

# QUESTION 4: DIRECTIONAL ANTENNA INFORMATION

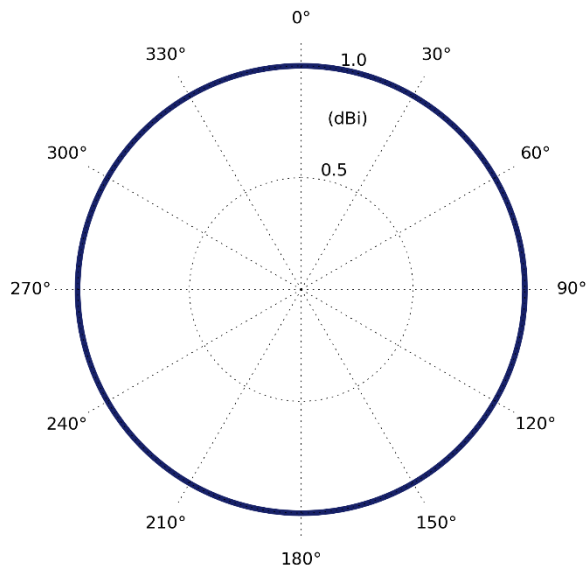
## REVISION 2.0

### 3U CubeSat

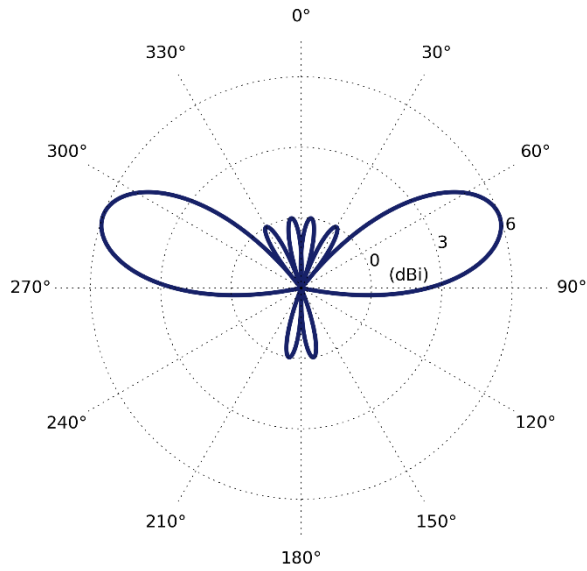
#### Low Gain Antenna - Omnidirectional

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

- Horizontal gain pattern:



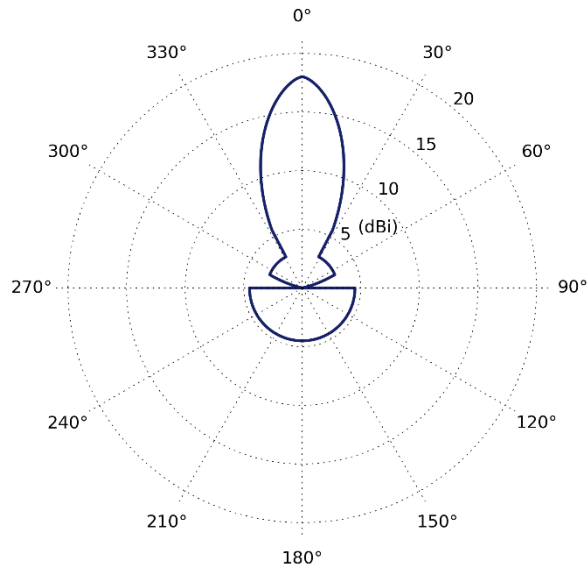
- Vertical gain pattern:



### High Gain Antenna - Patch

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

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



## Earth Station

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

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

