VENTUS HD6
USER GUIDE

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1 SAFETY CONDITIONS

Read all instructions prior to use.

Observe electrostatic discharge (ESD) precautions when handling.

The camera requires reasonable thermal sinking when operating. Use stirred air and conduction to outside environment when installed in an enclosure.

The camera must be operated within its environmental limits.

Repairs and service are to be completed only by Sierra Olympia Technologies. Please refer any technical issues to support@sierraolympia.com.

2 EXPORT NOTICE

Product Export Classification Control Number (ECCN): 6A003.b.4.a. This document is provided for operation purposes only and does not contain export-controlled technology.

3 REFERENCE DOCUMENTS

Document Number	Document Title
20-70004	Mechanical ICD, Ventus HD6, 30mm
20-70007	Mechanical ICD, Ventus HD6, No Lens
S-D03-10409	WIND Firmware API
S-D07-10496	WIND Viewer User Guide
20-70005	Electrical ICD, Ventus HD6
1043862	ICD for the HexaBlu Baseline OEM Camera Core

4 INTRODUCTION

The Ventus HD6 is ready to operate out of the box. This guide will provide a walkthrough of the minimum setup to begin imaging.

This document applies to WIND Viewer Version 2.6.x. More detailed information on WIND Viewer is available in the WIND Viewer User Guide.

The Ventus HD6 is an MWIR imager designed to be integrated into end-user products by integrators and OEMs. This user guide will cover basic usage and limits of the product. More detailed technical information (including software protocol, connector locations and pinouts, etc.) may be found in the referenced ICDs (interface control documents).

The main elements of the Ventus HD6 camera are the DRS HexaBlu Senor, calibration shutter, lens, chassis, and a video processing engine which is referred to as the SightLine processor, or SLA. The SLA serves as the central processor for the camera and performs video render/processing, IP encoding, and control of the sensor subsystem. Control commands are

sent to the SLA and may be passed through to subsystems in a fashion further described the WIND Firmware API.

WARNING! Do not update Sightline firmware without consulting Sierra-Olympia Technical Support. Update with an unqualified firmware version can interrupt camera functionality.

A sample user interface (WIND Viewer) is included on the delivery disk to demonstrate functionality of video encoding and control command structure. This quick start guide will describe camera operation using WIND Viewer.

The Ventus HD6 may be installed in an enclosure that protects the camera from the elements and provides field-friendly connectors using patch cables to the camera's interfaces as defined by the electrical ICD. The command interface and protocol are suitable to build camera functionality into end-user applications. The camera may also be operated to its full potential as delivered by using the sample interfaces provided.

5 INCLUDED ITEMS

The packaging contains:

- Ventus HD6 camera
- Cable kit
    - Ethernet: ~72in. RJ45 terminated
    - Power: 18in. barrel terminated with wall-plug-style transformer
    - Video: Short micro-HDMI to HDMI adapter
- USB Delivery drive
    - WIND Viewer
    - ICDs and documentation

5.1 Cables

Optional cables are available. See 20-70005 Electrical ICD, Ventus HD6 for additional connection information.

Cable Name	SOTI PN	Manufacturer PN
Input Power Cable	S-A07-10237	NA
Serial camera control	S-A07-10236	NA
Ethernet	S-A07-10240	NA
HDMI	NA	Tripp-Lite P142-06N-Micro
Camera Link Adapter Kit	S-A07-10251	NA

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6   QUICK START GUIDE

6.1   Connect the Ethernet cable.

6.1.1   Connect the provided Picoblade-terminated Ethernet cable to J11. The camera can be connected to a managed network, a switch or directly to a computer. The ethernet interface is preconfigured for DHCP.
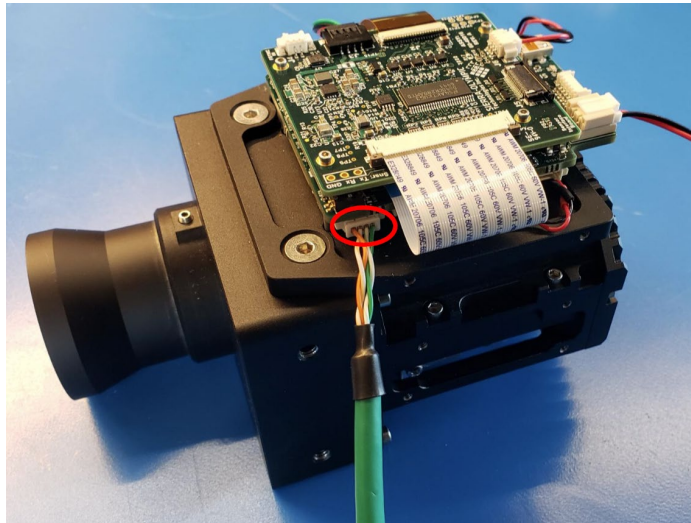

Figure 1: Ethernet Connection

6.2   Connect power cable.

6.2.1   Connect the provided Sherlock-terminated power cable to J1 as shown in Figure 2. The nominal input voltage is 12VDC (max 14V) with a minimum 1.5A supply.
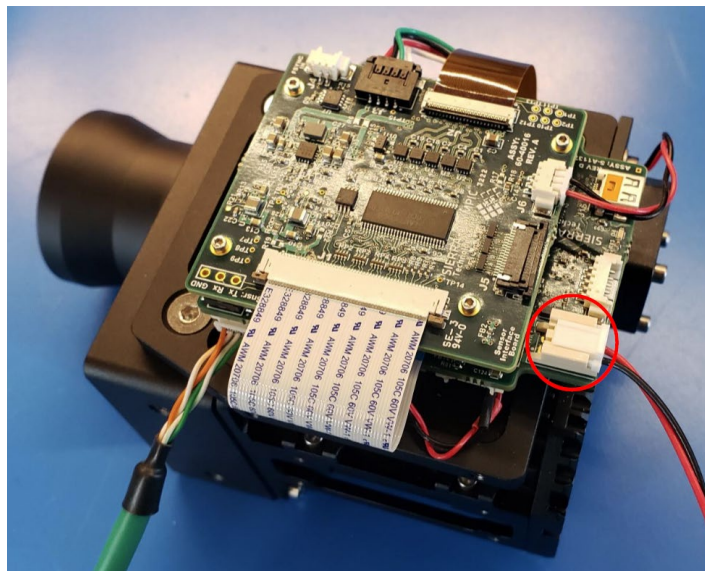

Figure 2: Power Connection

6.3   Optional HDMI Connection

6.3.1   Connect a type D Micro-HDMI cable to J16. The Type D Micro-HDMI may be connected to an HDMI monitor or capture card.
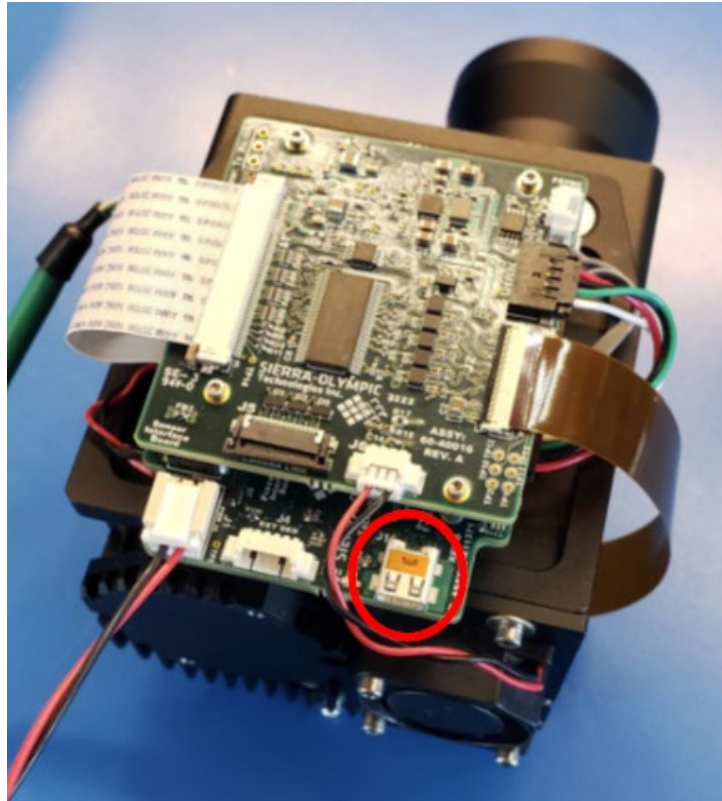

Figure 3: HDMI Connection

6.4   WIND Viewer – Connection Procedure

6.4.1 Establish IP Connection

6.4.1.1   Install WIND Viewer from the USB delivery drive.

6.4.1.2   Launch WIND Viewer.

6.4.1.3   All available SLA-equipped cameras on the network will appear in the "SLA Boards" dropdown list, identified by IP address and serial number. The camera has been preconfigured to obtain an IP address automatically from a DHCP server or from link-local addressing.
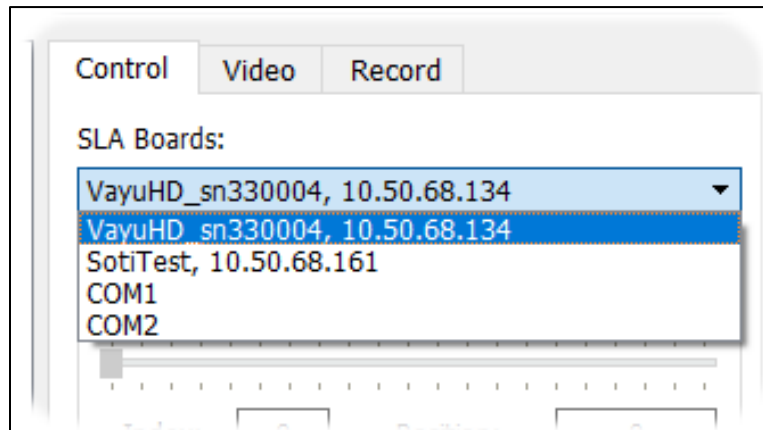
Figure 4: Connection Dropdown

6.4.1.4 If the camera does not appear in the list, do the following:

6.4.1.5 Verify the camera has had enough time to initialize. The cooling fan will start after initialization (approximately 1 minute after power on)

6.4.1.6 Click **Refresh**.

6.4.1.7 Make sure that your computer is on the same subnet as the camera.

6.4.1.8 To connect to the camera, select the camera from the drop-down and click **Connect**.

6.4.1.9 When the Connect button changes to Disconnect, you have successfully established connection.

6.4.2 Stream Video

6.4.2.1 H.264 video begins streaming immediately over UDP to the local computer's IP address on port 15004.

6.4.2.2 Live video should appear in the WIND Viewer main window.

6.4.2.3 Video streaming may be more intricately configured through the full communication protocol.

6.4.2.4 Explore camera functions in WIND Viewer.

6.4.2.5 There is nothing in this application that can damage the camera or is irreversible.

6.4.2.6 This document applies to WIND Viewer Version 2.6.x. More detailed information on WIND Viewer is available in the *WIND Viewer User Guide,* document number S-D07-10496.

7   3G/HD-SDI ACCESSORY INSTALLATION

A kit is available for separate purchase to enable SDI output (configured by the Sightline). The kit contains electronics, mounting equipment, and cables. The following instructions are provided to mount the kit on the chassis; the kit may also be remote mounted.

HDMI and SDI can not be operated simultaneously. The camera is configured to operate HDMI by default.

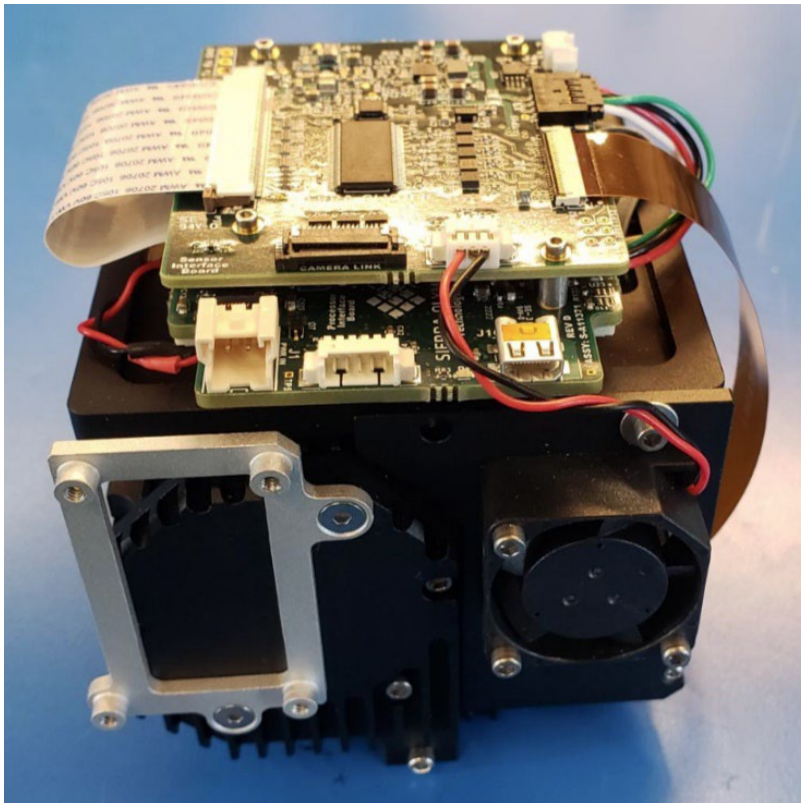7.1.1   Install the SDI bracket with two M2.5 4mm FHS.

Figure 5 SDI Bracket

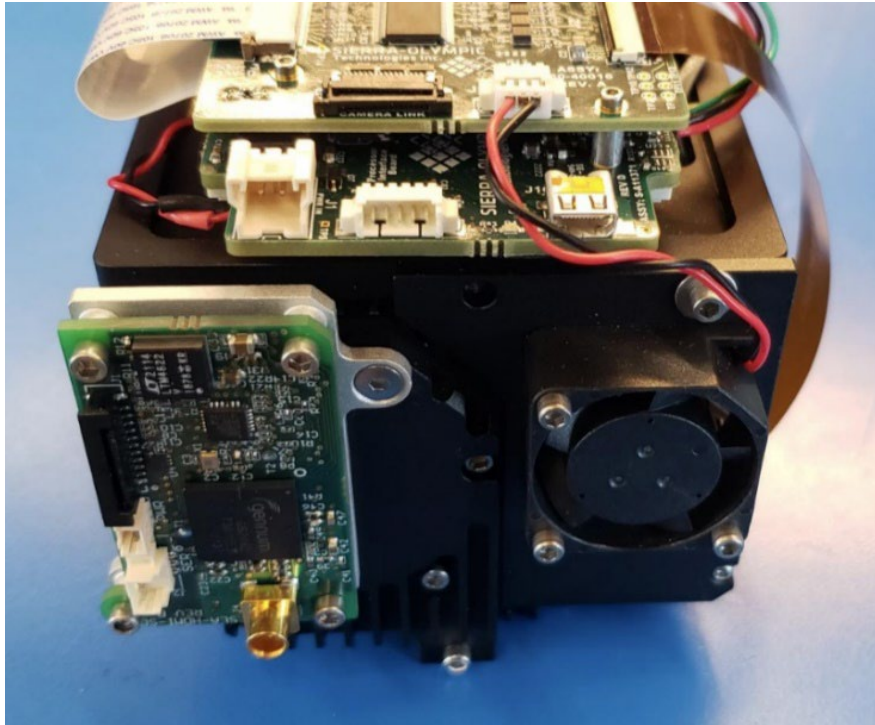### 7.1.2 Install the SDI board with four 2-56 1/4in SHCS

Figure 6 Install SDI board.
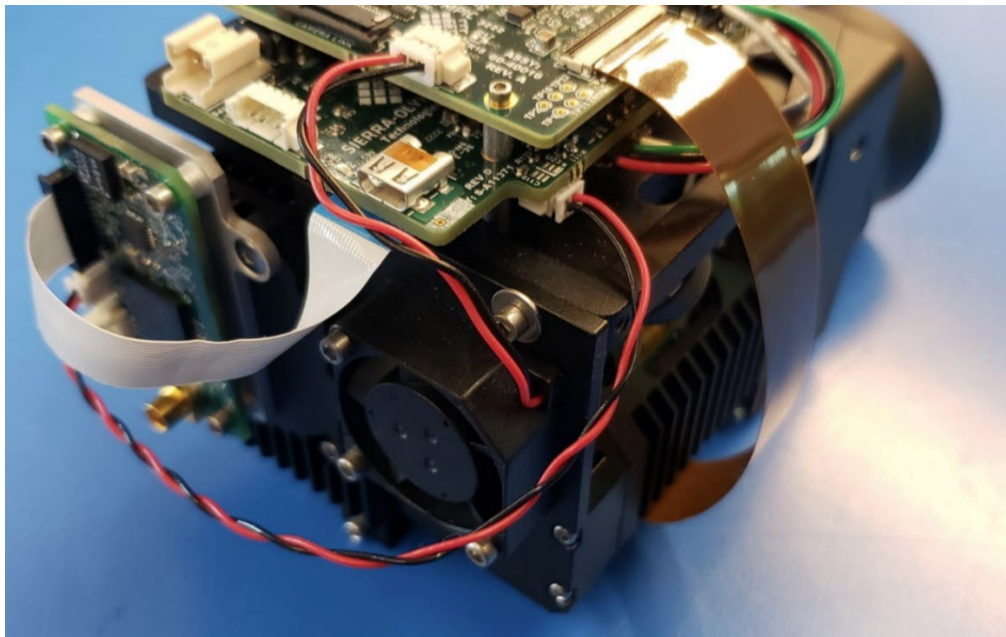
7.1.3 Install the FFC and power cables

Figure 7 FCC and Power Cable Installation

7.1.4   Once the SDI accessory kit is installed power the camera. Use any 75-ohm MCX cable to the SDI connection. (see electrical ICD 20-70005 for more detail)

8   FOCUS

The Ventus HD6 cameras are pre-focused at the Sierra Olympia factory to hyperfocal/infinity which is suitable for many applications. The camera may be manually refocused by loosening the set screw and rotating the lens until the desired focus is achieved, then tightening the set screw.

9   NONUNIFORMITY CORRECTION

9.1   NUC

The Hexablu contains a register of mode indices that correspond to 2-point (gain) NUC tables and integration times. The Ventus HD6 is calibrated with through-lens NUC at the integration times listed below. It is recommended to change modes based on scene temperature / photon flux.

NUC Table	Integration Time	Scene Temperature
1	16ms	10 to 50C
0	10ms	30 to 70C

10 INTEGRATION CONSIDERATIONS

- The Ventus HD6 dissipates ~11W of heat, please see the corresponding mechanical ICD for heatsinking surfaces. When enclosed, stirred air is recommended, the volume wall should promote conduction to ambient air.

- The lens mount has a ¼-20 tripod mount for convenience of demonstration. In integration it is recommended to use the M4 tapped holes on the lens mount

- The DRS HexaBlu sensor may be accessed using 'pass-through' commands in the WIND protocol. Please reference the WIND Firmware API (S-D03-10409) and DRS ICD (1043862) documents for additional information

11 REVISION HISTORY

Revision	Date	Description	ECO
Rev A	2023-06-06	Initial Release	1308