



## Award Winning Ethernet Based AV Signal Distribution Platform

Bringing the disruptive power of Ethernet to traditional AV signal distribution, the BlueRiver NT chipset series delivers a single programmable system on chip (SoC), which can be used to replace traditional AV/KVM extenders, matrix switchers, videowall controllers and windowing processors, with a simple network of transmitters, receivers and off the shelf Ethernet switches.

- 4K60 4:4:4 with uncompressed image quality
- Multi-channel audio, Gigabit Ethernet, RS-232, USB and IR
- Zero latency extension and switching
- Independent switching for all signal types
- Support for fiber and category cabling
- Scaling, compositing and image splitting\*

Sharing a common API interface with SDVoE infrastructure, the BlueRiver NT chipset includes the NT1000 and NT2000, which are interoperable with each other and with over 160 existing SDVoE products\*\* available in the market. Products using the NT chipsets can be installed in various combinations to address a variety of market applications. The API provides a flexible interface to client software, and the ability to insert control signals via software.

### APPLICATIONS

- AV/KVM extension
- AV/KVM matrix switching
- AV/KVM over IP
- Videowall processing
- Windowing and tiling
- All of the above simultaneously on a single platform



## BlueRiver™ NT1000

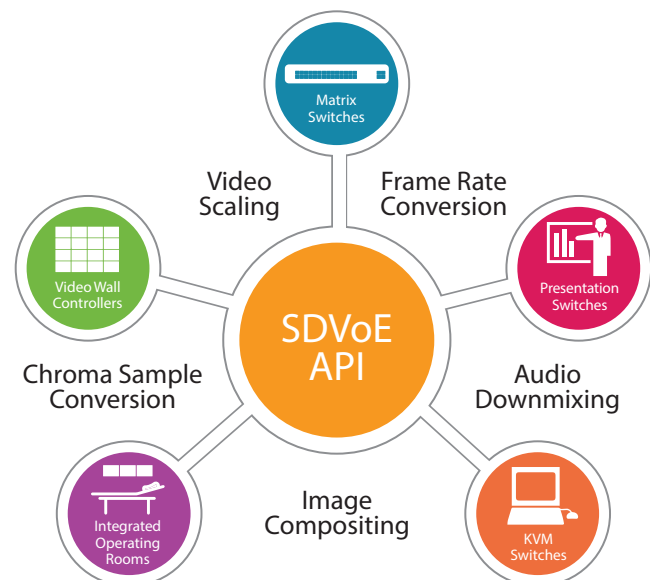
### KEY FEATURES

- Enables switching and extension of audio, video and control signals over standard Ethernet networks
- Compatible with full range of formats, including 4K60 RGB/4:4:4, HDR, 3G and broadcast-friendly 4K60 10-bit 4:2:2
- HDMI audio embedding, de-embedding and breakaway
- Independent switching with zero latency for all signal types
- Compatible with 10GBaseT copper infrastructure and fiber
- Single device for transmitter or receiver products
- Combine with NT2000 for fast switching and video wall applications

## BlueRiver™ NT2000

### KEY FEATURES

- All the features of the NT1000 plus a powerful AV processing engine
- Latency-free broadcast quality scaler, programmable to scale up or down any resolutions between VGA and 4K
- Synchronized video-wall processing with bezel correction
- Compositing engine for combining multiple sources into a single display with user-defined layouts for multi-view, tiling and picture-in-picture applications
- Audio down-mixing engine from multi channel PCM audio to stereo
- Color space conversion and frame rate conversion



## UNPRECEDENTED INTEROPERABILITY

All BlueRiver NT series chipsets are fully interoperable, enabling interoperability between more than 160 shipping SDVoE products. Sharing a common SDVoE API to intelligently enable features based on endpoint capability, the NT2000 can extend the capability of the NT1000. For example, a NT1000 transmitter, which does not support scaling, may send its signal to a NT2000 receiver, which can display the NT1000 video signal with scaling, seamless switching or as a video wall.

## SDVoE API

The BlueRiver NT platform is powered by the SDVoE API, which delivers a full stack software solution for interfacing all SDVoE products in the network. From device discovery to runtime control, the SDVoE API makes it simple to rapidly develop and deploy products of any complexity by providing the interface for easy setup, control and monitoring of the device capabilities such as routing, scaling, video wall processing, image compositing, down-mixing and much more.

## TRUE IT INTEGRATION

With a dedicated 1GbE interface combined with an integrated 10G to 1G switch, each BlueRiver NT enabled endpoint can provide a 1G data port, enabling true data networking within the AV network. This capability eliminates the need for redundant equipment and cabling for locations where the AV and data network overlap.

### BlueRiver NT1000 and NT2000 Feature Comparison

	NT1000	NT2000
<b>Video Support</b>		
4K/60 8-bit 4:4:4	✓	✓
4K/60 10-bit 4:2:2	✓	✓
4K/60 12-bit 4:2:0 (HDR)	✓	✓
<b>Transport Medium</b>		
Copper (10GBaseT)**	✓	✓
Multi-mode fiber (SFP+)	✓	✓
Single-mode fiber (SFP+)	✓	✓
<b>AV Processing</b>		
Custom scaling to display	*	✓
Single-frame switching	*	✓
Video wall	*	✓
Multi-view compositing	N/A	✓
Audio down-mixing	*	✓

\*Supported by combinations of NT1000 TX and NT2000 RX

\*\*Power over Ethernet (PoE) compatible

## BlueRiver Technical Highlights

### VIDEO INTERFACES

- HDMI 2.0 supporting all resolutions up to 594MHz
- 4K60 RGB and 4:4:4 8-bit, 4K60 4:2:0 10-bit and 12-bit HDR
- 4K60 4:2:2 10-bit for broadcast and medical applications

### AUDIO INTERFACES

- Integrated HDMI audio, plus 2-channel I2S in or out, and 8-channel I2S in and out
- Supporting all HDMI 2.0 formats including multi-channel PCM, Dolby True-HD and DTS-HD master audio
- Seamless Dante™ audio integration using available I2S and RGMII interfaces

### TRANSPORT PERFORMANCE

- End-to-end latency under 100 microseconds (less than 1/1000 of a frame)
- Video is uncompressed, except 4K60 8-bit 4:4:4 and 10-bit 4:2:2
- Compression, when used, is ultra-lightweight with 1.3-to-1 compression ratio and 100% artifact-free

### TRANSMISSION INTERFACE

- 10 Gigabit Ethernet via XFI, IEEE 802.3
- Compatible with 10GBaseT copper PHY or SFP+ fiber modules

### CONTROL INTERFACES

- Quad RS-232, infrared I/O, Gigabit Ethernet and GPIO
- USB 2.0 full device support at 480Mbps with third-party chipset

### TRANSMISSION DISTANCE

- Up to 100 meters via 10GBaseT on category cable
- Up to 300/550 meters with multi-mode OM3/OM4 fiber
- Up to 30km with single-mode fiber

### BLUERIVER AV PROCESSOR

- Broadcast quality upscaling and downscaling (4K ↔ VGA)
- Color space, chroma sampling, and frame rate conversion
- Multi-view compositing up to 16x16 tiles
- Video wall with synchronized output and bezel correction
- Multi-channel PCM audio down-mixing



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