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:
BSSNET2A-115W		1/1/2018	N
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s):	j. Number of transponders offered on a common carrier basis:
12/1/2015		15 Years	0
c. Construction Completion Date:		g. Total Number of Transponders:	k. Total Common Carrier Transponder Bandwidth:
6/1/2018		26	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:
6/1/2018	12/31/2018	758 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)		
17.3	G	17.7	G	T	Broadcasting Satellite Service - Data
17.3	G	17.7	G	T	Broadcasting Satellite Service - Sound
17.3	G	17.7	G	T	Broadcasting Satellite Service - Video
17.3	G	17.7	G	T	TTC
24.75	G	25.25	G	R	Broadcasting Satellite Service - Data
24.75	G	25.25	G	R	Broadcasting Satellite Service - Sound
24.75	G	25.25	G	R	Broadcasting Satellite Service - Video
24.75	G	25.25	G	R	TTC

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:
115 W			Available Appendix F orbital location
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.
CONUS+	S		USA, HWA, ALS
SWUL	S		SW UPLINK
CMD	S		COMMAND STATION
TEL	S		TELEMETRY STATION

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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				
		(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
USA	T	36.3	28.3	0.15		30	N		CONUS+	1.9	260	58.5					
SWU	R	46.8	44.8	0.15		30	N		SWUL				800	17.8	-109	25	0.5
CMD	R								CMD								
TEL	T								TEL								

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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
USA	T	C	-115		CONUS 115WLA	-115	-115	-115	-115	-115
SWU	R	C	-115		ULLA.gxt					
CMD	R	C	-115		ULLA.GXT					
TEL	T	C	-115		TEL.GXT	-140	-140	-140	-140	-140

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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)
CH001	26000	T	17325	L	C
CH003	26000	T	17354.16	L	C
CH005	26000	T	17383.32	L	C
CH007	26000	T	17412.48	L	C
CH009	26000	T	17441.64	L	C
CH011	26000	T	17470.8	L	C
CH013	26000	T	17499.96	L	C
CH015	26000	T	17529.12	L	C
CH017	26000	T	17558.28	L	C
CH019	26000	T	17587.44	L	C
CH021	26000	T	17616.6	L	C
CH023	26000	T	17645.76	L	C
CH025	26000	T	17674.92	L	C
CH002	26000	T	17325	R	C
CH004	26000	T	17354.16	R	C
CH006	26000	T	17383.32	R	C
CH008	26000	T	17412.48	R	C
CH010	26000	T	17441.64	R	C
CH012	26000	T	17470.8	R	C
CH014	26000	T	17499.96	R	C
CH016	26000	T	17529.12	R	C
CH018	26000	T	17558.28	R	C
CH020	26000	T	17587.44	R	C
CH022	26000	T	17616.6	R	C
CH024	26000	T	17645.76	R	C
CH026	26000	T	17674.92	R	C
CU001	26000	R	24775	R	C
CU003	26000	R	24804.16	R	C
CU005	26000	R	24833.32	R	C
CU007	26000	R	24862.48	R	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
T0001	156	CU001	SWUL	CH001	USA
T0003	156	CU003	SWUL	CH003	USA
T0005	156	CU005	SWUL	CH005	USA
T0007	156	CU007	SWUL	CH007	USA
T0009	156	CU009	SWUL	CH009	USA
T0011	156	CU011	SWUL	CH011	USA
T0013	156	CU013	SWUL	CH013	USA
T0015	156	CU015	SWUL	CH015	USA
T0017	156	CU017	SWUL	CH017	USA
T0019	156	CU019	SWUL	CH019	USA
T0021	156	CU021	SWUL	CH021	USA
T0023	156	CU023	SWUL	CH023	USA
T0025	156	CU025	SWUL	CH025	USA
T0002	156	CU002	SWUL	CH002	USA
T0004	156	CU004	SWUL	CH004	USA
T0006	156	CU006	SWUL	CH006	USA
T0008	156	CU008	SWUL	CH008	USA
T0010	156	CU010	SWUL	CH010	USA
T0012	156	CU012	SWUL	CH012	USA
T0014	156	CU014	SWUL	CH014	USA
T0016	156	CU016	SWUL	CH016	USA
T0018	156	CU018	SWUL	CH018	USA
T0020	156	CU020	SWUL	CH020	USA
T0022	156	CU022	SWUL	CH022	USA
T0024	156	CU024	SWUL	CH024	USA
T0026	156	CU026	SWUL	CH026	USA

CU009	26000	R	24891.64	R	C
CU011	26000	R	24920.8	R	C
CU013	26000	R	24949.96	R	C
CU015	26000	R	24979.12	R	C
CU017	26000	R	25008.28	R	C
CU019	26000	R	25037.44	R	C
CU021	26000	R	25066.6	R	C
CU023	26000	R	25095.76	R	C
CU025	26000	R	25124.92	R	C
CU002	26000	R	24775	L	C
CU004	26000	R	24804.16	L	C
CU006	26000	R	24833.32	L	C
CU008	26000	R	24862.48	L	C
CU010	26000	R	24891.64	L	C
CU012	26000	R	24920.8	L	C
CU014	26000	R	24949.96	L	C
CU016	26000	R	24979.12	L	C
CU018	26000	R	25008.28	L	C
CU020	26000	R	25037.44	L	C
CU022	26000	R	25066.6	L	C
CU024	26000	R	25095.76	L	C
CU026	26000	R	25124.92	L	C
CMD1	1000	R	24753	R	T
CMD2	1000	R	24755	R	T
TEL1	1000	T	17303	R	T
TEL2	1000	T	17306	R	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)
D1	26M0G7W	26000	4	27647	0.6912	0	5.7	28
D2	26M0G7W	26000	4	30719	0.768	0	6.6	28
D3	26M0G7W	26000	8	41200	0.6389	0	7.5	28

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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						

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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)			
(a) Start	(b) End	(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/m2/Hz)	(o)Assoc. Stn Rec. G/T (dB/K)
									(j) Min.	(k) Max.	(l) Min.	(m) Max.		
T0001	T0026	D1		1		115 WL Comm		67.6	9	12	50.5	58.5	-115	19.6

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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: TBD			
S14b. City:	S14c. County:	S14d. State/Country	S14e. Zip Code:
S14f. Telephone Number:	S14g. Call Sign of Control Station (if appropriate):		

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a: Mass of spacecraft without fuel (kg): 3715	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 2542		
S15c. Mass of spacecraft and fuel at launch (kg): 6260	S15f. Length (m): 45	S15i. Payload: 0.7
S15d. Mass of fuel, in orbit, at beginning of life (kg): 277	S15g. Width (m): 8.2	S15j. Bus: 0.85
S15e. Deployed Area of Solar Array (square meters): 80	S15h. Height (m): 7.3	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): 14922	(f): 14922	(k): 14922	(p): 14922
Bus (Watts):	(b): 1766	(g): 955	(l): 1766	(q): 955
Total (Watts):	(c): 16688	(h): 15877	(m) 16688	(r): 15877
Solar Array (Watts):	(d): 17944	(i): 19900	(n): 17000	(s): 17500
Depth of Battery Discharge (%):	(e) 76.5 %	(j) 76.5 %	(o) 76.5 %	(t) 76.5 %

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?	[X] 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?	[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.