



## Award-Winning AV-over-IP Solutions

### BlueRiver™ NT1000

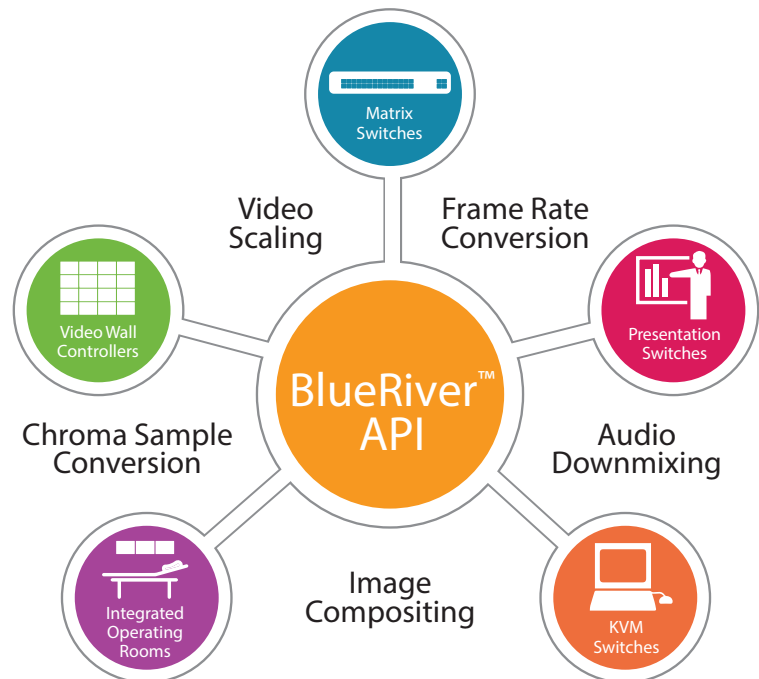
#### KEY FEATURES

- Enables switch and extend audio and video signals over standard Ethernet networks
- Compatible with full range of 4K formats (true 4K/60 RGB and 4:4:4, HDR formats, broadcast-friendly 4K/60 10-bit 4:2:2, and 3D)
- Compatible with 10GBaseT infrastructure or fiber optics

### BlueRiver™ NT2000

#### KEY FEATURES

- Same features as BlueRiver NT1000 plus a powerful AV processing engine
- Broadcast quality scaler, customizable to scale up or down for any VGA to 4K/60 resolution
- Ultra-fast switching between sources
- Compositing engine combines multiple sources onto a single display for tiling, picture-in-picture and complex user-defined layouts.
- Multi-channel PCM audio can be down-mixed to stereo



## SDVoE compatible chipset

The BlueRiver platform offers zero-latency AV-over-IP with true 4K/60 video processing

AptoVision's award-winning BlueRiver platform is the world's first chipset designed from the ground up to efficiently and cost-effectively address all the requirements of the professional AV market.

- Zero-latency 4K/60 4:4:4 AV-over-IP
- SDVoE compatible
- Independent audio and video switching
- Extension support for category cable or fiber

Using a synchronous, packet-based architecture for pixel transmission, BlueRiver can extend and independently switch video, audio, Gigabit Ethernet, and other control signals through off-the-shelf Ethernet switches. Combined with the BlueRiver Application Programming Interface (API), the BlueRiver chipsets provide a hardware/software platform for SDVoE products, supporting applications such as matrix switching, KVM distribution, and video processing. A single BlueRiver device can be configured as transmitter or receiver, simplifying supply chain management. Ready-to-manufacture reference designs are available for qualified customers.



## BLUERIVER NT1000 AND NT2000 INTEROPERABILITY

BlueRiver NT1000 and NT2000 are fully interoperable. In fact, BlueRiver NT2000 can be used to extend the capabilities of NT1000. For example, although NT1000 does not scale video, an NT1000 TX may send its signal to an NT2000 RX, which can perform scaling, fast switching, and create a video wall. Multi-view requires NT2000 TX and RX working together.

## BLUERIVER NT1000 AND NT2000 COST COMPARISON

BlueRiver NT2000 is a full-featured engine for AV signal distribution and processing. NT1000 gives manufacturers opportunities to design products with the same core capabilities, while reducing bill of materials costs by as much as 50%. Together, they make possible a full suite of inter-operable products ranging from most affordable to most capable.

## BLUERIVER API

More than just a chipset, the BlueRiver platform is powered by BlueRiver API. BlueRiver API makes it simple to rapidly develop products of any complexity by providing easy interfaces to control video routing, scaling, video wall processing, image compositing audio down-mixing, and much more. The API provides interoperability between SDVoE-compatible products from various manufacturers.

### BlueRiver NT1000 and NT2000 Feature Comparison

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

\* Supported by combinations of NT1000 and NT2000

## BlueRiver Technical Highlights

### VIDEO INTERFACES

- HDMI 2.0, supporting all resolutions up to 594 MHz
- 4K / 60 Hz / RGB and 4:4:4 8-bit
- 4K / 60 Hz / 4:2:2 10-bit for broadcast and medical applications
- 4K / 60 Hz / 4:2:0 10-bit and 12-bit HDR

### AUDIO INTERFACES

- I2S stereo I/O and I2S multi-channel I/O supporting all formats in HDMI 2.0, including: multi-channel PCM, Dolby True HD, DTS-HD master audio

### TRANSPORT PERFORMANCE

- End-to-end latency under 100 microseconds (less than 1/100 of a frame)
- Video is uncompressed, except 4K/60 8-bit 4:4:4 and 10-bit 4:2:2
- Compression is ultra-lightweight, 1.3-to-1 compression ratio and 100% artifact-free

### TRANSMISSION INTERFACE

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

### CONTROL INTERFACES

- RS-232, infrared, USB 2.0 (full device support, up to 480 Mbps) with third-party chipset, Gigabit Ethernet

### TRANSMISSION DISTANCE

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

### BLUERIVER AV PROCESSOR

- Broadcast-quality upscaling and downscaling
- Color space, chroma sampling, and frame-rate conversion
- Multi-view video compositing
- Display wall with synchronized outputs and bezel correction
- Multi-channel PCM down-mixing



200 Flynn Road, Camarillo, California 93012 • phone: (805) 498-2111 • fax: (805) 498-3804

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