**Product description**

Area-wide licences in the 3.4–4.0 GHz   
band in remote areas

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## 1. Introduction

The ACMA has authorised access to remote areas in the 3.4–4.0 GHz band via the area-wide licence (AWL) type of transmitter licence. AWLs provide licensees with ‘building blocks’ – aggregate frequency and area blocks in a single licence that can meet a range of network sizes or topographies. These are service or technology-flexible (provided that the relevant licence conditions are met), making them ideal to support the development of new and innovative technology.

An AWL can authorise the operation of one or more radiocommunications devices within a defined geographic area at a frequency or frequencies specified on the licence, subject to any conditions included in the licence.

In 2023, [32 AWLs were licensed in the 3.4–4.0 GHz band in remote areas](https://www.acma.gov.au/articles/2023-11/acma-issues-licences-34-4-ghz-band-remote-areas) via an ‘application window’ process (the 2023 allocation). The ACMA is now inviting applications for remaining spectrum in this band in remote areas, on a first-in-time basis, from 11 am (AEST), Monday 24 June 2024.

Spectrum in the West Australian Goldfields region, the Pilbara (WA), and North Queensland was in demand during the 2023 allocation. As a result, remaining spectrum in these regions may be highly localised and non-contiguous.

## 2. Applications

Applications for remaining spectrum in the 3.4–4.0 GHz band in remote areas should be made using the [3.4–4.0 GHz area-wide licence application form](https://www.acma.gov.au/area-wide-licences-awl). Applications may be submitted for up to 20 MHz of bandwidth (for each HCIS cell) per application. Please note that this 20 MHz limit applies per application, *not* per applicant.

Applications may be submitted for specific frequency ranges, or for a quantum of bandwidth (at unspecified frequencies), as suitable for an applicant’s business case. The ACMA will assign a frequency range if an application does not specify a required frequency range.

The first-in-time allocation process for the 3.4–4.0 GHz band in remote areas of Australia is limited to the geographic areas described later in this document.

Potential applicants are encouraged to engage the services of an [accredited person](https://www.acma.gov.au/find-accredited-person)   
to ensure that their application in consistent with the applicable technical framework (see [5. Technical framework](#_5._Technical_framework)) and does not overlap with AWLs licensed in the 2023 allocation. Current AWLs can be viewed on the [Register of Radiocommunications Licences.](https://web.acma.gov.au/rrl/register_search.main_page)

Current AWL licensees who wish to change the frequencies or geographic areas of their licence can also apply to vary their licence via the first-in-time process.

Applicants should also note that while [Embargo 78](https://www.acma.gov.au/publications/2023-10/rules/embargo-78) is still in place, you do not need an exemption to participate in this process.

## 3. Available spectrum

A total of up to 600 MHz of spectrum was initially made available for apparatus licensing as 60 x 10 MHz channels (which can be aggregated) across the 3.4–4.0 GHz band, in aggregable geographic cells down to Hierarchical Cell Identification Scheme (HCIS) level 0 (an area of approximately 1800 x 1800 m in size), for apparatus licensing.[[1]](#footnote-2) As mentioned, some of the available spectrum was allocated in 2023 through an application window process.

This spectrum is intended to support a range of spectrum use-cases, including:

wireless mobile broadband

fixed wireless access (FWA)

private networks operating over limited areas, such as rail corridors, a hospital, an education precinct, a mine or industrial facility, either as an ‘industry vertical’ or as a service by an enterprise provider

dedicated (for example, government only) wireless broadband (WBB) networks

Internet of Things (IoT)

machine-to-machine (M2M) communications.

This spectrum and associated use-cases are likely to be of interest to the following types of spectrum users:

mobile network operators, including for ‘mobile blackspots’ programs

wireless internet service providers

enterprise providers

wholesale infrastructure providers.

## 4. Geographic areas

The ACMA has defined geographic areas[[2]](#footnote-3) for the 3.4–4.0 GHz band that were used in the planning decisions process. These are:

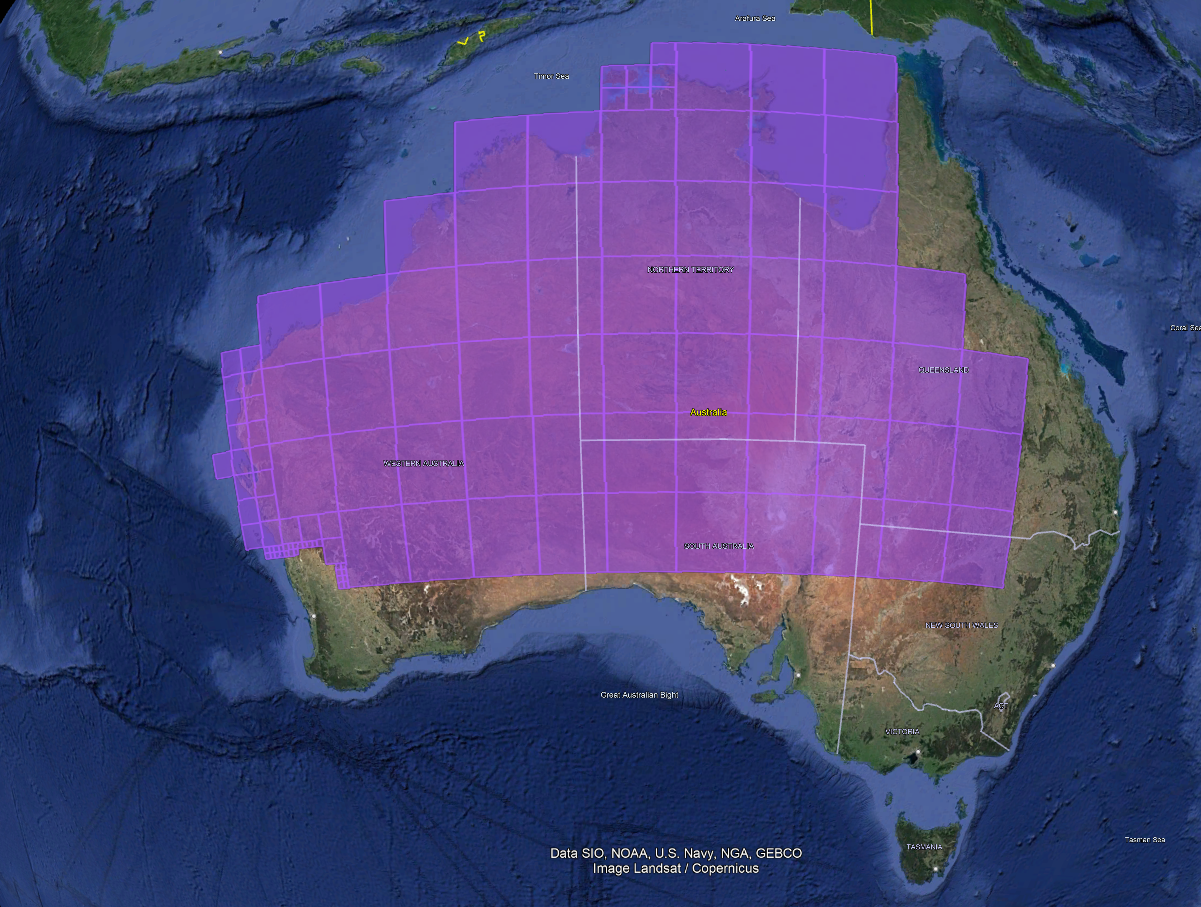
**Metropolitan:** covers all capital cities (except Darwin and Hobart). It mirrors the metropolitan areas subject to spectrum licensing in the 3575–3700 MHz band (3.6 GHz band) as defined in the [Radiocommunications (Spectrum Re-allocation—3.6 GHz Band for Adelaide and Eastern Metropolitan Australia) Declaration 2018](https://www.legislation.gov.au/Details/F2018L00225/Html/Text) and the [Radiocommunications (Spectrum Re-allocation—3.6 GHz Band for Perth) Declaration 2018](https://www.legislation.gov.au/Details/F2018L00221)*.*

**Regional:** mirrors the regional areas subject to spectrum licensing in the 3.6 GHz band as defined in the [Radiocommunications (Spectrum Re-allocation—3.6 GHz Band for Regional Areas) Declaration 2018](https://www.legislation.gov.au/Details/F2018L00222).

**Remote:** includes those areas of Australia within the [Australian spectrum map grid](https://www.acma.gov.au/australian-spectrum-map-grid)not covered by metropolitan and regional areas (see Table 1).

**Australia-wide:** covers all of Australia but excludes any Australian external territories.

Map of Australian remote areas



The Australian spectrum map grid (ASMG) is used to define geographic areas over which spectrum and AWLs are issued. The Hierarchical Cell Identification Scheme (HCIS) is a naming convention developed by the ACMA that applies unique ‘names’ to each of the cells that make up the ASMG. The ASMG and HCIS are described in detail in the [Australian spectrum map grid](https://www.acma.gov.au/australian-spectrum-map-grid).

The HCIS coordinates in the description of the area in Table 1 can be converted into a Placemark file (viewable in Google Earth) through a facility on the [ACMA website](https://www.acma.gov.au/convert-hcis-area-description-placemark).

Defining AWLs in remote areas by HCIS area has implications for offshore areas. The ASMG, which defines the HCIS structure, is only defined for a relatively short distance from the Australian coastline and does not include external Australian territories. WBB licensing outside of the ASMG will be conducted by exception, using site-based point-to-multipoint (PMP) apparatus licences.

HCIS for remote areas

|  |  |
| --- | --- |
| **Area** | **HCIS** |
| Remote | BR, BS, BT, CR, CS, CT, CU, DQ, DR, DS, DT, DU, EP, EQ, ER, ES, ET, EU, FP, FQ, FR, FS, FT, FU, GP, GQ, GR, GS, GT, GU, HO, HP, HQ, HR, HS, HT, HU, IO, IP, IQ, IR, IS, IT, IU, JO, JP, JQ, JR, JS, JT, JU, KR, KS, KT, KU, LS, LT, LU, AR8, AR9, AS2, AS3, AS5, AS6, AS8, AS9, AT1, AT2, AT3, AT5, AT6, AT8, AT9, AU2, AU3, BU1, BU2, BU3, BU6, GO3, GO4, GO5, GO6, GO7, GO8, GO9, AU6A, AU6B, AU6C, AU6D, AU6E, AU6F, AU6G, AU6H, BU4A, BU4B, BU4C, BU4D, BU4E, BU4F, BU4G, BU5A, BU5B, BU5C, BU5D, BU9C, BU9D, BU9G, BU9H, BU9K, BU9L, BU9O, BU9P. |

## 5. Technical framework

The technical framework for AWLs in the frequency range 3.4–4.0 GHz sets out the licence conditions and policy arrangements that manage coexistence with other services operating in and adjacent to the 3.4–4.0 GHz range. The arrangements are described in:

the [Radiocommunications Licence Conditions (Apparatus Licence)   
Determination 2015](https://www.legislation.gov.au/Details/F2021C01209) (the Apparatus Licence Determination)

the [Radiocommunications Licence Conditions (Area-Wide Licence)   
Determination 2020](https://www.legislation.gov.au/F2020L00070/latest/text) (AWL LCD)

the [Radiocommunications Licensing and Assignment Instructions (RALI) MS47](https://www.acma.gov.au/publications/2023-06/instruction/rali-ms47-licensing-and-coordination-procedures-area-wide-licences-awl-3400-4000-mhz-band)

individually issued licences.

These documents may also reference other relevant documents.

The technical framework is intended to manage coexistence of AWLs with a range of other services. Note that, in remote areas, earth receive apparatus licences, and point-to-point (PTP) apparatus licences above 3800 MHz, will continue to be issued.

Applicants should familiarise themselves with the arrangements to ensure that applications will be suitable for the intended purposes and engage an [accredited person](https://www.acma.gov.au/what-accredited-person-does) to ensure the proposed AWL satisfies the technical requirements needed for the services envisaged by the applicant.

### Apparatus Licence Determination

This determination specifies conditions that apply to all apparatus licences, including AWLs, principally in relation to electromagnetic radiation (RF levels) emitted by a transmitter.

### AWL LCD

The AWL LCD contains conditions that apply to all AWLs.

Schedule 4 to the AWL LCD contains conditions for radiocommunications devices authorised to operate in the 3.4–4.0 GHz band, including:

maximum permitted total radiated power, and equivalent isotopically radiated power limits that apply only above 3700 MHz

limits on unwanted emissions outside the frequency range authorised by   
the licence

deployment restrictions to manage coexistence with other services

requirements for all radiocommunications transmitters to be included in the Register of Radiocommunications Licences (RRL), other than those with specified operating parameters (that is, registration-exempt transmitters).

compliance with specific requirements of RALI MS47.

### RALI MS47

RALIs are administrative policy documents that support licensing and device coordination in a band, and assist accredited persons when assigning frequencies and coordinating devices. RALI MS47 for the 3.4–4.0 GHz band details the ACMA’s guidance on issuing new AWLs, and the coordination of devices operating under an AWL, with other services. Exceptions to this policy can be considered on a case-by-case basis.

RALI MS47 includes a specified channel raster and limitations on use in certain areas. In general, AWLs are to be assigned using contiguous channels of 10 MHz with the following guidance:

AWLs issued to existing spectrum licence holders in the 3.4–4.0 GHz band should preferably be contiguous with existing spectrum licences, and be below 3.8 GHz

AWLs issued to people who do not hold spectrum licences in the 3.4–4.0 GHz band should preferably be contiguous with any existing AWL licences held by them, and be above 3.8 GHz

AWLs should be issued in ascending frequency order, but subject to the above   
2 policies.

These arrangements are aimed at improving spectral efficiency, maximising spectrum availability for prospective licensees and enabling the prospect of contiguous spectrum holdings across geographic boundaries. Alternative ways of assigning spectrum can be considered on a case-by-case basis by the ACMA if it can improve the efficiency in use and allocation of spectrum.

An AWL authorises the operation of radiocommunications devices within a frequency range and geographic area specified on the licence. AWLs authorising operation in the 3.4–4.0 GHz band will generally only be issued in geographic areas outside those embargoed frequencies and areas defined in RALI MS03 and RALI MS26.

An AWL will not be issued if its frequency range would overlap with the frequency range authorised by an existing AWL in the same HCIS cell.

Also, in remote areas, an AWL will generally not be issued if it would authorise the operation of devices on a co-frequency within 20 km of a PMP service transmitter, or within 5 km if the proposed AWL is adjacent in frequency by 10 MHz or less, unless the licensee of the PMP service transmitter agrees in writing.

In addition, RALI MS47 specifies exclusion or coordination zones that apply to AWLs in the vicinity of:

particular radiolocation systems

the Darwin, Geraldton and Exmouth coordination zones

the Woomera Protected Area (WPA).

#### Radio altimeter coexistence measures

RALI MS47 includes several licence special conditions that apply interim mitigations to manage coexistence of AWLs in remote areas with aeronautical radionavigation services (radio altimeters) operating in the 4200–4400 MHz band. Further details on the basis for these special conditions can be found in the [Wireless broadband and radio altimeters coexistence outcomes paper](https://www.acma.gov.au/5g-and-aviation-services-australia).

In summary, they are:

For deployments above 3700 MHz around identified runways:

exclusion zones, where transmitters will not be permitted to be operated to provide WBB services

restricted zones, except in the 3950–4000 MHz range in metropolitan and regional areas, with a power flux density (PFD) limit in the restricted zones.

For all deployments above 3700 MHz:

1. restricting any antenna system used for WBB services to point maximum power, using mechanical or fixed electrical tilts, to below the horizon only
2. grating lobes of antenna systems used for WBB services must be minimised as much as is practicable.

Detailed information on these mitigations and the identified runways is in RALI MS47. The ACMA will remove the interim mitigations requirements after 31 March 2026.

#### Other coordination requirements

RALI MS47 also outlines the coordination requirements that must be met before a transmitter will be included in the RRL. This includes coordination arrangements between stations operated under other AWLs, and between stations authorised by an AWL and other radiocommunications devices or services in and adjacent to the   
3.4–4.0 GHz band. Requirements detailed in other applicable RALIs and [business operating procedures](https://www.acma.gov.au/business-operating-procedures-spectrum) are also set out in RALI MS47.

Unless an exception applies, a transmitter must comply with the coordination requirements in RALI MS47 to be registered in the RRL.

#### Incumbent services in the 3.4–4.0 GHz range in remote areas

Incumbent PMP, PTP and earth receive services exist in remote areas. RALI MS47 includes elements related to coordination of AWLs with those incumbent service types.

The ACMA will not generally issue any new PMP or Public Telecommunications Service licences in the 3.4–4.0 GHz range in remote areas.

The ACMA will generally only issue new PTP licences above 3800 MHz in remote areas.

Earth receive use in remote areas is not authorised under AWLs and will continue to be licensed under earth receive apparatus licences.

A summary of licensing arrangements in the 3.4–4.0 GHz band in remote Australia is in Table 2.

A range of other non-WBB technologies also use the 3.4–4.0 GHz band in   
remote Australia under specific conditions, including radiodetermination   
services. There will be an advisory note on AWLs noting potential interference from radiolocation systems operated by the Department of Defence in the 3.1–3.3 GHz   
and the 3.3–3.6 GHz bands.

Summary of licensing arrangements in 3.4–4.0 GHz remote areas

|  |  |  |  |
| --- | --- | --- | --- |
| **3400–3575 MHz** | **3575–3700 MHz** | **3700–3800 MHz** | **3800–4000 MHz** |
| AWL  Earth receive  Incumbent PMP  Amateur | AWL  Earth receive  Incumbent PMP  Incumbent PTP | AWL  Earth receive  Incumbent PTP | AWL  Earth receive  PTP |

AWL: area-wide licence, PMP: point-to-multipoint (fixed apparatus licence type), PTP: point-to-point (fixed apparatus licence type).

## 6. Licence tenure

### Licence duration

The *Radiocommunications Act 1992* enables the ACMA to issue apparatus licences for up to 20 years. An overview of our approach to licence duration is outlined in the [licensing and allocation information paper](https://www.acma.gov.au/publications/2021-03/rules/our-approach-radcomms-licensing-and-allocation). This paper defines long-term licence duration (20 years), medium-term licence duration (up to 10 years) and short-term licence duration (up to one year).

AWLs in the 3.4–4.0 GHz band in remote areas best satisfy the stated criteria for medium-term licence duration, as a high number of users and mixed use-cases is anticipated in the band.

As potential replanning activity may occur when spectrum licences expire in the  
3.4 GHz and 3.6 GHz bands in 2030, the ACMA has decided generally to limit the tenure of these AWLs to 13 December 2030 to align with the expiry of spectrum licences within the band and provide greater flexibility in replanning activities affecting the band. Aligning the expiry of AWLs with the expiry of spectrum licences in the same band supports the efficient future allocation of spectrum. Where this policy is applied, this would limit the maximum duration of licences issued in 2023 to approximately   
7 years. Applicants have the option to specify a different licence period in the application form.

### Licence renewal

The Radiocommunications Act also includes processes for the renewal of apparatus licences, or the inclusion of public interest statements on licences. The ACMA does not propose to include renewal statements or public interest statements on AWLs in the 3.4–4.0 GHz band in remote areas.

The extent of demand for AWLs in the band remains uncertain at this time, reflecting the early development of business cases for service deployment. To address the risk that initial licence allocations may not ultimately be used as planned, and the potential that licence holders may not have adequate incentive to return unused licences or unused portions of licences to the market, we intend to place an advisory note on each AWL. This will outline that the ACMA, when deciding whether to renew a licence, may consider whether the spectrum has been used and if there is unmet demand for licences in the 3.4–4.0 GHz band in remote areas. This approach supports the efficient use of spectrum, digital connectivity and investment in regional Australia.

We may decide not to renew a licence, or to renew the licence with different conditions (including a reduced quantum of spectrum or different geographic areas). The ACMA will generally not renew an AWL in the 3.4–4.0 GHz band in remote areas for any period that would take the licence term beyond 13 December 2030. This policy will apply until plans regarding defragmentation of the band and its potential impact on AWLs are known.

If we consider that unmet demand in the bands will require a consideration of spectrum use at renewal, we will inform licensees of this at least 6 months before the expiry date of the AWL.

We may also renew an AWL with different conditions and renewal statements, including in relation to re-planning decisions or for other reasons. More information about [apparatus licence renewal](https://www.acma.gov.au/policy-apparatus-licence-renewals) is available on the ACMA website.

Because a renewal statement is not included, the default renewal application and decision-making periods applicable to apparatus licences will apply. The default renewal application period for apparatus licences begins 6 months from expiry and ends 60 days after the licence expires. The decision-making period is 90 days.

The ACMA will review the tenure policy for AWLs in the 3.4–4.0 GHz band in remote areas taking into account the expiring 3.4 GHz band spectrum licences. On 23 May 2023, we opened a consultation on our [proposed approach to expiring spectrum licences](https://www.acma.gov.au/consultations/2023-05/proposed-approach-expiring-spectrum-licences), including the process.

## 7. Pricing

There are 2 types of fees applicable to apparatus licences:

annual apparatus licence taxes, which are calculated to recover the indirect costs of spectrum management and provide incentives for efficient spectrum use. Indirect costs are those that cannot be directly attributed to individual licensees

charges to recover the direct costs of issuing the licences.

### Annual apparatus licence tax

A tax rate of $0.0041/MHz/pop applies to AWLs in the 3.4–4.0 GHz band in remote Australia.

Total annual licence tax is calculated as follows:

AWL tax = $/MHz/pop price × bandwidth (MHz) × population of geographic area

where:

‘$/MHz/pop’ price is the tax rate for one MHz of spectrum per head of population

‘bandwidth’ is the total amount of spectrum in MHz authorised by the licence

‘population’ (based on the 2021 Census) is the population of the geographic   
area authorised by the licence. The area will be defined by HCIS identifiers in   
the ASMG.

The population is based on the aggregate population of all the geographic cells in which the AWL authorises operation of radiocommunications transmitters. The effective population of a single HCIS 0 cell (the minimum cell size, which will be referred to as a single ‘AWL cell’) for tax calculations will be determined by taking the average population of all HCIS 0 cells in the broader HCIS 1 cell that the particular HCIS 0 cell is located within. There are 25 HCIS 0 cells within one HCIS 1 cell.   
The population of the HCIS level 1 cells are set out in a document published on   
the [ACMA website](https://www.acma.gov.au/convert-hcis-area-description-placemark).

A minimum tax amount applies for AWLs (currently $41.86). If the tax calculated using the method outlined above is less the minimum annual tax, the tax will be the minimum annual tax. Total taxes are rounded to the nearest dollar.

#### Examples of taxes

To assist applicants, the following examples are provided using 3 location examples, based on 20 MHz of bandwidth and 4 different geographic areas (one AWL cell,   
4 AWL cells, one HCIS 1 block and one HCIS 2 block). The locations chosen have relatively large populations at the HCIS 1 level to highlight how to calculate the taxes. Other locations will have lower populations and therefore taxes   
will be lower. To simplify the examples, it is assumed that the HCIS 0 cells to be authorised are all in the one HCIS 1 cell.

The following examples use the $0.0041/MHz/pop tax rate in several different regions located in remote HCIS 1 cells proposed to be included in this allocation:

HCIS 1 cell HS4L8 is the most populated cell in Alice Springs, NT. It has a population of 22,965 (average population per AWL cell is 918.6). It falls within HCIS 2 cell HS4L, which has a population of 24,220.

HCIS 1 cell CR4G5 is the most populated cell in Port Hedland, WA. It has a population of 8,695 (average population per AWL cell is 347.8). It falls within HCIS 2 cell CR4G, which has a population of 15,283.

HCIS 1 cell LU7D6 is the most populated cell in Bourke, NSW. It has a population of 1,442 (average population per AWL cell is 57.68). It falls within HCIS 2 cell LU7D, which has a population of 1,555.

Table 3 details the potential annual taxes for the examples above, noting that the taxes are rounded to the nearest dollar and the minimum annual tax of $41.86   
also applies.

$/MHz/pop annual apparatus licence taxes (using 20 MHz) in various remote locations

|  |  |  |  |
| --- | --- | --- | --- |
| **Price ($0.0041/MHz/pop)** | **HCIS 1 cell** | | |
| **HS4L8 (Alice Springs)** | **CR4G5 (Port Hedland)** | **LU7D6 (Bourke)** |
| 1 HCIS 0 cell | $75 | $42\* | $42\* |
| 4 HCIS 0 cells | $301 | $114 | $42\* |
| 1 HCIS 1 block (equivalent to 25 AWL cells) | $1,883 | $713 | $118 |
| 1 HCIS 2 block\*\* (equivalent to 225 AWL cells) | $1,986 | $1,253 | $128 |

\* Tax amounts were lower than $41.86 minimum tax, causing the minimum tax to be applied (rounded to the nearest dollar). The calculated amounts were $28.52 for one cell in Port Hedland, $4.73 for one cell in Bourke, and $18.92 for 4 cells in Bourke.  
\*\* Tax amounts based on population of the HCIS 2 cell within which the HCIS 1 cell is located – i.e., HS4L for Alice Springs (pop: 24,220), CR4G for Port Hedland (pop: 15,283) and LU7D for Bourke (pop: 1,555).

Population information for the HCIS system can be found on the [ACMA website](https://www.acma.gov.au/convert-hcis-area-description-placemark).

We have developed a [fee calculator](https://www.acma.gov.au/publications/2023-06/guide/area-wide-licence-awl-calculators) (available alongside this pack on the ACMA website) to help applicants calculate how much tax must be paid for the combination of spectrum and geographic area wanted.

#### Payment of tax

Apparatus licence tax is payable on issue of a licence. If the licence duration is more than one year, the annual amount for each year can be paid upfront on application for the licence as a lump sum. Alternatively, the tax amount can be paid by annual instalments, with the first instalment usually paid on application for the licence (instalment amounts may differ each year to account for any tax changes arising in pricing reviews).

### Charges

A cost-recovery fee is charged for considering an apparatus licence application, irrespective of whether the application is approved. Different charges apply to different types of apparatus licence. A base charge of $847 applies for AWLs; an additional amount may apply if the application for the AWL needs to be assessed against one or more other applications (that is, there are multiple applications for the same spectrum in the same area).

1. The maximum amount of spectrum will not be available in all areas due to incumbent licensees. [↑](#footnote-ref-2)
2. These definitions do not include any areas of appropriate exclusion from licensing, such as the Earth station protection zones or the Australian radio quiet zone in Western Australia ([RQZ](https://www.acma.gov.au/publications/2019-08/instruction/rali-ms32-mid-west-radio-quiet-zone)), among others. [↑](#footnote-ref-3)