



## EAN-SCD Cameras

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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 covers how to setup and configure the SightLine OEM video processing boards to receive video from SCD cameras.

### 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

**ⓘ 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.

### 1.3 Third Party Software

Camera control software from [SCD](#).

## 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, MIPI, 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-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 SCD Mini Blackbird

See the [ICD-3000-4000 Adapter Boards](#) and [ICD-OEM-Camera Side Interfaces](#) when connecting the video processing boards to the SCD Mini Blackbird camera through the SCD-100 interface board.

*The SDI output module must be removed from the 100-pin connector on the Mini Blackbird camera and replaced with the Sightline SLA-SCD-100 adapter board.*



## 4.1 3000-OEM Mini Blackbird Camera Bench Setup

### Interface and adapter boards:

- [SLA-SCD-100](#): SCD Mini Blackbird camera and SLA-3000-CLK interface.
- [SLA-3000-CLK](#): SCD Mini Blackbird camera and [3000-OEM](#) interface.
- [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-CLK board to be connected directly to the OEM board.

### Cable connections:

- SLA-CAB-K010: Connects to the SLA-3000-CLK board and to the SCD Mini Blackbird camera. Provides serial communication and video to the camera. See the [KEL 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 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.

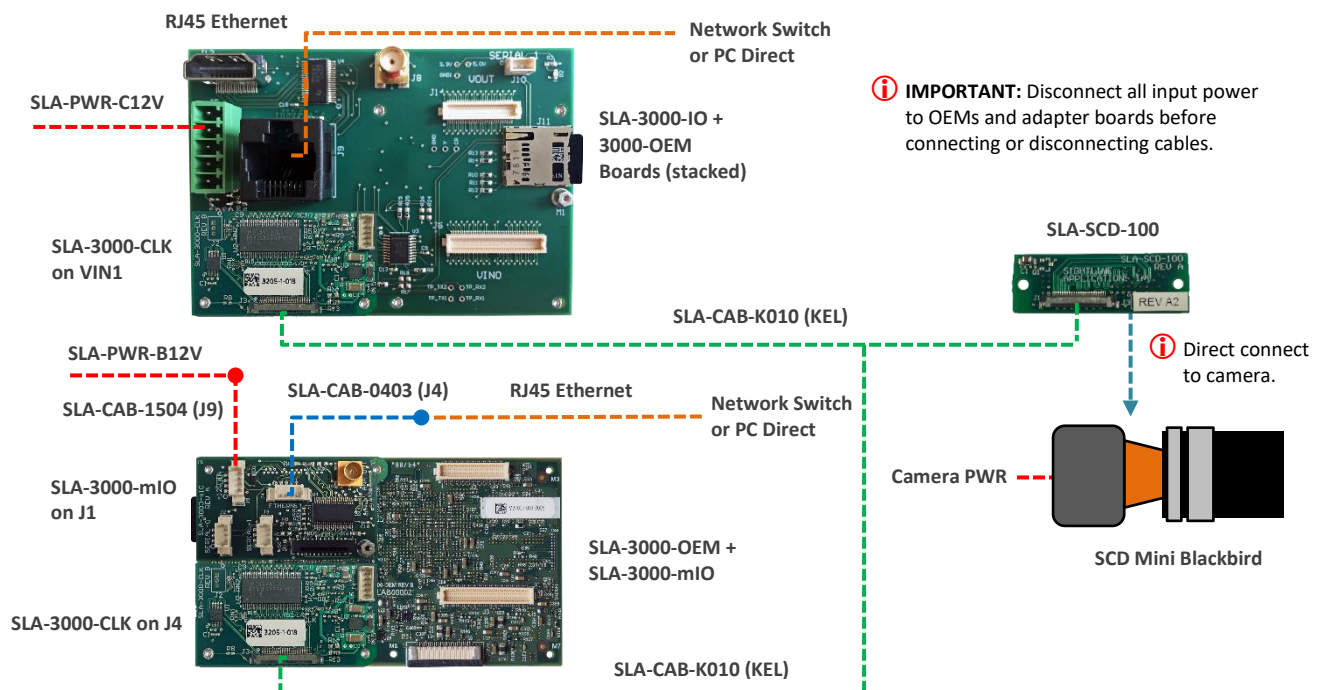
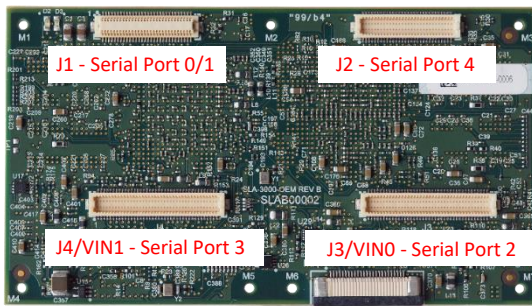


Figure 1: 3000-OEM / SLA-3000-CLK - SCD Mini Blackbird Camera Bench Setup



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 2: 3000-OEM Serial Port and Connector Reference

## 4.2 4000-OEM SCD Mini Blackbird Camera Bench Setup

### Interface and adapter boards:

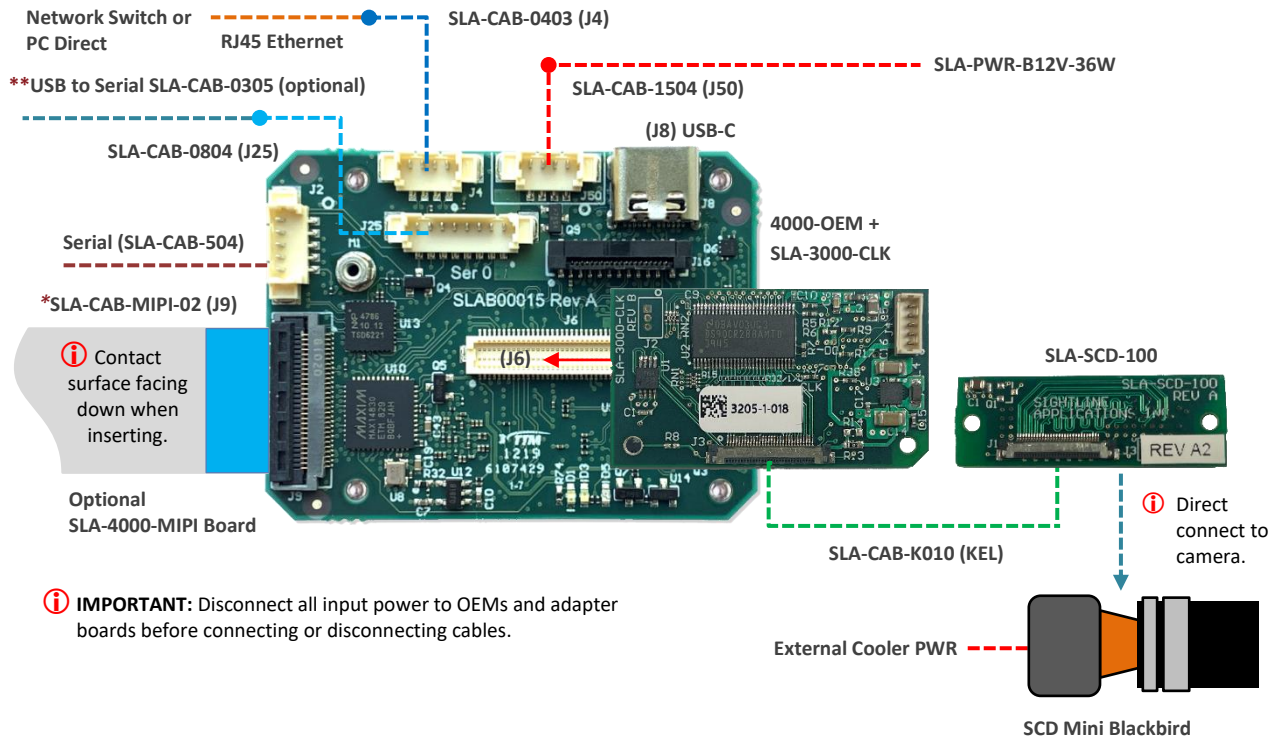
- [SLA-SCD-100](#): SCD Mini Blackbird camera and SLA-3000-CLK interface.
- [SLA-3000-CLK](#): SCD Mini Blackbird camera and [3000-OEM](#) interface.
- The SLA-3000-CLK board can be connected to J6 on the 4000-OEM. Additional camera adapter boards can be connected using the SLA-4000-MIPI board on J9. See the [ICD-3000-4000 Adapter Boards](#) for specific MIPI board power requirements.

### Cable connections:

- SLA-CAB-K010: Connects to the SLA-3000-CLK board and to the SCD Mini Blackbird camera. Provides serial communication and video to the camera. See the [KEL cable](#) instructions and precautions.
- SLA-CAB-0403: Connects to J4 on 4000-OEM board. Provides an RJ45 Ethernet connection.
- SLA-CAB-1504: Connects to J50 on the 4000-OEM board and SLA-PWR-B12V-36W power adapter.
- 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 3: 4000-OEM / SLA-3000-CLK - SCD Mini Blackbird LC 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 SightLine 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 3000-OEM](#)
- [EAN-Startup Guide 4000-OEM](#)

**i** **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.*

## 5.2 Additional Configuration Notes

### Mini Blackbird camera:

Most Mini Blackbird cameras come with an SDI output module that will output SDI video signals. Since the SDI video signal has a specific frame rate requirement, the output module provides a frame synch signal to the camera to make it match up with the SDI output frame rate.

 *The SDI output module must be removed from the 100-pin connector on the Mini Blackbird camera and replaced with the *Sightline SLA-SCD-100* adapter board.*

### Camera Link over Micro Coax (KEL):

- The SLA-3000-CLK board provides camera interface for reduced size KEL form factor Camera Link interfaces.
- The 1500-OEM is not supported through Camera Link.
- See the Camera Link section in [EAN-Digital-Video-Configuration](#) for additional information.

#### 5.2.1 SCD Camera GUI Configuration Settings

Since the Sightline hardware does not provide a frame sync output to the camera, the *Synchronization mode* must be changed to *Master*.

When using the SLA-3000-CLK adapter board with the SLA-SCD-100 camera interface board set the *Video output* mode to *Base Camera link (1 cable)*.

It can be easier to get set up imager timing by changing the *Frame synchronization mode* to *Integration at start* than using *Read (ITR)*.

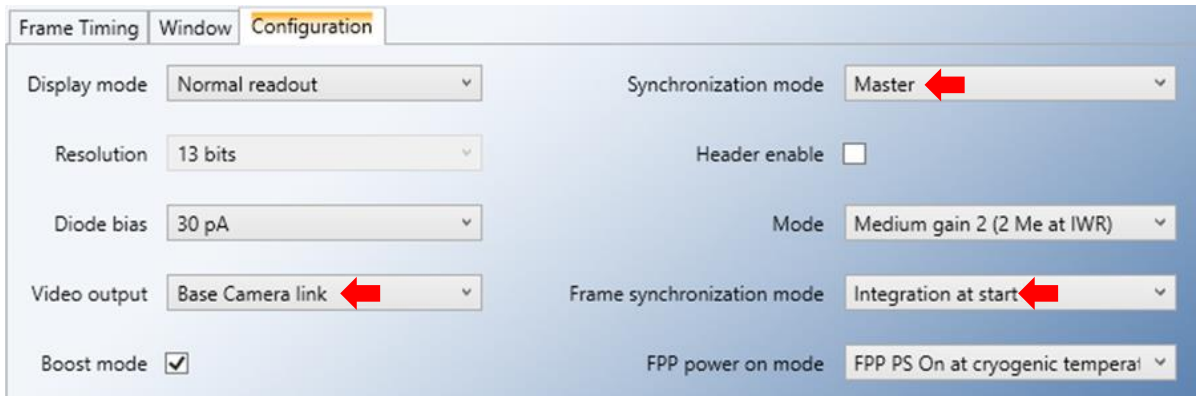


Figure 4: SCD Mini Blackbird GUI Camera Configuration

### 5.2.2 Frame Timing

Figure 5 shows an example for frame timing settings for 30 fps in ITR mode.



Figure 5: Example Frame Timing Settings (30 fps ITR Mode)

## 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.