



KN-4072A Airborne INS/GPS (C/A Code)

KN-4072A was designed as a small and lightweight Navigation System for the Unmanned Air Vehicles (UAV) and the Manned Aircraft markets.

Featuring Kearfott’s T-16B Monolithic Ring Laser Gyro (MRLG) and accelerometer triad the KN-4072A inertial sensors are tightly coupled with an embedded C/A Code GPS to give best performance in its class. Example customers are Hawk jet trainer and Hermes 450 UAV.

KN-4072A Main Features and Capabilities:

- C/A Code GPS
- C/A Code DGPS Corrections (requires DGPS receiver)
- Inputs:
 - Air Data: Baro Altitude
- Navigation Outputs:
 - Position and Altitude
 - Geographic Velocities
 - True Heading, Roll and Pitch
 - Magnetic Heading
- Flight Control Outputs:
 - Angular rates ($\Delta\theta$)
 - Linear Accelerations (Δv)
- Communication Interfaces:
 - MIL-STD-1553B (Muxbus), RS-422 and RS-232
- Recalibration NOT required

Navigation Performance*

	C/A Code GPS	With C/A DGPS
Position Accuracy (CEP)	4 m (13 ft)	2 m (6.5 ft)
Altitude Accuracy (1σ)	8 m (26 ft)	4 m (13 ft)
Heading Accuracy (1σ)	1 mrad	1 mrad
Pitch/Roll Accuracy (1σ)	0.5 mrad	0.5 mrad
Velocity Accuracy (1σ , each axis)	0.05 m/s (0.2 ft/s)	0.05 m/s (0.2 ft/s)

* Performance may vary according to application

KN-4072A System Characteristics

Modes of Operation:	<ul style="list-style-type: none"> • Hybrid INS/GPS Navigation: <ul style="list-style-type: none"> – GPS Data is Tightly Coupled with Inertial Measurements – DGPS Corrections are applied when available from an external DGPS Receiver (via RTCM-104) • Free Inertial: <ul style="list-style-type: none"> – Baro Altitude is incorporated in the Vertical Loop in absence of valid GPS data • Alignment: <ul style="list-style-type: none"> – Ground Alignment (Self Gyro Compassing) – In-Air Initialization
Embedded GPS:	<ul style="list-style-type: none"> • 12 Channels C/A Code Receiver • Time Mark: 1 PPS (UTC) • Supports 5 VDC Active GPS Antenna
Operating Range:	<ul style="list-style-type: none"> • Attitude: Unlimited • Angular Rate: Up to 400 deg/sec. (all axis) • Acceleration: Up to 30g's (all axis), IMU
Environmental:	<ul style="list-style-type: none"> • Temperature : -45°C to +71°C • EMI/RFI: per MIL-STD-461E • Shock and Vibration: per MIL-STD-810E/F
Data Communication:	<ul style="list-style-type: none"> • MIL-STD-1553B Muxbus: 1 Dual Redundant RT Channel • RS-422: 1 Channel, and provision for an additional channel • RS-232: 1 Channel
Power:	28 VDC per MIL-STD-704
Cooling:	Free Convection
Weight:	10.2 lb. (4.6 Kg)
Dimensions:	9.1 (L) x 5.4 (W) x 6.0" (H) (231 x 137 x 152 mm)

This datasheet is for reference only, Specifications are subject to change

Please contact Kearfott Marketing for Inertial Navigation Systems (INS) and Inertial Measurement Units (IMU)

Phone: (973) 785-6555

Fax: (973) 785-5905

Email: marketing@kearfott.com

Web Site: www.kearfott.com