Features

Industrial Carrier Design

- Mini-ITX Small Form Factor
- Made in the USA
- -40°C to +85°C Operating Temperature Range to help verify against your COMe T10 designs
- Wide Range Power Input (9-20 V DC)
- Supports all interfaces on the WINSYSTEMS COMeT10 modules

Graphics

- Supports up to Two Independent Displays
- 1x DisplayPort with 4K Resolution
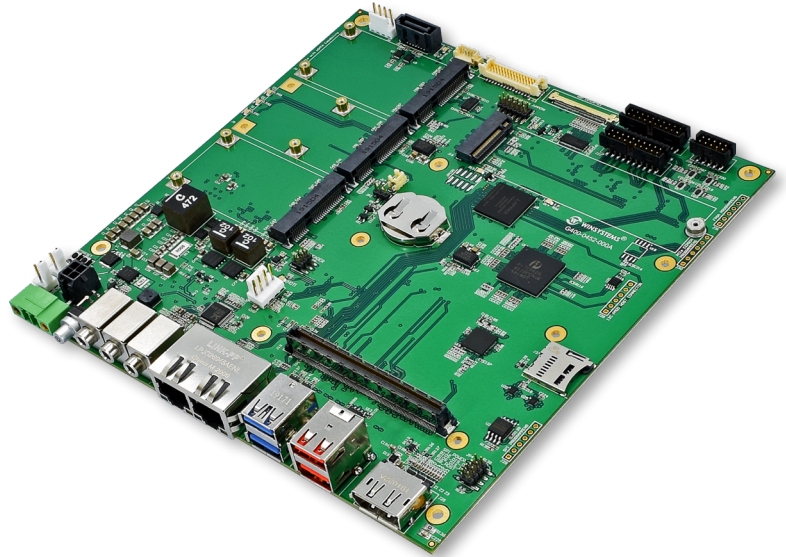- 1x LCD with backlight and touch control

Connectivity and I/O

- 2x Gigabit Ethernet
- 2x USB 3.2 Gen 1 and 2x USB 2.0
- 4x General Purpose Input (GPI)
- 4x General Purpose Output (GPO)
- 4x Serial Ports (2x RS232, 2x RS232/422/485)
- HD Audio

Storage

- microSD
- SATA with SATA Power
- mSATA

Expansion and Configuration Options

- 3x Mini-PCI Express (1x with mSATA support)
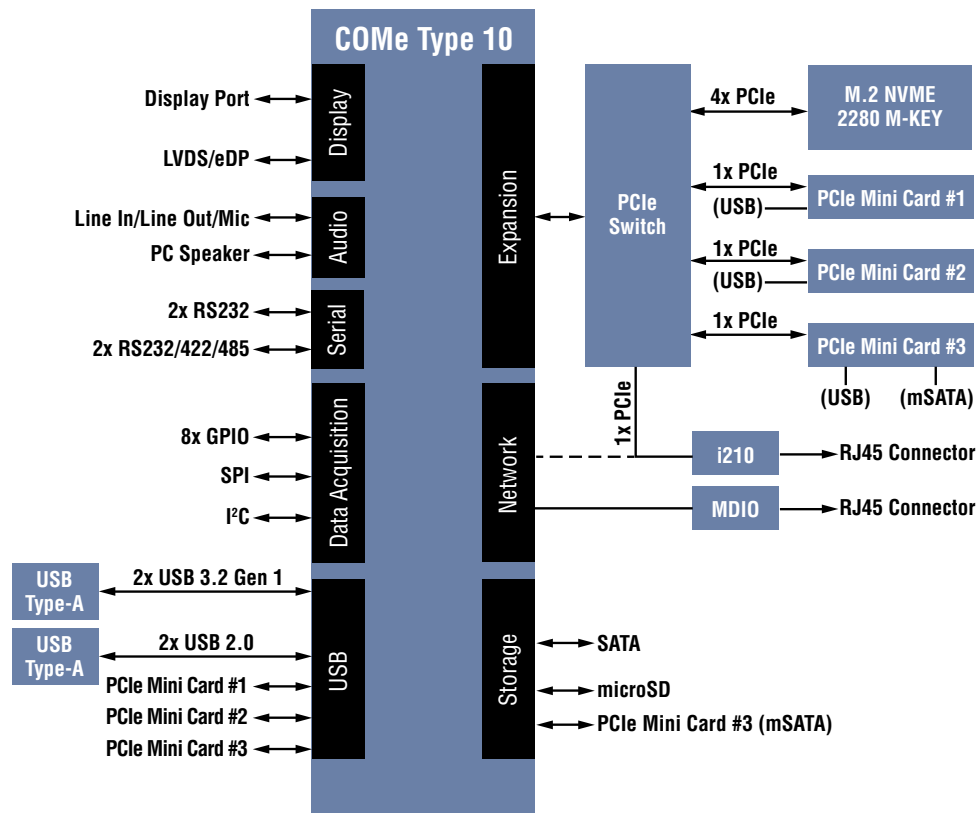- M.2 M-key 2280 with support for PCIe x4 NVMe

Product Description

The ITX-M-CC452-T10 is an industrial Mini-ITX small form factor Type 10 carrier board designed to fully test WINSYSTEMS' COMeT10-3900 COM Express Type 10 Mini module. The carrier board adheres to the PICMG COM Express specifications providing compatibility with other COM Express mini type 10 modules.

This full-featured carrier board supports two independent video displays (DisplayPort and LVDS/eDP), dual Ethernet, two USB 3.1 Gen 1 ports, two USB 2.0 ports, four general purpose inputs, four general purpose outputs, stereo audio, and a watchdog timer.
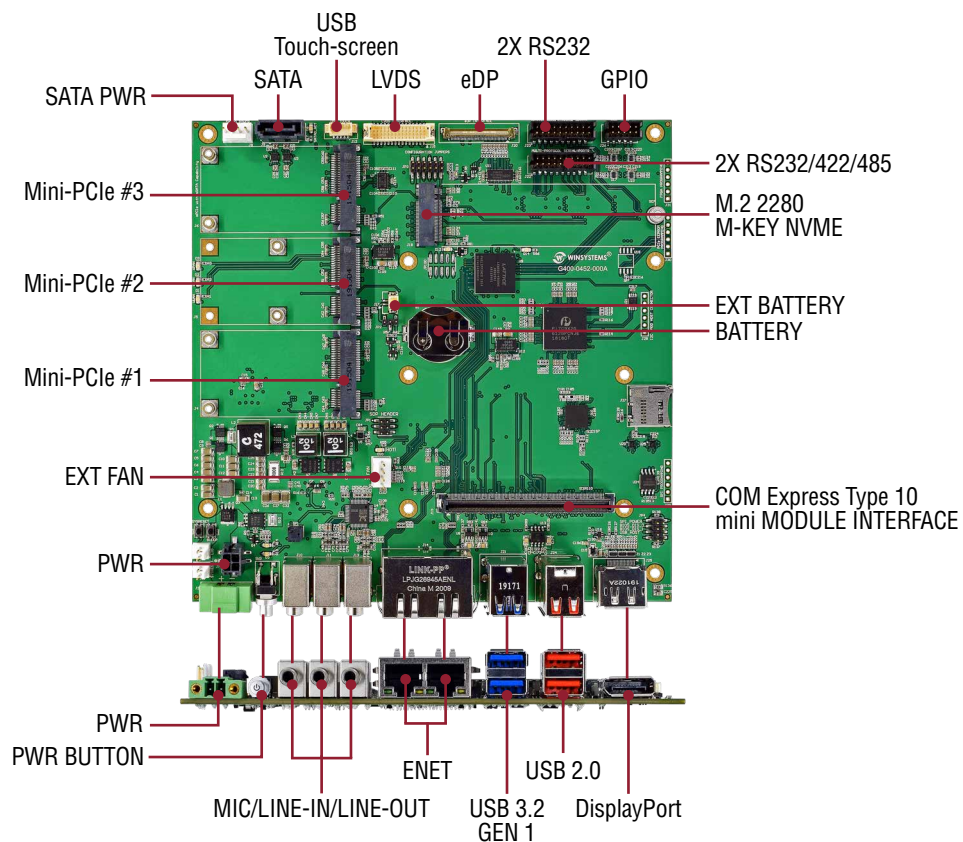
The board also includes expansion capabilities via three Mini-PCIe sockets (one with mSATA support), M.2 M-key 2280 with support for PCIe x4 NVMe SSD drives, and a SATA port for external SSD's.

The ITX-M-CC452-T10 is a fully production-ready platform and is a versatile and easily configured solution with customizable COM module, storage, and I/O options to suit the industrial use case. With design details available, the ITX-M-CC452-T10 is also an excellent reference design and evaluation carrier board for WINSYSTEMS Type 10 COM Express modules.

Block Diagram

Connectors

Technical Specifications

STORAGE	• microSD (muxed with GPIO) • SATA Connector provided by SATA channel from Type 10 module • mSATA provided by SATA channel from Type 10 module (shared with Mini-PCIe slot)

DISPLAY	• Two independent video outputs
	    – LVDS/eDP output with digital backlight and touch control
	        NOTE: The carrier board supports both eDP and LVDS from the Type 10 module and a mux to the eDP and LVDS connectors selectable via a jumper on-board the ITX-M-CC452-T10
	    – 1x DisplayPort up to Ultra 4K Resolution provided by DDI from Type 10 module (Front Panel I/O)

NETWORK INTERFACE	• 1x Gigabit Ethernet Port supported from the Type 10 module • 1x Gigabit Ethernet Port using Intel i210 provided by the on-board PCIe switch

ONBOARD I/O	**Supported from Type 10 Module**	**Provided by ITX-M-CC452**
	• 2x TTL Serial Ports	– 2x RS232 Serial Ports (3-wire) provided by on-board RS232 transcievers
	• LPC Bus	– 2x RS232/422/485 Serial Ports (4-wire) provided by on-board Multi-Protocol transcievers
	• 5x USB 2.0 and 2x 3.2 Gen 1 Ports	– 2x USB 3.2 Gen 1 ports (Front Panel I/O) – 2x USB 2.0 ports (Front Panel I/O) – 3x USB 2.0 ports (Mini-Cards #1-3)
	• GPIO signals	– 4x General Purpose Input (GPI) – 4x General Purpose Output (GPO)
	• HD Audio signals	– On-board HDA Codec providing Line Out, Line In, Mic In (Front Panel I/O)
	• Speaker output	– On-board speaker output for beep tones

EXPANSION BUS	• 3x Mini-PCIe card (1x shared with mSATA) • 1x M.2 M-key 2280 with support for PCIe x4 NVMe *Note: All the PCIe channels on the ITX-M-CC452-T10 are provided by an on-board PCIe switch. The PCIe switch is supported by 4x PCIe channels from the Type 10 module.*
POWER	• Wide Input: 9 to 20 VDC (±5%) • Battery back up for Type 10 module Real-time Clock (RTC)
ENVIRONMENTAL	• Operational from -40°C to +85°C (-40 to +185°F) • RoHS & REACH
MECHANICAL	Dimensions: 6.7 in x 6.7 in (mITX) (170 mm x 170 mm) Weight: 8.0 oz (225 gm) without COMe Module PC Board thickness: 0.078 inches (2.0 mm)

Order Information

SBC PART NUMBER	**ITX-M-CC452-T10-m-t** m = Module installed (0 = no module is default) t = Thermal solution installed (0 = no thermal solution is default)	
COM EXPRESS MINI TYPE 10 MODULES	COMeT10-3900	COM Express Type 10 Mini Module with Intel Atom E3900 Processor
CABLES AND ACCESSORIES	CBL-PWR-125-20 CBL-SER2-202-12 CBL-USB1-202-12 CBL-PWR-117-12 PS-ITX-N-12V-60W-1 CBL-PWR-ITX-04A	Input Power Cable Serial COM port cable with 2x DB9 connectors USB Touch Controller Cable Power cable for SATA drive 60W power supply with barrel connector Power cable barrel connector adapter

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 Mini-PCIe, and M.2 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.

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