



# SightLine

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APPLICATIONS

## **EAN-Hitachi Block 1500-OEM**

PN: EAN-1500-Hitachi-Block-1500-OEM

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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 install and configure the 1500-OEM and 1500-Hitachi interface board with the DI-SC120R Hitachi block camera.

### 1.1 Associated Documents

[EAN-Camera Compatibility](#): Lists all third-party cameras that are currently supported by SightLine software. It also covers 1500 FPGA driver support and lens control through the SightLine Command and Control (IDD) protocol.

[EAN-Digital Video Configuration](#): Describes how to configure the SLA-Hardware for digital video input.

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

[ICD-1500-OEM](#): Describes power requirements, thermal management, interface specifications, and connector pin-outs for the 1500-OEM.

[ICD-1500 Adapter Boards](#): Describes power requirements, thermal management, interface specifications, and connector pin-outs for the 1500-OEM associated camera interface boards.

[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.

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 Firmware and Software Requirements

Panel Plus software and firmware versions:

- 1500-OEM: Version 2.18 or later and FPGA version 5 or 12.
- 3000-OEM: Version 2.21 or later.

**ⓘ IMPORTANT:** The Panel Plus software version should match the firmware version running on the board.

All SightLine firmware and Panel Plus software revisions are available for download on the SightLine Applications [Website](#).

### 1.3 Third Party Software

Camera control software from Hitachi (contact your Hitachi representative).

Virtual Serial Port Emulator (VSPE) from [Eterlogic](#).



## 2 Interface Boards

The interface board kit for the 1500-OEM comes with screws, nuts, and stand-offs for connecting to the video processing boards and the camera. See the [1500-Hitachi drawing](#) on the SightLine website for mechanical connection information. See the [ICD-1500 Adapter Boards](#) and for power requirements, interface specifications, and connector pin-outs.

**ⓘ IMPORTANT:** All boards should be connected first before applying power. The 1500-OEM board and the Hitachi board should be connected first before connecting to the camera and 1500-AB board.



Figure 1: 1500-OEM + 1500-Hitachi Interface Board

### 2.1 1500-AB Power Connection

REV H and later 1500-AB boards have a single power switch. REV E and earlier boards have a dual power switch. REV H and later boards are immediately powered on when power is connected. If using the 1500-AB board in a bench setup, review [Figure 2](#) and [Figure 3](#) prior to making power connections.

- ⚠ **CAUTION:** Power to the 1500-OEM board is provided through the 1500-Hitachi interface board using the SLA-PWR-B12V power supply shown in [Figure 3](#). Powering the OEM through the J3 power pins and through the 1500-Hitachi board can damage the OEM.
- ⚠ **CAUTION:** DO NOT power up the 1500-OEM board from the 1500-AB interface board. The power switches should be set to the positions shown in [Figure 2](#) (AB board power ON / 1500-OEM power OFF). Long term over powering will permanently damage the 1500-OEM board.

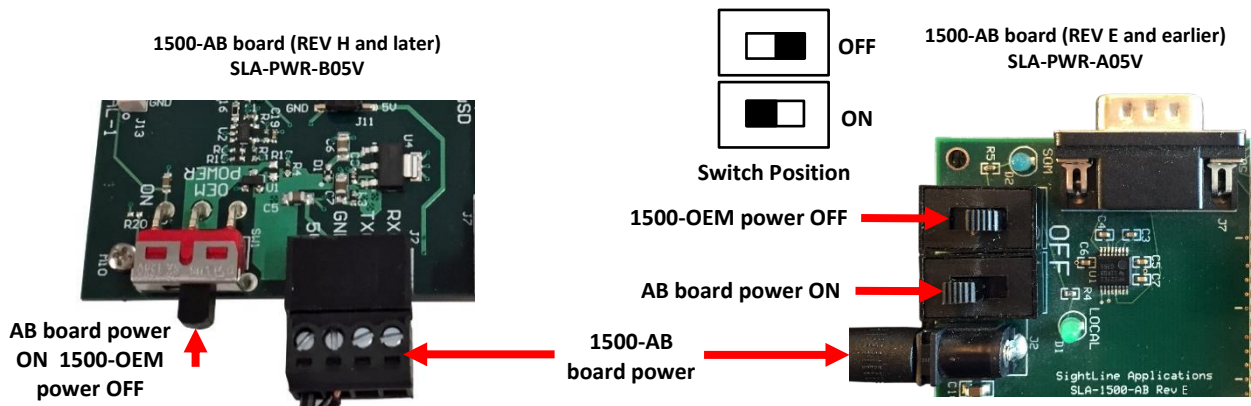


Figure 2: 1500-AB Board Power Connections



### 3 Hardware Connections

#### 3.1 Hardware Bench Setup 1500-OEM

This section describes the connection for the 1500-OEM and the 1500-Hitachi interface board to the supporting components.

The 1500-AB board is used as the serial and network interface board. The digital IO connector on the Hitachi camera connects to the 1500-Hitachi board with a SLA-CAB-HC36 cable. The connector provides serial communication to the camera in addition to the digital video.

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 SLA-CAB-HC36 cable to the 1500-Hitachi interface board and the Hitachi camera.
4. Connect the SLA-PWR-B12V to the J2 Pin on the 1500-Hitachi using the SLA-CAB-1504 power adaptor cable.
5. Connect the PWR-B05V to the 1500-AB board. This 5V power is only required if supporting the analog input/output and Serial 0 connections.

*REV H and later AB boards are immediately powered on when power is connected.*

6. Connect the SLA-PWR-B12V supply (12V) to an AC power source. This will power the camera, Hitachi adaptor board and the OEM assembly.

**ⓘ IMPORTANT:** Do not apply power to the 1500-OEM from the AB board, see [Figure 2](#).

7. Power on the 1500-AB board (first), then connect the SLA-PWR-B12V to a power source to power up the 1500-OEM and attached Hitachi camera.

**ⓘ IMPORTANT:** Do not attach the 1500-OEM and Hitachi adapter board to the 1500-AB board. They should remain separate.

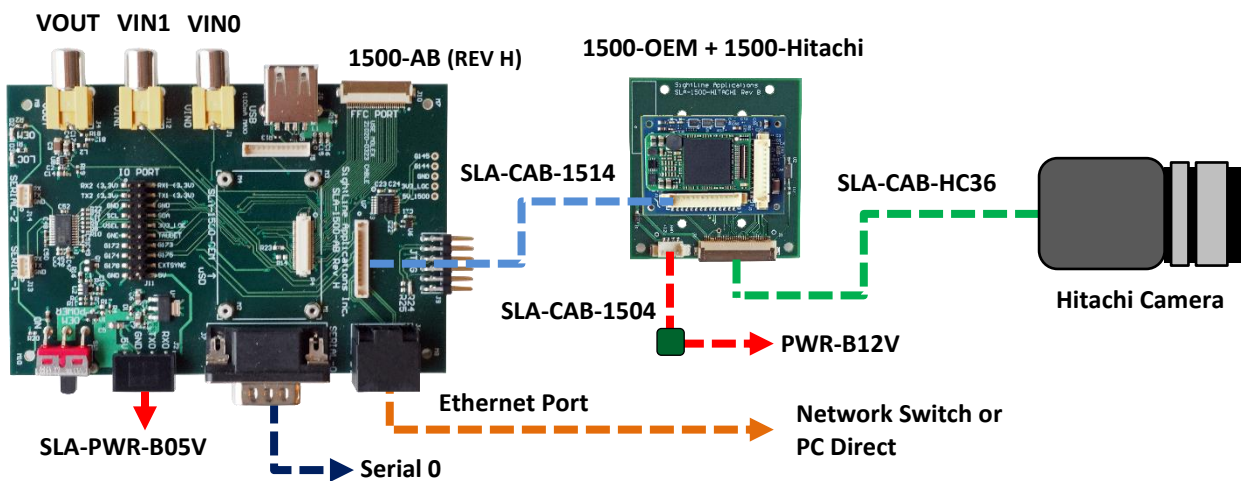


Figure 3: 1500-OEM Hitachi Block Camera Bench Setup



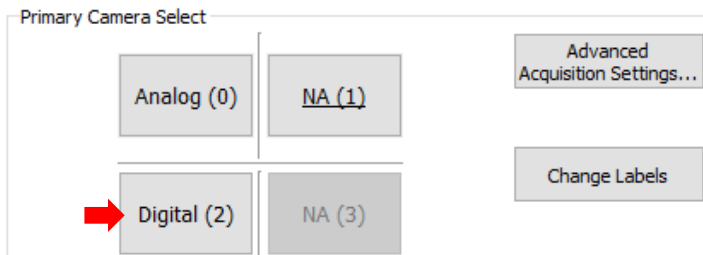
## 4 Configuration Settings

This section covers how to configure the video processing board to support the Hitachi camera input. The following steps reference the Panel Plus software.

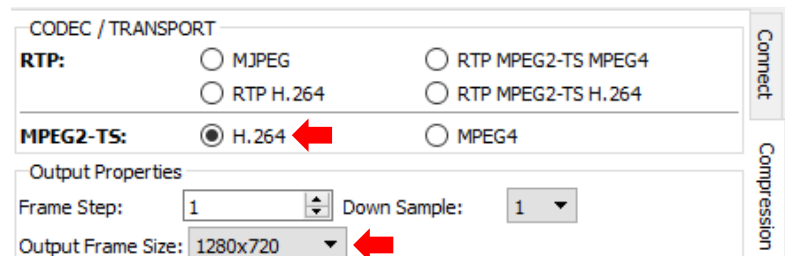
1. Connect to the board using the Panel Plus application. See the [1500-OEM Startup Guide](#) for connection instructions.
2. From the main menu » *Configure* » *Acquisition Settings*. Set the *Camera Index* to Digital.
3. Set the *Camera Type* to match the camera. The frame *Height* and *Width* will be selected automatically based on the camera type. The *Apply* button will turn red indicating input field changes have been detected.



4. Select the *Apply* button, and then close the *Acquisition Settings* dialog window.
5. 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.
6. Click the *Multi Camera* tab and select the *Digital (2)* input as the primary camera to display the video in Panel Plus.



7. Click the *Compression* tab.
8. Select H.264.
9. Select an Output Frame Size. Use the dropdown menu to select an output frame size - 960/720 or 1280/720.





## 5 Camera Control

This section describes how to set up a TCP passthrough and virtual COM port to allow camera control through the Hitachi GUI. The Virtual Serial Port Emulator (VSPE) from [Eterlogic](#) is used to set up a virtual COM port. Alternately, the lens focus and zoom can be controlled through Panel Plus, see the [EAN-Lens Focus Control](#) document for steps on how to set this up.

*Enabling TCP Passthrough will disable the Lens Control through Panel Plus. If using lens control through Panel Plus, the Protocol field in Serial Port Settings must be set to Port Not Used.*

### 5.1 TCP Passthrough Setup

Set up a passthrough on the SLA board.

1. From the Panel Plus main menu » *Configure* » *Serial Port Settings*:
  - a. Select *Serial Port 2*.
  - b. For *Protocol*, select *TCP Pass Through*.
  - c. Set the *Inbound Port*, *Baud rate*, *Data Bits*, *Stop Bits*, and *Parity (Even)*.

Serial Ports Settings

Port: Serial Port 2

Protocol: TCP Pass Through

Baud: 4800 Max Length: 127

Data Bits: 8 Max Delay: 100

Stop Bits: 1 Inbound Port: 4001

Parity: Even Destination Port: 0

Destination IP: 192.168.0.25

Destination port and IP determined from TCP protocol

Save

2. After configuring the settings, click *Save*.

*Some setting changes require the board to be restarted for the settings to take effect. In the Apply New Settings dialog window, choose one of the following options.*

Apply New Settings

Applying new settings may require a power cycle.  
Would you like to apply settings now?  
This may reset the board (20 sec downtime!)  
Reconnect when the board is back alive.

No! Revert! Yes, Apply settings. Just save for now, I'll restart later.

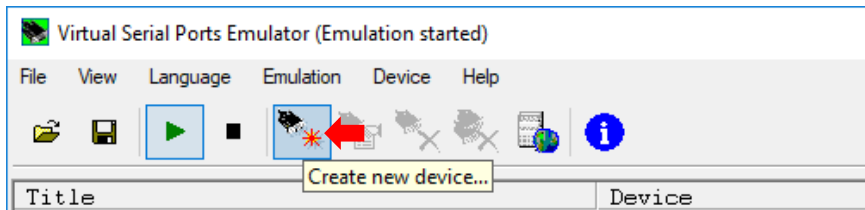
3. Proceed to the next section to set up a virtual COM port.



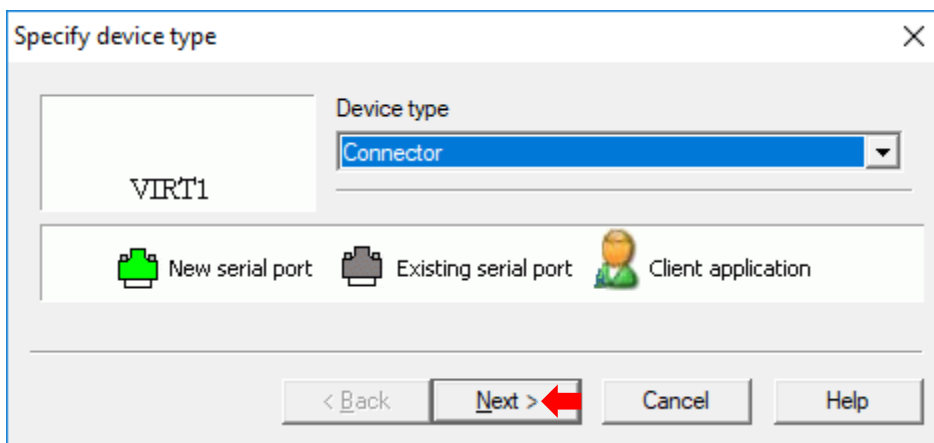


## 5.2 Virtual Com Port Setup

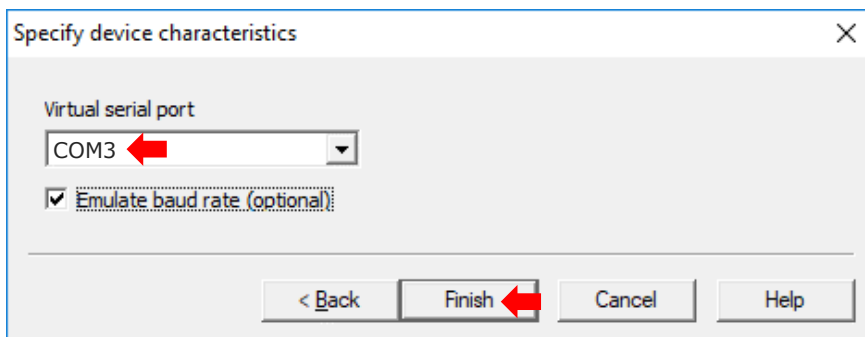
1. Start the Virtual Serial Ports Emulator from Eterlogic to set up a virtual COM port.
2. From the main VSPE interface, click on the *Create new device* icon.



3. Under Device type select *Connector*. Click *Next*.

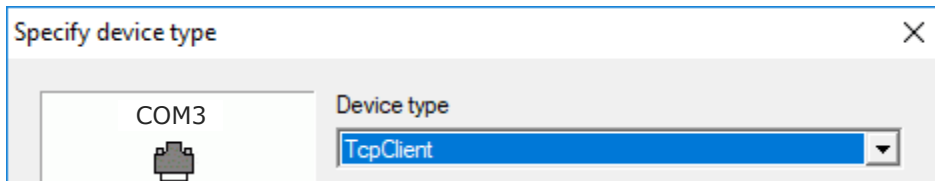


4. Assign a serial port number to the device. Use COM3 or higher since COM1 and COM2 may already be in use. Select the *Emulate Baud Rate* option. Click *Finish* when done.

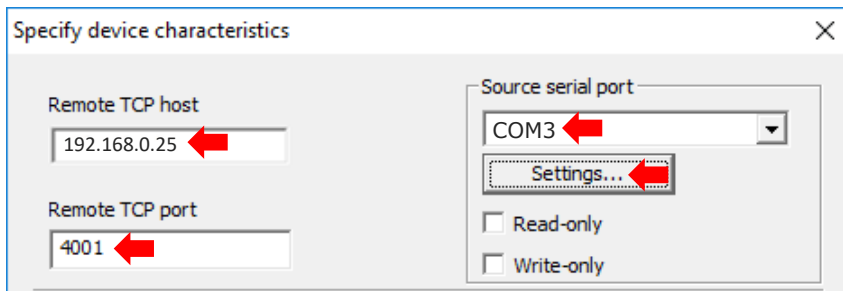




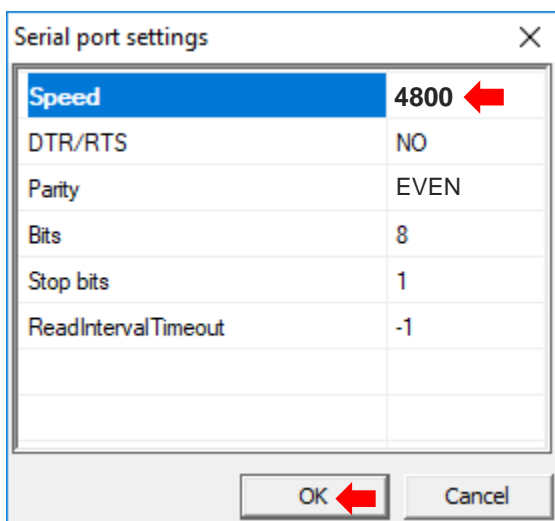
5. From the main VSPE interface, click on the *Create new device...* icon.
6. Under *Device type* select *TcpClient*. Click *Next*.



7. In the *Specify device characteristics* dialog window, enter the following settings:
  - Remote TCP host: *Enter SLA board IP address*
  - TCP port: *4001*
  - Source serial port: *COM3*
8. Click the *Settings* button.



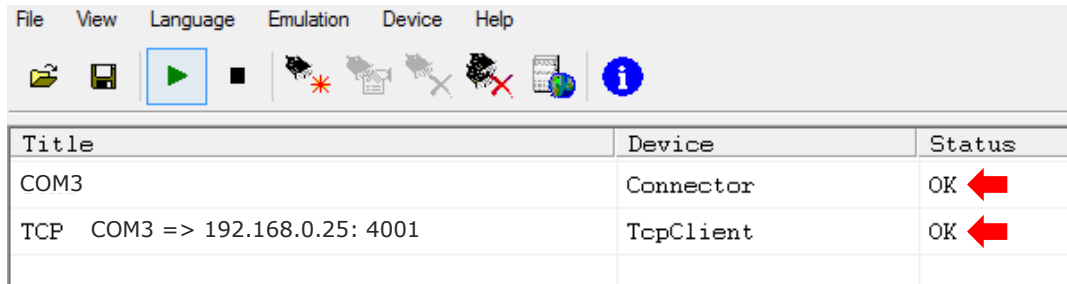
9. In the *Speed* dropdown menu select 4800 baud rate. Click OK.



10. Click *Finish* when done.



11. The main VSPE dialog window should show the following configuration:



12. Start the Hitachi camera control application (*ECRS2.exe* file). Select *COM3* and Default (*4800, EVEN Parity*) baud rate options.

13. Click *OK*. The Hitachi camera control application is now ready to use.

## 6 Questions and Additional Support

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](#).