

File Number: **DRAFT-SAT-LOA-20260805-00327**

Call Sign:

S1. Satellite Information

a. Space Station or Satellite Network Name	b. Orbit Type	c. Estimated Operational Lifetime of Space Station(s) From Date of Launch (yrs)	d. Will the space station(s) operate on a Common Carrier basis?	e. Application Description
Hubble-8 and Hubble-9	Non-Geostationary (NGSO)	7	No	Hubble requests launch-and-operational authority for the Hubble-8 and Hubble-9 satellites.

S2. Operating Frequency Bands

a. Type of Service	b. If a. is Other, provide a service description	c. Satellite Frequency Band (MHz)	d. Satellite Frequency (Lower Band Edge) (MHz)	e. Satellite Frequency (Upper Band Edge) (MHz)	f. Direction of Transmission	g. Non Conforming Indicator
MSS		Other	2482.04975	2482.831	Earth-to-Space (Receive)	Yes
EESS		8025 - 8400	8025	8400	Space-to-Earth (Transmit)	No
EESS		2025 - 2110	2025	2110	Earth-to-Space (Receive)	No
SOS		2025 - 2110	2025	2110	Earth-to-Space (Receive)	Yes
EESS		Other	2482.04975	2482.831	Earth-to-Space (Receive)	Yes

S3. NGSO Orbital Information

a. Total Number of Simultaneously Operating Satellites in Constellation	b. Total Number of Satellites Deployed During the License Term	c. Orbit Epoch Date	d. Celestial Reference Body	e. If d. is "Other", provide the name of celestial body being referenced	f. Total Number of Orbital Planes
2	2	2027-07-01	Earth		1

g. Orbital Plane Information

(i) Orbital Plane No.	(ii) Number of Satellites in Plane	(iii) Inclination Angle (°)	(iv) Inclination Angle Tolerance (+/- °)	(v) Orbital Period (seconds)	(vi) Apogee (km)	(vii) Apogee Tolerance (+/- km)	(viii) Perigee (km)	(ix) Perigee Tolerance (+/- km)	(x) Argument of Perigee (°)	(xi) Right Ascension of Ascending Node (°)	(xii) Right Ascension of Ascending Node Tolerance (+/- °)	(xiii) Active Service Arc Begin Angle with Respect to Ascending Node (°)	(xiv) Active Service Arc End Angle with Respect to Ascending Node (°)	(xv) Is additional info on the active service arc provided in the application?	(xvi) Satellite Spacing	(xvii) Phase Angle Spacing (°)	(xviii) First Satellite Initial Phase Angle (°)	(xix) Maximum Orbital Eccentricity
1	2	97.7	1	5,789	590	30	590	30	0	0	1	0	0	No	Evenly-Spaced	180	0	

h. Initial Phase Angle Information

(i) Orbital Plane No.	(i) Satellite No.	(ii) Initial Phase Angle (°)
1	1	0
1	2	180

S4. Earth-to-Space (Receive) Beams

a. Beam ID:	HSU1	n. Beam Peak Flux Density at Command Threshold (dBW/m²):	-121
b. Beam Frequency (Lower Band Edge) (MHz):	2025	o. Peak Isotropic Antenna Gain (dBi):	
c. Beam Frequency (Upper Band Edge) (MHz):	2110	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):	
d. Polarization:	RHCP	q. Antenna Pointing Error (°):	
e. Can the space station vary the channel bandwidth with on-board processing?:	Yes	r. Antenna Rotational Error (°):	
f. Is this a command beam? (Check box if Yes):	Yes	s. Will a GIMS container file containing all antenna contour data be provided?:	
g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:	
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:	
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?:	Yes
j. Maximum G/T (dB/K):		w. What information will be provided with the predicted antenna gain contours?:	
k. Minimum G/T (dB/K):			
l. Maximum Saturation Flux Density (dBW/m²):			
m. Minimum Saturation Flux Density (dBW/m²):			

x. Receive Channels						
(i) Channel ID	(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)	(iv) Channel Frequency (Lower Band Edge) (MHz)	(v) Channel Frequency (Upper Band Edge) (MHz)	(vi) Channel Type	(vii) Point of Communication
HSU1	0.98	2062.5	2062.01	2062.99	Service Link	

a. Beam ID:	HUBR	n. Beam Peak Flux Density at Command Threshold (dBW/m²):	
b. Beam Frequency (Lower Band Edge) (MHz):	2482.04975	o. Peak Isotropic Antenna Gain (dBi):	
c. Beam Frequency (Upper Band Edge) (MHz):	2482.831	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):	
d. Polarization:	RHCP	q. Antenna Pointing Error (°):	
e. Can the space station vary the channel bandwidth with on-board processing?:	Yes	r. Antenna Rotational Error (°):	
f. Is this a command beam? (Check box if Yes):	No	s. Will a GIMS container file containing all antenna contour data be provided?:	
g. Is the beam shapeable? (Check box if Yes):	Yes	t. Under what rules will the associated antenna contours be submitted?:	
h. Is the beam steerable? (Check box if Yes):	Yes	u. Provide a list of each orbital plane in which this antenna beam is used.:	
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?:	Yes
j. Maximum G/T (dB/K):	-4.3	w. What information will be provided with the predicted antenna gain contours?:	
k. Minimum G/T (dB/K):	-4.3		
l. Maximum Saturation Flux Density (dBW/m²):			
m. Minimum Saturation Flux Density (dBW/m²):			

x. Receive Channels						
(i) Channel ID	(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)	(iv) Channel Frequency (Lower Band Edge) (MHz)	(v) Channel Frequency (Upper Band Edge) (MHz)	(vi) Channel Type	(vii) Point of Communication

			Band Edge) (MHz)	Band Edge) (MHz)		
0	0.032	2482.208625	2482.192625	2482.224625	Service Link	
1	0.032	2482.234375	2482.218375	2482.250375	Service Link	
3	0.032	2482.285875	2482.269875	2482.301875	Service Link	
7	0.032	2482.388875	2482.372875	2482.404875	Service Link	
12	0.032	2482.517625	2482.501625	2482.533625	Service Link	
14	0.032	2482.569125	2482.553125	2482.585125	Service Link	
2	0.032	2482.260125	2482.244125	2482.276125	Service Link	
4	0.032	2482.311625	2482.295625	2482.327625	Service Link	
5	0.032	2482.337375	2482.321375	2482.353375	Service Link	
8	0.032	2482.414625	2482.398625	2482.430625	Service Link	
9	0.032	2482.440375	2482.424375	2482.456375	Service Link	
6	0.032	2482.363125	2482.347125	2482.379125	Service Link	
11	0.032	2482.491875	2482.475875	2482.507875	Service Link	
15	0.032	2482.594875	2482.578875	2482.610875	Service Link	
17	0.032	2482.646375	2482.630375	2482.662375	Service Link	
10	0.032	2482.466125	2482.450125	2482.482125	Service Link	
13	0.032	2482.543375	2482.527375	2482.559375	Service Link	
16	0.032	2482.620625	2482.604625	2482.636625	Service Link	
18	0.032	2482.672125	2482.656125	2482.688125	Service Link	

a. Beam ID:	TCU1	n. Beam Peak Flux Density at Command Threshold (dBW/m²):	-121
b. Beam Frequency (Lower Band Edge) (MHz):	2025	o. Peak Isotropic Antenna Gain (dBi):	
c. Beam Frequency (Upper Band Edge) (MHz):	2110	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):	
d. Polarization:	RHCP	q. Antenna Pointing Error (°):	
e. Can the space station vary the channel bandwidth with on-board processing?:	Yes	r. Antenna Rotational Error (°):	
f. Is this a command beam? (Check box if Yes):	Yes	s. Will a GIMS container file containing all antenna contour data be provided?:	
g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:	
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:	
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?:	Yes
j. Maximum G/T (dB/K):		w. What information will be provided with the predicted antenna gain contours?:	
k. Minimum G/T (dB/K):			
l. Maximum Saturation Flux Density (dBW/m²):			
m. Minimum Saturation Flux Density (dBW/m²):			

x. Receive Channels						
(i) Channel ID	(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)	(iv) Channel Frequency (Lower Band Edge) (MHz)	(v) Channel Frequency (Upper Band Edge) (MHz)	(vi) Channel Type	(vii) Point of Communication
TCU1	0.28	2061.5	2061.36	2061.64	TT&C	

S5. Space-to-Earth (Transmit) Beams

a. Beam ID:	HSD5	n. Beam Peak Flux Density at Command Threshold (dBW/m ²):
b. Beam Frequency (Lower Band Edge) (MHz):	8025	o. Peak Isotropic Antenna Gain (dBi):
c. Beam Frequency (Upper Band Edge) (MHz):	8400	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):
d. Polarization:	RHCP	q. Antenna Pointing Error (°):
e. Can the space station vary the channel bandwidth with on-board processing?:	Yes	r. Antenna Rotational Error (°):
f. Is this a command beam? (Check box if Yes):	No	s. Will a GIMS container file containing all antenna contour data be provided?:
g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?: Yes
j. Maximum Transmit EIRP Density (dBW/Ref BW):	-31	w. What information will be provided with the predicted antenna gain contours?:
k. Maximum Transmit EIRP (dBW):	18	

x. Transmit Channels													
(i) Channel ID		(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)		(iv) Channel Frequency (Lower Band Edge) (MHz)		(v) Channel Frequency (Upper Band Edge) (MHz)		(vi) Channel Type		(vii) Point of Communication		
HSD5		300	8175		8025		8325		Service Link				
y. Max. Power-Flux Densities													
			Angles of Arrival PFD						Geographic Region PFD				
(i) Beam Sub-Frequency (Lower Band Edge) (MHz)	(ii) Beam Sub-Frequency (Upper Band Edge) (MHz)	(iii) Reference Bandwidth (BW)	(iv) 0-2° (dBW/m²/BW)	(v) 2-5° (dBW/m²/BW)	(vi) 5-15° (dBW/m²/BW)	(vii) 15-20° (dBW/m²/BW)	(viii) 20-25° (dBW/m²/BW)	(ix) 25-90° (dBW/m²/BW)	(x) Southeastern Region (dBW/m²/BW)	(xi) Northeastern Region (dBW/m²/BW)	(xii) Western Region (dBW/m²/BW)	(xiii) Other Region (dBW/m²/BW)	(xiv) Energy Dispersal Bandwidth (kHz)
		4 kHz	-170	-169	-165.9	-164.5	-163.3	-157.2					

a. Beam ID:	TCD2	n. Beam Peak Flux Density at Command Threshold (dBW/m ²):
b. Beam Frequency (Lower Band Edge) (MHz):	8025	o. Peak Isotropic Antenna Gain (dBi):
c. Beam Frequency (Upper Band Edge) (MHz):	8400	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):
d. Polarization:	RHCP	q. Antenna Pointing Error (°):
e. Can the space station vary the channel bandwidth with on-board processing?:	Yes	r. Antenna Rotational Error (°):
f. Is this a command beam? (Check box if Yes):	No	s. Will a GIMS container file containing all antenna contour data be provided?:
g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?: Yes
j. Maximum Transmit EIRP Density (dBW/Ref BW):	-31	w. What information will be provided with the predicted antenna gain contours?:
k. Maximum Transmit EIRP (dBW):	-3	

x. Transmit Channels													
(i) Channel ID		(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)		(iv) Channel Frequency (Lower Band Edge) (MHz)		(v) Channel Frequency (Upper Band Edge) (MHz)		(vi) Channel Type		(vii) Point of Communication		
TCD2		2.8	8390		8388.6		8391.4		TT&C				
y. Max. Power-Flux Densities													
			Angles of Arrival PFD						Geographic Region PFD				
(i) Beam Sub-Frequency (Lower Band Edge) (MHz)	(ii) Beam Sub-Frequency (Upper Band Edge) (MHz)	(iii) Reference Bandwidth (BW)	(iv) 0-2° (dBW/m²/BW)	(v) 2-5° (dBW/m²/BW)	(vi) 5-15° (dBW/m²/BW)	(vii) 15-20° (dBW/m²/BW)	(viii) 20-25° (dBW/m²/BW)	(ix) 25-90° (dBW/m²/BW)	(x) Southeastern Region (dBW/m²/BW)	(xi) Northeastern Region (dBW/m²/BW)	(xii) Western Region (dBW/m²/BW)	(xiii) Other Region (dBW/m²/BW)	(xiv) Energy Dispersal Bandwidth (kHz)
		4 kHz	-170.8	-169.8	-166.7	-165.3	-164.1	-158					

a. Beam ID:	TCD1	n. Beam Peak Flux Density at Command Threshold (dBW/m ²):
b. Beam Frequency (Lower Band Edge) (MHz):	8025	o. Peak Isotropic Antenna Gain (dBi):
c. Beam Frequency (Upper Band Edge) (MHz):	8400	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):
d. Polarization:	RHCP	q. Antenna Pointing Error (°):
e. Can the space station vary the channel bandwidth with on-board processing?:	Yes	r. Antenna Rotational Error (°):
f. Is this a command beam? (Check box if Yes):	No	s. Will a GIMS container file containing all antenna contour data be provided?:
g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?: Yes
j. Maximum Transmit EIRP Density (dBW/Ref BW):	-31	w. What information will be provided with the predicted antenna gain contours?:
k. Maximum Transmit EIRP (dBW):	-3	

x. Transmit Channels													
(i) Channel ID		(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)		(iv) Channel Frequency (Lower Band Edge) (MHz)		(v) Channel Frequency (Upper Band Edge) (MHz)		(vi) Channel Type		(vii) Point of Communication		
TCD1		2.8	8385		8383.6		8386.4		TT&C				
y. Max. Power-Flux Densities													
			Angles of Arrival PFD						Geographic Region PFD				
(i) Beam Sub-Frequency (Lower Band Edge) (MHz)	(ii) Beam Sub-Frequency (Upper Band Edge) (MHz)	(iii) Reference Bandwidth (BW)	(iv) 0-2° (dBW/m²/BW)	(v) 2-5° (dBW/m²/BW)	(vi) 5-15° (dBW/m²/BW)	(vii) 15-20° (dBW/m²/BW)	(viii) 20-25° (dBW/m²/BW)	(ix) 25-90° (dBW/m²/BW)	(x) Southeastern Region (dBW/m²/BW)	(xi) Northeastern Region (dBW/m²/BW)	(xii) Western Region (dBW/m²/BW)	(xiii) Other Region (dBW/m²/BW)	(xiv) Energy Dispersal Bandwidth (kHz)
		4 kHz	-170.8	-169.8	-166.7	-165.3	-164.1	-158					

S6. Space-to-Space (Receive) Beams

S7. Space-to-Space (Transmit) Beams

S8. Attachments

Beam ID	Direction of Transmission	(i) Document Type	(ii) If Document Type is "Other", provide short description	(iii) File Name
HSD5	Space-to-Earth (Transmit)	Transmit Antenna Gain Contour Diagram		X-band - HSD5.png
HSU1	Earth-to-Space (Receive)	Receive Antenna Gain Contour Diagram		S-band - TCU, HSU.png
HUBR	Earth-to-Space (Receive)	Receive Antenna Gain Contour Diagram		S-band - HUBR 2.png
HUBR	Earth-to-Space (Receive)	Receive Antenna Gain Contour Diagram		S-band - HUBR 1.png
TCD1	Space-to-Earth (Transmit)	Transmit Antenna Gain Contour Diagram		X-band - TCD1, TCD2.png
TCD2	Space-to-Earth (Transmit)	Transmit Antenna Gain Contour Diagram		X-band - TCD1, TCD2.png
TCU1	Earth-to-Space (Receive)	Receive Antenna Gain Contour Diagram		S-band - TCU, HSU.png