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.

Overview

The Valens Colligo System on Module consists of two offerings:

- **Valens Colligo System on Module TX**: The transmitter module, implemented in ultrahigh-definition 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.

Architecture
• 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
Module Interfaces
(Tx chipset; both Rx and Tx contain same interfaces)
### Technical Highlights

#### 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>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HDMI Interfaces</strong></td>
<td></td>
</tr>
<tr>
<td>Cable Type</td>
<td>Range</td>
</tr>
<tr>
<td>CAT5e</td>
<td>100m</td>
</tr>
<tr>
<td>CAT5e</td>
<td>90m</td>
</tr>
<tr>
<td>CAT6/CAT6a/CAT7</td>
<td>100m</td>
</tr>
</tbody>
</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 Iix 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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