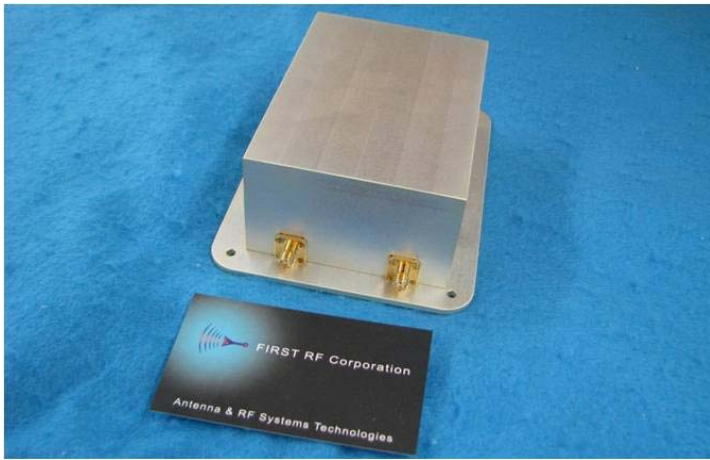


FRF-180 DATA SHEET



FIRST RF AHRS with Differential GPS

Description:

The FIRST RF Corporation attitude heading and reference system (AHRS) is a low-cost solution for wheeled and airborne vehicular platforms.

This multi-sensor device combines data from a 3-axis gyroscope, 3-axis accelerometer, magnetometer, and GPS receiver to produce an accurate and robust attitude solution. The AHRS can also be configured to use an additional GPS antenna to provide a differential solution, thus increasing cold-start accuracy and simplifying startup procedures.

Designed to integrate directly with FIRST RF antenna systems, the FIRST RF AHRS can simplify array control systems in addition to meeting specific end-user needs with 16-GPIO pins.

External GPS antennas are active with 5VDC input and 10-30dBic gain.

Electrical Performance Overview:

Input power: 12-24VDC, 500mA (max. differential configuration)

Heading accuracy: <math><1^\circ</math> rms
Roll accuracy: <math><1^\circ</math> rms
Pitch accuracy: <math><1^\circ</math> rms

Update Rate: Configured for 1 or 2Hz
Heading fix: <math><45</math>s (20s typ. Differential configuration)

GPS: L1: 1.575 GHz
L2: 1.227 GHz
Gain: ≥ 0 to +3 dBic
VSWR: 2:1 Max
Noise Figure: 1.5 typ.
LNA Gain: 25dB typ.
DC Power: 3-5VDC

Nominal Impedance: 50 Ohms
Polarization: Right-hand circular

Environmental:

Temperature: -30-+70°C Operational

Mechanical Overview:

Physical Dimensions:
Antenna Weight:

Communication Interface: USB (virtual COM)
UDP (RJ45)
Baud: 115200

Mounting: Enclosure has a 0.5" flange with 6 mounting holes