

NTIA Space record data form – Phoenix CubeSat

NTIA requires the following data for space related experiments using government shared spectrum. For each transmit frequency, please provide the data for both ends of the transmit-receive link. Use Part A to describe the satellite to ground information. Part B is for all ground to space transmit links.

Part A: Space to Earth Downlink Data

Satellite Transmitter Data

Transmit Frequency: UHF: 437.35 MHZ Sband: 4205.5 MHz		
Satellite Name: Phoenix CubeSat		
Data Field	Data Answer	Description/Comments
Polarization (XAP)	UHF XAP = L S-Band XAP = L	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Orientation (XAZ)	XAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	UHF ANTENNA GAIN__ 0 dB _____ BEAMWIDTH ____ 60° ____ XAD = 0G060B S-Band ANTENNA GAIN__ 8 dBi (Max)____ BEAMWIDTH ____ 60° ____ XAD = 8G060B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE__ 51.6° _____, APOGEE IN KILOMETERS__ 409____, PERIGEE IN KILOMETERS__ 401____, ORBITAL PERIOD IN HOURS __ 1__ AND FRACTIONS OF HOURS IN DECIMAL__ 0.53____,	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.58H01NRT01, AND FOR SPACE-TO-SPACE

	THE NUMBER OF SATELLITES IN THE SYSTEM __1__, ORB = 51.6IN00409AP00401PE001.53H01NRT01	COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.46H01NRR01
Earth Station Data (Receiver)		
State (RSC)	RSC = Arizona	
City Name (RAL)	RAL = Tempe	
Latitude (DDMMSS)	Lat = 33° 26' 54.1536" N	
Longitude (DDMMSS)	Lon = 112° 4' 26.296" W	
Antenna Polarization (RAP)	UHF – Yagi Antenna RAP = R S-Band – Dish Antenna RAP = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN __15.5 dB____, BEAMWIDTH __30 dB____, AZIMUTHAL RANGE __0° - 360°____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS __400____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS __402____ RAD = 16G030B000-360A00400H402	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
FCC notes: 1. Use S-Note S945. 2. REM AGN, Cubesat, (Phoenix)		

Part B: Ground Stations, Earth to Space link data:

Earth Station Transmitter Data

Transmit Frequency: UHF = 437.35 MHz		
State (XSC)	XSC = Arizona	
City Name (XAL)	XAL = Tempe	
Latitude (DDMMSS)	Lat = 33° 26' 54.1536" N	
Longitude (DDMMSS)	Lon = 112° 4' 26.296" W	
Antenna Polarization (XAP)	UHF XAP = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ = V00	THE EARTH STATION Transmitter ANTENNA AZIMUTH (XAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, XAZ01 V00
Antenna Dimensions (XAD)	ANTENNA GAIN____8 dBi (Max)____, BEAMWIDTH____60°____, AZIMUTHAL RANGE____0° - 360°____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS ____400____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS ____402____ XAD = 16G030B000-360A00400H402	EXAMPLE ASSUMING NONGEOSTATIONARY, XAD01 16G030B000-360A00357H006
Satellite Receive Specifications		
Polarization (RAP)	UHF RAP = L	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Azimuth (RAZ)	RAZ = V00	STATION RECEIVER ANTENNA AZIMUTH (XAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Dimension (RAD)	ANTENNA GAIN____0 dB____ BEAMWIDTH ____60°____ RAD = 0G060B	(NTIA format (RAD), EXAMPLE, RAD01 16G030B)
Type of satellite (State = SP) City = G/No	Type = Nongoestationary	Choose either: Geostationary or Nongoestationary

For Geostationary	Longitude = N/A	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE__51.6°__, APOGEE IN KILOMETERS__409__, PERIGEE IN KILOMETERS__401__, ORBITAL PERIOD IN HOURS _1_ AND FRACTIONS OF HOURS IN DECIMAL__0.53__, THE NUMBER OF SATELLITES IN THE SYSTEM__1__, ORB = 51.6IN00409AP00401PE001.53H01NRT01	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.58H01NRT01, AND FOR SPACE-TO-SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.46H01NRR01