

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: AFRISTAR		e. Estimated Date of Placement into Service: 1/14/1999		i. Will the space station(s) operate on a Common Carrier Basis: N	
b. Construction Commencement Date: 1/21/1995		f. Estimated Lifetime of Satellite(s): 15 Years		j. Number of transponders offered on a common carrier basis: 0	
c. Construction Completion Date: 6/11/1998		g. Total Number of Transponders: 6		k. Total Common Carrier Transponder Bandwidth: 0 MHz	
d1. Est Launch Date Begin:	d2. Est Launch Date End: 10/28/1998	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 15.6 MHz		i. Orbit Type: Mark all boxes that apply: <input checked="" type="checkbox"/> GSO <input type="checkbox"/> 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)		
1452	M	1492	M	T	Space Operations Service
1467	M	1492	M	T	Broadcasting Satellite Service - Sound
7025	M	7075	M	R	Feeder Link for Broadcasting Satellite Service in FSS
7025	M	7075	M	R	Space Operations Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 21 E		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: Adequate coverage of Europe, Africa and the Middle East while at the same time protecting the L-band aeronautical telemetry services in the US.
Longitudinal Tolerance or E/W Station-Keeping:		f. Inclination Excursion or N/S Station-Keeping Tolerance:		
d. Toward West: 0.1 Degrees	e. Toward East: 0.1 Degrees	g. Westernmost: h. Easternmost:		
i. Reason for service are selection (Optional):				

**FEDERAL COMMUNICATIONS COMMISSION
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:

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)

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.
1	S		Figure 1: Uplink Service Area
2	S		Figure 2: Downlink North Service Area
3	S		Figure 3: Downlink Northwest Service Area
4	S		Figure 4: Downlink Northeast Original Service Area
5	S		Figure 5: Downlink South Service Area
6	S		Figure 6: Downlink Northeast Repointed Service Area
7	S		Figure 7: Downlink Telemetry Service Area

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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 Iso- lation (dB)	(h) Polar- ization Switch- able? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive			Input Attenuator (dB)	
										(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)	(q) Max. Value	(r) Step Size
		(c) Peak (dBi)	(d) Edge (dBi)														
U	R	20	16	0.15		30	N		1				676	-8.3	-102.8	9.6	1.2
N	T	30	22	0.15		23	Y		2	1	240	53.8					
NW	T	30	22	0.15		23	Y		3	1	240	53.8					
NE	T	30	22	0.15		23	Y		4	1	240	53.8					
S	T	30	22	0.15		23	Y		5	1	240	53.8					
NE'	T	30	22	0.15		23	Y		6	1	240	53.8					
TM	T	12	10	0.15		23	N		7	1.5	0.56	9.5					

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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
U	R	C	21		U.gxt					
N	T	C	21		N.gxt	-137.2	-137.1	-137	-136.4	-135.8
NW	T	C	21		NW.gxt	-147	-146.9	-146.3	-145.2	-143.6
NE	T	C	21		NE.gxt	-147.5	-147.4	-147.3	-146.2	-145.1
S	T	C	21		S.gxt	-147.5	-147.4	-147.3	-147.2	-147.1
NE'	T	C	21		NE'.gxt	-147.5	-147.4	-147.3	-147.2	-146.1
TM	T	C	21		TM.gxt	-158.2	-158.1	-158	-157.9	-157.8

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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)
TU001	2600	R	7026.675	R	C
TU002	2600	R	7027.283	R	C
TU003	2600	R	7027.891	R	C
TU004	2600	R	7028.499	R	C
TU005	2600	R	7029.107	R	C
TU006	2600	R	7029.715	R	C
TU007	2600	R	7030.323	R	C
TU008	2600	R	7030.931	R	C
TU009	2600	R	7031.539	R	C
TU010	2600	R	7032.147	R	C
TU011	2600	R	7032.755	R	C
TU012	2600	R	7033.363	R	C
TU013	2600	R	7033.971	R	C
TU014	2600	R	7034.579	R	C
TU015	2600	R	7035.187	R	C
TU016	2600	R	7035.795	R	C
TU017	2600	R	7036.403	R	C
TU018	2600	R	7037.011	R	C
TU019	2600	R	7037.619	R	C
TU020	2600	R	7038.227	R	C
TU021	2600	R	7038.835	R	C
TU022	2600	R	7039.443	R	C
TU023	2600	R	7040.051	R	C
TU024	2600	R	7040.659	R	C
TU025	2600	R	7041.267	R	C
TU026	2600	R	7041.875	R	C
TU027	2600	R	7042.483	R	C
TU028	2600	R	7043.091	R	C
TU029	2600	R	7043.699	R	C
TU030	2600	R	7044.307	R	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
TP001	145	TU001	U	TD001	N
TP002	145	TU002	U	TD002	N
TP003	145	TU003	U	TD003	N
TP004	145	TU004	U	TD004	N
TP005	145	TU005	U	TD005	N
TP006	145	TU006	U	TD006	N
TP007	145	TU007	U	TD007	N
TP009	145	TU009	U	TD009	N
TP010	145	TU010	U	TD010	N
TP011	145	TU011	U	TD011	N
TP012	145	TU012	U	TD012	N
TP013	145	TU013	U	TD013	N
TP014	145	TU014	U	TD014	N
TP015	145	TU015	U	TD015	N
TP016	145	TU016	U	TD016	N
TP017	145	TU017	U	TD017	N
TP018	145	TU018	U	TD018	N
TP019	145	TU019	U	TD019	N
TP020	145	TU020	U	TD020	N
TP021	145	TU021	U	TD021	N
TP022	145	TU022	U	TD022	N
TP023	145	TU023	U	TD023	N
TP024	145	TU024	U	TD024	N
TP025	145	TU025	U	TD025	N
TP026	145	TU026	U	TD026	N
TP027	145	TU027	U	TD027	N
TP028	145	TU028	U	TD028	N
TP029	145	TU029	U	TD029	N
TP031	145	TU031	U	TD031	N
TP032	145	TU032	U	TD032	N

TU031	2600	R	7044.915	R	C
TU032	2600	R	7045.523	R	C
TU033	2600	R	7046.131	R	C
TU034	2600	R	7046.739	R	C
TU035	2600	R	7047.347	R	C
TU036	2600	R	7047.955	R	C
TU037	2600	R	7048.563	R	C
TU038	2600	R	7049.171	R	C
TU039	2600	R	7049.779	R	C
TU040	2600	R	7050.387	R	C
TU041	2600	R	7050.995	R	C
TU042	2600	R	7051.603	R	C
TU043	2600	R	7052.211	R	C
TU044	2600	R	7052.819	R	C
TU045	2600	R	7053.427	R	C
TU046	2600	R	7054.035	R	C
TU047	2600	R	7054.643	R	C
TU048	2600	R	7055.251	R	C
TU049	2600	R	7055.859	R	C
TU050	2600	R	7056.467	R	C
TU051	2600	R	7026.796	R	C
TU052	2600	R	7027.404	R	C
TU053	2600	R	7028.012	R	C
TU054	2600	R	7028.620	R	C
TU055	2600	R	7029.228	R	C
TU056	2600	R	7029.836	R	C
TU057	2600	R	7030.444	R	C
TU058	2600	R	7031.052	R	C
TU059	2600	R	7031.660	R	C
TU060	2600	R	7032.268	R	C
TU061	2600	R	7032.876	R	C
TU062	2600	R	7033.484	R	C
TU063	2600	R	7034.092	R	C
TU064	2600	R	7034.700	R	C
TU065	2600	R	7035.308	R	C
TU066	2600	R	7035.916	R	C
TU067	2600	R	7036.524	R	C
TU068	2600	R	7037.132	R	C
TU069	2600	R	7037.740	R	C

TP033	145	TU033	U	TD033	N
TP034	145	TU034	U	TD034	N
TP035	145	TU035	U	TD035	N
TP036	145	TU036	U	TD036	N
TP037	145	TU037	U	TD037	N
TP038	145	TU038	U	TD038	N
TP039	145	TU039	U	TD039	N
TP040	145	TU040	U	TD040	N
TP041	145	TU041	U	TD041	N
TP042	145	TU042	U	TD042	N
TP043	145	TU043	U	TD043	N
TP044	145	TU044	U	TD044	N
TP045	145	TU045	U	TD045	N
TP046	145	TU046	U	TD046	N
TP047	145	TU047	U	TD047	N
TP048	145	TU048	U	TD048	N
TP049	145	TU049	U	TD049	N
TP050	145	TU050	U	TD050	N
TP051	145	TU001	U	TD001	NW
TP052	145	TU002	U	TD002	NW
TP054	145	TU004	U	TD004	NW
TP055	145	TU005	U	TD005	NW
TP056	145	TU006	U	TD006	NW
TP057	145	TU007	U	TD007	NW
TP058	145	TU008	U	TD008	NW
TP059	145	TU009	U	TD009	NW
TP060	145	TU010	U	TD010	NW
TP061	145	TU011	U	TD011	NW
TP062	145	TU012	U	TD012	NW
TP063	145	TU013	U	TD013	NW
TP064	145	TU014	U	TD014	NW
TP065	145	TU015	U	TD015	NW
TP066	145	TU016	U	TD016	NW
TP067	145	TU017	U	TD017	NW
TP069	145	TU019	U	TD019	NW
TP070	145	TU020	U	TD020	NW
TP071	145	TU021	U	TD021	NW
TP072	145	TU022	U	TD022	NW
TP073	145	TU023	U	TD023	NW

TU070	2600	R	7038.348	R	C
TU071	2600	R	7038.956	R	C
TU072	2600	R	7039.564	R	C
TU073	2600	R	7040.172	R	C
TU074	2600	R	7040.780	R	C
TU075	2600	R	7041.388	R	C
TU076	2600	R	7041.996	R	C
TU077	2600	R	7042.604	R	C
TU078	2600	R	7043.212	R	C
TU079	2600	R	7043.820	R	C
TU080	2600	R	7044.428	R	C
TU081	2600	R	7045.036	R	C
TU082	2600	R	7045.644	R	C
TU083	2600	R	7046.252	R	C
TU084	2600	R	7046.860	R	C
TU085	2600	R	7047.468	R	C
TU086	2600	R	7048.076	R	C
TU087	2600	R	7048.684	R	C
TU088	2600	R	7049.292	R	C
TU089	2600	R	7049.900	R	C
TU090	2600	R	7050.508	R	C
TU091	2600	R	7051.116	R	C
TU092	2600	R	7051.724	R	C
TU093	2600	R	7052.332	R	C
TU094	2600	R	7052.940	R	C
TU095	2600	R	7053.548	R	C
TU096	2600	R	7054.156	R	C
TU097	2600	R	7054.764	R	C
TU098	2600	R	7055.372	R	C
TU099	2600	R	7055.980	R	C
TU100	2600	R	7056.588	R	C
TU101	2600	R	7057.075	R	C
TU102	2600	R	7057.683	R	C
TU103	2600	R	7058.291	R	C
TU104	2600	R	7058.899	R	C
TU105	2600	R	7059.507	R	C
TU106	2600	R	7060.115	R	C
TU107	2600	R	7060.723	R	C
TU108	2600	R	7061.331	R	C

TP074	145	TU024	U	TD024	NW
TP075	145	TU025	U	TD025	NW
TP076	145	TU026	U	TD026	NW
TP077	145	TU027	U	TD027	NW
TP078	145	TU028	U	TD028	NW
TP079	145	TU029	U	TD029	NW
TP080	145	TU030	U	TD030	NW
TP081	145	TU031	U	TD031	NW
TP082	145	TU032	U	TD032	NW
TP084	145	TU034	U	TD034	NW
TP085	145	TU035	U	TD035	NW
TP086	145	TU036	U	TD036	NW
TP087	145	TU037	U	TD037	NW
TP088	145	TU038	U	TD038	NW
TP089	145	TU039	U	TD039	NW
TP090	145	TU040	U	TD040	NW
TP091	145	TU041	U	TD041	NW
TP092	145	TU042	U	TD042	NW
TP093	145	TU043	U	TD043	NW
TP094	145	TU044	U	TD044	NW
TP095	145	TU045	U	TD045	NW
TP096	145	TU046	U	TD046	NW
TP097	145	TU047	U	TD047	NW
TP098	145	TU048	U	TD048	NW
TP099	145	TU049	U	TD049	NW
TP101	145	TU001	U	TD001	NE
TP102	145	TU002	U	TD002	NE
TP103	145	TU003	U	TD003	NE
TP104	145	TU004	U	TD004	NE
TP105	145	TU005	U	TD005	NE
TP106	145	TU006	U	TD006	NE
TP107	145	TU007	U	TD007	NE
TP108	145	TU008	U	TD008	NE
TP109	145	TU009	U	TD009	NE
TP110	145	TU010	U	TD010	NE
TP111	145	TU011	U	TD011	NE
TP112	145	TU012	U	TD012	NE
TP113	145	TU013	U	TD013	NE
TP114	145	TU014	U	TD014	NE

TU109	2600	R	7061.939	R	C
TU110	2600	R	7062.547	R	C
TU111	2600	R	7063.155	R	C
TU112	2600	R	7063.763	R	C
TU113	2600	R	7064.371	R	C
TU114	2600	R	7064.979	R	C
TU115	2600	R	7065.587	R	C
TU116	2600	R	7066.195	R	C
TU117	2600	R	7066.803	R	C
TU118	2600	R	7067.411	R	C
TU119	2600	R	7068.019	R	C
TU120	2600	R	7068.627	R	C
TU121	2600	R	7069.235	R	C
TU122	2600	R	7069.843	R	C
TU123	2600	R	7070.451	R	C
TU124	2600	R	7071.059	R	C
TU125	2600	R	7071.667	R	C
TU126	2600	R	7072.275	R	C
TU127	2600	R	7072.883	R	C
TU128	2600	R	7073.491	R	C
TU129	2600	R	7057.196	R	C
TU130	2600	R	7057.804	R	C
TU131	2600	R	7058.412	R	C
TU132	2600	R	7059.02	R	C
TU133	2600	R	7059.628	R	C
TU134	2600	R	7060.236	R	C
TU135	2600	R	7060.844	R	C
TU136	2600	R	7061.452	R	C
TU137	2600	R	7062.06	R	C
TU138	2600	R	7062.668	R	C
TU139	2600	R	7063.276	R	C
TU140	2600	R	7063.884	R	C
TU141	2600	R	7064.492	R	C
TU142	2600	R	7065.1	R	C
TU143	2600	R	7065.708	R	C
TU144	2600	R	7066.316	R	C
TU145	2600	R	7066.924	R	C
TU146	2600	R	7067.532	R	C
TU147	2600	R	7068.14	R	C

TP115	145	TU015	U	TD015	NE
TP116	145	TU016	U	TD016	NE
TP117	145	TU017	U	TD017	NE
TP118	145	TU018	U	TD018	NE
TP119	145	TU019	U	TD019	NE
TP120	145	TU020	U	TD020	NE
TP121	145	TU021	U	TD021	NE
TP123	145	TU023	U	TD023	NE
TP124	145	TU024	U	TD024	NE
TP125	145	TU025	U	TD025	NE
TP126	145	TU026	U	TD026	NE
TP127	145	TU027	U	TD027	NE
TP128	145	TU028	U	TD028	NE
TP129	145	TU029	U	TD029	NE
TP130	145	TU030	U	TD030	NE
TP131	145	TU031	U	TD031	NE
TP132	145	TU032	U	TD032	NE
TP133	145	TU033	U	TD033	NE
TP134	145	TU034	U	TD034	NE
TP135	145	TU035	U	TD035	NE
TP136	145	TU036	U	TD036	NE
TP137	145	TU037	U	TD037	NE
TP138	145	TU038	U	TD038	NE
TP139	145	TU039	U	TD039	NE
TP140	145	TU040	U	TD040	NE
TP141	145	TU041	U	TD041	NE
TP142	145	TU042	U	TD042	NE
TP143	145	TU043	U	TD043	NE
TP145	145	TU045	U	TD045	NE
TP146	145	TU046	U	TD046	NE
TP147	145	TU047	U	TD047	NE
TP148	145	TU048	U	TD048	NE
TP149	145	TU049	U	TD049	NE
TP150	145	TU050	U	TD050	NE
TP151	145	TU001	U	TD001	S
TP152	145	TU002	U	TD002	S
TP153	145	TU003	U	TD003	S
TP154	145	TU004	U	TD004	S
TP155	145	TU005	U	TD005	S

TU148	2600	R	7068.748	R	C
TU149	2600	R	7069.356	R	C
TU150	2600	R	7069.964	R	C
TU151	2600	R	7070.572	R	C
TU152	2600	R	7071.18	R	C
TU153	2600	R	7071.788	R	C
TU154	2600	R	7072.396	R	C
TU155	2600	R	7073.004	R	C
TU156	2600	R	7073.612	R	C
TD001	2600	T	1468.104	L	C
TD002	2600	T	1469.024	L	C
TD003	2600	T	1469.944	L	C
TD004	2600	T	1470.864	L	C
TD005	2600	T	1471.784	L	C
TD006	2600	T	1472.704	L	C
TD007	2600	T	1473.624	L	C
TD008	2600	T	1474.544	L	C
TD009	2600	T	1475.464	L	C
TD010	2600	T	1476.384	L	C
TD011	2600	T	1477.304	L	C
TD012	2600	T	1478.224	L	C
TD013	2600	T	1479.144	L	C
TD014	2600	T	1480.064	L	C
TD015	2600	T	1480.984	L	C
TD016	2600	T	1481.904	L	C
TD017	2600	T	1482.824	L	C
TD018	2600	T	1483.744	L	C
TD019	2600	T	1484.664	L	C
TD020	2600	T	1485.584	L	C
TD021	2600	T	1486.504	L	C
TD022	2600	T	1487.424	L	C
TD023	2600	T	1488.344	L	C
TD024	2600	T	1489.264	L	C
TD025	2600	T	1490.184	L	C
TD026	2600	T	1468.104	R	C
TD027	2600	T	1469.024	R	C
TD028	2600	T	1469.944	R	C
TD029	2600	T	1470.864	R	C
TD030	2600	T	1471.784	R	C

TP156	145	TU006	U	TD006	S
TP157	145	TU007	U	TD007	S
TP158	145	TU008	U	TD008	S
TP159	145	TU009	U	TD009	S
TP160	145	TU010	U	TD010	S
TP161	145	TU011	U	TD011	S
TP162	145	TU012	U	TD012	S
TP163	145	TU013	U	TD013	S
TP164	145	TU014	U	TD014	S
TP165	145	TU015	U	TD015	S
TP166	145	TU016	U	TD016	S
TP167	145	TU017	U	TD017	S
TP168	145	TU018	U	TD018	S
TP169	145	TU019	U	TD019	S
TP170	145	TU020	U	TD020	S
TP171	145	TU021	U	TD021	S
TP172	145	TU022	U	TD022	S
TP173	145	TU023	U	TD023	S
TP174	145	TU024	U	TD024	S
TP175	145	TU025	U	TD025	S
TP176	145	TU026	U	TD026	S
TP177	145	TU027	U	TD027	S
TP178	145	TU028	U	TD028	S
TP179	145	TU029	U	TD029	S
TP180	145	TU030	U	TD030	S
TP181	145	TU031	U	TD031	S
TP182	145	TU032	U	TD032	S
TP183	145	TU033	U	TD033	S
TP184	145	TU034	U	TD034	S
TP185	145	TU035	U	TD035	S
TP186	145	TU036	U	TD036	S
TP187	145	TU037	U	TD037	S
TP188	145	TU038	U	TD038	S
TP189	145	TU039	U	TD039	S
TP190	145	TU040	U	TD040	S
TP191	145	TU041	U	TD041	S
TP192	145	TU042	U	TD042	S
TP193	145	TU043	U	TD043	S
TP194	145	TU044	U	TD044	S

TD031	2600	T	1472.704	R	C
TD032	2600	T	1473.624	R	C
TD033	2600	T	1474.544	R	C
TD034	2600	T	1475.464	R	C
TD035	2600	T	1476.384	R	C
TD036	2600	T	1477.304	R	C
TD037	2600	T	1478.224	R	C
TD038	2600	T	1479.144	R	C
TD039	2600	T	1480.064	R	C
TD040	2600	T	1480.984	R	C
TD041	2600	T	1481.904	R	C
TD042	2600	T	1482.824	R	C
TD043	2600	T	1483.744	R	C
TD044	2600	T	1484.664	R	C
TD045	2600	T	1485.584	R	C
TD046	2600	T	1486.504	R	C
TD047	2600	T	1487.424	R	C
TD048	2600	T	1488.344	R	C
TD049	2600	T	1489.264	R	C
TD050	2600	T	1490.184	R	C
TD051	2600	T	1468.564	L	C
TD052	2600	T	1469.484	L	C
TD053	2600	T	1470.404	L	C
TD054	2600	T	1471.324	L	C
TD055	2600	T	1472.244	L	C
TD056	2600	T	1473.164	L	C
TD057	2600	T	1474.084	L	C
TD058	2600	T	1475.004	L	C
TD059	2600	T	1475.924	L	C
TD060	2600	T	1476.844	L	C
TD061	2600	T	1477.764	L	C
TD062	2600	T	1478.684	L	C
TD063	2600	T	1479.604	L	C
TD064	2600	T	1480.524	L	C
TD065	2600	T	1481.444	L	C
TD066	2600	T	1482.364	L	C
TD067	2600	T	1483.284	L	C
TD068	2600	T	1484.204	L	C
TD069	2600	T	1485.124	L	C

TP195	145	TU045	U	TD045	S
TP197	145	TU047	U	TD047	S
TP198	145	TU048	U	TD048	S
TP199	145	TU049	U	TD049	S
TP200	145	TU050	U	TD050	S
TP201	145	TU001	U	TD001	NE'
TP202	145	TU002	U	TD002	NE'
TP203	145	TU003	U	TD003	NE'
TP204	145	TU004	U	TD004	NE'
TP205	145	TU005	U	TD005	NE'
TP206	145	TU006	U	TD006	NE'
TP207	145	TU007	U	TD007	NE'
TP208	145	TU008	U	TD008	NE'
TP209	145	TU009	U	TD009	NE'
TP210	145	TU010	U	TD010	NE'
TP211	145	TU011	U	TD011	NE'
TP212	145	TU012	U	TD012	NE'
TP213	145	TU013	U	TD013	NE'
TP215	145	TU015	U	TD015	NE'
TP216	145	TU016	U	TD016	NE'
TP217	145	TU017	U	TD017	NE'
TP218	145	TU018	U	TD018	NE'
TP219	145	TU019	U	TD019	NE'
TP220	145	TU020	U	TD020	NE'
TP221	145	TU021	U	TD021	NE'
TP222	145	TU022	U	TD022	NE'
TP223	145	TU023	U	TD023	NE'
TP224	145	TU024	U	TD024	NE'
TP225	145	TU025	U	TD025	NE'
TP226	145	TU026	U	TD026	NE'
TP227	145	TU027	U	TD027	NE'
TP228	145	TU028	U	TD028	NE'
TP229	145	TU029	U	TD029	NE'
TP230	145	TU030	U	TD030	NE'
TP231	145	TU031	U	TD031	NE'
TP233	145	TU033	U	TD033	NE'
TP234	145	TU034	U	TD034	NE'
TP235	145	TU035	U	TD035	NE'
TP236	145	TU036	U	TD036	NE'

TD070	2600	T	1486.044	L	C
TD071	2600	T	1486.964	L	C
TD072	2600	T	1487.884	L	C
TD073	2600	T	1488.804	L	C
TD074	2600	T	1489.724	L	C
TD075	2600	T	1490.644	L	C
TD076	2600	T	1468.564	R	C
TD077	2600	T	1469.484	R	C
TD078	2600	T	1470.404	R	C
TD079	2600	T	1471.324	R	C
TD080	2600	T	1472.244	R	C
TD081	2600	T	1473.164	R	C
TD082	2600	T	1474.084	R	C
TD083	2600	T	1475.004	R	C
TD084	2600	T	1475.924	R	C
TD085	2600	T	1476.844	R	C
TD086	2600	T	1477.764	R	C
TD087	2600	T	1478.684	R	C
TD088	2600	T	1479.604	R	C
TD089	2600	T	1480.524	R	C
TD090	2600	T	1481.444	R	C
TD091	2600	T	1482.364	R	C
TD092	2600	T	1483.284	R	C
TD093	2600	T	1484.204	R	C
TD094	2600	T	1485.124	R	C
TD095	2600	T	1486.044	R	C
TD096	2600	T	1486.964	R	C
TD097	2600	T	1487.884	R	C
TD098	2600	T	1488.804	R	C
TD099	2600	T	1489.724	R	C
TD100	2600	T	1490.644	R	C
TM1	500	T	1452.3	R	T
TM2	500	T	1491.7	R	T
TC1	1000	R	7073	L	T
TC2	1000	R	7074	L	T

TP237	145	TU037	U	TD037	NE'
TP238	145	TU038	U	TD038	NE'
TP239	145	TU039	U	TD039	NE'
TP240	145	TU040	U	TD040	NE'
TP241	145	TU041	U	TD041	NE'
TP242	145	TU042	U	TD042	NE'
TP243	145	TU043	U	TD043	NE'
TP244	145	TU044	U	TD044	NE'
TP245	145	TU045	U	TD045	NE'
TP246	145	TU046	U	TD046	NE'
TP273	145	TU073	U	TD073	N
TP274	145	TU074	U	TD074	N
TP275	145	TU075	U	TD075	N
TP276	145	TU076	U	TD076	N
TP277	145	TU077	U	TD077	N
TP278	145	TU078	U	TD078	N
TP279	145	TU079	U	TD079	N
TP280	145	TU080	U	TD080	N
TP281	145	TU081	U	TD081	N
TP282	145	TU082	U	TD082	N
TP283	145	TU083	U	TD083	N
TP284	145	TU084	U	TD084	N
TP285	145	TU085	U	TD085	N
TP286	145	TU086	U	TD086	N
TP287	145	TU087	U	TD087	N
TP288	145	TU088	U	TD088	N
TP289	145	TU089	U	TD089	N
TP290	145	TU090	U	TD090	N
TP291	145	TU091	U	TD091	N
TP292	145	TU092	U	TD092	N
TP293	145	TU093	U	TD093	N
TP294	145	TU094	U	TD094	N
TP295	145	TU095	U	TD095	N
TP296	145	TU096	U	TD096	N
TP297	145	TU097	U	TD097	N
TP298	145	TU098	U	TD098	N
TP299	145	TU099	U	TD099	N
TP300	145	TU100	U	TD100	N
TP318	145	TU068	U	TD068	NW

TP319	145	TU069	U	TD069	NW
TP320	145	TU070	U	TD070	NW
TP321	145	TU071	U	TD071	NW
TP364	145	TU064	U	TD064	NE
TP365	145	TU065	U	TD065	NE
TP366	145	TU066	U	TD066	NE
TP367	145	TU067	U	TD067	NE
TP368	145	TU068	U	TD068	NE
TP369	145	TU069	U	TD069	NE
TP370	145	TU070	U	TD070	NE
TP371	145	TU071	U	TD071	NE
TP372	145	TU072	U	TD072	NE
TP373	145	TU073	U	TD073	NE
TP374	145	TU074	U	TD074	NE
TP375	145	TU075	U	TD075	NE
TP376	145	TU076	U	TD076	NE
TP377	145	TU077	U	TD077	NE
TP379	145	TU079	U	TD079	NE
TP380	145	TU080	U	TD080	NE
TP381	145	TU081	U	TD081	NE
TP382	145	TU082	U	TD082	NE
TP383	145	TU083	U	TD083	NE
TP384	145	TU084	U	TD084	NE
TP385	145	TU085	U	TD085	NE
TP386	145	TU086	U	TD086	NE
TP387	145	TU087	U	TD087	NE
TP388	145	TU088	U	TD088	NE
TP389	145	TU089	U	TD089	NE
TP390	145	TU090	U	TD090	NE
TP391	145	TU091	U	TD091	NE
TP392	145	TU092	U	TD092	NE
TP394	145	TU094	U	TD094	NE
TP395	145	TU095	U	TD095	NE
TP396	145	TU096	U	TD096	NE
TP397	145	TU097	U	TD097	NE
TP398	145	TU098	U	TD098	NE
TP399	145	TU099	U	TD099	NE
TP400	145	TU100	U	TD100	NE
TP401	145	TU051	U	TD051	S

TP402	145	TU052	U	TD052	S
TP403	145	TU053	U	TD053	S
TP404	145	TU054	U	TD054	S
TP405	145	TU055	U	TD055	S
TP406	145	TU056	U	TD056	S
TP407	145	TU057	U	TD057	S
TP408	145	TU058	U	TD058	S
TP453	145	TU053	U	TD053	NE'
TP454	145	TU054	U	TD054	NE'
TP455	145	TU055	U	TD055	NE'
TP456	145	TU056	U	TD056	NE'
TP457	145	TU057	U	TD057	NE'
TP458	145	TU058	U	TD058	NE'
TP459	145	TU059	U	TD059	NE'
TP461	145	TU061	U	TD061	NE'
TP462	145	TU062	U	TD062	NE'
TP463	145	TU063	U	TD063	NE'
TP464	145	TU064	U	TD064	NE'
TP465	145	TU065	U	TD065	NE'
TP466	145	TU066	U	TD066	NE'
TP467	145	TU067	U	TD067	NE'
TP468	145	TU068	U	TD068	NE'
TP469	145	TU069	U	TD069	NE'
TP470	145	TU070	U	TD070	NE'
TP471	145	TU071	U	TD071	NE'
TP472	145	TU072	U	TD072	NE'
TP473	145	TU073	U	TD073	NE'
TP474	145	TU074	U	TD074	NE'
TP475	145	TU075	U	TD075	NE'
TP476	145	TU076	U	TD076	NE'
TP477	145	TU077	U	TD077	NE'
TP478	145	TU078	U	TD078	NE'
TP479	145	TU079	U	TD079	NE'
TP480	145	TU080	U	TD080	NE'
TP481	145	TU081	U	TD081	NE'
TP482	145	TU082	U	TD082	NE'
TP484	145	TU084	U	TD084	NE'
TP485	145	TU085	U	TD085	NE'
TP486	145	TU086	U	TD086	NE'

TP487	145	TU087	U	TD087	NE'
TP488	145	TU088	U	TD088	NE'
TP489	145	TU089	U	TD089	NE'
TP490	145	TU090	U	TD090	NE'
TP491	145	TU091	U	TD091	NE'
TP492	145	TU092	U	TD092	NE'
TP493	145	TU093	U	TD093	NE'
TP494	145	TU094	U	TD094	NE'
TP495	145	TU095	U	TD095	NE'
TP496	145	TU096	U	TD096	NE'
TP409	145	TU059	U	TD059	S
TP410	145	TU060	U	TD060	S
TP411	145	TU061	U	TD061	S
TP412	145	TU062	U	TD062	S
TP413	145	TU063	U	TD063	S
TP414	145	TU064	U	TD064	S
TP415	145	TU065	U	TD065	S
TP416	145	TU066	U	TD066	S
TP417	145	TU067	U	TD067	S
TP418	145	TU068	U	TD068	S
TP419	145	TU069	U	TD069	S
TP420	145	TU070	U	TD070	S
TP421	145	TU071	U	TD071	S
TP422	145	TU072	U	TD072	S
TP423	145	TU073	U	TD073	S
TP424	145	TU074	U	TD074	S
TP425	145	TU075	U	TD075	S
TP426	145	TU076	U	TD076	S
TP427	145	TU077	U	TD077	S
TP428	145	TU078	U	TD078	S
TP429	145	TU079	U	TD079	S
TP430	145	TU080	U	TD080	S
TP431	145	TU081	U	TD081	S
TP432	145	TU082	U	TD082	S
TP433	145	TU083	U	TD083	S
TP434	145	TU084	U	TD084	S
TP435	145	TU085	U	TD085	S
TP436	145	TU086	U	TD086	S
TP437	145	TU087	U	TD087	S

TP438	145	TU088	U	TD088	S
TP439	145	TU089	U	TD089	S
TP440	145	TU090	U	TD090	S
TP441	145	TU091	U	TD091	S
TP442	145	TU092	U	TD092	S
TP443	145	TU093	U	TD093	S
TP444	145	TU094	U	TD094	S
TP445	145	TU095	U	TD095	S
TP446	145	TU096	U	TD096	S
TP447	145	TU097	U	TD097	S
TP448	145	TU098	U	TD098	S
TP449	145	TU099	U	TD099	S
TP450	145	TU100	U	TD100	S
TP451	145	TU051	U	TD051	NE'
TP452	145	TU052	U	TD052	NE'
TP008	145	TU008	U	TD008	N
TP030	145	TU030	U	TD030	N
TP053	145	TU003	U	TD003	NW
TP068	145	TU018	U	TD018	NW
TP083	145	TU033	U	TD033	NW
TP100	145	TU050	U	TD050	NW
TP122	145	TU022	U	TD022	NE
TP144	145	TU044	U	TD044	NE
TP196	145	TU046	U	TD046	S
TP214	145	TU014	U	TD014	NE'
TP232	145	TU032	U	TD032	NE'
TP247	145	TU047	U	TD047	NE'
TP248	145	TU048	U	TD048	NE'
TP249	145	TU049	U	TD049	NE'
TP250	145	TU050	U	TD050	NE'
TP251	145	TU051	U	TD051	N
TP252	145	TU052	U	TD052	N
TP253	145	TU053	U	TD053	N
TP254	145	TU054	U	TD054	N
TP255	145	TU055	U	TD055	N
TP256	145	TU056	U	TD056	N
TP257	145	TU057	U	TD057	N
TP258	145	TU058	U	TD058	N
TP259	145	TU059	U	TD059	N

TP260	145	TU060	U	TD060	N
TP261	145	TU061	U	TD061	N
TP262	145	TU062	U	TD062	N
TP263	145	TU063	U	TD063	N
TP264	145	TU064	U	TD064	N
TP265	145	TU065	U	TD065	N
TP266	145	TU066	U	TD066	N
TP267	145	TU067	U	TD067	N
TP268	145	TU068	U	TD068	N
TP269	145	TU069	U	TD069	N
TP270	145	TU070	U	TD070	N
TP271	145	TU071	U	TD071	N
TP272	145	TU072	U	TD072	N
TP301	145	TU051	U	TD051	NW
TP302	145	TU052	U	TD052	NW
TP303	145	TU053	U	TD053	NW
TP304	145	TU054	U	TD054	NW
TP497	145	TU097	U	TD097	NE'
TP498	145	TU098	U	TD098	NE'
TP499	145	TU099	U	TD099	NE'
TP500	145	TU100	U	TD100	NE'
TP305	145	TU055	U	TD055	NW
TP306	145	TU056	U	TD056	NW
TP307	145	TU057	U	TD057	NW
TP308	145	TU058	U	TD058	NW
TP309	145	TU059	U	TD059	NW
TP310	145	TU060	U	TD060	NW
TP311	145	TU061	U	TD061	NW
TP312	145	TU062	U	TD062	NW
TP313	145	TU063	U	TD063	NW
TP314	145	TU064	U	TD064	NW
TP315	145	TU065	U	TD065	NW
TP316	145	TU066	U	TD066	NW
TP317	145	TU067	U	TD067	NW
TP322	145	TU072	U	TD072	NW
TP323	145	TU073	U	TD073	NW
TP324	145	TU074	U	TD074	NW
TP325	145	TU075	U	TD075	NW
TP326	145	TU076	U	TD076	NW

TP327	145	TU077	U	TD077	NW
TP328	145	TU078	U	TD078	NW
TP329	145	TU079	U	TD079	NW
TP330	145	TU080	U	TD080	NW
TP331	145	TU081	U	TD081	NW
TP332	145	TU082	U	TD082	NW
TP333	145	TU083	U	TD083	NW
TP334	145	TU084	U	TD084	NW
TP335	145	TU085	U	TD085	NW
TP336	145	TU086	U	TD086	NW
TP337	145	TU087	U	TD087	NW
TP338	145	TU088	U	TD088	NW
TP339	145	TU089	U	TD089	NW
TP340	145	TU090	U	TD090	NW
TP341	145	TU091	U	TD091	NW
TP342	145	TU092	U	TD092	NW
TP343	145	TU093	U	TD093	NW
TP344	145	TU094	U	TD094	NW
TP345	145	TU095	U	TD095	NW
TP346	145	TU096	U	TD096	NW
TP347	145	TU097	U	TD097	NW
TP348	145	TU098	U	TD098	NW
TP349	145	TU099	U	TD099	NW
TP350	145	TU100	U	TD100	NW
TP351	145	TU051	U	TD051	NE
TP352	145	TU052	U	TD052	NE
TP353	145	TU053	U	TD053	NE
TP354	145	TU054	U	TD054	NE
TP355	145	TU055	U	TD055	NE
TP356	145	TU056	U	TD056	NE
TP357	145	TU057	U	TD057	NE
TP358	145	TU058	U	TD058	NE
TP359	145	TU059	U	TD059	NE
TP360	145	TU060	U	TD060	NE
TP361	145	TU061	U	TD061	NE
TP362	145	TU062	U	TD062	NE
TP363	145	TU063	U	TD063	NE
TP378	145	TU078	U	TD078	NE
TP393	145	TU093	U	TD093	NE

TP460	145	TU060	U	TD060	NE'
TP483	145	TU083	U	TD083	NE'
TM1				TM1	TM
TM2				TM2	TM
TC1		TC1	U		
TC2		TC2	U		

FEDERAL COMMUNICATIONS COMMISSION
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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)
1	2M60G7E	2600	4	918	0.25		-0.5	11.7
2	2M60G7E	2600	4	1224	0.33		1	13.2
3	1M71G7E	1710	4	990	0.33		1	13.2
4	1M71G7E	1710	4	1188	0.4		2.2	14.4
5	27K0G1E	27	4	38			15.2	27.4
6	500KG7D	500	2				4.8	21

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FCC Form 312 - Schedule S: (Technical and Operational Description)

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						
1	1M00FXD	1000											18.1	30.3

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

Associated Transponder ID Range (a) Start (b) End		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) (j) Min. (k) Max.		EIRP (dBW) (l) Min. (m) Max.		(n) Max. Power Flux Density (dBW/m ² /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
TP201	TP250	1		1		PP DL C.pdf		48.6			24.7	51.8	-138.3	-4.8
TP201	TP250	1		1		PP DL B.pdf		48.6			32.1	51.8	-138.3	-12
TP201	TP250	1		1		PP DL A.pdf		48.6			40	51.8	-138.3	-19.5
TP201	TP250	1		1		PP DL M.pdf		48.6			42.9	51.8	-138.3	-22.5
TP451	TP500	1		1		TP 2.6 .25 C.pd		48.6	11.4	19.4	24.7	51.8	-138.3	-4.8
TP451	TP500	1		1		TP 2.6 .25 B.pd		48.6	11.4	19.4	32.2	51.8	-138.3	-12
TP451	TP500	1		1		TP 2.6 .25 A.pd		48.6	11.4	19.4	40	51.8	-138.3	-19.5
TP451	TP500	1		1		TP 2.6 .25 M.p		48.6	11.4	19.4	43	51.8	-138.3	-22.5
TP451	TP500	2		1		TP 2.6 .33 C.pd		48.6	11.4	19.4	26.2	51.8	-138.3	-4.8
TP451	TP500	2		1		TP 2.6 .33 B.pd		48.6	11.4	19.4	33.7	51.8	-138.3	-12
TP451	TP500	2		1		TP 2.6 .33 A.pd		48.6	11.4	19.4	41.5	51.8	-138.3	-19.5
TP451	TP500	2		1		TP 2.6 .33 M.p		48.6	11.4	19.4	44.5	51.8	-138.3	-22.5
TP451	TP500	3		1		TP 1.7 .33 C.pd		48.6	10.7	17.6	25.3	50	-138.3	-4.8
TP451	TP500	3		1		TP 1.7 .33 B.pd		48.6	10.7	17.6	32.8	50	-138.3	-12
TP451	TP500	3		1		TP 1.7 .33 A.pd		48.6	10.7	17.6	40.6	50	-138.3	-19.5
TP451	TP500	3		1		TP 1.7 .33 M.p		48.6	10.7	17.6	43.6	50	-138.3	-22.5
TP451	TP500	4		1		TP 1.7 .4 C.pdf		48.6	10.7	17.6	26.4	50	-138.3	-4.8
TP451	TP500	4		1		TP 1.7 .4 B.pdf		48.6	10.7	17.6	33.9	50	-138.3	-12
TP451	TP500	4		1		TP 1.7 .4 A.pdf		48.6	10.7	17.6	41.8	50	-138.3	-19.5
TP451	TP500	4		1		TP 1.7 .4 M.pdf		48.6	10.7	17.6	44.8	50	-138.3	-22.5
TP301	TP450	4		1		TP 1.7 .4 C.pdf		48.6	10.7	17.6	26.4	52	-136.3	-4.8
TP251	TP300	4		1		TP 1.7 .4 B.pdf		48.6	10.7	17.6	33.9	53.8	-134.5	-12
TP301	TP450	4		1		TP 1.7 .4 B.pdf		48.6	10.7	17.6	33.9	52	-136.3	-12
TP251	TP300	4		1		TP 1.7 .4 A.pdf		48.6	10.7	17.6	41.8	53.8	-134.5	-19.5
TP301	TP450	4		1		TP 1.7 .4 A.pdf		48.6	10.7	17.6	41.8	52	-136.3	-19.5
TP251	TP300	4		1		TP 1.7 .4 M.pdf		48.6	10.7	17.6	44.8	53.8	-134.5	-22.5
TP301	TP450	4		1		TP 1.7 .4 M.pdf		48.6	10.7	17.6	44.8	52	-136.3	-22.5
TP001	TP250	5		48	38	PP UL.pdf		48.6	-1	4				
TP251	TP300	4		1		TP 1.7 .4 C.pdf		48.6	10.7	17.6	26.4	53.8	-134.5	-4.8

TP001	TP200	1		1	PP DL C.pdf					24.7	53.8	-136.3	-4.8
TP001	TP200	1		1	PP DL B.pdf					32.1	53.8	-136.3	-12
TP001	TP200	1		1	PP DL A.pdf					40	53.8	-136.3	-19.5
TP001	TP200	1		1	PP DL M.pdf					42.9	53.8	-136.3	-22.5
TM1	TM2	6		1	LB TM L Band.					6.5	9.5	-156	9
TC1	TC2		1	1	LB TC X Band.	48.6	13.1	19.4					
TP251	TP450	1		1	TP 2.6 .25 C.pd	48.6	11.4	19.4	24.7	53.8	-136.3	-4.8	
TP251	TP450	1		1	TP 2.6 .25 B.pd	48.6	11.4	19.4	32.2	53.8	-136.3	-12	
TP251	TP450	1		1	TP 2.6 .25 A.pd	48.6	11.4	19.4	40	53.8	-136.3	-19.5	
TP251	TP450	1		1	TP 2.6 .25 M.p	48.6	11.4	19.4	43	53.8	-136.3	-22.5	
TP251	TP450	2		1	TP 2.6 .33 C.pd	48.6	11.4	19.4	26.2	53.8	-136.3	-4.8	
TP251	TP450	2		1	TP 2.6 .33 B.pd	48.6	11.4	19.4	33.7	53.8	-136.3	-12	
TP251	TP450	2		1	TP 2.6 .33 A.pd	48.6	11.4	19.4	41.5	53.8	-136.3	-19.5	
TP251	TP500	2		1	TP 2.6 .33 M.p	48.6	11.4	19.4	44.5	53.8	-136.3	-22.5	
TP251	TP300	3		1	TP 1.7 .33 C.pd	48.6	10.7	17.6	25.3	53.8	-134.5	-4.8	
TP301	TP450	3		1	TP 1.7 .33 C.pd	48.6	10.7	17.6	25.3	52	-136.3	-4.8	
TP251	TP300	3		1	TP 1.7 .33 B.pd	48.6	10.7	17.6	32.8	53.8	-134.5	-12	
TP301	TP450	3		1	TP 1.7 .33 B.pd	48.6	10.7	17.6	32.8	52	-136.3	-12	
TP251	TP300	3		1	TP 1.7 .33 A.pd	48.6	10.7	17.6	40.6	53.8	-134.5	-19.5	
TP301	TP450	3		1	TP 1.7 .33 A.pd	48.6	10.7	17.6	40.6	52	-136.3	-19.5	
TP251	TP300	3		1	TP 1.7 .33 M.p	48.6	10.7	17.6	43.6	53.8	-134.5	-22.5	
TP301	TP450	3		1	TP 1.7 .33 M.p	48.6	10.7	17.6	43.6	52	-136.3	-22.5	

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

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: Cassis Earth Station			
S14b. City: Cassis	S14c. County:	S14d. State/Country	S14e. Zip Code:
S14f. Telephone Number: +230 211 8026		S14g. Call Sign of Control Station (if appropriate):	

Remote Control (TT C) Location(s):

S14a: Street Address: A1-6, Peenya Industrial Estate			
S14b. City: Bangalore	S14c. County:	S14d. State/Country	S14e. Zip Code:
S14f. Telephone Number: +91 802 809 4125		S14g. Call Sign of Control Station (if appropriate):	

**FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
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Characteristics and
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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 1237.6	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 1531.2		
S15c. Mass of spacecraft and fuel at launch (kg): 2768.8	S15f. Length (m): 28	S15i. Payload: 0.9999
S15d. Mass of fuel, in orbit, at beginning of life (kg): 487	S15g. Width (m): 8.32	S15j. Bus: 0.9999
S15e. Deployed Area of Solar Array (square meters): 49.25	S15h. Height (m): 4.26	S15k. Total: 0.9998

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): 3725	(f): 3725	(k): 3725	(p): 3725
Bus (Watts):	(b): 675	(g): 675	(l): 675	(q): 675
Total (Watts):	(c): 4400	(h): 4400	(m) 4400	(r): 4400
Solar Array (Watts):	(d): 6223	(i): 5869	(n): 5658	(s): 5336
Depth of Battery Discharge (%):	(e) 68 %	(j) 68 %	(o) 68 %	(t) 68 %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> 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?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> 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.