iPORT NTx-GigE Embedded Video Interface

Rapidly add high-performance GigE Vision 2.0 connectivity to systems and cameras

Overview

Pleora's iPORT™ NTx-GigE Embedded Video Interface hardware helps manufacturers shorten time-to-market, reduce risk, and lower costs by providing a straightforward way to integrate GigE Vision 2.0 video connectivity into cameras, x-ray detector panels, and imaging systems.

The NTx-GigE Embedded Video Interface interacts seamlessly with Pleora's other products in networked or point-to-point digital video systems. It complies with the GigE Vision® 2.0 and GenICam™ standards, ensuring interoperability in a multi-vendor environment.

The ultra-compact NTx-GigE is easily embedded into small-body cameras, flat-panel x-ray detectors, and imaging systems. Power over Ethernet (PoE) and external power options provide design flexibility, while lowering component and operating costs. The product supports the IEEE 1588 Precision Time Protocol to synchronize image capture functions and other system elements, enabling the exact triggering of image acquisition.

Pleora's iPORT NTx-GigE Embedded Video Interface is supported by:
- A Development Kit to help speed time-to-market by enabling the rapid design of prototypes and proof-of-concept demonstrations, often without requiring hardware development;
- The GenICam Integration Package (consisting of the iPORT AutoGen XML generation tool and a firmware reference design) which makes it fast and easy to create a user-friendly GenICam interface (contact sales for pricing information on this integration package).

Features

- Compact and low power
- GigE Vision and GenICam compatible
- Throughput approaching 1 Gb/s
- Up to 32-bit, 120 MHz parallel LVTTL/LVCMOS video input, and 4 interleaved taps
- Line scan and area scan modes
- 120 MB frame buffer to accommodate multi-mega pixel sensor sizes
- Supports both Power over Ethernet and external-powered options
- Updateable firmware via the GigE port for easy feature upgrades in the field

The iPORT NTx-GigE, together with the iPORT NTx-U3 for USB3 Vision™ connectivity family, are pin-compatible hardware solutions that provide manufacturers with a costeffective approach to support all video interface needs.

Ordering Information

900-6003	· iPORT NTx-GigE OEM board set.
900-6004	· iPORT NTx-GigE OEM Kit includes 900-6003, GPIO board with unsoldered 12-pin circular connector, and flat flex cable.
900-6005	· iPORT NTx-GigE Development Kit includes 900-6003, GPIO board with soldered 12-pin circular connector and flat flex cable, NTx-Mini adapter board with 3 flat flex cables, prober board, Gigabit Ethernet desktop NIC, PoE power injector, 2 Ethernet cables, and eBUS SDK USB stick.
900-6006	· iPORT NTx-GigE-IND OEM board set (industrial use).
900-6007	· iPORT NTx-GigE-IND OEM Kit (industrial use) includes 900-6006, GPIO board with unsoldered 12-pin circular connector, and flat flex cable.
900-6008	· iPORT NTx-GigE-IND Development Kit includes 900-6006, GPIO board with soldered 12-pin circular connector and flat flex cable, NTx-Mini adapter board with 3 flat flex cables, prober board, Gigabit Ethernet desktop NIC, PoE power injector, 2 Ethernet cables, and eBUS SDK USB stick.

Pleora **Technologies**

iPORT NTx-GigE Embedded Video Interface

Hardware

User Circuitry Interface	100-pin Samtec Connector: LSHM-150-04.0-L-DV-A-N-TR
External Interface	• 12-pin Hirose Connector: HR10A-10P-12P(73) • 20-pin FCI Connector: 62674-201121ALF
GigE Interface	RJ-45
GigE PHY	Marvell 88E1510
FPGA	Altera Cyclone V
Image Buffer	120 MB 16-bit wide DDR3
Persistent Memory	128 Mb Serial FLASH
Clock Generator	Included

Inputs/Outputs on User Circuitry Interface

Video Input	2.5 V LVTTL/LVCMOS
GPIO Inputs	4 x 2.5 V LVTTL/LVCMOS
GPIO Outputs	4 x 2.5 V LVTTL/LVCMOS
Serial (Bulk) Inputs*	3 x 2.5 V LVTTL/LVCMOS
Serial (Bulk) Outputs*	3 x 2.5 V LVTTL/LVCMOS
Camera Control Outputs	4 x 2.5 V LVTTL/LVCMOS

* Various serial communication protocols are supported.

GPIO on 12-Pin Circular Connector

GPIO Inputs	4 connections routed to User Circuitry Interface
GPIO Outputs	3 connections routed to User Circuitry Interface
Serial Communications Input	Connection routed to User Circuitry Interface
Serial Communications Output	Connection routed to User Circuitry Interface

Frame Grabber

Number of Channels	1
Scan Modes	Area Scan (Progressive) and Line Scan
Pixel Depth (bits)	8, 10, 12, 14, 16, 24, 32
Pixel Clock	• Min: 20 MHz • Max: 120 MHz
Taps per Data Channel	Up to 4
Image Width (pixels)	• Min: 8 • Default: 640 • Max: 16,376 • Increment: 4
Image Height (pixels)	• Min: 1 • Default: 480 • Max: 16,383 • Increment: 1
Windowing/Region of Interest	Yes
Tap Reconstruction	Interleaved only

Characteristics

Size (LxWxD)	37.0 mm x 37.0 mm x 28.1 mm (approximate, excluding RJ-45 Jack and GPIO board)
Weight	34 grams (includes NTx-GigE, GPIO board, 12-pin circular connector, and flat flex cable)
Operating Temperature	• Commercial* • Industrial* (-IND models)
Storage Temperature	-40° C to 85° C
Power Supply	• PoE Powered: IEEE 802.3af, up to 7 Watts • Externally Powered: 4.8 to 16 Volts nominal
Power Consumption	Less than 2.5 Watts when streaming at 1 Gbps
MTBF at 40°C	1,318,440 hours
ECCN	• EAR99

* Case and junction temperature limits vary by IC device. Please refer to User Guide for specific IC operating temperature specifications and thermal management information.