

Active (*)

Inactive (i)

Reentered (r)

Failure (f)

Satellite Mode	Number Callsign	Uplink Earth Escape (e)	Downlink	Beacon
AO-1 (Oscar-1) CW	00214	. r	. .	144.983
AO-2 (Oscar-2) CW	00305	. r	. .	144.983
AO-3 (Oscar-3) SSB, CW	01293	145.975-146.025 i	144.325-144.375	.
AO-4 (Oscar-4) SSB, CW	01902	432.145-432.155 r	144.300-144.310	.
AO-5 (Oscar-5) CW	04321	. i	29.450	144.050
AO-6 (Phase-2A) SSB, CW	06236	145.900-146.000 i	29.450- 29.550	.
AO-7 (Phase-2B) A	07530	145.850-145.950 *	29.400- 29.500	29.502
AO-7 (Phase-2B) B, C	07530	432.125-432.175 *	145.975-145.925	145.970
AO-7 (Phase-2B) D (RTTY)	07530	. i	2304.100	435.100
AO-8 (Phase-2D) SSB, CW	10703	145.850-145.900 i	29.400- 29.500	29.402
AO-8 (Phase-2D) SSB, CW	10703	145.900-146.000 i	435.200-435.100	435.095
UO-9 (UoSAT-1) SSB, CW	12888	. r	145.825/435.025	2401.000
AO-10 (Phase-3B) SSB, CW	14129	435.030-146.180 i	145.975-145.825	145.810
UO-11 (UoSAT-2) (V) FM, (S) PSK	14781 UOSAT-2	. *	145.826/435.025	2401.500
MIR Packet	16609 R0MIR-1	145.985 r	145.985	145.985
FO-12 (JAS-1) SSB, CW	16909	145.900-146.000 i	435.900-435.800	435.795
FO-12 (JAS-1) 1200bps JAS	16909 8J1JAS	145.85/87/89/91 i	435.910	.
RS-12 (Sputnik) SSB, CW	21089	21.210- 21.250 i	29.410- 29.450	29.408
RS-13 (Sputnik) SSB, CW	21089	21.260- 21.300 i	145.860-145.900	145.862
AO-13 (Phase-3C) SSB, CW	19216	435.423-435.573 r	145.975-145.825	145.812
UO-14 (UoSAT-3) FM	20437	145.975 i	435.070	.
RS-15 (Sputnik) SSB, CW	23439	145.858-145.898 *	29.354- 29.394	29.352

AO-16 (PACSAT)	20439	145.920	437.026	.
FM,USB		i		
AO-16 (PACSAT)	20439	145.920	437.026	2401.143
1200bps JAS	PACSAT-11,-12	i		
DO-17 (DOVE)	20440	.	145.825	2401.220
1200bps AFSK	DOVE-1	i		
WO-18 (WEBERSAT)	20441	.	437.104/437.075	.
1200bps PSK		i		
LO-19 (LUSAT)	20442	145.840-145.900	437.125/437.150	437.125
CW carrier	LUSAT-11,-12	*		
FO-20 (JAS-1b)	20480	145.900-146.000	435.900-435.800	435.795
SSB,CW		i		
FO-20 (JAS-1b)	20480	145.85/87/89/91	435.910	.
1200bps JAS	8J1JBS	i		
RS-21 (Sputnik)	27394	.	.	145.825
CW		r		
RS-22 (Mozhayets-4)	27939	.	432.098	435.352
CW		*		
UO-22 (UoSAT-5)	21575	145.900/145.975	435.120	435.120
9600bps FSK	UOSAT5-11,-12	i		
KO-23 (KITSAT-A)	22077	145.900/145.850	435.175	435.175
9600bps FSK	HL01-11,-12	i		
KO-25 (KITSAT-B)	22828	145.980/145.870	436.500	436.500
9600bps FSK	HL02-11,-12	i		
IO-26 (ITAMSAT)	22826	145.875-145.950	435.822/435.867	435.791
1200bps JAS	ITMSAT-11,-12	*		
AO-27 (EYESAT-A)	22825	145.850	436.795	436.795
1200bps AFSK,FM		i		
PO-28 (POSAT)	22829	145.925/145.975	435.075/435.275	.
9600bps FSK	POSAT1-11,-12	i		
FO-29 (JAS-2)	24278	145.900-146.000	435.900-435.800	435.795
SSB,CW,(DigiTalker)		*		
FO-29 (JAS-2)	24278	145.85/87/89/91	435.910	.
1200bps JAS	8J1JCS	i		
RS-30 (Yubileiniy-1)	32953	.	435.215	435.315
CW		*		
NOAA-15	25338	.	137.620/1702.500	.
(weather sat)				
TO-31 (TMSAT-1)	25396	145.925/145.975	436.925/436.900	436.925
9600bps FSK	TMSAT1-11,-12	i		
GO-32 (TechSat)	25397	145.850/145.930	435.225	435.325
9600bps FSK	4XTECH-11,-12	*		
SAFIR-S	25399	.	.	2401.900
9600bps FSK	DP1AIS	i		
SO-33 (SEDSAT-1)	25509	.	437.910	437.910
9600bps FSK	SEDSAT-1	i		
PO-34 (PANSAT)	25520	436.500	436.500	.
Spectrum		i		
ISS	25544	145.825	145.825	145.825
1200bps AFSK	RS0ISS	*		
ISS	25544	145.990	145.800	145.800
1200bps AFSK	RS0ISS-3	i		
ISS	25544	437.550	437.550	437.550
1200bps AFSK	RS0ISS-4,-11	i		
ISS	25544	145.200	145.800	.
Voice(Reg 1)	NA1SS	i		

ISS	25544	144.490	145.800	.
Voice (Reg 2,3)	NA1SS	i		
SO-35 (SUNSAT-1)	25636	436.291	145.825	145.825
9600bps, FM	SUNSAT-3	i		
UO-36 (UoSAT-12)	25693	145.960	437.400/437.025	437.400
38400bps FSK	UO121-11, -12	i		
WO-39 (JAWSAT)	26061	145.860	437.070/437.175	.
9600bps FSK		i		
OO-38 (OPAL)	26063	.	437.100	437.100
9600bps FSK	KF6RFX	i		
AO-37 (ASUSAT)	26065	145.960/145.980	435.700	.
9600bps FSK		i		
RS-39 (Chibis-M)	38051	.	435.215	435.315
CW		r		
AO-40 (Phase-3D)	26609	.	.	2401.323
400bps PSK		i		
RS-40 (MiR)	38736	.	.	435.365
CW		i		
SO-41 (SaudiSat-1a)	26545	.	436.775	436.775
9600bps FSK	SASAT1-11,-12	i		
SO-42 (SaudiSat-1b)	26549	.	436.075	436.075
9600bps FSK	SASAT2-11,-12	i		
SO-43 (Starshine)	26929	.	.	145.820
9600bps FSK	STRSHN	r		
NO-44 (PCsat1)	26931	145.827	145.827	145.827
1200bps AFSK	(A) W3ADO-1	*		
NO-44 (PCsat1)	26931	435.250	145.827	145.827
9600bps FSK	(A) PCSAT-1	*		
NO-44 (PCsat1)	26931	.	144.390	144.390
1200bps AFSK	(B) PCSAT-11	i		
NO-44 (PCsat1)	26931	.	144.390	144.390
9600bps FSK	(B) PCSAT-12	i		
NO-45 (Sapphire)	26932	145.945	437.100	437.100
1200bps AFSK	KE6QMD	i		
MO-46 (TiungSat)	26548	145.850/145.925	437.325	437.325
38400bps FSK	MYSAT3-11,-12	i		
BO-47 (IDEFIX)	27422	.	145.840	145.840
400bps BPSK		i		
BO-48 (IDEFIX)	27422	.	435.270	435.270
400bps BPSK		i		
AO-49 (Rubin-2)	27605	435.275	145.825	145.825
U/1200,D/9600 MSK		i		
SO-50 (SaudiSat-1c)	27607	145.850	436.795	.
FM tone 67.0Hz		*		
DTUSAT	27842	.	.	437.475
2400bps AFSK	OZ2DTU	i		
AAUSAT	27846	.	437.450	437.450
9600bps GMSK		i		
CANX-1	27847	.	437.880	.
1200bps AFSK	VA3SFL	i		
QUAKESAT	27845	.	436.682	436.682
9600bps FSK	KD7OVB	i		
AO-51 (Echo)	28375	145.920	435.300	435.150
FM tone 67.0Hz		i		
AO-51 (Echo)	28375	145.860/145.880	2401.200	435.150
9600bps FSK	PECHO-11,-12	i		

AO-51 (Echo)	28375	1268.700	435.150	435.150
9600bps FSK	PACB-11,	-12	i	
VO-52 (Hamsat)	28650	435.220-435.280	145.930-145.870	145.936
SSB,Carrier	Indian		i	
VO-52 (Hamsat)	28650	435.225-435.275	145.925-145.875	145.860
SSB,CW	Dutch		i	
PCSat2		145.825	435.275	437.975
9600bps FSK	PC2TLM		r	
NOAA-18	28654	.	137.9125/1707.000	.
(weather sat)				
UWE-1	28892	.	437.505	437.505
1200bps AFSK	DP0UWE		i	
XO-53 (SSETI)	28894	.	437.250	437.250
9600bps FSK	SSETI1		i	
AO-54 (SuitSat)	28933	.	145.990	.
FM				
CO-55 (CUTE-I)	27844	.	437.470	436.8375
1200bps AFSK	JQ1YCY		*	
CO-56 (CUTE1.7)	28941	.	437.505	437.382
1200bps AFSK	JQ1YPC		r	
CO-56 (CUTE1.7)	28941	1268.500	437.505	437.382
9600bps GMSK			r	
CO-57 (XI-IV)	27848	.	437.490	436.8475
1200bps AFSK,CW	JQ1YCW		*	
CO-58 (XI-V)	28895	.	437.345	437.465
1200bps AFSK,CW	JQ1YGW		*	
NCUBE2	28897	.	.	437.305
9600bps FSK	LA1CUB		i	
AeroCubel		.	902/928	.
9600bps GFSK		.	f	
HAUSAT-1		.	437.465	437.465
1200bps AFSK	D90HP		f	
ICEcubel		.	437.305	.
9600bps FSK	W2CXM		f	
ICEcube2		.	437.425	.
9600bps FSK	N2VR		f	
ION		.	437.505	437.505
1200bps AFSK		.	f	
KUTESat Pathfinder		.	437.385	.
1200bps AFSK	KC0RMW		f	
Mea Huaka'i Voyager		.	437.405/5.840GHz	.
1200bps AFSK		.	f	
MEROPE		.	145.980	.
1200bps AFSK	K7MSU-1		f	
nCUBE-1		.	437.305	.
9600bps GMSK	LA1CUB		f	
PICPOT		.	437.485	.
9600bps FSK		.	f	
PICPOT		.	2440.000	.
10kbit GFSK		.	f	
PolySat CP1		.	436.845	.
15bps DTMF,CW	N6CP		f	
PolySat CP2		.	437.325	437.325
1200bps AFSK		.	f	
RINCON		.	436.870	437.345
1200bps AFSK	WA4CEW		f	

SACRED		.	436.870	.
1200bps AFSK	WA4CEW	f		
SEEDS		.	437.485	.
1200bps AFSK	JQ1YGU	f		
HO-59 (HITSAT)	29484	145.980	437.425	437.275
1200bps AFSK	JR8YJT	r		
GeneSat-1	29655	.	437.065/437.100	437.065
1200bps AFSK	KE7EGC	r		
NMARS	29662	148.975	27.9652	.
1200bps FM/USB		r		
NO-60 (RAFT)	29661	145.825	145.825	145.825
1200bps AFSK	RAFT	r		
NO-61 (ANDE)	29664	145.825	145.825	145.825
1200bps AFSK	ANDE-1	r		
NO-62 (FCAL)	29667	.	437.385	437.385
1200bps AFSK	KD4HBO	r		
PO-63 (PehuenSat)	29712	.	145.825	145.825
1200bps AFSK	LU1YUC	i		
AeroCube-2	31122	.	902-928	.
9600bps GFSK		i		
MAST	31126	.	2400.000-2483.500	.
FHSS		i		
PolySat CP3	31128	.	436.845	.
1200bps AFSK		i		
LIBERTAD-1	31129	.	437.405	437.399
1200bps AFSK	5K3L	i		
CAPE-1	31130	.	435.245	435.248
1200bps AFSK	K5USL	i		
PolySat CP4	31132	.	437.325	437.323
1200bps SSB	N6CP	i		
CSTB-1	31133	.	400.0375	.
1200bps AFSK		i		
CO-65 (CUTE1.7+APDII)	32785	.	437.475	437.275
1200bps AFSK, CW	JQ1YTC	*		
CO-65 (CUTE1.7+APDII)	32785	1267.600	437.475	.
9600bps GMSK	JQ1YTC	i		
COMPASS-1	32787	.	437.405	437.275
1200bps AFSK, CW	DP0COM	i		
AAUSAT-II	32788	.	437.432	437.432
1200bps FFSK/MSK		*		
AAUSAT-II	32788	.	437.432	437.432
9600bps FSK	OZ2CUB	i		
DO-64 (DELFI-C3)	32789	.	145.870	145.867
1200bps BPSK	DLFIC3	*		
DO-64 (DELFI-C3)	32789	435.530-435.570	145.920-145.880	145.930
SSB, CW	DLFIC3	i		
CANX-2	32790	.	437.478	.
GMSK	VA3SFL	*		
CANX-2	32790	.	2200.000	.
32Kbps-256Kbps BPSK	VA3SFL	*		
CO-66 (SEEDS-II)	32791	.	437.485	437.485
1k2AFSK, CW, DigiTalker	JQ1YGU	*		
RS-30 (Yubileiniy-1)	32953	.	435.215	435.315
CW		*		
PRISM (HITOMI)	33493	.	437.425	437.250
1k2AFSK, 9k6GMSK, CW	JQ1YCX	*		

KAGAYAKI	33495	.		437.375	437.375
9600bps FSK,CW		i			
SOHLA-1 (MAIDO-1)	33496	.		437.505	437.505
1200bps AFSK,CW	JL3YUS	i			
STARS (KUKAI mother)	33498	.		437.485	437.305
1200bps FM,CW	JR5YBN	*			
STARS (KUKAI daught)	33498	.		437.465	437.275
1200bps FM,CW	JR5YBO	*			
KKS-1 (KISEKI)	33499	.		437.445	437.385
1200bps AFSK,CW	JQ1YYY	*			
NOAA-19	33591	.		137.100/1698.000	.
(weather sat)					
PharmaSat-1	35002	.		437.465	437.465
1200bps AFSK	KE7EGC	i			
CP-6	35003	.		437.365	437.365
1200bps AFSK,CW	N6CP	i			
HawkSat-1	35004	.		437.345	437.345
1200bps AFSK		i			
DRAGONSat (AggieSat-2)	35690	.		436.250	436.250
19200bps FSK		r			
DRAGONSat (BEVO-1)	35690	.		437.325	437.325
9600bps FSK		r			
ANDE-2 (Pollux)	35693	.		145.825	145.825
1200bps AFSK	POLLUX-1	r			
ANDE-2 (Castor)	35694	.		145.825	145.825
1200bps AFSK	KD4HBO-1	r			
METEOR-M1	35865	.		137.100/137.900	.
72Kbps QPSK	(weather sat)				
RS-28 (UgatuSat)	35868	.		435.266/435.442	435.264
CW		i			
RS-38 (Tatiana-2)	35869	.		435.448/435.498	435.490
CW		i			
SO-67 (SumbandilaSat)	35870	145.875		435.345	435.300
FM_tone 233.6Hz		i			
SwissCube-1	35932	.		437.505	437.505
1200bps BFSK,CW	HB9EG1	*			
BeeSat	35933	.		436.000	436.000
9600/4800bps GMSK	DP0BEE	*			
UWE-2	35934	.		437.385	437.385
1200bps AFSK,CW		i			
ITU-pSat1	35935	.		437.325	437.325
19200bps GFSK,CW		*			
HO-68 (XW-1)	36122	145.925-145.975		435.765-435.715	435.790
SSB invertng,CW	BJ1SA-11,-12	i			
HO-68 (XW-1)	36122	145.825		435.675	435.790
FM_tone67Hz,CW_only	BJ1SA-11,-12	*			
Waseda-SAT2	36574	.		437.485	437.485
1200bps PCMSK,CW	WASEDA	r			
Negai*"	36575	.		437.305	437.305
1200bps AFSK,CW	JQ1ZEX	r			
UNITEC-1	36578	.		5840.000	5840.000
1200bps AFSK,CW	JQ1ZUN	e			
StudSat	36796	437.505		437.505	437.861
9600bps FSK,CW		i			
TIIsat-1	36799	145.980		437.305	145.980
FM,AFSK,PSK,CW	HB9DE	*			

RAX-1	37223	.	437.505	437.505
9600bps GMSK	RAX-1	i		
O/OREOS	37224	.	437.300/437.305	.
1200bps AFSK	KF6JBP	*		
FO-69 (FASTRAC-1)	37227	145.825	437.345	437.342
1200bps AFSK	FAST1	i		
FO-69 (FASTRAC-1)	37227	145.980	437.345	437.342
9600bps FSK	FAST1	i		
NanoSail-D2	37361	.	.	437.270
1200bps AFSK	KE7EGC	r		
FO-70 (FASTRAC-2)	37380	435.025	145.825	145.825
1200bps AFSK	FAST2	i		
FO-70 (FASTRAC-2)	37380	437.345	145.825	145.825
9600bps FSK	FAST2	i		
CAERUS		.	437.600	437.600
1200bps AFSK	KJ6FIX-1			
E1P (Explorer-1 Prime)		437.305	437.505	.
1200bps AFSK		f		
Hermes		.	437.425	.
1200bps AFSK		f		
KySat-1		145.850	436.790	.
1200bps AFSK		f		
ARISSat-1	37772	435.742-435.758	145.938-145.922	145.919
FM, linear/inverting		r		
ARISSat-1	37772	.	145.950	145.950
FM, VOICE/SSTV/Telemetry		r		
ARISSat-1	37772	.	145.9182	145.919
BPSK-1000/CW	RS01S	r		
ARISSat-1	37772	.	145.939	145.939
BPSK-400/CW		r		
Jugnu	37839	.	437.505	437.2759
CW		*		
SRMSAT	37841	145.900	437.500	437.425
CW		*		
RAX-2	37853	.	437.345	437.345
9600bps GMSK		i		
AO-71 (AubieSat-1)	37854	.	437.475	437.473
1200bps AFSK, CW		*		
E1P-U2	37855	.	437.505	437.502
1200bps BPSK		*		
M-Cubed	37855	.	437.485	437.485
9600bps GMSK		*		
LARES (non-amateur)	38077	.	.	.
ALMASat-1	38078	.	437.465/2407.850	437.465
1200bps FSK	ALMASAT	i		
e-st@r	38079	.	437.445	437.445
1200bps AFSK	E-STAR-I	i		
Goliat	38080	.	437.485	437.485
1200bps AFSK, CW	YO7MJF	i		
MaSat-1 (MO-72)	38081	.	437.345	437.345
625/1250bps 2GFSK, CW	HA5MASAT	r		
Xatcobeo	38082	.	437.365/145.940	437.365
1200bps FFSK, SSR, CW		*		
PW-Sat1	38083	435.020	145.900	145.902
1200bps BPSK, FM, CW	VOID	i		

Robusta	38084	.	437.325	437.325
1200bps FM		i		
UNICubeSAT	38085	.	437.305	437.305
9600bps FSK		i		
Horyu-2	38340	.	437.375	437.375
1200bps FSK, CW	JG6YBW	*		
PROITERES	38756	.	437.485	437.485
1200bps AFSK, CW	JL3YZL	i		
AENEAS	38760	.	437.600	437.600
1200bps AFSK	KE6YFA-1	*		
CSSWE	38761	.	437.349	437.349
9600bps GMSK	CSSWE7	i		
CXBN	38762	.	437.525	437.525
9600bps GFSK		i		
CP5	38763	.	437.405	437.405
1200bps AFSK	CP5	i		
RAIKO	38852	.	2.285GHz, 13GHz	2285.000
38.4Kbps-500Kbps BPSK (non-amateur)				
FITSAT-1	38853	.	437.445/5.84GHz	437.250
1200bps/115.2Kbps	JG6YEW	r		
TechEdSat	38854	.	437.465	437.465
1200bps FM, CW	KJ6TVO	r		
F-1	38855	.	145.980	437.485
1200bps FM, AFSK, CW	XV1VN	r		
WE_WISH	38856	.	437.515	437.505
2400bps FM, SSTV, CW	JQ1ZIJ	r		
AAUSat-3	39087	.	437.425	437.425
4800bps FSK, CW	OZ3CUB	i		
STRaND-1	39090	.	437.568	437.568
9600bps GMSK		*		
TugSat-1 (CanX-3B)	39091	.	145.890/437.365/2234.400	
32Kbps-256Kbps BPSK		i		
UniBRITE (CanX-3A)	39092	.	145.890	145.890
CW		i		
Bion-M1 (non-amateur)	39130	.	.	.
OSSI-1	39131	.	437.525	145.980
1200bps AFSK, CW				
AIST-2 (RS-43)	39133	.	435.215	435.265
FM, CW		*		
SOMP	39134	.	437.485	437.503
1200bps AFSK, CW	DP0TUD	*		
BEEESAT-3	39135	.	435.950	435.950
4800bps GMSK, CW	DP0BEF	i		
BEEESAT-2	39136	.	435.950	435.950
4800bps GMSK, CW	DP0BEF	*		
GRAHAM (PhoneSat1)	39142	.	2401.200-2431.200	437.425
1200bps AFSK	KJ6KRW-2	r		
BELL (PhoneSat1)	39143	.	2401.200-2431.200	437.425
1200bps AFSK	KJ6KRW-1	r		
Dove-1,2	39144	.	145.825	2420.000
1200bps AFSK		r		
ALEXANDER (PhoneSat2)	39146	.	2401.200-2431.200	437.425
1200bps AFSK	KJ6KRW	r		
NEE-01 Pegaso	39151	.	910.000 (bandwidth 25MHz)	
AMTV-CW, SSTV (non-amateur)				

TURKSAT-3USAT	39152	145.940-145.990	435.200-435.250	437.225
Transponder, CW		i		
CubeBug-1	39153	.	437.445	437.4383
1200bps AFSK	CUBEB1	i		
EstCube-1	39161	.	437.505/2401.250	437.254
9600bps GMSK, CW	ES5E-11, ES5E/S	*		
CUSat-1	39266	.	437.405	437.405
1200bps AFSK	BOTTOM	*		
DANDE	39267	.	436.750	436.750
9600bps GMSK	DANDE-2	*		
CUSat-2	39271	.	437.485	437.485
1200bps AFSK	WG2XTI	i		
PhoneSat2.4	39381	.	2401.200-2431.200	437.425
1200bps AFSK	KJ6KRW	*		
CAPE-2 (LO-75)	39382	145.825	145.822/437.325	145.825
1200bps AFSK, CW, Voice	W5UL-15	r		
DragonSat-1	39383	.	145.870	.
9600bps FSK		i		
KySat-2	39384	.	437.405	437.402
9600bps FSK	KK4AJJ	i		
TJ3Sat	39385	.	.	437.320
CW		i		
NPS-SCAT	39389	.	2401.200-2447.600	437.525
1200bps AFSK, CW	K6NPS	i		
COPPER	39395	.	2403.000-2403.400	437.290
9600bps FSK		i		
Black Knight-1	39398	.	437.345	.
i				
Trailblazer-1	39400	.	437.425	.
9600bps FSK		i		
SwampSat	39402	.	437.385	.
9600bps FSK		i		
Ho'oponopono-2	39403	.	427.220	.
9600bps FSK/GMSK		i		
ChargerSat-1	39405	.	437.405	.
9600bps FSK		i		
Vermont Lunar	39407	.	437.305	.
9600bps FSK	W1VTC2	r		
ArduSat-1	39412	.	437.325	437.000
9600bps MSK, CW	WG9XFC-1	*		
PicoDragon	39413	.	437.xxx	437.250
1200bps AFSK, CW	XV9PID	r		
ArduSat-X	39414	.	437.345	437.007
9600bps MSK, CW	WG9XFC-X	*		
TechEdSat-3	39415	.	437.465	437.465
1200bps AFSK, CW		i		
ZACube-1	39417	145.860	437.356	14.099
1k2AFSK, 9k6GMSK, CW	123456	*		
OPTOS	39420	.	.	.
(non-amateur)				
UniSat-5	39421	.	437.175/437.425	.
9600bps GMSK		i		
WNISAT-1	39423	.	467.674	.
(non-amateur)				
Triton-1	39427	435.xxx	145.818/145.823	2408.000
1200bps RC-BPSK, CW	TRIV0, TRIV1	*		

Delfi-n3Xt	39428	.	145.870/145.930	2405.000
2400bps BPSK,MSK		i		
Delfi-n3Xt	39428	435.530-435.570	145.880-145.920	.
Transponder		i		
Dove-3	39429	.	.	.
(non-amateur)				
GOMX-1	39430	.	437.250	.
1k2/2k4/4k8/9k6 GMSK		*		
BRITE-PL	39431	.	437.365/2234.400	145.890
32Kbps-256Kbps		*		
ICUBE-1	39432	435.060	145.947	.
1200bps BPSK/FM-DSB_Transponder		i		
Humsat-D	39433	.	437.325/437.525	437.325
CW		i		
Dove-4	39434	.	.	.
(non-amateur)				
Wren	39435	.	437.405	437.405
1200bps FSK,CW		i		
Eagle-2 (\$50SAT,MO-76)	39436	.	437.505	437.505
9600bps GFSK,RTTY,CW		*		
Eagle-1 (BeakerSat-1)	39437	.	437.465	.
9600bps GFSK		i		
VELOX-P2	39438	437.305	145.980	145.980
1200bps BPSK,CW		i		
First-MOVE	39439	435.520	145.970	145.970
1200bps BPSK,CW	MOVE1	*		
CubeBug-2 (LO-74)	39440	.	437.445	.
1k2 AFSK,9k6 FSK	CUBEB2-6	*		
NEE-02 Krysaor	39441	.	980.000 (bandwidth 25MHz)	
(non-amateur)				
PUCP-SAT-1	39442	145.840	145.840/437.200	.
1200bps AFSK		i		
Qubescout-S1	39443	.	437.525	.
9600bps GMSK		i		
FUNcube-1 (AO-73)	39444	435.130-435.150	145.970-145.950	.
Inverting		*		
FUNcube-1 (AO-73)	39444	.	145.935	.
1200bps BPSK		*		
HiNCube	39445	.	437.305	.
i				
UWE-3	39446	.	435.000/436.395/437.385	
9600bps GMSK,CW	DP0UWG	*		
FIREBIRD-U1	39463	.	437.405	.
19200bps FSK	K7MSU	*		
FIREBIRD-U2	39464	.	437.230	.
19200bps FSK	K7MSU	i		
ALICE	39467	.	460.xxx	.
GFSK	(non-amateur)			
MCubed-2	39469	.	437.485	437.479
9600bps GMSK	NOCALL	i		
CUNYSAT-1	39470	.	437.505	437.505
9600bps GMSK,CW		i		
IPEX	39471	.	437.270	437.270
9600bps GMSK,CW	KJ6KSL-1	i		
AIST-1 (RS-41)	39492	.	.	435.265
CW		*		

E-Star-2	.		437.485	.
1200bps AFSK		i		
Pocket-PUCP	.		437.200	437.200
1200bps AFSK, CW		i		
TetherSat	.		437.100/437.305	.
9600bps GFSK		i		
SkyCube	39567	.	915.000	.
57.6Kbps	(non-amateur)			
LitSat-1	39568	435.135-435.165	145.965-145.935	.
SSB		r		
LitSat-1	39568	435.550	145.845	435.1375
9600bps FSK, CW	LY1LS	r		
LituanicaSAT-1 (LO-78)	39569	145.950	435.1755	.
FM_tone 67.0Hz		r		
LituanicaSAT-1 (LO-78)	39569	145.850	437.543	437.275
9600bps FSK, CW	LY5N	r		
ArduSat-2	39570	.	437.xxx	.
9600bps MSK CCSDS		i		
UAPSat-1	39571	145.980	437.385	437.385
1200bps AFSK	OA0UAP-1	i		
ShindaiSat	39572	.	437.305	437.485
1200bps AFSK, CW	JR0ZST	r		
ITF-1	39573	.	.	437.525
CW	JQ1ZLO	r		
OPUSAT	39575	.	437.154	437.154
1k2AFSK, 9k6GFSK, CW	JL3ZCA	r		
TeikyoSat-3	39576	.	437.450	437.450
1200bps AFSK, CW	JQ1ZKM	r		
ARTSAT1-INVADER (CO-77)	39577	.	437.200	437.325
1k2AFSK, DigiTalker, CW	JQ1ZKK	r		
KSAT2	39578	.	S, Ku-band	.
200Kbps, 1Mbps G1D	(non-amateur)			
STARS-II (Mother)	39579	.	437.405	437.245
1200bps AFSK, CW	JR5YDX	r		
STARS-II (Daughter)	39579	.	437.425	437.255
1200bps AFSK, CW	JR5YDY	r		
SporeSat	39681	.	2401.200-2431.200	437.100
1200bps AFSK				
TSAT (TestSat-Lite)	39682	.	.	.
All-Star/THEIA	39683	.	2401.700	.
256Kbps BPSK	COSGC1AS			
PhoneSat2.5	39684	.	2401.200-2431.200	437.425
1200bps AFSK	KJ6KRW	r		
KickSat	39685	.	2401.000-2436.200	437.505
1200bps AFSK	KD2BHC	r		
Sprites		.	437.240	.
125bps MSK				
UNIFORM-1	39767	.	.	.
(non-amateur)				
SOCRATES	39768	.	.	.
(non-amateur)				
RISING-2	39769	435.xxx	2401.xxx	.
1200bps 9600-96000bps	(non-amateur)			
SPROUT	39770	.	437.525	437.525
1k2AFSK, 9k6GMSK, CW	JQ1ZJQ	*		
SPROUT	39770	437.600	437.600	.
Digipeater, Digitaltalker, SSTV		*		

UniSat-6	40012	.	437.425	.
9600bps GMSK	II0US	*		
BugSat-1	40014	.	437.445	.
9600bps GMSK	LU7AA	*		
SaudiSat-4	40016	.	.	.
Ka-band transponder				
TabletSat-Aurora	40017	.	435.550/436.100/437.050	
9600bps GMSK, D-STAR		i		
DUCHIFAT	40021	435.220	145.825/145.980	145.980
1200bps AFSK, BPSK, CW	4X4HSL	*		
PACE	40023	.	437.485	437.485
1200bps AFSK, CW		i		
NanosatC-Br1	40024	435.xxx	145.865	145.865
1200bps BPSK, CW	NCBR1	*		
QB50p1/FUNcube3 (EO-79)	40025	435.050-435.075	145.970-145.945	145.815
1200bps BPSK, CW, SSB	QB50P1	*		
POPSAT-HIP1	40028	.	437.405	437.405
1k2, 9k6 CCSDS, CW	POPSAT	i		
DTUsat-2	40030	1268.900	2401.835	2401.843
9k6CPFSK/1k2, 19k2MSK	OZ2DTU	*		
QB50p2 (EO-80)	40032	435.080	145.880/145.840	145.880
1200bps BPSK, CW, FM	QB50P2	*		
ANTELSat	40034	.	437.575/2403.000	437.280
1k2 AFSK, GFSK/MSK, CW	CX1SAT	*		
Perseus-M2	40037	.	400.190/400.221	.
9600bps GFSK	(non-amateur)			
Perseus-M1	40039	.	400.160/400.170	.
9600bps GFSK	(non-amateur)			
PolyITAN-1	40042	.	437.677	437.677
9600bps 2FSK, CW	EM0UKP	*		
TigriSat	40043	.	435.000	.
9600bps FSK	HNATIG	*		
ESTELLE		.	U, S-band, 5.8GHz	.
1Mbps-10Mbps, GFSK, BPSK				
UNSA-SAT1		.	3.4GHz	.
230Kbps BPSK				
AISat	40054	.	437.250	437.511
CW	DP0AIS	*		
CanX-4	40055	.	145.890/2234.400	437.365
32Kbps-256Kbps BPSK				
CanX-5	40056	.	145.890/2234.400	437.365
32Kbps-256Kbps BPSK				
VELOX-I	40057	.	145.980	145.980
9600bps FSK, CW	VELOXI	*		
IiNUSat		145.950	436.915	.
1k2, 9k6 2FSK				
METEOR-M2	40069	.	137.100/137.900	.
72Kbps QPSK	(weather sat)			
DX-1	40071	144.975-145.025	434.975-435.025	438.225
9600bps GFSK	DAURIA	*		
UKube-1	40074	435.020-435.040	145.960-145.940	.
Transponder				
UKube-1	40074	.	145.805/2401.000	145.840
1200bps BPSK, CW	UKUBE1	*		
FUNcube-2	40074	435.060-435.080	145.950-145.930	.
Transponder				

FUNcube-2	40074	.	.	145.915
1200bps BPSK		*		
myPocketQub		.	437.425-437.525	.
Venta-1		.	437.325	.
Chasqui-1	40117	.	437.025	.
1k2AFSK, 9k6GMSK		i		
4M-LXS		.	145.980	.
WSJT-JT65B	LX0OHB	*		
RACE		.	437.525	437.525
38k4bps GMSK, CW		f		
GOMX-2		.	437.250	.
9600bps MSK		f		
ChubuSat-1		145.980	437.485	437.485
1200bps 9600bps, CW	JJ2YJY	*		
Hodoyoshi-1		.	467.674	.
1000bps Unknown	(non-amateur)			
TSUBAME		.	437.505	437.275
1200bps AFSK, CW	JQ1ZHX	i		
SpinSat		.	437.230	.
9600bps GFSK		i		
ARTSAT2-DESPATCH (FO-81)		.	.	437.325
CW	JQ1ZNN	*		
SHIN'EN2 (FO-82)		145.940-145.960	435.280-435.260	
437.385/437.505 Transponder, WSJT/CW	JG6YIG	*		
FIREBIRD-II FU3	40377	.	437.397/437.405	.
19200bps FSK	K7MSU	*		
FIREBIRD-II FU4	40378	.	437.219/437.230	.
19200bps FSK	K7MSU	*		
GRIFEX	40379	.	437.480	.
9600bps GMSK	KD8SPS	*		
ExoCube	40380	.	437.270	437.270
9600bps FSK, CW	KK6HGC, XO3	*		
AESP14		.	437.600	.
9600bps GFSK		i		
Lambda-Sat		.	437.462	.
1200bps AFSK		i		
PSat-A/B (NO-84)	40654	28.120/145.825	145.825/435.350	
1200bps AFSK, PSK31	PSAT-1/PSAT	*		
BRICsat (NO-83)	40655	28.120/145.825	437.975/435.350	.
9600bps FSK, PSK31	BRCSAT	*		
LightSail-A	40661	.	437.435	.
9600bps FSK	KK6HIT-1	r		
PTecSat		.	436.000/437.000-427.200	
1200bps AFSK				
USS Langley		28.120/145.825	437.475/435.350	2404.000
9600bps FSK, PSK31		i		
AggieSat-4		.	436.250	.
9600bps FSK				
Bevo-2		.	437.325	.
38k4bps FSK, CW				
DeorbitSail	40719	.	145.975	.
1200bps BPSK	DOS	*		
SERPENS	40897	.	145.980/437.365	.
9k6 GFSK, 1k2 MSK, CW	PY0ESA	*		
CAS-3A (XW-2A)	40903	435.030-435.050	145.685-145.665	
145.640/145.660 9k6/19k2 GMSK CW	BJ1SB	*		

CAS-3B (XW-2B)	40911	435.090-435.110	145.750-145.730	
145.705/145.725	9k6/19k2 GMSK CW	BJ1SC	*	
CAS-3C (XW-2C)	40906	435.150-435.170	145.815-145.795	
145.770/145.790	9k6/19k2 GMSK CW	BJ1SD	*	
CAS-3D (XW-2D)	40907	435.210-435.230	145.880-145.860	
145.835/145.855	9k6/19k2 GMSK CW	BJ1SE	*	
CAS-3E (XW-2E)	40909	435.270-435.290	145.935-145.915	
145.890/145.910	9k6 GMSK CW	BJ1SF	*	
CAS-3F (XW-2F)	40910	435.330-435.350	146.000-146.980	
145.955/145.975	9k6 GMSK CW	BJ1SG	*	
CAS-3G (DCBB, KAITUO-1B)	40912	.	145.475/437.950	.
9k6 GMSK	BJ1SH	*		
CAS-3H (LilacSat-2)	40908	144.350/144.390	437.225/144.390	437.200
4k8 GFSK APRS CW	BJ1SI	*		
CAS-3I (NUDT-Phone-Sat)	40900	.	437.300	.
9k6 GFSK	BJ1SJ	*		
TW-1A	40928	.	435.645	.
4k8/9k6 GMSK		*		
TW-1B	40927	.	437.645	.
4k8/9k6 GMSK		*		
TW-1C	40926	.	435.645	.
4k8/9k6 GMSK		*		
LAPAN-A2/ORARI (IO-86)	40931	435.880/145.825	145.880/145.825	437.425
FM, APRS		*		
AAUSat-5	40948	.	437.425	437.425
9600bps GMSK, CW	OZ5CUB	*		
GomX-3	40949	.	437.250	.
9600bps GMSK		*		
LQSat	40958	.	437.650/2404.035	437.650
4k8 MSK/1Mbps QPSK, CW		*		
ARC-1	40969	.	437.565	2440.500
9600bps, 1Mbps, CW		i		
BisonSat	40968	.	437.375	.
9600bps GMSK	N7SKC	*		
Fox-1A (AO-85)	40967	435.185	145.978	145.980
FM CTCSS 67.0Hz, 9k6 FSK, CW		*		
Fox-1B		435.250	145.960	.
FM CTCSS 67.0Hz				
Fox-1C		435.300/1267.300	145.920	.
FM CTCSS 67.0Hz				
Fox-1D		435.350/1267.350	145.880	.
FM CTCSS 67.0Hz				
Argus		.	2403.000-2403.400	437.290
1200bps AFSK		f		
EDSN 1-8		.	2401.200-2431.200	437.100
1200bps AFSK		f		
HawaiiSat1 (HiakaSat1)		.	145.9805	437.2705
9600bps GFSK		f		
ORS-Squared		.	437.325	.
9600bps GMSK		f		
PrintSat		.	437.325	.
9600bps GMSK		f		
STACEM		.	.	.
f				
STU-1		.	2402.000-2445.000	436.360
9600bps GMSK		f		

Supernova-Beta	.	437.570	.
1200bps AFSK	f		
Nayif-1	435.015-435.045	145.990-145.960	145.940
1200bps BPSK			
ITASAT-1	.	145.860/2400.150	.
1200bps BPSK			
HORYU-4	.	437.375/2400.300	437.375
1k2 AFSK, 9k6 GMSK, S_BPSK, CW			
ChubuSat-2	145.840	437.100	.
1k2 AFSK, 9k6 GMSK			
ChubuSat-3	145.840	437.425	.
1k2 AFSK, 9k6 GMSK			
STARS-C (Mother)	.	437.405	437.245
1k2 FM, CW			
STARS-C (Daughter)	.	437.425	437.255
1k2 FM, CW			
Waseda-Sat3	.	437.290	437.290
1k2 PCMFSK, CW			

RS series

Satellite	Number	Launch	Downlink	
Active(*), Inactive(i), Reentered(r)				
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RS-1 (Radio Sputnik 1)	11085	26Oct1978	.	Non-
Operational i				
RS-2 (Radio Sputnik 2)	11086	26Oct1978	.	Non-
Operational i				
RS-3 (Radio Sputnik 3)	12997	17Dec1981	.	Non-
Operational i				
RS-4 (Radio Sputnik 4)	13000	17Dec1981	.	Non-
Operational i				
RS-5 (Radio Sputnik 5)	12999	17Dec1981	.	Non-
Operational i				
RS-6 (Radio Sputnik 6)	13002	17Dec1981	.	Non-
Operational i				
RS-7 (Radio Sputnik 7)	13001	17Dec1981	.	Non-
Operational i				
RS-8 (Radio Sputnik 8)	12998	17Dec1981	.	Non-
Operational i				
RS-9 (Radio Sputnik 9)			.	
Project Cancel				
RS-10 (COSMOS 1861)	18129	23Jun1987	29.357/29.403	Non-
Operational i				
RS-11 (COSMOS 1861)	18129	23Jun1987	29.357/29.403	Non-
Operational i				
RS-12 (COSMOS 2123)	21089	05Feb1991	29.408/29.454	Non-
Operational i				
RS-13 (COSMOS 2123)	21089	05Feb1991	21.138/29.504	Non-
Operational i				
RS-14 (Informator-1)	21087	29Jan1991	145.822/145948	Non-
Operational i				
RS-15 (Radio Rosto)	23439	26Dec1994	29.3525/29.3987	
Operational *				

RS-16 (Mozhayets-2) Operational r	24744	04Mar1997	435.510	Non-
RS-17 (Sputnik 40) Operational r	24958	05Oct1997	145.820	Non-
RS-18 (Sputnik 41) Operational r	25533	25Oct1998	145.812	Non-
RS-19 (Sputnik 99) Operational r	25685	16Apr1998	145.815	Non-
RS-20 (Mozhayets-3) Unknown i	27560	28Nov2002	145.828/435.319	
RS-21 (Kolibri-2000) Unknown i	27394	26Nov2001	145.825	
RS-22 (Mozhayets-4) Operational *	27939	27Sep2003	432.098/435.352	
RS-23 (Tatyana) Operational	28523	20Jan2005	435.215/435.315	Non-
RS-24 Unknown			.	
RS-25 (Mozhayets-5) Unknown i	28898	27Oct2005	435.325	
RS-26 (Sinah-1) Engineering i	28893	05Oct2005	.	
RS-27 (Baumanets-1) failed		26Jul2006	.	Launch
RS-28 (UgatuSat) Operational i	35868	17Sep2009	435.264	Non-
RS-29 (Sterkh) reserved i			.	ID
RS-30 (Yubileiniy-1) Operational *	32953	23May2008	435.215/435.315	
RS-31 to RS-37 ORBCOMM i			.	for
RS-38 (Tatyana-2) Operational i	35869	17Sep2009	435.490	Non-
RS-39 (Chibis-M) Operational r	38051	25Jan2012	435.215/435.315	Non-
RS-40 (MiR) Operational i	38736	28Jul2012	435.365	Non-
RS-41 (AIST-1) Operational *	39492	28Dec2013	435.265	
RS-42 Unknown			.	
RS-43 (AIST-2) Operational *	39133	19Apr2013	435.215/435.265	
RS-44 Unknown			.	
RS-45 Unknown			.	
RS-46 (COSMOS-2491) Operational *	39497	25Dec2013	435.465/435.565	
RS-47 (COSMOS-2499) Operational *	39765	23May2014	435.465/435.565	

RS Satellites update written by RW3DZ and edited by DK3WN/JE9PEL on 9 Jan 2010.

RS-28 (UGATUSAT,Ufa) failed due to malfunction of electronics
 RS-29 (STERKH) ID was reserved for this satellite but they used their
 own TRX rig and this number was omitted so far
 RS-30 (Yubileyny-1) operational
 RS-31 to RS-37 were used for ORBCOMM satellites under contract from
 OHB-systems
 RS-38 (Tatyana-2) is working perfect and operate well under Kaluga
 control
 RS-39 (Chibis) is under construction since 2006 and may be on orbit in
 2011
 RS-40 (Yubileyny-2) will be on orbit in 2010
 RS- () next new RS satellites also in progress

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<http://rammb.cira.colostate.edu/dev/hillger/amateur.htm>
<http://amsat-uk.org/satellites/frequencies-of-active-satellites/>
<http://www.amsat-dl.org/index.php/satelliten-mainmenu-76/ersicht-aller-mainmenu-102>

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[Supplement]

FO-29 Mode

Voice/CW Mode JA, Operational

Uplink 145.900 to 146.000 MHz CW/LSB
 Downlink 435.800 to 435.900 MHz CW/USB

Digital Mode JD, Non-Operational

Uplink 145.850 145.870 145.890 145.910 MHz, FM Manchester Code
 Downlink 435.910 MHz 1200 baud BPSK
 Digitaltalker 435.910 MHz

Linear inverting heterodyne transponder of FO-29

Uplink	Downlink
145.900 ---	435.900
145.901 ---	435.899
145.902 ---	435.898
:	:
145.950 ---	435.850
:	:
145.998 ---	435.802
145.999 ---	435.801
146.000 ---	435.800

i.e. Uplink + Downlink = 581.800

[Supplement]

Q1) In case of FO-29 (JAS-2):

Does 145.900-146.000 mean that the uplink frequency is centered on 145.95 MHz and has a bandwidth of 100 kHz ? Or does it mean that any uplink frequency between 145.9 to 146.0 MHz will work?

A1) Uplink: 145.900-146.000 mean that any uplink frequency between 145.900 to 146.000 MHz.

And Downlink: 435.900-435.800 mean that 435.900 to 435.800 MHz. This is the characteristic of the equipment called Transponder.

Why the increase or decrease in frequency is reversed, it's so

$$\text{Uplink} + \text{Downlink} = \text{Constant}$$

In case of FO-29: Uplink + Downlink = 581.800

Namely, in SSB mode (Up: LSB, Down: USB),

Uplink		Downlink
145.900	---	435.900
145.901	---	435.899
145.902	---	435.898
:		:
145.950	---	435.850
:		:
145.998	---	435.802
145.999	---	435.801
146.000	---	435.800

We call this rule with "Linear Inverting Heterodyne Transponder".

Q2) In case of FO-29 (JAS-2): Uplink 145.85/87/89/91

Does this mean that the satellite accepts uplink on 145.85 AND 145.87, 145.89, 145.91 MHz?

A2) Yes, FO-29 had these four channel. If we uplinklink to FO-29 in any four channel, it was downlink to 435.910 MHz.

Unfortunately, this digital mode of FO-29 has become the state of inactive. It's currently active as SSB and CW mode.

S-band Satellites, Non-Operational

Sat.	No.	Uplink	Downlink	Beacon	Mode	Status
UO-11	14781	.	145.825	2401.500	1200bps PSK	Carrier
AO-16	20439	145.900-960	437.025/051	2401.143	1200bps JAS	Carrier
AO-40	26609	V,U,L,S,C	V,U,L,S,X	2401.323	400bps PSK	S-beacon

AO-40 Frequencies, Non-Operational

Uplink	Digital	Analog	Passband
15m	none	21.210 -	21.250 MHz
12m	none	24.920 -	24.960 MHz
2m	145.800 -	145.840 MHz	145.840 - 145.990 MHz
70cm	435.300 -	435.550 MHz	435.550 - 435.800 MHz
23cm(1)	1269.000 -	1269.250 MHz	1269.250 - 1269.500 MHz
23cm(2)	1268.075 -	1268.325 MHz	1268.325 - 1268.575 MHz
13cm(1)	2400.100 -	2400.350 MHz	2400.350 - 2400.600 MHz
13cm(2)	2446.200 -	2446.450 MHz	2446.450 - 2446.700 MHz
6cm	5668.300 -	5668.550 MHz	5668.550 - 5668.800 MHz

Downlink	Digital	Analog	Passband
2m	145.955 -	145.990 MHz	145.805 - 145.955 MHz
70cm	435.900 -	436.200 MHz	435.475 - 435.725 MHz
13cm(1)	2400.650 -	2400.950 MHz	2400.225 - 2400.475 MHz
13cm(2)	2401.650 -	2401.950 MHz	2401.225 - 2401.475 MHz
3cm	10451.450 -	10451.750 MHz	10451.025 - 10451.275 MHz
1.5cm	24048.450 -	24048.750 MHz	24048.025 - 24048.275 MHz

Telemetry Beacons (IHU)

	General Beacon(GB)	Middle Beacon(MB)	Engineering Beacon(EB)
2m	none	145.898 MHz	none
70cm	435.438 MHz	435.588 MHz	435.838 MHz
13cm(1)	2400.188 MHz	2400.338 MHz	2400.588 MHz
13cm(2)	2401.173 MHz	2401.323 MHz	2401.573 MHz
3cm	10450.975 MHz	10451.125 MHz	10451.375 MHz
1.5cm	24047.885 MHz	24048.035 MHz	24048.285 MHz

		U	S1	S2	X
RUDAK A	9k6 0	436.006	2400.768	2401.747	10451.561
	9k6 1	435.982	2400.740	2401.720	10451.536
RUDAK B	9k6 0	436.122	2400.887	2401.867	
	9k6 1	436.109	2400.870	2401.847	

RUD A mod 0 = 2400.791
RUD A mod 1 = 2400.765
RUD B mod 0 = 2400.910
RUD B mod 1 = 2400.891
(measured with an accuracy of +-5 KHz)

AO-40 List (C) JAMSAT

Char.	Freq.	Rem.
T	21 MHz	Uplink
H	24 MHz	Uplink
V	145 MHz	Uplink, Downlink
U	435 MHz	Uplink, Downlink
L	1.2 GHz	2-Uplink, L1 & L2
S	2.4 GHz	2-Uplink, 2-Downlink, S1 & S2
C	5.6 GHz	Uplink
X	10 GHz	Downlink
K	24 GHz	Downlink

Trans. list :

UPLINK						
		T	H	V	U	
D	V	167.130	170.840	-	581.575	
O	U	456.830	460.540	581.500	-	
W						
N	S1	2421.580	2425.290	2546.250	2836.025	
L						
I	S2	2422.580	2426.290	2547.250	2837.025	
N						
K	X	10472.380	10476.090	10597.050	10886.825	
	K	24069.380	24073.090	24194.050	24483.825	
		L1	L2	S1	S2	C
D	V	1415.275	1414.350	2546.375	2592.475	5814.575
O	U	1704.975	1704.050	2836.075	2882.175	6104.275
W						
N	S1	3669.725	3668.800	-	-	8069.025
L						
I	S2	3670.725	3669.800	-	-	8070.025
N						
K	X	11720.525	11719.600	12851.625	12897.725	16119.825
	K	25317.525	25316.600	26448.625	26494.725	29716.825

The above list is quoting from JAMSAT Home Page.

Example : Trans.= (U-Up) + (S2-Down) = 2837.025

We made trial of AO-40 "(U-Up) + (S2-Down)" at the beginning of May 2001, then we observed as follows.

Approximation after the our observation :

Trans.= (U-Up) + (S2-Down) = 2836.990

Up (LSB)	Down (USB)
435.755 -->	2401.235
435.690 -->	2401.300
435.560 -->	2401.430

JF6BCC, Imaishi wrote on AO-40

	(A)	(B)
	----- 95kHz -----	----- 150kHz -----
U -Up	435.780 - 435.685	435.645 - 435.495
L1-Up	1269.496 - 1269.400	1269.360 - 1269.211

		:		:	(EB)
S1-Dw	2400.245	-	2400.340	2400.380	- 2400.530 2400.600
S2-Dw	2401.210	-	2401.305	2401.345	- 2401.495
			2401.323		
			(MB)		

			40kHz S2-MB Gird Band		

AO-51 Mode (C)AMSAT, Non-Operational

FM Repeater, V/U

Uplink : 145.920 MHz FM, 67Hz PL Tone
 Downlink: 435.300 MHz FM

FM Repeater, V/U, High Power Mode

Uplink : 145.920 MHz FM, 67Hz PL Tone
 Downlink: 435.300 MHz FM

FM Repeater, L/U

Uplink : 1268.700 MHz FM, 67Hz PL Tone
 Downlink: 435.300 MHz FM

FM Repeater, V/S

Uplink : 145.920 MHz FM, No PL Tone
 Downlink: 2401.200 MHz FM

FM Repeater, L/S

Uplink : 1268.700 MHz FM, No PL Tone
 Downlink: 2401.200 MHz FM

FM Repeater, V(ssb)/U (Experimental)

Uplink : 145.880 MHz USB
 Downlink: 435.300 MHz FM

PSK31, 10 meters/U (Experimental)

Uplink : 28.140 MHz USB, PSK31 Mode Only
 Downlink: 435.300 MHz FM

PSK31, V(ssb)/U (Experimental)

Uplink : 145.860 MHz USB, PSK31 Mode Only
 Downlink: 435.300 MHz FM

9k6 Digital, V/U, PBP BBS (Pacsat Broadcast Protocol)

Uplink : 145.860 MHz FM, 9k6 PBP Digital
 Downlink: 435.150 MHz FM, 9k6 PBP Digital

9k6 Digital, V/U, High Power, PBP BBS

Uplink : 145.860 MHz FM, 9k6 PBP Digital
 Downlink: 435.150 MHz FM, 9k6 PBP Digital

9k6 Digital, L/U, PBP BBS

Uplink : 1268.700 MHz FM, 9k6 PBP Digital
 Downlink: 435.150 MHz FM, 9k6 PBP Digital

38k4 Digital Downlink, V/U, PBP BBS

Uplink : 145.860 MHz FM, 9k6 PBP Digital

Downlink: 435.150 MHz FM, 38k4 PBP Digital

38k4 Digital Downlink, V/S, PBP BBS

Uplink : 145.860 MHz FM, 9k6 PBP Digital

Downlink: 2401.200 MHz FM, 38k4 PBP Digital

38k4 Digital Downlink, L/S, PBP BBS

Uplink : 1268.700 MHz FM, 9k6 PBP Digital

Downlink: 2401.200 MHz FM, 38k4 PBP Digital