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	<i>r</i> :	
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	Is FEC used? Yes ⊠No □	
Correction Coding	FEC Type:Viterbi,	
	FEC Rate:,	
Total Symbol Rate	100 M/s	DATA RATE COMBINED WITH FEC AND FRAME OVERHEAD RESULTING IN THE TOTAL SYMBOL RATE AT THE INPUTE TO THE SYMBOL MAPPER/MODULATOR.
Does transmitter	Yes □	BEACON MODE IS NORMALLY CONSIDERED A
have a beacon mode?	No ⊠	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.

	T	
If transmitter has	Yes □	N/A
a beacon mode,	No □	
can the beacon be		
commanded off?		
Transmit Antenna	XAP =J	POLARIZATIONS INCLUDE:
Polarization (XAP)		H = HORIZONTAL,
1 010112011011 (70 11)		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	XAZ = EC	NB= NARROWBEAM
Orientation (XAZ)	MAZ - LC	EC = EARTH COVERAGE
	ANTENNA CAINI 2 E ID:	NTIA FORMAT (XAD), EXAMPLE, FOR 16 DBI
Transmit Antenna	ANTENNA GAIN2.5 dBi,	ANTENNA GAIN AND 30 DEGREE BEAMWIDTH
Dimension (XAD)	BEAMWIDTH80°,	XAD01 16G030B
	XAD = 03G080B	
Type of satellite	Type = nongeostationary	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
(State = SPCE)		GEOSTATIONALI OKNONGEOSTATIONALI
(City = Geo or		
Nongeo)		
For Geostationary	Longitude = N/A	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT
Satellites	,	ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND
		REPORT ITS LONGITUDE IN DDDMMSS FORMAT (XLG AND/OR RLG).
For	INCLINATION ANGLE-	IF ANY SATELLITES ARE NONGEOSTATIONARY,
Nongeostationary	97.4	REPORT ITS INCLINATION ANGLE, APOGEE
(Orbital Data)	APOGEE IN	IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF
(Orbital Bata)	KILOMETERS 500 , PERIGEE	HOURS IN DECIMAL, THE NUMBER OF SATELLITES
	IN KILOMETERS 500 ,	IN THE SYSTEM, THEN TO1, EXAMPLE,
	ORBITAL PERIOD IN HOURS	REM04 *ORB,98.0IN00510AP00510PE001.58H01NRT01,
		AND FOR SPACE-TO-SPACE
	1.6AND FRACTIONS OF HOURS IN	COMMUNICATIONS WITH ANOTHER
	DECIMAL0,	NONGEOSTATIONARY SATELLITE ADD AN
	THE NUMBER OF SATELLITES IN THE	ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05
	SYSTEM1,	*ORB,72.9IN03209AP00655PE013.46H01NRR01
	ORB =	
	97.4IN00500AP00500PE001.6H00NRT01	
For	Mean Local Time of Ascending Node	MLTAN IS THE ANGLE BETWEEN AN ORBIT'S
SunSynchronous	(MLTAN) =TBD	ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)
Nongeostationary		
Orbits		
Earth Station Data	a (Receiver) at Each Earth Station Location	on
State (RSC)	RSC = CA	
City Name (RAL)	RAL = Los Angeles	
Latitude	Lat = 334928	
(DDMMSS)		
(22133)	<u>l</u>	

Longitude	Lon = 1180847	
(DDDMMSS) Receive Antenna Polarization (RAP) Receive Antenna Orientation (RAZ)	RAP =R RAZ = TBD	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 THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), VOO TO V90, EXAMPLE, RAZ01 VOO
Receive Antenna Dimensions (RAD)	ANTENNA GAIN36.78, BEAMWIDTH0.7, AZIMUTHAL RANGETBD, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS24, 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) Number of Satellite Contacts	ANTENNA DIAMETER, ANTENNA EFFICIENCY, TBD	NUMBER OF TIMES THE SATELLITE WILL COMMUNICATE WITH THE EARTH STATION IN THE SPACE TO EARTH DIRECTION (DOWNLINKS) EACH
Supported Per Day Expected Duration of Each Contact Supported	TBD Satellite Health and Status Data □	AVERAGE DURATION OF EACH CONTACT SATELLITE HEALTH AND STATUS TELEMETRY
Operations FCC notes: 1. Use S-Note	Mission Payload Data ⊠	AND/OR MISSION PAYLOAD DATA

2. REM AGN, Cubesat, (insert name)

Earth Station Data	a (Receiver) at Each Earth Station Locati	on
State (RSC)	RSC = Norway	
City Name (RAL)	RAL = Svalbard	
Latitude	Lat = 771337	
(DDMMSS)		
Longitude	Lon = 152310	
(DDDMMSS)		
Receive Antenna	RAP =R	POLARIZATIONS INCLUDE: H = HORIZONTAL,
Polarization (RAP)		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR,
		R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND CIRCULAR,
Receive Antenna	RAZ = TBD	J = LINEAR POLARIZATION THE EARTH STATION RECEIVER ANTENNA
Orientation (RAZ)	RAZ - IBD	MINIMUM OPERATING ANGLE OF
Offentation (NAZ)		ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00
		Voo
Receive Antenna	ANTENNA GAIN36.78,	EXAMPLE ASSUMING NONGEOSTATIONARY, 16
Dimensions (RAD)	BEAMWIDTH0.7,	DBI GAIN, 30 DEGREE BEAMWIDTH, AZIMUTHAL RANGE FROM 001-360, SITE ELEVATION OF 357
	AZIMUTHAL RANGETBD,	METERS, AND ANTENNA HEIGHT ABOVE TERRAIN
	THE SITE ELEVATION ABOVE MEAN SEA	OF 6 METERS: RAD01 16G030B001-360A00357H006
	LEVEL IN METERS493,	NADO1 1000300001 300A0033711000
	THE ANTENNA HEIGHT ABOVE TERRAIN	
	IN METERS24,	
	RAD = 37G001B001-360A00005H024	
Receive Antenna	ANTENNA	
Additional	DIAMETER3.7	
Information (For	ANTENNA EFFICIENCY,	
Parabolic		
Antennas) Number of	TDD	NUMBER OF TIMES THE SATELLITE WILL
Satellite Contacts	TBD	COMMUNICATE WITH THE EARTH STATION IN THE
Supported Per		SPACE TO EARTH DIRECTION (DOWNLINKS) EACH
		DAY
Day Expected	TBD	AVERAGE DURATION OF EACH CONTACT
Duration of Each	166	
Contact		
Supported	Satellite Health and Status Data	SATELLITE HEALTH AND STATUS TELEMETRY
Operations	Mission Payload Data ⊠	AND/OR MISSION PAYLOAD DATA
FCC notes:	I WIISSIOTI FAYIOAU DALA 🖂	
1. Use S-Note	5945	
	Cubesat, (insert name)	
LIVI / \\\ \ \ \ \		

Earth Station Data	a (Receiver) at Each Earth Station Locati	on
State (RSC)	RSC = Chile	
City Name (RAL)	RAL = Punta Arenas	
Latitude	Lat = -525606	
(DDMMSS)		
Longitude	Lon = -705314	
(DDDMMSS)		
Receive Antenna	RAP =R	POLARIZATIONS INCLUDE: H = HORIZONTAL,
Polarization (RAP)		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND CIRCULAR,
Dani' a Aalaaa	DA7 TDD	J = LINEAR POLARIZATION THE EARTH STATION RECEIVER ANTENNA
Receive Antenna	RAZ = TBD	MINIMUM OPERATING ANGLE OF
Orientation (RAZ)		ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01
		V00
Receive Antenna	ANTENNA GAIN36.78,	EXAMPLE ASSUMING NONGEOSTATIONARY, 16
Dimensions (RAD)	BEAMWIDTH0.7,	DBI GAIN, 30 DEGREE BEAMWIDTH, AZIMUTHAL RANGE FROM 001-360, SITE ELEVATION OF 357
, ,	AZIMUTHAL RANGETBD,	METERS, AND ANTENNA HEIGHT ABOVE TERRAIN
	THE SITE ELEVATION ABOVE MEAN SEA	OF 6 METERS:
	LEVEL IN METERS23	RAD01 16G030B001-360A00357H006
	THE ANTENNA HEIGHT ABOVE TERRAIN	
	IN METERS24,	
	RAD = 37G001B001-360A00005H024	
Receive Antenna	ANTENNA	
Additional	DIAMETER,	
Information (For	ANTENNA EFFICIENCY,	
Parabolic		
Antennas)		
Number of	TBD	NUMBER OF TIMES THE SATELLITE WILL COMMUNICATE WITH THE EARTH STATION IN THE
Satellite Contacts		SPACE TO EARTH DIRECTION (DOWNLINKS) EACH
Supported Per		DAY
Day		
Expected	TBD	AVERAGE DURATION OF EACH CONTACT
Duration of Each		
Contact	_	
Supported	Satellite Health and Status Data □	SATELLITE HEALTH AND STATUS TELEMETRY AND/OR MISSION PAYLOAD DATA
Operations	Mission Payload Data ⊠	,
FCC notes:		
1. Use S-Note		
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	Lat =	
(DDMMSS)		
Longitude	Lon =	
(DDDMMSS)		
Transmit Power	PWR =	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2
(PWR)		TRANSMIT POWER UNITS INCLUDE:
		W = WATT,
		K = KILOWATT, M = MEGAWATT
Necessary		THE WIDTH OF FREQUENCY BAND WHICH IS JUST
Bandwidth		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	Is FEC used? Yes \square No \square	
Correction Coding	FEC Type:,	
	FEC Rate:,	
Total Symbol Rate		DATA RATE COMBINED WITH FEC AND FRAME OVERHEAD RESULTING IN THE TOTAL SYMBOL
		RATE AT THE INPUTE TO THE SYMBOL
		MAPPER/MODULATOR.
Transmit Antenna	XAP =	POLARIZATIONS INCLUDE: H = HORIZONTAL,
Polarization (XAP)		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND CIRCULAR,
Transmit Antonna	VA7 -	J = LINEAR POLARIZATION THE EARTH STATION TRANSMITTER ANTENNA
Transmit Antenna	XAZ =	MINIMUM OPERATING ANGLE OF
Orientation (XAZ)		ELEVATION (XAZ), V00 TO V90, EXAMPLE, XAZ01
		, voo

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	ANTENNA DIAMETER,		
Additional Information (For Parabolic	ANTENNA EFFICIENCY,		
Antennas)			
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		AVERAGE DURATION OF EACH CONTACT	
Duration of Each			
Contact			
Satellite Receive Sp	Satellite Receive Specifications		
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	ANTENNA GAIN25.5dBi, BEAMWIDTH 0.68° ,	NTIA FORMAT(RAD), EXAMPLE, FOR 16 DBI ANTENNA GAIN AND 30 DEGREE BEAMWIDTH	
Dimension (RAD)	RAD =RAD01 26G001B	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).	

For Nongeostationary (Orbital Data)	INCLINATION ANGLE97°- , APOGEE IN	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
	KILOMETERS500, PERIGEE IN KILOMETERS500, ORBITAL PERIOD IN HOURS1.57AND FRACTIONS OF HOURS IN DECIMAL0, THE NUMBER OF SATELLITES IN THE SYSTEM1, 97.0IN00500AP00500PE001.57H00NRT01	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)