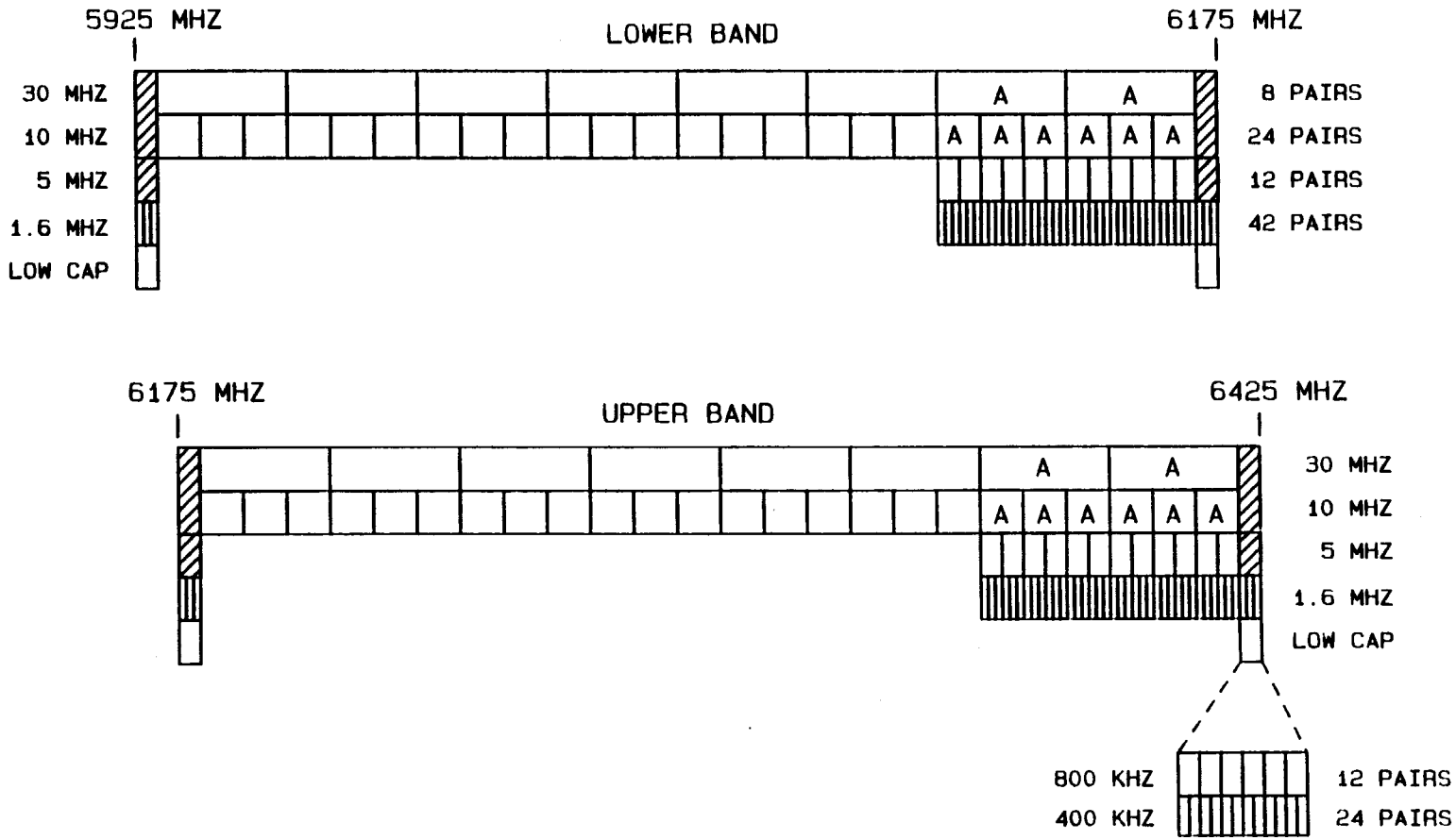
FCC CHANNEL PLAN – LOWER 6 GHZ BAND

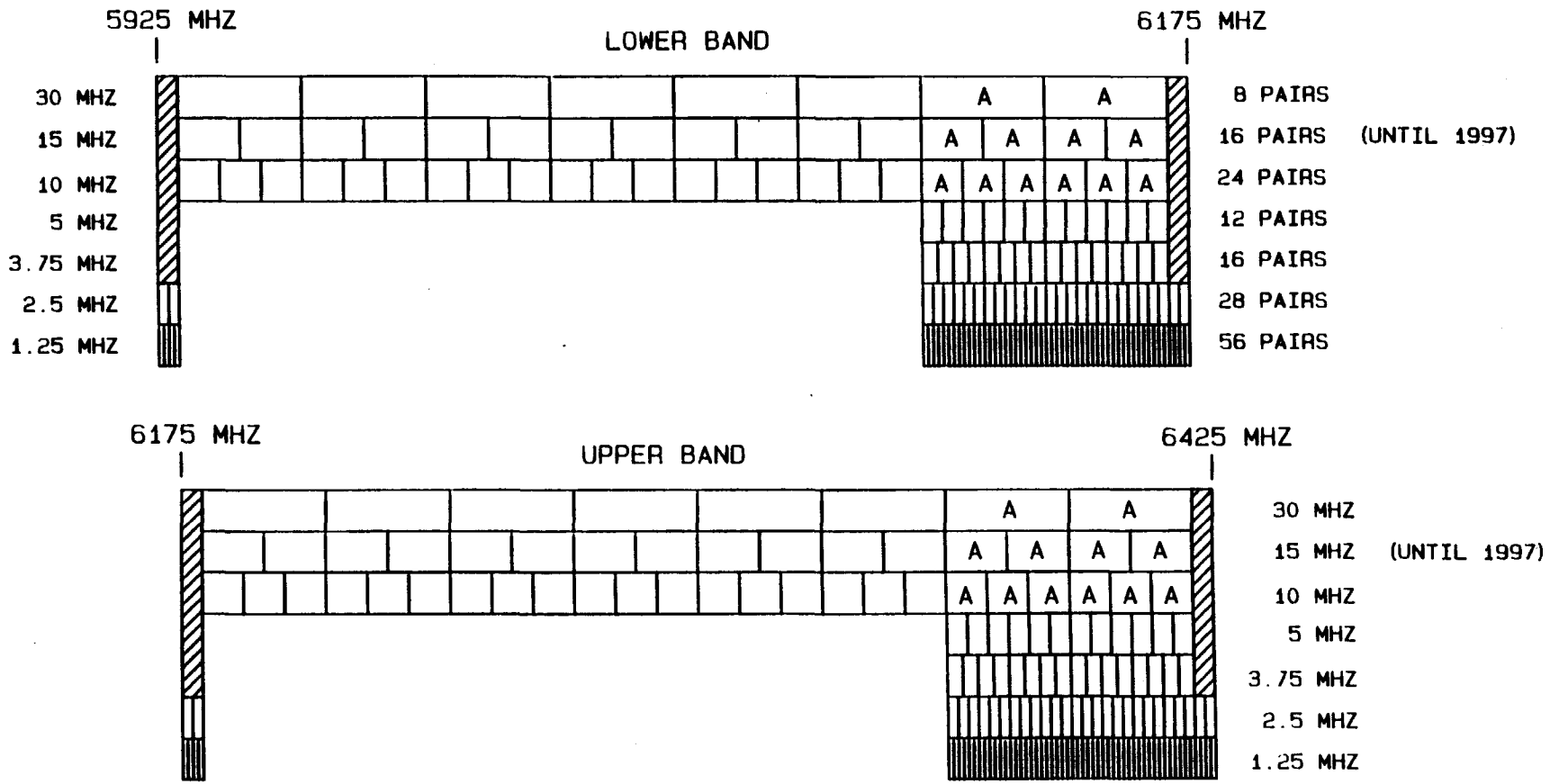


5.925 - 6.425 GHZ
COMMON CARRIER BAND
FREQUENCY CHANNELIZATION

A = ALTERNATE CHANNEL IF ALL OTHER CHANNELS ARE BLOCKED

Figure 4

TIA CHANNEL PLAN – LOWER 6 GHZ BAND

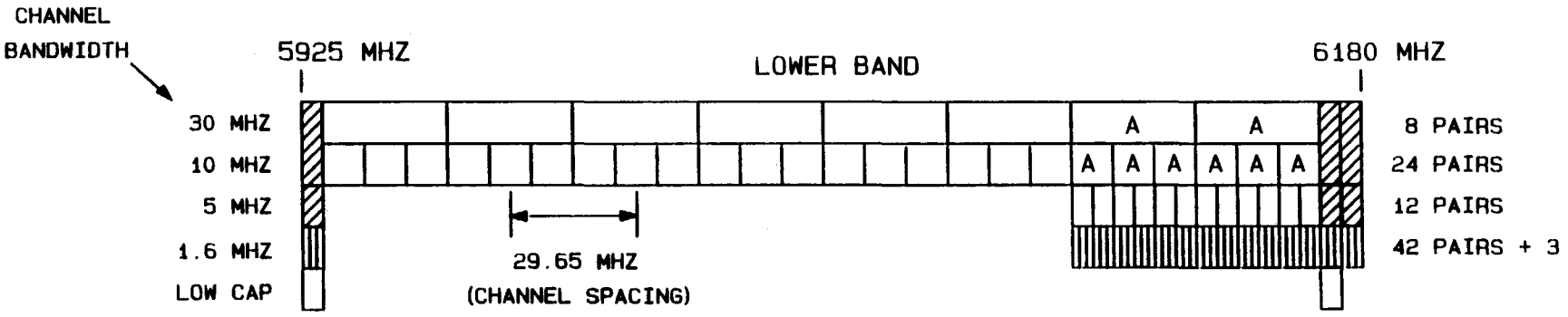


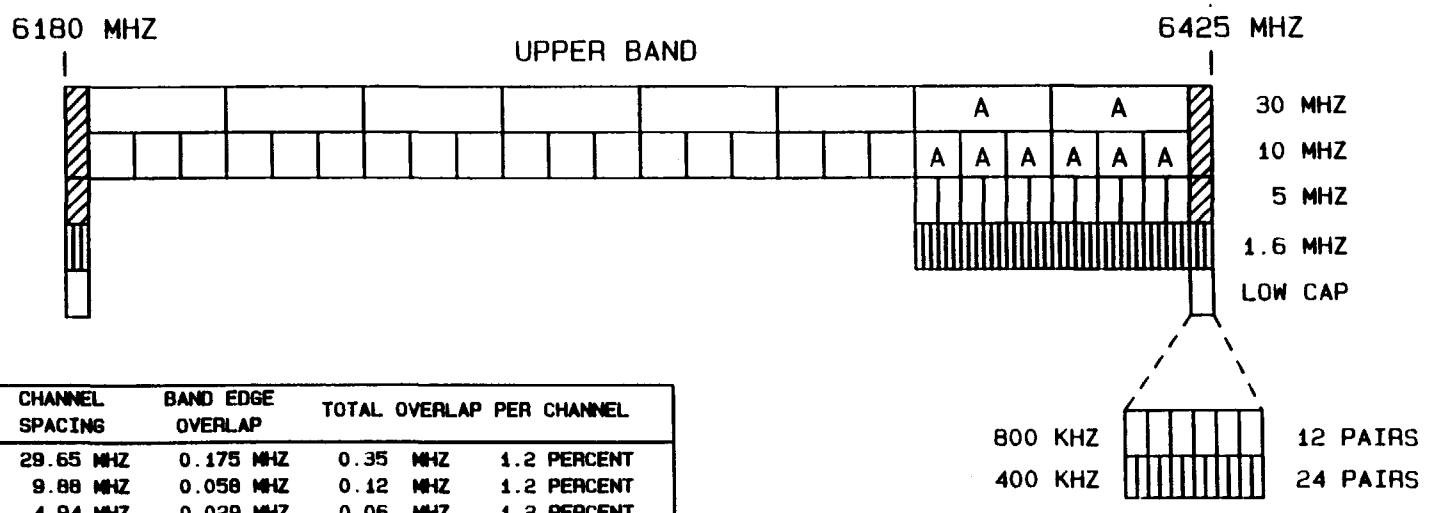
A = ALTERNATE CHANNEL IF ALL OTHER CHANNELS ARE BLOCKED

5.925 - 6.425 GHZ
COMMON CARRIER BAND
FREQUENCY CHANNELIZATION

Figure 5

ALCATEL MODIFIED CHANNEL PLAN – LOWER 6 GHZ BAND





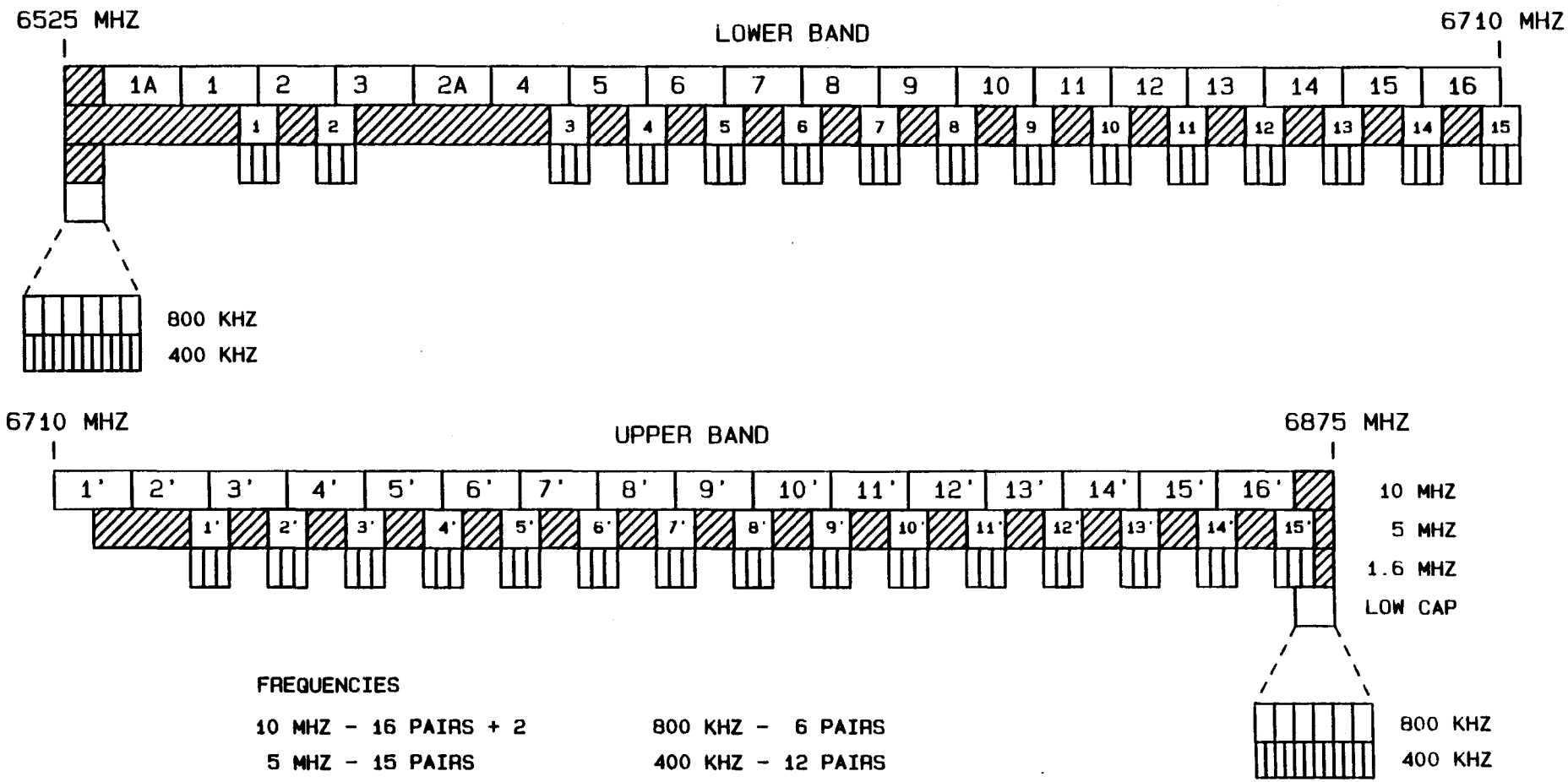
CHANNEL BANDWIDTH	CHANNEL SPACING	BAND EDGE OVERLAP	TOTAL OVERLAP PER CHANNEL	
30 MHZ	29.65 MHZ	0.175 MHZ	0.35 MHZ	1.2 PERCENT
10 MHZ	9.88 MHZ	0.058 MHZ	0.12 MHZ	1.2 PERCENT
5 MHZ	4.94 MHZ	0.029 MHZ	0.06 MHZ	1.2 PERCENT
1.6 MHZ	1.6 MHZ	---	---	----
800 KHZ	800 KHZ	---	---	----
400 KHZ	400 KHZ	---	---	----

A = ALTERNATE CHANNEL IF ALL OTHER CHANNELS ARE BLOCKED

5.925 - 6.425 GHZ
COMMON CARRIER BAND
FREQUENCY CHANNELIZATION

Figure 6

FCC CHANNEL PLAN – UPPER 6 GHZ BAND



FREQUENCIES

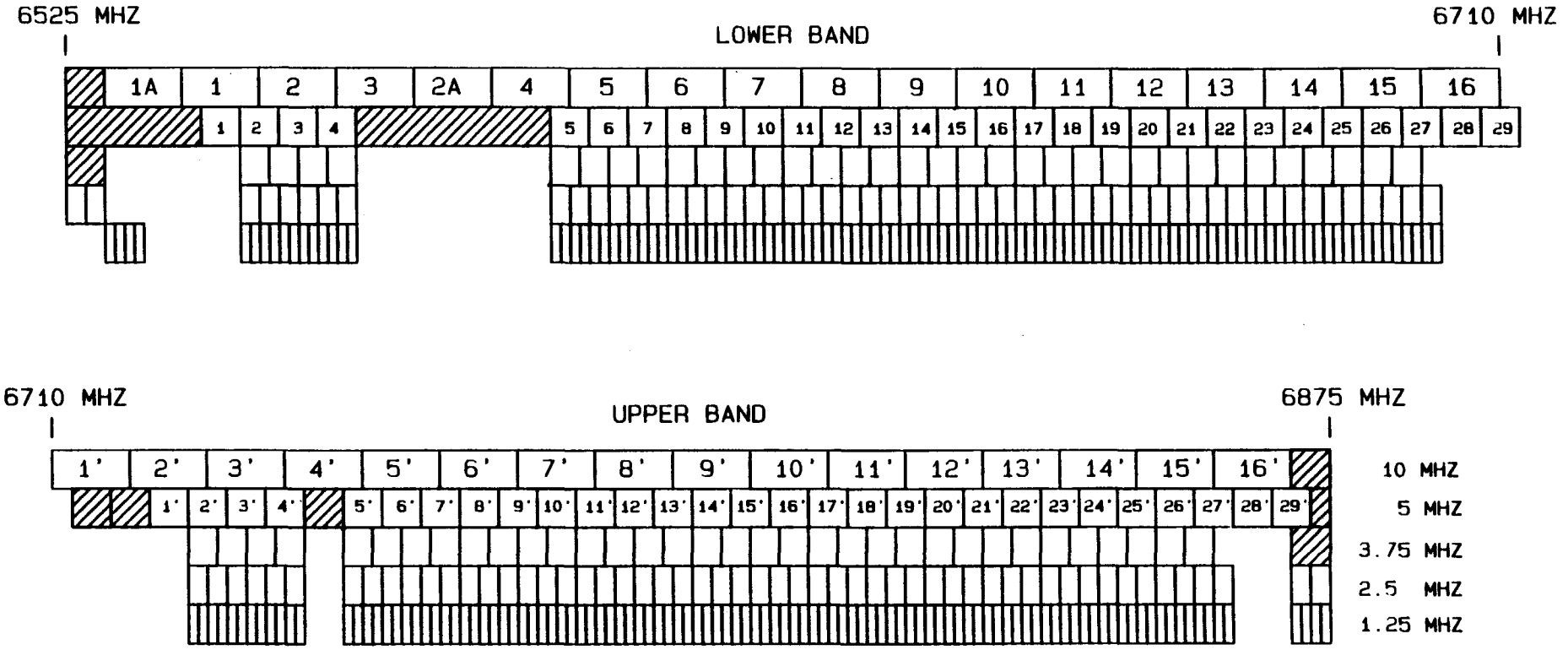
10 MHZ - 16 PAIRS + 2	800 KHZ - 6 PAIRS
5 MHZ - 15 PAIRS	400 KHZ - 12 PAIRS
1.6 MHZ - 45 PAIRS	

NOTE: 1. 10 MHZ CHANNELS 1, 2, 1', AND 2' AVAILABLE FOR UNPAIRED USE
2. 10 MHZ CHANNELS 1A AND 2A FOR EMERGENCY RESTORATION

6.525 - 6.875 GHZ
PRIVATE OPERATIONAL FIXED
FREQUENCY CHANNELIZATION

Figure 7

TIA CHANNEL PLAN – UPPER 6 GHZ



FREQUENCIES

10 MHZ - 16 PAIRS + 2

5 MHZ - 29 PAIRS

3.75 MHZ - 34 PAIRS

2.5 MHZ - 54 PAIRS

1.25 MHZ - 108 PAIRS

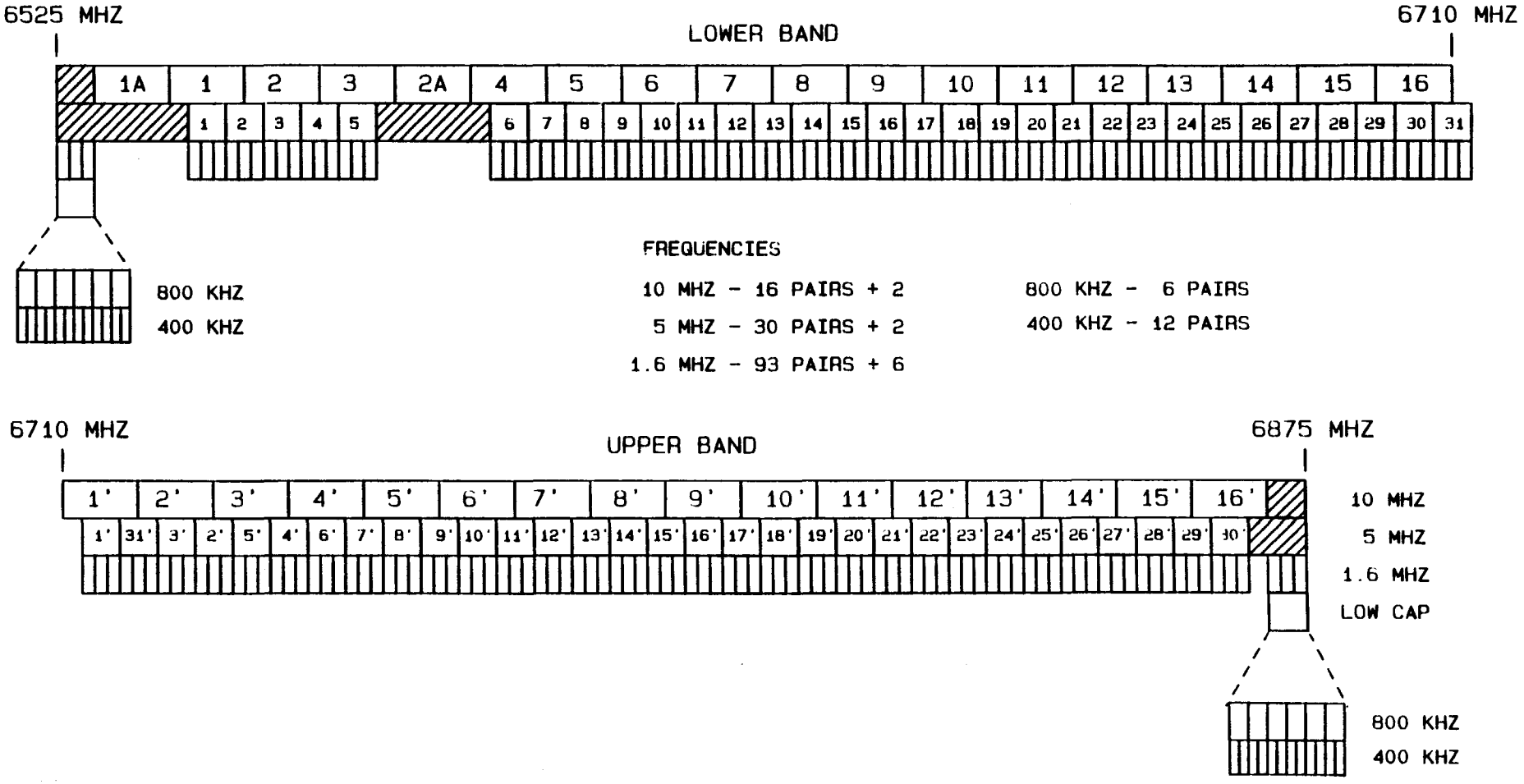
NOTE: 1. 10 MHZ CHANNELS 1 AND 1', 2 AND 2' AVAILABLE FOR UNPAIRED USE

2. 10 MHZ CHANNELS 1A AND 2A FOR EMERGENCY RESTORATION

6.525 - 6.875 GHZ
PRIVATE OPERATIONAL FIXED
FREQUENCY CHANNELIZATION

Figure 8

ALCATEL MODIFIED CHANNEL PLAN – UPPER 6 GHZ BAND

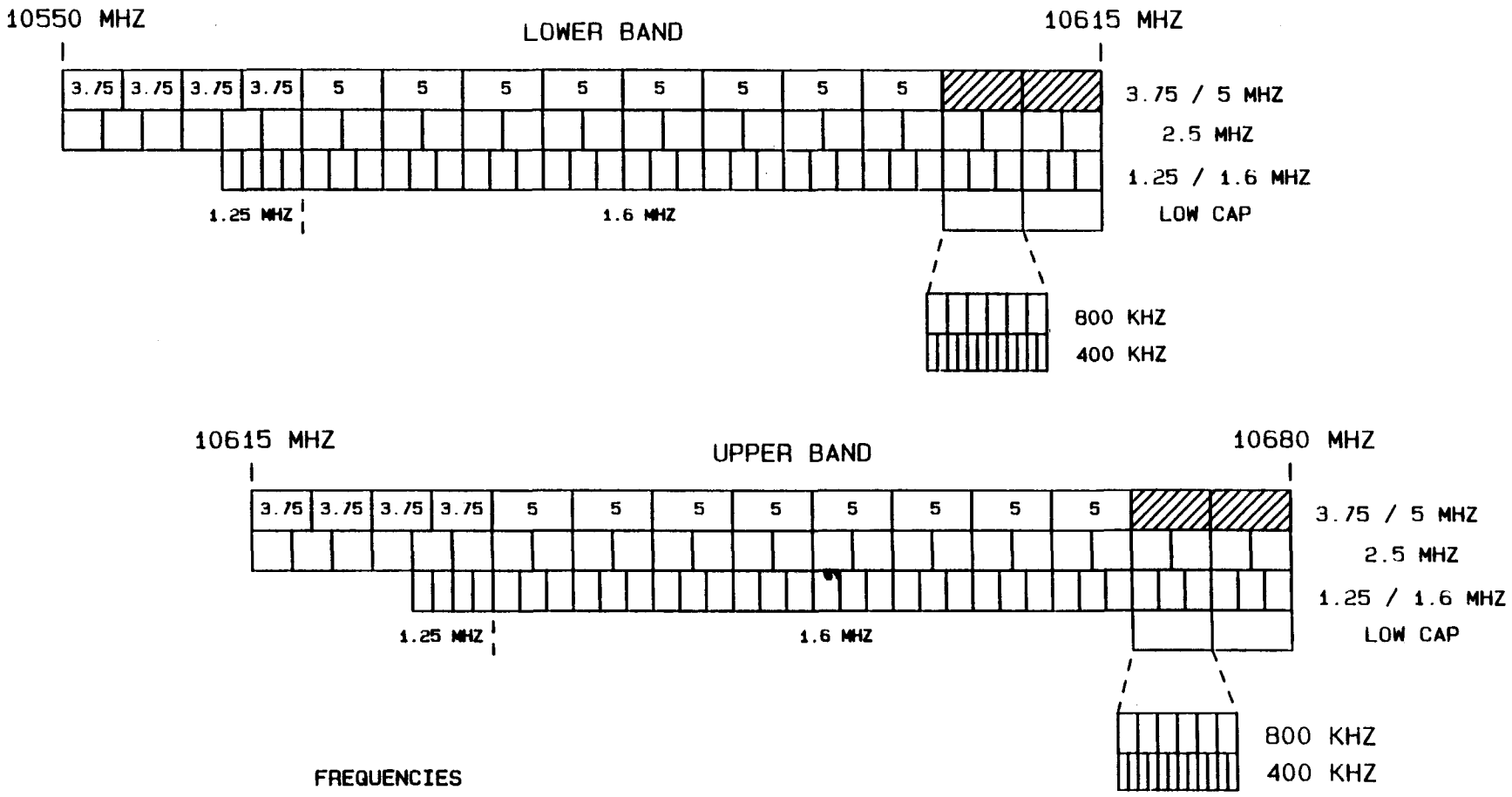


NOTE:
1. 10 MHZ CHANNELS 1 AND 1', 2 AND 2' AVAILABLE FOR UNPAIRED USE
2. 5 MHZ CHANNELS 1 AND 1', 3 AND 3', 31 AND 31' FOR UNPAIRED USE
3. 10 MHZ CHANNELS 1A AND 2A FOR EMERGENCY RESTORATION

6.525 - 6.875 GHZ
PRIVATE OPERATIONAL FIXED
FREQUENCY CHANNELIZATION

Figure 9

FCC CHANNEL PLAN – 10 GHZ BAND



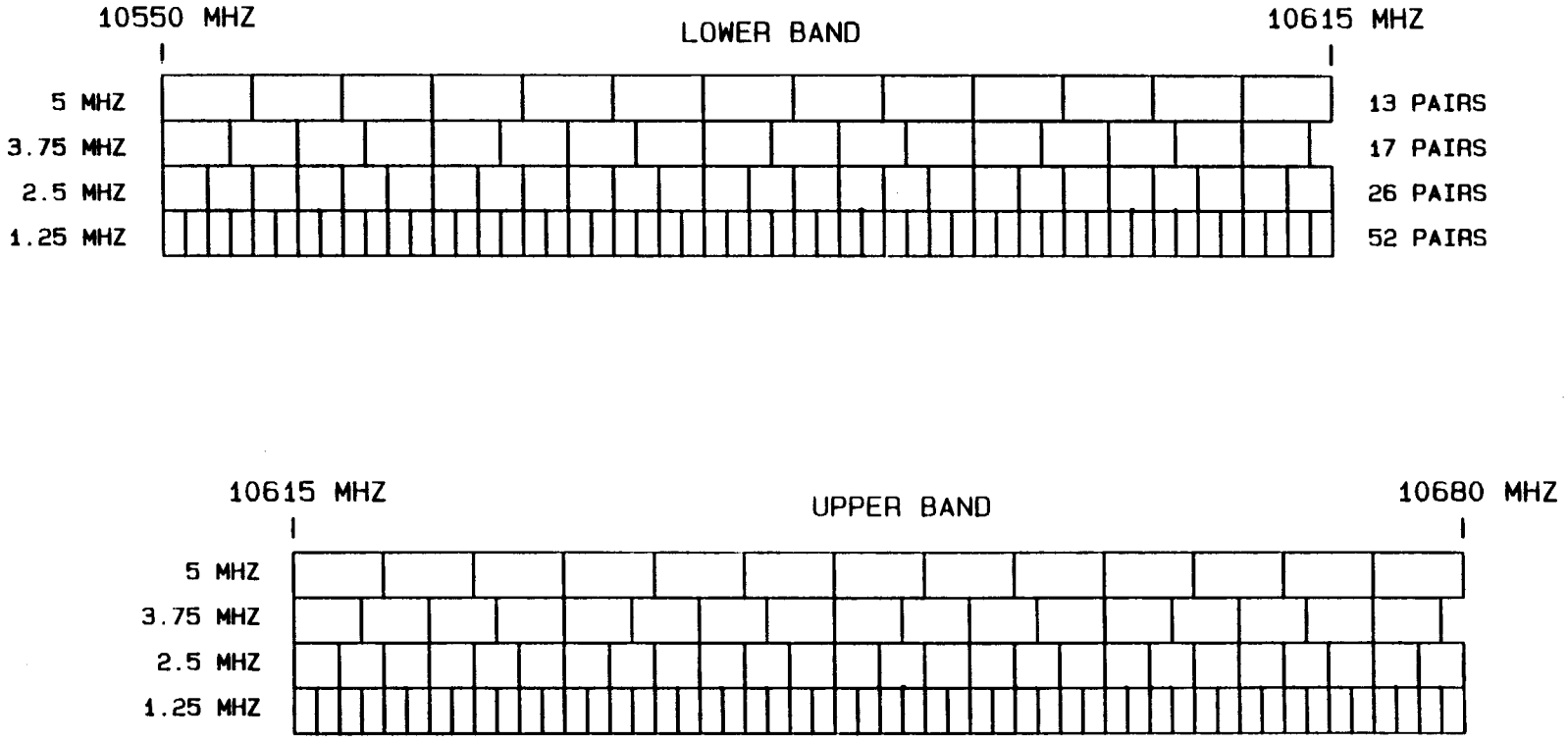
FREQUENCIES

5 MHZ - 8 PAIRS	1.6 MHZ - 30 PAIRS
3.75 MHZ - 4 PAIRS	800 KHZ - 12 PAIRS
2.5 MHZ - 26 PAIRS	400 KHZ - 24 PAIRS
1.25 MHZ - 4 PAIRS	

10.55 - 10.68 GHZ
FREQUENCY CHANNELIZATION

Figure 10

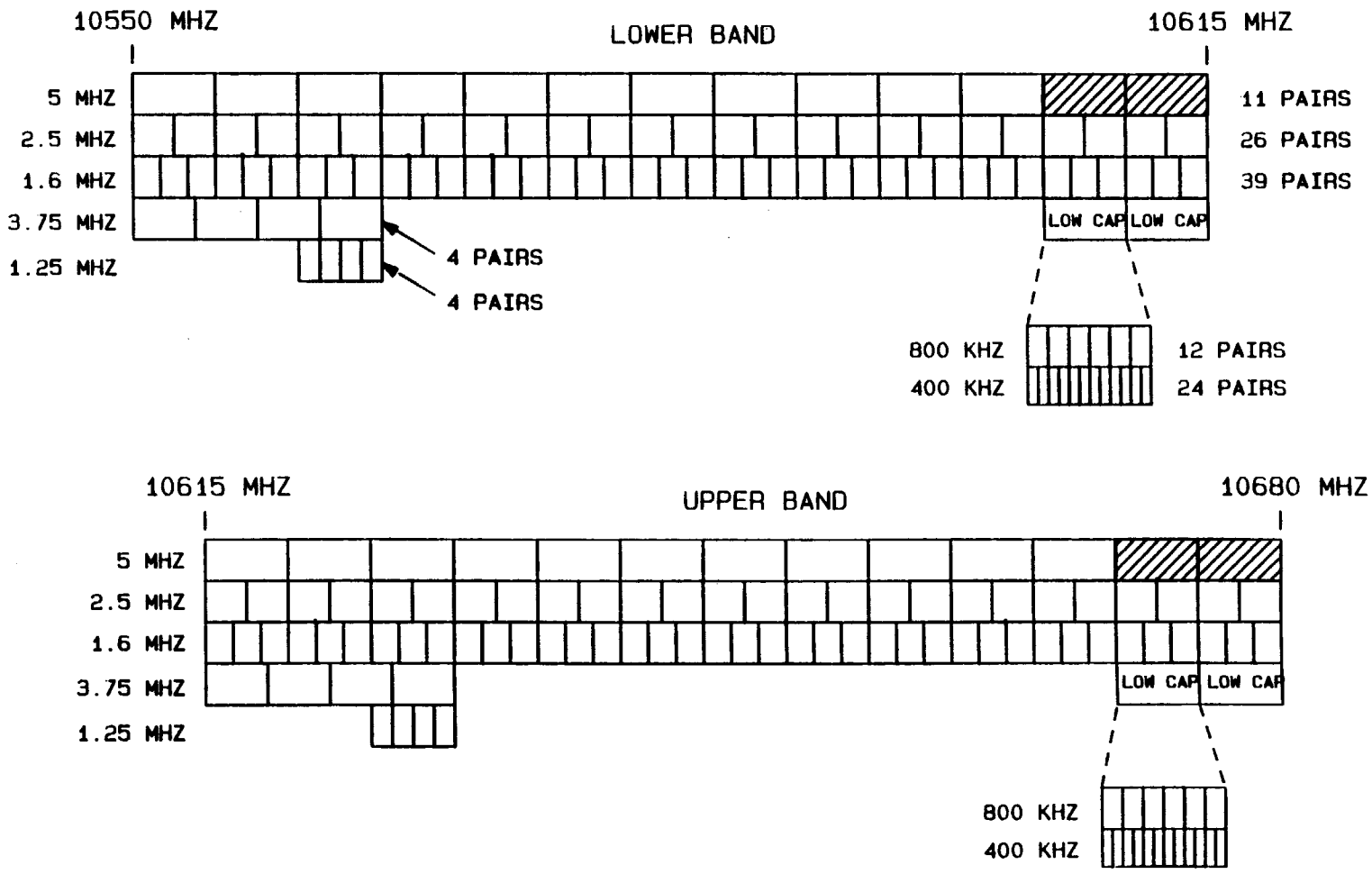
TIA CHANNEL PLAN – 10 GHZ BAND



10.55 - 10.68 GHZ
FREQUENCY CHANNELIZATION

Figure 11

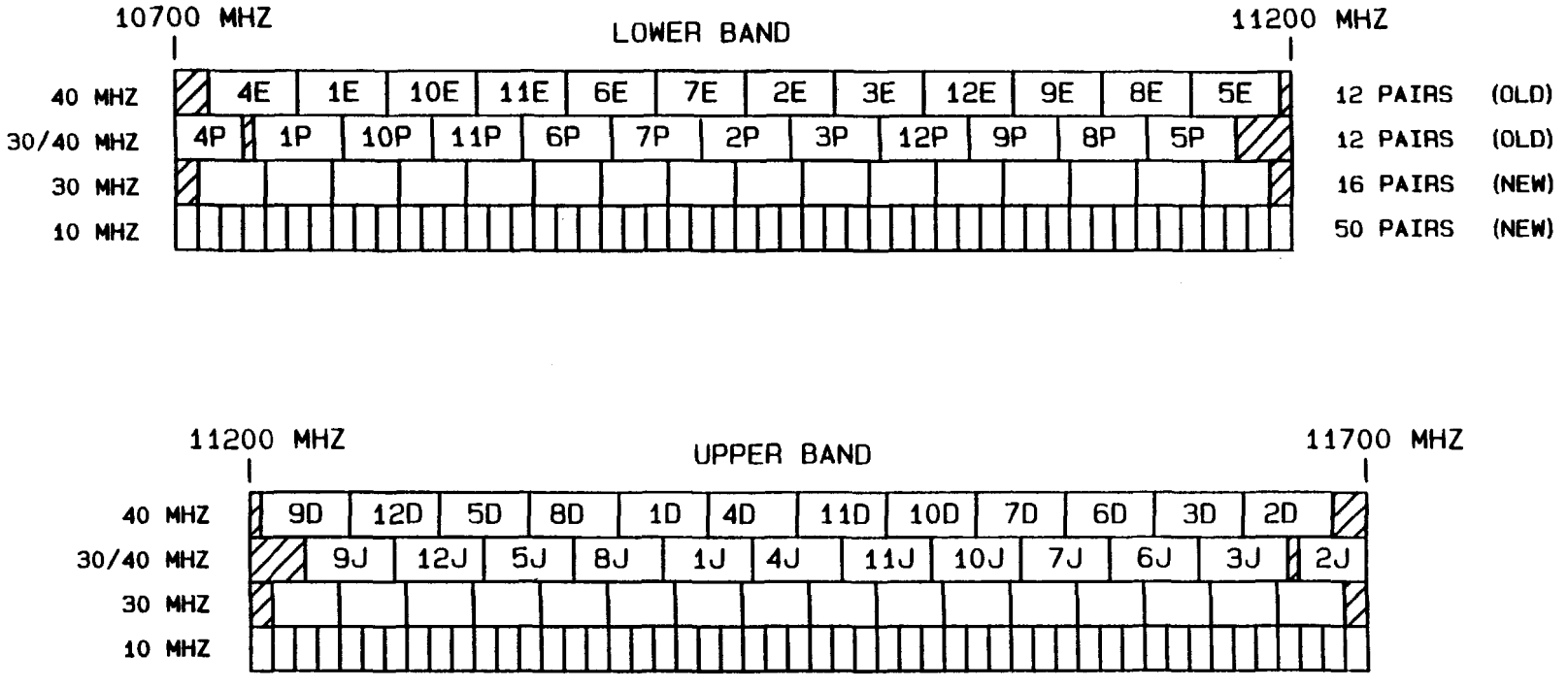
ALCATEL MODIFIED CHANNEL PLAN – 10 GHZ BAND



10.55 - 10.68 GHZ
FREQUENCY CHANNELIZATION

Figure 12

FCC CHANNEL PLAN – 11 GHZ BAND



NOTE: EXISTING 40 MHZ CHANNELS REPLACED BY 10 AND 30 MHZ CHANNELS

10.7 – 11.7 GHZ
COMMON CARRIER BAND
FREQUENCY CHANNELIZATION

Figure 13

TIA CHANNEL PLAN – 11 GHZ BAND

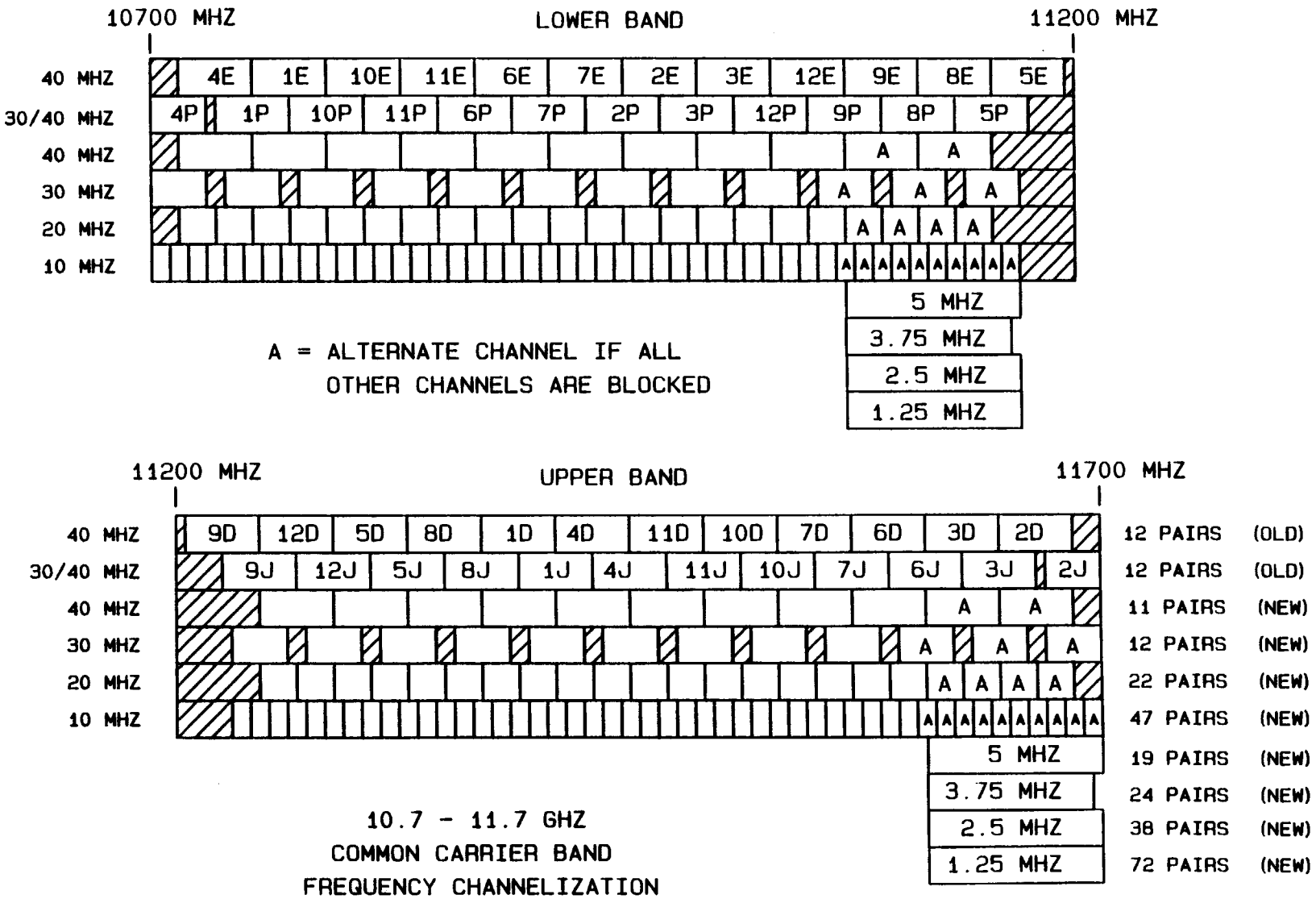
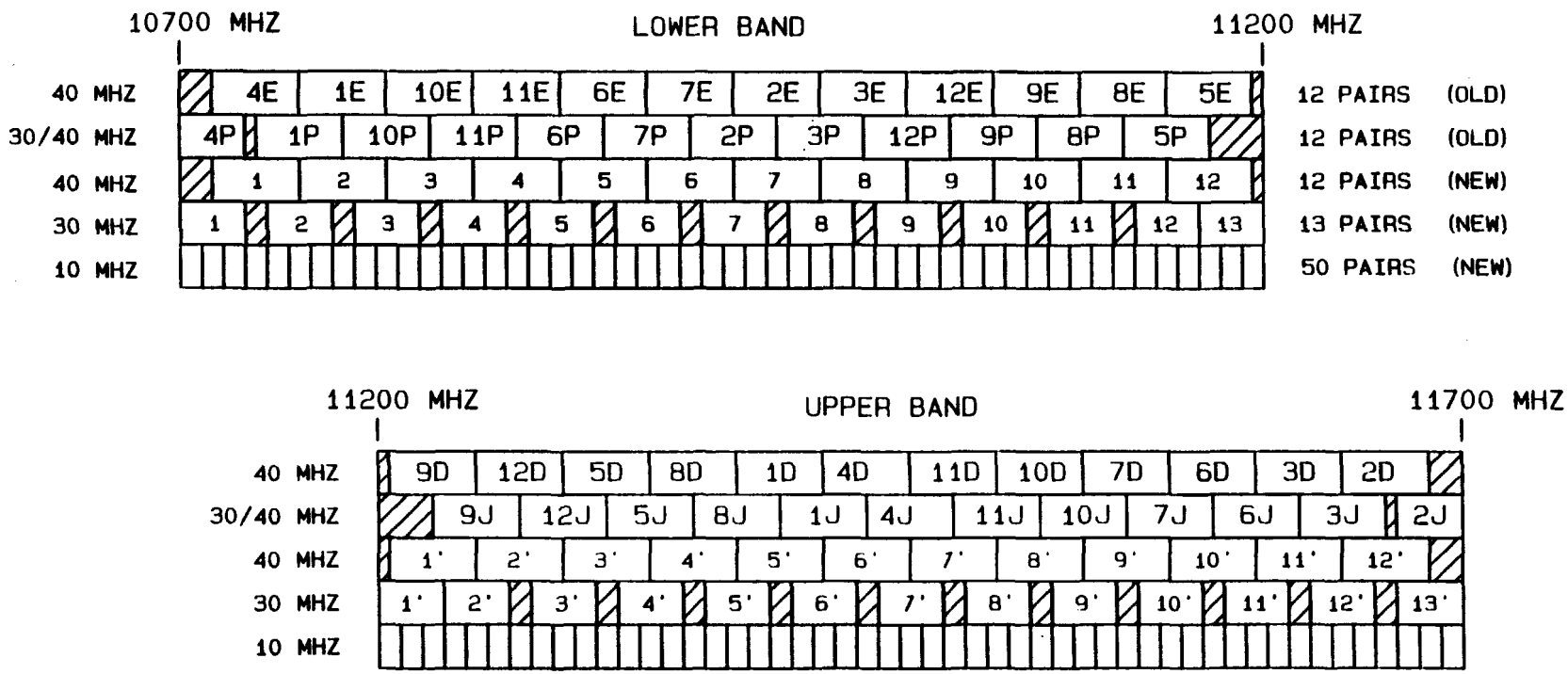


Figure 14

ALCATEL MODIFIED CHANNEL PLAN – 11 GHZ BAND



NOTE:

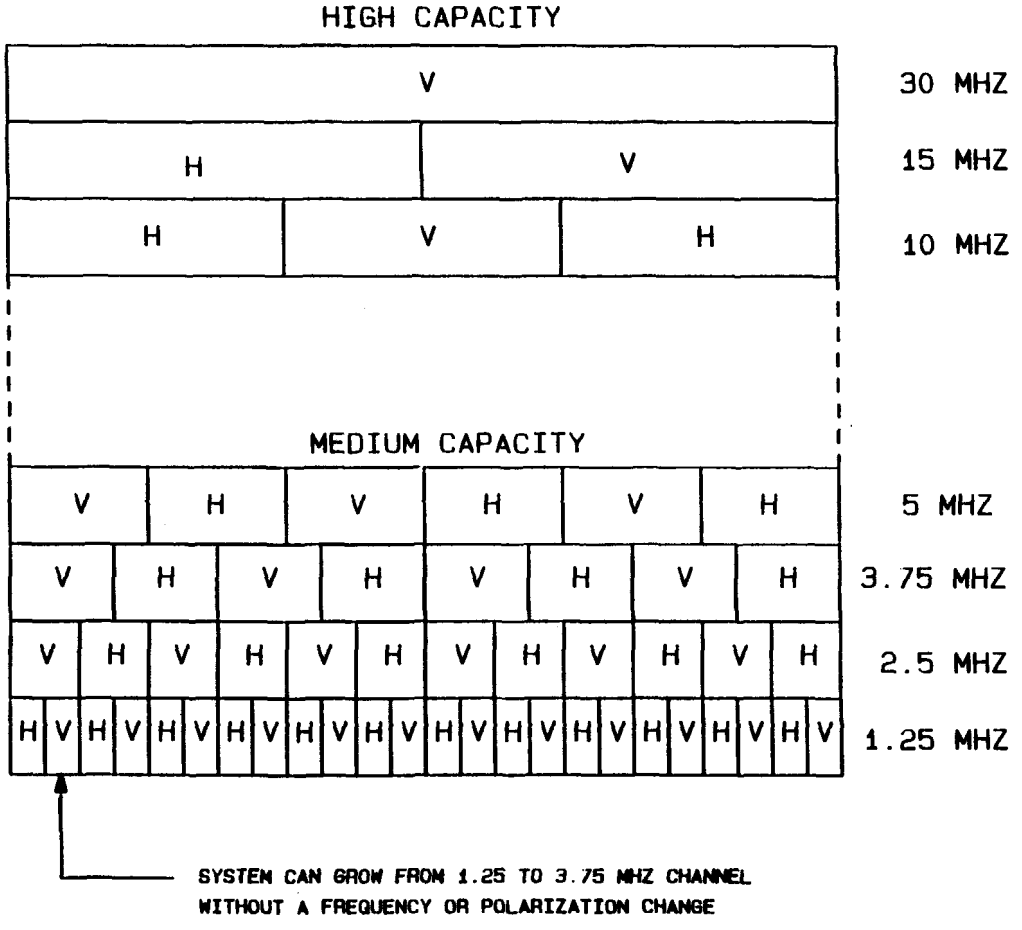
1. EXISTING 40 MHZ 'DE' PLAN RETAINED
2. NEW 30 MHZ PLAN USES THE SAME CENTER FREQUENCIES AS THE EXISTING 'PJ' PLAN
3. ONE ADDITIONAL 30 MHZ PAIR ADDED TO THE EXISITING 'PJ' PLAN

10.7 - 11.7 GHZ
COMMON CARRIER BAND
FREQUENCY CHANNELIZATION

Figure 15

TIA CHANNEL PLAN – LOWER 6 GHZ BAND

SYSTEM GROWTH PLAN



V = VERTICAL POLARIZATION

H = HORIZONTAL POLARIZATION

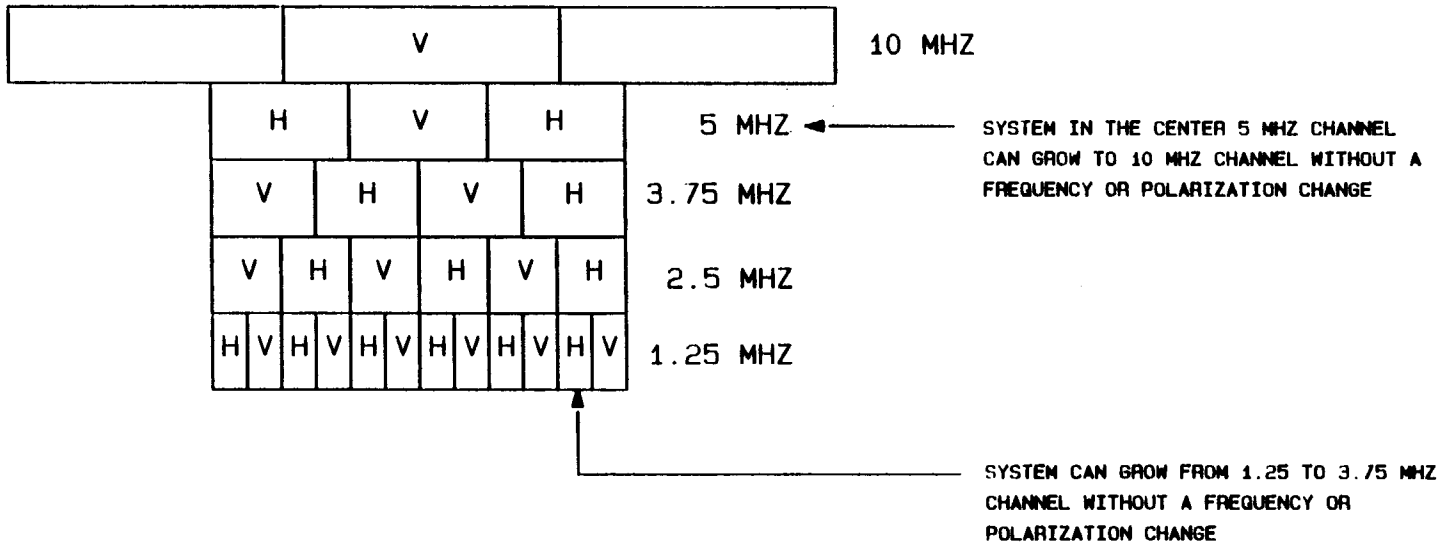
NOTES:

1. SYSTEM IN THE CENTER 10 MHZ CHANNEL CAN GROW TO 30 MHZ WITHOUT A FREQUENCY OR POLARIZATION CHANGE
2. FREQUENCY CHANGES ARE REQUIRED FOR THE FOLLOWING CASES.
   - GROWTH FROM 1.25 TO 2.5 MHZ CHANNELS
   - GROWTH FROM 2.5 TO 3.75 MHZ CHANNELS
   - GROWTH FROM 3.75 TO 5.0 MHZ CHANNELS
   - GROWTH FROM 5 TO 10 MHZ CHANNELS
   - GROWTH FROM 10 TO 15 MHZ CHANNELS
   - GROWTH FROM 15 TO 30 MHZ CHANNELS
3. POLARIZATION CHANGES WILL BE REQUIRED IN SOME CASES
4. DUE TO CONFLICTING CHANNEL BANDWIDTHS AND POLARIZATION PLANS, SOME CHANNELS WILL BE BLOCKED

Figure 16

TIA CHANNEL PLAN – UPPER 6 GHZ BAND

SYSTEM GROWTH PLAN



NOTES:

1. FREQUENCY CHANGES ARE REQUIRED FOR THE FOLLOWING CASES:
   - GROWTH FROM 1.25 TO 2.5 MHZ CHANNELS
   - GROWTH FROM 2.5 TO 3.75 MHZ CHANNELS
   - GROWTH FROM 3.75 TO 5.0 MHZ CHANNELS
2. POLARIZATION CHANGES WILL BE REQUIRED IN SOME CASES
3. DUE TO CONFLICTING CHANNEL BANDWIDTHS AND POLARIZATION PLANS, SOME CHANNELS WILL BE BLOCKED

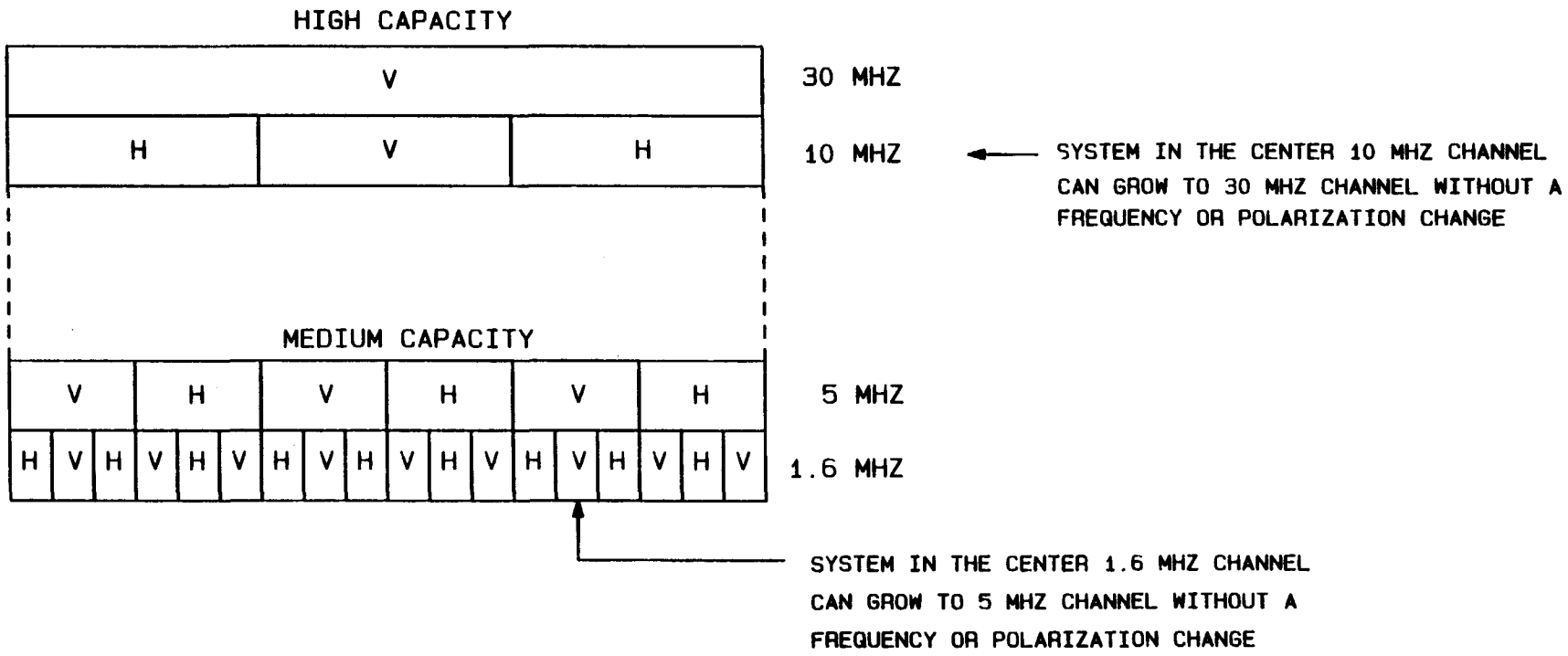
V = VERTICAL POLARIZATION

H = HORIZONTAL POLARIZATION

Figure 17

MODIFIED CHANNEL PLAN - LOWER 6 GHZ BAND

SYSTEM GROWTH PLAN



NOTE:

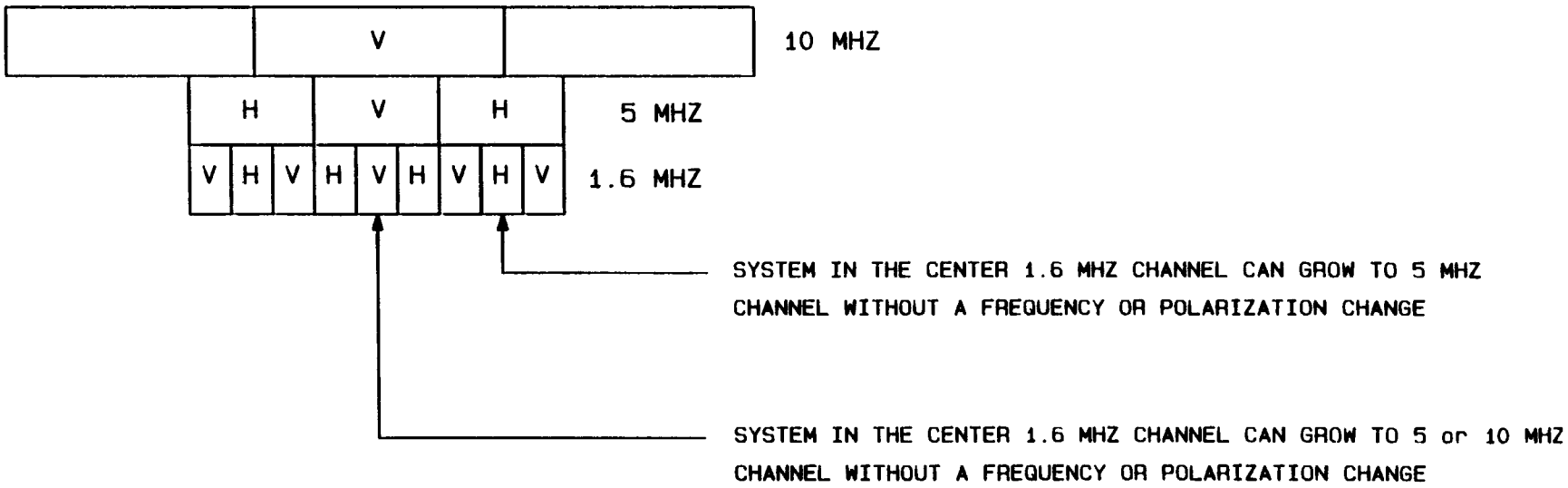
1. FREQUENCY CHANGE IS REQUIRED TO GROW FROM 5 TO 10 MHZ CHANNEL
2. POLARIZATION CHANGE MAY ALSO BE REQUIRED
3. LOW CAPACITY 400 AND 800 KHZ CHANNELS IN RESERVED SPECTRUM (BAND EDGES/GUARD BANDS)

V = VERTICAL POLARIZATION
H = HORIZONTAL POLARIZATION

Figure 18

MODIFIED CHANNEL PLAN – UPPER 6 GHZ BAND

SYSTEM GROWTH PLAN



NOTE:

1. LOW CAPACITY 400 AND 800 KHZ CHANNELS IN RESERVED SPECTRUM (BAND EDGES/GUARD BANDS)

V = VERTICAL POLARIZATION

H = HORIZONTAL POLARIZATION

Figure 19

CONCATENATED FREQUENCY PLANS

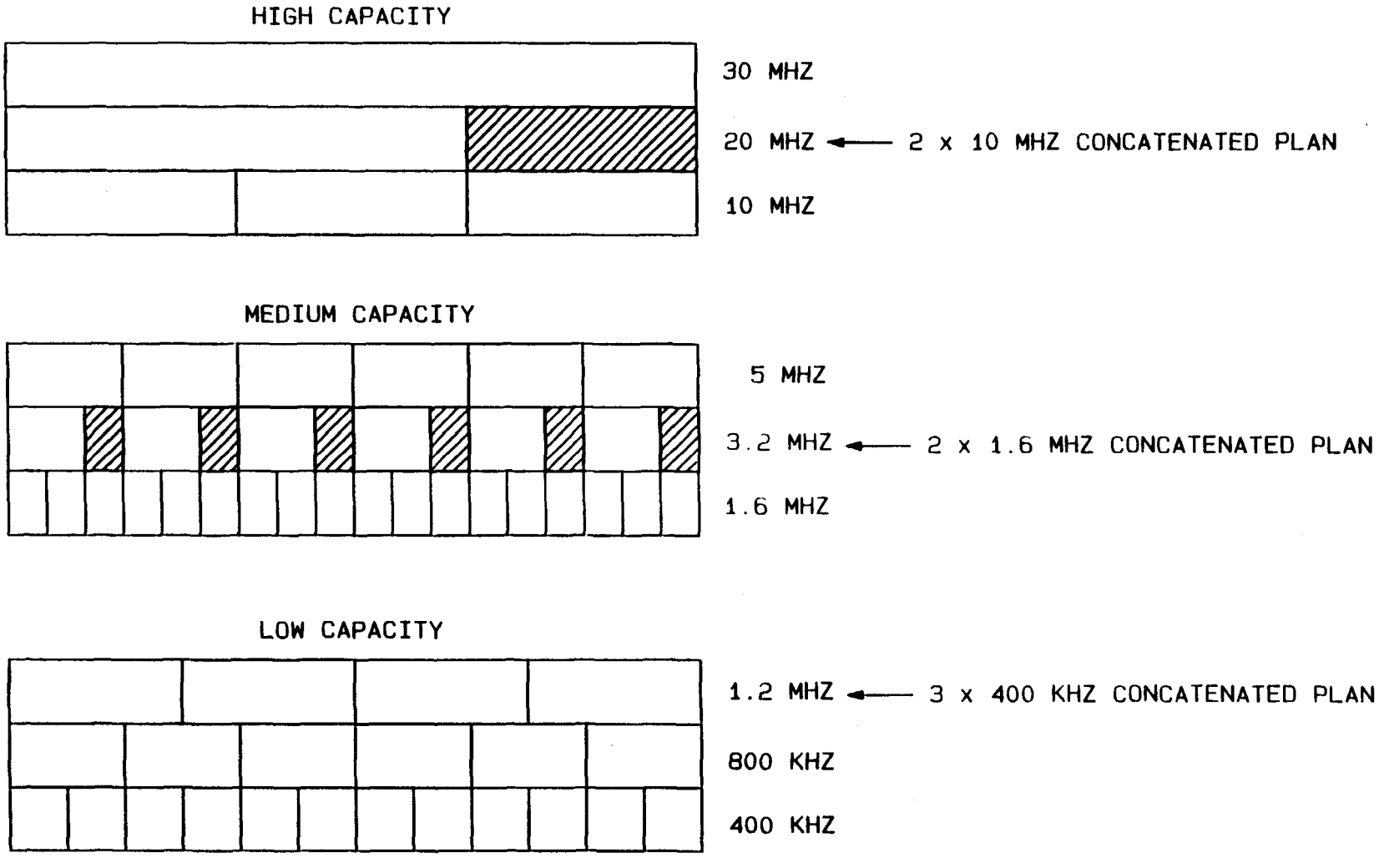


Figure 20

TYPICAL HIGH CAPACITY RADIOS

Frequency (GHZ)	Manufacturer	Radio Name	Traffic Loading	Channel Bandwidth	Modem Method	FCC Type Number
1.8 - 2.0	ALCATEL	MDR-4102	1 DS3 *	10 MHZ	64 QAM	JF6-8705
1.8 - 2.0	HARRIS	DVM2-45	1 DS3 *	10 MHZ	64 QAM	
1.8 - 2.0	TELESCIENCES	DR2J	1 DS3 *	10 MHZ	49 QPR	
3.7 - 4.2	ALCATEL	MDR-4104	1 DS3 *	10 MHZ	64 QAM	
3.7 - 4.2	ALCATEL	MDR-4204	2 DS3 *	20 MHZ	64 QAM	JF6-8908
3.7 - 4.2	N. TELECOM	RD-4A	2 DS3 *	20 MHZ	64 QAM	
5.9 - 6.4	ALCATEL	MDR-4106C	1 DS3 *	10 MHZ	64 QAM	JF6-8803
5.9 - 6.4	ALCATEL	MDR-4206	2 DS3 *	30 MHZ	16 QAM	JF6-8801
5.9 - 6.4	ALCATEL	MDR-4306	3 DS3 *	30 MHZ	64 QAM	JF6-8814
5.9 - 6.4	AT&T	DR6-30-135	3 DS3 *	30 MHZ	64 QAM	DR6-30-135E
5.9 - 6.4	HARRIS	unknown	1 DS3	15 MHZ?		
5.9 - 6.4	HARRIS	DM6-90	2 DS3 *	30 MHZ		
5.9 - 6.4	NEC	6G135-800	3 DS3 *	30 MHZ	64 QAM	
5.9 - 6.4	N. TELECOM	RD-6C	3 DS3 *	30 MHZ	64 QAM	CXP7UJRD6C1
5.9 - 6.4	TELESCIENCES	6G/1DS3	1 DS3 *	10 MHZ	64 QAM	IVO-6G-1DS3
6.5 - 6.8	ALCATEL	MDR-4106U	1 DS3 *	10 MHZ	64 QAM	JF6-8609
6.5 - 6.8	DMC	QUANTUM 6	1 DS3 *	10 MHZ	64 QAM	DYHDMC6QSU-45
6.5 - 6.8	HARRIS	DVM6-45	1 DS3 *	10 MHZ	64 QAM	BCK9GK DVM6-4564-1
6.5 - 6.8	TELESCIENCES	6G/1DS3	1 DS3 *	10 MHZ	64 QAM	IVO-6G-1DS3
10.7 - 11.7	ALCATEL	MDR-4111A	1 DS3 *	10 MHZ	64 QAM	JF6-8914
10.7 - 11.7	ALCATEL	MDR-4211	2 DS3 *	30 MHZ	16 QAM	JF6-8802
10.7 - 11.7	ALCATEL	MDR-4311	3 DS3 *	30 MHZ	64 QAM	JF6-8815
10.7 - 11.7	AT&T	DR-11-135	3 DS3 *	30 MHZ	64 QAM	DR11-40A-135
10.7 - 11.7	DMC	QUANTUM 11	1 DS3	15 MHZ	16 QAM	
10.7 - 11.7	NEC	11G135-800	3 DS3 *	30 MHZ	64 QAM	
10.7 - 11.7	N. TELECOM	RD-11C	3 DS3 *	30 MHZ	64 QAM	

* This radio will meet the spectrum efficiency requirements proposed by Alcatel.

Figure 21

TYPICAL MEDIUM AND LOW CAPACITY RADIOS

Frequency (GHZ)	Manufacturer	Radio Name	Traffic Loading	Channel Bandwidth	Modem Method	FCC Type Number
1.8 - 2.2	ALCATEL	MDR-5102	12 DS1 *	3.5 MHZ	256 QAM	JF6-8804
1.8 - 2.2	ALCATEL	MDR-5202	8 DS1 *	3.2 MHZ	64 QAM	JF6-8903
1.8 - 2.2	ALCATEL	MDR-5302	4 DS1 *	1.6 MHZ	64 QAM	JF6-8904
1.8 - 2.2	ALCATEL	MDR-5402	12 DS1 *	5.0 MHZ	64 QAM	JF6-9102
1.8 - 2.0	ALCATEL	DTR2-26	16 DS1	10.0 MHZ	16 QAM	FHM49A DTR2-26-2
1.8 - 2.0	ALCATEL	DTR2-13	8 DS1	5.0 MHZ	8 QAM	FHM49A DTR2-13-2
1.8 - 2.2	HARRIS	DVM2-8T	8 DS1	5.0 MHZ	25 QPRS	
2.1 - 2.2	HARRIS	URBANET 2	4 DS1 *	1.6 MHZ	49 QPRS	BCK9GK DM2-7A-6-1
2.1 - 2.2	HARRIS	URBANET 2	2 DS1	1.6 MHZ	9 QPRS	BCK9GK DM2-3A-3-4
2.1 - 2.2	HARRIS	URBANET 2	1 DS1	800 KHZ	9 QPRS	BCK9GK DM2-3A-1-3
1.8 - 2.2	TELESCIENCES	2G/12DS1	12 DS1 *	3.5 MHZ	128 QAM	IVO-2G-12DS1
1.8 - 2.2	TELESCIENCES	2G/8DS1	8 DS1	3.5 MHZ	32 QAM	IVO-2G-8DS1
1.8 - 2.2	TELESCIENCES	2G/4DS1	4 DS1	3.5 MHZ	8 QAM	IVO-2G-4DS1
1.8 - 2.2	TELESCIENCES	2G/4DS1N	4 DS1 *	1.6 MHZ	64 QAM	IVO-2G-4DS1N
1.8 - 2.2	W. MULTIPLEX	ONE-2000	132 VF *	1.6 MHZ	ANALOG	HZB-12000
1.8 - 2.2	W. MULTIPLEX	ONE-2000	48 VF *	800 KHZ	ANALOG	HZB-12000
3.7 - 4.2	TELESCIENCES	DR4A	12 DS1	7.0 MHZ	25 QPR	

* This radio will meet the spectrum efficiency requirements proposed by Alcatel.

Figure 22.1

TYPICAL MEDIUM AND LOW CAPACITY RADIOS (continued)

Frequency (GHZ)	Manufacturer	Radio Name	Traffic Loading	Channel Bandwidth	Modem Method	FCC Type Number
5.9 - 6.8	ALCATEL	MDR-5106	12 DS1 *	5.0 MHZ	64 QAM	JF6-9206
5.9 - 6.8	ALCATEL	MDR-5206	8 DS1 *	3.2 MHZ	64 QAM	JF6-9204
5.9 - 6.8	ALCATEL	MDR-5306	4 DS1 *	1.6 MHZ	64 QAM	JF6-9205
6.5 - 6.8	ALCATEL	DTR6-26	16 DS1	10.0 MHZ	16 QAM	FHM49A DTR6-26-2
6.5 - 6.8	ALCATEL	DTR6-13	8 DS1	5.0 MHZ	16 QAM	FHM49A DTR6-13-2
6.5 - 6.8	DMC	QUANTUM 6	16 DS1	10.0 MHZ	16 QAM	DYHDMC6QDSU-16
6.5 - 6.8	DMC	QUANTUM 6	8 DS1	5.0 MHZ	16 QAM	DYHDMC6QDSU-08
5.9 - 6.8	HARRIS	DVM6-12T	12 DS1 *	5.0 MHZ	49 QPRS	BCK9GK DVM6-12T-1
5.9 - 6.8	HARRIS	DVM6-8T	8 DS1	5.0 MHZ	25 QPRS	BCK9GK DVM6-8T-1
5.9 - 6.8	TELESCIENCES	6G/12DS1	12 DS1 *	3.5 MHZ	128 QAM	IVO-6G-12DS1
5.9 - 6.8	TELESCIENCES	6G/8DS1	8 DS1	3.5 MHZ	32 QAM	IVO-6G-8DS1
5.9 - 6.8	TELESCIENCES	6G/4DS1	4 DS1	3.5 MHZ	8 QAM	IVO-6G-4DS1
6.5 - 6.8	W. MULTIPLEX	TWO-6000	132 VF *	1.6 MHZ	ANALOG	
10.5 - 10.7	DMC	DMC 10M	4 DS1	2.5 MHZ	16 QAM	DYH6RMDMC10S-04
10.5 - 10.7	HARRIS	DVM10-8T	8 DS1	3.75 MHZ	49 QPRS	BCK9GK DVM10-8T-1
10.5 - 10.7	HARRIS	URBANET 10	4 DS1	2.5 MHZ	25 QPRS	BCK9GK DM105A-5-2
10.5 - 10.7	HARRIS	URBANET 10	2 DS1	1.6 MHZ	9 QPRS	BCK9GK DVM10-3A-3-3
10.5 - 10.7	HARRIS	URBANET 10	1 DS1	800 KHZ	9 QPRS	BCK9GK DVM10-3A-1-2
10.5 - 10.7	TELESCIENCES	10G/12DS1	12 DS1 *	3.5 MHZ	128 QAM	IVO-10G-12DS1
10.5 - 10.7	TELESCIENCES	10G/8DS1	8 DS1	3.5 MHZ	32 QAM	IVO-10G-8DS1
10.7 - 11.7	ALCATEL	MDR-5111	12 DS1	10.0 MHZ	8 FSK	JF6-9103
10.7 - 11.7	DMC	QUANTUM 11	16 DS1	10.0 MHZ	16 QAM	DYHDMC11QS-16
10.7 - 11.7	DMC	QUANTUM 11	8 DS1	5.0 MHZ	16 QAM	DYHDMC11QS-08

* This radio will meet the spectrum efficiency requirements proposed by Alcatel.

Figure 22.2

Appendix A

List of Center Frequencies for the
Alcatel Modified Channel Plan

3.7 - 4.2 GHZ COMMON CARRIER BAND

(1) 20 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)			RECEIVE (transmit) (MHZ)	
3710		.....	3990	
3730		.....	4010	
3750	1	.....	3950	1
3770	1	.....	3970	1
3790		.....	4070	
3810		.....	4090	
3830		.....	4030	
3850		.....	4050	
3870		.....	4150	
3890		.....	4170	
3910		.....	4110	
3930		.....	4130	
n/a		.....	4190	2

1 - Alternate channels. These channels are set aside for narrow bandwidth systems and should be used only if all other channels are blocked.

2 - These frequencies may be assigned for unpaired use.

(2) 10 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)			RECEIVE (transmit) (MHZ)	
3710		.....	3990	
3730		.....	4010	
3750	1	.....	3950	1
3770	1	.....	3970	1
3790		.....	4070	
3810		.....	4090	
3830		.....	4030	
3850		.....	4050	
3870		.....	4150	
3890		.....	4170	
3910		.....	4110	
3930		.....	4130	
n/a		.....	4190	2

1 - Alternate channels. These channels are set aside for narrow bandwidth systems and should be used only if all other channels are blocked.

2 - These frequencies may be assigned for unpaired use.

(3) 5 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)			RECEIVE (transmit) (MHZ)	
3710.0		.....	3990.0	
3730.0		.....	4010.0	
3790.0		.....	4070.0	
3810.0	3	.....	4090.0	3
3830.0		.....	4030.0	
3850.0	3	.....	4050.0	3
3870.0	3	.....	4150.0	3
3890.0	3	.....	4170.0	3
3910.0	3	.....	4110.0	3
3930.0	3	.....	4130.0	3
n/a		.....	4190.0	2

2 - These frequencies may be assigned for unpaired use.

3 - Alternate channels. These channels should be used only after all other narrow bandwidth channels are used.

(4) 1.6 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)			RECEIVE (transmit) (MHZ)	
3708.4		.....	3988.4	
3710.0		.....	3990.0	
3711.6		.....	3991.6	
3728.4		.....	4008.4	
3730.0		.....	4010.0	
3731.6		.....	4011.6	
3748.4		.....	3948.4	
3750.0		.....	3950.0	
3751.6		.....	3951.6	
3768.4		.....	3968.4	
3770.0		.....	3970.0	
3771.6		.....	3971.6	
3788.4		.....	4068.4	
3790.0		.....	4070.0	
3791.6		.....	4071.6	
3808.4	3	.....	4088.4	3
3810.0	3	.....	4090.0	3
3811.6	3	.....	4091.6	3
3828.4		.....	4028.4	
3830.0		.....	4030.0	
3831.6		.....	4031.6	
3848.4	3	.....	4048.4	3
3850.0	3	.....	4050.0	3
3851.6	3	.....	4051.6	3
3868.4	3	.....	4148.4	3
3870.0	3	.....	4150.0	3
3871.6	3	.....	4151.6	3
3888.4	3	.....	4168.4	3
3890.0	3	.....	4170.0	3
3891.6	3	.....	4171.6	3
3908.4	3	.....	4108.4	3
3910.0	3	.....	4110.0	3
3911.6	3	.....	4111.6	3
3928.4	3	.....	4128.4	3
3930.0	3	.....	4130.0	3
3931.6	3	.....	4131.6	3
n/a		.....	4188.4	2
n/a		.....	4190.0	2
n/a		.....	4191.6	2

2 - These frequencies may be assigned for unpaired use.

3 - Alternate channels. These channels should be used only after all other narrow bandwidth channels are used.