



- **Highly Customizable**
- **Catalyst Compatible**
- **Intel® Atom™ E3900 Powered**
- **Industrial Grade**
- **IoT Ready**
- **Open Platform**

## Features

**Highly Customizable :** Compact Eurotech-proprietary form factor for flexible hardware and software customization

**Catalyst Compatible :** Drop-in replacement for earlier Catalyst versions (i.e. BT, TC, XL) offers a simple and cost-effective upgrade for long-term programs

**Intel Atom E3900 Powered :** Delivers more performance using less power, along with enhanced graphics capabilities and faster cores

**Industrial Grade :** Designed to last, with high reliability connectors, ECC memory and extended temperature tested (-40 to +85°C)

**IoT Ready :** Provides a wide range of networks and I/O interfaces in a compact form factor: Gigabit Ethernet, GPIOs, high speed serial, USB and PCIe

**Open Platform :** Features Everyware Software Framework (ESF), the Java/OSGi-based middleware that accelerates IoT gateway development and enables remote management

## Description

The Catalyst AL is a small form factor Computer on Module (CoM) designed for use in Embedded and Industrial IoT projects requiring high reliability, continuity and a long-life cycle, allowing for a range of flexible customization options. Measuring just 100x67mm and designed to operate in extended temperatures, the Catalyst AL is an excellent option for use in rugged, fanless embedded systems.

Based on the Intel E3900 (Apollo Lake) processor family, the Catalyst AL provides a drop-in replacement for previous Catalyst generations (Catalyst BT, TC and XL), requiring minimal or no changes to existing carrier boards. It is available in two and four core versions, with up to 8GB of RAM with ECC, up to 32GB of eMMC and two SATA interfaces.

The Catalyst AL makes it possible to leverage the multimedia capabilities of the Intel HD graphics 50x GPU, driving up to three simultaneous independent screens. MIPI camera input and HD audio are also supported. It also accelerates the implementation of field and system interfaces by providing high speed serial, USB 3.0 and 2.0, Gigabit Ethernet and GPIOs.

As with all Eurotech boards and systems, the Catalyst AL is compatible with [Everyware Software Framework \(ESF\)](#), a commercial, enterpriseready version of Eclipse Kura, the open source Java/ OSGi middleware for [IoT gateways](#). Distributed and supported by Eurotech, ESF adds advanced security, diagnostics, provisioning, remote access and full integration with the [Everyware Cloud \(EC\) IoT integration platform](#) (available separately).

Used stand-alone, or in conjunction with EC, the Catalyst AL provides a fast track go-to-market solution for embedded and Industrial IoT projects of any size.

Ordering code: CPU-300-25-XX

| XX                    |                   | -01  | -05                              | -09                              | -10   | -14                              | -18                              |  |
|-----------------------|-------------------|--|----------------------------------|----------------------------------|---|----------------------------------|----------------------------------|--|
| <b>PROCESSOR</b>      | CPU               | x5-E39301.3GHz, Dual Core  | x5-E39401.6GHz, Quad Core        | x7-E39501.6GHz, Quad Core        | x5-E39301.3GHz, Dual Core   | x5-E39401.6GHz, Quad Core        | x7-E39501.6GHz, Quad Core        |  |
| <b>MEMORY</b>         | RAM               | 2GB DDR3L<br>ECC1866MHz, Dual Ch   | 4GB DDR3L<br>ECC1866MHz, Dual Ch | 8GB DDR3L<br>ECC1866MHz, Dual Ch | 2GB DDR3L<br>ECC1866MHz, Dual Ch  | 4GB DDR3L<br>ECC1866MHz, Dual Ch | 8GB DDR3L<br>ECC1866MHz, Dual Ch |  |
| <b>STORAGE</b>        | Embedded          | No (32GB Max)  | 8GB eMMC (32GB Max)              |                                  | No (32GB Max)   | 8GB eMMC (32GB Max)              |                                  |  |
|                       | SATA              | 2x SATA 3.0  |                                  |                                  |   |                                  |                                  |  |
|                       | Other             | 1x SDIO  |                                  |                                  |   |                                  |                                  |  |
| <b>I/O INTERFACES</b> | Ethernet          | 1x 10/100/1000Mbps   |                                  |                                  |   |                                  |                                  |  |
|                       | USB               | 2x USB 3.0 7x USB 2.0  |                                  |                                  |   |                                  |                                  |  |
|                       | Serial            | 2x High Speed RX/TX (3.6Mb/s) 1x Debug Port  |                                  |                                  | 2x High Speed with Flow Control (3.6Mb/s) 1x High Speed RX/TX (3.6Mb/s) 1x Debug Port |                                  |                                  |  |
|                       | Digital I/O       | 4x GPIO (3.3V) 4x GPIO (1.8V)  |                                  |                                  | 7x GPIO (3.3V) 2x GPIO (1.8V)   |                                  |                                  |  |
|                       | Video             | 1x LVDS 2x DDI   |                                  |                                  | 1x LVDS   |                                  |                                  |  |
|                       | Backlight Control | Yes  |                                  |                                  |   |                                  |                                  |  |
|                       | Camera            | 4x Lane MIPI CSI (up to 5M Still Cut Resolution, up to 1920x1080@30fps Video Capture) 4x Lane MIPI DSI |                                  |                                  |   |                                  |                                  |  |
|                       | Audio             | Intel HD Audio   |                                  |                                  |   |                                  |                                  |  |
|                       | PCI Express       | 4x PCIe Gen 2  |                                  |                                  |   |                                  |                                  |  |
|                       | I2C               | Up to 4x, 1.8V   |                                  |                                  | Up to 5x, 3.3V Up to 4x, 1.8V   |                                  |                                  |  |
|                       | SPI               | No   |                                  |                                  | 1x  |                                  |                                  |  |
|                       | I2S               | 1x   |                                  |                                  |   |                                  |                                  |  |
|                       | SMBus             | 1x   |                                  |                                  |   |                                  |                                  |  |
|                       | LPC               | 1x   |                                  |                                  |   |                                  |                                  |  |
|                       | <b>OTHER</b>      | RTC  | Yes (Battery on Carrier)         |                                  |   |                                  |                                  |  |
| Watchdog              |                   | Yes - Dedicated Chip   |                                  |                                  |   |                                  |                                  |  |
| TPM                   |                   | Factory Option   | Yes                              | Factory Option                   |   | Yes                              | Factory Option                   |  |
| Sensors               |                   | Temperature  |                                  |                                  |   |                                  |                                  |  |
| <b>POWER</b>          | Input             | 9-36VDC  |                                  |                                  |   |                                  |                                  |  |
|                       | Consumption       | 7W Typ. (9W Max.)  | 10W Typ. (12.5W Max.)            | 13W Typ. (15W Max.)              | 7W Typ. (9W Max.)   | 10W Typ. (12.5W Max.)            | 13W Typ. (15W Max.)              |  |
| <b>ENVIRONMENT</b>    | Operating Temp    | -40 to +85°C   |                                  |                                  |   |                                  |                                  |  |
|                       | Storage Temp      | -40 to +85°C   |                                  |                                  |   |                                  |                                  |  |
| <b>MECHANICAL</b>     | Dimensions        | 100x67mm (LxW) - Catalyst Form Factor  |                                  |                                  |   |                                  |                                  |  |
| <b>SOFTWARE</b>       | OS                | Eurotech Everyware Linux 1.6 - Kernel 3.14 - Factory Option: Windows 10 IoT Enterprise                 |                                  |                                  |   |                                  |                                  |  |
|                       | SDK               | Yocto-based Eclipse Tooling  |                                  |                                  |   |                                  |                                  |  |
|                       | IoT Framework     | Azul Java SE Embedded Version 8 - Everyware Software Framework (Java/OSGi)                             |                                  |                                  |   |                                  |                                  |  |

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