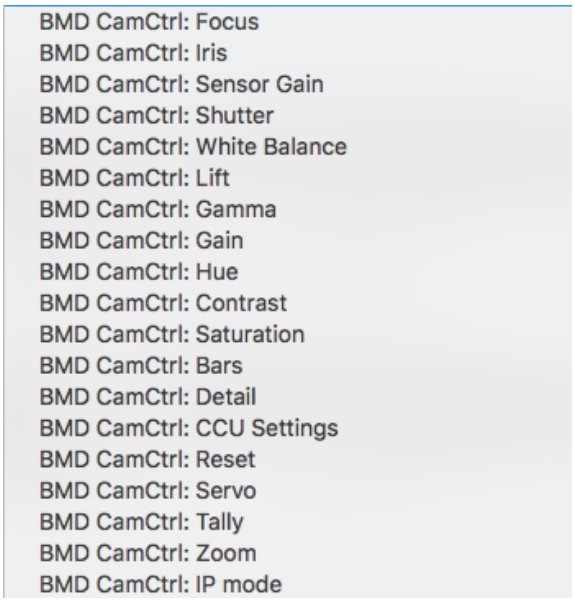
BlackMagic Camera Control (over SDI)

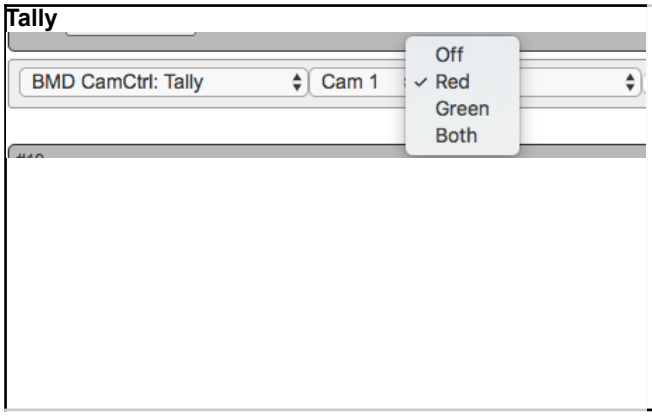
Used to send BlackMagic Camera Control data over SDI out on a SKAARHOJ controller, alternatively over UDP to a receiving device such as SKAARHOJ ETH-SDI Link or ETH-B4 Link.

SDI as the output is used whenever an IP address is 0.0.0.0 (four zeros), otherwise IP mode is used. Notice that for IP mode, two submodes exist, BASE mode and DIRECT mode (default). See note in the bottom of this document.

In SDI mode there are a few facts to mention:

- Tally: By default on power-up, incoming tally data on SDI will be forwarded through on the SDI output. Only if/when a tally state is set by the controller itself will "override" mode be turned on and incoming tally data is blocked out and only controller-generated tally data is outputted. The logic behind this is that sometimes a SKAARHOJ controller should just be transparent to tally input data and at other times it should generate tally data and block any incoming data. Letting this depend on whether a controller actively ever tries to set tally data itself is an easy way to assume the intended function.
- Camera control data: By default no incoming camera control data (CCU data) will be passed through the controller. This makes sense as a default since usually the SKAARHOJ controller is expected to be the source of camera control data and block out any incoming data. However, a special mode exists, "Momentary Override" (see bottom of document) which if set will only enable override mode for as long as it takes to send data out, then disable it again thus letting incoming camera control data pass through. This mode makes sense if you wish to allow devices upstream to send camera control data through the SKAARHOJ controller. This is relevant if there are dedicated controllers for dedicated cameras, for instance if you daisy chain SKAARHOJ controllers together. Notice however, that any incoming data while a controller is in override mode is simply blocked out and lost: In other words; if a controller upstream sends iris information simultaneously with a downstream controller, the upstream controller data is lost because it's blocked out at that time.





Sets or gets tally

Binary triggers: Sets the selected tally type (Red, Green, Both or Off)

Pulse inputs: Acts like a binary trigger

Binary outputs: On when selected tally matches tally value. The tally value is the incoming tally in case override mode is not enabled, otherwise it will be the memory value of whatever the controller itself set as the latest tally value.

Button colors: Red, for red tally, green for green tally

Displays: Uses background color to denote the tally value and shows the camera number in the display.

Device Configurations

Device configuration options exist:

- Index 0: **UDP Addressing set to BASE mode**: If "1", then BASE mode is On, otherwise Off (DIRECT mode). DIRECT mode (the default behaviour) means that all commands for any camera is sent to the IP address configured for the device core. This is the "intuitive" behaviour of course and the mode you would use if you want to forward data to a ETH-SDI Link. BASE mode on the other hand forwards data to a number of different IP addresses, basically the "device core IP address + camera number". So for instance, if the device core IP address is 192.168.10.80 and you send iris data to camera 1, it would be forwarded to a ETH-B4 Link (or similar) device on 192.168.10.81 (80+1).
- Index 1: **Momentary Override**: If "1" the controller will only override incoming camera control data at times when it sends out its own data, otherwise it will be transparent to incoming data.
- Index 2: **Sensor Gain / Camera Gain Setting Range**:
  - If "0" = default
  - If "1" = Extended -12dB/12dB Range
  - If "2" = Original 0db/18dB Range

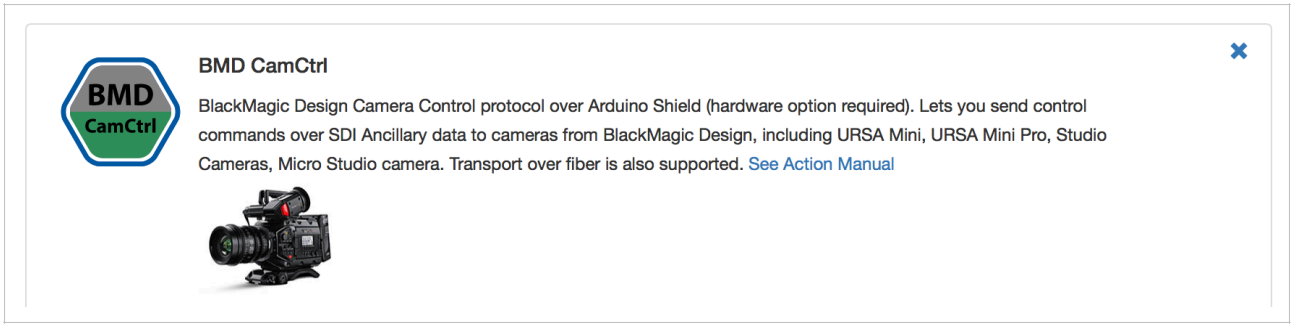
Example:

Enabling Momentary Override could look like this device configuration code: "D1:1=1" where the general form would be "Dx:1=1" where "x" is the number of the device core as installed on the controller (starting with zero for the first device core).

To confirm that a device configuration is in fact detected by the controller, please check it out on the serial monitor where it will be mentioned:

```
Compiled: Sep 13 2017 08:52:08
DeviceCore #1: BMDCamCtrl0
BMD Shield Initialized (F/W Ver: 0.10, Protocol Ver: 1.0)
BMDCamCtrl CCU Momentary Override Activated
setup() Done
------------------------------
```

Example: If the BMD Cam Control device core is the first like below:



then Momentary Override would be set by this configuration under "Manage Media" on cores.skaarhoj.com: