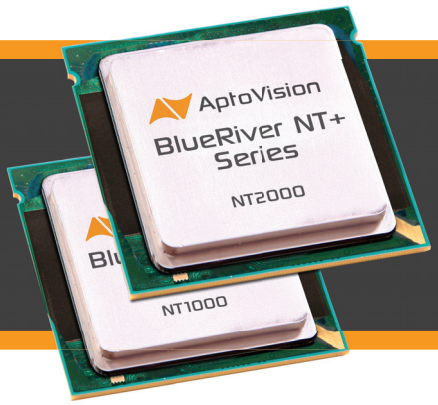


BlueRiver NT+ Series

SDVoE compatible chipset, offering zero-latency AV-over-IP with true 4K/60 and video processing

AptoVision's award-winning BlueRiver™ NT+ 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.

SDVoE™ ALLIANCE

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

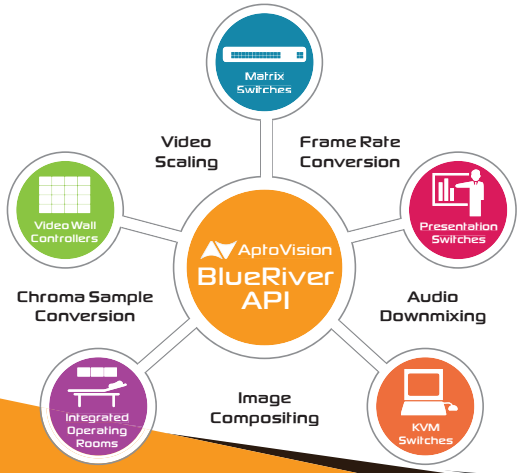
Using a synchronous, packet-based architecture for pixel transmission, BlueRiver NT+ can extend and independently switch video, audio, gigabit Ethernet, and other control signals through off-the-shelf Ethernet switches. Combined with the BlueRiver Application Programming Interface (API), the BlueRiver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

BlueRiver NT1000

The entry-level product in the series, BlueRiver NT1000 includes the capability to switch and extend audio and video signals over standard Ethernet networks. It handles the full range of 4K formats including true 4K/60 RGB and 4:4:4, HDR formats up to 12-bit 4:2:0 (with infoframe forwarding), broadcast-friendly 4K/60 10-bit 4:2:2, and 3D content. BlueRiver NT1000 is compatible with 10GBaseT (copper) infrastructure or fiber optics.

BlueRiver NT2000

BlueRiver NT2000 shares the capabilities of BlueRiver NT1000, adding a powerful AV processing engine to deliver the most advanced feature set available from any AV signal management platform. BlueRiver NT2000 features a broadcast quality scaler, which can be customized to scale up or down to any resolution from VGA to 4K/60. The scaler enables ultra-fast switching between sources. Beyond scaling, the processor can create video walls of any size up to 64 displays. The compositing engine combines multiple sources onto a single display, offering tiling, picture-in-picture, and more complex user-defined layouts. Additionally, multi-channel PCM audio can be downmixed to stereo.



BlueRiver API

More than just a chipset, BlueRiver NT+ series is powered by the BlueRiver API. The 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 downmixing, and much more. The API provides interoperability between SDVoE-compatible products.

AptoVision
Redefining AV Signal Processing

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.

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 interoperable products ranging from most affordable to most capable.

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	✗	✓
Audio downmixing	*	✓

* Supported by combinations of NT1000 and NT2000

BlueRiver NT+ Series technical highlights

Video interfaces	HDMI 2.0a, supporting all SD and HD 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 via integrated Ethernet switch
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
AV processing (BlueRiver NT2000)	Broadcast-quality upscaling and downscaling Colorspace, chroma sampling, and frame-rate conversion Multi-view video compositing Display wall with synchronized outputs and bezel correction Multi-channel PCM down-mixing

AptoVision was founded in 2011 to provide advanced chipsets for AV signal management. In 2014, AptoVision introduced its award-winning BlueRiver NT chipset which forever changed the face of AV distribution by allowing manufacturers to replace traditional AV matrix switches with IP switches delivering higher price/performance, flexibility, and scalability. AptoVision are a founding member of the SDVoE Alliance.

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