

## 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

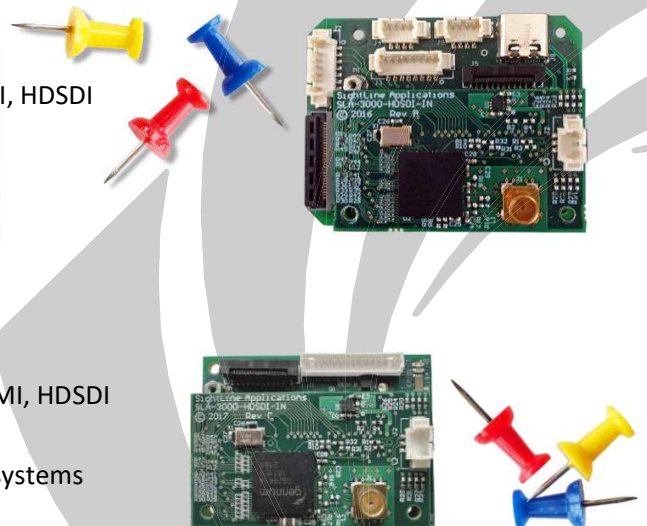
### Third Party ARM Processors

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.*



# Hardware

## 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 <sup>nd</sup> 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 <sup>2</sup> 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 optronic 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.

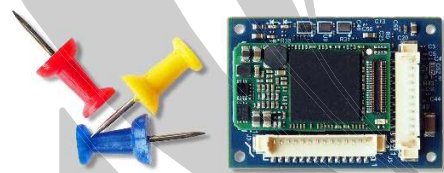
### 3000-OEM

- 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.*

# Hardware

## 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 <sup>2</sup> C (1), GPIO (3+)	I <sup>2</sup> C (3), GPIO (4+)	I <sup>2</sup> 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		

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