
QUICK START GUIDE

HARRIER 18x AF-ZOOM HDMI 4K CAMERA

Introduction

This guide is designed to get you quickly up and running with the **Evaluation Kit for the Harrier 18x HDMI 4K Camera** (AS-CIB-18HDMI4K-EVAL-A) and the **Harrier 18x AF-Zoom HDMI 4K Camera** (AS-CAM-18HDMI4K-A).

This document should be read in conjunction with the Harrier 18x AF-Zoom HDMI 4K Camera technical reference manual and other documents available on [Active Silicon's website](https://www.activesilicon.com), (see Harrier 18x AF-Zoom HDMI 4K Camera - Downloads section):

<https://www.activesilicon.com/products/harrier-18x-af-zoom-hdmi-4k-camera/>



Figure 1. Harrier 18x AF-Zoom HDMI 4K Camera

Evaluation Kit Contents

The Evaluation Kit for the Harrier 18x HDMI 4K Camera (AS-CIB-18HDMI4K-EVAL-A) contains all the parts needed to evaluate the Harrier 18x AF-Zoom HDMI 4K Camera. Note that the evaluation kit does not include a Harrier 18x AF-Zoom HDMI 4K Camera, this must be ordered separately.

Please check that you have all the parts listed below:

- Harrier 18x HDMI 4K Camera Evaluation Board (Figure 2)
- 30-way micro coax cable (KEL cable; Figure 2)
- 24-way FFC cable (Figure 2)
- 4x mounting pillars and 4x screws (Figure 2)
- USB Type A to mini USB Type B cable
- Multi-region 12V power supply (please fit the adapter suitable for your region)

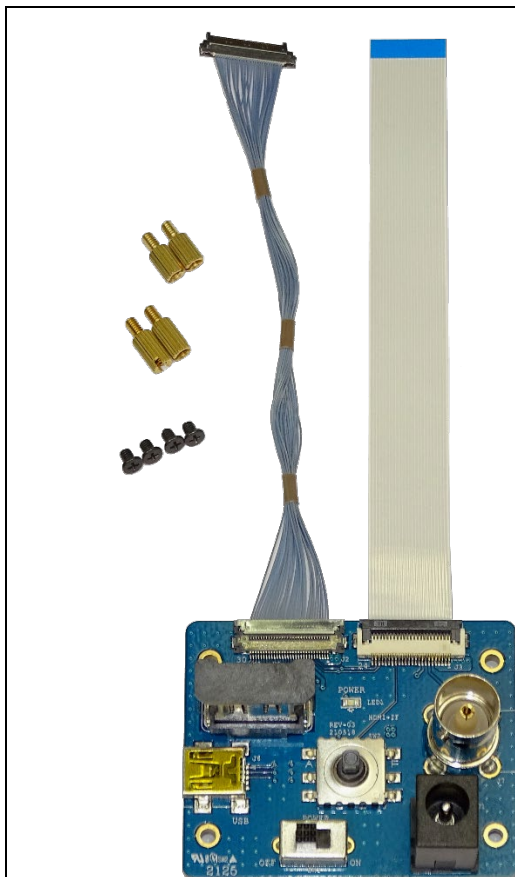


Figure 2. Harrier 18x HDMI 4K Camera Evaluation Board.

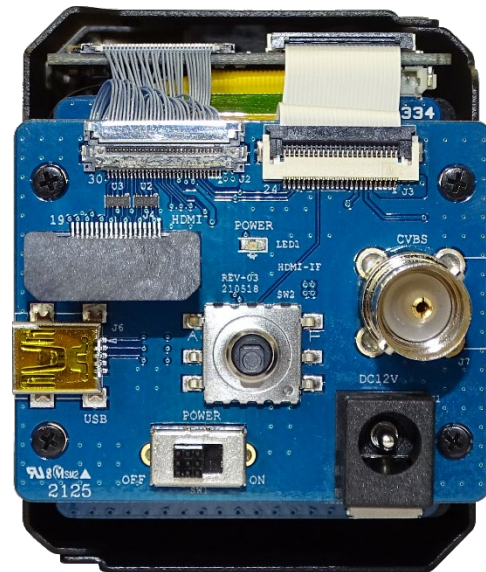
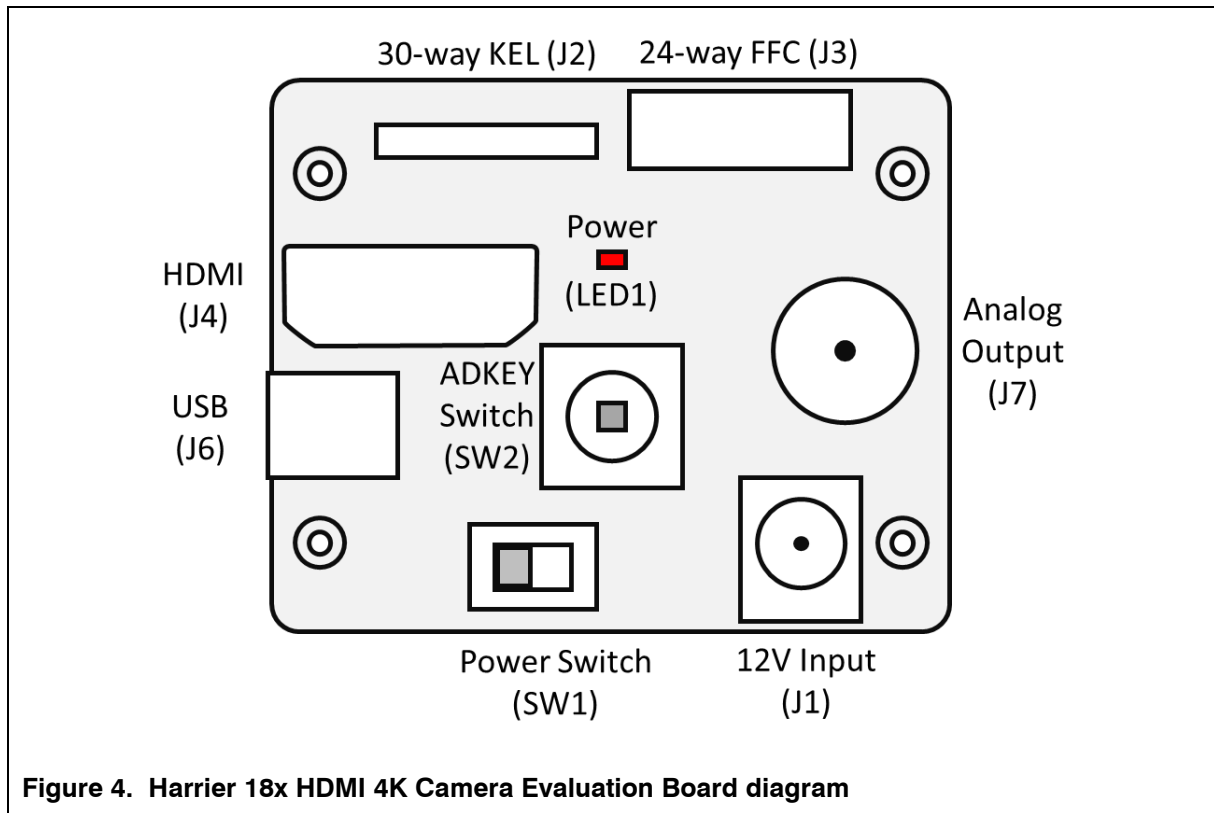


Figure 3. Harrier 18x HDMI 4K Camera Evaluation Board mounted on the camera.

Harrier 18x HDMI 4K Camera Evaluation Board Overview



The Harrier 18x HDMI 4K Camera Evaluation Board connects to the camera using the supplied FFC and KEL cables. It connects to a host PC using the mini-USB cable.

The board is powered by the 12V power supply via a barrel connector (J1). This supply is also used as a power supply for the camera and is connected to the camera via the Power Switch (SW1). When the Power Switch (and camera power supply) is switched ON the Power (LED1) will illuminate.

When the Harrier 18x HDMI 4K Camera Evaluation Board is connected to a PC using the mini-USB cable, the Windows 10 operating system will see a virtual COM port; this port is automatically assigned a number by Windows. To identify the COM port number that Windows 10 has assigned to the camera, open Device Manager and look at the COM & LPT ports. You can identify the right COM port number by comparing reported port numbers with the USB connection to the board connected/disconnected.

Setting up the System

To get the Harrier 18x AF-Zoom HDMI 4K Camera running, please follow the instructions below (also see figure 3):

1. To mount the evaluation board on to the camera please see the section 'Mounting the Harrier 18x HDMI 4K Camera Evaluation Board onto the camera' below.
2. Connect the 24-way FFC cable to the camera (J3 – J302).
3. Connect the 30-way KEL cable to the camera (J2 – J301).
4. For capturing **analog camera output** connect the BNC socket (J7) on the evaluation board to an analog monitor/display using a suitable coaxial cable.
5. For **HDMI camera output**, remove the protective insert from the HDMI socket (J4) and using a suitable HDMI cable, connect the evaluation board to a HDMI monitor/display. If you intend to use 4K, the monitor and cable will need to be able to support 4K video.
6. For **VISCA communications** with the camera, use the mini USB–USB Type-A cable to connect the mini USB socket (J6) on the evaluation board to a PC. The VISCA interface will appear as a COM port on the PC and be accessible to PC software; this COM port can be used with the [HarrierControl](#) command line software, or other serial control applications, to communicate with the camera. The HarrierControl application can be downloaded from www.activesilicon.com from the [Software](#) page.
7. Set the evaluation board power switch (SW1) to OFF (left viewed from above).
8. Connect the power supply barrel connector to the evaluation board power input connector (J1).
9. Plug in the power supply and switch ON the evaluation board power switch (SW1). The Power LED (LED1) should light up.
10. The camera will make audible mechanical noises as it goes through its power-up sequence and after a short time the video outputs will start working.
Note: the camera will power up in the last video mode used, some monitors cannot display all the modes supported by the camera (notably 1080p30 and 4K). If you have no visible video output, use the HarrierControl application to check/change the video output mode set on the camera to ensure that the camera output is supported by the monitor.
11. If an analog monitor is connected to the evaluation board, and the camera analog output is enabled, you will see the camera output on the analog monitor.
12. If the HDMI output is connected and set to a supported mode, you will see the camera output on the HDMI monitor/display.

Mounting the Harrier 18x HDMI 4K Camera Evaluation Board onto the camera

The evaluation board can be mounted on the back of the camera as shown in figure 3.

To mount the board please follow these instructions:

1. Get the mounting pillars. Two of the mounting pillars are slightly shorter than the other two. At the back of the camera, you will see two threaded holes on the left-hand side. Screw the shorter mounting pillars into these threaded holes.
2. At the back of the camera on the right-hand side, there are two screws that secure the casing. Remove these screws with a small cross-headed screwdriver. Store them safely in case you want to remove the evaluation board at a future date.
3. Screw the longer mounting pillars into the two threaded holes where the cross-headed screws were.
4. If not already connected, carefully connect the 30-way KEL cable (J2) and the 24-way FFC (J3) to the evaluation board.
5. Carefully connect the 24-way FFC cable to the FFC connector on the camera (J302).
6. Carefully connect the 30-way KEL cable to the KEL connector on the camera (J301). It may be helpful to add a 360 degree twist to the KEL cable before connecting to the camera as this helps the cable to coil up compactly when mounting the board on the camera.
7. Being careful not to damage the cables, align the board with the mounting pillars and insert the screws to secure the board (see figure 3). Ensure that the cables fit neatly between the board and the camera.
8. To use the HDMI interface carefully remove the protective insert from the HDMI socket (J4).

Using the HarrierControl Application

Go to the Active Silicon website and find the [Software page](#), or the product page for the Harrier 18x AF-Zoom HDMI 4K camera (downloads tab), and download the HarrierControl Application.

Unzip the HarrierControl folder and move it to a suitable folder on your PC.

The HarrierControl application is only supported on Windows 10. You may need to install the latest drivers from FTDI. These are available here, please use version 2.12.28 of the drivers:

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

The HarrierControl application is Windows 10 command line program that relies on several DLL files also included in the HarrierControl folder.

The Harriercontrol application is run in a Windows 10 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 shell and change drive/directory to the HarrierControl folder.

Connect the Harrier 18x AF-Zoom HDMI 4K Camera to the evaluation board.

Using a HDMI cable or coaxial cable, connect the evaluation board to a suitable display/monitor.

Run Windows Device Manager and open the Ports (COM & LPT) list. You will see the COM ports currently connected to your computer. Using the USB cable connect the mini USB socket (J6) on the evaluation board to the PC.

Power-up the camera.

In the Windows Device Manager Ports (COM & LPT) list you will see the COM port of the camera appear. Note the COM port number. Entering **mode** into the Command Prompt window will also list all the available COM ports.

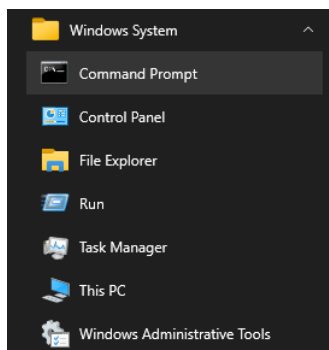


Figure 5. Windows 10 Command Prompt application



Figure 6. Typical Harrier HDMI 4K camera COM port in Device Manager

The HarrierControl application is used in the Command Prompt window 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.

RS232 RS-232 comms via Harrier Evaluation Kit Board selected.

RS485 RS-485 comms via Harrier Evaluation Kit Board selected.

TTL TTL comms via Harrier Evaluation Kit Board selected.

USB3 USB comms selected.

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**.

With USB3 communications [P2] is not required and is omitted from the command line.

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: " ** "

For information on available VISCA commands please refer to the documentation for your camera

Argument [P4]:

This is an optional parameter. If you set [P4] to **/P** HarrierControl will attempt to parse the command and response and print a description of the command/response on the screen.

Note: only a few commands are supported so there may be no description for many commands.

Examples:

```
C:> HarrierControl COM3 9600 81,09,00,02,ff
Tx: [ 81 09 00 02 ff ]
Rx: [ 90 50 00 20 04 66 01 00 03 ff ]
---
C:> HarrierControl COM3 9600 81,09,00,37,ff
Tx: [ 81 09 00 37 ff ]
Rx: [ 90 50 00 1e 2a 00 0d ff ]
---
```

Using the Navigation/ADKEY Control Switch (SW2)

This navigation switch can be used to manually control the zoom/focus of the camera, or to operate the camera on-screen menu system. The control has 5 positions that can be operated – UP, DOWN, LEFT, RIGHT, MENU SELECT. The switch position names represent the way to move the switch from the perspective of the camera display when the evaluation board is mounted on the back of the camera.

MENU SELECT is chosen by pressing the lever towards the evaluation board.

By default, the on-screen menu system is off; pressing MENU SELECT will open the menu system and the other switch positions can be used to move the highlighted menu option to navigate through the menu system. For more information on the menu system please see the camera technical reference manual.

| SWITCH OPERATION | FUNCTION WITH ON-SCREEN MENU OFF | FUNCTION WITH ON-SCREEN MENU ON |
|------------------|----------------------------------|---------------------------------|
| MENU SELECT | Opens menu system | Select Menu option |
| UP | Zoom in | Move menu selection up |
| DOWN | Zoom out | Move menu selection down |
| LEFT | Focus near | Move menu selection left |
| RIGHT | Focus far | Move menu selection right |

Table 1. ADKEY switch operation functions.

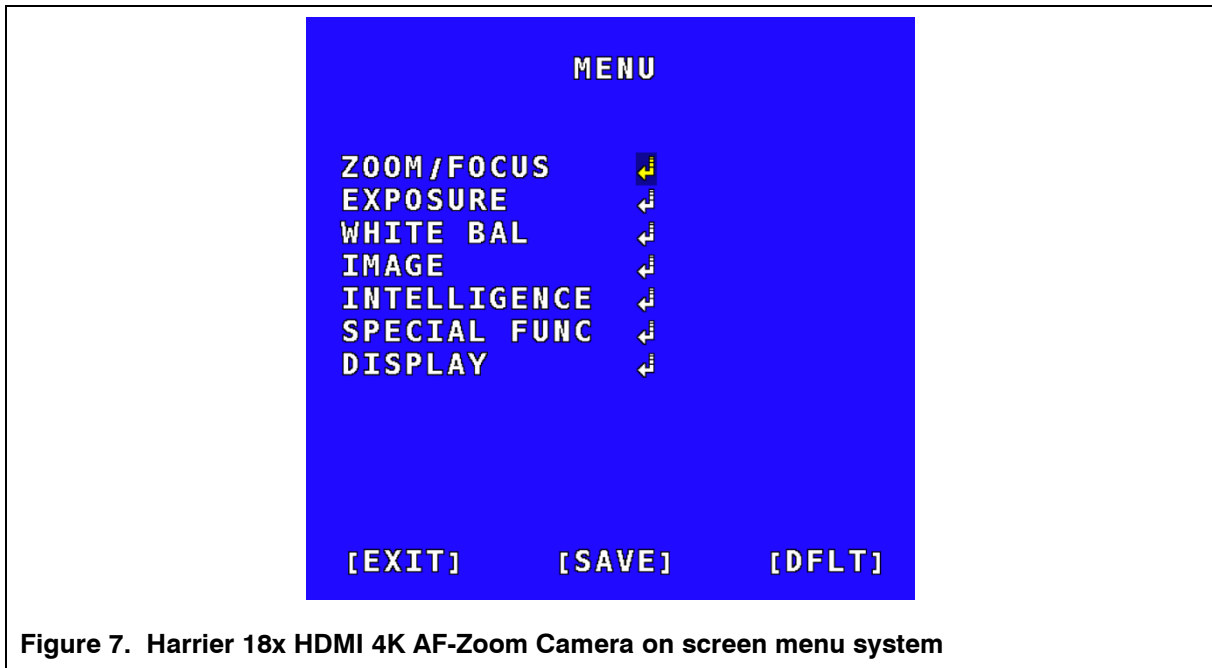


Figure 7. Harrier 18x HDMI 4K AF-Zoom Camera on screen menu system

Technical Support

In case of any issues, please contact Active Silicon Technical Support on the telephone numbers below or by email to techsupport@activesilicon.com.



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