



SDVoE Transceiver over Copper/Fiber With Switching USB-C (video + USB 2.0) and HDMI Inputs

This transceiver is an SDVoE-Compliant, All-In-One AV over IP solution that provides the highest-quality, uncompressed 4K and zero-frame audio/ video extension over a standard 10G Copper Network Switch with instant switching, Video Wall, and Multiview functions. It can transfer advanced HDMI content such as HDR (high dynamic range), full-color depth, and multi-channel HD Bitstream audio. A flexible transceiver design (one box can be set to encoder or decoder) is much more convenient in an installation site and inventory control. Integrated 2 channel Dante allows for the audio to be sent to a distributed audio system. Multiple control and data signals can be simultaneously transmitted with audio and video, including bi-directional IR, RS-232, USB KVM, CEC, and 1G Ethernet.

Featured Highlights

- Support the input/output timing of up to 4096x2160@60Hz, 3840x2160@60Hz (4:4:4) and 3840x2160@60Hz (4:2:0 10-bit HDR)
- Between the device and the Ethernet switch or the transmitter/receiver/transceiver, the maximum transport distance is 100m (copper port) or 300m (fiber port)
- The minimum end to end latency is less than 120 μ s
- Switch the 10G Ethernet interface between the copper and fiber ports dynamically
- Maximum video wall scale is 16x16 (4k source and FHD display)
- Multi-view feature supports up to 16 windows
- Supports Dolby Vision, HLG and HDR10 video (Genlocked mode)
- Supports eARC/ARC on HDMI input and output
- POE+ power
- Two optional USB extension solutions:
 - a) USB HID only (12 Mbs)
 - b) Full feature USB 2.0 high speed 480Mbs utilizing Icron Technology

VIDEO/AUDIO

Input Connectors	1 x USB-C 1 x HDMI 1 x analog audio 1 x 10GBase-T 1 x 10GBase-SR
Supported Input	USB-C / HDMI / 10GBase-T / 10GBase-SR [Video] 640x480 ^s , 800x600 ^s , 1024x768 ^s , 1280x1024 ^s , 1360x768 ^s , 1440x900 ^s , 1440x1050 ^s , 1600x1200 ^s , 720x480 ⁱ (480i59), 720x480 ⁱ (480p59), 720x576 ⁱ (576i50), 720x576 ⁱ (576p50), 1280x720 ^s (720p50), 1280x720 ⁱ (720p59), 1280x720 ⁱ (720p60), 1920x1080 ^s (1080i50), 1920x1080 ⁱ (1080i59), 1920x1080 ^s (1080i60), 1920x1080 ⁱ (1080p23), 1920x1080 ⁱ (1080p24), 1920x1080 ⁱ (1080p25), 1920x1080 ⁱ (1080p29), 1920x1080 ⁱ (1080p30), 1920x1080 ⁱ (1080p50), 1920x1080 ⁱ (1080p59), 1920x1080 ⁱ (1080p60), 3840x2160 ^s (2160p23), 3840x2160 ⁱ (2160p24), 3840x2160 ⁱ (2160p25), 3840x2160 ⁱ (2160p29), 3840x2160 ^s (2160p30), 3840x2160 ⁱ (2160p60), 4096x2160 ^s , 4096x2160 ^s 1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = 60 Hz, 9 = 75 Hz; Can support DolbyVision, HDR10, and HLG enhanced video encoding [Audio] Pass-thru support LPCM, 2.0/5.1/7.1 channel, 44.1/48/96/192 kHz Dolby True HD, up to 7.1,192kHz DTS-HD Master, up to 7.1,192kHz Dolby Digital AC-3 (DVD format) DTS version 1 (DVD format) Note: LPCM audio can be downmixed to 2 channel audio outputs without a license. Dante Audio Stream: 2 channel PCM, 24 bits, 44.1/48/88.2/96K sps Analog audio Unbalanced stereo audio
Output Connectors	1 x HDMI 1 x analog audio 1 x 10GBase-T 1 x 10GBase-SR
Support Output	HDMI / 10GBase-T / 10GBase-SR [Video] 640x480 ^s , 800x600 ^s , 1024x768 ^s , 1280x1024 ^s , 1360x768 ^s , 1440x900 ^s , 1440x1050 ^s , 1600x1200 ^s , 720x480 ⁱ (480i59), 720x480 ⁱ (480p59), 720x576 ⁱ (576i50), 720x576 ⁱ (576p50), 1280x720 ^s (720p50), 1280x720 ⁱ (720p59), 1280x720 ⁱ (720p60), 1920x1080 ^s (1080i50), 1920x1080 ⁱ (1080i59), 1920x1080 ^s (1080i60), 1920x1080 ⁱ (1080p23), 1920x1080 ⁱ (1080p24), 1920x1080 ⁱ (1080p25), 1920x1080 ⁱ (1080p29), 1920x1080 ⁱ (1080p30), 1920x1080 ⁱ (1080p50), 1920x1080 ⁱ (1080p59), 1920x1080 ⁱ (1080p60), 3840x2160 ^s (2160p23), 3840x2160 ⁱ (2160p24), 3840x2160 ⁱ (2160p25), 3840x2160 ⁱ (2160p29), 3840x2160 ^s (2160p30), 3840x2160 ⁱ (2160p60), 4096x2160 ^s , 4096x2160 ^s 1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = 60 Hz, 9 = 75 Hz; Can support DolbyVision, HDR10, and HLG enhanced video encoding [Audio] LPCM, 2.0/5.1/7.1 channel, 44.1/48/96/192 kHz Dolby True HD, up to 7.1,192kHz DTS-HD Master, up to 7.1,192kHz Dolby Digital AC-3 (DVD format) DTS version 1 (DVD format) Dante Audio Stream: 2 channel PCM, 24 bits, 44.1/48/88.2/96K sps Analog audio: Unbalanced stereo audio

NETWORK

Overview	<p>Except the GbE switch, the AVP chip has a built-in 10G switch to supports 10G network. The diagram of the network connection is below:</p>
10G Switch	<p>The 10G Switch of the AVP chip deals with the network packets with some rules:</p> <ol style="list-style-type: none"> 1) All traffics of the SDVoE engine are not forwarded to the GbE switch 2) All traffics of the Icron USB chip are not forwarded to the GbE switch 3) Except the above two, the rest traffics are forwarded between the 10GbE port and the GbE switch transparently. <p>SDVoE vide stream occupies considerable network bandwidth, here is a list for the typical video timings and the approximate bandwidth:</p> <ul style="list-style-type: none"> • 4K@60Hz RGB/4:4:4 9Gbps • 4K@30Hz RGB/4:4:4 6.6Gbps • 4K@60Hz RGB/4:2:0 10bit 8.2Gbps • 4K@60Hz RGB/4:2:2 10bit 9Gbps
GbE Switch	<p>The GbE switch is a management switch chip and supports 802.1Q VLAN, as the factory default, the VLAN mechanism is inactive, it means that the GbE port and 10GbE port are interconnected. To avoid network loop, the below networking methods are prohibited:</p> <ol style="list-style-type: none"> 1) The GbE and 10GbE ports of a same device are connected to the same 10G switch. 2) For two or more devices, their GbE ports are connected to a switch and their 10GbE ports are connected to another 10G switch. <p>To provide flexibility for networking, the device can achieve network isolation based on VLAN function of the GbE switch:</p> <p>As shown in the above diagram, the MCU and the port connected to the AVP (10G switch) is in a same VLAN where the SDVoE services run. The Dante module, the ports connected to the GbE RJ45 and USB-C IN are in another VLAN where many general applications run. As an actual application example, the 10GbE ports and the GbE ports of multiple devices can be connected to the 10G switch and 1G switch at the same time without network loop.</p> <p>Besides, the two ports connected to the GbE RJ45 and USB-C interface can be disabled separately for network security.</p>

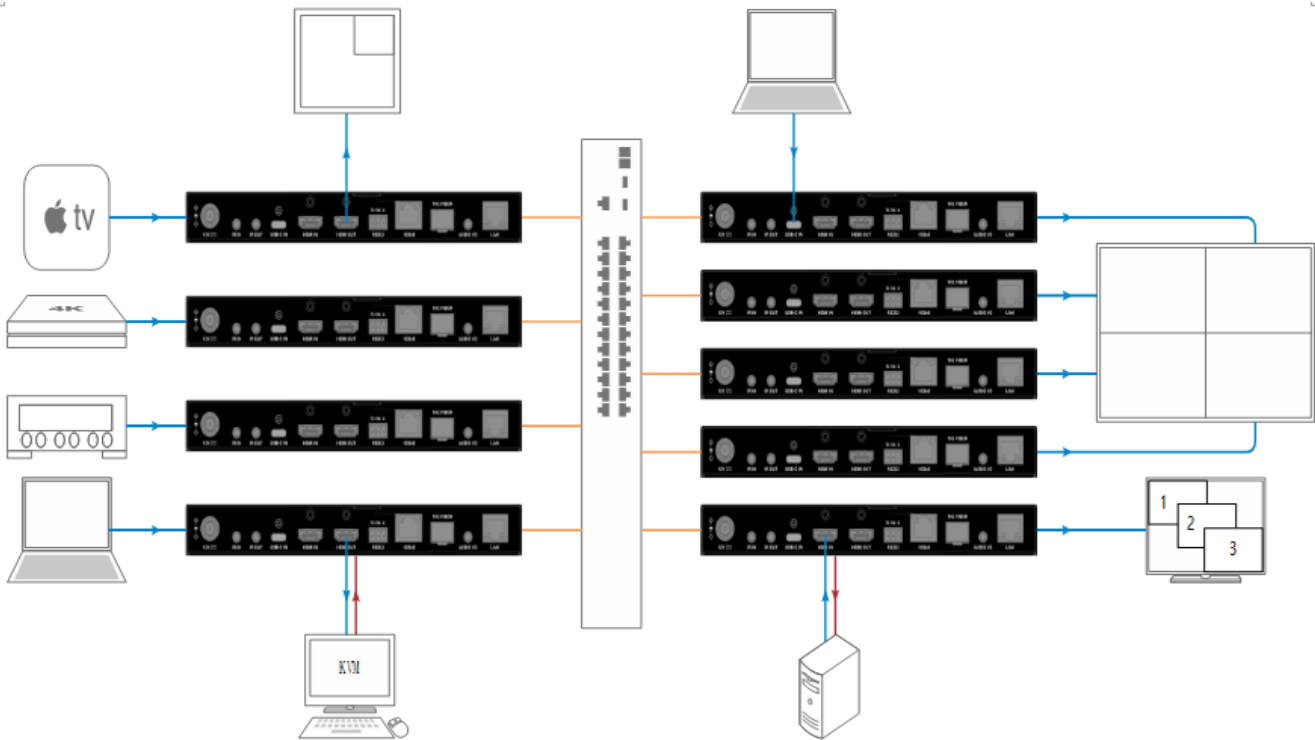
Control

Ethernet	<p>GbE / 10GbE port, for configuring, control and upgrading with several controller software or hardware:</p> <ol style="list-style-type: none"> 1) HDMI Over IP Console 2) BlueRiver AV Manager, Semtech official controller which can't access any feature not implemented by AVP chip, such as video source switching. 3) The 3rd party controller, VigilLink will provide the corresponding technical support.
Button	<p>A button on the front panel to switch the input video source and access some extended features A hidden button on the front panel to the factory default</p>

MECHANICAL

Operating Temperature	0 to + 40°C (32 to + 104 °F), 10% to 90%, non-condensing
Storage Temperature	-20 to +70°C (-4 to + 158 °F), 10% to 90%, non-condensing
Humidity	10% to 90%, non-condensing
Product Weight	To be measured
Power Supply	20V 10A
Transport Distance	100m (copper port) or 300m (fiber port)
Product Dimension	215mm x 215mm x 25mm (L x W x H)
ESD Protection	Human-body Model: ±8kV(Air-gap discharge)/±4kV(Contact discharge)

Classic Application Example



Applications

Medical equipment, AV broadcasting: such as conference rooms, retails, and Digital signage with interaction: such as shopping malls, hotels