

**COMMONWEALTH OF AUSTRALIA**  
**AUSTRALIAN COMMUNICATIONS AND MEDIA AUTHORITY**



***Radiocommunications Act 1992***

**SPECTRUM LICENCE FOR THE 3.4 GHz BAND**

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

1. The person named at Item 1 of Part 1, 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 the following:
  - (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 at the start of the date shown at Item 5 of Part 1, Licence Schedule 1 and remains in force until the end of the date shown at Item 6 of Part 1, Licence Schedule 1.

## Definitions

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

**3.4 GHz band** means the frequency band 3400 MHz to 3800 MHz.

**3.4 GHz re-allocation zone**, in relation to a part of the 3.4 GHz band specified in one of subsections 7(1) to 7(6) of the *Radiocommunications (Spectrum Re-allocation - 3.4 GHz and 3.7 GHz Bands) Declaration 2022*, means the area specified in that subsection.

**3.6 GHz re-allocation zone** means, for the part of the spectrum from 3575 MHz to 3700 MHz, the area specified in subsection 5(3) of the *Radiocommunications (Spectrum Re-allocation - 3.6 GHz Band for Regional Australia) Declaration 2018*.

**3.7 GHz re-allocation zone**, in relation to a part of the 3.4 GHz band specified in either subsection 7(7) or 7(8) of the *Radiocommunications (Spectrum Re-allocation - 3.4 GHz and 3.7 GHz Bands) Declaration 2022*, means the area specified in that subsection.

**3GPP TS 36.211** means the document entitled "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); Physical channels and modulation (3GPP TS 36.211 version 14.6.0 Release 14)" published by the European Telecommunications Standards Institute (ETSI), as it existed at the time the *Australian Communications and Media Authority (Radiocommunications Licence Conditions - 3.4 GHz and 3.6 GHz Bands Interference Management) Direction 2018* was made.

*Note 1:* 3GPP TS 36.211 is available free of charge on the ETSI website at: [www.etsi.org](http://www.etsi.org).

*Note 2:* The *Australian Communications and Media Authority (Radiocommunications Licence Conditions - 3.4 GHz and 3.6 GHz Bands Interference Management) Direction 2018* was made on 17 July 2018.

**Act** means the *Radiocommunications Act 1992*.

**AAS receiver** means a radiocommunications receiver with AAS.

**AAS transmitter** means a radiocommunications transmitter with AAS.

## Definitions (cont)

**active antenna system** or **AAS** means an antenna system where the amplitude and/or phase between multiple antenna elements is continually adjusted, resulting in an antenna pattern that varies in response to short term changes in the radio environment.

**earth station protection zones** has the meaning given by RALI MS 44.

**harmful interference** has the same meaning as in the spectrum plan made under subsection 30(1) of the Act.

**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* can be accessed, free of charge on the ACMA website at: [www.acma.gov.au](http://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, can be accessed, free of charge, on the ITU website at: [www.itu.int](http://www.itu.int).

**Licence Schedule** means a Schedule to this licence.

**mean power**, in relation to a radiocommunications transmitter, means the average power of the transmitter measured during an interval of time that is at least 10 times the period of the lowest modulation frequency.

**non-AAS receiver** means a radiocommunications receiver without AAS.

**non-AAS transmitter** means a radiocommunications transmitter without AAS.

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

## Definitions (cont)

***RALI MS 32*** means the Radiocommunications Assignment and Licensing Instruction No. MS 32 Coordination of Apparatus Licensed Services within the Australian Radio Quiet Zone Western Australia, as in existence from time to time and published on the ACMA's website at [www.acma.gov.au](http://www.acma.gov.au).

***RALI MS 44*** means the Radiocommunications Assignment and Licensing Instruction No. MS 44 Frequency Coordination Procedures for the Earth Station Protection Zones, as in existence from time to time and published on the ACMA's website at [www.acma.gov.au](http://www.acma.gov.au).

***total radiated power or TRP*** is defined as the integral of the power transmitted in different directions over the entire radiation sphere. It is measured considering the combination of all radiating elements on an antenna panel or individual device.

***unwanted emission***, in relation to the operation of a transmitter authorised by this licence, means an emission outside the lower and upper frequency limits of the frequency bands described in Table 1 of Part 2 of Licence Schedule 1 of this licence.

***upper or lower frequency limits***, in relation to a geographic area, means the maximum and minimum frequencies, respectively, specified in Part 2 of Licence Schedule 1 for that geographic area.

5. Unless the contrary intention appears, terms and expressions used in this licence have the meanings given to them by the *Radiocommunications (Unacceptable Levels of Interference - 3.4 GHz Band) Determination 2015* (as in force from time to time), or any instrument made under subsection 145(4) of the Act as a replacement of that determination (as in force from time to time).

## Definitions (cont)

6. Unless the contrary intention appears, terms and expressions used in this licence have the meaning given to them by any determination made under section 64 of the *Australian Communications and Media Authority Act 2005*, as in force from time to time.

*Note:* A number of terms used in this licence, are defined in the Act and have the meanings given to them by the Act, including:

- ACMA
- core condition
- frequency band
- public interest statement
- radiocommunications device
- radiocommunications receiver
- radiocommunications transmitter
- radio emission
- Register
- renewal application period
- renewal application period statement
- renewal decision-making period
- renewal decision-making period statement
- renewal statement
- spectrum licence
- spectrum plan

7. 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) a reference to a part of the spectrum, a frequency band or a frequency range includes all frequencies that are greater than but not including the lower frequency, up to and including the higher frequency.

## Licence Schedule 1

## Licence details, bands and areas

### Part 1 Licence Details

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<i>Item</i>	<i>Licencee Details</i>	
1	<i>Name of licensee</i>	Optus Mobile Pty Limited
2	<i>Address of licensee</i>	PO Box 888 (Attn Steve Turner) NORTH RYDE NSW 1670
3	<i>Client number</i>	1103276
	<b><i>Licence Details</i></b>	
4	<i>Band release</i>	3.4 GHz Band
5	<i>Date of licence effect</i>	3/08/2023
6	<i>Date of licence expiry</i>	13/12/2030
7	<i>Licence number</i>	11286123
8	<i>Date of licence issue</i>	21/12/2023

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### 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.

The frequency bands consist of the bandwidth between the lower and upper frequencies, where the lower frequency limit is exclusive and the 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.

## Licence Schedule 1      Licence details, bands and areas (cont)

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	3510	3575		
B	2	3510	3575		
C	3	3510	3575		
D	4	3442.5	3475		
E		3542.5	3575		
F	5	3510	3575		
G	6	3475	3543.5		
H	7	3475	3540		
I	8	3475	3540		
J	9	3475	3575		
K	10	3475	3542.5		
L	11	3475	3571.5		

## Licence Schedule 1      Licence details, bands and areas (cont)

Table 2: Description of the geographic areas of this licence

Geographic areas (column 1)	HCIS identifiers (column 2)
1	MW4G1, MW4G2, MW4G3, MW4G5, MW4G6, MW4G8, MW4G9, MW4K2, MW4K3, MW4K5, MW4K6
2	MW4P6, MW5M4, MW5M5
3	KX5D2, KX5D3, KX5D5, KX5D6, KX5D8, KX5D9, KX5H2, KX5H3, KX5H5, KX5H6, KX5H8, KX5H9, KX5L2, KX5L3, KX5L5, KX5L6, KX5L8, KX5L9
4	CV, DV, CW1, CW2, CW3, CW4, DW1, DW2, DW3, EV1, EV2, EV3, EV4, EV5, EV6, EV7, FV1, FV2, FV4, FV5, BV3D, BV3H, BV3K, BV3L, BV3O, BV3P, BV6C, BV6D, BV6G, BV6H, BV6K, BV6L, BV6O, BV6P, BV9D, BV9H, BV9K, BV9L, BV9O, BV9P, BV3B, BW3C, BW3D, BW3E, BW3F, BW3G, BW3H, BW3I, BW3J, BW3K, BW3L, BW3N, BW3O, BW3P, BW6B, BW6C, BW6D, BW6F, BW6G, BW6H, BW6J, BW6K, BW6L, BW6N, BW6O, BW6P, BV3C3, BV3C6, BV3C9, BV3G3, BV3G6, BV3G7, BV3G8, BV3G9, BV9C3, BV9C6, BV9C9, BV9G3, BV9G6, BV9G9, BW3M1, BW3M2, BW3M3, BW3M5, BW3M6, BW3M9
5	AV9, AW3, BV7, BV8, BW1, BW2, BW5, BV1A, BV1B, BV1C, BV1D, BV2A, BV2B, BV2C, BV2D, BV2G, BV2H, BV2K, BV2L, BV2O, BV2P, BV3A, BV3B, BV3E, BV3F, BV3I, BV3J, BV3M, BV3N, BV5C, BV5D, BV5G, BV5H, BV5K, BV5L, BV5O, BV5P, BV6A, BV6B, BV6E, BV6F, BV6I, BV6J, BV6M, BV6N, BV9A, BV9B, BV9E, BV9F, BV9I, BV9J, BV9M, BV9N, BW3A, BW6A, BW6E, BW6I, BW6M, BV1E1, BV1E2, BV1E3, BV1E4, BV1E5, BV1E6, BV1F1, BV1F2, BV1F3, BV1F4, BV1F5, BV1F6, BV1G1, BV1G2, BV1G3, BV1G4, BV1G5, BV1G6, BV1H1, BV1H2, BV1H3, BV1H4, BV1H5, BV1H6, BV2E1, BV2E2, BV2E3, BV2E4, BV2E5, BV2E6, BV2F1, BV2F2, BV2F3, BV2F4, BV2F5, BV2F6, BV3C1, BV3C2, BV3C4, BV3C5, BV3C7, BV3C8, BV3G1, BV3G2, BV3G4, BV3G5, BV4M4, BV4M5, BV4M6, BV4M7, BV4M8, BV4M9, BV4N4, BV4N5, BV4N6, BV4N7, BV4N8, BV4N9, BV4O4, BV4O5, BV4O6, BV4O7, BV4O8, BV4O9, BV4P4, BV4P5, BV4P6, BV4P7, BV4P8, BV4P9, BV5M4, BV5M5, BV5M6, BV5M7, BV5M8, BV5M9, BV5N4, BV5N5, BV5N6, BV5N7, BV5N8, BV5N9, BV9C1, BV9C2, BV9C4, BV9C5, BV9C7, BV9C8, BV9G1, BV9G2, BV9G4, BV9G5, BV9G7, BV9G8, BW3M4, BW3M7, BW3M8
6	IW3J, IW3K, IW3N, IW3O, IW3P, IW6B, IW6C, IW3E5, IW3E6, IW3E8, IW3E9, IW3F4, IW3F5, IW3F7, IW3F8, IW3F9, IW3I2, IW3I3, IW3I5, IW3I6, IW3I8, IW3I9, IW3L4, IW3L7, IW3M2, IW3M3, IW3M5, IW3M6, IW3M8, IW3M9, IW6A2, IW6A3, IW6A5, IW6A6, IW6A8, IW6A9, IW6D1, IW6D2, IW6D3, IW6D4, IW6D5, IW6D6, IW6E2, IW6E3, IW6F1, IW6F2, IW6F3, IW6G1, IW6G2, IW6G3
7	NT8D, NT8H, NT8L, NT9A, NT9B, NT9E, NT9F, NT8C3, NT8C6, NT8C9, NT8G1, NT8G2, NT8G3, NT8G5, NT8G6, NT8G8, NT8G9, NT8K2, NT8K3, NT8K6, NT8K9, NT8O3, NT8P1, NT8P2, NT8P3, NT9C1, NT9C4, NT9C7, NT9G1, NT9G4, NT9G7, NT9I1, NT9I2, NT9I3, NT9I4, NT9I5, NT9I6, NT9I7, NT9I8, NT9J1, NT9J2, NT9J3, NT9J4, NT9J5, NT9J6, NT9K1, NT9K4, NT9M1, NT9M2
8	MW4H, MW4L, MW5A, MW5E, MW5I, MW4D7, MW4D8, MW4D9, MW4P3, MW5B4, MW5B7, MW5B8, MW5F1, MW5F2, MW5M1, MW5M2



## Licence Schedule 1

## Licence details, bands and areas (cont)

Geographic areas (column 1)	HCIS identifiers (column 2)
9	KX3K, KX3L, KX3O, KX3P, KX6A, KX6B, KX6C, KX6D, KX6E, KX6F, KX6G, KX6H, KX6I, KX6J, KX6K, KX6L, LX1I, LX1M, LX4A, KX3F8, KX3F9, KX3G7, KX3G8, KX3G9, KX3H7, KX3H8, KX3H9, KX3J2, KX3J3, KX3J5, KX3J6, KX3J8, KX3J9, KX3M5, KX3M6, KX3M8, KX3M9, KX3N2, KX3N3, KX3N4, KX3N5, KX3N6, KX3N7, KX3N8, KX3N9, LX1E7, LX1E8, LX1E9, LX1J1, LX1J4, LX1J5, LX1J7, LX1J8, LX1N1, LX1N2, LX1N4, LX1N5, LX1N6, LX1N7, LX1N8, LX1N9, LX4B1, LX4B4, LX4B7, LX4E1, LX4E2, LX4E3, LX4E4, LX4E5, LX4E6, LX4E7, LX4I1, LX4I4, LX4I7
10	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
11	MV9K, MV9L, MV9O, MV9P, MW3C, NV4P, NV5M, NV7B, NV7C, NV7D, NV7E, NV7F, NV7G, NV7H, NV7I, NV7J, NV7K, NV7L, NV7M, NV7N, NV7O, NV7P, MV9D6, MV9D9, MV9G4, MV9G5, MV9G6, MV9G7, MV9G8, MV9G9, MV9H3, MV9H4, MV9H5, MV9H6, MV9H7, MV9H8, MV9H9, MW3D1, MW3D2, MW3D3, MW3D4, MW3D5, MW3D6, MW3D7, MW3D8, MW3G1, MW3G2, MW3G3, MW3H1, NV4L4, NV4L5, NV4L6, NV4L7, NV4L8, NV4L9, NV4M5, NV4M6, NV4M8, NV4M9, NV4N4, NV4N5, NV4N6, NV4N7, NV4N8, NV4N9, NV4O3, NV4O4, NV4O5, NV4O6, NV4O7, NV4O8, NV4O9, NV5I4, NV5I5, NV5I6, NV5I7, NV5I8, NV5I9, NV5J4, NV5J7, NV5N1, NV5N4, NV5N7, NV7A2, NV7A3, NV7A4, NV7A5, NV7A6, NV7A7, NV7A8, NV7A9, NW1A1, NW1A2, NW1A3, NW1A4, NW1A5, NW1A6, NW1B1, NW1B2, NW1B3, NW1B4, NW1B5, NW1B6, NW1C1, NW1C2, NW1C3, NW1C4, NW1C5, NW1C6, NW1D1, NW1D2, NW1D3, NW1D4, NW1D5, NW1D6

*Note:* The HCIS is described in the *Australian Spectrum Map Grid 2012*. The *Australian Spectrum Map Grid 2012* can be accessed, free of charge, on the ACMA website at: [www.acma.gov.au](http://www.acma.gov.au).

## Licence Schedule 2                      Core Conditions

### Frequency band 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 band

2. Core Conditions 3 to 12 apply in relation to those frequencies that are outside each of the frequency bands set out in Part 2 of Licence Schedule 1. For a frequency band set out in Part 2 of Licence Schedule 1, Core Conditions 3 to 12 apply within the geographic area specified for the frequency band.
3. (1) In relation to a frequency band set out in Part 2 of Licence Schedule 1, where a written agreement specifying the maximum permitted level of radio emission for frequencies outside that frequency band exists and satisfies Core Condition 3(2), the licensee must comply with that specified maximum permitted level of radio emission.  
  
(2) A written agreement satisfies this Core Condition if:
  - (a) the licensee is a party; and
  - (b) the licensee of each spectrum licence that is spectrally affected by the frequency band is a party.  
(3) A spectrum licence is *spectrally affected* by a frequency band set out in Part 2 of Licence Schedule 1 (*the relevant band*) if:
  - (a) the licence authorises the operation of radiocommunications devices in a frequency band (*the affected band*) in a geographic area that overlaps, wholly or partly, with the geographic area set out in Part 2 of Licence Schedule 1 in relation to the relevant band; and
  - (b) the relevant band adjoins or partly overlaps the affected band.
4. Where there is no written agreement for the purposes of Core Condition 3 in force, or where Core Condition 3 does not apply, the licensee must comply with Core Conditions 5 to 12.

### Unwanted emission limits outside the frequency bands

5. (1) The licensee must ensure that radiocommunications transmitters operated under this licence that are not exempt from the registration requirement under Statutory Condition 4 of Licence Schedule 3 do not exceed the unwanted emission limits in Core Conditions 6, 7, 9(b) and 10(b).

## Licence Schedule 2

## Core Conditions (cont)

- (2) The licensee must ensure that radiocommunications transmitters operated under this licence that are exempt from the registration requirement under Statutory Condition 4 of Licence Schedule 3 do not exceed the unwanted emission limits in Core Conditions 8, 9(a) and 10(a).
- (3) The licensee must ensure that radiocommunications receivers operated under this licence do not exceed the unwanted emission limits in Core Conditions 11 and 12.
6. The unwanted emission limits in Table 3 apply to non-AAS transmitters:
- (a) within the 3360 MHz to 3840 MHz frequency range; and
  - (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:

$f_{\text{offset}}$  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 the licence is placed at  $f_{\text{offset}}$ .

**Table 3: Unwanted emission limits in 3360 MHz to 3840 MHz - registered non-AAS transmitters**

Frequency offset range ( $f_{\text{offset}}$ )	Mean power per antenna port (dBm)	Specified Bandwidth
$0 \text{ kHz} \leq f_{\text{offset}} < 5 \text{ MHz}$	$-7 - (7/5) f_{\text{offset}} \text{ (MHz)}$	100 kHz
$5 \text{ MHz} \leq f_{\text{offset}} < 10 \text{ MHz}$	-14	100 kHz
$f_{\text{offset}} \geq 10 \text{ MHz}$	-15	1 MHz

## Licence Schedule 2

## Core Conditions (cont)

7. The unwanted emission limits in Table 4 apply to AAS transmitters:

- (a) within the 3360 MHz to 3840 MHz frequency range;
- (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:

$f_{\text{offset}}$  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 the licence is placed at  $f_{\text{offset}}$ .

**Table 4: Unwanted emission limits in 3360 MHz to 3840 MHz - registered AAS transmitters**

Frequency offset range ( $f_{\text{offset}}$ )	Total radiated power (dBm)	Specified Bandwidth
$0 \text{ kHz} \leq f_{\text{offset}} < 5 \text{ MHz}$	$2 - (7/5) f_{\text{offset}} \text{ (MHz)}$	100 kHz
$5 \text{ MHz} \leq f_{\text{offset}} < 10 \text{ MHz}$	-5	100 kHz
$f_{\text{offset}} \geq 10 \text{ MHz}$	-6	1 MHz

8. The unwanted emission limits in Table 5 apply to radiocommunications transmitters exempt from registration:

- (a) within the 3295 MHz to 3905 MHz frequency range;
- (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:

$f_{\text{offset}}$  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 the licence is placed at  $f_{\text{offset}}$ .

**Table 5: Unwanted emission limits in 3295 MHz to 3905 MHz - transmitters exempt from registration**

Frequency offset range ( $f_{\text{offset}}$ )	Total radiated power (dBm)	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
$5 \text{ MHz} \leq f_{\text{offset}} < 100 \text{ MHz}$	-13	1 MHz
$f_{\text{offset}} \geq 100 \text{ MHz}$	-25	1 MHz

9. For non-AAS transmitters:

- (a) for transmitters that are exempt from the registration requirements under Statutory Condition 4 of Licence Schedule 3 - the unwanted emission limits in Table 6 apply at frequencies outside the 3295 MHz to 3905 MHz frequency range; or
- (b) for transmitters that are not exempt from the registration requirements under Statutory Condition 4 of Licence Schedule 3 - the unwanted emission limits in Table 6 apply at frequencies outside the 3360 MHz to 3840 MHz frequency range;

when measured over the specified bandwidth for the relevant frequency range.

**Table 6: Unwanted emission limits - non-AAS transmitters exempt from registration outside 3295 MHz to 3905 MHz, and registered non-AAS transmitters outside 3360 MHz to 3840 MHz**

Frequency range ( $f$ )	Mean power per antenna port (dBm)	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
$1 \text{ GHz} \leq f < 19 \text{ GHz}$	-30	1 MHz

## Licence Schedule 2

## Core Conditions (cont)

10. For AAS transmitters:

- (a) for transmitters that are exempt from the registration requirements under Statutory Condition 4 of Licence Schedule 3 - the unwanted emission limits in Table 7 apply at frequencies outside the 3295 MHz to 3905 MHz frequency range; or
- (b) for transmitters that are not exempt from the registration requirements under Statutory Condition 4 of Licence Schedule 3 - the unwanted emission limits in Table 7 apply at frequencies outside the 3360 MHz to 3840 MHz frequency range;

when measured over the specified bandwidth for the relevant frequency range.

**Table 7: Unwanted emission limits - AAS transmitters exempt from registration outside 3295 MHz to 3905 MHz, and registered AAS transmitters outside 3360 MHz to 3840 MHz**

Frequency range (f)	Total radiated power (dBm)	Specified Bandwidth
9 kHz $\leq f < 150$ kHz	-27	1 kHz
150 kHz $\leq f < 30$ MHz	-27	10 kHz
30 MHz $\leq f < 1$ GHz	-27	100 kHz
1 GHz $\leq f < 19$ GHz	-21	1 MHz

11. The unwanted emission limits in Table 8 apply to non-AAS receivers:

- (a) for emissions made by a non-AAS receiver that is registered in the Register - emissions outside the 3360 MHz to 3840 MHz frequency band; or
- (b) for emissions made by all other non-AAS receivers - emissions outside the 3295 MHz to 3905 MHz frequency band;

when measured over the specified bandwidth for the relevant frequency range.

*Note 1:* A radiocommunications receiver is not required to be registered in the Register. However, the ACMA will generally have regard to whether a radiocommunications receiver is registered in the Register, and when the receiver was registered, in considering interference disputes.

*Note 2:* The unwanted emission limits in Core Condition 11 only have a practical effect during periods an associated radiocommunications transmitter in the device is not operating.

**Licence Schedule 2****Core Conditions (cont)****Table 8: Unwanted emission limits - non-AAS receivers outside 3295 MHz to 3905 MHz, and registered non-AAS receivers outside 3360 MHz to 3840 MHz**

Frequency range (f)	Mean power per antenna port (dBm)	Specified Bandwidth
30 MHz $\leq f < 1$ GHz	-57	100 kHz
1 GHz $\leq f < 19$ GHz	-47	1 MHz

12. The unwanted emission limits in Table 9 apply in relation to:

- (a) for emissions made by an AAS receiver that is registered in the Register - emissions outside the 3360 MHz to 3840 MHz frequency band; or
- (b) for emissions made by all other AAS receivers - emissions outside the 3295 MHz to 3905 MHz frequency band;

when measured over the specified bandwidth for the relevant frequency range.

*Note 1:* A radiocommunications receiver is not required to be registered in the Register. However, the ACMA will generally have regard to whether a radiocommunications receiver is registered in the Register, and when the receiver was registered, in considering interference disputes.

*Note 2:* The unwanted emission limits in Core Condition 12 only have a practical effect during periods an associated radiocommunications transmitter in the device is not operating.

**Table 9: Radiocommunications receiver unwanted emission limits for registered AAS receivers outside 3360 MHz to 3840 MHz, and AAS receivers outside 3295 MHz to 3905 MHz**

Frequency range (f)	Total radiated power (dBm)	Specified Bandwidth
30 MHz $\leq f < 1$ GHz	-27	100 kHz
1 GHz $\leq f < 19$ GHz	-21	1 MHz

**Emission limits outside the geographic areas**

13. Core Conditions 14 to 17 apply in relation to those areas that are outside each of the geographic areas set out in Part 2 of Licence Schedule 1 in relation to a frequency band.
14. (1) In relation to a geographic area set out in Part 2 of Licence Schedule 1 in relation to a frequency band, where a written agreement specifying the maximum permitted level of radio emission outside that area exists and satisfies Core Condition 14(2), the licensee must comply with that specified maximum permitted level of radio emission.
- (2) A written agreement satisfies this Core Condition if:
- (a) the licensee is a party; and
  - (b) the licensee of each spectrum licence that is geographically affected by the geographic area is a party;
- (3) In this Core Condition, a spectrum licence is geographically affected by a geographic area (*the relevant area*) set out in Part 2 of Licence Schedule 1 in relation to a frequency band (*the relevant band*) if:
- (a) the licence authorises the operation of radiocommunications devices in a geographic area (*the affected area*) in relation to a frequency band that overlaps, wholly or partly, with the relevant band; and
  - (b) the relevant area adjoins or partly overlaps the affected area.
15. Where there is no written agreement for the purposes of Core Condition 14 in force, or where Core Condition 14 does not apply, the licensee must comply with Core Condition 16.

**Unwanted emission limits outside the geographic areas**

16. The licensee must ensure that the maximum permitted level of radio emission for an area outside the area described in Core Condition 13 caused by the operation of radiocommunications transmitters under this licence does not exceed a total radiated power of 48 dBm/5 MHz.
17. The licensee complies with Core Condition 16 by ensuring that the maximum permitted level of radio emissions caused by the operation of radiocommunications transmitters under this licence does not exceed a total radiated power of 48 dBm/5 MHz.



## Licence Schedule 3

## Statutory Conditions

### Liability to pay charges

1. The licensee must comply with all its obligations (if any) to pay:
  - (a) charges fixed by determinations made under section 60 of the *Australian Communications and Media Authority Act 2005*; and
  - (b) the 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. A person must not operate a radiocommunications transmitter under this licence unless:
  - (a) the transmitter has been exempted from the registration requirements under Statutory Condition 4 below; or
  - (b) both:
    - (i) the requirements under Part 3.5 of the Act relating to registration of the transmitter have been met; and
    - (ii) the transmitter complies with the details about it that have been entered in the Register.

**Exemption from registration requirements**

4. Radiocommunications transmitters that operate in the 3.4 GHz band with a maximum total radiated power of less than or equal to 28 dBm per occupied bandwidth are exempt from the registration requirement in Statutory Condition 3 (b).

**Residency**

5. (1) The licensee must not derive any income, profits or gains from operating radiocommunications devices under this licence, or from authorising others 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) A person (the ***authorised person***) authorised under section 68 of the Act in relation to this licence must not derive income, profits or gains from operating 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*.

***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*.

**Definitions**

1. In this Licence Schedule 4:

*managing interference* includes, but is not limited to, the following:

- (a) investigating the possible causes of 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;
- (d) negotiating with other persons to reduce interference to acceptable levels.

*special subframe configuration 6* means a special subframe configuration, as referred to in clause 4.2 of 3GPP TS 36.211, that is consistent with special subframe configuration 6, as referred to in Table 4.2-1 of 3GPP TS 36.211.

*uplink-downlink configuration 2* means an uplink-downlink configuration, as referred to in clause 4.2 of 3GPP TS 36.211, that is consistent with uplink-downlink configuration 2, as referred to in Table 4.2-2 of 3GPP TS 36.211.

**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:
    - (i) a radiocommunications device operated under this licence; and
    - (ii) another radiocommunications device operated under another licence (the *other licence*);when the measured separation between the phase centre of the antenna used with each device is less than 500 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 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*, or any instrument made under section 110A of the Act that replaces that determination, 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*, or the interpretation section of the replacement instrument, is to be read as if it referred to a spectrum licence.

*Note:* The *Radiocommunications Licence Conditions (Apparatus Licence) Determination 2015* can be accessed, free of charge, on the Federal Register of Legislation at [www.legislation.gov.au](http://www.legislation.gov.au).

**Record keeping - transmitters located at communal sites**

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

**Coordination with the Australian Radio Quiet Zone Western Australia**

8. Before seeking to register a radiocommunications transmitter for use in or around the RQZ, as defined by the *Radiocommunications (Australian Radio Quiet Zone Western Australia) Frequency Band Plan 2023*, or any instrument made under section 32 of the Act as a replacement of that plan (as in force from time to time), the licensee must follow the procedures set out in RALI MS 32, as existing from time to time, as if the radiocommunications transmitter it is seeking to register were an apparatus licensed transmitter.

*Note:* RALI MS 32 *Coordination of Apparatus Licensed Services within the Australian Radio Quiet Zone Western Australia* is available on the ACMA website at [www.acma.gov.au](http://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 under a different spectrum licence or an apparatus licence.

**Coordination with earth station protection zones**

10. Before seeking to register or operate a radiocommunications transmitter, the licensee must follow the procedures set out in RALI MS 44 for coordination with, and protection of, any earth stations operating in the 3.4 GHz band in earth station protection zones.

*Note:* RALI MS 44 *Frequency Coordination Procedures for the Earth Station Protection Zones* is available on the ACMA website at [www.acma.gov.au](http://www.acma.gov.au).

**Synchronisation requirement**

11. If:

- (a) interference occurs between:
  - (i) a radiocommunications device (the *first device*) operated under this licence; and
  - (ii) a radiocommunications device (the *other device*) operated under another spectrum licence; and
- (b) the level of interference to the first device or to any other device exceeds the compatibility requirement set out in the *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers - 3.4 GHz Band) 2015*, or any instrument made under section 262 of the Act that replaces those guidelines, as in force from time to time; and
- (c) either the licensee or the holder (or authorised third party) of the other licence wishes to resolve the interference; and
- (d) no agreement between the licensee and each person operating one or more other devices can be reached on how to manage the interference;

then the licensee is required to manage interference by:

- (e) either:
  - (i) operating the first device with a frame structure that uses both uplink-downlink configuration 2 and special subframe configuration 6; or
  - (ii) operating the first device using a sequence and duration of radio emissions that is consistent with those configurations (disregarding any time at which the device is not making a radio emission); and
- (f) synchronising the timing of the frame structure or other sequence of radio emissions of the first device with the timing of the frame structure or other sequence of radio emissions of each of the other devices (disregarding any device at a time at which the device is not making a radio emission).

*Note 1:* A licensee may act in accordance with sub-paragraph 11(e)(ii) by operating a radiocommunications transmitter in a manner that complies with the specification made by 3rd Generation Partnership Project numbered 3GPP TS 38.211, published on its website at [www.3gpp.org](http://www.3gpp.org).

*Note 2:* The synchronisation requirement only applies when an interference issue occurs and where there is no other measure agreed to between the licensees to resolve the interference. This means synchronisation can be done on a site/cell specific basis. During any period in which the licensee and other licensee are taking steps to resolve the interference issue or synchronise, the ACMA will generally give priority to the device registered first in time in any interference dispute, meaning that a device or devices registered later-in-time will generally be required to accept any interference or cease causing interference during this time.

**Managing interference caused by unwanted emissions**

12. If:

(a) interference occurs between:

(i) a radiocommunications device operated under this licence; and

(ii) a radiocommunications device operated under another licence (the *other licence*);

and the interference is due to unwanted emissions at frequencies below 3360 MHz and above 3840 MHz from a radiocommunications device operating under this licence; 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.

**Managing interference to incumbent apparatus licences**

13. The licensee must provide protection to any radiocommunications devices operating in:

(a) a 3.4 GHz re-allocation zone, in the 3400 MHz to 3475 MHz frequency range; or

(b) a 3.6 GHz re-allocation zone, in the 3575 MHz to 3700 MHz frequency range; or

(c) a 3.7 GHz re-allocation zone, in the 3700 MHz to 3800 MHz frequency range;

in accordance with an apparatus licence in the manner set out in Part 3, Part 4 and Part 5 of the *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters - 3.4 GHz Band) 2015*, or any instrument made under section 262 of the Act that replaces those guidelines, as in force from time to time, until the end of the re-allocation period for the relevant re-allocation zone.



**Variation to licence conditions and statements**

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, with the written agreement of the licensee, vary this licence by varying the renewal statement, omitting the renewal statement and substituting another renewal statement, varying the renewal application period statement, omitting the public interest statement (if any), omitting the renewal decision-making period statement, or varying the renewal decision-making period statement, provided that each such statement, as varied or replaced, still complies with the requirements of section 65A of the Act.
3. 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 levels of interference**

4. The ACMA has made the *Radiocommunications (Unacceptable Levels of Interference - 3.4 GHz Band) Determination 2015* 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 1:* Although not mandatory, the registration of radiocommunications receivers to be operated under the licence is recommended 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 dispute.

*Note 2:* The *Radiocommunications (Unacceptable Levels of Interference - 3.4 GHz Band) Determination 2015* can be accessed, free of charge, on the Federal Register of Legislation at [www.legislation.gov.au](http://www.legislation.gov.au).

**Guidelines**

5. The ACMA has made written Radiocommunications Advisory Guidelines (the *guidelines*) under section 262 of the Act about the following:
  - (a) coordinating the operation of radiocommunications transmitters under this licence with radiocommunications receivers operated under other licences: see the *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters - 3.4 GHz Band) 2015*;
  - (b) coordinating the operation of radiocommunications receivers operated under this licence with radiocommunications transmitters operated under other licences: see the *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers - 3.4 GHz Band) 2015*.
6. The guidelines should be read in conjunction with the *Radiocommunications (Unacceptable Levels of Interference - 3.4 GHz Band) Determination 2015* (see Licence Note 4). That determination sets out the unacceptable levels of interference for the purpose of registration of radiocommunications 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.

**Suspension and cancellation of spectrum licences**

7. 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.

**Renewal**

8. The ACMA may renew spectrum licences in accordance with Division 3A of Part 3.2 of the Act.
9. A person must apply for renewal in accordance with section 77A of the Act. The renewal application period for this licence is set out in the renewal application period statement in Part 3 of Licence Schedule 1. Other statements in Part 3 of Licence Schedule 1 may also affect the renewal of the licence.

## Licence Schedule 5

## Licence Notes (cont)

10. The ACMA may request further information in connection with an application for renewal, in accordance with section 77B of the Act.
11. The ACMA must not renew a spectrum licence for a period of 10 years or longer unless satisfied that it is in the public interest to do so.
12. If the ACMA renews a spectrum licence, the conditions of the new spectrum licence need not be the same as those of the licence it replaces.
13. If the ACMA has the discretion to renew the licence, it also has the discretion to refuse to renew the licence. The ACMA must make its decision within the renewal decision-making period, set out in Part 3 of Licence Schedule 1.

### Trading

14. (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 a spectrum licence does not take effect until the Register has been amended under Part 3.5 of the Act, to take it into account.

### Appeals

15. 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

16. Licensees should affix identification labels containing the name and address of the licensee on all fixed 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’”.