

ANTENNA GAIN FOR THE SMARTCROP

The Field Sensor and Vertical Field Sensor Antenna are both regular 1/2 wave dipole, gain is 2.15 dBi.

See included reference.

Radiation pattern and gain

Dipoles have an omnidirectional radiation pattern, shaped like a toroid (doughnut) symmetrical about the axis of the dipole. The radiation is maximum at right angles to the dipole, dropping off to zero on the antenna's axis. The theoretical maximum gain of a Hertzian dipole is $10 \log 1.5$ or 1.76 dBi. The maximum theoretical gain of a $\frac{1}{2}$ wave dipole is $10 \log 1.64$ or 2.15 dBi.