Statutory Rules 1991 No. 355[1]

VHF Mid Band Frequency Band Plan (70 to 87.5 MHz)

I, WARREN EDWARD SNOWDON, Parliamentary Secretary to the Minister of State for Transport and Communications, acting for and on behalf of the Minister of State for Transport and Communications, make the following band plan, under section 19 of the *Radiocommunications Act 1983* .

Dated 14 November 1991.

WARREN SNOWDON
Parliamentary Secretary to the
Minister of State for Transport and Communications
for and on behalf of the
Minister of State for Transport and Communications

Name of plan

1. This plan is the *VHF Mid Band Frequency Band Plan (70 to 87.5 MHz) 1991*.

General

2. The following notes describe the intention of this plan and outline the approach adopted for its implementation.

[**GENERAL NOTE:**

(1) This plan provides for the expansion of existing services and the introduction of new types of services.

(2) The principal changes to the VHF Mid Band provide for:

(a) predominant use of the band for land mobile services; and

(b) a band structure which accommodates predominantly two frequency systems to facilitate more efficient use of radiocommunications sites; and

(c) the existing 30 kHz channelling to be replaced by a more spectrum efficient 12.5 kHz channelling to increase the short and medium term productivity of the band; and

(d) flexibility to accommodate services which provide more efficient use of the spectrum.

(3) This plan commences on gazettal.

Definitions

3. (1) Unless the contrary intention appears, a word or expression used in this plan and in the spectrum plan has the same meaning in this plan as it has in the spectrum plan (even if the word or expression is also defined in the *Radiocommunications (Definitions) Determination 1993 (No.2)*).

[NOTE: For the definitions of other expressions used in this plan, see the *Radiocommunications Act 1992*, the *Radiocommunications (Definitions) Determination 1993 (No. 2*) and the *Radiocommunications Regulations 1993*.

(2) In this plan, unless the contrary intention appears:

"Act" means the *Radiocommunications Act 1992*;

"allocation" means the purpose for which a segment may be used;

"allowed area" means the geographic area in which services specified in this plan may be operated;

"authorised" means authorised by the ACA;

"bandwidth" means the frequency difference between the upper frequency limit and the lower frequency limit of a sub-band;

"base receive" means a segment which may be used at a base station for reception only;

"base transmit" means a segment which may be used at a base station for transmission only;

"channel" means a sub-band in a segment, with a specified centre frequency;
"channelling" refers to the frequency separation between 2 consecutive channel centre frequencies in the same segment;
"HSD area" has the meaning it is given in clause 13;
"miscellaneous service" means a mobile service, or a fixed service, that uses unconventional or innovative radiocommunications technologies;
"narrowband area service" means a service provided by a narrowband area service station;
"non-HSD area" means an area outside an HSD area;
"primary service" has the same meaning as in the spectrum plan;
"secondary service" has the same meaning as in the spectrum plan;
"segment" is a sub-band of the VHF Mid Band, represented by a letter in the range 'A' to 'Q', as indicated in Column 2 of an item in Table 2 or 3, to which the frequency range in Column 3 of Table 2 corresponds;
"single frequency" means a mode of operation in which transmissions can be made between 2 stations in either one or both directions, but not simultaneously in both directions, and for which only one channel is used;
"sub-band" means any part of the VHF Mid Band;
"transmit/receive split" means the frequency separation between the transmit channel centre frequency and receive channel centre frequency of a station in a two frequency service;
"two frequency" means a mode of operation in which transmissions can be made between 2 stations and in which 2 channels are used;
"VHF Mid Band" is the range of frequencies from 70 MHz (exclusive) to 87.5 MHz (inclusive).

General Purposes for Band Segments

6. Subject to clause 9 and the spectrum plan, the VHF Mid Band, represented diagrammatically in Figure 1, may only be used for a service:

(a) which transmits or receives signals in a channel in the range specified in Column 3 of an item in Table 2, to which range the segment in Column 2 corresponds; and
(b) whose purpose accords with the allocation specified in Column 4 of that item; and
(c) in a geographic area specified in Column 5 of that item.

Channelling Arrangements for Band Segments

7. (1) Subject to clause 9 and subclause 7 (3) and the spectrum plan, the VHF Mid Band may only be used for a service which operates:

(a) within a channel whose centre frequency is determined by the formula specified in Column 3 of an item in Table 3, where the values of "n" in the formula are specified in Column 4 of that item; and

(b) within a channel bandwidth as specified in Column 5 of that item.

(2) The transmit/receive split in the VHF Mid Band is 2.5 MHz.

(3) Channelling arrangements other than those specified by subclauses 7 (1) and 7 (2) may be authorised where such arrangements provide for more efficient use of the spectrum, as compared to the channelling arrangements specified for that segment.

[NOTE: In determining the spectrum efficiency of a service, without limiting the range of matters which may be taken into account, the following matters may be considered:

(a) occupied bandwidth;

(b) adjacent channel performance;

(c) the distance from the transmitter that the channel may be used again without causing harmful interference;

(d) the impact that introduction of the service will have upon existing services.]

Status of Allocations

8. Unless the contrary intention appears, a service which is operated according to clauses 6 and 7 is a primary service.

Exemption from compliance with clause 6 or 7—existing services

9. (1) An existing service may use frequencies in the VHF Mid Band, on a secondary basis, to supply a service that does not comply with either clause 6 or 7.

(2) For subclause (1), an ***existing service*** is a service for the operation of which a licence:

(a) was, or is taken to have been, in force on 30 June 1998; and

(b) has continued, or is taken to have continued, in force after that date.

(3) For this clause:

(a) a licence is taken to have been ***in force on 30 June 1998*** if the operation of the service became unlicensed between 2 May 1998 and 30 June 1998 and was unlicensed for not more than 60 consecutive days; and

(b) a licence is taken to have ***continued in force*** after 30 June 1998 if the operation of the service has been unlicensed for not more than 60 consecutive days.

Exemption from compliance with clause 7—new services

9A. **(1)** A new service may use frequencies in the VHF Mid Band, on a secondary basis, in a non-HSD area, to supply a service that does not comply with clause 7.

(2) For subclause (1), a ***new service*** is a service for which a licence was not in force, or taken to have been in force for clause 9, on 30 June 1998.

Table 2

10. TABLE 2: SERVICE ALLOCATIONS (See note 1)

Column 1 Item	Column 2 Segment	Column 3 Segment limits (MHz) (Lower limit exclusive, upper limit inclusive)	Column 4 Allocation	Column 5 Allowed Areas
1	A	70.00000 to 70.24375	Miscellaneous Service (See note 5)	Australia Wide
2	B	70.24375 to 72.29375	Land Mobile Service (two frequency, base transmit)	Australia Wide
3	C	72.29375 to 72.74375	Land Mobile Service (single frequency)	Australia Wide
4	D	72.74375 to 74.80000	Land Mobile Service (two frequency, base receive)	Australia Wide
5	E	74.80000 to 75.20000	Aeronautical Radionavigation Service (See note 2)	Australia Wide
6	F	75.20000 to 77.29375	Land Mobile Service (single frequency)	Australia Wide
7	G	77.29375 to 77.49375	Miscellaneous Service (See note 5)	Australia Wide
8	H	77.49375 to 79.80625	Land Mobile Service (two frequency, base transmit)	Australia Wide
9	I	79.80625 to 79.99375	Land Mobile Service (single frequency)	Australia Wide
10	J	79.99375 to 82.30625	Land Mobile Service (two frequency, base receive)	Australia Wide
11	K	82.30625 to 82.49375	Land Mobile Service (single frequency)	Australia Wide
12	L	82.49375 to 83.74375	Land Mobile Service (two frequency, base receive)	Australia Wide
13	M	83.74375 to 84.69375	Land Mobile Service (two frequency, base receive) OR (single frequency) (See note 3)	Australia Wide
14	N	84.69375 to 84.99375	Miscellaneous Service (See note 5)	Australia Wide

Column 1 Item	Column 2 Segment	Column 3 Segment limits (MHz) (Lower limit exclusive, upper limit inclusive)	Column 4 Allocation	Column 5 Allowed Areas
15	O	84.99375 to 86.24375	Land Mobile Service (two frequency, base transmit) (See note 4)	Australia Wide
16	P	86.24375 to 87.19375	Land Mobile Service (two frequency, base transmit) OR (single frequency) (See notes 3 and 4)	Australia Wide
17	Q	87.19375 to 87.50000	Miscellaneous Service (See notes 4 and 5)	Australia Wide

Notes :

1. The Department of Defence and the Australian Defence Force are allowed secondary use of the 70 MHz to 87.5 MHz band for the purpose of tactical land mobile communications.

2. The operation of aeronautical marker beacons within the aeronautical radionavigation service is subject to the provisions of Annex 10 to the Convention on International Civil Aviation and the Standards and Recommended Practices of the International Civil Aviation Organisation.

3. Land mobile segments referenced by this note may be used in a single frequency mode or a two frequency mode in non-HSD areas of any State or Territory. In HSD areas of any State or Territory, either single or two frequency modes may be used, but not both. The mode of operation for these segments in HSD areas may be determined by the ACA, based upon relative demand for these modes of operation in each State and Territory.

4. Subject to the Band II Television Clearance Programme, the 85 MHz to 87.5 MHz Band may be used for broadcasting services as primary services. The band may be used for other services, as indicated in Table 2, as secondary services.

5. Segments A, G, N and Q are predominantly allocated to miscellaneous services. However, they may also be used for narrowband area services.

Table 3

11. TABLE 3: CHANNELLING ARRANGEMENTS

(See note 1)

Column 1 Item	Column 2 Segment	Column 3 Channel centre frequencies formula (MHz)	Column 4 Range of integer values for the variable 'n' (inclusive)	Column 5 Channel bandwidth (kHz)
1	A	70.0000 + (n x (0.0125)) (See note 2)	1 to 19	12.5 (See note 2)
2	B	70.2375 + (n x (0.0125))	1 to 164	12.5
3	C	72.2875 + (n x (0.0125))	1 to 36	12.5
4	D	72.7375 + (n x (0.0125))	1 to 164	12.5
5	E	See note 3	See note 3	See note 3
6	F	75.2000 + (n x (0.0125))	1 to 167	12.5
7	G	77.2875 + (n x (0.0125)) (See note 2)	1 to 16	12.5 (See note 2)
8	H	77.4875 + (n x (0.0125))	1 to 185	12.5
9	I	79.8000 + (n x (0.0125))	1 to 15	12.5
10	J	79.9875 + (n x (0.0125))	1 to 185	12.5
11	K	82.3000 + (n x (0.0125))	1 to 15	12.5
12	L	82.4875 + (n x (0.0125))	1 to 100	12.5
13	M	83.7375 + (n x (0.0125))	1 to 76	12.5
14	N	84.6875 + (n x (0.0125)) (See note 2)	1 to 24	12.5 (See note 2)
15	O	84.9875 + (n x (0.0125)) (See note 4)	1 to 100	12.5 (See note 4)
16	P	86.2375 + (n x (0.0125)) (See note 4)	1 to 76	12.5 (See note 4)
17	Q	87.1875 + (n x (0.0125)) (See notes 2 and 4)	1 to 24	12.5 (See notes 2 and 4)

Notes:

1. The Department of Defence and the Australian Defence Force may operate with channelling arrangements other than those specified in Table 3.

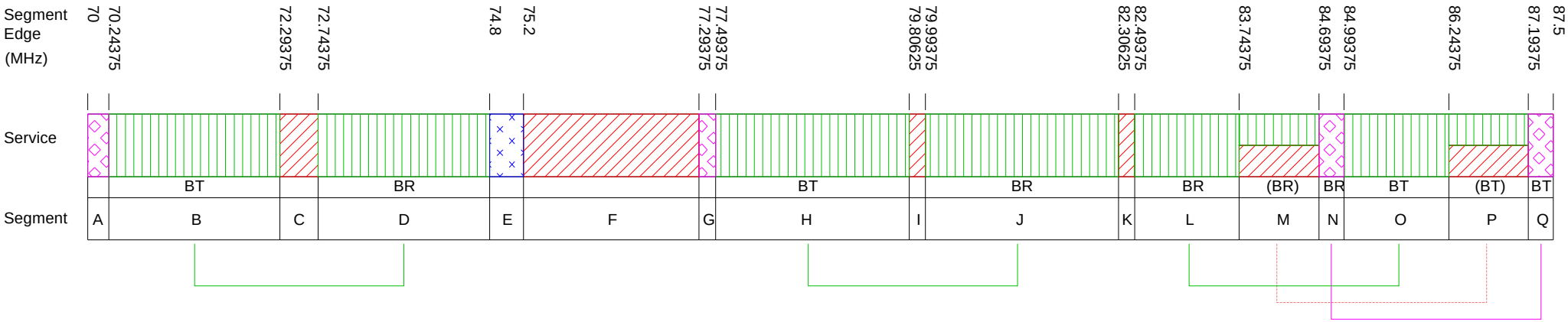
2. The channelling arrangements are for miscellaneous services only, and are nominal. Any user of a miscellaneous service may be authorised to operate with a channel centre frequency and channel bandwidth other

than that specified. The channelling arrangements for narrowband area services are not defined.

3. The operation of aeronautical marker beacons within the aeronautical radionavigation service is subject to the provisions of Annex 10 to the Convention on International Civil Aviation and the Standards and Recommended Practices of the International Civil Aviation Organisation.

4. Broadcasting services may operate with channelling arrangements other than those specified in Table 3.

FIGURE 1 : VHF MID BAND PLAN DIAGRAM



SERVICES

Land Mobile (two frequency) — 12.5 kHz channelling

Land mobile (single frequency) — 12.5 kHz channelling

Land mobile (either two frequency or single frequency) — 12.5 kHz channelling

Miscellaneous — 12.5 kHz channelling

Aeronautical radionavigation

NOTE :

This diagram should be read with reference to Tables 2 and 3 of the Band Plan.

BT = Base transmit

BR = Base receive

⌊⌋ = Paired segments

(BT),(BR), and ⌊⌋ have the same meaning as above, if the segment is used for a land mobile service operating in a two frequency mode. These symbols are not applicable if the segment is used for a land mobile service operating in a single frequency mode.

High Spectrum Demand Areas

13. (1) A High Spectrum Demand (HSD) area is the area on or within a circular contour drawn with a radius specified in Column 5 of an item in Table 4, centred on a point specified as an Australian Map Grid coordinate in Column 4 of that item.

(2) The centre point is nominally described by reference to a nearby town, specified in Column 3, situated in a State specified in Column 2 of that item.

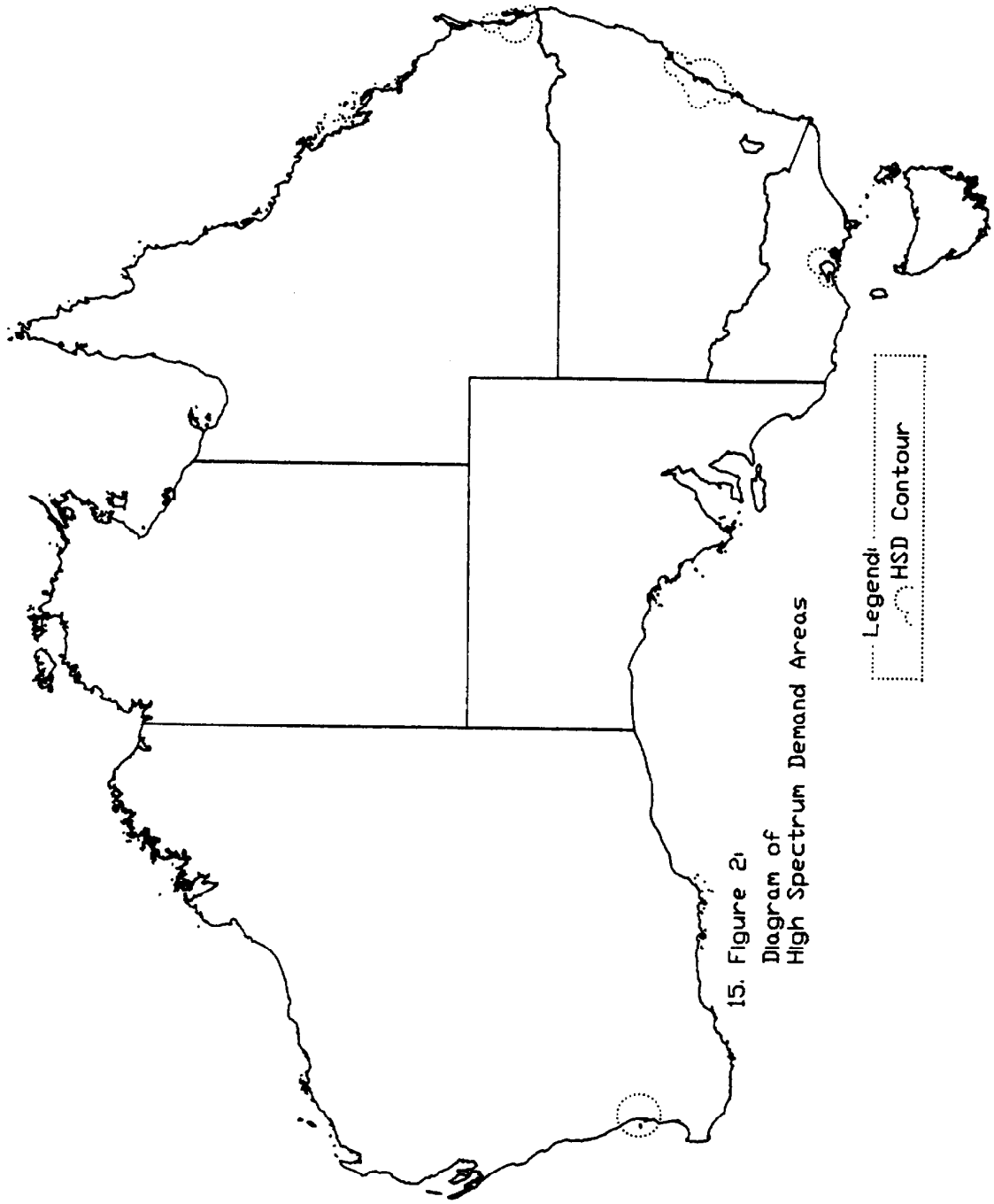
(3) Where adjacent areas overlap, an HSD area then becomes the combination of those adjacent areas.

(4) Diagrammatic representations of the HSD areas are set out in Figure 2.

Table 4

14. TABLE 4: HIGH SPECTRUM DEMAND CONTOUR CENTRE COORDINATES AND RADII

Column 1 Item	Column 2 State	Column 3 Town	Column 4 Coordinate (Easting, Northing, Zone)	Column 5 Radius
1	New South Wales	Newcastle	384722 6355447 56	50 km
2	New South Wales	Sydney	335103 6249367 56	60 km
3	New South Wales	Penrith	279726 6267448 56	35 km
4	New South Wales	Wollongong	301116 6177146 56	35 km
5	Queensland	Maroochydore	509952 7052315 56	35 km
6	Queensland	Brisbane	501674 6961834 56	55 km
7	Queensland	Surfers Paradise	542065 6902340 56	35 km
8	Victoria	Melbourne	320605 5812740 55	50 km
9	Victoria	Mornington	328000 5768000 55	50 km
10	Victoria	Geelong	268300 5774265 55	20 km
11	Western Australia	Perth	391314 6464517 50	50 km



15. Figure 2: Diagram of High Spectrum Demand Areas

NOTE

1. VHF Mid Band Frequency Band Plan (70 to 87.5 MHz), notified in the *Commonwealth of Australia Gazette* on 27 November 1991 comprises VHF Mid Band Frequency Band Plan (70 to 87.5 MHz) as amended by the band plan variations specified in the following table:

(a) VHF Mid Band Frequency Band Plan (70 to 87.5 MHz) (Variation), notified in the *Commonwealth of Australia Gazette* on 26 June 1996.

(b) VHF Mid Band Frequency Band Plan (70 to 87.5 MHz) (Variation), notified in the *Commonwealth of Australia Gazette* on 24 June 1998.

(c) VHF Mid Band Frequency Band Plan (70 to 87.5 MHz) Plan Variation 1999 (No. 1), notified in the *Commonwealth of Australia Gazette* on 7 July 1999.