

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)

Transmit Frequency: S-Band 2258.75 MHz to 2261.25 MHz		
Satellite Name: Crypto3		
Data Field	Data Answer	Description/Comments
Transmit Power (PWR)	PWR = 1W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	2.5MHz	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	OQPSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	4Mbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> FEC Type: _ FEC Rate: _	
Total Symbol Rate	4Mbps	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 checked="" type="checkbox"/> No <input 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 checked="" type="checkbox"/> No <input type="checkbox"/>	
Transmit Antenna Polarization (XAP)	XAP =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)	XAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Transmit Antenna Dimension (XAD)	ANTENNA GAIN_8dbi_ BEAMWIDTH_68 Degrees_ XAD = 08G068B	NTIA FORMAT (XAD), EXAMPLE, FOR 16 DBI ANTENNA GAIN AND 30 DEGREE BEAMWIDTH XAD01 16G030B
Type of satellite (State = SPCE) (City = Geo or Nonge)	Type = NONGEOSTATIONARY	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_97.4_ APOGEE IN KILOMETERS_525_ PERIGEE IN KILOMETERS_525_ ORBITAL PERIOD IN HOURS_1_ AND FRACTIONS OF HOURS IN DECIMAL_0.58_ THE NUMBER OF SATELLITES IN THE SYSTEM_1_  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,72.9IN03209AP00655PE013.46H01NRR01
For SunSynchronous Nongeostationary Orbits	Mean Local Time of Ascending Node (MLTAN) =_22:30_	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 = Outside of US	
City Name (RAL)	RAL = Outside of US	
Latitude (DDMMSS)	Lat = Outside of US	
Longitude (DDDMMSS)	Lon = Outside of US	

Receive Antenna Polarization (RAP)	RAP = Outside of US	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 = Outside of US	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00
Receive Antenna Dimensions (RAD)	ANTENNA GAIN _____, BEAMWIDTH _____, AZIMUTHAL RANGE _____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS _____, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS _____,  RAD =	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 _____, ANTENNA EFFICIENCY _____,	
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 type="checkbox"/> Mission Payload Data <input 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)

Transmit Frequency: S-Band 2046.25 MHz to 2048.75 MHz		
State (XSC)	XSC =Azerbaijan	
City Name (XAL)	XAL =Absheron	
Latitude (DDMMSS)	Lat = 40° N 27' 58.6"	
Longitude (DDDMMSS)	Lon = 49° E 29' 8.9"	
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	OQPSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	4Mbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> FEC Type: _____, FEC Rate: _____,	
Total Symbol Rate	4Mbps	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 = 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
Receive Antenna Orientation (RAZ)	RAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimension (RAD)	ANTENNA GAIN_8dbi_, BEAMWIDTH_68 Degrees_, RAD = 08G068B	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 =	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 <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>0.58</u>,  THE NUMBER OF SATELLITES IN THE  SYSTEM <u>1</u>,</p> <p>ORB =  97.4IN00525AP00525PE001.58H01NRT01</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) = <u>22:30</u></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>

Transmit Frequency: S-Band 2046.25 MHz to 2048.75 MHz		
State (XSC)	XSC =Bulgaria	
City Name (XAL)	XAL =Plana	
Latitude (DDMMSS)	Lat = 42° N 28' 58.6"	
Longitude (DDMMSS)	Lon = 23° E 26' 43.0"	
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	OQPSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	4Mbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> FEC Type: _____, FEC Rate: _____,	
Total Symbol Rate	4Mbps	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 = 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
Receive Antenna Orientation (RAZ)	RAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimension (RAD)	ANTENNA GAIN_8dbi_, BEAMWIDTH_68 Degrees_, RAD = 08G068B	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 =	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 __97.4__, APOGEE IN KILOMETERS __525__, PERIGEE IN KILOMETERS __525__, ORBITAL PERIOD IN HOURS _1_ AND FRACTIONS OF HOURS IN DECIMAL_0.58_, THE NUMBER OF SATELLITES IN THE SYSTEM_1_,  ORB = 97.4IN00525AP00525PE001.58H01NRT01</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) = _22:30_</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>

<b>Transmit Frequency: S-Band 2046.25 MHz to 2048.75 MHz</b>		
State (XSC)	XSC =United Kingdom	
City Name (XAL)	XAL =Unst, Shetland	
Latitude (DDMMSS)	Lat =60° N 44' 53.9"	
Longitude (DDMMSS)	Lon =0° W 51' 30.2"	
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	OQPSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	4Mbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> FEC Type: _____, FEC Rate: _____,	
Total Symbol Rate	4Mbps	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 = 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
Receive Antenna Orientation (RAZ)	RAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimension (RAD)	ANTENNA GAIN_8dbi_, BEAMWIDTH_68 Degrees_, RAD = 08G068B	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 =	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 <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>0.58</u>,  THE NUMBER OF SATELLITES IN THE  SYSTEM <u>1</u>,</p> <p>ORB =  97.4IN00525AP00525PE001.58H01NRT01</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) = <u>22:30</u></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>

Transmit Frequency: S-Band 2046.25 MHz to 2048.75 MHz		
State (XSC)	XSC =Sri Lanka	
City Name (XAL)	XAL =Kandy	
Latitude (DDMMSS)	Lat = 7° N 16' 27.2"	
Longitude (DDMMSS)	Lon = 80° E 43' 29.5"	
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	OQPSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	4Mbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> FEC Type: _____, FEC Rate: _____,	
Total Symbol Rate	4Mbps	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 = 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
Receive Antenna Orientation (RAZ)	RAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimension (RAD)	ANTENNA GAIN_8dbi_, BEAMWIDTH_68 Degrees_, RAD = 08G068B	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 =	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 __97.4__,  APOGEE IN KILOMETERS __525__,  PERIGEE IN KILOMETERS __525__,  ORBITAL PERIOD IN HOURS _1_ AND  FRACTIONS OF HOURS IN  DECIMAL_0.58_,  THE NUMBER OF SATELLITES IN THE  SYSTEM_1_,   ORB =  97.4IN00525AP00525PE001.58H01NRT01</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) = _22:30_</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>

<b>Transmit Frequency: S-Band 2046.25 MHz to 2048.75 MHz</b>		
State (XSC)	XSC =Iceland	
City Name (XAL)	XAL =Blönduós	
Latitude (DDMMSS)	Lat = 65° N 38' 50.5"	
Longitude (DDMMSS)	Lon = 20° W 14' 45.9"	
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	OQPSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	4Mbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> FEC Type: _____, FEC Rate: _____,	
Total Symbol Rate	4Mbps	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 = 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
Receive Antenna Orientation (RAZ)	RAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimension (RAD)	ANTENNA GAIN_8dbi_, BEAMWIDTH_68 Degrees_, RAD = 08G068B	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 =	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 __525__, PERIGEE IN KILOMETERS __525__, ORBITAL PERIOD IN HOURS _1_ AND FRACTIONS OF HOURS IN DECIMAL_0.58_, THE NUMBER OF SATELLITES IN THE SYSTEM_1_,  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,72.9IN03209AP00655PE013.46H01NRR01
For SunSynchronous Nongeostationary Orbits	Mean Local Time of Ascending Node (MLTAN) = _22:30_	MLTAN IS THE ANGLE BETWEEN AN ORBIT'S ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)

Satellite Transmitter Data (Required for Each Frequency)

Transmit Frequency: L-Band Intersatellite link (1618.725 MHz to 1626.5MHz)		
Satellite Name: Crypto3		
Data Field	Data Answer	Description/Comments
Transmit Power (PWR)	PWR = 2W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	35KHz	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	N/A	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	2.4kbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> FEC Type: __, FEC Rate: __,	
Total Symbol Rate	2.4kbps	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"/>	
Transmit Antenna Polarization (XAP)	XAP =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)	XAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Transmit Antenna Dimension (XAD)	ANTENNA GAIN_5dbi_ BEAMWIDTH_90 Degrees_ XAD = 05G090B	NTIA FORMAT (XAD), EXAMPLE, FOR 16 DBI ANTENNA GAIN AND 30 DEGREE BEAMWIDTH XAD01 16G030B
Type of satellite (State = SPCE) (City = Geo or Nongeog)	Type = NONGEOSTATIONARY	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_97.4_ APOGEE IN KILOMETERS_525_ PERIGEE IN KILOMETERS_525_ ORBITAL PERIOD IN HOURS_1_ AND FRACTIONS OF HOURS IN DECIMAL_0.58_ THE NUMBER OF SATELLITES IN THE SYSTEM_1_  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,72.9IN03209AP00655PE013.46H01NRR01
For SunSynchronous Nongeostationary Orbits	Mean Local Time of Ascending Node (MLTAN) =_22:30_	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 = NA / ISL	
City Name (RAL)	RAL = NA / ISL	
Latitude (DDMMSS)	Lat = NA / ISL	
Longitude (DDDMMSS)	Lon = NA / ISL	
Receive Antenna Polarization (RAP)	RAP = NA / ISL	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 = NA / ISL	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00
Receive Antenna Dimensions (RAD)	ANTENNA GAIN _____, BEAMWIDTH _____, AZIMUTHAL RANGE _____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS _____, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS _____,  RAD =	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 _____, ANTENNA EFFICIENCY _____,	
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 type="checkbox"/> Mission Payload Data <input type="checkbox"/>	SATELLITE HEALTH AND STATUS TELEMETRY AND/OR MISSION PAYLOAD DATA
FCC notes: 3. Use S-Note S945. 4. REM AGN, Cubesat, (insert name)		