

COMMONWEALTH OF AUSTRALIA
AUSTRALIAN COMMUNICATIONS AND MEDIA AUTHORITY



Radiocommunications Act 1992

SPECTRUM LICENCE FOR THE 2 GHz BAND

This licence is issued under Part 3.2 of the *Radiocommunications Act 1992* ('the Act') to the person named at Item 1 of Part 1 of 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 means the following frequency bands:

- a) 1920 MHz to 1980 MHz (2 GHz Lower Band); and
- b) 2110 MHz to 2170 MHz (2 GHz Upper Band).

Act means the *Radiocommunications Act 1992*.

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

frequency-adjacent spectrum licences mean 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 as 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 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.

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 radio emission at any time.

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.

Definitions (cont)

section 145 Determination means the *Radiocommunications (Unacceptable Levels of Interference - 2 GHz Band) Determination 2016*.

Note: The *Radiocommunications (Unacceptable Levels of Interference - 2 GHz Band) Determination 2016* is available on the Federal Register of Legislation website at: www.legislation.gov.au.

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 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:

- 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;
- (b) the range of numbers that identify a frequency band includes the higher, but not the lower, number; and
- (c) a reference to another legislative instrument is a reference to that other legislative instrument as in force from time to time.

Licence Schedule 1 Licence details, bands and areas

Part 1 Licence Details

<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>
<i>Item</i>	<i>Licensee Details</i>	
1	<i>Name of licensee</i>	Optus Mobile Pty Limited
2	<i>Address of licensee</i>	PO Box 888 (Attn Cy Carter) NORTH RYDE NSW 1670
3	<i>Client number</i>	1103276
	<i>Licence Details</i>	
4	<i>Band release</i>	2 GHz Band
5	<i>Date of licence effect</i>	12/10/2017
6	<i>Date of licence expiry</i>	11/10/2032
7	<i>Licence number</i>	10143562
8	<i>Date of licence issue</i>	4/07/2017

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.

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	1940	1960	2130	2150
B	2	1940	1960	2130	2150
C	3	1940	1960	2130	2150
D	4	1940	1960	2130	2150
E	5	1940	1960	2130	2150
F	6	1940	1960	2130	2150
G	7	1940	1960	2130	2150
H	8	1940	1960	2130	2150
I	9	1960	1965	2150	2155
J	10	1960	1965	2150	2155

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	GO7C, GO7D, GO7G, GO7H, GO7K, GO7L, GO8A, GO8E, GO8I
2	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
3	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
4	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
5	KX3J, KX3K, KX3L, KX3N, KX3O, KX3P, KX6B, KX6C, KX6D, KX6F, KX6G, KX6H, KX6J, KX6K, KX6L, LX1I, LX1M, LX1N, LX1O, LX4A, LX4B, LX4C, LX4E, LX4I, KX3F7, KX3F8, KX3F9, KX3G7, KX3G8, KX3G9, KX3H4, KX3H5, KX3H6, KX3H7, KX3H8, KX3H9, KX3M6, KX3M8, KX3M9, KX6A2, KX6A3, KX6A5, KX6A6, KX6A8, KX6A9, KX6E2, KX6E3, KX6E5, KX6E6, KX6E8, KX6E9, KX6I2, KX6I3, KX6I5, KX6I6, KX6I8, KX6I9, LX1E4, LX1E7, LX1E8, LX1E9, LX1J1, LX1J4, LX1J5, LX1J6, LX1J7, LX1J8, LX1J9, LX1K4, LX1K7, LX4F1, LX4F2, LX4F4, LX4F5, LX4F7, LX4F8, LX4J1, LX4J2, LX4J4, LX4J5, LX4J7, LX4J8
6	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

Licence Schedule 1 Licence details, bands and areas (Cont)

Geographic areas (column 1)	HCIS identifiers (column 2)
7	NW1, MV9I, MV9J, MV9K, MV9L, MV9M, MV9N, MV9O, MV9P, MW3C, MW3D, MW3G, MW3H, MW3K, MW3L, MW3O, MW3P, NV4N, NV4O, NV4P, NV5M, NV5N, NV5O, NV5P, NV7B, NV7C, NV7D, NV7E, NV7F, NV7G, NV7H, NV7I, NV7J, NV7K, NV7L, NV7M, NV7N, NV7O, NV7P, MV9D6, MV9D9, MV9E4, MV9E5, MV9E6, MV9E7, MV9E8, MV9E9, MV9F4, MV9F5, MV9F6, MV9F7, MV9F8, MV9F9, MV9G4, MV9G5, MV9G6, MV9G7, MV9G8, MV9G9, MV9H3, MV9H4, MV9H5, MV9H6, MV9H7, MV9H8, MV9H9, MW3B2, MW3B3, MW3B5, MW3B6, MW3B8, MW3B9, MW3F2, MW3F3, MW3F5, MW3F6, MW3F8, MW3F9, MW3J2, MW3J3, NV4I5, NV4I6, NV4I8, NV4I9, NV4J4, NV4J5, NV4J6, NV4J7, NV4J8, NV4J9, NV4K4, NV4K5, NV4K6, NV4K7, NV4K8, NV4K9, NV4L4, NV4L5, NV4L6, NV4L7, NV4L8, NV4L9, NV4M2, NV4M3, NV4M5, NV4M6, NV4M8, NV4M9, NV5I4, NV5I5, NV5I6, NV5I7, NV5I8, NV5I9, NV5J4, NV5J5, NV5J6, NV5J7, NV5J8, NV5J9, NV5K4, NV5K5, NV5K6, NV5K7, NV5K8, NV5K9, NV5L4, NV5L5, NV5L6, NV5L7, NV5L8, NV5L9, NV7A2, NV7A3, NV7A4, NV7A5, NV7A6, NV7A7, NV7A8, NV7A9
8	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

Licence Schedule 1 Licence details, bands and areas (Cont)

Geographic areas (column 1)	HCIS identifiers (column 2)
9	KW, LW, GV1, GV2, GV3, GV6, HV1, HV2, HV4, HV5, HV6, HV8, HV9, HW3, IV4, IV5, IV6, IV7, IV8, IV9, IW1, IW2, IW4, IW5, IW7, IW8, IW9, JV4, JV5, JV7, JV8, JV9, JW2, JW3, JW4, JW5, JW6, JW7, JW8, JW9, JX1, JX2, JX3, JX5, JX6, KV7, KX1, KX2, KX4, KX5, KX8, KX9, KY2, KY3, KY6, LQ1, LQ2, LQ4, LQ5, LQ7, LQ8, LR2, LR3, LR5, LR6, LV9, LX2, LX3, LX5, LX6, LX7, LX8, LX9, LY1, LY2, LY3, LY4, LY5, LY6, LY7, LZ1, MR1, MR4, MR5, MR7, MR8, MR9, MS1, MS2, MS3, MS4, MS5, MS6, MS8, MS9, MT3, MT6, MT9, MU3, MU5, MU6, MU8, MU9, MV1, MV2, MV3, MV4, MV5, MV6, MV7, MV8, MW6, MW7, MW8, MW9, MX1, MX2, MX3, MX4, MX7, MY1, MY4, MY7, MZ1, NS4, NS7, NS8, NS9, NT1, NT2, NT3, NT4, NT7, NU1, NU4, NU5, NU6, NU7, NU8, NU9, NV1, NV2, NV3, IW3A, IW3B, IW3C, IW3D, IW6I, IW6J, IW6K, IW6L, IW6M, IW6N, IW6O, IW6P, JW1A, JW1B, JW1C, JW1D, JW1F, JW1G, JW1H, JW1I, JW1K, JW1L, JW1N, JW1O, JW1P, KX3A, KX3B, KX3C, KX3D, KX3E, KX3I, KX6M, KX6N, KX6O, KX6P, LX1A, LX1B, LX1C, LX1D, LX1F, LX1G, LX1H, LX1L, LX1P, LX4D, LX4G, LX4H, LX4K, LX4L, LX4M, LX4N, LX4O, LX4P, LY8A, LY8B, LY8C, LY8D, LY8E, LY8F, LY8G, LY8I, LY8J, LY8K, LY8M, LY8N, LY8O, LY9A, LY9B, LY9C, LY9D, LZ2A, LZ2B, LZ2C, LZ2E, LZ2F, LZ2G, LZ2I, LZ2J, LZ2K, LZ2M, LZ2N, LZ2O, LZ2P, LZ3M, LZ3N, LZ3O, LZ3P, MV9A, MV9B, MV9C, MW1A, MW1B, MW1C, MW1D, MW1E, MW1F, MW1G, MW1H, MW1I, MW1J, MW1K, MW1L, MW1M, MW1N, MW1O, MW2A, MW2B, MW2C, MW2D, MW2E, MW2F, MW2G, MW2H, MW2I, MW2J, MW2K, MW2L, MW2O, MW2P, MW3A, MW3E, MW3I, MW3M, MW3N, MW4A, MW4B, MW4C, MW4E, MW4F, MW4G, MW4I, MW4J, MW4K, MW4M, MW4N, MW4O, MW5C, MW5D, MW5G, MW5H, MW5K, MW5L, MW5O, MW5P, NT5A, NT5B, NT5E, NT5F, NT5I, NT5J, NT5M, NT5N, NT8A, NT8B, NT8E, NT8F, NT8I, NT8J, NT8M, NT8N, NU2A, NU2B, NU2E, NU2F, NU2G, NU2I, NU2J, NU2K, NU2L, NU2M, NU2N, NU2O, NU2P, NU3M, NU3N, NU3O, NU3P, NV4A, NV4B, NV4C, NV4D, NV4E, NV4F, NV4G, NV4H, NV5A, NV5B, NV5C, NV5D, NV5E, NV5F, NV5G, NV5H, IW3E1, IW3E2, IW3E3, IW3E4, IW3E7, IW3F1, IW3F2, IW3F3, IW3G1, IW3G2, IW3G3, IW3H1, IW3H2, IW3H3, IW3I1, IW3I4, IW3I7, IW3M1, IW3M4, IW3M7, IW6A1, IW6A4, IW6A7, IW6E1, IW6E4, IW6E7, JW1E1, JW1E2, JW1E3, JW1E5, JW1E6, JW1E8, JW1E9, JW1I2, JW1I3, JW1I5, JW1I6, JW1I8, JW1I9, JW1M2, JW1M3, JW1M5, JW1M6, JW1M7, JW1M8, JW1M9, KX3F1, KX3F2, KX3F3, KX3F4, KX3F5, KX3F6, KX3G1, KX3G2, KX3G3, KX3G4, KX3G5, KX3G6, KX3H1, KX3H2, KX3H3, KX3M1, KX3M2, KX3M3, KX3M4, KX3M5, KX3M7, KX6A1, KX6A4, KX6A7, KX6E1, KX6E4, KX6E7, KX6I1, KX6I4, KX6I7, LX1E1, LX1E2, LX1E3, LX1E5, LX1E6, LX1J2, LX1J3, LX1K1, LX1K2, LX1K3, LX1K5, LX1K6, LX1K8, LX1K9, LX4F3, LX4F6, LX4F9, LX4J3, LX4J6, LX4J9, LY8H1, LY8H2, LY8H3, LY9E1, LY9E2, LY9E3, LY9F1, LY9F2, LY9F3, LY9G1, LY9G2, LY9G3, LY9H1, LY9H2, LY9H3, LZ2L4, LZ2L5, LZ2L6, LZ2L7, LZ2L8, LZ2L9, LZ3I4, LZ3I5, LZ3I6, LZ3I7, LZ3I8, LZ3I9, LZ3J4, LZ3J5, LZ3J6, LZ3J7, LZ3J8, LZ3J9, LZ3K4, LZ3K5, LZ3K6, LZ3K7, LZ3K8, LZ3K9, LZ3L4, LZ3L5, LZ3L6, LZ3L7, LZ3L8, LZ3L9, MV9D1, MV9D2, MV9D3, MV9D4, MV9D5, MV9D7, MV9D8, MV9E1, MV9E2, MV9E3, MV9F1, MV9F2, MV9F3, MV9G1, MV9G2, MV9G3, MV9H1, MV9H2, MW1P1, MW1P2, MW1P3, MW2M1, MW2M2, MW2M3, MW2N1, MW2N2, MW2N3, MW3B1, MW3B4, MW3B7, MW3F1, MW3F4, MW3F7, MW3J1, MW3J4, MW3J5, MW3J6, MW3J7, MW3J8, MW3J9, MW4P4, MW4P5, MW4P6, MW4P7, MW4P8, MW4P9, MW5M4, MW5M5, MW5M6, MW5M7, MW5M8, MW5M9, MW5N4, MW5N5, MW5N6, MW5N7, MW5N8, MW5N9, NT5C1, NT5C2,

Licence Schedule 1 Licence details, bands and areas (Cont)

Geographic areas (column 1)	HCIS identifiers (column 2)
	NT5C3, NT5D1, NT5D2, NT5D3, NT6A1, NT6A2, NT6A3, NT6B1, NT6B2, NT6B3, NT6C1, NT6C2, NT6C3, NT6D1, NT6D2, NT6D3, NU2C4, NU2C5, NU2C6, NU2C7, NU2C8, NU2C9, NU2D4, NU2D7, NU2H1, NU2H4, NU2H5, NU2H6, NU2H7, NU2H8, NU2H9, NU3E4, NU3E7, NU3I1, NU3I4, NU3I5, NU3I6, NU3I7, NU3I8, NU3I9, NU3J4, NU3J5, NU3J6, NU3J7, NU3J8, NU3J9, NU3K4, NU3K5, NU3K6, NU3K7, NU3K8, NU3K9, NU3L4, NU3L5, NU3L6, NU3L7, NU3L8, NU3L9, NV4I1, NV4I2, NV4I3, NV4I4, NV4I7, NV4J1, NV4J2, NV4J3, NV4K1, NV4K2, NV4K3, NV4L1, NV4L2, NV4L3, NV4M1, NV4M4, NV4M7, NV5I1, NV5I2, NV5I3, NV5J1, NV5J2, NV5J3, NV5K1, NV5K2, NV5K3, NV5L1, NV5L2, NV5L3, NV7A1
10	AU2, AU3, AU6, AU9, AV9, AW3, BU1, BU2, BU4, BU5, BU7, BU8, BU9, BV3, BV6, BV7, BV8, BV9, BW1, BW2, BW3, BW5, BW6, CV4, CV7, CW1, CW4, BV1A, BV1B, BV1C, BV1D, BV2A, BV2B, BV2C, BV2D, BV2G, BV2H, BV2K, BV2L, BV2O, BV2P, BV5C, BV5D, BV5G, BV5H, BV5K, BV5L, BV5O, BV5P, 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, 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

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 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 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 to 7.
 - (2) For any frequency where an emission limit described in core conditions 8 to 10 is less than an emission limit described in core conditions 6 or 7, the emission limit in core conditions 8 to 10 applies.

Licence Schedule 2

Core Conditions (cont)

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 (f_{offset})	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:

- (a) to a radiocommunications transmitters operating in the frequency band 1920-1980 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 4: Radiated maximum true mean power unwanted emission limits

Frequency offset range (f_{offset})	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

Licence Schedule 2**Core Conditions (cont)**

8. The unwanted emission limits in Table 5 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 this licence is placed at f_{offset} .

Table 5: Radiated maximum true mean power unwanted emission limits

Frequency offset range (f_{offset})	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

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

Licence Schedule 2 Core Conditions (cont)

10. The additional unwanted emission limits in Table 7 apply to radiocommunications transmitters operating in the band 1920-1980 MHz.

Table 7: Radiated maximum true mean power unwanted emission limits

Frequency range (f)	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 area

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) 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. 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 requirements of the ACMA under Part 3.5 of the Act relating to registration of the radiocommunications transmitter have been met; and
 - (ii) the radiocommunications transmitter complies with the details about it that have been entered in the Register.

Licence Schedule 3 Statutory Conditions (cont)

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/(m².MHz)) at 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*.

Definitions

1. In this Licence Schedule 4:

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

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-site 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*. 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* should 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 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-conditions 7(2) and 7(3).

Licence Schedule 4

Other conditions (cont)

7. (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*, 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.

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 under a different spectrum or apparatus licence.

Licence Schedule 4**Other conditions (cont)****Spurious Emission Limits**

10. The licensee must ensure that radiocommunications devices operated under this spectrum licence do not exceed the spurious emission limits in conditions 11 and 14.
11. For radiocommunications transmitters operating in the 2 GHz Upper Band, the spurious emission limits in Table 8 apply at frequencies outside the 2100-2180 MHz frequency band.
12. For radiocommunications transmitters operating in the 2 GHz Lower Band, the spurious emission limits in Table 8 apply at frequencies outside the 1875-2025 MHz frequency band.

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 2 GHz Lower Band, the spurious emission limits in Table 9 apply at frequencies outside the 2100-2180 MHz frequency band.
14. For radiocommunications receivers operating in the 2 GHz Upper Band, the spurious emission limits in Table 9 apply.

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

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 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 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;*
 - (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. Licensees (and accredited persons) should follow the guidelines before operating radiocommunications transmitters under this licence. The ACMA intends to afford protection to radiocommunications receivers in accordance with the guidelines in the settlement of interference disputes. The guidelines do not prevent a licensee from negotiating other protection requirements with another licensee.

Licence Schedule 5

Licence Notes (cont)

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 licences to the same licensees 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 that 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

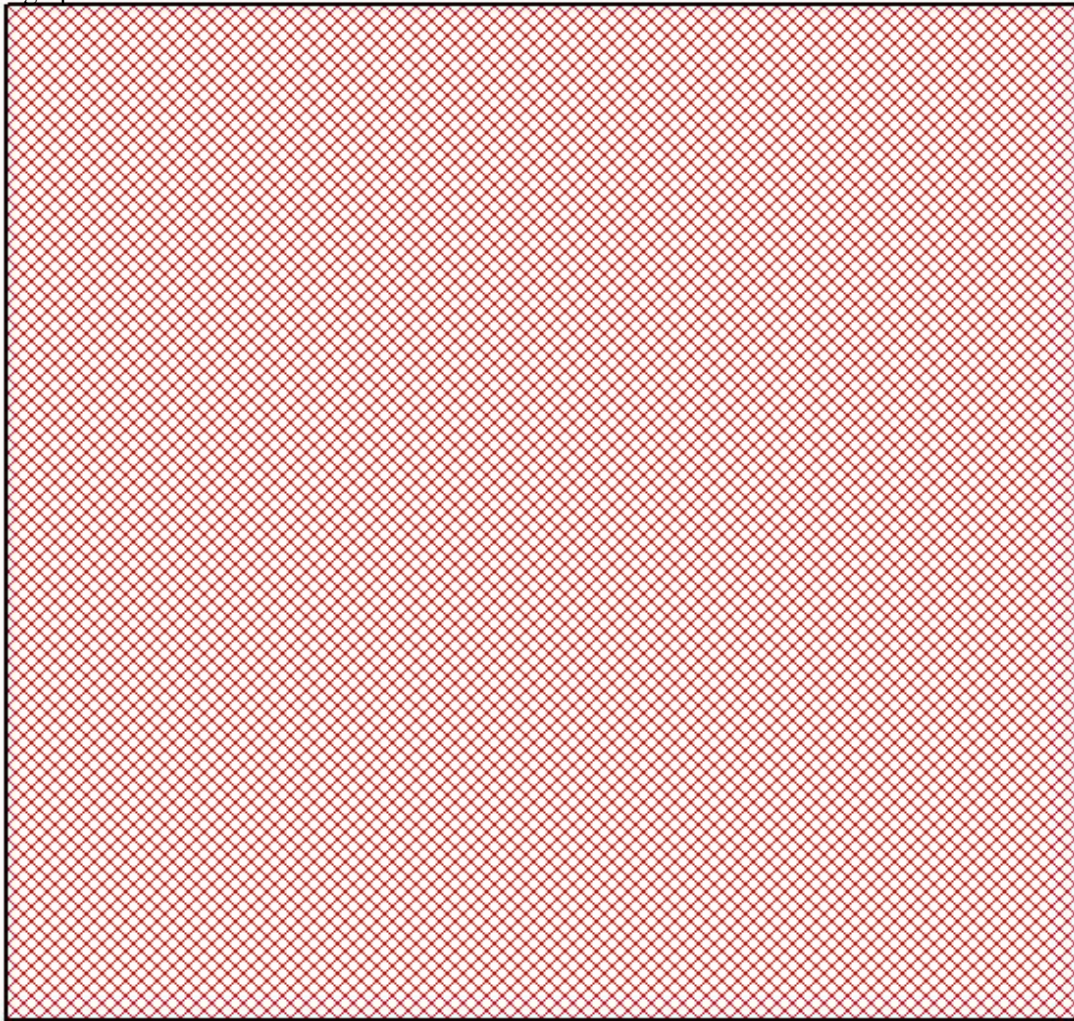
9. An application may be made to the ACMA for re-consideration of a decision of a kind listed in section 285 of the Act. A person affected by and dissatisfied with an ACMA decision may seek a re-consideration of the decision by the ACMA under subsection 288(1) of the Act. This decision can be subject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

Labelling of radiocommunications transmitters

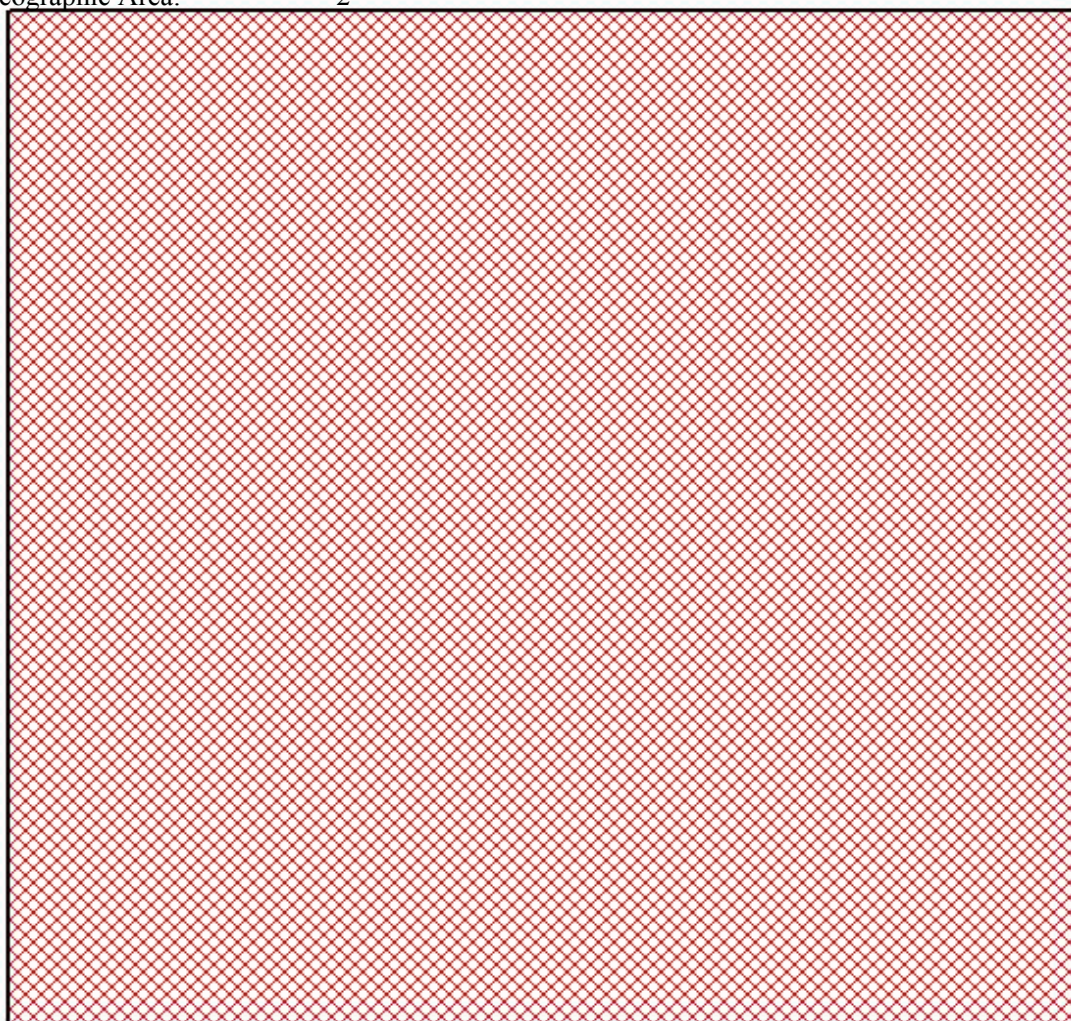
10. Licensees should affix identification labels containing the name and address of the licensee on all fixed radiocommunications transmitters operated under this licence.

Note: An example of an identification label would be one containing the following statement: "This device is the property of 'name'".

Geographic Area: 1

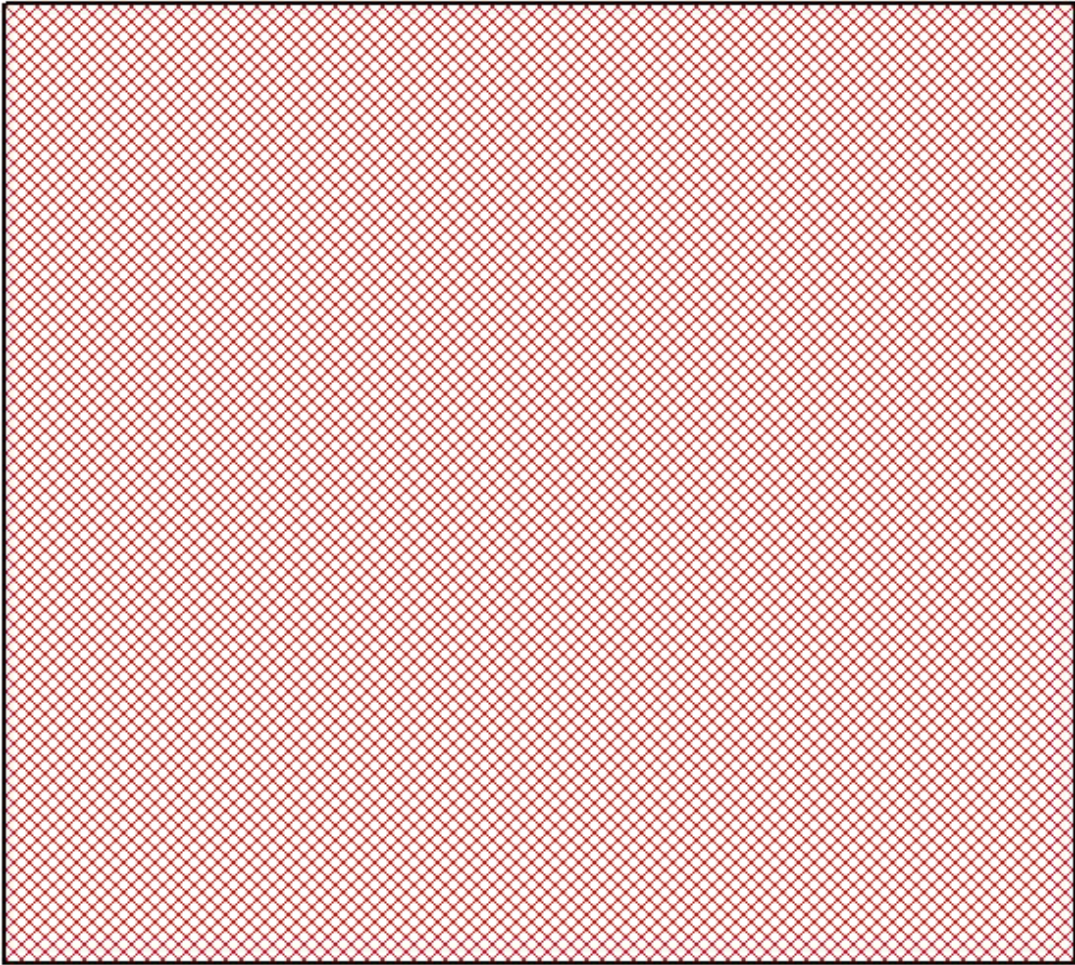


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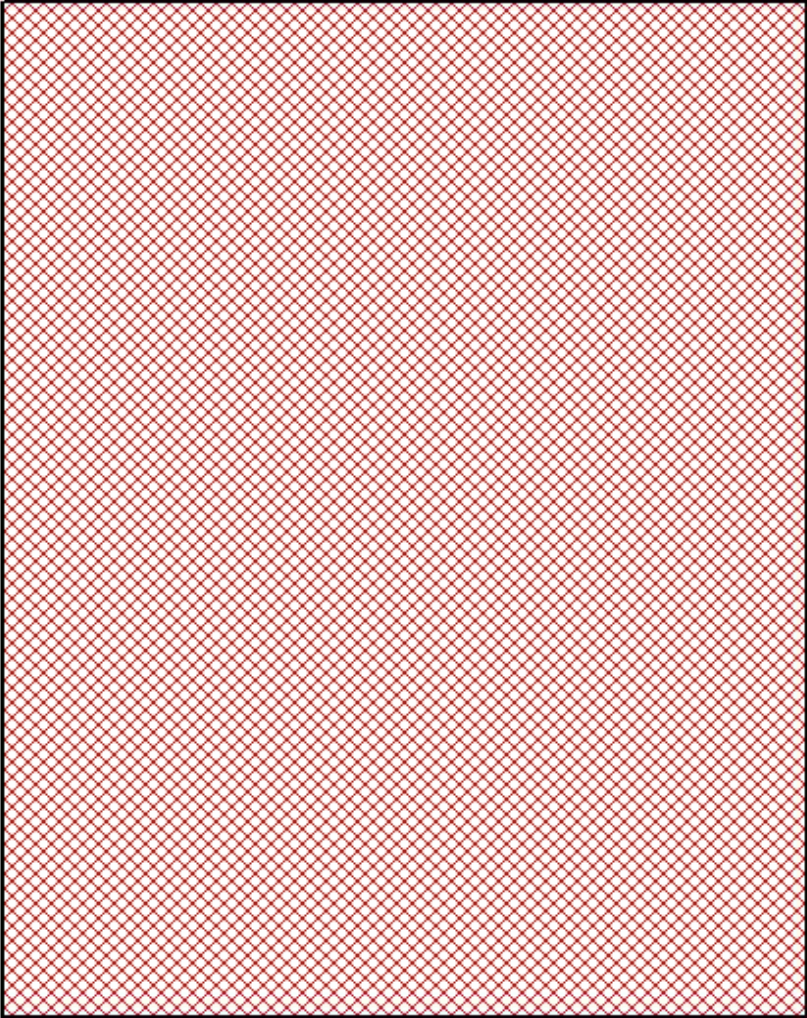


Geographic Area:

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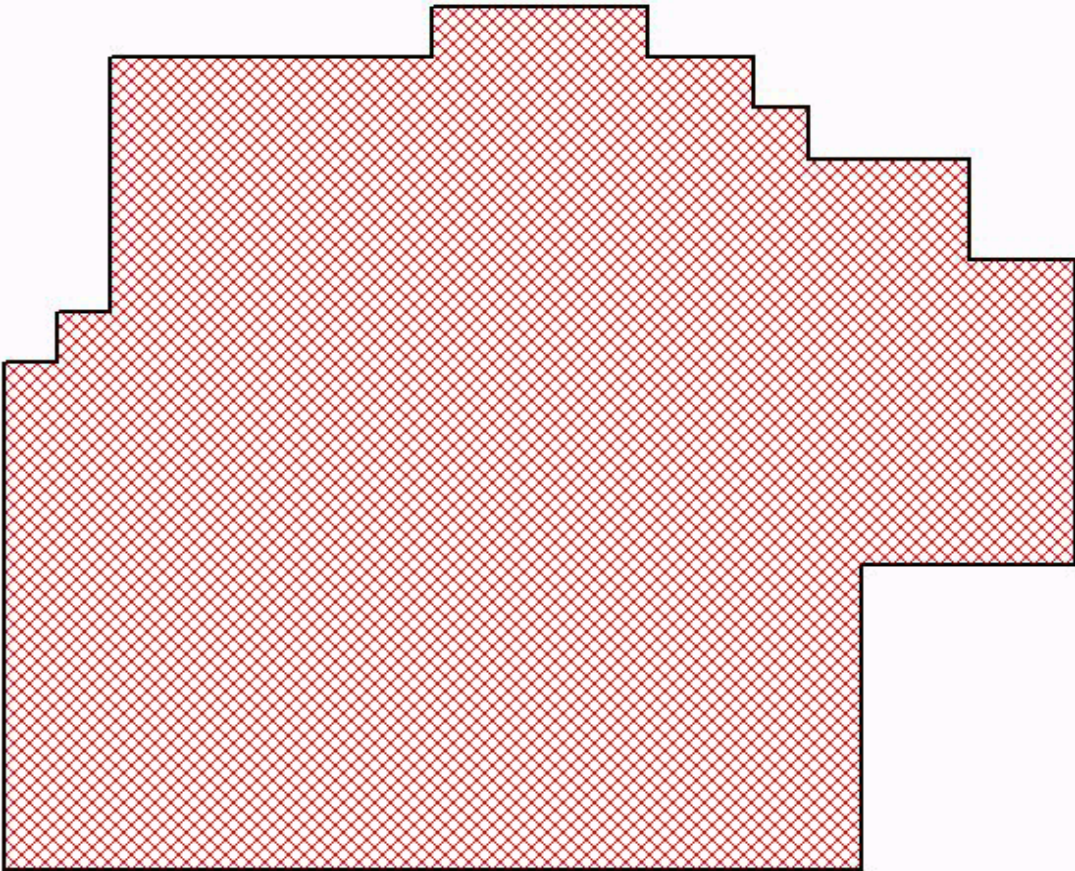


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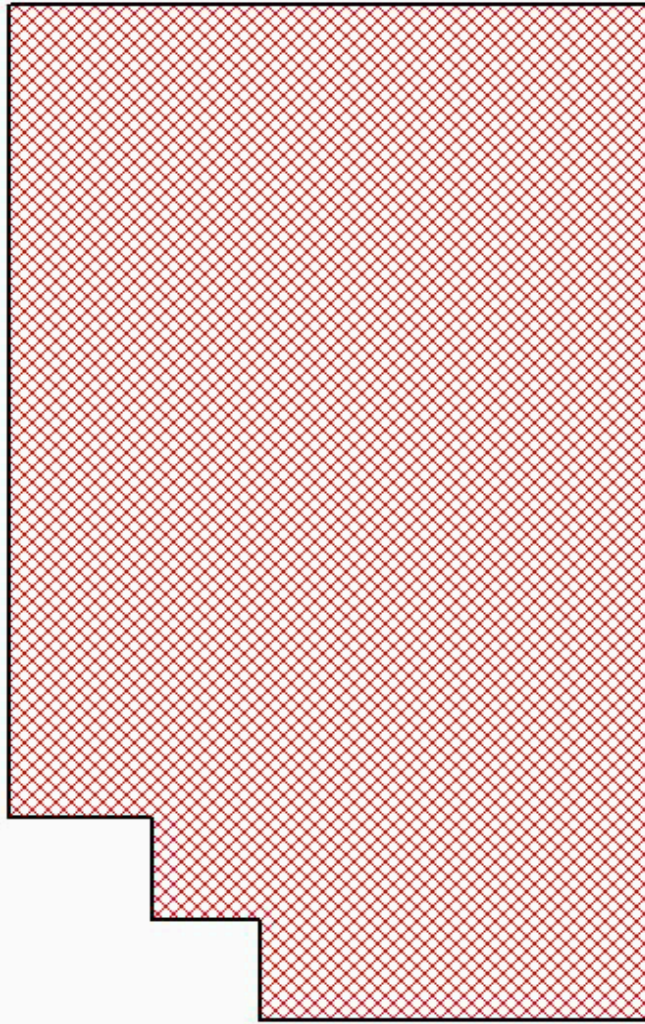
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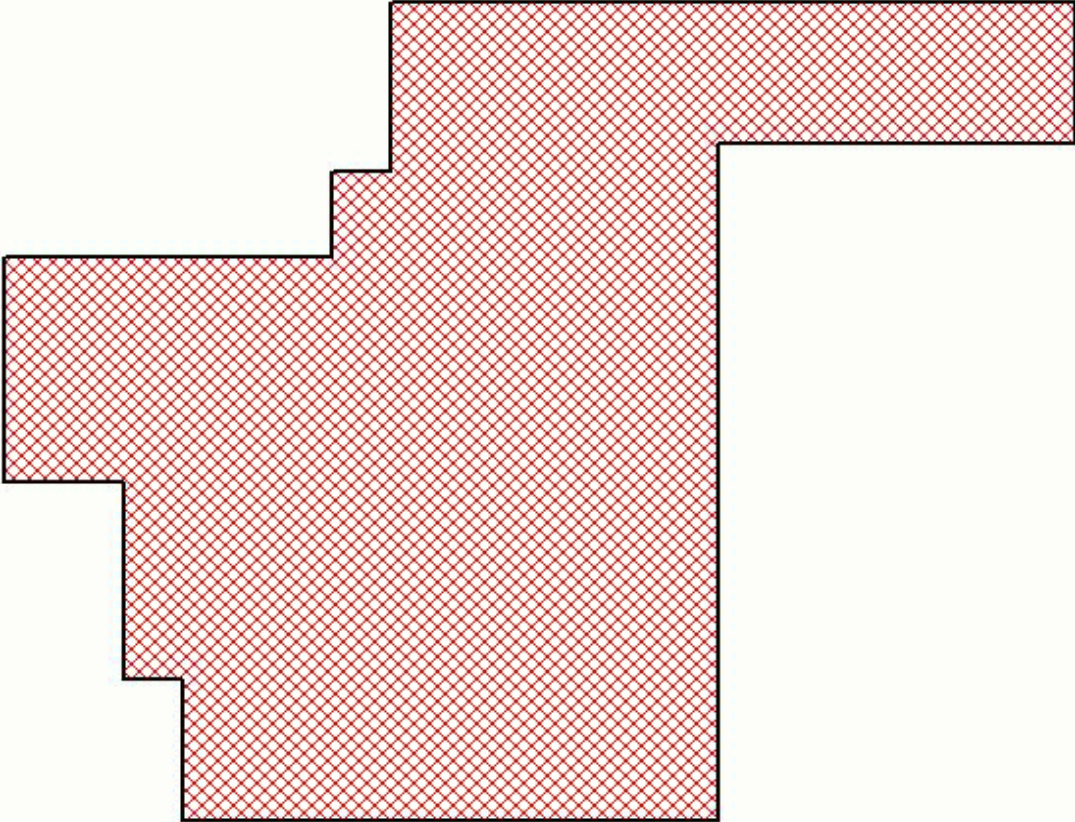
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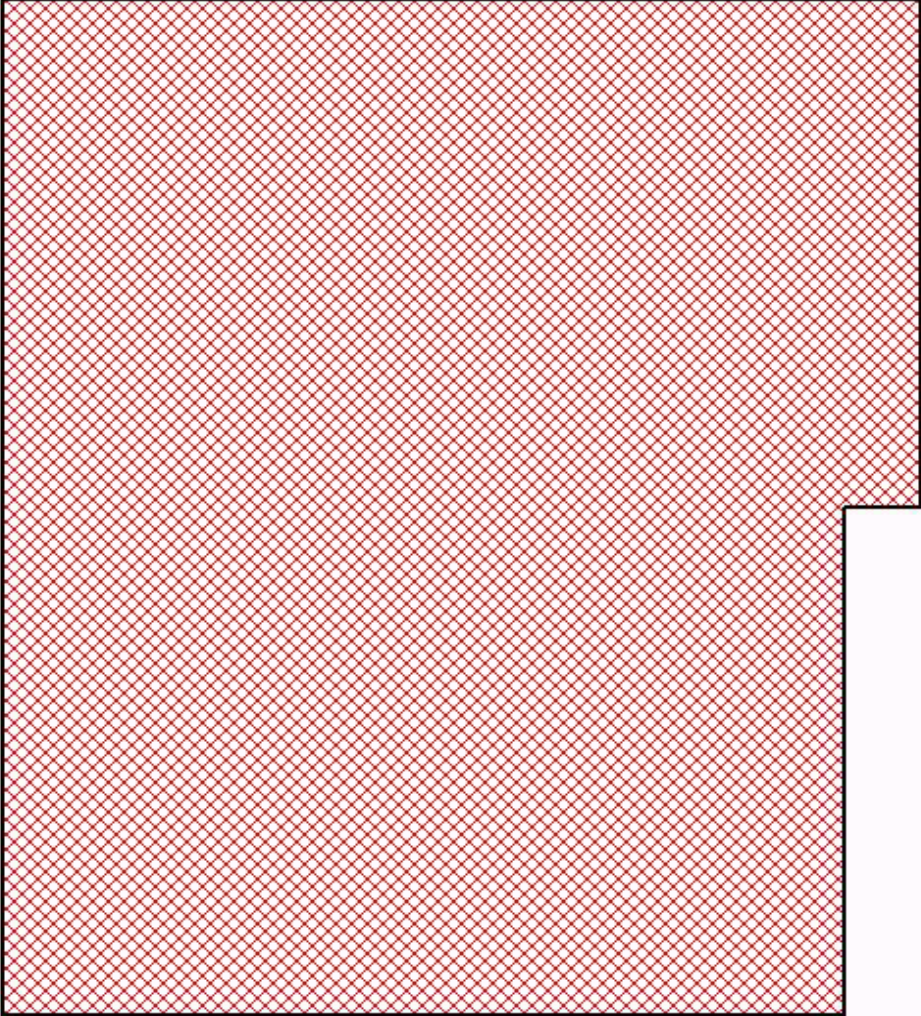


Geographic Area:

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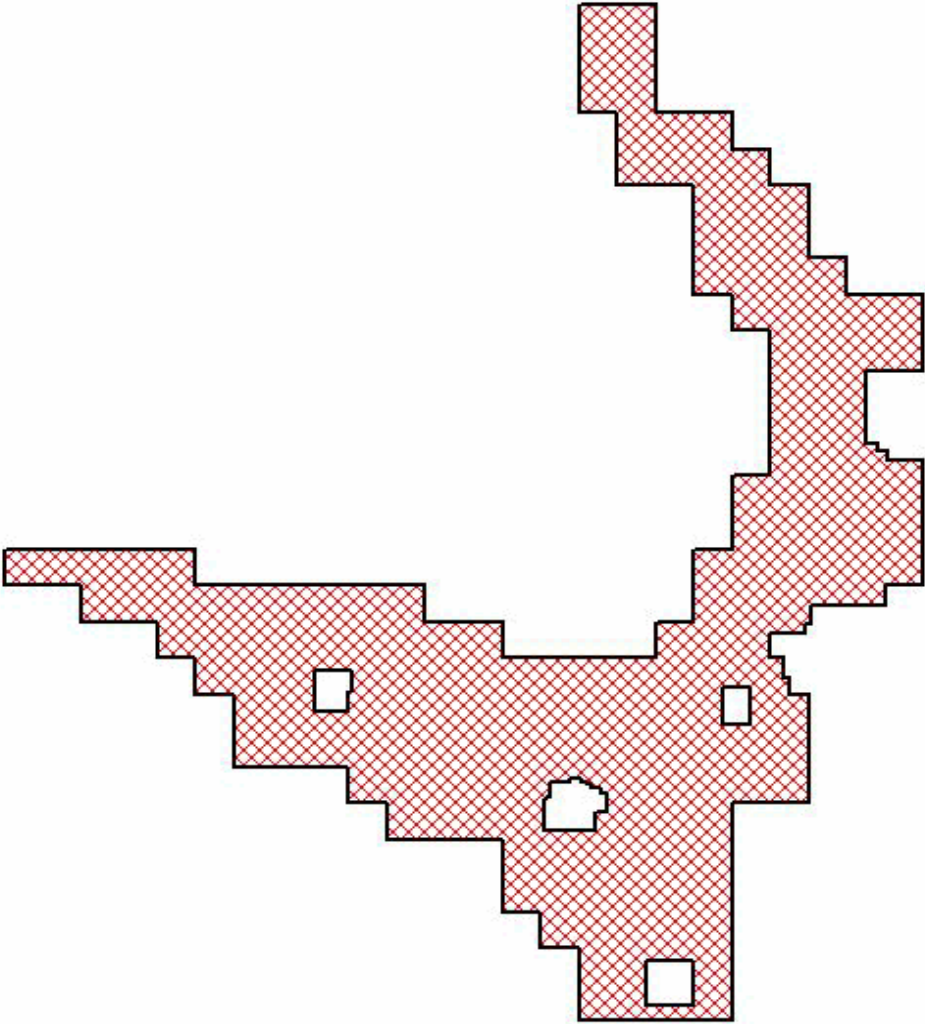


Geographic Area: 8



Geographic Area:

9



Geographic Area: 10

