

QUESTION 4: DIRECTIONAL ANTENNA INFORMATION

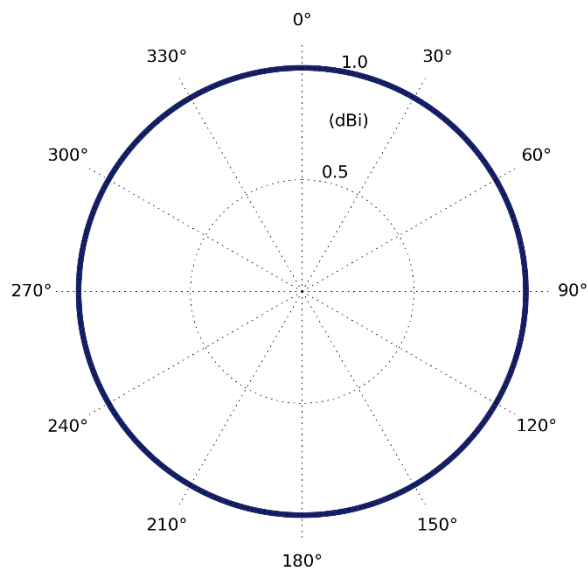
REVISION 2.0

3U CubeSat

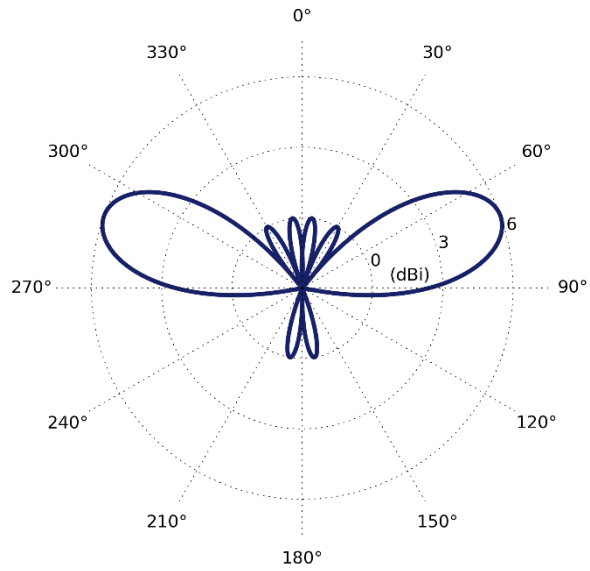
Low Gain Antenna - Omnidirectional

	Frequency (GHz)	Peak Gain (dBi)	Half-Power (3 dB) Beamwidth (°)
Uplink (Rx)	29.51	Horizontal: 0	Horizontal: 180°
Downlink (Tx)	20.19	Vertical: 6	Vertical: 29.8°

- Horizontal gain pattern:



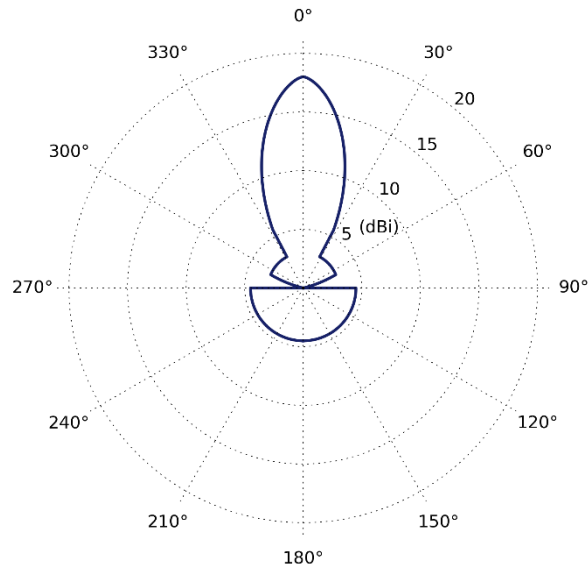
- Vertical gain pattern:



High Gain Antenna - Patch

	Frequency (GHz)	Peak Gain (dBi)	Half-Power (3 dB) Beamwidth (°)
Uplink (Rx)	29.51	18	21.46
Downlink (Tx)	20.19		

- Roughly symmetric about the horizontal and vertical planes.
- Gain pattern:



Earth Station

	Frequency (GHz)	Peak Gain (dBi)	Half-Power (3 dB) Beamwidth (°)
Uplink (Tx)	29.51	64.49	0.10
Downlink (Rx)	20.19	61.19	0.15

- Roughly symmetric about the horizontal and vertical planes.
- Uplink gain pattern:

