



Radiocommunications Spectrum Marketing Plan (2 GHz unallocated lots band) 2017

The Australian Communications and Media Authority makes the following plan under section 39 of the *Radiocommunications Act 1992*.

Dated: 25 September 2017

Richard Bean
[signed]
Member

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

Australian Communications and Media Authority

Part 1—Preliminary

1 Name

This is the *Radiocommunications Spectrum Marketing Plan (2 GHz unallocated lots band) 2017*.

2 Commencement

This instrument commences on the day after it is registered.

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

3 Authority

This instrument is made under section 39 of the Act.

4 Purpose of the instrument

This instrument describes:

- (a) the procedures for issuing spectrum licences in the 2 GHz (unallocated lots) band;
- (b) the spectrum licences that will be allocated by the ACMA in accordance with this instrument;
- (c) some of the matters a licensee must take into account when operating radiocommunications devices under a spectrum licence allocated in accordance with this instrument; and
- (d) other matters which a person should take into account when deciding whether to apply for a spectrum licence under the allocation determination.

5 Definitions

- (1) In this instrument:

2 GHz band means the following frequency bands:

- (a) 1920 MHz to 1980 MHz; and
- (b) 2110 MHz to 2170 MHz.

2 GHz lot has the meaning given by subsection 4(1) of the allocation determination.

2 GHz (unallocated lots) band means the following frequency ranges within the corresponding areas:

- (a) 1920 MHz to 1930 MHz and 2110 MHz to 2120 MHz in:
 - (i) Canberra B;
 - (ii) Darwin; and
 - (iii) Hobart;
- (b) 1930 MHz to 1935 MHz and 2120 MHz to 2125 MHz in:
 - (i) Adelaide;
 - (ii) Brisbane A;
 - (iii) Canberra A;
 - (iv) Darwin;
 - (v) Hobart; and
 - (vi) Perth;

where each corresponding area is to be ascertained in accordance with subsection 5(2) of the designation notice.

Note: Each named area is also a region specified in Schedule 2.

Act means the *Radiocommunications Act 1992*.

advisory guidelines means one or both of the following:

- (a) *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 2 GHz Band) 2016*; and
- (b) *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 2 GHz Band) 2016*.

Note: The advisory guidelines are registered on the Federal Register of Legislation.

allocation determination means the *Radiocommunications (Spectrum Licence Allocation – Multi-band Auction) Determination 2017*.

applicant has the meaning given by subsection 4(1) of the allocation determination.

applicant information package has the meaning given by subsection 4(1) of the allocation determination.

auction has the meaning given by subsection 4(1) of the allocation determination.

Australian spectrum map grid or **ASMG** means the *Australian Spectrum Map Grid 2012* published by the ACMA on its website at <http://www.acma.gov.au>.

balance of the pre-determined price has the meaning given by subsection 4(1) of the allocation determination.

balance of the winning price has the meaning given by subsection 4(1) of the allocation determination.

Canberra Deep Space Communications Complex or **CDSCC** refers to the complex housing numerous Earth stations located at Tidbinbilla in HCIS identifier MW4H6.

designation notice means the *Radiocommunications (Spectrum Designation—2 GHz and 3.4 GHz Bands) Notice 2017*.

first and second rounds of the auction has the same meaning as in section 56 of the allocation determination.

geographic area, for a spectrum licence, means the area within which operation of a radiocommunications device is authorised under the licence.

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

hierarchical cell identifier scheme or **HCIS** means the cell grouping hierarchy scheme used to describe geographic areas in the ASMG.

high altitude platform station or **HAPS** means a high altitude platform station, which is a station located on an object at an altitude of 20 to 50 km and at a specified, nominal, fixed point relative to the earth.

licence schedule means a schedule to the sample spectrum licence.

lot means a 2 GHz lot.

maximum true mean power means the true mean power measured in a specified rectangular bandwidth that is located within a specified frequency band such that the true mean power is the maximum of true mean powers produced.

Note: The power within the specified rectangular bandwidth is normally established by taking measurements using either an adjacent channel power meter or a spectrum analyser. Estimation of the accuracy of the measuring equipment, measurement procedure and any adjustments made to measurements to take account of practical filter shape factors should be in accordance with good engineering practice.

mean power means the average power measured during an interval of time that is at least 10 times the period of the lowest modulation frequency.

non spurious emission means an unwanted emission that is not a spurious emission.

occupied bandwidth, in relation to a radiocommunications transmitter, means the bandwidth of a frequency band, having fixed upper and lower limits, that is necessary to contain not less than 99 per cent of the true mean power of the transmitter's emissions at any time.

post-auction application has the meaning given by subclause 2(1) of Schedule 4 to the allocation determination.

post-auction process means the process for allocation of licences conducted in accordance with Schedule 4 of the allocation determination.

pre-determined price has the meaning given by subsection 4(1) of the allocation determination.

preferred lots has the meaning given by subsection 4(1) of the allocation determination.

RALI MS 32 means the RALI MS 32 Coordination of Apparatus Licensed Services Within the Mid West Radio Quiet Zone, published on the ACMA's website at <http://www.acma.gov.au>.

region: see Schedule 2.

sample spectrum licence: see section 21.

spectrum space means a three dimensional space described by a frequency band and geographic area specified in a spectrum licence.

spurious emission means an emission that is not:

- (a) a modulation product; or
- (b) wide band noise; or
- (c) an emission caused by switching transients.

true mean power means:

- (a) if an unmodulated carrier is present – the mean power measured while the unmodulated carrier is present;
- (b) if an unmodulated carrier is not present – the mean power measured while transmitter information is present.

unwanted emission, in relation to the operation of a transmitter authorised by a spectrum licence, means an emission outside the lower and upper frequency limits of the licence.

Note: A number of other expressions used in this instrument are defined in the Act, including the following:
(a) ACMA;

- (b) apparatus licence;
- (c) core conditions;
- (d) frequency band;
- (e) licensee;
- (f) radiocommunications device;
- (g) Register; and
- (h) spectrum licence.

6 References to other legislative instruments and to other instruments or writing

- (1) In this instrument, unless the contrary intention appears, a reference to another legislative instrument is a reference to that other legislative instrument as in force 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.

- (2) In this instrument, unless the contrary intention appears, a reference to an instrument or other writing (other than a legislative instrument) is a reference to that instrument or writing as existing from time to time.

Note: See section 314A of the Act.

7 References to frequency ranges

In this instrument, the range of numbers that identifies a frequency range includes the higher, but not the lower, number.

Part 2—Allocation of spectrum licences

8 Simplified outline of this Part

This Part describes the procedures for allocating spectrum licences that authorise the operation of radiocommunications devices in the 2 GHz (unallocated lots) band.

9 Parts of the spectrum

The ACMA will allocate and issue spectrum licences for spectrum in the 2 GHz (unallocated lots) band in the manner described in this instrument and the allocation determination.

10 How licences will be allocated

- (1) Spectrum licences for spectrum in the 2 GHz (unallocated lots) band will be allocated by simple clock auction in accordance with the procedures set out in the allocation determination.

Note: Neither the ACMA nor the Commonwealth accepts any liability for any loss or damage suffered by any person participating in the auction. Any person intending to participate in the auction should obtain independent legal, technical and financial advice before applying.

- (2) If, before the auction manager sets the start date and time for the first and second rounds of the auction, the ACMA is satisfied that, for a lot, there is only one applicant that has nominated the lot as one of its preferred lots, the ACMA may offer to allocate spectrum licences for the lot for a pre-determined price, as set out in Part 5 of the allocation determination.
- (3) Parts of the 2 GHz (unallocated lots) band that are offered at auction or for a pre-determined price but not allocated may be later offered for allocation in accordance with Schedule 4 of the allocation determination.

11 Lots for the auction

- (1) The ACMA has divided the 2 GHz (unallocated lots) band into lots described in Schedule 1. Each lot is characterised by:
 - (a) the region of the lot, specified in column 3 of table 1 in Schedule 1;
 - (b) the frequencies specified in columns 4 and 5 of table 1 in Schedule 1; and
 - (c) the bandwidth specified in column 6 of table 1 in Schedule 1.
- (2) The auction will be held in accordance with the procedures set out in the allocation determination. All lots will be available for allocation in accordance with the allocation determination.

12 Advertising the auction

The ACMA will publish details of the auction and invite persons to apply to take part in the auction, in accordance with the allocation determination.

13 Taking part in the auction

- (1) The ACMA will make available an applicant information package that contains more details about application requirements and the auction process in accordance with the allocation determination. Details of what must be in the applicant information package are in subsection 28(1) of the allocation determination.
- (2) Details of how to apply to take part in the auction are set out in Part 4 of the allocation determination.

Part 3—Spectrum licences to be issued

14 Simplified outline of this Part

This Part describes:

- (a) the spectrum licences that will be issued in accordance with this instrument;
- (b) some of the matters a licensee must take into account when operating devices under a spectrum licence issued in accordance with this instrument;
- (c) conditions to be included in spectrum licences issued in accordance with this instrument; and
- (d) other matters which a person should take into account when deciding whether to apply for a spectrum licence to be issued in accordance with this instrument.

15 Issue of licences

- (1) Subject to the Act, the allocation determination and other relevant law, and subject to subsection (2), the ACMA will issue a spectrum licence to the person to whom it is allocated as soon as practicable after the person pays to the ACMA, on behalf of the Commonwealth, whichever of the following is relevant:
 - (a) the balance of the pre-determined price;
 - (b) the balance of the winning price.
- (2) Subject to the Act, the allocation determination and other relevant law, if a spectrum licence is allocated to a person under clause 10 of Schedule 4 to the allocation determination, the ACMA will issue a spectrum licence to the person as soon as practicable.

16 Commencement and duration of licences

- (1) A licence issued to a person who has been allocated the licence as a result of the auction or for a pre-determined price under Part 5 of the allocation determination, will commence on the date that the licence was issued and, subject to the Act, will be for a fixed term with an expiry date of 11 October 2032.

Note: In accordance with the Act, a licence may be resumed or cancelled before the expiry date.

- (2) A licence issued to a person who has been allocated the licence through the post-auction allocation process will commence on the later of:
 - (a) the date stated in the post-auction application;
 - (b) the date the licence is issued;
 - (c) 1 February 2018;and, subject to the Act, will be for a fixed term with an expiry date of 11 October 2032.

Note: In accordance with the Act, a licence may be resumed or cancelled before the expiry date.

17 Core licence conditions

- (1) Section 66 of the Act requires spectrum licences to include the following core conditions:

- (a) a condition specifying the part or parts of the spectrum in which operation of radiocommunications devices is authorised under the licence;
 - (b) a condition specifying the maximum permitted level of radio emission, in parts of the spectrum outside such a part, that may be caused by operation of radiocommunications devices under the licence;
 - (c) a condition specifying the area within which operation of radiocommunications devices is authorised under the licence;
 - (d) a condition specifying the maximum permitted levels of radio emission, outside that area, that may be caused by operation of radiocommunications devices under the licence.
- (2) These conditions will be included in the spectrum licences issued in accordance with this instrument.

Note: These core conditions may be varied by the ACMA, with the licensee's agreement, under section 72 of the Act.

18 Determining core licence conditions

- (1) For each spectrum licence issued to a person as a result of the auction, for a pre-determined price, or through the post-auction allocation process:
 - (a) the licence will be for the frequencies, or the aggregation of the frequencies, assigned to the lots allocated to the person in accordance with the allocation determination; and
 - (b) the geographic area of a licence will be, for the frequencies assigned to each lot allocated to the person in accordance with the allocation determination, the region described in Schedule 2 that is the region for the lot.
- (2) The emission limits outside the geographic area for all licences issued in accordance with this instrument will be calculated in accordance with Schedule 3.
- (3) The emission limits outside part or parts of the spectrum for each licence issued in accordance with this instrument will be calculated in accordance with Schedule 4.

19 Other licence conditions

- (1) Each spectrum licence will also include conditions about:
 - (a) the payment of charges (section 67 of the Act);
 - (b) use by third parties (section 68 of the Act);
 - (c) registration of transmitters (section 69 of the Act); and
 - (d) residency (section 69A of the Act).
- (2) Under section 71 of the Act, the ACMA may also include conditions about other matters as it thinks fit.
- (3) Other conditions likely to be included in a licence are included in the sample spectrum licence at Schedule 5.

Note: The ACMA may include conditions in a spectrum licence that are not included in the sample spectrum licence.

- (4) Each spectrum licence will include a condition that states that radiocommunications receivers operating in the 2110 MHz to 2125 MHz frequency range cannot claim protection from harmful interference caused by radiocommunications transmitters of the space research service operated at the CDSCC.

Note: It is intended that radiocommunications devices operating in the 2110 MHz to 2125 MHz frequency range do not constrain current or future space research services operations at the CDSCC in the 2110 MHz to 2120 MHz frequency range.

- (5) Each spectrum licence will include a condition that states that, before registering a radiocommunications transmitter for use in or around the RQZ and supplementary RQZ, as defined by the *Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan 2011*, the licensee must follow the procedures set out in Radiocommunications RALI MS 32 as if the radiocommunications transmitter were an apparatus-licensed transmitter.
- (6) Each spectrum licence will include a condition that states that licensees must ensure that operation of a radiocommunications transmitter that is exempt from registration under subsection 20(2) does not cause harmful interference to other radiocommunications devices operating in the 2 GHz band.

20 Registration of transmitters

- (1) Each spectrum licence will include a condition that prohibits operation of a radiocommunications transmitter unless the requirements under Part 3.5 of the Act to have the transmitter registered have been met.

Note 1: Under subsection 145(1) of the Act, the ACMA may refuse to include in the Register details of a radiocommunications transmitter that is proposed to be operated under a spectrum licence if the ACMA is satisfied that operation of the transmitter could cause an unacceptable level of interference to the operation of other radiocommunications devices under that or any other licence.

Note 2: Subsection 145(4) of the Act states that the ACMA may determine, by written instrument, what are acceptable levels of interference for the purposes of section 145 of the Act.

Note 3: The *Radiocommunications (Unacceptable Levels of Interference — 2 GHz Band) Determination 2016* sets out what are the unacceptable levels of interference for the purpose of registering devices to be operated under a licence issued in accordance with this instrument, and is to be used for the issue of certificates by accredited persons under subsection 145(3) of the Act.

- (2) Each spectrum licence will include a condition that states the following radiocommunications transmitters are exempt from registration:
 - (a) a radiocommunications transmitter that operates in the 2 GHz band with a maximum EIRP of less than or equal to 25 dBm per occupied bandwidth;
 - (b) a high altitude platform station (HAPS) that does not exceed a power flux density of -121.5 dB (W/(m²MHz)) at the Earth's surface outside the spectrum space for the spectrum licence.

21 Draft sample licence

Schedule 5 sets out a sample spectrum licence (*sample spectrum licence*) including conditions that may be included in each spectrum licence that is issued in the 2GHz (unallocated lots) band.

Note: The sample spectrum licence may not reflect all the conditions included in a spectrum licence issued in accordance with the instrument.

22 Compatibility requirements

The advisory guidelines provide a means of coordinating services operating under spectrum licences with other services.

Part 4—After allocation

23 Simplified outline of this Part

This Part describes various matters that apply after licences are issued in accordance with this instrument.

24 Registration of licences

The ACMA will register all spectrum licences in accordance with Part 3.5 of the Act.

Note: Details about registration are in the *Radiocommunications (Register of Radiocommunications Licences) Determination 2017*.

25 Third party use

A licensee may authorise other persons to operate radiocommunications devices under any spectrum licence issued to it, provided it does so in accordance with Division 1 of Part 3.2 of the Act.

26 Trading in spectrum licences

- (1) A licensee may assign, or otherwise deal with, the whole or any part of a spectrum licence, provided it does so in accordance with Division 5 of Part 3.2 of the Act.
- (2) The ACMA has made rules under section 88 of the Act to regulate trading in spectrum licences. Section 85 of the Act requires assignments of the whole or part of any spectrum licence to comply with these rules.

Note: The rules are set out in the *Radiocommunications (Trading Rules for Spectrum Licences) Determination 2012*.

27 Agreements about emission limits

A licensee may enter into an agreement for the purpose of one or more of the following:

- (a) clause 1 of Schedule 3 (about emission limits outside the geographic area of the licence); or
- (b) clause 1 of Schedule 4 (about emission limits outside the band of the licence).

28 Spectrum licences that are about to expire

As required by section 78 of the Act, the ACMA must, from time to time, publish on its website a notice that:

- (a) states where information may be obtained about:
 - (i) the spectrum licences that will expire during a period specified in the notice; and
 - (ii) the parts of the spectrum to which they relate; and
- (b) invites expressions of interest from persons who wish to have issued to them spectrum licences relating to those parts of the spectrum.

29 Re-issue of licence

- (1) The ACMA re-issues licences in accordance with Division 4 of Part 3.2 of the Act.

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- (2) Spectrum licences that are re-issued are unlikely to take the same form as originally issued, as the lots may be divided and distributed differently. Conditions on the spectrum licences may also change upon re-issue. A person considering applying to participate in the allocation process should not assume that, if the person is issued with a licence in accordance with this instrument:
- (a) the licence will be re-issued to the person; or
 - (b) if the licence is re-issued to the person – the licence re-issued will have the same conditions as the licence originally issued to the person.

Schedule 1—Lots

(subsection 11(1))

Table 1 Lots

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Lot number	Lot name	Region	Lower frequency range	Upper frequency range	Bandwidth
6	CBRB01	Canberra B	1920 MHz – 1930 MHz	2110 MHz– 2120 MHz	2 x 10 MHz
7	DARW01	Darwin	1920 MHz– 1930 MHz	2110 MHz– 2120 MHz	2 x 10 MHz
8	HOBA01	Hobart	1920 MHz– 1930 MHz	2110 MHz– 2120 MHz	2 x 10 MHz
9	ADEL01	Adelaide	1930 MHz– 1935 MHz	2120 MHz– 2125 MHz	2 x 5 MHz
10	BRIA01	Brisbane A	1930 MHz– 1935 MHz	2120 MHz– 2125 MHz	2 x 5 MHz
11	CBRA01	Canberra A	1930 MHz– 1935 MHz	2120 MHz– 2125 MHz	2 x 5 MHz
12	DARW02	Darwin	1930 MHz– 1935 MHz	2120 MHz– 2125 MHz	2 x 5 MHz
13	HOBA02	Hobart	1930 MHz– 1935 MHz	2120 MHz– 2125 MHz	2 x 5 MHz
14	PERT01	Perth	1930 MHz– 1935 MHz	2120 MHz– 2125 MHz	2 x 5 MHz

Note: Columns 1 and 2 are included for information only. The auction system used for the purposes of the allocation determination may refer to the lot number and the lot name. The lot numbers begin at number 6 as other lots are being allocated through the allocation process set out in the allocation determination.

Schedule 2—Regions

(section 5, paragraph 11(1)(a))

1 The regions

(1) There are lots offered in seven regions. The regions are:

- (a) Canberra B;
- (b) Darwin;
- (c) Hobart;
- (d) Adelaide;
- (e) Brisbane A;
- (f) Canberra A; and
- (g) Perth.

Note 1: Each region is also a ‘named area’ within the meaning of subsection 5(2) of the designation notice.

Note 2: A lot in each of the first three listed regions (Canberra B, Darwin and Hobart) will be available in stage 1 of the auction. A lot in each of the other regions, as well as a lot in Darwin and a lot in Hobart, will be available in stage 2 of the auction.

(2) The regions are described using the hierarchical cell identifier scheme in the ASMG. The seven regions are described by the HCIS identifiers specified in table 1 for each region. There are four levels to the HCIS, corresponding to 3 degree cells, 1 degree cells, 15 minute cells and 5 minute cells of the ASMG.

(3) The geographic area of each region can be determined by the aggregation of block areas represented by the HCIS identifiers used to describe the region. Refer to the ASMG for a complete description of the HCIS naming convention, as published by the ACMA.

Note: The maps included in this Schedule is included for information only. The ACMA does not accept responsibility for the accuracy of that information. Potential participants in the allocation should obtain their own advice and make their own inquiries into the pictorial representation of the region.

Table 1 HCIS identifiers for spectrum licences in the 2 GHz (unallocated lots) band

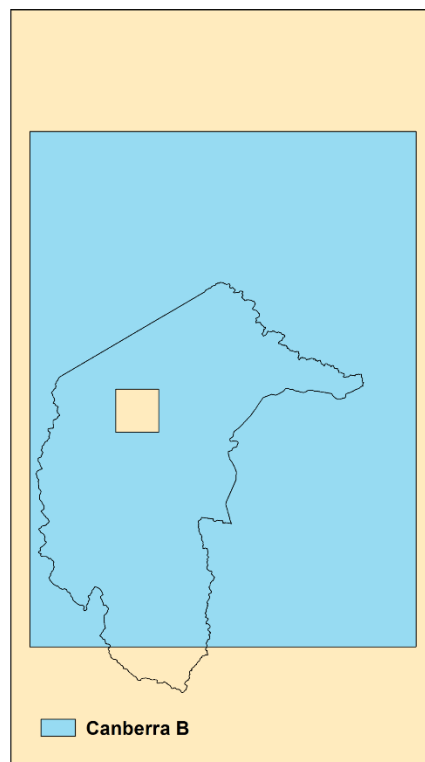
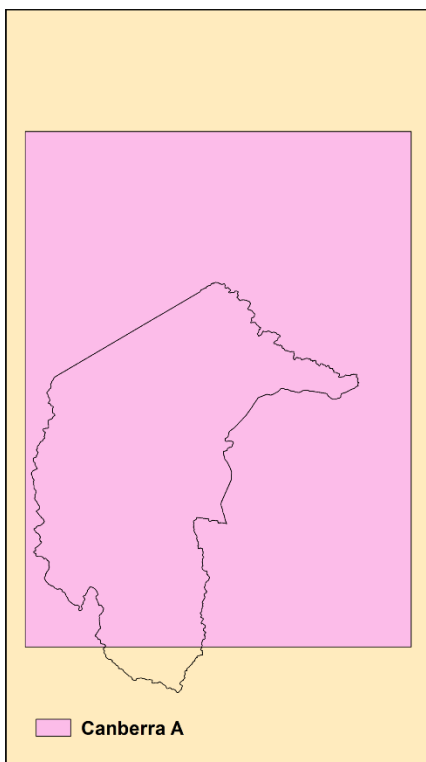
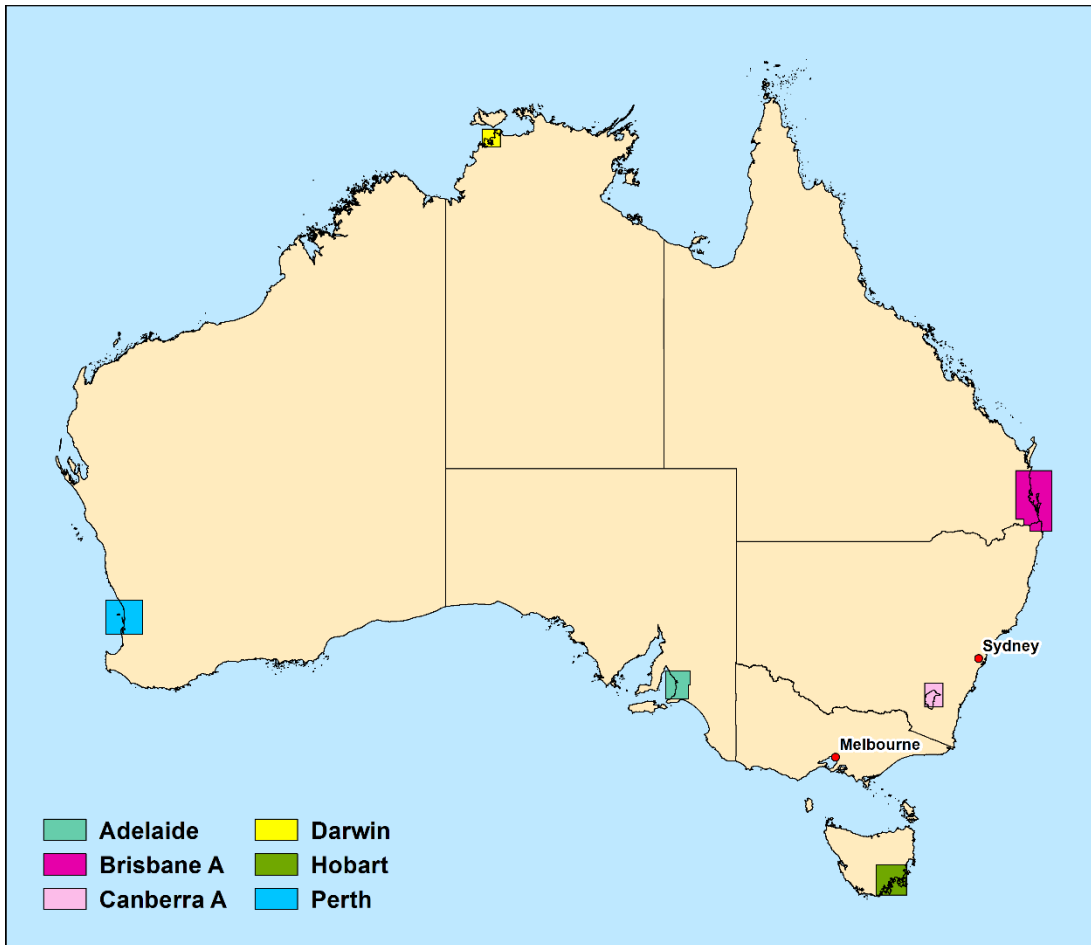
Geographic areas	HCIS identifiers
Canberra B	MW4D, MW4L, MW5A, MW5B, MW5E, MW5F, MW5I, MW5J, MW1P4, MW1P5, MW1P6, MW1P7, MW1P8, MW1P9, MW2M4, MW2M5, MW2M6, MW2M7, MW2M8, MW2M9, MW2N4, MW2N5, MW2N6, MW2N7, MW2N8, MW2N9, MW4H1, MW4H2, MW4H3, MW4H4, MW4H5, MW4H7, MW4H8, MW4H9, MW4P1, MW4P2, MW4P3, MW5M1, MW5M2, MW5M3, MW5N1, MW5N2, MW5N3
Darwin	GO7C, GO7D, GO7G, GO7H, GO7K, GO7L, GO8A, GO8E, GO8I
Hobart	LY8L, LY8P, LY9I, LY9J, LY9K, LY9L, LY9M, LY9N, LY9O, LY9P, LZ2D, LZ2H, LZ3A, LZ3B, LZ3C, LZ3D, LZ3E, LZ3F, LZ3G, LZ3H, LY8H4, LY8H5, LY8H6, LY8H7, LY8H8, LY8H9, LY9E4, LY9E5, LY9E6, LY9E7, LY9E8, LY9E9, LY9F4, LY9F5, LY9F6, LY9F7, LY9F8, LY9F9, LY9G4, LY9G5, LY9G6, LY9G7, LY9G8, LY9G9, LY9H4, LY9H5, LY9H6, LY9H7, LY9H8, LY9H9, LZ2L1, LZ2L2, LZ2L3, LZ3I1, LZ3I2, LZ3I3, LZ3J1, LZ3J2, LZ3J3, LZ3K1, LZ3K2, LZ3K3, LZ3L1, LZ3L2, LZ3L3

Schedule 2—Regions

Geographic areas	HCIS identifiers
Adelaide	IW3J, IW3K, IW3L, IW3N, IW3O, IW3P, IW6B, IW6C, IW6D, IW6F, IW6G, IW6H, IW3E5, IW3E6, IW3E8, IW3E9, IW3F4, IW3F5, IW3F6, IW3F7, IW3F8, IW3F9, IW3G4, IW3G5, IW3G6, IW3G7, IW3G8, IW3G9, IW3H4, IW3H5, IW3H6, IW3H7, IW3H8, IW3H9, IW3I2, IW3I3, IW3I5, IW3I6, IW3I8, IW3I9, IW3M2, IW3M3, IW3M5, IW3M6, IW3M8, IW3M9, IW6A2, IW6A3, IW6A5, IW6A6, IW6A8, IW6A9, IW6E2, IW6E3, IW6E5, IW6E6, IW6E8, IW6E9, JW1E4, JW1E7, JW1I1, JW1I4, JW1I7, JW1M1, JW1M4
Brisbane A	NT9, NT5G, NT5H, NT5K, NT5L, NT5O, NT5P, NT6E, NT6F, NT6G, NT6H, NT6I, NT6J, NT6K, NT6L, NT6M, NT6N, NT6O, NT6P, NT8C, NT8D, NT8G, NT8H, NT8K, NT8L, NT8O, NT8P, NU3A, NU3B, NU3C, NU3D, NU3F, NU3G, NU3H, NT5C4, NT5C5, NT5C6, NT5C7, NT5C8, NT5C9, NT5D4, NT5D5, NT5D6, NT5D7, NT5D8, NT5D9, NT6A4, NT6A5, NT6A6, NT6A7, NT6A8, NT6A9, NT6B4, NT6B5, NT6B6, NT6B7, NT6B8, NT6B9, NT6C4, NT6C5, NT6C6, NT6C7, NT6C8, NT6C9, NT6D4, NT6D5, NT6D6, NT6D7, NT6D8, NT6D9, NU2C1, NU2C2, NU2C3, NU2D1, NU2D2, NU2D3, NU2D5, NU2D6, NU2D8, NU2D9, NU2H2, NU2H3, NU3E1, NU3E2, NU3E3, NU3E5, NU3E6, NU3E8, NU3E9, NU3I2, NU3I3, NU3J1, NU3J2, NU3J3, NU3K1, NU3K2, NU3K3, NU3L1, NU3L2, NU3L3
Canberra A	MW4D, MW4H, MW4L, MW5A, MW5B, MW5E, MW5F, MW5I, MW5J, MW1P4, MW1P5, MW1P6, MW1P7, MW1P8, MW1P9, MW2M4, MW2M5, MW2M6, MW2M7, MW2M8, MW2M9, MW2N4, MW2N5, MW2N6, MW2N7, MW2N8, MW2N9, MW4P1, MW4P2, MW4P3, MW5M1, MW5M2, MW5M3, MW5N1, MW5N2, MW5N3
Perth	BV1I, BV1J, BV1K, BV1L, BV1M, BV1N, BV1O, BV1P, BV2I, BV2J, BV2M, BV2N, BV4A, BV4B, BV4C, BV4D, BV4E, BV4F, BV4G, BV4H, BV4I, BV4J, BV4K, BV4L, BV5A, BV5B, BV5E, BV5F, BV5I, BV5J, BV1E7, BV1E8, BV1E9, BV1F7, BV1F8, BV1F9, BV1G7, BV1G8, BV1G9, BV1H7, BV1H8, BV1H9, BV2E7, BV2E8, BV2E9, BV2F7, BV2F8, BV2F9, BV4M1, BV4M2, BV4M3, BV4N1, BV4N2, BV4N3, BV4O1, BV4O2, BV4O3, BV4P1, BV4P2, BV4P3, BV5M1, BV5M2, BV5M3, BV5N1, BV5N2, BV5N3

2 Indicative pictorial representation

The areas shaded in the maps are only an indicative pictorial representation of each region. The ACMA does not accept responsibility for the accuracy of the information in the maps.



Schedule 3—Emission limits outside the area

(subsection 18(2))

1 Emission limits outside the area specified by written agreement

- (1) Where a written agreement specifying the maximum permitted level of radio emissions exists between:
 - (a) the licensee; and
 - (b) all the affected licensees of frequency-adjacent licences and area-adjacent licences;the licensee must comply with that specified maximum permitted level of radio emission.
- (2) Where there is no written agreement for the purpose of this clause in force, the licensee must comply with clause 2.

2 Emission limits outside the area without agreement

- (1) The licensee must ensure that the maximum permitted level of radio emissions for an area outside of the geographic area for which the licence authorises the operation of radiocommunications devices caused by operation of radiocommunications devices under the licence does not exceed a radiated maximum true mean power of 77.2 dBm EIRP per 5 MHz.
- (2) The licensee complies with subclause (1) by ensuring that no radiocommunications device is operated under the licence in excess of a radiated maximum true mean power of 77.2 dBm EIRP per 5 MHz.

Schedule 4—Emission limits outside the band

(subsection 18(3))

1 Emission limits outside the band specified by written agreement

- (1) Where a written agreement specifying the maximum permitted level of radio emission exists between:
 - (a) the licensee; and
 - (b) all affected licensees of frequency-adjacent licences and area-adjacent licences;
 the licensee must comply with that specified maximum permitted level of radio emission.
- (2) Where there is no written agreement for the purposes of this clause in force, the licensee must comply with clauses 2 and 3.

2 Unwanted emissions

- (1) Subject to subclause (2), the licensee must ensure that radiocommunications transmitters operated under the licence do not exceed the unwanted emission limits in subclauses (3) to (7).
- (2) For any frequency where an emission limit described in subclauses (5) or (6) is less than an emission limit described in subclause (3), the emission limit in subclauses (5) or (6) applies instead of the emission limit in subclause (3).
- (3) The unwanted emission limits in Table 1 apply:
 - (a) to radiocommunications transmitters operating in the frequency band 2110-2170 MHz;
 - (b) at frequencies outside the upper and lower frequency limits for the spectrum licence; and
 - (c) offset from the upper or lower frequency limits for the spectrum licence.

where:

f_{offset} : is the frequency offset from the upper or lower frequency limits for the spectrum licence. The closest -3dB point of the specified bandwidth closest to the upper and lower frequency limits for the spectrum licence is placed at f_{offset} .

Table 1 Radiated maximum true mean power unwanted emission limits

Frequency offset range	Radiated maximum true mean power (dBm EIRP)	Specified bandwidth
$0 \text{ kHz} \leq f_{\text{offset}} < 5 \text{ MHz}$	$11 - (7/5) \times f_{\text{offset}}(\text{MHz})$	100 kHz
$5 \text{ MHz} \leq f_{\text{offset}} < 10 \text{ MHz}$	4	100 kHz
$f_{\text{offset}} \geq 10 \text{ MHz}$	3	1 MHz

- (4) The unwanted emission limits in Table 2 apply:

Schedule 4—Emission limits outside the band

- (a) to a radiocommunications transmitter operating in the frequency band 1920-1980 MHz;
- (b) at frequencies outside the upper or lower frequency limits for the spectrum licence;
- (c) offset from the upper or lower frequency limits for the spectrum licence; and
- (d) within the frequency band 1875-2025 MHz;

where:

f_{offset} : is the frequency offset from the upper or lower frequency limits for the spectrum licence. The closest -3dB point of the specified bandwidth closest to the band edge being frequency offset from, is placed at f_{offset} .

Table 2 Radiated maximum true mean power unwanted emission limits

Frequency offset Range	Radiated maximum true mean power (dBm EIRP)	Specified bandwidth
$0 \text{ kHz} \leq f_{\text{offset}} < 5 \text{ MHz}$	-15	30 kHz
$1 \text{ MHz} \leq f_{\text{offset}} < 5 \text{ MHz}$	-10	1 MHz
$5 \text{ MHz} \leq f_{\text{offset}} < 39.8 \text{ MHz}$	-13	1 MHz
$f_{\text{offset}} \geq 39.8 \text{ MHz}$	-25	1 MHz

(5) The unwanted emission limits in Table 3 apply:

- (a) to a radiocommunications transmitter operating in the band 2110-2170 MHz;
- (b) at frequencies below 2110 MHz; and
- (c) offset from 2110 MHz;

where:

f_{offset} : is the frequency offset from 2110 MHz. The closest -3dB point of the specified bandwidth to the lower frequency limit of the spectrum licence is placed at f_{offset} .

Table 3 Radiated maximum true mean power unwanted emission limits

Frequency offset range	Radiated maximum true mean power (dBm EIRP)	Specified bandwidth
$0 \text{ kHz} \leq f_{\text{offset}} < 4 \text{ MHz}$	$11 - (7/5) \times f_{\text{offset}}(\text{MHz})$	100 kHz
$4 \text{ MHz} \leq f_{\text{offset}} < 5 \text{ MHz}$	-4	100 kHz
$5 \text{ MHz} \leq f_{\text{offset}} < 10 \text{ MHz}$	-1	1 MHz
$f_{\text{offset}} \geq 10 \text{ MHz}$	-11	1 MHz

Schedule 4—Emission limits outside the band

- (6) The unwanted emission limits in Table 4 apply:
- (a) to a radiocommunications transmitter operating in the band 2110-2170 MHz;
 - (b) at frequencies above 2170 MHz; and
 - (c) offset from 2170 MHz;

where:

f_{offset} : is the frequency offset from 2170 MHz. The closest -3dB point of the specified bandwidth to the upper frequency limit of the spectrum licence is placed at f_{offset} .

Table 4 Radiated maximum true mean power unwanted emission limits

Frequency offset range	Radiated mean power (dBm EIRP)	Specified bandwidth
$f_{\text{offset}} \geq 10$ MHz	-11	1 MHz

- (7) The unwanted emission limits in Table 5 apply to radiocommunications transmitters operating in the band 1920-1980 MHz. These limits apply outside the 1875-2025 MHz frequency bands, measured over the specified bandwidth for the relevant frequency range.

Table 5 Radiated maximum true mean power unwanted emission limits

Frequency offset range	Radiated mean power (dBm EIRP)	Specified bandwidth
$9 \text{ kHz} \leq f_{\text{offset}} < 150 \text{ kHz}$	-36	1 kHz
$150 \text{ kHz} \leq f_{\text{offset}} < 30 \text{ MHz}$	-36	10 kHz
$30 \text{ MHz} \leq f_{\text{offset}} < 1 \text{ GHz}$	-36	100 kHz
$1 \text{ GHz} \leq f_{\text{offset}} < 1.875 \text{ GHz}$	-30	1 MHz
$2.025 \text{ GHz} \leq f_{\text{offset}}$	-30	1 MHz

Schedule 5—Sample spectrum licence

(section 21)

This Schedule sets out a sample spectrum licence, and the conditions that may be included in a spectrum licence, issued in the 2 GHz (unallocated lots) band, in accordance with this instrument.



COMMONWEALTH OF AUSTRALIA

AUSTRALIAN COMMUNICATIONS AND MEDIA AUTHORITY

Radiocommunications Act 1992

Sample Spectrum Licence for the 2 GHz (unallocated lots) band

Prepared under section 61 of the *Radiocommunications Act 1992* ('the Act') in accordance with the

Radiocommunications Spectrum Marketing Plan (2GHz unallocated lots band) 2017

This licence is issued under Part 3.2 of the Act to the person named at Item 1 of Part 1, Licence Schedule 1 of this licence.

1. The person named at Item 1 of Part 1 of Licence Schedule 1 ('the licensee'), or a person authorised under subsection 68(1) of the Act, is authorised, under this licence, to operate radiocommunications devices in accordance with:
 - (a) the Act;
 - (b) the core conditions set out in Licence Schedule 2;
 - (c) the statutory conditions set out in Licence Schedule 3; and
 - (d) the other conditions set out in Licence Schedule 4.

2. This licence comes into force on the date shown at Item 5 of Part 1 of Licence Schedule 1 and remains in force until the end of the date shown at Item 6 of Part 1 of Licence Schedule 1.

Definitions

3. In this licence, unless the contrary intention appears:

2 GHz band has the meaning given by the *Radiocommunications Spectrum Marketing Plan (2 GHz unallocated lots band) 2017*.

Act means the *Radiocommunications Act 1992*.

area-adjacent spectrum licences means the spectrum licences that authorise the operation of radiocommunications devices in the geographic areas adjacent to the geographic areas described in Tables 1 and 2 of Part 2 of Licence Schedule 1.

Canberra Deep Space Communications Complex (CDSCC) refers to the complex housing numerous Earth stations located at Tidbinbilla in HCIS identifier MW4H6.

frequency-adjacent spectrum licences means the spectrum licences that authorise the operation of radiocommunications devices in the frequency bands adjacent to the frequency bands described in Table 1 of Part 2 of Licence Schedule 1.

HAPS means a high altitude platform station, which is a station located on an object at an altitude of 20 to 50 km and at a specified, nominal, fixed point relative to the earth.

harmful interference has the same meaning it has in the spectrum plan.

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

Hierarchical Cell Identification Scheme (HCIS) means the cell grouping hierarchy scheme used to describe geographic areas in the *Australian Spectrum Map Grid 2012* published by the ACMA, as existing from time to time.

Note The *Australian Spectrum Map Grid 2012* is available on the ACMA website at: www.acma.gov.au.

ITU Radio Regulations means the Radio Regulations published by the International Telecommunication Union, as in force from time to time.

Note: The Radio Regulations are available on the ITU website at: www.itu.int.

occupied bandwidth, in relation to a radiocommunications transmitter, means the width of a frequency band having upper and lower limits that are necessary to contain 99% of the true mean power of the transmitter's emission at any time.

section 145 Determination means the *Radiocommunications (Unacceptable Levels of Interference – 2 GHz Band) Determination 2016* (as in force from time to time).

spectrum space means a 3 dimensional space consisting of a frequency band and a geographic area.

unwanted emissions means any emissions (both out-of-band and spurious emissions) outside the lower and upper frequency limits of this licence as set out in Part 2 of Licence Schedule 1.

4. Unless the contrary intention appears, terms and expressions used in this licence have the meaning given to them by the *Radiocommunications Spectrum Marking Plan (2 GHz unallocated lots band) 2017* (as in force from time to time) or the section 145 Determination.

Note: A number of terms, used in this licence are defined in the Act and unless the contrary intention appears, have the meanings given to them by the Act. These terms include:

Schedule 5—Sample spectrum licence

- ACMA
 - core condition
 - frequency band
 - radiocommunications device
 - radiocommunications receiver
 - radiocommunications transmitter
 - radio emission
 - Register
 - spectrum licence
 - spectrum licence tax
 - spectrum plan.
5. Unless the contrary intention appears, in this licence:
- (a) the value of a parameter in Licence Schedules 2 and 3 must be estimated with a level of confidence not less than 95% that the true value of the parameter will always remain below the requirement specified; and
 - (b) the range of numbers that identify a frequency band includes the higher but not the lower number.

Licence Schedule 1 Licence Details, Bands and Areas

Part 1 Licence details

Item	<i>Licence Details</i>	
1	<i>Name of licensee</i>	
2	<i>Address of licensee</i>	
3	<i>Client number</i>	
	<i>Licence Details</i>	
4	<i>Band release</i>	2 GHz (unallocated lots) band
5	<i>Date of licence effect</i>	
6	<i>Date of licence expiry</i>	11 October 2032
7	<i>Licence number</i>	
8	<i>Date of licence issue</i>	dd/mm/yyyy

Part 2 Frequency bands and geographic areas

For core condition 1, this licence authorises the operation of radiocommunications devices in the frequency bands specified in column 3 and within the corresponding geographic areas specified in column 2 of Table 1.

A frequency band consists of the bandwidth between the lower and upper frequencies, where the lower frequency limit is exclusive and upper frequency limit is inclusive. The geographic areas in column 2 of Table 1 are described by the sequence of HCIS identifiers in Table 2.

Table 1: Frequency bands and geographic areas of this licence

Identifier (column 1)	Geographic areas (column 2)	Frequency bands (column 3)			
		Lower band (MHz)		Upper band (MHz)	
		Lower limit	Upper limit	Lower limit	Upper limit
A	1	1930	1935	2120	2125

Table 2: Description of the geographic areas of this licence

Geographic areas (column 1)	HCIS identifiers (column 2)

Schedule 5—Sample spectrum licence

Geographic areas (column 1)	HCIS identifiers (column 2)
1	GO7C, GO7D, GO7G, GO7H, GO7K, GO7L, GO8A, GO8E, GO8I

Note: The HCIS is described in the Australian Spectrum Map Grid 2012. The Australian Spectrum Map Grid 2012 is available on the ACMA website at: www.acma.gov.au. Copies are also available from the ACMA.

Licence Schedule 2 Core Conditions

Frequency bands and geographic areas

1. This licence authorises the operation of radiocommunications devices in the frequency bands and within the geographic areas set out in Part 2 of Licence Schedule 1.

Emission limits outside the frequency bands

2. Core conditions 3 to 10 apply in relation to those frequencies that are outside the frequency bands set out in Part 2 of Licence Schedule 1.
3. Where a written agreement specifying the maximum permitted level of radio emission for frequencies described in core condition 2 exists between:
 - (a) the licensee; and
 - (b) all the affected licensees of frequency-adjacent spectrum licences and area-adjacent spectrum licences;the licensee must comply with that specified maximum permitted level of radio emission.
4. Where there is no written agreement for the purposes of core condition 3 in force, the licensee must comply with core conditions 5 to 10.

Unwanted emission limits

5.
 - (1) Subject to sub-condition (2), the licensee must ensure that radiocommunications transmitters operated under this licence do not exceed the unwanted emission limits in core conditions 6, 7 and 10.
 - (2) For any frequency where an emission limit described in core condition 8 or 9 is less than an emission limit described in core condition 6, the emission limit in core condition 8 or 9 applies.
6. The unwanted emission limits in Table 3 apply:
 - (a) to a radiocommunications transmitter operating in the frequency band 2110-2170 MHz;
 - (b) at frequencies outside the upper or lower frequency limits set out in Part 2 of Licence Schedule 1; and
 - (c) offset from the upper or lower frequency limits set out in Part 2 of Licence Schedule 1;

where:

f_{offset} is the frequency offset from the upper or lower frequency limits set out in Part 2 of Licence Schedule 1. The closest -3dB point of the specified bandwidth to the upper or lower frequency limits of this licence is placed at f_{offset} .

Table 3: Radiated maximum true mean power unwanted emission limits

Frequency offset range	Radiated maximum true mean power (dBm EIRP)	Specified bandwidth
$0 \text{ kHz} \leq f_{\text{offset}} < 5 \text{ MHz}$	$11 - (7/5) \times f_{\text{offset}}(\text{MHz})$	100 kHz
$5 \text{ MHz} \leq f_{\text{offset}} < 10 \text{ MHz}$	4	100 kHz
$f_{\text{offset}} \geq 10 \text{ MHz}$	3	1 MHz

7. The unwanted emission limits in Table 4 apply:
- to a radiocommunications transmitter operating in the frequency band 1920-1980 MHz;
 - at frequencies outside the upper or lower frequency limits set out in Part 2 of Licence Schedule 1;
 - offset from the upper or lower frequency limits set out in Part 2 of Licence Schedule 1; and
 - within the frequency band 1875-2025 MHz;

where:

f_{offset} is the frequency offset from the upper or lower frequency limits set out in Part 2 of Licence Schedule 1. The closest -3dB point of the specified bandwidth to the upper or lower frequency limits of this licence is placed at f_{offset} .

Table 4: Radiated maximum true mean power unwanted emission limits

Frequency offset range	Radiated maximum true mean power (dBm EIRP)	Specified bandwidth
$0 \text{ kHz} \leq f_{\text{offset}} < 1 \text{ MHz}$	-15	30 kHz
$1 \text{ MHz} \leq f_{\text{offset}} < 5 \text{ MHz}$	-10	1 MHz
$5 \text{ MHz} \leq f_{\text{offset}} < 39.8 \text{ MHz}$	-13	1 MHz
$f_{\text{offset}} \geq 39.8 \text{ MHz}$	-25	1 MHz

8. The unwanted emission limits in Table 5 apply:
- to a radiocommunications transmitter operating in the band 2110-2170 MHz;
 - at frequencies below 2110 MHz; and
 - offset from 2110 MHz;

where:

f_{offset} is the frequency offset from 2110 MHz. The closest -3dB point of the specified bandwidth to the lower frequency limit of this licence is placed at f_{offset} .

Table 5: Radiated maximum true mean power unwanted emission limits

Frequency offset range	Radiated maximum true mean power (dBm EIRP)	Specified bandwidth
$0 \text{ kHz} \leq f_{\text{offset}} < 4 \text{ MHz}$	$11 - (7/5) \times f_{\text{offset}}(\text{MHz})$	100 kHz
$4 \text{ MHz} \leq f_{\text{offset}} < 5 \text{ MHz}$	-4	100 kHz
$5 \text{ MHz} \leq f_{\text{offset}} < 10 \text{ MHz}$	-1	1 MHz
$f_{\text{offset}} \geq 10 \text{ MHz}$	-11	1 MHz

Schedule 5—Sample spectrum licence

9. The unwanted emission limits in Table 6 apply:
- (a) to a radiocommunications transmitter operating in the band 2110-2170 MHz;
 - (b) at frequencies above 2170 MHz; and
 - (c) offset from 2170 MHz;

where:

f_{offset} is the frequency offset from 2170 MHz. The closest -3dB point of the specified bandwidth to the upper frequency limit of this licence is placed at f_{offset} .

Table 6: Radiated maximum true mean power unwanted emission limits

Frequency offset range	Radiated maximum true mean power (dBm EIRP)	Specified bandwidth
$f_{\text{offset}} \geq 10$ MHz	-11	1 MHz

10. The additional unwanted emission limits in Table 7 apply to radiocommunications transmitters operating in the band 1920-1980 MHz. These limits apply outside the 1875-2025 MHz band, measured over the specified bandwidth for the relevant frequency range.

Table 7: Radiated maximum true mean power unwanted emission limits

Frequency offset range	Radiated maximum true mean power (dBm EIRP)	Specified bandwidth
$9 \text{ kHz} \leq f < 150 \text{ kHz}$	-36	1 kHz
$150 \text{ kHz} \leq f < 30 \text{ MHz}$	-36	10 kHz
$30 \text{ MHz} \leq f < 1 \text{ GHz}$	-36	100 kHz
$1 \text{ GHz} \leq f < 1.875 \text{ GHz}$	-30	1 MHz
$2.025 \text{ GHz} \leq f$	-30	1 MHz

Emission limits outside the geographic areas

11. Core conditions 12 to 14 apply in relation to those areas that are outside the geographic areas set out in Part 2 of Licence Schedule 1.
12. Where a written agreement specifying the maximum permitted level of radio emission for areas described in core condition 11 exists between:
- (a) the licensee; and
 - (b) all the affected licensees of frequency-adjacent spectrum licences and area-adjacent spectrum licences;
- the licensee must comply with that specified maximum permitted level of radio emission.
13. Where there is no written agreement for the purposes of core condition 12 in force, the licensee must comply with core condition 14.
14. The licensee must ensure that the maximum permitted level of radio emission for an area described in core condition 11 caused by the operation of radiocommunications transmitters under this licence does not exceed a radiated maximum true mean power of 77.2 dBm EIRP per 5 MHz.

Licence Schedule 3 Statutory Conditions

Liability to pay charges

1. The licensee must comply with all its obligations to pay:
 - (a) charges fixed by determinations made under section 60 of the *Australian Communications and Media Authority Act 2005*;
 - (b) spectrum access charges fixed by determinations made under section 294 of the Act; and
 - (c) amounts of spectrum licence tax.

Third party use

2. (1) The licensee must notify any person whom the licensee authorises, under section 68 of the Act, to operate radiocommunications devices under this licence of that person's obligations under the Act, in particular:
 - (a) the registration requirements under Part 3.5 of the Act for operation of radiocommunications devices under this licence (if applicable); and
 - (b) any rules made by the ACMA under subsection 68(3) of the Act.
- (2) Any person other than the licensee who operates a radiocommunications device under this licence must comply with rules made by the ACMA under subsection 68(3) of the Act.

Radiocommunications transmitter registration requirements

3. The licensee must not operate a radiocommunications transmitter under this licence unless:
 - (a) the radiocommunications transmitter has been exempted from the registration requirements under statutory condition 4 below; or
 - (b) both:
 - (i) the registration requirements under Part 3.5 of the Act for operation of the radiocommunications transmitter have been met; and
 - (ii) the radiocommunications transmitter complies with the details about it as specified in the Register.

Exemption from registration requirements

4. The following kinds of radiocommunications transmitters are exempt from the registration requirements in statutory condition 3:
 - (a) a radiocommunications transmitter that operates in the 2 GHz band with a maximum EIRP of less than or equal to 25 dBm per occupied bandwidth;
 - (b) a HAPS that does not exceed a power flux density of -121.5 dB(W/(m²MHz)) at the Earth's surface outside the spectrum space as defined for this licence in Table 1 of Licence Schedule 1.

Residency

5. (1) The licensee must not derive any income, profits or gains from operating radiocommunications devices under this licence, or from authorising an authorised person to do so, unless:
- (a) the licensee is an Australian resident; or
 - (b) the income, profits or gains are attributable to a permanent establishment in Australia through which the licensee carries on business.
- (2) An authorised person must not derive income, profits or gains from operating radiocommunications devices under this licence, or from allowing third parties to operate radiocommunications devices under this licence, unless:
- (a) the authorised person is an Australian resident; or
 - (b) the income, profits or gains are attributable to a permanent establishment in Australia through which the authorised person carries on business.
- (3) In this condition:
- Australian resident*** has the same meaning as in the *Income Tax Assessment Act 1997*.
- authorised person*** means a person authorised under section 68 of the Act by the licensee to operate radiocommunications devices under this licence.
- permanent establishment*** has the same meaning as in:
- (a) if the licensee or authorised person (as appropriate) is a resident of a country or other jurisdiction with which Australia has an agreement within the meaning of the *International Tax Agreements Act 1953*—that agreement; or
 - (b) in any other case—the *Income Tax Assessment Act 1997*.

Licence Schedule 4 Other Conditions

Definitions

1. In this Licence Schedule 4:

communal site has the same meaning as in the *Radiocommunications (Interpretation) Determination 2015* as in force from time to time.

managing interference includes but is not limited to:

- (a) investigating the possible causes of the interference;
- (b) taking all steps reasonably necessary to resolve disputes about interference;
- (c) taking steps (or requiring persons authorised to operate radiocommunications devices under this licence to take steps) reasonably likely to reduce interference to acceptable levels; and
- (d) negotiating with other persons to reduce interference to acceptable levels.

Responsibility to manage interference

2. The licensee must manage interference between:

- (a) radiocommunications devices operated under this licence; and
- (b) radiocommunications devices operated under this licence and under each other spectrum licence held by the licensee.

Co-sited radiocommunications devices

3. If:

- (a) interference occurs between a radiocommunications device:
 - (i) operated under this licence; and
 - (ii) operated under another licence (the **other licence**);when the measured separation between the phase centre of the antenna used with each radiocommunications device is less than 200 metres; and
- (b) that interference is not the result of operation of a radiocommunications device in a manner that does not comply with the conditions of the relevant licence; and
- (c) either the licensee or the holder (or authorised third party) of the other licence wishes to resolve the interference;

the licensee must manage interference with:

- (d) the holder of the other licence; or
- (e) if a site manager is responsible for managing interference at that location, that site manager.

Information for Register

4. The licensee must give the ACMA all information as required by the ACMA from time to time for inclusion in the Register.

Note: Licensees should assist the ACMA in keeping the Register accurate and up to date by informing the ACMA of changes to radiocommunications device registration details as soon as possible.

International coordination

5. The licensee must ensure that operation of a radiocommunications transmitter under this licence does not cause harmful interference to a radiocommunications receiver that operates in accordance with the ITU Radio Regulations and is located in a country other than Australia.

Electromagnetic Energy (EME) requirements

6. The licensee must comply with Parts 2, 3 and 4 of the *Radiocommunications Licence Conditions (Apparatus Licence) Determination 2015* as in force from time to time. For the purpose of compliance with this condition, the definition of licence in subsection 4(1) of the *Radiocommunications Licence Conditions (Apparatus Licence) Determination 2015* is to be read as if it means a spectrum licence.

Record keeping – radiocommunications transmitters located at communal sites

7. (1) If the licensee operates a radiocommunications transmitter under this licence, and the transmitter:
- (a) is located at a communal site; and
 - (b) is not exempt under statutory condition 4 of Licence Schedule 3;
- the licensee must comply with sub-conditions 7(2) and 7(3).
- (2) In relation to each radiocommunications transmitter, the licensee must keep a record which includes the following information:
- (a) the radiocommunications transmitter's device registration number as specified in the Register;
 - (b) the licence number of this licence;
 - (c) the radiocommunications transmitter's geographic location;
 - (d) if the licensee owns the radiocommunications transmitter, the licensee's name and address;
 - (e) if the licensee does not own the radiocommunications transmitter, the owner's name and address;
 - (f) the radiocommunications transmitter's centre frequency;
 - (g) the radiocommunications transmitter's emission designator;
 - (h) details of the radiocommunications transmitter's antenna including the manufacturer, model, type, gain, polarisation, azimuth and average ground height;
 - (i) the radiocommunications transmitter's maximum true mean power; and
 - (j) the radiocommunications transmitter's maximum EIRP.

- (3) If the ACMA requests a copy of a record kept under sub-condition 7(2), the licensee must comply with the request as soon as practicable.

Coordination with the Mid-West Radio Quiet Zone

8. Before seeking to register a radiocommunications transmitter for use in or around the RQZ, as defined by the *Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan 2011* (as in force from time to time), the licensee must follow the procedures set out in *Radiocommunications Assignment and Licensing Instruction No. MS 32* (RALI MS 32) as existing from time to time, as if the radiocommunications transmitter were an apparatus-licensed transmitter.

Note RALI MS 32 is available on the ACMA website at: www.acma.gov.au.

Harmful Interference

9. The licensee must ensure that operation of a radiocommunications transmitter that is exempt from registration under statutory condition 4 of Licence Schedule 3 does not cause harmful interference to other radiocommunications devices operated in the 2 GHz band under a different spectrum or apparatus licence.

Spurious emission limits

10. The licensee must ensure that radiocommunications devices operated under this licence do not exceed the spurious emission limits in conditions 11 to 14. The spurious emission limits in conditions 11 to 14 apply to emissions of electromagnetic energy other than radio emissions.
11. For radiocommunications transmitters operating in the 2110-2170 MHz frequency band, the spurious emission limits in Table 8 apply at frequencies outside the 2100-2180 MHz frequency band, measured over the measurement bandwidth for the relevant frequency range.
12. For radiocommunications transmitters operating in the 1920-1980 MHz frequency band, the spurious emission limits in Table 8 apply at frequencies outside the 1875-2025 MHz frequency band, measured over the measurement bandwidth for the relevant frequency range.

Table 8: Radiocommunications transmitter spurious emission limits

Frequency range (f)	Mean power (dBm) at the antenna connector	Measurement Bandwidth
$9 \text{ kHz} \leq f < 150 \text{ kHz}$	-36	1 kHz
$150 \text{ kHz} \leq f < 30 \text{ MHz}$	-36	10 kHz
$30 \text{ MHz} \leq f < 1 \text{ GHz}$	-36	100 kHz
$1 \text{ GHz} \leq f < 12.75 \text{ GHz}$	-30	1 MHz

13. For radiocommunications receivers operating in the 1920-1980 MHz frequency band, the spurious emission limits in Table 9 apply at frequencies outside the 2100-2180 MHz frequency band, measured over the measurement bandwidth for the relevant frequency range.

14. For radiocommunications receivers operating in the 2110-2170 MHz frequency band, the spurious emission limits in Table 9 apply, measured over the measurement bandwidth for the relevant frequency range.

Table 9: Radiocommunications receiver spurious emission limits

Frequency range (f)	Mean power (dBm) at the antenna connector	Measurement Bandwidth
$30 \text{ MHz} \leq f < 1 \text{ GHz}$	-57	100 kHz
$1 \text{ GHz} \leq f < 12.75 \text{ GHz}$	-47	1 MHz

Radiocommunications transmitters operating at the CDSCC

15. Radiocommunications receivers operating in the 2110-2125 MHz frequency range cannot claim protection from harmful interference caused by radiocommunications transmitters of the space research service operated at the CDSCC.

Note: It is intended that radiocommunications devices operating in the 2110-2125 MHz do not constrain current or future space research service operations at the CDSCC in the 2110–2120 MHz frequency range.

Licence Schedule 5 Licence Notes

Variation to licence conditions

1. The ACMA may, with the written agreement of the licensee, vary this licence by including one or more further conditions, or by revoking or varying any conditions of this licence, provided that the conditions, as varied, still comply with the requirements of Subdivision C of Division 1 of Part 3.2 of the Act.
2. The ACMA may, by written notice given to the licensee, vary this licence by including one or more further conditions (other than core conditions), or by revoking or varying any conditions (other than core conditions) of this licence, provided that the conditions as varied still comply with the requirements of Subdivision C of Division 1 of Part 3.2 of the Act.

Determination of unacceptable interference

3. The ACMA has made the section 145 Determination that sets out the unacceptable levels of interference for the purpose of registering radiocommunications transmitters to be operated under this licence, and which is to be used for the issuing of certificates by accredited persons under subsection 145(3) of the Act.

Note: Although not mandatory, the registration of radiocommunications receivers to be operated under this licence is advised because one of the matters the ACMA will take into account in settling interference disputes is the time of registration of the receiver involved in the interference.

Guidelines

4. The ACMA has issued written radiocommunications advisory guidelines (the *guidelines*) under section 262 of the Act about:
 - (a) co-ordinating the operation of radiocommunications transmitters under this licence with radiocommunications receivers operated under other licences:
 - *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 2 GHz Band) 2016*; and
 - (b) co-ordinating the operation of radiocommunications receivers operated under this licence with radiocommunications transmitters operated under other licences:
 - *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 2 GHz Band) 2016*.
5. The guidelines should be read in conjunction with the section 145 Determination (see Licence Note 3). That determination sets out the unacceptable levels of interference for the purpose of registration of transmitters to be operated under this licence. The guidelines should be followed by licensees (and accredited persons) in the planning of services and the resolution of interference cases. The ACMA will consider these guidelines during the settlement of interference disputes. Each case will be assessed on its merits. Copies of the guidelines are available from www.legislation.gov.au and the ACMA.

Suspension and cancellation of spectrum licences

6. The ACMA may by written notice given to a licensee, suspend or cancel a spectrum licence in accordance with Division 3 of Part 3.2 of the Act.

Re-issue

7. A spectrum licence will not be re-issued to the same licensee without a price based allocation procedure unless:
- (a) the spectrum licence was used to provide a service of a kind determined by the Minister under subsection 82(3) of the Act for which re-issuing spectrum licences to the same licensee would be in the public interest; or
 - (b) the ACMA is satisfied under paragraph 82(1)(b) of the Act that special circumstances exist as a result of which it would be in the public interest for that licensee to continue to hold the spectrum licence.

Trading

8. (1) A licensee may assign or otherwise deal with the whole or any part of a spectrum licence provided that this is done in accordance with any rules determined by the ACMA under section 88 of the Act.
- (2) An assignment under section 85 of the Act of the whole or any part of a spectrum licence that involves any change to the spectrum licence cannot take effect until the Register has been amended under Part 3.5 of the Act, to take it into account.

Appeals

9. An application may be made to the ACMA for reconsideration of a decision of a kind listed in section 285 of the Act. A person affected by and dissatisfied with an ACMA decision may seek a reconsideration of the decision by the ACMA under subsection 288(1) of the Act. This decision can be subject to further review by the Administrative Appeals Tribunal, subject to the provisions of the *Administrative Appeals Tribunal Act 1975*.

Labelling of radiocommunications transmitters

10. Licensees should affix identification labels containing the name and address of the licensee on all fixed radiocommunications transmitters operated under this licence.

Note: An example of an identification label would be one containing the following statement: “This device is the property of ‘name’”.