

The PL1453A EtherCast™ Video IP Engine™

*Real-time, high-quality transport of SD
and ASI video over Ethernet*

Pleora's EtherCast PL1453A Video IP Engine is a palm-sized, affordable device that reliably transports SD-SDI, SDTI (SMPTE 305M), or DVB-ASI digital video in real time over standard Ethernet networks.

The engine auto-detects incoming SD or ASI video signals, converts them quickly and efficiently to IP, and pumps them live over a managed Ethernet LAN/WAN. Ancillary data in the video stream, such as digital audio and timing information, is also converted. Multicast transmission is fully supported, enabling the same video stream to be distributed simultaneously to multiple destinations.

Pleora's EtherCast PL1453A Video IP Engine does not compress or decompress the signal, and there are no video quality compromises. Jitter control is exceptional, transfer is lossless, and end-to-end latency (or delay) is low and predictable.

At the receiving end, there are two options: return the video to its original SD or ASI format using another PL1453A engine, or transfer it directly into PC memory using the innovative EtherCast Driver.

The EtherCast Driver, based on Pleora's field-proven iPORT™ platform, is a ground-breaking PC software application that runs under Windows on standard



Ethernet NICs, eliminating the need for video capture cards. It creates a full-duplex, real-time video path between PC memory and the LAN/WAN connection, while using only a small fraction of the CPU capacity.

The PL1453A also includes the EtherCast SDK and the EtherCast Configuration Utility (ECU). The SDK delivers the tools needed to capture real-time video streams from memory, store them to disk, access them from higher-level applications, and stream them back over the network.

The ECU is a PC-based Windows application for detecting PL1453A engines on a network, checking their status, assigning them names and IP addresses, setting packet timeouts, and other functions.

Pleora offers the PL1453A EtherCast Video IP Engine boxed or as an OEM board set. A rack-mounted version, with four boards to a 1U chassis, is available upon request.

Applications

EtherCast IP Studio

- **Point-to-point/multipoint video distribution**
Use Ethernet switches as routing switchers
- **Video recording and playback**
Transform standard PCs into VTRs or DVRs
- **Network-attached storage**
Use PCs to store and serve video
- **Real-time workgroup collaboration**
Use PC/Ethernet platforms for real-time video sharing

EtherCast IP Transport

- **Terrestrial backhaul to cable headends**
Huge cost savings over satellite links
- **Transport of dailies to post facilities**
Instantaneous and efficient
- **Distribution of live or stored video to multiple venues**
Simultaneous multicasting
- **Premise-to-premise transport of digital footage**
No lost data

EtherCast PL1453A Features

Complies with SMPTE 259M and 305M	<ul style="list-style-type: none"> Supports uncompressed SD-SDI video and compressed SDTI video Transfers SDI data at full 270 Mb/s rate
Full SD-SDI data integrity	<ul style="list-style-type: none"> All SD-SDI data is transported across the link, including ancillary data such as digital audio and timing information
Wide range of DVB-ASI data rates	<ul style="list-style-type: none"> From 100 Kb/s - 270 Mb/s (effectively 200 Mb/s due to 8/10 encoding)
DVB-ASI packet size auto-detect	<ul style="list-style-type: none"> Configuration-free 188-byte or 204-byte MPEG packet detection
WAN support	<ul style="list-style-type: none"> Communicates with other PL1453A engines over managed Ethernet WAN
Multicasting support	<ul style="list-style-type: none"> Simultaneous distribution through a switch of one video stream to multiple PL1453A engines or PCs (via EtherCast Driver)
High-performance EtherCast Driver for PC	<ul style="list-style-type: none"> Transfers video directly to PC memory with no video capture card
Configurable as receiver or transmitter	<ul style="list-style-type: none"> One model accommodates range of network Rx/Tx requirements
Low, predictable, tunable latency	<ul style="list-style-type: none"> Adjustable from 750 microseconds to 233 milliseconds (SDI) Greater for DVB-ASI (rate dependant)
Superior jitter control	<ul style="list-style-type: none"> PCR jitter as low as +/- 100 ns, steady state
Excellent jitter tolerance	<ul style="list-style-type: none"> +/- 0.3 UI
Carrier input detect	<ul style="list-style-type: none"> Auto detects and switches between SD-SDI/SDTI and DVB-ASI input streams
Hot pluggable	<ul style="list-style-type: none"> Fast, automatic recovery from cable disconnects or system faults, with no need for PC reboot
Clock recovery	<ul style="list-style-type: none"> Clock frequency on receiver locked over Ethernet link to clock frequency on transmitter
Efficient packet ordering	<ul style="list-style-type: none"> Packets placed in correct order regardless of the order in which they are received
Built-in network traffic shaper	<ul style="list-style-type: none"> Steady and consistent packet transmission rate
Automatic lost packet detection	<ul style="list-style-type: none"> Intelligent, bandwidth-efficient, sub-millisecond data resend scheme
Intelligent source absence detection	<ul style="list-style-type: none"> Idle insertion in DVB mode, black screen in SDI mode
Intelligent idle detection	<ul style="list-style-type: none"> Minimizes bandwidth utilization when input signal is not present
Internal test pattern	<ul style="list-style-type: none"> Aids fault isolation
Loopback mode	<ul style="list-style-type: none"> Simplifies testing and system setup
EtherCast Configuration Utility	<ul style="list-style-type: none"> Network and/or engine configured from same application
Setting retention	<ul style="list-style-type: none"> Retains settings upon power-off with write-to-flash via PC or DIP switches
LED status indicators	<ul style="list-style-type: none"> Green – engine is receiving data on SDI/ASI interface Orange – engine is configured to transmit data on SDI/ASI interface

EtherCast PL1453A Characteristics

Package	<ul style="list-style-type: none"> Boxed: 9.3 cm x 9.8 cm x 3.7 cm (L x W x D) OEM: 8.9 cm x 5.6 cm x 2.1 cm (L x W x D) Rack mount 19" for up to four engines (option)
Operating temperature and humidity	<ul style="list-style-type: none"> Boxed / Racked: 0°C to +50°C OEM: 0°C to +70°C Humidity: 10 to 90% non-condensing
Power supply	<ul style="list-style-type: none"> +4.5 V to 16 V DC for boxed and OEM
Power consumption	<ul style="list-style-type: none"> 3.75 W

EtherCast PL1453A Connectors

Power	<ul style="list-style-type: none"> Boxed: Hirose 4-pin (HR10A-7R-4P) OEM: Molex 4-pin 6373 series (22-23-2041)
Network	<ul style="list-style-type: none"> RJ-45, copper, 10/100/1000BaseT
Video	<ul style="list-style-type: none"> 2x BNC female, 75 ohm (input and output)
GPIO	<ul style="list-style-type: none"> Reserved for future use