VPX3U-DUAL-FGX-TK1

HD-SDI FRAME GRABBER WITH 650 GFLOPS TEGRA-K1 CUDA PROCESSING ENGINE

Overview

WOLF's VPX3U-DUAL-FGX-TK1 is a revolution in image capture and processing for aerospace and defense, incorporating two of NVIDIA's latest technology 28nm Tegra-K1 APUs, with a combined 10 ARM cores, 16GB Low Power LPDDR3 memory and 650 GFLOPs of CUDA processing using as low as 10 Watts.

This two channel HD-SDI Frame Grabber eXtreme (FGX) allows complete control of captured image data for complex analysis and pre-processing independent of the host Intel or PowerPC SBC.

This board is designed as an ancillary processor board, to be installed into a VITA 46.0 VPX system. The VPX3U-DUAL-FGX-TK1 has two HD-SDI video capture channels – SMPTE-292M – for encode as an H.264 transport stream or GPU processing and displaying as HD-SDI or HDMI.

The VPX3U-DUAL-FGX-TK1 thrives in rugged environments performing precision-intensive operations, such as image processing, video stabilization, filtering, terrain analytics, 3D visualization of geospatial data, object recognition and tracking.

Key Features

- Dual NVIDIA® Tegra-K1 Embedded APUs for complex capture processing
- Dual WOLF Frame Grabber eXtreme (FGX) Embedded FPGA capture engines
- 650 GFLOPs CUDA processing
- APU accelerated H.264 encoding
- Advanced power management (tunable as low as 10 watts)

Additional Features

- 2× NVIDIA® Tegra-K1 Embedded APUs each with:
  - 5 ARM processor cores
  - 192 Kepler GPGPU cores
  - 8GB LPDDR3 memory
  - 64GB Embedded Flash
- 2× HD-SDI inputs (SMPTE-292M)
- 2× HD-SDI outputs (SMPTE-292M)
- 2× HDMI outputs
- 2× USB 2.0 interfaces
- 4× UART interfaces
- 2× 10/100/1000 Ethernet interfaces up to USB 2.0 speeds (480Mbps)

Specifications

- High level of ruggedization
  - MIL-STD-810, IPC 6012 Class-3
  - -40° to +85°C operating temperature
  - 40g, 11ms shock and 0.2g²/Hz@ 5 - 2000Hz vibration
  - Conduction-cooled
  - Rugged air-cooled
- VPX 3U form factor: 160×100mm
- Supports VPX-REDI and OpenVPX

The information in this document is preliminary and subject to change.