Statutory Rules 1992 No. 47

900 MHz Band Plan

TABLE OF PROVISIONS

Statutory Rules 1992 No. 47[1]

900 MHz Band Plan

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 Frequency Band Plan under section 19 of the *Radiocommunications Act 1983.*

Dated 19 February 1992.

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

Citation

1. This Band Plan for the 820 - 960 MHz band may be cited as the 900 MHz Band Plan.

General

2. The following notes describe the intention of the 900 MHz Band Plan and outline the approach adopted for its implementation.

[GENERAL NOTE:

2.1 The 820 - 960 MHz band currently supports a variety of radiocommunications services, including:

(a) the analogue AMPS cellular mobile telephone service;
(b) the trunked land mobile service;
(c) single channel, low capacity and wideband fixed services;
(d) radio broadcasting studio to transmitter links;
(e) miscellaneous low power fixed and mobile services; and
(f) radiolocation services.

2.2 The purpose of this Band Plan is primarily to facilitate the introduction of public mobile telecommunications competition in Australia, and, in particular, to provide spectrum allocations for cordless telephone services including public access cordless telephone services and provide for the transition from AMPS to digital cellular mobile telephone services using GSM technology.

2.3 The Band Plan aims to provide for the orderly continuation of existing services affected by the above allocations for public mobile telecommunications services.

2.4 Wherever possible, this is achieved by:
(a) providing alternative allocations for displaced services; and
(b) allowing for transitional arrangements within the 820 - 960 MHz band to facilitate implementation of the Band Plan; and
(c) allowing continued operation of existing services on a secondary basis where such operation will not inhibit the introduction of primary services.

2.5 The spectrum allocations in this Band Plan will affect most existing services to some extent.

2.6 Some existing equipment may require replacement, modification or a change in operating frequency to comply with the new Band Plan.

2.7 In some cases existing services will not be able to be accommodated in the 820 - 960 MHz band and will need to be accommodated in other bands.

2.8 It is intended that this Band Plan be reviewed in 1995.]

Interpretation

3. (1) Unless the contrary intention appears, if any expression used in this Band Plan is defined in the *Radiocommunications Act 1983,* the Radiocommunications—Australian Spectrum Plan, or the Radiocommunications (Licensing and General) Regulations, that expression has the same meaning in this Band Plan as in that Act, that Spectrum Plan, or those Regulations, as the case requires.

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

"allocation" means the purpose for which a segment or sub-band may be used;

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

"AMPS" means Advanced Mobile Phone System;

"Band Plan" means the 900 MHz Band Plan;

"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 two consecutive channel centre frequencies in the same segment;

"cordless telephone service" means a service consisting of:

(a) a land station, not forming part of a cellular mobile telephone service, which is able to communicate by means of radiocommunications with, or connected by a line to, a public switched telephone network; and

(b) one or more handsets:

(i) not connected by a line to a land station; and

(ii) by means of which communication may be made through the land station with other users of the public switched telephone network by a transmission of radio signals between the handset and the land station;

"digital cellular mobile telephone service" means a cellular mobile telephone service within the meaning of the Radiocommunications (Licensing and General) Regulations which incorporates digital modulation techniques to provide that service;

"digital short range radio" means a short range multi channel mobile service as specified in the European Technical Standards Institute draft interim technical standard I-ETS 300 168 as published and in force at the commencement of this Band Plan;

"GSM" means Global System for Mobile Communications;

"land mobile service" means a radiocommunications service between ambulatory stations on land and:

(a) land stations; or

(b) other ambulatory stations on land;

"low capacity" means a channel width of greater than 25 kHz but not exceeding 400 kHz;

"point-to-multipoint" means transmissions between a specified fixed station ("control station") and two or more associated fixed stations ("remote stations");

"point-to-point" means transmissions between two specified fixed stations;

"primary service" has the same meaning as in Part 3 of the Radiocommunications—Australian Spectrum Plan;

"secondary service" has the same meaning as in Part 3 of the Radiocommunications—Australian Spectrum Plan;

"segment" is a sub-band of the 820 - 960 MHz band as indicated by an item specified in Column 1 in Table 1 or Table 2 in the Schedule, to which the frequency range specified in Column 2 of that item applies;

"single channel" means a channel width of not greater than 25 kHz;

"single frequency" means a mode of operation in which transmissions can be made between two stations in either one or both directions, but not simultaneously, and in which only one channel is used;

"sound outside broadcast link" means a fixed service established for the purpose of temporary radio broadcasting coverage of an event such as a sporting match;

"spread spectrum" is a modulation technique in which the average energy of the transmitted signal is intentionally spread over a wide bandwidth;

"studio to transmitter link" means a fixed service which transmits radio broadcasting programme material from a broadcasting studio to a broadcasting transmitter;

"sub-band" means any part of the 820 - 960 MHz band;
"trunked" means a mode of operation in which base stations are used for communicating with mobile stations and in which a number of users share the use of two or more radio channels selected automatically by the base station;
"two frequency" means a mode of operation in which transmissions can be made between two stations, and in which two channels are used;
"wideband" means a channel width of greater than 200 kHz but not exceeding 2 MHz.

(3) Wherever in this Band Plan **"authorised"** is used, this refers to an authorisation given by the Secretary of the Department or by an officer authorised in writing by the Secretary, for the relevant purpose.

General Purposes for Band Segments

4. Subject to clause 9 of this Band Plan and Part 4 of the Radiocommunications—Australian Spectrum Plan, the 820 - 960 MHz band, represented diagrammatically in Figure 1 in the Schedule, may only be used for a service:

(a) which transmits or receives signals in a channel in the range specified in Column 2 of an item in Table 1 or Table 2 in the Schedule; and
(b) whose purpose accords with the allocation specified in Column 3 of that item; and
(c) in a geographic area specified in Column 4 of that item.

Channelling Arrangements for Allocations

5. (1) Subject to subclauses 5 (2) and 9 (2) of this Band Plan and Part 4 of the Radiocommunications—Australian Spectrum Plan, a service specified in Column 2 of an item in Table 5 in the Schedule operating in the 820 - 960 MHz band may only operate within:

(a) a channel whose centre frequency is determined by the formula specified in Column 4 of an item in Table 5 in the Schedule, where the values of "n" in the formula are specified in Column 5 in that item; and
(b) a channel bandwidth as specified in Column 6 of that item.

(2) Channelling arrangements other than those specified by subclause 5 (1) 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; and
(d) the impact that introduction of the service will have upon existing services.]

Status of Allocations

6. (1) A service specified in Table 1 in the Schedule is a primary service.

(2) A service specified in Table 2 in the Schedule is a secondary service.

Allocation Commencement Dates

7. (1) Subject to subclause 7 (2), the allocations specified in this Band Plan take effect on commencement of the Band Plan.

(2) An allocation specified in Column 2 of an item in Table 3 in the Schedule to a sub-band specified in Column 3 of that item, is to have effect from the date specified in Column 4 of that item.

Allocation Cessation Dates

8. An allocation specified in Column 2 of an item in Table 4 in the Schedule to a sub-band specified in Column 3 of that item, is to cease to have effect on the date specified in Column 4 of that item.

Exemption from Compliance with Clauses 4 and 5

9. (1) A service currently operating with technical or operational characteristics other than those specified by clause 4 or sub-clause 5 (1) may continue to operate as a secondary service.

(2) Any segment of the 820 - 960 MHz band may be authorised to be used temporarily for purposes or with technical or operational characteristics other than those specified in the Band Plan for that segment on a transitional basis to facilitate the implementation of the Band Plan.

SCHEDULE

TABLE 1

PRIMARY SERVICES IN THE 820 - 960 MHz BAND (Note 1)

Column 1 Item	Column 2 Segment Limits (MHz) (lower limit exclusive, upper limit inclusive)	Column 3 Allocation	Column 4 Allowed Area
1	820 - 825	Land Mobile Service (trunked, base receive), see Note 2	Australia Wide
2	825 - 830	Cellular Mobile Telephone Service (base receive), see Note 3	See Note 4
3	830 - 831	Cellular Mobile Telephone Service (base receive), see Note 3	See Note 4
		Fixed Service (single channel, two frequency), see Note 6	Australia Wide
4	831 - 835	Cellular Mobile Telephone Service (base receive), see Note 3	See Note 4
5	835 - 845	Cellular Mobile Telephone Service (base receive), see Note 3	See Notes 4 and 5
		Fixed Service (wideband), see Notes 7, 12	Australia Wide

SCHEDULE—continued

Column 1 Item	Column 2 Segment Limits (MHz) (lower limit exclusive, upper limit inclusive)	Column 3 Allocation	Column 4 Allowed Area
6	845 - 846.5	Fixed Service (low capacity, single frequency), see Note 8	Australia Wide
		Sound Outside Broadcast Link	Australia Wide
7	846.5 - 850.5	Fixed Service (low capacity, single frequency), see Note 8	Australia Wide
8	850.5 - 852	Fixed Service (low capacity, single frequency), see Note 8	Australia Wide
		Sound Outside Broadcast Link	Australia Wide
9	852 - 854	Fixed Service (single channel, two frequency), see Note 9	Australia Wide
10	854 - 857	Fixed Service (low capacity, two frequency)	Australia Wide
11	857 - 861	Fixed Service (single channel, single frequency), see Note 11	Australia Wide
		Cordless Telephone Service, see Note 11	Australia Wide
12	861 - 865	Cordless Telephone Service, see Note 3	Australia Wide
13	865 - 870	Land Mobile Service (trunked, base transmit), see Note 2	Australia Wide

SCHEDULE—continued

Column 1 Item	Column 2 Segment Limits (MHz) (lower limit exclusive, upper limit inclusive)	Column 3 Allocation	Column 4 Allowed Area
14	870 - 875	Cellular Mobile Telephone Service (base transmit), see Note 3	See Note 4
15	875 - 876	Cellular Mobile Telephone Service (base transmit), see Note 3	See Note 4
		Fixed Service (single channel, two frequency), see Note 6	Australia Wide
16	876 - 880	Cellular Mobile Telephone Service (base transmit), see Note 3	See Note 4
17	880 - 890	Cellular Mobile Telephone Service (base transmit), see Note 3	See Note 4
		Fixed Service (wideband), see Notes 7, 12	Australia Wide
18	890 - 915	Digital Cellular Mobile Telephone Service (base receive), see Notes 3, 7	Australia Wide
19	915 - 918	Radiolocation, see Note 10	Australia Wide
20	918 - 926	Radiolocation, see Note 10	Australia Wide
		Industrial, Scientific and Medical Applications	Australia Wide

SCHEDULE—continued

Column 1 Item	Column 2 Segment Limits (MHz) (lower limit exclusive, upper limit inclusive)	Column 3 Allocation	Column 4 Allowed Area
21	926 - 928	Radiolocation, see Note 10	Australia Wide
22	928- 930	Fixed Service (single channel, two frequency), see Note 9	Australia Wide
23	930- 933	Fixed Service (low capacity, two frequency)	Australia Wide
24	933 - 935	Digital Short Range Radio Service	Australia Wide
25	935 - 960	Digital Cellular Mobile Telephone Service (base transmit), see Notes 3, 7	Australia Wide

NOTES:

1. The allocations for these primary services are represented in Figure 1: 900 MHz Band Plan Diagram.

2. Segments referenced by this note may be authorised for use by users of:

(1) land mobile services (two frequency), if such services are used in conjunction with a land mobile service (trunked); or

(2) other land mobile services that make equivalent or more efficient use of the spectrum, as compared to the designated service allocation.

3. It should be noted that equipment used in this service is required to comply with relevant AUSTEL Technical Standards. Such equipment may also be authorised for use in providing other telecommunications services in this segment. Such alternative use is also subject to the same commencement or cessation dates applying to the service allocations as specified in Tables 3 and 4.

4. The 825-835 MHz and 870-880 MHz sub-bands are allocated to the cellular mobile service Australia wide. In the 835-845 MHz and 880-890 MHz sub-bands cellular mobile telephone service base station operation on a primary basis is restricted to locations within 100 km of Sydney and Melbourne General Post Offices

SCHEDULE—continued

only. On 1 January 1995 this service will become a secondary service in the 835-845 MHz and 880-890 MHz sub-bands in those locations; see Table 2. Allocation cessation dates apply; see Table 4.

5. The University of Sydney operates the Molonglo Observatory Synthesis Telescope (MOST) located about 30 km east of Canberra at latitude 35 22' 30" S, longitude 149 25' 35" E. The telescope has a receive frequency of 843 MHz with a bandwidth of +/- 1.5 MHz. While an allocation has not been made to the radioastronomy service in this band, all practicable steps will be taken to protect the MOST radio telescope from harmful interference.

6. No new assignments will be made for this service in this segment.

7. Allocation commencement dates apply; see Table 3.

8. The allocation for this service includes provision for Studio to Transmitter Links.

9. This segment includes point-to-point and point-to-multipoint services. Point-to-point services occupy the 852-853.5 MHz and 928-929.5 MHz sub-bands. Point-to-multipoint services occupy the 853.5-854 MHz and 929.5-930 MHz sub-bands.

10. Assignments to users other than the Department of Defence or the Australian Defence Force will not normally be authorised for this service.

11. Special licensing and coordination arrangements apply to this service.

12. Assignments for this service are normally limited to those required to accommodate fixed services that are required to vacate other segments of the Band.

SCHEDULE—continued

TABLE 2

SECONDARY SERVICES IN THE 820 - 960 MHz BAND (Note 1)

Column 1 Item	Column 2 Segment Limits (MHz) (lower limit exclusive, upper limit inclusive)	Column 3 Allocation	Column 4 Allowed Area
1	835 - 845	Cellular Mobile Telephone Service (base receive)	See Note 2
2	846.5 - 850	Sound Outside Broadcast Link	Australia Wide
3	850 - 850.5	Sound Outside Broadcast Link Radiolocation, see Note 3	Australia Wide Australia Wide
4	850.5 - 880	Radiolocation, see Note 3	Australia Wide
5	880 - 890	Cellular Mobile Telephone Service (base transmit) Radiolocation, see Note 3	See Note 2 Australia Wide
6	890 - 915	Radiolocation, see Note 3	Australia Wide
7	915 - 928	Mobile Service, see Note 4 Fixed Service, see Note 4	Australia Wide Australia Wide
8	928 - 942	Radiolocation, see Note 3	Australia Wide

NOTES:

1. The allocations for these secondary services are represented in Figure 1: 900 MHz Band Plan Diagram.

SCHEDULE—continued

2. The 835-845 MHz and 880-890 MHz sub-bands are allocated on a secondary basis to this service Australia Wide except within 100 km of Sydney and Melbourne General Post Offices, where primary use applies until 1 January 1995 (see Table 1). From this date, these sub-bands become secondary within 100 km of Sydney and Melbourne General Post Offices. Requests for assignments in these secondary allocations will be considered on a case by case basis. Allocation cessation dates apply; see Table 4.

3. Assignments to users other than the Department of Defence or the Australian Defence Force will not normally be authorised for this service. In this segment the service is primary in offshore areas.

4. The allocation for these services includes provision for wireless audio transmitters, spread spectrum systems and radio frequency identification transmitters.

TABLE 3

COMMENCEMENT DATES FOR ALLOCATIONS

Column 1 Item	Column 2 Allocation	Column 3 Sub-band (MHz) (lower limit exclusive, upper limit inclusive)	Column 4 Allocation Commencement Date
1	Fixed Service (Wideband)	835 - 845	1 January 1995 See Note 1
2	Fixed Service (Wideband)	880 - 890	1 January 1995 See Note 1
3	Digital Cellular Mobile Telephone Service	890 - 900	1 January 1995

SCHEDULE—continued

Column 1 Item	Column 2 Allocation	Column 3 Sub-band (MHz) (lower limit exclusive, upper limit inclusive)	Column 4 Allocation Commencement Date
4	Digital Cellular Mobile Telephone Service	900 - 910	1 March 1992
5	Digital Cellular Mobile Telephone Service	910 - 915	1 July 1993
6	Digital Cellular Mobile Telephone Service	935 - 945	1 January 1995
7	Digital Cellular Mobile Telephone Service	945 - 955	1 March 1992
8	Digital Cellular Mobile Telephone Service	955 - 960	1 July 1993

NOTE:

1. This allocation commencement date applies to this service only within 200 km of Sydney and Melbourne General Post Offices. Beyond this distance the allocation takes effect from the making of this Band Plan.

TABLE 4

CESSATION DATES FOR ALLOCATIONS

Column 1 Item	Column 2 Allocation	Column 3 Sub-band (MHz) (lower limit exclusive, upper limit inclusive)	Column 4 Allocation Cessation Date
1	Cellular Mobile Telephone Service	825 - 835	1 January 2000 See Note 1

SCHEDULE—continued

Column 1 Item	Column 2 Allocation	Column 3 Sub-band (MHz) (lower limit exclusive, upper limit inclusive)	Column 4 Allocation Cessation Date
2	Cellular Mobile Telephone Service	835 - 845	1 January 2000 See Note 1
3	Cellular Mobile Telephone Service	870 - 880	1 January 2000 See Note 1
4	Cellular Mobile Telephone Service	880 - 890	1 January 2000 See Note 1

NOTE:

1. In the review of this Band Plan in 1995, a specific timetable will be established for the progressive recovery of this spectrum from 1 January 1996.

TABLE 5

CHANNELLING ARRANGEMENTS FOR ALLOCATIONS

Column 1 Item	Column 2 Allocation	Column 3 Sub-band (MHz) (lower limit exclusive, upper limit inclusive)	Column 4 Channel Centre Frequencies Formulas (MHz)	Column 5 Range of Integer Values for the Variable "n" (inclusive)	Column 6 Maxi-mum Channel Band-width (kHz)
1	Land Mobile Service (trunked, base receive)	820 - 825	819.9875 + (n x (0.025))	1 to 200	25
2	Cellular Mobile Telephone Service (base receive)	825 - 845	825 + (n x (0.03))	1 to 666	30

SCHEDULE—continued

Column 1 Item	Column 2 Allocation	Column 3 Sub-band (MHz) (lower limit exclusive, upper limit inclusive)	Column 4 Channel Centre Frequencies Formulas (MHz)	Column 5 Range of Integer Values for the Variable "n" (inclusive)	Column 6 Maximum Channel Bandwidth (kHz)
3	Fixed Service (single channel, two frequency)	830 - 831	829.9875 + (n x (0.025))	1 to 40	25
4	Fixed Service (wideband)	835 - 845	835 + (n x (1))	1 to 9	2000
5	Fixed Service (low capacity, single frequency)	845 - 852	845 + (n x (0.2))	1 to 34	400
6	Fixed Service (single channel, two frequency) (point-to-point)	852 - 853	851.9875 + (n x (0.025))	1 to 40	25
7	Fixed Service (single channel, two frequency) (point to-point)	853 - 853.5	852.99375 + (n x (0.0125)) See Note 1	1 to 40	12.5
8	Fixed Service (single channel, two frequency) (point-to-multipoint)	853.5 - 854	853.49375 + (n x (0.0125)) See Notes 1,2	1 to 40	12.5
9	Fixed Service (low capacity, two frequency)	854 - 857	854 + (n x (0.05))	1 to 59	200

SCHEDULE—continued

Column 1 Item	Column 2 Allocation	Column 3 Sub-band (MHz) (lower limit exclusive, upper limit inclusive)	Column 4 Channel Centre Frequencies Formulas (MHz)	Column 5 Range of Integer Values for the Variable "n" (inclusive)	Column 6 Maxi-mum Channel Band-width (kHz)
10	Fixed Service (single channel, single frequency)	857 - 861	856.9875 + (n x (0.025))	l to 160	25
11	Cordless Telephone Service	861 - 865	860.95 + (n x (0.1))	1 to 40	100
12	Land Mobile Service (trunked, base transmit)	865 - 870	864.9875 + (n x (0.025))	l to 200	25
13	Cellular Mobile Telephone Service (base transmit)	870 - 890	870 + (n x (0.03))	l to 666	30
14	Fixed Service (single channel, two frequency)	875 - 876	874.9875 + (n x (0.025))	1 to 40	25
15	Fixed Service (wideband)	880 - 890	880 + (n x (1))	1 to 9	2000
16	Digital Cellular Mobile Telephone Service (base receive)	890 - 915	890 + (n x (0.2))	1 to 124	200
17	Fixed Service (single channel, two frequency) (point-to-point)	928 - 929	927.9875 + (n x (0.025))	l to 40	25

SCHEDULE—continued

Column 1 Item	Column 2 Allocation	Column 3 Sub-band (MHz) (lower limit exclusive, upper limit inclusive)	Column 4 Channel Centre Frequencies Formulas (MHz)	Column 5 Range of Integer Values for the Variable "n" (inclusive)	Column 6 Maximum Channel Bandwidth (kHz)
18	Fixed Service (single channel, two frequency) (point-to-point)	929 - 929.5	928.99375 + (n x (0.0125)) See Note 1	1 to 40	12.5
19	Fixed Service (single channel, two frequency) (point-to-multipoint)	929.5 - 930	929.49375 + (n x (0.0125)) See Notes 1, 3	1 to 40	125
20	Fixed Service (low capacity, two frequency)	930 - 933	930 + (n x (0.05))	1 to 59	200
21	Digital Cellular Mobile Telephone Service (base transmit)	935 - 960	935 + (n x (0.2))	1 to 124	200

NOTES:

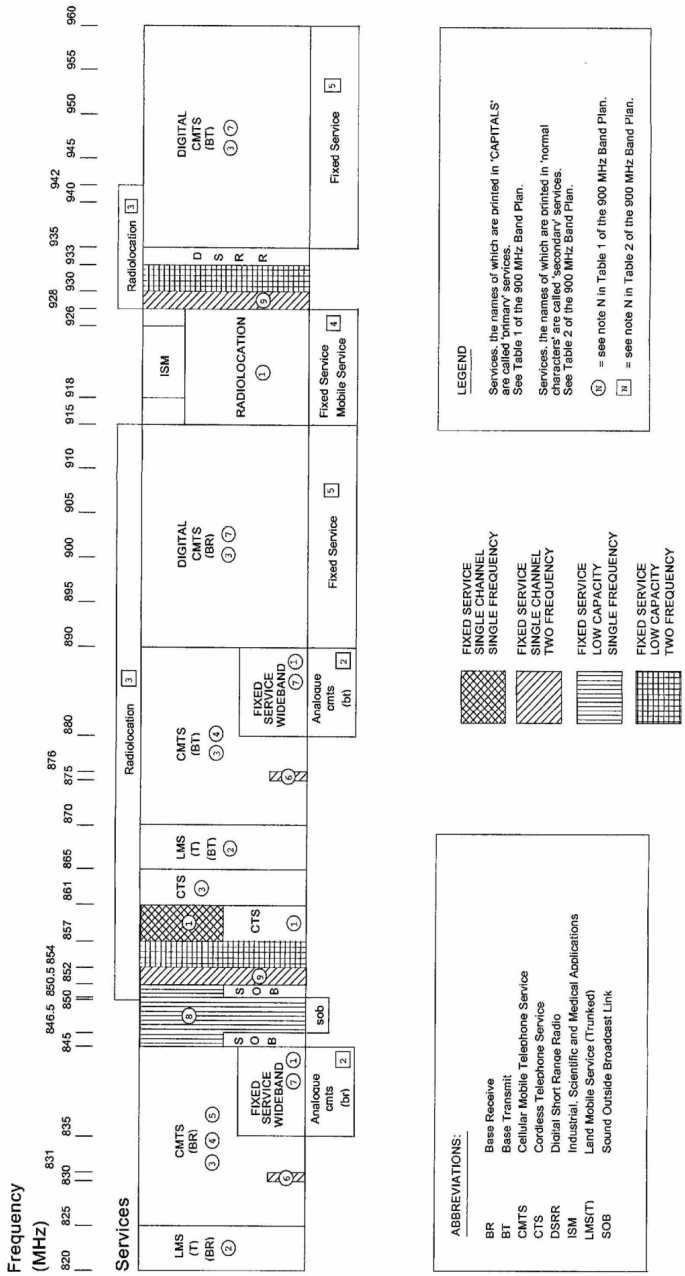
1. Where a demonstrated need exists for 25 kHz operation, two contiguous 12.5 kHz channels may be assigned frequencies offset by 6.25 kHz between the channel centre frequencies given by this formula.

2. These channels are for use by remote station transmitters.

3. These channels are for use by control station transmitters.

SCHEDULE—continued

FIGURE 1: 900 MHZ BAND PLAN DIAGRAM



NOTE

1. Notified in the *Commonwealth of Australia Gazette* on 28 February 1992.