

5.15 Camera Support

The phyFLEX-i.MX 6 - module offers many different ways to connect digital cameras.

The i.MX 6 controller has in the Dual- and Quad-core version two independent parallel camera ports and as an alternative one MIPI/CSI-2 receiver.

Also have they two IPU 3H - Image Processing Units (version 3H) for separated processing of the two independent parallel cameras.

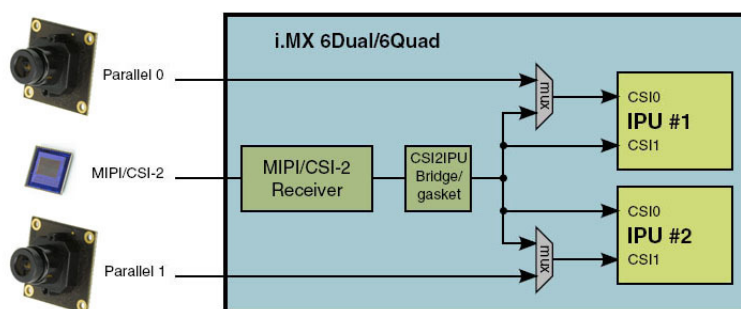


Image 01: Connection options of the cameras (i.MX6 Dual- and Quad-core)

For more information to the possible electrical camera connections, are included in the hardware manual L-773, chapter "camera support". More information to the phyCAM camera-moduls are in the L-748 "phyCAM manual".

In the PHYTEC BSP following camera connection are supported:

- on Parallel 0 (Camera_0 or also referred as CSIO):
 - phyCAM_P cameras via camera_0 phyCAM-P connector
 - phyCAM_S(+) cameras via camera_0 phyCAM-S+ connector
- on Parallel 1 (Camera_1 or also referred as CSI1):
 - phyCAM_P cameras via camera_1 phyCAM-P connector
 - phyCAM_S(+) cameras via camera_1 phyCAM-S+ connector

The MIPI/CSI-2 (Camera 2) interface is not supported in BSP.

You can order the Kit also as "Embedded Imaging Kit". In this case is a camera included or you can select a other camera model.

The kit includes the necessary software drivers for the operation of the various Phytex camera boards. The assignment to the camera port and the selection of the camera typ must be set in a configuration file.

Please refer to the document "phyCAM_with_phyFLEX-iMX6_Getting_Started.pdf"

The camera interface driver and the camera drivers are compatible with video4linux2 (V4L2).

In our BSP we have for following applications examples compiled:

- gstreamer (multimedia framework)
 - o *.../home/gstreamer_examples/...*
 - o *(Note: For optimized camera support e.g. high fps, ... , use the examples in the sub-directorys of the camera modul.)*
- C programming
 - o *.../home/v4l2_c-examples/...*
- OpenCV
 - o *.../home/opencv_examples/...*

More informations are in the readme documents, you find in the sub-directorys.

UVC USB-Kameras

In addition to the phyCAM camera modules, it is also possible USB cameras to the USB port of phyFLEX-i.MX6 - to use module.

The BSP supports USB-cameras that conform to the UVC standard. Thus, for example, the USB-CAM series from PHYTEC be used (Note: Only with UVC firmware version).

The UVC Camera Driver is compatible with video4linux2 (V4L2). In our BSP several sample scripts for the GStreamer multimedia framework are included, showing the access to the V4L2 interface:

- ... /home/gstreamer_examples/phytec_usb_cam/ ...

The "readme.txt" included a list of currently supported cameras.
