



SightLine

APPLICATIONS

EAN-DRS Tamarisk Camera

PN: EAN-DRS-Tamarisk-Camera

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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 SLA-hardware for controlling DRS Cameras. This covers the Tamarisk 320 and 640, as well as the Superframe (temperature) version.

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.

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

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

1500-OEM:

- Firmware version 2.22.06 or above for DRS Superframe
- FPGA firmware version 5 or 12

3000-OEM:

- Firmware version 2.22.13 or above for DRS 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.



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-FFC interface board (connects to 1500-OEM)
- 3000-FFC interface board (connects to 3000-OEM)
- FFC-DRS interface board (connects to camera)
- FFC-DRS interface board (connects to camera)
- 1500-AB board (serial and network interface)
- 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-FFC 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 FFC ribbon cable to the 1500-FFC interface board and the FFC-DRS on the Tamarisk camera.
4. Connect 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.

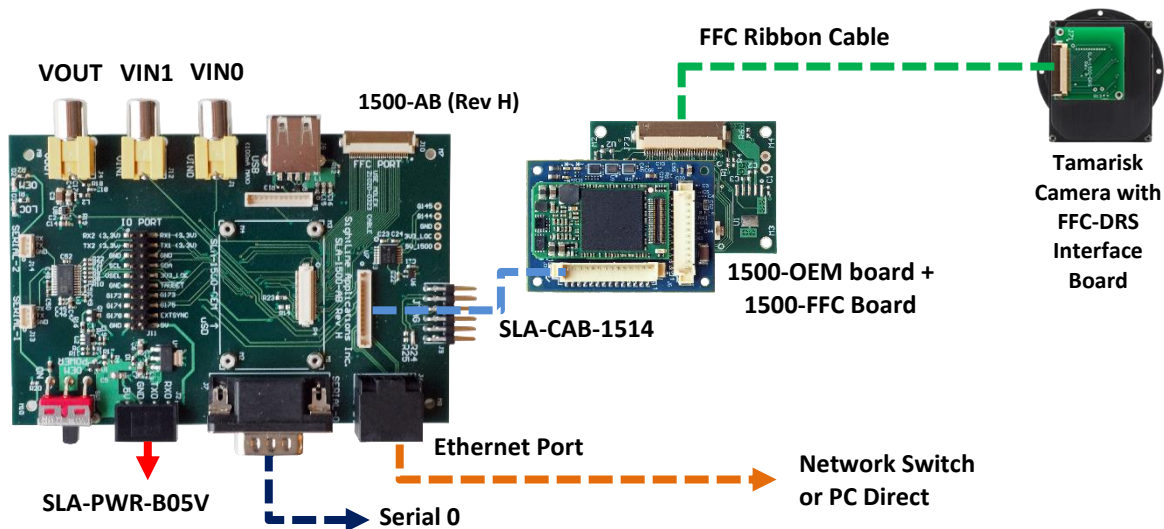


Figure 1: 1500-OEM DRS Tamarisk Camera Bench Setup




3.2 Hardware Bench Setup 3000-OEM

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

The 3000-IO board provides power to the camera through the 3000-FFC interface board. It is supplied via the FFC ribbon cable that is used between the interface board and the camera.

1. Attached the 3000-IO board to the 3000-OEM board.
2. Attach the 3000-FFC 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-FFC 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-FFC 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.*

3. Connect the FFC ribbon cable to the 3000-FFC interface board and the FFC-DRS interface board on the Tamarisk camera.
4. Connect the Ethernet, serial, and power cables to the 3000-IO board.
5. 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.

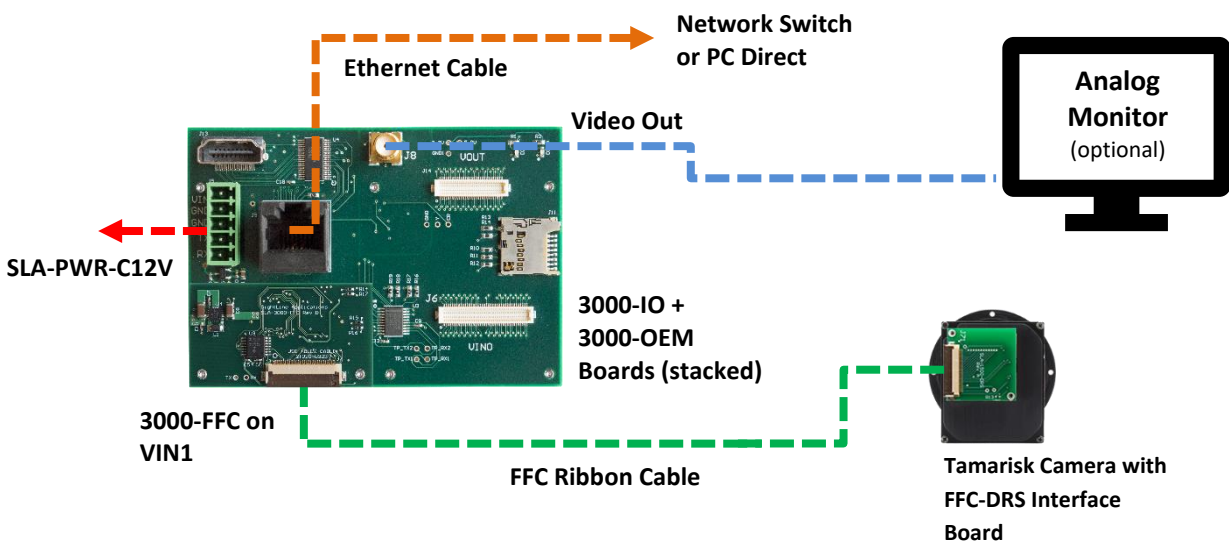


Figure 2: 3000-OEM DRS Tamarisk Camera Bench Setup



4 Configuration Settings

This section covers how to configure the video processing boards to support the DRS Tamarisk cameras in 640 x 480 or 320 x 240 mode with the video processing boards. The 3000-OEM and 1500-OEM configuration procedures are similar. The 3000-OEM requires additional steps. The following sections reference the Panel Plus software.

4.1 Preconfigured Camera Settings

The *Camera Type* list for the Tamarisk include the 640 and 320 in 8-bit or 14-bit mode. In 8-bit mode, autogain is done on the Tamarisk camera therefor the contrast and brightness controls in Panel Plus have no effect on the video.

In 14-bit mode, autogain is done on 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.

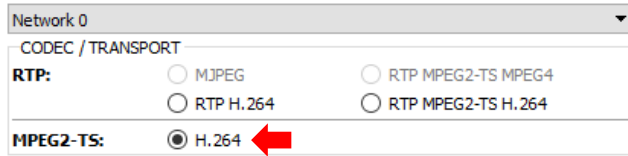
1. Connect to the board using the Panel Plus application. See the [1500-OEM Startup Guide](#) or the [EAN-Startup Guide 3000-OEM](#) for connection instructions.
2. Main menu » *Configure* » *Acquisition Settings*. Set the *Camera Index*:
 - a. 1500-OEM: *Digital*
 - b. 3000-OEM: If the camera adapter board is installed on VIN1 of the 3000-IO board, use *Cam 2*. If the board is installed on VIN0, use *Cam 0*.
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. Click 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 on the *Compression* tab. Select a video protocol. (*MPEG2-TS: H.264* is recommended.)



7. Click *Use My IP - Unicast*, and then click *Send*.

8. From the Multi-Camera tab select *Cam 2*. The camera output should now be displayed in Panel Plus.

If video does not display, try saving and activating the settings again in step 5.

4.2 DRS Tamarisk Camera with Superframe

The DRS Tamarisk Superframe is supported in firmware 2.22.15 and later.

Camera configuration settings can be set from the *Configure » Aquisition Settings* dialog window. *Height*, *Width* and *Horizontal Front Porch* should match Tamarisk camera model.

The settings shown in Figure 3 are for the 320 Tamarisk camera with the 3000-OEM board. If the 3000-FFC camera board is connected on VIN0, use Cam 0. If the board is connected on VIN1, use Cam 2 (shown).

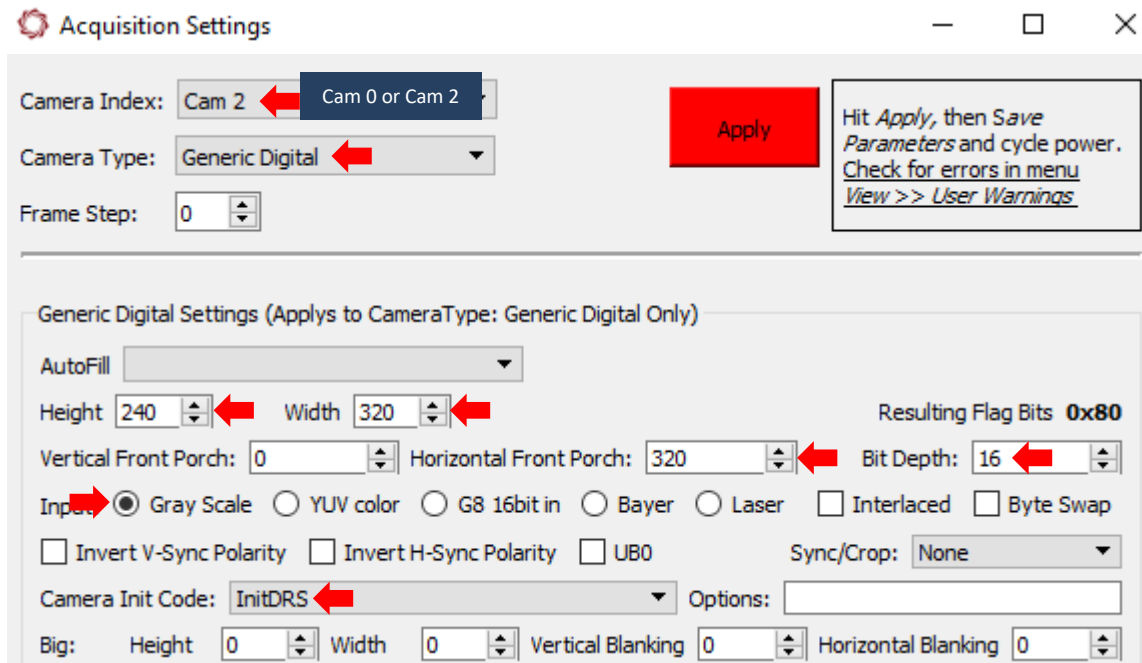


Figure 3: DRS Tamarisk Superframe Setup (3000-OEM)



4.3 DRS Superframe Modes and Ranges

Data output is 16-bits. There are no programmable ranges.

Each 16-bit pixel value represents Kelvin temperature as 11.5 fixed point binary.

Take 16-bit pixel value as integer, divide by 32.0f, then subtract 273.15 to get Celsius

4.4 Additional Camera Configuration - 3000-OEM

1. In Panel Plus click the *Multi-Camera* tab
2. Select *Network 0*.
3. In the *Cameras* section, if the 3000-FFC board is connected on VIN0, select camera 0. If the 3000-FFC board is connected on VIN1, select camera 2. This enables video to display in Panel Plus.
4. To display video on any of the 3000-OEM outputs (Analog, HDMI, or HD-SDI) select the radio buttons adjacent to the desired output.

Decode @ P+	Display	Cameras				Multi	Blend	None	Resolution
		0	1	2	3				
<input checked="" type="radio"/>	Network 0	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Out=In ▼
<input type="radio"/>	Network 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Out=In ▼
	Analog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	NTSC ▼
	HDMI	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	720p60 ▼
	HD-SDI	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	720p60 ▼

Send ←

Figure 4: 3000-OEM Multi-Camera Tab Settings

4.5 Serial Passthrough

Serial Passthrough for DRS Tamarisk cameras defaults to 57600, 8, N, 1 serial setup. When using the DRS Camera Controller GUI with serial passthrough, it may be necessary to unplug any USB-to-serial adapters currently plugged into the host PC. The DRS Camera Controller GUI can get confused by these adapters and stop working. Restart the PC after unplugging the devices, and then run the DRS Camera Control GUI.

5 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](#).