

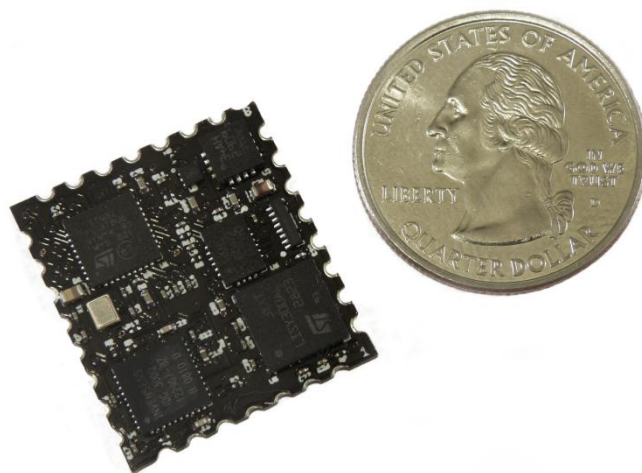


# VN-100(T)

## Embedded Attitude Heading Reference System

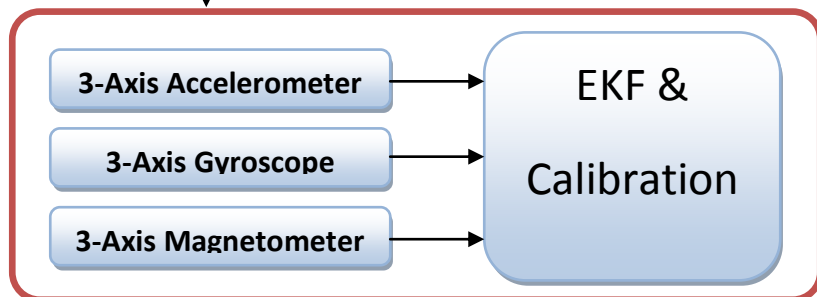
The VN-100 is the world's first Attitude Heading Reference System (AHRS) integrated into a single chip sized module. It's small size and high performance opens the door for numerous embedded applications.

Watch our video demonstration at:  
<http://tinyurl.com/vectornav>



3.3-5.5VDC @ 65mA

VN-100 Chip



### Features

- ◆ Single surface mount solution
- ◆ Small SMT footprint < 1in<sup>2</sup>
- ◆ Accuracy < 0.5 deg RMS (static)
- ◆ Two calibration options:
  - Room temp: VN-100
  - Full temp range: VN-100T
- ◆ Extended Kalman Filter (EKF) attitude solution at 200 Hz
- ◆ Serial TTL, SPI Outputs
- ◆ Euler angles, quaternion, DCM, acceleration, angular rates, magnetic outputs

## Performance

Heading	
Range	$\pm 180^\circ$
Accuracy (RMS) @ 25°C	$< 0.5^\circ$
Accuracy: (3 Sigma) @ 25°C	$< 2.0^\circ$
Temp Sensitivity: VN-100	$< 0.06^\circ / ^\circ\text{C}$
Temp Sensitivity: VN-100T	$< 0.005^\circ / ^\circ\text{C}$
Resolution:	$< 0.05^\circ$

Attitude	
Range: Pitch, Roll	$\pm 180^\circ, \pm 90^\circ$
Accuracy: (RMS) @ 25°C	$< 0.2^\circ$
Accuracy: (3 Sigma) @ 25°C	$< 0.5^\circ$
Temp Sensitivity: VN-100	$< 0.06^\circ / ^\circ\text{C}$
Temp Sensitivity: VN-100T	$< 0.005^\circ / ^\circ\text{C}$
Resolution:	$< 0.05^\circ$

Angular Rate	
Range: Yaw, Pitch, Roll	$\pm 500^\circ/\text{sec}$
Zero Rate Bias Stability: @ 25°C	$< 100^\circ/\text{hr}$
Resolution: Heading	$< 0.01^\circ/\text{sec}$
Resolution: Pitch, Roll	$< 0.01^\circ/\text{sec}$
Bandwidth:	140 Hz

Acceleration	
Input Range: X/Y/Z	$\pm 2\text{ g}, \pm 6\text{ g}$
Resolution: X/Y	$< 0.4\text{ mg}$
Resolution: Z	$< 1\text{ mg}$
Bandwidth:	50 Hz

## Specifications

Environment	
Operating Temp:	$-40^\circ\text{C}$ to $85^\circ\text{C}$
Non-Operating Temp:	$-40^\circ\text{C}$ to $85^\circ\text{C}$

Electrical	
Input Voltage:	3.3 V to 5.5 V
Current:	65 mA
Digital Interface:	Serial TTL, SPI

Physical	
Size: (in)	0.87 x 0.95 x 0.12
(mm)	22 x 24 x 3
Weight: (g)	3 g
Footprint:	30-pin

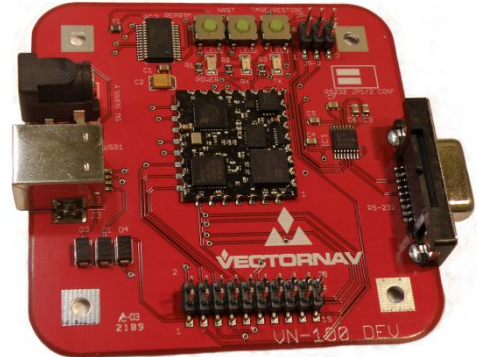
# VN-100(T)

## Embedded Attitude Heading Reference System

## Applications

- ◆ Virtual / Augmented Reality
- ◆ Platform Stabilization / Pointing
- ◆ Motion Tracking
- ◆ Micro Aerial Vehicles
- ◆ Human Machine Interfaces
- ◆ Robotics
- ◆ Handheld devices

## VN-100 Development Board



## Configuration & Display Software

