

TROOP-3 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 (or to other satellite) information. Part B is for all ground to space transmit links.

Part A: Space to Earth or to Space Downlink Data

From TROOP-3 to the Globalstar Constellation

Satellite Simplex Transmitter Data

Transmit Frequency: 1616.25 MHz		
Satellite Name: TROOP-3		
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 ____ 5 ____ BEAMWIDTH ____ 100 ____ XAD = XAD01 05G100B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = non	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>525</u> _____, PERIGEE IN KILOMETERS <u>525</u> _____, ORBITAL PERIOD IN HOURS <u>1</u> _____ AND FRACTIONS OF HOURS IN DECIMAL <u>.58</u> _____, THE NUMBER OF SATELLITES IN THE SYSTEM <u>1</u> _____, ORB = ORB,97.4IN00525AP00525PE001.58H01NRT01 ORB,52.0IN01414AP01414PE001.90H48NRR01	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,72.9IN03209AP00655PE013.46H01NRT01
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FCC notes: 1. Use S-Note S945. 2. REM AGN, Cubesat, TROOP-3

Receiver Data Globalstar Satellite

Satellite Receive Specifications		
Polarization (RAP)	RAP = RAP 01 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
Azimuth (RAZ)	RAZ = NB	NB= NARROWBEAM EC = EARTH COVERAGE
Dimension (RAD)	ANTENNA GAIN <u>12</u> _____ BEAMWIDTH <u>037</u> _____ RAD = RAD01 12G037B	(NTIA format (RAD), EXAMPLE, RAD01 16G030B)
Type of satellite (State = SP) City = G/No	Type = Non	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).
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For Nongeostationary (Orbital Data)	INCLINATION ANGLE <u>52</u> , APOGEE IN KILOMETERS <u>1414</u> , PERIGEE IN KILOMETERS <u>1414</u> , ORBITAL PERIOD IN HOURS <u>1</u> AND FRACTIONS OF HOURS IN DECIMAL <u>.90</u> , THE NUMBER OF SATELLITES IN THE SYSTEM <u>48</u> , ORB = ORB,52.0IN01414AP01414PE001.90H48NRR01	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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From TROOP-3 to the Kratos Transceiver on Earth

Satellite Kratos Transmitter Data

Transmit Frequency: 2425 MHz		
Satellite Name: TROOP-3		
Data Field	Data Answer	Description/Comments
Polarization (XAP)	XAP = XAP01 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 = XAZ01 NB	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN <u>2</u> BEAMWIDTH <u>130</u> XAD = XAD02 02G130B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = non	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>525</u> , PERIGEE IN KILOMETERS <u>525</u> , ORBITAL PERIOD IN HOURS <u>1</u> AND FRACTIONS OF HOURS IN DECIMAL <u>.58</u> , THE NUMBER OF SATELLITES IN THE SYSTEM <u>1</u> , ORB = ORB,97.4IN00525AP00525PE001.58H01NRT01	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,72.9IN03209AP00655PE013.46H01NRT01
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FCC notes: 3. Use S-Note S945. 4. REM AGN, Cubesat, TROOP-3

Receiver Data Kratos Ground Station

State (RSC)	RSC = IN	
City Name (RAL)	RAL = UPLAND	
Latitude (DDMMSS)	Lat = 402553 North	
Longitude (DDDMMSS)	Lon = 0853030 West	
Receive Antenna Polarization (RAP)	RAP = RAP01 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
Receive Antenna Orientation (RAZ)	RAZ = RAZ01 V20	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00
Receive Antenna Dimensions (RAD)	ANTENNA GAIN <u>30</u> , BEAMWIDTH <u>5</u> , AZIMUTHAL RANGE <u>001 - 360</u> , THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS <u>276</u> , THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS <u>2</u> , RAD01 30G005B001-360A00276H002	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 ___ 1.8 Meters ___, ANTENNA EFFICIENCY ___ 85 percent,	
Number of Satellite Contacts Supported Per Day		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		AVERAGE DURATION OF EACH CONTACT
Supported Operations	Satellite Health and Status Data <input checked="" 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, TROOP-3		

Part B:

NSL Earth Station to TROOP-3 NSL S Band Receiver link data:

NSL Earth Station Transmitter Data

Transmit Frequency: 2467 MHz		
State (XSC)	XSC = IN	
City Name (XAL)	XAL = UPLAND	
Latitude (DDMMSS)	Lat = 402553	
Longitude (DDDMMSS)	Lon = 0853030	
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)	Min Elevation is 60 degrees XAZ = XAZ01 V60	THE EARTH STATION Transmitter ANTENNA AZIMUTH (XAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, XAZ01 V00

Antenna Dimensions (XAD)	ANTENNA GAIN ____ 30 _____, BEAMWIDTH ____ 5 _____, AZIMUTHAL RANGE ____ 001- 360 _____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS _276 _____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS ____ 2 _____ XAD01 30G005B001-360A00276H002	EXAMPLE ASSUMING NONGEOSTATIONARY, XAD01 16G030B000-360A00357H006
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Satellite Receive Specifications

Polarization (RAP)	RAP = RAP 01 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 ____ 5 _____ BEAMWIDTH ____ 110 _____ RAD = RAD01 05G110B	(NTIA format (RAD), EXAMPLE, RAD01 16G030B)
Type of satellite (State = SP) City = G/No	Type = Non	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 ____ 525 _____, PERIGEE IN KILOMETERS ____ 525 _____, ORBITAL PERIOD IN HOURS __ 1 ____ AND FRACTIONS OF HOURS IN DECIMAL _ .58 __, THE NUMBER OF SATELLITES IN THE SYSTEM ____ 1 _____, ORB = ORB,97.4IN00525AP00525PE001.58H01NRR01	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

Ground Station, Earth to TROOP-3 Kratos Transceiver:

Kratos Earth Station Transmitter Data

Transmit Frequency: 2425 MHz		
State (XSC)	XSC = IN	
City Name (XAL)	XAL = UPLAND	
Latitude (DDMMSS)	Lat = 402553	
Longitude (DDDMMSS)	Lon = 0853030	
Antenna Polarization (XAP)	XAP = XAP01 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
Antenna Azimuth (XAZ)	Min Elevation is 20 degrees XAZ = XAZ01 V20	THE EARTH STATION Transmitter ANTENNA AZIMUTH (XAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, XAZ01 V00
Antenna Dimensions (XAD)	ANTENNA GAIN ___ 30 _____, BEAMWIDTH ___ 5 _____, AZIMUTHAL RANGE ___ 001 - 360 _____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS _276_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS _____ 2 _____ XAD01 30G005B001-360A00276H002	EXAMPLE ASSUMING NONGEOSTATIONARY, XAD01 16G030B000-360A00357H006
Satellite Receive Specifications Kratos Receiver		
Polarization (RAP)	RAP = RAP 01 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
Azimuth (RAZ)	RAZ = NB	NB= NARROWBEAM EC = EARTH COVERAGE
Dimension (RAD)	ANTENNA GAIN ___ 2 _____ BEAMWIDTH ___ 130 _____ RAD = RAD02 02G130B	(NTIA format (RAD), EXAMPLE, RAD01 16G030B)

Type of satellite (State = SP) City = G/No	Type = Non	Choose either: Geostationary or Nongeostationary
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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>525</u> , PERIGEE IN KILOMETERS <u>525</u> , ORBITAL PERIOD IN HOURS <u>1</u> AND FRACTIONS OF HOURS IN DECIMAL <u>.58</u> , THE NUMBER OF SATELLITES IN THE SYSTEM <u>1</u> , ORB = ORB,97.4IN00525AP00525PE001.58H01NRR01	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