

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
(Technical and Operational Description)

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: ESTRELA DO SUL 2		e. Estimated Date of Placement into Service: 8/1/2011	i. Will the space station(s) operate on a Common Carrier Basis: N
b. Construction Commencement Date: 5/1/2009		f. Estimated Lifetime of Satellite(s): 15 Years	j. Number of transponders offered on a common carrier basis: 0
c. Construction Completion Date: 6/1/2011		g. Total Number of Transponders: 46	k. Total Common Carrier Transponder Bandwidth: 0 MHz
d1. Est Launch Date Begin: 7/1/2011	d2. Est Launch Date End: 7/1/2011	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 1656 MHz	l. Orbit Type: Mark all boxes that apply: ☒ 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)		
11.45	G	11.7	G	T	Fixed Satellite Service
11.7	G	12.2	G	T	Fixed Satellite Service
13.75	G	14	G	R	Fixed Satellite Service
14	G	14.5	G	R	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 63 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: This satellite is a replacement satellite for the existing satellite "Estrela do Sul 1" at 63 degrees west longitude orbital location (which is already providing services to the corresponding customers).
Longitudinal Tolerance or E/W Station-Keeping:		f. Inclination Excursion or N/S Station-Keeping Tolerance:	Range of orbital are in which adequate service can be provided (Optional):	
d. Toward West:	0.05 Degrees	0.05 Degrees	g. Westernmost: h. Easternmost:	
e. Toward East:	0.05 Degrees			
i. Reason for service are selection (Optional):				

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Page 2: NGSO Orbits

S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System:

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

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

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 initial phase angle.

(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)
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NO NGSO DATA FILED

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Page 3: Service Areas

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.
1	S	Andean_SA.gxt	
2	S	Brazil_SA.gxt	
3	S	US_SA.gxt	
4	S	NAOR_SA.gxt	
5	S	South Cone_SA.gxt	

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Page 4: Antenna Beams

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 Iso- lation (dB)	(h) Polar- ization Switch- able? (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 Noise 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
ATXV	T	30.4	24.4	0.1	0	28	N	90	1	1	145	52					
BTXH	T	31.4	23.4	0.1	0	28	N	0	2	1	145	53					
BTXV	T	31.4	23.4	0.1	0	28	N	90	2	1	145	53					
UTX	T	30.4	28.4	0.1	0	30	N	0	3	1	145	52					
UTXV	T	30.4	28.4	0.1	0	30	N	90	3	1	145	52					
NTX	T	30.4	28.4	0.1	0	29	N	0	4	1	145	52					
NTXV	T	30.4	28.4	0.1	0	29	N	90	4	1	145	52					
STXV	T	31.4	23.4	0.1	0	29	N	90	5	1	145	53					
ARX	R	31.9	25.9	0.1	0	28	N	0	1				400	5.9	-102.9	20	1
BRX	R	32.9	24.9	0.1	0	28	N	0	2				400	6.9	-103.9	20	1
BRX	R	32.9	24.9	0.1	0	28	N	90	2				400	6.9	-103.9	20	1
URX	R	31.9	29.9	0.1	0	30	N	0	3				400	5.9	-102.9	20	1
URX	R	31.9	29.9	0.1	0	30	N	90	3				400	5.9	-102.9	20	1
NRX	R	31.9	29.9	0.1	0	29	N	0	4				400	5.9	-102.9	20	1
NRX	R	31.9	29.9	0.1	0	29	N	90	4				400	5.9	-102.9	20	1
SRX	R	32.9	24.9	0.1	0	29	N	0	5				400	6.9	-103.9	20	1

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Page 5: Beam Diagrams

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
ATXV	T	C	-63		ATXV.gxt	-164	-164	-164	-164	-164
BTXH	T	C	-63		BTXH.gxt	-168	-168	-168	-168	-168
BTXV	T	C	-63		BTXV.gxt	-168	-168	-168	-168	-168
UTX	T	C	-63		UTXH.gxt	-151.3	-149.9	-149.9	-149.9	-149.9
UTXV	T	C	-63		UTXV.gxt	-151.3	-149.9	-149.9	-149.9	-149.9
NTX	T	C	-63		NTXH.gxt	-151.3	-150.1	-150.1	-150.1	-150.1
NTXV	T	C	-63		NTXV.gxt	-151.3	-150.1	-150.1	-150.1	-150.1
STXV	T	C	-63		STXV.gxt	-154.8	-152.8	-152.8	-150.8	-148.8
ARX	R	C	-63		ARXH.gxt					
BRX	R	C	-63		BRXH.gxt					
BRX	R	C	-63		BRXV.gxt					
URX	R	C	-63		URXH.gxt					
URX	R	C	-63		URXV.gxt					
NRX	R	C	-63		NRXH.gxt					
NRX	R	C	-63		NRXV.gxt					
SRX	R	C	-63		SRXH.gxt					
ATXV	T	X	-63		ATXV_XP.gxt					
BTXH	T	X	-63		BTXH_XP.gxt					
BTXV	T	X	-63		BTXV_XP.gxt					
UTX	T	X	-63		UTXH_XP.gxt					
UTXV	T	X	-63		UTXV_XP.gxt					
NTX	T	X	-63		NTXH_XP.gxt					
NTXV	T	X	-63		NTXV_XP.gxt					
STXV	T	X	-63		STXV_XP.gxt					
ARX	R	X	-63		ARXH_XP.gxt					
BRX	R	X	-63		BRXH_XP.gxt					
BRX	R	X	-63		BRXV_XP.gxt					
URX	R	X	-63		URXH_XP.gxt					

URX	R	X	-63		URXV_XP.gxt					
NRX	R	X	-63		NRXH_XP.gxt					
NRX	R	X	-63		NRXV_XP.gxt					
SRX	R	X	-63		SRXH_XP.gxt					

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Page 6: Channels and Transponders

S9. SPACE STATION CHANNELS For each frequency channel provide: **S10. SPACE STATION TRANSPONDERS** For each transponder 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)
U1V	36000	R	13770	V	C
U1H	36000	R	13770	H	C
U2V	36000	R	13810	V	C
U2H	36000	R	13810	H	C
U3V	36000	R	13852	V	C
U3H	36000	R	13852	H	C
U4V	36000	R	13892	V	C
U4H	36000	R	13892	H	C
U5V	36000	R	13934	V	C
U5H	36000	R	13934	H	C
U6V	36000	R	13974	V	C
U6H	36000	R	13974	H	C
U72V1	72000	R	13954	V	C
U72H1	72000	R	13954	H	C
U7V	36000	R	14020	V	C
U7H	36000	R	14020	H	C
U8V	36000	R	14060	V	C
U8H	36000	R	14060	H	C
U9V	36000	R	14104	V	C
U9H	36000	R	14104	H	C
U10V	36000	R	14144	V	C
U10H	36000	R	14144	H	C
U76V1	76000	R	14124	V	C
U76H1	76000	R	14124	H	C
U72V2	72000	R	14206	V	C
U72H2	72000	R	14206	H	C
U72V3	72000	R	14288	V	C
U72H3	72000	R	14288	H	C
U11V	36000	R	14268	V	C
U11H	36000	R	14268	H	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
B1	135.2	U1V	BRXV	D1H	BTXH
A1	135.2	U1V	URXV	D1H	NTXH
A2	135.2	U1H	URXH	D1V	NTXV
A3	135.2	U1H	URXH	D1V	UTXV
B2	135.2	U1H	SRXH	D1V	STXV
A4	135.2	U1H	ARXH	D1V	ATXV
B3	135.2	U2V	BRXV	D2H	BTXH
A5	135.2	U2V	URXV	D2H	NTXH
A6	135.2	U2H	URXH	D2V	NTXV
A7	135.2	U2H	URXH	D2V	UTXH
B4	135.2	U2H	SRXH	D2V	STXV
A8	135.2	U2H	ARXH	D2V	ATXV
B5	135.2	U3V	BRXV	D3H	BTXH
A9	135.2	U3V	URXV	D3H	NTXH
A10	135.2	U3H	URXH	D3V	NTXV
B6	135.2	U3H	SRXH	D3V	STXV
A11	135.2	U3H	ARXH	D3V	ATXV
B7	135.2	U4V	BRXV	D4H	BTXH
A12	135.2	U4V	URXV	D4H	NTXH
B8	135.2	U4H	SRXH	D4V	STXV
A13	135.2	U4H	ARXH	D4V	ATXV
B9	135.2	U5V	BRXV	D5H	BTXH
A14	135.2	U5V	URXV	D5H	NTXH
B10	135.2	U6V	BRXV	D6H	BTXH
A15	135.2	U6V	URXV	D6H	NTXH
B11	135.2	U72H1	SRXH	D72V1	STXV
A16	135.2	U72H1	ARXH	D72V1	ATXV
B12	135.2	U7V	BRXV	D7H	BTXH
B13	135.2	U7H	BRXH	D7V	BTXV
A17	135.2	U7V	URXV	D7H	UTXH

U12V	36000	R	14308	V	C
U12H	36000	R	14308	H	C
U13V	36000	R	14350	V	C
U13H	36000	R	14350	H	C
U14V	36000	R	14390	V	C
U14H	36000	R	14390	H	C
U72V4	72000	R	14370	V	C
U15V	36000	R	14430	V	C
U15H	36000	R	14430	H	C
U16V	36000	R	14470	V	C
U16H	36000	R	14470	H	C
U72V5	72000	R	14452	V	C
U72H5	72000	R	14452	H	C
D1V	36000	T	11470	V	C
D1H	36000	T	11470	H	C
D2V	36000	T	11510	V	C
D2H	36000	T	11510	H	C
D3V	36000	T	11552	V	C
D3H	36000	T	11552	H	C
D4V	36000	T	11592	V	C
D4H	36000	T	11592	H	C
D5V	36000	T	11634	V	C
D5H	36000	T	11634	H	C
D6V	36000	T	11674	V	C
D6H	36000	T	11674	H	C
D72V1	72000	T	11654	V	C
D72H1	72000	T	11654	H	C
D7V	36000	T	11720	V	C
D7H	36000	T	11720	H	C
D8V	36000	T	11760	V	C
D8H	36000	T	11760	H	C
D9V	36000	T	11804	V	C
D9H	36000	T	11804	H	C
D10V	36000	T	11844	V	C
D10H	36000	T	11844	H	C
D76V1	76000	T	11824	V	C
D76H1	76000	T	11824	H	C
D72V2	72000	T	11906	V	C
D72H2	72000	T	11906	H	C

A18	135.2	U7H	URXH	D7V	UTXV
B14	135.2	U7H	SRXH	D7V	STXV
A19	135.2	U7H	ARXH	D7V	ATXV
A20	135.2	U7V	NRXV	D7H	UTXH
A21	135.2	U7H	NRXH	D7V	UTXV
B15	135.2	U8V	BRXV	D8H	BTXH
B16	135.2	U8H	BRXH	D8V	BTXV
A22	135.2	U8V	URXV	D8H	UTXH
A23	135.2	U8H	URXH	D8V	UTXV
B17	135.2	U8H	SRXH	D8V	STXV
A24	135.2	U8H	ARXH	D8V	ATXV
A25	135.2	U8V	NRXV	D8H	UTXH
A26	135.2	U8H	NRXH	D8V	UTXH
B18	135.2	U9V	BRXV	D9H	BTXH
B19	135.2	U9H	BRXH	D9V	BTXV
A27	135.2	U9V	URXV	D9H	UTXH
B20	135.2	U9H	SRXH	D9V	STXV
A28	135.2	U9H	ARXH	D9V	ATXV
A29	135.2	U9V	NRXV	D9H	UTXH
B21	135.2	U10V	BRXH	D10H	BTXH
B22	135.2	U10H	BRXH	D10V	BTXV
A30	135.2	U10V	URXV	D10H	UTXH
B23	135.2	U10H	SRXH	D10V	STXV
A31	135.2	U10H	ARXH	D10V	ATXV
A32	135.2	U10V	NRXV	D10H	UTXH
A33	135.2	U76H1	URXH	D76V1	UTXV
B24	135.2	U72V2	BRXV	D72H2	BTXV
B25	135.2	U72H2	BRXH	D72V2	BTXV
A34	135.2	U72V2	URXV	D72H2	UTXH
B26	135.2	U72H2	SRXH	D72V2	STXV
A35	135.2	U72H2	ARXH	D72V2	ATXV
A36	135.2	U72V2	NRXV	D72H2	UTXH
B27	135.2	U72V3	BRXV	D72H3	BTXH
B28	135.2	U11H	BRXH	D11V	BTXV
A37	135.2	U11V	URXV	D11H	UTXH
A38	135.2	U11H	URXH	D11V	UTXV
B29	135.2	U11H	SRXH	D11V	STXV
A39	135.2	U11H	ARXH	D11V	ATXV
B30	135.2	U12H	BRXH	D12V	BTXV

D72V3	72000	T	11988	V	C
D72H3	72000	T	11988	H	C
D11V	36000	T	11968	V	C
D11H	36000	T	11968	H	C
D12V	36000	T	12008	V	C
D12H	36000	T	12008	H	C
D13V	36000	T	12050	V	C
D13H	36000	T	12050	H	C
D14V	36000	T	12090	V	C
D14H	36000	T	12090	H	C
D72H4	72000	T	12070	H	C
D15V	36000	T	12130	V	C
D15H	36000	T	12130	H	C
D16V	36000	T	12170	V	C
D16H	36000	T	12170	H	C
D72V5	72000	T	12152	V	C
D72H5	72000	T	12152	H	C
CMD1	450	R	14497.5	V	T
CMD2	450	R	14499.5	H	T
TLM1	225	T	12198.5	V	T
TLM2	225	T	12196.5	H	T

A40	135.2	U12V	URXV	D12H	UTXH
A41	135.2	U12H	URXH	D12V	UTXV
B31	135.2	U12H	SRXH	D12V	STXV
A42	135.2	U12H	ARXH	D12V	ATXV
B32	135.2	U13V	BRXV	D13H	BTXH
B33	135.2	U13H	SRXH	D13V	STXV
A43	135.2	U13H	ARXH	D13V	ATXV
B34	135.2	U14V	BRXV	D14H	BTXH
B35	135.2	U14H	SRXH	D14V	STXV
A44	135.2	U14H	ARXH	D14V	ATXV
A45	135.2	U72V4	URXV	D72H4	UTXH
B36	135.2	U15V	BRXV	D15H	BTXH
B37	135.2	U15H	SRXH	D15V	STXV
A46	135.2	U15H	ARXH	D15V	ATXV
B38	135.2	U16V	BRXV	D16H	BTXH
B39	135.2	U16H	SRXH	D16V	STXV
A47	135.2	U16H	ARXH	D16V	ATXV
A48	135.2	U72V5	URXV	D72H5	UTXH
A49	135.2	U72H5	URXH	D72V5	UTXV
CMD1		CMD1	BRXV		
CMD2		CMD2	BRXH		
TLM1				TLM1	BTXV
TLM2				TLM2	BTXH

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Page 7: Digital Modulation

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)
1	36M0G7W	36000	4	38081	0.667	0	3.9	15.2
2	2M00G7W	2000	4	2116	0.667	0	3.9	15.2
3	500KG7W	500	4	529	0.667	0	3.9	15.2
4	18M0G7W	18000	4	21420	0.75	0	4.83	16.1
5	1M00G7W	1000	4	1190	0.75	0	4.83	16.1
6	200KG7W	200	4	283	0.889	0	7	18.3
7	9M00G7W	9000	8	14261	0.667	0	7.92	19.2
8	450KG7D	450	4	176	0.25	0	-1.55	9.8
9	225KG7D	225	4	88	0.25	0	-1.55	9.8
10	18M0G7W	18000	8	28521	0.667	0	7.92	19.2

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Page 8: Analog Modulation

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						
ALG1	36M0F9F	36000	TV/FM	1					NTSC	12.8	1.29		12	23.3

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Page 9: Typical Emissions

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)			
		(c) Digital (Table S11)	(d) Analog (Table S12)					(i) Assoc. Stn. Max. Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW)		EIRP (dBW)		(n) Max. Power Flux Density (dBW/m ² /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
(a) Start	(b) End								(j) Min.	(k) Max.	(l) Min.	(m) Max.		
A17	A49	1		1		U_A_N_Link_B		57	14.6	25.5	46	52	-149.9	18.5
A17	A49	2		18	2000	U_A_N_Link_B		43	5	12.9	30	39.5	-149.9	32.4
A17	A49	3		72	500	U_A_N_Link_B		43	-1	6.9	25	33.4	-149.9	32.4
A17	A49	4		2	18000	U_A_N_Link_B		57	11.6	22.5	41	49	-149.9	18.5
A17	A49	5		36	1000	U_A_N_Link_B		60.6	-1	9.9	30.5	36.5	-149.9	18.5
A17	A49	6		180	200	U_A_N_Link_B		49.1	-7	2.9	23.5	29.5	-149.9	36.1
A17	A49	7		4	9000	U_A_N_Link_B		60.6	8.5	19.4	40	46	-149.9	18.5
B12	B39	1		1		B_S_Link_Bud		57	10.6	27.5	44	53	-148.8	18.5
B12	B39	2		18	2000	B_S_Link_Bud		43	5	14.9	26.5	40.5	-148.8	32.4
B12	B39	3		72	500	B_S_Link_Bud		43	-1	8.9	20.5	34.4	-148.8	32.4
B12	B39	4		2	18000	B_S_Link_Bud		57	17.6	24.5	41	50	-148.8	18.5
B12	B39	5		36	1000	B_S_Link_Bud		60.6	-5	11.9	28.5	37.5	-148.8	18.5
B12	B39	6		180	200	B_S_Link_Bud		49.1	-8	4.9	19.1	30.5	-148.8	36.1
B12	B39	7		4	9000	B_S_Link_Bud		60.6	4.5	21.4	38	47	-148.8	22
CMD1	CMD2	8		1		CMD_Link_Bud		60.6	-3.5	8.4				
TLM1	TLM2	9		1		TLM_Link_Bud					19	31	-148.8	36.1
A1	A16	1		1		U_A_N_xKu.xls		57	14.6	25.5	44	52	-149.9	18.5
A1	A16	4		2	18000	U_A_N_xKu.xls		57	11.6	22.5	41	49	-149.9	18.5
A1	A16	7		4	9000	U_A_N_xKu.xls		60.6	8.5	19.4	40	46	-149.9	20.4
A1	A16	10		2	18000	U_A_N_xKu.xls		54.5	13.6	22.5	44	49	-149.9	18.5
B1	B11	1		1		B_S_xKu.xls		57	11.6	27.5	44	53	-149.9	18.5
B1	B11	4		2	18000	B_S_xKu.xls		57	11.6	24.5	41	50	-148.8	18.5
B1	B11	7		4	9000	B_S_xKu.xls		60.6	7.5	21.4	38	47	-148.8	22
B1	B11	10		2	18000	B_S_xKu.xls		54.5	13.6	24.5	44	50	-148.8	20.4
A17	A49		ALG1	1		U_A_N_ANLG.		60.6	14.6	25.5	48	52	-149.9	24.5
B12	B39		ALG1	1		B_S_ANLG.xls		60.6	15.6	27.5	46	53	-148.8	24.5

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Page 10: TT and C

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: Av. Rio Branco			
S14b. City: Rio de Janeiro, RJ	S14c. County: Brazil	S14d. State/Country	S14e. Zip Code:
S14f. Telephone Number: +55-21-2253-5195		S14g. Call Sign of Control Station (if appropriate):	

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Characteristics and
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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 2203.4	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 2825		
S15c. Mass of spacecraft and fuel at launch (kg): 5028.4	S15f. Length (m): 32.4	S15i. Payload: 0.92
S15d. Mass of fuel, in orbit, at beginning of life (kg): 1344.6	S15g. Width (m): 9.1	S15j. Bus: 0.82
S15e. Deployed Area of Solar Array (square meters): 60.6	S15h. Height (m): 7.9	S15k. Total: 0.75

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): 9398	(f): 9398	(k): 9398	(p): 9398
Bus (Watts):	(b): 2212	(g): 1210	(l): 2212	(q): 1060
Total (Watts):	(c): 11610	(h): 10608	(m): 11610	(r): 10458
Solar Array (Watts):	(d): 14113	(i): 12680	(n): 12688	(s): 11539
Depth of Battery Discharge (%):	(e) 74.6 %	(j) 0 %	(o) 74.6 %	(t) 0 %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?:	☒ 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	☒ 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?	☒ 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.