

Satellite	Frequency (MHz) (Uncalibrated)	L-Band Freq. (MHz) (Uncalibrated, 10750 or 5150 MHz L.O.)	Pol.	Symbol Rate (kBaud)	Bandwidth (kHz)	MODCOD	Decimal {Hexadecimal} PIDs, Programming, [Audio Format]
SES-2 (87°W)	11723.890	973.890	V	113	136	DVB-S2 QPSK 5/6 0.20 Off	101 {65} Your Network of Praise [AAC-LC]
SES-2 (87°W)	11724.118	974.118	V	250	300	DVB-S2 QPSK 3/4 0.20 Off	<u>Minnesota Christian Broadcasters (MCBI) Mux</u> 101 {65} 91.5 & 102.7 The Word (KCFB/KTIG) [AAC-LC] 202 {C9} 104.3 The Pulse (WZPJ) [AAC-LC]
SES-2 (87°W)	11725.283	975.283	V	148	200	DVB-S QPSK 5/6	101 {65} Mars Hill Network [HE-AAC]
SES-2 (87°W)	11725.781	975.781	V	593	800	DVB-S QPSK 3/4	101 {65} KWAVE Syndication [AAC-LC] (Audio not 24/7)
SES-2 (87°W)	11730.228	980.228	V	148	200	DVB-S QPSK 3/4	101 {65} Sound of Life Radio Network [AAC-LC]
SES-2 (87°W)	11755.473	1005.473	V	296	400	DVB-S QPSK 3/4	<u>Family Life Ministries Mux</u> 178 {B2} NRT Audio (IDs, Spots, Liners, etc.) [MPEG] 4097 {1001} Family Life Network [AAC-LC]
SES-2 (87°W)	11755.894	1005.894	V	128	173		
SES-2 (87°W)	11756.080	1006.080	V	143	193	DVB-S QPSK 3/4	<u>Great Plains Christian Radio Mux</u> 4096 {1000} KJIL [AAC-LC] 4097 {1001} KHYM [AAC-LC]
SES-2 (87°W)	11756.290	1006.290	V	128	173		
SES-2 (87°W)	11756.572	1006.572	V	148	200	DVB-S QPSK 5/6	101 {65} KLAA ("Angels Radio AM 830") [MPEG]
SES-2 (87°W)	11756.989	1006.989	V	128	173		
SES-2 (87°W)	11757.373	1007.373	V	148	200	DVB-S QPSK 3/4	1001 {3E9} Pilgrim Radio [HE-AAC]
Galaxy 17 (91°W)	11919.422	1169.422	V	XXXX	100	Analog	Bible Broadcasting Network (WYHH) [FM Stereo]
Galaxy 16 (99°W)	11992.964	1242.964	V	370	500	DVB-S QPSK 3/4	<u>Liberty University Mux</u> 178 {B2} NRT Audio (IDs, Spots, Liners, etc.) [MPEG] 4096 {1000} The Journey FM [AAC-LC]
Galaxy 16 (99°W)	11993.863	1243.863	V	1075	1289	DVB-S2 QPSK 2/3 0.25 Off	<u>Family Radio Mux</u> 178 {B2} NRT Audio (IDs, Spots, Liners, etc.) [MPEG] 4096 {1000} Family Radio Network (East) [AAC-LC] 4097 {1001} Family Radio Network (West) [AAC-LC] 4098 {1002} Family Radio Network (New York) [AAC-LC]
Galaxy 16 (99°W)	11994.715	1244.715	V	290	392	DVB-S QPSK 2/3	<u>Minn-owa Christian Broadcasting Mux</u> 101 {65} Kinship Radio [AAC-LC] 201 {C9} Kinship Radio Spanish [AAC-LC]

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Galaxy 16 (99°W)	12021.507	1271.507	V	2275	2730	DVB-S2 QPSK 3/4 0.20 Off	<u>National Public Radio Ku Band Mux</u> 210 {D2} NRT Audio (IDs, Spots, Liners, etc.) [MPEG] 1698 {6A2} KVPR [AAC-LC] 1699 {6A3} KUSC [HE-AAC] 1702 {6A6} WRVO Public Media [HE-AAC] (Audio mislabeled as MPEG in PAT) 1705 {6A9} Northeast Public Radio [AAC-LC] 1706 {6AA} WNRN [AAC-LC] 1707 {6AB} KUNC [AAC-LC] 1708 {6AC} Rejoice Radio [AAC-LC] 1709 {6AD} Northwest Public Broadcasting (NPR & Classical Music) [AAC-LC] 1711 {6AF} Radio Bilingüe [HE-AAC] (Audio mislabeled as MPEG in PAT) 1712 {6B0} Utah Public Radio [AAC-LC] 1713 {6B1} YES FM [AAC-LC] 1714 {6B2} Yellowstone Public Radio [AAC-LC] 4099 {1003} Test Channel [MPEG] PAT contains many additional PIDs for data services as well as channels defining programming distributed by NPR. These programming channels may be used as-needed. NPR's primary satellite distribution is on Galaxy 16 C Band.
Galaxy 16 (99°W)	12026.609	1276.609	V	290	392	DVB-S QPSK 3/4	<u>KCRW Mux</u> 178 {B2} NRT Audio (IDs, Spots, Liners, etc.) [AAC-LC] 4096 {1000} KCRW [AAC-LC] 4099 {1003} Eclectic24 [AAC-LC] 2 Additional channels defined in PAT, but do not exist in TS
Galaxy 16 (99°W)	12027.057	1277.057	V	360	486	DVB-S QPSK 3/4	<u>Wyoming Public Media Mux</u> 178 {B2} NRT Audio (IDs, Spots, Liners, etc.) [AAC-LC] 4097 {1001} Wyoming Public Radio [AAC-LC] 4098 {1002} Classical Wyoming [AAC-LC] 4099 {1003} Wyoming Sounds [AAC-LC] 2 Additional channels defined in PAT, but do not exist in TS
Galaxy 16 (99°W)	12027.407	1277.407	V	185	221	DVB-S2 QPSK 3/4 0.20 Off	4097 {1001} Nevada Public Radio [MPEG]
SES-1 (101°W)	11821.709	1071.709	V	384	461	DVB-S2 QPSK 1/2 0.20 On Short Frame	515 {203} IP Data (TCP stream to AT&T IP addresses; does not extract in IPCleaner) 2065 {811} Data 5632 {1600} Data

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SES-3 (103°W)	11703.688	953.688	H	447	604	DVB-S QPSK 3/4	<u>Christian Satellite Network Mux</u> 178 {B2} NRT Audio (IDs, Spots, Liners, etc.) [MPEG] 4151 {1037} Effect Radio [AAC-LC] 4410 {113A} CSN International [AAC-LC]
SES-3 (103°W)	11704.077	954.077	H	128	173		
SES-3 (103°W)	11704.478	954.478	H	128	173		
SES-3 (103°W)	11704.680	954.680	H	128	173		
SES-3 (103°W)	11704.983	954.983	H	222	300	DVB-S QPSK 3/4	<u>Crawford Broadcasting Mux</u> 101 {65} KBRT (KBRITE So. Cal) [AAC-LC] 201 {C9} KNSN (KBRITE San Diego) [AAC-LC]
SES-3 (103°W)	11705.291	955.291	H	148	200	DVB-S QPSK 3/4	<u>WWFM Mux</u> 101 {65} The Classical Network [AAC-LC] 201 {C9} JazzOn2 [HE-AACv2]
SES-3 (103°W)	11705.478	955.478	H	148	200	DVB-S QPSK 3/4	101 {65} KYCC [AAC-LC]
SES-3 (103°W)	11705.878	955.878	H	128	173		
SES-3 (103°W)	11706.077	956.077	H	128	173		
SES-3 (103°W)	11706.292	956.292	H	128	173	DVB-S QPSK 3/4	101 {65} Fundamental Broadcasting Network [AAC-LC]
SES-3 (103°W)	11706.486	956.486	H	148	200	DVB-S QPSK 3/4	101 {65} La Campesina Network [MPEG] <i>No audio during local commercial breaks</i>
SES-3 (103°W)	11706.680	956.680	H	64	80		
SES-3 (103°W)	11707.990	957.990	H	1013	1368	DVB-S QPSK 3/4	<u>LinkUp Communications Ku Band Mux</u> 178 {B2} NRT Audio (IDs, Spots, Liners, etc.) [MPEG] 4097 {1001} SonLife Radio [AAC-LC] 4101 {1005} Oasis Radio Network [HE-AAC] <i>(Audio mislabeled as MPEG in PAT)</i> 4197 {1065} Bott Radio Network [HE-AAC] <i>(Audio mislabeled as MPEG in PAT)</i> 6145 {1801} SonLife Radio [MPEG] 6372 {18E4} Test Channel [AAC-LC]
SES-3 (103°W)	11803.466	1053.466	V	1107	1495	DVB-S QPSK 2/3	<u>American Family Radio Mux</u> 178 {B2} NRT Audio (IDs, Spots, Liners, etc.) [MPEG] 4097 {1001} American Family Radio Hybrid [MPEG] 4098 {1002} American Family Radio Music [MPEG] 4099 {1003} American Family Radio Talk [MPEG]

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SES-3 (103°W)	11804.549	1054.549	V	518	700	DVB-S QPSK 3/4	<u>Gold Coast Broadcasting Mux</u> 101 {65} KOCP/K252FK ("Old School 104.7") [MPEG] 201 {C9} KQIE ("Old School 104.7") [MPEG] 301 {12D} KWIE ("Old School 101.3") [MPEG]
SES-3 (103°W)	11807.680	1057.680	V	445	600	DVB-S QPSK 2/3	1001 {3E9} Family Life Radio [AAC-LC] <i>Audio is delivered as IP data using RTP within TS; can be decoded with Wireshark</i>
SES-3 (103°W)	11808.076	1058.076	V	128	173		
SES-3 (103°W)	11810.062	1060.062	V	445	600	DVB-S QPSK 3/4	<u>Northwestern Media Mux</u> 1001 {3E9} WBGL [AAC-LC] 1002 {3EA} WCIC [AAC-LC] <i>Audio is delivered as IP data using RTP within TS; can be decoded with Wireshark</i>
	Note: Remaining signals on SES-3 Ku are expected to move to SES-2 Ku before the end of 2023						
Anik F2 (111.1°W)	11904.107	1154.107	H	128	173		
Anik F2 (111.1°W)	11904.306	1154.306	H	128	173		
Anik F2 (111.1°W)	11904.521	1154.521	H	128	173	DVB-S2 QPSK 5/6 0.25 On	101 {65} NCI FM Manitoba [AAC-LC]
Anik F2 (111.1°W)	11904.858	1154.858	H	220	275	DVB-S2 QPSK 4/5 0.25 On	<u>Missinipi Broadcasting Corporation Mux</u> 101 {65} MBC Channel 1 [MPEG] 201 {C9} MBC Channel 2 [AAC-LC] 301 {12D} MBC Channel 3 [AAC-LC]
Anik F2 (111.1°W)	11725.776	975.776	V	139	188	DVB-S QPSK 5/6	200 {C8} IP Data <i>PID extracts in IPCleaner; possibly audio and data combined in one PID</i>
	Note: Anik F2 is now in an inclined orbit and close to retirement						
Eutelsat 115 West B (114.9°W)	12040.682	1290.682	H	220	275	DVB-S2 QPSK 4/5 0.25 On	<u>Missinipi Broadcasting Corporation Mux</u> 101 {65} MBC Channel 1 [MPEG] 201 {C9} MBC Channel 2 [AAC-LC] 301 {12D} MBC Channel 3 [AAC-LC]
Eutelsat 115 West B (114.9°W)	12040.917	1290.917	H	128	173	DVB-S2 QPSK 5/6 0.25 On	101 {65} NCI FM Manitoba [AAC-LC]

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SES-2 (87°W)	4155.187	994.813	H	667	900	DVB-S QPSK 5/6	<u>LinkUp Communications SES-2 C Band Mux</u> 178 {B2} NRT Audio (IDs, Spots, Liners, etc.) [MPEG] 4106 {100A} VCY America (KVCX/WVIW) [MPEG] 4100 {1004} VCY America (KVCX/WVIW) [AAC-LC] <i>(Very faint audio)</i> 4324 {10E4} LinkUp Communications Test Channel [AAC-LC] <i>PAT is a mirror of the LinkUp Communications mux on SES-11 defining over 125 channels</i>
SES-2 (87°W)	4155.880	994.120	H	283	382	DVB-S QPSK 3/4	4098 {1002} Moody Radio Nashville [MPEG] 4099 {1003} [MPEG] <i>(Silent)</i>
SES-2 (87°W)	4157.691	992.309	V	290	392		
SES-2 (87°W)	4158.083	991.917	V	290	392	DVB-S QPSK 3/4	4096 {1000} Moody Radio Florida [MPEG]
Galaxy 19 (97°W)	4022.583	1127.417	V	373	504	DVB-S QPSK 3/4	<u>WAY Media Mux</u> 4097 {1001} WayFM [AAC-LC] 4098 {1002} WayFM [AAC-LC]
Galaxy 19 (97°W)	4023.029	1126.971	V	290	390	DVB-S QPSK 3/4	<u>Good News Network Mux</u> 4097 {1001} GNN Radio [MPEG] 4098 {1002} Radio Amistad [MPEG]
Galaxy 19 (97°W)	4023.532	1126.468	V	148	200	DVB-S QPSK 2/3	101 {65} Faith Radio (WLBF) [HE-AAC]
Galaxy 19 (97°W)	4049.524	1100.476	V	444	600	DVB-S QPSK 3/4	<u>Hope Media Group Mux</u> 101 {65} KSBj [AAC-LC] 201 {C9} Vida Unida [AAC-LC] 301 {12D} Vida Unida [AAC-LC] 401 {191} Vida Unida [AAC-LC]
Galaxy 16 (99°W)	4159.582	990.418	H	444	600	DVB-S QPSK 3/4	<u>West Virginia MetroNews Network Mux</u> 4096 {1000} Test Channel [AAC-LC] <i>Over 100 channels defined in PAT, used as-needed for programming</i>
Galaxy 16 (99°W)	4160.283	989.717	H	760	912	DVB-S2 QPSK 3/4 0.20 Off	<u>Texas State Networks Mux</u> 4135 {1027} Test Channel [MPEG] <i>PIDs 4103 {1007} through 4127 {101F} used as-needed for programming [MPEG]</i>

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Galaxy 16 (99°W)	4161.231	988.769	H	1040	1248	DVB-S2 QPSK 3/4 0.20 Off	<u>Minnesota Public Radio/American Public Media Mux</u> 178 {B2} NRT Audio (IDs, Spots, Liners, etc.) [MPEG] 4099 {1003} YourClassicalIMPR [MPEG] 4100 {1004} The Current [MPEG] 4101 {1005} MPR News [MPEG] 4102 {1006} Classical 24 [MPEG] 4103 {1007} BBC World Service [MPEG]
Galaxy 16 (99°W)	4162.442	987.558	H	1040	1248	DVB-S2 QPSK 3/4 0.20 Off	<u>Colorado Public Radio Mux</u> 178 {B2} NRT Audio (IDs, Spots, Liners, etc.) [MPEG] 4097 {1001} CPR Classical [MPEG] 4101 {1005} Indie 102.3 [MPEG] 4102 {1006} KRCC [MPEG] 4114 {1012} CPR News [MPEG]
Galaxy 16 (99°W)	4163.630	986.370	H	240	324	DVB-S QPSK 2/3	101 {65} New Hampshire Public Radio [MPEG]
Galaxy 16 (99°W)	4163.914	986.086	H	148	200		