DuraVIS 4310
Modular Avionics Multi-Function Display (MFD) Panel w/Core2Duo CPU & PCI-104 Expansion

Features

General Features:

- **Smart 6.5" Multi-Function Display**
- **Dual-Core Processor @ 1.5GHz, 2GB RAM**
- **2x PCI-104 / PC104+ Expansion Slots**
- **Linux or Windows OS**
- **18 Backlit Keys for OSD/App/Power**
- **Designed to MIL-STD-810G & MIL-STD-461E**
- **MIL-STD-704E Power Supply**
- **MIL-C-38999 Connectors w/ Front-Panel Gigabit Ethernet, USB**

COLOR AMLCD: 6.5" Color Thin Film Transistor (TFT) Liquid Crystal Display (LCD)

18 BACKLIT PUSHBUTTONS:
• Illuminated Keypad Emulates USB Keyboard and Provides Brightness / OSD Contro / Power
• Firmware API Enables Keys to be User-Mapped to Desired Functions

INTEGRATED COMPUTER:
• CPU: 1500MHz Intel Core 2 Duo Processor with Standard Data/com Interfaces (Gig and Fast Ethernet, Serial, USB, Keyboard, Mouse, Audio)
• OS: Pre-loaded Linux or Windows to Boot-Up Out of Box

EXPANDABLE:
• Modular Embedded PC Architecture
• PC104 railed card cage with up to two open slots

COMPLIANCE: Designed to MIL-STD-461E and MIL-STD-810G (EMI/EMC, Thermal, Shock, Vibration, Rapid Decompression, Humidity, and Altitude).

PLATFORM EXPERIENCE: AC-130. Legacy Parvus MFDs Have Platform Experience Onboard the P-8 MMA Poseidon, P-3 Orion, QF-4, and Other Airframes.

The DuraVIS® 4310 represents Parvus' 5th generation Commercial-Off-the-Shelf (COTS) Multi-Function Display (MFD) - an ideal command and control (C2) solution for presenting flight, sensor, mapping, advisory and other information for civil and military aircraft retrofit/upgrade programs. This rugged mission control panel incorporates a multi-core Intel processor architecture, front-panel Gigabit Ethernet and USB access, dual removable rear panel SSD access, and improved thermal management and firmware configurability over legacy Parvus MFDs onboard the AC-130, P-8, P-3, QF-4, and other airframes.

Designed to meet MIL-STD-810G, MIL-STD-704E and MIL-STD-461E standards, the DuraVIS 4300 offers exceptional low-temperature operation (-20C) and resistance to shock and vibration profiles experienced by jet and rotary aircraft. The unit is based around an expandable PCI-104 Core2Duo computer, avionics power supply and sunlight-readable 6.5" flat panel LCD. Designed to accommodate standard 1/4-turn (Dzus) rail mount installations, the subsystem features 18 user-programmable push buttons located around the front bezel, an anti-glare protective cover for impact protection and a high luminance (800 Nit) LED backlight for long lamp life, excellent dimming capabilities (down to 4%), and exceptional low-temp operation.

Supporting a VGA output and customer-furnished x86 software, the DuraVIS 4310 integrates MIL-C-38999 connectors bringing out dual Ethernet, Video, Power, Audio, USB, Serial, Keyboard and Mouse signals. The DuraVIS 4300 boasts a 160-degree viewing angle, 600:1 contrast ratio, and a 79-pin expansion connector, which is conveniently routed to an internal breakout board and headers so that up to two application-specific PCI-104 or PC/104+ cards can be integrated without mechanical changes. Professional integration services are available from Parvus.

Parvus

DuraVIS 4310

Specifications

	LIQUID CRYSTAL DISPLAY	• 6.5" (16.6cm) Diagonal a-SI TFT LCD with LED Backlight • Viewable Area (W x H): 5.2" (132.5mm) x 3.9" (99.4mm) • Acrylic Front Protective Window • Anti-Reflective Coated (MIL-C-14806 Compliant) • ITO Coated for Glare and EMI Control
	OPTICAL CHARACTERISTICS	• Luminance (Brightness): 800 cd/m² (nit) • Dimming: 30 Levels of Brightness Control • Resolution: 640 x 480 Pixels • Colors: 262,144 • Contrast: 600:1 (typ) • Response Time: 13ms (typ) • Screen Orientation: Rotatable Portrait/Landscape (Celeron M 1000MHz) • Viewing Angle: 160° (H), 140° (V)
	BUTTONS	• 18 Backlit Keycaps, Adjustable Color • Keypad Emulates USB Keyboard & Provides Brightness / OSD Control / Power • Firmware API Enables Keys to be User-Mapped to Desired Functions
	VIDEO OUTPUT	• VGA Analog Video Output Mirrors LCD Output
	PROCESSOR	• Intel® Core™2 Duo Processor L7400, Core Speed: 1.5 GHz, Front-Side Bus-Speed: 667 MHz, L2 Cache: 2048KB Unified, Intel® 945GM chipset
	MEMORY	• 2048MB DDR2 666MHz SODIMM 200pin
	SOLID STATE DISK	• 16GB Non-Volatile CompactFlash Solid State Disk (Capacity Upgrades Available up to ~32GB) • Dual Slots, Removable Rear Panel Access to SSD
	I/O & DATACOM	• Front Panel: 1x 10/100/1000 Ethernet, 1x USB 2.0 • Rear Panel: 1x 10/100 Ethernet, 2x RS-232 Serial, 4x USB 2.0, Keyboard, Mouse, AC97 Audio
	EXPANSION	• Two Open PCI104 / PC104+ Card Slots, PCI Bus (in Card Cage) • User-Defined 79-pin MIL-C-38999 Expansion Connector Pre-wired to Internal Breakout Board for Integration of Add-on Cards (i.e. MIL-STD-1553 / ARINC 429 Databus Cards) • Modular Embedded PC Architecture Supports Perpetual Upgrades and Retrofits
	OPERATING SYSTEM	• Pre-installed Linux, Windows Embedded or Windows 7 • Hardware Compatible with All x86 Embedded and Real-Time Operating Systems (Windows XPe, WinCE, Linux, QNX, VxWorks)
	POWER	• 28VDC Filtered Input (9-32 VDC) • MIL-STD-704E Compliant • Reverse, Over Voltage, Surge Protected • Approx. 40 Watts Power Consumption (max) for Base System • Approx. 35 Watts Available for Optional Relay Output / Expansion Cards • Power ON/OFF Switch (one of front bezel buttons)
	PHYSICAL	• Dimensions: TBD • Installation: MS25212 Mounting (4 Quarter-Turn Dzus Fastener Studs; 3/8" Hole Centers) • Chassis: Aluminium alloy 6061-6063, Corrosion Resistant • Finish: Black Anodize (MIL-A-8625, Type II, Class 2) Front Panel; Clear Anodize Behind Bezel • Weight: Approx. 10 lbs (4.53kg) • Connectors: MIL-C-38999 for I/O and Power; Front Ruggedized RJ-45 / USB in MIL-C-38999 Shell
	TEMPERATURE	Designed to MIL-STD-810G: • Operating Temperature: -20°C to +60°C (-4°F to +140°F) • Storage Temperature: -55°C to +71°C (-67°F to +160°F) • Cooling: Forced Air Cooling.
	SHOCK/VIBRATRION	Designed to MIL-STD-810G (Jet & Helicopter Test Profiles): • Operating Shock: 15g, 11ms, ½ Sine Wave, 3 Positive/Negative per Axis • Random Vibration: 0.022-G²/10-Hz to 0.0026-G²/2000-Hz
	HUMIDITY	Designed to Meet MIL-STD-810G: • Operating: 6 to 95% RH • Non-Operating: 6 to 100% RH
	RAPID DECOMPRESSION	• Designed to MIL-STD-810G, Method 500.4, Proc. 3: • Rapid Decompression: 1500 Ft below Sea Level to ~Sea Level and Sea Level to 41,000 Ft (12,497 meters), Max 15 Seconds

	EMI/EMC	Designed to Meet MIL-STD-461E: • CE101, Conducted Emissions, Power Leads, 30 Hz to 10 kHz • CE102, Conducted Emissions, Power Leads, 10 kHz to 10 MHz • CS114, Conducted Susceptibility, Bulk Cable Injection, 10 kHz to 200 MHz • RE101, Radiated Emissions, Magnetic Field, 30 Hz to 100 kHz • RE102, Radiated Emissions, Electric Field, 10kHz to 18 GHz • RS103, Radiated Susceptibility, Electric Field, 2 MHz to 40 GHz
	INGRESS	Designed to Meet MIL-STD-810G: • Fungus, Salt Fog, Sand, Dust, Volcanic Ash, Explosive Atmosphere
	ALTITUDE	Designed to MIL-STD-810G, Method 500.4, Proc. 2: • Sea level to 41,000 feet (12,497 meters) @ 4°C to 50°C
	WARRANTY	1 Year Warranty (Extended Service Contracts Available)
	OPTIONS/ PROFESSIONAL SERVICES	• Mass Storage Memory Capacity Upgrades / SATA-based Media • 28V Relay Output (to power auxiliary device) – ON/OFF Engaged by Pressing Front Panel Button • Integrated PC104+ MIL-STD-1553 / ARINC 429 Databus Controller • Other Integrated PC104+ / PCI-104 Modules (up to 2), i.e. GPS, DIO, etc. • Mechanical Changes