

Precision Avionics Ecosystem



**INTEGRATE, TRAIN
& FLIGHT TEST at
NORTHWEST UAV**


Northwest UAV
A GLOBAL COMPANY
OFFICIAL DISTRIBUTOR for Unmanned Systems

 **EMBENTION**
 **VERONTE**
AUTOPILOTS

CERTIFIED AUTONOMY SOLUTIONS

TECHNICAL EXCELLENCE FOR PLATFORMS REQUIRING AIRWORTHINESS

Veronte provides the architecture for certified autonomous flight. Developed under DO178C and DO254, our **autopilots** and **avionics** offer the redundancy and safety required for civilian and defense applications. We simplify complex integration with robust motor control and tracking systems.

01. Engineered for DO178C, DO254, and DO160 Compliance
02. Redundant Systems with Fail-Safe Integration
03. Dual-use Technology for Civil and Military Platforms

MILITARY PROVEN PROPULSION SOLUTIONS!

 **Northwest UAV** A GLOBAL COMPANY **20 YEARS**



CERTIFIED FLIGHT CONTROL BUILT FOR PERFORMANCE

RELIABLE AUTONOMY FOR EVERYTHING FROM SMALL DRONES TO ADVANCED AIRCRAFT

Veronte delivers certified, fail-safe flight controllers for every mission. Our hardware manages flight to complex, redundant operations in GPS-denied zones. These systems meet stringent regulatory friction so your aircraft is always flight-ready.

01. VERONTE 1X, 4X AND DRX AUTOPILOT SERIES

- **Total Mission Control:** Fully autonomous operations with seamless transitions to assisted-manual flight.
- **Scalable Architecture:** Expandable I/O supporting up to 32 actuators and with Veronte CEX modules.
- **Advanced Obstacle Avoidance:** Integrated compatibility with Radar, Lidar, ADS-B, and Remote ID.
- **Superior Navigation:** Precise positioning using advanced sensor fusion and Kalman filtering.
- **Custom Logic:** Model-based design tools for deep PID tuning and automated failsafe protocols.
- **Peripheral Ecosystem:** Plug-and-play support for gimbals, altimeters, and external mission computers.



1x Autopilot
SAIL I-IV | Fail-Safe



4x Autopilot
SAIL I-VI & TC | Fail-Operational



DRx Autopilot
SAIL I-VI & TC | Distributed Redundant

	1x Autopilot SAIL I-IV Fail-Safe	4x Autopilot SAIL I-VI & TC Fail-Operational	DRx Autopilot SAIL I-VI & TC Distributed Redundant
Fly-by-wire	-	Onboard or Remote Joystick	Onboard Joystick & Display
Internal Sensors	3x IMU 3x Magneto 2x Barometer 1x Pitot	9x IMU 9x Magneto 6x Barometer 3x Pitot	6x IMU 6x Magneto 6x Barometer 3x Pitot
Positioning	2x GNSS RTK GNSS Heading	6x GNSS RTK GNSS Heading	9x GNSS RTK GNSS Heading
Communications	Internal ¹ LOS, BLOS External LOS, Satcom, 4G/5G	Internal LOS, LTE External LOS, LTE, Satcom	3x LOS, 4G External LOS, LTE, Satcom
I/O Ports	16x PWM/GPIO 5x ADC	PWM/GPIO ADC	PWM/GPIO ADC
I/O Buses	2x CAN 12C RS232 RS485 UART	CAN 12C RS232 RS485	CAN 12C RS232 RS485 Ethernet
Redundancy	-	Autopilot Cores- 3x Internal 1x External	3x Autopilot Cores Distributed Redundancy
Certification	Ready: DO-178C DO-254 DAL-B DO-160	DO-178C DO-254 DAL-B DO-160G	DO-178C DO-254 DO-160G
Power	-	17-47W	3x 5-15W
Temperature Range	-40° to 65°C	-20° to 70°C	-40° to 60°C
Weight	198g 210g ²	615g 631g ²	198g (per core)

¹LOS: 2.4Ghz, 100mW, Configuration, Tuning; BLOS: LTE, Cloud Communications, Worldwide. | ²Including ADS-B/Remote ID.

02. VERONTE VBN 1.0: PRECISE VISION NAVIGATION

- **UAV & eVTOL positioning for GNSS-denied operations:**

The VBN ensures mission success where GPS fails. Utilizing onboard SLAM and stereoscopic computer vision, it provides the deterministic accuracy required for UAM certification. Built to DO-178C and DO-254 standards, this system replaces signal reliance with verifiable visual intelligence.



- **Operation Range:** Up to 5000 m AGL | 50 m/s
- **Onboard maps:** Pre-mapping or Real-time Mapping
- **Modes:** VIO, SLAM, VPR, Dead-reckoning Fallback

VBN Autopilot

Vision Based Navigation System

Performance	GNSS Denied Navigation
Internal Sensors	Camera: EO 1.6 MP 30 FPS 1440x1080 px
Position Accuracy	0.3-1.0 m CEP Autopilot Sensor Fusion
Position	ENU/NED Coordinates Absolute & Relative
I/O	CAN 2.0 CAN-FD RS232 RS485 GPIO
Startup	EGNSS Not Required GNSS for Faster Startup
Certification	DO-178C DO-254 IP67 Waterproofness
Power	6.5V-36V 10W Typical Redundant Input
Temperature Range	-40° to +60°C
Weight	328g

FT

manages everything from simple
strict aviation standards, removing

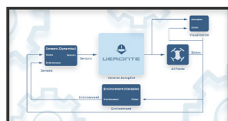
03. FLY THE HARDWARE BEFORE THE MISSION

- Autopilot HIL – Hardware in the Loop Simulator integrates actual hardware with precise simulation. Processing virtual data through real processors validates control logic without risking airframes. It remains the most efficient way to test configurations and train operators in safe, repeatable environments.
- Test real actuators and hardware in risk-free environments.
- Validate flight logic using authentic sensor data injection.
- Generate PDI evidence for faster system certification.



04. PERFECT YOUR AVIONICS BEFORE THE FIRST FLIGHT

- Autopilot SIL – Software in the Loop Simulator executes flight code in a software environment, bypassing hardware risks. It processes simulated sensor data to validate GNC algorithms and failure modes. Speed up development by running tests faster than real-time while generating data needed for airworthiness certification.
- Run complex failure simulations without risking expensive frames.
- Accelerate testing cycles with faster-than-real-time simulations.
- Generate certification data using custom C++, Matlab, or Fortran.



MISSION-CRITICAL COMMAND SOLUTIONS RUGGED, LONG-RANGE CONTROL FOR UNMANNED VEHICLE OPERATIONS

Veronte ground stations provide reliable control for autonomous vehicles in extreme conditions. Rugged hardware delivers long-range connectivity and RTK precision for demanding missions. LCS and PCS units ensure field-ready performance and seamless integration for autopilot-powered operations.

01. MISSION-CRITICAL COMMAND: VERONTE LCS

- Professional-grade control for uncrewed vehicle operations: Veronte LCS provides field-ready command in extreme conditions. MIL-STD-810 ruggedness and IP53 ratings protect against shock, drops, and rain. Featuring 25-hour hot-swap power and a sunlight-readable display, it delivers continuous, reliable control for every uncrewed mission.
- IP53 and MIL-STD-810 rated for shock, vibration, and weather
- 25-hour runtime with hot-swap cells for nonstop mission uptime
- 1100-nit touchscreen with pre-installed Autopilot Toolsuite



02. RELIABLE GROUND CONTROL FOR PROFESSIONAL UAVS

- Precision RTK and long-range links in one rugged unit: Veronte PCS delivers professional command for uncrewed systems. Its IP54 aluminum frame integrates RTK precision, dual GNSS, and 2-hour backup power. Optimized for range, the 3-meter mast ensures line-of-sight connectivity, while DO-178C compliance guarantees mission-critical reliability.
- Integrated dual GNSS for RTK precision without extra hardware
- IP54-rated aluminum enclosure with a 3m mast for clear LOS
- Multi-drone support with seamless control handover capabilities



01. PRECISION TRACKING FOR UNMANNED OPERATIONS

- Maintain mission-critical telemetry across extreme ranges. The Veronte T28 automates directional alignment, ensuring a stable high-bandwidth connection for UAVs, USVs, and UGVs. It eliminates signal dropouts in harsh RF environments through rugged, autonomous mechanical tracking.
- Automated pointing for uninterrupted long-range data links
- Dual directional antenna support for maximum signal gain
- Built for reliability in severe environmental conditions



HIGH-PERFORMANCE VERONTE AVIONICS

RUGGED INTEGRATION COMPONENTS FOR MISSION-CRITICAL RELIABILITY

Veronte I/O modules, power converters, and datalinks streamline uncrewed system architecture and ensure mission success.

01. I/O EXPANSION

	CEX I/O Expansion & Bus Management	MEX I/O Expansion & Magnetometer
Wire Optimization	Long distances Robust to interferences	Long distances Protection Robust bus
Data Concentrator	CAN Bus to serial, digital input, ARINC, etc	CAN Bus to serial, digital input, analog, etc.
Failure Detection	Babbling idiot failure Bus failures	
Construction	Anodized aluminium IP68	Anodized aluminium
Power Input	6.5 – 36VDC Redundant power input	6 – 36VDC Redundant power input
Power	3.5W	3W
Temperature Range	-40 to 85°C	-40 to 60°C
Weight	117.9g	69g 17g OEM
Size (W x L x H)	41 x 60 x 37 mm	38 x 83 x 19 mm



Stick
USB-PPM Stick Converter



Serial
RS232-RS485-UART Converter



Shifter
PWM Level shifter

Construction	Aluminium Black anodized	OEM PCB	OEM PCB
Power Input	5V Up to 3A	2.3 to 6.5V 2A	0 to 12V (input & output)
Power	15W	-	Consumption: Up to 300 mW
Temperature Range	-40 to 60°C	-40 to 85°C	-50 to 85 °C
Weight	280g	3g	0.5 g
Size (W x L x H)	90 x 65 x 33 mm	12 x 26 x 5 mm	7 mm (W)

04. SDL DATALINK FOR DRONES

	SDL04	SDL09²	SDL24
Supported Frequency	410–480 MHz / 902–928 MHz ¹	902–928 MHz	2.400–2.4835 GHz
Spreading Method	Frequency Hopping, GMSK, 2GFSK, 4GFSK, QPSK	Frequency Hopping	Frequency Hopping, DTS
Error Detection	32 bits of CRC, ARQ		
Range	Depends on the antenna employed and on the user's setup.		
Output Power	Up to 2W	100 mW to 1 W	Up to 1W
Link Rate	Up to 345 kbps	Up to 276 kbps	19.2–345 kbps
Serial Baud Rate	300 bps–230 kbps	Up to 230.4 kbps asynchronous	250–230.4 kbps
Humidity	5%–95% (non condensing)		
Operating Temp	-40 °C to 85 °C (internal)		
Weight	68 g		
Size (W x L x H)	44 x 71 x 26 mm		



¹Software Selectable. | ²SDL 09 Band Segments: Selectable via Freq. Zones

02. DC-DC CONVERTERS

	RxxF: R12F, R24F DC-DC 60W Converters
Enclosure Protection	IP66
Input Voltage	14–160V DC
Output Voltage	12V DC or 24V DC
Max Output Current	5A
Operating Temp	-40 to 75°C
R12F Size (W x L x H)	64.4 x 98.4 x 34.4 mm
R12F OEM Size	52 x 87 x 17.8 mm



	R12S Switch Redundant DC-DC Converter
Enclosure Protection	IP66
Input Voltage	5.5–36V DC
Output Peak/Cont. Current	6A / 5A
Output Voltages	3.3, 5, 6, 7.4, 9 or 12V
Operating Temp	-40 to 85°C
Weight	19g
R12F Size (W x L x H)	23.5 x 48 x 11.9 mm

03. MOTOR CONTROLLERS

The MC01 is built for precision. It is small and light-weight. Use it to control brushless or stepper motors in gimbals and tracking antennas.

The MC110 drives large eVTOLs and drones. It pushes up to 800V and 200A. This liquid-cooled inverter delivers 110kW of power, and meets strict aviation safety standards for reliable flight control.

05. XDL24 DATALINK

	XDL24
Interface	USB 2.0 (Connector USB-C)
Frequency Band	ISM 2.4 GHz
Supply Voltage	5W
Power Consumption	0.5W
RF Data Rate	250 Kbps
Weight	82 g / 100 g (with antenna)
Size (W x L x H)	43 x 45 x 16 mm

