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.

NOTE THAT DAILI HAS TWO INDEPENDENT RADIOS (THE ADV RADIO AND THE SDR RADIO) ON THE SATELLITE AND ALSO IN EACH GROUND STATION, BUT ONLY ONE IS USED AT A TIME. BOTH OPERATE HALF-DUPLEX AND BOTH USE THE SAME FIXED FREQUENCY. THE SATELLITE HAS A PATCH ANTENNA FOR EACH RADIO AND BECAUSE IT IS HALF-DUPLEX, THAT ONE PATCH ANTENNA IS FOR SEND AND RECEIVE. AT THE GROUND STATION, THE SAME PHYSICAL PARABOLIC ANTENNA IS USED FOR SEND AND RECEIVE.

Part A: Space to Earth Downlink Data

Satellite Transmitter Data (Required for Each Frequency)

DAILI Satellite Transmitter 1 = ADV radio + dedicated patch antenna on satellite

Transmit Frequency: 914.7 MHz (DAILI satellite radio #1: ADV radio)		
Satellite Name: DAILI		
Data Field	**Data Answer**	**Description/Comments**
Transmit Power (PWR)	PWR = 1.3 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.09 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		2-SIDED EMISSION BANDWIDTH VALUES
-3 dB bandwidth	1 MHz	
-20 dB bandwidth	1.1 MHz	
-40 dB bandwidth	1.6 MHz	
-60 dB bandwidth	2.0 MHz	
Modulation Type	2-MSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	500 Kbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes ☐ No ☒ FEC Type: _____, FEC Rate: _____,	
Total Symbol Rate	500 Kbps	DATA RATE COMBINED WITH FEC AND FRAME OVERHEAD RESULTING IN THE TOTAL SYMBOL RATE AT THE INPUTE TO THE SYMBOL MAPPER/MODULATOR.

Does transmitter have a beacon mode?	Yes ☐ No ☒	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 ☐ No ☐	
Transmit Antenna Polarization (XAP)	XAP01 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)	XAZ01 EC	NB= NARROWBEAM EC = EARTH COVERAGE
Transmit Antenna Dimension (XAD)	ANTENNA GAIN = 0 dBi BEAMWIDTH = OMNI XAD01 00G090B	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 = Nongeo	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
For Geostationary Satellites	Longitude =	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 51.5, APOGEE IN KILOMETERS 410 km, PERIGEE IN KILOMETERS 410 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.64, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 51.6IN00410AP00410PE001.64H01NRT01	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) =_____	MLTAN IS THE ANGLE BETWEEN AN ORBIT'S ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)

DAILI Satellite Transmitter 2 = SDR radio + dedicated patch ntenna on satellite

Transmit Frequency: 914.7 MHz (DAILI satellite radio #2: SDR radio)		
Satellite Name: DAILI		
Data Field	**Data Answer**	**Description/Comments**
Transmit Power (PWR)	PWR = 1.3 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.23 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		2-SIDED EMISSION BANDWIDTH VALUES
-3 dB bandwidth	1.0 MHz	
-20 dB bandwidth	1.1 MHz	
-40 dB bandwidth	1.2 MHz	
-60 dB bandwidth	1.2 MHz	
Modulation Type	QPSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	500 Kbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes ☒ No ☒ FEC Type: Turbo FEC Rate: 1/2	
Total Symbol Rate	1000 Kbps	DATA RATE COMBINED WITH FEC AND FRAME OVERHEAD RESULTING IN THE TOTAL SYMBOL RATE AT THE INPUTE TO THE SYMBOL MAPPER/MODULATOR.
Does transmitter have a beacon mode?	Yes ☐ No ☒	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 ☐ No ☐	
Transmit Antenna Polarization (XAP)	XAP02 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)	XAZ02 EC	NB= NARROWBEAM EC = EARTH COVERAGE

Transmit Antenna Dimension (XAD)	ANTENNA GAIN = 0 dBi BEAMWIDTH = OMNI XAD02 00G090B	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 = Nongeo	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
For Geostationary Satellites	Longitude =	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 51.5, APOGEE IN KILOMETERS 410 km, PERIGEE IN KILOMETERS 410 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.64, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 51.6IN00410AP00410PE001.64H01NRT01	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) =_____	MLTAN IS THE ANGLE BETWEEN AN ORBIT'S ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)

Earth Station Data (Receiver) at Each Earth Station Location		
State (RSC)	RSC01 California RSC02 Texas RSC03 Florida RSC04 Hawaii RSC05 California RSC06 California RSC07 Minnesota RSC08 Maine RSC09 Washington	
City Name (RAL)	RAL01 El Segundo RAL02 College Station RAL03 Gainesville RAL04 Kihei RAL05 Mt. Wilson RAL06 Vandenberg RAL07 Orr RAL08 Limestone RAL09 Spokane	
Latitude (DDMMSS)	Lat01 335508 Lat02 303835 Lat03 293737 Lat04 204448 Lat05 341329 Lat06 343855 Lat07 482245 Lat08 465628 Lat09 473805	
Longitude (DDDMMSS)	Lon01 1182241W Lon02 0962821W Lon03 0822139W Lon04 1562553W Lon05 1180322W Lon06 1203653W Lon07 0924956W Lon08 0675358W Lon09 1173758W	

Receive Antenna Polarization (RAP)	RAP01 R RAP02 R RAP03 R RAP04 R RAP05 R RAP06 R RAP07 R RAP08 R RAP09 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)	RAZ01 V02 RAZ02 V02 RAZ03 V02 RAZ04 V02 RAZ05 V02 RAZ06 V02 RAZ07 V02 RAZ08 V02 RAZ09 V02	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00
Receive Antenna Dimensions (RAD)	RAD01 31G005B000-360A00023H017 RAD02 23G012B000-360A00107H002 RAD03 23G012B000-360A00036H002 RAD04 23G012B000-360A00010H002 RAD05 23G012B000-360A01736H002 RAD06 23G012B000-360A00025H002 RAD07 23G012B000-360A00372H002 RAD08 23G012B000-360A00159H002 RAD09 23G012B000-360A00562H002	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 = 5 m, ANTENNA EFFICIENCY = 60%, ANTENNA DIAMETER = 1.8 m, ANTENNA EFFICIENCY = 60%,	
Number of Satellite Contacts Supported Per Day	2 per ground station	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	10 minutes per ground station	AVERAGE DURATION OF EACH CONTACT
Supported Operations	Satellite Health and Status Data ☒ Mission Payload Data ☒	SATELLITE HEALTH AND STATUS TELEMETRY AND/OR MISSION PAYLOAD DATA
FCC notes: 1. Use S-Note S945. 2. REM AGN, Cubesat, (DAILI)		

Part B: Ground Stations, Earth to Space link data

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

Transmitter 1 (ADV radio) installed in all ground stations

Transmit Frequency:		
State (XSC)	XSC01 California XSC02 Texas XSC03 Florida XSC04 Hawaii XSC05 California XSC06 California XSC07 Minnesota XSC08 Maine XSC09 Washington	
City Name (XAL)	XAL01 El Segundo XAL02 College Station XAL03 Gainesville XAL04 Kihei XAL05 Mt. Wilson XAL06 Vandenberg XAL07 Orr XAL08 Limestone XAL09 Spokane	
Latitude (DDMMSS)	Lat01 335508 Lat02 303835 Lat03 293737 Lat04 204448 Lat05 341329 Lat06 343855 Lat07 482245 Lat08 465628 Lat09 473805	
Longitude (DDDMMSS)	Lon01 1182241W Lon02 0962821W Lon03 0822139W Lon04 1562553W Lon05 1180322W Lon06 1203653W Lon07 0924956W Lon08 0675358W Lon09 1173758W	

Transmit Power (PWR)	PWR = 9W for all ground stations	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.09 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		2-SIDED EMISSION BANDWIDTH VALUES
-3 dB bandwidth	1 MHz	
-20 dB bandwidth	1.1 MHz	
-40 dB bandwidth	1.6 MHz	
-60 dB bandwidth	2.0 MHz	
Modulation Type	2-MSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	500 Kbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes ☐ No ☒ FEC Type: _____, FEC Rate: _____,	
Total Symbol Rate	500 Kbps	DATA RATE COMBINED WITH FEC AND FRAME OVERHEAD RESULTING IN THE TOTAL SYMBOL RATE AT THE INPUTE TO THE SYMBOL MAPPER/MODULATOR.
Transmit Antenna Polarization (XAP)	XAP01 R XAP02 R XAP03 R XAP04 R XAP05 R XAP06 R XAP07 R XAP08 R XAP09 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
Transmit Antenna Orientation (XAZ)	XAZ01 V02 XAZ02 V02 XAZ03 V02 XAZ04 V02 XAZ05 V02 XAZ06 V02 XAZ07 V02 XAZ08 V02 XAZ09 V02	THE EARTH STATION TRANSMITTER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (XAZ), V00 TO V90, EXAMPLE, XAZ01 V00

Transmit Antenna Dimensions (XAD)	XAD01 31G005B000-360A00023H017 XAD02 23G012B000-360A00107H002 XAD03 23G012B000-360A00036H002 XAD04 23G012B000-360A00010H002 XAD05 23G012B000-360A01736H002 XAD06 23G012B000-360A00025H002 XAD07 23G012B000-360A00372H002 XAD08 23G012B000-360A00159H002 XAD09 23G012B000-360A00562H002	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 = 5 m, ANTENNA EFFICIENCY = 60%, ANTENNA DIAMETER = 1.8 m, ANTENNA EFFICIENCY = 60%,	
Number of Satellite Contacts Supported Per Day	2 per ground station	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	10 minutes per ground station	AVERAGE DURATION OF EACH CONTACT
Satellite Receive Specifications		
Receive Antenna Polarization (RAP)	RAP01 = 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
Receive Antenna Orientation (RAZ)	RAZ01 = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimension (RAD)	RAD01 00G090B	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 = Nongeo	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
For Geostationary Satellites	Longitude =	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 51.5, APOGEE IN KILOMETERS 410 km, PERIGEE IN KILOMETERS 410 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.64, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 51.6IN00410AP00410PE001.64H01NRT01	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) =_____	MLTAN IS THE ANGLE BETWEEN AN ORBIT'S ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)

Transmitter 2 (SDR radio) installed in all ground stations

Transmit Frequency:		
State (XSC)	XSC01 California XSC02 Texas XSC03 Florida XSC04 Hawaii XSC05 California XSC06 California XSC07 Minnesota XSC08 Maine XSC09 Washington	
City Name (XAL)	XAL01 El Segundo XAL02 College Station XAL03 Gainesville XAL04 Kihei XAL05 Mt. Wilson XAL06 Vandenberg XAL07 Orr XAL08 Limestone XAL09 Spokane	

Latitude (DDMMSS)	Lat01 335508 Lat02 303835 Lat03 293737 Lat04 204448 Lat05 341329 Lat06 343855 Lat07 482245 Lat08 465628 Lat09 473805	
Longitude (DDDMMSS)	Lon01 1182241W Lon02 0962821W Lon03 0822139W Lon04 1562553W Lon05 1180322W Lon06 1203653W Lon07 0924956W Lon08 0675358W Lon09 1173758W	
Transmit Power (PWR)	PWR = 9W for all ground stations	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.23 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		2-SIDED EMISSION BANDWIDTH VALUES
-3 dB bandwidth	1.0 MHz	
-20 dB bandwidth	1.1 MHz	
-40 dB bandwidth	1.2 MHz	
-60 dB bandwidth	1.2 MHz	
Modulation Type	QPSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	500 Kbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes ☒ No ☒ FEC Type: Turbo FEC Rate: 1/2	
Total Symbol Rate	1000 Kbps	DATA RATE COMBINED WITH FEC AND FRAME OVERHEAD RESULTING IN THE TOTAL SYMBOL RATE AT THE INPUTE TO THE SYMBOL MAPPER/MODULATOR.

Transmit Antenna Polarization (XAP)	XAP01 R XAP02 R XAP03 R XAP04 R XAP05 R XAP06 R XAP07 R XAP08 R XAP09 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
Transmit Antenna Orientation (XAZ)	XAZ01 V02 XAZ02 V02 XAZ03 V02 XAZ04 V02 XAZ05 V02 XAZ06 V02 XAZ07 V02 XAZ08 V02 XAZ09 V02	THE EARTH STATION TRANSMITTER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (XAZ), V00 TO V90, EXAMPLE, XAZ01 V00
Transmit Antenna Dimensions (XAD)	XAD01 31G005B000-360A00023H017 XAD02 23G012B000-360A00107H002 XAD03 23G012B000-360A00036H002 XAD04 23G012B000-360A00010H002 XAD05 23G012B000-360A01736H002 XAD06 23G012B000-360A00025H002 XAD07 23G012B000-360A00372H002 XAD08 23G012B000-360A00159H002 XAD09 23G012B000-360A00562H002	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 = 5 m, ANTENNA EFFICIENCY = 60%, ANTENNA DIAMETER = 1.8 m, ANTENNA EFFICIENCY = 60%,	
Number of Satellite Contacts Supported Per Day	2 per ground station	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	10 minutes per ground station	AVERAGE DURATION OF EACH CONTACT
Satellite Receive Specifications		

Receive Antenna Polarization (RAP)	RAP02 = 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
Receive Antenna Orientation (RAZ)	RAZ02 = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimension (RAD)	RAD02 00G090B	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 = Nongeo	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
For Geostationary Satellites	Longitude =	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 51.5, APOGEE IN KILOMETERS 410 km, PERIGEE IN KILOMETERS 410 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.64, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 51.6IN00410AP00410PE001.64H01NRT01	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) =_____	MLTAN IS THE ANGLE BETWEEN AN ORBIT'S ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)