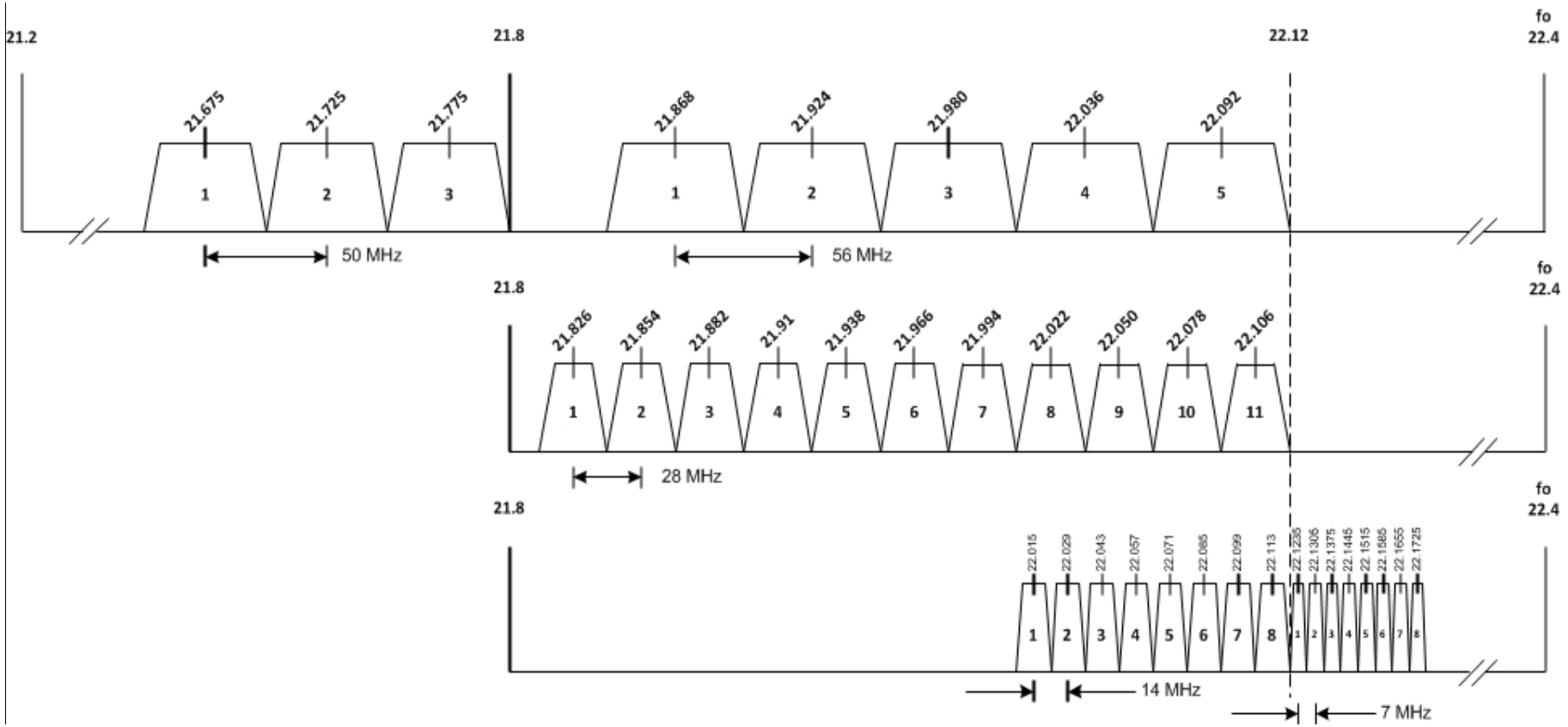
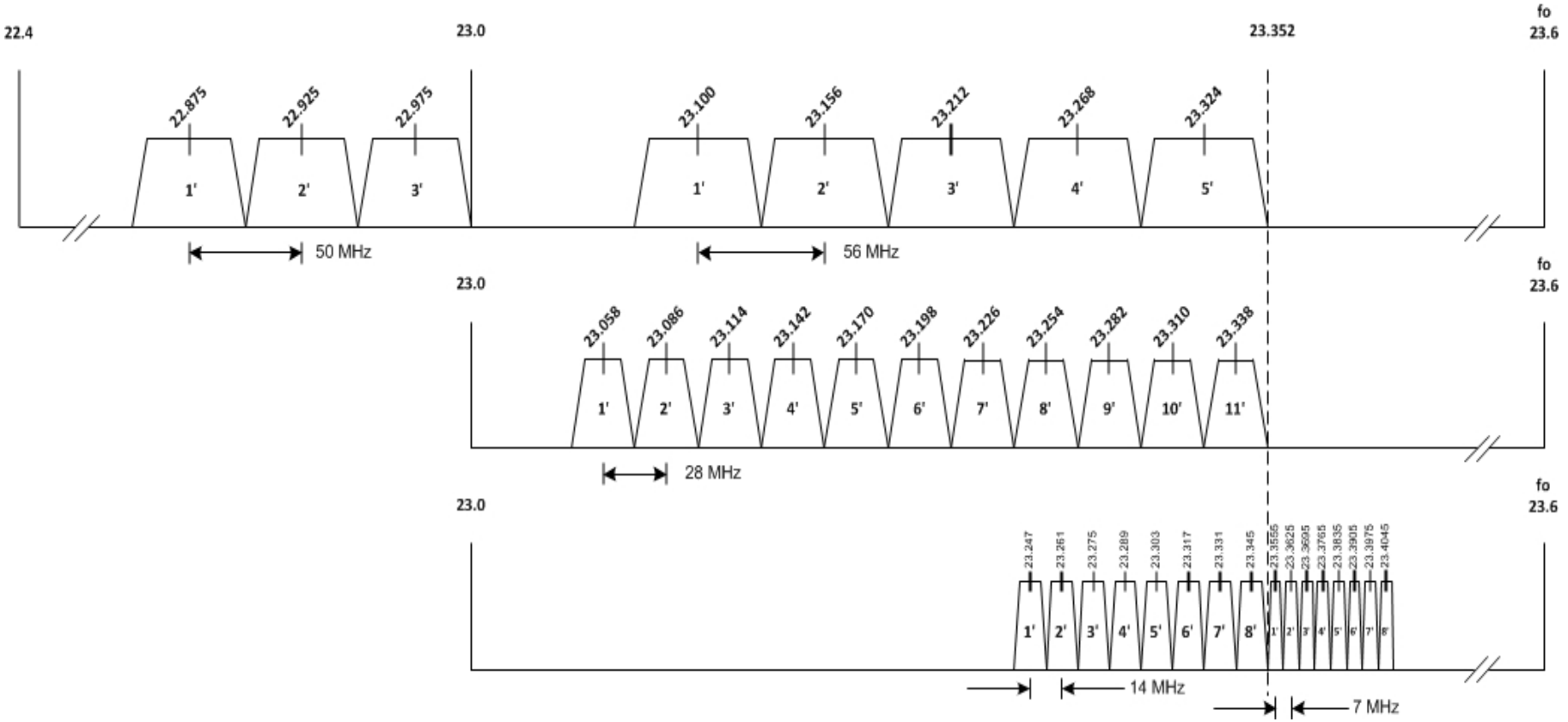
THE 22 GHz BAND (21.2 - 23.6 GHz)

RF CHANNEL ARRANGEMENTS




22.4
23.0
23.352
fo
23.6
22.875
22.925
22.975
1'
2'
3'
50 MHz
23.100
23.156
23.212
23.268
23.324
1'
2'
3'
4'
5'
56 MHz
23.0
fo
23.6
23.058
23.086
23.114
23.142
23.170
23.198
23.226
23.254
23.282
23.310
23.338
1'
2'
3'
4'
5'
6'
7'
8'
9'
10'
11'
28 MHz
23.0
fo
23.6
23.247
23.261
23.275
23.289
23.303
23.317
23.331
23.345
23.3555
23.3625
23.3695
23.3765
23.3835
23.3905
23.3975
23.4045
1'
2'
3'
4'
5'
6'
7'
8'
14 MHz
7 MHz

CHANNEL CENTRE FREQUENCIES (GHz)											
Channels		**56 MHz Channels**		**50 MHz Channels**		**28 MHz Channels**		**14 MHz Channels**		**7 MHz Channels**	
1	1’	21.868	23.100	21.675	22.875	21.826	23.058	22.015	23.247	22.1235	23.3555
2	2’	21.924	23.156	21.725	22.925	21.854	23.086	22.029	23.261	22.1305	23.3625
3	3’	21.980	23.212	21.775	22.975	21.882	23.114	22.043	23.275	22.1375	23.3695
4	4’	22.036	23.268			21.91	23.142	22.057	23.289	22.1445	23.3765
5	5’	22.092	23.324			21.938	23.17	22.071	23.303	22.1515	23.3835
6	6’					21.966	23.198	22.085	23.317	22.1585	23.3905
7	7’					21.994	23.226	22.099	23.331	22.1655	23.3975
8	8’					22.022	23.254	22.113	23.345	22.1725	23.4045
9	9’					22.050	23.282				
10	10’					22.078	23.310				
11	11’					22.106	23.338				

THE 22 GHz BAND (21.2 - 23.6 GHz)

ASSIGNMENT INSTRUCTIONS

This band is designated for use by fixed point-to-point links and Television Outside Broadcast (TOB) services (See Note 1).

Typical Use	: 2/8 Mbit/s data, FM video
Assignment Priority	: See Note 2
Minimum Path Length	: not specified
Antenna Requirements	: refer to Appendix 11

Notes:

1. (a) The 50 MHz channels 1/1'..3/3' are designated for TOB services. Licensed TOB operators may use any of these channels in any area on a co-equal basis with other TOB operators and are expected to coordinate their use among themselves;

   (b) Deleted

2. Assignment priorities for point-to-point services are defined as follows:

   56 MHz channels - from the lowest channel upward;
   28 MHz channels - from the lowest channel upward;
   14 MHz channels - from the highest channel downward;
   7 MHz channels - from the lowest channel upward;

3. Special Condition BL shall be applied to all licences for operation on the 50 MHz channels 1-7 (21.65-22.00 GHz band). See Reference 1.

References

1. "*Australian Radiofrequency Spectrum Plan*", (Footnote 530A).

2. Rec. ITU-R F.637-2, "*Radio-frequency channel arrangements for radio-relay systems operating in the 23 GHz band*".

THE 22 GHz BAND (21.2 - 23.6 GHz)

PROTECTION RATIOS

1. Protection ratios required between digital systems operating on the same channel arrangements, except for 50 MHz and 56 MHz channels (see table 9 and 10 respectively).

Co channel	60 dB
1st Adjacent Channel	30 dB
2nd Adjacent Channel	0 dB

2. Protection ratios required between digital systems operating on 3.5 and 7 MHz channels.

Frequency Offset (MHz)	PROTECTION RATIO (dB) Digital Interferer Tx → Digital Victim Rx	
	3.5 MHz → 7 MHz	7 MHz → 3.5 MHz
5.25	55	48
8.75	18	20
12.25	0	

3. Protection ratios required between digital systems operating on 7 MHz channels and digital systems operating on 14 and 28 MHz channels.

Frequency Offset (MHz)	PROTECTION RATIO (dB) Digital Interferer Tx → Digital Victim Rx			
	7 MHz→14 MHz	14 MHz→7 MHz	7 MHz→28 MHz	28 MHz→7 MHz
10.5	58	49		
17.5	32	26	45	35
24.5	15		10	20

4. Protection ratios required between digital systems operating on 14 and 28 MHz channels.

Frequency Offset (MHz)	PROTECTION RATIO (dB) Digital Interferer Tx → Digital Victim Rx	
	28 MHz → 14 MHz	14 MHz → 28 MHz
7	58	60
21	33	35

5. Protection ratios required between digital systems operating on 7 MHz and 56 MHz channels.

Frequency Offset (MHz)	PROTECTION RATIO (dB) Digital Interferer Tx → Digital Victim Rx	
	7 MHz → 56 MHz	56 MHz → 7 MHz
31.5	53	35
38.5	21	15
45.5	11	13
52.5	9	12
59.5	9	10
66.5	9	9

6. Protection ratios required between digital systems operating on 14 MHz and 56 MHz channels.

Frequency Offset (MHz)	PROTECTION RATIO (dB) Digital Interferer Tx → Digital Victim Rx	
	14 MHz → 56 MHz	56 MHz → 14 MHz
7	65	53
21	64	53
35	49	34
49	15	16
63	10	13
77	9	9
91	9	4

7. Protection ratios required between digital systems operating on 28 MHz and 56 MHz channels.

Frequency Offset (MHz)	PROTECTION RATIO (dB) Digital Interferer Tx → Digital Victim Rx	
	28 MHz → 56 MHz	56 MHz → 28 MHz
14	65	56
42	45	33
70	15	15
98	10	5
126	9	4

8. Protection ratios required between digital systems operating on 28 MHz and 50 MHz channels.

Frequency Offset (MHz)	PROTECTION RATIO (dB) Digital Interferer Tx → Digital Victim Rx	
	28 MHz → 50 MHz	50 MHz → 28 MHz
51	17	18
79	7	
83	6	8

107	4	

9. Protection ratios required between digital systems operating on 50 MHz channel.

Frequency Offset (MHz)	PROTECTION RATIO (dB) Digital Interferer Tx → Digital Victim Rx
	50 MHz → 50 MHz
0	60
50	35
100	9

10. Protection ratios required between digital systems operating on 56 MHz channel.

Frequency Offset (MHz)	PROTECTION RATIO (dB) Digital Interferer Tx → Digital Victim Rx
	56 MHz → 56 MHz
0	65
56	41
112	15

11. Protection ratios required between digital systems operating on 50 MHz and 56 MHz channels.

Frequency Offset (MHz)	PROTECTION RATIO (dB) Digital Interferer Tx → Digital Victim Rx	
	50 MHz → 56 MHz	56 MHz → 50 MHz
93	17	12
125	13	8

Notes:

1. Protection ratio for digital systems are based on a 5 km path length and R (*Rainfall rate in mm/hr for 0.01% of the worst month*) of 80 mm/hr, for other path lengths and rainfall rates refer to the appropriate path length correction factors graph on the following page.

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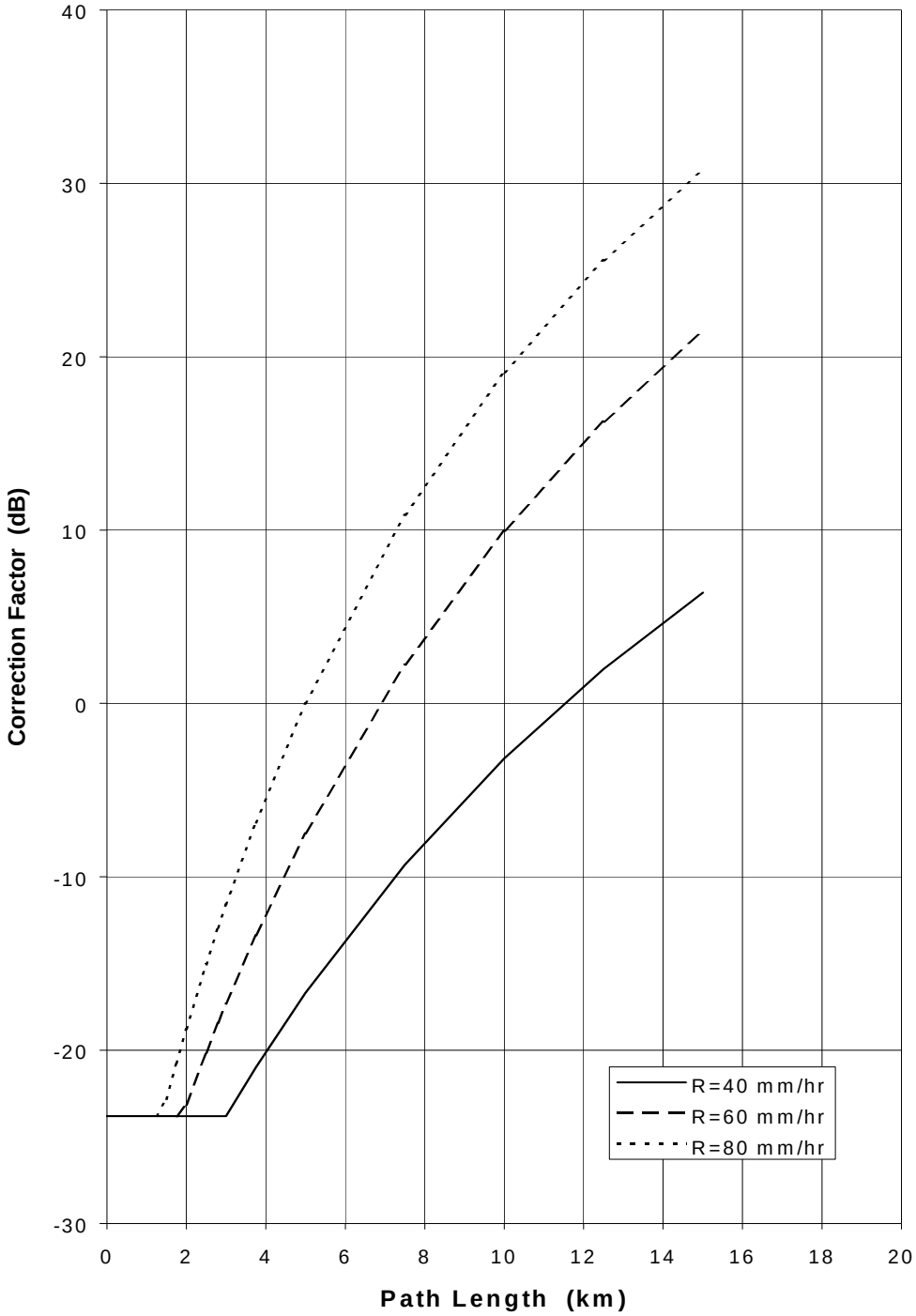
PROTECTION RATIO CORRECTION FACTORS

RAIN FADE



R: Rainfall rate in mm/hr for 0.01% of the worst month.

For further details refer to Annex A to Appendix 1.