Software & FPGA Solutions

Reliable solutions for low-latency HD, 4K and 8K video

intoPIX has developed breakthrough video transport FPGA and software solutions for customers that bridge the worlds of professional AV, video production and IP networks.

Today, intoPIX is extending its video transport expertise to address complex issues in the delivery of video data in HD, 4K or 8K through IP networks in professional AV and media production workflows with minimum latency, maximum reliability, quality, cost effectiveness and interoperability.

**IP-CORES, SOFTWARE AND REFERENCE DESIGN**

### Video over IP
- SMPTE 2110 4K60P over 1G/10G for Xilinx & Intel FPGA
  - TicoXS / TicoXS FIP over RTP (as SMPTE 2110-22)
  - FPGA design on Xilinx ZCU106 FPGA
  - Software combining intoPIX FastTicoXS CPU/GPU SDK & Nvidia Rivermax SDK
- intoPIX TITANIUM streaming SDK & Applications (preliminary)
- SMPTE 2022-1/2 for Xilinx and Intel FPGA - On request
  - JPEG XS support (TR07)

### Video over SDI
- 4K over 3G-SDI or HD-SDI with JPEG XS and intoPIX SDI mapping
- 8K over 3G-SDI with JPEG XS and intoPIX SDI mapping

### Compression & security
- TicoXS, TicoXS FIP, FlinQ, TicoRAW, J2K compression
- AES real-time encryption
- MPEG-2 TS for JPEG XS or J2K and audio encapsulation
- RTP Packetizer / Depacketizer for JPEG XS

[Diagram showing video transport solutions for HD, 4K, and 8K video with various interfaces and protocols]
AV over IP

intoPIX provides both reference design for FPGA & software solutions to build your AV over IP solutions. Combining our smart low latency and pixel perfect compression technologies with existing professional standard such as SMPTE 2110 or SMPTE 2022, we deliver reference designs on software & hardware to build your own products.

The TicoXS (JPEG XS ) and TicoXS FIP (JPEG XS with intoPIX Flawless Imaging Profile), can be used as a smart path to build bandwidth efficient AV over IP solutions, leveraging SMPTE 2110 or SMPTE 2022 protocols using 1G networks in hardware or software.

KEY BENEFITS :
- Integrate rapidly your product with compressed SMPTE 2110-22 ecosystems.
- Replace uncompressed, preserve latency & quality with low bandwidth.
- Carry HD, 4K, 8K over CAT5E cables (1Gbe/2.5Gbe).
- Available IP-cores & SDK.

SOFTWARE

intoPIX delivers ready to use SMPTE 2110-22 JPEG XS software solution.
- The FastTicoXS SDK can be combined with Nvidia Rivermax SDK for SMPTE 2110.
- The intoPIX Titanium streaming SDK is ideal for audio-video streaming application offering high performance on reasonable bandwidth. It preserves the synchronization between audio, ancillary and video generated from the sender to the receiver.

FPGA

intoPIX delivers FPGA reference designs for 4K60p 444/422 compressed AV over IP. These designs are available from intoPIX and in collaboration with third party IP providers.

Extend 4K or 8K using today’s deployed HD-SDI/3G-SDI systems

Leveraging existing SDI infrastructures, TicoXS lightweight compression can be embedded in the active area of the 3G or HD-SDI in order to carry 8K or 4K 60P over a single SDI cable without any impact on quality and latency.

KEY BENEFITS :
- Efficient mapping on SDI following the SMPTE RDD35 and patented by intoPIX (avoiding forbidden values).
- Leverage existing and deployed SDI infrastructures.
- Extend SDI over longer distance for higher resolutions.
- Leverage existing and deployed SMPTE 2022-6 equipments for SDI over IP.
- Available IP-cores & SDK.