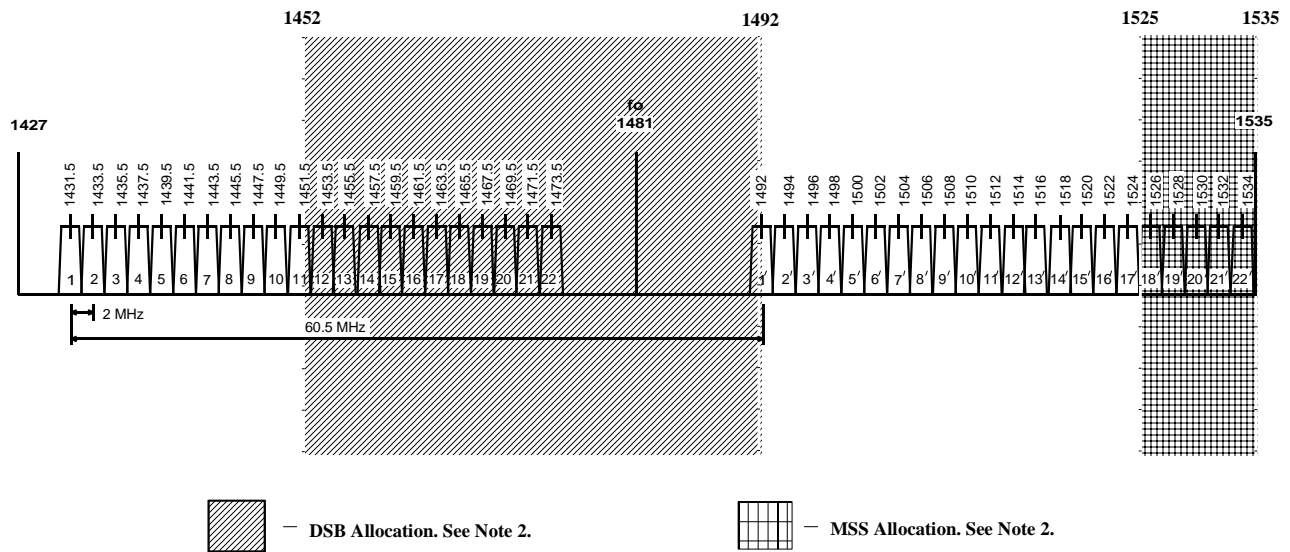


**THE 1.5 GHz DRCS BAND (1427-1535 MHz)  
(Point-to-Multipoint Services)  
RF CHANNEL ARRANGEMENTS**



**ASSIGNMENT INSTRUCTIONS**

This band is designated for use by point-to-point and point-to-multipoint fixed links used for the delivery of public telecommunications services in rural and remote areas (see Reference 1).

<b>Typical Use</b>	: Digital Radio Concentrator Systems (DRCS).
<b>Assignment Priority</b>	: See Notes 2b and 3a
<b>Minimum Path Length</b>	: not applicable
<b>Antenna Requirements</b>	: not specified

**Note:**

1. The use of these arrangements is restricted to rural and remote areas.
- 2a. Assignments for DRCS systems (or upgrades to DRCS systems) may not be made in parts of Australia that are less than 200 km from the GPOs any of the following locations: Sydney, Melbourne, Brisbane, Adelaide, Perth, Hobart, Canberra, Albury, Horsham and Port Macquarie.
- 2b. Channel assignment restrictions apply. No further point-to-multipoint assignments may be made on channels 20/20', 21/21' or 22/22' and new point-to-multipoint assignments on channels 11 to 19 and channel 1', 18' and 19' are restricted to cases where interference considerations preclude the use of other channels in the band. In such cases an "assign lowest channel first" rule applies.
- 2c. All assignments that have emissions in the 1452 – 1492 or 1518-1535 MHz ranges shall be endorsed with Advisory Note BL that states: "This frequency band is currently under review to accommodate changes in technology. This review may lead to a requirement to change frequency or cease transmissions".

- 3a. Assignments for broadband wireless access (BWA) systems may in some circumstances be made in parts of this band. Assignments for BWA services may not be made in high or medium density areas (see Schedule 1 of Reference 3). Assignments for BWA systems may only be made on channels 2/2' to 10/10' and, pending the future revision of Reference 1, shall be subject to case-by-case consideration by the Manager, Spectrum Planning and Engineering.
- 3b. Assignments for broadband wireless access (BWA) systems shall be endorsed with the following Special Condition and Advisory Note:

Special Condition:

*“The transmitters authorised by this licence shall employ adaptive transmit power control (ATPC).”*

Advisory Note

*“Note:*

- (a) *remote station receivers will be afforded protection from harmful interference only from services provided that they: operate within 15 km of their associated base station; have an antenna with a height above sea level no greater than that of their associated base station antenna; and, have an antenna gain no greater than 11 dBi.*
- (b) *remote station transmitters must not cause interference to other services beyond the levels that would be caused if they: were located within 15 km of their associated base station; have an antenna with a height above sea level no greater than that of their associated base station antenna; operate with a transmitter power of no more than 30 dBm; and, have an antenna gain no greater than 11 dBi”.*

**References**

1. The “1.5 GHz Band Plan”, December 1996.
2. Rec. ITU-R F.701, “Radio-frequency channel arrangements for analogue and digital point-to-multipoint radio systems operating in frequency bands in the range 1.427 to 2.690 GHz (1.5, 1.8, 2.0, 2.2, 2.4 and 2.6 GHz)”.
3. *Radiocommunications (Transmitter Licence Tax) Determination 2003 No.2*

## THE 1.5 GHz DRCS BAND (1427-1535 MHz)

### PROTECTION RATIOS

1. Protection ratios required between digital systems operating on 2 and 4 MHz channels.

Frequency Offset MHz	PROTECTION RATIO (dB)			
	Digital Interferer Tx → Digital Victim Rx			
	2 → 2 MHz	2 → 4 MHz	4 → 2 MHz	4 → 4 MHz
0	60	60	60	60
2	30	55	47	55
4		27	20	30
6				8

2. Protection ratios required by digital systems operating on 2 and 4 MHz channels against interference from analogue systems operating on 2 and 4 MHz channels.

Frequency Offset MHz	PROTECTION RATIO (dB)			
	Analogue Interferer Tx → Digital Victim Rx			
	2 → 2 MHz	2 → 4 MHz	4 → 2 MHz	4 → 4 MHz
0	60	60	60	60
2		30	30	60
4				20

3. Protection ratios required by analogue systems operating on 2 and 4 MHz channels against interference from digital systems operating on 2 and 4 MHz channels.

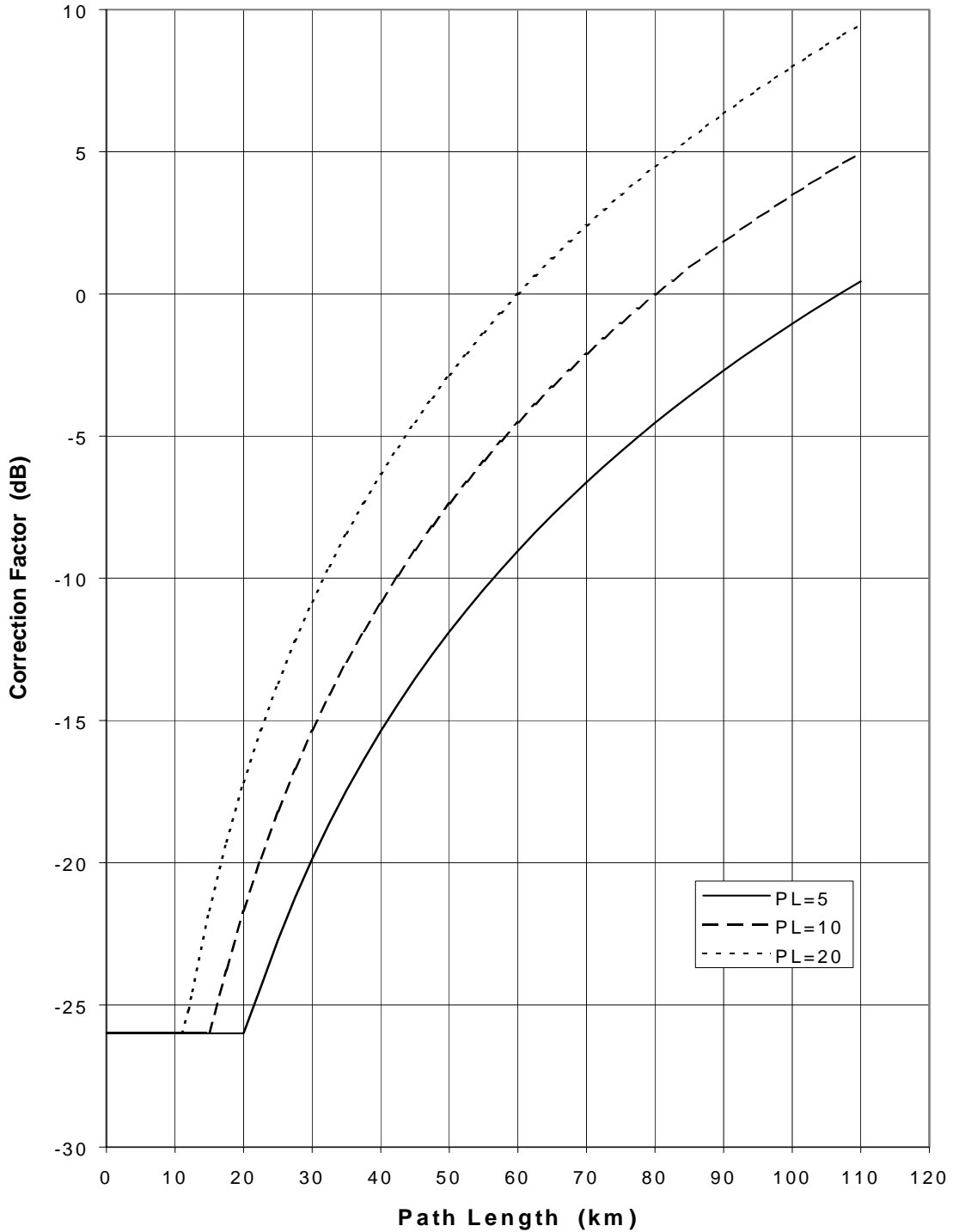
Frequency Offset MHz	PROTECTION RATIO (dB)			
	Digital Interferer Tx → Analogue Victim Rx			
	2 → 2 MHz	2 → 4 MHz	4 → 2 MHz	4 → 4 MHz
0	60	60	60	60
2	10	10	10	30

Note: Protection ratio for digital systems are based on a 60 km path length and  $P_L=20$ . For other path lengths and  $P_L$  values refer to the appropriate protection ratio correction factors graph on the following page.

# THE 1.5 GHz DRCS BAND (1427-1535 MHz)

## PROTECTION RATIO CORRECTION FACTORS

### MULTIPATH



$P_L$ : Percentage of time that the average refractivity gradient in the lowest 100 m of the atmosphere is less than or equal to -100 N units/km.

For further details refer to Annex A to Appendix 1.