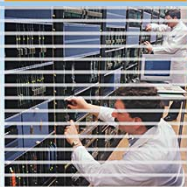


Cypress Video Solutions 2004



PERSONAL ACCESS ENTERPRISE METRO CORE

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About Cypress

Cypress Semiconductor Corporation (NYSE: CY) is Connecting From Last Mile to First Mile™ with high-performance solutions for personal, network access, enterprise, metro switch and core communications-system applications. Cypress Connects™ using wireless, wireline, digital, and optical transmission standards, including USB, Fibre Channel, SONET/SDH, Gigabit Ethernet and DWDM. Leveraging its process and system-level expertise, Cypress makes industry-leading physical layer devices, framers and network search engines, along with a broad portfolio of high-bandwidth memories, timing technology solutions and reconfigurable mixed-signal arrays. More information about Cypress is accessible online at www.cypress.com.

Cypress Video Products

Cypress' innovative SERDES technology provides system designers with the most flexible and customizable serial digital video SERDES on the market today. From single channel transmit and receive devices that support SD-SDI (SMPTE 259M) and DVB-ASI, to quad channel, fully integrated SERDES devices that support HD-SDI (SMPTE 292M), SD-SDI, and DVB-ASI on a per channel basis, Cypress enables designers to select the component that is right for their designs. Whether there are concerns about port density or cost-effective implementation, Cypress can provide customers with the ultimate in serial digital video SERDES.

In order to make evaluation of our solutions easier for customers, we provide various demonstration boards and application notes for our HOTLink® and HOTLink II™ devices.

This brochure will discuss Cypress' serial digital video SERDES devices and the evaluation boards and application notes that accompany them. For more information or datasheets on any of the products mentioned, please visit <http://www.cypress.com>.

HOTLink II™ SERDES Features

- Integrated Transmitter and Receiver
- 195-1500Mbps Serial Signaling Rate
- Supports SD-SDI/HD-SDI/DVB-ASI
- Redundant Serial Outputs
- Selectable Serial Inputs
- High Ref Clock Input Tolerance
- SMPTE 259M/SMPTE 292M Pathological Compliance
- Supports Half-Rate Clocking
- 50Ω Source-Matched CML Output Drivers
- Bypassable 8B/10B Encoding
- Single 3.3V Supply
- Low Transmit Jitter
- Built-In Self Test (BIST)



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Quad Independent Channel HOTLink II SERDES

Features

- Supports DVB-ASI, SD-SDI or HD-SDI serial data on a per channel basis
- Four integrated transceiver channels*
- Per channel power-down control
- Selectable serial inputs



Benefits

- Design a system capable of supporting any of the major video standards on any channel
- Increase system port density while saving board space
- Save power by turning off unused receivers, transmitters, or entire channels
- Select from two different serial streams on each receive channel

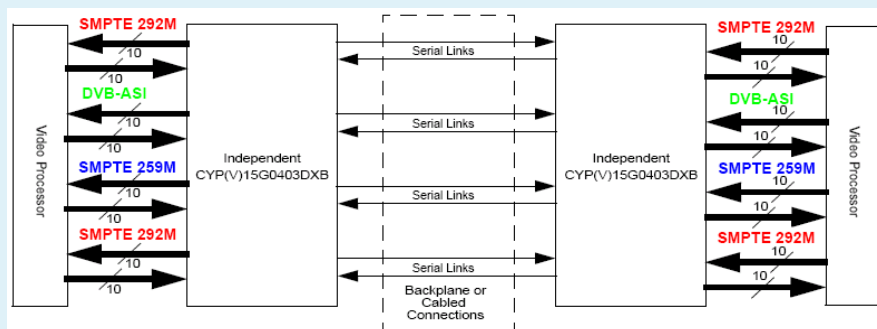
Protocol Flexibility Per Channel,
Four Integrated Channels,
Flexible Design

*Per Channel Reclocker
Also Available

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Quad Independent Channel HOTLink II System Diagram



Quad Channel HOTLink II SERDES

Features

- Four Integrated Transmitters and Receivers in a Single Device
- Half-Rate Clocking Support
- Built-In Self Test (BIST)
- 50Ω Source Matched CML Output Drivers

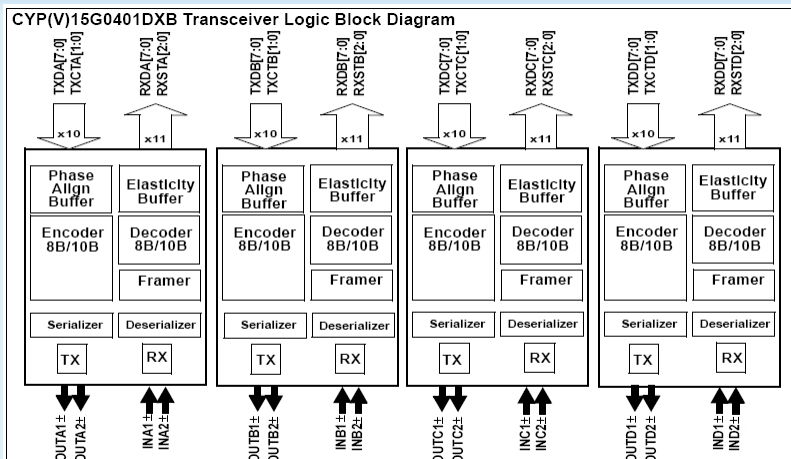


Benefits

- Increase system port density and save board space in high port-count video systems
- Allows for flexible clocking schemes in SMPTE systems
- Makes board debug and bring-up easier and faster
- Ensures excellent signal integrity

Increased Port Density,
Four Integrated Channels,
Simple Designs

Quad Channel HOTLink II Block Diagram



Single & Dual Channel HOTLink II SERDES

Features

- Single and Dual Channel Integrated Transceivers
- 8B/10B encoded data or 10 bit unencoded data
- 195- to 1500 Mbps serial signaling rate
- Single 3.3V Supply

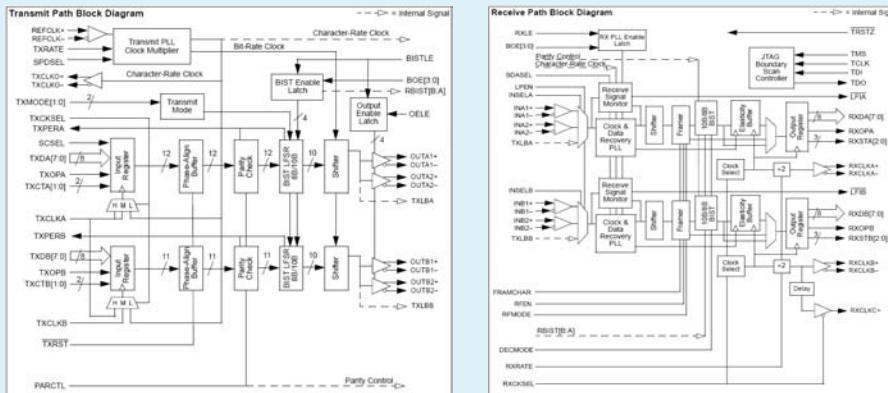
Benefits

- Fit system requirements - no waste of unnecessary SERDES channels
- Support DVB-ASI (8B/10B data) or SMPTE (10-bit data) in same device
- Wide frequency range to support all major video standards
- Utilize common 3.3V power supply on board



Tx/Rx Integration,
No Wasted Channels,
Board Space Efficient

Dual Channel HOTLink II Block Diagram



HOTLink® Serializer & Deserializer

Features

- **SMPTE 259M compliance**
- **DVB-ASI (270Mbps) support**
- **Direct interface to SMPTE 259M Scrambler/Descrambler chipset**
- **Selectable 8B/10B-coded or 10-bit uncoded data**



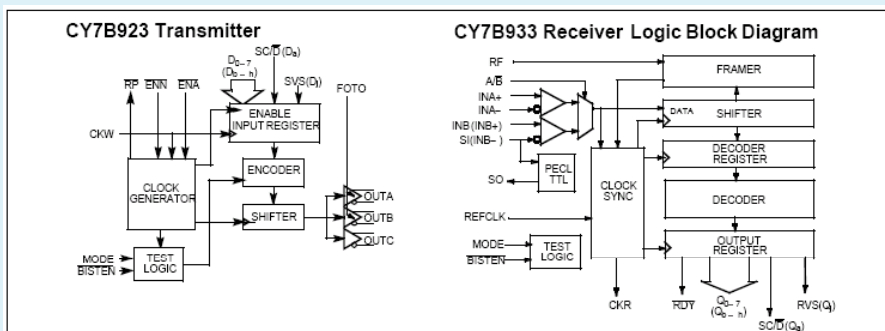
Benefits

- **Meets SMPTE 259M pathological requirements**
- **Full compliance to DVB-ASI specification for use in video transport systems**
- **Design a complete SMPTE 259M solution***
- **Support SMPTE and DVB-ASI with the same device**



SMPTE 259M Chipset,
DVB-ASI Pioneer,
Integrated Multi-Byte
Framing

HOTLink Tx/Rx Block Diagram



Video Evaluation Boards

HOTLink II™ SERDES Demonstration Boards

Quad Independent Channel HOTLink II™ Video Platform

Single Channel HOTLink II™ Video Platform

Quad Independent Channel HOTLink II™ Evaluation Board

Quad Channel HOTLink II™ Evaluation Board

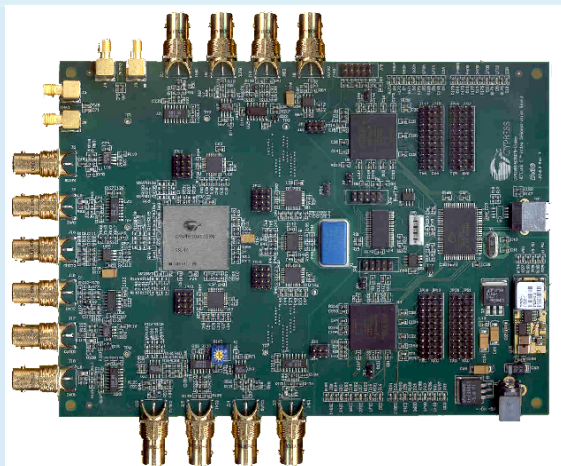
HOTLink® Serializers & Deserializers Demonstration Boards

HOTLink® SMPTE Chipset Platform

HOTLink® Serializer and Deserializer Evaluation Board

Quad Independent Channel HOTLink II Video Board

- Four Tx/Rx channels
- SMPTE 259M/292M/
DVB-ASI support*
- Test pattern generation
- Reclocking
- Auto-rate detection
- Redundant serial
outputs/selectable
serial inputs
- Simple configuration
GUI
- Program logic via
Cypress USB



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*SMPTE 259M/292M Scrambler/Descrambler IP Available

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Single Channel HOTLink II Video Board

- Single Tx/Rx channel
- SMPTE 259M/DVB-ASI
support
- Test pattern generation
- Redundant serial
outputs/selectable
serial inputs
- Simple configuration
GUI
- Program logic via
Cypress USB

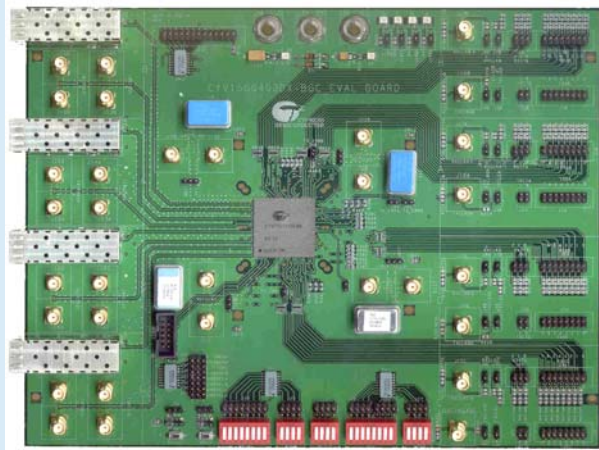


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Independent Channel HOTLink II Evaluation Board

- Four Tx/Rx channels
- SMPTE 259M/292M/
DVB-ASI support
- Reclocking
- BIST
- Redundant serial
outputs/selectable
serial inputs
- 195-1500Mbps serial
data rate

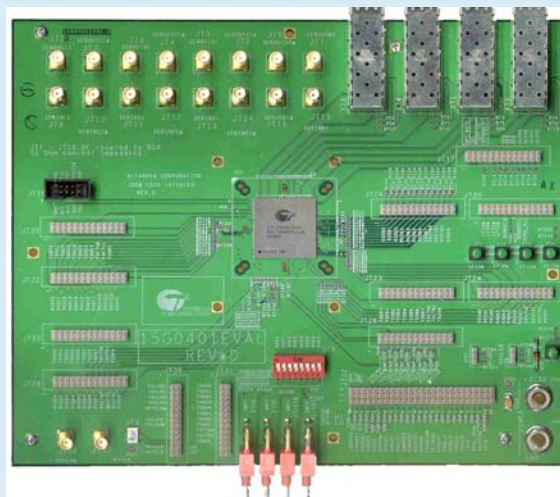


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Quad Channel HOTLink II Evaluation Board

- Four Tx/Rx channels
- SMPTE 259M/292M/
DVB-ASI support
- BIST
- Redundant serial
outputs/selectable
serial inputs
- 195-1500Mbps serial
data rate

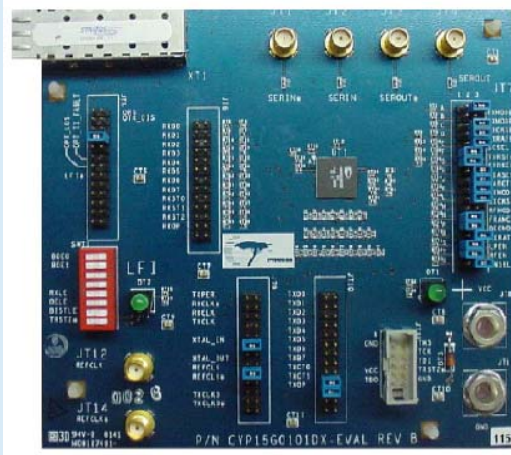


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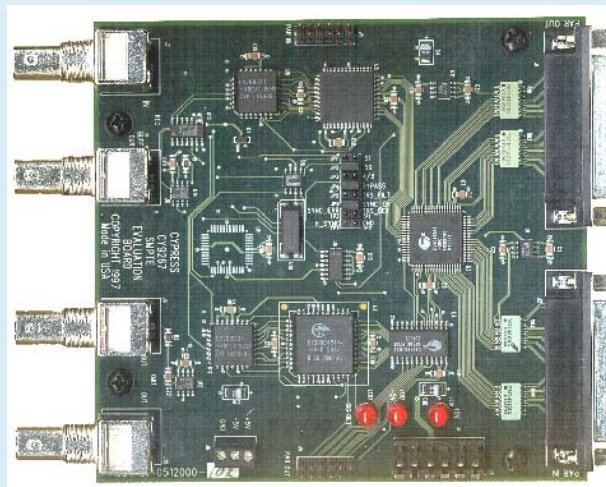
Single Channel HOTLink II Evaluation Board

- **Single Tx/Rx channel**
- **SMPTE 259M/292M/
DVB-ASI support**
- **BIST**
- **Redundant serial
outputs/selectable
serial inputs**
- **195-1500Mbps serial
data rate**



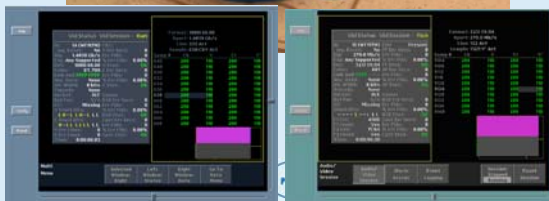
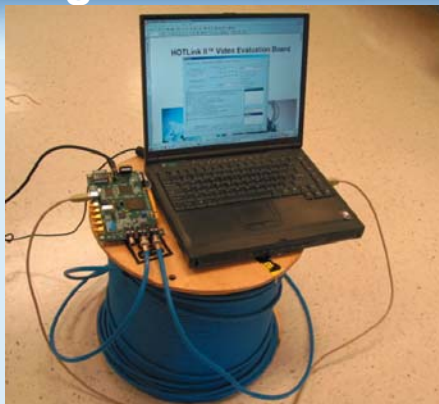
HOTLink® SMPTE Video Board

- **Transmit and receive channels**
- **SMPTE 259M/DVB-ASI support**
- **Redundant serial outputs/selectable serial inputs**
- **SMPTE 259M Scrambler/Descrambler IP available**



HOTLink II™ SMPTE Pathological Performance

- Tested over SMPTE-spec lengths of Belden cable
- Broadcast industry test equipment validated
- Pictured test performed on Single Channel HOTLink II Video Board



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Video Application Notes

- 1) Configuring the HOTLink II™ CYV15G0403DXB
http://www.cypress.com/cfuploads/support/app_notes/AN068.pdf
- 2) Implementing DVB-ASI Serial Interfaces Using HOTLink®
http://www.cypress.com/cfuploads/support/app_notes/Implementdvbasiwithhotlink.pdf
- 3) SD-SDI and HD-SDI Checkfield Testing on HOTLink II™ Transceivers for SMPTE Pathological Conditions
http://www.cypress.com/cfuploads/support/app_notes/AN084.pdf
- 4) Interfacing the HOTLink II™ Transceiver with the 3.3V Gennum GS1524 Equalizer and GS1528 Cable Driver for Digital Video
http://www.cypress.com/cfuploads/support/app_notes/AN080_C1.pdf
- 5) Interfacing the HOTLink II™ Transceiver with the 5.0V Gennum GS9024 Equalizer and GS9028 Cable Driver for Digital Video
http://www.cypress.com/cfuploads/support/app_notes/AN082.pdf
- 6) Interfacing the HOTLink II™ Transceiver with the 5.0V National CLC007 Cable Driver and CLC014 Equalizer for Digital Video
http://www.cypress.com/cfuploads/support/app_notes/AN083.pdf
- 7) Interfacing the HOTLink II™ Transceiver with the 3.3V National CLC001 Cable Driver for Digital Video
http://www.cypress.com/cfuploads/support/app_notes/AN081_C.pdf
- 8) Termination and Biasing of HOTLink II™ High-Speed Serial I/O
http://www.cypress.com/cfuploads/support/app_notes/Termination.pdf
- 9) Using Decoupling Capacitors
http://www.cypress.com/cfuploads/support/app_notes/decouple.pdf
- 10) CYV15G0101DXB Video Evaluation Board User's Guide
http://www.cypress.com/cfuploads/support/app_notes/videoboardusersguide.pdf

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Video Application Notes

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|---|--|
| <p>11) CYP15G0101DXB Evaluation Board User's Guide http://www.cypress.com/cfuploads/support/app_notes/UG0101.pdf</p> <p>12) CYP15G0401DXB Evaluation Board User's Guide http://www.cypress.com/cfuploads/support/app_notes/UG002_B.pdf</p> <p>13) CYP15G0403DXB Evaluation Board User's Guide http://www.cypress.com/cfuploads/support/app_notes/UG005.pdf</p> <p>14) Frequently Asked Questions about HOTLink II™ Family of Devices http://www.cypress.com/cfuploads/support/app_notes/HLIIFAQ.pdf</p> <p>15) Frequently Asked Questions about the CYP(V)15G0403DXB Device http://www.cypress.com/cfuploads/support/app_notes/</p> | <p>16) Power Consumption of HOTLink II™ Family of Devices http://www.cypress.com/cfuploads/support/app_notes/AN027.pdf</p> <p>17) Using HOTLink® for 9- and 10-Bit Data http://www.cypress.com/cfuploads/support/app_notes/9b10b.pdf</p> |
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Contact Cypress

Please contact your local Cypress Sales Representative and/or Field Applications Engineer for Pricing and Availability

For Cypress sales office locations and additional product information, please visit:

www.cypress.com

**Or send an email to:
video_solutions@cypress.com**