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

S-band Satellite Transmitter Data

Transmit Frequency: 2211 MHz and 2215 MHz		
Satellite Name: Cesium Satellite 1 (CS1), Cesium Satellite 2 (CS2)		
Data Field	**Data Answer**	**Description/Comments**
Polarization (XAP)	XAP = XAP01 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 = XAZ01 EC	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN = 7 dBi BEAMWIDTH = 80 degrees XAD = XAD01 07G080B	(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____97.6 deg___, APOGEE IN KILOMETERS_____550_____, PERIGEE IN KILOMETERS_____550_____, ORBITAL PERIOD IN HOURS___1___ AND FRACTIONS OF HOURS IN DECIMAL___0.59___, THE NUMBER OF SATELLITES IN THE SYSTEM_____2_____, ORB = *ORB,97.6IN00550AP00550PE001.59H02NRT01	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) Cesium TX S-band		
State (RSC)	RSC = TX	
City Name (RAL)	RAL = Austin	
Latitude (DDMMSS)	Lat = 30° 18’ 54.1” N	
Longitude (DDDMMSS)	Lon = 97° 56’ 47.7” W	
Antenna Polarization (RAP)	RAP = RAP01 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
Antenna Azimuth (RAZ)	RAZ = RAZ01 V15	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN_____31 dBi_____, BEAMWIDTH_____5 degrees_____, AZIMUTHAL RANGE___0 to 360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS _____297_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS _____3.6_____ RAD = RAD01 31G005B000-360A00297H004	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
FCC notes: 1. Use S-Note S945. 2. REM AGN, Cubesat, (CS1, CS2)		

Ka-band Satellite Transmitter Data

Transmit Frequency: 27.0 – 27.4 GHz, 27.1 – 27.3 GHz, 27.2 GHz, 27.3 GHz		
Satellite Name: Cesium Satellite 1 (CS1), Cesium Satellite 2 (CS2)		
Data Field	**Data Answer**	**Description/Comments**
Polarization (XAP)	XAP = XAP01 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 = XAZ01 NB	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN = 27 dBi BEAMWIDTH = 7 degrees	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)

	XAD = XAD01 27G007B	
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____97.6 deg___, APOGEE IN KILOMETERS_____550_____, PERIGEE IN KILOMETERS_____550_____, ORBITAL PERIOD IN HOURS___1___ AND FRACTIONS OF HOURS IN DECIMAL___0.59___, THE NUMBER OF SATELLITES IN THE SYSTEM_____2_____, ORB = *ORB,97.6IN00550AP00550PE001.59H02NRT01	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) Ka-band #1		
State (RSC)	RSC = TX	
City Name (RAL)	RAL = Austin	
Latitude (DDMMSS)	Lat = 30° 18’ 54.1” N	
Longitude (DDDMMSS)	Lon = 97° 56’ 47.7” W	
Antenna Polarization (RAP)	RAP = RAP01 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
Antenna Azimuth (RAZ)	RAZ = RAZ01 V15	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN_____56.6 dBi_____, BEAMWIDTH_____0.25 degrees____, AZIMUTHAL RANGE___0 to 360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS _____297_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS _____4.1_____ RAD = 57G0.3B000-360A00297H004	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006

FCC notes:

3. Use S-Note S945.
4. REM AGN, Cubesat, (CS1, CS2)

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

Cesium TX S-band Earth Station Transmitter Data

Transmit Frequency: 2061.2 MHz		
State (XSC)	XSC = TX	
City Name (XAL)	XAL = Austin	
Latitude (DDMMSS)	Lat = 30° 18’ 54.1” N	
Longitude (DDDMMSS)	Lon = 97° 56’ 47.7” W	
Antenna Polarization (XAP)	XAP = XAP01 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
Antenna Azimuth (XAZ)	XAZ = XAZ01 V15	THE EARTH STATION Transmitter ANTENNA AZIMUTH (XAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, XAZ01 V00
Antenna Dimensions (XAD)	ANTENNA GAIN_____31 dBi_____, BEAMWIDTH_____5_____, AZIMUTHAL RANGE____0 to 360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS _____297_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS _____3.6_____ XAD = XAD01 31G005B000-360A00297H004	EXAMPLE ASSUMING NONGEOSTATIONARY, XAD01 16G030B000-360A00357H006
Satellite Receive Specifications		
Polarization (RAP)	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 = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Dimension (RAD)	ANTENNA GAIN = 6.8 dBi BEAMWIDTH = 80 degrees RAD = RAD01 07G080B	(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____97.6 deg___, APOGEE IN KILOMETERS_____550_____, PERIGEE IN KILOMETERS_____550_____, ORBITAL PERIOD IN HOURS___1___ AND FRACTIONS OF HOURS IN DECIMAL___0.59___, THE NUMBER OF SATELLITES IN THE SYSTEM_____2_____, ORB = *ORB,97.6IN00550AP00550PE001.59H02NRT01	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

Cesium TX Ka-band Earth Station Transmitter Data

Transmit Frequency: 27.0 – 27.4 GHz, 27.1 – 27.3 GHz, 27.2 GHz, 27.3 GHz		
State (XSC)	XSC = TX	
City Name (XAL)	XAL = Austin	
Latitude (DDMMSS)	Lat = 30° 18’ 54.1” N	
Longitude (DDDMMSS)	Lon = 097° 56’ 47.7” W	
Antenna Polarization (XAP)	XAP = XAP01 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
Antenna Azimuth (XAZ)	XAZ = XAZ01 V15	THE EARTH STATION Transmitter ANTENNA AZIMUTH (XAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, XAZ01 V00
Antenna Dimensions (XAD)	ANTENNA GAIN_____56.6 dBi_____, BEAMWIDTH_____0.25_____, AZIMUTHAL RANGE____0 to 360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS _____297_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS _____4.1_____ XAD = 57G0.3B000-360A00297H004	EXAMPLE ASSUMING NONGEOSTATIONARY, XAD01 16G030B000-360A00357H006
Satellite Receive Specifications		
Polarization (RAP)	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 = NB	NB= NARROWBEAM EC = EARTH COVERAGE
Dimension (RAD)	ANTENNA GAIN = 27 dBi BEAMWIDTH = 7 degrees RAD = RAD01 27G007B	(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____97.6 deg___, APOGEE IN KILOMETERS_____550_____, PERIGEE IN KILOMETERS_____550_____, ORBITAL PERIOD IN HOURS___1___ AND FRACTIONS OF HOURS IN DECIMAL___0.59___, THE NUMBER OF SATELLITES IN THE SYSTEM_____2_____, ORB = *ORB,97.6IN00550AP00550PE001.59H02NRT01	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