



Radiocommunications Spectrum Marketing Plan (1.8 GHz Bands) 1999

as amended

made under section 39A of the

Radiocommunications Act 1992

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taking into account amendments up to *Radiocommunications Spectrum Marketing Plan (1.8 GHz Bands) 1999 Variation 1999 (No. 1)*

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Summary of marketing plan

The Minister for Communications, Information Technology and the Arts has made spectrum re-allocation declarations under section 153B of Part 3.6 of the Act with respect to the 1.8 GHz bands in specified geographic areas. The effect of these declarations is that the areas and parts of the spectrum referred to in the declarations are subject to re-allocation by issuing spectrum licences. The declarations set a 're-allocation period' during which time it is intended that the spectrum licences will be allocated. Apparatus licences in a part of the spectrum covered by a declaration will be cancelled automatically at the end of the re-allocation period (section 153H of the Act). The Act also requires that each declaration must set a 're-allocation deadline'. The significance of the re-allocation deadline is that where a re-allocation declaration states that a part of the spectrum should be re-allocated by issuing spectrum licences, at least 1 licence must be issued by the re-allocation deadline. If no spectrum licences are issued by the re-allocation deadline, the declaration is taken to have been revoked immediately after the deadline (section 153K of the Act).

A summary of the overall process is as follows:

- Parts of the 1.8 GHz bands have been divided into lots for sale. The lots consist of a geographic area and a particular bandwidth. It is intended that these lots will be allocated and become the subject of spectrum licences.
- Allocation will be by way of a simultaneous ascending auction (Details are in the Allocation Determination).
- The ACA will advertise details of the auction as soon as practicable after this Plan is published. This will be at least 1 month before the date of the auction. Interested parties must register to take part in the auction before the closing date.
- The successful applicant for a lot will be entitled to have a spectrum licence issued that includes the lot as soon as practicable after the ACA has received payment of the final bid price for the lot and payment of the spectrum access charge (subsection 62 (2) of the Act).
- A spectrum licence will contain core conditions and conditions relating to other aspects of spectrum use (sections 66–71 of the Act). An example of a spectrum licence is attached.
- The licence will come into force on the day specified in the licence, and will be in force for the period set out in the licence (section 65 of the Act). This period cannot be longer than 15 years. The ACA intends that all licences for a particular band be in force for 15 years.
- The ACA will publish information regarding licences that are due to expire during the 2 years before the expiry date (section 78 of the Act). Current licensees will also receive periodic reminders that their licence is due to expire.
- Re-allocation of licences will be by way of price based allocation (sections 80, 81). Only in special circumstances will the ACA re-issue spectrum licences to existing licensees without conducting a re-allocation (section 82).

Part 1 Preliminary

1.1 Title [see Note 1]

This Plan is called the *Radiocommunications Spectrum Marketing Plan (1.8 GHz Bands) 1999*.

1.2 Commencement

This Plan commences on 3 November 1999.

1.3 Purpose

- (1) This Plan sets out procedures and a timetable for issuing spectrum licences that authorise the operation of radiocommunications devices in those parts of the 1.8 GHz band that are subject to a re-allocation declaration.
- (2) This Plan also sets out matters a licensee must take into account in operating devices under a licence.

1.4 Interpretation

In this Plan:

adjacent channel selectivity means a measure of the ability of the receiver to receive a wanted signal without the output quality exceeding a specified degradation due to the presence of an unwanted adjacent channel signal.

Advisory Guidelines means the following documents made by the ACA under s. 262 of the Act, as in force and as amended from time to time:

- (a) *Radiocommunications Advisory Guidelines (Protection of Apparatus-licensed and Class-licensed Receivers — 1800 MHz Band) 1999*;
- (b) *Radiocommunications Advisory Guidelines (Managing Interference from Apparatus-licensed and Class-licensed Transmitters — 1800 MHz Band) 1999*; and
- (c) *Radiocommunications Advisory Guidelines (Protection of Mobile Base Receivers — 1800 MHz Lower Band) 1999*.

Allocation Determination means the *Radiocommunications (Spectrum Licence Allocation) Determination 1999* as in force from time to time.

blocking means a measure of the ability of the receiver to receive a wanted signal without the output quality exceeding a specified degradation caused by the presence of a high level off-tune signal increasing the non-linearity of the receiver's front-end.

cell means a square with a side measured in degrees, and where appropriate, minutes and seconds, by reference to the Australian National Spheroid.

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

Clause 1.4

in-band, for a transmitter operated under a licence, means the frequencies within a frequency band to which the licence relates.

harmful interference means interference which endangers the functioning of a radio-navigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service.

horizontally radiated power for a radiocommunications device, means the radiated maximum true mean power, within the frequency band of the licence authorising the operation of the device, summed over all polarisations and measured in units of dBm EIRP in a direction referenced from, and in the horizontal plane containing, the phase centre of the antenna used with the device.

intermodulation immunity means a measure of the ability of a receiver to receive a wanted signal without the output quality exceeding a specified degradation caused by the presence of 2 or more unwanted signals with a specific amplitude and frequency relationship to the wanted signal frequency.

lot means a part of the spectrum described in Clause 2.2.

lot rating means a value set by the ACA under Clause 2.5.

maximum true mean power means the true mean power measured in a 30 kHz rectangular bandwidth that is located within a specified frequency band such that the true mean power is the maximum of true mean powers produced.

Note The power within a 30 kHz rectangular bandwidth is normally established by taking measurements using either an adjacent channel power meter or a spectrum analyser. The accuracy of measuring equipment, measurement procedure and any corrections to measurements necessary to take account of practical filter shape factors would normally be in accordance with good engineering practice.

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

peak power means the average power measured within a specified bandwidth during one radio frequency cycle at the crest of the signal envelope.

population means the notional population of a lot, fixed by the ACA and set out in column 4 of an item in Schedule 1.

re-allocation means the re-allocation of spectrum by the issue of spectrum licences in accordance with a re-allocation declaration.

re-allocation declaration means a declaration made by the Minister under s. 153B of the Act for a part of the spectrum in the 1.8 GHz band.

spectrum map grid means the map grid developed by the ACA for Australia, showing cells the sides of which measure 3 degrees of arc, 1 degree of arc or 5 minutes of arc, published by the ACA.

spurious emissions means emissions that are not modulation products or wide band noise or emissions caused by switching transients.

spurious response immunity means a measure of the ability of the receiver to discriminate between the wanted signal at its nominal frequency and an unwanted signal at any frequency at which the receiver responds.

Clause 1.4

standard trading unit (STU) means a parcel of spectrum space that consists of a geographic area equal to a cell of the spectrum map grid and a frequency band having lower and upper frequency limits defined by:

- (a) $1755 + n \times 2.5$ MHz and $1755 + (n + 1) \times 2.5$ MHz respectively; or
 - (b) $1850 + n \times 2.5$ MHz and $1850 + (n + 1) \times 2.5$ MHz respectively;
- where n is an integer from 0 to 11 (inclusive).

true mean power means:

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

1.8 GHz band means the following frequency bands:

- (a) 1710 to 1785 MHz; and
- (b) 1805 to 1880 MHz.

Note A number of expressions used in this Plan are defined in the Act, including:

ACA	licensee
apparatus licence	public or community service
core condition	spectrum licence.
frequency band	

Clause 2.1

Part 2 Allocation of spectrum licences**2.1 Issue of spectrum licences**

- (1) The ACA will issue spectrum licences for the parts of the spectrum in the 1.8 GHz bands that are subject to the re-allocation declaration.
- (2) The ACA will issue the licences to the persons to whom the licences are allocated under a price-based allocation system determined under s. 60 of the Act.
- (3) No part of the spectrum in the 1.8 GHz bands subject to this Marketing Plan will be reserved for public or community services.

2.2 Identification of lots

- (1) The ACA has divided the parts of the spectrum that have been declared for re-allocation by the Minister into lots.
- (2) Each lot represents a part of the spectrum that is defined in terms of its geographic area and frequency band.
- (3) The geographic area of a lot is the area described in Schedule 2 for the area number mentioned in column 3 of Schedule 4 for the lot.
- (4) The frequency bands of a lot that has the geographic area mentioned in a table in Schedule 2 comprise:
 - (a) the frequencies in the frequency range greater than the frequency set out in column 6 of an item in Schedule 4 up to and including the frequency set out in column 7 of the item; and
 - (b) the frequencies in the frequency range greater than the frequency set out in column 8 of an item in Schedule 4 up to and including the frequency set out in column 9 of the item.

2.3 Allocation of lots

- (1) Lots will be allocated and will then become the subject of spectrum licences.
- (2) Under Subdivision B of Division 1 of Part 3.2 of the Act, the ACA will issue spectrum licences to cover the lots that have been allocated in accordance with this Marketing Plan.

2.4 How licences will be allocated

- (1) The first allocation will be by simultaneous ascending auction, in accordance with the procedures set out in the Allocation Determination.

Note The determination sets out the procedures for allocating spectrum licences by a simultaneous ascending auction.

- (2) All of the lots listed in Schedule 4 will be available for auction at the same time.

Clause 2.8

- (3) The ACA may hold further allocations by a means to be determined by the ACA under section 60 of the Act.
- (4) However, the ACA will not hold an auction if:
 - the total amount of bandwidth nominated for each area by all applicants for the area, is equal to or less than the bandwidth available for the area; and
 - the ACA offers each applicant a licence for a bandwidth, in the area nominated by the applicant, at the starting bid price; and
 - each applicant accepts the licence offered.

Note In this case, the ACA will allocate the licences for a pre-determined price — see Part 3 of the *Radiocommunications (Spectrum Licence Allocation) Determination 1999*.

2.5 Lot ratings

- (1) Each lot has a lot rating fixed by the ACA.
- (3) The lot rating for a lot is the value set out in column 5 of the item in Schedule 4 in which the lot is mentioned.
- (4) The lot rating is used as the basis for working out the eligibility payment payable by an applicant, and the applicant's initial eligibility. Details of these are in clauses 2.6 and 2.7 of the Allocation Determination.

2.6 Advertising auction

- (1) The ACA will advertise details of the auction as soon as practicable after this Plan is published.
- (2) Details of the advertisement are set out in clause 2.2 of the Allocation Determination.
- (3) The ACA will not conduct an auction until at least 30 days after the publication of the advertisement.

2.7 Registration

- (1) The advertisement will invite people to apply to register for the auction.
- (2) The ACA will make available to interested people an Applicant Information Package that contains more detail about registration requirements and the auction process. Details of what is in the Package are in clause 2.3 of the Allocation Determination.
- (3) Anyone wishing to take part in the auction must apply to register by the closing date in the advertisement. Details of how to apply are in clauses 2.4 and 2.5 of the Allocation Determination.

2.8 Amount of eligibility payment

An applicant for registration must pay an eligibility payment. The amount of eligibility payment payable is based on the eligibility nominated by the applicant in the application for registration.

Clause 2.9

Note To find out how the eligibility payment is worked out see clause 2.7 of the Allocation Determination.

2.9 Entitlement to licence

Except where allocation limits set out in Part 1A of the Allocation Determination are exceeded, a successful applicant for a lot is entitled to be issued a licence that includes the lot as soon as practicable after the balance of bid price is received by the ACA.

Note Details of payment requirements are in Part 5 of the Allocation Determination.

2.10 Sample licence

Schedule 5 sets out:

- (a) a sample spectrum licence; and
- (b) the conditions that may be included in a spectrum licence that is issued in a part of the spectrum referred to in a re-allocation declaration.

2.11 Core licence conditions

- (1) Section 66 of the Act requires a licence to contain core conditions that define the parts of the spectrum that can be used under the licence, in terms of:
 - (a) frequency band; and
 - (b) geographic area; and
 - (c) emission limits outside the area; and
 - (d) emission limits outside the band.
- (2) These conditions will be included in the licence.

2.12 Other licence conditions

The licence will also include conditions about:

- (a) payment of charges (section 67 of the Act); and
- (b) use by third parties (section 68); and
- (c) registration of transmitters (section 69); and
- (d) other matters that the ACA may include in the licence (section 71).

2.13 Determination of core licence conditions

- (1) The core conditions for the geographic area of a licence will apply to the area or the aggregation of areas described in Schedule 2 that cover the lots allocated to the licensee in the allocation under section 60 of the Act.
- (2) The core conditions for frequency bands will apply to the bands or aggregation of bands described in Schedule 3 that cover the lots allocated to the licensee.

Clause 2.18

2.14 Emission limits

- (1) The emission limits outside the area for all licences are worked out in accordance with Schedule 6.
- (2) The emission limits outside the band for all licences are worked out in accordance with Schedule 7.

Note These core conditions may be varied by the ACA with the licensee's agreement — see s. 72 of the Act.

2.15 Duration of licences

The licences issued under this Plan will be for fixed terms of 15 years.

Note Section 65 of the Act provides that the maximum duration of a spectrum licence is 15 years.

2.16 Registration of licences

- (1) The ACA will register licences, as required by section 144 of the Act.

Note Details about registration are in the *Radiocommunications (Contents of Register) Determination No. 1 of 1997*.

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

Note see section 69 of the Act.

- (3) Transmitters that are part of a group of transmitters may be registered individually or as a group.
- (4) The ACA does not propose to register a mobile transmitter that operates in the 1.8 GHz band with maximum radiated true mean power of 24.5 dBm or less.

2.17 Trading in licences

As permitted by Division 5 of Part 3.2 of the Act, a licensee may assign or otherwise deal with the whole or any part of their licence. The ACA has determined rules under section 88 of the Act to regulate trading in licences. The rules restrict trading to whole standard trading units.

2.18 Spectrum licences that are about to expire

- (1) As required by section 78 of the Act, the ACA will publish notices periodically in the *Gazette*:
 - stating where information can be obtained about spectrum licences that are due to expire within the next 2 years; and
 - inviting expressions of interest from people who want to have these licences issued to them.
- (2) The information will also be available from any of the ACA's Area Offices.

Clause 2.19

- (3) The ACA will also send licensees regular reminders during the last 2 years of the term of their licences that the licences are due to expire.

2.19 Re-issue of licences

- (1) The ACA will re-issue licences, in accordance with Division 4 of Part 3.2 of the Act.
- (2) As a general rule, licences will only be re-issued after the lots they cover are offered for re-allocation by auction, tender, or predetermined or negotiated price. In re-allocating the licences, the ACA will follow the procedures set out in the determinations made under section 60 of the Act that are in force at the time.
- (3) However, as set out in section 82 of the Act, the ACA may re-issue a licence to the previous licensee without re-allocating the licence if it is in the public interest to do so.
- (4) Spectrum licences that are re-issued are unlikely to take the same form as originally issued as the spectrum lots may be divided and distributed differently. Licensees should not assume that they will be re-issued with their existing licence.

Part 3 Spectrum usage and compatibility

3.1 Compatibility requirements

- (1) The compatibility requirements for the receivers of various apparatus licensed and class licensed services in the 1.8 GHz band and in adjacent frequency bands are set out in the Advisory Guidelines. The substance of these requirements and recommended methods of coordinating radiocommunications services to be operated in spectrum licensed space are also set out in the Advisory Guidelines. The Advisory Guidelines provide a means of coordinating services operating under spectrum licences with other services operating under spectrum licences and with those operating under apparatus licences. Each licensee must ensure that the operation of their service does not cause an unacceptable level of interference to other services which they are obliged to protect.
- (2) These requirements apply to a receiver that:
 - (a) operates or will operate under an apparatus licence or a class licence; and
 - (b) is outside:
 - (i) the frequency bands of spectrum licences; or
 - (ii) the geographic limits of spectrum licences; and
 - (c) operates inside the frequency bands and geographic areas to be subject to spectrum licenses.

Schedule 1 Description of geographic areas containing lots for re-allocation

(clause 1.4)

Column 1	Column 2	Column 3	Column 4
Item No.	Area Number	Name	Population
1	1	Brisbane	1735500
2	2	Sydney	4265500
3	3	Melbourne	3246700
4	4	Adelaide	1094900
5	5	Perth	1189100

Schedule 2 Coordinates of geographic areas

(clause 1.4, subclauses 2.2 (3), 2.2 (4))

Description: The geographic area of a lot is the area of land described in a table below, bounded by a line starting at the intersection of the first coordinates listed in the table for the area and then bounded by a line passing sequentially through the intersections of each set of coordinates shown in the table to the point of commencement.

Table 1 Area 1 (Brisbane)

° ' " East	° ' " South	° ' " East	° ' " South	° ' " East	° ' " South
152 30 0	26 50 0	153 05 0	28 35 0	152 50 0	28 05 0
154 00 0	26 50 0	153 05 0	28 20 0	152 30 0	28 05 0
154 00 0	28 35 0	152 50 0	28 20 0	152 30 0	26 50 0

Table 2 Area 2 (Sydney)

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

Table 3 Area 3 (Melbourne)

° ' " East	° ' " South	° ' " East	° ' " South	° ' " East	° ' " South
144 45 0	37 20 0	145 35 0	37 35 0	144 05 0	37 55 0
145 05 0	37 20 0	145 35 0	37 45 0	144 10 0	37 55 0
145 05 0	37 25 0	145 45 0	37 45 0	144 10 0	37 50 0
145 15 0	37 25 0	145 45 0	38 15 0	144 15 0	37 50 0
145 15 0	37 30 0	145 25 0	38 15 0	144 15 0	37 25 0
145 20 0	37 30 0	145 25 0	38 45 0	144 45 0	37 25 0
145 20 0	37 35 0	144 05 0	38 45 0	144 45 0	37 20 0

Table 4 Area 4 (Adelaide)

° ' " East	° ' " South
138 05 0	34 20 0
139 05 0	34 20 0
139 05 0	34 55 0

° ' " East	° ' " South
139 00 0	34 55 0
139 00 0	35 30 0
138 05 0	35 30 0

° ' " East	° ' " South
138 05 0	34 20 0

Table 5 Area 5 (Perth)

° ' " East	° ' " South
115 00 0	31 25 0
116 30 0	31 25 0

° ' " East	° ' " South
116 30 0	32 50 0
115 00 0	32 50 0

° ' " East	° ' " South
115 00 0	31 25 0

Schedule 3 Band segments

(clause 1.4, subclause 2.13 (2))

Part 1

1. A frequency band in this Schedule comprises:
 - (a) the frequencies in the frequency range greater than the frequency set out in column 3 of the item up to and including the frequency set out in column 4 of the item; or
 - (b) the frequencies in the frequency range greater than the frequency set out in column 5 of the item up to and including the frequency set out in column 6 of the item.

Part 2

Column 1 Item No.	Column 2 Band Number	Column 3 Lower	Column 4 Upper	Column 5 Lower	Column 6 Upper	Column 7 Bandwidth MHz
1	1	1755	1757.5	1850	1852.5	2.5
2	2	1757.5	1760	1852.5	1855	2.5
3	3	1760	1762.5	1855	1857.5	2.5
4	4	1762.5	1765	1857.5	1860	2.5
5	5	1765	1767.5	1860	1862.5	2.5
6	6	1767.5	1770	1862.5	1865	2.5
7	7	1770	1772.5	1865	1867.5	2.5
8	8	1772.5	1775	1867.5	1870	2.5
9	9	1775	1777.5	1870	1872.5	2.5
10	10	1777.5	1780	1872.5	1875	2.5
11	11	1780	1782.5	1875	1877.5	2.5
12	12	1782.5	1785	1877.5	1880	2.5

Schedule 4 Description of lots

(clauses 1.4, 2.2, 2.4, 2.5)

Column 1 Lot Number	Column 2 Name	Column 3 Area	Column 4 Band	Column 5 Lot Rating	Column 6 Lower	Column 7 Upper	Column 8 Lower	Column 9 Upper
1	Brisbane-001	1	1	360	1755	1757.5	1850	1852.5
2	Brisbane-002	1	2	360	1757.5	1760	1852.5	1855
3	Brisbane-003	1	3	360	1760	1762.5	1855	1857.5
4	Brisbane-004	1	4	360	1762.5	1765	1857.5	1860
5	Brisbane-005	1	5	360	1765	1767.5	1860	1862.5
6	Brisbane-006	1	6	360	1767.5	1770	1862.5	1865
7	Brisbane-007	1	7	360	1770	1772.5	1865	1867.5
8	Brisbane-008	1	8	360	1772.5	1775	1867.5	1870
9	Brisbane-009	1	9	360	1775	1777.5	1870	1872.5
10	Brisbane-010	1	10	360	1777.5	1780	1872.5	1875
11	Brisbane-011	1	11	360	1780	1782.5	1875	1877.5
12	Brisbane-012	1	12	360	1782.5	1785	1877.5	1880
13	Sydney-001	2	1	1635	1755	1757.5	1850	1852.5
14	Sydney-002	2	2	1635	1757.5	1760	1852.5	1855
15	Sydney-003	2	3	1635	1760	1762.5	1855	1857.5

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9
Lot Number	Name	Area	Band	Lot Rating	Lower	Upper	Lower	Upper
16	Sydney-004	2	4	1635	1762.5	1765	1857.5	1860
17	Sydney-005	2	5	1635	1765	1767.5	1860	1862.5
18	Sydney-006	2	6	1635	1767.5	1770	1862.5	1865
19	Sydney-007	2	7	1635	1770	1772.5	1865	1867.5
20	Sydney-008	2	8	1635	1772.5	1775	1867.5	1870
21	Sydney-009	2	9	1635	1775	1777.5	1870	1872.5
22	Sydney-010	2	10	1635	1777.5	1780	1872.5	1875
23	Sydney-011	2	11	1635	1780	1782.5	1875	1877.5
24	Sydney-012	2	12	1635	1782.5	1785	1877.5	1880
25	Melbourne-001	3	1	1134	1755	1757.5	1850	1852.5
26	Melbourne-002	3	2	1134	1757.5	1760	1852.5	1855
27	Melbourne-003	3	3	1134	1760	1762.5	1855	1857.5
28	Melbourne-004	3	4	1134	1762.5	1765	1857.5	1860
29	Melbourne-005	3	5	1134	1765	1767.5	1860	1862.5
30	Melbourne-006	3	6	1134	1767.5	1770	1862.5	1865
31	Melbourne-007	3	7	1134	1770	1772.5	1865	1867.5
32	Melbourne-008	3	8	1134	1772.5	1775	1867.5	1870
33	Melbourne-009	3	9	1134	1775	1777.5	1870	1872.5
34	Melbourne-010	3	10	1134	1777.5	1780	1872.5	1875

Column 1 Lot Number	Column 2 Name	Column 3 Area	Column 4 Band	Column 5 Lot Rating	Column 6 Lower	Column 7 Upper	Column 8 Lower	Column 9 Upper
35	Melbourne-011	3	11	1134	1780	1782.5	1875	1877.5
36	Melbourne-012	3	12	1134	1782.5	1785	1877.5	1880
37	Adelaide-001	4	1	99	1755	1757.5	1850	1852.5
38	Adelaide-002	4	2	99	1757.5	1760	1852.5	1855
39	Adelaide-003	4	3	99	1760	1762.5	1855	1857.5
40	Adelaide-004	4	4	99	1762.5	1765	1857.5	1860
41	Adelaide-005	4	5	99	1765	1767.5	1860	1862.5
42	Adelaide-006	4	6	99	1767.5	1770	1862.5	1865
43	Adelaide-007	4	7	99	1770	1772.5	1865	1867.5
44	Adelaide-008	4	8	99	1772.5	1775	1867.5	1870
45	Adelaide-009	4	9	99	1775	1777.5	1870	1872.5
46	Adelaide-010	4	10	99	1777.5	1780	1872.5	1875
47	Adelaide-011	4	11	99	1780	1782.5	1875	1877.5
48	Adelaide-012	4	12	99	1782.5	1785	1877.5	1880
49	Perth-001	5	1	108	1755	1757.5	1850	1852.5
50	Perth-002	5	2	108	1757.5	1760	1852.5	1855
51	Perth-003	5	3	108	1760	1762.5	1855	1857.5
52	Perth-004	5	4	108	1762.5	1765	1857.5	1860
53	Perth-005	5	5	108	1765	1767.5	1860	1862.5

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9
Lot Number	Name	Area	Band	Lot Rating	Lower	Upper	Lower	Upper
54	Perth-006	5	6	108	1767.5	1770	1862.5	1865
55	Perth-007	5	7	108	1770	1772.5	1865	1867.5
56	Perth-008	5	8	108	1772.5	1775	1867.5	1870
57	Perth-009	5	9	108	1775	1777.5	1870	1872.5
58	Perth-010	5	10	108	1777.5	1780	1872.5	1875
59	Perth-011	5	11	108	1780	1782.5	1875	1877.5
60	Perth-012	5	12	108	1782.5	1785	1877.5	1880

Schedule 5 Sample licence schedules

(clause 2.10)

This Schedule sets out a sample spectrum licence, and the conditions that may be included in a spectrum licence, issued in the parts of the spectrum that are subject to a re-allocation declaration:

LICENCE SCHEDULE 1

LICENCE AND TECHNICAL DETAILS

Part 1 — Licence Details

Item

- 1 *Name of Licensee*
Address of Licensee
- 2 *Client Number*
- 3 *Band Release*
- 4 *Date of Licence Effect*
- 5 *Date of Licence Expiry*
- 6 *Licence Number*
- 7 *Date of Licence Issue*
- 8 *Issuing Officer*

Part 2 — Technical Details

Item

- 9 *Upper limit of frequency band*
- 10 *Lower limit of frequency band*
- 11 *Offsets for core condition 3 (a)*
- 12 *Offsets for core condition 3 (b)*
- 13 *Power conversion function k1 (d) for core condition 3*
- 14 *Power conversion function k2 (d) for core condition 3*
- 15 *Range of offsets for core condition 4 (a)*
- 16 *Maximum true mean power for core condition 4 (a)*
- 17 *Range of offsets for core condition 4 (b)*
- 18 *Maximum true mean power for core condition 4 (b)*
- 19 *Range of offsets for core condition 4 (c)*
- 20 *Maximum true mean power for core condition 4 (c)*
- 21 *Range of offsets for core condition 4 (d)*
- 22 *Maximum true mean power for core condition 4 (d)*
- 23 *Range of offsets for core condition 4 (e)*
- 24 *Maximum true mean power for core condition 4 (e)*

<i>Item</i>	
25	<i>Range of offsets for core condition 4 (f)</i>
26	<i>Peak power for core condition 4 (f)</i>
27	<i>Mean power for core condition 5 (a)</i>
28	<i>Band for condition 5 (a)</i>
29	<i>Mean power for core condition 5 (b)</i>
30	<i>Band for condition 5 (b)</i>
31	<i>Mean power for core condition 5 (c)</i>
32	<i>Band for condition 5 (c)</i>
33	<i>Mean power for core condition 5 (d)</i>
34	<i>Band for condition 5 (d)</i>
35	<i>Mean power for core condition 6 (a)</i>
36	<i>Band for condition 6 (a)</i>
37	<i>Mean power for core condition 6 (b)</i>
38	<i>Band for core condition 6 (b)</i>
39	<i>Mean power for core condition 6 (c)</i>
40	<i>Band for condition 6 (c)</i>
41	<i>Mean power for core condition 6 (d)</i>
42	<i>Band for core condition 6 (d)</i>
43	<i>Section 145 Determination for registration of transmitters</i>

Part 3 — Geographic Area

For core condition 2, the area within which operation of radiocommunications devices is authorised by this licence is as follows:

[Description of area]

LICENCE SCHEDULE 2**CORE CONDITIONS****Frequency band**

1. This licence authorises the operation of radiocommunications devices in the frequency bands that consist of the contiguous range of frequencies between the upper and lower frequency limits set out in Items 9 and 10 of Part 2 of Schedule 1, respectively.

Geographic area

2. This licence authorises the operation of radiocommunications devices in the geographic area set out at Part 3 of Schedule 1.

Emission limits outside the area

3. The emission limits outside the geographic area set out at Part 3 of Schedule 1 are:
 - (a) for frequency bands only containing frequencies outside the upper and lower frequency limits of the licence by the offsets set out in item 11 of Part 2 of Schedule 1 — a horizontally radiated power of P1 dBm EIRP per 30 kHz; and
 - (b) for frequency bands only containing frequencies outside the upper and lower frequency limits of the licence by the offsets set out in item 12 of Part 2 of Schedule 1 — a horizontally radiated power of P2 dBm EIRP per 30 kHz;

where:

$P1 = 70 - k1(d)$; and

$P2 = 70 - k2(d)$; and

d is the distance in kilometres of the device from the boundary of the geographic area and *k1(d)* and *k2(d)* are the power conversion functions set out at Items 13 and 14 of Part 2 of Schedule 1, respectively.

Emission limits outside the band

4. For radio emission that is not spurious emission, caused by transmitters, at frequencies outside the frequency band of the licence, the emission limits outside the band are:
 - (a) for frequency bands only containing frequencies that are removed from the upper and lower frequency limits of the frequency band of the licence by offsets within the range set out at item 15 of Part 2 of Schedule 1 — the radiated maximum true mean power set out at Item 16 of Part 2 of Schedule 1 of this licence; and

-
- (b) for frequency bands only containing frequencies that are removed from the upper and lower frequency limits of the licence by offsets within the range set out at item 17 of Part 2 of Schedule 1 — the radiated maximum true mean power set out at Item 18 of Part 2 of Schedule 1; and
- (c) for frequency bands only containing frequencies that are removed from the lower and upper frequency limits of the licence by offsets within the range set out at item 19 of Part 2 of Schedule 1 of this licence — the radiated maximum true mean power set out at Item 20 of Part 2 of Schedule 1.
- (d) for frequency bands only containing frequencies that are removed from the lower and upper frequency limits of the licence by offsets within the range set out at item 21 of Part 2 of Schedule 1 of this licence — the radiated maximum true mean power set out at item 22 of Part 2 of Schedule 1.
- (e) for frequency bands only containing frequencies that are removed from the lower and upper frequency limits of the licence by offsets within the range set out at item 23 of Part 2 of Schedule 1 of this licence — the radiated maximum true mean power set out at item 24 of Part 2 of Schedule 1.
- (f) for frequency bands only containing frequencies that are removed from the lower and upper frequency limits of the licence by offsets within the range set out at item 25 of Part 2 of Schedule 1 of this licence — the radiated peak power set out at item 26 of Part 2 of Schedule 1.
5. For radio emission that is spurious emission at frequencies outside the frequency band of the licence that is caused by transmitters, the emission limits outside the band are:
- (a) a radiated mean power set out at item 27 of Part 2 of Schedule 1 and measured within a 100 kHz rectangular bandwidth that is within the band set out at item 28 of Part 2 of Schedule 1; and
- (b) a radiated mean power set out at item 29 of Part 2 of Schedule 1 and measured within a 100 kHz rectangular bandwidth that is within the band set out at item 30 of Part 2 of Schedule 1; and
- (c) a radiated mean power set out at item 31 of Part 2 of Schedule 1 and measured within a 100 kHz rectangular bandwidth that is within the band set out at item 32 of Part 2 of Schedule 1; and
- (d) a radiated mean power set out at item 33 of Part 2 of Schedule 1 and measured within a 100 kHz rectangular bandwidth that is within the band set out at item 34 of Part 2 of Schedule 1.
6. For radio emission that is caused by receivers, the emission limits outside the band are:
- (a) a radiated mean power set out at item 35 of Part 2 of Schedule 1 and measured within a 100 kHz rectangular bandwidth that is within the band set out at item 36 of Part 2 of Schedule 1; and

- (b) a radiated mean power set out at item 37 of Part 2 of Schedule 1 and measured within a 100 kHz rectangular bandwidth that is within the band set out at item 38 of Part 2 of Schedule 1; and
- (c) a radiated mean power set out at item 39 of Part 2 of Schedule 1 and measured within a 100 kHz rectangular bandwidth that is within the band set out at item 40 of Part 2 of Schedule 1; and
- (d) a radiated mean power set out at item 41 of Part 2 of Schedule 1 and measured within a 100 kHz rectangular bandwidth that is within the band set out at item 42 of Part 2 of Schedule 1.

LICENCE SCHEDULE 3**STATUTORY CONDITIONS****Liability to pay charges**

1. The licensee must meet all obligations to pay charges fixed by determinations made under section 294 of the Act and subsection 53 (1) of the *Australian Communications Authority Act 1997*.

Third party use

2. (1) The licensee must notify any person authorised to operate radiocommunications devices under the licence of that person's obligations under the Act, in particular of any registration requirements under Part 3.5 of the Act for operation of radiocommunications devices under the licence, and any rules made under subsection 68 (3) of the Act.
- (2) Each operation of a radiocommunications device under the licence by a person other than the licensee must comply with rules made by the ACA under subsection 68 (3) of the Act.

Transmitter registration requirements

3. The licensee must not operate a transmitter under this licence unless:
 - (a) the transmitter has been exempted from the registration requirements under clause 4, or:
 - (b) both:
 - (i) the requirements of the ACA 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. The following kinds of transmitters do not have to be registered:
 - (b) a mobile transmitter or an indoor fixed transmitter that operates in the 1.8 GHz band with a horizontally radiated power less than or equal to 24.5 dBm EIRP per 30 kHz.

Note The Determination that sets out the unacceptable levels of interference for the purpose of registering transmitters to be operated under this licence, and which is to be used for the issue of certificates by accredited persons under s. 145 (3) of the Act is set out at Item 43 of Part 2 of Schedule 1 of this licence.

LICENCE SCHEDULE 4**CONDITIONS INCLUDED BY THE ACA****Interference management**

1. In this licence:
manage interference includes investigation of the possible causes of the interference, taking all steps reasonably necessary to resolve disputes concerning interference where more than 1 person is involved, taking steps (or requiring persons authorised to operate devices under this licence to take steps) reasonably likely to reduce interference to acceptable levels, and negotiating with other persons for the purpose of reducing interference to acceptable levels.

Responsibility to manage interference

2. The licensee must manage interference between radiocommunications devices operated under this licence, and interference between radiocommunications devices operated under this licence and operated under each other spectrum licence held by the licensee.

Co-sited devices

3. If:
 - (a) interference occurs between a radiocommunications device operated under this licence and a radiocommunications device operated under another licence that is located within 200 metres of another device and measured with respect to the location of the phase centre of the antenna used with each device; 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 third party authorisee) of the other licence wishes to resolve the interference;
the licensee must take reasonable steps to negotiate arrangements reasonably likely to reduce the interference to acceptable levels 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 ACA all information as required by the ACA from time to time for inclusion in the Register.

International coordination

5. If operation of a transmitter under this licence causes harmful interference to a receiver that operates in accordance with International Telecommunication Union Radio Regulations and is located in a country other than Australia, the transmission must cease.

LICENCE NOTES

Variation to licence conditions

1. The ACA may, with the written agreement of the licensee, vary this licence by including 1 or more further conditions, or revoking or varying any conditions of the 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 ACA may, by written notice given to the licensee, vary a licence by including 1 or more further conditions or revoking or varying any non core conditions of the licence provided that the licence as varied complies with the requirements of Subdivision C of Division 1 of Part 3.2 of the Act.

Guidelines

3. The ACA has issued written Advisory Guidelines under s. 262 of the Act about:
 - (a) co-ordinating the operation of transmitters under this licence for receivers operated under apparatus licences:
 - *Radiocommunications Advisory Guidelines (Protection of Apparatus-licensed and Class-licensed Receivers — 1800 MHz Band) 1999;*
 - (b) co-ordinating the operation of transmitters under apparatus licences or class licences for receivers operated under spectrum licences:
 - *Radiocommunications Advisory Guidelines (Managing Interference from Apparatus-licensed and Class-licensed Transmitters — 1800 MHz Band) 1999;*
 - *Radiocommunications Advisory Guidelines (Protection of Mobile Base Receivers — 1800 MHz Lower Band) 1998.*
4. The guidelines should be read in conjunction with the relevant Determination made under s. 145 (3) of the Act setting out the unacceptable levels of interference for the purpose of the registration of transmitters to be operated under this licence. The guidelines should be followed by licensees (and accredited persons) before operating transmitters. The ACA intends to afford protection to receivers in accordance with the guidelines in the settlement of interference disputes. Copies of the guidelines are available from the ACA

The suspension and cancellation of spectrum licences

5. The ACA may by written notice given to a licensee suspend, cancel or revoke a spectrum licence where the ACA is satisfied that the licensee, or a person authorised by the licensee to operate a radiocommunications device under the licence, has contravened a condition of the licence, or in any other way contravened the Act, or operated a radiocommunications device under the licence, or purportedly under the licence in contravention of any other law (whether written or unwritten) of the Commonwealth, a State or a Territory or in the course of contravening such a law.

Reissue

6. A spectrum licence may not be reissued to the same licensee without a price based allocation procedure unless:
 - the ACA is satisfied under s. 82 (1) 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 licence; or
 - the licensee provides a service of a kind determined by the Minister under s. 82 (3) of the Act for which reissuing licences to the same licensees would be in the public interest.

Trading

7. 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 ACA under s. 88 of the Act.

An assignment under s. 85 of the whole or any part of a licence that involves any change to a licence does not take effect until the ACA has been advised of the changes and the Register of Radiocommunications Licences has been altered accordingly.

Appeals

8. An application may be made to the ACA for re-consideration of decisions listed under s. 285 of the Act and a person affected by and dissatisfied with the decision may seek a re-consideration of the decision by the ACA under s. 288 (1) of the Act. This decision can be subject to further re-consideration by the Administrative Appeals Tribunal, subject to the provisions of the *Administrative Appeals Tribunal Act 1975*.

Schedule 6 Emission limits outside the area

(subclause 2.14 (1))

1. The emission limits outside the area, for frequency bands only containing in-band frequencies, are a horizontally radiated power of:

P dBm EIRP;

where:

$P = 70 - k(d)$;

d is the distance, measured in kilometres, that a device is inside the boundary of the geographic area of the licence under which the device operates; and

$k(d)$ is the power conversion function.

For a spectrum licence issued for the 1.8 GHz band, $k(d) = 15.5$ for $d \geq 0$.

Schedule 7 Emission limits outside the band

(subclause 2.14 (2))

Note Emission limits outside the band manage levels of:

- (a) modulation products and switching transient emissions (carrier rise times) outside the frequency band of the licence; and
- (b) transmitter wide band noise; and
- (c) transmitter spurious signals from frequency combining processes, including multicoupling of transmitters into an antenna; and
- (d) any receiver emissions.

1. Spurious emission — 1.8 GHz transmitters

For radio emission that is:

- (a) spurious emission; and
- (b) caused by transmitters operating under spectrum licences issued for the 1.8 GHz band; and
- (c) at frequencies outside the frequency band of the licence;
the emission limit outside the band is a radiated mean power of:
 - (d) -36 dBm EIRP measured within a 100 kHz rectangular bandwidth that is within the band 9 kHz to 1GHz; and
 - (e) -12 dBm EIRP measured within a 100 kHz rectangular bandwidth that is within the band 1 GHz to 3.5 GHz; and
 - (f) -30 dBm EIRP measured within a 100 kHz rectangular bandwidth that is within the band 3.5 GHz to 12.75 GHz.

2. 1.8 GHz receivers

For radio emission that is;

- (a) caused by receivers operating under spectrum licences issued for the 1.8 GHz band; and
- (b) at frequencies outside the frequency band of the licence;
the emission limit outside the band is a radiated mean power of:
 - (c) -57 dBm EIRP measured within a 100 kHz rectangular bandwidth that is within the band 9 kHz to 1 GHz; and
 - (d) -29 dBm EIRP measured within a 100 kHz rectangular bandwidth that is within the band 1 GHz to 3.5 GHz; and
 - (e) -47 dBm EIRP measured within a 100 kHz rectangular bandwidth that is within the band 3.5 GHz to 12.75 GHz

3. Non-spurious emission outside the designated bands — 1.8 GHz transmitters

3.1 For radio emission that is:

- (a) not spurious emission; and

-
- (b) caused by a transmitter operating under a spectrum licence issued for the 1.8 GHz band; and
 - (c) at frequencies outside the frequency bands 1710 MHz to 1785 MHz; and
 - (d) offset from 1710 MHz,
the emission limits outside the band are for frequency bands containing frequencies that have offsets:
 - (e) within the range 0 kHz to 0.5 MHz — a radiated maximum true mean power of -8.5 dBm EIRP per 30 kHz; and
 - (f) greater than 0.5 MHz — a radiated maximum true mean power of -33.5 dBm EIRP per 30 kHz; and
 - (g) within the range 0 kHz to 300 kHz — a radiated peak power of 10 dBm EIRP measured within a 300 kHz rectangular bandwidth.

3.2 For radio emission that is:

- (a) not spurious emission; and
- (b) caused by a transmitter operating under a spectrum licence issued for the 1.8 GHz band; and
- (c) at frequencies outside the frequency bands 1710 MHz to 1785 MHz and 1805 MHz to 1850 MHz; and
- (d) offset from 1785 MHz, 1805 MHz and 1880 MHz;
the emission limits outside the band are for frequency bands containing frequencies that have offsets:
- (e) within the range 0 kHz to 5.6 MHz — a radiated maximum true mean power of -8.5 dBm EIRP per 30 kHz; and
- (f) greater than 5.6 MHz — a radiated maximum true mean power of -33.5 dBm EIRP per 30 kHz; and
- (g) within the range 0 kHz to 300 kHz — a radiated peak power of 10 dBm EIRP measured within a 300 kHz rectangular bandwidth.

3.3 However, when the emission limits outside the band at any frequency and specified in Clause 4 are lower, the limits set out in Clause 4 apply.

4. Non-spurious emission — 1.8 GHz transmitters

For radio emission that is:

- (a) not spurious emission; and
- (b) caused by a transmitter operating under a spectrum licence issued for the 1.8 GHz band; and,
- (c) at frequencies outside the frequency band of the licence; and
- (d) offset from the upper and lower limits of the frequency band; the emission limits outside the band are for frequency bands containing frequencies that have offsets:
- (e) within the range 0 kHz to 200 kHz — a radiated maximum true mean power of 21.5 dBm EIRP per 30 kHz; and

-
- (f) within the range 200 kHz to 5.8 MHz — a radiated maximum true mean power of -8.5 dBm EIRP per 30 kHz; and
 - (g) greater than 5.8 MHz — a radiated maximum true mean power of -33.5 dBm EIRP per 30 kHz; and
 - (h) within the range 200 kHz to 50 kHz — a radiated peak power of 10 dBm EIRP measured within a 300 kHz rectangular bandwidth.

Table of Instruments

Notes to the *Radiocommunications Spectrum Marketing Plan (1.8 GHz Bands) 1999*

Note 1

The *Radiocommunications Spectrum Marketing Plan (1.8 GHz Bands) 1999* (in force under section 39A of the *Radiocommunications Act 1992*) as shown in this compilation is amended as indicated in the Tables below.

Table of Instruments

Title	Date made	Date of commencement	Application, saving or transitional provisions
<i>Radiocommunications Spectrum Marketing Plan (1.8 GHz Bands) 1999</i>	3 Nov 1999	3 Nov 1999	
<i>Radiocommunications Spectrum Marketing Plan (1.8 GHz Bands) 1999 Variation 1999 (No. 1)</i>	25 Nov 1999	25 Nov 1999	—

Table of Amendments

Table of Amendments

ad. = added or inserted am. = amended rep. = repealed rs. = repealed and substituted

Provision affected	How affected
Schedule 4	am. 1999 No. 1
