

a) THE TYPE OF SATELLITE, GEOSTATIONARY OR NONGEOSTATIONARY
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

CSUNSat1 is a nongeostationary satellite in Low Earth Orbit with:

Inclination Angle = 51.6451°

Apogee = 409 km

Perigee = 416 km

Orbital Period = 1.5433 hours

Number of satellites in system = 1

b) THE SATELLITE TRANSMITTER ANTENNA GAIN AND BEAMWIDTH

Satellite transmitter antenna gain = 4.9dB

This is an omnidirectional antenna and the satellite has no attitude control

c) THE SATELLITE TRANSMITTER ANTENNA AZIMUTH: NARROWBEAM
(NB), EARTH COVERAGE (EC)

This is an omnidirectional antenna and the satellite has no attitude control

d) THE EARTH STATION RECEIVER ANTENNA GAIN, BEAMWIDTH,
AZIMUTHAL RANGE, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN
METERS AND THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS

Earth station receiver antenna gain = 13dBi

Beamwidth = approximately 20°

Azimuthal range = $0 - 360^{\circ}$

Site Elevation above mean sea level = 268 meters

Antenna height above terrain = 37 meters

e) THE EARTH STATION RECEIVER ANTENNA AZIMUTH, THE
MINIMUM ANGLE OF ELEVATION (V00 TO V90)

Earth station receiver antenna azimuth can be varied from $0 - 360^{\circ}$

The angle of elevation can be varied from 0 to 90°

f) THE TRANSMITTER ANTENNA ORIENTATION (XAP), EXAMPLE XAP01 J ,
AND THE RECEIVER ANTENNA ORIENTATION (RAP), EXAMPLE RAP01 J ,
WHERE J REPRESENTS LINEAR POLARIZATION. OTHER POLARIZATIONS
INCLUDE H FOR HORIZONTAL, V FOR VERTICAL, S FOR HORIZONTAL AND
VERTICAL, L FOR LEFT HAND CIRCULAR, R FOR RIGHT HAND CIRCULAR,

T FOR RIGHT AND LEFT HAND CIRCULAR, E FOR ELLIPTICAL AND O FOR OBLIQUE ANGLED CROSSED.,

The earth station transmitter and receiver antenna is left and right hand circular polarization

XAP01 T

RAP01 T

Note that the receive and transmit antenna is the same.