



SightLine

APPLICATIONS

EAN-Imperx-Cameras

1500-OEM and 3000-OEM

PN: EAN-Imperx-Cameras

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**Contact:**

Web: sightlineapplications.com

Sales: sales@sightlineapplications.com

Support: support@sightlineapplications.com

Phone: +1 (541) 716-5137

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Alerts

The following notifications are used throughout the document to help identify important safety and setup information to the user:

 **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.*



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1 Overview

This document describes how to configure the 1500-OEM and 3000-OEM to receive video from the Imperx B1921C camera.

1.1 Associated Documents

[EAN-Startup Guide 1500-OEM](#): Describes steps for connecting, configuring, and testing the 1500-OEM video processing board on the 1500-AB accessory board.

[EAN-Startup Guide 3000-OEM](#): Describes steps for connecting, configuring, and testing the 3000-OEM video processing board on the 3000-IO interface board

[EAN-Ethernet and Serial Communication](#): Describes how to setup serial communications for cameras or other payload devices from SLA-hardware.

[EAN-FPGA-Firmware-Update-1500-OEM](#): Describes how to upgrade the FPGA driver firmware on the 1500-OEM board.

[Interface Command and Control \(IDD\)](#): Describes the native communications protocol used by the SightLine Applications product line. The IDD is also available as a local download on the [Software Download](#) page

EAN-Panel Plus User Guide: Provides descriptions of all the settings in the Panel Plus application. (Located in the Panel Plus application in the *Help* menu.)

1.2 SightLine Software Requirements

1500-OEM and 3000-OEM - Firmware version 2.24.xx and higher.

1.3 FPGA

Version 10 is required for the camera to operate correctly. This information is located on the *Connect* tab. FPGA version 10 does not support other digital cameras.

ⓘ IMPORTANT: If the 1500-OEM board is not running version 2.24.xx firmware and version 10 FPGA code, the camera will not operate correctly.

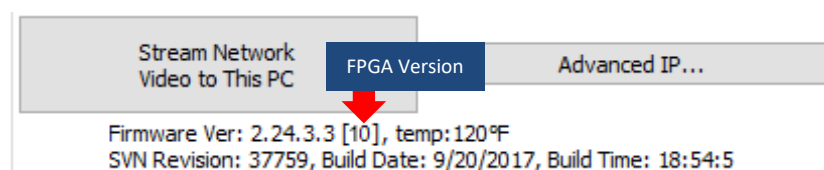


Figure 1: FPGA Version Number



2 Interface Boards

The interface board kits for the 1500-OEM and 3000-OEM come with screws, nuts, and stand-offs for connecting to the video processing boards and the camera. See the [ICD-1500 Adapter Boards](#) and [ICD-3000 Adapter Boards](#) for power requirements, thermal management, interface specifications, and connector pin-outs.

ⓘ IMPORTANT: All boards should be connected first before applying power.

- 1500-CL interface board (connects to 1500-OEM)
- 1500-AB board (serial and network interface)
- Camera Link Cable
- 3000-CL interface board (connects to 3000-OEM)
- 3000-IO board (serial and network interface)

3 Hardware Connections

3.1 Hardware Bench Setup 1500-OEM

This section describes the connection for the 1500-OEM and the 1500-CL interface board to the supporting components. The 1500-AB board is used as the serial and network interface board.

1. Connect SLA-CAB-1514 Molex cable to the 1500-OEM J3 (14-pin) connector and to the 1500-AB J3 (14-pin) connector. This provides analog video, network, and serial connections to the 1500-OEM.
2. Connect a network cable to the 1500-AB Ethernet port.
3. Connect the Camera Link cable to the 1500-CL interface board and the Camera Link interface on the Imperx B1921C camera.
4. Connect the SLA-PWR-B05V to the 1500-AB board. A green light indicates the 1500-AB is powered on.
5. Slide the switch to the left to power-on the 1500-OEM board. A blue light on the 1500-AB board and a green light on the 1500-OEM indicate that all the boards are powered on.

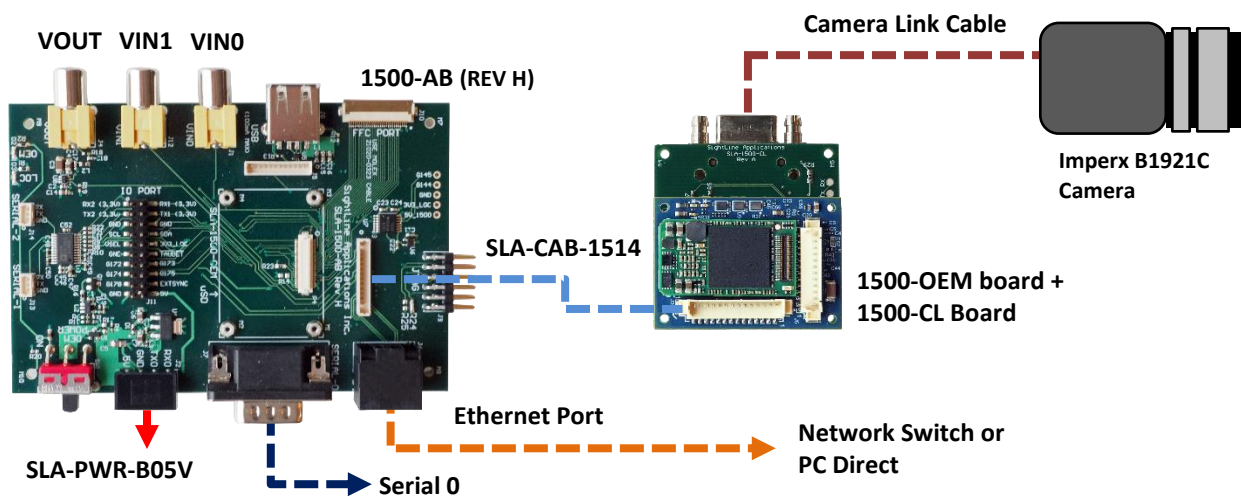


Figure 2: 1500-OEM Imperx Camera Bench Setup




3.2 Hardware Bench Setup 3000-OEM

This section describes the connections for the 3000-OEM and the 3000-CL interface board to the supporting components and equipment.

The 3000-CL interface board may be used to supply power to camera using the 2-pin Molex connector (J2). Refer to the and [ICD-3000 Adapter Boards](#) for more information.

1. Attach the 3000-CL interface board to one of the available video input connectors on the 3000-IO board. The 3000-IO board has two connectors for the 3000-CL board (VIN1 and VIN0). See the [3000-OEM](#) exploded assembly drawing for more physical connection layout information.

 *On the 3000-IO board, VIN0 has camera channels 0 and 1 assigned. VIN1 has camera channels 2 and 3 assigned. The 3000-IO board supports installing the 3000-CL interface board onto either of these connectors. If the configuration includes an analog board with a digital interface board, the analog board must be installed onto VIN0.*

2. Connect the Camera Link cable to the 3000-CL interface board and the Camera Link interface on the Imperx B1921C camera.
3. Connect the Ethernet, serial, and power cables to the 3000-IO board.
4. Plug in the power adapter (SLA-PWR-C12V) to an AC power source. A green light on the 3000-IO board indicates that all boards are powered on.

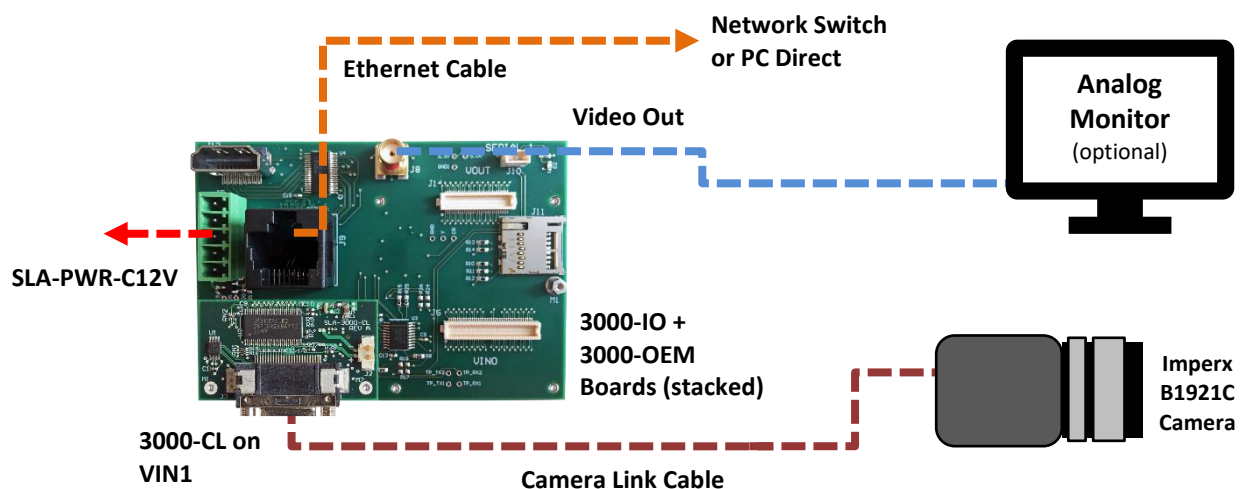


Figure 3: 3000-OEM Imperx Camera Bench Setup



4 Configuration Settings

This section covers how to configure the video processing boards to support the Imperx camera. The following steps reference the Panel Plus software.

The 3000-OEM and 1500-OEM HDMI configuration procedures are similar.

For other detailed camera configuration settings and options, see the User Configuration section in the camera user manual (available on the [Imperx](http://Imperx.com) website).

4.1 Panel Plus 1500-OEM

1. Connect to the board using the Panel Plus application. See the [1500-OEM Startup Guide](#) for connection instructions.
2. From the main menu » *Configure* » *Acquisition Settings*. Set the *Camera Index* and *Camera Type* as shown. The *Apply* button will turn red indicating input field changes have been detected.

3. Click the *Apply* button, and then close the *Acquisition Settings* dialog window.
4. Save and activate the settings:
 - a. Main menu » *Parameters* » *Save to Board*.
 - b. Main menu » *Reset* » *Board*.
 - c. Wait for the system to boot, and then reconnect to the board. Make sure the board connects.



4.1.1 Additional Camera Configuration 1500-OEM

The Imperx camera must be setup as a 12-bit, single-tap camera for the 1500-OEM to capture video correctly. To configure the camera, use the Panel Plus application and the [EAN-Ethernet and Serial Communication](#) document to setup TCP passthrough on Serial Port 2.

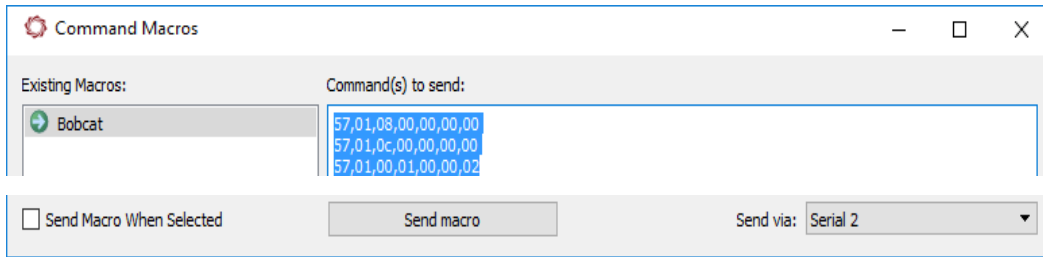
1. In Panel Plus, click the *Comms* tab.
2. Select the *Port*, *Baud* rate and other Comm settings shown.

Passthrough Settings	
Port:	Serial Port 2
Baud:	115200
Data Bits:	8
Stop Bits:	1
Parity:	None
Protocol:	TCP Pass Through
Max Length:	127
Max Delay:	100
Inbound Port:	4001
Destination Port:	0
Destination IP:	0.0.0.0

3. Save and activate the settings:
 - a. Main menu » *Parameters* » *Save to Board*.
 - b. Main menu » *Reset* » *Board*.
 - c. Wait for the system to boot, and then reconnect to the board. Make sure the board connects.
4. From the main menu » *File* » *Macros*.
5. Add the following commands in the *Command(s) to send:* window.
 - 57,01,08,00,00,00,00
 - 57,01,0c,00,00,00,00
 - 57,01,00,01,00,00,02
6. Click *Save as a macro*.
7. In the *Send via:* drop down menu, select *Serial 2*.

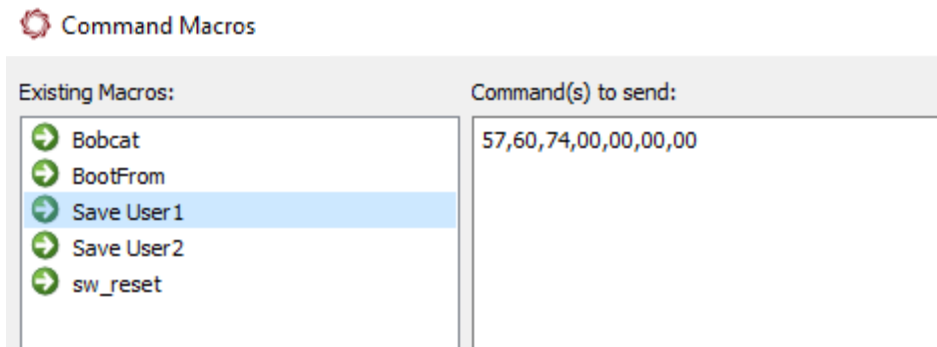


- Click *Send macro* to send the commands through Serial 2 TCP Passthrough. Once the command has been sent, a good image from the camera will be displayed.

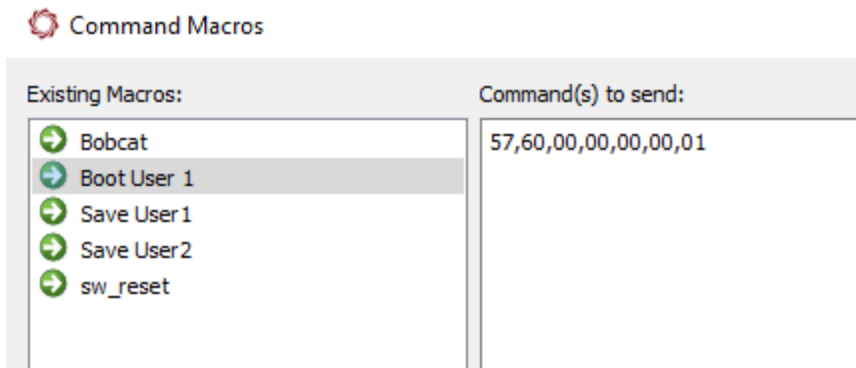


- Panel Plus can also be used to save the settings camera settings and make them recurrent through restarts by adding and saving a macros command to boot from:

For example, *Save User 1* command:



Boot User 1 command:



- After the camera has been setup and is displaying a suitable quality image, the Save User 1 and Boot User 1 macros commands can be used to display the same consistent image every time the camera is rebooted.

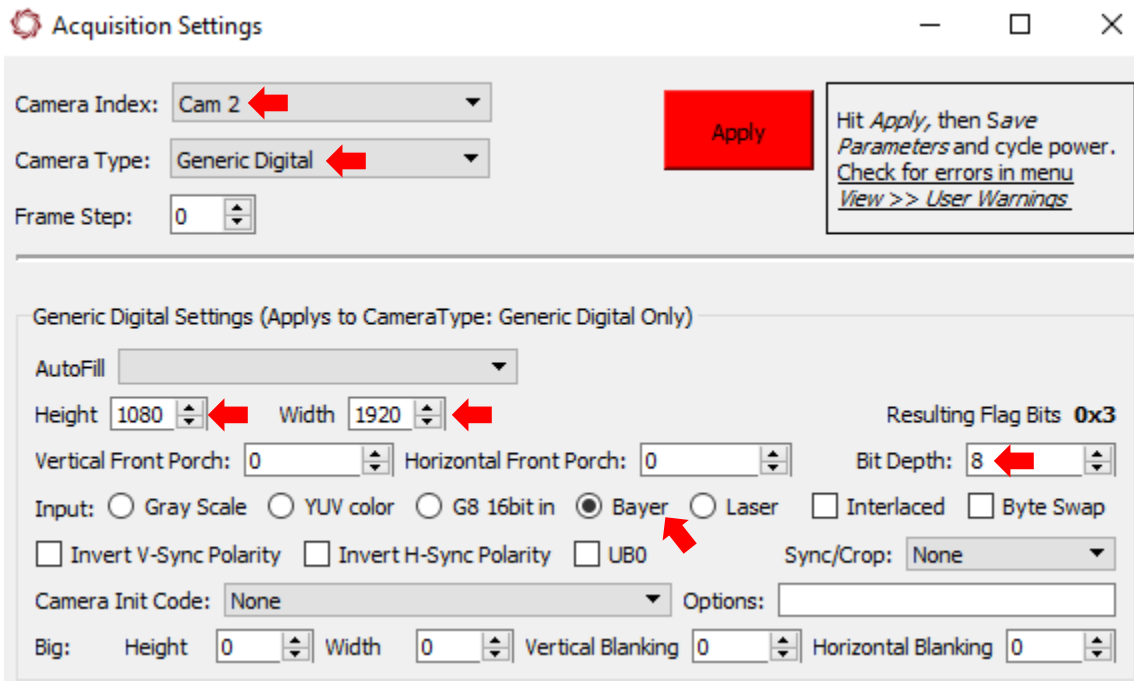


4.2 Panel Plus 3000-OEM

Connect to the board using the Panel Plus application. See the [1500-OEM Startup Guide](#) or the [EAN-Startup Guide 3000-OEM](#) for connection instructions.

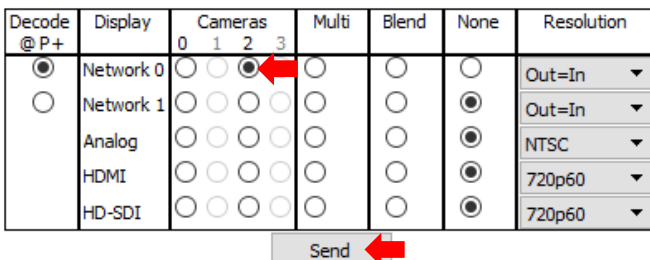
1. From the main menu » *Configure* » *Aquisition Settings*. This dialog window allows changes to the camera configuration.
2. Set the fields as shown. The *Apply* button will turn red indicating input field changes have been detected.

If the 3000-CL adapter board is installed on VIN1, use *Cam 2* for the *Camera Index* (shown). If it is installed on VIN0, use *Cam 0*.



The default setup of the Imperx Bobcat camera is dual-tap 8-bit Bayer pattern, which will work for the 3000-OEM board.

3. Click the *Apply* button, and then close the *Acquisition Settings* dialog window.
4. Select the *Multi Camera* tab. Select *Network 0* and *Camera 2*. This enables video to display in Panel Plus. If the 3000-CL board is connected to VIN0, select *Camera 0*.
5. Click the *Send* button to save the settings to the parameter file.





6. Save and activate the settings:

- a. Main menu » *Parameters* » *Save to Board*.
- b. Main menu » *Reset* » *Board*.
- c. Wait for the system to boot, and then reconnect to the board. Make sure the board connects.

5 Questions and Additional Support

This completes the Imperx B1921C camera setup instructions. For questions and additional support, please contact [Technical Support](#). Additional support documentation and Engineering Application Notes (EANs) can be found on the Support pages of the SightLine Applications [website](#).