

Antenna Information

The requested information for antenna directionality is described below. As explained in the Experiment Narrative, each of the four antennas will initially be used for ground testing on or about Collins property in Cedar Rapids, Iowa, and then for flight testing at and near the Iowa City Airport.

Antenna 1: Electronically Steered Array antenna for V Band (60-64 GHz); Collins Aerospace/UCSD V Band 1024 Element ESA; mounted in test pod on aircraft (Station MO):

- (a) Width of beam in degrees at the half-power point: 3 degrees
- (b) Orientation in horizontal plane (degrees from True North): varies over 360 degrees
- (c) Orientation in vertical plane (degrees from horizontal): ± 30 degrees

Antenna 2: Electronically Steered Array antenna for Ka Band (26.5-29.5 GHz); Collins Aerospace/UCSD Ka Band 256 Element ESA; mounted in test pod on aircraft (Station MO):

- (a) Width of beam in degrees at the half-power point: 8 degrees
- (b) Orientation in horizontal plane (degrees from True North): varies over 360 degrees
- (c) Orientation in vertical plane (degrees from horizontal): ± 30 degrees

Antenna 3: Antenna for fixed temporary station (Station FTX); same as Ka Band mobile antenna:

- (a) Width of beam in degrees at the half-power point: 8 degrees
- (b) Orientation in horizontal plane (degrees from True North): may vary over 360 degrees via mechanical mounting; ± 30 degrees electronically steered
- (c) Orientation in vertical plane (degrees from horizontal): ± 30 degrees

Antenna 4: Alternate Antenna for fixed temporary station (Station FTX); COTS Anokiwave AWA-0134:

- (a) Width of beam in degrees at the half-power point: 8 degrees
- (b) Orientation in horizontal plane (degrees from True North): may vary over 360 degrees via mechanical mounting; ± 30 degrees electronically steered
- (c) Orientation in vertical plane (degrees from horizontal): ± 30 degrees