

# QUICK START GUIDE

## BLUEBIRD SDI - H.264 IP ADAPTER BOARD

### Introduction

This guide is designed to get you quickly up and running with the **BlueBird SDI - H.264 IP Adapter** (AS-ADP-H264-001-A). The IP adapter can be plugged into the **BlueBird SDI - H.264 IP Adapter Evaluation Board** (AS-ADP-H264-001-EVAL-A).

This document should be read in conjunction with the BlueBird SDI - H.264 IP Adapter datasheet.

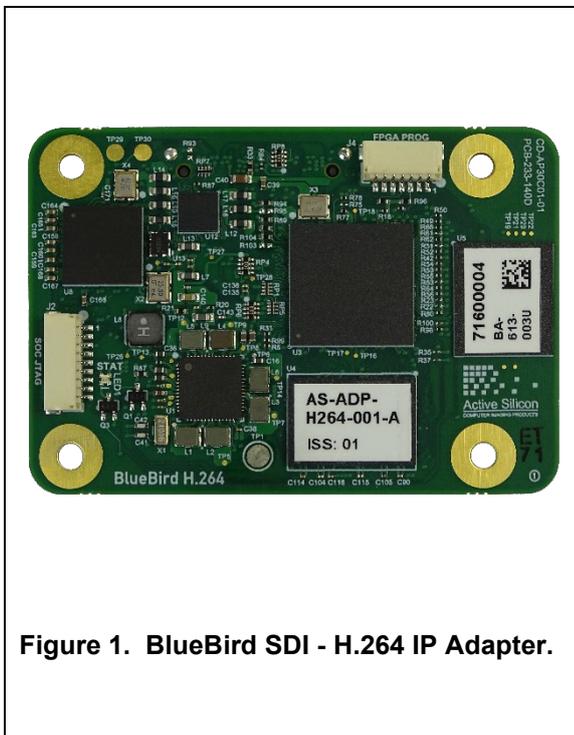


Figure 1. BlueBird SDI - H.264 IP Adapter.

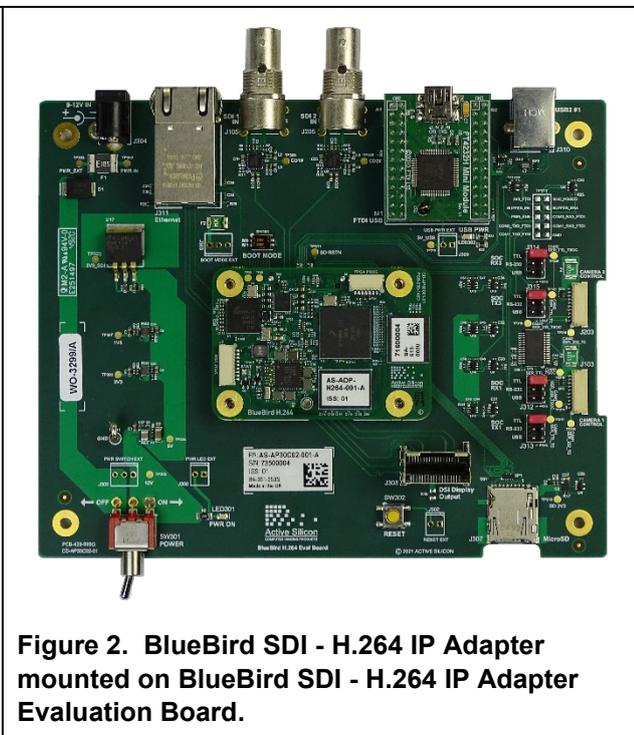


Figure 2. BlueBird SDI - H.264 IP Adapter mounted on BlueBird SDI - H.264 IP Adapter Evaluation Board.

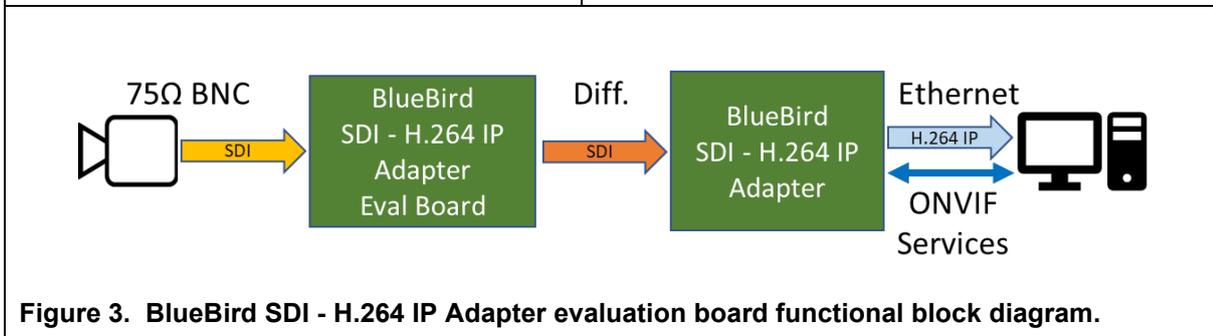


Figure 3. BlueBird SDI - H.264 IP Adapter evaluation board functional block diagram.



## Setting up the Evaluation Board

1. Carefully connect the BlueBird SDI - H.264 IP Adapter to the evaluation board (J301). Try to keep the IP adapter board parallel to the evaluation board as you connect the boards. There should be a firm click as the connectors mate.
2. Check that the position of the jumpers meets your requirements. If you are not using the serial interfaces these can be left in their default positions. The Boot Mode configuration should be both DIP switches set to OFF for micro SD card boot. DIP switch 2 should be set ON to boot from the on-board eMMC.

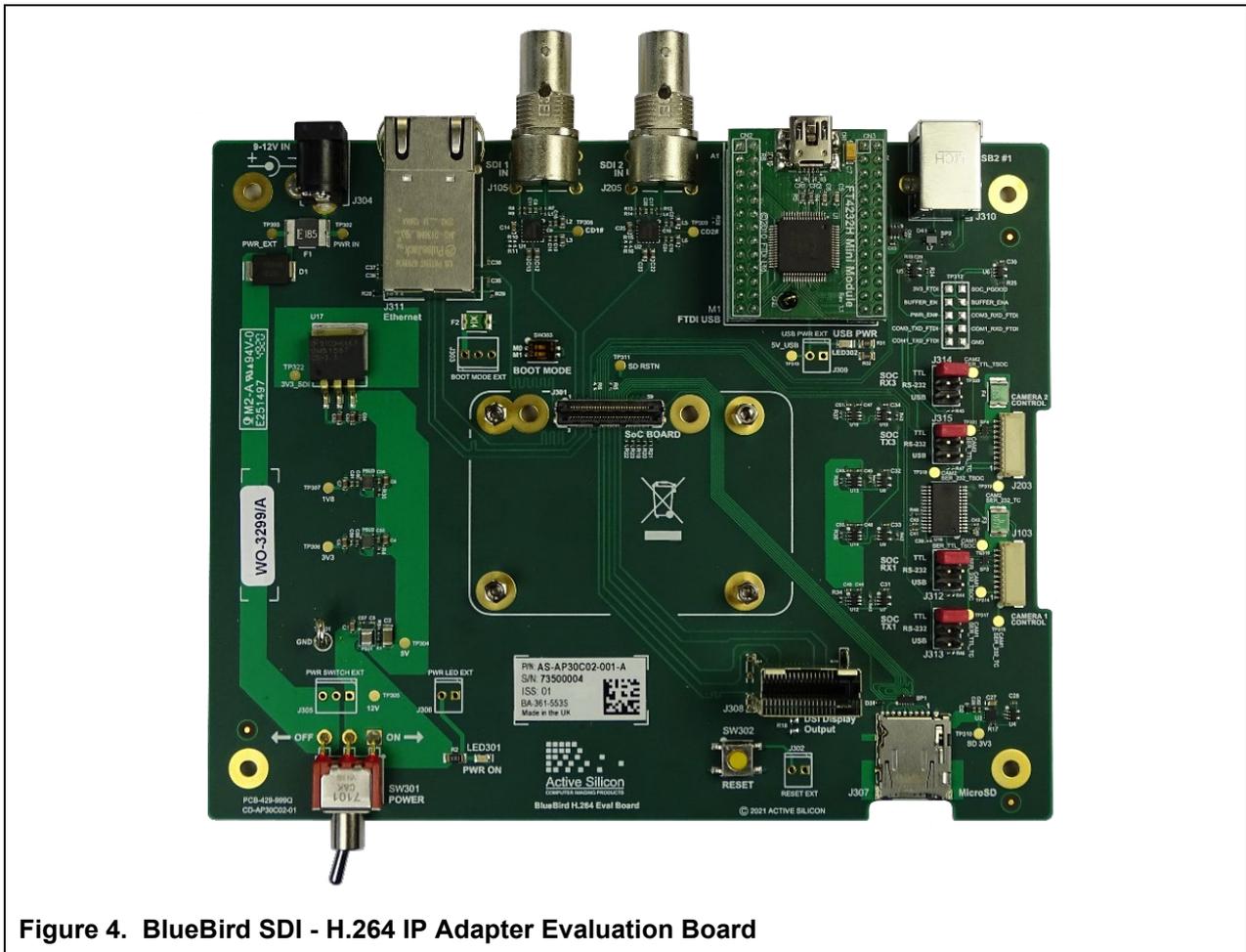


Figure 4. BlueBird SDI - H.264 IP Adapter Evaluation Board



## Quick Start

1. Download and install the [ONVIF Device Manager](https://sourceforge.net/projects/onvifdm/) from <https://sourceforge.net/projects/onvifdm/>
2. Connect a (12V, center positive, 5.5mm/2.1mm barrel connector) power supply to the BlueBird SDI - H.264 IP Adapter Evaluation Board power barrel connector socket (J304).
3. Connect the evaluation board Ethernet socket (J311) to a PC using a CAT5/6 Ethernet cable.
4. Open the Ethernet Settings of the PC and locate the Ethernet port that is connected to the SDI-H.264 IP adapter. Set the IP address of the Ethernet port in the range 192.168.189.1-255 (but not to 100). Set the subnet mask to 255.255.255.0 (24 on Win 10). The gateway can also be set to an address in the same subnet (192.168.189.1-255, but not 100).
5. Connect a 1080p30 SDI video source to the BNC socket SDI2 IN (J205).
6. Check that the Boot Mode DIP switches are set correctly (micro SD card boot = both switches OFF, eMMC boot = DIP switch 2 ON).
7. Connect the 12V power supply to mains power and switch the evaluation board power switch (SW301) to ON.  
The evaluation board and IP adapter will now power-up.  
A red LED on the IP adapter should illuminate to indicate that the IP adapter has booted correctly.
8. On the PC, open the ONVIF Device Manager application.  
Click on Refresh to locate the IP adapter. It should be located at 192.168.189.100.
9. View the streaming video from the IP Adapter using ONVIF Device Manager or a similar media player application (e.g. VLC media player or GStreamer).  
Use **rtsp://192.168.189.100:8554/quality\_h264** to connect to the IP adapter.

## Discovering the IP Address of the IP Adapter

By default, the IP address of the IP adapter is 192.168.189.100

If you have set the IP adapter to DHCP mode, you can find out the IP address of the IP adapter using the [ONVIF Device Manager](#) application.

In DHCP mode, the IP adapter is automatically assigned an IP address by the DHCP server, this means that it may change when you disconnect and re-connect to the network.

To discover the DHCP assigned IP address:

- Ensure the IP adapter has powered-up correctly and is connected to the network.
- Ensure your Ethernet router/network is running a DHCP server.
- Launch the [ONVIF Device Manager](#).
- Click the Refresh button.  
The software will scan the network and the IP adapter will appear on the Device List.

You can also use IP address scanning applications like Advanced IP Scanner (<http://www.advanced-ip-scanner.com>) or check the assigned addresses table of the DHCP server.



## Assigning an IP Address

The IP address of the IP adapter can be set to a fixed value or set to be assigned by a DHCP server.

The BlueBird SDI - H.264 IP Adapter hosts a web server and serves an administration website at the IP address of the IP adapter. On the IP adapter website, select the Network page and use the controls to set a fixed IP address or a DHCP server assigned address for the IP adapter.

- In your web browser, enter: **http://<IP Address>** to access the IP adapter website.
- Select the Network tab.
- Edit the network settings and submit the form.

Note: the IP address will change immediately and you will need to use the new address to access streaming video and the IP adapter webpages.

The IP address/settings can also be changed using the ONVIF API (see section below).

## Viewing the Video Stream

To view streaming video from the BlueBird SDI - H.264 IP Adapter you will need a media player such as VLC media player or GStreamer. The video can be viewed in [ONVIF Device Manager](#) but the latency of this display can be quite high.

### Using VLC media player

- Install and open [VLC media player](#)
- From the Media menu, select Open Network Stream
- In the Open Media dialog, enter **rtsp://<IP address>:8554/quality\_h264**
- Click the Play button

### Using GStreamer

- Install [GStreamer](#) and open a command prompt or shell.  
(<https://gstreamer.freedesktop.org/download/>)
- Run the following command:

```
gst-launch-1.0 rtspsrc location=rtsp://<IP Address>:8554/quality_h264 !  
decodebin ! autovideoconvert ! autovideosink sync=false
```

Note: to make GStreamer work on Windows, you may need to update the 'PATH' environment variable and set the GStreamer environment variable; for example:

```
set GSTREAMER_1_0_ROOT_X86_64=c:\gstreamer\1.0\x86_64\  
set path=%path%;%GSTREAMER_1_0_ROOT_X86_64%\bin;
```



## Getting Started with the ONVIF API

The BlueBird SDI - H.264 IP Adapter implements the ONVIF Profile S standard. The main services and their functions are listed below.

- Media service: allows control of the H.264 encoder settings and the on-screen display (OSD) features.
- DeviceIO service: provides direct communication to the serial ports (SendReceiveSerialCommand()). This enables VISCA communication with an attached camera to allow full control of the camera and all its features.
- Device Management service: provides control of the BlueBird H.264 IP platform (e.g. setting the time and date, IP address, etc.).

For examples of how to implement VISCA camera control please see the Harrier IP Example Software. Downloads tab on <https://www.activesilicon.com/products/harrier-ip-camera-interface-board/>

## Downloads

ONVIF Device Manager: <https://sourceforge.net/projects/onvifdm/>

VLC media player: <https://www.videolan.org/vlc/index.en-GB.html>

GStreamer: <https://gstreamer.freedesktop.org/download/>

DHCP server application: <http://tftpd32.jounin.net>

IP address scanning application: <http://www.advanced-ip-scanner.com>

## Technical Support

In case of any issues, please contact Active Silicon Technical Support by email on [techsupport@activesilicon.com](mailto:techsupport@activesilicon.com).



### *Head Office:*

Active Silicon Ltd  
1 Waterside Court, Waterside Drive,  
Langley, Berks, SL3 6EZ, UK.

Tel: +44 (0)1753 650600  
Fax: +44 (0)1753 651661  
Email: [info@activesilicon.com](mailto:info@activesilicon.com)  
Website: [www.activesilicon.com](http://www.activesilicon.com)

### *North America Office:*

Active Silicon, Inc.  
479 Jumpers Hole Road, Suite 301,  
Severna Park, MD 21146, USA.

Tel: +1 410-696-7642  
Fax: +1 410-696-7643  
Email: [sales.us@activesilicon.com](mailto:sales.us@activesilicon.com)  
Website: [www.activesilicon.com](http://www.activesilicon.com)