

Embedded Industrial Vision Computer // Embedded Deep Learning Computer

The core functionality of embedded industrial vision computers is the management of camera, trigger and I/Os. Typically, the space for (smart) cameras is limited and a camera-box-combination makes more sense. Regarding the type of CPU and OS, a multi-core ARM-Linux synthesis is state of the art. Some applications like deep learning, hyperspectral imaging or computing 3D images expect CUDA-compatible accelerators – a good reason for the VisionBox DAYTONA.

Key Features

Embedded Nvidia Pascal GPU



for:
 Trigger-over-Ethernet
 Digital In/Out with opto-isolators
 RS-422 Input for encoder

2 × GigE Vision interface with TaPoE

Computing power Nvidia Jetson TX2:

256 CUDA cores

Quad-core Cortex-A57

Dual-core Denver2

Linux OS with IMAGO RTCC SDK

Embedded system / fanless design

Long-term availability 2019...2028



Processor

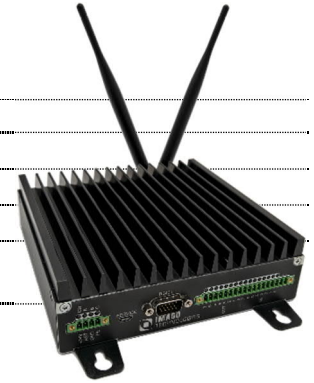
| | |
|---------------------|---|
| Manufacturer & Type | Nvidia Jetson TX2, 64 bit |
| CPU Cores | 4-core ARM Cortex-A57 with up to 2.0 GHz & 2-core Denver2 with up to 2.0 GHz |
| GPU Cores | 256 CUDA core Pascal with up to 1.12 GHz |
| DDR RAM | 4 - 8 GB DDR4 |
| Mass Storage | 16 - 32 GB eMMC (in Jetson module) |
| Removable Storage | SDXC slot (external access) & M.2 SSD socket (internal access) |

Interfaces

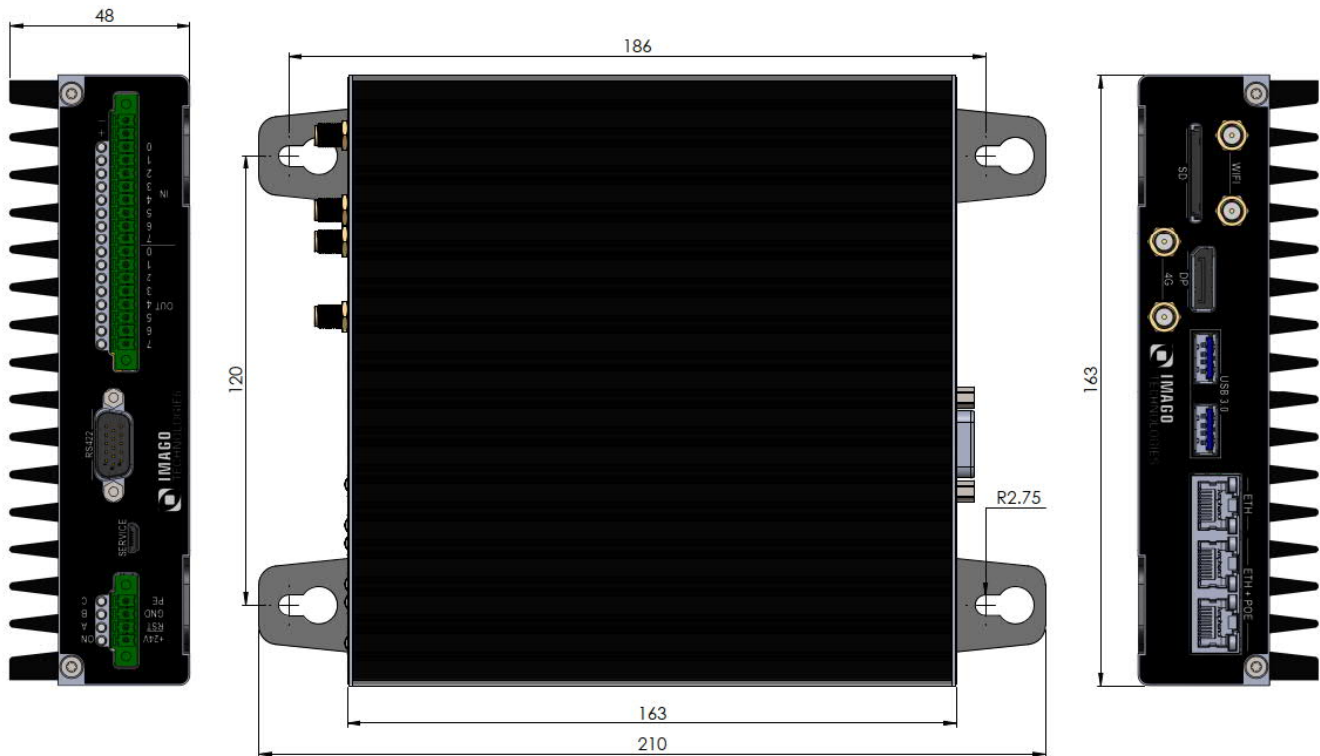
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|----------------------------------|--|
| Camera Interface | 2 × GigE Vision with Trigger-and-Power-over-Ethernet |
| Camera Trigger | 2 × Trigger-over-Ethernet |
| Digital In/Out | 8 × Input / 8 × Output, opto-isolated, 24V |
| Encoder Interface RS-422 | 3 × Input |
| Ethernet for LAN | 1 x 1000 Mbit/s |
| Wireless LAN (8 GB version only) | 1 × IEEE 802.11a/b/g/n/ac with ext. antenna socket (e.g. hotspot for a tablet) |
| LTE | 1 × internal socket for LTE modem with ext. antenna socket |
| USB 3.0 | 2 × for external peripherals, validation of Linux drivers required |
| DisplayPort | 1 × |

Mechanical / Electrical

| | |
|------------------------------------|--|
| Power Consumption (idle / typical) | 7 W / 24 W (without PoE usage) |
| Power Supply | 20 V _{DC} – 28 V _{DC} |
| Thermal Solution | Heat sink |
| Temperature Range | +5 °C ... +50 °C (optimum: +20 °C ... +30 °C) |
| Weight | 1300 g |
| Dimensions | 163 mm × 163 mm × 48 mm (H × W × D) 210 mm × 163 mm × 48 mm (on mounting plate) |



Dimensions (≈ half the original size shown below)



Block Diagram

