

iPORT CL-Deca-RoCEv2 External Frame Grabber

High-performance GigE Vision 3.0 connectivity for Camera Link 80-bit, Full, Medium and Base cameras with minimal CPU loading leveraging RoCEv2 over 10 GigE links

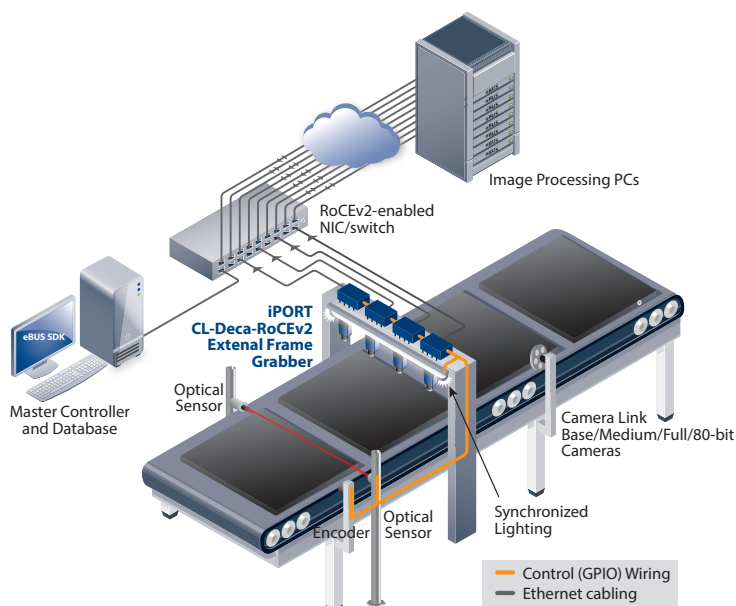


Overview

Pleora's iPORT™ CL-Deca-RoCEv2 External Frame Grabbers deliver high-performance GigE Vision® 3.0 connectivity over 10 Gigabit Ethernet (10 GigE), enabling video transmission from Camera Link® 80-bit, Full, Medium, or Base cameras at maximum data rates with low, predictable latency and minimal CPU load. Leveraging RoCEv2 (RDMA over Converged Ethernet), image data is transferred directly to host memory with minimal operating system involvement, reducing CPU utilization and freeing processing resources for image analysis, AI, visualization, and other compute-intensive tasks.

Video data is converted into Ethernet packets and sent over the 10 GigE link to receiving software or hardware, allowing designers to extend cabling and integrate Camera Link cameras into networked environments. Fully compliant with Camera Link, GigE Vision, and GenICam™ standards, the CL-Deca-RoCEv2 ensures seamless interoperability in multi-vendor systems. Fully compliant with the GigE Vision and GenICam™ standards, the CL-Deca-RoCEv2 integrates seamlessly into existing GigE Vision systems and works alongside cameras operating at 10, 5, 2.5, or 1 Gb/s without software changes.

Compatible with Cat 6A cabling and RJ-45 connectors, the frame grabber works with readily available 10 GigE infrastructure, including RoCEv2-enabled NICs and switches. An integrated programmable logic controller (PLC) provides precise measurement, synchronization, triggering, and control of vision system components. Combined with Pleora's proven eBUS SDK, designers gain a complete, high-performance solution for low-latency image transport with reduced CPU overhead.



Features

- Highly reliable, 10/5/2.5/1 Gbps data transfer rate with low, end-to-end latency from Camera Link 80-bit/Full/Medium/Base cameras to computing platforms without needing a PCIe frame grabber
- RoCEv2 compatibility enables low latency, high-bandwidth communication while reducing CPU usage, freeing resources for valuable processing tasks
- GigE Vision compliance ensures interoperability in multi-vendor digital video systems
- Line scan and area scan modes
- Record and playback capability
- Sophisticated on-board programmable logic controller (PLC) allows users to precisely measure, synchronize, trigger, and control the operation of other vision system elements
- Supports transmission of 80-bit, Full or Medium and Base configuration cameras
- Supports IEEE1588 Precision Time Protocol and action commands
- Provides power to cameras utilizing the Power over Camera Link (PoCL) standard
- Screw surface mountable enclosure or OEM boardset
- GenICam Integration Package makes it fast and easy to create a user-friendly GenICam interface (contact sales for pricing information on this integration package)
- Fully supported by a comprehensive development kit

iPORT CL-Deca-RoCEv2 External Frame Grabbers

Networked Video Connectivity Solutions	
iPORT™ External Frame Grabbers	<ul style="list-style-type: none"> Highly reliable data transfer with low, end-to-end latency Enclosed and OEM board units
GigE Vision® and GenICam	<ul style="list-style-type: none"> Fully compliant GigE Vision 3.0 firmware load Guarantees delivery of all packets Comprehensive data transfer diagnostics
Video Formats	
Scan Modes	Area Scan and Line Scan
Tap Support	<ul style="list-style-type: none"> Base mode: 1 and 2 taps Medium Mode: 1, 2 and 4 taps Full Mode: 1, 2, 4, and 8 taps 80-Bit Mode: 1, 2, 4, 8 and 10 taps
Tap Geometries (GenICam SFNC)	1X_1Y, 1X2_1Y, 1X, 1X2, 1X4_1Y, 1X4, 2X2E, 1X8_1Y, 1X8, 1X10_1Y, 1X10
Image Width	<ul style="list-style-type: none"> Min: 4¹ Default: 640 Max: 32,760 Increment: 4¹
Image Height	<ul style="list-style-type: none"> Min: 1 Default: 480 Max: 32,767 Increment: 1
Payload Types	GenDC
Pixel Formats	Mono, BayerGR, BayerRG, BayerGB, BayerBG, RGB, BGR, RGBA, BGRA, YUV, YCbCr, Sparse Color Filter pattern
Pixel Depth	8, 10, 12, 14, 16, 24, 30, 32 and 36 bits
Features	
Camera Link cameras	<ul style="list-style-type: none"> Camera Link 2.1 compliant Single 80-bit, Full, Medium or Base configuration cameras Supports Power over Camera Link (PoCL) Supports CLProtocol Supports GenCP
Pixel Clock	20 MHz to 85 MHz
Frame Buffer	1024 MB
Programmable Logic Controller	<ul style="list-style-type: none"> Advanced image capture control Integrated with GPIO
Delay, rescaler, general-purpose counter	<ul style="list-style-type: none"> Allows full synchronization to line scan cameras Allows synchronized capture between multiple cameras Allows camera acquisition to track changing speeds on conveyor belts
GPIO	<ul style="list-style-type: none"> 4x TTL inputs 2x TTL outputs
Serial Communication	2x UARTs (available as Bulk interfaces in software) <ul style="list-style-type: none"> 1x on Power/GPIO connector for peripheral/external device control 1x on MiniCL A connector for camera control
Supported Baud Rates	9600, 14400, 19200, 28800, 38400, 57600, 115200, 230400, 460800, 921600, Programmable

Connectors	
Network	1x RJ-45 connection, with locking screws ²
Video Interface	2x SDR-26 (Mini CL) connectors
Power In and GPIO	OEM: 12-pin header or via 12-pin circular connector with cable assembly and GPIO/Power board ³ Enclosed: 12-pin circular connector
Power Out	PoCL on the 2x SDR-26 (Mini CL) connectors
Characteristics	
Size (L x W x H)	OEM board sets: 85.86 mm x 61 mm x 23.35 mm Enclosed: 99.29 mm x 91.2 mm x 50 mm
Weight	OEM board sets: 60g Enclosed: 304 g
Operating Temperature Commercial Variant:	OEM: Commercial ⁴ Enclosed: 0°C to 50°C
Storage Temperature	-40°C to 85°C
External Power Supply	12V (11-13V)
Power Consumption	8 W maximum with PoCL disabled (estimated TBC)
MTBF @ 40°C	1,327,378 hours
ECCN	5A991.b.4.a
Networking Features	
10 Gigabit Ethernet-based	<ul style="list-style-type: none"> Industry standard, easy-to-use equipment Compatible with 10G/5G/2.5G/1G IP/Ethernet networks. RoCEv2 compatible network adapter required Supports IEEE 802.3 (Ethernet), IP, UDP and ICMP (ping) Supports IEEE 1588 Precision Time Protocol
RoCEv2 Compatibility	<ul style="list-style-type: none"> Zero copy transfer from CL-Deca-RoCEv2 to host memory minimizes CPU consumption

Ordering Information	
900-8056	iPORT CL-Deca-RoCEv2 External Frame Grabber in Mountable Enclosure External Frame Grabber with RoCEv2 in mountable enclosure for Camera Link 80-bit/Full/Medium/Base modes.
900-8058	iPORT CL-Deca-RoCEv2 External Frame Grabber in OEM Boardset External Frame Grabber with RoCEv2 OEM boardset for Camera Link 80-bit/Full/Medium/Base modes.
900-8059	iPORT CL-Deca-RoCEv2 External Frame Grabber Development Kit Includes 900-8056, Cat 6A cable, Power Supply, 10GigE RoCEv2 compatible Network Interface Card and eBUS SDK USB Stick.
900-8060	iPORT CL-Deca-RoCEv2 Development Bundle iPORT CL-Deca-RoCEv2 Development bundle including 900-8059 and 1 year of eBUS SDK Developer Annual Maintenance and Support

- Image width increment of 8 when in Extended Chunk Mode
- Only available for mountable enclosure variant.
- Input power, GPIO and serial port connections can be accessed through a 12-pin header on the adapter card. The customer may alternatively use Pleora's GPIO/Power card plus cable assembly and the same 12-pin circular connector used on the non-OEM version.
- Case and junction temperature limits vary by IC device. Please refer to User Guide for specific IC operating temperature specifications and thermal management information.