

84 x 55mm / 3.3 x 2.2 in

Description

The **Zeta** COM Express SBC family of ultra-small embedded computer boards combines a COM Express Mini CPU module with a same-size carrier board to create a complete embedded PC. Designed in the COM Express Mini Type 10 form factor (84 x 55mm/ 3.3 x 2.2 in), Zeta provides an ultra-compact, industry-standard form factor solution with scalable performance and long term availability.

Zeta supports 4 Intel processor options:

- ◆ Bay Trail E3825 1.33GHz Dual Core CPU w/ 2GB RAM
- ◆ Bay Trail E3845 1.91GHz Quad Core CPU w/2GB RAM
- ◆ Apollo Lake E3940 1.6GHz Quad Core CPU w/4GB RAM
- ◆ Apollo Lake N4200 1.1GHz Quad Core CPU w/8GB RAM



Zeta consists of 3 key components pre-assembled:

- ◆ A Computer on Module (COM) providing the core CPU functionality
- ◆ A carrier board providing the I/O transceivers and connectors, power supplies, and expansion socket
- ◆ A heat spreader with a flat exterior surface for direct mounting and heat transfer to the system enclosure

Zeta's small size and high feature density make it an ideal choice for mobile applications. It has a wide range 6-36VDC input voltage and a -40 to +85°C operating temperature range.

Features

- ◆ Interchangeable industry standard COMs support long product lifecycles
- ◆ 2x Gigabit Ethernet ports
- ◆ 4x RS-232/422/485 serial ports
- ◆ 4x USB 2.0 ports + 1x USB 3.0 port
- ◆ VGA and single-channel LVDS display
- ◆ PCIe MiniCard / mSATA socket
- ◆ Micro SD socket
- ◆ Expansion connector with PCIe, SATA and audio interfaces
- ◆ 6-36VDC input range
- ◆ COM Express Mini form factor: 3.3 x 2.2 in / 84 x 55mm
- ◆ -40°C to +85°C (-40°F to +185°F)
- ◆ Bottom-mounted heat spreader cooling
- ◆ Option integrated data acquisition circuit:
 - 16 single-ended / 8 differential analog voltage inputs
 - 16-bit A/D resolution
 - 100KHz max A/D sample rate
 - 4 16-bit analog voltage outputs
 - 27 digital I/O / counter/timers / PWM with programmable logic levels and pull-up/down resistors

Expansion Capability



Unique I/O expansion connector

Zeta includes a miniature yet rugged expansion connector which supports off the shelf and custom daughterboards with additional I/O. The following expansion signals are provided:

- ◆ PCIe x1 or x2
- ◆ I2C
- ◆ SATA
- ◆ HD Audio



Zeta I/O daughterboard

Diamond's off-the-shelf I/O daughterboards provide ready-made expansion capabilities:

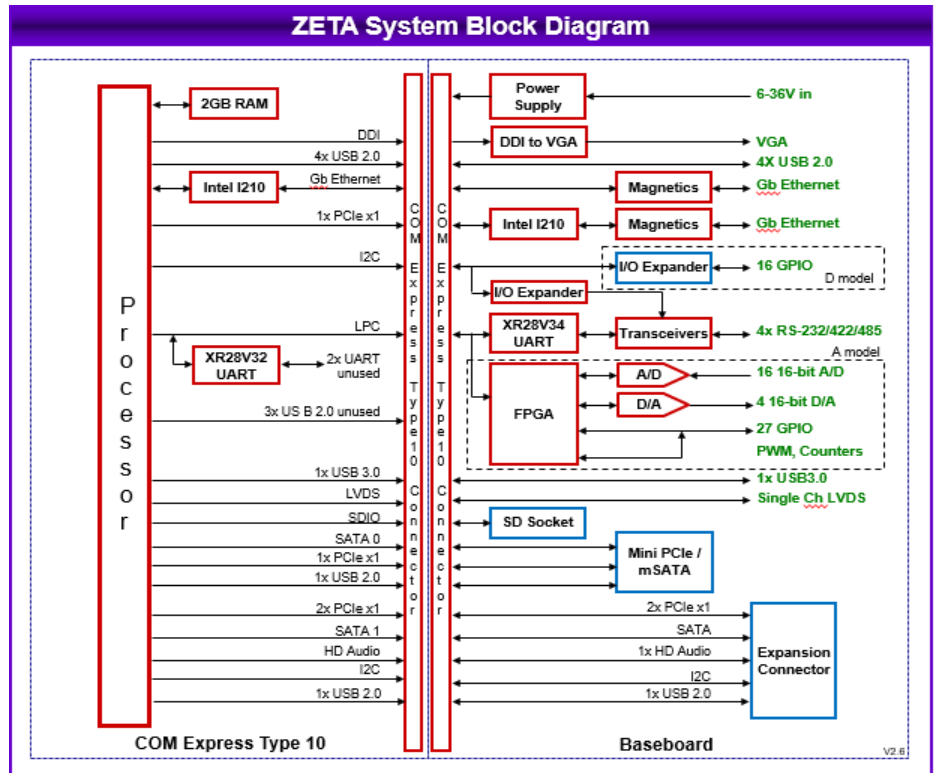
Feature	ZETA-DB-01	ZETA-DB-02
Full/half-size MiniCard socket with PCIe x1 and USB2.0	√	√
M.2 M-keying 2242 size SATA socket for mass storage	√	√
HD Audio with Line In, Mic In, Line Out	√	
16 Digital I/O lines with configurable 3.3V/5V logic levels	√	

Development Support

Operating system support is available for Linux (Ubuntu 16.04 LTS), Windows Embedded 7, and Windows 10 IoT Enterprise LTSB. Drivers and instructions are available for free download on the Diamond website. Software development kits / board support packages are available as well and consist of the selected operating system installed and pre-configured on a solid state flashdisk (SSD). See ordering information below for definition of OS for each model.

Development Kits

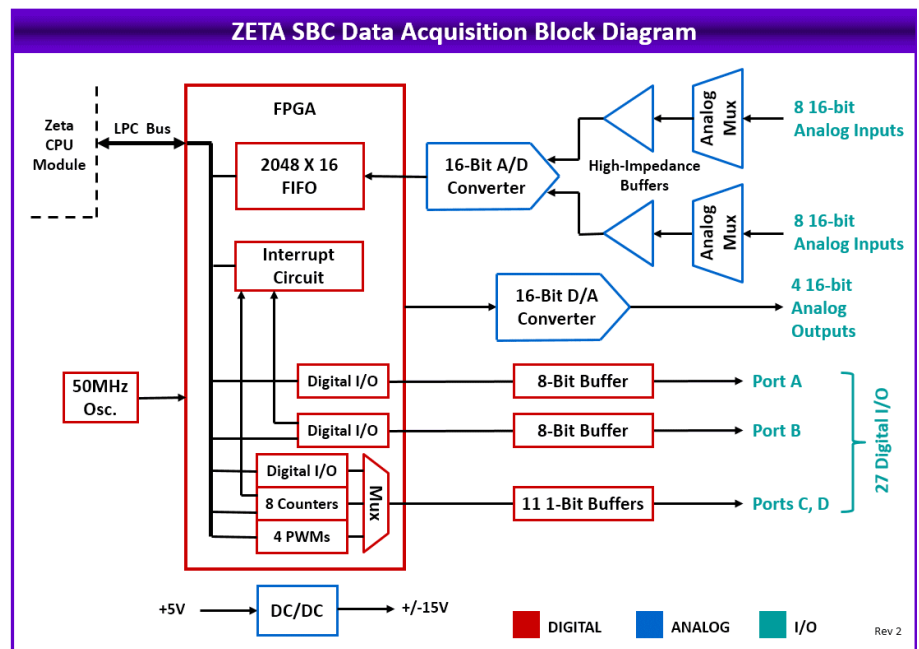
Complete kits are available with a full set of I/O cables and a bootable flash driver with Linux or Windows OS. Simply install the pre-configured flashdisk, attach cables / keyboard / mouse / monitor, power up, and the system is ready.



Data Acquisition & Digital I/O

Zeta "A" models include a complete data acquisition circuit with a combination of analog and digital I/O features. Diamond's Universal Driver software provides a toolkit for rapid development of applications to control all I/O features.

Zeta "D" models include a 16-line digital I/O (GPIO) circuit based on the popular PCA9535 GPIO expander chip. Programming support is provided via a driver with demo programs.



Ordering Information

Model	Linux OS Support	Windows OS Support
ZETA-E3825-2GA E3825 1.33GHz CPU, 2GB RAM, DAQ circuit	Ubuntu 16.04 LTS 32-bit	WIN Embedded 7 32-bit
ZETA-E3825-2GD E3825 1.33GHz CPU, 2GB RAM, Digital I/O circuit	Ubuntu 16.04 LTS 32-bit	WIN Embedded 7 32-bit
ZETA-E3845-2GA E3845 1.91GHz CPU, 2GB RAM, DAQ circuit	Ubuntu 16.04 LTS 32-bit	WIN 10 IoT Enterprise LTSB 64-bit
ZETA-E3845-2GD E3845 1.91GHz CPU, 2GB RAM, Digital I/O circuit	Ubuntu 16.04 LTS 32-bit	WIN 10 IoT Enterprise LTSB 64-bit
ZETA-E3940-4GA E3940 1.6GHz CPU, 4GB RAM DAQ circuit	Ubuntu 16.04 LTS 64-bit	WIN 10 IoT Enterprise LTSB 64-bit
ZETA-E3940-4GD E3940 1.6GHz CPU, 4GB RAM Digital I/O circuit	Ubuntu 16.04 LTS 64-bit	WIN 10 IoT Enterprise LTSB 64-bit
ZETA-N4200-8GA E4200 1.1GHz CPU, 8GB RAM DAQ circuit	Ubuntu 16.04 LTS 64-bit	WIN 10 IoT Enterprise LTSB 64-bit
ZETA-N4200-8GD N4200 1.1GHz CPU, 8GB RAM Digital I/O circuit	Ubuntu 16.04 LTS 64-bit	WIN 10 IoT Enterprise LTSB 64-bit