

**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: PEGASUS 107W		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: 32		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) 768 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)		
17.3	G	17.7	G	T	Broadcasting Satellite Service - Video
17.3	G	17.7	G	T	Broadcasting Satellite Service - Sound
17.3	G	17.7	G	T	Broadcasting Satellite Service - Data
24.75	G	25.15	G	R	Feeder Link for Broadcasting Satellite Service in FSS
17.7	G	17.8	G	T	Broadcasting Satellite Service - Video
17.7	G	17.8	G	T	Broadcasting Satellite Service - Sound
17.7	G	17.8	G	T	Broadcasting Satellite Service - Data
25.15	G	25.25	G	R	Feeder Link for Broadcasting Satellite Service in FSS

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 107 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: good elevation angle for subscribers in all coverage areas	
Longitudinal Tolerance or E/W Station-Keeping:		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		
d. Toward West:	0.05 Degrees		g. Westernmost: h. Easternmost:		
e. Toward East:		0.05 Degrees		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.
CONUST	S		CONUS + AK + HI + PR
CONUSR	E		CONUS
MEXT	S		Mexico

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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															
CON	T	37.1	27.1	0.1	0.05	25	N		CONUST	4	204.2	60.2						
CON	R	33.1	23.1	0.1	0.05	25	N		CONUSR				912	3.5	-100	20	1	
CON	T	37.1	27.1	0.1	0.05	25	N		CONUST	4	204.2	60.2						
CON	R	33.1	23.1	0.1	0.05	25	N		CONUSR				912	3.5	-100	20	1	
MEX	T	37	27	0.1	0.05	25	N		MEXT	1	100	57.1						
MEX	T	37	27	0.1	0.05	25	N		MEXT	1	100	57.1						

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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
CON	T	C	-107		CONTR fig	-123.3	-123.3	-123.3	-123.3	-123.3
CON	R	C	-107		CONRR fig					
CON	T	C	-107		CONTL	-123.3	-123.3	-123.3	-123.3	-123.3
CON	R	C	-107		CONRL fig					
MEX	T	C	-107		MEXTR fig	-126.4	-126.4	-126.4	-126.4	-126.4
MEX	T	C	-107		MEXTL fig	-126.4	-126.4	-126.4	-126.4	-126.4

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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)
C24R	24000	R	25096.34	L	C
C25T	24000	T	17675.50	R	C
C25R	24000	R	25125.50	R	C
C26T	24000	T	17675.50	L	C
C26R	24000	R	25125.50	L	C
BEA	1000	T	17695.00	R	T
M27T	24000	T	17721.08	R	C
M27R	24000	R	25171.08	R	C
M28T	24000	T	17721.08	L	C
M28R	24000	R	25171.08	L	C
M29T	24000	T	17750.24	R	C
M29R	24000	R	25200.24	R	C
M30T	24000	T	17750.24	L	C
M30R	24000	R	25200.24	L	C
M31T	24000	T	17779.40	R	C
M31R	24000	R	25229.40	R	C
M32T	24000	T	17779.40	L	C
M32R	24000	R	25229.40	L	C
TEL	316	T	17303.00	R	T
COM	2000	R	24755.00	R	T
C1T	24000	T	17325.58	R	C
C1R	24000	R	24775.00	R	C
C2T	24000	T	17325.58	L	C
C2R	24000	R	24775.00	L	C
C3T	24000	T	17254.74	R	C
C3R	24000	R	24804.74	R	C
C4T	24000	T	17254.74	L	C
C4R	24000	R	24804.74	L	C
C5T	24000	T	17383.90	R	C
C5R	24000	R	24833.90	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
T1	139.7	C1R	CONRR	C1T	CONTR
T2	139.7	C2R	CONRL	C2T	CONTL
T3	139.7	C3R	CONRR	C3T	CONTR
T4	139.7	C4R	CONRL	C4T	CONTL
T5	139.7	C5R	CONRR	C5T	CONTR
T6	139.7	C6R	CONRL	C6T	CONTL
T7	139.7	C7R	CONRR	C7T	CONTR
T8	139.7	C8R	CONRL	C8T	CONTL
T9	139.7	C9R	CONRR	C9T	CONTR
T10	139.7	C10R	CONRL	C10T	CONTL
T11	139.7	C11R	CONRR	C11T	CONTR
T12	139.7	C12R	CONRL	C12T	CONTL
T13	139.7	C13R	CONRR	C13T	CONTR
T14	139.7	C14R	CONRL	C14T	CONTL
T15	139.7	C15R	CONRR	C15T	CONTR
T16	139.7	C16R	CONRL	C16T	CONTL
T17	139.7	C17R	CONRR	C17T	CONTR
T18	139.7	C18R	CONRL	C18T	CONTL
T19	139.7	C19R	CONRR	C19T	CONTR
T20	139.7	C20R	CONRL	C20T	CONTL
T21	139.7	C21R	CONRR	C21T	CONTR
T22	139.7	C22R	CONRL	C22T	CONTL
T23	139.7	C23R	CONRR	C23T	CONTR
T24	139.7	C24R	CONRL	C24T	CONTL
T25	139.7	C25R	CONRR	C25T	CONTR
T26	139.7	C26R	CONRL	C26T	CONTL
T27	136.7	M27R	CONRR	M27T	MEXTR
T28	136.7	M28R	CONRL	M28T	MEXTL
T29	136.7	M29R	CONRR	M29T	MEXTR
T30	136.7	M30R	CONRL	M30T	MEXTL

C6T	24000	T	17383.9	L	C
C6R	24000	R	24833.90	L	C
C7T	24000	T	17413.06	R	C
C7R	24000	R	24863.06	R	C
C8T	24000	T	17413.06	L	C
C8R	24000	R	24863.06	L	C
C9T	24000	T	17442.22	R	C
C9R	24000	R	24892.22	R	C
C10T	24000	T	17442.22	L	C
C10R	24000	R	24982.22	L	C
C11T	24000	T	17471.38	R	C
C11R	24000	R	24921.38	R	C
C12T	24000	T	17471.38	L	C
C12R	24000	R	24921.38	L	C
C13T	24000	T	17500.54	R	C
C13R	24000	R	24950.54	R	C
C14T	24000	T	17500.54	L	C
C14R	24000	R	24950.54	L	C
C15T	24000	T	17529.70	R	C
C15R	24000	R	24979.70	R	C
C16T	24000	T	17529.70	L	C
C16R	24000	R	24979.70	L	C
C17T	24000	T	17558.86	R	C
C17R	24000	R	25008.86	R	C
C18T	24000	T	17558.86	L	C
C18R	24000	R	25008.86	L	C
C19T	24000	T	17588.02	R	C
C19R	24000	R	25038.02	R	C
C20T	24000	T	17588.02	L	C
C20R	24000	R	25038.02	L	C
C21T	24000	T	17617.18	R	C
C21R	24000	R	25067.18	R	C
C22T	24000	T	17617.18	L	C
C22R	24000	R	25067.18	L	C
C23T	24000	T	17646.34	R	C
C23R	24000	R	25096.34	R	C
C24T	24000	T	17646.34	L	C

T31	136.7	M31R	CONRR	M31T	MEXTR
T32	136.7	M32R	CONRL	M32T	MEXTL
TTEL				TEL	CONTR
TCOM		COM	CONRR		
TBEA				BEA	CONTR

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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	24M0G1W	24000	4	25600	0.64		4	22
2	24M0G1W	24000	4	28400	0.71		4.8	22
3	24M0G1W	24000	8	38400	0.64		7.6	22
4	24M0G1W	24000	8	42300	0.71		9	22
5	1K00N0N	1000	1				8	22
6	350KG9D	350					8	22
7	2M00G2D	2000					8	22

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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)
T1	T26	1		1		see attached		59.8	23.3	33.3	50.2	60.2	-115.2	11.2
T1	T26	2		1		see attached		59.8	23.3	33.3	50.2	60.2	-115.2	11.2
T1	T26	3		1		see attached		59.8	23.3	33.3	50.2	60.2	-115.2	11.2
T1	T26	4		1		see attached		59.8	23.3	33.3	50.2	60.2	-115.2	11.2
T27	T32	1		1		see attached		59.8	23.3	33.3	47.1	57.1	-118.3	11.2
T27	T32	2		1		see attached		59.8	23.3	33.3	47.1	57.1	-118.3	11.2
T27	T32	3		1		see attached		59.8	23.3	33.3	47.1	57.1	-118.3	11.2
T27	T32	4		1		see attached		59.8	23.3	33.3	47.1	57.1	-118.3	11.2
TTEL	TTEL	6		1		see attached					15	20	-137.8	37.3
TBEA	TBEA	5		1		see attached					11	11	-151.4	37.3
TCOM	TCOM	7		1		see attached		59.8	5.2	25.2				

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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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Characteristics and
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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 3000	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 3200		
S15c. Mass of spacecraft and fuel at launch (kg): 6200	S15f. Length (m): 32.5	S15i. Payload: 0.87
S15d. Mass of fuel, in orbit, at beginning of life (kg): 740	S15g. Width (m): 8	S15j. Bus: 0.87
S15e. Deployed Area of Solar Array (square meters): 90	S15h. Height (m): 8.2	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): 13800	(f): 13800	(k): 13800	(p): 13800
Bus (Watts):	(b): 3500	(g): 1650	(l): 3500	(q): 1650
Total (Watts):	(c): 17300	(h): 15450	(m): 17300	(r): 15540
Solar Array (Watts):	(d): 21700	(i): 19350	(n): 19100	(s): 17150
Depth of Battery Discharge (%):	(e) 70 %	(j) 0 %	(o) 70 %	(t) 15 %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?	<input checked="" 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 checked="" 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 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.