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.

Polylingual Experimental Terminal (PExT) is a non-geostationary satellite that will be in LEO conducting a flight demonstration of inter-satellite relay capabilities with existing satellites in LEO, MEO, and GEO. The bus by York Space Systems is equipped with communication system to facilitate TT&C communication with the ground station. For completeness, Part C was added to include PExT's inter-satellite relay transmitter. The transmitters at the other end of the inter-satellite links are existing equipment for separate fixed-satellite systems that are coordinated to support this experiment, therefore will not be defined in this data form.

Part A: Space to Earth Downlink Data:

Satellite Transmitter Data

Transmit Frequency: 2257.5 MHz		
Satellite Name: PExT DEMO		
Data Field	**Data Answer**	**Description/Comments**
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
Orientation (XAZ)	XAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN = 6.11 dBi BEAMWIDTH = 136˚ XAD = XAD01 06G136B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type =Nongeostationary	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 = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM = 1, ORB = 97.5IN00515AP00515PE0001.6H01NRT01 ORB = 97.5IN00515AP00515PE0001.6H01NRR01	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

Earth Station Data (Receiver)		
State/Country (RSC)	RSC01 = G RSC02 = NZL RSC03 = UAE RSC04 = GUM RSC05 = S RSC06 = AUS	
City Name (RAL)	RAL01 = DUNDEE RAL02 = AWARUA RAL03 = DUBAI RAL04 = HARMON RAL05 = OJEBYN RAL06 = MINGENEW	
Latitude (DDMMSS)	LAT01 = 562360N LAT02 = 463112S LAT03 = 245624N LAT04 = 133036N LAT05 = 652013N LAT06 = 290036S	
Longitude (DDDMMSS)	LON01 = 0031012W LON02 = 1682248E LON03 = 0552100E LON04 = 1444912E LON05 = 0212534E LON06 = 1152024E	
Antenna Polarization (RAP)	RAP = 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 Orientation (RAZ)	RAZ = V10	THE EARTH STATION RECEIVER ANTENNA ORIENTATION (RAZ), THE MINIMUM ANGLE OF ELEVATION, VOO TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN_____, BEAMWIDTH_____, AZIMUTHAL RANGE_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS_____, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS_____ RAD01 = 36G003B000-360A0115H002 RAD02 = 35G003B000-360A0013H002 RAD03 = 35G003B000-360A0029H025 RAD04 = 35G003B000-360A0072H007 RAD05 = 41G002B000-360A0012H005 RAD06 = 37G003B000-360A0270H005	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A0035H006

SUP	To test a wideband Ka-band user terminal from LEO with multiple commercial relay services and backwards comp0atibility to TDRSS service. RFA for PExT TT&C communication with Earth station as part of bus service by York Space Systems. Contract Agency NASA, contract number 80MSFC22F0103.	
FCC notes: 1. Use S-Note S945. 2. Use P-Note P032.		

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

Earth Station Transmitter Data

Transmit Frequency: 2037.5 MHz		
Data Field	**Data Answer**	**Description/Comments**
State/Country (XSC)	XSC01 = G XSC02 = NZL XSC03 = UAE XSC04 = GUM XSC05 = S XSC06 = AUS	
City Name (XAL)	XAL01 = DUNDEE SCOTLAND XAL02 = AWARUA NEW ZEALAND XAL03 = DUBAI UNITED ARAB EMIRATES XAL04 = HARMON GUAM XAL05 = OJEBYN SWEDEN XAL06 = MINGENEW AUSTXALIA	
Latitude (DDMMSS)	LAT01 = 562360N LAT02 = 463112S LAT03 = 245624N LAT04 = 133036N LAT05 = 652013N LAT06 = 290036S	
Longitude (DDDMMSS)	LON01 = 0031012W LON02 = 1682248E LON03 = 0552100E LON04 = 1444912E LON05 = 0212534E LON06 = 1152024E	
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

Antenna Orientation (XAZ)	XAZ = V10	THE EARTH STATION Transmitter ANTENNA ORIENTATION (XAZ), THE MINIMUM ANGLE OF ELEVATION, VOO TO V90, EXAMPLE, XAZ01 V00
Antenna Dimensions (XAD)	ANTENNA GAIN_____, BEAMWIDTH_____, AZIMUTHAL RANGE_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS_____, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS_____ XAD01 = 36G003B000-360A0115H002 XAD02 = 35G003B000-360A0013H002 XAD03 = 35G003B000-360A0029H025 XAD04 = 35G003B000-360A0072H007 XAD05 = 41G002B000-360A0012H005 XAD06 = 37G003B000-360A0270H005	EXAMPLE ASSUMING NONGEOSTATIONARY, XAD01 16G030B000-360A0035H006
Satellite Receive Specification		
Polarization (RAP)	RAP = 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 Orientation (RAZ)	RAZ = EC	STATION RECEIVER ANTENNA ORIENTATION (XAZ), THE MINIMUM ANGLE OF ELEVEATION, V00 TO V90, EXAMPLE, RAZ01 V00
Dimension (RAD)	ANTENNA GAIN = 6.11 dBi BEAMWIDTH = 136˚ RAD = RAD01 06G	(NTIA format (RAD), EXAMPLE, RAD01 16G030B)
Type of satellite (State = SP) (City = G/No)	Type = Nongeostationary	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 = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM = 1, ORB = 97.5IN00515AP00515PE0001.6H01NRT01 ORB = 97.5IN00515AP00515PE0001.6H01NRR01	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

SUP	To test a wideband Ka-band user terminal from LEO with multiple commercial relay services and backwards comp0atibility to TDRSS service. RFA for PExT TT&C communication with space station as part of bus service by York Space Systems. Contract Agency NASA, contract number 80MSFC22F0103.	
FCC notes: 1. Use S-Note S945. 2. Use P-Note P032.		

Part C: Space to Space link data:

Satellite Transmitter Data		
Transmit Frequency: 28.3 GHz		
Satellite Name: PExT DEMO		
Data Field	**Data Answer**	**Description/Comments**
Polarization (SAP)	SAP = 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
Orientation (XAZ)	Space-to-space XAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS
Antenna Dimension (XAD)	ANTENNA GAIN = 40.3 dBi BEAMWIDTH = 1.1˚ (3-dB beamwidth) XAD = XAD01 40G001B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A	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 = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM = 1, ORB = 97.5IN00515AP00515PE0001.6H01NRT01 ORB = 97.5IN00515AP00515PE0001.6H01NRR01	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

Space Station Data (Receiver)		
Polarization (SAP)	SAP = 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
Antenna Orientation (RAZ)	Space-to-space RAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS
Dimensions (RAD)	ANTENNA GAIN = ___ dBW BEAMWIDTH = ___˚ (3-dB beamwidth) RAD = RAD01 ___	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
Type of satellite (State = SP) City = G/No	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A	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 = ?, APOGEE IN KILOMETERS = ?, PERIGEE IN KILOMETERS = ?, ORBITAL PERIOD IN HOURS = ? AND FRACTIONS OF HOURS IN DECIMAL = ?, THE NUMBER OF SATELLITES IN THE SYSTEM = ?, ORB = 0.04IN08079AP08067PE0004.8H13NRT01 0.05IN08081AP08065PE0004.8H13NRT01 0.06IN08568AP07522PE0004.8H13NRT01 0.17IN08078AP08063PE0004.8H13NRT01 ORB = 0.04IN08079AP08067PE0004.8H13NRR01 0.05IN08081AP08065PE0004.8H13NRR01 0.06IN08568AP07522PE0004.8H13NRR01 0.17IN08078AP08063PE0004.8H13NRR01	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
SUP	To test a wideband Ka-band user terminal from LEO with multiple commercial relay services and backwards compatibility to TDRSS service. RFA for PExT transmission to O3b mPOWER satellite system. Contract Agency NASA, contract number 80MSFC22F0103.	
FCC notes: 1. Use S-Note S945. 2. Use P-Note P032.		

Satellite Transmitter Data		
Transmit Frequency: 30.35 GHz		
Satellite Name: PExT DEMO		
Data Field	**Data Answer**	**Description/Comments**
Polarization (SAP)	SAP = 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
Orientation (XAZ)	Space-to-space XAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS
Antenna Dimension (XAD)	ANTENNA GAIN = 40.3 dBi BEAMWIDTH = 1.1˚ (3-dB beamwidth) XAD = XAD01 40G001B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type =Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A	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 = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM = 1, ORB = 97.5IN00515AP00515PE0001.6H01NRT01 ORB = 97.5IN00515AP00515PE0001.6H01NRR01	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
Space Station Data (Receiver)		
Polarization (SAP)	SAP = 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
Antenna Orientation (RAZ)	Space-to-space RAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS
Dimensions (RAD)	ANTENNA GAIN = ___ dBW	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006

	BEAMWIDTH = ___˚ (3-dB beamwidth) RAD = RAD01 ___	
Type of satellite (State = SP) City = G/No	Type = Geostationary	Choose either: Geostationary or Nongeostationary
For Geostationary (RLA, RLG)	Latitude = 0˚ 0’ 0” Longitude = 62˚ 3’ 0” RLA = 000000N RLG = 0620300E	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 = ___, APOGEE IN KILOMETERS = ___, PERIGEE IN KILOMETERS = ___, ORBITAL PERIOD IN HOURS = ___ AND FRACTIONS OF HOURS IN DECIMAL = ___, THE NUMBER OF SATELLITES IN THE SYSTEM = ___, ORB = ORB =	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
SUP	To test a wideband Ka-band user terminal from LEO with multiple commercial relay services and backwards compatibility to TDRSS service. Unwanted emissions into 31.3-31.5 GHz will not exceed -20 dBW into the 31.3-31.5 GHz Earth exploration-satellite service. RFA for PExT transmission to Inmarsat I5-F1. Contract Agency NASA, contract number 80MSFC22F0103.	
FCC notes: 1. Use S-Note S945. 2. Use P-Note P032.		

Satellite Transmitter Data		
Transmit Frequency: 27.11 GHz, 27.45 GHz		
Satellite Name: PExT DEMO		
Data Field	**Data Answer**	**Description/Comments**
Polarization (SAP)	SAP = 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
Orientation (XAZ)	Space-to-space XAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS

Antenna Dimension (XAD)	ANTENNA GAIN = 40.3 dBi BEAMWIDTH = 1.1˚ (3-dB beamwidth) XAD = XAD01 40G001B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A	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 = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM = 1, ORB = 97.5IN00515AP00515PE0001.6H01NRT01 ORB = 97.5IN00515AP00515PE0001.6H01NRR01	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
Space Station Data (Receiver)		
Polarization (SAP)	SAP = 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
Antenna Orientation (RAZ)	Space-to-space RAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS
Dimensions (RAD)	ANTENNA GAIN = ___ dBW BEAMWIDTH = ___˚ (3-dB beamwidth) RAD = RAD01 46G0.6B RAD02 46G0.6B RAD03 46G0.6B	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
Type of satellite (State = SP) City = G/No	Type = Geostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A RLA01 000000N RLG01 0410000W RLA02 000000N RLG02 1710000W	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).

	RLA03 000000N RLG03 1740000W	
For Nongeostationary (Orbital Data)	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 = ?, ORB = ORB =	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
SUP	To test a wideband Ka-band user terminal from LEO with multiple commercial relay services and backwards compatibility to TDRSS service. RFA for PExT transmission to O3b mPOWER satellite system. Contract Agency NASA, contract number 80MSFC22F0103.	
FCC notes: 1. Use S-Note S945. 2. Use P-Note P032.		

Satellite Transmitter Data		
Transmit Frequency: 19.0 GHz		
Satellite Name: O3b mPOWER		
Data Field	**Data Answer**	**Description/Comments**
Polarization (SAP)	SAP = 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
Orientation (XAZ)	Space-to-space XAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS
Antenna Dimension (XAD)	ANTENNA GAIN = ___ dBW BEAMWIDTH = ___° (3-dB beamwidth) XAD = XAD01 ___	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A	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 = ?, APOGEE IN KILOMETERS = ?, PERIGEE IN KILOMETERS = ?, ORBITAL PERIOD IN HOURS = ? AND FRACTIONS OF HOURS IN DECIMAL = ?, THE NUMBER OF SATELLITES IN THE SYSTEM = ?, ORB = 0.04IN08079AP08067PE0004.8H13NRT01 0.05IN08081AP08065PE0004.8H13NRT01 0.06IN08568AP07522PE0004.8H13NRT01 0.17IN08078AP08063PE0004.8H13NRT01 ORB = 0.04IN08079AP08067PE0004.8H13NRR01 0.05IN08081AP08065PE0004.8H13NRR01 0.06IN08568AP07522PE0004.8H13NRR01 0.17IN08078AP08063PE0004.8H13NRR01	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
Space Station Data (Receiver)		
Polarization (SAP)	SAP = 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
Antenna Orientation (RAZ)	Space-to-space RAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS
Dimensions (RAD)	ANTENNA GAIN = 40.3 dBi BEAMWIDTH = 1.1˚ (3-dB beamwidth) RAD = RAD01 40G001B	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
Type of satellite (State = SP) City = G/No	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A	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 = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM = 1, ORB = 97.5IN00515AP00515PE0001.6H01NRT01	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

	ORB = 97.5IN00515AP00515PE0001.6H01NRR01	
SUP	To test a wideband Ka-band user terminal from LEO with multiple commercial relay services and backwards compatibility to TDRSS service. RFA for O3b mPOWER transmission to PExT satellite system. Contract Agency NASA, contract number 80MSFC22F0103.	
FCC notes: 1. Use S-Note S945. 2. Use P-Note P032.		

Satellite Transmitter Data		
Transmit Frequency: 20.55 GHz		
Satellite Name: Inmarsat I5-F1		
Data Field	**Data Answer**	**Description/Comments**
Polarization (SAP)	SAP = 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
Orientation (XAZ)	Space-to-space XAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS
Antenna Dimension (XAD)	ANTENNA GAIN = ___ dBW BEAMWIDTH = ___˚ (3-dB beamwidth) XAD = XAD01 ___	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Geostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Latitude = 0˚ 0’ 0” Longitude = 62˚ 3’ 0” XLA = 000000N XLG = 0620300E	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 = ___, APOGEE IN KILOMETERS = ___, PERIGEE IN KILOMETERS = ___, ORBITAL PERIOD IN HOURS = ___ AND FRACTIONS OF HOURS IN DECIMAL = ___, THE NUMBER OF SATELLITES IN THE SYSTEM = ___,	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

	ORB = ORB =	NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.46H01NRR01
Space Station Data (Receiver)		
Polarization (SAP)	SAP = 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
Antenna Orientation (RAZ)	Space-to-space RAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS
Dimensions (RAD)	ANTENNA GAIN = 40.3 dBi BEAMWIDTH = 1.1˚ (3-dB beamwidth) RAD = RAD01 40G001B	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
Type of satellite (State = SP) City = G/No	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A	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 = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM = 1, ORB = 97.5IN00515AP00515PE0001.6H01NRT01 ORB = 97.5IN00515AP00515PE0001.6H01NRR01	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
SUP	To test a wideband Ka-band user terminal from LEO with multiple commercial relay services and backwards compatibility to TDRSS service. RFA for Inmarsat I5-F1 transmission to PExT satellite system. Contract Agency NASA, contract number 80MSFC22F0103.	
FCC notes: 1. Use S-Note S945. 2. Use P-Note P032.		

Satellite Transmitter Data
Transmit Frequency: 23.15 GHz

Satellite Name: TDRSS		
Data Field	**Data Answer**	**Description/Comments**
Polarization (SAP)	SAP = 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
Orientation (XAZ)	Space-to-space XAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS
Antenna Dimension (XAD)	ANTENNA GAIN = ___ dBW BEAMWIDTH = ___˚ (3-dB beamwidth) XAD = XAD01 46G0.6B XAD02 46G0.6B XAD03 46G0.6B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Geostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Latitude = 0˚ 0’ 0” Longitude = 62˚ 3’ 0” XLA01 000000N XLG01 0410000W XLA02 000000N XLG02 1710000W XLA03 000000N XLG03 1740000W	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 = ___, APOGEE IN KILOMETERS = ___, PERIGEE IN KILOMETERS = ___, ORBITAL PERIOD IN HOURS = ___ AND FRACTIONS OF HOURS IN DECIMAL = ___, THE NUMBER OF SATELLITES IN THE SYSTEM = ___, ORB = ORB =	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
Space Station Data (Receiver)		
Polarization (SAP)	SAP = 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

Antenna Orientation (RAZ)	Space-to-space RAZ =	NB= NARROWBEAM EC = EARTH COVERAGE LEAVE THE FIELD BLANK FOR THE CASE OF SPACE-TO-SPACE OPERATIONS
Dimensions (RAD)	ANTENNA GAIN = 40.3 dBi BEAMWIDTH = 1.1˚ (3-dB beamwidth) RAD = RAD01 40G001B	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
Type of satellite (State = SP) City = G/No	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A	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 = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM = 1, ORB = 97.5IN00515AP00515PE0001.6H01NRT01 ORB = 97.5IN00515AP00515PE0001.6H01NRR01	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
SUP	To test a wideband Ka-band user terminal from LEO with multiple commercial relay services and backwards compatibility to TDRSS service. RFA for Inmarsat I5-F1 transmission to PExT satellite system. Contract Agency NASA, contract number 80MSFC22F0103.	
FCC notes: 1. Use S-Note S945. 2. Use P-Note P032.		