FCC 312 Schedule S	FEDERAL COMMUNICATIONS COMMISSION SATELLITE SPACE STATION AUTHORIZATIONS (Technical and Operational Description)	Page 1: General, Frequency Bands, and GSO Orbit

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name:		e. Estimated Date of Placement into Service:	i Will the space station(s) operate on a Common Carrier Basis:
AMC-2		3/5/1997	N
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s):	j. Number of transponders offered on a common carrier basis:
1/1/1994		14.8 Years	0
c. Construction Completion Date:		g. Total Number of Transponders:	k. Total Common Carrier Transponder Bandwidth:
8/1/1996		48	0 MHz
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth)	l. Orbit Type: Mark all boxes that apply:
1/30/1997	1/30/1997	1920 MHz	[X] GSO [ ] NGSO

S2. OPERATING FREQUENCY BANDS Identify the frequency range and transmit/receive mode for all frequency bands in which this station will oper
Also indicate the nature of service(s) for each frequency band.

Frequency Band Limits				e. T/R Mode	f. Nature of Service(s): List all that apply to this band
Lower Frequency (_Hz)		Upper Frequency (_Hz)			
a. Numeric	b. Unit (K/M/G)	c. Numeric	d. Unit (K/M/G)		
14.0	G	14.5	G	R	Fixed Satellite Service
14.0	G	14.5	G	R	Direct to Home in the Fixed Fixed Satellite Service
11.7	G	12.20	G	T	Fixed Satellite Service
11.7	G	12.2	G	T	Direct to Home in the Fixed Fixed Satellite Service
5.925	G	6.425	G	R	Fixed Satellite Service
3.7	G	4.2	G	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W):	b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection:
101 W			To provide backup to AMC-4
Longitudinal Tolerance or E/W Station-Keeping: d. Toward West: 0.05 Degrees e. Toward East: 0.05 Degrees	f. Inclination Excursion or N/S Station-Keeping Tolerance: 0.05 Degrees	Range of orbital are in which adequate service can be provided (Optional): Degrees E/W g. Westernmost: h. Easternmost:	
i. Reason for service are selection (Optional):			

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S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System:

S4b. Total Number of Orbital Planes in Network or System:

S4c. Celestial Reference Body (Earth, Sun, Moon, etc.):

S4d. Orbit Epoch Date:

For each Orbital Plane Provide:

(e) Orbital Plane No.	(f) No. of Satellites in Plane	(g) Inclination Angle (degrees)	(h) Orbital Period (Seconds)	(i) Apogee (km)	(j) Perigee (km)	(k) Right Ascension of the Ascending Node (Deg.)	(l) Argument of Perigee (Degrees)	Active Service Arc Range (Degrees)		
								(m) Begin Angle	(n) End Angle	(o) Other

S5. INITIAL SATELLITE PHASE ANGLE For each satellite in each orbital plane, provide the intital phase angle.

(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)

NO NGSO DATA FILED

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S6. SERVICE AREA CHARACTERISTICS for each service area provide:

(a) Service Area ID	(b) Type of Associated Station (Earth or Space)	(c) Service Area Diagram File Name (GXT File)	(d) Service Area Description. Provide list of geographic areas (state postal codes or ITU 3-ltr codes), satellites or Figure No. of Service Area Diagram.
KUL	E		US CONUS coverage, -6 dB contour
KDL	E		US CONUS coverage, -6 dB contour
CUL	E		US CONUS, Hawaii, Alaska and Caribbean coverage
CDL	E		US CONUS, Hawaii, Alaska and Caribbean coverage
GBL	E		Global region for TT&C

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S7. SPACE STATION ANTENNA BEAM CHARACTERISTICS For each antenna beam provide:

(a) Beam ID	(b) T/R Mode	Isotropic Antenna Gain		(e) Pointing Error (Degrees)	(f) Rotational Error (Degrees)	(g) Min. Cross-Polar Isolation (dB)	(h) Polarization Switchable? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive				
		(c) Peak (dBi)	(d) Edge (dBi)							(k) Input Losses (dB)	(l) Effective Output Power (W)	(m) Max. EIRP (dBW)	(n) System Noice Temp (k)	(o) G/T Max. Gain Pt. (db/K)	(p) Min. Saturation Flux Density (dBW/m2)	Input Attenuator (dB)	
																(q) Max. Value	(r) Step Size
KRV	R	34.2	28.2	0.15	0	30	Y	90	KUL				550	6.8	-99.4	18	1
KRH	R	35.5	29.5	0.15	0	30	Y	0	KUL				590	7.8	-100.4	18	1
KTV	T	34.1	28.1	0.15	0	30	Y	90	KDL	1.5	41.7	50.3					
KTH	T	35.1	29.1	0.15	0	30	Y	0	KDL	1.4	43.7	51.5					
CRV	R	31.9	21.9	0.15	0	30	Y	90	CUL				605	4	-102	18	1
CRH	R	33.1	23.1	0.15	0	30	Y	0	CUL				540	5.8	-103.2	18	1
CTV	T	31	21	0.15	0	30	Y	90	CDL	1.9	12.9	42.1					
CTH	T	30.3	20.3	0.15	0	30	Y	0	CDL	2.5	11.2	40.8					
GBL	R	10		0.15	0	30	Y	90	GBL				600	-7			
GBL	R	10		0.15	0	30	Y	0	GBL				600	-7			

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S8. ANTENNA BEAM DIAGRAMS For each beam pattern provide the reference to the graphic image and numerical data:
Also provide the power flux density levels in each beam that result from the emission with the highest power flux density.

(a) Beam ID	(b) T/R Mode	(c) Co-or Cross Polar Mode ("C" or" X")	(d) GSO Ref. Orbital Longitude (Deg. E/W)	(e) NGSO Antenna Gain Contour Description (Figure/Table/ Exhibit)	(f) GSO Antenna Gain Contour Data (GXT File)	Max. Power Flux Density (dBW/M2/Hz) At Angle of Arrival above horizontal (for emission with highest PFD)				
						(g) 5 Deg	(h) 10 Deg	(i) 15 Deg	(j) 20 Deg	(k) 25 Deg
KRV	R	C	-101		KRV.gxt					
KRH	R	C	-101		KRH.gxt					
CRV	R	C	-101		CRV.gxt					
CRH	R	C	-101		CRH.gxt					
KTV	T	C	-101		KTV.gxt					
KTH	T	C	-101		KTH.gxt					
CTV	T	C	-101		CTV.gxt	-156.8	-156.4	-155.3	-155.2	-154.2
CTH	T	C	-101		CTH.gxt	-157.3	-157	-156	-155.5	-154.5

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S9. SPACE STATION CHANNELS For each frequency channel provide:

(a) Channel No.	(B) Assigned Bandwidth (kHz)	(c) T/R Mode	(d) Center Frequency (MHz)	(e) Polarization (H, V, L, R)	(f) TTC or Comm Channel (T or C)
KR001	36000	R	14020	H	C
KR002	36000	R	14040	V	C
KR003	36000	R	14060	H	C
KR004	36000	R	14080	V	C
KR005	36000	R	14100	H	C
KR006	36000	R	14120	V	C
KR007	36000	R	14140	H	C
KR008	36000	R	14160	V	C
KR009	36000	R	14180	H	C
KR010	36000	R	14200	V	C
KR011	36000	R	14220	H	C
KR012	36000	R	14240	V	C
KR013	36000	R	14260	H	C
KR014	36000	R	14280	V	C
KR015	36000	R	14300	H	C
KR016	36000	R	14320	V	C
KR017	36000	R	14340	H	C
KR018	36000	R	14360	V	C
KR019	36000	R	14380	H	C
KR020	36000	R	14400	V	C
KR021	36000	R	14420	H	C
KR022	36000	R	14440	V	C
KR023	36000	R	14460	H	C
KR024	36000	R	14480	V	C
KT001	36000	T	11720	V	C
KT002	36000	T	11740	H	C
KT003	36000	T	11760	V	C
KT004	36000	T	11780	H	C
KT005	36000	T	11800	V	C
KT006	36000	T	11820	H	C

S10. SPACE STATION TRANSPONDERS For each transponder provide:

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
K0001	120	KR001	KRH	KT001	KTV
K0002	120	KR002	KRV	KT002	KTH
K0003	120	KR003	KRH	KT003	KTV
K0004	120	KR004	KRV	KT004	KTH
K0005	120	KR005	KRH	KT005	KTV
K0006	120	KR006	KRV	KT006	KTH
K0007	120	KR007	KRH	KT007	KTV
K0008	120	KR008	KRV	KT008	KTH
K0009	120	KR009	KRH	KT009	KTV
K0010	120	KR010	KRV	KT010	KTH
K0011	120	KR011	KRH	KT011	KTV
K0012	120	KR012	KRV	KT012	KTH
K0013	120	KR013	KRH	KT013	KTV
K0014	120	KR014	KRV	KT014	KTH
K0015	120	KR015	KRH	KT015	KTV
K0016	120	KR016	KRV	KT016	KTH
K0017	120	KR017	KRH	KT017	KTV
K0018	120	KR018	KRV	KT018	KTH
K0019	120	KR019	KRH	KT019	KTV
K0020	120	KR020	KRV	KT020	KTH
K0021	120	KR021	KRH	KT021	KTV
K0022	120	KR022	KRV	KT022	KTH
K0023	120	KR023	KRH	KT023	KTV
K0024	120	KR024	KRV	KT024	KTH
C0001	109	CR001	CRH	CT001	CTV
C0002	109	CR002	CRV	CT002	CTH
C0003	109	CR003	CRH	CT003	CTV
C0004	109	CR004	CRV	CT004	CTH
C0005	109	CR005	CRH	CT005	CTV
C0006	109	CR006	CRV	CT006	CTH

KT007	36000	T	11840	V	C
KT008	36000	T	11860	H	C
KT009	36000	T	11880	V	C
KT010	36000	T	11900	H	C
KT011	36000	T	11920	V	C
KT012	36000	T	11940	H	C
KT013	36000	T	11960	V	C
KT014	36000	T	11980	H	C
KT015	36000	T	12000	V	C
KT016	36000	T	12020	H	C
KT017	36000	T	12040	V	C
KT018	36000	T	12060	H	C
KT019	36000	T	12080	V	C
KT020	36000	T	12100	H	C
KT021	36000	T	12120	V	C
KT022	36000	T	12140	H	C
KT023	36000	T	12160	V	C
KT024	36000	T	12180	H	C
CR001	36000	R	5945	H	C
CR002	36000	R	5965	V	C
CR003	36000	R	5985	H	C
CR004	36000	R	6005	V	C
CR005	36000	R	6025	H	C
CR006	36000	R	6045	V	C
CR007	36000	R	6065	H	C
CR008	36000	R	6085	V	C
CR009	36000	R	6105	H	C
CR010	36000	R	6125	V	C
CR011	36000	R	6145	H	C
CR012	36000	R	6165	V	C
CR013	36000	R	6185	H	C
CR014	36000	R	6205	V	C
CR015	36000	R	6225	H	C
CR016	36000	R	6245	V	C
CR017	36000	R	6265	H	C
CR018	36000	R	6285	V	C
CR019	36000	R	6305	H	C
CR020	36000	R	6325	V	C
CR021	36000	R	6345	H	C

C0007	109	CR007	CRH	CT007	CTV
C0008	109	CR008	CRV	CT008	CTH
C0009	109	CR009	CRH	CT009	CTV
C0010	109	CR010	CRV	CT010	CTH
C0011	109	CR011	CRH	CT011	CTV
C0012	109	CR012	CRV	CT012	CTH
C0013	109	CR013	CRH	CT013	CTV
C0014	109	CR014	CRV	CT014	CTH
C0015	109	CR015	CRH	CT015	CTV
C0016	109	CR016	CRV	CT016	CTH
C0017	109	CR017	CRH	CT017	CTV
C0018	109	CR018	CRV	CT018	CTH
C0019	109	CR019	CRH	CT019	CTV
C0020	109	CR020	CRV	CT020	CTH
C0021	109	CR021	CRH	CT021	CTV
C0022	109	CR022	CRV	CT022	CTH
C0023	109	CR023	CRH	CT023	CTV
C0024	109	CR024	CRV	CT024	CTH
C1		TC	GBLRH		
T1				TM1	CTH
T2				TM2	CTV
T3				TM3	KTV

CR022	36000	R	6365	V	C
CR023	36000	R	6385	H	C
CR024	36000	R	6405	V	C
CT001	36000	T	3720	V	C
CT002	36000	T	3740	H	C
CT003	36000	T	3760	V	C
CT004	36000	T	3780	H	C
CT005	36000	T	3800	V	C
CT006	36000	T	3820	H	C
CT007	36000	T	3840	V	C
CT008	36000	T	3860	H	C
CT009	36000	T	3880	V	C
CT010	36000	T	3900	H	C
CT011	36000	T	3920	V	C
CT012	36000	T	3940	H	C
CT013	36000	T	3960	V	C
CT014	36000	T	3980	H	C
CT015	36000	T	4000	V	C
CT016	36000	T	4020	H	C
CT017	36000	T	4040	V	C
CT018	36000	T	4060	H	C
CT019	36000	T	4080	V	C
CT020	36000	T	4100	H	C
CT021	36000	T	4120	V	C
CT022	36000	T	4140	H	C
CT023	36000	T	4160	V	C
CT024	36000	T	4180	H	C
TC	800	R	6423.5	H	T
TM1	300	T	3700.5	H	T
TM2	300	T	4199.5	V	T
TM3	300	T	12198.0	V	T

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S11. DIGITAL MODULATION PARAMETERS For each digital emission provide:

(a) Digital Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) No. of Phases	(e)Uncoded Data Rate (kbps)	(f) FEC Error Correction Coding Rate	(g) CDMA Processing Gain (dB)	(h) Total C/N Performance Objective (dB)	(i) Single Entry C/I Objective (dB)
A_KU	36M0G7W	36000	4	40000	0.69		6.4	18
B_KU	27M0G7W	27000	4	32000	0.69		6.4	18
C_KU	6M95G1W	6950	4	8000	0.69		6.4	18
D_KU	5M00G1W	5000	4	6000	0.69		6.4	18
E_KU	100KG1W	100	4	56	0.69		6.4	18
F_KU	1M60G1W	1600	4	1544	0.69		6.4	18
G_KU	36M7W	36000	8	50000	0.61		9.9	20
H_C	36M0G7W	36000	4	40000	0.59		6.8	18
I_C	6M95G1W	6950	4	8000	0.69		6.8	18
J_C	36M0G7W	36000	8	60000	0.61		9.9	22
K_C	36M0G7W	36000	16	110000	0.81		16.6	24
L_C	100KG1D	100	4	56	0.75		7.2	18
M_C	1M60G1D	1600	4	1544	0.75		7.2	18

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S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

(a) Analog Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) Signal Type	(e) Channels per Carrier	Multi-channel Telephony				(j) Video Standard NTSC, PAL, etc.	(k) Video Noise-Weighting (dB)	(l) Video and SCPC/FM Modulation Index	(m) SCPC/FM Compander, Preemphasis, and Noise Weighting (dB)	(n) Total C/N Performance Objective (dB)	(o) Single Entry C/I Objective (dB)
					(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)	(h) Top Baseband Freq. (MHz)	(i) RMS Modulation Index						
N_KU	36M0F3F	36000	TV/FM	1					NTSC	12.8	1.29		11	21
P_C	36M0F3F	36000	TV/FM	1					NTSC	12.8	1.29		11	21
Q_C	800KF9D	800											10	21
R_C	300KF9D	300											9	21
S_KU	300KF9D	300											9	21

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S13. TYPICAL EMISSIONS For each planned type of emission provide:

Associated Transponder ID Range		Modulation ID		(e) Carriers per Transponder	(f) Carrier Spacing (kHz)	(g)Noise Budget Reference (Table No.)	(h) Energy Dispersal Bandwidth (kHz)	Receive Band (Assoc. Transmit Stn)			Transmit Band (This Space Station)			
								(i)Assoc. Stn. Max. Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW)		EIRP (dBW)		(n) Max. Power Flux Density (dBW/m2/Hz)	(o)Assoc. Stn Rec. G/T (dB/K)
(a) Start	(b) End	(c) Digital (Table S11)	(d) Analog (Table S12)						(j) Min.	(k) Max.	(l) Min.	(m) Max.		
K0001	K0024	A_KU		1		budgets_Ku.xls		57.2	20	25	46	51.4	-149.5	17.1
K0001	K0024	B_KU		1		budgets_Ku.xls		57.2	20	25	46	51.4	-148.5	17.1
K0001	K0024	C_KU		5	6950	budgets_Ku.xls		52.9	8.9	13	32	37.7	-156.2	25.6
K0001	K0024	D_KU		6	5000	budgets_Ku.xls		52.9	8.9	13	32	36.3	-156.2	25.6
K0001	K0024	E_KU		250	100	budgets_Ku.xls		46.6	-2	3	16	20.5	-151.9	19.6
K0001	K0024	F_KU		20	1544	budgets_Ku.xls		46.6	8	13	26	30.5	-156.3	25.6
K0001	K0024	G_KU		1		budgets_Ku.xls		57.2	20	25	46	51.4	-149.2	25.6
C0001	C0024	H_C		1		budgets_C.xls		54.4	17.1	22	37	42	-162.9	21.8
C0001	C0024	I_C		5		budgets_C.xls		54.4	9.6	15	27	32	-165.9	25.2
C0001	C0024	J_C		1		budgets_C.xls		54.4	22	25	37	42	-163.4	33.2
C0001	C0024	K_C		1		budgets_C.xls		54.4	22	25	37	42	-161.6	33.2
C0001	C0024	L_C		250	100	budgets_C.xls		47.4	-3.4	2	7	12	-164	23
C0001	C0024	M_C		20	1544	budgets_C.xls		47.4	11	16	24	29	-161.2	23
K0001	K0024		N_KU	1		budgets_Ku.xls	6000	57.2	17	25	46	51	-138	19.6
C0001	C0024		P_C	1		budgets_C.xls	6000	49.8	17	25	36	41	-142	23
C1	C1		Q_C			budgets_TTC.xl		54.4	17					
T1	T2		R_C			budgets_TTC.xl								
T3	T3		S_KU			budgets_TTC.xl								

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S14. Is the space station(s) controlled and monitored remotely? If Yes, provide the location and telephone number of the TT and C control point(s): Yes

Remote Control (TT C) Location(s):

S14a: Street Address: Woodbine TT&C			
S14b. City: Mt. Airy	S14c. County:	S14d. State/Country MD	S14e. Zip Code: 21771
S14f. Telephone Number: 410-548-4300	S14g. Call Sign of Control Station (if appropriate): E7169		

Remote Control (TT C) Location(s):

S14a: Street Address: Vernon Valley Spacecrafts Ops.			
S14b. City: Sussex	S14c. County:	S14d. State/Country NJ	S14e. Zip Code: 07461
S14f. Telephone Number: 973-823-6000	S14g. Call Sign of Control Station (if appropriate): WB81		

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a: Mass of spacecraft without fuel (kg): 1310.8	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 1338.3		
S15c. Mass of spacecraft and fuel at launch (kg): 2649	S15f. Length (m): 26.8	S15i. Payload: 0.78
S15d. Mass of fuel, in orbit, at beginning of life (kg): 320	S15g. Width (m): 1.8	S15j. Bus: 0.88
S15e. Deployed Area of Solar Array (square meters): 75.5	S15h. Height (m): 3.78	S15k. Total: 0.69

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

Spacecraft Subsystem	Electrical Power (Watts) At Beginning of Life		Electrical Power (Watts) At End of Life	
	At Equinox	At Solstice	At Equinox	At Solstice
Payload (Watts):	(a): 3772	(f): 3740	(k): 3772	(p): 3740
Bus (Watts):	(b): 1089	(g): 674	(l): 1089	(q): 674
Total (Watts):	(c): 4861	(h): 4414	(m) 4861	(r): 4414
Solar Array (Watts):	(d): 6513	(i): 6212	(n): 5250	(s): 4836
Depth of Battery Discharge (%):	(e) 70 %	(j) 70 %	(o) 70 %	(t) 70 %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?:	X	**YES**		**NO**		**N/A**
b. Are the appropriate service area coverage requirements of § 25.143(b)(ii) and (iii), or § 25.145(c)(1) and (2) met?		**YES**		**NO**	X	**N/A**
c. Are the frequency tolerances of § 25.202(e) and the out-of-band emission limits of § 25.202(f)(1), (2) and (3) met?	X	**YES**		**NO**		**N/A**

In addition to the information required in this Form, the space station applicant is required to provide all the information specified in Section 25.114 of the Commission's rules, 47 C.F.R § 25.114.