

A192 RediBuilt™

Rugged HPEC Computer & GbE Switch



Embedded Computing
without Compromise



- Rugged High Performance Embedded Computer (HPEC)
- 8th Gen E-2176M Intel® Xeon® CPU
 - ▶ 6 Cores/12Threads @ 2.7 GHz
 - ▶ Up to 32 GB DDR4 w/ECC
- 7-port Gigabit Ethernet Switch
- I/O
 - ▶ Gigabit Ethernet
 - ▶ UART Serial
 - ▶ USB 2.0
 - ▶ DVI Output
 - ▶ RGBHV Output
 - ▶ Composite/S-video Inputs
 - ▶ HD-SDI Inputs
- Up to 1 TB Flash SSD Mass Storage
- Removable Mass Storage SSD
- Windows® & Linux® Support
- Fully Integrated and Ready to Use
- D38999 I/O and Power Connectors
- Compact and Lightweight
- Internally Conduction-Cooled 3U VPX
- Fully Sealed Faraday Cage
- EMI/RFI Filtering
- Environmentally Sealed (IP65)
- Cold Plate & Passive Convection Cooling



www.aitechsystems.com

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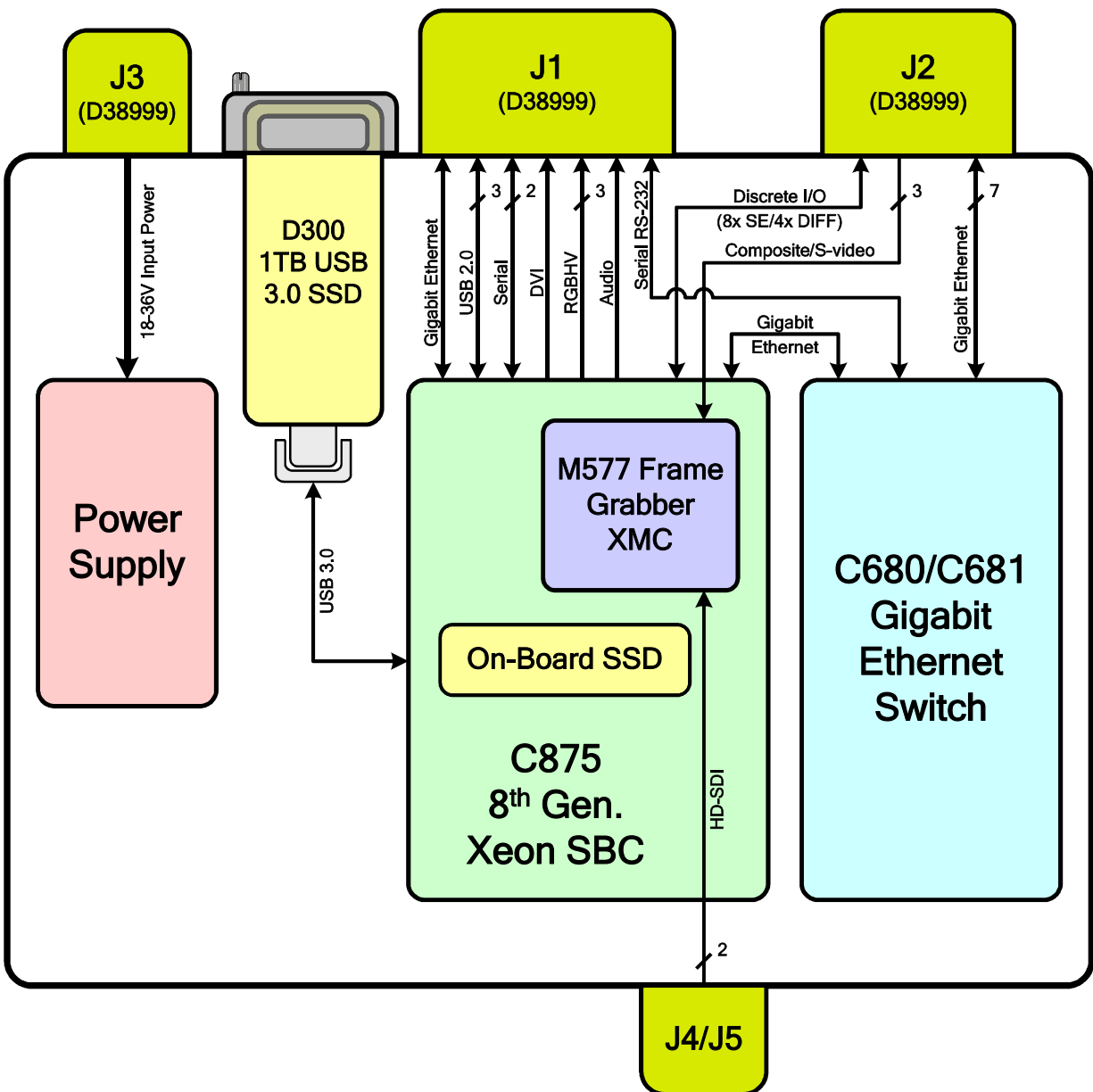


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Aitech's compact A192 is packed with many of the features most wanted in today's rugged embedded computing environments. Out of the box, the A192's combination of high power processing, Gigabit Ethernet switching, video capture, and removable USB mass storage, in combination with its small form factor and low power consumption, make it ideal for a wide range of applications.

The A192 is based on Aitech's C875 SBC and C680 (Managed) or C681 (Unmanaged) Gigabit Ethernet Switch. Video inputs are provided by the M577 Frame Grabber XMC, and the D300 provides 1 TB of rugged removable SSD storage.

These elements are packaged in an Aitech enclosure along with a high-efficiency power supply, providing a complete High Performance Embedded Computer (HPEC) system in an extremely rugged and compact form factor.



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System Architecture

CPU (C875 SBC)	Xeon E-2176M – 6 cores/12 threads (Hyper-Threading) @ 2.7 GHz, 4.4 GHz Turbo Boost, 12 MB Cache
Ethernet Switch	8-port C680 (Managed) or C681 (Unmanaged) Gigabit Ethernet Switch Board (7 ports available to user)
Video Capture	M577 frame grabber XMC providing 3 Composite or 1 S-video and 2 HD-SDI video input interfaces
System Resources	<ul style="list-style-type: none">• Windowed Watchdog Timer• Elapsed Time Recorder• Temperature Sensors• Real Time Clock (with battery backup)
VPX Fabric	1 GbE link between SBC and Ethernet switch

Memory Resources

RAM	16/32 GB of DDR4 SDRAM in dual channels with ECC, operating at 2133 MT/s
Flash Mass Storage	<ul style="list-style-type: none">• Up to 1 TB SSD on-board the SBC, with advanced performance and security options• D300 1 TB Removable Mass Storage USB 3.0 SSD
BIOS Flash	Dual BIOS Flash devices (Primary device for normal board operation, Alternate device in case of BIOS failure)

I/O

USB 2.0	3
Serial Ports (software configurable as RS-232/422/485)	2
GbE Ports: 1000Base-T - SBC + GbE Switch	1 + 7
Audio - Stereo	1 In + 1 Out
RGBHV Out	1
DVI Out	1
Composite/S-video In	3/1
HD-SDI In	2
Discrete I/O Lines (software configurable as Discrete SE/Diff or Serial RS-232)	8

Managed GbE Switch

Applicable to configurations with C680 Managed Gigabit Ethernet Switch (see *Ordering Information*).

- L2 Packet Forwarding within 15 Seconds
- Link Aggregation Support
- Mirroring Support
- MAC Address Support
- VLAN Support
- Multicast Support
- Spanning Tree Support
- Access Control Support
- Qos/Cos And Rate Limiting Support
- IP Routing Support
- SNMP v1, v2c, and v3 Support
- Monitoring Support
- Security Support
- Extended L3 Features Support
- System IP Address Management
- RS-232 Interface for OOB Management

Unmanaged GbE Switch

Applicable to configurations with C681 Unmanaged Gigabit Ethernet Switch (see *Ordering Information*).

- Unmanaged, no user configuration required
- Immediate L2 Packet Forwarding
- Full wire-speed non-blocking forwarding
- Jumbo Frame support (up to 9 kB)
- Auto-negotiation and auto cross-over (MDI/MDI-X)
- Additional Features available by Factory Configuration (contact an Aitech representative for information)
 - 802.1Q VLAN
 - QoS
 - Mirroring
 - Loopback

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Software

- Supported operating systems
 - Windows 10
 - Linux
- Available with or without supported operating systems pre-installed

Enclosure

Cold Plate-Cooling	Sidewalls conduct heat to enclosure base for cooling via the cold plate. Cold plate cooling is supplemented with convective cooling via sidewall fins.
I/O Routing and Connectors	I/O is routed to front panel D38999 I/O and power connectors and BNC connectors for the HD-SDI video inputs at the top back of the enclosure.

Mechanical

Dimensions	288 x 156 x 154 mm [11.4 x 6.15 x 6.04"]
Weight	<7.5 kg [16.5 lb]

Power

Input Power	<ul style="list-style-type: none">• 85% Typical Efficiency Internal Power Supply• 18 – 36 Vdc Input Range• EMI/RFI Input Filter	<ul style="list-style-type: none">• Input Transient Protection• Input Reverse Polarity Protection• MIL-STD-704D/E Compliance
Power Consumption	<ul style="list-style-type: none"><120W with Managed GbE Switch<105W with Unmanaged GbE Switch	

Environmental

Operating Temp.	-40 to +55 °C (cold plate temp)
Non-Operating Temp.	-55 to +105 °C
Vibration	V3 per VITA 47
Operating Shock	OS2 per VITA 47
Altitude	-1,500 to +60,000 ft.
Relative Humidity	0 – 100%
Ingress Protection	IP65
Rain	MIL-STD-810F, Method 506.4, Procedure III
Dust	MIL-STD-810F, Method 510.4, Procedure I & II
Salt Fog	MIL-STD-810F, Method 509.4
Bench Handling	MIL-STD-810F, Method 516.5, Procedure VI
Fungus	Fungus Resistant
EMI/RFI	MIL-STD-461

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Ordering Information

2 A192 - **2** **3** **0** -

Ruggedization
2 = Rugged

Cooling Configuration
2 = Cold Plate-Cooled

Processor
S = Xeon E-2176M

SDRAM
C = 16 GB
D = 32 GB

SBC OnBoard SSD
0 = None
5 = SATA, 256 GB SLC, QE, SE, AES
G = SATA, 1 TB MLC, QE, SE, AES
M = NVME, 1 TB TLC, QE

GbE Switch
01 = Managed
02 = Unmanaged

Input Voltage
3 = 18-36 Vdc

Operating System
0 = None
1 = Windows 10 64-bit
2 = Linux

D300
0 = None
G = 1TB MLC *
* Not recommended for OS installation

Reserved

Configuration No.
To be assigned by Aitech

Example: 2A192-2SCG0132G0-00

SLC: Single Level Cell; MLC: Multi Level Cell; QE: Quick Erase; SE: Secure Erase; AES: AES256 Encryption

Optional Accessories

MCS191-1-00	Set of Front Panel Mating Connectors
TC192-J1-00	J1 I/O Breakout Cable
TC192-J2-00	J2 I/O Breakout Cable
TC191-J3-00	J3 Power Cable
PS28-150-00	28 Vdc/150W External Power Supply (100 - 240 Vac input)



Contact Aitech

Contact your Aitech sales representative for additional product information, and for inquiries regarding customized configurations of the A192 and additional software support.

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