iPORT NTx-Mini-LC with RapidPIX Compression

Lossless compression increases throughput without infrastructure upgrade

Overview

Pleora's **iPORT NTx-Mini-LC Embedded Video Interface with RapidPIX™** compression enables imaging device and system designers to seamlessly increase bandwidth throughput by up to 70 percent while leveraging existing Ethernet network infrastructure.

With RapidPIX lossless compression, the off-the-shelf hardware converts video data into GigE Vision compliant packets that are transmitted at up to 1.5 Gbps throughput rates over existing 1 Gbps infrastructure. Pleora's patented RapidPIX lossless compression algorithm ensures original and post-compression data are identical while supporting ultra-low latency performance for mission-critical applications.

The drop-in enhancement of the market-proven NTx-Mini embedded interface interoperates seamlessly with Pleora and third-party GigE Vision compliant products in networked or point-to-point digital video systems. To speed time-to-market, the iPORT NTx-Mini-LC with RapidPIX Development Kit helps manufacturers develop system or camera prototypes and proof-of-concepts easily and rapidly, often without undertaking hardware development.

Pleora's iPORT NTx-Mini-LC with RapidPIX includes a sophisticated on-board programmable logic controller (PLC), which allows users to precisely measure, synchronize, trigger, and control the operation of vision system components 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.

The iPORT NTx-Mini-LC with RapidPIX is supported by Pleora's feature-rich eBUS™ SDK application tool kit. With this software suite, designers can rapidly prototype and deploy production-ready software to support video transmission over GigE, 10 GigE, and USB 3.0 using the same application programming interface (API).

Features

- Integrates patented RapidPIX low latency lossless compression to support up to 1.5 Gbps throughput over standard 1 Gbps Ethernet infrastructure
- Compact and low power
- GigE Vision version 1.2 and GenICam compliant
- 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

GENICAM GIGE VISION

Pleora Technologies

iPORT NTx-Mini-LC with RapidPIX Compression

Connectors

FlexEBoard	• 12-pin (Hirose HR10A-10R-12PB(71) • 20-pin (Hirose FH12-20S-0.5SH)
AdaptRBoard	40-pin (Hirose DF12NB(3.5)-40DP-0.5V(51))
Network	Available with horizontally or vertically mounted RJ-45 on the NTx-Mini-LC Main Board
Camera head interface	60-pin (Molex 501951-6000)
PLC	20-pin (Wurth 687120149028

Characteristics

Size (L x W x H)	• 42.0 x 42.0 x 21.14 mm (horizontal version) • 42.0 x 42.0 x 24.0 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	< 1.5W (input voltage and temperature dependent)
ECCN	5A991.b
MTBF @ 40°C	4,418,454 hours

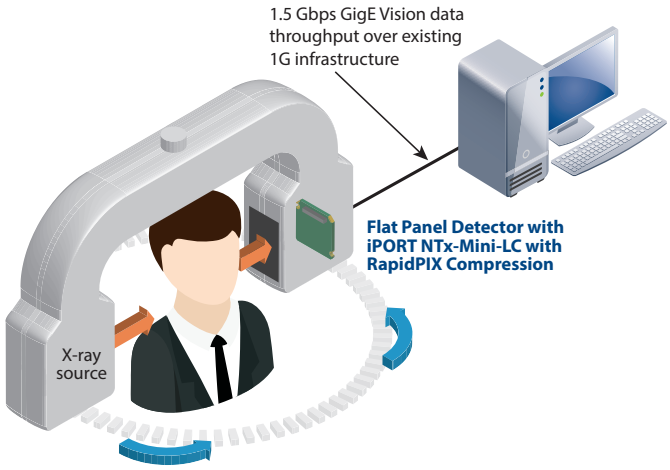
Inputs/Outputs on User Circuitry Interface

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 Developmen 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
USB4-Based	Connection to low-cost, easy-to-use equipment
Programmable Logic Controller	• Advanced image capture, deterministic trigger and timing control • Integrated with GPIO

* Please refer to the User Guide for thermal management information
**One UART serial link (UART0) is available for use with the AutoGEV XML generation tool

Frame Grabber

RapidPIX Lossless Compression	• 30-70% additional throughput over standard Ethernet • Ultra low latency (2 lines) designed for Medical Imaging and Machine Vision applications
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/single frame/multi frame • Continuous recording and readout • Single frame recording and single frame readout
Static configuration	Configuration settings are saved to on-board Flash memory leveraging User Sets from GenICam



Pleora's patented RapidPIX lossless compression converts video data into GigE Vision compliant packets that are transmitted at up to 1.5 Gbps throughput rates over existing 1 Gbps infrastructure. The compression technique, integrated into Pleora's iPORT NTx-Mini-LC platform, is optimized to ensure original and post-compression data are identical while supporting ultra-low latency performance for mission-critical applications.

iPORT NTx-Mini-LC with RapidPIX Compression

ITEM ID	Item Description
904-3026	**iPORT NTx-Mini with Lossless Compression main board (vertical RJ45 jack).** • An external power supply is required. • Does not include power supply.
904-3031	**iPORT NTx-Mini with Lossless Compression main board (vertical RJ45 jack - 3.3V).** • An external power supply is required. • Does not include power supply.
904-3027	**iPORT NTx-Mini with Lossless Compression board set (vertical RJ45 jack)** including NTx-Mini main board (vertical RJ45 jack) with AdaptRBoard. • An external power supply is required. • Does not include power supply.
904-3028	**iPORT NTx-Mini with Lossless Compression in-camera set (vertical RJ45 jack)** including NTx-Mini main board (vertical RJ45 jack) with AdaptRBoard, and FlexEBoard. • The 12-pin circular connector is not included and must be ordered separately, see 200-0016 under Accessories. • An external power supply is required. • Does not include power supply.
904-3029	**iPORT NTx-Mini with Lossless Compression Development kit (vertical RJ45 jack)** including NTx-Mini main board (vertical RJ45 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. • The eBUS SDK provided on the USB stick with development kits is for use as-is, is not supported, and does not provide access to maintenance releases or runtime licenses for your workstations. • The eBUS SDK Seat License (990-1024) – purchased separately – includes the latest version of eBUS SDK, a one-year subscription to Basic Maintenance and Support, and eBUS Edge, GEV-Rx and U3V-Rx runtime licenses.

ITEM ID	Item Description
904-3229	**iPORT NTx-Mini with Lossless Compression main board (horizontal RJ45 jack).** • An external power supply is required. • Does not include power supply.
904-3232	**iPORT NTx-Mini with Lossless Compression main board (Horizontal RJ45 jack - 3.3V).** • An external power supply is required. • Does not include power supply.
904-3230	**iPORT NTx-Mini with Lossless Compression board set (horizontal RJ45 jack)** including NTx-Mini main board (horizontal RJ45 jack) with AdaptRBoard. • An external power supply is required. • Does not include power supply.
904-3231	**iPORT NTx-Mini with Lossless Compression Development kit (horizontal RJ45 jack)** including NTx-Mini main board (horizontal RJ45 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. • The eBUS SDK provided on the USB stick with development kits is for use as-is, is not supported, and does not provide access to maintenance releases or runtime licenses for your workstations. • The eBUS SDK Seat License (990-1024) – purchased separately – includes the latest version of eBUS SDK, a one-year subscription to Basic Maintenance and Support, and eBUS Edge, GEV-Rx and U3V-Rx runtime licenses.

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