

NTIA Space Record Data Form

Mission: REASON-2 | Regulatory Agency: Office of Engineering & Technology (OET) | Launch Date: April 1 2027 | Number of Satellites: 1 | Lifetime: 5 years

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 C is for all space to space transmit links.

Part A: Space to Earth Downlink Data

Data Field	Data Answer	Description/Comments
Transmit Frequency: 400.65 MHz		
Satellite Name: REASON-2 (Transmitter 1)		
Polarization (XAP)	XAP01 = H	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)	XAZ01 = EC	NB = NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN(dBi) 0dBi BEAMWIDTH@ ½ Power 180 degrees XAD = XAD01 00G180B	NTIA FORMAT (XAD), EXAMPLE, FOR 16 DBI ANTENNA GAIN AND 30 DEGREE BEAMWIDTH XAD01 16G030B
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97.4 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 58, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97.4IN00510AP00510PE001.58H01NRT01	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,97.5.0IN00510AP00510PE001.58H01NRT01, 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 Sun-Synchronous Nongeostationary Orbits	Mean Local Time of Ascending Node (MLTAN) = 12:00	MLTAN IS THE ANGLE BETWEEN AN ORBIT'S ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)
Transmit Power (PWR)	PWR = 1.2 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	0.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST

		SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – UNST (Receiver 1)		
State (RSC)	RSC = United Kingdom	State (U.S. sites) or country
City Name (RAL)	RAL = Unst	City or location name
Latitude (DDMMSS)	Lat = 604454 N	
Longitude (DDMMSS)	Lon = 0005130 W	
Antenna Polarization (RAP)	RAP01 = H	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)	RAZ01 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 19 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD01 15G020B001- 360A00019H002	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
Earth Station Data – PRETORIA (Receiver 2)		
State (RSC)	RSC = South Africa	State (U.S. sites) or country
City Name (RAL)	RAL = Pretoria	City or location name
Latitude (DDMMSS)	Lat = 255137 S	
Longitude (DDMMSS)	Lon = 0282714 E	
Antenna Polarization (RAP)	RAP02 = H	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)	RAZ02 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1394 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD02 15G020B001- 360A01394H002	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
Earth Station Data – SAN CARLOS (Receiver 3)		
State (RSC)	RSC = California, USA	State (U.S. sites) or country

City Name (RAL)	RAL = San Carlos	City or location name
Latitude (DDMMSS)	Lat = 373027 N	
Longitude (DDMMSS)	Lon = 1221516 W	
Antenna Polarization (RAP)	RAP03 = H	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)	RAZ03 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 7 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD03 15G020B001- 360A00007H002	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
Earth Station Data – TALKEETNA (Receiver 4)		
State (RSC)	RSC = Alaska, USA	State (U.S. sites) or country
City Name (RAL)	RAL = Talkeetna	City or location name
Latitude (DDMMSS)	Lat = 621956 N	
Longitude (DDMMSS)	Lon = 1500156 W	
Antenna Polarization (RAP)	RAP04 = H	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)	RAZ04 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 143 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 4.0 m, RAD = RAD04 15G020B001- 360A00143H004	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
Earth Station Data – KENT (Receiver 5)		
State (RSC)	RSC = Washington, USA	State (U.S. sites) or country
City Name (RAL)	RAL = Kent	City or location name
Latitude (DDMMSS)	Lat = 472357 N	
Longitude (DDMMSS)	Lon = 1221413 W	
Antenna Polarization (RAP)	RAP05 = H	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)	RAZ05 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 22 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 14.0 m, RAD = RAD05 15G020B001- 360A00022H014	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
Earth Station Data – SG_RANCH (Receiver 6)		
State (RSC)	RSC = California, USA	State (U.S. sites) or country
City Name (RAL)	RAL = SG Ranch	City or location name
Latitude (DDMMSS)	Lat = 350047 N	
Longitude (DDMMSS)	Lon = 1165545 W	
Antenna Polarization (RAP)	RAP06 = H	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)	RAZ06 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 869 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD06 15G020B001- 360A00869H002	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
Earth Station Data – WHITE SANDS (Receiver 7)		
State (RSC)	RSC = New Mexico, USA	State (U.S. sites) or country
City Name (RAL)	RAL = White Sands	City or location name
Latitude (DDMMSS)	Lat = 323053 N	
Longitude (DDMMSS)	Lon = 1061441 W	
Antenna Polarization (RAP)	RAP07 = H	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)	RAZ07 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1215 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD07 15G020B001- 360A01215H002	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

Data Field	Data Answer	Description/Comments
Transmit Frequency: 2240 MHz		
Satellite Name: REASON-2 (Transmitter 2)		
Polarization (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
Orientation (XAZ)	XAZ02 = EC	NB = NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN(dBi) 5dBi BEAMWIDTH@ ½ Power 75 degrees XAD = XAD02 05G075B	NTIA FORMAT (XAD), EXAMPLE, FOR 16 DBI ANTENNA GAIN AND 30 DEGREE BEAMWIDTH XAD01 16G030B
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97.4 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 58, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97.4IN00510AP00510PE001.58H01NRT01	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,97.5.0IN00510AP00510PE001.58H01NRT01, 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 Sun-Synchronous Nongeostationary Orbits	Mean Local Time of Ascending Node (MLTAN) = 12:00	MLTAN IS THE ANGLE BETWEEN AN ORBIT'S ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)
Transmit Power (PWR)	PWR = 0.7 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE:

		W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	4 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – ABSHERON (Receiver 8)		
State (RSC)	RSC = Azerbaijan	State (U.S. sites) or country
City Name (RAL)	RAL = Absheron	City or location name
Latitude (DDMMSS)	Lat = 402759 N	
Longitude (DDMMSS)	Lon = 0492909 E	
Antenna Polarization (RAP)	RAP08 = 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)	RAZ08 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 210 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD08 35G002B001-360A00210H002	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
Earth Station Data – AWARUA (Receiver 9)		
State (RSC)	RSC = New Zealand	State (U.S. sites) or country
City Name (RAL)	RAL = Awarua	City or location name
Latitude (DDMMSS)	Lat = 463141 S	
Longitude (DDMMSS)	Lon = 1682245 E	
Antenna Polarization (RAP)	RAP09 = 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)	RAZ09 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 11 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m,	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

	RAD = RAD09 35G002B001-360A00011H002	
Earth Station Data – BLONDUOS (Receiver 10)		
State (RSC)	RSC = Iceland	State (U.S. sites) or country
City Name (RAL)	RAL = Blonduos	City or location name
Latitude (DDMMSS)	Lat = 653851 N	
Longitude (DDMMSS)	Lon = 0201446 W	
Antenna Polarization (RAP)	RAP10 = 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)	RAZ10 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 119 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD10 35G002B001-360A00119H002	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
Earth Station Data – JEJU (Receiver 11)		
State (RSC)	RSC = South Korea	State (U.S. sites) or country
City Name (RAL)	RAL = Jeju	City or location name
Latitude (DDMMSS)	Lat = 332314 N	
Longitude (DDMMSS)	Lon = 1261903 E	
Antenna Polarization (RAP)	RAP11 = 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)	RAZ11 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 240 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.2 m, RAD = RAD11 35G002B001-360A00240H002	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
Earth Station Data – KANDY (Receiver 12)		
State (RSC)	RSC = Sri Lanka	State (U.S. sites) or country

City Name (RAL)	RAL = Kandy	City or location name
Latitude (DDMMSS)	Lat = 071627 N	
Longitude (DDMMSS)	Lon = 0804330 E	
Antenna Polarization (RAP)	RAP12 = 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)	RAZ12 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 456 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD12 35G002B001- 360A00456H002	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
Earth Station Data – LA PAZ (Receiver 13)		
State (RSC)	RSC = Mexico	State (U.S. sites) or country
City Name (RAL)	RAL = La Paz	City or location name
Latitude (DDMMSS)	Lat = 240558 N	
Longitude (DDMMSS)	Lon = 1102310 W	
Antenna Polarization (RAP)	RAP13 = 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)	RAZ13 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 4 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, RAD = RAD13 35G002B001- 360A00004H003	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
Earth Station Data – MON LOISIR (Receiver 14)		
State (RSC)	RSC = Mauritius	State (U.S. sites) or country
City Name (RAL)	RAL = Mon Loisir	City or location name
Latitude (DDMMSS)	Lat = 200821 S	
Longitude (DDMMSS)	Lon = 0574113 E	
Antenna Polarization (RAP)	RAP14 = 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)	RAZ14 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 96 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, RAD = RAD14 35G002B001- 360A00096H003	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
Earth Station Data – NANGETTY (Receiver 15)		
State (RSC)	RSC = Australia	State (U.S. sites) or country
City Name (RAL)	RAL = Nangetty	City or location name
Latitude (DDMMSS)	Lat = 290038 S	
Longitude (DDMMSS)	Lon = 1152030 E	
Antenna Polarization (RAP)	RAP15 = 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)	RAZ15 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 271 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD15 35G002B001- 360A00271H002	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
Earth Station Data – PETERBOROUGH (Receiver 16)		
State (RSC)	RSC = Australia	State (U.S. sites) or country
City Name (RAL)	RAL = Peterborough	City or location name
Latitude (DDMMSS)	Lat = 325743 S	
Longitude (DDMMSS)	Lon = 1385058 E	
Antenna Polarization (RAP)	RAP16 = 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)	RAZ16 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 539 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD16 35G002B001- 360A00539H002	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
Earth Station Data – PITEA_A (Receiver 17)		
State (RSC)	RSC = Sweden	State (U.S. sites) or country
City Name (RAL)	RAL = Piteå	City or location name
Latitude (DDMMSS)	Lat = 652017 N	
Longitude (DDMMSS)	Lon = 0212531 E	
Antenna Polarization (RAP)	RAP17 = 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)	RAZ17 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 31 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 9 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD17 31G003B001- 360A00009H002	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
Earth Station Data – PLANA (Receiver 18)		
State (RSC)	RSC = Bulgaria	State (U.S. sites) or country
City Name (RAL)	RAL = Plana	City or location name
Latitude (DDMMSS)	Lat = 422859 N	
Longitude (DDMMSS)	Lon = 0232643 E	
Antenna Polarization (RAP)	RAP18 = 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)	RAZ18 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90

Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1107 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 4.0 m, RAD = RAD18 35G002B001-360A01107H004	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
Earth Station Data – PRETORIA (Receiver 19)		
State (RSC)	RSC = South Africa	State (U.S. sites) or country
City Name (RAL)	RAL = Pretoria	City or location name
Latitude (DDMMSS)	Lat = 255137 S	
Longitude (DDMMSS)	Lon = 0282714 E	
Antenna Polarization (RAP)	RAP19 = 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)	RAZ19 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1394 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, RAD = RAD19 35G002B001-360A01394H003	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
Earth Station Data – PUNTA ARENAS (Receiver 20)		
State (RSC)	RSC = Chile	State (U.S. sites) or country
City Name (RAL)	RAL = Punta Arenas	City or location name
Latitude (DDMMSS)	Lat = 530228 S	
Longitude (DDMMSS)	Lon = 0705050 W	
Antenna Polarization (RAP)	RAP20 = 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)	RAZ20 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 29 m,	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:

	THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, RAD = RAD20 35G002B001- 360A00029H003	RAD01 16G030B001-360A00357H006
Earth Station Data – PUNTA_ARENAS_A (Receiver 21)		
State (RSC)	RSC = Chile	State (U.S. sites) or country
City Name (RAL)	RAL = Punta Arenas	City or location name
Latitude (DDMMSS)	Lat = 530703 S	
Longitude (DDMMSS)	Lon = 0705339 W	
Antenna Polarization (RAP)	RAP21 = 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)	RAZ21 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 31 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 29 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD21 31G003B001- 360A00029H002	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
Earth Station Data – SANTA MARIA (Receiver 22)		
State (RSC)	RSC = Portugal	State (U.S. sites) or country
City Name (RAL)	RAL = Santa Maria	City or location name
Latitude (DDMMSS)	Lat = 365951 N	
Longitude (DDMMSS)	Lon = 0250814 W	
Antenna Polarization (RAP)	RAP22 = 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)	RAZ22 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 195 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD22 35G002B001-	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

	360A00195H002	
Earth Station Data – SELFOSS_A (Receiver 23)		
State (RSC)	RSC = Iceland	State (U.S. sites) or country
City Name (RAL)	RAL = Selfoss	City or location name
Latitude (DDMMSS)	Lat = 640304 N	
Longitude (DDMMSS)	Lon = 0202518 W	
Antenna Polarization (RAP)	RAP23 = 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)	RAZ23 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 31 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 125 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD23 31G002B001- 360A00125H002	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
Earth Station Data – TALKEETNA (Receiver 24)		
State (RSC)	RSC = Alaska, USA	State (U.S. sites) or country
City Name (RAL)	RAL = Talkeetna	City or location name
Latitude (DDMMSS)	Lat = 621956 N	
Longitude (DDMMSS)	Lon = 1500156 W	
Antenna Polarization (RAP)	RAP24 = 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)	RAZ24 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 31 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 143 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.5 m, RAD = RAD24 31G002B001- 360A00143H004	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
Earth Station Data – UNST (Receiver 25)		
State (RSC)	RSC = United Kingdom	State (U.S. sites) or country
City Name (RAL)	RAL = Unst	City or location name

Latitude (DDMMSS)	Lat = 604454 N	
Longitude (DDDMMSS)	Lon = 0005130 W	
Antenna Polarization (RAP)	RAP25 = 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)	RAZ25 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 2 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 19 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD25 35G002B001- 360A00019H002	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

Data Field	Data Answer	Description/Comments
Transmit Frequency: 2272.5 MHz		
Satellite Name: REASON-2 (Transmitter 3)		
Polarization (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
Orientation (XAZ)	XAZ03 = EC	NB = NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN(dBi) 6dBi BEAMWIDTH@ ½ Power 60 degrees XAD = XAD03 06G060B	NTIA FORMAT (XAD), EXAMPLE, FOR 16 DBI ANTENNA GAIN AND 30 DEGREE BEAMWIDTH XAD01 16G030B
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97.4 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 58, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97.4IN00510AP00510PE001.58H01NRT01	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,97.5.0IN00510AP00510PE001.58H01NRT01, 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 Sun-Synchronous Nongeostationary Orbits	Mean Local Time of Ascending Node (MLTAN) = 12:00	MLTAN IS THE ANGLE BETWEEN AN ORBIT'S ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)
Transmit Power (PWR)	PWR = 0.7 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	4 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – SAN CARLOS (Receiver 26)		
State (RSC)	RSC = California, USA	State (U.S. sites) or country
City Name (RAL)	RAL = San Carlos	City or location name
Latitude (DDMMSS)	Lat = 373027 N	
Longitude (DDMMSS)	Lon = 1221516 W	
Antenna Polarization (RAP)	RAP26 = 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)	RAZ26 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 31 dBi, BEAMWIDTH 4 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 7 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD26 31G004B001- 360A00007H002	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
Earth Station Data – WHITE SANDS (Receiver 27)		
State (RSC)	RSC = New Mexico, USA	State (U.S. sites) or country
City Name (RAL)	RAL = White Sands	City or location name
Latitude (DDMMSS)	Lat = 323053 N	
Longitude (DDMMSS)	Lon = 1061441 W	
Antenna Polarization (RAP)	RAP27 = 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)	RAZ27 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90

Receive Antenna Dimensions (RAD)	ANTENNA GAIN 31 dBi, BEAMWIDTH 4 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1215 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD27 31G004B001-360A01215H002	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
Earth Station Data – KENT (Receiver 28)		
State (RSC)	RSC = Washington, USA	State (U.S. sites) or country
City Name (RAL)	RAL = Kent	City or location name
Latitude (DDMMSS)	Lat = 472357 N	
Longitude (DDMMSS)	Lon = 1221413 W	
Antenna Polarization (RAP)	RAP28 = 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)	RAZ28 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 31 dBi, BEAMWIDTH 4 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 22 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 14.0 m, RAD = RAD28 31G004B001-360A00022H014	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
Earth Station Data – SG_RANCH (Receiver 29)		
State (RSC)	RSC = California, USA	State (U.S. sites) or country
City Name (RAL)	RAL = SG Ranch	City or location name
Latitude (DDMMSS)	Lat = 350047 N	
Longitude (DDMMSS)	Lon = 1165545 W	
Antenna Polarization (RAP)	RAP29 = 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)	RAZ29 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 31 dBi, BEAMWIDTH 4 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 869 m,	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:

	THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD29 31G004B001- 360A00869H002	RAD01 16G030B001-360A00357H006
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Data Field	Data Answer	Description/Comments
Transmit Frequency: 8212 MHz		
Satellite Name: REASON-2 (Transmitter 4)		
Polarization (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
Orientation (XAZ)	XAZ04 = NB	NB = NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN(dBi) 17dBi BEAMWIDTH@ ½ Power 30 degrees XAD = XAD04 17G030B	NTIA FORMAT (XAD), EXAMPLE, FOR 16 DBI ANTENNA GAIN AND 30 DEGREE BEAMWIDTH XAD01 16G030B
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	CHOOSE EITHER: GEOSTATIONARY OR NONGEOSTATIONARY
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97.4 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 58, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97.4IN00510AP00510PE001.58H01NRT01	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,97.5.0IN00510AP00510PE001.58H01NRT01, 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 Sun-Synchronous Nongeostationary Orbits	Mean Local Time of Ascending Node (MLTAN) = 12:00	MLTAN IS THE ANGLE BETWEEN AN ORBIT'S ASCENDING NODE AND THE MEAN SUN, OFTEN EXPRESSED AS UNIT OF TIME (HH:MM)
Transmit Power (PWR)	PWR = 1.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	80 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – AWARUA (Receiver 30)		
State (RSC)	RSC = New Zealand	State (U.S. sites) or country
City Name (RAL)	RAL = Awarua	City or location name

Latitude (DDMMSS)	Lat = 463141 S	
Longitude (DDMMSS)	Lon = 1682245 E	
Antenna Polarization (RAP)	RAP30 = 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)	RAZ30 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 47 dBi, BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 11 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD30 47G001B001- 360A00011H002	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
Earth Station Data – BLONDUOS (Receiver 31)		
State (RSC)	RSC = Iceland	State (U.S. sites) or country
City Name (RAL)	RAL = Blonduos	City or location name
Latitude (DDMMSS)	Lat = 653851 N	
Longitude (DDMMSS)	Lon = 0201446 W	
Antenna Polarization (RAP)	RAP31 = 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)	RAZ31 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 47 dBi, BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 53 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.2 m, RAD = RAD31 47G001B001- 360A00053H002	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
Earth Station Data – LA PAZ (Receiver 32)		
State (RSC)	RSC = Mexico	State (U.S. sites) or country
City Name (RAL)	RAL = La Paz	City or location name
Latitude (DDMMSS)	Lat = 240558 N	
Longitude (DDMMSS)	Lon = 1102310 W	
Antenna Polarization (RAP)	RAP32 = 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)	RAZ32 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 47 dBi, BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 4 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, RAD = RAD32 47G001B001- 360A00004H003	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
Earth Station Data – MON LOISIR (Receiver 33)		
State (RSC)	RSC = Mauritius	State (U.S. sites) or country
City Name (RAL)	RAL = Mon Loisir	City or location name
Latitude (DDMMSS)	Lat = 200821 S	
Longitude (DDMMSS)	Lon = 0574113 E	
Antenna Polarization (RAP)	RAP33 = 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)	RAZ33 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 47 dBi, BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 96 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, RAD = RAD33 47G001B001- 360A00096H003	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
Earth Station Data – NORTH_POLE_A (Receiver 34)		
State (RSC)	RSC = Alaska, USA	State (U.S. sites) or country
City Name (RAL)	RAL = North Pole	City or location name
Latitude (DDMMSS)	Lat = 644549 N	
Longitude (DDMMSS)	Lon = 1472213 W	
Antenna Polarization (RAP)	RAP34 = 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)	RAZ34 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 44 dBi, BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 149 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD34 44G001B001-360A00149H002	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
Earth Station Data – PRETORIA (Receiver 35)		
State (RSC)	RSC = South Africa	State (U.S. sites) or country
City Name (RAL)	RAL = Pretoria	City or location name
Latitude (DDMMSS)	Lat = 255137 S	
Longitude (DDMMSS)	Lon = 0282714 E	
Antenna Polarization (RAP)	RAP35 = 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)	RAZ35 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 47 dBi, BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1394 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, RAD = RAD35 47G001B001-360A01394H003	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
Earth Station Data – PUNTA ARENAS (Receiver 36)		
State (RSC)	RSC = Chile	State (U.S. sites) or country
City Name (RAL)	RAL = Punta Arenas	City or location name
Latitude (DDMMSS)	Lat = 530228 S	
Longitude (DDMMSS)	Lon = 0705050 W	
Antenna Polarization (RAP)	RAP36 = 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)	RAZ36 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions	ANTENNA GAIN 47 dBi,	EXAMPLE ASSUMING NONGEOSTATIONARY, 16

(RAD)	BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 29 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, RAD = RAD36 47G001B001- 360A00029H003	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
Earth Station Data – PUNTA_ARENAS_A (Receiver 37)		
State (RSC)	RSC = Chile	State (U.S. sites) or country
City Name (RAL)	RAL = Punta Arenas	City or location name
Latitude (DDMMSS)	Lat = 530703 S	
Longitude (DDMMSS)	Lon = 0705339 W	
Antenna Polarization (RAP)	RAP37 = 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)	RAZ37 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 47 dBi, BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 29 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD37 47G001B001- 360A00029H002	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
Earth Station Data – SANTA MARIA (Receiver 38)		
State (RSC)	RSC = Portugal	State (U.S. sites) or country
City Name (RAL)	RAL = Santa Maria	City or location name
Latitude (DDMMSS)	Lat = 365951 N	
Longitude (DDMMSS)	Lon = 0250814 W	
Antenna Polarization (RAP)	RAP38 = 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)	RAZ38 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 47 dBi, BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 195 m, THE ANTENNA HEIGHT ABOVE TERRAIN	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

	IN METERS 2.0 m, RAD = RAD38 47G001B001-360A00195H002	
Earth Station Data – SELFOSS_A (Receiver 39)		
State (RSC)	RSC = Iceland	State (U.S. sites) or country
City Name (RAL)	RAL = Selfoss	City or location name
Latitude (DDMMSS)	Lat = 640304 N	
Longitude (DDMMSS)	Lon = 0202518 W	
Antenna Polarization (RAP)	RAP39 = 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)	RAZ39 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 44 dBi, BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 125 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, RAD = RAD39 44G001B001-360A00125H002	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
Earth Station Data – TALKEETNA (Receiver 40)		
State (RSC)	RSC = Alaska, USA	State (U.S. sites) or country
City Name (RAL)	RAL = Talkeetna	City or location name
Latitude (DDMMSS)	Lat = 621956 N	
Longitude (DDMMSS)	Lon = 1500156 W	
Antenna Polarization (RAP)	RAP40 = 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)	RAZ40 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 47 dBi, BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 143 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 4.0 m, RAD = RAD40 47G001B001-360A00143H004	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

Earth Station Data – KENT (Receiver 41)		
State (RSC)	RSC = Washington, USA	State (U.S. sites) or country
City Name (RAL)	RAL = Kent	City or location name
Latitude (DDMMSS)	Lat = 472357 N	
Longitude (DDMMSS)	Lon = 1221413 W	
Antenna Polarization (RAP)	RAP41 = 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)	RAZ41 = V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Receive Antenna Dimensions (RAD)	ANTENNA GAIN 44 dBi, BEAMWIDTH 1 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 22 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 14.0 m, RAD = RAD41 44G001B001-360A00022H014	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

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

The proposed system will receive transmissions from Ground Stations on the following frequencies. Because the system will not transmit on these frequencies, operator is not seeking corresponding experimental authorization. These receive-only frequencies are listed here for informational purposes only.

Data Field	Data Answer	Description/Comments
Transmit Frequency: 402.2 MHz		
Earth Station Data – UNST (Transmitter 1)		
State (XSC)	XSC = United Kingdom	State (U.S. sites) or country
City Name (XAL)	XAL = Unst	City or location name
Latitude (DDMMSS)	Lat = 604454 N	
Longitude (DDMMSS)	Lon = 0005130 W	
Antenna Polarization (XAP)	XAP01 = H	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ01 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg,	EXAMPLE ASSUMING NONGEOSTATIONARY, 16 DBI GAIN, 30

	AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 19 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD01 15G020B001- 360A00019H002	DEGREE BEAMWIDTH, AZIMUTHAL RANGE FROM 001-360, SITE ELEVATION OF 357 METERS, AND ANTENNA HEIGHT ABOVE TERRAIN OF 6 METERS: XAD01 16G030B001-360A00357H006
Transmitter Power (PWR)	PWR = 0.12 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	0.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – PRETORIA (Transmitter 2)		
State (XSC)	XSC = South Africa	State (U.S. sites) or country
City Name (XAL)	XAL = Pretoria	City or location name
Latitude (DDMMSS)	Lat = 255137 S	
Longitude (DDMMSS)	Lon = 0282714 E	
Antenna Polarization (XAP)	XAP02 = H	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ02 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1394 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD02 15G020B001- 360A01394H002	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
Transmitter Power (PWR)	PWR = 0.12 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	0.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY

		TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – SAN CARLOS (Transmitter 3)		
State (XSC)	XSC = California, USA	State (U.S. sites) or country
City Name (XAL)	XAL = San Carlos	City or location name
Latitude (DDMMSS)	Lat = 373027 N	
Longitude (DDMMSS)	Lon = 1221516 W	
Antenna Polarization (XAP)	XAP03 = H	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ03 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 7 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD03 15G020B001-360A00007H002	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
Transmitter Power (PWR)	PWR = 0.12 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	0.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – TALKEETNA (Transmitter 4)		
State (XSC)	XSC = Alaska, USA	State (U.S. sites) or country
City Name (XAL)	XAL = Talkeetna	City or location name
Latitude (DDMMSS)	Lat = 621956 N	
Longitude (DDMMSS)	Lon = 1500156 W	
Antenna Polarization (XAP)	XAP04 = H	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ04 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE

		OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 143 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 4.0 m, XAD = XAD04 15G020B001- 360A00143H004	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
Transmitter Power (PWR)	PWR = 0.12 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	0.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – KENT (Transmitter 5)		
State (XSC)	XSC = Washington, USA	State (U.S. sites) or country
City Name (XAL)	XAL = Kent	City or location name
Latitude (DDMMSS)	Lat = 472357 N	
Longitude (DDMMSS)	Lon = 1221413 W	
Antenna Polarization (XAP)	XAP05 = H	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ05 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 22 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 14.0 m, XAD = XAD05 15G020B001- 360A00022H014	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
Transmitter Power (PWR)	PWR = 0.12 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT

Necessary Bandwidth	0.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – SG_RANCH (Transmitter 6)		
State (XSC)	XSC = California, USA	State (U.S. sites) or country
City Name (XAL)	XAL = SG Ranch	City or location name
Latitude (DDMMSS)	Lat = 350047 N	
Longitude (DDMMSS)	Lon = 1165545 W	
Antenna Polarization (XAP)	XAP06 = H	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ06 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 869 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD06 15G020B001-360A00869H002	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
Transmitter Power (PWR)	PWR = 0.12 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	0.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – WHITE SANDS (Transmitter 7)		
State (XSC)	XSC = New Mexico, USA	State (U.S. sites) or country
City Name (XAL)	XAL = White Sands	City or location name
Latitude (DDMMSS)	Lat = 323053 N	
Longitude (DDMMSS)	Lon = 1061441 W	
Antenna Polarization (XAP)	XAP07 = H	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR,

		J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ07 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 15 dBi, BEAMWIDTH 20 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1215 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD07 15G020B001-360A01215H002	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
Transmitter Power (PWR)	PWR = 0.12 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	0.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Satellite Receiver Data – REASON-2 (Receiver 1)		
Antenna Polarization (RAP)	RAP01 = H	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)	RAZ01 = EC	NB = NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimensions (RAD)	ANTENNA GAIN(dBi) 0dBi BEAMWIDTH@ ½ Power 180 degrees RAD = RAD01 00G180B	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 Noise Temperature	290 K	Satellite system noise temperature

Data Field	Data Answer	Description/Comments
Transmit Frequency: 2100 MHz		
Earth Station Data – ABSHERON (Transmitter 8)		
State (XSC)	XSC = Azerbaijan	State (U.S. sites) or country
City Name (XAL)	XAL = Absheron	City or location name
Latitude (DDMMSS)	Lat = 402759 N	
Longitude (DDMMSS)	Lon = 0492909 E	
Antenna Polarization (XAP)	XAP08 = R	POLARIZATIONS INCLUDE :

		H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ08 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 210 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD08 35G003B001- 360A00210H002	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – AWARUA (Transmitter 9)		
State (XSC)	XSC = New Zealand	State (U.S. sites) or country
City Name (XAL)	XAL = Awarua	City or location name
Latitude (DDMMSS)	Lat = 463141 S	
Longitude (DDMMSS)	Lon = 1682245 E	
Antenna Polarization (XAP)	XAP09 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ09 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 11 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m,	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

	XAD = XAD09 35G003B001-360A00011H002	
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – BLONDUOS (Transmitter 10)		
State (XSC)	XSC = Iceland	State (U.S. sites) or country
City Name (XAL)	XAL = Blonduos	City or location name
Latitude (DDMMSS)	Lat = 653851 N	
Longitude (DDMMSS)	Lon = 0201446 W	
Antenna Polarization (XAP)	XAP10 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ10 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 119 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD10 35G003B001-360A00119H002	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – JEJU (Transmitter 11)		
State (XSC)	XSC = South Korea	State (U.S. sites) or country
City Name (XAL)	XAL = Jeju	City or location name

Latitude (DDMMSS)	Lat = 332314 N	
Longitude (DDMMSS)	Lon = 1261903 E	
Antenna Polarization (XAP)	XAP11 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ11 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 240 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.2 m, XAD = XAD11 35G003B001- 360A00240H002	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – KANDY (Transmitter 12)		
State (XSC)	XSC = Sri Lanka	State (U.S. sites) or country
City Name (XAL)	XAL = Kandy	City or location name
Latitude (DDMMSS)	Lat = 071627 N	
Longitude (DDMMSS)	Lon = 0804330 E	
Antenna Polarization (XAP)	XAP12 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ12 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 456 m,	EXAMPLE ASSUMING NONGEOSTATIONARY, 16 DBI GAIN, 30 DEGREE BEAMWIDTH, AZIMUTHAL RANGE FROM 001-360, SITE ELEVATION OF 357 METERS, AND

	THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD12 35G003B001-360A00456H002	ANTENNA HEIGHT ABOVE TERRAIN OF 6 METERS: XAD01 16G030B001-360A00357H006
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – LA PAZ (Transmitter 13)		
State (XSC)	XSC = Mexico	State (U.S. sites) or country
City Name (XAL)	XAL = La Paz	City or location name
Latitude (DDMMSS)	Lat = 240558 N	
Longitude (DDMMSS)	Lon = 1102310 W	
Antenna Polarization (XAP)	XAP13 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ13 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 4 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, XAD = XAD13 35G003B001-360A00004H003	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.

Earth Station Data – MON LOISIR (Transmitter 14)		
State (XSC)	XSC = Mauritius	State (U.S. sites) or country
City Name (XAL)	XAL = Mon Loisir	City or location name
Latitude (DDMMSS)	Lat = 200821 S	
Longitude (DDMMSS)	Lon = 0574113 E	
Antenna Polarization (XAP)	XAP14 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ14 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 96 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, XAD = XAD14 35G003B001-360A00096H003	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – NANGETTY (Transmitter 15)		
State (XSC)	XSC = Australia	State (U.S. sites) or country
City Name (XAL)	XAL = Nangetty	City or location name
Latitude (DDMMSS)	Lat = 290038 S	
Longitude (DDMMSS)	Lon = 1152030 E	
Antenna Polarization (XAP)	XAP15 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ15 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg,	EXAMPLE ASSUMING NONGEOSTATIONARY, 16 DBI GAIN, 30

	AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 271 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD15 35G003B001- 360A00271H002	DEGREE BEAMWIDTH, AZIMUTHAL RANGE FROM 001-360, SITE ELEVATION OF 357 METERS, AND ANTENNA HEIGHT ABOVE TERRAIN OF 6 METERS: XAD01 16G030B001-360A00357H006
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – NORTH_POLE_A (Transmitter 16)		
State (XSC)	XSC = Alaska, USA	State (U.S. sites) or country
City Name (XAL)	XAL = North Pole	City or location name
Latitude (DDMMSS)	Lat = 644549 N	
Longitude (DDMMSS)	Lon = 1472213 W	
Antenna Polarization (XAP)	XAP16 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ16 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 33 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 149 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD16 33G003B001- 360A00149H002	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
Transmitter Power (PWR)	PWR = 70 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY

		TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – PETERBOROUGH (Transmitter 17)		
State (XSC)	XSC = Australia	State (U.S. sites) or country
City Name (XAL)	XAL = Peterborough	City or location name
Latitude (DDMMSS)	Lat = 325743 S	
Longitude (DDMMSS)	Lon = 1385058 E	
Antenna Polarization (XAP)	XAP17 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ17 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 539 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD17 35G003B001-360A00539H002	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – PITEA_A (Transmitter 18)		
State (XSC)	XSC = Sweden	State (U.S. sites) or country
City Name (XAL)	XAL = Piteå	City or location name
Latitude (DDMMSS)	Lat = 652017 N	
Longitude (DDMMSS)	Lon = 0212531 E	
Antenna Polarization (XAP)	XAP18 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ18 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE

		OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 33 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 9 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD18 33G003B001- 360A00009H002	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
Transmitter Power (PWR)	PWR = 70 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – PLANA (Transmitter 19)		
State (XSC)	XSC = Bulgaria	State (U.S. sites) or country
City Name (XAL)	XAL = Plana	City or location name
Latitude (DDMMSS)	Lat = 422859 N	
Longitude (DDMMSS)	Lon = 0232643 E	
Antenna Polarization (XAP)	XAP19 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ19 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1107 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 4.0 m, XAD = XAD19 35G003B001- 360A01107H004	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT

Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – PRETORIA (Transmitter 20)		
State (XSC)	XSC = South Africa	State (U.S. sites) or country
City Name (XAL)	XAL = Pretoria	City or location name
Latitude (DDMMSS)	Lat = 255137 S	
Longitude (DDMMSS)	Lon = 0282714 E	
Antenna Polarization (XAP)	XAP20 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ20 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1394 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, XAD = XAD20 35G003B001-360A01394H003	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – PUNTA ARENAS (Transmitter 21)		
State (XSC)	XSC = Chile	State (U.S. sites) or country
City Name (XAL)	XAL = Punta Arenas	City or location name
Latitude (DDMMSS)	Lat = 530228 S	
Longitude (DDMMSS)	Lon = 0705050 W	
Antenna Polarization (XAP)	XAP21 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR,

		J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ21 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 29 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3.0 m, XAD = XAD21 35G003B001-360A00029H003	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – PUNTA_ARENAS_A (Transmitter 22)		
State (XSC)	XSC = Chile	State (U.S. sites) or country
City Name (XAL)	XAL = Punta Arenas	City or location name
Latitude (DDMMSS)	Lat = 530703 S	
Longitude (DDMMSS)	Lon = 0705339 W	
Antenna Polarization (XAP)	XAP22 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ22 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 33 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 29 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD22 33G003B001-360A00029H002	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
Transmitter Power (PWR)	PWR = 70 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE:

		W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – SANTA MARIA (Transmitter 23)		
State (XSC)	XSC = Portugal	State (U.S. sites) or country
City Name (XAL)	XAL = Santa Maria	City or location name
Latitude (DDMMSS)	Lat = 365951 N	
Longitude (DDMMSS)	Lon = 0250814 W	
Antenna Polarization (XAP)	XAP23 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ23 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 195 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD23 35G003B001-360A00195H002	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – SELFOSS_A (Transmitter 24)		
State (XSC)	XSC = Iceland	State (U.S. sites) or country
City Name (XAL)	XAL = Selfoss	City or location name
Latitude (DDMMSS)	Lat = 640304 N	
Longitude (DDMMSS)	Lon = 0202518 W	
Antenna Polarization (XAP)	XAP24 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL,

		L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ24 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 33 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 125 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD24 33G003B001- 360A00125H002	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
Transmitter Power (PWR)	PWR = 70 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – TALKEETNA (Transmitter 25)		
State (XSC)	XSC = Alaska, USA	State (U.S. sites) or country
City Name (XAL)	XAL = Talkeetna	City or location name
Latitude (DDMMSS)	Lat = 621956 N	
Longitude (DDMMSS)	Lon = 1500156 W	
Antenna Polarization (XAP)	XAP25 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ25 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 143 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 4.0 m, XAD = XAD25 35G003B001- 360A00143H004	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE

		ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – TORRANCE_A (Transmitter 26)		
State (XSC)	XSC = California, USA	State (U.S. sites) or country
City Name (XAL)	XAL = Torrance	City or location name
Latitude (DDMMSS)	Lat = 334827 N	
Longitude (DDMMSS)	Lon = 1182100 W	
Antenna Polarization (XAP)	XAP26 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ26 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 33 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 25 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD26 33G003B001-360A00025H002	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
Transmitter Power (PWR)	PWR = 70 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – UNST (Transmitter 27)		
State (XSC)	XSC = United Kingdom	State (U.S. sites) or country
City Name (XAL)	XAL = Unst	City or location name
Latitude (DDMMSS)	Lat = 604454 N	
Longitude (DDMMSS)	Lon = 0005130 W	
Antenna Polarization (XAP)	XAP27 = R	POLARIZATIONS INCLUDE :

		H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ27 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 35 dBi, BEAMWIDTH 3 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 19 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD27 35G003B001- 360A00019H002	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
Transmitter Power (PWR)	PWR = 31.6 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Satellite Receiver Data – REASON-2 (Receiver 2)		
Antenna Polarization (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
Antenna Azimuth (RAZ)	RAZ02 = EC	NB = NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimensions (RAD)	ANTENNA GAIN(dBi) 6dBi BEAMWIDTH@ ½ Power 75 degrees RAD = RAD02 06G075B	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 Noise Temperature	440 K	Satellite system noise temperature

Data Field	Data Answer	Description/Comments
Transmit Frequency: 2092.59375 MHz		

Earth Station Data – KENT (Transmitter 28)		
State (XSC)	XSC = Washington, USA	State (U.S. sites) or country
City Name (XAL)	XAL = Kent	City or location name
Latitude (DDMMSS)	Lat = 472357 N	
Longitude (DDMMSS)	Lon = 1221413 W	
Antenna Polarization (XAP)	XAP28 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ28 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 30 dBi, BEAMWIDTH 4 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 22 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 14.0 m, XAD = XAD28 30G004B001-360A00022H014	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
Transmitter Power (PWR)	PWR = 100 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – SG_RANCH (Transmitter 29)		
State (XSC)	XSC = California, USA	State (U.S. sites) or country
City Name (XAL)	XAL = SG Ranch	City or location name
Latitude (DDMMSS)	Lat = 350047 N	
Longitude (DDMMSS)	Lon = 1165545 W	
Antenna Polarization (XAP)	XAP29 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ29 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 30 dBi, BEAMWIDTH 4 deg,	EXAMPLE ASSUMING NONGEOSTATIONARY, 16 DBI GAIN, 30

	AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 869 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD29 30G004B001- 360A00869H002	DEGREE BEAMWIDTH, AZIMUTHAL RANGE FROM 001-360, SITE ELEVATION OF 357 METERS, AND ANTENNA HEIGHT ABOVE TERRAIN OF 6 METERS: XAD01 16G030B001-360A00357H006
Transmitter Power (PWR)	PWR = 100 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – SAN CARLOS (Transmitter 30)		
State (XSC)	XSC = California, USA	State (U.S. sites) or country
City Name (XAL)	XAL = San Carlos	City or location name
Latitude (DDMMSS)	Lat = 373027 N	
Longitude (DDMMSS)	Lon = 1221516 W	
Antenna Polarization (XAP)	XAP30 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ30 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 30 dBi, BEAMWIDTH 4 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 7 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD30 30G004B001- 360A00007H002	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
Transmitter Power (PWR)	PWR = 100 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY

		TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Earth Station Data – WHITE SANDS (Transmitter 31)		
State (XSC)	XSC = New Mexico, USA	State (U.S. sites) or country
City Name (XAL)	XAL = White Sands	City or location name
Latitude (DDMMSS)	Lat = 323053 N	
Longitude (DDMMSS)	Lon = 1061441 W	
Antenna Polarization (XAP)	XAP31 = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ31 = V05	THE EARTH STATION TRANSMITTER ANTENNA AZIMUTH, MINIMUM ANGLE OF ELEVATION, V00 TO V90
Antenna Dimensions (XAD)	ANTENNA GAIN 30 dBi, BEAMWIDTH 4 deg, AZIMUTHAL RANGE 001 – 360 deg, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1215 m, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 2.0 m, XAD = XAD31 30G004B001-360A01215H002	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
Transmitter Power (PWR)	PWR = 100 W	TRANSMIT POWER SUPPLIED TO THE ANTENNA INPUT TERMINAL, EXAMPLE, PWR01 W2 TRANSMIT POWER UNITS INCLUDE: W = WATT, K = KILOWATT, M = MEGAWATT
Necessary Bandwidth	1.02 MHz	THE WIDTH OF FREQUENCY BAND WHICH IS JUST SUFFICIENT TO SUCCESSFULLY TRANSFER DATA. FORMULAS CAN BE FOUND IN ANNEX J OF THE NTIA MANUAL.
Satellite Receiver Data – REASON-2 (Receiver 3)		
Antenna Polarization (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
Antenna Azimuth (RAZ)	RAZ03 = EC	NB = NARROWBEAM EC = EARTH COVERAGE
Receive Antenna Dimensions (RAD)	ANTENNA GAIN(dBi) 6dBi BEAMWIDTH@ ½ Power 60 degrees RAD = RAD03 06G060B	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 Noise Temperature	787 K	Satellite system noise temperature