WINSYSTEMS®

ITX-P-C444
NXP i.MX8M Single Board Computer with 4K UltraHD Video and Low Power Processing

MADE IN USA

Features

Industrial Single Board Computer
- Form Factor: Pico-ITX
  3.93 in x 2.83 in (100 mm x 72mm)
- Made in the USA
- NXP® i.MX8M Industrial Processor @ 1.3 GHz
- Dual and Quad arm Cortex®-A53
- Cortex-M4 core processor for low-power processing
- Up to 4GB LPDDR4 RAM
- -40°C to +85°C Operating Temperature Range
- Wide Range Power Input (9 - 36 VDC)

Security
- Hardware security - Trusted Platform Module (TPM) 2.0 enabled

Display and Graphics
- HDMI output with 4K UltraHD resolution and HDR capability
- Single channel LVDS output with backlight

Network
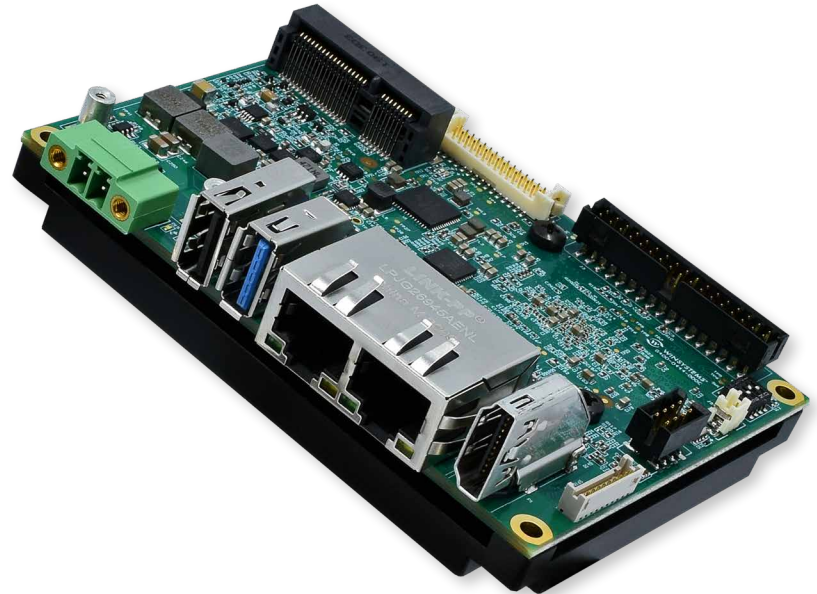- 2x Gigabit Ethernet ports (Front Panel I/O)

Storage
- Up to 32GB onboard eMMC
- MicroSD Socket

Connectivity and I/O
- 1x USB 3.1 Gen 1
- 3x USB 2.0
- 2x RS-232/422/485 Serial ports
- 6 x General Purpose Input/Output (GPIO)
- 1x MIPI-CSI (4-Lanes)
- 1x SPI bus
- 1x I2C bus
- HD Audio Interface
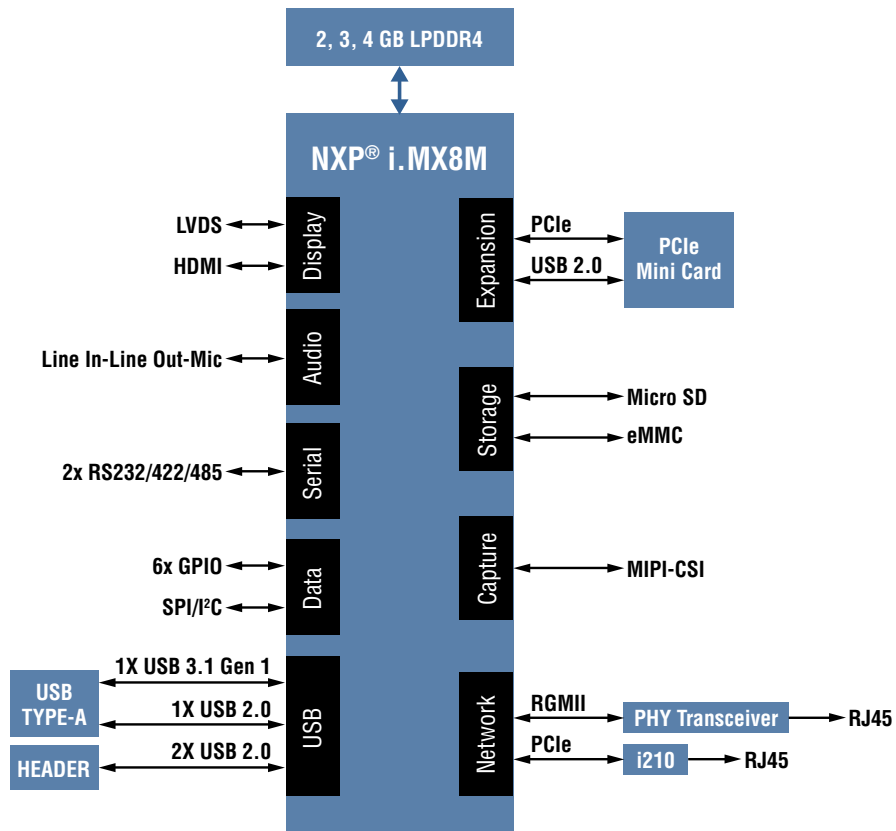- PCIe Mini Card (mPCIe) expansion option
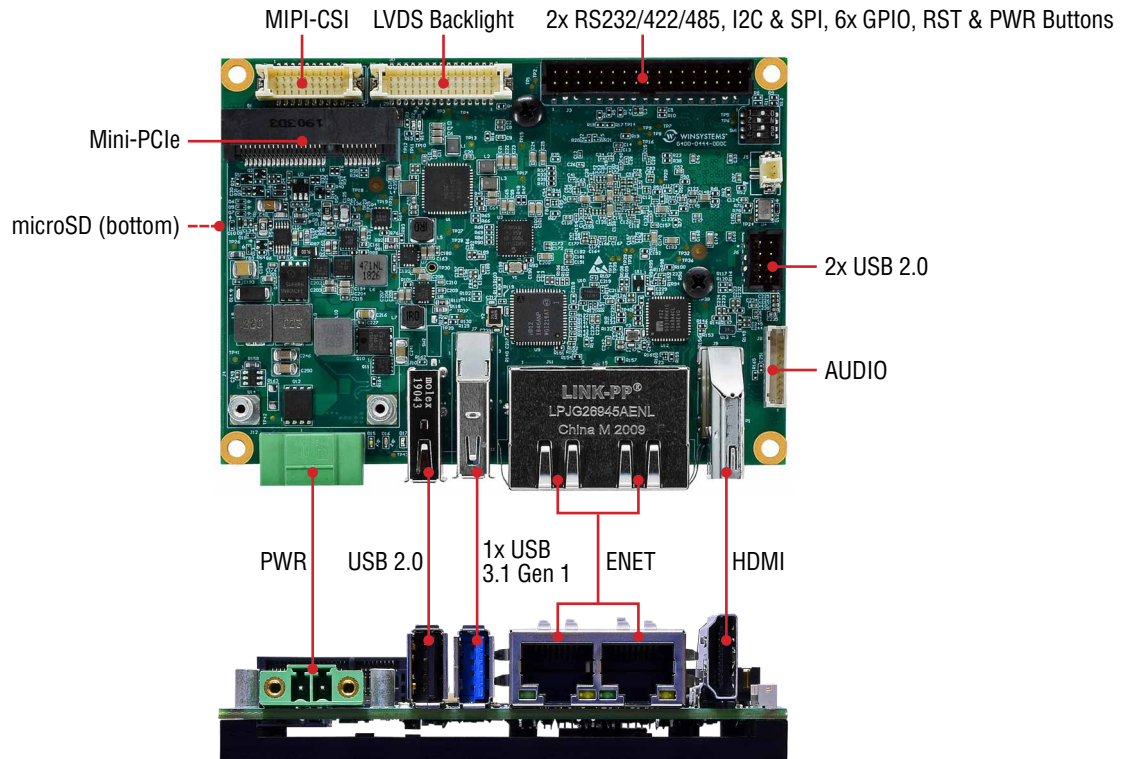
Software
- Compatible with Linux, Android

Product Description

The ITX-P-C444 is an industrial Pico-ITX single board computer (SBC) based upon NXP's i.MX8M application processor and packed with dual Ethernet, industrial I/O, and expansion options. The processor supports industry-leading video processing along with M4 microcontroller for real-time subsystems making it an ideal fit for industrial IoT applications requiring performance in harsh conditions such as digital signage, industrial automation, energy, building automation and others.

Block Diagram

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2, 3, 4 GB LPDDR4

NXP® i.MX8M

- LVDS ↔ Display
- HDMI ↔ Display
- Line In-Line Out-Mic ↔ Audio
- 2x RS232/422/485 ↔ Serial
- 6x GPIO ↔ Data
- SPI/I²C ↔ Data
- 1X USB 3.1 Gen 1 — USB TYPE-A
- 1X USB 2.0 — USB
- 2X USB 2.0 — HEADER

- Expansion: PCIe ↔ PCIe Mini Card; USB 2.0 ↔ PCIe Mini Card
- Storage: Micro SD, eMMC
- Capture: MIPI-CSI
- Network: RGMII → PHY Transceiver → RJ45; PCIe → i210 → RJ45

Connectors

MIPI-CSI | LVDS Backlight | 2x RS232/422/485, I2C & SPI, 6x GPIO, RST & PWR Buttons

Mini-PCIe

microSD (bottom)

2x USB 2.0

AUDIO

PWR | USB 2.0 | 1x USB 3.1 Gen 1 | ENET | HDMI

ITX-P-C444

Technical Specifications

PROCESSOR	**NXP i.MX8M Processor**
OS COMPATIBILITY	• Compatible with Linux, Android
MEMORY	• Embedded LPDDR4 (up to 4GB)

DISPLAY	• HDMI 2.0a
	  – 4096 x 2160 at 60 Hz
	  – HDR10
	• Single channel LVDS output with backlight (18 and 24 bpp color panel support)
	• Hardware acceleration utilized for video playback

VIDEO INPUT	• MIPI/CSI Capture
STORAGE	• eMMC • MicroSD
NETWORK INTERFACE	2x Gigabit Ethernet ports (Front Panel I/O)
ONBOARD I/O	• 1x USB 3.1 Gen 1 (Front Panel I/O) • 3x USB 2.0 (1x Front Panel I/O) • 2x RS-232/422/485 Serial ports • 6x General Purpose Input/Output (GPIO) • 1x MIPI-CSI (4-Lane) • 1x SPI bus • 1x I2C bus • HD Audio Interface (Line Out, Line In, Mic In)
EXPANSION BUS	PCIe Mini Card (mPCIe)
POWER	Wide Input: +9 to 36 V DC / Power usage: ITX-P-C444D-2-16 = 7.34 W, ITX-P-C444Q-2-16 = 7.65 W
ENVIRONMENTAL	• Operational from -40°C to +85°C (-40°F to +185°F) • RoHS compliant
MECHANICAL	Dimensions: 3.93 in x 2.83 in (100 mm x 72mm) Weight: 5.95 oz (168.5 g) Board thickness: 0.078 inches
ADDITIONAL FEATURES	• DHardware security - Trusted Platform Module (TPM) 2.0 enabled • Watchdog timer adjustable from 1 second to 255-minute reset • RoHS compliant • Backlight power supported • TXCO RTC clock/calendar

Order Information

SBC PART NUMBER	**ITX-P-C444-P-R-M** P = CPU (D = Dual-Core, Q = Quad-Core) R = RAM (2, 4) GB M = eMMC (0*, 16, 32) GB *Special order only*
CABLES	• CBL-AUDIO-001-20 AUDIO • CBL-MULTI-IO-12 Multi I/O cable includes: Serial, GPIO, I²C, SPI, Power and Reset Buttons • CBL-USB2-006-12 USB • CBL-LVDSB-021-20 LVDS and Backlight to AUO panel
OPTIONAL BATTERY	• BAT-LPC-BR2330 3V 255 mAH Removable Battery -40°C to +85°C

Expansion and Customization Options

WinSystems provides additional cables, expansion cards, power supplies, and solid state drives to complete your embedded computing solution including data acquisition, communications, location, and other features via expansion interfaces. Our Application Engineers are available to guide you through product selection and customized options.

Contact an Application Engineer or visit our website for more information.