

AMATEUR SATELLITE FREQUENCY GUIDE

April 2017

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Satellite ^(Notes)	Mode ⁽¹⁾	Frequencies																																																												
AO-7 ⁽³⁾	V/a-Non-Inverting U/v-Inverting Analog SSB/CW	<table><tr><td>Dwn-USB</td><td>29.400</td><td>410</td><td>420</td><td>430</td><td>440</td><td>450</td><td>460</td><td>470</td><td>480</td><td>490</td><td>29.500</td></tr><tr><td>Up-USB</td><td>145.850</td><td>860</td><td>870</td><td>880</td><td>890</td><td>900</td><td>910</td><td>920</td><td>930</td><td>940</td><td>145.950</td></tr><tr><td>Dwn-USB</td><td>145.975</td><td>970</td><td>965</td><td>960</td><td>955</td><td>950</td><td>945</td><td>940</td><td>935</td><td>930</td><td>145.925</td></tr><tr><td>Up-LSB</td><td>432.125</td><td>130</td><td>135</td><td>140</td><td>145</td><td>150</td><td>155</td><td>160</td><td>165</td><td>170</td><td>432.175</td></tr><tr><td>Bcn</td><td>29.502</td><td>145.975</td><td>435.100</td><td colspan="8"></td></tr></table>	Dwn-USB	29.400	410	420	430	440	450	460	470	480	490	29.500	Up-USB	145.850	860	870	880	890	900	910	920	930	940	145.950	Dwn-USB	145.975	970	965	960	955	950	945	940	935	930	145.925	Up-LSB	432.125	130	135	140	145	150	155	160	165	170	432.175	Bcn	29.502	145.975	435.100								
Dwn-USB	29.400	410	420	430	440	450	460	470	480	490	29.500																																																			
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Bcn	29.502	145.975	435.100																																																											
AO-73 (FUNcube-1)	U/v-Inverting Analog SSB/CW	<table><tr><td>Dwn</td><td>145.950</td><td>955</td><td>960</td><td>965</td><td>145.970</td><td colspan="6" rowspan="3"><i>Transponder is on when in eclipse and off when in sunlight. Transponder is continuously active on weekends and holidays.</i></td></tr><tr><td>Up</td><td>435.160</td><td>155</td><td>150</td><td>145</td><td>435.140</td></tr><tr><td>Bcn</td><td>145.935</td><td colspan="10"><i>BPSK Telemetry</i></td></tr></table>	Dwn	145.950	955	960	965	145.970	<i>Transponder is on when in eclipse and off when in sunlight. Transponder is continuously active on weekends and holidays.</i>						Up	435.160	155	150	145	435.140	Bcn	145.935	<i>BPSK Telemetry</i>																																							
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AO-85 ⁽²⁾ (Fox-1A)	U/v FM Voice Digital [b] [g]	<table><tr><td>Dwn-FM</td><td>145.980</td><td colspan="10" rowspan="3"><i>FSK data up to 9600 baud 67.0 Hz CTCSS tone for access</i></td></tr><tr><td>Dwn-FM</td><td>145.980</td></tr><tr><td>Up-FM</td><td>435.170</td></tr></table>	Dwn-FM	145.980	<i>FSK data up to 9600 baud 67.0 Hz CTCSS tone for access</i>										Dwn-FM	145.980	Up-FM	435.170																																												
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Up-FM	435.170																																																													
EO-79 ⁽²⁾ (FUNcube-3, QB50p1)	U/v-Inverting Analog SSB/CW Digital [i]	<table><tr><td>Dwn</td><td>145.946</td><td>951</td><td>956</td><td>961</td><td>966</td><td>145.971</td><td colspan="5" rowspan="3"><i>Transponder is operational 27 minutes after entering sunlight and runs for 25 minutes.</i></td></tr><tr><td>Up</td><td>435.0723</td><td>0673</td><td>0623</td><td>0573</td><td>0523</td><td>435.0473</td></tr><tr><td>Bcn</td><td>145.815</td><td colspan="10"><i>1200 baud BPSK or CW Telemetry</i></td></tr></table>	Dwn	145.946	951	956	961	966	145.971	<i>Transponder is operational 27 minutes after entering sunlight and runs for 25 minutes.</i>					Up	435.0723	0673	0623	0573	0523	435.0473	Bcn	145.815	<i>1200 baud BPSK or CW Telemetry</i>																																						
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EO-88 ⁽²⁾ (FUNcube-5, Nayif-1)	U/v-Inverting Analog SSB/CW Digital [i]	<table><tr><td>Dwn-USB</td><td>145.960</td><td>965</td><td>970</td><td>975</td><td>980</td><td>985</td><td>145.990</td><td colspan="4" rowspan="3"><i>Transponder is on when in eclipse and off when in sunlight.</i></td></tr><tr><td>Up-LSB</td><td>435.045</td><td>040</td><td>035</td><td>030</td><td>025</td><td>020</td><td>435.015</td></tr><tr><td>Bcn</td><td>145.940</td><td colspan="10"></td></tr></table>	Dwn-USB	145.960	965	970	975	980	985	145.990	<i>Transponder is on when in eclipse and off when in sunlight.</i>				Up-LSB	435.045	040	035	030	025	020	435.015	Bcn	145.940																																						
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Up-LSB	435.045	040	035	030	025	020	435.015																																																							
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FO-29 (JAS-2)	V/u-Inverting Analog SSB/CW	<table><tr><td>Dwn-USB</td><td>435.800</td><td>810</td><td>820</td><td>830</td><td>840</td><td>850</td><td>860</td><td>870</td><td>880</td><td>890</td><td>435.900</td></tr><tr><td>Up-LSB</td><td>146.000</td><td>990</td><td>980</td><td>970</td><td>960</td><td>950</td><td>940</td><td>930</td><td>920</td><td>910</td><td>145.900</td></tr><tr><td>Bcn</td><td>435.795</td><td colspan="10"></td></tr></table>	Dwn-USB	435.800	810	820	830	840	850	860	870	880	890	435.900	Up-LSB	146.000	990	980	970	960	950	940	930	920	910	145.900	Bcn	435.795																																		
Dwn-USB	435.800	810	820	830	840	850	860	870	880	890	435.900																																																			
Up-LSB	146.000	990	980	970	960	950	940	930	920	910	145.900																																																			
Bcn	435.795																																																													
LilacSat-2 ⁽²⁾ (CAS-3H)	V/u FM Voice Digital [a] [h]	<table><tr><td>Dwn-FM</td><td>437.200</td><td colspan="10"></td></tr><tr><td>Up-FM</td><td>144.350</td><td colspan="10"></td></tr><tr><td>Bcn</td><td>437.225</td><td colspan="10"></td></tr></table>	Dwn-FM	437.200											Up-FM	144.350											Bcn	437.225																																		
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NO-84 (PSAT)	V/v APRS A/u PSK31	<table><tr><td>Dwn-FM</td><td>145.825</td><td colspan="10" rowspan="2"><i>APRS</i></td></tr><tr><td>Up-FM</td><td>145.825</td></tr><tr><td>Dwn-FM</td><td>435.350</td><td colspan="10" rowspan="2"><i>PSK31</i></td></tr><tr><td>Up-USB</td><td>28.120</td></tr></table>	Dwn-FM	145.825	<i>APRS</i>										Up-FM	145.825	Dwn-FM	435.350	<i>PSK31</i>										Up-USB	28.120																																
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SO-50 ⁽⁶⁾ (SaudiSat-1C)	V/u FM Voice	<table><tr><td>Dwn-FM</td><td>436.795</td><td colspan="10" rowspan="2"><i>67.0 Hz CTCSS tone for access</i></td></tr><tr><td>Up-FM</td><td>145.850</td></tr></table>	Dwn-FM	436.795	<i>67.0 Hz CTCSS tone for access</i>										Up-FM	145.850																																														
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Up-FM	145.850																																																													
UKube-1 ⁽²⁾ (FUNcube-2)	U/v-Inverting Analog SSB/CW Digital [c] [e] [f]	<table><tr><td>Dwn-USB</td><td>145.930</td><td>935</td><td>940</td><td>945</td><td>145.950</td><td colspan="6" rowspan="4"><i>Telemetry</i></td></tr><tr><td>Up-LSB</td><td>435.094</td><td>089</td><td>084</td><td>079</td><td>435.074</td></tr><tr><td>Bcn</td><td>145.915</td><td colspan="10"></td></tr><tr><td>Bcn</td><td>145.840</td><td colspan="10"></td></tr></table>	Dwn-USB	145.930	935	940	945	145.950	<i>Telemetry</i>						Up-LSB	435.094	089	084	079	435.074	Bcn	145.915											Bcn	145.840																												
Dwn-USB	145.930	935	940	945	145.950	<i>Telemetry</i>																																																								
Up-LSB	435.094	089	084	079	435.074																																																									
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XW-2A (CAS-3A)	U/v-Inverting Analog SSB/CW	<table><tr><td>Dwn-USB</td><td>145.665</td><td>670</td><td>675</td><td>680</td><td>145.685</td><td colspan="6"></td></tr><tr><td>Up-LSB</td><td>435.050</td><td>045</td><td>040</td><td>035</td><td>435.030</td><td colspan="6" rowspan="2"></td></tr><tr><td>Bcn</td><td>145.660</td><td colspan="10"></td></tr></table>	Dwn-USB	145.665	670	675	680	145.685							Up-LSB	435.050	045	040	035	435.030							Bcn	145.660																																		
Dwn-USB	145.665	670	675	680	145.685																																																									
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XW-2B (CAS-3B)	U/v-Inverting Analog SSB/CW	<table><tr><td>Dwn-USB</td><td>145.730</td><td>735</td><td>740</td><td>745</td><td>145.750</td><td colspan="6"></td></tr><tr><td>Up-LSB</td><td>435.110</td><td>105</td><td>100</td><td>095</td><td>435.090</td><td colspan="6" rowspan="2"></td></tr><tr><td>Bcn</td><td>145.725</td><td colspan="10"></td></tr></table>	Dwn-USB	145.730	735	740	745	145.750							Up-LSB	435.110	105	100	095	435.090							Bcn	145.725																																		
Dwn-USB	145.730	735	740	745	145.750																																																									
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XW-2C (CAS-3C)	U/v-Inverting Analog SSB/CW	<table><tr><td>Dwn-USB</td><td>145.795</td><td>800</td><td>805</td><td>810</td><td>145.815</td><td colspan="6"></td></tr><tr><td>Up-LSB</td><td>435.170</td><td>165</td><td>160</td><td>155</td><td>435.150</td><td colspan="6" rowspan="2"></td></tr><tr><td>Bcn</td><td>145.790</td><td colspan="10"></td></tr></table>	Dwn-USB	145.795	800	805	810	145.815							Up-LSB	435.170	165	160	155	435.150							Bcn	145.790																																		
Dwn-USB	145.795	800	805	810	145.815																																																									
Up-LSB	435.170	165	160	155	435.150																																																									
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XW-2D

(CAS-3D)

U/v-Inverting
Analog SSB/CW

Dwn-USB	145.860	865	870	875	145.880
Up-LSB	435.230	225	220	215	435.210
Bcn	145.855				

XW-2F

(CAS-3F)

U/v-Inverting
Analog SSB/CW

Dwn-USB	145.980	985	990	995	146.000
Up-LSB	435.350	345	340	335	435.330
Bcn	145.975				

ISS ⁽⁵⁾(International Space
Station)V/v - U/v - s
FM Voice
Digital # [a] [d]

Dwn-FM	145.800 (voice, SSTV)	
Dwn-FM	145.825 (packet)	
Up-FM	144.490 Region 2/3 Voice	145.200 Region 1 Voice
Up-FM	145.825 Simplex Digipeater	
Dwn	2.369, 2.395, 2.437, 2.422 GHz DATV	

FUTURE LAUNCHES**Fox-1Cliff** ^(2,4)U/v - L/v
FM Voice
Digital [b] [g] [\$]

Dwn-FM	145.920	
Dwn-FM	145.920	FSK data up to 9600 baud
Up-FM	435.300	67.0 Hz CTCSS tone for access
Up-FM	1267.300	67.0 Hz CTCSS tone for access

Fox-1D ^(2,4)

AO-92

U/v - L/v
FM Voice
Digital [b] [g] [\$]

Dwn-FM	145.880	
Dwn-FM	145.880	FSK data up to 9600 baud
Up-FM	435.350	67.0 Hz CTCSS tone for access
Up-FM	1267.350	67.0 Hz CTCSS tone for access.

RadFxSat ⁽²⁾

(Fox-1B)

U/v
FM Voice
Digital [b] [g]

Dwn-FM	145.960	
Dwn-FM	145.960	FSK data up to 9600 baud
Up-FM	435.250	67.0 Hz CTCSS tone for access

RadFxSat-2 ⁽²⁾

(Fox-1E)

V/u-Inverting
Analog SSB/CW
Digital [i]

Dwn-USB	435.760	765	770	775	780	785	435.790
Up-LSB	145.890	885	880	875	870	865	145.860
Bcn	435.750	1200 baud BPSK					

CURRENT SATELLITE STATUS IS AVAILABLE AT WWW.AMSAT.ORG/STATUS**NOTES:****1.** The Mode designations are:

A = 10m H = 15m V = 2m
U = 70cm L = 23cm S = 13cm
C = 6cm X = 3cm K = 1.5cm

The uplink is upper case and listed first while the downlink is lower case and listed last. Uplink/Downlink. Thus, old Mode B is U/v and old Mode J is V/u.

2. Letters in [] represent the following digital formats:

[a] = 1200 bps AFSK-FM AX.25
[b] = 9600 bps FSK
[c] = 1200 or 9600 bps BPSK
[d] = DATV (Digital Amateur Television)
[e] = Spread Spectrum
[f] = 1 Mbps QPSK or OQPSK

[g] = Subaudible slow speed data when in transponder mode

[h] = 1200/4800 bps GFSK

[i] = 1200 bps BPSK

* denotes Store and Forward (flying mailbox) capability.

denotes digipeater that also allows APRS.

\$ denotes provisions for capturing pictures in orbit.

3. AO-7 is available only when it's in sunlight. It may not be functional on each pass.
4. L uplink is switchable by command station; not operational simultaneously. Normal operation is U/v.
5. The Region 2/3 voice uplink frequency listed for ISS is to be used over North & South America. The Digital frequency is usable world-wide.
6. To activate SO-50, transmit briefly with a 74.4 Hz CTCSS tone.

AMSAT gratefully acknowledges the assistance of N8HM, N9IP, N0JY, W5PFG & N1JEZ in compiling this information.

**THE RADIO AMATEUR SATELLITE CORPORATION****WWW.AMSAT.ORG**