

DIGITAL VEHICLE DISTRIBUTION BOX (DVDB)



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Embedded Diagnostics System

Leonardo DRS is a recognized leader in embedded vehicle electronic systems. The DVDB was developed and fielded to support Chassis Modernization / Embedded Diagnostics (CMED) of the Bradley Fighting Vehicle.

- Vehicle System Controller
- Drive Train Monitoring
- Sensor Monitoring / Reporting
- Power Distribution
- Video Processing
- Diagnostic Capability

The DVDB provides for driver video management, hull power distribution and hull diagnostics on the A3 Bradley. Its functionality includes collecting, processing, reformatting and distributing video and data from a variety of systems on the Bradley to the driver. Over 3000 DVDBs have been fielded within the Bradley Fighting Vehicle platform.

Designed to grow and adapt to current and future needs, the DVDB offers the flexibility needed for the Bradley vehicles on the modern battlefield by utilizing current technology capabilities.

The DVDB provides embedded diagnostics capabilities to detect failures and assist in troubleshooting. This embedded feature eliminates the need for carry on diagnostic equipment such as BRADS and other external diagnostic equipment such as STE-ICE.

The embedded diagnostics monitors power lines, signal lines and sensors interfacing with the DVDB to determine the health and status of the Bradley chassis.

The embedded diagnostics routine is composed of three parts; Start-up Built-in-Test (SBIT), Background BIT (BBIT) and Interactive BIT (IBIT). SBIT occurs at power on and checks the DVDB status. BBIT occurs during normal DVDB operation and checks the chassis status in a background mode without operator intervention. IBIT occurs in the DVDB maintenance mode and allows the operator to select individual tests to be performed for fault isolation and repair.



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STANDARDS

Military standards	MIL-STD-1275B, MIL-STD-1553B, MIL-STD-461D, MIL-STD-810E, MIL-STD-882, MIL-STD-1686
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POWER

Input voltage	18-32 Vdc
Switched power outputs	(28Vdc, 2 Amps - 150 Amps)
Consumption	<100 Watts
Solid state power controllers	2.5A X 16, 8.3A X 6, 20A X 4, and 25A X 6
Remote power controller	35A X 3, 150A X 1, 130A X 1

ENVIRONMENTAL

Temperature, operating	-40°C to +71°C
Shock	Per MIL-STD-810
Humidity	Per MIL-STD-810
Steam & water	Per MIL-STD-810
Jet	Per MIL-STD-810
Vibration	Per MIL-STD-810
Fungus	Per MIL-STD-810
EMI	Per MIL-STD-810
Nuclear hardening	Per MIL-STD-810
ESD	Per MIL-STD-810

PHYSICAL (LRU)

Length	16.04 inches
Width	12.79 inches
Height	9.88 inches
Weight	45 lbs
Cooling	Conduction/Convection
Reliability	1180 HRS MTBF

PHYSICAL (VME)

Size	6U VME64x card
Cooling	Conduction/Convection



INPUTS/OUTPUTS

Analog	Multiple analog channels for sensor interfaces and signal processing, Headset Warning Tone / Audio Interface
Discrete	28 Volt / Open, Ground / Open, TTL

VIDEO CAPABILITIES

Interfaces	RS-170 NTSC, RGB (VGA/SVGA), and DVE / DVE Wide
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COMMUNICATIONS INTERFACES

Control of external LRUs or peripherals	CAN Bus
Vehicle communication	1553
Development ports	10/100 Ethernet, IEEE 802.3 RS232
Squad leaders display and drivers tactical display	RS422
Diagnostic information	USB

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