

Camera Adapter Board for DEBIX SOM A I/O Board User Guide

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Complied by: Polyhex Technology Company Limited (<http://www.polyhex.net/>)

Camera Adapter Board is an add-on board designed for DEBIX SOM A I/O Board to allow the connection with DEBIX Camera Modules.

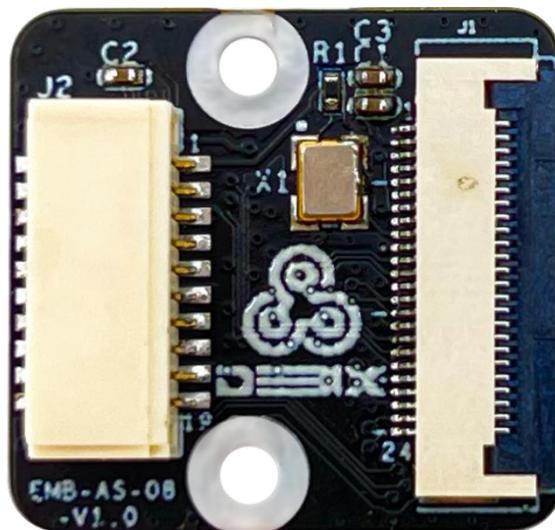


Figure 1 Camera Adapter Board for DEBIX SOM A I/O Board



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REVISION HISTORY

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1.0	2023.09.06	First edition



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Chapter 1 Camera Adapter Board for DEBIX SOM A I/O Board Introduction

Camera Adapter Board is an add-on board designed for DEBIX SOM A I/O Board to allow the connection with DEBIX Camera Modules. It connects to the MIPI CSI interface of the DEBIX SOM A I/O Board via the CSI cable, and connects to the DEBIX Camera Module via the FPC cable.

Main features:

- Double-row CSI connection cable
- Designed for DEBIX SOM A I/O Board
- Compatible with DEBIX Camera 200A, Camera 500A and Camera 1300A

1.1. Overview

Camera Adapter Board has two connectors. DEBIX SOM A I/O Board can be connected to the DEBIX Camera Module via the Camera Adapter Board, which is composed as follows:

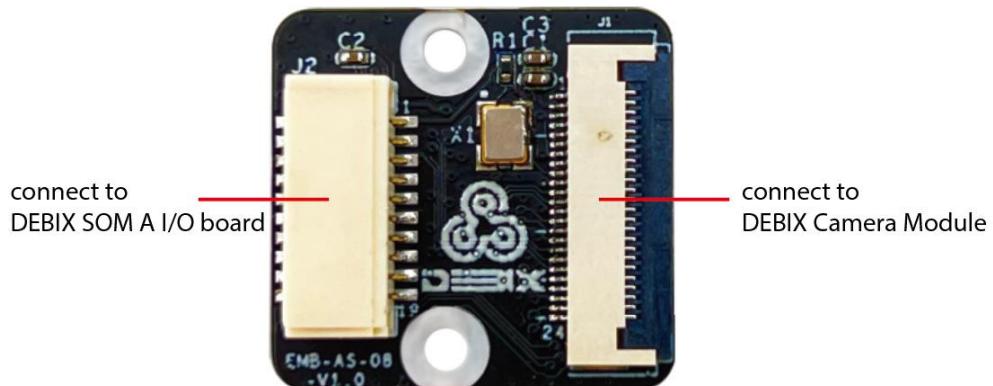


Figure 2 Camera Adapter Board

Table 1 Camera Adapter Board specification

I/O Interface	
Connector	<ul style="list-style-type: none">• 1 x 24pin/0.5mm Pitch FPC socket• 1 x 20pin/1.25mm Pitch MIPI_CSI socket

1.2. Interface

The Camera Adapter Board provides two interfaces:

- One is a 24pin/0.5mm FPC socket (J1) for connection to the DEBIX Camera Module.
- One is a 20pin/1.25mm MIPI_CSI socket (J2) for connection to DEBIX SOM A I/O Board.

1.2.1. J1

The pin sequence of J1 is as shown in the figure:

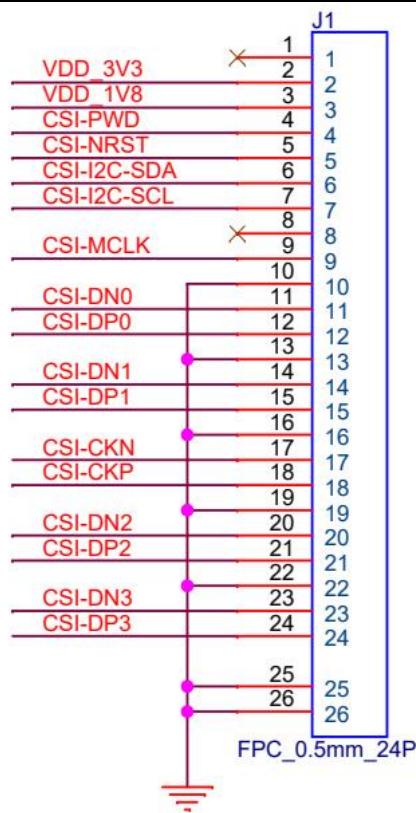


Figure 3 Pin sequence of J1

The interface is defined as follows:

Table 2 Pin definition of J1 interface

Pins	Definition	Description
1	Not used	-
2	VDD_3V3	3.3V input
3	VDD_1V8	1.8V input
4	CSI_PWD	Power Control
5	CSI_NRST	Reset control
6	CSI_I2C_SDA	I2C data signal (controlled by I2C2)
7	CSI_I2C_SCL	I2C clock signal (controlled by I2C2)
8	Not used	-
9	CSI_MCLK	Master clock input
10	GND	To Ground

11	CSI_DN0	CSI Differential data channel 0 (-)
12	CSI_DP0	CSI Differential data channel 0 (+)
13	GND	To Ground
14	CSI_DN1	CSI Differential data channel 1 (-)
15	CSI_DP1	CSI Differential data channel 1 (+)
16	GND	To Ground
17	CSI_CKN	CSI Differential Clock Channels (-)
18	CSI_CKP	CSI Differential Clock Channels (+)
19	GND	To Ground
20	CSI_DN2	CSI Differential data channel 2 (-)
21	CSI_DP2	CSI Differential data channel 2 (+)
22	GND	To Ground
23	CSI_DN3	CSI Differential data channel 3 (-)
24	CSI_DP3	CSI Differential data channel 3 (+)

1.2.2. J2

The pin sequence of J2 is as shown in the figure:

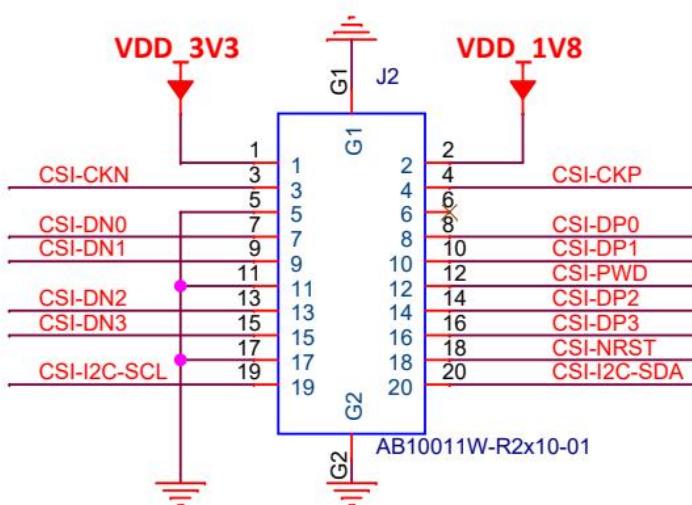


Figure 4 Pin sequence of J2

The interface is defined as follows:

Table 2 Pin definition of J2 interface

Pins	Definition	Description
1	VDD_3V3	3.3V input
2	VDD_1V8	1.8V input
3	CSI_CKN	CSI Differential Clock Channels (-)
4	CSI_CKP	CSI Differential Clock Channels (+)
5	GND	To Ground
6	Not used	-
7	CSI_DN0	CSI Differential data channel 0 (-)
8	CSI_DP0	CSI Differential data channel 0 (+)
9	CSI_DN1	CSI Differential data channel 1 (-)
10	CSI_DP1	CSI Differential data channel 1 (+)
11	GND	To Ground
12	CSI_PWD	Power Control
13	CSI_DN2	CSI Differential data channel 2 (-)
14	CSI_DP2	CSI Differential data channel 2 (+)
15	CSI_DN3	CSI Differential data channel 3 (-)
16	CSI_DP3	CSI Differential data channel 3 (+)
17	GND	To Ground
18	CSI_NRST	Reset control
19	CSI_I2C_SDA	I2C data signal (controlled by I2C2)
20	CSI_I2C_SCL	I2C clock signal (controlled by I2C2)



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1.3. Packing List

- 1 x Camera Adapter Board
- 1 x 20pin/1.25mm Pitch MIPI_CSI cable
- 1 x 24pin/0.5mm Pitch FPC cable

Chapter 2 Get Started

2.1. Hardware Installation

The installation procedure is the same for one DEBIX Camera module and two DEBIX Camera modules, and they are used in the same way; this section describes the installation of two DEBIX Camera modules as an example.

- **Component Preparation**

- ✓ 1 x DEBIX SOM A + I/O Board
- ✓ 2 x 24Pin/0.5mm Pitch FPC cable
- ✓ 2 x 20Pin/1.25mm Pitch MIPI_CSI cable
- ✓ DEBIX Camera 200A and 500A Module

- **Hardware Connection**

Warning

The device can be powered on only after all the accessories are completely connected; and the accessories cannot be inserted or removed at will during the working process.

1. Pull up the black rubber snap of J1 interface on the camera adapter board, insert the FPC cable that has been connected to the DEBIX Camera 200A Module (note the direction of the gold finger, gold finger facing down), press the snap, and then connect the double-row CSI connection cable to J2 interface, as follows:

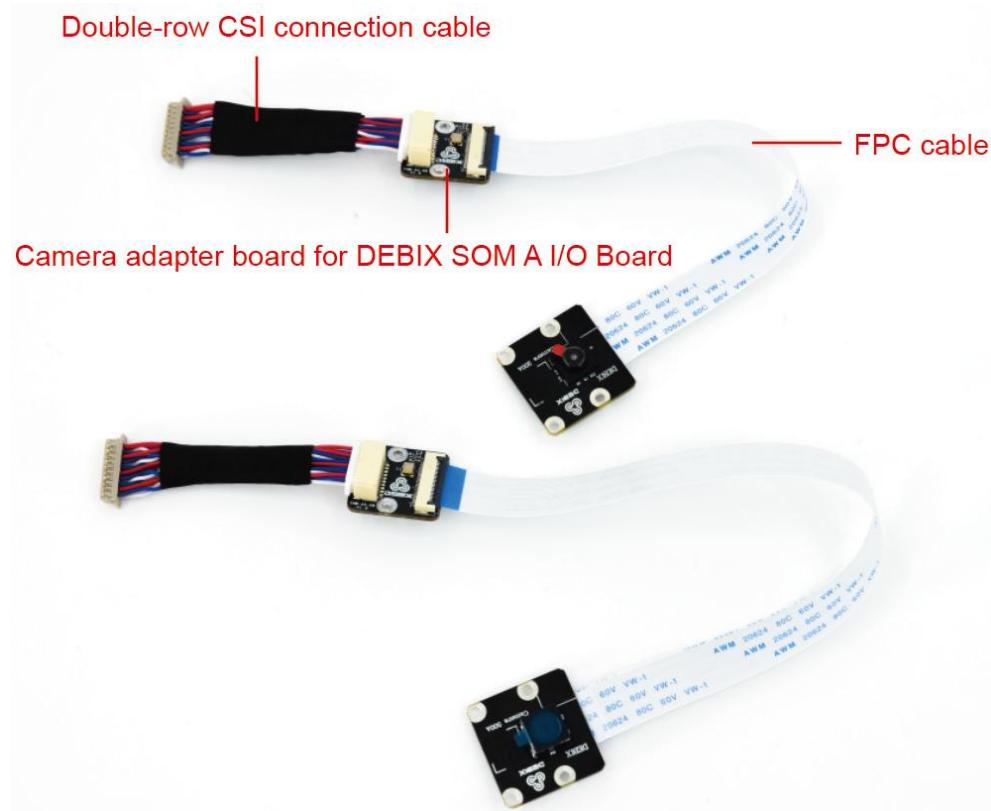


Figure 5

2. Remove the white rubber snap of CSI interface on the DEBIX SOM A I/O Board, and insert the other end of the double-row CSI connection cable, after installation as follows:



Figure 6

3. Connect the DEBIX Camera 500A Module as in above steps 1-2.