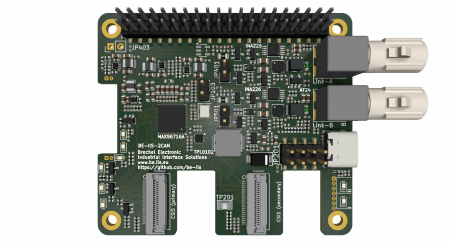
GMSL2 Camera HAT for Raspberry Pi

Brechel Electronic
Industrial Interface Solutions
Designed by Philipp Brechel (Germany)
www.be-iis.eu | www.github.com/be-iis



Document ID: BE-IIS-GMSL2-2CAM_RevB_Datasheet
Revision: Rev. B
Date: September 19, 2026
Document Status: released
Product Status: released

GMSL2 enables high-speed camera links over a single automotive cable, allowing image sensors to be placed remotely from the processing unit.

This HAT enables the connection of two GMSL2 camera to a Raspberry Pi using a dedicated GMSL2 deserializer and CSI-2 video output.

Key Features

- Dual GMSL2 camera input
- MAX96716A GMSL2 deserializer
- Raspberry Pi CSI interface compatible
- Single and Dual HAT Operation
- Multiple Camera Power Supply Voltages
- PoC Filter and Protection
- Rosenberger FAKRA connector
- RoHS compliant
- Quality component suppliers

Product Description

The HAT connects to CSI port 1 and 2 of the Raspberry Pi, or compatible CSI-2 interface of another single-board computer.
Configuration and control are handled via the I2C interface on the 40-pin header.

Applications

- GMSL2 camera evaluation
- Automotive camera prototyping
- Industrial vision evaluation
- Raspberry Pi based video capture
- Sensor and imager bring-up
- Education and laboratory use
- Stereo Camera Evaluation

Contents

1 Introduction **4**

1.1 General . . . 4
1.2 Raspberry Pi Compatibility . . . 4
1.3 HAT Compatibility Level . . . 5
1.4 Design Resources . . . 5

2 Hardware Configuration **7**

2.1 Main Features . . . 7
2.2 Power Supply . . . 9
2.2.1 Main Power Supply . . . 9
2.2.2 5V Power Source . . . 9
2.2.3 Supplementary Power Supplies . . . 9
2.2.4 Camera Power Supply . . . 9
2.2.5 Camera Power Supply Monitoring . . . 10
2.3 GMSL2 . . . 10
2.3.1 MAX96716A Deserializer . . . 10
2.3.2 CFG0 Configuration . . . 10
2.3.3 CFG1 Configuration . . . 11
2.3.4 Reset . . . 11
2.3.5 MIPI CSI-2 Interface . . . 11
2.3.6 I2C Interface . . . 11
2.4 Connectors . . . 11
2.4.1 FAKRA Connector . . . 11
2.4.2 40-Pin Header . . . 11
2.5 Device Identification . . . 12
2.6 Housing and Outline . . . 12
2.7 Quick Installation . . . 13
2.8 Dual-Camera Activation . . . 13
2.9 Manual Configuration Targets . . . 13
2.10 Image Capture and Preview . . . 14
2.11 Repository Contents . . . 14

3 Electrical Specifications **15**

3.1 Supply Voltage . . . 15
3.2 Power Consumption . . . 15
3.3 EMC and Environmental Compliance (Preliminary) . . . 15

3.4 Conditions . . . 15
3.5 Usage . . . 15
3.6 EMC and Environmental Compliance (Preliminary) . . . 15

4 Delivery **16**

5 Mechanical **16**
5.1 Board Format . . . 16
5.2 3D Data . . . 16

6 Assembly **16**
6.1 Assemble 2x20-Pin Main Connector . . . 16
6.2 Assemble Spacer . . . 18
6.3 Assemble FAKRA Connectors . . . 18
6.4 Board Overview . . . 18

7 References **18**

8 Revision History **19**

Company Information **20**

1 Introduction

1.1 General

The BE-IIS-GMSL2-1CAM is a Raspberry Pi HAT compliant camera interface board for connecting two GMSL2 camera to a Raspberry Pi or to another compatible single-board computer.

GMSL2 enables high-speed camera links over a single automotive cable, allowing image sensors to be placed remotely from the processing unit. This makes the board suitable for evaluation, prototyping, industrial vision systems, and test setups where camera placement and processing hardware must be physically separated.

The board integrates a dedicated GMSL2 deserializer [1] and provides up to two CSI-2 video outputs for the host system. The CSI-2 interface can be connected to CSI port 1 and CSI port 2 of the Raspberry Pi, or to a compatible CSI-2 input of another single-board computer.

The camera-side power supply is routed through a Power-over-Coax filter and protection circuit. Multiple camera supply voltage options are supported, allowing the board to be adapted to different GMSL2 camera modules.

Configuration and control are handled via the I2C interface on the CSI-Connector. The I2C connection provides access to the deserializer and, depending on the connected camera system, to the remote serializer and image sensor configuration path. The 40-Pin header is just used for +5V Supply.

The BE-IIS-GMSL2-2CAM is intended for GMSL2 camera evaluation, rapid prototyping, software bring-up, industrial vision testing, and Raspberry Pi or SBC based camera development. “‘tex

1.2 Raspberry Pi Compatibility

The board follows the Raspberry Pi HAT+ mechanical and electrical interface concept. Compatibility depends on the selected Raspberry Pi model, operating system architecture, enabled interfaces, and the installed BE-IIS software configuration.

Model	32-bit	64-bit
Raspberry Pi 2	✗	✗
Raspberry Pi 3	✗	✗
Raspberry Pi 4	✗	✗
Raspberry Pi 5	✓	✓
Raspberry Pi Zero	✗	✗
Raspberry Pi Zero 2 W	✗	✗

Table 1: Raspberry Pi compatibility

Note: Compatibility depends on the installed operating system, kernel version and enabled interfaces.“‘

1.3 HAT Compatibility Level

Table 2 describes the HAT compatibility level of the board.

Level	Description	Support	Configuration
HAT	The board can be used as a standard Raspberry Pi HAT.	✓	Standard Raspberry Pi HAT form factor
HAT+	The board supports the Raspberry Pi HAT+ auto-detection mechanism.	✗	HAT+ EEPROM populated; connected to the I2C interface of the CSI connector
HAT++	The board supports detection and stackable operation according to the BE-IIS HAT++ specification.	✗	HAT++ stack detection is not implemented; the board is designed to operate alongside HAT++ boards

Table 2: HAT compatibility level

1.4 Design Resources

All design files and software resources are publicly available.

HTML **Product Page**
https://www.be-iis.eu/products/BE-IIS-GMSL2-2CAM_B/

PDF **Datasheet (PDF)**
https://www.be-iis.eu/products/BE-IIS-GMSL2-2CAM_B/datasheet.pdf

PDF **Schematic (PDF)**
https://www.be-iis.eu/products/BE-IIS-GMSL2-2CAM_B/schematic.pdf

HTML **Layout & BOM (Interactive)**
https://www.be-iis.eu/products/BE-IIS-GMSL2-2CAM_B/ibom.html

STL **3D Model (STEP/STL)**
https://www.be-iis.eu/products/BE-IIS-GMSL2-2CAM_B/model.zip

GIT **GitHub Repository**
https://github.com/be-iis/be-iis-cam-installer

GIT **Installer Script**
https://github.com/be-iis/be-iis-cam-installer

Available from DigiKey

DigiKey product page

DigiKey Store

Available from Tindie

Tindie product page

Tindie Store

2 Hardware Configuration

2.1 Main Features

The BE-IIS-GMSL2-2CAM enables the connection of two GMSL2 camera to a Raspberry Pi or compatible single-board computer.

It allows remote camera placement by separating the image sensor from the processing unit while using a single automotive cable for the high-speed camera link.

The board integrates a dedicated GMSL2 deserializer and converts the incoming camera links to upt to two CSI-2 video interface for the host system. The CSI-2 output can be connected to CSI port 1 and CSI port 2 of the Raspberry Pi, or to a compatible CSI-2 input of another SBC.

Power is supplied either through the 40-pin Raspberry Pi header.

Configuration and control are performed via the I2C interface provided on the CSI-2 connector.

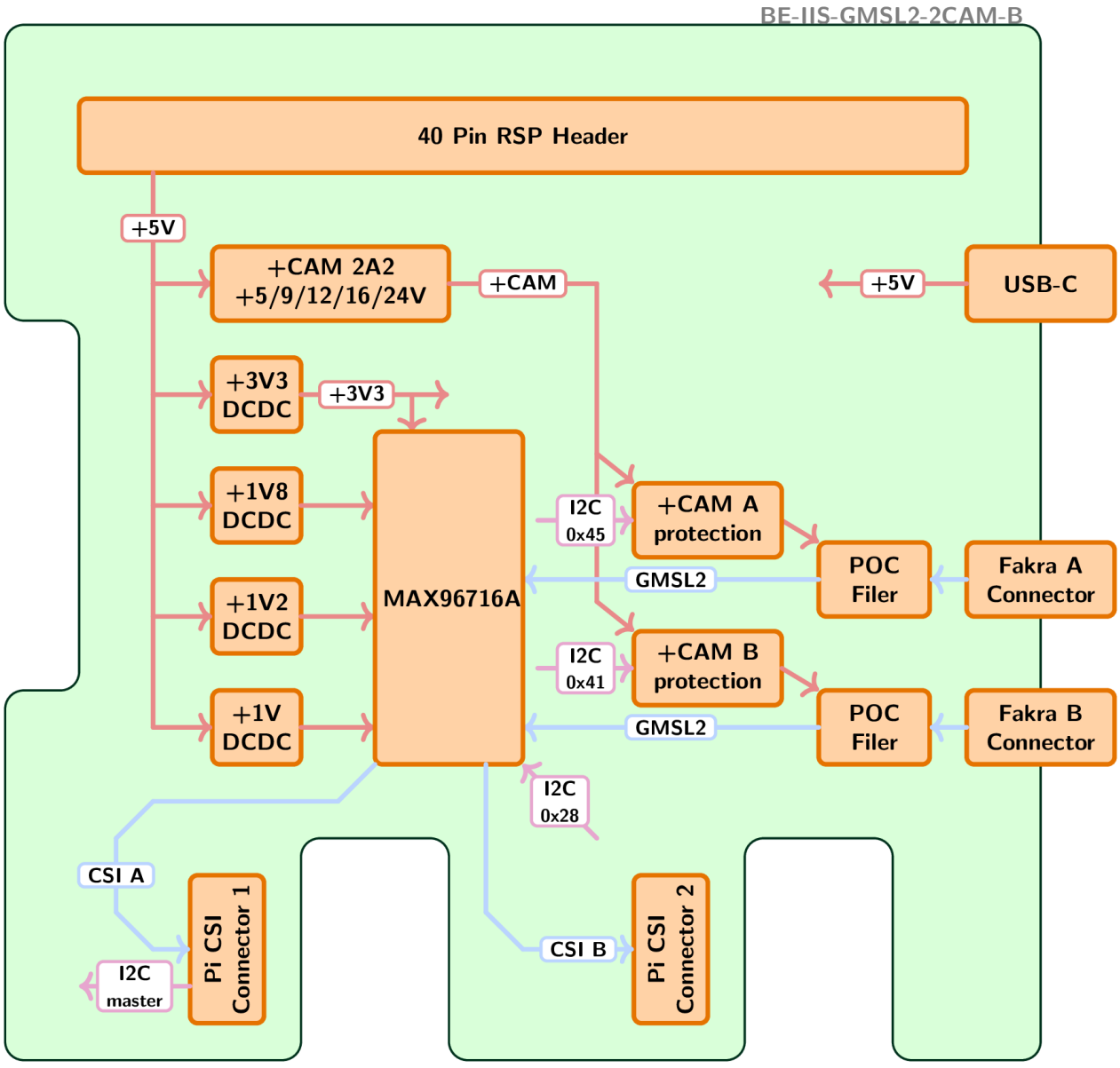


Figure 1: BE-IIS-GMSL2-2CAM block diagram

GMSL2 Deserializer

- Supplier: Analog Devices
- MAX96716A high-speed link deserializer with dual GMSL input
- CFG0: fixed to I2C target address 0x50
- 25MHz crystal

I2C Interface

- I2C interface provided by the CSI connector
- Hardware detection by EEPROM
- Monitoring by voltage and current monitor

PoC: Power over Coax

- Integrated PoC filter
- Supports currents up to 600mA
- Supports input voltages from 5V to 24V

Camera Power Supply

- Supports currents up to 600mA
- Default output voltage: 5.5V
- Selectable by jumper: 9V, 12V, 16V, or 24V

Monitoring

- Optional configuration by jumper setting
- Defined voltage and current monitoring ranges
- Power-off in case of overvoltage or overcurrent

Configuration

- Digital configuration by digital potentiometer
- Supports volatile and persistent configuration options

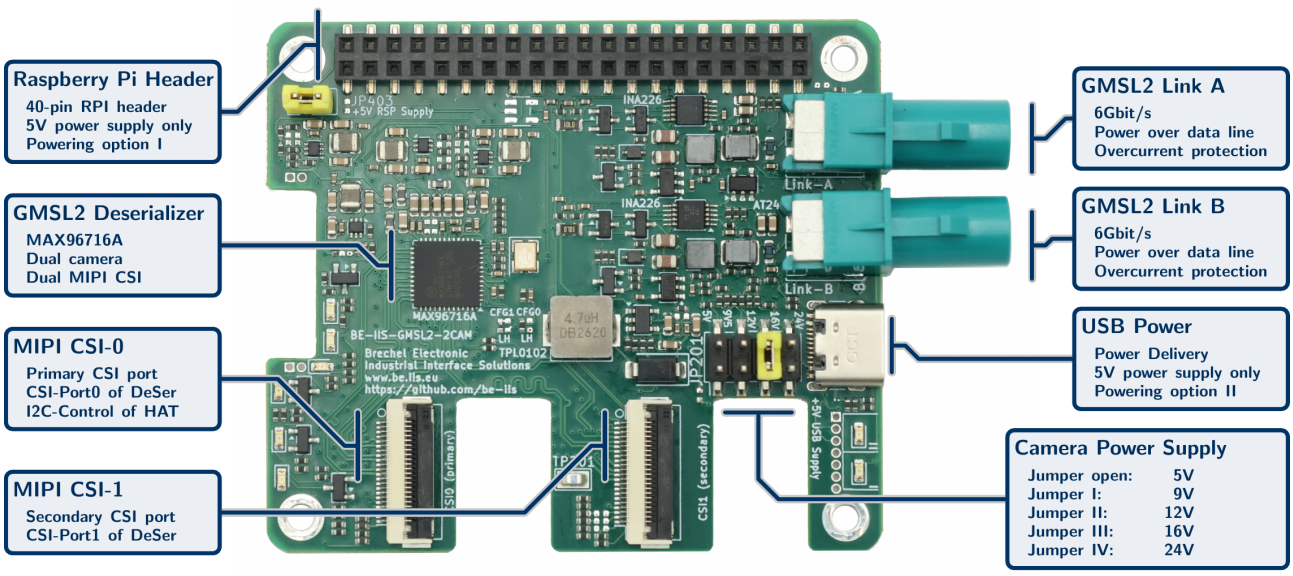


Figure 2: BE-IIS-GMSL2-2CAM annotated

2.2 Power Supply

2.2.1 Main Power Supply

The HAT is powered from a nominal 5V supply. The estimated power consumption of a dual-camera configuration is based on the following assumptions:

- Dual GMSL2 deserializer: approximately 2.2W
- Two connected cameras: approximately 2W each

For sufficient design margin, the HAT power input is specified for a minimum supply capability of 5V / 1.5A. A higher current capability is recommended to cover peripheral loads, conversion losses, and future product variants.

2.2.2 5V Power Source

The HAT can be powered from one of two 5V sources:

- **Option I – Raspberry Pi 40-pin header:** The HAT is powered through the Raspberry Pi header. Apply jumper JP403.
- **Option II – USB-C connector:** The HAT is powered through the USB-C connector. If jumper JP403 is applied, the Raspberry Pi is powered in parallel through the 40-pin header.

2.2.3 Supplementary Power Supplies

The board provides dedicated DC/DC converters for the supplementary power supplies. These converters are enabled when the 3.3V supply on the CSI flex cable is active.

The following supply rails are provided:

- 1.0V / 1A: core supply for the GMSL2 deserializer
- 1.2V / 1A: supply rail for the GMSL2 deserializer
- 1.8V / 1A: supply rail for the GMSL2 deserializer
- 3.3V / 1A: I/O voltage supply

2.2.4 Camera Power Supply

The BE-IIS-GMSL2-2CAM provides a dedicated DC/DC boost converter for the camera power supply.

The default camera supply voltage is 5.5V. Additional output voltages can be selected by jumper configuration.

- 5.5V: default configuration
- 9.5V: Jumper 1
- 12.5V: Jumper 2
- 16.5V: Jumper 3
- 24V: Jumper 4

Never install more than one voltage-selection jumper.

The maximum output current is 600mA. The voltage-selection jumper reference designator is JP201.

The boost converter is enabled through pin 17 of the CSI connector. By default, the camera power supply is disabled.

PoC Link Control In Revision B, the PoC enable jumpers JP401 and JP501 have been removed. Both GMSL2 camera links are powered by default.

The PoC supply of each link can be switched off individually via the `ALERT` output of the corresponding INA226 current monitor. This allows unused camera links to be unpowered and provides protection through configurable current and voltage limits.

Software tools for monitoring the PoC voltage/current, configuring limits, and enabling or disabling Link A and Link B are available in the BE-IIS CAM Installer.

2.2.5 Camera Power Supply Monitoring

Each GMSL2 link has an INA226 [2] current and voltage monitor for its PoC supply. The monitor measures the supply voltage and current of the respective camera link.

Voltage and current limits can be configured by software. If a configured limit is exceeded, the corresponding `ALERT` output of the INA226 is asserted. In Revision B, this signal controls the high-side switch of the associated PoC supply and disconnects the camera power automatically.

The alert state can also be read by Linux. After a fault condition, the PoC supply remains switched off until it is enabled again by software. This prevents repeated power cycling in the event of a persistent overload, short circuit, or camera fault.

Software tools for reading voltage and current, configuring voltage and current limits, and enabling or disabling Link A and Link B are available in the BE-IIS CAM Installer.

2.3 GMSL2

2.3.1 MAX96716A Deserializer

The GMSL2 deserializer is implemented with a MAX96716A device.

- Reference designator: U103
- Type: MAX96716A

2.3.2 CFG0 Configuration

CFG0 is pulled to GND by a 10 kΩ resistor to force I2C mode and set the I2C target address to 0x50.

As an assembly option, a digital potentiometer can be used to adjust the CFG0 level flexibly and volatile.

- Reference designator: U106
- Type: TPL0102
- Channel 0: CFG0

2.3.3 CFG1 Configuration

The CFG1 voltage level is configurable through I^2C access.

In Revision B, the optional TPL0102 digital potentiometer (U106) and the fixed-resistor configuration have been removed. CFG1 is now connected to a pull-down resistor and configured during initialization by software via I^2C.

The required initialization scripts are provided in the BE-IIS CAM Installer.

2.3.4 Reset

The reset signal is controlled by the hardware filter and pin 18 of the CSI connector.

If pin 18 is left open, the reset signal is generated by the onboard RC filter.

Applying jumper JP103 forces the reset signal active. Use JP103 when a reset must be enforced manually.

2.3.5 MIPI CSI-2 Interface

The MIPI CSI-2 output of the deserializer is connected to the CSI port of the Raspberry Pi or compatible SBC.

The pinout follows the Raspberry Pi 5 CSI connector specification.

2.3.6 I2C Interface

The I2C interface is connected to MFP3 as SDA and MFP4 as SCL.

As an assembly option, the pass-through I2C connection can be populated to provide access to the remote serializer and camera-side devices.

The I2C bus is pulled up with 3.3 kΩ resistors.

2.4 Connectors

2.4.1 FAKRA Connector

The GMSL2 camera link uses a FAKRA connector.

- Supplier: Rosenberger
- MPN: 59S22B-40MT5-Z
- Coding: uncoded / blue

2.4.2 40-Pin Header

The 40-pin header follows the Raspberry Pi header specification.

Only the power pins are used by the BE-IIS-GMSL2-2CAM.

- Used: 5V
- Used: GND
- Remaining pins: not connected

2.5 Device Identification

The EEPROM is connected to the I2C bus of the CSI connector.

The board does not support the standard Raspberry Pi HAT+ auto-detection mechanism, because the EEPROM is not connected to the HAT ID EEPROM interface of the 40-pin header.

Instead, device identification can be performed by probing the EEPROM on the CSI I2C bus. If the EEPROM is detected, the corresponding overlay can be applied by software. After a reboot, the overlay becomes active.

- EEPROM I2C address: 0x50
- 8-bit EEPROM address notation: 0xA0

2.6 Housing and Outline

The BE-IIS-GMSL2-1CAM is largely compliant with the Raspberry Pi HAT+ mechanical specification [7]. However, the board outline differs from the standard HAT+ dimensions where necessary to provide access to the CSI-2 connectors.

The mechanical dimensions, mounting holes, connector locations, and board outline are shown in Figure 3.

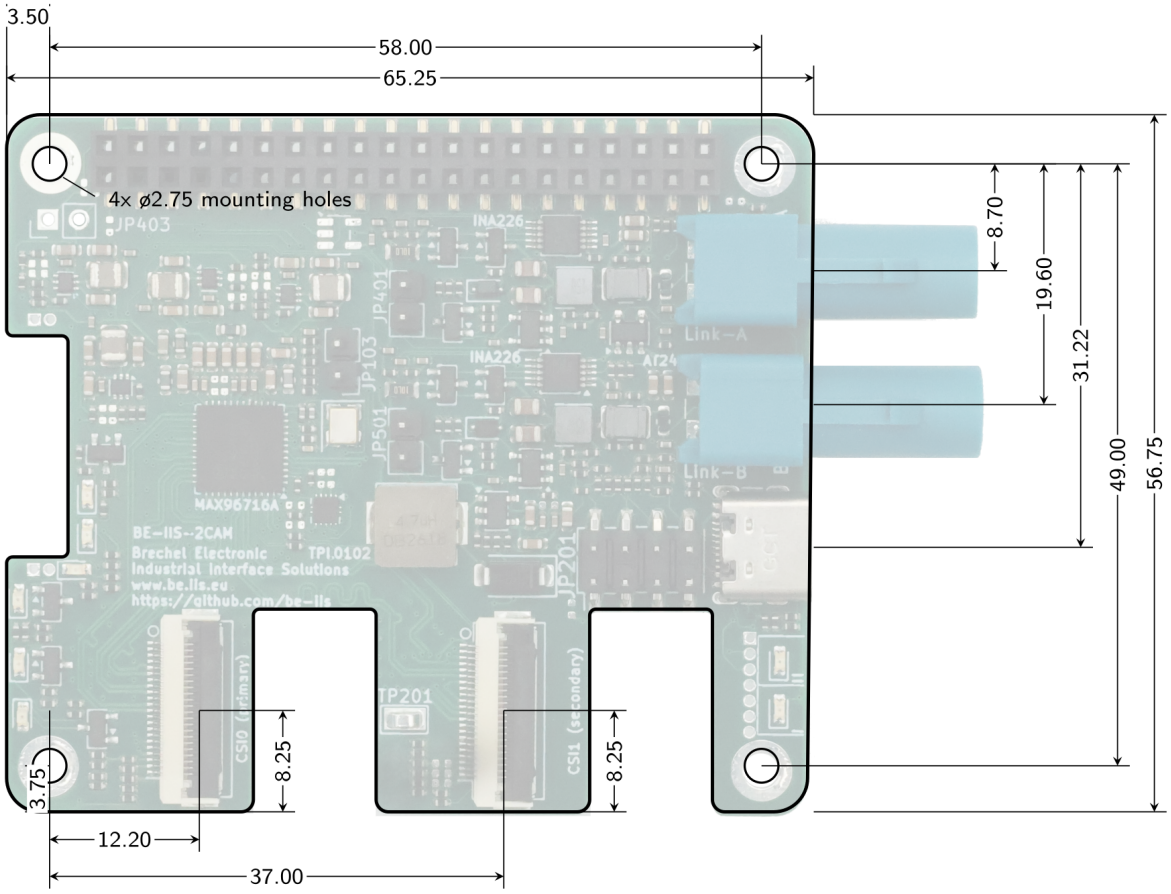


Figure 3: BE-IIS GMSL2 Camera HAT mechanical drawing.

The board can be used with a Raspberry Pi 5 or another compatible host system. For operation, the BE-IIS-GMSL2-1CAM requires a connection to a compatible CSI-2 port of the host system.

2.7 Quick Installation

Clone the repository and run the installer on a fresh Raspberry Pi OS installation:

```
$ sudo apt install -y git
$ git clone https://github.com/be-iis/be-iis-cam-installer.git
$ cd be-iis-cam-installer
$ ./install.sh
```

The installer verifies the Raspberry Pi camera I²C bus (`/dev/i2c-11`), enables the required CSI I²C configuration where necessary, installs dependencies, and builds the external IMX708 and MAX96716A I²C-mux kernel drivers.

If the installer enables the CSI I²C configuration, the Raspberry Pi reboots automatically. Run `./install.sh` once more after the reboot.

The installation step does not initialize a GMSL2 link or configure a camera video pipeline.

2.8 Dual-Camera Activation

The validated dual-camera configuration is activated manually. This separation allows the control path, Device Tree overlays, and video pipeline to be inspected independently.

```
$ cd ~/be-iis-cam-installer

# remove previously loaded BE-IIS camera overlays
$ make unoverlay

# initialize both reverse-I2C control paths and load both IMX708 overlays
$ make prepare-a-b

# configure both GMSL2 links and CSI-2 video pipelines
$ make pipeline-a-b

# verify detected cameras
$ rpicam-hello --list-cameras
```

The verified configuration uses the following camera mapping:

GMSL2 link	Camera I²C address	rpicam camera number
Link A	IMX708 at `0x52`	1
Link B	IMX708 at `0x53`	0

Table 3: Validated dual-camera mapping.

The validated camera mode is 2304 x 1296 pixels, RAW10, two CSI-2 lanes per camera, and 900 Mbit/s per CSI-2 lane.

2.9 Manual Configuration Targets

The installer provides separate targets for control-path and video-pipeline configuration:

- `make init-a`: Initialize only the Link-A reverse-I²C control path.
- `make init-b`: Initialize only the Link-B reverse-I²C control path.

- `make init-a-b`: Initialize both reverse-I²C control paths.
- `make prepare-a-b`: Initialize both control paths and load both IMX708 Device Tree overlays.
- `make pipeline-a`: Configure the Link-A GMSL2 and CSI-2 video pipeline.
- `make pipeline-a-b`: Configure both GMSL2 links and CSI-2 video pipelines.
- `make unoverlay`: Remove dynamically loaded BE-IIS camera overlays.

2.10 Image Capture and Preview

Capture an image from either camera:

```
# capture from Link B (rpicam camera 0)
$ make png-0

# capture from Link A (rpicam camera 1)
$ make png-1
```

Captured images are written to the `captures/` directory with a timestamp. The generic command form is `make png CAMERA=0` or `make png CAMERA=1`.

Display one camera continuously on the locally connected display:

```
$ make video-0
$ make video-1
```

Display both cameras side by side on HDMI:

```
$ make video-dual
```

Stop a running preview with `Ctrl-C`.

2.11 Repository Contents

- `drivers/imx708/`: External IMX708 kernel-module build
- `drivers/max96716a-i2c-mux/`: MAX96716A control-plane I²C mux driver
- `overlays/`: Dual-IMX708 Device Tree overlay sources
- `tools/init-gmsl-*.sh`: Reverse-I²C initialization scripts
- `tools/bringup-gmsl-*.sh`: GMSL2 and CSI-2 video-pipeline scripts
- `examples/`: Capture and preview examples
- `docs/`: Detailed bring-up and diagnostic documentation

Validated Reference Example The software documentation describes one validated and working reference configuration using a Sony IMX708 camera module. It is intended as a functional starting point for evaluation and integration of the BE-IIS GMSL2 camera platform.

The initialization scripts, Device Tree overlays, camera aliases, supported video modes, and rpicam camera numbering described in this section apply to this specific reference configuration.

Other camera sensors, lens modules, serializers, deserializers, or host platforms may require different Device Tree descriptions, I²C addresses, initialization sequences, video-pipeline settings, and capture commands. They are therefore not guaranteed to work without adaptation.

3 Electrical Specifications

3.1 Supply Voltage

Parameter	Min	Typ	Max
HAT input voltage [V]	4.5V	5V	5.5V
Camera supply voltage [V]	5V	–	24V

Table 4: Voltage supply

3.2 Power Consumption

Parameter	Typ	Max
HAT power consumption	2.2W	–
Camera power consumption (each)	2W	–
Total power consumption (two cameras)	6.2W	–
Required 5V input current	1.24A	1.5A

Table 5: Power consumption, including two cameras

3.3 EMC and Environmental Compliance (Preliminary)

3.4 Conditions

Condition	Min	Max
Operating Temperature [°C]	-40	+85
Storage Temperature [°C]	-40	+105
Relative humidity [%]	5	95

Table 6: Operating conditions

3.5 Usage

Condition	Parameter
Usage	indoor
Pullution degree	2
Operating altitude	up to 2000m

Table 7: Operating usage

3.6 EMC and Environmental Compliance (Preliminary)

The standard version of the board is provided without formal EMC or safety certification.

The hardware design is developed with consideration of commonly applied IEC standards, including:

- **ESD immunity:** IEC 61000-4-2
- **Electrical fast transient (EFT/Burst):** IEC 61000-4-4
- **Surge immunity:** IEC 61000-4-5
- **Conducted RF immunity:** IEC 61000-4-6
- **Radiated RF immunity:** IEC 61000-4-3
- **EMC immunity (industrial):** IEC 61000-6-2
- **EMC emission (industrial):** IEC 61000-6-4
- **Safety / isolation reference:** IEC 62368-1

These standards are not verified for the standard product variant.

Compliance with specific standards, test levels, or safety requirements is not guaranteed unless explicitly specified.

If defined EMC or isolation requirements are provided, application-specific validation, testing, and certification can be supported. Upon request, product variants with validated performance, including labeling, certification, and test reports (e.g. Hi-Pot testing), can be delivered.

4 Delivery

The product is delivered as a partially assembled kit for final user assembly. All components required for standard dual-camera evaluation and stacked operation are included.

Order Code	BE-IIS-GMSL2-2CAM
Condition	Assembly kit
Status	Partially assembled
Included Items	1x BE-IIS-GMSL2-2CAM-PCBA-FT 2x 50mm flex cables 2x FAKRA connectors 1x 2x20 pin stackable header 4x M2.5x16mm mechanical spacers 2x configuration jumpers
REACH & RoHS	RoHS and REACH compliant

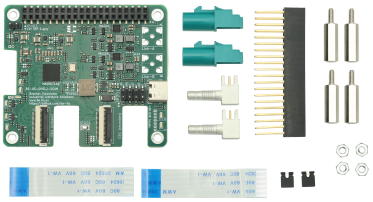


Figure 4: Delivery condition

Available from DigiKey

DigiKey product page

DigiKey Store

Available from Tindie

Tindie product page

Tindie Store

5 Mechanical

5.1 Board Format

- Form factor: Raspberry Pi HAT
- Mechanical dimensions: Raspberry Pi HAT compatible [7]
- Mounting-hole pattern: Raspberry Pi HAT compatible [7]
- Stack height: 16mm

5.2 3D Data

- Available on the BE-IIS product page [5]

6 Assembly

This product is delivered as a kit and requires basic soldering and mechanical assembly.

6.1 Assemble 2x20-Pin Main Connector

The 2x20-pin connector provides the interface to the Raspberry Pi. For proper HAT functionality, the connector must be assembled carefully.

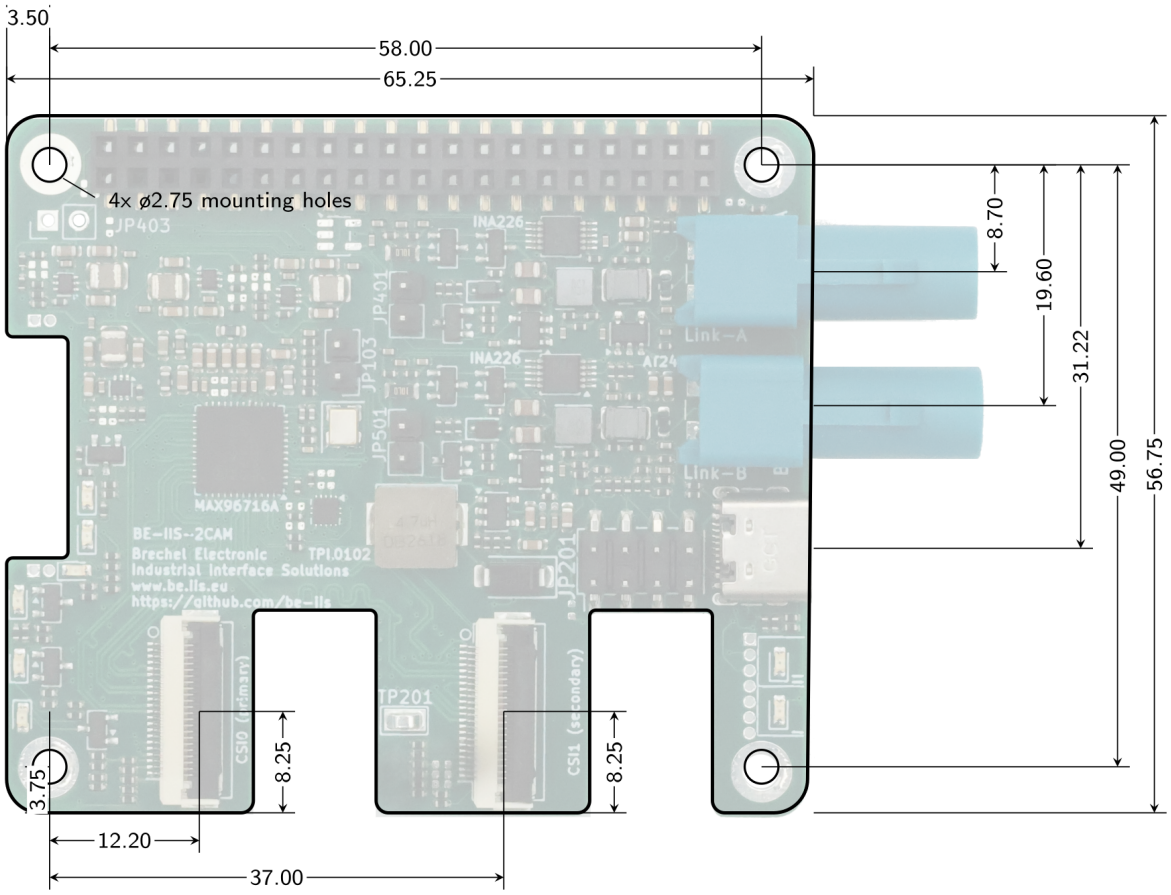


Figure 5: BE-IIS-GMSL2-2CAM – mechanical dimensions and connector reference positions

A stackable 2x20-pin header is included in the delivery and is recommended for most applications, especially when using the BE-IIS HAT++ stacking system.

The header must be inserted between the Raspberry Pi and the HAT: the header is first mounted onto the Raspberry Pi, and the HAT is then plugged onto the header.

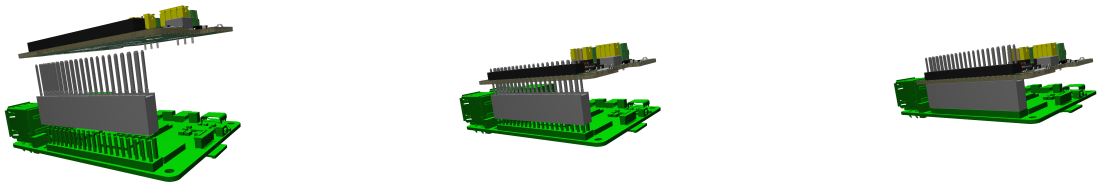


Figure 6: Assembly of the 2x20-pin stackable header between Raspberry Pi and HAT

6.2 Assemble Spacer

To ensure mechanical stability and correct stacking height, spacers must be installed.

- Recommended spacer height: see Section 5.1
- Fix the PCB using appropriate screws and spacers
- Ensure stable mechanical mounting to avoid stress on the connector

The spacers define the stacking distance and provide mechanical fixation of the HAT.

6.3 Assemble FAKRA Connectors

Two FAKRA connectors are included in the delivery for the GMSL2 camera links. They are mechanically coded and must be fitted in the specified connector positions.

Assembly instructions:

- Insert each FAKRA connector from the top side of the PCB.
- Ensure that the connector housing is aligned with the PCB outline and that the coaxial cable interface faces outwards.
- Push the connector fully into the PCB before soldering to ensure correct mechanical alignment.
- Solder all connector pins and the mounting tabs carefully with sufficient solder wetting.

Important notes:

- Do not apply excessive heat to the plastic connector housing.
- Ensure that the shield and mounting tabs are soldered properly; they provide both mechanical retention and the high-frequency ground connection.
- Inspect all solder joints for bridges, incomplete wetting or mechanical misalignment.

Correct assembly is essential for reliable GMSL2 signal transmission and mechanical stability of the coaxial interface.

6.4 Board Overview

7 References

1. Analog Devices MAX96716 Datasheet

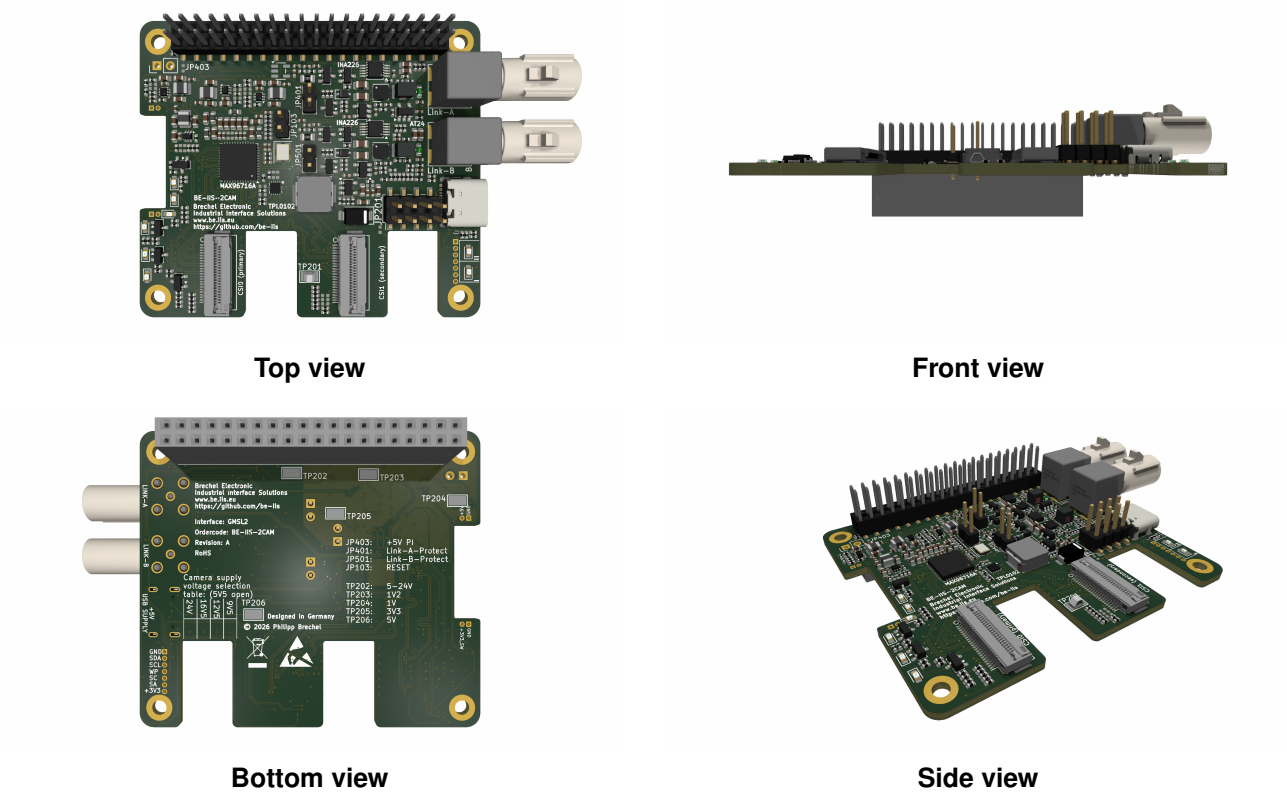


Figure 7: BE-IIS-GMSL2-2CAM – mechanical overview

2. TI INA226 Datasheet
3. BE-IIS CAM Installer (Software and Setup Tools)
4. Raspberry Pi HAT+ Specification
5. Schematic, PCB-Viewer, BOM, 3D-Model
6. Power over Dataline extension board
7. Raspberry Pi HAT+ Specification

8 Revision History

Revision	Date	Description
A.00	2026-06-28	Initial draft
A.01	2026-07-27	Add content after Rev-A bring up
A.02	2026-07-29	Add content dimensions
B.00	2026-09-19	Create Rev.B version

Company Information

Manufacturer

BE-IIS welcomes technical feedback, suggestions and improvement ideas. Business inquiries, cooperation requests and distribution opportunities are welcome.

Name	Philipp Brechel
Company	Brechel Electronic
Business	Industrial Interface Systems
Address	Hindenburgstraße 100/1
	73207 Plochingen, Germany

Contact

Email	`contact@be-iis.eu`
Web	`www.be-iis.eu`
GitHub	`github.com/be-iis`
LinkedIn	`linkedin.com/in/brechel`
Digikey	`https://www.digikey.de/de/supplier-centers/industrial-interface-solutions`
Languages	`German and English`