

VECTOR-400

Overview



The Professional Choice for Aerial Targets



Fully Automatic Operation



GNSS-Denied Navigation



Datalink Independent



Sea-Skimming



Compact and Easy to Integrate

The Professional Choice for Aerial Targets

The **VECTOR-400** is a compact Flight Control Computer specifically designed to meet the special requirements of aerial targets: catapult launch, highly dynamic maneuvers, high speed flight, sustained +3G maneuvers, parachute recovery etc.

Fully Automatic Operation

The VECTOR-400 executes the flight completely automatically, from takeoff to landing. The operator is able to define the operation and execute it autonomously, but can also **modify the operation in-flight**.

Compact and Easy to Integrate

Reduced size and weight allow straightforward integration into the platform's avionics package using a robust Amphenol **military grade**, twist fit connector. Integrated datalink options are available.

GNSS-Denied Navigation

Exceptional performance in GNSS-denied environments and when there is a jamming threat. High quality components and an EMI/EMC resistant design (tested to MIL-STD 461), together with advanced estimation logic, mitigate the impact of certain high-power signals and allow precise dead-reckoning navigation.

Sea Skimming

When a **radar altimeter** is installed, the VECTOR-400 can use readings from the unit to control high speed, sea-skimming flight at altitudes down to 7 m above surface level. The system also features automatic abort logic which means the mission can be safely terminated at a predefined safety distance from the target vessel. Such safety features can also be triggered automatically by preset alarms.

Non-Dependent Radio Navigation

Advanced onboard software means that **the mission can be carried out even if the datalink becomes unavailable or fails**.



Avda Pirineos 7, B11, 28703
San Sebastián de los Reyes, Spain
+34 91 657 2723
Office hours: 09:00 - 18:00 (CET)
<http://www.uavnavigation.com>

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UAV Navigation



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Technical Specification

MECHANICAL / ENVIRONMENTAL	
Size (mm, H x W x L)	58.0 x 68.0 x 74.5
Weight	210 g (No datalink) 255 g (Integrated datalink)
Enclosure Material	Grade 6082 Aluminium Alloy
Environmental Qualification	MIL-STD-810
EMC/EMI Qualification	MIL-STD-461
Temperature Range	-40°C to +85°C
IP Rating	Designed to conform with IP66
Humidity	Up to 90% RH, non-condensing
Shock survival	500g 8ms 1/2 sine
Integrated RF DataLink Options	No Datalink, 400 MHz, 900 MHz
ESD Compliant	IEC 61.000-4-2-level 4
Main Connector	Amphenol MS3112E-16-26P
External Datalink Connector	SOURIAU 8STA00205SA
ELECTRICAL AND I/O	
Voltage Supply	9 to 36 V DC
Power Consumption	2.5W
GPIOs	8
PWM rate	50Hz, 200Hz or 400Hz
CAN	1 (up to 1Mbps)
Serial comm	4 x RS-232 (up to 250kbps) (No radio version) 3 x RS-232 (up to 250kbps) (Radio version)
Analog Input	3 ADC inputs with 12 bit resolution. Conversion extends from 0V to 3.3V
GNSS Antenna Connector	50 Ohm SMA Female
GNSS Antenna Power Supply	3.3V

ADAHRS	
Roll, pitch, yaw range	Continuous unrestricted
Pitch & Roll error	< 0.5°
Heading error	< 1°
Horizontal Position Accuracy	2.0 m CEP (GNSS available)
Navigation Drift (Dead-reckoning)	<30 m/min (continuous, not first minute only)
Altitude Range	-2000 ft to +36000 ft AMSL
Altitude Accuracy	50 ft
Airspeed Ranges	15-220 kt (43-450 kt under request)
Gyro range	+/-300 °/s (all axis)
Accelerometers range	+/-8 g, all axis (+/-15 g under request)
IMU Sampling rate	1KHz
Internal Magnetometer	3 axis
Magnetometer attitude compensation	Yes
Multi-constellation GNSS capability	72-channel receiver. GPS, SBAS, QZSS, GLONASS, BeiDou, Galileo.
Time to First Fix	Cold Start: 26s. Hot Start: 1s
REDUNDANCY AND SAFETY	
Waypoint Navigation	400 waypoints saved in autopilot
Dual IMU	Yes
Dual CPU	Yes. 850MIPS CPUs (each with 16MB program flash & 256MB ram)
Online sensors diagnostics	Yes (Continuous Built-In Test, CBIT)
Dual Power Supply	Yes
Flight Termination	Deadman Output
Sensor failure tolerance	All single, several multiple

- ✓ Catapult launch (up to 25G).
- ✓ Parachute Recovery.
- ✓ Sea Operations.
- ✓ Flown up to 650km/h.
- ✓ Optimal Evasive Aircraft Maneuvers.
- ✓ Manual, Assisted-Manual, and Automatic Modes.
- ✓ MULTI-UAV Operations.
- ✓ High Dynamics Actions: Evasive Maneuvers.
- ✓ Modify the operation in flight.
- ✓ Auto flight plan execution (up to 400 waypoints).
- ✓ Multi-Fligh Plan Operations
- ✓ Predictive paths.
- ✓ Flight Termination System.
- ✓ Automatic Stall Protection.
- ✓ Exceptional performance to price ratio.
- ✓ Optional Integrated Datalink.
- ✓ Geofencing.
- ✓ Flares and pyrotechnics control.
- ✓ Health Monitoring.
- ✓ Integrated ADS.
- ✓ Dual High-end CPU.
- ✓ Allows the target drone to be used against surface-to-air and air-to-air weapon systems.
- ✓ Transponder IN for UTM (Unmanned Traffic Management).

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