



Valens  
Colligo™ VS2310  
Product Brief

## Overview

The Colligo VS2310 is a high-end 5Play chipset that includes native USB 2.0 support and inter-device connectivity. The Colligo VS2310 chip's proprietary HDI digital interfaces enable true multistreaming and daisy-chaining. The Colligo VS2310 fully complies with the HDBaseT™ 2.0 Specification and supports the 5Play feature set for relaying audio, video, control, Ethernet, and power over a single up to 100m cable. The Colligo VS2310 is also backwards compatible with the HDBaseT™ 1.0 Specification and all legacy HDBaseT™ products.



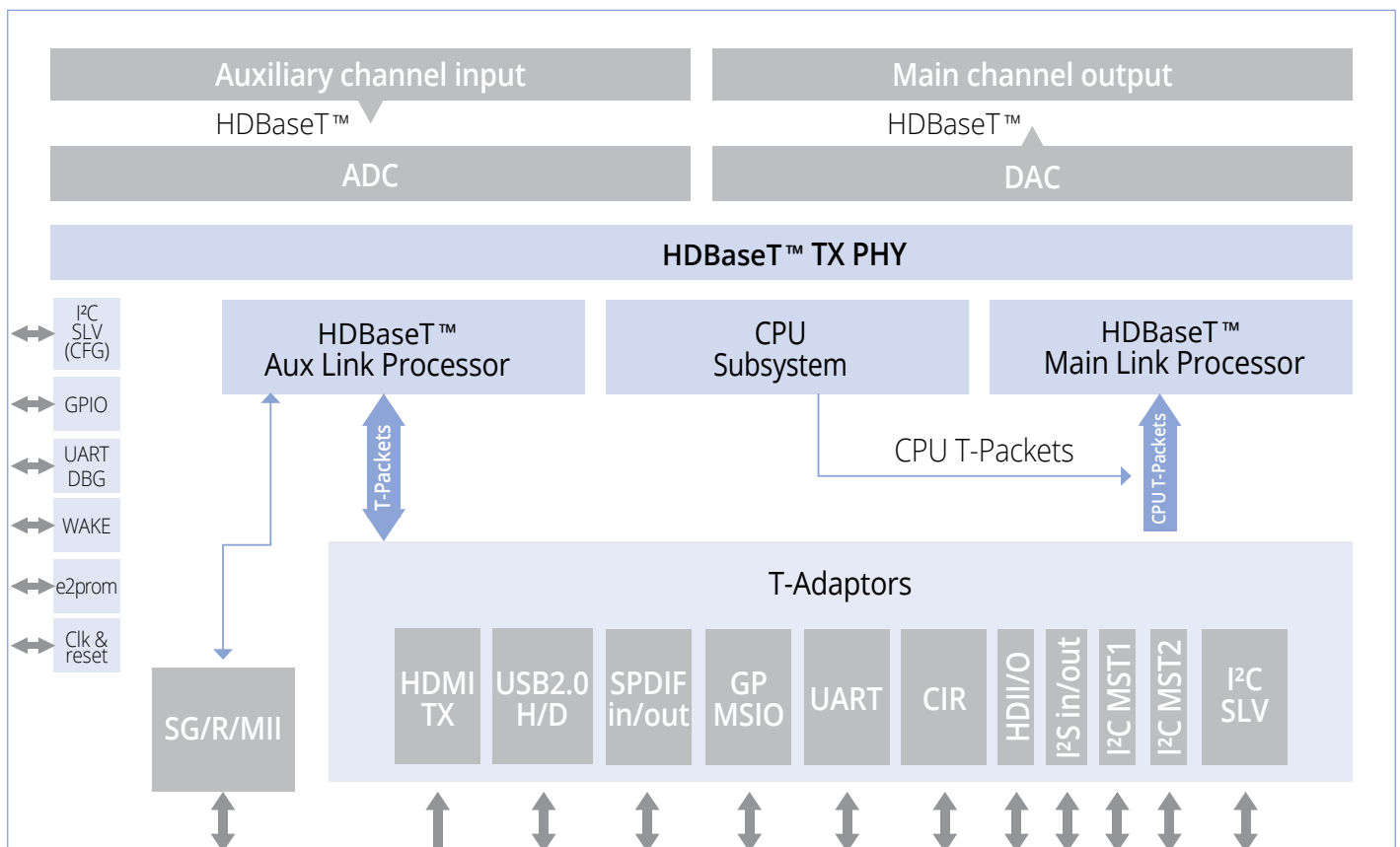
# Architecture

The Colligo VS2310 is comprised of two integrated chips:

- **Colligo VS2310TX** – The transmitter chip is used for video and signaling in a source device, such as a Blu-ray player or STB.
- **Colligo VS2310RX** – The receiver is used for video and signaling in a sink device, such as an LCD display or projector.

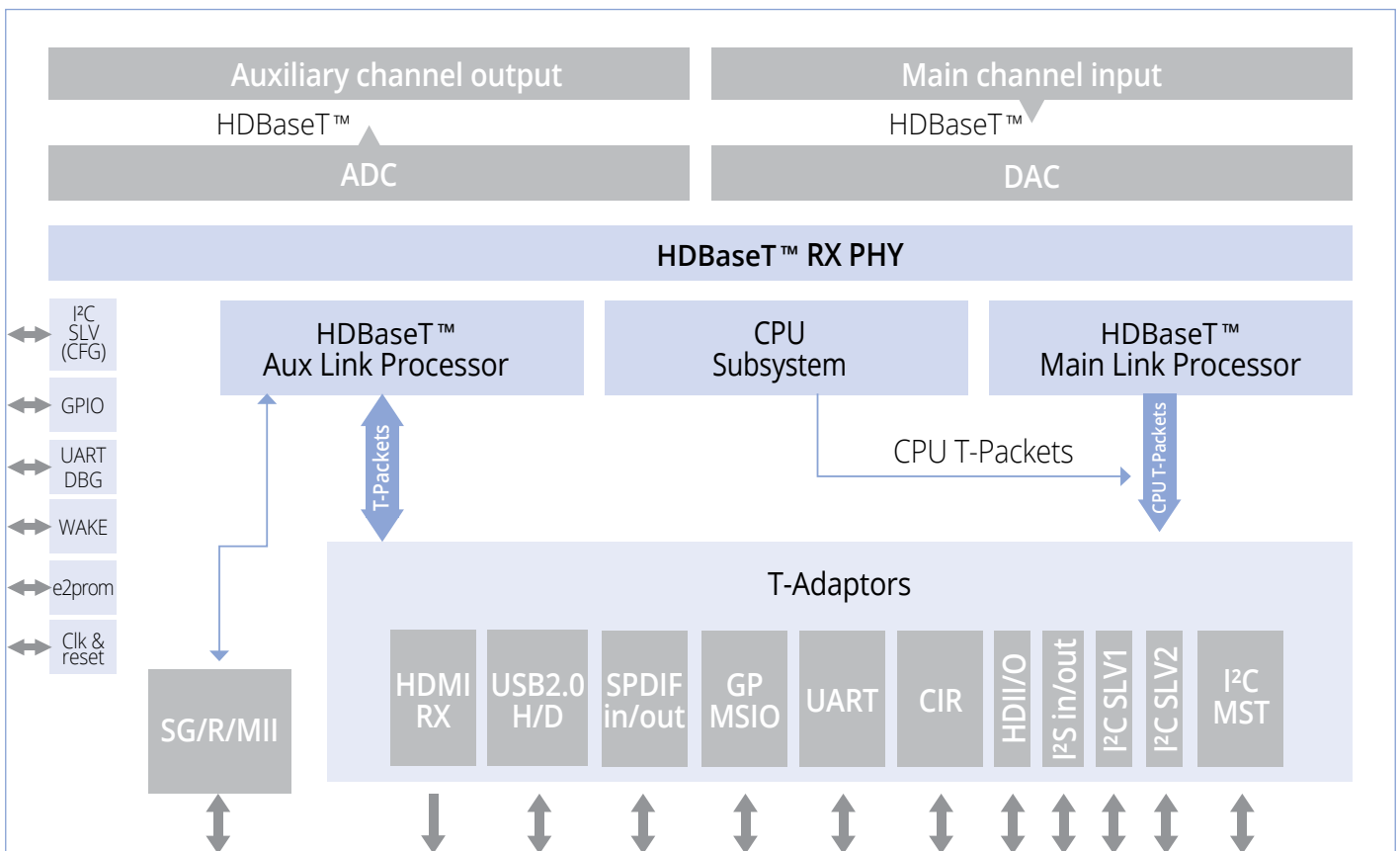
The following block diagram illustrates the major Colligo VS2310 components:

## Colligo VS2310TX





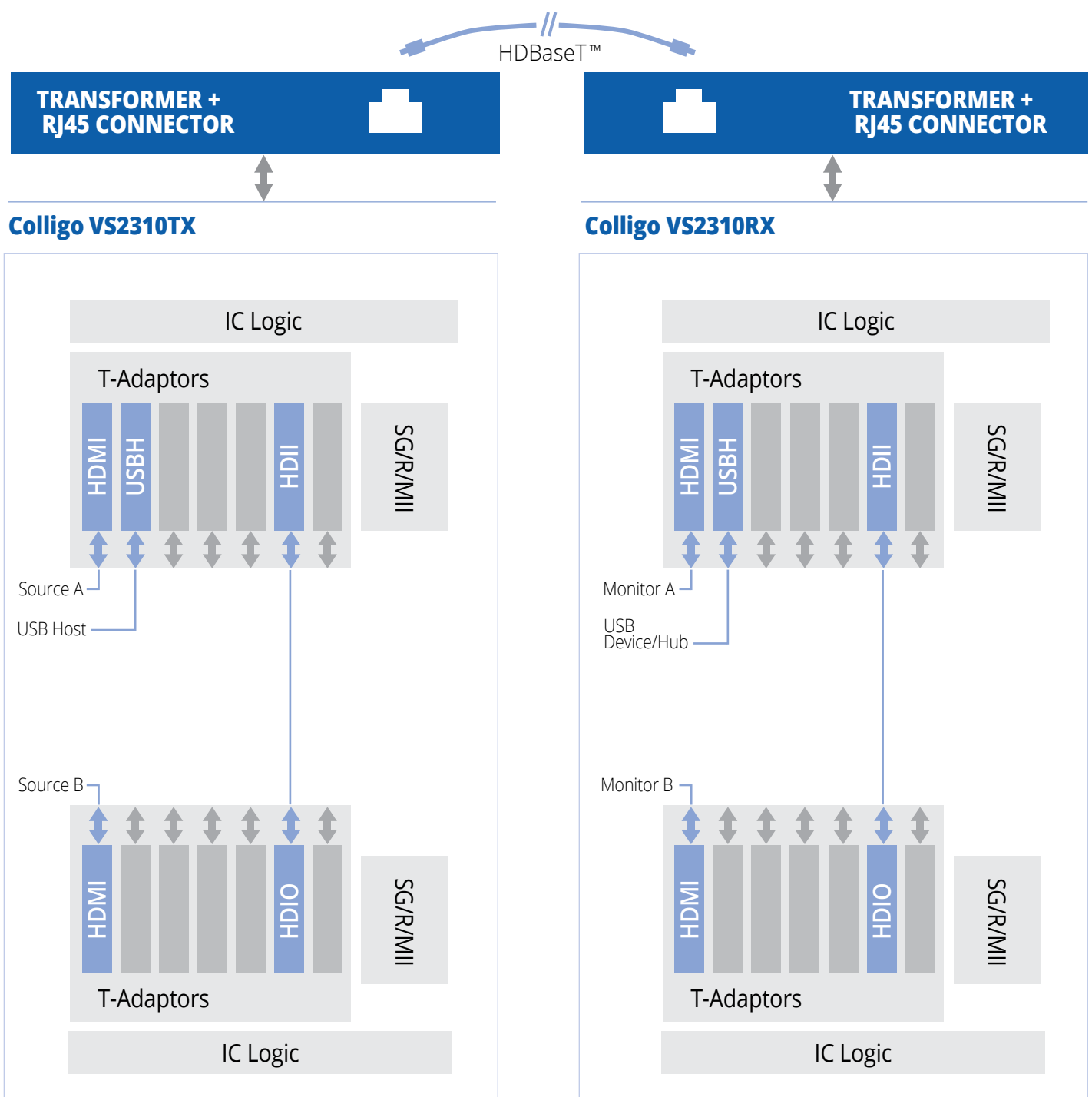
## Colligo VS2310RX



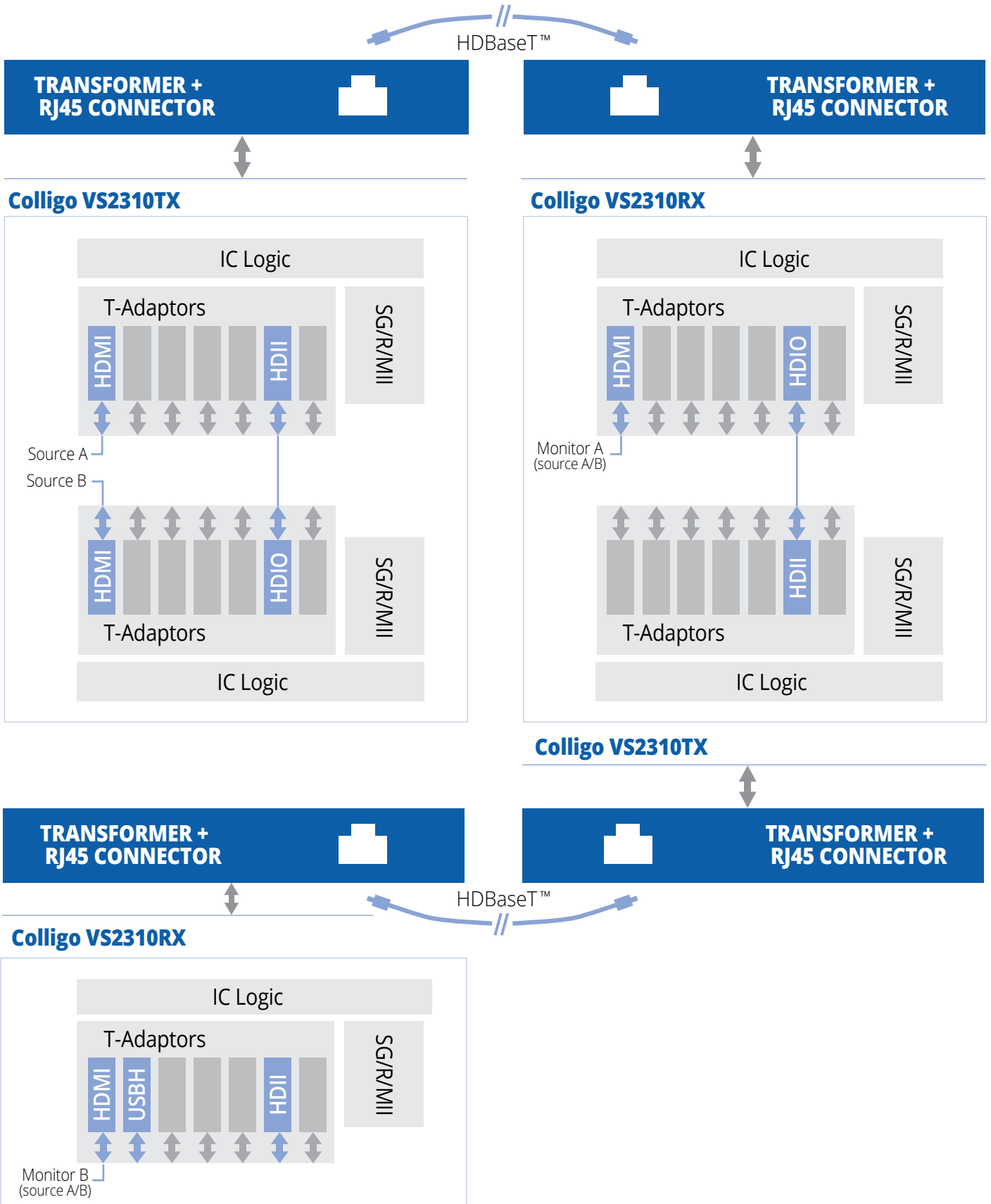
# Applications

The Colligo VS2310 second generation high-end chip can be used in various applications throughout multiple industries. Main applications include HDMI / DVI extenders over CatX / fiber optics cables, NxK AV matrixes, AV receivers, HD projectors, industrial PCs, single wire TVs, two-box TVs, digital signage displays, multi-stream video switching / distribution / aggregation, daisy chaining, and delivering uncompressed video and controls over fiber optics (with the Colligo VS2311).

The following diagram illustrates the HDBaseT™ Gen 2.0 in a multi-stream video system:



The following diagram illustrates the HDBaseT™ Gen 2.0 in a signage daisy chain system:



# Key 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 Glueless interface to TMDS, DDC, CEC, and HPD HDMI signals
HDMI Interface	100m Cat5e/Cat6 uncompressed HD video: <ul style="list-style-type: none"> <li>• 4K / 2K, 30Hz, 24bpp</li> <li>• 4K / 2K, 60Hz, 24bpp with 4:2:0 pixel format</li> </ul> 150m in long-reach mode: <ul style="list-style-type: none"> <li>• 148.5Mhz HDMI pixel frequency</li> <li>• 1080p, 60Hz, 24bpp – uncompressed</li> </ul>
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, I <sup>2</sup> S
Control Interfaces	UART, IR, I <sup>2</sup> C (slave / master), MSIO-6 General Purpose fast serial channels, 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
System Interfaces	RS232, I <sup>2</sup> C slave, I <sup>2</sup> C / SPI boot EEPROM
USB 2.0	Configurable as host or device USB port, USB 2.0 standard compliant
Power	PoE (802.3af), PoE+ (802.3at), PoH
Data Rate	Auxiliary channel data rate of 250Mbps Full Duplex
Max Traffic Rate	100m – 8 Gbps HDBaseT traffic rate 150m Long-Reach mode – 4 Gbps HDBaseT™ traffic rate
HDCP	Supported
Networking	End device functionality for HDBaseT™ 2.0 networking supported
Daisy Chain	Support for daisy chain connectivity of source and sink.
Power Consumption	Sleep – Low Power Mode #1 – 270 mW (RX), 220 mW (TX) Max power consumption – 5.0 w (RX), 3.5 w (TX)
Junction Temp	-40°C – +125°C
Dimensions	Colligo VS2310TX – Heat Slug BGA 21mm x 21mm Colligo VS2310 RX – Heat Slug BGA 23mm x 23mm Ball pitch – 1.0mm



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