

NTX7642

Ultra Low-Power, Extended Temperature
Intel® Dual Core

Bay Trail Based Single Board
Computer for COM Express® mini



Power and Flexibility

The Orion NTX7642 single board computer (SBC) is a flexible, rugged, high-performance, low power, multi core SBC ideally suited for a variety of applications.

Harnessing the power of the Intel® E3800 series processor and the unparalleled complement of I/O, this SBC can be adapted to practically any Military, Industrial or Commercial application.

The NTX7642 is available in multiple levels of ruggedization, from commercial temperature air cooled to extended temperature.

With up to 4GB DDR3, onboard NAND Flash, and Gigabit Ethernet the low power NTX7642 design has streamlined high-performance, low power processing in a small form factor (55mm x 84mm).

The NTX7642's Gigabit Ethernet, two SATA ports, two USB 3.0 ports, USB OTG port, four USB ports, two serial ports, audio and graphics make it ideal where low power and high performance are a must!

Features

- Intel E3800 Series Processor
- Configurations from single core (3W) to quad core (10W) TDP
- Ultra Small Form Factor (55mm x 84mm)
- Rugged, Extended Temperature design
- Com Express Signaling
- Up to 4G DDR3 SDRAM
- 10/100/1000 Ethernet Port
- Two SATA ports
- Two Serial ports
- Four USB ports
- Two USB 3.0 ports
- USB OTG port
- HDMI Video Connection
- HD Audio
- Onboard NAND Flash
- Onboard Boot Flash
- Four PCIe lanes
- Various Operating System Support

Hardware Specifications

Processor

- Intel®: Quad Core Bay Trail processor
- Processor Speed: up to 1.9GHz
- Multiple Processor SKUs Available
E3845, E3827, E3826, E3825, E3815, E3805

Processor Features

- Quad-core with hyper-threading technology
- Integrated Intel HD Graphics Controller
- 32KB L1 Instruction, 24KB L1 Data, 2M L2 cache

Video Port

- HDMI
- DVI
- Display Port

Memory

- DRAM Memory Type: DDR3 SDRAM with ECC
- DRAM Memory Size: Up to 4GB (soldered)
- Up to 64GB SATA NAND Drive

PCIe

- Four PCIe lanes which can be combined into one Fat-Pipe
- DMA Support
- Configurable Non-transparent port

Peripherals

- Up to 64GB SATA NAND Drive
- 1x PCIe Gb Ethernet MAC/PHY (Intel® i210)
- Top & bottom side ambient temperature sensors (I2C)
- On-die CPU temperature sensor
- HD Audio interface
- Four USB 2.0
- Low Pin Count (LPC) bus
- 6x GPIO (LVTTL)
- Two Serial ATA (SATA) 300MB/s
- Four PCIe lanes (Can be combined to one Fat-Pipe)
- SMBus
- COM Express® Type 10 Signaling
- USB-OTG support (configurable as host or end point)
- Two USB 3.0 ports (one host controller, one device controller)

Physical / Electrical / Environmental

- COM Express® mini form factor (55mm x 84mm)
- Supply voltage: +12V +/- 10%
- Typical power consumption: 550mA, 6.6W

Temperature

- Operating: -40°C to +85°C•
- Storage: -50°C to +100°C•

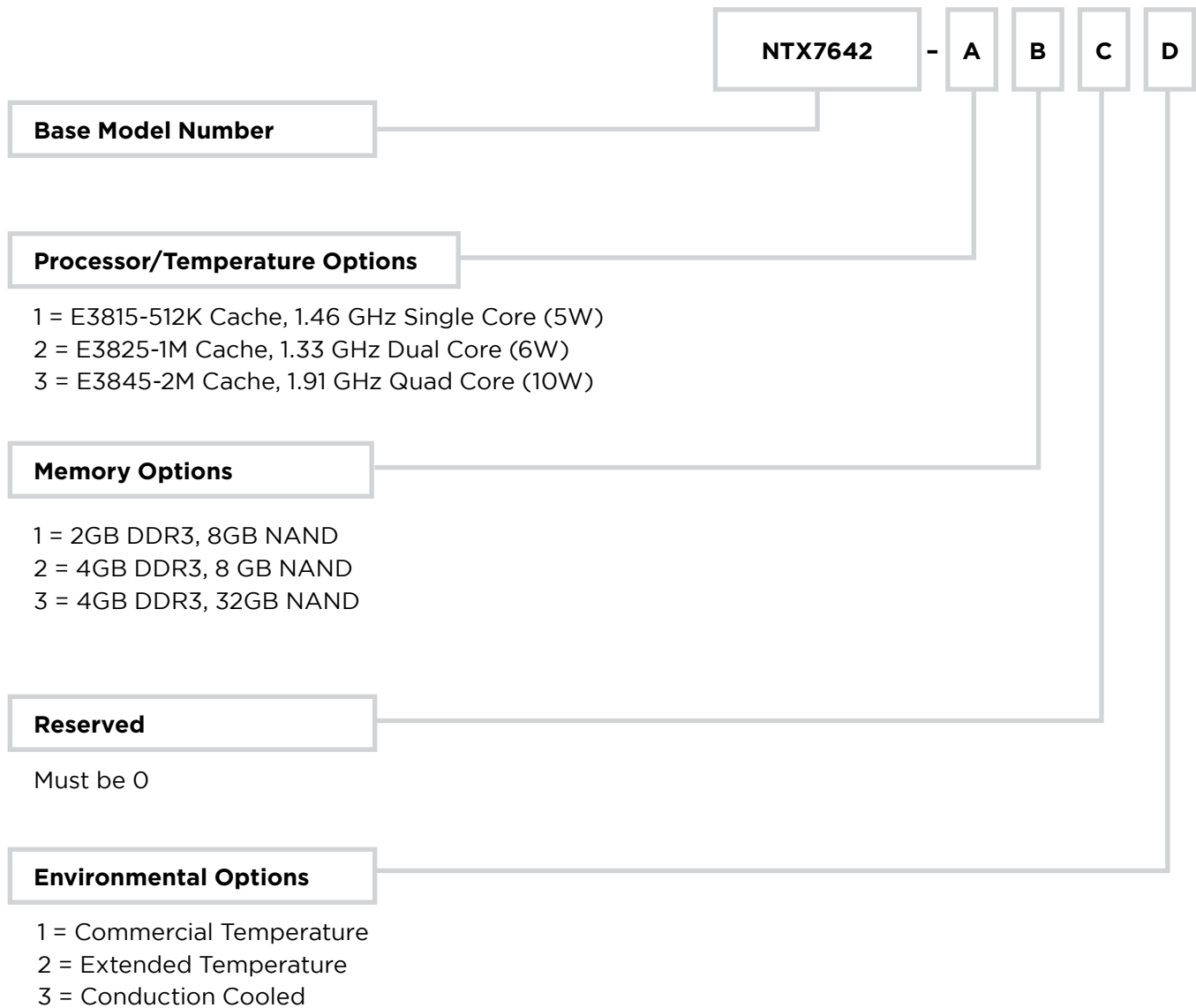
Relative Humidity

- Operating: 5% to 95%, non-condensing
- Storage: 5% to 95%, non-condensing

Environmental

Operating Temperature	-40 to +85°C
Humidity	5% to 95%, non-condensing

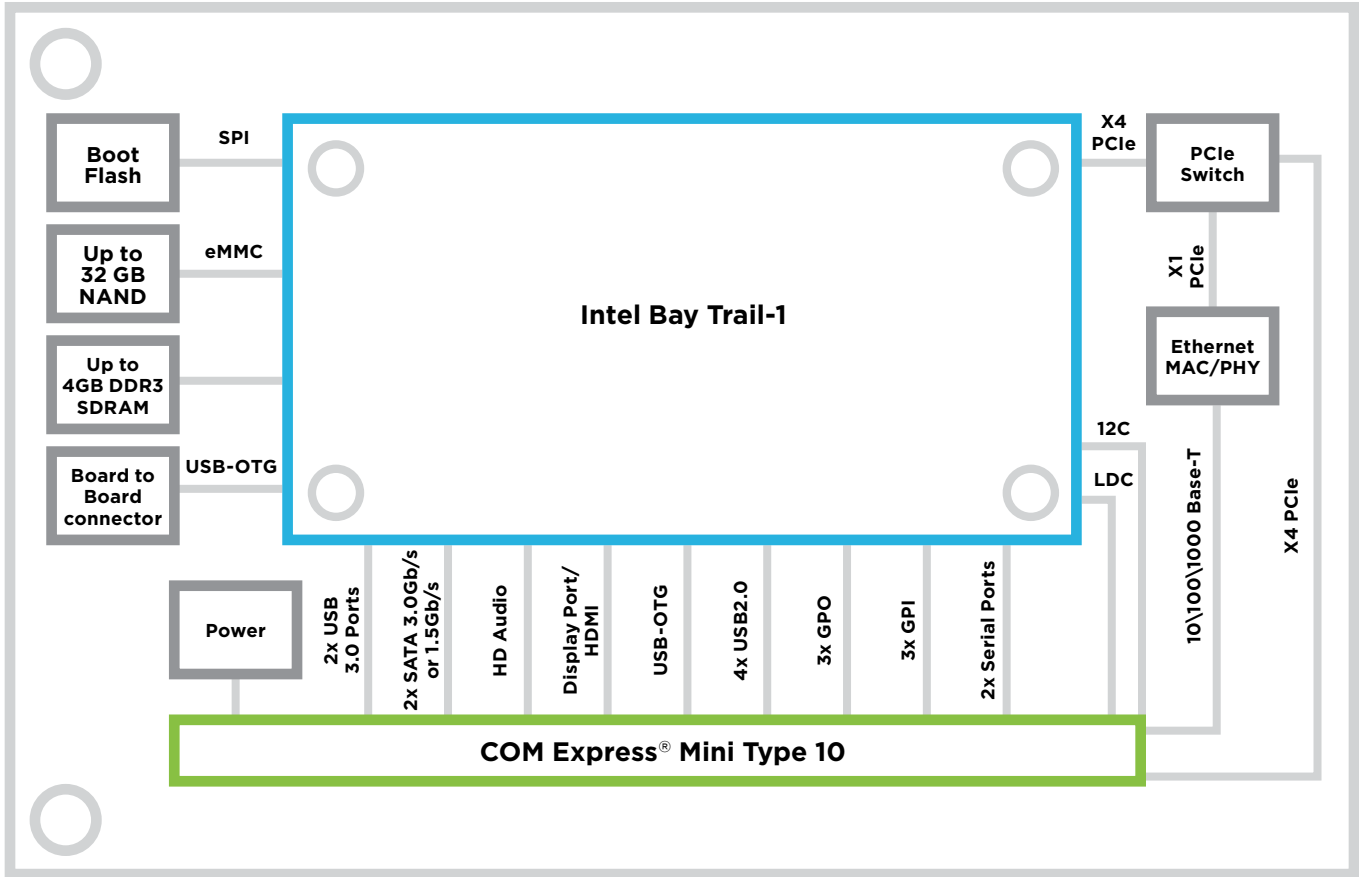
Options Guide



Orion has successfully generated products utilizing an extensive assortment of microprocessors since 1990. Our single board computer product offering includes both custom and standard form factors such as VPX, VME, Compact PCI and PMC. The majority of our products are offered in five ruggedization levels from standard commercial to rugged, extended temperature with conduction cooling. At Orion, we put the customer at the center of our business. We strive to provide the highest quality of products backed by our exceptional service and support.

Whether it's a small quantity, one-time requirement or a high volume product for years to come, we would like to be your partner in embedded solutions.

Block Diagram



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