QUICKSTART GUIDE
ORIOLE 3x AFZ SDI BOARD CAMERA

Introduction

This guide is designed to get you quickly up and running with the **Oriole 3x AF-Zoom HD-SDI Board Camera** (AS-BCAM-3SG42-00-A) and its evaluation kit (AS-BCAM-3SG42-EVAL-A).
This document should be read in conjunction with the technical reference manual for this camera and other documents available on Active Silicon's website, (see Oriole 3x AF-Zoom HD-SDI Board Camera with Global Shutter - Downloads section):

https://www.activesilicon.com/products/oriole-af-zoom-hd-sdi-board-camera-global-shutter/

Figure 1. Oriole 3x AF-Zoom HD-SDI Board Camera

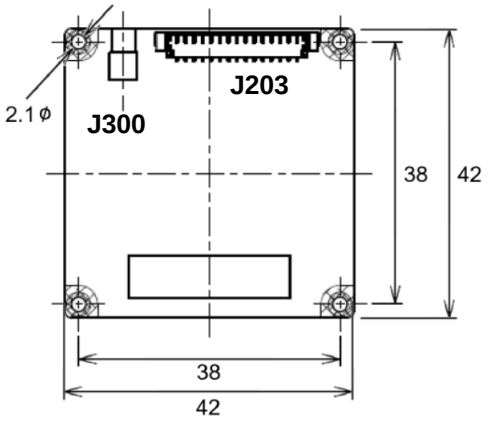

Figure 2. Rear dimensions of Oriole 3x AF-Zoom HD-SDI Board Camera showing connector positions

Evaluation Kit Contents

The Evaluation Kit (AS-BCAM-3SG42-EVAL-A) contains all the parts needed to evaluate the Oriole 3x AF-Zoom HD-SDI Board Camera with Global Shutter. Note that the evaluation kit does not include the camera, this needs to be ordered separately.

Please check that you have all the parts listed below:

- Harrier Evaluation Board (Figure 3)
- 10-way/15-way JST-Molex cable
  (connects camera to evaluation board, Figure 4)
- MMCX to BNC adapter cable (Figure 5)
- USB Type A to mini USB Type B cable
- Multi-region 12V power supply (please fit the adapter suitable for your region)

Figure 3. Harrier Evaluation Board

Figure 4. 10-way/15-way JST-Molex cable

Figure 5. MMCX-BNC adapter cable (example only, actual part may be different) adapter

Harrier Evaluation Board Overview

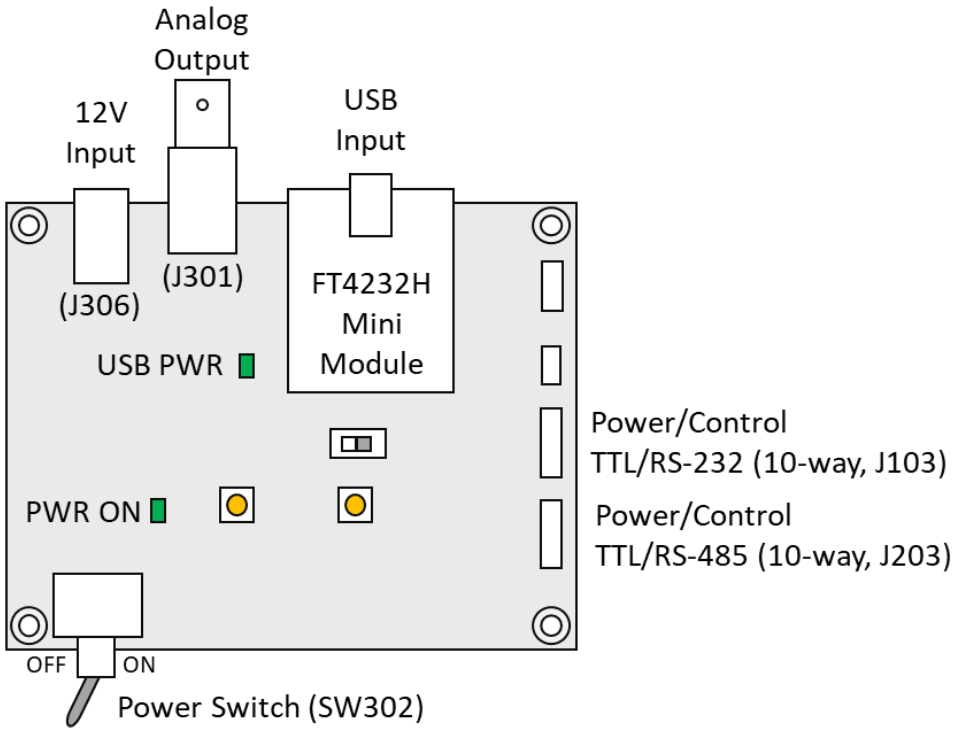

Figure 6. Harrier Evaluation Board diagram

The Harrier Evaluation Board connects to the camera using the supplied 10-way/15-way JST-Molex cable (J103). This provides the power and serial connection to the camera.

The evaluation board is powered by the 12V power supply via a barrel connector (J306).
This supply also powers the camera via the Power Switch (SW302). When the Power Switch (and evaluation board power supply) is switched ON the PWR ON LED will illuminate and the camera will be powered.

Serial communication with the camera is provided by the USB mini module which converts a host PC USB connection to a serial connection to the camera.

For more information please see the Harrier Evaluation Board datasheet on the Active Silicon website (see Evaluation Kit for the Oriole 3x AF-Zoom HD-SDI Board Camera - Downloads section).

Setting up the System

To get the Oriole 3x AFZ SDI Board Camera running, please follow the instructions below:

1. Connect the camera header connector (J203) to the Harrier Evaluation board I/O connector (J103) using the 10-way/15-way JST-Molex cable.
2. For **analog camera output**, connect the J301 (Analog) BNC socket on the Harrier Evaluation Board to an analog monitor/display using a suitable cable.
3. For **HD-SDI camera output**, connect the MMCX to BNC adapter cable to J300 (MMCX socket) on the Oriole 3x AFZ SDI Board Camera; connect the BNC socket of the adapter to a HD-SDI capable monitor/display using a 75 Ohm HD-SDI digital video quality BNC cable.
4. For **serial communications** with the camera, use the mini USB–USB Type-A cable to connect the mini USB socket on the Harrier Evaluation Board to a PC. The USB PWR LED should light up indicating a live connection to the PC. Three serial interfaces will appear as COM ports on the PC and be accessible to PC software (baud rate 9600 default) – one of these (usually the higher number) will be the COM port connected to the camera. These COM ports can be tested using the HarrierControl command line software; this application can be downloaded from www.activesilicon.com from the Software page.
5. Connect the power supply barrel connector to the Harrier Evaluation Board power input connector (J306).
6. Set the Harrier Evaluation Board power switch (SW302) to OFF (left viewed from above).
7. Plug in the power supply and switch ON the Harrier Evaluation Board power switch (SW302). The PWR ON should light up.
8. The camera will make audible mechanical noises as it goes through its power up sequence and after a short time the video outputs will be working.
9. If an analog monitor is connected to the Harrier Evaluation board, and the camera analogue output is set ON you will see the camera output on the analog monitor.
10. If the HD-SDI output is connected you will see the camera output on the HD-SDI monitor/display.

VISCA/Serial Communication

To evaluate VISCA/serial control connect the camera header connector (J203) to the Harrier Evaluation board I/O connector (J103) using the 10-way/15-way JST-Molex cable. Use the mini USB–USB Type-A cable to connect the mini USB socket on the Harrier Evaluation Board to a PC. The USB PWR LED should light up indicating a live connection to the PC. Three serial interfaces will appear as COM ports on the PC and be accessible to PC software. The COM port number is assigned by the Windows operating system. Windows Device Manager (section: Ports (COM & LPT)) can be used to identify the actual COM port number assigned for the serial connection to the camera.

The camera uses the TTL interface – usually this is the highest COM port number assigned and is set to 9600 baud by default. The HarrierControl command line software can be used to send VISCA commands to the camera via the COM port.

Using the HarrierControl Application

Go to the Active Silicon website and find the Software page, or the camera product page for the Oriole 3x AF-Zoom HD-SDI Board Camera and download the HarrierControl application.

Unzip the HarrierControl folder into a suitable folder on your PC. The HarrierControl application is only supported on Windows 10/11. You may need to install the latest drivers from FTDI. These are available here:

https://www.ftdichip.com/Drivers/D2XX.htm

The HarrierControl application is a Windows command line program that relies on several DLL files also included in the HarrierControl folder. The best way to run the application is in a Windows Command Prompt shell; this can be found under Windows Start button in

Start->Windows System->Command Prompt,

or you can search the applications/start for **CMD**.

Run the Command Prompt application and change drive/directory to the HarrierControl folder.

Connect the Oriole 3x AF-Zoom HD-SDI Board Camera to the PC and power-up the camera.

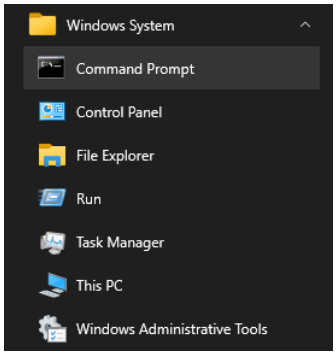

Figure 7. Windows 10 Command prompt application

```
C:\Tools\HarrierControl>
C:\Tools\HarrierControl>harriercontrol COM6 9600 81,09,00,37,FF
Tx: [ 81 09 00 37 ff ]
Rx: [ 90 50 00 4e 3c 00 04 ff ]
C:\Tools\HarrierControl>
```

Figure 8. Typical HarrierControl usage

The HarrierControl application can be used with command line arguments as follows:

HarrierControl [P1] [P2] [P3] [P4]

Argument **[P1]**:

This specifies the type of Interface/Serial communication to be used.

/? displays help text.

/h displays help text.

/H displays help text.

COMx COM port x selected, (x=2-255).

Argument **[P2]**:

This specifies the Baud Rate of the serial port. Valid values are **9600**, **19200**, **38400**, **57600** and **115200**.

Argument **[P3]**:

This is the VISCA command that is to be sent to the camera.

The application requires VISCA commands to be entered in a comma delimited format; the commas are removed before sending the commands.

Each individual number is treated as a hexadecimal number.

To work in PowerShell the comma separated VISCA command should be enclosed in double quotation marks: " *command* "

For information on suitable VISCA commands please refer to the camera documentation.

Example:

```
C:\Tools\HarrierControl>harriercontrol COM6 9600 81,09,00,37,FF
Tx: [ 81 09 00 37 ff ]
Rx: [ 90 50 00 4e 3c 00 04 ff ]
```

Opening the Camera On-Screen Menu (OSD) system

The camera VISCA command set includes commands (CAM_MENUKey) for opening and operating the camera the Camera On-Screen Menu (OSD) system. Using these commands, the menu can be opened, the selection moved up, down, left, right and the highlighted item selected. In the HarrierControl folder there is a batch file ***Harrier_Camera_OSD_Demo.bat*** that can be used to more easily operate the OSD from the command line.

To open the menu system, send the CAM_MENUKey Menu command and the OSD menu will open. Browse the menu by using the CAM_MENUKey up, down, left, right commands to move the selection and the CAM_MENUKey menu command to select options and sub-menus. To apply the results permanently to the camera you must 'Save' the settings on each OSD screen.

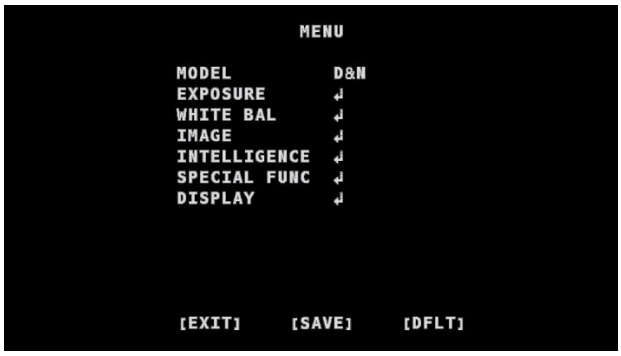

Figure 9. Oriole 3x AF-Zoom HD-SDI Board Camera on-screen display menu

Technical Support

In case of any issues, please contact Active Silicon Technical Support by email on techsupport@activesilicon.com.

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