

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 (Required for Each Frequency) (Using KSAT Earth Station and will be receive-only)

Transmit Frequency: 8100 MHz		
Satellite Name: MyRadar1		
Data Field	Data Answer	Description/Comments
Transmit Power (PWR)	PWR = 2 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	100 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
RF Emissions Data	encoded superresolution image data	2-SIDED EMISSION BANDWIDTH VALUES
-3 dB bandwidth	100 MHz	
-20 dB bandwidth	< 100 MHz	
-40 dB bandwidth	< 100 MHz	
-60 dB bandwidth	< 100 MHz	
Modulation Type	2-PSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	100 Mbit/s	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> FEC Type: ___ Viterbi _____, FEC Rate: _____ 1/2 _____,	
Total Symbol Rate	100 M/s	DATA RATE COMBINED WITH FEC AND FRAME OVERHEAD RESULTING IN THE TOTAL SYMBOL RATE AT THE INPUT TO THE SYMBOL MAPPER/MODULATOR.
Does transmitter have a beacon mode?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	BEACON MODE IS NORMALLY CONSIDERED A REGULAR AND PERIODIC SHORT DURATION TRANSMISSION THAT IS OFTEN USED TO ASSIST WITH TRACKING, DOPPLER COMPENSATION, OR SMALL SATELLITE IDENTIFICATION WHOSE TRANSMISSIONS ARE NOT LIMITED TO DURATIONS WHEN SUPPORTING GROUND STATIONS ARE VISIBLE.

If transmitter has a beacon mode, can the beacon be commanded off?	Yes <input type="checkbox"/> No <input type="checkbox"/>	N/A
Transmit Antenna Polarization (XAP)	XAP = J	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
Transmit Antenna Orientation (XAZ)	XAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Transmit Antenna Dimension (XAD)	ANTENNA GAIN _____ 2.5 dBi _____, BEAMWIDTH _____ 80° _____, XAD = 03G080B	NTIA FORMAT (XAD), EXAMPLE, FOR 16 DBI ANTENNA GAIN AND 30 DEGREE BEAMWIDTH XAD01 16G030B
Type of satellite (State = SPCE) (City = Geo or Nongeo)	Type = NONGEOSTATIONARY	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
For Geostationary Satellites	Longitude = N/A	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE IN DDDMMSS FORMAT (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE- _____ 97.4 _____, APOGEE IN KILOMETERS _____ 500 _____, PERIGEE IN KILOMETERS _____ 500 _____, ORBITAL PERIOD IN HOURS _____ 1.6 _____ AND FRACTIONS OF HOURS IN DECIMAL _____ 0 _____, THE NUMBER OF SATELLITES IN THE SYSTEM _____ 1 _____,  ORB = 97.4IN00500AP00500PE001.6H00NRT01	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
For SunSynchronous Nongeostationary Orbits	Mean Local Time of Ascending Node (MLTAN) = _____ TBD _____	MLTAN IS THE ANGLE BETWEEN AN ORBIT'S ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)
<b>Earth Station Data (Receiver) at Each Earth Station Location</b>		
State (RSC)	RSC = CA	
City Name (RAL)	RAL = Los Angeles	
Latitude (DDMMSS)	Lat = 334928	

Longitude (DDMMSS)	Lon = 1180847	
Receive Antenna 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
Receive Antenna Orientation (RAZ)	RAZ = TBD	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00
Receive Antenna Dimensions (RAD)	ANTENNA GAIN ___36.78___, BEAMWIDTH ___0.7___, AZIMUTHAL RANGE ___TBD___, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS ___5___, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS ___24___,  RAD = 37G001B001-360A00005H024	EXAMPLE ASSUMING NONGEOSTATIONARY, 16 DBI GAIN, 30 DEGREE BEAMWIDTH, AZIMUTHAL RANGE FROM 001-360, SITE ELEVATION OF 357 METERS, AND ANTENNA HEIGHT ABOVE TERRAIN OF 6 METERS: RAD01 16G030B001-360A00357H006
Receive Antenna Additional Information (For Parabolic Antennas)	ANTENNA DIAMETER ___3.7___, ANTENNA EFFICIENCY _____,	
Number of Satellite Contacts Supported Per Day	TBD	NUMBER OF TIMES THE SATELLITE WILL COMMUNICATE WITH THE EARTH STATION IN THE SPACE TO EARTH DIRECTION (DOWNLINKS) EACH DAY
Expected Duration of Each Contact	TBD	AVERAGE DURATION OF EACH CONTACT
Supported Operations	Satellite Health and Status Data <input type="checkbox"/> Mission Payload Data <input checked="" type="checkbox"/>	SATELLITE HEALTH AND STATUS TELEMETRY AND/OR MISSION PAYLOAD DATA
FCC notes: 1. Use S-Note S945. 2. REM AGN, Cubesat, (insert name)		

Earth Station Data (Receiver) at Each Earth Station Location		
State (RSC)	RSC = Norway	
City Name (RAL)	RAL = Svalbard	
Latitude (DDMMSS)	Lat = 771337	
Longitude (DDDMMSS)	Lon = 152310	
Receive Antenna 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
Receive Antenna Orientation (RAZ)	RAZ = TBD	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00
Receive Antenna Dimensions (RAD)	ANTENNA GAIN ___ 36.78 _____, BEAMWIDTH ___ 0.7 _____, AZIMUTHAL RANGE ___ TBD _____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS ___ 493 _____, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS ___ 24 _____,  RAD = 37G001B001-360A00005H024	EXAMPLE ASSUMING NONGEOSTATIONARY, 16 DBI GAIN, 30 DEGREE BEAMWIDTH, AZIMUTHAL RANGE FROM 001-360, SITE ELEVATION OF 357 METERS, AND ANTENNA HEIGHT ABOVE TERRAIN OF 6 METERS: RAD01 16G030B001-360A00357H006
Receive Antenna Additional Information (For Parabolic Antennas)	ANTENNA DIAMETER ___ 3.7 _____, ANTENNA EFFICIENCY _____,	
Number of Satellite Contacts Supported Per Day	TBD	NUMBER OF TIMES THE SATELLITE WILL COMMUNICATE WITH THE EARTH STATION IN THE SPACE TO EARTH DIRECTION (DOWNLINKS) EACH DAY
Expected Duration of Each Contact	TBD	AVERAGE DURATION OF EACH CONTACT
Supported Operations	Satellite Health and Status Data <input type="checkbox"/> Mission Payload Data <input checked="" type="checkbox"/>	SATELLITE HEALTH AND STATUS TELEMETRY AND/OR MISSION PAYLOAD DATA
FCC notes: 1. Use S-Note S945. 2. REM AGN, Cubesat, (insert name)		

Earth Station Data (Receiver) at Each Earth Station Location		
State (RSC)	RSC = Chile	
City Name (RAL)	RAL = Punta Arenas	
Latitude (DDMMSS)	Lat = -525606	
Longitude (DDDMMSS)	Lon = -705314	
Receive Antenna 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
Receive Antenna Orientation (RAZ)	RAZ = TBD	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00
Receive Antenna Dimensions (RAD)	ANTENNA GAIN ___ 36.78 _____, BEAMWIDTH ___ 0.7 _____, AZIMUTHAL RANGE ___ TBD _____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS __ 23 _____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS ___ 24 _____,  RAD = 37G001B001-360A00005H024	EXAMPLE ASSUMING NONGEOSTATIONARY, 16 DBI GAIN, 30 DEGREE BEAMWIDTH, AZIMUTHAL RANGE FROM 001-360, SITE ELEVATION OF 357 METERS, AND ANTENNA HEIGHT ABOVE TERRAIN OF 6 METERS: RAD01 16G030B001-360A00357H006
Receive Antenna Additional Information (For Parabolic Antennas)	ANTENNA DIAMETER ___ 3.7 _____, ANTENNA EFFICIENCY _____,	
Number of Satellite Contacts Supported Per Day	TBD	NUMBER OF TIMES THE SATELLITE WILL COMMUNICATE WITH THE EARTH STATION IN THE SPACE TO EARTH DIRECTION (DOWNLINKS) EACH DAY
Expected Duration of Each Contact	TBD	AVERAGE DURATION OF EACH CONTACT
Supported Operations	Satellite Health and Status Data <input type="checkbox"/> Mission Payload Data <input checked="" type="checkbox"/>	SATELLITE HEALTH AND STATUS TELEMETRY AND/OR MISSION PAYLOAD DATA
FCC notes: 1. Use S-Note S945. 2. REM AGN, Cubesat, (insert name)		

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

Earth Station Transmitter Data (Required for Each Frequency at Each Earth Station Location) N/A

Transmit Frequency: N/A (No Earth to Space Transmitter within the US)		
State (XSC)	XSC =	
City Name (XAL)	XAL =	
Latitude (DDMMSS)	Lat =	
Longitude (DDDMMSS)	Lon =	
Transmit Power (PWR)	PWR =	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth		THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
RF Emissions Data		2-SIDED EMISSION BANDWIDTH VALUES
-3 dB bandwidth		
-20 dB bandwidth		
-40 dB bandwidth		
-60 dB bandwidth		
Modulation Type		THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate		INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes <input type="checkbox"/> No <input type="checkbox"/> FEC Type: _____, FEC Rate: _____	
Total Symbol Rate		DATA RATE COMBINED WITH FEC AND FRAME OVERHEAD RESULTING IN THE TOTAL SYMBOL RATE AT THE INPUT TO THE SYMBOL MAPPER/MODULATOR.
Transmit Antenna Polarization (XAP)	XAP =	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
Transmit Antenna Orientation (XAZ)	XAZ =	THE EARTH STATION TRANSMITTER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (XAZ), V00 TO V90, EXAMPLE, XAZ01 V00

Transmit Antenna Dimensions (XAD)	ANTENNA GAIN _____, BEAMWIDTH _____, AZIMUTHAL RANGE _____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS _____, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS _____,  XAD =	EXAMPLE ASSUMING NONGEOSTATIONARY, 16 DBI GAIN, 30 DEGREE BEAMWIDTH, AZIMUTHAL RANGE FROM 001-360, SITE ELEVATION OF 357 METERS, AND ANTENNA HEIGHT ABOVE TERRAIN OF 6 METERS: XAD01 16G030B001-360A00357H006
Transmit Antenna Additional Information (For Parabolic Antennas)	ANTENNA DIAMETER _____, ANTENNA EFFICIENCY _____,	
Number of Satellite Contacts Supported Per Day		NUMBER OF TIMES THE EARTH STATION WILL COMMUNICATE WITH THE STATELLITE IN THE EARTH TO SPACE DIRECTION (UPINKS) EACH DAY
Expected Duration of Each Contact		AVERAGE DURATION OF EACH CONTACT
<b>Satellite Receive Specifications</b>		
Receive Antenna Polarization (RAP)	RAP = T	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
Receive Antenna Orientation (RAZ)	RAZ = NB	NB= NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimension (RAD)	ANTENNA GAIN ____ 25.5dBi _____, BEAMWIDTH _____ 0.68° _____, RAD =RAD01 26G001B	NTIA FORMAT(RAD), EXAMPLE, FOR 16 DBI ANTENNA GAIN AND 30 DEGREE BEAMWIDTH RAD01 16G030B
Type of satellite (State = SPCE) City = Geo or Nongeo	Type = NONGEOSTATIONARY	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
For Geostationary Satellites	Longitude = N/A	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE IN DDDMMSS FORMAT (XLG AND/OR RLG).

<p>For Nongeostationary (Orbital Data)</p>	<p>INCLINATION ANGLE ____ 97°- _____, APOGEE IN KILOMETERS ____ 500 _____, PERIGEE IN KILOMETERS ____ 500 _____, ORBITAL PERIOD IN HOURS ____ 1.57 ____ AND FRACTIONS OF HOURS IN DECIMAL ____ 0 _____, THE NUMBER OF SATELLITES IN THE SYSTEM ____ 1 _____, 97.0IN00500AP00500PE001.57H00NRT01</p>	<p>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</p>
<p>For SunSynchronous Nongeostationary Orbits</p>	<p>Mean Local Time of Ascending Node (MLTAN) = _____ TBD</p>	<p>MLTAN IS THE ANGLE BETWEEN AN ORBIT'S ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)</p>