# CPU-521-17

## Mini-ITX SBC - Intel Core and Celeron

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- **6th Gen Intel® Core™**
- **Low Profile, Mini-ITX**
- **Three Displays, RAID, SIM, mPCIe**
- **Wide Operating Temperature**
- **Fanless**
- **Customization Options**
- **IoT Middleware and Platform**

## Features

**Powerful** - Comes with 6th Gen Intel Core CPUs: Core i7, i5, i3 and Celeron dual core configurations, up to 2.6GHz (3.4GHz burst)

**Versatile** - Fits easily everywhere, with the low profile Mini-ITX form factor, while offering a wide range of standard interfaces

**Rich** - Delivers multiple interfaces, including three independent video ports, two Mini PCIe sockets, two SATA interfaces with RAID, a SIM slot and much more

**Rugged** - Supports wide operating temperature (-20 to +70°C), soldered-down CPU and conformal coating options

**Low Power** - Enables fanless designs with DDR3L and a CPU TDP of only 15W

**Professional Services** - Cuts Time-To-Market with Eurotech Professional Services, which include deep module customization, BIOS personalization, carrier board and system design and production

**IoT Native** - Provides native support for IoT, including IoT middleware and access to Eurotech IoT Integration Platform

## Description

The CPU-521-17 is a rugged Mini-ITX Single Board Computer designed to deliver intense computation while meeting the requirements for industrial and rugged fanless applications.

Low-profile at just 16.5mm, the CPU-521-17 offers the 6th Generation Intel Core processor family (i7, i5, i3 and Celeron), with two cores and up to 16GB SO-DIMM RAM.

Other features include high speed interfaces: two Gbit Ethernet, two SATA 3.0 with RAID support, four USB 3.0 and four USB 2.0, two full-size Mini PCIe sockets, four PCIe Gen 3 lanes, and three independent video ports (LVDS, DP++ and HDMI supporting up to 4096x2304@60Hz).

The CPU-521-17 is a solid building block for projects where reliability in harsh conditions is mandatory, and long term availability is a must, thanks to an operating temperature of -20 to +70°C, a soldered-down CPU, support for RAID 0/1, optional conformal coating and long term support/lifecycle programs.

Supported operating systems include Windows 10 IoT Enterprise and Linux; moreover, the CPU-521-17 supports Everyware Software Framework (ESF), a commercial, enterprise-ready edition 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 Everyware Cloud (EC), Eurotech's IoT integration platform (separately available).

Professional Services are available for the CPU-521-17, starting from BIOS personalization and including carrier board design, system development and production. Deep module customization, such as feature changes are also available.

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| Ordering code: CPU-521-17-XX | | | | |
|---|---|---|---|---|
| **XX** | | - 01 | - 02 | - 03 |
| **PROCESSOR** | CPU | Celeron 3955U 2.0GHz, 2 Cores | Core i5 6300U 2.4GHz (3.4GHz), 2 Cores | Core i7 6600U 2.6GHz (3.4GHz), 2 Cores |
| **BIOS** | Type | Insyde | | |
| | Size | SPI 128Mbit | | |
| **MEMORY** | RAM | 2x SODIMM Sockets - Up to 16GB DDR3L 1600MHz - Dual Channel | | |
| **STORAGE** | SATA | 2x SATA 3.0 (up to 6Gb/s), 1x Mini SATA Slot (Shared with PCIe/USB) | | |
| | RAID | RAID 0/1 | | |
| **I/O INTERFACES** | Ethernet | 2x 10/100/1000Mbps (I210AT + I219LM) | 2x 10/100/1000Mbps (I210AT + I219LM - With iAMT Support) | |
| | USB | 4x USB 3.0 (Type A), 4x USB 2.0 (Header) | | |
| | Serial | 2x RS-232/RS-422/RS-485 (RS-232 With Power, Header), 2x RS-232 (Header) | | |
| | Digital I/O | 8x DI/O | | |
| | Video | Intel HD Graphics GT Series, Triple Independent Displays: 1x HDMI (up to 4096x2160 @24Hz / 2560x1600 @60Hz), 1x LVDS (up to 1920x1200 @60Hz, Dual Channel, 48 bit), 1x DP++ (up to up to 4096x2304 @60Hz) | | |
| | Display | 1x LVDS LCD Connector, 1x LCD Inverter Power | | |
| | Audio | 1x Line-out, 1x Mic-in | | |
| | PCI Express | 1x PCIe x4 (Gen 3) Slot – 1x Full/Half Size Mini PCIe Slot (PCIe/USB/mSATA Signals) – 1x Full/Half Size Mini PCIe Slot (PCIe/USB/SIM Signals) | | |
| | LPC | Yes | | |
| | I2C | Yes | | |
| | SMBus | Yes | | |
| **OTHER** | RTC | Yes (Lithium 3V 210mAh Battery) | | |
| | Watchdog | Software Programmable (From 1 to 255s) | | |
| | TPM | Factory Option | | |
| | SIM Slot | Yes | | |
| **POWER** | Input | 12V (DC-in, Screw-lock Jack) | | |
| **ENVIRONMENT** | Operating Temp | - 20 to +70°C (Temperature Screened) | | |
| | Storage Temp | - 40 to +85°C | | |
| **CERTIFICATIONS** | Environmental | RoHS2, REACH | | |
| | Compliance | Mini-ITX | | |
| **MECHANICAL** | Dimensions | 170x170mm (LxW) - Height: 3.5/1.6/16.5mm (Bottom, PCB, Top Sides) | | |

| Supported Software | | |
|---|---|---|
| **SOFTWARE** | OS | CentOS 7, Windows 10 IoT Enterprise (Professional Services: Yocto, Fedora, Other Linux and RTOS) |
| | IoT Framework | Everyware Software Framework (Java/OSGi) |

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