Valens
First in HDBaseT™

Valens Colligo System on Module Product Brief

Overview

The Valens Colligo System on Module is a small form-factor, surface mount offering, for a complete HDBaseT 2.0 implementation. The module, with its embedded VS2310 integrated circuit, is designed to reduce the costs and efforts of bringing HDBaseT applications to the marketplace, as board design issues are taken care of inside the module. The Valens Colligo System on Module allows developers to focus only on the interface connections required for a successful and timely product roll-out.

Architecture

The Valens Colligo System on Module consists of two offerings:

- **Valens Colligo System on Module TX:** The transmitter module, implemented in ultrahighdefinition source equipment, such as computers or media streamers.
- **Valens Colligo System on Module RX:** The receiver module, implemented in displays, projectors and other types of video sink equipment.

Applications

- HDMI/DVI extenders over CATx
- NxK AV matrixes
- AV receivers
- Projectors
- Industrial PCs (IPCs)
- Single-wire TVs and two-box TVs
- KVM (Keyboard, Video, Mouse) extensions
- Digital signage displays
- Multistream video switching/distribution/aggregation, and daisy-chaining

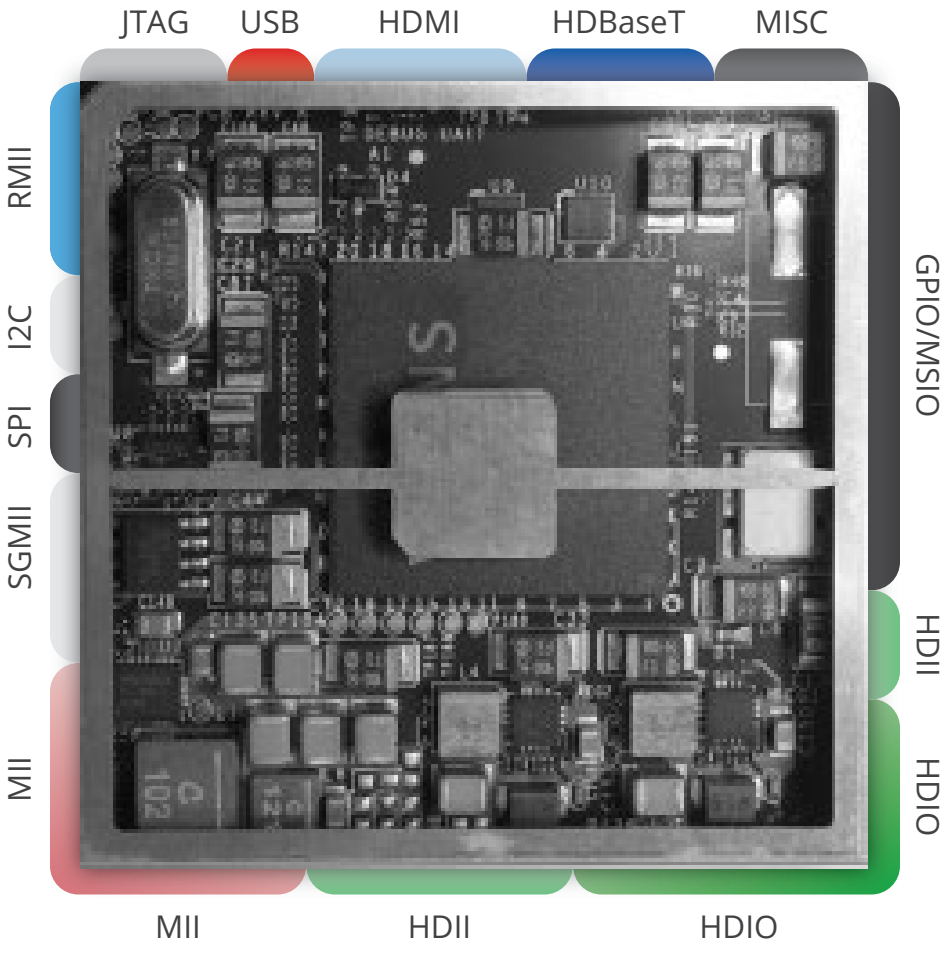
The following diagram illustrates a typical Valens Colligo System on Module application, in which the video/audio and control signals are sent from an HDBaseT Industrial PC while the HDBaseT Module is integrated using an extension PCB or as part of the main PCB. The HDBaseT Rx Module is integrated into an existing display for minimal design efforts.

HDBaseT Industrial Application

Functional Block Diagram

Module Interfaces

(Tx chipset; both Rx and Tx contain same interfaces)



Technical Highlights

Parameter	Value
Video Interfaces	Fully compliant with HDMI 1.4 and HDMI 2.0. EDID adjustment mechanism for HDMI 2.0 at pixel clock higher than 340MHz HDCP 1.x, 2.2 compliant Glueless interface to TMDS, DDC, CEC, and HPD HDMI signals
HDMI Interfaces	<table><tr><th>Cable Type</th><th>Range</th><th>Pixel Clock Rate</th><th>Video Data Rate</th><th>Supported Video</th></tr><tr><td>CAT5e</td><td>100m</td><td><=225MHz</td><td><=5.3 Gbps (HD Video)</td><td>Up to 1080P, 60Hz, 36bpp (data rates lower than 5.3 Gbps or bellow 225 MHz TMDS clock).</td></tr><tr><td>CAT5e</td><td>90m</td><td rowspan="2">>225MHz</td><td rowspan="2">>5.3 Gbps (Ultra HD Video)</td><td rowspan="2">1080p 60Hz 48 bpp, 1080p 60 Hz 3D, 4K2K/30Hz/4:4:4 and 4K2K/60Hz/4:2:0 video formats</td></tr><tr><td>CAT6/CAT6a/CAT7</td><td>100m</td></tr></table> Long-reach mode: Up to 150m with 4 Gbps HDBaseT traffic rate, equivalent to HDMI Pixel Frequency of 148.5Mhz (Video Format 1080p/60Hz/24bpp)
Audio Interfaces	All formats supported by HDMI 1.4 and HDMI 2.0 All major digital audio formats, including: Dolby Digital, DTS, Dolby TrueHD, DTS HD-Master Audio, Dolby Pro Logic Iiz 7.1 & 9.1, and more Standard SPDIF, I²S
Control Interfaces	UART, IR, I²C (slave/master), MSIO-6 General Purpose fast serial channels for delivering any proprietary user format, USB 2.0
HDII/O Interfaces	8Gbps inter-device connectivity HDBaseT packets over inter-chip connection Glueless interface to Colligo VS2311 fiber optics devices
Ethernet Interfaces	100BaseT, SGMII/RMII/MII
Ethernet Interfaces	RS232, I²C slave
USB 2.0	Configurable as host or device USB port
Power	Coexistence with PoE (802.3af), PoE+ (802.3at) and PoH
Power Consumption	2.65W/5V (Tx) 4.5W/5V (Rx)
Dimensions	Colligo VS2310TX – 50mm x 50mm x 7mm (WxLxH) Colligo VS2310 RX – 50mm x 50mm x 7 mm (WxLxH)

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