

DISPLAY PROCESSING UNIT (DPU)

GOVERNMENT
> LAND-SEA SOLUTIONS

FEATURES

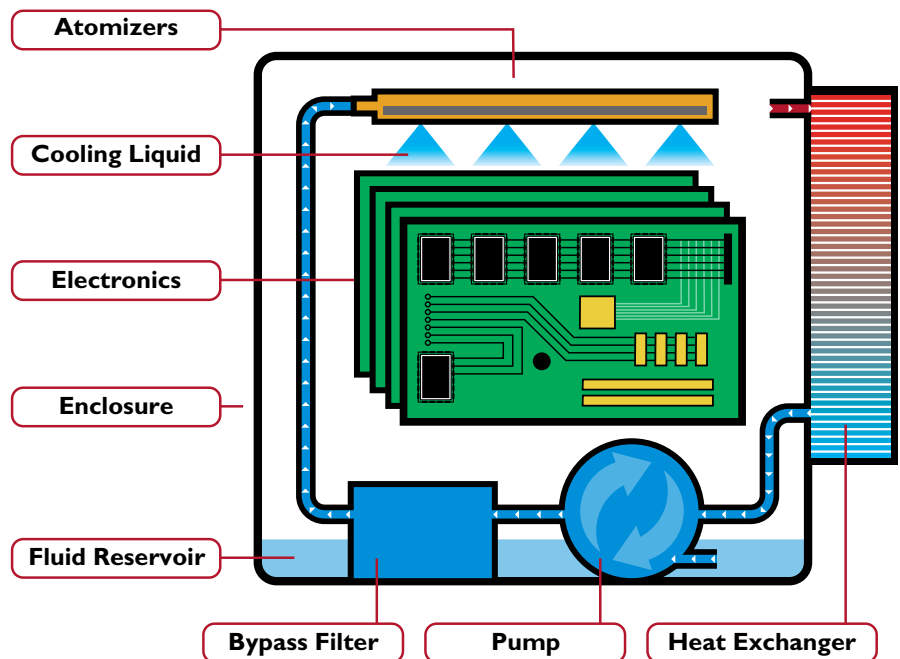
- Provides integration platform based on open systems architecture for two or three slot 6U(10.5") 160mm VME and/or cPCI configurations
- Customer specified I/O, backplane, form factor and power supply
- Removable hard drive for classified applications
- Optional isolation trays for vehicle specific shock and vibration profiles
- Modular design for integrated or distributed installations
- Local and remote health monitoring and reporting of cooling system performance
- n+1 redundant pumps
- Front, rear and side access and I/O panels
- SprayCool Ground Version 2 (GV2) and Ground Version 3 (GV3) environmental specifications

HOW SPRAYCOOL™ TECHNOLOGY WORKS

A non-conductive and non-corrosive coolant is atomized and sprayed directly onto electronics to provide cooling. The coolant vaporizes and heat is rejected to the enclosure and/or through a heat exchanger, condensing the vapor back into a liquid state. The process continuously cycles within a closed loop sealed enclosure that prevents corrosive environmental contamination from harming sensitive electronics.

DESCRIPTION

Realizing the need for high performance graphics processing and situational awareness at the man-machine interface, ISR has developed the Display Processing Unit (DPU). The DPU is a rugged Embedded Solution that consists of a 12.1" or 18.1" diagonal display, bezel controls, special purpose key pad, keyboard, and of course, the SprayCool processing electronics. In addition, the DPU has touch screen capabilities for flexible and user defined interaction. The DPU uses a modular design that allows each of the components to be mounted together as a line replaceable item or individually for space constrained installations. For example, the display could be mounted in front of the user while the processing electronics box could be mounted under the seat. Another design option allows the DPU to be directly connected to an ARME if additional capability is required. The DPU boasts the latest in Intel Pentium IV 2.4GHz processing and NVIDIA Quadro4 Graphics Processing Unit for mind blowing 3-D graphics. In addition to military applications, SprayCool display products provide a robust solution for industrial use.



SPRAYCOOL™
SYSTEM SOLUTIONS FROM ISR INC.

2218 N. MOLTER ROAD | LIBERTY LAKE, WA 99019 | 509.232.2600 | WWW.SPRAYCOOL.COM

MODULAR RACK SOLUTIONS

SPECIFICATIONS

Processor	Intel Pentium® III, 700 MHz or faster. 256K L2 cache, Socket 370, design also supports Celeron processors.
Memory	Up to 512 Megabytes PC-100 SDRAM
Mass Storage	Removable internal 10 GB hard drive expandable to 28+ GB
Display	SVGA, 12.1" diagonal, color LCD with touch screen, Active Matrix TFT 800 by 600 pixels resolution Sunlight readable at maximum luminance of 750 nits with a contrast ratio of 2.8:1 Display unit interface permits tethered operation up to 25-ft. Side-to-side viewing angle +/- 60° Top to bottom maximum viewing angle +10°/-30°
Keyboard.....	USB 88-key full-travel elastomeric keyboard in QWERTY configuration. "Hot swappable" while the system is powered.
Pointing Device.....	Fully sealed pointing device with right and left pick buttons
Operating System.....	Compliant with MS-DOS, Windows 95, 98, 2000, Microsoft NT and Solaris
Expansion.....	One PMC slot, Disk On Chip socket, 3U CompactPCI expansion slot, Device Bay DB20 form factor slot
External Ports.....	External SVGA port supports up to 1280 x 1024 pixel resolution, 18-bit LVDS video Sound Blaster™ compatible PCI audio input and output Two USB ports, one dedicated to Processor Unit/Display Unit interconnect IEEE 802.3 LAN interface 10/100BaseT One RS-232C port dedicated to the Display Unit Touch Screen Five RS-422/RS-423 ports, one dedicated to Processor Unit/Display Unit interconnect 2 synchronous serial communication ports for Conditioned Di-Phase (CDP) and MIL-STD-188-144 Non-Return-to-Zero communication interfaces
Power	28 VDC vehicle power per MIL-STD-1275A(AT), Optional AC converter, 85-264 VAC, 47-63 Hz
Weight.....	Processor Unit: 18.05 lb., Display Unit: 7.3 lb., Keyboard Unit: 2.2 lb., Hard Disk Drive Cartridge: 0.8 lb.
Dimensions	Processor Unit: 5.1" x 12.7" x 10.2", Display Unit: 2.36" x 13.1" x 9.0" Keyboard Unit: 1.0" x 11.5" x 7.25" Hard Disk Drive Cartridge: 0.7"x3.9"x5.9"

ENVIRONMENTAL

Temperature	Operating range: -35° to 60°C, Nonoperating range: -35° to 71°C
Temperature Shock.....	-35° to 21°C and 21°C to 52°C each within 10-minute intervals
Salt Fog	48-hour exposure per MIL-STD-810E, Method 509.3, Proc I
Solar Radiation.....	Exposure per MIL-STD-810E, Method 505.3, Proc I, hot-dry
Road Shock	Operates during three half-sine shock impulses in each direction of each orthogonal axis (total of 18 shocks) at a peak amplitude of 30 g (-0%, +20%) and duration of 11 ms (-0%, +50%), on isolation mounts
Functional Shock	Operates during three half-sine shock impulses in each direction of each orthogonal axis (total of 18 shocks) at a peak amplitude of 40 g (-0%, +20%) and a duration of 6 ms (-0%, +50%), hard mounted
Ballistic Shock	Operates during three half-sine shock impulses in each direction of each orthogonal axis (total of 18 shocks) at a peak amplitude of 50 g (-0%, +20%) and duration of 10 ms (-0%, +50%), hard mounted
Altitude	10,000 feet operating (tested to 15,000 feet) per MIL-STD-810E, Method 500.3, Proc II
Humidity	Relative humidity operating per MIL-STD-810E, Method 507.3, Proc II.
Sand/Dust.....	Exposure to wind blown sand and dust particles at a rate of 20 ±3 miles per hour for 30 minutes per MIL-STD-810E, Method 510.3, Proc I.
Water Tightness	No water penetration, 50 psig, 40 minutes, 3' spray per MIL-STD-810E, Method 506.3, Proc III
Climate.....	Fungus resistant per MIL-STD-810E, Method 508.4
Explosive Atmosphere...	Non-explosive when tested per MIL-STD-810E, Method 511.3, Proc I
Vibration	Operates on the move without degraded performance when mounted on standard shock isolation fixtures for tracked and wheeled vehicles per MIL-STD-810E, method 514.4, Proc I, category 8. Keyboard can be hard-mounted.
EMI.....	MIL-STD-461E, CE102, CS101, CS114, RE102 and RS103
ESD.....	2,000 V to I/O pins, non-operating 15,000 V to controls/surfaces, operating
HEMP	MIL-STD-461E, RS105, CS116

