HIGH-PERFORMANCE SOLUTIONS TO EQUIP YOUR MISSION

Custom data storage, mission computing chassis, power conversion and avionic controls with advanced open architecture technology

Collins Aerospace

A HISTORY OF INNOVATION

Macrolink® is a trusted name in the design and fabrication of mission computing hardware and power conversion components for the aerospace, defense and transportation sectors. For decades, our engineers have been innovating in the field of custom electronic assemblies, providing customers with some of the most advanced fabrication, assembly integrations and in-house testing services in the industry.

Our extensive array of solutions includes complete box build and circuit card assemblies, ruggedized enclosures, chassis, portable workstations, communications controllers and storage systems. We also provide open architecture avionics, cockpit controls and displays, as well as VITA power supplies, electronic assemblies and conversions for systems, subsystems and a range of test equipment.

DELIVERING FOR OUR CUSTOMERS

Now, as part of Collins Aerospace, our capabilities and commitment to helping customers solve challenges have grown exponentially. You can count on our skilled technicians to be well-trained on the latest assembly and testing technologies. And our products are backed by the Collins reputation for high-performance, unparalleled quality and an unwavering commitment to delivering on-time, tailored solutions for our customers.

THE COLLINS ADVANTAGE

With more than 100,000 products installed in computing applications worldwide, you'll find our fielded and qualified systems on military and commercial aircraft, as well as on surface ships and land-based vehicles. In addition to our extensive experience with 3D-parametric modeling, backplane design and fabrication, and the integration of platform-agnostic technologies, you can expect flexibility and responsiveness from a world-class, customer-focused team.

FOR SUPERIOR MISSION COMPUTING AND POWER CONVERSION DESIGN, FABRICATION, TESTING AND IMPLEMENTATION SERVICES, WITH THE FEEL OF SMALL-COMPANY CUSTOMER SUPPORT, WE HAVE THE TAILORED SOLUTIONS – AND EXPERTISE – YOU'RE LOOKING FOR.

OUR CAPABILITIES:

- ATR subsystems
- Data-at-Rest systems
- Power supply design
- Custom chassis and secure recording solutions
- Custom and standard backplane design
- COTS system integration
- Fully staffed integration technical specialists
- Encryption
- Information assurance crypto systems
- Comprehensive manufacturing and testing
- IPC-6012/6013 Class 3 PWB workmanship
- NFS storage/MIL spec data recorders
- Open architecture technology
- Program management
- Red/Black systems
- Rugged rack mount subsystems
- TEMPEST experience

ENGINEERING

Our broad range of engineering design skills includes system design for high-reliability, military and COTS applications.

Our engineering capabilities include:

- 3D CAD modeling/rapid prototyping
- Digital, analog and mixed technology
- Conceptual design and integrated engineering
- EMI/EMC filter design and testing
- Industry-leading power density
- Microprocessor control
- Obsolescence redesign
- Power levels – 100 watts to 100 kilowatts:

  Input specifications:

  - MIL-STD-704 Aircraft
  - MIL-STD-1399 Shipboard
  - MIL-STD-1275 Mobile
  - DO-160
- Specification assistance
- Thermal management, simulation and structural analysis
- Software development: DO-178 and DO-254

PRODUCTS AND SOLUTIONS

We engineer, design and manufacture custom electronic assemblies and components for systems, sub-systems and test equipment in military and commercial aircraft, surface ship and military ground vehicle applications. As our "Best Value" supplier status indicates, we're committed to reducing lead times and offering our customers 100% on-time delivery.

COCKPIT SOLUTIONS/CONTROL PANELS

Our open architecture avionics, cockpit controls and displays are ready to equip your flight deck with the latest technology that's designed to work with third-party applications, making integrations fast, easy and cost-effective.

POWER SOLUTIONS

We've developed a broad range of custom electronic assemblies and components power solutions using the latest power management technology to enhance efficiency and overall performance. Offerings include military and commercial supplies, ranging from 100-watt, VME/VPX and VITA form factors to 100-kilowatt, custom water-cooled supply for next-generation offensive weapon systems.

VITA & VME/VPX SOLUTIONS

As the complexity of embedded computing and image-processing weapons, radar and control systems continue to increase, improved power sources become ever more critical. We have extensive experience and success with VME/VPX and VITA power for multiple military-embedded systems. Microprocessor control and state-of-the-art power factor correction circuitry enable us to develop industry-leading power density in 3U and 6U form factors.

QUALITY

Our products are recognized for their high quality and performance, and our commitment to training, process improvement and on-time delivery has earned us service awards and preferred status with our most discerning customers.

- NADCAP-compliant cables and harnesses
- AS9100 / ISO9001 certified
- Defect database and process controls
- J-STD-001, IPC-620, IPC610 certified trainers and operators








MISSION COMPUTERS AND PLATFORMS

BAMS AIRBORNE RECORDER

- Customer NGC, Rancho Bernardo
- Platform: MQ-4C Triton
- NSA Type I encryption
- r/w speed of 3 GPS
- Capacity 32 TB
- I 7 SBC
- High Speed Ethernet

AIRBORNE DATA RECORDER

- Customer: NGC, Rancho Bernardo
- Platform: RQ-4 Global Hawk
- Airborne Data Computer
- Capacity 1.6TB
- SBC
- Mission configurable

B-52 FILE SERVER UNIT

- Customer L3, Camden
- Platform: B-52
- 3U, cPCI, 4-slot chassis
- Redundant SSD & power
- Removable media
- 1.1 TB per cartridge

RECONNAISSANCE MANAGEMENT UNIT

- 1 ATR standard
- Conduction-cooled via liquid-cooled sidewalls
- 10-slot custom VME64x backplane with integral I/O
- 28 VDC power input per MIL-STD-704
- 4 output, 250-watt power supply: +5 VDC, +/- 12 VDC & -3.3 VDC
- Lightweight structure
- Brazed structure per MIL-B-7883

POD-BASED RADAR CONTROLLER/PROCESSOR UNIT

- Custom 1 ATR Tall Long
- Conduction-cooled via forced air
- Custom VPX 8-slot backplane with integrated GPS modulator
- +28 VDC power input per MIL-STD-704F
- 4 output, 695-watt power supply
- Lightweight aluminum structure
- 40 Gbit I/O








SHIP'S DEFENSE MANAGEMENT SYSTEM

- Antenna Controller
  - 4-slot 2U front-load VME chassis
  - 28 VDC input power
  - 2 output, 229-watt power supply
- Signal & Data Processor
  - 20-slot 6U VPX front-load chassis
  - 115 VAC power input per MIL-STD-461
  - 4 output, 1,300W power supply

HIGH CAPACITY SECURE DATA RECORDER

- 3/4 ATR forced air conduction-cooled
- Lightweight construction = 34 lbs.
- +28 VDC input power per MIL-STD-704E
- Line-replaceable, removable (LRU) storage unit
- Information assurance cryptosystems
- I/O four 10/100/1000 Ethernet
- One serial BUS (USB) 2.0 port

HIGH BAND ASIP SENSOR

- Lightweight 19-inch rackmount chassis
- 20-slot VME64x backplane
- High-volume/high-pressure convection cooling
- 1.3KW/115VAC power supply
- Single-phase or 3-phase options
- Quali¬fied to MIL-STD-810/461/704
- Brazed structure per MIL-B-7883

SPECIFIC EMITTER PROCESSING UNIT

- 1½ ATR long
- 9-slot VME64x side load
- High-output convection-cooling
- Up to 1,200 watts
- Front panel I/O
- Brazed structure per MIL-B-7883
- 4 output 115VAC 400 HZ single phase

DESIGN EXPERIENCE

- Military Aircraft: MIL-E-5400, MIL-STD-810, MIL-STD-461, MIL-STD-704, MIL-STD-454 and RTCA/DO-160
- Naval Vessels: MIL-E-5400, MIL-STD-810, MIL-STD-461, MIL-STD-1399, MIL-STD-454 and MIL-STD-901
- Military Ground Vehicles: MIL-E-5400, MIL-STD-810, MIL-STD-461, MIL-STD-1275 and MIL-STD-454
- Commercial aircraft systems to RTCA/DO-160
- Power supplies meet power aircraft requirements for 115 VAC, 28 VDC & 270 VDC

POWERED ENCLOSURES

SEWIP SHIPBOARD EW CHASSIS

- Customer: LMCO, Syracuse
- Platform: Shipboard SLQ-32
- 6 chassis per S/S
- 20 slot front-load chassis
- 115VAC input

SEWIP HIGH-GAIN/HIGH-SENSE

- Falcon IV
- Customer: Harris, PA
- Platform: Shipboard EW
- Powered subsystem
- Fiber cabling

FOLIAGE PENETRATING RADAR

- Customer: KEYW, Maryland
- Platform: P-8
- Radar signal processor
- Custom VPX backplane
- 40Gbit I/O
- Mission configurable

FALCON V POWER-READY CHASSIS

- Customer: GD, Pittsfield
- Platform: Shipboard EW
- 9-slot VME backplane

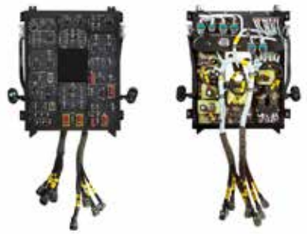
AVIONIC CONTROLS

SWITCHING CONTROL PANELS

- Support of legacy platforms
- B1, F-16, CMHP, etc.
- Build to Print / Value Added Manufacturing

OVERHEAD CONSOLE

- Platform: CH-47
- Build to Print/Value Added Manufacturing
- Delivered 8 variants
- Complex wiring



POWER CONVERSION

VITA 62 COMPLIANT POWER MODULES

- 6U & 3U form factors
- Inputs: 28VDC, 270VDC, 1 & 3 Phase AC
- Outputs from 250W – 1,200W
- Companion sets for tailored solutions:
  - EMI Filtering, extended hold-up
  - Supports wide input ranges
  - MIL-STD-704 A/F
  - MIL-STD-1275
  - Load sharing, health monitoring

3-PHASE POWER & BATTERY CHARGER

- Single, 3-phase and DC inputs
- Modular, scalable design
- Up to 450W over 12VDC & 5VDC
- Battery/charger provides 2.2 Ah @ 25VDC

SINGLE-PHASE, MULTI-OUTPUT

- Single-phase 400Hz input
- 1,500W over 12VDC, 5VDC, 3.3VDC
- Platform: SEWIP
- Dramatic MTTR improvement

SMALL FORM FACTOR

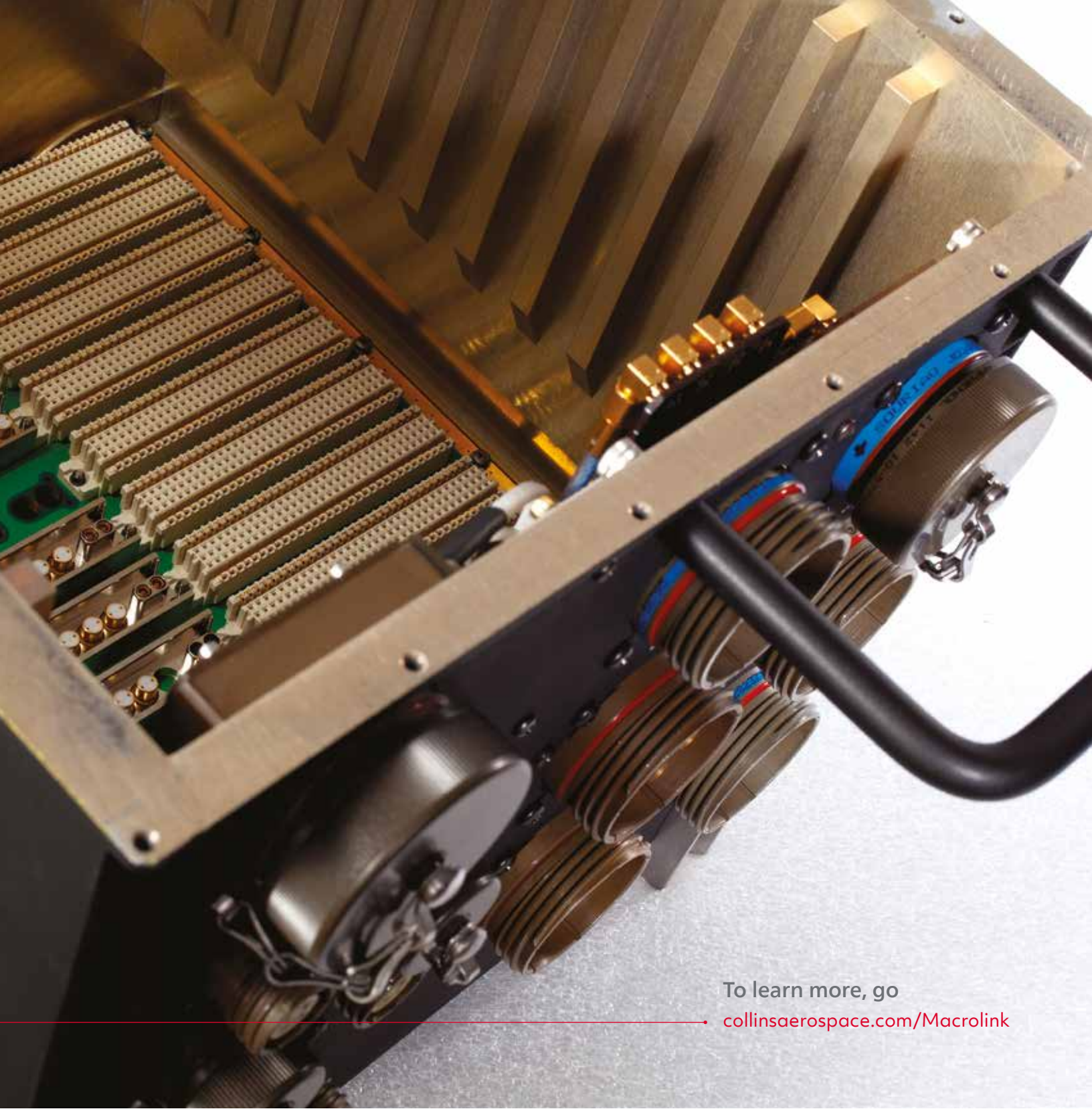
- 28VDC input
- Up to 300W over 12VDC, 5VDC, 3.3VDC
- Signal processors/mission computers
- N+1 compatibility
- EMI-compliant
- Leverage VITA topologies

ELECTROMECHANICAL ASSEMBLY

- UH-60 throttle quadrant
- Build to Print / Value Added Manufacturing

AVIONIC CONTROL PANELS

- Designed and qualified in-house
- Multiple rotary wing platforms



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