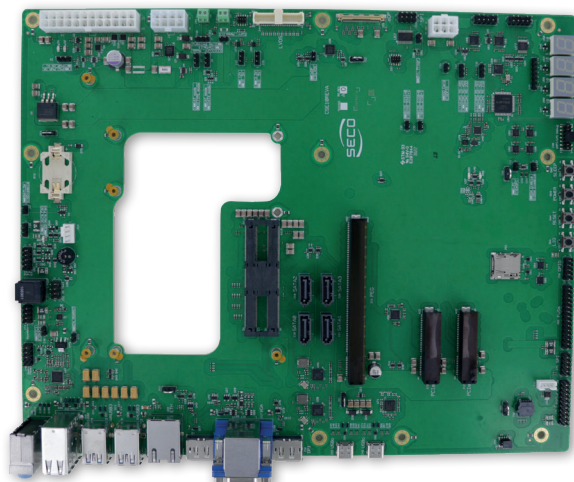# COM Express® Type 6

Carrier Board

CCOMe-E10 — Carrier Board for COM-Express™ Rel. 3.1 Type 6 Modules for Development

Connectivity and Flexibility to Accelerate Development

HIGHLIGHTS

- COM Express 3.1 Type 6 Carrier board
- ATX form factor
- Especially suited for development and debugging of COM express modules
- Separated power supply for COM Express module and carrier board

CROSS PLATFORM Philosophy

FEATURES

Video Interfaces	3 x DP++ connectors or 1 x DP++ connector and 2 x USB4.0 Type-C with Alternate-Mode VGA connector LVDS 24-bit Single/Dual Channel eDP 4-lanes 40 poles VESA connector Backlight control + LCD selectable voltages dedicated connector LVDS External EDID flash socket	**Other Interfaces**	4 x GPI + 4 x GPO pin header (interface multiplexed with µSD slot) SPI Flash Socket Button / LEDs front panel header 4-pin tachometric FAN connector I2C + SM Bus on feature Pin header I2C Flash Socket SM Bus Smart Battery Connector 4 x 7-segment LCD displays for POST codes LPC/eSPI internal header
Mass Storage	4x S-ATA 7p M connectors µSD Card slot (interface multiplexed with GPIO header)		
Networking	1x GbEthernet RJ-45 connector	**Power Supply**	ATX 24 poles connector for carrier board working only Auxiliary 12V connector for carrier board working only 12 VDC power in connector for COM Express module's working Cabled Coin-cell connector for RTC
PCI-e	2x PCI-e x4 Slots Gen4 1x PCI-e x16 Slot Gen4		
USB	2 x USB 4.0 on Type-C sockets with Alternate-Mode (factory alternative to 2 x DP++ and 2 x USB 2.0) 4 x USB 3.2 Host ports on Type-A sockets 4 x USB 2.0 Host ports on Quad Type-A sockets	**Operating Temperature***	0°C ÷ +60°C (Commercial version)
Audio	On-board HD Audio Codec (Realtek ALC888S) 5.1 Audio Jack with S/PDIF Optical interface Mic In + Line Out internal pin header	**Dimensions**	305x244mm (ATXform factor, 12" x 9.6")
Serial Ports	2 x RS-232 / RS-422 / RS-485 ports on internal pin header (from carrier board's LPC Dual UART controller) 2 x RS-232 ports on dedicated pin header (from module)		

*All carrier board components must remain within the operating temperature at any and all times, including start-up; carrier operating temperature is independent of the module installed. Please refer to the specific module for more details. Actual temperature will widely depend on application, enclosure and/or environment. Upon customer to consider specific cooling solutions for the final system.

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BLOCK DIAGRAM

Block diagram labels:

- RJ-45 Gigabit Ethernet Connector — GbE
- 4x SATA 7 p Gen3 Connectors — SATA #[0..3]
- VGA — VGA
- µSD Slot — SD/GPIO
- GPIO Header
- LVDS 34-pin connector
- eDP connector — MUX — LVDS/eDP
- Feature Header — SoundWire
- Analog Audio Header
- HD Audio Codec — HDA
- 5.1 Audio Jacks + Optical S/PDIF
- FAN
- Flash Socket — SPI
- Coin Cell Battery Holder — V_{RTC}
- Feature Header — RS-232 transceiver — SER [0..1]

COM-Express A-B connector

- Header
- MUX — eSPI — Bridge eSPI-to-LPC
- LPC
- Port 80 4x 7-Segment displays
- Super I/O
- RS-232/RS-422/RS-485 transceivers
- Serial Header
- 2x USB 2.0 Type-A connectors — USB 2.0 #[4..5]
- 2x USB 3.2 Type-A connectors — USB 2.0 #[0..1]
- 2x USB 3.2 Type-A connectors — USB 2.0 #[2..3]
- USB 2.0 #[6..7]
- 2x USB 4.0 Type-C Connectors — Re-Timers — DDI [1..2] / USB 4.0 #[1..2]
- CC/VBUS — Cypress CCG5 PD Controller
- SML1
- PCI-e #[4..5] Gen4 — PCI-e Gen4 X4 Slot #2
- PCI-e #[0..3] Gen4 — PCI-e Gen4 x4 Slot #1
- GP_SPI — Header
- I2C — EEPROM Socket
- SM Bus — Feature Header
- Smart Battery Connector

COM-Express C-D connector

- PEG X16 Gen4 — PCI-e Gen4 X16 Slot
- DDI3 — DP Connector #3
- DDI2 — DP Connector #2
- DDI1 — DP Connector #1
- FuSa Header
- USB 3.2 #[0..1]
- USB 3.2 #[2..3]
- PCI-e #[6..7] Gen4

Power:

- ATX 24p Connector — 3.3V_RUN, 5V_RUN, 5V_SB, 12V_RUN
- PCI-e 6p connector
- CPU 8p connector — 12V_IM