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: STAR ONE C1		e. Estimated Date of Placement into Service:	i Will the space station(s) operate on a Common Carrier Basis: N
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s): 15 Years	j. Number of transponders offered on a common carrier basis: 0
c. Construction Completion Date:		g. Total Number of Transponders: 42	k. Total Common Carrier Transponder Bandwidth: 0 MHz
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 1581 MHz	l. Orbit Type: Mark all boxes that apply: [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)		
5925	M	6425	M	R	Fixed Satellite Service
3700	M	4200	M	T	Fixed Satellite Service
14000	M	14500	M	R	Fixed Satellite Service
11700	M	12200	M	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 65 W	b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: The Brazilian telecommunications authority has authorized Star One to operate the STAR ONE C1 satellite at 65°W.L.
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: 0.1 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):			

FEDERAL COMMUNICATIONS COMMISSION **Page 2: NGSO Orbits**
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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

FEDERAL COMMUNICATIONS COMMISSION **Page 3: Service Areas**
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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.
SA1	S		South America, Central America, Mexico, USA
SA2	S		South America, Central America, Mexico, USA
SA3	S		Brazil
SA4	S		South America, USA
SA5	S		Region 2

FEDERAL COMMUNICATIONS COMMISSION **Page 4: Antenna Beams**
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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
BSC	R	29.7	19.7	0.09	0.02	27	N	0	SA1				617	1.8	-96.8	18	0.5
BSC	R	29.7	19.7	0.09	0.02	27	N	90	SA1				617	1.8	-96.8	18	0.5
BSC	T	26.2	16.2	0.09	0.02	27	N	0	SA1	2.9	28.2	40.7					
BSC	T	26.2	16.2	0.09	0.02	27	N	90	SA1	2.9	28.2	40.7					
BKR	R	34	26	0.09	0.02	28	N	90	SA3				660	5.8	-98.8	18	1
BKR	R	34	26	0.09	0.02	28	N	0	SA3				660	5.8	-98.8	18	1
MKR	R	32.2	24.2	0.09	0.02	28	N	90	SA4				668	4	-97	18	1
MKR	R	32.2	24.2	0.09	0.02	28	N	0	SA4				668	4	-97	18	1
BKTV	T	32	24	0.09	0.02	28	N	90	SA3	2.3	68.9	50.4					
BKT	T	32	24	0.09	0.02	28	N	0	SA3	2.3	68.9	50.4					
MKT	T	31.6	23.6	0.09	0.02	28	N	90	SA4	2.3	68.9	50					
MKT	T	31.6	23.6	0.09	0.02	28	N	0	SA4	2.3	68.9	50					
GBL	T	19.6	16.6	0.09	0.02	30	N	0	SA5	4	0.088	9					
GBL	T	19.6	16.6	0.09	0.02	30	N	90	SA5	4	0.088	9					

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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
BSC	R	C	-65		BSCRH.GXT					
BSC	R	C	-65		BSCRV.GXT					
BSC	T	C	-65		BSCTH.GXT	-157.5	-157.3	-156.8	-155.4	-154.6
BSC	T	C	-65		BSCTV.GXT	-157.5	-157.3	-156.8	-155.4	-154.6
BKR	R	C	-65		BKRV.GXT					
BKR	R	C	-65		BKRH.GXT					
MKR	R	C	-65		MKRV.GXT					
MKR	R	C	-65		MKRH.GXT					
BKTV	T	C	-65		BKTV.GXT	-161.2	-160.9	-160.7	-160.6	-155.5
BKT	T	C	-65		BKTH.GXT	-161.2	-160.9	-160.7	-160.6	-155.5
MKT	T	C	-65		MKTV.GXT	-157.1	-155.2	-153.5	-151.4	-148.8
MKT	T	C	-65		MKTH.GXT	-157.1	-155.2	-153.5	-151.4	-148.8
GBL	T	C	-65		GBLH.gxt	-153	-153	-153	-153	-153
GBL	T	C	-65		GBLV.gxt	-153	-153	-153	-153	-153

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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)
CU001	36000	R	5925	H	C
CU003	36000	R	5965	H	C
CU005	36000	R	6005	H	C
CU007	36000	R	6045	H	C
CU009	36000	R	6085	H	C
CU011	36000	R	6125	H	C
CU013	36000	R	6165	H	C
CU015	36000	R	6205	H	C
CU017	36000	R	6245	H	C
CU019	36000	R	6285	H	C
CU021	36000	R	6325	H	C
CU023	36000	R	6365	H	C
CU025	36000	R	6405	H	C
CU002	36000	R	5945	V	C
CU004	36000	R	5985	V	C
CU006	36000	R	6025	V	C
CU008	36000	R	6065	V	C
CU010	36000	R	6105	V	C
CU012	36000	R	6145	V	C
CU014	36000	R	6185	V	C
CU016	36000	R	6225	V	C
CU018	36000	R	6265	V	C
CU020	36000	R	6305	V	C
CU022	36000	R	6345	V	C
CU024	36000	R	6385	V	C
CD001	36000	T	3700	V	C
CD003	36000	T	3740	V	C
CD005	36000	T	3780	V	C
CD007	36000	T	3820	V	C
CD009	36000	T	3860	V	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
TC001	119.2	CU001	BSCRH	CD001	BSCTV
TC003	119.2	CU003	BSCRH	CD003	BSCTV
TC005	119.2	CU005	BSCRH	CD005	BSCTV
TC007	119.2	CU007	BSCRH	CD007	BSCTV
TC009	119.2	CU009	BSCRH	CD009	BSCTV
TC011	119.2	CU011	BSCRH	CD011	BSCTV
TC013	119.2	CU013	BSCRH	CD013	BSCTV
TC015	119.2	CU015	BSCRH	CD015	BSCTV
TC017	119.2	CU017	BSCRH	CD017	BSCTV
TC019	119.2	CU019	BSCRH	CD019	BSCTV
TC021	119.2	CU021	BSCRH	CD021	BSCTV
TC023	119.2	CU023	BSCRH	CD023	BSCTV
TC025	119.2	CU025	BSCRH	CD025	BSCTV
TC002	119.2	CU002	BSCRV	CD002	BSCTH
TC004	119.2	CU004	BSCRV	CD004	BSCTH
TC006	119.2	CU006	BSCRV	CD006	BSCTH
TC008	119.2	CU008	BSCRV	CD008	BSCTH
TC010	119.2	CU010	BSCRV	CD010	BSCTH
TC012	119.2	CU012	BSCRV	CD012	BSCTH
TC014	119.2	CU014	BSCRV	CD014	BSCTH
TC016	119.2	CU016	BSCRV	CD016	BSCTH
TC018	119.2	CU018	BSCRV	CD018	BSCTH
TC020	119.2	CU020	BSCRV	CD020	BSCTH
TC022	119.2	CU022	BSCRV	CD022	BSCTH
TC024	119.2	CU024	BSCRV	CD024	BSCTH
TK001	127.8	KU001	MKRV	KD001	MKTH
TK002	127.8	KU001	MKRV	KD001	BKTH
TK003	127.8	KU001	BKRV	KD001	MKTH
TK004	127.8	KU002	MKRV	KD002	MKTH
TK005	127.8	KU002	BKRV	KD002	BKTH

CD011	36000	T	3900	V	C
CD013	36000	T	3940	V	C
CD015	36000	T	3980	V	C
CD017	36000	T	4020	V	C
CD019	36000	T	4060	V	C
CD021	36000	T	4100	V	C
CD023	36000	T	4140	V	C
CD025	36000	T	4180	V	C
CD002	36000	T	3720	H	C
CD004	36000	T	3760	H	C
CD006	36000	T	3800	H	C
CD008	36000	T	3840	H	C
CD010	36000	T	3880	H	C
CD012	36000	T	3920	H	C
CD014	36000	T	3960	H	C
CD016	36000	T	4000	H	C
CD018	36000	T	4040	H	C
CD020	36000	T	4080	H	C
CD022	36000	T	4120	H	C
CD024	36000	T	4160	H	C
KU001	36000	R	14040	V	C
KU002	72000	R	14180	V	C
KU003	72000	R	14320	H	C
KU004	36000	R	14460	H	C
KD001	36000	T	11740	H	C
KD002	72000	T	11880	H	C
KD003	72000	T	12020	V	C
KD004	36000	T	12160	V	C
CMD01	820	R	6424.5	V	T
CMD02	820	R	6424.5	H	T
TLM01	200	T	4199	H	T
TLM02	200	T	4199.9	H	T
BN01	25	T	11701	H	T
BN02	25	T	12199.8	V	T

TK006	127.8	KU002	MKRV	KD002	BKTH
TK007	127.8	KU003	MKRH	KD003	MKTV
TK008	127.8	KU003	MKRH	KD003	BKTV
TK009	127.8	KU003	BKRH	KD003	MKTV
TK010	127.8	KU004	MKRH	KD004	MKTV
TK011	127.8	KU004	MKRH	KD004	BKTV
TK012	127.8	KU004	BKRH	KD004	MKTV
CM01		CMD01	BSCRV		
CM02		CMD02	BSCRH		
TM01				TLM01	BSCTH
TM02				TLM02	BSCTH
BN01				BN01	GBLH
BN02				BN02	GBLV

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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)
D01	36M0G7W	36000	4	48400	0.806		7.8	20
D02	17M9G7W	17900	8	34368	0.768		12.4	24.6
D03	5M50G7W	5500	8	8448	0.614		9.4	21.6
D04	1M64G7W	1640	4	2048	0.75		8.5	20.7
D05	614KG7W	614	4	512	0.5		5.7	17.9
D06	5K80G7W	5.8	4	4.8	0.5		5.7	17.9

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						
A01	17M5F3F	17500	TV/FM						NTSC	12.8	1.4		9	23
A02	25M0F3F	25000	TV/FM						NTSC	12.8	2		12.5	26.5
A03	820KF2D	820											10	22.2
A04	200KG2D	200											7.5	19.7
A05	25K0N0N	25											7	19.2

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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.		
TC001	TC024	D06		500	9	C1 LB.doc		39.2	-11.8	-5.2	-7.5	-3.5	-167	24.1
TC001	TC024	D06		500	9	C2 LB.doc		47.2	-12.8	-6.2	0	4	-159	16.2
TC001	TC024	D05		48	750	C3 LB.doc		39.2	8.2	14.8	13	17	-167	24.1
TC001	TC024	D05		48	750	C4 LB.doc		47.2	7.7	14.3	20	24	-160	16.2
TC001	TC024	D04		18	1975	C5 LB.doc		45.2	7.7	14.3	18	22	-166	26.6
TC001	TC024	D04		13	1975	C6 LB.doc		49.7	6.2	12.8	21.5	25.5	-162	22.2
TC001	TC024	D03		5	6875	C7 LB.doc		51.6	6.8	13.4	23.5	27.5	-166	28.6
TC001	TC024	D02		2	18000	C8 LB.doc		53.2	12.2	18.8	29	33	-165	30.1
TC001	TC024	D01		1		C9 LB.doc		53.2	16.7	23.3	36.7	40.7	-161	20.6
TC001	TC024		A01	2		C10 LB.doc		49.7	15.2	21.8	33	36	-153	24.1
TC001	TC024		A02	1		C11 LB.doc		51.6	18.3	24.9	37.7	40.7	-148	16.2
TK001	TK012	D06		500	9	K1 LB.doc		43.1	-7.6	-1.1	2.5	6.5	-157	29
TK001	TK012	D06		500	9	K2 LB.doc		52.6	-9.1	-2.6	11	15	-148	19.4
TK001	TK012	D05		48	750	K3 LB.doc		46.6	8.9	15.4	22.5	26.5	-157	30.9
TK001	TK012	D05		48	750	K4 LB.doc		54.5	4.5	11	26	30	-154	22.9
TK001	TK012	D04		18	1975	K5 LB.doc		49.1	12.4	18.9	28.5	32.5	-155	33.4
TK001	TK012	D04		13	1975	K6 LB.doc		57	4.5	11	31	35	-153	25.4
TK001	TK012	D03		5	6875	K7 LB.doc		57	6.5	13	33	37	-156	33.4
TK001	TK012	D02		2	18000	K8 LB.doc		59	9	15.5	37	41	-155	35.3
TK001	TK012	D01		1		K9 LB.doc		59	15.5	22	46	50	-151	22.9
TK001	TK012		A01	2		K10 LB.doc		57	11	17.5	42	45	-140	27.4
TK001	TK012		A02	1		K11 LB.doc		57	17.5	24	46	49	-140	21.4
CM01	CM02		A03	1		CMD LB.doc		53.2	10.8	15.8				
TM01	TM02		A04	1		TLM LB.doc					11	18	-148	27.9
BN01	BN02		A05	1		BCN LB.doc					6	9	-153	29.4

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

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a: Mass of spacecraft without fuel (kg): 1812	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 2286		
S15c. Mass of spacecraft and fuel at launch (kg): 4098	S15f. Length (m): 37	S15i. Payload: 0.72
S15d. Mass of fuel, in orbit, at beginning of life (kg): 800	S15g. Width (m): 7.5	S15j. Bus: 0.83
S15e. Deployed Area of Solar Array (square meters): 65	S15h. Height (m): 6.1	S15k. Total: 0.6

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): 5830	(f): 5830	(k): 5830	(p): 5830
Bus (Watts):	(b): 1696	(g): 769	(l): 1696	(q): 769
Total (Watts):	(c): 7526	(h): 6599	(m) 7526	(r): 6599
Solar Array (Watts):	(d): 10420	(i): 9330	(n): 8250	(s): 7580
Depth of Battery Discharge (%):	(e) 75 %	(j) 75 %	(o) 75 %	(t) 75 %

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.