

Notion “Breck” Antenna specification.

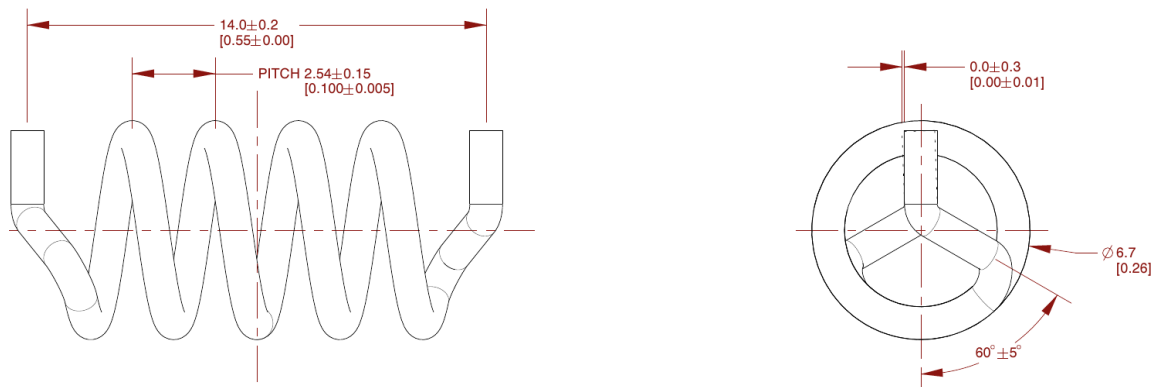
Overview,

This describes a purpose designed antenna by Loop Labs, Inc. (DBA Notion) for “Breck” products, Notion’s 3rd generation sensor and bridge. The antenna is designed for the 915 MHz band, to be used at up to +20 dBm, to fit in both the Sensor, Model 0009, and Bridge, model 0011, although may be used in future Notion designs as needed.

Design,

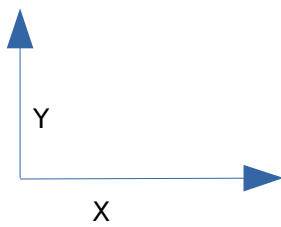
The antenna is essentially a normal mode helical antenna (shortened monopole) with a capacitance hat, which allows further shortening of the helix length, as well as reduces axial end nulls, resulting in a more omni-directional antenna.

The helix is a 18 gauge (1mm dia) uninsulated phosphor bronze wire coil of about 4 1/3 turns, design to be through hole, or pin in past inserted into a PCB dimensions are mm[in]:

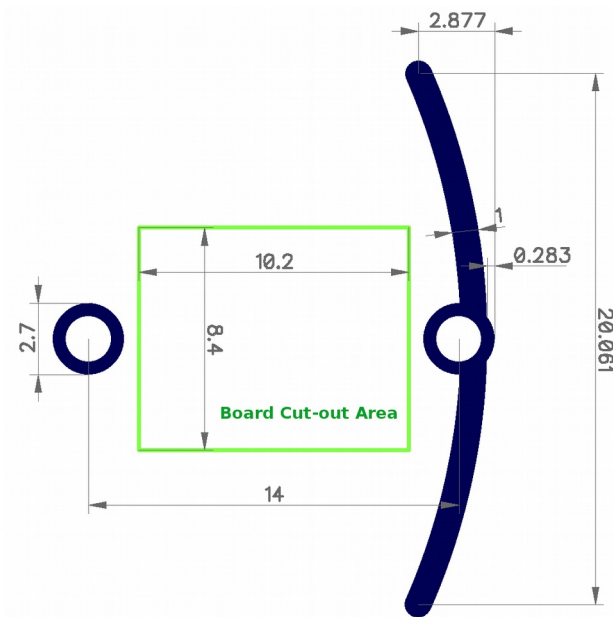


When inserted into the PCB, one end is the feed point, beyond which should be a ground plane, and the other end will have a PCB trace “hat”, as dimensioned here, dimensions are mm:

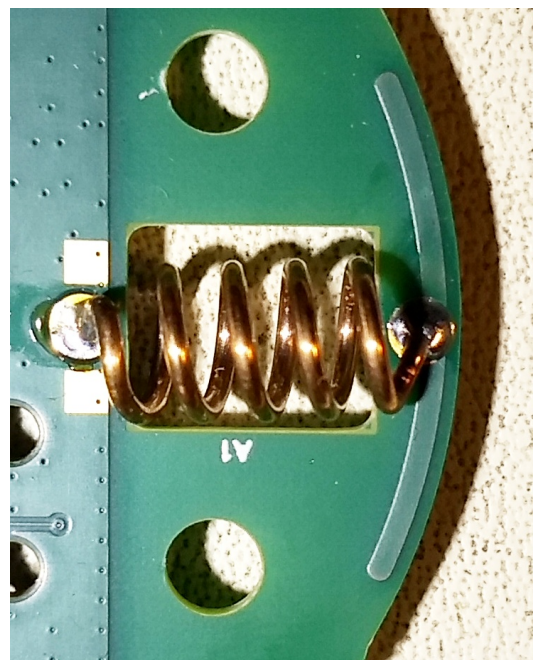
Orientation for measurements:



(Z out toward viewer)



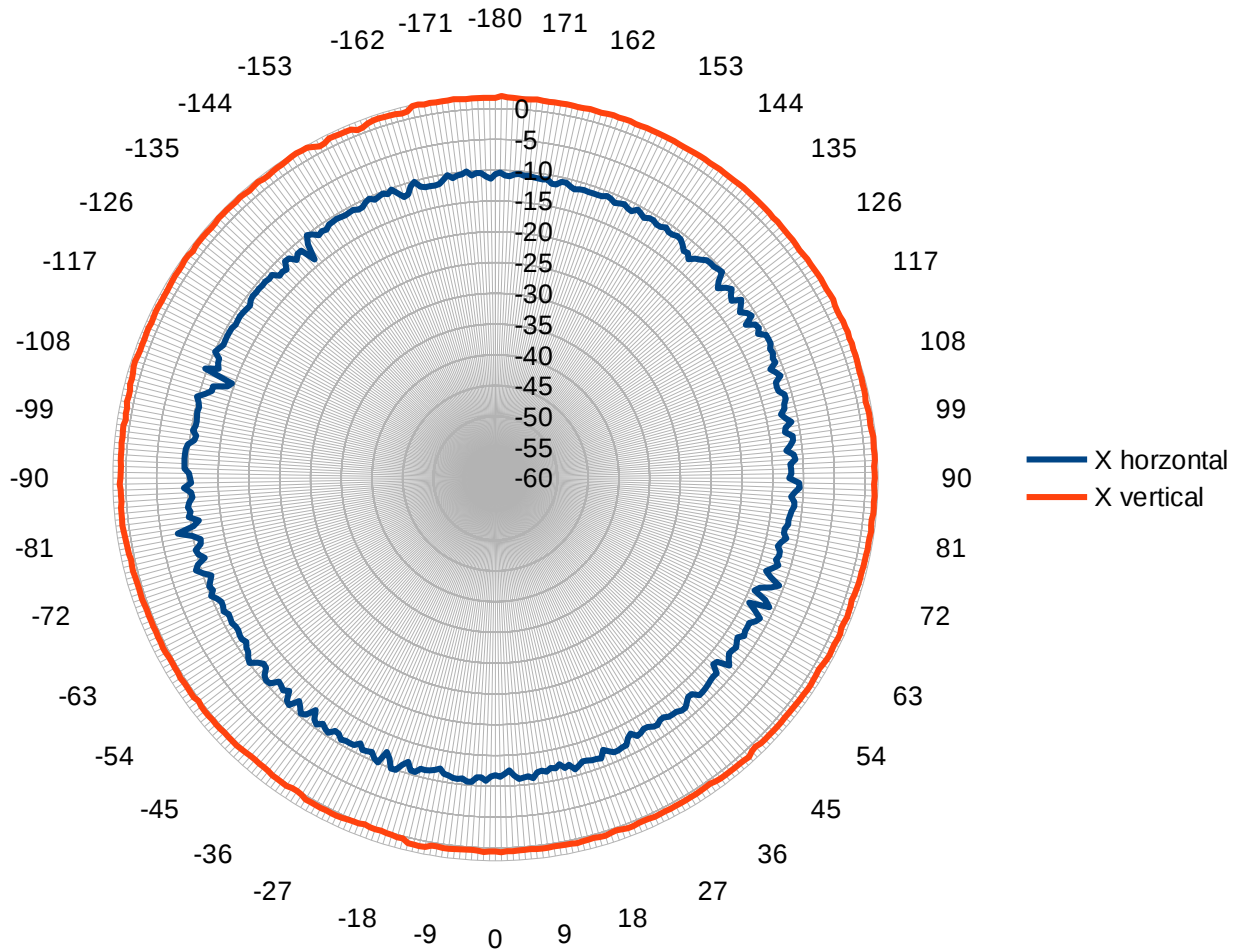
Shown assembled:



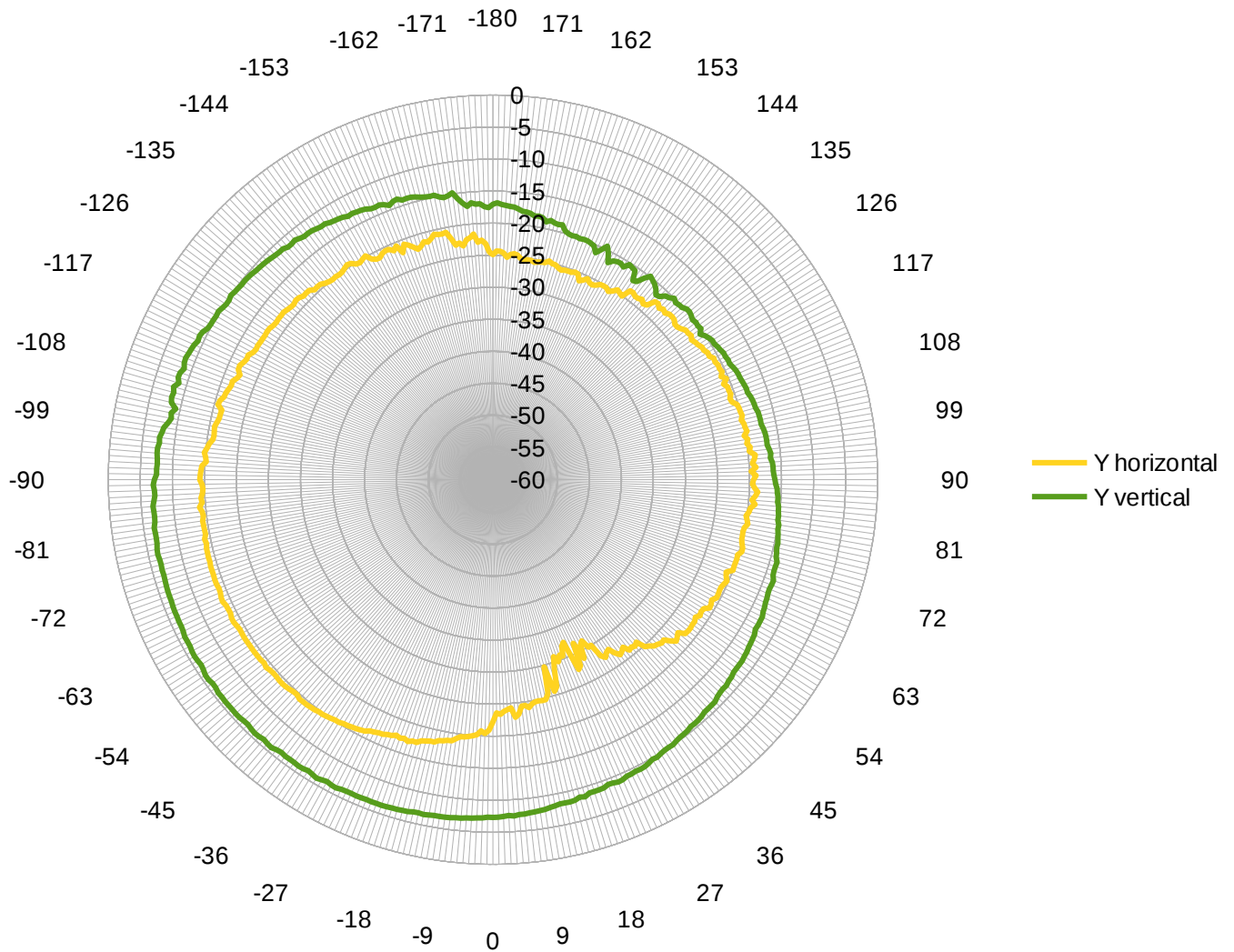
Performance:

Peak gain, 2.1 dBi, all gains shown are dBi.

Antenna gain, Rotation around X axis, horizontal and vertical polarization:



Antenna gain, Rotation around Y axis, horizontal and vertical polarization:



Antenna gain, Rotation around Z axis, horizontal and vertical polarization:

