



EAN-Startup Guide 3000-OEM

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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

The 3000-OEM Startup Guide provides the steps for connecting, configuring, and evaluating the 3000-OEM video processing board on the SLA-3000-mIO interface board. The mIO is optimized for connections in an integrated assembly. Compared to the SLA-3000-IO the mIO is smaller, uncomplicated, has small round wire interfaces and supports a two-board stack height.

Boards with SLE options enabled use the same startup procedure.

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 located in 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 [Documentation](#) page under Software Support Documentation.

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.

2 Network Configuration

The 3000-OEM board can be connected directly to the host PC or through a network switch. During startup, the board sends three DHCP discover requests in three second intervals. It will self-assign the link-local address of 169.254.1.181 if it does not receive a response.

Refer to [EAN-Network Configuration](#) for more network configuration information.

SightLine recommends assigning a static IP on the PC when a DHCP server is not present on the network.

If additional assistance is needed to assign a static IP address to the host PC, contact a network administrator or search online for procedures that corresponds with the current PC operating system.

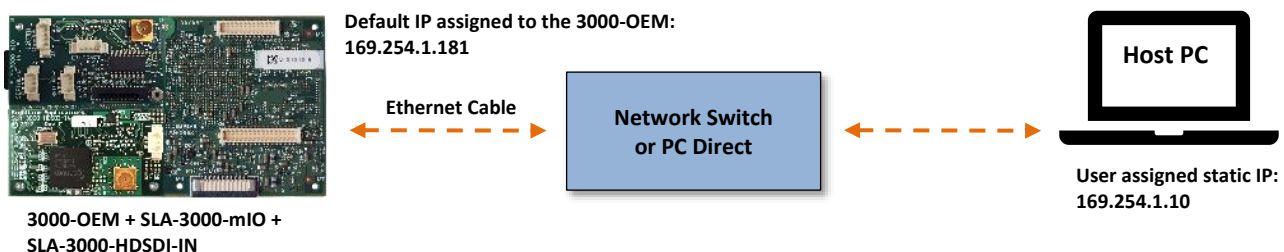


Figure 1: Network Configuration Options



Configuration notes:

- If a wireless adapter is active on the host PC it should be disabled.
- If using the link local address, assign a static IP address to the host PC of 169.254.X.X, where X is 1-254 (do not use 181). Use a subnet mask of 255.255.0.0.
- Problems with outbound streaming are often related to setting/assigning IP addresses and ports. See the Encoding Configuration settings in [EAN-Encoding](#) for advanced settings.

3 Serial Communications

For a direct serial connection use the 9-pin serial connection. A serial COM connector is included in the EVAL kits for both the SLA-3000-mIO and the SLA-3000-IO boards. Connecting to the serial COM port on both boards from a host PC requires a null modem adapter or null modem serial cable.

For the SLA-3000-IO the serial COM connector and must be wired to the board power adapter as shown in [Figure 2](#). The pinout for this cable can be found in the [ICD-3000-4000-Adapter-Board](#) document.

Use a direct serial connection for troubleshooting or if a network connection cannot be established.

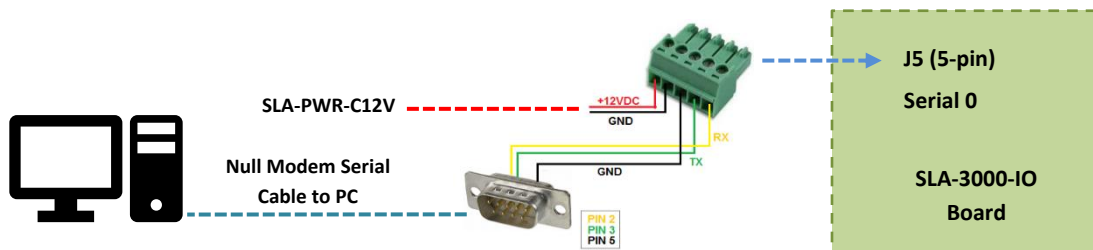


Figure 2: Serial COM and Power Connection-SLA-3000-IO

4 SLA-EVAL-3000-MIO Kit

Provides a complete laboratory bench / development interface with standard connectors. For additional options and interface boards, please contact [Sales](#). To review all the interface board options, see the [3000-OEM Accessories](#) page on the SightLine Applications website.

Table 1: SLA-EVAL-3000-MIO Kit

Part Number	Qty	Description	Part Number	Qty	Description
3000-OEM	1	Video processing board	SL00764	1	HDMI Type A male connector standard
3000-mIO*	1	Main interface board for the 3000-OEM	SLA-CAB-0303	1	3-pin PicoBlade to DB9
4000-OEM-MP	1	4000-OEM mounting base	SLA-CAB-0403	1	6-inch cable, 4-Pin PicoBlade to modular jack
SLA-DIST	1	PWR/ENET distribution board	SLA-CAB-P103	1	RF179 cable assy, BNC bulkhead jack to MCX
3000-HDSDI-IN	1	HD-SDI interface board	SLA-CAB-0302	2	3-pin PicoBlade pigtail
SLA-CAB-0404	1	4-pin Molex PicoBlade, 3.0 inches, GEN (WHT)	SLA-CAB-0402	2	4-pin PicoBlade pigtail
SLA-CAB-0405	1	4-pin Molex PicoBlade, 3.0 inches, PWR (BLK/RED)	SLA-CAB-HD10	1	10cm Length FPC ribbon flat cable for HDMI
SLA-PAD-010	1	Thermal pad 1.0-inch x 1.0-inch x 0.010 inch	SLA-CAB-MCX2BNC	1	Cable, MCX (RA) to BNC(M) for HDSDI-IN
SLA-PAD-020	1	Thermal pad 0.75-inch X 0.75-inch x 0.020 inch	SLA-CAB-ETH0	1	Ethernet cable CAT 5e 3ft
SLA-PAD-125	1	Thermal pad 0.250-inch x 0.250-inch x 0.125 inch	SLA-CAM-HDSDI	1	HD-SDI 1080p camera
SLA-PWR-B12V	1	12V power supply w/2-pin connector	SLA-PWR-A12V	1	12V Power supply for camera
SLA-CAB-1504	1	12V power cable to PicoBlade	SLA-MSD-ADPT	1	SD adapter
SLA-MSD-32GB	1	32 GB microSD memory card (class 10 SDHC)	SLA-DOC-LICENSE	1	Hardware license
SLA-CAB-S001	1	Serial adapter (stripped)	Mounting hardware	-	Spacers and mounting screws

*The SLA-3000-IO board is alternate interface board for the 3000-OEM that comes in the SLA-EVAL-3000 kit.



5 Hardware Bench Setup

IMPORTANT: To prevent damage to the 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 anti-static mat.

The 3000-HDSDI-IN is connected to J4 on the 3000-OEM or VIN1 on the SLA-3000-IO. The SLA-DIST provides power switch and standard bench interface connections for power and ethernet.

IMPORTANT: To prevent voltage spikes to the board, plug in the power adapter to an AC power source first and then connect to the board.

Cable connections:

- SLA-CAB-MCX2BNC: Connects to J1 (MCX jack) on the 3000-HDSDI-IN board and to the green BNC connector of the 1080p camera. The yellow BNC connector is for analog use only.
- SLA-CAB-SMA2BNC: Analog monitor cable (optional). Connects to J8 on the SLA-3000-mIO (VOUT on the SLA-3000-IO).
- SLA-CAB-ETH0: Connects to the Ethernet port and to the network switch or host PC.
- SLA-CAB-0404: Connects to J3 on the SLA-DIST and J4 on the SLA-3000-mIO. Provides Ethernet to the 3000-OEM.
- SLA-CAB-0405: Connects to J2 on the SLA-DIST and J9 on the SLA-3000-mIO. Provides power to the 3000-OEM.
- SLA-PWR-A12V (110-250VAC input / 12VDC output): Connects to the red power connector on the 1090p camera.
- SLA-PWR-B12V (110-250VAC input / 12VDC output): Connects to J4 on the SLA-DIST (SLA-3000-mIO).
- SLA-PWR-C12V (110-250VAC input / 12VDC output): Connects to J5 on the SLA-3000-IO.

Power and network connectivity LEDs:

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

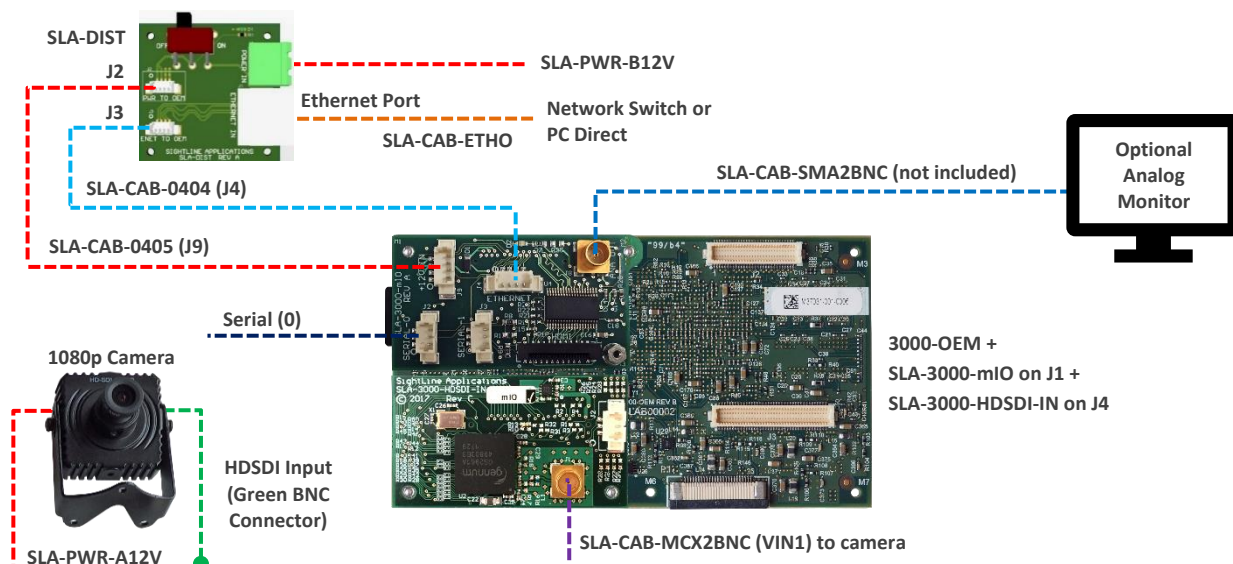


Figure 3: Typical Bench Hardware Setup - SLA-3000-mIO

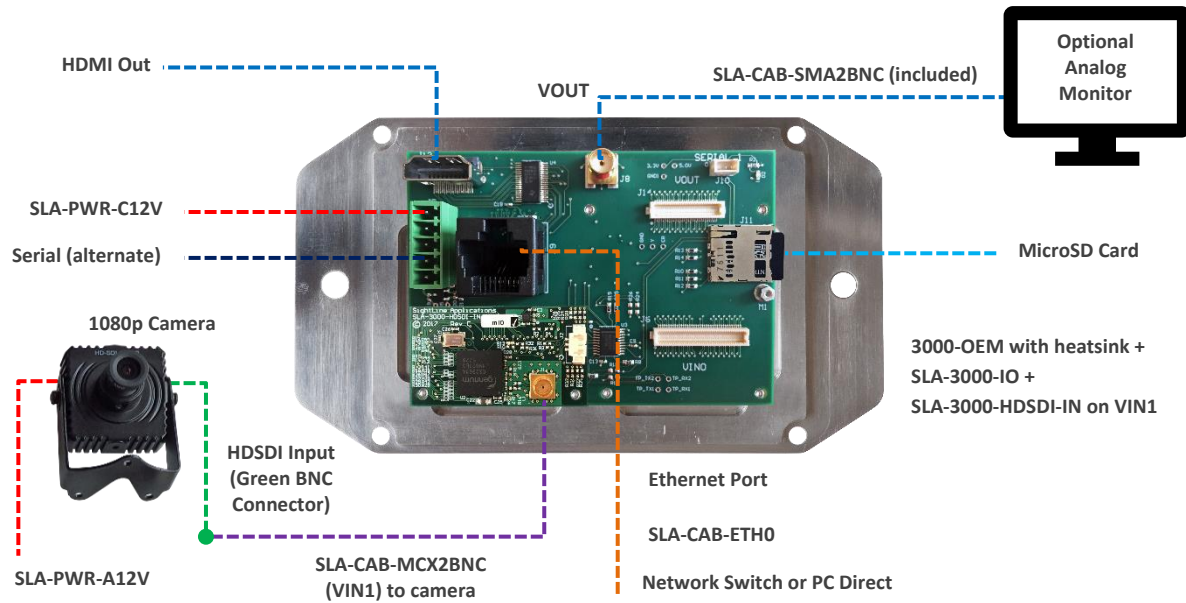


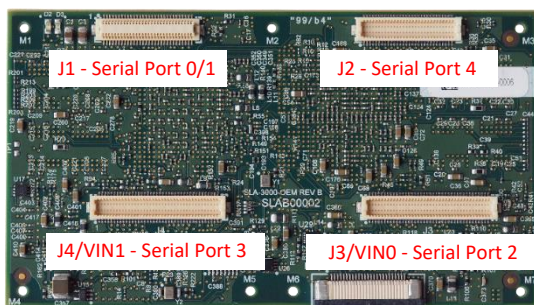
Figure 4: Alternate Bench Hardware Setup - SLA-3000-IO

5.1 Additional SightLine Adapter Boards

SightLine adapter boards provide different I/O, camera inputs, or digital outputs. The boards can be attached directly to the 3000-OEM or through a secondary adapter allowing customers to swap out modules for custom configurations. This setup guide assumes the initial use of the EVAL kit and the HDSDI input. Customer specific configurations with other camera input boards is fully supported.

On the SLA-3000-IO board, VIN0/(J3) has camera channels 0 and 1 assigned. VIN1/(J4) has camera channel 2 assigned. Both the SLA-3000-mIO and SLA-3000-IO supports SightLine interface boards on either of these connectors.

ⓘ IMPORTANT: 3000-AB board only - If the SLA-3000-AB board is installed on VIN0/J3, both analog inputs can be used. If it is installed on VIN1/J4, only the J3 (input 0) can be used.



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 5: 3000-OEM Serial Port and Connector Reference

6 Panel Plus

This section covers the Panel Plus setup and configuration process. Panel Plus provides a basic graphical interface to the features and functions of the 3000-OEM and 3000-mIO board.



Before connecting with the Panel Plus software, the 3000-OEM and 3000-mIO boards 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).
1. Go to the [Software Downloads](#) page on the SightLine website and download the Panel Plus application installer. Older releases are available under the *Previous Versions* section.
- ❗ IMPORTANT:** The firmware version number and Panel Plus Software version number should match. If the board firmware version is initially unknown, reference the SightLine invoice that came with the board when it was purchased.
2. Launch the installer file and follow the prompts. After installation open the Panel Plus application.
 3. The first time that Panel Plus is launched, a Windows Security Alert prompt should appear. Select *Allow Access* to create a firewall exception ([Figure 5](#)).

Approving private network access is sufficient in most cases. Check public networks if directly connecting to the board.

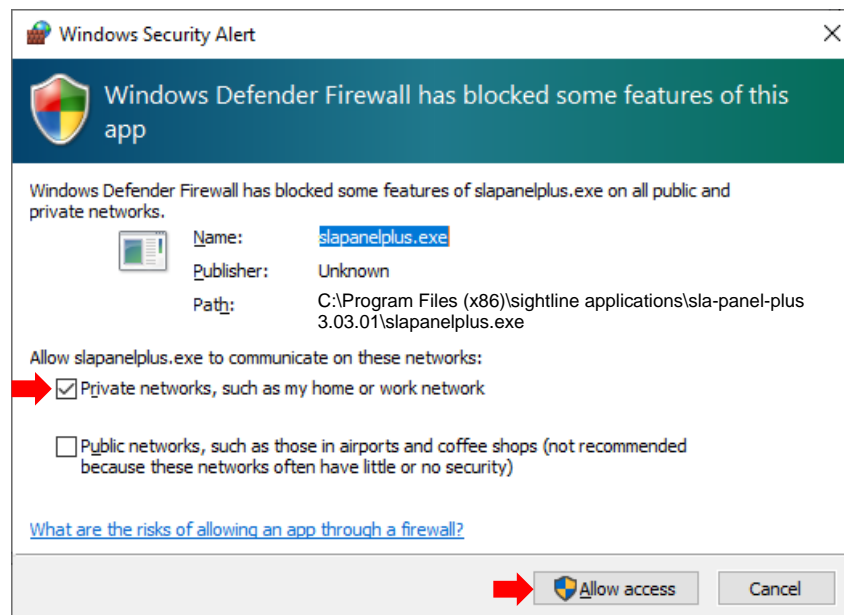


Figure 6: Windows Security Alert Prompt

- ❗ IMPORTANT:**
- Do not cancel this prompt. Failure to allow access at this point will not allow the Panel Plus application to connect to the board. See the [Troubleshooting](#) section for more information.
 - Before using the Panel Plus program, review the Panel Plus User Guide in the Help section of the Panel Plus application for additional user and setup information.
4. Network connection to the board:
 - a. From the *Connect* tab, click the *Refresh List* button to get a list of boards on the network.



- b. Use the drop-down menu and click on the appropriate board to select it.
- c. Click the *Disconnected (click to connect)* button.

Once the connection is successful, the button changes to *Connected*.

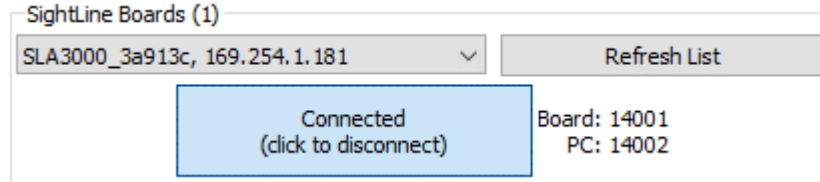


Figure 7: Network Connection to Board

- 5. Verify the connection. When the Panel Plus has successfully connected to the 3000-OEM board, operating information is displayed under the *Video Output* section and the bottom status bar in Panel Plus. If the connection was not successful, this information will not be present or incomplete.

ⓘ IMPORTANT: For optimal performance, monitor the board temperature. Board temperatures should be below 185°F (85°C). To keep boards within the optimal temperature range, use the included heatsink during bench testing. For more information about thermal management, see the [ICD-3000-OEM](#).

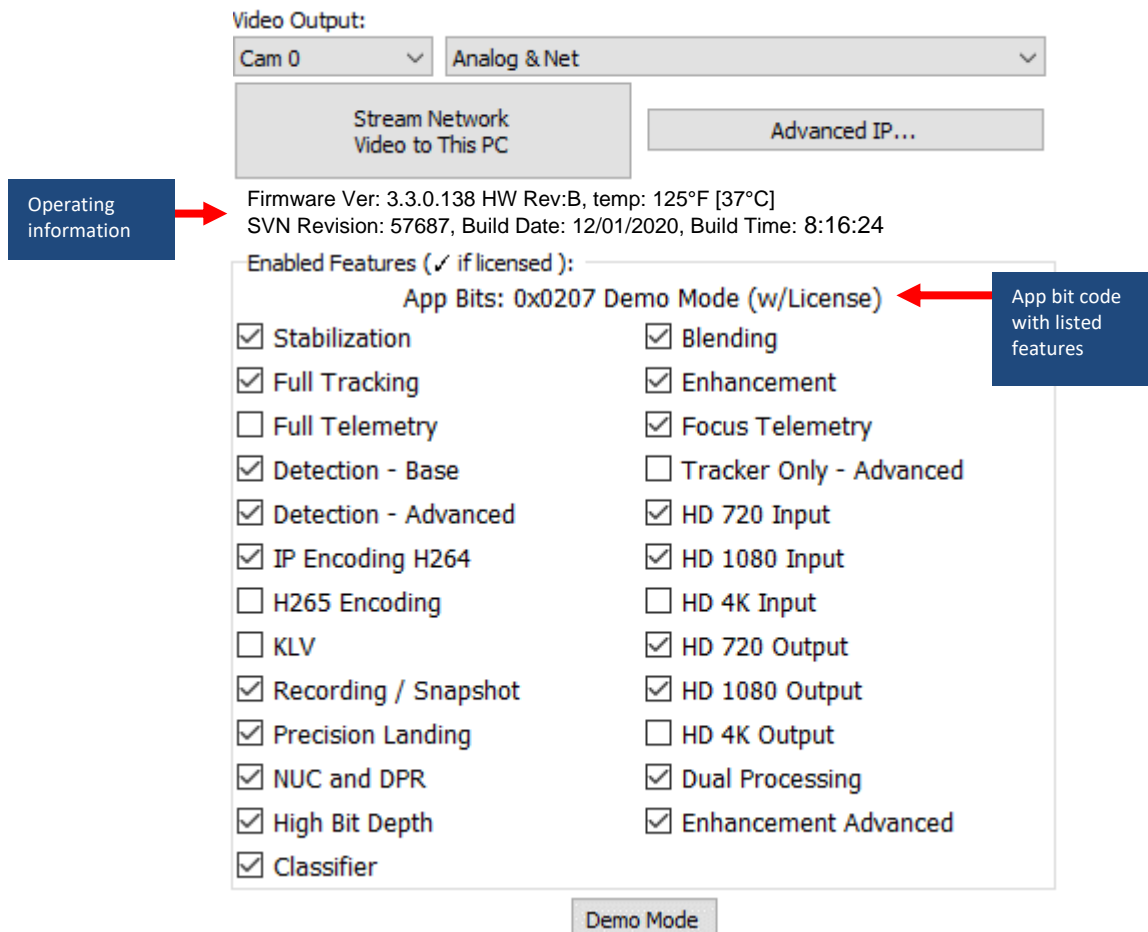


Figure 8: Firmware Version and Enabled Features



6. Select the *Compress* tab:
 - a. Use the H.264 encoding options to get started.
 - b. In the *Output Properties* section, use the default values for *Frame Step* and *Down Sample*.
 - c. In the *Streaming* parameters section, define the destination IP address and port.

To set these parameters quickly, click the *Use My IP - Unicast* button. This sets the outbound destination IP address to the network interface card on the PC.

- d. Click *Send* to dynamically set the desired IP Address, UDP Port, and UDP delivery format (Unicast, Multicast, or Broadcast).
- e. To save the settings and make them recurrent through restarts, main menu » *Parameters* » *Save to board*.

See [EAN-Parameter File](#) for a comprehensive guide to saving parameter settings.

Figure 9: Compress Tab

6.1 Camera Setup and Network Selection

1. From the main menu go to *Configure* » *Aquisition Settings*. This dialog window allows changes to the camera configurations.
2. Since the SLA-3000-HDSI-IN board is on J4 on the 3000-OEM or VIN 1 on the 3000-IO, set the *Camera Index* to *Cam 2*. *Set the Camera Type* to *Generic Digital*.



- In the *Auto Fill* drop-down menu, select *HD-SDI 720p* from the *Auto Fill* menu or enter the *Height* and *Width* settings of the connected camera.

If using a camera that is not configured for 720P, choose the corresponding option under *Auto Fill* that matches the camera., e.g., *HD-SDI 1080p*.

If the camera is listed, the *Auto Fill* drop-down menu automatically populates the relevant fields with the correct settings as shown in *Figure 10*.

Figure 10: Camera Acquisition Auto Fill Settings

- After changes have been made, the *Apply* button will turn red indicating that a change has been detected. Click *Apply* to apply the changes. Close the *Acquisition Settings* dialog window.
- Save and activate the settings:
 - Main menu » *Parameters* » *Save to Board*.
 - Main menu » *Reset* » *Board*.
 - After the system reboots reconnect to the board. Make sure the board connects.
- See [EAN-Camera Compatibility](#) for all third-party cameras and lens assemblies that are currently supported by *SightLine* software. Includes configuration and setting support guidance.
- From the *Connect* tab, click *Stream Network Video to This PC*.



6.2 Direct Serial Connection (optional)

1. Connect the serial cable to the 3000-OEM board and host PC as described in [Serial Communications](#).
2. From the *Connect* tab, click the *Refresh List* button to get a list of available COM ports.
3. Use the drop-down menu and click on a COM port to select it.
4. Click the *Disconnected (click to connect)* button.

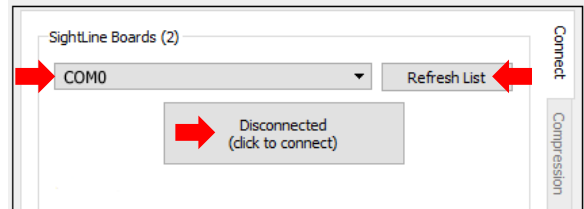


Figure 11: Direct Serial Connection

7 Summary

This completes the startup guide for the 3000-OEM board. See the Panel Plus User Guide (main menu » *Help* » *User Guide*) for additional user and setup information.

If the board has been connected to a camera and encoding functions are part of the configuration, video will be displayed in the main window. On the *Connect* tab of Panel Plus, the purchased functions are checked and enabled. To add additional features to 3000-OEM board, contact [Sales](#).

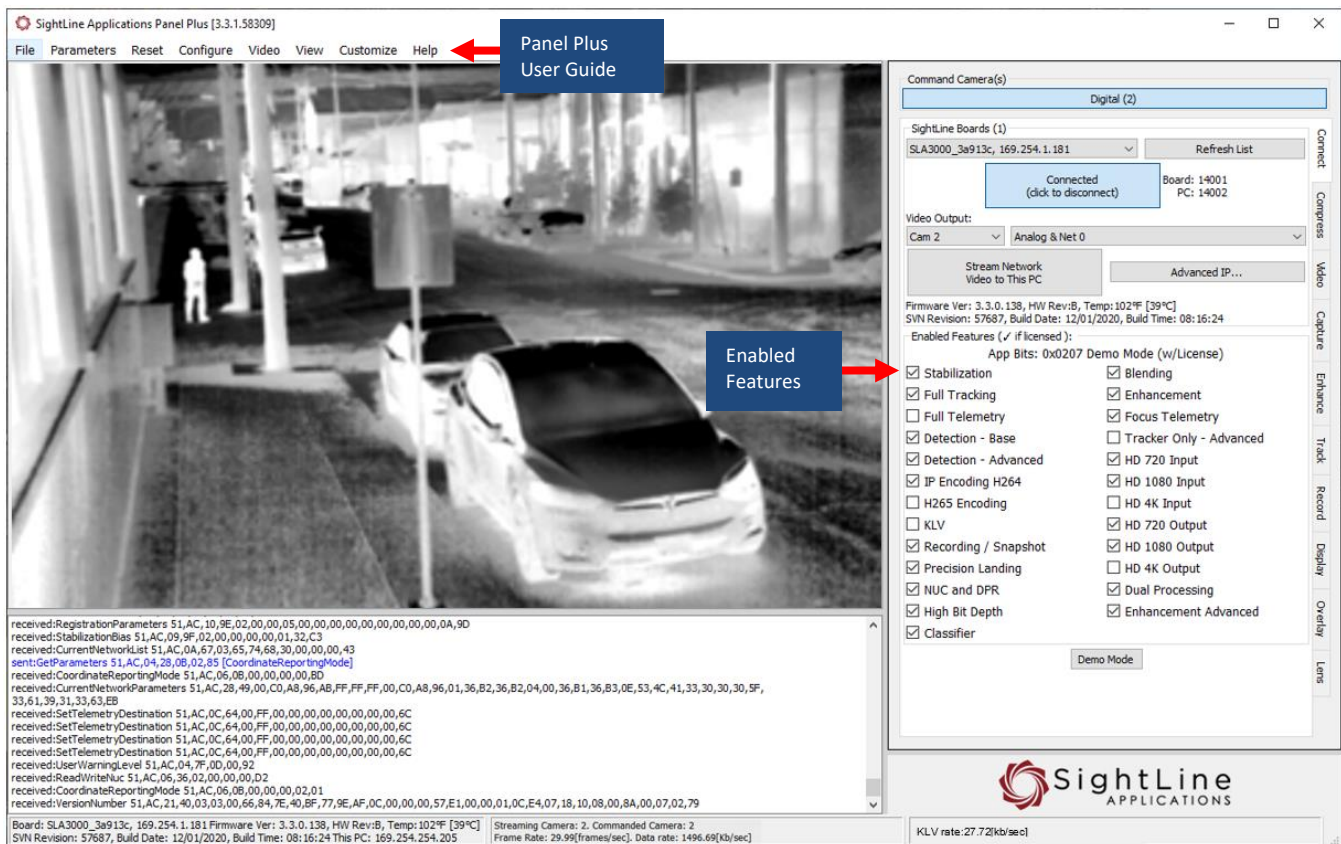


Figure 12: Panel Plus Connection to Board

IMPORTANT: Not all 3000-OEM purchased configurations include encoded IP video, e.g., the Tracker-only configuration. For configurations that include encoding, video will be displayed in the Panel Plus main window. Tracker-only configurations will display processed video on the analog output only. An analog monitor is required for viewing this output.



7.1 Demo Mode

To enable all features for testing and evaluation purposes, click the *Demo Mode* button from the *Connect* tab. All the features enabled on the board are now available for testing.

The video screen will have a *Demo Mode* screen overlay until the *Demo Mode* function is turned off.

8 Troubleshooting

8.1 Network Connection

Issue: Unable to connect with the Panel Plus application to the 3000-OEM board over a standard network connection.

Check static IP address:

Check the static IP address configuration. Improper or unknown static IP address setup is a common connection problem. See the [Network Configuration](#) section and [EAN-Network Configuration](#) for more network configuration information.

Check Windows firewall:

Failure to allow access in the Windows Security Alert prompt upon initial startup of the Panel Plus application can cause connection issues.

1. Close the Panel Plus software application and open the Windows Firewall Security Manager on the host PC.
2. Go to Inbound rules and delete the two *slapanelplus* rules (TCP and UDP).
3. Re-start the Panel Plus application and allow access in the Windows Security Alert prompt window.

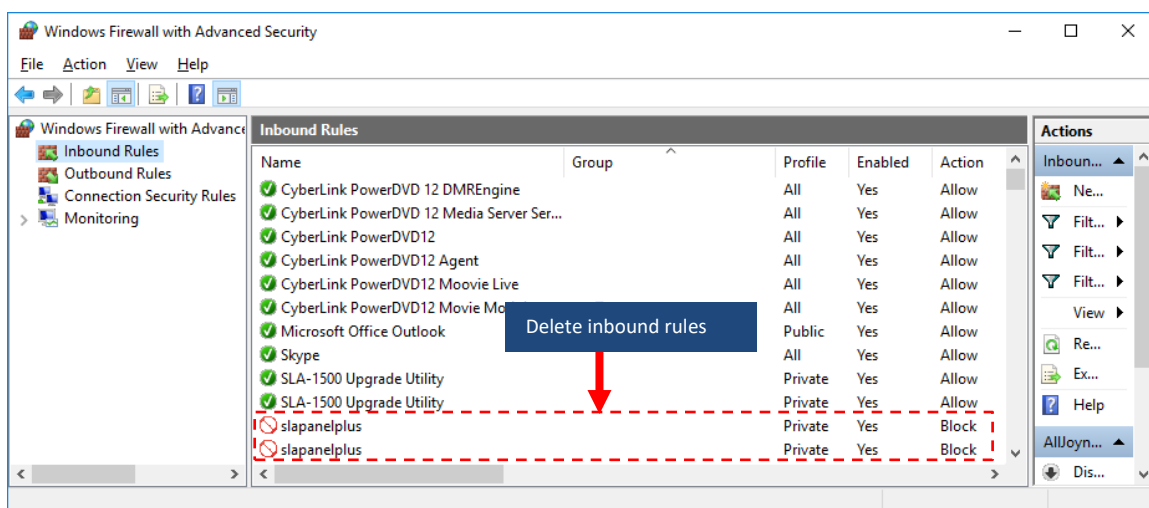


Figure 13: Delete Inbound Rules in Windows Security Alert Prompt Window



Check hardware connections:

Make sure that all the boards are powered on.

If connecting over the network, switch to a direct serial connection (see the [Serial Communications](#) section). The Panel Plus software will automatically recognize serial ports and list them in the drop-down menu for available connections.

Connecting to the serial COM port on the 3000-OEM board from a host PC requires a null modem adapter or null modem serial cable.

Check network configuration:

After communications have been established using the serial connection, networking settings can be corrected to allow proper network communications.

1. From the main menu, go to *Configure » Network Settings*.
2. If an unknown static IP address is assigned, remove it, or update it to match the addressing scheme of the current network.

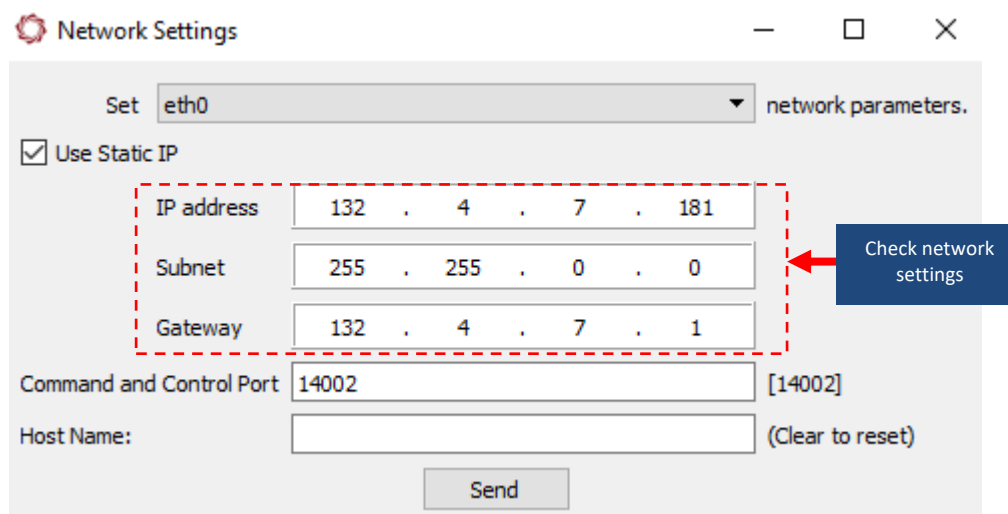


Figure 14: Check Network Settings

8.2 3000-OEM HD-SDI Camera Input

Issue: Network output video shows image in the upper left corner of Panel Plus with a green background.

Check camera output settings:

The camera could be set to output 720P. The camera setting in *Acquisition Settings* is set to 1080P. Changing the camera to 720P in *Acquisition Setting* should correct this problem.

If the HD-SDI camera came with the EVAL kit, the camera resolution can be changed to 1080P30 using the small controller joystick on the cable included in the kit.

The menus are easier to read if the yellow output of the camera (analog out) is connected to an analog monitor.



1. Press the joystick on the cable to bring up the menu.
2. Scroll down to *System*.
3. Press the joystick and scroll down to *Frame Rate*.
4. Move the joystick right or left to select 1080P30.

8.3 Questions and Additional Support

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