Mars Outpost 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

Mars Outpost: a one day hosted mission on SpaceX second stage. S band Tx, X band Tx.

Part A: Space to Earth Downlink Data

Satellite Transmitter Data S Band

Transmit Frequency: 2209.2 MHz		
Satellite Name: Mars Outpost		
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 = NB	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN___5_____ BEAMWIDTH ____75_____ XAD = 05G075B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Non	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE___97.5_____, APOGEE IN KILOMETERS__538_____, PERIGEE IN KILOMETERS_____531____, ORBITAL PERIOD IN HOURS _1___AND FRACTIONS OF HOURS IN DECIMAL__59, THE NUMBER OF SATELLITES IN THE SYSTEM____1_____, ORB = 97.5IN00538AP00531PE001.59H01NRT01	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

Two S Band ground stations are described.

Earth Station Data (Receiver) Fairbanks AK S Band		
State (RSC)	RSC = AK	
City Name (RAL)	RAL = FAIRBANKS	
Latitude (DDMMSS)	Lat = 644800	
Longitude (DDDMMSS)	Lon = 1474900	
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 Azimuth (RAZ)	RAZ = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN___45.8_____, BEAMWIDTH__001_____, AZIMUTHAL RANGE__000-360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS __187__ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS ___40_____ RAD = RAD01 46G001B000-360A00187H040	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
FCC notes: 1. Use S-Note S945. 2. REM AGN, Hosted Payload, not Cubesat		

Earth Station Data (Receiver) McMurdo Antarctic Region MG1 S Band		
State (RSC)	RSC = Antarctic Region	
City Name (RAL)	RAL = McMurdo Station	
Latitude (DDMMSS)	Lat = 775000	
Longitude (DDDMMSS)	Lon = 1664000	

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 Azimuth (RAZ)	RAZ = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN___45.8_____, BEAMWIDTH__001_____, AZIMUTHAL RANGE__000-360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS __143_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS ___10_____ RAD = RAD01 46G001B000-360A00143H010	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
FCC notes: 1. Use S-Note S945. 2. REM AGN, Hosted Payload, not Cubesat		

Satellite Transmitter Data X Band Tx

Transmit Frequency: 8045 MHz		
Satellite Name: Mars Outpost		
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 = NB	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN___5_____ BEAMWIDTH ____75_____ XAD = 05G075B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Non	Choose either: Geostationary or Nongeostationary

For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE___98_____, APOGEE IN KILOMETERS__600_____, PERIGEE IN KILOMETERS_____600____, ORBITAL PERIOD IN HOURS _1___AND FRACTIONS OF HOURS IN DECIMAL__36, THE NUMBER OF SATELLITES IN THE SYSTEM____1_____, ORB = 98.0IN00600AP00600PE001.36H01NRT01	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

Two X band ground stations are described

Earth Station Data (Receiver) Fairbanks AK X Band		
State (RSC)	RSC = AK	
City Name (RAL)	RAL = FAIRBANKS	
Latitude (DDMMSS)	Lat = 644800	
Longitude (DDDMMSS)	Lon = 1474900	
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 Azimuth (RAZ)	RAZ = V10	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN___56.8_____, BEAMWIDTH__001_____, AZIMUTHAL RANGE__000-360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS __187_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS ___40_____ RAD = RAD01 57G001B000-360A00187B040	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006

FCC notes: 3. Use S-Note S945. 4. REM AGN, Cubesat, Hosted Payload, not Cubesat

Earth Station Data (Receiver) McMurdo Antarctic Region MG1 X Band		
State (RSC)	RSC = Antarctic Region	
City Name (RAL)	RAL = McMurdo Station	
Latitude (DDMMSS)	Lat = 775000	
Longitude (DDDMMSS)	Lon = 1664000	
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 Azimuth (RAZ)	RAZ = V10	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN___56_____, BEAMWIDTH__001_____, AZIMUTHAL RANGE__000-360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS __143_____ THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS ___10_____ RAD = RAD01 56G001B000-360A00143H010	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
FCC notes: 3. Use S-Note S945. 4. REM AGN, Hosted Payload, not Cubesat		

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

There is no uplink. The downlink transmission will only occur for a day or less.