

Back Catalog Item

This unit is part of our Back Catalog items. This means the product is not in stock and support is not available. Development and improvements have stopped. No future firmwares are expected to be developed.

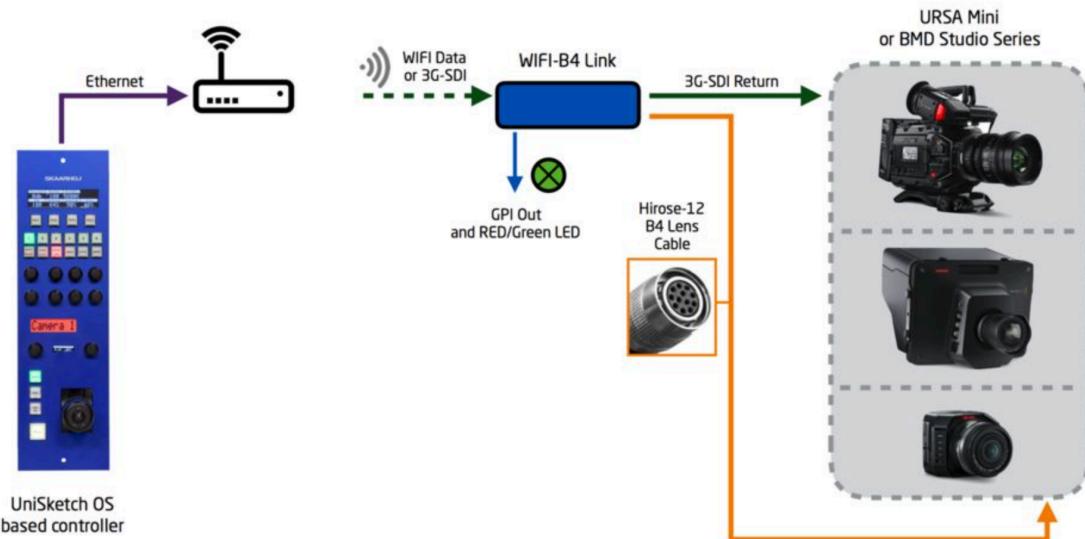
WIFI-B4 Link

Control your Blackmagic URSA Mini (+ Pro) and the Studio Camera series wirelessly. Send CCU data via SDI or WiFi, whatever you prefer.



Get full wireless control for your live multi camera production. The URSA Mini (+Pro) and the Studio Camera Series from Blackmagic Design offers great remote control setting such as iris, focus and zoom (on supported lenses) together with full DaVinci primary color corrector. The WIFI-B4 Link allows you to do all these great things wirelessly - no more cables!

How does it work?



Principle sketch for setup with the WIFI-B4 Link

Features



- Receives control signals either via WiFi or incoming SDI
- WiFi using 2.4 GHz band only (not 5 GHz band)
- CCU control your Blackmagic Camera wirelessly (WiFi)
- Control iris on analog B4 lens via SDI or WiFi
- Hirose 12-pin connector
- Preview/program tally on small LED
- GPI Output for external tally lamp
- Iris lens calibration feature
- Compatible with Studio Camera series and URSA Mini (+Pro)
- Dimensions: 9.5 x 7.5 x 3 cm
- Weight: 0.175 kg

CCU data over WiFi

The WIFI-B4 Link receives CCU data over WiFi, if connected. The source of this information must be a SKAARHOJ UniSketch OS based controller set up to send commands to a given WIFI-B4 Link device. Any received data for CCU will be converted to SDI Camera Control commands on the SDI output (first received package will enable override mode until power off) as well as forwarded to the analog B4 Lens (iris values).

CCU data over SDI

The WIFI-B4 Link receives CCU data over SDI too using a Blackmagic Arduino Shield. Incoming CCU data is simply forwarded on the SDI output (pass through) and iris values for the camera number selected on the Cam # switch is used to generate an analog control voltage for iris on the Hirose 12 B4 connector. The SDI carried CCU data can originate from any equipment supporting Blackmagics camera control protocol, including ATEM switchers or a SKAARHOJ ATEM CCU, RCP/RCP Mini and our Link IO products with the Blackmagic Arduino Shield integrated.

Selector Switch



Camera Selector

The camera selector switch determines the camera ID for the **Hirose connector only** and *not* the camera ID on the SDI out. This is set on the main controller (see Controlling the WIFI-B4 Link section). The camera ID is set for any case with selection from 1-9. If the selector is set in positions A-F special functions are activated instead. You can change the switch selector using a small screw driver. Notice you B4 Lens may need to be set up for external control with a switch.

Selector switch 0 = Deactivated

Selector switch 1-9 = Camera 1-9

Selector switch A = Creates momentary access point to set up the network parameters

Selector switch B = Deactivated

Selector switch C = Deactivated

Selector switch D = Runs test program where the lens iris will close and open in a cycle that will prove that it works

Selector switch E = Reset calibration

Selector switch F = Calibration mode (will determine when iris is fully closed/open and save settings, given the factory default values, are not appropriate for your particular lens)

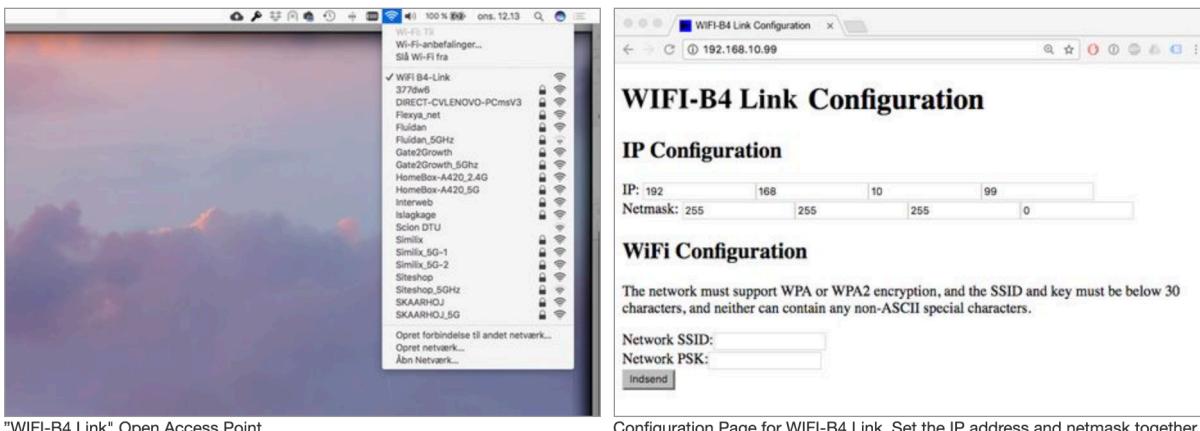
Blackmagic Design 3G-SDI Shield



The Blackmagic 3G-SDI Arduino Shield supports the following formats using SDI Level B: 720p50, 720p59.94, 720p60, 1080i50, 1080i59.94, 1080i60, 1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p50 (output only), 1080p59.94 (output only) and 1080p60 (output only), but the camera doesn't have to be running the same video format as the program input, so you can use cameras in Ultra HD while the camera protocol is sent over HD signal to the camera.

WiFi Setup

The WIFI-B4 Link has a WiFi client built in which must connect to a WiFi network you have provided. This network must be connected to a SKAARHOJ controller that can send data to the WIFI-B4 Link. To set up the WiFi parameters such as SSID and password, place the camera selector in position "A" and power cycle the device. Now it will create an open Access Point with the SSID "WIFI-B4 Link". Connect to this network, open a web browser and go to 192.168.10.99. Here you will find a web interface where you can configure the parameters. Save, move the camera selector switch away from position "A" and power cycle the device.



Configuration Page for WIFI-B4 Link. Set the IP address and netmask together with the network name and password. The network is the one the WIFI-B4 Link should connect to when in operation mode

Controlling the WIFI-B4 Link

In order to control the WIFI-B4 Link you need a UniSketch OS based SKAARHOJ controller with the Device Core "BMDCamCtrl" installed. The IP settings for the device core must correspond with the IP address you have set for the WIFI-B4 Link. Remember the IP address for the WIFI-B4 Link and the main controller used for sending commands *must not be the same!*

For sending a command to the WIFI-B4 Link you assign a hardware interface component (such as a joystick) to a BMDCamCtrl action on the main controller.



Example of RCP set with Device Core "BMDCamCtrl" and "BMD CamCtrl: Iris" action for Cam 1 for the joystick on the main controller. Notice camera ID is set in the configuration and not via the camera selector (see Selector Switch section above)



Example of IP address set on the main controller to communicate with WIFI-B4 Link on 192.168.10.99 (via the BMDCamCtrl Device Core)

A Note about WiFi

It's highly recommended to consider the robustness of the WIFI-B4 Link solution in relation to your venue: Will the WIFI network perform sufficiently well during a live show (with a room full of audience with wifi enabled mobile devices) as it did during your test? Experiences with mobile usage (cable cameras) show that it may work just fine, but could also be challenging. You are encouraged to consider means such as directional antennas etc.

The WIFI-B4 Link work over standard WiFi, but for the best user experience please ensure you have a stable and powerful wireless network. Use a wireless access point on a low congested channel and place it in line of sight with the WIFI-B4 Link.

Set the channel to auto, but if you experience interference then manually select and set the channel. Use a WiFi troubleshooting and optimization tool to help you select channel and access point placement.

To minimize poor performance, use a network dedicated to the WIFI-B4 Link. Avoid using a network where you stream or download data. We do not recommend expanding the range of your network by connecting a wireless network to another wireless network.

Analog B4 Lenses

This works exactly like our popular SDI-B4 Link. It will drive an analog B4 lens iris with Hirose connector. However, in addition to extracting the lens iris data from SDI, the WIFI-B4 Link will also listen for incoming data on the WiFi.

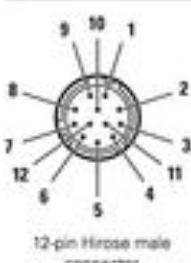
The Hirose 12pin connector supports most B4 lenses, but it's your own responsibility to **check** that your particular lens has the features described below. Two example pin outs are given to the left from manuals for cameras and lenses, so you should be able to look up and check similar information for your lens.

The SKAARHOJ WIFI-B4 Link will:

- Pass on the DC 12V input to the lens with GND going to pin 3 and 12V going to pin 6
- Adjust the lens iris with an analog value between 2.5 and 7.5V going out on pin 5 (output to lens)
- Read back the iris position as an analog value from pin 7 (input from lens)
- Enable iris adjustment from the B4 Link box by pulling pin 6 to 5V through a 10 K resistor. To turn off iris adjustment, it will short pin 6 to ground
- Notice: The lens may have a "Manual / Auto" button which must typically be in Manual for this to work. In auto you may find that the lens always adjusts the iris to whatever value it receives from the B4 link box

Please be aware you might expect vignetting depending on your lens, the sensor size and the type of mount adaptor used. SKAARHOJ takes no responsibility in this regard. Check with your camera/lens supplier.

Example Pin Out 1**8.1.5 Lens interface connector**

	Pin	Description	Pin	Description
	1	External video on/off	7	Iris follow
	2	VTR trigger switch	8	Lens servo
	3	+13 VDC Return	9	Range Extender
	4	Momentary iris	10	Zoom follow
	5	Iris control	11	RxD / Focus follow ²⁾
	6	+13 VDC (max 1.1 A) ¹⁾	12	TxD

¹⁾ If more than maximum power is drawn from the lens connector, the camera automatically shuts off power to the lens. A message ("Lens Power Error") is shown in the viewfinder.

²⁾ Focus Follow is not a default function of all lens types.

NOTE: Only connect broadcast ENG/EFP lenses to the lens interface connector.

Example Pin Out 2

3	2	GND	LENS ground	GND	
4	9	AUTO +5V (B4) IRIS SERVO ON (B3)	Iris focus servo ON/OFF: SERVO ON : +5V SERVO OFF : OPEN	OUT	
5	6	IRIS-CONT	Iris Iris control output B4 type: F2.8 : +6.2V, F16 : +3.4V, CLOSE : +2.5V B3 type: 5V (LENS COMMON) : 5V 5V +3V : CLOSE, 5V -3V : OPEN	OUT	
6	1	+12V LENS	+12V output for lens	OUT	200 mA MAX
7	---	IRIS FOLLOW	Iris position signal +3.4V (F16) to +6.2V (F2.8)	IN	



Hirose 12pin connector

GPI Output short to GND

This output will short the middle pin (out) to GND when tally is on (red tally) for the selected camera (according to incoming data on either SDI or WiFi)



GPI Output