

**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: EUTELSAT WEST 115 B		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:	
c. Construction Completion Date:		g. Total Number of Transponders:		k. Total Common Carrier Transponder Bandwidth: MHz	
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth) MHz		l. 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)		
3700	M	4200	M	T	Fixed Satellite Service
5925	M	6425	M	R	Fixed Satellite Service
11700	M	12200	M	T	Fixed Satellite Service
14000	M	14200	M	R	Fixed Satellite Service
14200	M	14470	M	R	Fixed Satellite Service
14470	M	14500	M	R	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 114.9 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection:			
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): Degrees E/W	
d. Toward West: 0.05 Degrees	e. Toward East: 0.05 Degrees		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:

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.
CBAND	E	N/A	Hemispheric - Canada, CONUS, Alaska, Mexico, Galapagos Islands, South America
KU1	E	N/A	Mexico and southern United States
KU3	E	N/A	South America
KU4	E	N/A	Canada, CONUS, Alaska, Hawaii

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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				
										(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														
CRH	R			0.1	1	26.5	N	0	CBAND					5.8	-96	1	1
CRV	R			0.1	1	26	N	90	CBAND					5.8	-96	1	1
CTH	T			0.1	1	27	N	0	CBAND			47.1					
CTV	T			0.1	1	27	N	90	CBAND			47.1					
KU1R	R			0.1	1	26	N		KU1					10.8	-96	1	1
KU1T	T			0.1	1	26	N		KU1			55.3					
KU3R	R			0.1	1	27	N		KU3					9.1	-96	1	1
KU3T	T			0.1	1	27	N		KU3			54					
KU4R	R			0.1	1	25	N		KU4					8.4	-96	1	1
KU4T	T			0.1	1	25	N		KU4			53.4					

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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
CRH	R	C			CRHCO.gxt					
CRV	R	C			CRVCO.gxt					
CTH	T	C			CTHCO.gxt	-159.5	-159.5	-159.5	-158.5	-158.5
CTV	T	C			CTVCO.gxt	-159.5	-159.5	-159.5	-158.5	-158.5
KU1R	R	C			KU1RCO.gxt					
KU1T	T	C			KU1TCO.gxt	-144.9	-143.7	-143.7	-143.2	-143.2
KU3R	R	C			KU3RCO.gxt					
KU3T	T	C			KU3TCO.gxt	-130.4	-128.5	-128.4	-127.4	-127.4
KU4R	R	C			KU4RCO.gxt					
KU4T	T	C			KU4TCO.gxt	-125.9	-124.9	-124.9	-125.9	-125.9

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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)
01CR	72000	R	5965	V	C
03CR	72000	R	6045	V	C
05CR	72000	R	6125	V	C
07CR	72000	R	6205	V	C
09CR	72000	R	6285	V	C
11CR	72000	R	6365	V	C
02CR	72000	R	5985	H	C
04CR	72000	R	6065	H	C
06CR	72000	R	6145	H	C
08CR	72000	R	6225	H	C
10CR	72000	R	6305	H	C
12CR	72000	R	6385	H	C
01CT	72000	T	3740	H	C
03CT	72000	T	3820	H	C
05CT	72000	T	3900	H	C
07CT	72000	T	3980	H	C
09CT	72000	T	4060	H	C
11CT	72000	T	4140	H	C
02CT	72000	T	3760	V	C
04CT	72000	T	3840	V	C
06CT	72000	T	3920	V	C
08CT	72000	T	4000	V	C
10CT	72000	T	4080	V	C
12CT	72000	T	4160	V	C
1KR	54000	R	14030	H	C
3KR	54000	R	14090	H	C
5KR	36000	R	14140	H	C
7KR	36000	R	14180	H	C
9KR	36000	R	14220	H	C
11KR	36000	R	14260	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
35K	1	35KR	KU1R	35KT	KU1T
01C	1	01CR	CRV	01CT	CTH
02C	1	02CR	CRH	02CT	CTV
03C	1	03CR	CRV	03CT	CTH
04C	1	04CR	CRH	04CT	CTV
05C	1	05CR	CRV	05CT	CTH
06C	1	06CR	CRH	06CT	CTV
07C	1	07CR	CRV	07CT	CTH
08C	1	08CR	CRH	08CT	CTV
10C	1	10CR	CRH	10CT	CTV
09C	1	09CR	CRV	09CT	CTH
11C	1	11CR	CRV	11CT	CTH
12C	1	12CR	CRH	12CT	CTV
1K	1	1KR	KU1R	1KT	KU1T
2K	1	2KR	KU1R	2KT	KU1T
3K	1	3KR	KU1R	3KT	KU1T
4K	1	4KR	KU1R	4KT	KU1T
5K	1	5KR	KU3R	5KT	KU3T
6K	1	6KR	KU3R	6KT	KU3T
7K	1	7KR	KU3R	7KT	KU3T
8K	1	8KR	KU3R	8KT	KU3T
9K	1	9KR	KU3R	9KT	KU3T
10K	1	10KR	KU3R	10KT	KU3T
11K	1	11KR	KU3R	11KT	KU3T
12K	1	12KR	KU3R	12KT	KU3T
13K	1	13KR	KU3R	13KT	KU3T
14K	1	14KR	KU3R	14KT	KU3T
15K	1	15KR	KU3R	15KT	KU3T
16K	1	16KR	KU3R	16KT	KU3T
17K	1	17KR	KU3R	17KT	KU3T

13KR	36000	R	14300	H	C
15KR	36000	R	14340	H	C
17KR	36000	R	14380	H	C
19KR	36000	R	14420	H	C
21KR	36000	R	14460	H	C
2KR	56000	R	14049	V	C
4KR	54000	R	14110	V	C
6KR	54000	R	14170	V	C
8KR	54000	R	14230	V	C
10KR	36000	R	14280	V	C
12KR	36000	R	14320	V	C
14KR	36000	R	14360	V	C
16KR	36000	R	14400	V	C
18KR	36000	R	14440	V	C
20KR	36000	R	14480	V	C
1KT	54000	T	11730	V	C
3KT	54000	T	11790	V	C
5KT	36000	T	11840	V	C
7KT	36000	T	11880	V	C
9KT	36000	T	11920	V	C
11KT	36000	T	11960	V	C
13KT	36000	T	12000	V	C
15KT	36000	T	12040	V	C
17KT	36000	T	12080	V	C
19KT	36000	T	12120	V	C
21KT	36000	T	12160	V	C
2KT	56000	T	11749	H	C
4KT	54000	T	11810	H	C
6KT	54000	T	11870	H	C
8KT	54000	T	11930	H	C
10KT	36000	T	11980	H	C
12KT	36000	T	12020	H	C
14KT	36000	T	12060	H	C
16KT	36000	T	12100	H	C
18KT	36000	T	12140	H	C
20KT	36000	T	12180	H	C
23KR	36000	R	14180	H	C
25KR	36000	R	14220	H	C
27KR	36000	R	14260	H	C

18K		1	18KR	KU3R	18KT	KU3T
19K		1	19KR	KU3R	19KT	KU3T
20K		1	20KR	KU3R	20KT	KU3T
21K		1	21KR	KU3R	21KT	KU3T
22K		1	22KR	KU1R	22KT	KU1T
23K		1	23KR	KU1R	23KT	KU1T
24K		1	24KR	KU1R	24KT	KU1T
25K		1	25KR	KU1R	25KT	KU1T
26K		1	26KR	KU4R	26KT	KU4T
27K		1	27KR	KU1R	27KT	KU1T
28K		1	28KR	KU4R	28KT	KU4T
29K		1	29KR	KU4R	29KT	KU4T
30K		1	30KR	KU4R	30KT	KU4T
31K		1	31KR	KU4R	31KT	KU4T
32K		1	32KR	KU1R	32KT	KU1T
33K		1	33KR	KU4R	33KT	KU4T

22KR	54000	R	14170	V	C
24KR	54000	R	14230	V	C
29KR	54000	R	14330	H	C
31KR	36000	R	14380	H	C
33KR	36000	R	14420	H	C
26KR	54000	R	14290	V	C
28KR	54000	R	14350	V	C
30KR	54000	R	14410	V	C
29KT	54000	T	12030	V	C
31KT	36000	T	12080	V	C
33KT	36000	T	12120	V	C
26KT	54000	T	11990	H	C
28KT	54000	T	12050	H	C
30KT	54000	T	12110	H	C
35KR	56000	R	14471	H	C
32KR	36000	R	14480	V	C
35KT	56000	T	12171	V	C
32KT	36000	T	12180	H	C
22KT	54000	T	11870	H	C
24KT	54000	T	11930	H	C
23KT	36000	T	11880	V	C
25KT	36000	T	11920	V	C
27KT	36000	T	11960	V	C

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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	6M33G7W	6330						
D2	1M34G7W	1340						
D3	48K6G7W	48.6						
D4	36M0G7W	36000						
D5	1M40G7W	1400						
D6	4M16G7W	4160						

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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)
01C	12C	D4									47.1		
01C	12C	D5									30.1		
01C	12C	D6									34.7		
1K	4K	D1									44.8		
22K	33K	D1									44.8		
35K	35K	D1									44.8		
1K	4K	D2									38		
22K	33K	D2									38		
35K	35K	D2									38		
1K	4K	D3									23.6		
22K	33K	D3									23.6		
35K	35K	D3									23.6		
1K	4K	D4									55.3		
22K	33K	D4									55.3		
35K	35K	D4									55.3		
1K	21K	D1									43.5		
1K	21K	D2									36.7		
1K	21K	D3									22.3		
1K	21K	D4									54		
26K	26K	D1									42.9		
28K	31K	D1									42.9		
33K	33K	D1									42.9		
26K	26K	D2									36.1		
28K	31K	D2									36.1		
33K	33K	D2									36.1		
26K	26K	D3									21.7		
28K	31K	D3									21.7		
33K	33K	D3									21.7		
26K	26K	D4									53.4		

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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): #Error

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Characteristics and
Certifications

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

S17. CERTIFICATIONS:

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

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