

Where Precision and Reliability Soar!

Northwest UAV



VERONTE
A U T O P I L O T S

FULLY AUTONOMOUS CONTROL FOR UNMANNED VEHICLES

- Triple Redundancy
- Fully Autonomous Control
- Urban Air Mobility (UAM)
- Hybrid VTOL, Multirotor, Fixed-wing, Heli, Missile, Ground Vehicle, Boat, and more
- BLOS Communications (4G/5G, LOS, Satcom)
- Cloud Connectivity
- DO-178-C, DO-254, DO-160-G, ESS, ATR, STANAG, IP67 Compliant, and more
- Sense and Avoid
- Adaptive Control
- RTK & RTCM Positioning
- 4x Redundant Configurations
- One-Click Missions
- Curve Based Navigation
- Fly-by-Camera and Gimbal Auto Tracking



**Veronte Autopilot Is The Flight Controller's Choice for Advanced
and Professional UAV and Unmanned Vehicle Control**

INTEGRATE, TRAIN, AND FLIGHT TEST AT NORTHWEST UAV

VERONTE AUTOPILOT 1x



- All Vehicles: VTOL, USV, Plane, Heli, Multi, Autogiro
- 100% Autonomous
- Sense & Avoid
- RTK Precise Positioning
- User Programmable

The Veronte Autopilot 1x is designed to control any unmanned vehicle: UAVs, multirotors, helicopters, airplanes, Hybrid VTOL, blimps ... as well as ground and surface vehicles, and many others.

Custom flight phases and control channels provide support for any aircraft layout and performance. Compatible with any payload (gimbal, camera, cargo release, transponder, etc.).

MAIN FEATURES

- Advance Control
- All-in-One Box
- Internal LOS & BLOVS
- External LOS, Satcom, 4G/5G
- Certification Ready: DO178-C, DO254, DAL-B, DO160-G

VERONTE AUTOPILOT 4x



Veronte Autopilot 4x is the optimal choice for critical applications that require a redundant autopilot, where the risk of casualties in civilian applications or the failure of military operations, is not an option.

It incorporates three complete Veronte Autopilot modules and connectivity for a fourth external module. The dissimilar arbiter includes advanced voting algorithms for selecting the control module, eliminating single points of failure.

MAIN FEATURES

- Fly-by-Wire Onboard or Remote Joystick
- High Reliability
- Redundancy
- Customizable
- Robustness
- Anodized aluminum, IP167
- Internal LOS, LTE
- External LOS, LTE, Satcom
- Certification: DO178-C, DO254, DAL-B, DO160-G

SPECIFICATIONS & HIGHLIGHTS

	VERONTE AUTOPILOT 1x	VERONTE AUTOPILOT 4x (REDUNDANT)
MAIN FEATURES		
Internal Sensors	3x IMU, 3x Magneto, 2x Barometer, 1x Pilot	9x IMU, 9x Magneto, 6x Barometer, 3x Pilot
Positioning	2x GNSS, RTK, GNSS Heading	6x GNSS, RTK, GNSS Heading
I/O		
Ports	16x PWM/GPIO, 5x ADC	PWM/GPIO, ADC
Buses	—	CAN, 12C, RS232, RS485, UART
Auxiliary	—	PWM, 12C, RS232, RS485, ADC, ARINC
Expandible	Veronte CEX, Up to 32 Actuators	
SAFETY		
Failsafe	Dissimilar Supervisor, FTS	
Protection	ESD, Overtemperature, Short Circuit, RP	
Robust Mfg.	ATR, DDP & DoD, ESS & Calibrations in All Units	
GENERAL		
Power Input	3W, 6.5-36VDC	17-47W, 6.5-36VDC
Temperature Range	-40°C to 60°C	
Weight	198g 201g Including ADS-B/Remote ID	750g

[P006982] Veronte Autopilot 1x - w/o DAA V4.8
 [P006142] Veronte Autopilot 1x - Remote ID V4.8
 [P006143] Veronte Autopilot 1x - ADS-B V4.8

[P006365] Veronte Autopilot 1x - Target/Loitering V4.8
 [P006146] Veronte Autopilot 4x - Remote ID 1.8
 [P006147] Veronte Autopilot 4x - ADS-B 1.8

See page 5 for configurations and accessories.

VERONTE AUTOPILOT 1x KIT



This is the ideal autopilot kit choice for UAS/RPAS professionals seeking an advanced integration environment to configure and fine-tune the Veronte Autopilot into their UAS/RPAS.

The 1x KIT includes the Hardware-in-the-Loop (HIL) Simulator, whereby your UAS/RPAS will fly in a simulated virtual environment provided by X-Plane, allowing for adjustments, e.g. control PID gains on the fly.

APPLICATIONS

- First Integration
- Real HIL
- Testing
- Fine Tuning
- Training
- Any Vehicle

MAIN FEATURES

- Airborne Autopilot
- GCS Electronics
- HIL Simulation
- Embedded Datalink
- Wiring & Accessories

SPECIFICATIONS & HIGHLIGHTS

VERONTE AUTOPILOT KIT

Ready for Installation	Includes All Needed Equipment for Veronte Autopilot Integration
Learning Tool	Hardware-in-The-Loop Safe Virtual X-Plane Test Flight Environment
Tuning Capabilities	Real Aircraft Layout and Performance in the Virtual Environment
Compatibility	Autopilot Installation within Any Vehicle
Onboard Unit	Veronte Autopilot 1X
Control Station Unit	Veronte BCS Autopilot
Harness	Circular 68-pin Connector and Control Station Cable Included
Data-link	Embedded LOS (900 MHz or 2.4 GHz) + BLOS (4G) Module
Autopilot Casing	Sealed Anodized Aluminium, IP67 Waterproof, EMI Shielding
Accessories	GPS & RF Antennas Included
Extended Support	Real Time Support through Email, Phone or Remote Desktop
Device Compatibility	Transponder, Gimbal, Altimeter, Obstacle Detection, Comparison ...
Full Autopilot Functionality	Fly-by-Camera, Curve Based Navigation, Follow Me, One Click Missions, Adaptive Control ...
Optional Upgrade	High Gain GPS Antenna Enhancement

1x KIT CONTENTS

Onboard Equipment:

- Veronte Autopilot 1x
- GPS Antenna SSMA
- LOS Antenna 2.4GHz
- Antenna Extension Cable 25cm
- Autopilot Harness

Control Station Equipment:

- Veronte Autopilot BCS
- LOS Antenna 2.4GHz
- Antenna Extension Cable 25cm
- Autopilot Harness CS
- Power Source

Software Tools:

- Veronte APP operation software
- Veronte PDI Builder configuration tools
- Veronte HIL Simulator software

Extended Support:

- 10h Extended real-time support



VERONTE HIL & SIL SIMULATORS

Two types of tools for performing UAV simulations. We will assist you to determine the appropriate tool for you:

- **HIL Simulations** (Hardware-in-the-Loop)
- **SIL Simulations** (Software-in-the-Loop)

The ability to test is an essential part of the development process for drones or eVTOL systems. Verification of the many elements ensures that all configurations are correct. A simulation of the System before the flight is vital, particularly in the UAS industry, where mission-critical success is imperative. These factors make simulations a valuable and powerful tool.

HIL SIMULATOR uses the hardware to simulate specific environments and situations and monitors the autopilot, taking into account responses of the real Hardware's performance in real-time. With HIL hardware simulations, some environmental conditions are hard to predict; this is where the power of the SIL software simulation comes in.

SIL SIMULATOR allows the operator to simulate the operation of the drone or eVTOL with the use of software and without the need for the real Hardware. The software system can be programmed to simulate and control the flight (start, restart, etc.) and record detailed analysis of the system's navigation and control algorithms that are not available using the HIL Simulator. Recent updates incorporate many improvements to the SIL Simulator and allow SIL to connect with Veronte PIPE software.



For questions on Veronte product capabilities or custom integration, contact Northwest UAV.

See page 5 for configurations and accessories.

VERONTE CONTROL STATIONS

LCS CONTROL STATION



MAIN FEATURES

- Embedded Control Station for UAVs and Drones
- GCS for the Control of Autonomous Vehicles Operating in Harsh Environments
- Ready-to-Use Veronte Toolbox
- Fully Rugged All-weather MIL-STD-810H & IP66 Design with Magnesium Alloy

Veronte LCS Control Station is a ready-to-use system designed for high-performance autonomous vehicle operations. Thanks to its built-in battery and robustness for outdoor use, the LCS is positioned as a fully adaptable option for operators' most demanding needs.

SPECIFICATIONS & HIGHLIGHTS

	VERONTE LCS
Ready to use	Pre-installed software, Rugged laptop
Software	Veronte Autopilot Toolbox
OS	Windows 11 Pro, Linux (optional)
CPU	Intel Core i7-1185G7 vPro Processor
Memory	RAM 16GB, SSD 512GB
Touch Display	Multi-touch, Outdoors Use
Rugged	MIL-STD-810, IP 66
Dimension	31.5 x 36.5 x 5.5 cm, 3.35 Kg
Configuration	PDI Builder, PDI Calibration
Display	14.0", FHD 1920 x 1080, Touch
Interface	USB-C, USB-A x2, Ethernet, MicroSDXC
Communications	Dual SIM
Webcam	5MP w/Privacy Cover & Tetra-array Mic
Compliance	MIL-STD-810H, MIL-STD-461G, IP662
Security	Intel Shield, Secured-core, TPM 2.0
Encryption	NIST BIOS, Encrypted SSD
Battery	Li-Ion Battery (18 Hours), 3h to Charge
Hot Swap	Yes
AC Adapter	AC 100V-240V Worldwide Power

[P008655] Veronte Control Stations: LCS 1.01

PCS CONTROL STATION



MAIN FEATURES

- RTK and COMMs for Any Autonomous Vehicle
- Rugged Control Station for Advanced Control, Waterproof IP54
- Embedded Datalink
- Battery Backup
- Enables RTK, Differential GNSS, Relative Missions, Landing on Moving Platforms and Tracking Antenna Control

Veronte PCS Control Station is an advanced ground station (GCS) optimized for the control of any Veronte Autopilot-powered vehicle. It contains all the necessary components for performing operations with UAVs and autonomous vehicles.

SPECIFICATIONS & HIGHLIGHTS

	VERONTE PCS
Control Station	Long Range LOS, Joystick Interface
Embedded Sensors	RTK, IMU, Barometer, QNH
GCS Computer	Laptop, Tablet, PC
GCS Interface	WiFi, Ethernet, USB
Peripheral I/O	CAN, PWM, PPM, ADCs, I2C
RF Connectors	WiFi, LOS, GNSS, Aux
Datalink Extension	Veronte Tracking System T28
Frequencies	400MHz, 900MHz, 2.4GHz, Others
Expansion Bay I/O	RS232, CAN bus, Ethernet, GPIO, Power
GNSS 1	Integrated Antenna, 40dB Gain
GNSS 2	SMA Female Connector
Sensors	3x IMU & Magnetometer, 2x Barometer
PCS Material	Anodized Aluminium Encl., Plastic Frames
Temperature	-20°C to 60°C Range
Weight	4.5 Kg PCS Unit, 5.7 Kg Mast
Power Input	14-24VDC
Power Supply	280W, 80-264 VAC 50-60 Hz
Backup Battery	LiFePO4, 10 Ah, 2h (typical)
Power	30W (w/o radio), Up to 80W (w/radio)

[P006149] Veronte Control Stations: PCS 2.1

VERONTE

VERONTE CEX AVIONICS



MAIN FEATURES

- I/O Expansion and BUS Management Unit

Veronte Avionics CEX is a peripheral to ease the reduction of wire in autonomous vehicles at the time it permits to increase the number of devices in the system, enhancing the I/O connectivity and bus protection. Its user-friendly design ensures a quick and efficient integration process for improved overall performance. It is highly durable and resistant to electromagnetic interference. It is compliant with DO160 and MIL-STD-810 environmental test for aircraft certification.

VERONTE MEX AVIONICS



MAIN FEATURES

- Magnetometer and I/O Expansion Module

The **Veronte Avionics MEX** magnetic compass is a powerful peripheral that includes functionality to enhance the I/O connectivity in the Veronte Autopilot, reducing wiring in autonomous vehicles and increasing the number of devices in the system. Offered in two different versions: Veronte MEX (is protected by an enclosure made of anodized aluminum 6061-T6) and Veronte MEX OEM (is smaller and lighter, but requires mechanical protection when installed). DO178C / ED-12 and DO254 / ED 80 aviation design standards are followed during the Veronte Avionics MEX development.

AVIONICS

VERONTE SDL AVIONICS



MAIN FEATURES

- RS232 LOS Datalink for drones

Veronte Avionics SDL Datalink is a radio module for devices with RS-232 with Autopilots 1x or 4x. It establishes wireless serial communications with high performance and reliability. This product can be employed to build point to point and multipoint applications. Datalink connects devices with RS-232 ports to RF communications through external antennas. In addition, Datalink sends RSSI to monitorize the RF signal strength.

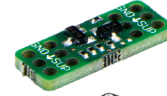
SDL is sold with three variants. They have two main differences: frequency and operating antennas.

SDL VARIANT	FREQUENCY
SDL04	400 MHz
SDL09	900 MHz
SDL24	2.4 GHz

ADDITIONAL AVIONICS



Veronte Avionics Stick integrates USB sticks into any drone system, converting USB signals to generic PPM output. Compatible with most commercial sticks, pedals, levers, wheels, etc. It allows combining signals for creating custom flight decks.



Avionics Serial & Avionics Shifter



Avionics R12f & R24f



Avionics R12s



Leaders in manned eVTOL flights
 First to pass VVZ2 TC with LufABw in Germany
 Distributed Redundancy for eVTOL

TRACKING ANTENNA T28

MAIN FEATURES



- Ready for Operation with Veronte PCS
- Real Time Tracking
- Data, Telemetry and Video Link Communication
- Tripod or Telescopic Mast Mount
- Directional and Omnidirectional Antenna Combination
- Compatible with Veronte MCS or Third Party Computers
- Easy to Install
- 360° Free Rotation
- Easy Maintenance
- Robust and Reliable Construction

The **Tracking Antenna T28** is a high-performance antenna designed for long-range communications in harsh environments. With auto-tracking capabilities, it can autonomously point the antenna to the drone. Equipped with embedded control actuators and precision encoders, it enables precise tracking for optimal performance. The T28 antenna allows for the installation of a wide range of datalinks in the designated expansion bay, regardless of frequency or manufacturer. Compatible with Veronte PCS, it offers long-range communications in Line Of Sight (LOS) and versatility when operating at different distances. It provides a comprehensive solution to optimize performance and simplify tracking and communication operations for drones and autonomous vehicles.

See page 5 for configurations and accessories.

VERONTE PRODUCT LIST

AUTOPILOTS

1x 4.8 Autopilots

LOS + BLOS Radio Options

- External Radio (RS232)
- 4G/5G + 2.4 GHz Radio
- 4G/5G + 900 MHz Radio
- 4G/5G + 400 MHz & 900 MHz Radio

Options

- Mounting Kit
- IP67 Aluminum Protection Removed

NOTE: Standard Veronte autopilot system requires both an onboard and control station unit; both units must have the same radio installed.

1x Autopilot KIT

LOS + BLOS Radio Options

- 4G/5G + 2.4 GHz Radio
- 4G/5G + 900 MHz Radio

4x 1.8 Autopilots

Configuration

- Veronte Autopilot 4x (Redundant)

LOS + BLOS Radio Options

- External Radio (RS232)
- 3x 4G/5G + 2.4 GHz Radio
- 3x 4G/5G + 900 MHz Radio
- 3x 4G/5G + 400 MHz & 900 MHz Radio

NOTE: Standard Veronte autopilot system requires both an onboard and control station unit; both units must have the same radio installed.

Speciality Autopilots

- LM** - FCS for Loitering Munition
- VBM** - Vision Based Navigation System

Professional Simulator Kits

- HIL** - Hardware-in-the-Loop
- SIL** - Software-in-the-Loop
- HIL Kit** for X-Plane Simulator

Available Accessories

- Veronte HIL Simulation cable
- 4x Veronte HIL Simulation cable

CONTROL STATIONS

LCS Control Station

LOS + BLOS Radio Options

- External Radio (RS232)
- 4G/5G + 2.4 GHz Radio
- 4G/5G + 900 MHz Radio
- 4G/5G + 400 MHz & 900 MHz Radio

PCS Control Station

LOS + BLOS Radio Options

- External Radio (RS232)
- 4G/5G + 2.4 GHz Radio
- 4G/5G + 900 MHz Radio
- 4G/5G + 400 MHz & 900 MHz Radio

TRACKING SYSTEMS

T28 TRACKING ANTENNA

Veronte Tracker Antenna with detachable tripod with multiple configurations:

- | | |
|---------|-----------------|
| 400 MHz | 2.4 GHz |
| 900 MHz | Call for custom |

AVIONICS

- CEX** - I/O Expansion & BUS Management Unit
- MEX** - Magnetometer & I/O Expansion
- SDL** - RS232 LOS Datalink for drones

Additional Avionics

- Stick** - USB to PPM stick converter
- Serial** - UART Converter to RS232 & RS485
- Shifter**
- Rxxf: R12f & R24f** - Robust DC-DC converter 60W
- R12s** - Redundant DC-DC Converter

ACCESSORIES

HARNESSES

- Autopilot Harness
- Autopilot Harness CS

MOTOR CONTROLLERS

- MC01** - Gimbal & Tracker Motor Controller
- MC110** - Designed for eVTOL and Drones
- MC24** - Inverters for eVTOL Certification

PERIPHERALS

- Veronte Expander CEX
- Veronte Expander CEM
- Veronte Expander COM
- Veronte Expander MLINK
- Veronte Expander MAGNETO
- Veronte Expander STICK
- Veronte Expander GIM3

POWER

- Veronte Redundant DC-DC Converter
- Veronte 12V Power Source for Autopilot CS and HIL Simulator

LICENSING

- Veronte Communications Protocol (VCP) License** [SRSV014] (1-Year of updates and support. API libraries, VCP connectivity manuals, and advanced HIL Simulator connectivity)

Pay-Per-Fly License

Lifetime License

For Questions on Veronte Product Prices, Capabilities, Custom Integration, Training & Support contact

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