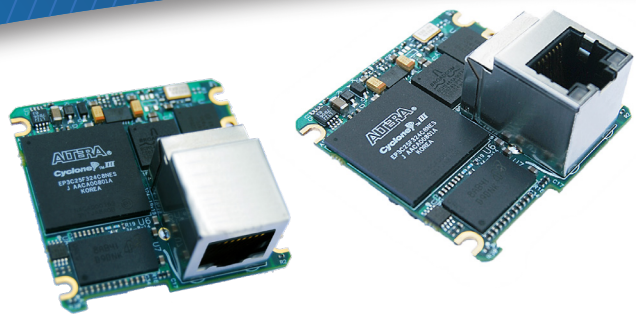
DATA SHEET



iPORT NTx-Mini Embedded Video Interface

Rapidly add high-performance GigE Vision connectivity to cameras

Overview

Pleora's iPORT™ NTx-Mini Embedded Video Interface hardware provides system and camera manufacturers with a straightforward way to integrate Gigabit Ethernet (GigE) video connectivity into their products. With the NTx-Mini, manufacturers can shorten time-to-market, reduce development and deployment risk, and lower design and system costs.

NTx-Mini embedded hardware interacts seamlessly with Pleora's other products in networked or point-to-point digital video systems. The hardware also complies fully with the GigE Vision® and GenICam™ standards, enabling interoperation with third-party equipment in multi-vendor environments. The embedded hardware converts video data to packets at GigE's full, 1 Gb/s throughput rate and sends it with low, consistent latency over a GigE link to receiving software or hardware.

To speed time-to-market, Pleora offers a Development Kit for the NTx-Mini. This kit allows manufacturers to produce system or camera prototypes and proof-of-concept demonstrations easily and rapidly, often without undertaking hardware development.

Pleora's iPORT NTx-Mini Embedded Video Interface also includes a sophisticated on-board programmable logic controller (PLC), which allows users to precisely measure, synchronize, trigger, and control the operation of vision system elements such as strobe lights and rotary encoders.

Pleora's AutoGEV XML generation tool is available, which makes it fast and easy for manufacturers to create a user friendly GenICam interface for their products.

Features

- Compact and low power
- GigE Vision version 1.2 and GenICam compliant
- Throughput up to Gigabit Ethernet's full 1 Gb/s rate
- Up to 24-bit, 90 MHz parallel LVTTL/LVCMOS video input, and 2 interleaved taps
- Line scan and area scan modes
- 32 MB frame buffer for store-and-forward applications
- Updateable firmware via the GigE port for ease of manufacturing and feature upgrades in the field

Ordering Information on page 3.

GiGE VISION

GENICAM

For more information, visit www.pleora.com

Pleora Technologies

iPORT NTx-Mini Embedded Video Interface

Networked Video Connectivity Solutions

iPORT™ Embedded Video Interfaces	• Highly reliable, 1 Gb/s data transfer rate with low, end-to-end latency • OEM, in-camera board • 32 MB of DDR2 RAM
eBUS SDK	• eBUS SDK: Single API to receive video over GigE, 10 GigE, and USB that is portable across Windows, Mac, and Linux • eBUS Tx: Software implementation of a full device level GigE Vision transmitter • eBUS Rx: High-speed reception of images or data for hand-off to the end application • eBUS Player Toolkit: View streams and develop, test and evaluate advanced features
AutoGEV™ XML Generation Tool	• Unique GenICam™ XML management tool for seamless GenICam integration of camera specific features
GigE Vision®	• Compliant to version 1.2 • Fully compliant firmware load • Guarantees delivery of all packets • Comprehensive data transfer diagnostics

Connectors

FlexEBoard	• 12-pin (Hirose HR10A-10R-12PB(71)) • 20-pin (Hirose FH12-20S-0.5SH)
AdaptRBoard	• 40-pin (Hirose DF12(3.5)-40DP-0.5V(86))
Network	• Available with horizontally or vertically mounted RJ-45 on the NTx-Mini Main Board
Camera head interface	• 60-pin (Molex 501951-6000)
PLC	• 20-pin (Wurth 687120149028)

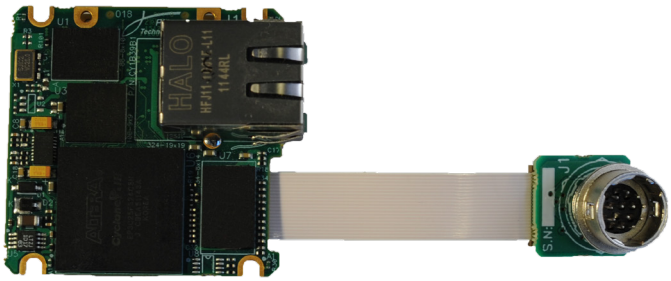
Networking Features

GigE-based	• 10/100/1000 Mb/s • IEEE 802.3 (Ethernet), IPv4, IGMPv.2, UDP and ICMP (ping) • Long reach: 100 m point-to-point, further with Ethernet switches or fiber
GigE Vision Protocol	• Guarantees delivery of all packets • Comprehensive data transfer diagnostics
Unconditional streaming	• Continue streaming when the controlling application becomes unavailable or when the state of the network changes
Multicast capability	• Enables advanced distributed processing and control architectures

Characteristics

Size (L x W x H)	• 42.0 x 42.0 x 21.6 mm (horizontal version) • 42.0 x 42.0 x 24.3 mm (vertical version)
Weight	• 19.2 grams approximately (without AdapRBoard, FlexEBoard, and flat flex cable)
Operating temperature	• Commercial temperature grade components are used, temperature performance will vary depending on the user's thermal design*
Storage temperature	• -40°C to 85°C
Power supply	• 4.5V to 16V
Power Consumption	• From 1.6W (input voltage and temperature dependent)
ECC	• 5A991.b
MTBF @ 40°C	• 2,382,545 hours

** Please refer to the User Guide for thermal management information*



iPORT NTx-Mini Embedded Video Interface main board with horizontal RJ-45 connector and soldered 12-pin circular connector on the FlexEBoard

iPORT NTx-Mini Embedded Video Interface

Programmable Logic Features

4 inputs (TTL) 3 outputs (TTL) 4 outputs (LVCMOS/LVTTL to camera head connector)	· Provides a flexible, general-purpose interface with the AdaptRBoard in the In-Camera Set and Development Kit · Users can design their own AdaptRBoard for additional flexibility · Allows synchronization of multiple devices or system elements · Flexible triggering capabilities, including Boolean combinations, deserialized Camera Link control signals, encoders, and time stamps · Built-in debouncers
1 RS-232 serial link	· Serial control of external devices via PC application over the GigE link · Can be bridged to an internal UART serial link with a user designed AdaptRBoard
2 UART serial links ** **(LVCMOS/LVTTL)**	· Serial control of camera and other devices via PC application over the GigE link
Delayer, rescaler, general-purpose counter	· Allows full synchronization of line scan cameras and other system elements
Timestamp trigger, counter, and reset	· Allows system actions to be triggered based on timestamps · Allows resets to be broadcast to all iPORT IP engines in system from host

** One UART serial link is available for use with the AutoGEV XML generation tool*

Data Acquisition Features

Accepts LVCMOS/ LVTTL signals	· Compatible with internal camera signal levels
Integrated acquisition engine	· Area scan and line scan · Pixel clock: 20 MHz to 90 MHz · Pixel depth: 8, 10, 12, 14, 16 and 24 bits · Pixel formats: Mono, BayerGR/RG/GB/BG, RGB, BGR, YUV, Raw · Image height: 1 to 16,383 pixels · Image width: 1 to 16,376 pixels · Tap support: 1 and 2 taps · Tap reconstruction: interleaved only · Windowing/region of interest

Free running or externally triggered	· Flexible acquisition modes
	  · Continuous
	  · SingleFrame
	  · Multiframe
	  · ContinuousRecording
	  · ContinuousReadout
	  · SingleFrameRecording
	  · SingleFrameReadout

Static configuration	· Configuration settings are saved to on-board Flash memory leveraging User Sets from GenICam

Ordering Information

904-3011	• **iPORT™ NTx-Mini Main Board (Vertical RJ-45 Jack).** • **Note:** Recommended replacement for 904-3000
904-3013	• **iPORT™ NTx-Mini in-Camera Set (Vertical RJ-45 Jack).** includes NTx-Mini main board (vertical RJ-45 jack) with AdaptRBoard, FlexEBoard, and Flat Flex Cable. • **Note:** Recommended replacement for 904-3002
904-3014	• **iPORT™ NTx-Mini Development Kit (Vertical RJ-45 Jack).** Includes NTx-Mini main board (vertical RJ-45 jack) with AdaptRBoard, prober board, flat flex cables, power supply, and GigE NIC, Ethernet cable, 12-pin circular connector soldered on FlexEBoard, and eBUS SDK USB stick. • **Note:** Recommended replacement for 904-3003
904-3213	• **iPORT™ NTx-Mini Main Board (Horizontal RJ-45 Jack).** • **Note:** Recommended replacement for 904-3200
904-3214	• **iPORT™ NTx-Mini Board Set (Horizontal RJ-45 Jack).** Includes NTx-Mini main board (horizontal RJ-45 jack) with AdaptRBoard. • **Note:** Recommended replacement for 904-3201
904-3215	• **iPORT™ NTx-Mini In-Camera Set (Horizontal RJ-45 Jack).** includes NTx-Mini main board (horizontal RJ-45 jack) with AdaptRBoard, FlexEBoard, and Flat Flex Cable. **Note**: The 12-pin circular connector is not included and must be ordered separately, order code 200-0016. • **Note:** Recommended replacement for 904-3202
904-3216	• **iPORT™ NTx-Mini Development Kit (Horizontal RJ-45 Jack).** includes NTx-Mini main board (horizontal RJ-45 jack) with AdaptRBoard, prober board, flat flex cables, power supply, Gigabit Ethernet desktop NIC, Ethernet cable, 12-pin circular connector soldered on FlexEBoard, and eBUS SDK USB stick. • **Note**: Recommended replacement for 904-3203

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