Features

- Rugged Enclosure Includes Thermal Solution
- Fanless -40° to +85°C Operation
- Intel® Low Power Processor (Bay Trail)
  - Intel Atom® E3827 at 1.75 GHz
  - 1 MB L2 Cache
  - Intel Gen7 Graphics
  - HD Audio
- Two Active Video Outputs
  - VGA up to 2560x1536
  - LVDS 18 bit or 24 bit
  - DisplayPort Version 1.1
- Up to 8GB DDR3L SDRAM
- Two Gigabit Ethernet Controllers
  - Hardware-based time stamping
    - IEEE1588 and IEEE 802.1 AS
  - IEEE802.Qav Audio-Video Bridging
  - Remote boot (PXE 2.1, iSCI, and Intel® Boot Agent)
- Two Serial ports
  - 16C550 compatible
  - RS-232, RS-422, or RS-485
  - Standard or High-Speed 25 MHz clock
- Bus Expansion
  - Two MiniPCIe
  - IO60 (SPI, I^2C, PWM, and UART)
- Four USB Ports (one USB 3.0 and three USB 2.0)
- SSD Options
  - SATA, CFast, mSATA, and USB
- Input Power
  - Wide range 10 to 50VDC Input Power
- Software
  - Phoenix® UEFI BIOS
  - Compatible with Linux®, Windows® 7/10, and other x86 RTOS

Product Description

The SYS-405Q is a rugged, industrial system capable of operating at extended temperatures without requiring a fan or heat-pipe. The SYS-405Q is based on the dual-core Intel Atom® E3827 processor and protected by a rugged enclosure.

Benefiting from Intel® Silvermont microarchitecture, the E3827 provides up to twice the performance of previous Intel Atom processors while drawing less power. The SYS-405D features a wealth of I/O and expansion options including USB3, USB2, dual Gigabit Ethernet, MiniPCIe, two RS-232/422/485 serial ports, I^2C and SPI bus.

COM Express Module – The SYS-405D includes an integrated COM Express Type 6 module for the processing engine. The BIOS tightly couples the COM module with the carrier devices to provide a complete off-the-shelf solution while providing processor options in the same Intel® Atom™ family.

Housing – Made of lightweight aluminum, the enclosure provides ample durability without adding unnecessary weight to the system. Its exterior has a black powder coat finish that resists scratches and fingerprints. With its durable exterior and fanless interior, the SYS-405D is able to survive in industrial applications and reduce field service.

2.5 inches

0.25 inches
0 inches

SYS-405D: Industrial Computer with Quad-Core Intel Atom® Processor

Memory – The SYS-405D supports 2G, 4G, or 8GB of factory installed DDR3L SRAM memory.

Video – The Intel Atom® SoC implements a derivative of the Generation 7 graphics engine. The graphics engine supports two independent and simultaneously active interfaces. The SYS-405D provides support for analog VGA, DisplayPort 1.1, and LVDS, which allows direct connection to a variety of LCD displays.

Ethernet – The SYS-405D includes two Intel® I210 Gigabit Ethernet controllers with support for IEEE 1588 and 802.1AS protocol time-stamping, 802.1Qav Audio-Video Bridging, Error Correcting Code (ECC) packet buffers,and advanced power management including Energy Efficient Ethernet (EEE). Both interfaces support 10/100/1000 Mb/s multi-speed full, and half-duplex operation.

Serial – The two 16C550 compatible serial channels include EXAR SP339E multiprotocol transceivers with internal termination and four configuration modes. Each transceiver is configurable in the BIOS and supports RS-232, RS-485 (2-wire half duplex), or RS-422 (4-wire full duplex).

Bus Expansion – The SYS-405D provides multiple interfaces to add functionality to the basic design. Two MiniPCIe connectors are available for PCI Express expansion and include mounting holes for half or full size cards. One of the MiniPCIe connectors doubles as a bootable mSATA connector and the other includes USB lines.

The stackable IO60 expansion connector provides access to SPI, I^2C, PWM, and UART signals for adding I/O modules. The simple interfaces allow integration with data acquisition, sensors, and other functionality for unique designs.

Boot Media and Storage – The SYS-405D includes several bootable interfaces: SATA, USB, CFast, and mSATA. CFast and mSATA provide high performance solid state drives for rugged and high-reliability applications.

Custom Configurations – Our engineering staff can utilize the building blocks contained in our standard products to address most requirements that arise. We will work directly with your staff define an optimum solution that will reduce your time-to-market.

WinSystems reserves the right to make changes to products and/or documentation without further notifi cation.

Product names of other companies may be trademarks of their respective companies

Technical Specifications

Processor
Quad-Core Intel® Atom™ E3827 at 1.75 GHz

Network Interface
Ethernet	Two Intel® I210 GbE controllers

Video Interfaces
Up to Two Active Displays
VGA	Up to 2560x1536 at 24bpp
LVDS	18bit or 24bit
DisplayPort 1.1	

Storage (Bootable SATA Options)
One SATA 2.0 Channel
One CFast Socket
One mSATA Socket

Onboard I/O
Four USB	One 3.0 and three 2.0
Two Serial Ports	RS-232/422/485
Audio	HD, Stereo, & DisplayPort
Watchdog Timer	Adjust from 1 sec to 255 min
Real Time Clock	With optional battery back-up

Expansion Bus Connectors
Two MiniPCIe (one supports mSATA)
One IO60 (SPI, I^2C, PWM, and UART)

Power[1]
+10 to 50VDC input: 8.75W Typical/ 12W Max

Software
Phoenix® BIOS
Compatible with Linux™, Windows®, DOS, and x86 RTOS

Environmental
Operating Temperature	-40° to +85°C
RoHS compliant	

Mechanical
Dimensions	8x5x2.5in (203.2x127x63.5mm)
Weight	2.65lbs (1.20kg)

Ordering Information
(See website for complete ordering information and accessories.)

SYS-405D-2G-0	E3845 Industrial Computer with 2GB RAM
SYS-405D-4G-0	E3845 Industrial Computer with 4GB RAM
SYS-405D-8G-0	E3845 Industrial Computer with 8GB RAM

---

1   Power consumption estimates are for the SYS-405 only and exclude any external devices