## NTIA Space record data form

Cubesat Mission CURIE A and B

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	/: 916 MHz	
Satellite Name: CUR	RIE A, CURIE B	
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	200 kHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
<b>RF</b> Emissions Data	N/A	2-SIDED EMISSION BANDWIDTH VALUES
-3 dB bandwidth		
-20 dB bandwidth		
-40 dB bandwidth		
-60 dB bandwidth		
Modulation Type	GFSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	100 kbps	INFORMATION DATA RATE
Forward Error	Is FEC used? Yes 🖂 No 🗔	
Correction Coding	FEC Type: _Reed-Solomon	
	FEC Rate:1.1 Mbps	
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.
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	Yes 🖂	
a beacon mode,		
can the beacon be		
commanded off?		
Transmit 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
Transmit Antenna	XAZ = XAZ01 NB	NB= NARROWBEAM
Orientation (XAZ)		EC = EARTH COVERAGE
Transmit Antenna	ANTENNA GAIN 5 ,	NTIA FORMAT (XAD), EXAMPLE, FOR 16 DBI
Dimension (XAD)	BEAMWIDTH80, XAD = XAD01 05G080B	ANTENNA GAIN AND 30 DEGREE BEAMWIDTH XAD01 16G030B
Type of satellite (State = SPCE) (City = Geo or Nongeo)	Type = SPCE 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	INCLINATION ANGLE41,	IF ANY SATELLITES ARE NONGEOSTATIONARY,
Nongeostationary (Orbital Data)	APOGEE IN KILOMETERS 500, PERIGEE IN KILOMETERS 500, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 56, THE NUMBER OF SATELLITES IN THE SYSTEM 2, ORB = ORB,41.0IN00500AP00500PE001.56H02N RT02	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	Mean Local Time of Ascending Node	ASCENDING NODE AND THE MEAN SUN, OFTEN
SunSynchronous	(MLTAN) =	EXPRESSED AS UNIT OF TIME (HH:MM)
Nongeostationary		
Orbits		
Easth Station Date	(Pasaiyar) at Fach Farth Station Last:	
	a (Receiver) at Each Earth Station Location	
State (RSC)		
City Name (RAL)	RAL = Berkeley	
Latitude	Lat = 375250	
(DDMMSS)		

Longitude	Lon = 1221437	
(DDDMMSS)	1221437	
Receive Antenna Polarization (RAP)	RAP = RAP01 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 = RAZ01 V10	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00
Receive Antenna Dimensions (RAD)	ANTENNA GAIN31, BEAMWIDTH6, AZIMUTHAL RANGE001-360, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS400, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS25, RAD = RAD01 31G006B001- 360A00400H025	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 DIAMETER3, ANTENNA EFFICIENCY152%,	
Number of Satellite Contacts Supported Per Day	2	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	5 minutes	AVERAGE DURATION OF EACH CONTACT
Supported Operations	Satellite Health and Status Data $oxtimes$ Mission Payload Data $oxtimes$	SATELLITE HEALTH AND STATUS TELEMETRY AND/OR MISSION PAYLOAD DATA
FCC notes: 1. Use S-Note 2. REM AGN, 0	e S945. Cubesat, (insert name)	
Earth Station Data	a (Receiver) at Each Earth Station Locatio	on
State (RSC)	RSC = DE	
City Name (RAL) Latitude (DDMMSS)	RAL = Greenville Lat = 394704	
Longitude (DDDMMSS)	Lon = 753758	

Receive Antenna Polarization (RAP) Receive Antenna Orientation (RAZ)	RAP = RAP02 R RAZ = RAZ02 V10	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), V00 TO V90, EXAMPLE, RAZ01 V00
Receive Antenna Dimensions (RAD)	ANTENNA GAIN31, BEAMWIDTH6, AZIMUTHAL RANGE001-360, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS80, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS1, RAD = RAD02 31G006B001- 360A00080H001	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 DIAMETER3, ANTENNA EFFICIENCY152%,	
Number of Satellite Contacts Supported Per Day	2	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	5	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 2. REM AGN, 0	s945. Cubesat, CURIE A; CURIE B	

C. J. JULL N. CLI		
Satellite Name: CUF		
Data Field	Data Answer	Description/Comments
Transmit Power (PWR)	PWR = 1 W	TRANSMIT POWER SUPPLIED TO THE ANTENNAINPUT TERMINAL, EXAMPLE, PWR01 W2TRANSMIT POWER UNITS INCLUDE:W = WATT,K = KILOWATT,M = MEGAWATT
Necessary Bandwidth	1620 kHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUS SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
<b>RF Emissions Data</b>	N/A	2-SIDED EMISSION BANDWIDTH VALUES
-3 dB bandwidth		
-20 dB bandwidth		
-40 dB bandwidth		
-60 dB bandwidth		
Modulation Type	FSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate	1 mbps	INFORMATION DATA RATE
Forward Error Correction Coding	Is FEC used? Yes ⊠ No □ FEC Type: _Reed-Solomon, FEC Rate:1.1 Mbps,	
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.
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)	XAP = XAPO2 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 = XAZO2 NB	NB= NARROWBEAM EC = EARTH COVERAGE
Transmit Antenna Dimension (XAD)	ANTENNA GAIN6.7, BEAMWIDTH80, XAD = XAD02 06.7G080B	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 = SPCE 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 ANGLE41, APOGEE IN KILOMETERS500, PERIGEE IN KILOMETERS500, ORBITAL PERIOD IN HOURS1AND FRACTIONS OF HOURS IN DECIMAL_56, THE NUMBER OF SATELLITES IN THE SYSTEM2, ORB = ORB,41.0IN00500AP00500PE001.56H02N RT02	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)
	a (Receiver) at Each Earth Station Locatio	on
State (RSC)	RSC = CA	
City Name (RAL)	RAL = Berkeley	
Latitude (DDMMSS)	Lat = 375250	
Longitude (DDDMMSS)	Lon = 1221437	
Receive Antenna Polarization (RAP)	RAP = RAP03 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 = RAZ03 V10	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00

Receive Antenna Dimensions (RAD)	ANTENNA GAIN34, BEAMWIDTH3, AZIMUTHAL RANGE001-360, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS400, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS25, RAD = RAD03 34G003B001-	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
	360A00400H025	
Receive Antenna Additional Information (For Parabolic	ANTENNA DIAMETER3, ANTENNA EFFICIENCY45%,	
Antennas)		
Number of Satellite Contacts Supported Per Day	2	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	5	AVERAGE DURATION OF EACH CONTACT
Supported	Satellite Health and Status Data 🗆	SATELLITE HEALTH AND STATUS TELEMETRY
Operations	Mission Payload Data	AND/OR MISSION PAYLOAD DATA
	e S945. Cubesat, (insert name) <b>a (Receiver) at Each Earth Station Locati</b> e	on
State (RSC)	RSC = DE	
City Name (RAL)	RAL = Greenville	
Latitude (DDMMSS)	Lat = 394704	
Longitude (DDDMMSS)	Lon = 753758	
Receive Antenna Polarization (RAP)	RAP = RAP04 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 = RAZ04 V10	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00

Receive Antenna Dimensions (RAD)	ANTENNA GAIN34, BEAMWIDTH3, AZIMUTHAL RANGE001-360, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS80, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS1, RAD = RAD04 34G003B001- 360A00080H001	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 DIAMETER3, ANTENNA EFFICIENCY45%,	
Number of Satellite Contacts Supported Per Day	2	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	5	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: 3. Use S-Note 4. REM AGN, (	e S945. Cubesat, CURIE A	

Satellite Name: CUF	RIF B	
Data Field	Data Answer	Description/Comments
Transmit Power (PWR)	PWR = 1 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1620 kHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUS SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
RF Emissions Data -3 dB bandwidth -20 dB bandwidth -40 dB bandwidth	N/A	2-SIDED EMISSION BANDWIDTH VALUES
-60 dB bandwidth Modulation Type	FSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.
Data Rate Forward Error Correction Coding	1 mbps Is FEC used? Yes ⊠ No □ FEC Type: _Reed-Solomon, FEC Rate:1.1 Mbps,	INFORMATION DATA 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.
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)	XAP = XAP03 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 = XAZO3 NB	NB= NARROWBEAM EC = EARTH COVERAGE
Transmit Antenna Dimension (XAD)	ANTENNA GAIN6.7, BEAMWIDTH80, XAD = XAD03 06.7G080B	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 = SPCE 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 ANGLE41, APOGEE IN KILOMETERS500, PERIGEE IN KILOMETERS500, ORBITAL PERIOD IN HOURS1AND FRACTIONS OF HOURS IN DECIMAL_56, THE NUMBER OF SATELLITES IN THE SYSTEM2, ORB = ORB,41.0IN00500AP00500PE001.56H02N RT02	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	a (Receiver) at Each Earth Station Locatio	on
State (RSC)	RSC = CA	
City Name (RAL)	RAL = Berkeley	
Latitude (DDMMSS)	Lat = 375250	
Longitude (DDDMMSS)	Lon = 1221437	
Receive Antenna Polarization (RAP)	RAP = RAP05 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 = RAZ05 V10	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00

ANTENNA GAIN 34	EXAMPLE ASSUMING NONGEOSTATIONARY, 16
BEAMWIDTH 3	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
IN METERS25,	
PAD - PADOS 24C002P001	
ANTENNA EFFICIENCY45%,	
2	NUMBER OF TIMES THE SATELLITE WILL
2	COMMUNICATE WITH THE EARTH STATION IN THE
	SPACE TO EARTH DIRECTION (DOWNLINKS) EACH
	DAY
5	AVERAGE DURATION OF EACH CONTACT
Satellite Health and Status Data $\Box$	SATELLITE HEALTH AND STATUS TELEMETRY AND/OR MISSION PAYLOAD DATA
Mission Payload Data 🛛	
2 S945.	
Cubesat, CURIE B	
a (Receiver) at Each Earth Station Locatio	on
RSC = DE	
RAL = Greenville	
Lat = 394704	
Lon = 753758	
Lon = 753758	
Lon = 753758 RAP = RAP05 R	POLARIZATIONS INCLUDE:
	H = HORIZONTAL,
	H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR,
	H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR,
	H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR,
	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
RAP = RAP05 R	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
	S945. Cubesat, CURIE B <b>a (Receiver) at Each Earth Station Locati</b> RSC = DE RAL = Greenville Lat = 394704

Receive Antenna Dimensions (RAD)	ANTENNA GAIN34, BEAMWIDTH3, AZIMUTHAL RANGE001-360, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS80, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS1, RAD = RAD05 34G003B001- 360A00080H001	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 DIAMETER3, ANTENNA EFFICIENCY45%,	
Number of Satellite Contacts Supported Per Day	2	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	5	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: 5. Use S-Note 6. REM AGN, 0	e S945. Cubesat, CURIE B	

Transmit Frequency: 2397 MHz		
Satellite Name: CUF	RIE A, CURIE B	
Data Field	Data Answer	Description/Comments
Transmit Power (PWR)	PWR = 1 W	TRANSMIT POWER SUPPLIED TO THE ANTENNAINPUT TERMINAL, EXAMPLE, PWR01 W2TRANSMIT POWER UNITS INCLUDE:W = WATT,K = KILOWATT,M = MEGAWATT
Necessary Bandwidth	1000 kHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
<b>RF Emissions Data</b>	N/A	2-SIDED EMISSION BANDWIDTH VALUES
-3 dB bandwidth		
-20 dB bandwidth		
-40 dB bandwidth		
-60 dB bandwidth		
Modulation Type	FSK	THE METHOD USED TO SUPERIMPOSE DATA ON THE CARRIER, EXAMPLE, BPSK, QPSK, GMSK.

Data Rate	1 mbps	INFORMATION DATA RATE
Forward Error	Is FEC used? Yes ⊠ No □	
<b>Correction Coding</b>	FEC Type: _Reed-Solomon	,
	FEC Rate:1.1 Mbps	
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.
Does transmitter	Yes 🗆	BEACON MODE IS NORMALLY CONSIDERED A
have a beacon	No 🖂	REGULAR AND PERIODIC SHORT DURATION TRANSMISSION THAT IS OFTEN USED TO ASSIST
mode?		WITH TRACKING, DOPPLER COMPENSATION, OR
		SMALL SATELLITE IDENTIFICATION WHOSE
		TRANSMISSIONS ARE NOT LIMITED TO DURATIONS WHEN SUPPORTING GROUND
		STATIONS ARE VISIBLE.
If transmitter has	Yes 🗆	
a beacon mode,	No 🗆	
can the beacon be		
commanded off?		
Transmit Antenna	XAP = XAP04 J	POLARIZATIONS INCLUDE:
Polarization (XAP)		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	XAZ = XAZ04 NB	NB= NARROWBEAM
Orientation (XAZ)		EC = EARTH COVERAGE
Transmit Antenna	ANTENNA GAIN6.7,	NTIA FORMAT (XAD), EXAMPLE, FOR 16 DBI
Dimension (XAD)	BEAMWIDTH 80 ,	ANTENNA GAIN AND 30 DEGREE BEAMWIDTH XAD01 16G030B
	XAD = XAD04 06.7G080B	VADOT TOGOZOP
Type of satellite	Type = SPCE Nongeo	CHOOSE EITHER:
(State = SPCE)	_	GEOSTATIONARY OR NONGEOSTATIONARY
(City = Geo or		
Nongeo)		
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND
Satellites		REPORT ITS LONGITUDE IN DDDMMSS FORMAT
		(XLG AND/OR RLG).

For Nongeostationary (Orbital Data)	INCLINATION ANGLE41, APOGEE IN KILOMETERS500, PERIGEE IN KILOMETERS500, ORBITAL PERIOD IN HOURS1AND FRACTIONS OF HOURS IN DECIMAL_56, THE NUMBER OF SATELLITES IN THE SYSTEM2, ORB = ORB,41.0IN00500AP00500PE001.56H02N RT02	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)
	a (Receiver) at Each Earth Station Locatio	on
State (RSC)	RSC = CA	
City Name (RAL)	RAL = Berkeley	
Latitude (DDMMSS)	Lat = 375250	
Longitude (DDDMMSS)	Lon = 1221437	
Receive Antenna Polarization (RAP)	RAP = RAP06 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 = RAZ06 V10	THE EARTH STATION RECEIVER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01 V00
Receive Antenna Dimensions (RAD)	ANTENNA GAIN34, BEAMWIDTH3, AZIMUTHAL RANGE001-360, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS400, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS25, RAD = RAD03 34G003B001- 360A00400H025	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	ANTENNA DIAMETER 3 ,	
Additional	ANTENNA EFFICIENCY 45% ,	
Information (For	ANTENNA EFFICIENCE,	
Parabolic		
Antennas)		
Number of	2	NUMBER OF TIMES THE SATELLITE WILL
Satellite Contacts	2	COMMUNICATE WITH THE EARTH STATION IN THE
Supported Per		SPACE TO EARTH DIRECTION (DOWNLINKS) EACH DAY
Day		
Expected	5	AVERAGE DURATION OF EACH CONTACT
Duration of Each		
Contact		
Supported	Satellite Health and Status Data $\Box$	SATELLITE HEALTH AND STATUS TELEMETRY
Operations		AND/OR MISSION PAYLOAD DATA
•	Mission Payload Data	
FCC notes:	5045	
7. Use S-Note		
	Cubesat, (insert name)	
	a (Receiver) at Each Earth Station Locatio	on
State (RSC)	RSC = DE	
City Name (RAL)	RAL = Greenville	
Latitude	Lat = 394704	
(DDMMSS)		
Longitude	Lon = 753758	
(DDDMMSS)		
Receive Antenna	RAP = RAP07 R	
Polarization (RAP)		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		T = RIGHT AND LEFT HAND CIRCULAR,
	RAZ = RAZ07 V10	
Orientation (RAZ)		ELEVATION (RAZ), V00 TO V90, EXAMPLE, RAZ01
		V00
Receive Antenna	ANTENNA GAIN 34	EXAMPLE ASSUMING NONGEOSTATIONARY, 16
		DBI GAIN, 30 DEGREE BEAMWIDTH, AZIMUTHAL
		OF 6 METERS:
		RAD01 16G030B001-360A00357H006
	,	
	RAD = RAD07 34G003B001-	
	RAP = RAP07 R   RAZ = RAZ07 V10   ANTENNA GAIN34,   BEAMWIDTH3,   AZIMUTHAL RANGE001-360,   THE SITE ELEVATION ABOVE MEAN SEA   LEVEL IN METERS80,   THE ANTENNA HEIGHT ABOVE TERRAIN   IN METERS1,   RAD = RAD07 34G003B001-   360A00080H001	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), V00 TO V90, EXAMPLE, RAZ01 V00 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:

Receive Antenna	ANTENNA DIAMETER3,	
Additional	ANTENNA EFFICIENCY45%,	
Information (For		
Parabolic		
Antennas)		
Number of	2	NUMBER OF TIMES THE SATELLITE WILL
Satellite Contacts		COMMUNICATE WITH THE EARTH STATION IN THE SPACE TO EARTH DIRECTION (DOWNLINKS) EACH
Supported Per		DAY
Day		
Expected	5	AVERAGE DURATION OF EACH CONTACT
Duration of Each		
Contact		
Supported	Satellite Health and Status Data $\Box$	SATELLITE HEALTH AND STATUS TELEMETRY
Operations	Mission Payload Data 🛛	AND/OR MISSION PAYLOAD DATA
FCC notes:		
7. Use S-Note	s945.	
8. REM AGN, O	Cubesat, CURIE A, CURIE B	

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

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

Transmit Frequency	/: 916 MHz	
State (XSC)	XSC = CA	
City Name (XAL)	XAL = Berkeley	
Latitude	Lat = 375250	
(DDMMSS)		
Longitude	Lon = 1221437	
(DDDMMSS)		
Transmit Power (PWR)	PWR = 3.16 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	200 kHz	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	N/A	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	100 kbps	INFORMATION DATA RATE

Forward Error	Is FEC used? Yes $oxtimes$ No $\Box$	
Correction Coding	FEC Type: _Reed-Solomon,	
	FEC Rate:1.1 Mbps,	
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 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
Transmit Antenna Orientation (XAZ)	XAZ = XAZ01 V10	THE EARTH STATION TRANSMITTER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (XAZ), V00 TO V90, EXAMPLE, XAZ01 V00
Transmit Antenna Dimensions (XAD)	ANTENNA GAIN 31, BEAMWIDTH 6, AZIMUTHAL RANGE 001-360, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 400, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 25, XAD = XAD01 31G006B001-	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)	360A00400H025 ANTENNA DIAMETER3, ANTENNA EFFICIENCY152%,	
Number of Satellite Contacts Supported Per Day	2	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	5	AVERAGE DURATION OF EACH CONTACT
Satellite Receive Sp	pecifications	
Receive Antenna Polarization (RAP)	RAP = RAP01 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) Receive Antenna Dimension (RAD) Type of satellite (State = SPCE)	RAZ = RAZ 01 NB   ANTENNA GAIN5,   BEAMWIDTH80,   RAD = RAD01 05G080B   Type = SPACE Nongeo	NB= NARROWBEAM EC = EARTH COVERAGE NTIA FORMAT(RAD), EXAMPLE, FOR 16 DBI ANTENNA GAIN AND 30 DEGREE BEAMWIDTH RAD01 16G030B CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
City = Geo or Nongeo For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND
Satellites For	INCLINATION ANGLE 41 ,	REPORT ITS LONGITUDE IN DDDMMSS FORMAT (XLG AND/OR RLG). IF ANY SATELLITES ARE NONGEOSTATIONARY,
Nongeostationary (Orbital Data)	APOGEE IN KILOMETERS 500, PERIGEE IN KILOMETERS 500, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 56, THE NUMBER OF SATELLITES IN THE SYSTEM 2, ORB = ORB,41.0IN00500AP00500PE001.56H02N RR02	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)

Transmit Frequency	r: 916 MHz	
State (XSC)	XSC = DE	
City Name (XAL)	XAL = Greenville	
Latitude	Lat = 394704	
(DDMMSS)		
Longitude	Lon = 753758	
(DDDMMSS)		
Transmit Power (PWR)	PWR = 3.16 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	200 kHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
<b>RF</b> Emissions Data	N/A	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	100 kbps	INFORMATION DATA RATE
Forward Error	Is FEC used? Yes $oxtimes$ No $\Box$	
Correction Coding	FEC Type: _Reed-Solomon, FEC Rate:1.1 Mbps,	
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 Polarization (XAP)	XAP = XAP02 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 = XAZ02 V10	THE EARTH STATION TRANSMITTER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (XAZ), V00 TO V90, EXAMPLE, XAZ01 V00

-		EVANADLE ASSUMING NONGEOSTATIONADY 45
Transmit Antenna Dimensions (XAD)	ANTENNA GAIN 31, BEAMWIDTH 6, AZIMUTHAL RANGE 001-360, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 80, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 1, XAD = XAD02 31G006B001-	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
	360A00080H001	
Transmit Antenna Additional Information (For Parabolic Antennas)	ANTENNA DIAMETER3, ANTENNA EFFICIENCY152%,	
Number of Satellite Contacts Supported Per Day	2	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	5	AVERAGE DURATION OF EACH CONTACT
Satellite Receive Sp	pecifications	
Receive Antenna Polarization (RAP)	RAP = RAP02 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 = RAZ 02 NB	NB= NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimension (RAD)	ANTENNA GAIN, BEAMWIDTH80, RAD = RAD02 05G080B	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 = SPACE 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 ANGLE41, APOGEE IN KILOMETERS500, PERIGEE IN KILOMETERS500, ORBITAL PERIOD IN HOURS1AND FRACTIONS OF HOURS IN DECIMAL_56, THE NUMBER OF SATELLITES IN THE SYSTEM2, ORB = ORB,41.0IN00500AP00500PE001.56H02N RR02	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)

Transmit Frequency	/: 2397 MHz	
State (XSC)	XSC = CA	
City Name (XAL)	XAL = Berkeley	
Latitude	Lat = 375250	
(DDMMSS)		
Longitude	Lon = 1221437	
(DDDMMSS)		
Transmit Power	PWR = 3.97 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2
(PWR)		TRANSMIT POWER UNITS INCLUDE:
		W = WATT,
		K = KILOWATT, M = MEGAWATT
Necessary	200 kHz	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.
<b>RF Emissions Data</b>	N/A	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	1 mbps	INFORMATION DATA RATE
Forward Error	Is FEC used? Yes $oxtimes$ No $\Box$	
Correction Coding	FEC Type: _Reed-Solomon,	
	FEC Rate:1.1 Mbps,	
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 Polarization (XAP)	XAP = XAP03 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 = XAZ03 V10	THE EARTH STATION TRANSMITTER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (XAZ), V00 TO V90, EXAMPLE, XAZ01 V00
Transmit Antenna Dimensions (XAD)	ANTENNA GAIN34, BEAMWIDTH3, AZIMUTHAL RANGE001-360, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS400, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS25, XAD = XAD03 34G003B001- 360A00400H025	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 3 ,	
Additional	ANTENNA	
Information (For	EFFICIENCY45%,	
Parabolic		
Antennas)	2	NUMBER OF TIMES THE EARTH STATION WILL
Number of Satellite Contacts Supported Per Day	2	COMMUNICATE WITH THE STATELLITE IN THE EARTH TO SPACE DIRECTION (UPINKS) EACH DAY
Expected Duration of Each Contact	5	AVERAGE DURATION OF EACH CONTACT
Satellite Receive Sp	pecifications	
	1	Γ
Receive Antenna Polarization (RAP)	RAP = RAP03 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	RAZ = RAZ 03 NB	NB= NARROWBEAM
Orientation (RAZ)		EC = EARTH COVERAGE
Receive Antenna Dimension (RAD)	ANTENNA GAIN6.7, BEAMWIDTH80, RAD = RAD03 06.7G080B	NTIA FORMAT(RAD), EXAMPLE, FOR 16 DBI ANTENNA GAIN AND 30 DEGREE BEAMWIDTH RAD01 16G030B

Type of satellite (State = SPCE) City = Geo or Nongeo For Geostationary	Type = SPACE Nongeo Longitude =	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
Satellites		ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE IN DDDMMSS FORMAT (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE41, APOGEE IN KILOMETERS500, PERIGEE IN KILOMETERS500, ORBITAL PERIOD IN HOURS1AND FRACTIONS OF HOURS IN DECIMAL_56, THE NUMBER OF SATELLITES IN THE SYSTEM2, ORB = ORB,41.0IN00500AP00500PE001.56H02N RR02	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)

Transmit Frequency: 2397 MHz		
State (XSC)	XSC = DE	
City Name (XAL)	XAL = Greenville	
Latitude (DDMMSS)	Lat = 394704	
Longitude (DDDMMSS)	Lon = 753758	
Transmit Power (PWR)	PWR = 3.97 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	200 kHz	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	N/A	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	1 mbps	INFORMATION DATA RATE
Forward Error	Is FEC used? Yes $oxtimes$ No $\Box$	
Correction Coding	FEC Type: _Reed-Solomon,	
	FEC Rate:1.1 Mbps,	
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 Polarization (XAP)	XAP = XAP04 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 = XAZ04 V10	THE EARTH STATION TRANSMITTER ANTENNA MINIMUM OPERATING ANGLE OF ELEVATION (XAZ), V00 TO V90, EXAMPLE, XAZ01 V00
Transmit Antenna Dimensions (XAD)	ANTENNA GAIN34, BEAMWIDTH3, AZIMUTHAL RANGE001-360, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS80, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS1, XAD = XAD01 34G003B001- 360A00080H001	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 DIAMETER3, ANTENNA EFFICIENCY152%,	
Number of Satellite Contacts Supported Per Day	2	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	5	AVERAGE DURATION OF EACH CONTACT
Satellite Receive Sp	pecifications	
Receive Antenna Polarization (RAP)	RAP = RAP04 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	RA7 = RA7 04 NB	NB= NARROWBEAM
Orientation (RAZ)		EC = EARTH COVERAGE
Receive Antenna Dimension (RAD)	ANTENNA GAIN6.7, BEAMWIDTH80, RAD = RAD02 06.7G080B	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 = SPACE 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 ANGLE41, APOGEE IN KILOMETERS500, PERIGEE IN KILOMETERS500, ORBITAL PERIOD IN HOURS1AND FRACTIONS OF HOURS IN DECIMAL_56, THE NUMBER OF SATELLITES IN THE SYSTEM2, ORB = ORB,41.0IN00500AP00500PE001.56H02N RR02	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)