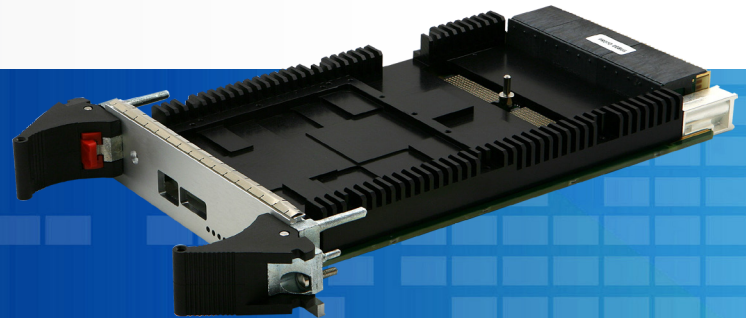


BuiltSAFE™ VCP-2864

3U OpenVPX™ Frame Grabber

- Capture up to 4 HD video streams
- Xilinx Kintex™-7 configurable processing
- XMC mezzanine site
- Pre-integrated Mercury video API
- JPEG 2000 Codec compression (consult factory)
- H.264 compression (optional)
- Rugged Air-Cooled
- And Rugged Conduction-Cooled packages



Mercury's BuiltSAFE™ products bring the highest level of flight safety assurance to aerospace and defense applications. Our proven, reusable Design Assurance Level (DAL) certified artifacts for mission computing, avionics, networking and datalink comms processing save time and cost while decreasing risk.

The BuiltSAFE VCP-2864 is a 3U OpenVPX low-latency frame grabber module for video applications requiring rugged air or conduction cooling. It is specifically designed for the most demanding applications.

Two SDI and a Camera Link input interfaces enables the VCP-2864 to simultaneously capture up to three HD video streams and forward them to a PCIe output. Filters can be applied to the captured streams to crop frames or scale down the stream frame rate. A JPEG 2000 compression (consult factory) engine is available on-board with the ability to compress one HD or two SD streams. Additionally, the BuiltSAFE VGP-2864 can output two HD video streams via SDI. One of the streams is received via PCIe, while the other one is received via HDMI.

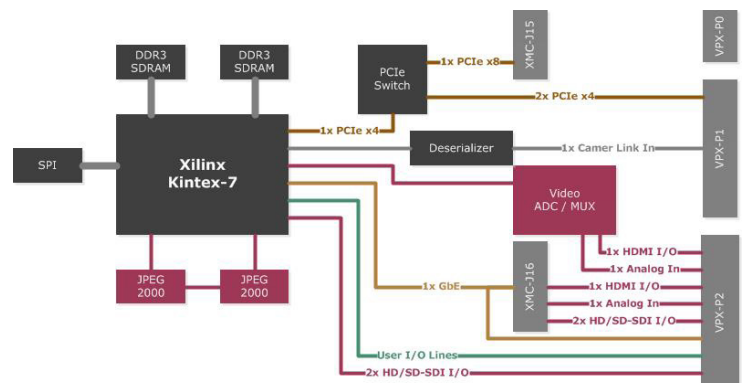
The built-in XMC site has been primarily designed to house an BuiltSAFE VCP-8166DA: a Mercury video capture/H.264 compression mezzanine card. Together with the VCP-2864, this mezzanine

card adds a forth HD stream that can be simultaneously captured from this single 3U OpenVPX slot solution. The H.264 compression engine enables the additional stream captured by the VCP-8166DA mezzanine to be compressed before being forwarded to PCIe output.

A Board Management Controller (BMC) is implemented for configuration management and other supporting tasks.

BuiltSAFE for Avionics

Mercury's expertise and experience in safety certifiable solutions has been built on successful execution of dozens of programs over three decades. This domain knowledge is the foundation of our BuiltSAFE portfolio of open architecture modules, systems and software for avionics, communications, video servers, and mission computing.



Mercury Systems is a leading commercial provider of secure sensor and mission processing subsystems. Optimized for customer and mission success, Mercury's solutions power a wide variety of critical defense and intelligence programs.



ACQUIRE



DIGITIZE



PROCESS



STORAGE



EXPLOIT



DISSEMINATE

Technical Specifications

Compliance

3U OpenVPX (VITA 65)/VPX (VITA 46)/VPX REDI (VITA 48)

Air-cooled VPX (VITA 48.1): "B/DA21LN" model

Conduction-cooled VPX (VITA 48.2): "C/DA41LN" model

SMPTE 292M/SMPTE 274M/SMPTE 296M

HDMI 1.3

Power Consumption

Minimum	typical	maximum	units
-	11	13	Watts

Memory

Dual 128 MB DDR3 SDRAM at 5.3 GB/s peak for FPGA

32 MB Flash SPI (Quad SPI)

FPGA/User-Programmable/User I/O Lines

Xilinx Kintex™-7 FPGA

User-specific I/O lines on VPX-P2

Frame Grabber

Raw video in parallel: up to 2x 1080p30 (HD-SDI) and 1x Base Configuration

Camera Link input SXGA @ 60 fps

Inputs

1x HDMI 1.3 on VPX-P2/XMC-J6

2x HD-SDI on VPX-P2/XMC-J6

1x Analog video: CVBS monochrome/RGBHV on VPX-P2/XMC-J6

1x Camera Link on VPX-P1

Outputs

1x HDMI 1.3 on VPX-P2/XMC-J6

2x HD-SDI on VPX-P /XMC-J6

Switches / Bridges

1x PCIe Gen2 switch (6 ports)

High-Speed Links/Connections

2x PCIe x4 on VPX-P1 (VITA 46.4)

1x PCIe x8 on XMC-J5 (VITA 42.3)

Sites

1x XMC site (VITA 42.3) for VCP-8166DA native support

Board Management Controller (BMC)

Power management

Temperature sensing (thermal sensors on critical positions)

Development / Debug

Onboard JTAG test port

Rear I/O transition module

Xilinx ChipScope Pro FPGA debugging tool

Ruggedization Levels

Level	Description	Cooling Type	Operating Temperature	Vibration (1 hour per axis)	Operating Shocks
C4	Extended range CC	Conduction	-40°C to 85°C [CC4]	5-100 Hz: increase at 3 dB/octave, 100-1000 Hz: 0.1 g ² /Hz, 1000-2000Hz: decrease at 6 dB/octave	40g, 11ms saw-tooth, three axes

Environmental Specifications

Condition	Limits, standards	Comments
Non-operating temperature	-55°C to 105°C [C4]	
Humidity	95%	
Altitude	-1,500 to 60,000 feet	May require conformal coating
Fungus resistance	No nutrient materials	
Workmanship	IPC-A-160 class 3	
Soldering	IPC J-STD-001 class 3	
PCB Manufacturing	IPC-A-600 class 3	
Conformal coating	IPC-CC-830	Optional
Materials	REACH compliant	ROHS variants as an option
Flammability	UL 94 Class V-0	
Quality	EN 9100:2008	

Product Ordering

VCP-2864B0	Air-cooled 3U OpenVPX frame grabber module (1" Pitch)
VCP-2864C0	Conduction-cooled 3U OpenVPX frame grabber module (0.8" - 1" Pitch)
VCP-2864DA21LN	Air-cooled 3U OpenVPX JPEG 2000 Codec module (1" Pitch)
VCP-2864DA41LN	Conduction-cooled 3U OpenVPX JPEG 2000 Codec module (0.8" - 1" Pitch)
DGX-34280D	Linux® Toolbox and video API library for VCP-2864

Related Hardware Products

RTM-6487A0	Rear I/O Transition Module for video module (8x SMB, 3x micro HDMI, 2x VGA, 2x mini Stereo Jack, 1x CameraLink, 1x RJ45, 1x mini USB)
VCP-8166DA	Conduction-cooled H.264/AVC Codec XMC

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