NV054-F
(MIPI-Uni-DuP)
Hardware Specification

Ver.1.0

NetVision Co., Ltd.

Update History

Revision	Date	Note	
1.0	29. May., 2026	New File (Translated from Japanese version 3.)	R. Sugo

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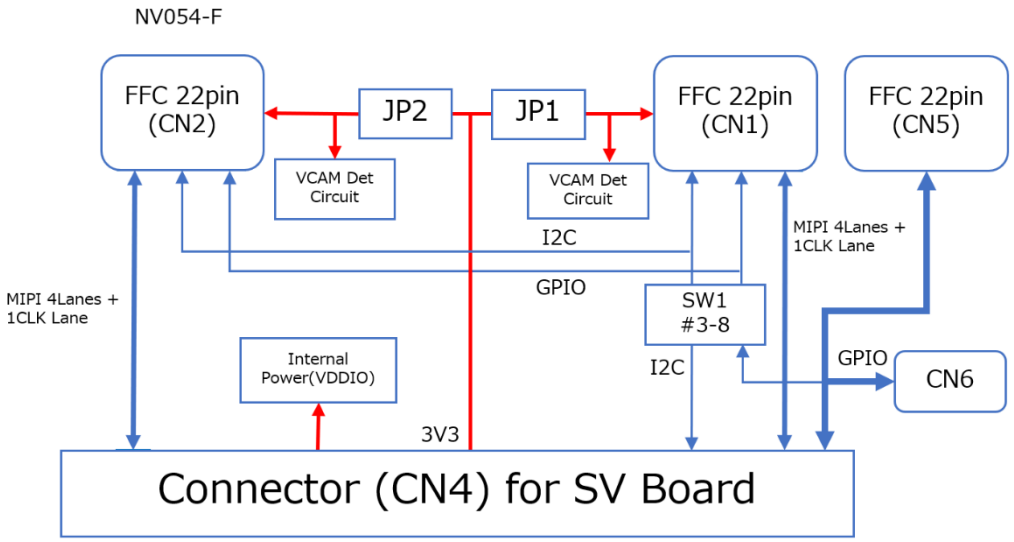
1. Overview

This document is the hardware specification for the NV054-F / MIPI-Uni-DuP. The NV054-F converts the SV series common dual-port MIPI CSI-2 interface to a pair of Raspberry Pi-compatible connectors. It allows connection to evaluation kits such as NVIDIA Jetson or to Raspberry Pi Camera modules.

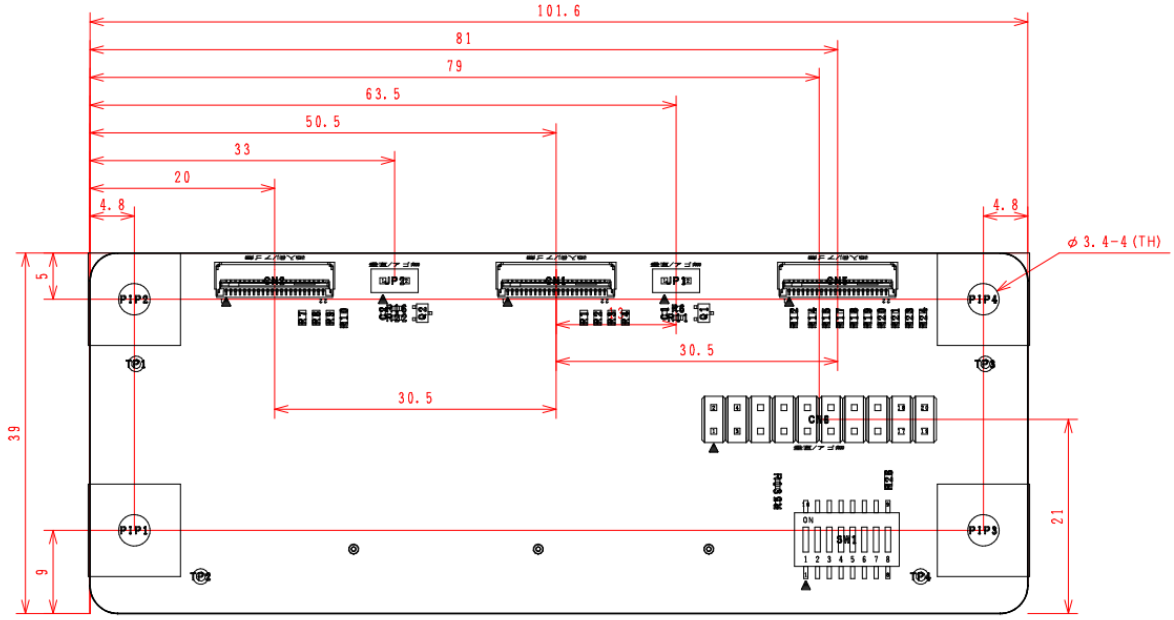
- Block diagram

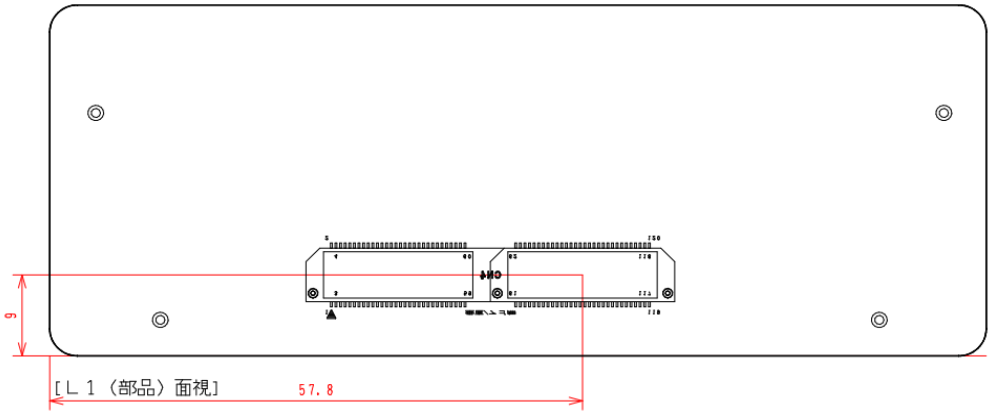


2. Board Layout

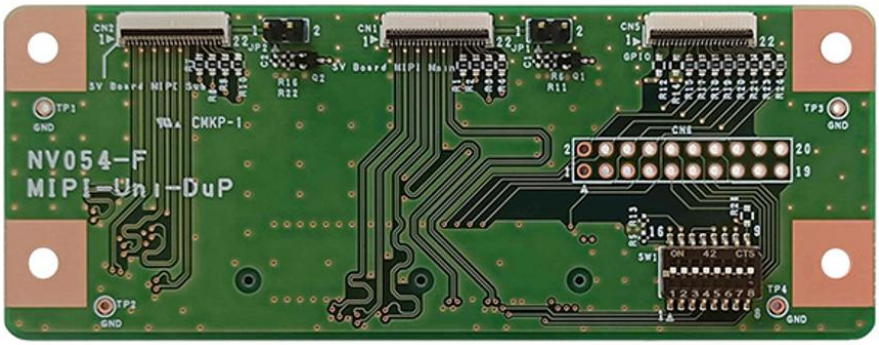
2.1 Connector Layout

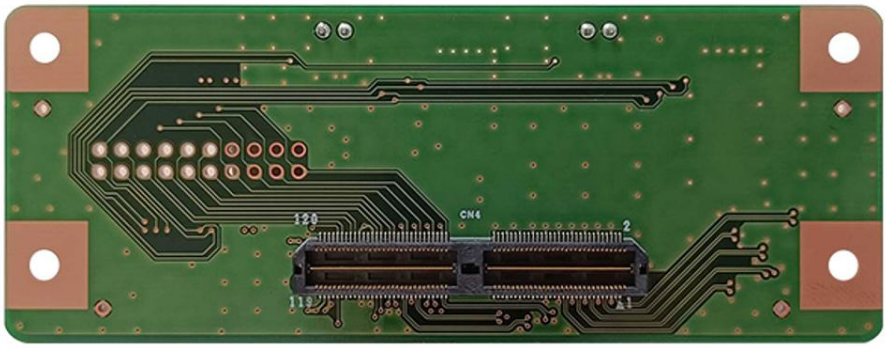
The layout of the main connectors on this board is shown below. For connector pin numbers and pin assignments, refer to Connector List and Connector Details.





2.2 Board Photos





3. Details

3.1 Connector List

The connectors mounted on this board are shown below.

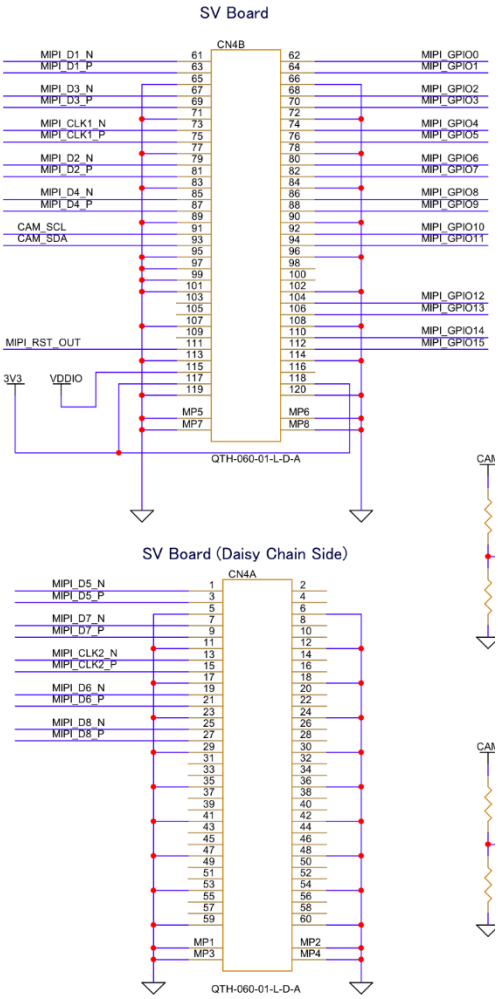
CN#	Mounting status	Description	Part number
CN1		MIPI signal input/output on the standard port	5034802200
CN2		MIPI signal input/output on the expansion port	5034802200
CN4		For SV board connection	QTH-060-01-L-D-A
CN5		GPIO connections between multiple boards	5034802200
CN6	Un-mounted		PRPC010DAAN-RC

- CN1, CN2, and CN5 support both top-contact and bottom-contact insertion. Ensure the orientation of the FFC is correct when making the connection.
- CN5 is intended for GPIO-based inter-board communication and future expansion.

3.2 Connector Details

The simplified top-view outline of the board's connectors and the pin assignments (excerpted from the schematic) are shown below. For connection details of each connector, refer to the schematic.

・ CN4 (QTH-060-01-L-D-A)



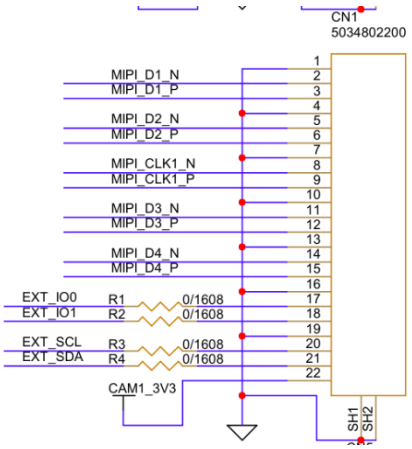
(Schematic)

*Refer to the SV board hardware specification for the pin assignments.

- CN1 (5034802200)

1 22

(Top view)

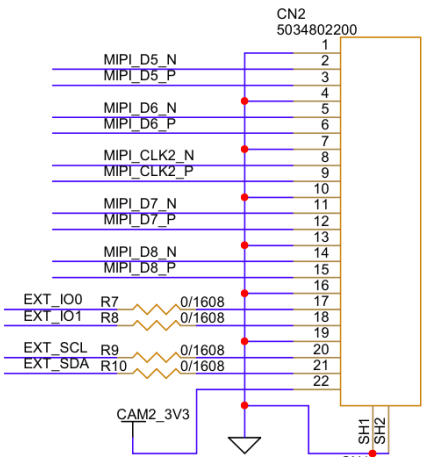


(Schematic)

- CN2 (5034802200)

1 22

(Top view)

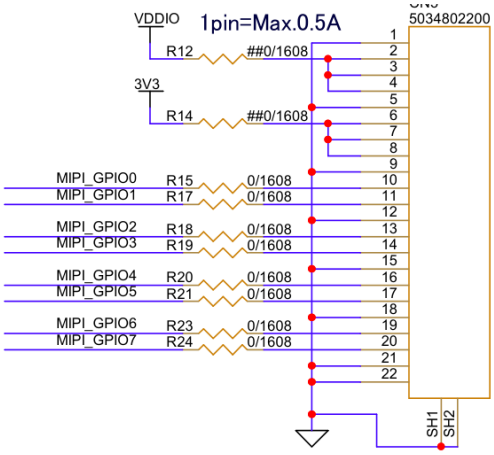


(Schematic)

- CN5 (5034802200)

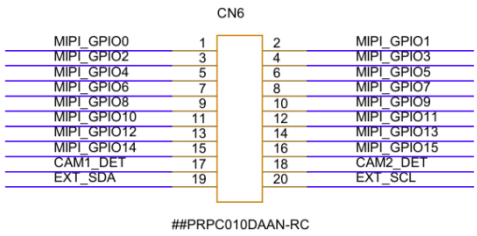
1 22

(Top view)



(Schematic)

- CN6 (PRPC010DAAN-RC)



(Schematic)

3.3 Switch Settings

This board is equipped with a configuration switch (SW1).

SW#	Name	Description
1	CAM1_DET	ON: Connects GPIO9 of CN4 to the target power detection signal of CN1. OFF: Disconnects.
2	CAM2_DET	ON: Connects GPIO9 of CN4 to the target power detection signal of CN2. OFF: Disconnects.
3	SCL	ON: Connects the I2C bus of CN4 to the I2C bus of CN1/CN2. OFF: Disconnects the I2C bus.
4	SDA	
5	SCL	ON: Connects GPIO11 of CN4 to the EXT_SCL signal of CN1/CN2. OFF: Disconnects.
6	SDA	ON: Connects GPIO12 of CN4 to the EXT_SDA signal of CN1/CN2. OFF: Disconnects.
7	EXT_IO1	ON: Connects GPIO13 of CN4 to the EXT_IO1 signal of CN1/CN2. OFF: Disconnects.
8	EXT_IO0	ON: Connects RST_OUT of CN4 to the EXT_IO0 signal of CN1/CN2. OFF: Disconnects.

- The default setting is ALL OFF.

3.4 Jumper Settings

This board is equipped with two jumper pins.

- JP1-JP2

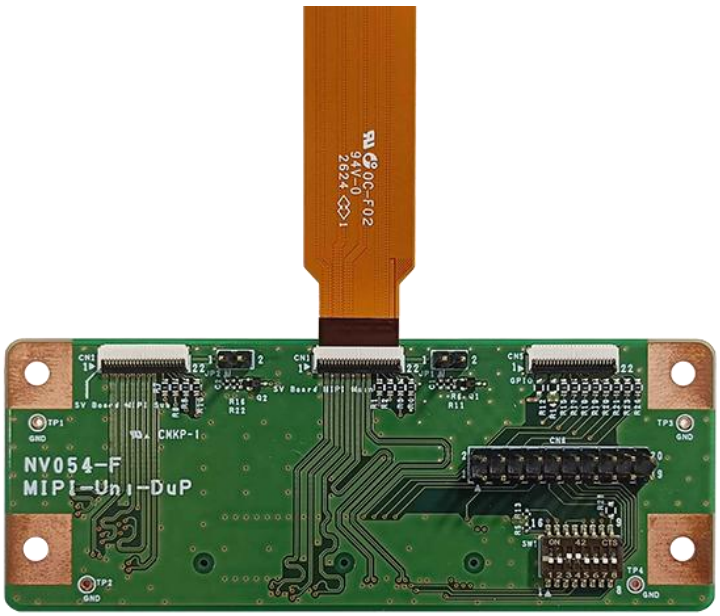
JP#	Name	Description
JP1	CAM1_3V3	1-2 shorted: Connects the 3.3V rails of CN1 and CN4. 1-2 open: Disconnects. (Default)
JP2	CAM2_3V3	1-2 shorted: Connects the 3.3V rails of CN2 and CN4. 1-2 open: Disconnects. (Default)

3.5 Raspberry Pi Camera Connection Settings

Connect the Raspberry Pi Camera to CN1. Set JP1 to the shorted position and set SW1 switches #3, #4, and #8 to ON. When using the official Raspberry Pi 15pin to 22pin FFC, ensure that the FFC is inserted with the contact side facing downward.

When using this board together with the SV board, set the SV board's VDDIO voltage to 3.3V. VDDIO is configured using the jumpers on each board. Refer to the respective hardware specifications for details.

- FFC connection orientation



3.6 Jetson Connection Settings

Connect the Jetson to CN1. Set JP1 to the open position and set SW1 switches #3 and #4 to ON. Pay attention to the FFC orientation when making the connection.

When using this board together with the SV board, set the SV board's VDDIO voltage to 3.3 V. VDDIO is configured using the jumpers on each board. Refer to the respective hardware specifications for details.

4. Specifications

Item	Value	Description
Board dimensions	101.6 x 39.0 mm	Values do not include connectors.
IO voltage	DC +1.8V - 3.3V	Set the I/O voltage to the same level as the target device.
Video input / output	MIPI CSI-2 1-4 Lanes + CLK	MIPI CSI-2 signals are routed through CN1, CN2, and CN4.

- The above specifications apply only to model NV054-F / MIPI-Uni-DuP.
- Hot-plugging is not supported. Do not connect or disconnect the connector while the SV board is powered on.
- CN1, CN2, and CN5 support both top-contact and bottom-contact insertion. Please ensure the orientation of the FFC when making the connection.