

# VPDU 110

## Video Processing Board



The Vision4ce VPDU, Video Processing Distribution Unit 110 is a standalone video processing board for embedded video and image processing applications which is designed to host the Vision4ce VMS software. The VMS software includes the field proven DART video tracking software. The VPDU is based on a NVIDIA TX2 Jetson embedded processor which incorporates a multi-core ARM processor and powerful GPU. A variety of video interfaces are available based on customer requirements.



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### Architecture

The VPDU 110 uses a FPGA for high speed, low latency video interfacing and processing combined with the flexibility of the Jetson embedded processing which includes the following resources:

- 256 Core NVIDIA Pascal GPU
- DUAL Core NVIDIA Denver 2 64bit CPU
- QUAD Core ARM Cortex-A57 MP Core
- 8GB 128-bit LP DDR4 Memory

The VPDU processes two concurrent streams of standard definition or high definition video selected from the multiple analog and digital video inputs. The output video is genlocked to the input video and is comprised of low latency video from the selected input combined with processed video and graphics from the Jetson.

### Applications

- Security and surveillance
- UAV & UGV
- Manned platforms- Sea, Air, Land

### Enclosure

A rugged enclosure is available for the VPDU. The enclosure includes an input power supply which allows the VPDU to be powered directly from vehicle and aircraft power sources.

The VPDU is a high-performance standalone video processing board. Video interfaces are provided for HD and SD video in both analog and digital formats. The primary host interface is through an Ethernet port. Multiple serial links are also provided.

### Available Video Input Options

- 2 x SD analogue video inputs
  - 1.0V peak to peak into 75 Ohm
  - CCIR, RS170, PAL or NTSC
- 2 x HD analogue video inputs
  - 1.0V peak to peak into 75 Ohm
  - YPrPb
- 4 x HD digital video inputs – SD-SDI, HD-SDI, 3G-SDI
  - 480i60,576i50,720p50/59.94/60,1080p25/29.97/30,1080i50/59.94/60, 1080p50/59.94/60)

### Available Video Output Options

- 4 x SD/HD analogue video outputs
  - 1.0V peak to peak into 75 Ohm
  - CCIR, RS170, PAL, NTSC or YPbPr
- 4 x HD digital video outputs
  - SD-SDI, HD-SDI, 3G-SDI
  - 480i60,576i50,720p50/59.94/60,1080p25/29.97/30,1080i50/59.94/60,1080p50/59.94/60)
- Selectable symbology overlay on two outputs

### Available Data Interfaces

- 1 x Ethernet, 1000 Base-T
- Serial
  - 1 x RS232, 3 x RS422
- 1 x USB 2.0
- 1 x CANbus

### Power

- 12VDC +/-5%, <20W

### Expansion

- 1 x mini PCIe slot, up to 2 additional Ethernet ports

### Mechanical

- Dimensions 194 x 156 x 57mm (7.64" x 6.14" x 2.24")

