iPORT NTx-Mini-S Embedded Video Interface

All the benefits of the proven NTx-Mini in a low thickness form factor

Overview

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

NTx-Mini-S 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 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-S. This kit allows manufacturers to produce prototypes and proof-of-concept demonstrations easily and rapidly, often without undertaking hardware development.

Pleora's iPORT NTx-Mini-S 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; and
- The AutoGEV XML generation tool, which makes it fast and easy for manufacturers to create a user-friendly GenICam interface for their products.

Features

- Very low thickness form factor
- Low power
- GigE Vision and GenICam compliant
- Throughput approaching 1 Gb/s
- 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

Applications

- Sensor devices requiring a very low thickness form factor
- Specialty cameras

Pleora Technologies

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Networked Video Connectivity Solutions

iPORT™ Embedded Video Interfaces	· Highly reliable, 1 Gb/s data transfer rate with low, end-to-end latency · OEM 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
GigE Vision®	· Fully compliant firmware load · Guarantees delivery of all packets · Comprehensive data transfer diagnostics

Connectors

PLC/GPIO Interface	· 20-pin (Hirose FH12-20S-0.5SH(55))
Network Interface	· 8-pin (Hirose DF19G-8P-1H(54))
Camera head interface	· 60-pin (Hirose FH28E-60S-0.5SH(05))

Data Acquisition Features

Video Interface connector (2.5V LVCMOS/ LVTTL)	· Compatible with internal signaling of video source
Integrated acquisition engine	· Can acquire images from a wide variety of sources, with pixel depths up to 24 bits, color or B/W, and multi-tap at up to 90 MHz
Free running or externally triggered	· Flexible acquisition modes
Static configuration	· Configuration settings are saved to on-board Flash memory

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
Multicast capability	· Enables advanced distributed processing and control architectures

Programmable Logic Features

4 inputs 4 outputs to PLC/GPIO connector 4 outputs to video interface connector (2.5V LVCMOS/ LVTTL)	· Provides a flexible, general-purpose interface · Allows synchronization of multiple devices or system elements · Flexible triggering capabilities, including Boolean combinations, camera control signals, encoders, and time stamps · Built-in debouncers
3 serial links (2.5V LVCMOS/ LVTTL)	· Serial control[2] of video source and other devices via PC application over the GigE link
Delayer, rescaler, general-purpose counter	· Allows full synchronization of video source 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 Pleora products in system from host
Host interrupts	· Allows host to be interrupted based on events on any input or internal signal

[2] Various serial communication protocols are supported

Characteristics

Size (L x W x H)	· 43.0 x 67.1 x 5.0 mm
Operating temperature	· Commercial[1]
Storage temperature	· -40°C to 85°C
Power supply	· Nominally 4.2V to 16V
Power consumption	· From 1.6 W (input voltage and temperature dependent)
MTBF at 40°C	· 2,347,064 hours
ECCN	· 5A991.b

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

Ordering Information

904-3016	· **iPORT™ NTx-Mini-S main board** · **Note**: Recommended replacement for 904-3008
904-3017	· **iPORT™ NTx-Mini Development Kit.** Includes 904-3016, 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 904-3009