



EAN-DRS Cameras

2022-11-11

Exports: [Export Summary Sheet](#)

EULA: [End User License Agreement](#)


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 **CAUTION:** Alerts to a potential hazard that may result in personal injury, or an unsafe practice that causes damage to the equipment if not avoided.

 **IMPORTANT:** Identifies crucial information that is important to setup and configuration procedures.

 *Used to emphasize points or reminds the user of something. Supplementary information that aids in the use or understanding of the equipment or subject that is not critical to system use.*



1 Overview

This document describes how to configure the SightLine OEM video processing boards to receive video from DRS cameras. See [EAN-Camera-Compatibility](#) for the complete list of supported DRS cameras.

SightLine OEM boards configured in this document: 1500-OEM, 3000-OEM, 4000-OEM.

1.1 Additional Support Documentation

Additional Engineering Application Notes (EANs) can be found on the [Documentation](#) page of the SightLine Applications website.

The Panel Plus User Guide provides a complete overview of settings and dialog windows. It can be accessed from the Help menu of the [Panel Plus](#) application.

The Interface Command and Control ([IDD](#)) describes the native communications protocol used by the SightLine Applications product line. The IDD is also available as a PDF download on the [Software Downloads](#) page.

1.2 SightLine Software Requirements

See the [camera configuration tables](#) for specific OEM Sightline software version requirements for supported cameras.

Licensing: The 14 and 16-bit mode requires license for feature Enhance + High Depth + Temp.

Superframe requirements:

1500-OEM: Version 2.22.06 and later for Superframe and FPGA firmware version 5 or 12.

3000-OEM: Version 2.22.13 and later for Superframe. (REV C) requires firmware 2.24.xx and higher.

ⓘ IMPORTANT: The Panel Plus software version should match the firmware version running on the board. Firmware and Panel Plus software versions are available on the [Software Download](#) page.

1.2.1 FPGA - 1500-OEM

Version 5 of the FPGA driver firmware is required for the camera to operate correctly with the 1500-OEM. Version information is located on the *Connect* tab under the *Video Output* section. See the [EAN-FPGA Firmware Update 1500-OEM](#) for updating instructions.



Firmware Ver: 3.3.1.6 FPGA:05, temp: 98°F [37°C]
SVN Revision: 58309, Build Date: 01/11/2021, Build Time: 4:48:51

Figure 1: FPGA Version Number Location

2 Safe Device Handling

- ⚠ CAUTION:** To prevent damage to hardware boards, disconnect all input power to OEMs and adapter boards before connecting or disconnecting cables including all FFC, FPC, KEL, HDMI, and round wire (Molex) cables.
- ⚠ CAUTION:** To prevent damage to hardware boards, use a conductive wrist strap attached to a good earth ground. Before picking up an ESD sensitive electronic component, discharge built up static by touching a grounded bare metal surface or approved antistatic mat.



3 Interface Boards and Adapters

System interface boards provide options for network interfacing, serial ports, and GPIO. Camera interface and adapter boards provide an interface from the camera to OEM. See the [ICD-1500 Adapter Boards](#) and [ICD-3000-4000 Adapter Boards](#) for complete specifications and pinouts.

IMPORTANT: All boards should be connected and secured with the included cables and hardware fasteners first before applying power.

4 Hardware Connections

4.1 1500-OEM DRS Camera Bench Setup

See [EAN-Camera-Compatibility](#) for the complete list of supported DRS cameras.

Interface and adapter boards:

- [SLA-FPC-DRS](#): DRS camera and SLA-1500-FPC interface.
- [SLA-1500-FPC](#): DRS camera and [1500-OEM](#) interface. The 1500-OEM supplies power to the camera through the SLA-1500-FPC board.
- [SLA-1500-AB](#): Provides serial and network interfaces.

Cable connections:

- SLA-CAB-1514: Connects to the 1500-OEM J3 (14-pin) connector and to the 1500-AB J3 (14-pin) connector. Provides analog video, network, and serial connections to the 1500-OEM board.
- SLA-CAB-FPC04: Connects to the SLA-1500-FPC board and to the DRS camera. Provides serial communication and video to the camera. See [FPC cable](#) instructions and precautions.
- SLA-PWR-B05V (110-250VAC input / 5VDC output): Connects to J2 on the SLA-1500-AB board.

Power and network connectivity LEDs:

A green light (D3) indicates the 1500-AB board is powered on. A blue light (D2) on the 1500-AB and a green light (D1) on the 1500-OEM board indicate that all the boards are powered on. A second flashing green light (D3) on the 1500-OEM indicates network connectivity.

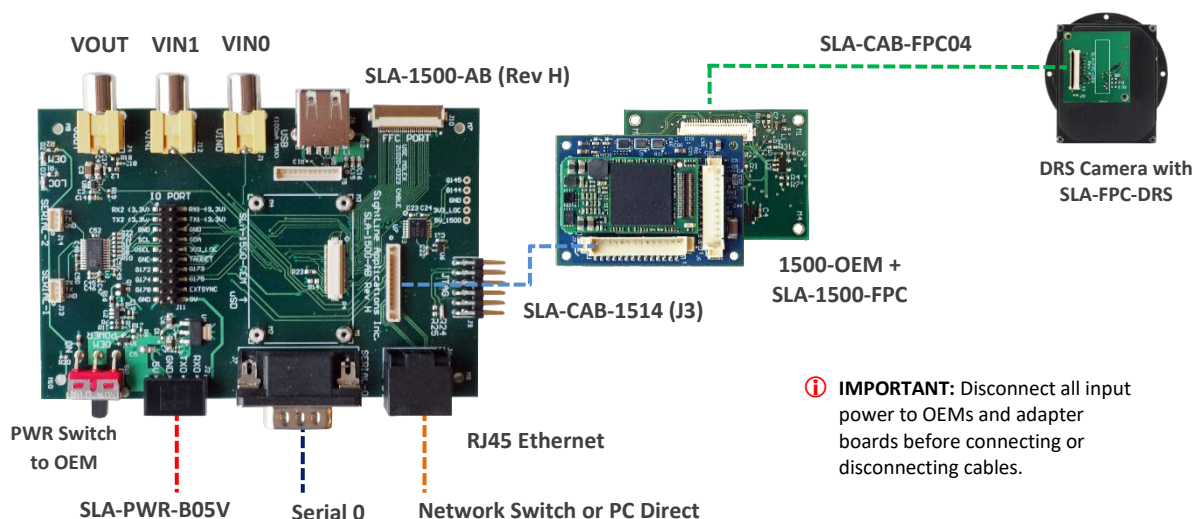


Figure 2: 1500-OEM Tamarisk Camera Bench Setup



4.2 3000-OEM DRS Camera Bench Setup

See [EAN-Camera-Compatibility](#) for the complete list of supported DRS cameras.

Interface and adapter boards:

- [SLA-FPC-DRS](#): DRS camera and SLA-3000-FPC interface.
- [SLA-3000-FPC](#): DRS cameras and [3000-OEM](#) interface. Provides serial and network interfaces. The 3000-OEM supplies power to the camera through the SLA-3000-FPC board.
- [SLA-3000-IO](#): Provides serial and network interfaces. Adapter boards can be connected to one of two available video input connectors (VIN1 or VIN0). See the 3000-OEM [exploded assembly](#) drawing for more connection layout information.

VIN0 has camera channels 0 and 1 assigned. VIN1 has camera channels 2 and 3 assigned. If the configuration includes an analog board with a digital adapter board the analog board must be installed on VIN0.

- [SLA-3000-mIO](#) (optional smaller IO board): Provides serial and network interfaces. This board allows SLA-3000-HITACHI board to be connected directly to the OEM board.

Cable connections:

- SLA-CAB-FPC04: Connects to the SLA-3000-FPC board and to the DRS cameras. Provides serial communication and digital video to the camera. See [FPC cable](#) instructions and precautions.
- SLA-CAB-0403: Connects to J4 on SLA-3000-mIO board. Provides an RJ45 Ethernet connection.
- SLA-PWR-C12V(110-250VAC input / 12VDC output): Connects to J5 on the SLA-3000-IO board. .
- SLA-CAB-1504 / SLA-PWR-B12V (110-250VAC input / 12VDC output): Connects to J9 on the SLA-3000-mIO board.

Power and network connectivity LEDs:

A green light (D2) on the 3000-IO or 3000-mIO board indicates that all boards are powered on. An amber light (D3) on the 3000-OEM board verifies network connection.

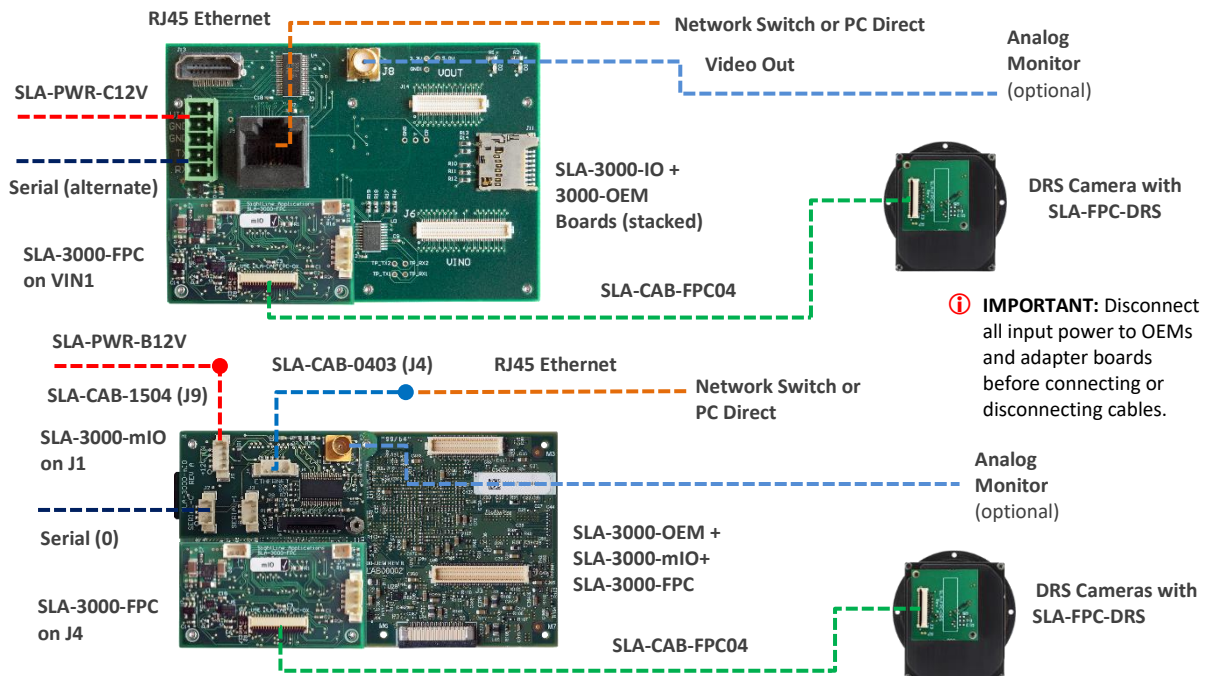
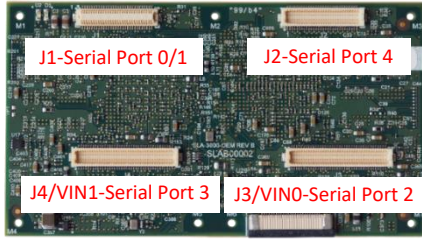


Figure 3: 3000-OEM DRS Camera Bench Setup



3000-OEM	SLA-3000-IO	Serial Port	Camera Index Panel Plus
J1		0/1	NA
J2	VOUT	4	NA
J3	VIN0	2	CAM0/CAM1
J4	VIN1	3	CAM2

Figure 4: 3000-OEM Serial Port and Connector Reference

4.3 4000-OEM DRS Camera Bench Setup

See [EAN-Camera-Compatibility](#) for the complete list of supported DRS cameras.

Interface and adapter boards:

- **SLA-3000-FPC:** DRS camera and **4000-OEM** interface. The 4000-OEM supplies power to the camera through the SLA-3000-FPC board. Serial and network interfaces are provided on the 4000-OEM board.
- The SLA-3000-FPC board can be connected to J6 on the 4000-OEM. Additional camera adapter boards can be connected using the SLA-4000-MIPI board on J9. See the [ICD-3000-4000 Adapter Boards](#) for specific MIPI board power requirements.

Cable connections:

- **SLA-CAB-FPC04:** Connects to the 3000-FPC board and to the DRS camera. Provides serial communication and digital video to the camera. See [FPC cable](#) instructions and precautions.
- **SLA-CAB-0403:** Connects to J4 on the 4000-OEM board. Provides an RJ45 Ethernet connection.
- **SLA-CAB-1504 / SLA-PWR-B12V-36W (110-250VAC input / 12VDC output):** Connects to J50 on the 4000-OEM board.

Power and network connectivity LEDs:

A green light (D1) on the 4000-OEM board indicates that all boards are powered on. An amber light (D5) verifies network connection.

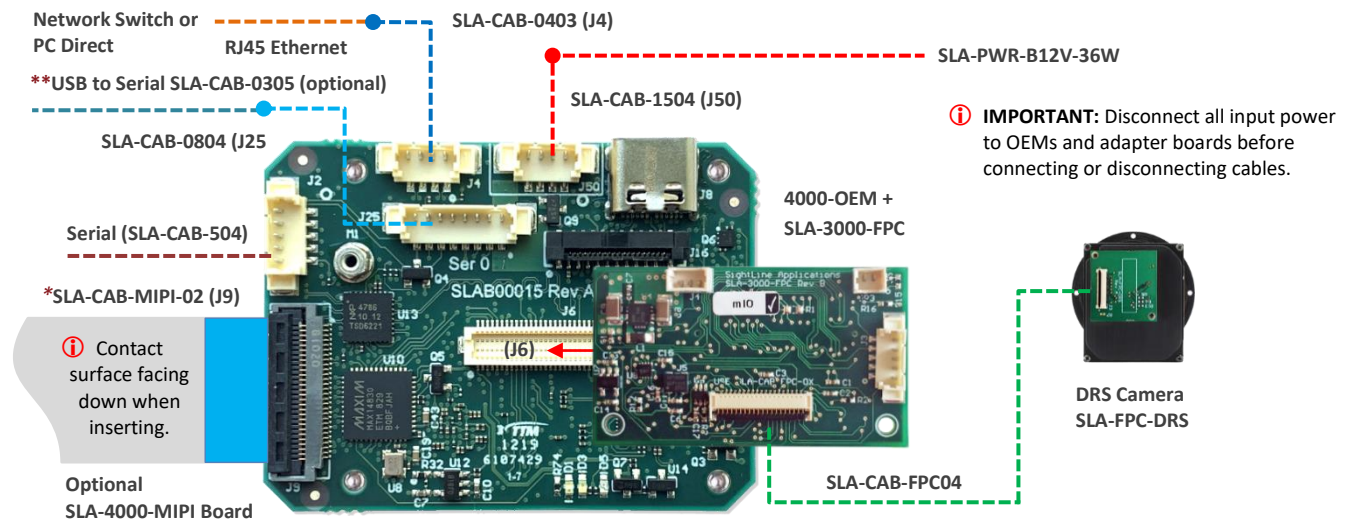


Figure 5: 4000-OEM AGS-720p Camera Bench Setup

*SLA-CAB-MIPI-02 FFC cable must be connected correctly. See [FFC cable](#) instructions before connecting the SLA-4000-MIPI board.

**SLA-CAB-0305 can connect to SLA-CAB-0804 to facilitate a PC/USB connection to serial port 0 on the 4000-OEM. See the [Serial Communications](#) section in the [EAN-Startup-Guide-4000-OEM](#) for more information.



5 Configuration Settings

This section covers the basic camera configuration settings in Panel Plus for the OEM video processing boards.

Before connecting with the Panel Plus software, the OEM board should be powered up and connected through:

- a network switch or directly to the host PC (preferred) or,
- Direct serial connection (for troubleshooting or if a network connection cannot be established).

See one of the corresponding OEM startup guides for connection and video streaming instructions:

- [EAN-Startup Guide 1500-OEM](#)
- [EAN-Startup Guide 3000-OEM](#)
- [EAN-Startup Guide 4000-OEM](#)

IMPORTANT: This procedure assumes that the customer has read the OEM startup guide(s) and has a basic understanding of the following fundamentals:

- Completed a functional connection between the SightLine video processing board and Panel Plus application.
- Familiar with Panel Plus controls.
- Successfully streamed video in Panel Plus.

If you do not have a strong basic system setup and familiarity, we recommend reviewing the OEM startup guide(s) and work with our support team to establish basic connection and streaming fundamentals.

5.1 Acquisition Settings

From the main menu in Panel Plus go to *Configure » Acquisition Settings*.

If available, use the *Auto Fill* drop-down menu in the *Acquisition Settings* dialog to automatically populate the relevant fields with the correct settings.

The settings can also be manually entered as shown in the [camera configuration tables](#).

For information about Acquisition fields in Panel Plus see [EAN-Digital Video Configuration](#).

IMPORTANT: Save parameters and reset the board when changing parameters. Cycle system power when changing resolution.

If video does not display, try saving and activating the settings again. Check the encoding settings on the *Compress* tab and review the network addresses for the destination video.

Configuration settings for the Tamarisk cameras include the 640 and 320 in 8-bit or 14-bit mode. In 8-bit mode autogain is controlled through the Tamarisk camera. The contrast and brightness controls in Panel Plus have no effect on the video. In 14-bit mode, autogain is controlled through the video processing board. The video contrast and brightness can be used to bias the autogain output. These values can be set and persisted through Panel Plus.

In the *Compress* tab, video protocol MPEG2-TS: H.264 is recommended.



5.2 Tenum 640 Configuration Notes - 4000-OEM

In the *Acquisition Settings* dialog set *Camera Type* to *Generic Digital*.

The Tenum 640 camera attached to the SLA-4000-4000-MIPI is available as *Cam1* and *Cam 2*.

The *Options* field will set up the onboard FPGA and MIPI clock and call the FPC initialization routine in a Lua script.

Figure 6: DRS Tenum 640 Camera Configuration

5.3 Tamarisk Camera with Superframe Configuration Notes

- Superframe is supported in firmware 2.22.15 and later.
- Data output is 16-bits. There are no programmable ranges.
- Each 16-bit pixel value represents Kelvin temperature as 11.5 fixed point binary.
- To get Celsius, use the 16-bit pixel value as the integer, divide by 32.0F, and then subtract 273.15.

5.4 Serial Passthrough

Serial passthrough is supported by the SightLine OEM boards to allow connection to the camera from a network controlling host. Serial Passthrough for the Tamarisk cameras defaults to:

Baud: 57600 Data Bits: 8 Stop Bits: 1 Parity: None

When using the DRS camera control GUI with serial passthrough, it may be necessary to unplug any USB-to-serial adapters plugged into the host PC. The DRS camera control GUI may not be compatible with these adapters and stop working. Restart the PC after unplugging the devices, and then run the DRS camera control GUI.

4000-OEM: SightLine was unable to use the DRS camera control software to communicate to the camera when TCP passthrough was enabled. However, sending direct commands – e.g., 01 27 02 00 03 D3 to trigger a flat field correction – work as expected.



6 Questions and Additional Support

For questions and additional support, please contact [SightLine Support](#). Additional support documentation and Engineering Application Notes (EANs) can be found on the Documentation page of the SightLine Applications [website](#).