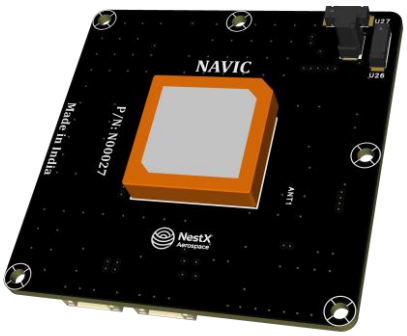
NX-Atlas 1

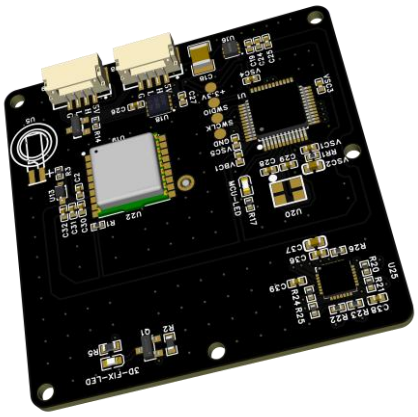
CAN-Based Multi-Constellation GNSS + Magnetometer Module

u-blox F10 standard precision | L1/L5 dual-band GNSS receiver | RM3100 Mag | CAN | **Made in India**

Product Images



Bottom View (Antenna Side)



Top View (Component Side)

General Description

The NX-Atlas 1 is a compact CAN-based GNSS and magnetometer module built around the u-blox NEO-F10N/MAX-F10S L1/L5 dual-band receiver and the PNI RM3100 high-accuracy magnetometer. It provides a complete heading and positioning solution for unmanned and autonomous platforms, with multi-constellation support across NavIC, GPS+QZSS/SBAS, Galileo and BeiDou. Dual JST-GH 1.25mm connectors enable daisy-chain or redundant CAN connection, and the on-board patch antenna delivers reliable acquisition in a 48 × 48 mm footprint.

Key Features

- ✓ u-blox NEO-F10N/MX-F10S L1/L5 dual-band GNSS receiver
- ✓ NavIC (IRNSS) + GPS + QZSS/SBAS + Galileo + BeiDou
- ✓ PNI RM3100 high-accuracy magnetometer
- ✓ CAN communication interface (DroneCAN / UAVCAN v0 compatible)
- ✓ 5 V single-supply power input
- ✓ Dual JST-GH 1.25 mm pitch 4-pin connectors
- ✓ Compact 48 × 48 mm form factor
- ✓ On-board patch antenna (ANT1)
- ✓ PPS output, 3D-Fix and status LED indicators
- ✓ Designed and manufactured in India

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Electrical Specifications

Supply Voltage	5 V DC ± 5%
Supply Current (Peak)	< 300 mA
Logic Level	3.3 V (internal)
ESD Protection	On all external-facing signals
Operating Temperature	−40 °C to +85 °C
Storage Temperature	−40 °C to +85 °C

GNSS Specifications (u-blox NEO-F10N)

GNSS Constellations	GPS + QZSS/SBAS, Galileo, BeiDou, NavIC (IRNSS)
Frequency Bands	L1: 1575.42 MHz | L5: 1176.45 MHz
Position Accuracy (CEP)	1.0 m CEP (with SBAS) | 1.5 m CEP (without SBAS)
Cold Start TTFF	28 s (typical)
Hot Start TTFF	1 s (typical)
Update Rate	Up to 10 Hz
Sensitivity (Tracking & Nav.)	−167 dBm
Sensitivity (Reacquisition)	−159 dBm
PPS Output	3D fix LED
Anti-Jamming	Detection and reporting
Anti-Spoofing	Detection and reporting

Magnetometer Specifications (PNI RM3100)

Sensor Type	Magneto-Inductive (MI) technology
Measurement Range	±1100 µT
Resolution (Sensitivity)	13 nT (@ 200 CPS)
Noise Density	1.2 nT/√Hz
Interface	SPI (to MCU)
Axes	3-axis (X, Y, Z)

CAN Bus Interface

Protocol	CAN 2.0B
Bit Rate (CAN 2.0B)	Up to 1 Mbit/s
CAN Transceiver	Integrated, ISO 11898-2 compliant
Protocol (Application)	DroneCAN / UAVCAN v0 compatible

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LED Indicators

Designator	Color	Behavior & Meaning
LED1 (PPS)	Green	Blinking (1 Hz) — 3D GNSS fix acquired. Solid — no fix.
LED2 (MCU-LED)	Blue	Blinking (1 Hz) — MCU running normally. Solid ON / OFF — fault condition.

Mechanical Dimensions

PCB Dimensions	48.0 mm × 48.0 mm
PCB Thickness	1.6 mm (standard FR4)
Mounting	M2 corner holes
Weight	~30 g (without cable harness)
Origin	Made in India

Connector Pinout — JST-GH 1.25 mm, 4-Pin (×2)

Both connectors (J1 and J2) are electrically identical, enabling daisy-chain or redundant connection to the CAN bus.

Pin	Signal	Direction	Description
1	5V	Power In	5 V DC supply input
2	CANH	Bidirectional	CAN bus high-side differential signal
3	CANL	Bidirectional	CAN bus low-side differential signal
4	GND	Power	Ground reference

Typical Applications

- UAV / UAS autopilot GNSS and heading solution
- Ground control stations and GCS base nodes
- Precision agriculture and survey platforms
- Robotics and autonomous vehicle navigation
- Defense and strategic NavIC-compliant applications

Ordering Information

Part Number	Description	Notes
NX03-001	GPS-F10 Module	-

Custom boards and bulk pricing available on request.

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