

## Satellite Tracking Frequencies

M9 WWTV	M5/7	M3	Satellite	Frequency	Symbol Rate	Code Rate	Network ID	Polarization	Band	Decoder Type	Orbital Position
(1) ATLBD5W	N/A	N/A	AtlanticBird3	12543	27500	34	0X0801	Horizontal	H	DVB QPSK	5W
			AtlanticBird3	11512	29950	78	0X055F	Vertical	L	DVB QPSK	5W
			AtlanticBird3	11591	20000	23	0X20FA	Vertical	L	DVB QPSK	5W
			AtlanticBird3	11054	29950	78	0X055F	Vertical	L	DVB QPSK	5W
(2) ABSN75E	N/A	N/A	ABS 1 North	12640	22000	34	0X0064	Vertical	H	DVB QPSK	75E
			ABS 1 North	12518	22000	78	0X0056	Vertical	H	DVB QPSK	75E
			ABS 1 North	12579	22000	78	0X0064	Vertical	H	DVB QPSK	75E
			ABS 1 North	12670	22000	78	0X0064	Vertical	H	DVB QPSK	75E
(3) AGL146E	N/A	N/A	ABS 5	12301	30000	34	0XFFFE	Vertical	H	DVB QPSK	146E
			ABS 5	12661	26042	56	0X0039	Horizontal	H	DVB QPSK	146E
			ABS 5	12621	30000	34	0XFFFE	Vertical	H	DVB QPSK	146E
			ABS 5	12301	30000	34	0XFFFE	Vertical	H	DVB QPSK	146E
(4) AM80E	N/A	N/A	Express AM2	11606	30000	56	0XFFFE	Vertical	H	DVB QPSK	80E
			Express AM2	11101	30000	34	0XFFFE	Vertical	L	DVB QPSK	80E
			Express AM2	11606	27500	34	0XFFFE	Vertical	H	DVB QPSK	80E
			Express AM2	11044	30000	56	0XFFFE	Horizontal	L	DVB QPSK	80E
(5) AM140E	N/A	N/A	Express AM3	11665	39500	56	0XFFFE	Vertical	L	DVB QPSK	140E
			Express AM3	11665	39500	56	0XFFFE	Vertical	L	DVB QPSK	140E
			Express AM3	11471	24800	34	0XFFFE	Vertical	L	DVB QPSK	140E
			Express AM3	11471	24800	12	0XFFFE	Horizontal	L	DVB QPSK	140E
(6) AME53E	N/A	N/A	Express AM22 W	12664	27500	56	0XFFFE	Vertical	H	DVB QPSK	53E
			Express AM22 W	11044	44950	34	0X1111	Vertical	L	DVB QPSK	53E
			Express AM22 W	12664	27500	34	0XFFFE	Vertical	H	DVB QPSK	53E
			Express AM22 W	10974	10000	34	0XFFFE	Horizontal	L	DVB QPSK	53E
(7) AMC87W	N/A	N/A	AMC 3	11900	30000	23	0XFFFE	Vertical	H	DVB QPSK	87W

			AMC 3	11900	30000	23	0XFFFE	Vertical	H	DVB QPSK	87W
			AMC 3	11960	29270	34	0XFFFE	Horizontal	H	DVB QPSK	87W
			AMC 3	11960	29270	34	0XFFFE	Horizontal	H	DVB QPSK	87W
(8)	N/A	N/A	Amos 2	10806	27500	34	0X00AB	Vertical	L	DVB QPSK	4W
AMOSE4W			Amos 2	10758	27500	56	0X00AB	Vertical	L	DVB QPSK	4W
			Amos 2	10806	27500	34	0X0001	Horizontal	L	DVB QPSK	4W
			Amos 2	10759	30000	34	0X0055	Horizontal	L	DVB QPSK	4W
(9)	N/A	N/A	Apstar 6	12515	27500	34	0X0041	Vertical	H	DVB QPSK	134E
APS134E			Apstar 6	12395	27500	34	0XFFFE	Vertical	H	DVB QPSK	134E
			Apstar 6	12595	27500	34	0X0041	Vertical	H	DVB QPSK	134E
			Apstar 6	12595	27500	34	0X0041	Vertical	H	DVB QPSK	134E
(10)	(10) ARABSAT	26E	Badr 6	11747	27500	34	0X02BE	Vertical	H	DVB QPSK	26E
ARAB26E			Badr 6	12399	27500	34	0X0001	Vertical	H	DVB QPSK	26E
			Badr 6	11843	27500	34	0X02BE	Horizontal	H	DVB QPSK	26E
			Badr 6	12341	27500	34	0X013E	Horizontal	H	DVB QPSK	26E
(11)	N/A	N/A	AsiaSat 3S	12352	30000	34	0X0002	Vertical	H	DVB QPSK	105E
ASA105E			AsiaSat 3S	12641	11166	23	0X0001	Vertical	H	LDPC 8PSK	105E
			AsiaSat 3S	12471	20000	23	0XFFFE	Horizontal	H	STD DVB-S2	105E
			AsiaSat 3S	12471	20000	23	0XFFFE	Horizontal	H	DVB QPSK	105E
(12)	(59) ASIASAT	122E	AsiaSat 4	11727	25000	23	0XFFFE	Circular Right	H	DVB QPSK	122E
ASA122E			AsiaSat 4	11727	25000	23	0XFFFE	Circular Right	H	DVB QPSK	122E
			AsiaSat 4	11881	25000	23	0XFFFE	Circular Right	H	DVB QPSK	122E
			AsiaSat 4	11881	25000	23	0XFFFE	Circular Right	H	DVB QPSK	122E
(13)	(1) ASTRA1	19E	Astra 1	11778	27500	34	0X0001	Vertical	H	DVB QPSK	19E
AST19E			Astra 1	11156	22000	56	0X0001	Vertical	L	DVB QPSK	19E
			Astra 1	11719	27500	34	0X0085	Horizontal	H	DVB QPSK	19E
			Astra 1	10862	22000	78	0X0001	Horizontal	L	DVB QPSK	19E
(14)	(3) ASTRA2N	28NE	Astra 2 North	11778	27500	23	0X0020	Vertical	H	DVB QPSK	28E
ASTN28E			Astra 2 North	10729	22000	56	0X0020	Vertical	L	DVB QPSK	28E
				11914	27500	23	0X0020	Horizontal	H		28E

			Astra 2 North							DVB QPSK	
			Astra 2 North	10714	22000	56	0X0020	Horizontal	L	DVB QPSK	28E
(15) ASTS28E	(4) ASTRA2S	28SE	Astra 2 South	12207	27500	23	0X0020	Vertical	H	DVB QPSK	28E
			Astra 2 South	11681	27500	23	0X0020	Vertical	L	DVB QPSK	28E
			Astra 2 South	12110	27500	23	0X0020	Horizontal	H	DVB QPSK	28E
			Astra 2 South	11623	27500	23	0X0020	Horizontal	L	DVB QPSK	28E
(16) DTV72W	(62) DSS_72	72W	DIRECTV 1R	12239	20000	67	0X0007	Circular Left	H	DSS DTV	72W
			DIRECTV 1R	12559	20000	67	0X0007	Circular Left	H	DSS DTV	72W
			DIRECTV 1R	12414	20000	67	0X0007	Circular Left	H	DSS DTV	72W
			DIRECTV 1R	12647	20000	67	0X0007	Circular Left	H	DSS DTV	72W
(17) DTV101W	(55) DSS_101	101W	DIRECTV	12603	20000	67	0X0000	Circular Right	H	DSS DTV	101W
			DIRECTV	12603	20000	67	0X0000	Circular Right	H	DSS DTV	101W
			DIRECTV	12676	20000	67	0X0000	Circular Left	H	DSS DTV	101W
			DIRECTV	12239	20000	67	0X0000	Circular Left	H	DSS DTV	101W
(18) DTV110W	(56) DSS_110	110W	DIRECTV 5	12516	20000	99	0X1006	Circular Right	H	DVB QPSK	110W
			DIRECTV 5	12428	20000	99	0X1006	Circular Right	H	DVB QPSK	110W
			DIRECTV 5	12414	20000	99	0X1006	Circular Left	H	DVB QPSK	110W
			DIRECTV 5	12443	20000	99	0X1006	Circular Left	H	DVB QPSK	110W
(19) DTV119W	(57) DSS_119	119W	DIRECTV 7S	12603	20000	67	0X0003	Circular Right	H	DSS DTV	119W
			DIRECTV 7S	12545	20000	67	0X0003	Circular Right	H	DSS DTV	119W
			DIRECTV 7S	12676	20000	67	0X0003	Circular Left	H	DSS DTV	119W
			DIRECTV 7S	12530	20000	67	0X0003	Circular Left	H	DSS DTV	119W
(20) TELB63W	N/A	N/A	Telstar 14R	11720	31300	34	0XFFFE	Vertical	H	DVB QPSK	63W
			Telstar 14R	11720	31300	34	0XFFFE	Vertical	H	DVB QPSK	63W
			Telstar 14R	12055	26666	56	0XFFFE	Horizontal	H	DVB QPSK	63W
			Telstar 14R	12055	26666	56	0XFFFE	Horizontal	H	DVB QPSK	63W
(21) DSH61W	(51) ECHO_61	61W	EchoStar 3	12457	20000	99	0X1002	Circular Right	H	DVB QPSK	61W
			EchoStar 3	12516	20000	99	0X1002	Circular Right	H	DVB QPSK	61W
			EchoStar 3	12414	20000	99	0X1002	Circular Left	H	DVB QPSK	61W
			EchoStar 3	12268	20000	99	0X1002	Circular Left	H	DVB QPSK	61W
	(52) ECHO_110	110W	EchoStar 11	12516	20000	99	0X1006		H		110W

(22)								Circular Right		DVB QPSK		
DSH110W			EchoStar 11	12428	20000	99	0X1006	Circular Right	H	DVB QPSK	110W	
			EchoStar 11	12414	20000	99	0X1006	Circular Left	H	DVB QPSK	110W	
			EchoStar 11	12443	20000	99	0X1006	Circular Left	H	DVB QPSK	110W	
(23)	(53)	ECHO_119	119W	EchoStar 7	12486	20000	99	0X1004	Circular Right	H	DVB QPSK	119W
DSH119W			EchoStar 7	12341	20000	99	0X1004	Circular Right	H	DVB QPSK	119W	
			EchoStar 7	12326	20000	99	0X1004	Circular Left	H	DVB QPSK	119W	
			EchoStar 7	12355	20000	99	0X1004	Circular Left	H	DVB QPSK	119W	
(24)	(54)	ECHO_129	129W	Ceil 2	12516	20000	99	0X1008	Circular Right	H	DVB QPSK	129W
DSH129W			Ceil 2	12545	21500	99	0X1008	Circular Right	H	Turbo 8PSK Dish	129W	
			Ceil 2	12501	21500	99	0X1008	Circular Left	H	Turbo 8PSK Dish	129W	
			Ceil 2	12530	21500	99	0X1008	Circular Left	H	Turbo 8PSK Dish	129W	
(25)	N/A	N/A	EchoStar 8	12224	22500	99	0X1003	Circular Right	H	Turbo 8PSK Dish	77W	
DSH77W			EchoStar 8	12282	22500	99	0X1003	Circular Right	H	Turbo 8PSK Dish	77W	
			EchoStar 8	12239	22500	99	0X1003	Circular Left	H	Turbo 8PSK Dish	77W	
			EchoStar 8	12268	22500	99	0X1003	Circular Left	H	Turbo 8PSK Dish	77W	
(26)	ETL7E	(14)	7E	Eutelsat W3A	11617	30000	34	0X007E	Vertical	L	DVB QPSK	7E
		EUTELSAT_W3A		Eutelsat W3A	11452	25066	23	0X007E	Vertical	L	DVB QPSK	7E
				Eutelsat W3A	11596	30000	34	0X007E	Horizontal	L	DVB QPSK	7E
				Eutelsat W3A	11471	30000	34	0X007E	Horizontal	L	DVB QPSK	7E
(27)	N/A	N/A	Eutelsat W4 Ru	12245	27500	34	0X0070	Circular Right	H	DVB QPSK	36E	
ETLR36E			Eutelsat W4 Ru	11977	27500	34	0X0070	Circular Right	H	DVB QPSK	36E	
			Eutelsat W4 Ru	11727	27500	34	0XFFFE	Circular Left	H	LDPC 8PSK STD DVB-S2	36E	
			Eutelsat W4 Ru	11804	27500	34	0X036E	Circular Left	H	DVB QPSK	36E	
(28)	N/A	N/A	Eutelsat W4 A	11843	27500	34	0X036E	Vertical	H	DVB QPSK	36E	
ETLN36E			Eutelsat W4 A	11881	27500	34	0X036E	Vertical	H	DVB QPSK	36E	
			Eutelsat W4 A	11747	27500	34	0X036E	Horizontal	H	DVB QPSK	36E	

			Eutelsat W4 A	12015	27500	34	0X036E	Horizontal	H	DVB QPSK	36E
(29) ETL70E	N/A	N/A	Eutelsat W5	11210	10000	34	0X013E	Horizontal	L	DVB QPSK	70E
			Eutelsat W5	11210	10000	34	0X013E	Horizontal	L	DVB QPSK	70E
			Eutelsat W5	11210	10000	34	0X013E	Horizontal	L	DVB QPSK	70E
			Eutelsat W5	11210	10000	34	0X013E	Horizontal	L	DVB QPSK	70E
(30) ETLS36E	N/A	N/A	Eutel Sesat	11178	27500	34	0X0001	Vertical	L	DVB QPSK	16E
			Eutel Sesat	11633	05787	34	0X22D4	Vertical	L	DVB QPSK	16E
			Eutel Sesat	12525	30000	34	0X016E	Horizontal	H	DVB QPSK	16E
			Eutel Sesat	10976	27225	23	0X016E	Horizontal	L	LDPC QPSK STD DVB- S2	16E
(31) EXVU91W	(61) EXPRESSTV	91W	Bell TV	12428	20000	99	0X0100	Circular Right	H	DVB QPSK	91W
			Bell TV	12224	20000	99	0X0100	Circular Right	H	DVB QPSK	91W
			Bell TV	12239	20000	99	0X0100	Circular Left	H	DVB QPSK	91W
			Bell TV	12268	20000	99	0X0100	Circular Left	H	DVB QPSK	91W
(32) EXVU82W	(50) EXPRESSVU	82W	Bell TV HD	12428	20000	99	0X0101	Circular Right	H	DVB QPSK	82W
			Bell TV HD	12224	20000	99	0X0101	Circular Right	H	Turbo 8PSK Dish	82W
			Bell TV HD	12443	20000	99	0X0101	Circular Left	H	DVB QPSK	82W
			Bell TV HD	12268	20000	99	0X0101	Circular Left	H	Turbo 8PSK Dish	82W
(33) GLX95W	(58) GALAXY3CN	N/A	DIRECTV LA	11570	20000	23	0XFFFE	Circular Right	H	DSS DTV	95W
			DIRECTV LA	11480	20000	23	0XFFFE	Circular Right	H	DSS DTV	95W
			DIRECTV LA	11597	22500	23	0XFFFE	Circular Left	H	DSS DTV	95W
			DIRECTV LA	11480	20000	23	0XFFFE	Circular Left	H	DSS DTV	95W
(34) HSPE30W	(7) HISPASAT	30W	Hispasat 1C	12379	27500	34	0X0031	Vertical	H	DVB QPSK	30W
			Hispasat 1C	11771	27500	34	0X0031	Vertical	L	DVB QPSK	30W
			Hispasat 1C	12322	27500	34	0X0036	Horizontal	H	DVB QPSK	30W
			Hispasat 1C	12322	27500	34	0X0036	Horizontal	L	DVB QPSK	30W
(35) HBD13E	(2) HOTBIRD	13E	Hot Bird	12594	27500	34	0X013E	Vertical	H	DVB QPSK	13E
			Hot Bird	11766	27500	23	0X013E	Vertical	L	DVB QPSK	13E
			Hot Bird	11747	27500	34	0X013E	Horizontal	H	DVB QPSK	13E
			Hot Bird	11137	27500	34	0X013E	Horizontal	L		13E

											DVB QPSK
(36) Eusat9A	Eusat9A	9E	Intelsat 9A	12418	27500	34	0X000A	Vertical	H	DVB QPSK	9E
			Intelsat 9A	12418	27500	34	0X0006	Vertical	H	DVB QPSK	9E
			Intelsat 9A	11976	27500	34	0X189C	Horizontal	H	DVB QPSK	9E
			Intelsat 9A	12437	27500	34	0X009C	Horizontal	H	DVB QPSK	9E
(37) ISAT93E	N/A	N/A	Intelsat 3A 4B	10990	27500	34	0X0001	Vertical	L	DVB QPSK	93E
			Intelsat 3A 4B	11490	27500	34	0X0001	Vertical	L	DVB QPSK	93E
			Intelsat 3A 4B	11030	30000	34	0X0012	Vertical	L	LDPC 8PSK STD DVB- S2	93E
			Intelsat 3A 4B	11150	27500	34	0X0001	Vertical	L	DVB QPSK	93E
(38) IT166E	N/A	N/A	Intelsat 8	12646	28066	34	0XFFFE	Horizontal	H	DVB QPSK	166E
			Intelsat 8	12726	28066	34	0XFFFE	Horizontal	H	DVB QPSK	166E
			Intelsat 8	12286	28800	34	0XFFFE	Horizontal	H	DVB QPSK	166E
			Intelsat 8	12286	28800	34	0XFFFE	Horizontal	H	DVB QPSK	166E
(39) ITE68E	N/A	N/A	Intelsat 10 E	12722	26657	12	0X013E	Vertical	H	DVB QPSK	68E
			Intelsat 10 E	12602	26657	12	0X0005	Vertical	H	DVB QPSK	68E
			Intelsat 10 E	12562	26657	12	0X0001	Horizontal	H	DVB QPSK	68E
			Intelsat 10 E	12522	26657	12	0X013E	Horizontal	H	DVB QPSK	68E
(40) IT43W	N/A	N/A	Intelsat 11	10882	30000	99	0XFFFE	Vertical	L	DVB QPSK	43W
			Intelsat 11	10722	30000	99	0XFFFE	Vertical	L	DVB QPSK	43W
			Intelsat 11	10882	30000	99	0XFFFE	Horizontal	L	DVB QPSK	43W
			Intelsat 11	10722	30000	99	0XFFFE	Horizontal	L	DVB QPSK	43W
(41) ITP180E	N/A	N/A	Intelsat 18SP	11155	28588	34	0XFFFE	Horizontal	L	LDPC 8PSK STD DVB- S2	180E
			Intelsat 18SP	11060	30000	34	0X00A7	Horizontal	L	DVB QPSK	180E
			Intelsat 18SP	12648	28066	34	0XFFFE	Horizontal	H	DVB QPSK	180E
			Intelsat 18SP	10975	30000	34	0XFFFE	Horizontal	L	DVB QPSK	180E
(42) IT34W	N/A	N/A	Intelsat 903	11675	30000	34	0X0001	Vertical	L	DVB QPSK	34W
			Intelsat 903	11555	30000	34	0X0001	Horizontal	L	DVB QPSK	34W
			Intelsat 903	11675	30000	34	0X0001	Horizontal	L	DVB QPSK	34W
			Intelsat 903	11095	30000	34	0X0001	Horizontal	L		34W

										DVB QPSK	
(43) MEAM91E	N/A	N/A	Measat 3	12523	27500	56	0X03E7	Vertical	H	DVB QPSK	91E
			Measat 3	10982	30000	78	0XFFFE	Vertical	L	DVB QPSK	91E
			Measat 3	12683	27500	56	0X03E7	Horizontal	H	DVB QPSK	91E
			Measat 3	12683	27500	34	0X03E7	Horizontal	H	DVB QPSK	91E
(44) NILE7W	(11) NILESAT	7W	Nilesat 101	12284	27500	34	0X0800	Vertical	H	DVB QPSK	7W
			Nilesat 101	10758	27500	34	0X0800	Vertical	L	DVB QPSK	7W
			Nilesat 101	11996	27500	34	0X0800	Horizontal	H	DVB QPSK	7W
			Nilesat 101	10930	27500	34	0X0800	Horizontal	L	DVB QPSK	7W
(45) NSSS95E	N/A	N/A	NSS6 SE Asia	11635	27500	34	0X2000	Horizontal	L	DVB QPSK	95E
			NSS6 SE Asia	11542	43200	34	0XFFFE	Vertical	L	DVB QPSK	95E
			NSS6 SE Asia	11131	27500	56	0X1111	Vertical	L	DVB QPSK	95E
			NSS6 SE Asia	11676	27500	34	0XFFFE	Horizontal	L	DVB QPSK	95E
(46) NSS108E	N/A	N/A	NSS 11	12411	11110	56	0X0002	Vertical	H	DVB QPSK	108E
			NSS 11	12471	30000	56	0X0001	Horizontal	H	DVB QPSK	108E
			NSS 11	12551	28100	56	0X00AE	Horizontal	H	LDPC 8PSK STD DVB- S2	108E
			NSS 11	12611	26667	34	0X00D1	Vertical	H	DVB QPSK	108E
(47) OPT156E	(13) OPTUS_C1	156E	Optus C1	12177	27800	34	0X1000	Vertical	H	DVB QPSK	156E
			Optus C1	11227	27800	34	0X1000	Vertical	L	DVB QPSK	156E
			Optus C1	12177	27800	34	0X1000	Horizontal	H	DVB QPSK	156E
			Optus C1	11227	27800	34	0X1000	Horizontal	L	DVB QPSK	156E
(48) OPT160E	(12) OPTUS_D1	160E	Optus D1	12519	22500	34	0X00A9	Horizontal	H	DVB QPSK	160E
			Optus D1	12519	22500	34	0X00A9	Vertical	H	DVB QPSK	160E
			Optus D1	12545	22500	34	0X00A9	Horizontal	H	DVB QPSK	160E
			Optus D1	12545	22500	34	0X00A9	Horizontal	H	DVB QPSK	160E
(49) INT58W	(63) PAS_9	58W	Sky Mexico	12180	30000	34	0XFFFE	Vertical	H	DVB QPSK	58W
			Sky Mexico	11980	30000	34	0XFFFE	Vertical	H	DVB QPSK	58W
			Sky Mexico	11960	30000	34	0XFFFE	Horizontal	H	DVB QPSK	58W
			Sky Mexico	12000	30000	34	0XFFFE	Horizontal	H	DVB QPSK	58W

(50) SB144E	N/A	N/A	SuperBird C2	12508	21096	34	0X0005	Vertical	H	DVB QPSK	144E
			SuperBird C2	12598	21096	34	0X0005	Vertical	H	DVB QPSK	144E
			SuperBird C2	12523	21096	34	0XF001	Horizontal	H	DVB QPSK	144E
			SuperBird C2	12583	21906	34	0XF001	Horizontal	H	DVB QPSK	144E
(51) NA	(60) SINOSAT	110E	Anik F3	11715	20000	99	0X1001	Circular Right	H	DVB QPSK	118W
			Anik F3	11745	20000	99	0X1001	Circular Right	H	DVB QPSK	118W
			Anik F3	11728	20000	99	0X1001	Circular Left	H	DVB QPSK	118W
			Anik F3	11758	20000	99	0X1001	Circular Left	H	DVB QPSK	118W
(52) SIRI5E	(6) SIRIUS	5E	Astra 4A	11747	27500	34	0X0056	Vertical	H	DVB QPSK	5E
			Astra 4A	11785	27500	34	0X0056	Vertical	H	DVB QPSK	5E
			Astra 4A	11804	27500	34	0X0056	Horizontal	H	DVB QPSK	5E
			Astra 4A	11727	27500	34	0X0056	Horizontal	H	DVB QPSK	5E
(53) ST88E	N/A	N/A	ST 2	12702	20000	34	0X000E	Horizontal	H	DVB QPSK	88E
			ST 2	11483	43978	35	0XFFFE	Vertical	L	LDPC 8PSK STD DVB-S2	88E
			ST 2	12642	24000	34	0X0001	Horizontal	H	DVB QPSK	88E
			ST 2	11609	43978	35	0XFFFE	Horizontal	L	DVB QPSK	88E
(54) TEL76E	N/A	N/A	Telstar 10	12528	30000	34	0X0001	Vertical	H	DVB QPSK	76E
			Telstar 10	12308	22425	34	0XFFFE	Vertical	H	DVB QPSK	76E
			Telstar 10	12278	22425	34	0X0001	Vertical	H	DVB QPSK	76E
			Telstar 10	12405	30000	34	0XFFFE	Vertical	H	DVB QPSK	76E
(55) TELA15W	N/A	N/A	Telstar 12 A	11842	20000	99	0XFFFE	Vertical	H	LDPC 8PSK STD DVB-S2	15W
			Telstar 12 A	11860	45000	99	0XFFFE	Horizontal	H	DVB QPSK	15W
			Telstar 12 A	11984	13570	23	0X0CB8	Horizontal	H	DVB QPSK	15W
			Telstar 12 A	11920	45000	99	0XFFFE	Horizontal	H	DVB QPSK	15W
(56) TEL138E	N/A	N/A	Telstar 18	12302	30000	56	0X0378	Vertical	H	DVB QPSK	138E
			Telstar 18	12430	22425	56	0X0378	Vertical	H	DVB QPSK	138E
			Telstar 18	12354	43000	34	0X000A	Vertical	H	DVB QPSK	138E
			Telstar 18	12690	43200	34	0X01FF	Horizontal	H	DVB QPSK	138E
	N/A	N/A	Thiacom	12313	30000	23	0X0001	Vertical	H		78E



(57)	THAI78E			Thiacom	12396	30000	23	0X0058	Horizontal	H	DVB QPSK LDPC	78E
				Thiacom	12272	30000	23	0X0001	Horizontal	H	STD DVB-S2 DVB QPSK	78E
				Thiacom	12355	30000	23	0X0001	Horizontal	H	DVB QPSK	78E
(58)	(5) THOR	1W	Thor 5/6	12341	28000	78	0X0046	Vertical	H	DVB QPSK	1W	
THOR1W			Thor 5/6	11309	24500	78	0X0046	Vertical	L	DVB QPSK	1W	
			Thor 5/6	11862	28000	78	0X0046	Horizontal	H	DVB QPSK	1W	
			Thor 5/6	11229	24500	78	0X0046	Horizontal	L	DVB QPSK	1W	
(59)	(8) TURKSAT1C	42E	Turksat 2/3	11804	24400	56	0X0042	Vertical	H	DVB QPSK	42E	
TRK42E			Turksat 2/3	11012	30000	56	0X0042	Vertical	L	DVB QPSK	42E	
			Turksat 2/3	11864	27500	56	0X0042	Horizontal	H	DVB QPSK	42E	
			Turksat 2/3	11791	16000	56	0X002A	Horizontal	L	DVB QPSK	42E	
(60)	N/A	N/A	ABS 1 South	12579	22000	34	0X0064	Horizontal	H	DVB QPSK	75E	
ABSS75E			ABS 1 South	12579	22000	56	0X0064	Horizontal	H	DVB QPSK	75E	
			ABS 1 South	12579	22000	34	0X0064	Horizontal	H	DVB QPSK	75E	
			ABS 1 South	12579	22000	56	0X0064	Horizontal	H	DVB QPSK	75E	
(61)	N/A	N/A	Nimiq 5	12224	21500	99	0X1005	Circular Right	H	Turbo QPSK Dish	72W	
AM40E			Nimiq 5	12253	21500	99	0X1005	Circular Right	H	Turbo QPSK Dish	72W	
			Nimiq 5	12297	21500	99	0X1005	Circular Left	H	Turbo QPSK Dish	72W	
			Nimiq 5	12384	21500	99	0X1005	Circular Left	H	Turbo QPSK Dish	72W	
(62)	N/A	N/A	Exp AM22 S2	12664	27500	56	0XFFFE	Vertical	H	DVB QPSK	53E	
AMM53E			Exp AM22 S2	12664	27500	56	0XFFFE	Vertical	H	DVB QPSK	53E	
			Exp AM22 S2	12664	27500	56	0XFFFE	Vertical	H	DVB QPSK	53E	
			Exp AM22 S2	12664	27500	56	0XFFFE	Vertical	H	DVB QPSK	53E	
(63)	N/A	N/A	Amos 2 ME	10722	27500	56	0X00AB	Vertical	L	DVB QPSK	4W	
AMOSM4W			Amos 2 ME	10890	27500	56	0X00AB	Vertical	L	DVB QPSK	4W	
			Amos 2 ME	10806	27500	56	0X00AB	Vertical	L	DVB QPSK	4W	
			Amos 2 ME	10806	27500	56	0X00AB	Vertical	L	DVB QPSK	4W	

(64) AST23E	N/A	N/A	Astra 3A	11973	27500	56	0X0003	Vertical	H	DVB QPSK	23E
			Astra 3A	11475	27500	34	0XF001	Vertical	L	DVB QPSK	23E
			Astra 3A	11992	27500	34	0X0003	Horizontal	H	DVB QPSK	23E
			Astra 3A	11798	27500	34	0X0003	Horizontal	L	DVB QPSK	23E
(65) BON56E	N/A	N/A	Bonum 1	12245	27500	34	0XFFFE	Circular Right	H	DVB QPSK	56E
			Bonum 1	12399	27500	34	0XFFFE	Circular Right	H	DVB QPSK	56E
			Bonum 1	12226	27500	34	0XFFFE	Circular Left	H	DVB QPSK	56E
			Bonum 1	12380	27500	34	0XFFFE	Circular Left	H	DVB QPSK	56E
(66) TELM63W	N/A	N/A	Telstar 14 EB	11979	13021	34	0XFFFE	Horizontal	H	DVB QPSK	63W
			Telstar 14 EB	11640	18100	78	0XFFFE	Vertical	L	DVB QPSK	63W
			Telstar 14 EB	11979	13021	34	0XFFFE	Horizontal	H	DVB QPSK	63W
			Telstar 14 EB	11640	18100	78	0XFFFE	Vertical	L	DVB QPSK	63W
(67) GLX93W	N/A	N/A	Galaxy 25	11780	30000	56	0XFFFE	Vertical	H	DVB QPSK	93W
			Galaxy 25	11780	30000	56	0XFFFE	Vertical	H	DVB QPSK	93W
			Galaxy 25	11874	19510	34	0XFFFE	Horizontal	H	DVB QPSK	93W
			Galaxy 25	11874	19510	34	0XFFFE	Horizontal	H	DVB QPSK	93W
(68) GLX97W	N/A	N/A	Galaxy 19	11992	22000	34	0X0001	Vertical	H	DVB QPSK	97W
			Galaxy 19	12084	20000	34	0X5000	Vertical	H	DVB QPSK	97W
			Galaxy 19	11937	28100	23	0X4048	Horizontal	H	DVB QPSK	97W
			Galaxy 19	12047	22000	34	0X0001	Horizontal	H	DVB QPSK	97W
(69) GLX123W	N/A	N/A	Galaxy 18	11732	13240	34	0XFFFE	Horizontal	H	DVB QPSK	123W
			Galaxy 18	11732	13240	34	0XFFFE	Horizontal	H	DVB QPSK	123W
			Galaxy 18	11732	13240	34	0XFFFE	Horizontal	H	DVB QPSK	123W
			Galaxy 18	11732	13240	34	0XFFFE	Horizontal	H	DVB QPSK	123W
(70) HSPA30W	N/A	N/A	Hispasat 1C A	12052	27500	34	0X0033	Vertical	H	DVB QPSK	30W
			Hispasat 1C A	11909	10000	35	0XFFFE	Vertical	H	LDPG 8PSK STD DVB-S2	30W
			Hispasat 1C A	12132	27500	34	0XFFFE	Horizontal	H	DVB QPSK	30W
			Hispasat 1C A	12052	27500	78	0XFFFE	Horizontal	H	DVB QPSK	30W
(71) ITA68E	N/A	N/A	Intelsat 10 SA	12722	26657	12	0XFFFE	Vertical	H	DVB QPSK	68E
				12722	26657	12	0XFFFE	Vertical	H		68E

			Intelsat 10 SA							DVB QPSK	
			Intelsat 10 SA	12682	26657	12	0XFFFE	Horizontal	H	DVB QPSK	68E
			Intelsat 10 SA	12682	26657	12	0XFFFE	Horizontal	H	DVB QPSK	68E
(72) NA	N/A	N/A	DIRECTV INTL	11720	20000	23	0X0001	Horizontal	H	DSS DTV	95W
			DIRECTV INTL	11960	20000	23	0X0001	Horizontal	H	DSS DTV	95W
			DIRECTV INTL	11900	20000	23	0X0001	Horizontal	H	DSS DTV	95W
			DIRECTV INTL	12140	20000	23	0X0001	Horizontal	H	DSS DTV	95W
(73) MEAI91E	N/A	N/A	Measat 3 SA	12523	27500	56	0XFFFE	Vertical	H	DVB QPSK	91E
			Measat 3 SA	12523	30000	56	0XFFFE	Vertical	H	DVB QPSK	91E
			Measat 3 SA	12683	22700	34	0XFFFE	Horizontal	H	DVB QPSK	91E
			Measat 3 SA	12523	30000	56	0XFFFE	Horizontal	H	DVB QPSK	91E
(74) NSSI95E	N/A	N/A	NSS6, India	12688	27500	34	0XFFFE	Vertical	H	DVB QPSK	95E
			NSS6, India	12688	27500	34	0XFFFE	Vertical	H	DVB QPSK	95E
			NSS6, India	12688	27500	34	0XFFFE	Horizontal	H	DVB QPSK	95E
			NSS6, India	11090	29500	78	0XFFFE	Horizontal	L	DVB QPSK	95E
(75) NSSN95E	N/A	N/A	NSS6 NE Asia	12688	28000	34	0X0009	Horizontal	H	DVB QPSK	95E
			NSS6 NE Asia	11494	20000	34	0XFFFE	Vertical	L	DVB QPSK	95E
			NSS6 NE Asia	12647	28000	34	0X0009	Horizontal	H	DVB QPSK	95E
			NSS6 NE Asia	11494	20000	34	0XFFFE	Vertical	L	DVB QPSK	95E
(76) TELE15W	N/A	N/A	Telstar 12, ESA	12524	26470	34	0X0001	Vertical	H	DVB QPSK	15W
			Telstar 12, ESA	11150	19279	34	0XFFFE	Vertical	L	DVB QPSK	15W
			Telstar 12, ESA	12608	19279	23	0X0002	Horizontal	H	DVB QPSK	15W
			Telstar 12, ESA	11124	18386	34	0X0601	Horizontal	L	DVB QPSK	15W
(77) YAM90E	N/A	N/A	Yamal 201	11057	26470	34	0X0064	Vertical	L	DVB QPSK	90E
			Yamal 201	11057	26470	34	0XFFFE	Vertical	L	DVB QPSK	90E
			Yamal 201	11145	22222	34	0XFFFE	Vertical	L	DVB QPSK	90E
			Yamal 201	11145	22222	34	0XFFFE	Vertical	L	DVB QPSK	90E
(78)			DIRECTV 11	18404	20000	67	0XFFFE	Circular Right	H	DSS DTV	99W
			DIRECTV 11	18444	20000	67	0XFFFE	Circular Right	H	DSS DTV	99W
			DIRECTV 11	18404	20000	67	0XFFFE	Circular Left	H	DSS DTV	99W
				18444	20000	67	0XFFFE	Circular Left	H	DSS DTV	99W

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(79)	DIRECTV 10/12	18327	20000	67	0XFFFE	Circular Right	H	DSS DTV	103W
	DIRECTV 10/12	18367	20000	67	0XFFFE	Circular Right	H	DSS DTV	103W
	DIRECTV 10/12	18327	20000	67	0XFFFE	Circular Left	H	DSS DTV	103W
	DIRECTV 10/12	18367	20000	67	0XFFFE	Circular Left	H	DSS DTV	103W
(80)	DIRECTV HD								101W
	DIRECTV HD								101W
	DIRECTV HD								101W
	DIRECTV HD								101W
(81) NA	Star One C2	10974	29890	34	0X1325	Horizontal	L	DVB QPSK	70W
	Star One C2	11880	29890	34	0X1325	Horizontal	H	DVB QPSK	70W
	Star One C2	11780	29890	34	0X1325	Horizontal	L	DVB QPSK	70W
	Star One C2	11130	29890	34	0X1325	Vertical	L	DVB QPSK	70W
(82) NA	Anik F2	11941	19510	34	0XFFFE	Horizontal	H	DCII QPSK DigiCipher 2	111W
	Anik F2	11941	19510	34	0XFFFE	Horizontal	H	DCII QPSK DigiCipher 2	111W
	Anik F2	11941	19510	34	0XFFFE	Vertical	H	DCII QPSK DigiCipher 2	111W
	Anik F2	11941	19510	34	0XFFFE	Vertical	H	DCII QPSK DigiCipher 2	111W
(83) NA	Anik F1R	11728	19510	34	0XFFFE	Horizontal	H	DCII QPSK DigiCipher 2	107W
	Anik F1R	11728	19510	34	0XFFFE	Horizontal	H	DCII QPSK DigiCipher 2	107W
	Anik F1R	11745	19510	34	0XFFFE	Vertical	H	DCII QPSK DigiCipher 2	107W
	Anik F1R	11745	19510	34	0XFFFE	Vertical	H	DCII QPSK DigiCipher 2	107W
(84) SES1	SES 1	11820	20000	34	0X0002	Horizontal	H	DVB QPSK	101W
	SES 1	11820	20000	34	0X0002	Horizontal	H	DVB QPSK	101W
	SES 1	11820	20000	34	0X0002	Horizontal	H	DVB QPSK	101W

			SES 1	11820	20000	34	0X0002	Horizontal	H	DVB QPSK	101W
(85) AMC21			AMC 21	11980	30000	35	0X0001	Vertical	H	LDPC QPSK STD DVB-S2	125W
			AMC 21	11980	30000	35	0X0001	Vertical	H	LDPC QPSK STD DVB-S2	125W
			AMC 21	11980	30000	35	0X0001	Vertical	H	LDPC QPSK STD DVB-S2	125W
			AMC 21	11980	30000	35	0X0001	Vertical	H	LDPC QPSK STD DVB-S2	125W
(86) 77W			EchoStar 1	12253	22500	99	0X1713	Circular Right	H	Turbo 8PSK Dish	77W
			EchoStar 1	12486	22500	99	0X1713	Circular Right	H	Turbo 8PSK Dish	77W
			EchoStar 1	12370	22500	99	0X1713	Circular Right	H	Turbo 8PSK Dish	77W
			EchoStar 1	12545	22500	99	0X1713	Circular Right	H	Turbo 8PSK Dish	77W
(87) JCSAT 4A			JCSAT 4A	12508	21096	34	0XFFFE	Vertical	H	DVB QPSK	124E
			JCSAT 4A	12523	21096	34	0XFFFE	Horizontal	H	DVB QPSK	124E
			JCSAT 4A	12568	21096	34	0XFFFE	Vertical	H	DVB QPSK	124E
			JCSAT 4A	12583	21096	34	0XFFFE	Horizontal	H	DVB QPSK	124E
(88) JCSAT 3A			JCSAT 3A	12508	21096	34	0XFFFE	Vertical	H	DVB QPSK	128E
			JCSAT 3A	12408	21096	34	0XFFFE	Horizontal	H	DVB QPSK	128E
			JCSAT 3A	12568	21096	34	0XFFFE	Vertical	H	DVB QPSK	128E
			JCSAT 3A	12613	21096	34	0XFFFE	Horizontal	H	DVB QPSK	128E
(89) ITP180E	N/A	N/A	Intelsat 18FP	11155	28588	34	0XFFFE	Vertical	L	LDPC 8PSK STD DVB-S2	180E
			Intelsat 18FP	11155	28588	34	0XFFFE	Vertical	L	LDPC 8PSK STD DVB-S2	180E
			Intelsat 18FP	11155	28588	34	0XFFFE	Vertical	L	LDPC 8PSK STD DVB-S2	180E
			Intelsat 18FP	11155	28588	34	0XFFFE	Vertical	L	LDPC 8PSK STD DVB-S2	180E
(90) Intelsat8NZ	N/A	N/A	Intelsat 8 NZ	12491	04400	34	0XFFFE	Vertical	H	DVB QPSK	166E
				12491	04400	34	0XFFFE	Vertical	H		166E

Intelsat 8 NZ							DVB QPSK	
Intelsat 8 NZ	12491	04400	34	0XFFFE	Vertical	H	DVB QPSK	166E
Intelsat 8 NZ	12491	04400	34	0XFFFE	Vertical	H	DVB QPSK	166E

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