



Onboard Video Processors

SightLine video processors provide powerful edge processing for any real-time application. Operating at the source, SightLine processors deliver low-latency performance and exceptional video quality.

These third-generation ARM processors are SightLine's newest and most powerful hardware options, providing higher performance, lower power, and enhanced user integration options.

4000-OEM

- Multiple video inputs – dual channel processing
- Multiple video outputs – dual-stream H.264/H.265 IP video, HDMI, HDSDI
- Most powerful option – processing and streaming to 4Kp30
- Smaller and lower power than 3000-OEM
- OEM and SOM integration options

1750-OEM

- Multiple video inputs – single channel processing
- Multiple video outputs – single-stream H.264/H.265 IP video, HDMI, HDSDI
- Processing and streaming up to 1080p30
- Smaller and lower power than 4000-OEM for use in the smallest systems
- OEM and SOM integration options

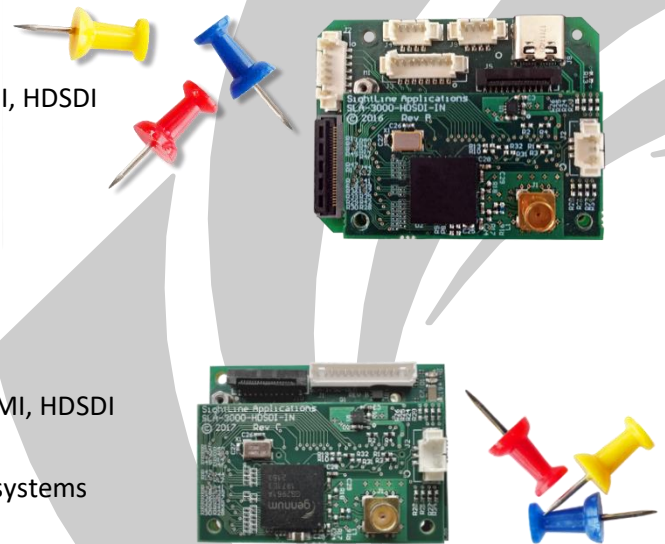
Third Party ARM Processors

The ARM Library provides analytics licensing option for integrator architectures using third party processors.

- Analyze + Render + Encoding functions licensable on NVIDIA Jetson, Qualcomm 820/5165/3150, NXP IMX8+
- Analyze functions licensable on any 64-bit ARM processor running Linux
- Integrator responsible for camera capture and system interfaces

Video Processing Software

SightLine **Video Processing Software** delivers essential functionality for a wide range of ISR applications. SightLine provides tailorable, powerful solutions. These newest processors will be supported by software versions beyond the current 3.6.x version. *See the [Software Functions page](#) for more information about image processing functions.*



Specifications

| Criteria | 1750-OEM | 4000-OEM |
|-------------------------------|--|---|
| Processor | NXP i.MX 8M Plus SOM | Qualcomm Snapdragon 820 SOM |
| Multi-Camera | Single channel processing. Switching between multiple camera inputs | Dual Processing with multi-camera display options: multi-streaming, picture in picture, blending, and switching |
| Video Inputs: Digital Video | Three: 1 x Parallel digital + camera adapter 1 x MIPI (MIPI cameras or 2 nd Camera adaptor) 1 x USB 3.0 | |
| Analog | Switch between two inputs (MCX connectors) using MIPI-AB adapter board or 1 via 3000-AB board | |
| Video Outputs: Encoded Video | H.264 and H.265 encoding, MPEG2 TS/RTP encapsulation | |
| HDMI | Yes. HDMI out via FFC ribbon. | |
| HDSDI | Yes. With HDMI-HDSDI converter board | |
| Camera Link | Full raw LVDS output with external CL connector | No |
| KLV / Metadata | System metadata can be inserted into KLV IP stream, used in OSD, with JPEG EXIF headers, full pixel snapshots, and KML or NITF files. KLV metadata is generated in accordance with MISB standards. | |
| Recording | Micro SD. Class 10 SDHC cards up to 400 GB. | |
| Frame Size / Rates | 720p @60 fps limited functions 1080p @30 fps with full SW | 2x 1080p @30 fps with full SW 4K @30 fps encoding, 15-30 fps full SW |
| Serial Ports Available | 2 (@3.3V) + 4 with MIPI-Input adapter | 4 (@3.3V) + 4 with MIPI-Input adapter |
| Additional User IO | GPIO (1) + GPIO (3) with MIPI-IN adapter | I ² C, GPIO (3) + GPIO (3) with MIPI-Input adapter |
| Ethernet Interface | 10/100 BASE-T Ethernet PHY. UDP, TCP, and RTSP connectivity, unicast, multicast. With transformers (magnetics) | |
| Voltage In / Power | 8 - 15 VDC (12 VDC nom) 3 W typical 0.1 W Sleep Mode (anticipated) | 8 - 15 VDC (12 VDC nom) 5 W typical |
| Physical | 33.3 x 45 mm (1.31 x 1.77 in), 23 g with HDSDI input board (SOM is 7.1) | 50.5 x 38mm (1.99 x 1.50 in), 32 g with HDSDI input board (SOM is 12.5g) |
| Environment: Temperature | -40°C to + 85°C (component specifications) | Screened: -35°C to + 70°C ambient with delivered passive heatsink. |
| EMI | SightLine support of Customer Tests is TBD | MIL-STD-461 and CE confirmed as part of customer assemblies |
| Shock Vibe | SightLine support of Customer Tests is TBD | MIL-STD-810 qualification confirmed as part of customer assemblies |
| Fabrication Quality Assurance | Boards are assembled to IPC-A-610 Class2 specifications by a facility certified to ISO 9001 and AS 9100 standards and using ROHS Directive 2011/65/EU, 2015/863/EU compliant materials and processes | |



Legacy Onboard Video Processors

SightLine video processors provide powerful edge processing for any real-time application. Operating at the source, SightLine processors deliver low-latency performance and exceptional video quality.

These second-generation DSP processors have been the processing engine in tens of thousands of optronics systems and support will be maintained as long as customers need them. For new products, SightLine recommends our third-generation 4000-OEM multichannel and 1750-OEM single channel processors.

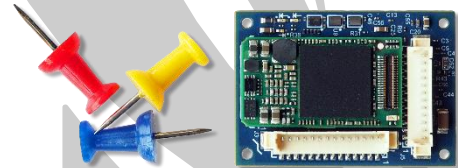
3000-OEM

- Two video inputs – dual channel processing
- Multiple video outputs – dual-stream H.264 IP video, analog, HDMI, HDSDI
- Processing and streaming to 1080p30
- Small size (business card size footprint)
- SOM style, board-to-board Interface



1500-OEM

- One digital and two analog video inputs – switching for single channel processing
- Multiple video outputs – single-stream H.264 IP video, analog
- Processing and streaming for SD systems
- Tiny size for use in the smallest camera systems
- OEM and SOM integration options



Video Processing Software

SightLine **Video Processing Software** delivers essential functionality for a wide range of ISR applications. SightLine provides tailorable, powerful solutions. These legacy processors are supported by software versions up to 3.5.x. [See the Software Functions page for more information about image processing functions.](#)

Specifications

| Criteria | 1500-OEM | 3000-OEM | 4000-OEM for Reference |
|--------------------------------|--|--|--|
| Processor | Texas Instruments DM3730 SOM | Texas Instruments DM8148 and Texas Instruments C6657 | Qualcomm Snapdragon 820 SOM |
| Multi-camera | Switching between inputs | Dual Processing with multi-camera streaming and display options. | Dual Processing with multi-camera streaming and display options. |
| Digital Video Inputs | 1 | 2 | 3 |
| Analog Inputs (NTSC/PAL) | 2 | 3 (using dual analog adapter boards) | 2 (Using two 3000-AB adaptors, one each installed on OEM and on MIPI adapter) |
| Frame size and Rate out | SD @ 30fps 720p @ 15-25 fps dep on SW | 720p @60 fps single or 2 x 720p/30 1080p @30 fps + SD @ 30 fps | 2x 1080p @30 fps with full SW 4K @30 fps encoding, 15-30 fps full SW |
| Serial Ports Available | 3 (@3.3V) | 5 (@3.3V) | 4 (@3.3V) + 4 with MIPI-Input adapter |
| Additional IO | I ² C (1), GPIO (3+) | I ² C (3), GPIO (4+) | I ² C, GPIO (3) + 3 with MIPI-Input adapter |
| Ethernet Interface | 10/100 BASE-T Ethernet PHY. UDP, TCP, and RTSP connectivity, unicast, multicast. Capacitive coupling | | Same Ethernet interfaces as 1500 and 3000, but with magnetic coupling |
| Encoded Video Output | H.264/MPEG4/M-JPEG encoding, MPEG2 TS/RTP encapsulation | H.264 encoding, MPEG2 TS/RTP encapsulation | H.264 and H.265 encoding, MPEG2 TS/RTP encapsulation |
| KLV / Metadata | System metadata can be inserted into KLV IP stream, used in OSD, within JPEG EXIF headers, full pixel snapshots, and KML or NITF files. KLV metadata in accordance with MISB standards. | | |
| HDMI Output | No | Yes | Yes |
| HDSDI Output | No | Yes – with HDSDI-output board | Yes – with HDMI-HDSDI-output board |
| Analog Output | Yes | Yes | No |
| Recording | Micro SD. Class 10 SDHC cards up to 400 GB | Interface for external Micro SD card Class 10 SDHC cards up to 400 GB | Micro SD. Class 10 SDHC cards up to 400 GB |
| Voltage In / Power Consumption | 4.5 - 6.5 VDC OEM (5 VDC nom) Some adapter boards = 6.0 V max 3 W (max) 2.5W (typical) | 8 - 15 VDC (12 VDC nom) 10 W (typical) | 8 - 15 VDC (12 VDC nom) 5 W (typical) (startup current 3A per Smart Wireless Computing) |
| Size | OEM: 26.5 x 37.7mm (1.04 x 1.48 “), 7.6 grams SOM: 15 x 27mm | OEM: 88 x 50 mm (3.47 x 1.97 “), 39 grams | OEM: 50.5 x 38mm (2.0 x 1.5 “), 13 grams SOM: 50 x 28mm |
| Environment - Temperature | Temp: Demonstrated with basic heatsink: -40°C to + 55°C Component rating: -40°C to + 85°C | | Screened: -35°C to + 55°C ambient with basic heatsink. -40°C start-up with heater circuit. Component rating: SOM: 0°C to +70°C. All other -40°C to +85°C |
| Environment – EMI | MIL-STD-461 and CE confirmed as part of customer assembly | | |
| Environment – Shock Vibe | MIL-STD-810 qualification confirmed as part of customer assembly | | |
| Fabrication Quality Assurance | Boards are assembled to IPC-A-610 Class2 specifications by a facility certified to ISO 9001 and AS 9100 standards and using ROHS Directive 2011/65/EU, 2015/863/EU compliant materials and processes | | |