iPORT NTx-Deca 10G Ethernet Embedded Interface

Transmit video seamlessly at 10 Gbps over Ethernet

Serial Communications

Camera Interface

Digital Video

GigE Vision over iPORT NTx-Deca Embedded Interface

Image Processing and Other Electronics

Camera Head/Sensor
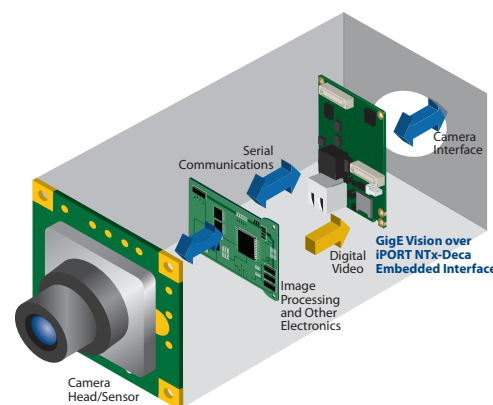
Overview

Pleora's **iPORT™ NTx-Deca 10G** embedded interface, built on decades of proven expertise in high-reliability transport solutions, simplifies the design of high-bandwidth cameras, imaging devices, and medical, dental, and industrial X-ray flat panel detectors (FPDs) while ensuring more efficient processing to improve system performance and reliability.

Reduce Time-to-Market

Simplify and accelerate your development. Connect your sensor to Pleora's iPORT NTx-Deca and the off-the-shelf solution seamlessly handles 10 Gbps video and sensor transport over a flexible Ethernet connection. GigE Vision 2.0 compliance streamlines interoperability in multi-vendor imaging systems and applications.

Advanced Features for X-Ray FPDs and Imaging Devices

Pleora's unique Image Management Database features enhance system reliability. Store video frames with associated metadata for patient identification, video replay, and tractability for medical and dental applications. In the event of a power or network failure, image management features allow a user to retrieve image data.

Unmatched 10 Gbps Ethernet Performance and Reliability

Every packet counts, every pixel counts. Pleora's embedded interface expertise has been trusted by the world's largest camera and FPD manufacturers for over two decades.

The embedded interface is fully supported by Pleora's eBUS Software Development Kit, the industry leading choice for image capture, display, and transmission in thousands of mission-critical automation, security and defense, and medical applications.
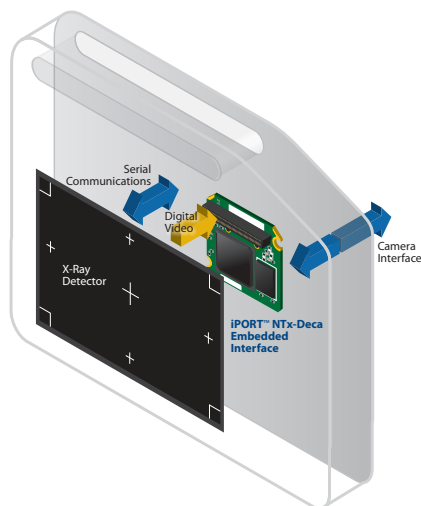
Features

- Supports 10 Gbps transmission rates for uncompressed images over Copper Cat 6A Ethernet cabling for distances up to 100 meters
- Up to 10 taps per channel for internal 128-bit pixel bus
- GigE Vision 2.0 compliance ensures interoperability in multi-vendor imaging systems and applications
- GenICam compliant interface provides easy access to programming features and simplifies integration of imaging devices into existing or new systems
- Supports IEEE 1588 Precision Time Protocol (PTP) to synchronize image capture and imaging system elements
- Programmable logic controller (PLC) lets users control external machines and react to inputs to make functional changes, adjust timing, or add features without requiring new hardware
- Image management tags an image or group of images with metadata — provides context necessary to retrieve image data from the on-board frame buffer in event of power or network failure at the receiver
- GenICam Integration Package (consisting of the iPORT AutoGen XML generation tool and a firmware reference design) makes it fast and easy to create a user-friendly GenICam interface (contact sales for pricing information on this integration package)

Serial Communications

Digital Video

X-Ray Detector

Camera Interface

iPORT™ NTx-Deca Embedded Interface

iPORT NTx-Deca 10G Ethernet Embedded Interface

Frame Grabber

Number of Channels	1
Scan Modes	Area Scan and Line Scan
Pixel Depth (bits)	8, 10, 12, 14, 16, 24, 30, 32 and 36 bits
Internal Pixel Bus Clock	37.5 MHz to 150 MHz
Pixels Formats	Mono, Bayer, RGB, BGR, Sparse, YCbCr, YUV
Taps per Data Channel	Up to 10 for internal 128-bit pixel bus
Image Width (pixels)	• Min: 4[1] • Default: 640 • Max: 32,760 • Increment: 4[1]
Image Height (pixels)	• Min: 1 • Default: 480 • Max: 32,767 • Increment: 1
Windowing/Region of Interest	Yes
Tap Geometries (GenICam SFNC)	1X_1Y, 1X2_1Y, 1X, 1X2, 1X4_1Y, 1X4, 2X2E, 1X8_1Y, 1X8, 1X10_1Y, 1X10, 1XTR_2Y[2], 1XTR_2YTR[2]

Inputs/Outputs on User Circuitry Interface

Video Input	17 x Serialized LVDS lanes 1 x LVDS clock lane
GPIO Inputs	4 x 2.5 V
GPIO Outputs	2 x 2.5 V
Serial (Bulk)[3]	2 x 2.5 V
Camera Control Outputs	2 x 2.5 V

Hardware

User Circuitry Interface (Including Internal Power Interface)	Two 40-pin Hirose Connectors: FX6-40S-0.8SV2(93)
Network Interface	RJ-45
10GBASE-T PHY	Marvell AQR113
Image Buffer	1024 MB DDR4
Persistent Memory	512 Mb Serial FLASH

Characteristics

Size (LxWxD)	72.5 mm x 56.0 mm x 17.6 mm (approximate, including RJ-45 Jack)
Weight	32.5 grams
IC Operating Temp Range	Commercial[3]
Storage Temperature	-40 to +85°C
Operational Humidity	Relative humidity of 30% to 75% (no condensation) at ambient temperature of 15°C to 30°C
Storage Humidity	Relative humidity of 30% to 85% (no condensation) at ambient temperature of -10°C to 55°C
Power Supply	3.3 VDC on User Circuitry Interface
Power Consumption	Up to 7 W typical (30 m Cat 6A cable, 9.2 Gbps)
MTBF at 40°C	2,032,074 hours

Ordering Information

900-8025	iPORT NTx-Deca OEM Board 10 Gb/s network transmission supporting 10GBASE-T.
900-8027	iPORT NTx-Deca Development Kit includes NTx-Deca OEM board mounted to a thermal baseplate, 10GBASE-T Ethernet desktop NIC, Ethernet cable, power supply, and eBUS SDK USB stick. NOTE: The eBUS SDK provided on the USB stick is unsupported, without access to maintenance releases, and does not provide any runtime licenses for your workstations. If any of these items are needed, we recommend the purchase of the eBUS SDK Seat License.

1 Image width increment of 8 when in Extended Chunk Mode.

2 Not a GenICam SFNC tap geometry, contact Pleora for additional information.

3 UART, USRT, two-wire, and SPI supported on all Bulks.

4 Using commercial temperature grade components. Case and junction temperature limits vary by IC device. The end-use operating temperature range is dependent on the customer's mechanical and thermal management design. Contact Pleora for specific IC operating temperature specifications and thermal management information.