

RuggedCONNECT Smart Video Switcher

AI-enabled video management for augmented situational awareness



Overview

The RuggedCONNECT Smart Video Switcher is a highly integrated standalone device that acquires, processes, and displays real-time video sensor data for vehicle-based local situational awareness (LSA) and driver vision enhancer (DVE) applications.

The RuggedCONNECT Smart Video Switcher includes eight analog composite inputs supporting RS-170/NTSC/PAL or 2 HD-SDI video inputs and two independent HD-SDI single link displays. Support for GigE Vision and Def Stan 00-082 streaming protocols on dual 1 Gbps Ethernet channels make it the perfect solution to implement networked, open standard, interoperable video management systems as demanded by GVA, NGVA, and VICTORY standards.

Scalable, distributed video

The RuggedCONNECT leverages Pleora's distributed video architecture to allow multiple units to be networked together to create larger scale video switching systems with different video input/output combinations.

Powerful Processing

Combining the high-performance networking capabilities of RuggedCONNECT with the power of an NVIDIA GPU, designers can easily add AI image processing and graphics overlay decision-support capabilities to reduce cognitive burden and increase mission effectiveness. The compute power of the NVIDIA GPU supports applications such as AI/ Machine Learning, image fusion, 360 degree stitching, map/ terrain overlay, and image enhancement to more demanding convolutional-neural-network based threat detection and classification.

Customization options

The highly configurable RuggedCONNECT architecture enables fast development of products to address various sensor and display interfaces, such as HD-SDI, VGA, or custom sensor/display requirements. This same architecture enables Pleora to add more interfaces, support a different mix of interfaces, additional network interfaces, and general communications ports.

Features

All-in-one rugged Smart Video Switcher for video capture, processing, streaming, and display

- 8 video inputs (RS-170/NTSC/PAL) or 2 HD-SDI video inputs
- 2 fully independent HD-SDI displays
- CANbus, USB2.0
- Dual Ethernet capability enables system level redundancy and more effective communications capabilities
- Bypass channels for select inputs provides additional redundancy during degraded operating situations
- Scalable technology platform to support multiple sensor and display configurations, including basic sensor, display, or network-only processing units
- Plug-in AI solutions for machine learning-based tank detection and driver assistance

Eases design of standards-compliant vetronics video management platforms

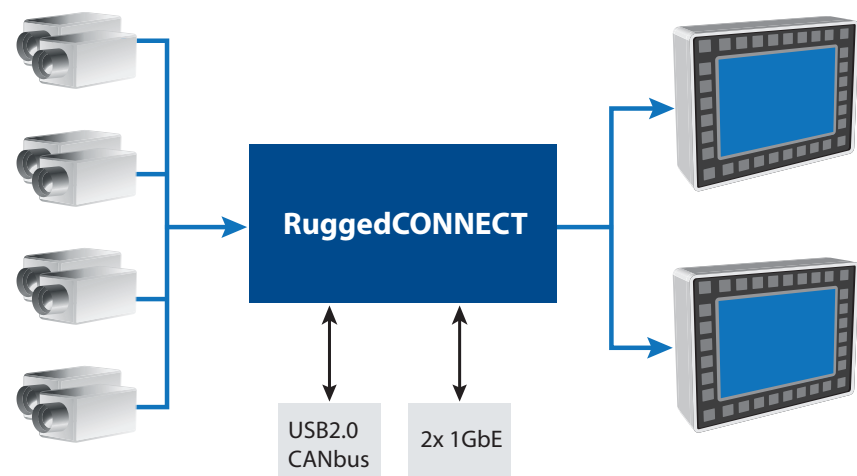
- GigE Vision and Def Stan 00-082 compliant
- GVA, NGVA and VICTORY ready
- MIL-STD-1275E Power supply
- MIL-STD-810G and MIL-STD-461F conformance for shock, vibration and EMI.

Software

The included RuggedCONNECT software platform provides features such as networked-based video switching or advanced situational awareness. An open framework is provided to load custom imaging plugins into the platform to perform realtime video analysis.



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Functional Specifications

Video Input	8 channels of RS-170/NTSC/PAL
Network I/F	<ul style="list-style-type: none">• 2 channels of 1 Gbps Ethernet• 8 channels or RS-170/NTSC/PAL or 2 channels of HD-SDI
Video Streaming Protocol	GigE Vision 2.0 and Def Stan 00-082
Communications	<ul style="list-style-type: none">• 1 x channel CANbus• 1 x channel USB2.0
Compression	HW codec for multi-channel H.264/H.265/JPEG2000
Display Interfaces	2 fully independent channels of HD-SDI

Customization Options:

Video inputs	VGA/HDMI/DVI
Video outputs	VGA/DVI/HDMI
Communications	RS232/422/485

Mechanical, Environmental, Power

Conformal Coating	Applied to all PCBs
Power Connector	MIL-DTL-38999 Series III
Sensor I/O Connector	MIL-DTL-38999 Series III
Ethernet Connector	MIL-DTL-38999 Series III
Enclosure	Aluminum Alloy
Shock and Vibration	MIL-STD-810G
EMI	MIL-STD-461F
Power Supply	MIL-STD-1275E
Power Consumption	<50W