

Bill of Materials (BOM)

Nimbus Robotics — Meridian UAV (VTOL) V4.2

Sub-Assembly: Main Avionics & Power Distribution Board (PDB)

Document ID: BOM-NR-MRD-042-REV3

Date: July 15, 2026

Status: Approved / Released

Lead Engineer: Dr. Sarah Jenkins

Sourcing Summary

Total Items: 26

Total Quantity: 92

Suppliers: 5 (Apex, Nexa, Synapse, Vertex, Meridian)

Preferred Rate: 92%

Financial Dashboard

Unit Cost (Base): \$2,458.50

Total Rolled Cost: \$14,914.10

Target Budget: \$15,000.00

Variance: -\$85.90 (-0.57%)

Risk & Lead Time

Max Lead Time: 6 Weeks

Critical Path: Payload
Camera
Gimbal

Risk Level: Low-Medium

Sourced Status: 100% Qualified

1.0 System Overview & Power Distribution Subsystem

This section details the primary energy storage, propulsion actuators, and heavy power distribution elements of the Meridian UAV. All components are certified for high-reliability operation under extreme environmental conditions. Sourcing is restricted to approved vendors.

Item	Part Number	Description	Manufacturer	Qty	Unit (\$)	Total (\$)	Status
1.1	NX-BAT-22Ah	LiPo Battery Pack 22000mAh 12S	Nexa	4	420.00	1,680.00	✓ In Stock
1.2	AP-MOT-VTOL	Brushless Motor 380KV VTOL	Apex	8	195.00	1,560.00	✓ In Stock
1.3	NX-ESC-80A	Electronic Speed Controller 80A	Nexa	8	125.00	1,000.00	✓ In Stock
1.4	NX-PDB-12V	PDB Main Board 12V 50A	Nexa	2	85.00	170.00	✓ In Stock
1.5	MR-SEN-CUR	Hall Effect Current Sensor 150A	Meridian	2	25.00	50.00	✓ In Stock
1.6	NX-REG-05V	DC-DC Buck Regulator 5V 10A	Nexa	2	35.00	70.00	✓ In Stock
1.7	VX-MOS-80N	N-Channel Power MOSFET 80V 120A	Vertex	16	4.50	72.00	✓ In Stock
1.8	AP-CON-XT60	XT60 Male/Female Connectors (10pk)	Apex	4	12.50	50.00	✓ In Stock
Section 1 Subtotal:						\$4,652.00	

2.0 Avionics, Guidance & Telemetry Subsystem

The avionics suite comprises the core computational units, telemetry links, and environmental sensors. The primary flight computer is dual-redundant and interfaced via isolated bus architectures to protect signal integrity.

Item	Part Number	Description	Manufacturer	Qty	Unit (\$)	Total (\$)	Status
2.1	MR-MCU-H7	Flight Controller Board STM32H7	Meridian	2	450.00	900.00	✓ In Stock
2.2	NX-GPS-RTK	High-Precision RTK GPS Module	Nexa	2	280.00	560.00	✓ In Stock
2.3	SP-RAD-900	Telemetry Radio 900MHz 1W	Synapse	2	185.00	370.00	🕒 2 Weeks
2.4	VX-IMU-6DO	High-Grade 6-DOF IMU Sensor	Vertex	4	95.00	380.00	✓ In Stock
2.5	MR-LID-2D	2D LiDAR Obstacle Avoidance	Meridian	2	620.00	1,240.00	🕒 4 Weeks
2.6	SP-COM-ETH	Ethernet Switch 5-Port Rugged	Synapse	2	310.00	620.00	✓ In Stock
2.7	NX-TRANS-5G	5G Cellular Telemetry Link	Nexa	2	150.00	300.00	✓ In Stock
2.8	AP-ANT-DIR	Directional Antenna Patch 900MHz	Apex	2	45.00	90.00	✓ In Stock
2.9	VX-BARO-MS	High-Resolution Barometric Sensor	Vertex	4	18.00	72.00	✓ In Stock
2.10	SP-ISO-OPT	Optocoupler Isolation Board 4-Ch	Synapse	4	9.80	39.20	✓ In Stock
Section 2 Subtotal:						\$4,571.20	

3.0 Payload, Structural Integration & Fasteners

This section includes the primary electro-optical payload gimbal, structural mounting plates, sealing enclosures, and mechanical fasteners required to assemble the avionics module into the carbon fiber airframe.

Item	Part Number	Description	Manufacturer	Qty	Unit (\$)	Total (\$)	Status
3.1	MR-CAM-EO	EO/IR Dual Sensor Camera Gimbal	Meridian	1	4,850.00	4,850.00	🕒 6 Weeks
3.2	VX-ENC-AL	Aluminum Enclosure IP67	Vertex	2	145.00	290.00	✅ In Stock
3.3	AP-MNT-VIB	Anti-Vibration Camera Mount	Apex	2	65.00	130.00	✅ In Stock
3.4	NX-CAB-WHR	Wiring Harness Assembly Kit	Nexa	2	95.00	190.00	✅ In Stock
3.5	VX-STR-CF	Carbon Fiber Mounting Plate Set	Vertex	4	35.00	140.00	✅ In Stock
3.6	AP-SCR-M3	Stainless Steel M3 Screw Set (100pk)	Apex	5	8.50	42.50	✅ In Stock
3.7	NX-TAPE-TH	Thermal Interface Tape 25mm	Nexa	2	12.20	24.40	✅ In Stock
3.8	SP-LED-NAV	Navigation LED Indicator Board	Synapse	4	6.00	24.00	✅ In Stock
Section 3 Subtotal:						\$5,690.90	

Financial Roll-up Summary

Total Propulsion & Power (Sec 1):

\$4,652.00

Total Avionics & Comms (Sec 2):

\$4,571.20

Total Payload & Structure (Sec 3):

\$5,690.90

Total Rolled BOM Cost:

\$14,914.10

Allocated Budget:

\$15,000.00

Project Variance:

-\$85.90 (Under)

Approval & Release Status

Prepared By:

Dr. Sarah Jenkins, Lead Systems Engineer

Approved By:

Marcus Vance, VP of Engineering, Nimbus Robotics

QA Release:

Vertex Quality Assurance Division