BVR™ Data Concentrator Units (DCUs)
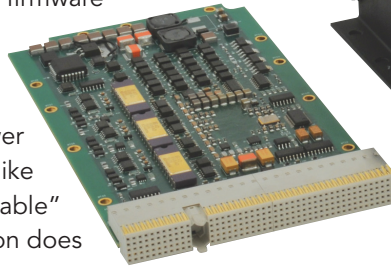
Industry-leading signal-conversion and data-concentration technology, featuring:

- Proven airborne reliability
- Compact, low-weight designs
- Versatile I/O and databus management
- Self calibration, self testing

Remote data concentrator with on-the-fly pinout reconfiguration, a BVR exclusive

Only available from Esterline, the BVR remote data concentrator (RDC, right), in combination with one or more programmable data-concentrator modules (PDCM, left), offers a versatile, modular solution to streamline an aircraft's data-transmission architecture and anticipate future growth.

The RDC/PDCM pair includes firmware to allow quick toggling between up to eight customer-defined I/O circuit configurations by cycling power and entering a command. Unlike existing so-called "programmable" concentrators, the BVR solution does not require servicing a unit to reroute pinouts.

Esterline is an industry leader in developing aircraft data collection, conversion, and routing solutions, usually referred to as DCUs. We deliver the elements you need to implement rugged, scalable, fault-tolerant data networks.

DCUs collect discrete inputs, analog signals, and digital data from sensors and equipment throughout the aircraft, then convert them to digital format for streaming over the databus of the flight-control or aircraft-management system (typically ARINC 429, ARINC 664/AFDX, CAN bus, Ethernet, MIL-STD-1553, RS-422, RS-485).

Main advantages include reduced cabling and minimal signal interference, as well as improved robustness and survivability, through distributed redundancy and the elimination of single points of failure.

We optimize DCU reliability, weight, and size by engineering all our units to systematically reduce component count and connections. We implement state-of-the-art electronics technologies, including:

- Embedded passives
- System on a chip
- Configurable I/O
- FPGA circuit integration

Our electronics are so compact that the final form factor is driven by customer requirements for the number of I/O pinouts and associated connectors.

With our depth of expertise in electronics design, software, and mechanical engineering, as well as manufacturing and testing, we are able to deliver solutions perfectly suited to your platform requirements.

BVR remote data concentrator and PDCM I/O card

Features

- 48 I/O pinouts: 37 configurable (see table) and 11 fixed
- Field-loadable DO-254 Level A firmware with up to eight preset I/O configurations
- Multiple PDCM I/O cards possible per RDC unit for modular build out
- Proven interface circuits
- Built-in redundancy (triple, dual dissimilar, or dual)

- MTBF of 100,000 hours
- Self calibration
- Self test
- DO-160
- MIL-STD-461
- MIL-STD-704
- MIL-STD-810

Configurable inputs and outputs

Up to eight firmware-defined I/O configurations are available through simple power-cycle/command combinations.

Signal	I/O type	Destination type	Configuration quantity
Discrete	Input	Ground/open; 28 VDC/open	16
Analog	Input	±100 mVDC; ±10 VDC; RTD frequency	4
Serial	Input	High/low speed ARINC 429, software configurable	4
Discrete	Input	Chip detector	2
Analog	Output	±10 VDC	3 dynamically configurable
Serial	Output	High/low speed ARINC 429, software configurable	2
Discrete	Input or output (bi-directional)	Ground/open; 28 VDC/open	6 (4096 combinations)

Fixed inputs and outputs

- Six ground/open
- Five analog

For more information about BVR data concentrator units, call us at 815-874-2471 or email bvr.sales@esterline.com.

Esterline

Control & Communication Systems

BVR™ remote data concentrator and PDCM I/O card