

A photograph of a family—a man, a woman, and a young child—relaxing in a modern living room. The man and woman are sitting on a light-colored sofa, looking towards the right. The child is sitting on the floor in front of the sofa, holding a tablet. The room features a large window, a floor lamp, and a coffee table. A semi-transparent wireframe grid is overlaid on the entire scene, creating a technical or architectural feel. The image is framed by large, abstract geometric shapes in shades of blue and green.

Valens Colligo™ VS2000 Product Brief

Overview

The Colligo VS2000 is Valens' second generation chip, fully compliant with the HDBaseT™ 2.0 Specification. The Colligo VS2000 chip supports the 5Play feature set for relaying audio, video, control, Ethernet, and power over a single up to 100m cable. The Colligo VS2000 is also backwards compatible with the HDBaseT™ 1.0 Specification and all legacy HDBaseT™ products.

Architecture

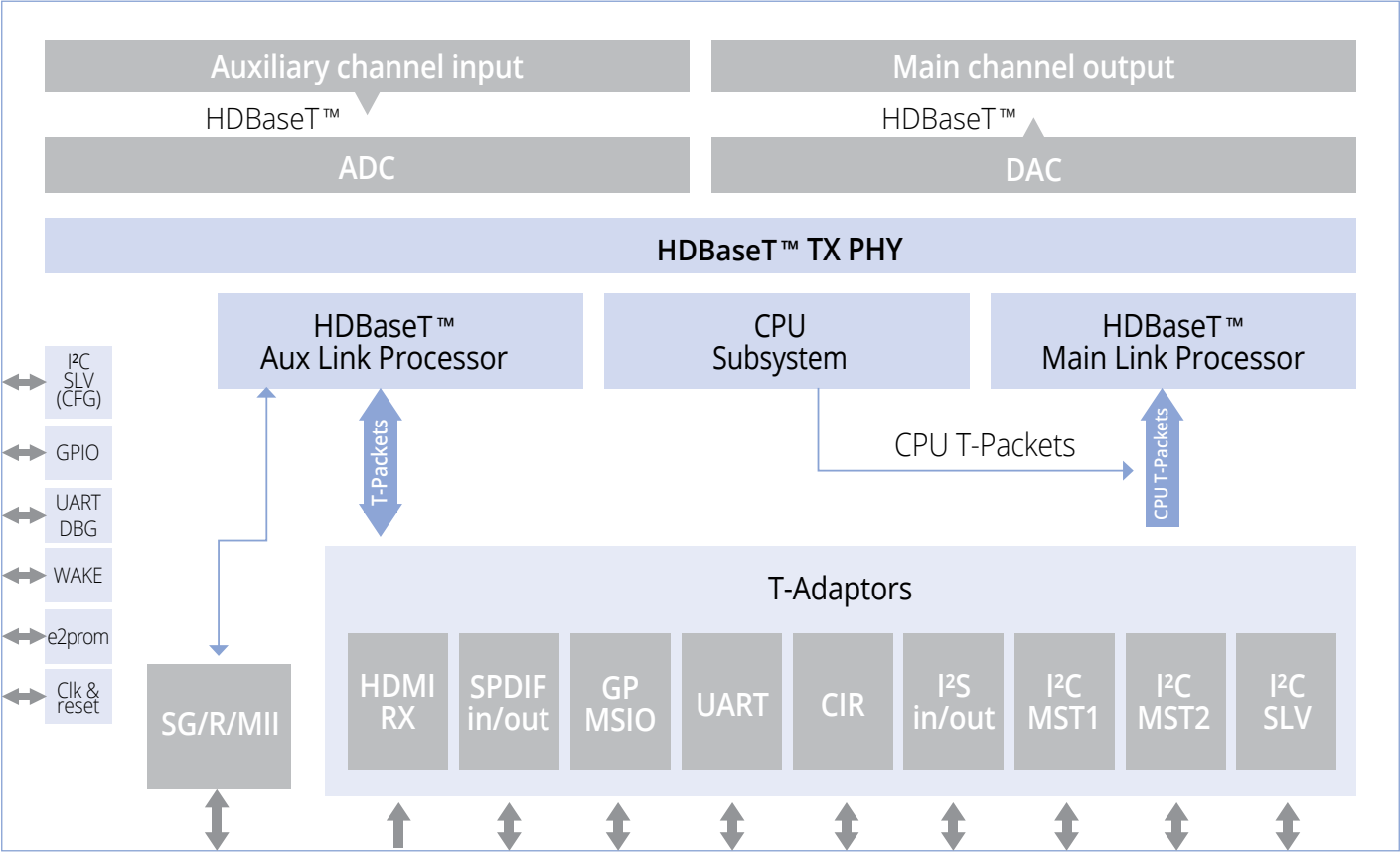
The Colligo VS2000 is comprised of two integrated chips:

- **Colligo VS2000TX** – The transmitter chip is used for video and signaling in a source device, such as a Blu-ray player or STB.
- **Colligo VS2000RX** – The receiver is used for video and signaling in a sink device, such as an LCD display or projector.

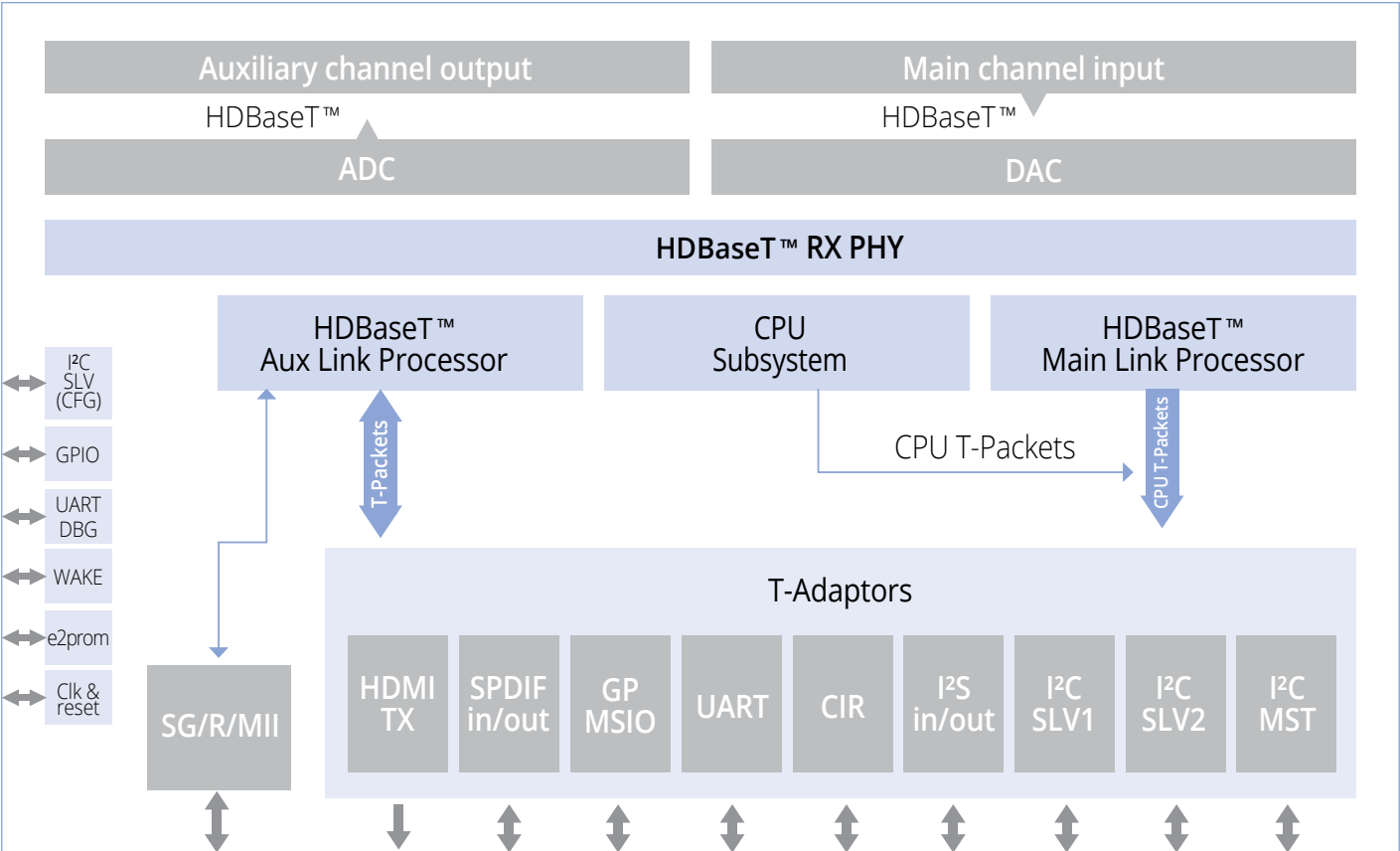


The following block diagram illustrates the major Colligo VS2000 components:

Colligo VS2000TX



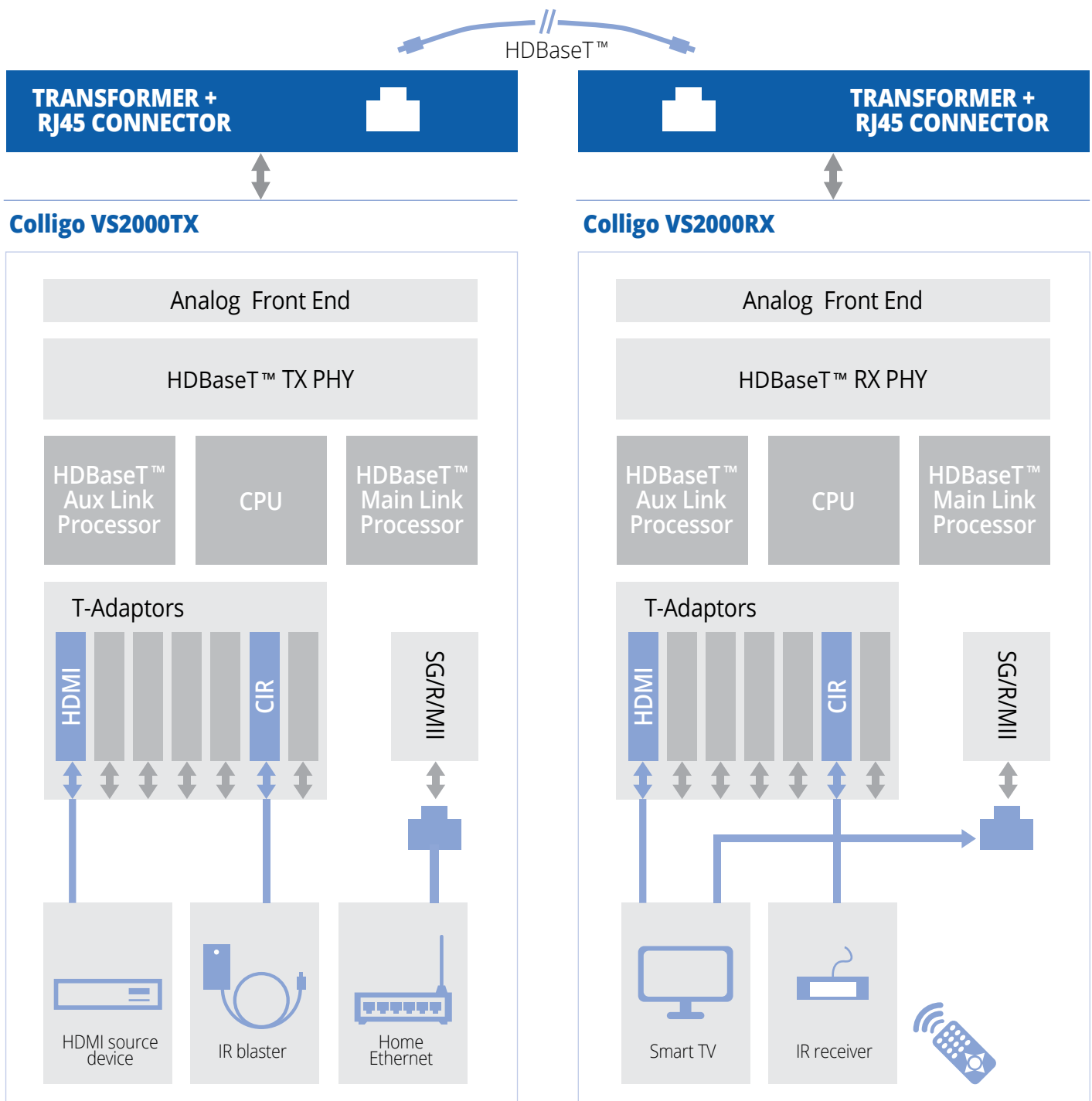
Colligo VS2000RX



Applications

The Colligo VS2000 second generation chip can be used in various applications throughout multiple industries. Main applications include HDMI / DVI / HDSI extenders over CatX cables, NxK AV matrixes, AV receivers, HD projectors, broadcasting equipment, industrial PCs, single wire TVs, and digital signage displays.

The following diagram illustrates an example application of HDBaseT™ Gen 2.0 in action:



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 Interfaces	100m Cat5e/Cat6 uncompressed HD video: • 4K / 2K, 30Hz, 24bpp • 4K / 2K, 60Hz, 24bpp with 4:2:0 pixel format 150m in long-reach mode: • 148.5Mhz HDMI pixel frequency • 1080p, 60Hz, 24bpp – uncompressed
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 ² S
Control Interfaces	UART, IR, I ² C (slave / master), MSIO-6 General Purpose fast serial channels
Ethernet Interfaces	100BaseT, SGMII / RMII / MII
System Interfaces	RS232, I ² C slave, I ² C / SPI boot EEPROM
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
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 VS2000TX – Heat Slug BGA 21mm x 21mm Colligo VS2000 RX – Heat Slug BGA 23mm x 23mm Ball pitch – 1.0mm



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