

NTIA Space record data form

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: 137.880-138.000 MHz		
Satellite Name: SPACEBEE-10, SPACEBEE-11, SPACEBEE-12, SPACEBEE-13, SPACEBEE-14, SPACEBEE-15, SPACEBEE-16, SPACEBEE-17, SPACEBEE-18, SPACEBEE-19, SPACEBEE-20, SPACEBEE-21		
Data Field	Data Answer	Description/Comments
Polarization (XAP)	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
Orientation (XAZ)	XAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN = 0.00 dBi BEAMWIDTH = 360 degrees XAD = 00G360B	(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 =	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 97.4 , APOGEE IN KILOMETERS 500 , PERIGEE IN KILOMETERS 500 , ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.577 , THE NUMBER OF SATELLITES IN THE SYSTEM 12 , ORB = 97.4IN00500AP00500PE001.58H12NRT01	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

Earth Station Data (Receiver) #1		
State (RSC)	RSC = CA	
City Name (RAL)	RAL = Los Altos	
Latitude (DDMMSS)	Lat = 37 21 53 N	
Longitude (DDMMSS)	Lon = 122 06 39 W	
Antenna Polarization (RAP)	RAP = V	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__11.0_____, BEAMWIDTH__50_____, AZIMUTHAL RANGE__0 to 50_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS __132_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS __3_____ RAD = 11G050B000-360A00132H003	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
FCC notes: 1. Use S-Note S945. 2. REM AGN, Cubesat, (SPACEBEE)		

Earth Station Data (Receiver) #2		
State (RSC)	RSC = GA	
City Name (RAL)	RAL = Flowery Branch	
Latitude (DDMMSS)	Lat = 034 11 29 N	
Longitude (DDMMSS)	Lon = 083 56 29 W	
Antenna Polarization (RAP)	RAP = V	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__11.0_____, BEAMWIDTH__50_____, AZIMUTHAL RANGE__0 to 50_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS __366_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS __3_____ RAD = 11G050B000-360A00366H003	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
FCC notes: 1. Use S-Note S945. 2. REM AGN, Cubesat, (SPACEBEE)		

Earth Station Data (Receiver) #3		
State (RSC)	RSC = UT	
City Name (RAL)	RAL = Draper	
Latitude (DDMMSS)	Lat = 40 28 53 N	
Longitude (DDDMMSS)	Lon = 111 49 23 W	
Antenna Polarization (RAP)	RAP = V	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__11.0_____, BEAMWIDTH__50_____, AZIMUTHAL RANGE__0 to 50_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS __1796_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS __3_____ RAD = 11G050B000-360A01796H003	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
FCC notes: 1. Use S-Note S945. 2. REM AGN, Cubesat, (SPACEBEE)		

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

Earth Station Transmitter Data #1

Transmit Frequency: 148.300-148.420 MHz		
State (XSC)	XSC = CA	
City Name (XAL)	XAL = Los Altos	
Latitude (DDMMSS)	Lat = 37 21 53 N	
Longitude (DDDMMSS)	Lon = 122 06 39 W	
Antenna Polarization (XAP)	XAP = V	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__11.0_____, BEAMWIDTH__50_____, AZIMUTHAL RANGE__0 to 360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS __132_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS __3_____ XAD = 11G050B000-360A00132H003	EXAMPLE ASSUMING NONGEOSTATIONARY, XAD01 16G030B000-360A00357H006
Satellite Receive Specifications (SPACEBEE-10, SPACEBEE-11, SPACEBEE-12, SPACEBEE-13, SPACEBEE-14, SPACEBEE-15, SPACEBEE-16, SPACEBEE-17, SPACEBEE-18, SPACEBEE-19, SPACEBEE-20, SPACEBEE-21)		
Polarization (RAP)	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
Azimuth (RAZ)	RAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Dimension (RAD)	ANTENNA GAIN = 0.00 dBi BEAMWIDTH = 360 degrees RAD = 00G360B	(NTIA format (RAD), EXAMPLE, RAD01 16G030B)
Type of satellite (State = SP) City = G/No	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	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 <u>97.4</u> , APOGEE IN KILOMETERS <u>500</u> , PERIGEE IN KILOMETERS <u>500</u> , ORBITAL PERIOD IN HOURS <u>1</u> AND FRACTIONS OF HOURS IN DECIMAL <u>0.577</u> , THE NUMBER OF SATELLITES IN THE SYSTEM <u>12</u> , ORB = <u>97.4IN00500AP00500PE001.58H12NRT01</u>	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
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Earth Station Transmitter Data #2

Transmit Frequency: 148.300-148.420 MHz		
State (XSC)	XSC = UT	
City Name (XAL)	XAL = Draper	
Latitude (DDMMSS)	Lat = 40 28 53 N	
Longitude (DDDMMSS)	Lon = 111 49 23 W	
Antenna Polarization (XAP)	XAP = V	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 <u>11.0</u> , BEAMWIDTH <u>50</u> , AZIMUTHAL RANGE <u>0 to 360</u> , THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS <u>1798</u> THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS <u>3</u> XAD = 11G050B000-360A01798H003	EXAMPLE ASSUMING NONGEOSTATIONARY, XAD01 16G030B000-360A00357H006
Satellite Receive Specifications (SPACEBEE-10, SPACEBEE-11, SPACEBEE-12, SPACEBEE-13, SPACEBEE-14, SPACEBEE-15, SPACEBEE-16, SPACEBEE-17, SPACEBEE-18, SPACEBEE-19, SPACEBEE-20, SPACEBEE-21)		
Polarization (RAP)	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
Azimuth (RAZ)	RAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Dimension (RAD)	ANTENNA GAIN = 0.00 dBi BEAMWIDTH = 360 degrees RAD = 00G360B	(NTIA format (RAD)), EXAMPLE, RAD01 16G030B)
Type of satellite (State = SP) City = G/No	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	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__97.4_____, APOGEE IN KILOMETERS__500_____, PERIGEE IN KILOMETERS__500_____, ORBITAL PERIOD IN HOURS __1__AND FRACTIONS OF HOURS IN DECIMAL__0.577_____, THE NUMBER OF SATELLITES IN THE SYSTEM__12_____, ORB = 97.4IN00500AP00500PE001.58H12NRT01	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

Earth Station Transmitter Data #3

Transmit Frequency: 148.300-148.420 MHz		
State (XSC)	XSC = GA	
City Name (XAL)	XAL = Flowery Branch	
Latitude (DDMMSS)	Lat = 34 11 32 N	
Longitude (DDDMMSS)	Lon = 083 56 28 W	
Antenna Polarization (XAP)	XAP = V	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__11.0_____, BEAMWIDTH__50_____, AZIMUTHAL RANGE__0 to 360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS __348_____,	EXAMPLE ASSUMING NONGEOSTATIONARY, XAD01 16G030B000-360A00357H006

	THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS <u> 3 </u>	
	XAD = <u>11G050B000-360A00348H003</u>	
Satellite Receive Specifications (SPACEBEE-10, SPACEBEE-11, SPACEBEE-12, SPACEBEE-13, SPACEBEE-14, SPACEBEE-15, SPACEBEE-16, SPACEBEE-17, SPACEBEE-18, SPACEBEE-19, SPACEBEE-20, SPACEBEE-21)		
Polarization (RAP)	RAP = <u>R</u>	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 = <u>EC</u>	NB= NARROWBEAM EC = EARTH COVERAGE
Dimension (RAD)	ANTENNA GAIN = <u>0.00 dBi</u> BEAMWIDTH = <u>360 degrees</u> RAD = <u>00G360B</u>	(NTIA format (RAD)), EXAMPLE, RAD01 16G030B)
Type of satellite (State = SP) City = G/No	Type = <u>Nongeostationary</u>	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	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 <u> 97.4 </u> , APOGEE IN KILOMETERS <u> 500 </u> , PERIGEE IN KILOMETERS <u> 500 </u> , ORBITAL PERIOD IN HOURS <u> 1 </u> AND FRACTIONS OF HOURS IN DECIMAL <u> 0.577 </u> , THE NUMBER OF SATELLITES IN THE SYSTEM <u> 12 </u> , ORB = <u>97.4IN00500AP00500PE001.58H12NRT01</u>	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