

Narrative

Astro Digital US, Inc. (“Astro Digital”) requests special temporary authority (“STA”)¹ for a period of 180 days, commencing upon the grant of this application, to communicate with the Sherpa-AC1 spacecraft (SAT-LOA-20220111-00007)², which is owned and controlled by Spaceflight Inc. (“Spaceflight”). Astro Digital is providing supplemental Telemetry, Tracking and Command (“TT&C”) ground station support for the Sherpa-AC1 mission from an operational Astro Digital ground station located in Santa Clara, California (Call Sign E170192). The transmit command uplinks from the Astro Digital earth station and the receive telemetry downlinks from the Sherpa-AC1 spacecraft, separately authorized by Spaceflight, are specified in the chart below.

Technical Information:

The earth station will operate on the following frequencies and use the following technical parameters. For completeness, Astro Digital also provides below additional information related to the operation of the Spaceflight spacecraft:

	Uplink Transmit (command)	Downlink Receive (telemetry)
Frequency Band	402.88-402.92 MHz	400.48-400.52 MHz
Occupied Bandwidth	40 kHz	40 kHz
Max Data Rate	38.4 kbps	38.4 kbps
Max. Aggregate Output EIRP	41 dBW	N/A
EIRP Density Toward Spacecraft	-5.0 dBw/4kHz	n/a
Minimum operating angle of elevation of the antenna	5 degrees	5 degrees
Antenna height above terrain	13.0 m	13.0 m
Site elevation above mean sea level, in meters	23.3 m	23.3 m
Antenna size, in meters	2.7	2.7
Antenna beamwidth at the half- power point	12°	12°
Polarization	Right Hand Circular	Right Hand Circular
Emission carrier and designator	40K0F1D	40K0F1D
Range of azimuth angles over which the earth station antenna will point at the spacecraft	0° to 360°	0° to 360°

Astro Digital understands that its STA operations on the above UHF frequencies will be on an unprotected, non-harmful interference basis.

¹ 47 C.F.R. § 25.120.

² See generally Stamp Grant, Spaceflight Inc., IBFS File No. SAT-LOA-20220111-00007 (granted in part May 10, 2022) (“Sherpa AC1 Grant”).

Site Address:

3171 Jay Street
Santa Clara, CA 95054

Coordinates:

Latitude: 37° 22' 48" N
Longitude: 121° 57' 40" W