

ARS-1800

Fanless and Compact Embedded Controller, 4 GbE LANs, 8 USB, Isolated DIO, DIN-Rail Support, Programmable GPIO & LED Display, PCI-104, with Intel® Atom™ D525 Processor



Front Panel Layout



Side Panel Layout

- Intel® Atom™ D525 Processor (1M Cache, 1.8GHz)
- Rugged, -20°C to 70°C Operation Temperature
- Fanless and Compact Form Factor
- VGA and 24-bit LVDS Dual Independent Display
- External Accessible CFast Port
- 8 USB, 4 GbE Ports, Isolated DIO (2.5K V_{bc})
- Programmable GPIO 16-step Rotary Switch
- Programmable LED Display 4 Modes/Status
- PCI-104 Expansion
- Onboard Programmable EPROM for Unique ID No.

ARS-1800 Intel® Atom™ empowered fanless cost-efficient vision controller, which enables to equipped with Intel® Atom™ D525 1M cache, 1.8GHz processor, 4 Gigabit Ethernet ports, 3 RS-232 and 1 RS-232/422/485, external accessible CFast, 8 USB, Isolated DIO, PCI-104, and Mini PCIe socket. Supporting EtherCAT for better communication between devices, ARS-1800 also enables GigE Vision cameras to extend performance and application ranges. The balance between cost and computing performance, ARS-1800 integrates Intel® Atom™ D525 processor, which has assimilated memory controller to reduce the memory latency and to escalate the general system performance. In addition, the ARS-1800 is equipped with rich I/O, 4 GbE LAN, Mini PCIe, CFast, PCI-104, and 8 USB ports. Optional with 4 GB of RAM and a 2 solid-state hard drives, ARS-1800 enables to add CFast for storage and PCI-104 for extension, and to achieve the outstanding performance with the reliability and stability of a real-time embedded vision system. Engineering design fanless thermal within operating temperatures from -20°C to 70°C (4°F ~ 157°F), ARS-1800 is an ideal solution for industrial control, intelligent factory automation, machinery computing, automated optical inspection, solar panel inspection, and oil thrilling platforms.



Application

RELIABILITY

- ★ Intel® Atom™ D525 Processor
- ★ Rugged, -20 °C to 70 °C Operation Temp.
- ★ Fanless & Compact Form Factor
- ★ 2 DDR3 SO-DIMM, Up to 4GB
- ★ VGA & 24-bit LVDS Dual Display

VERSATILITY

- ★ External Accessible CFast Port
- ★ 3 RS-232 & 1 RS-232/422/485 with Auto Flow Control
- ★ 6 USB 2.0, 4 GbE Ports, Isolated DIO (2.5K V_{DC})
- ★ Programmable GPIO 16-step Rotary Switch
- ★ Programmable LED Display 4 Modes/Status

SAFETY

- ★ Supports DC-IN Range from 16 to 28V
- ★ Onboard Programmable EPROM for Unique ID No.
- ★ DIN-rail, Wall



Specification

System Hardware

CPU	Intel® Atom™ D525, 1M Cache, 1.8GHz Processor
Chipset	ICH8M
Memory	Single Channel Support 2 DDR3 SO-DIMM up to 4GB
Indicators	LEDs for Power, HDD / CFast
Storage	Internal Two 2.5" SATA / SATA II for HDD / SSD Outside Accessible CFast Slot
Mini PCIe	1
Display	Front DB15 VGA Internal LVDS 24-bit
Audio	Internal Stereo Headphone, Internal Microphone

I/O Interface

Serial Ports	3 RS-232, 1 RS-232 / 422 / 485 with Automatic Data Flow Control
LAN	LAN1~LAN3: Intel® GbE 82574L LAN4: Realtek RTL8110SC
USB 2.0	Front: 6, Internal: 2
Programmable GPIO	Isolation Protection on GPIO-16 (8DI / 8DO) Sink/Wet Contact Source GPIO-4 (Programmable Status / Modes LED Display) 16-step Rotary Switch (States / Modes Select)
PCI-104	Present (2 Bus Master Available)

General

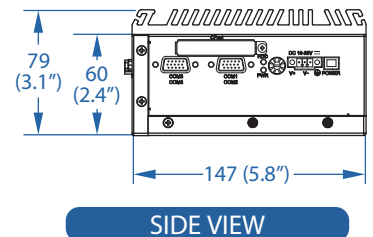
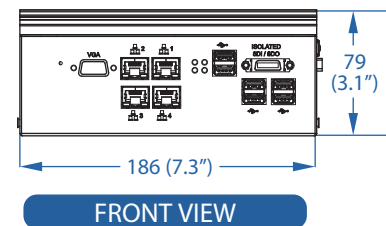
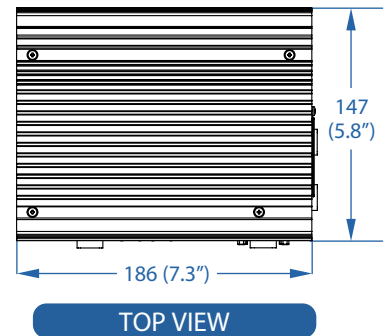
Certifications	CF, FCC Class A
Dimensions(W x H x D)	186mm x 138mm x 78mm (7.3" x 5.4" x 3.1")
Enclosure	Aluminum Heat-sink and Sheet Metal Chassis with Iron-gray Color
Mounting	Wall-mounting for DIN-rail
Power Requirements	ATX : 2-pin Remote Power On / Off Switch AT : Optional by Jumper Setting On-board DC-to-DC Power Support from 16 ~ 28 V _{DC}
Weight	2.1 Kg (4.5 lb)
OS Support	Windows XP Embedded / Windows XP Pro and Above Linux Fedora 11 / Ubuntu 10.04 / Cent OS 5.3 / Kernel
System Design	Top Cover Heat-sink with Internal Heat Spreader for Fanless Design

Environment

Operating Temperature	-20 ~ 70°C (-4°F ~ 157°F) (Ambient Temperature with Air Flow)
Storage Temperature	-40~85°C (-40°F ~ 185°F)
Operating Humidity	20~95% (Non-condensing), 0~90% RH @ 40°C (Non-condensing)
Storage Humidity	IEC 68 2-27
Shock Protection	CFast: 50G @ Wall-mount, Half Sine, 11ms HDD: 20G @ Wall-mount, Half Sine, 11ms IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
Vibration Protection	CFast: 5 Grms @ 5~500Hz, HDD: 1 Grms @ 5~500Hz

*All product specifications are subject to change without prior notice.

Unit: mm (inch)



Order Information

Product No.	Description
ARS-1800	Fanless Embedded controller, 4 LANs, Isolated GPIO (8DI/8DO), 4 COMs, 8 USBs, PCI-104, 1 YCB-D15D9 included
PWA-60WP3	60W, 24V, 100V _{AC} to 240V _{AC} Power Adapter
SCSI-20P-100	20-pin SCSI Cable, 1M
TMB-SCSI-20P	Terminal Board with One 20-pin SCSI Connector and DIN-Rail Mounting