



SIERRA-OLYMPIA

TECHNOLOGIES INC.



QUICK START GUIDE

VIENTO 10 AND HD10 USB

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Product Export Classification Control Number (ECCN): 60/30Hz: 6A003.b.4.b 9Hz: 6A993 This document does not contain export-controlled technology.

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1 SAFETY CONDITIONS

Read all instructions prior to use.

Observe ESD (electrostatic discharge) 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 the environmental limits.

Repairs and service are to be completed only by Sierra Olympia Technologies. Please refer any issues to your sales representative.

2 EXPORT NOTICE

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3 REFERENCE DOCUMENTS

Document Number	Document Title
S-D11513	Mechanical ICD, Viento 10 USB
20-70057	Mechanical ICD, Viento HD10 USB
S-D11285	Electrical ICD, DRS USB
S-D11400	USBreeze Viewer User Guide

4 INTRODUCTION

The Viento 10 USB is a fixed-focal length, UVC-enabled LWIR imager designed for integrators and OEMs. This quick start guide will cover basic operation of this product. More detailed technical information can be found in the interface control documents (ICDs) referenced in section 5.

The Viento 10 USB is ready to operate out of the box with UVC.

5 OEM BASE BOARD

The Viento 10 USB can be operated in its OEM configuration by removing the USB-C Adapter Board. Remove the two 0-80 socket head caps screws securing the USB-C Adapter Board and gently pull the Adapter Board straight back to remove it from the stack. In this configuration, all connections to the Viento 10 USB are made through the S2 connector on the OEM Base Board.

S2 is a “board-to-board” type connector; there is no “cable-to-board” mating connector to connect to S2. Therefore, any integration in the OEM configuration requires the use of a printed circuit board using the applicable mating connector. Refer to *S-D11285 Electrical ICD, DRS USB*, for the specification of the S2 connector, its mating connector, and its signal assignments.

Refer to *S-D11513 Mechanical ICD, Viento-10 USB* for dimensional relationships between the mating connector for S2 and the jackscrew fasteners (which would correspond with mounting holes in the interface PCB.)

A PCB reference design for the USB-C Adapter Board is available on request, in Altium file format. This reference design provides a baseline layout with proper placement of the S2 mating connector and mounting holes.

6 INCLUDED ITEMS

Packaging contains the following items:

- Viento 10 or HD10 USB camera
- Delivery drive
 - Quick Start Guide (this document)
 - USBreeze Viewer Software

- Interface Control Documents

7 REQUIRED EQUIPMENT

- USB 3.0 Type A to Type C cable or USB 3.0 Type C to Type C cable

8 POWER

The DRS sensor may require more power than some USB 3.0 ports can supply. This will be evident by the camera getting stuck in a reset loop, where you can hear the soft click of the shutter repeatedly trying, and failing, to move. An Auxiliary Power connection is available for the case that the USB port power is insufficient. The camera will default to Auxiliary Power when it is applied. This will not affect the data on the USB port. Auxiliary Power and USBC power are not hot-swappable (i.e. removing Aux power while USBC plugged in will cause camera to reset). Refer to *S-D11285 Electrical ICD, DRS USB*, for the specification of the J4 Auxiliary Power connector, its mating connector, and its max ratings.

9 SET UP

- 9.1 Connect the USB cable to the camera and the computer.
- 9.2 Install USBreeze Viewer from the delivery drive
- 9.3 Launch USBreeze
- 9.4 Select the camera from the Select video source drop down

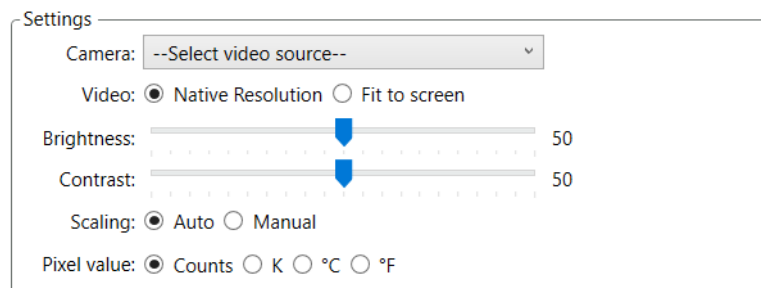


Figure 1 USBreeze Settings Window

- 9.5 Video should stream immediately. See S-D11400 USBreeze Viewer User Guide for more information about how to use USBreeze.

10 NVP CONTROLS

Non-volatile parameters (NVPs) may be set and read on Viento-10/HD10 USB cameras by launching the application with the `--nvps` command line option. This option may also be set by editing the Target field in the application's shortcut. This mode is not recommended unless users are familiar with altering NVPS.

11 NOISE FILTERING

DRS offers two different noise filtering options to improve image quality, Temporal Noise Reduction (TNR) and Spatial Noise Reduction (SNR). TNR compares pixels from frame to frame and replaces them if their value is less than a specified threshold. SNR compares each pixel's value to its neighbors and ensures the intensity is bounded within the range of its neighbors. TNR and SNR are toggles that can be enabled and disabled through both DRS Camera Control Software (CCS) and serial commands. The combination of both is called the 3D noise filter by DRS, enabling 3D noise filtering results in substantial lowering of NETD. The Viento 10 and HD10 USB is configured with both TNR and SNR on.

Serial commands:

NVP #89 – TNR Enable: 0 = Disable, 1 = Enable.

NVP #90 – TNR Threshold: range 0 to 32. Any value larger than 32 would cause significant motion lag (trailing image) on moving objects in the image.

NVP #185 – Spatial noise enable 1: 0 = Disable, 142 = Enable.

NVP #186 – Spatial noise enable 2: 0 = Disable, 293 = Enable

Note: Spatial noise enable 1 and 2 should be enabled or disabled together.

12 REVISION HISTORY

Revision	Date	Description	ECO
Rev A	2021-12-22	Initial Release	1106
Rev B	2023-10-27	Add NVP Controls section	1436
Rev C	2024-01-23	Add Power section	1689
Rev D	2024-06-25	Add Mechanical ICD to section 3	1765