

MIPI DSI Adapter Board for DEBIX SOM A I/O Board User Guide

Version: V1.0 (2025-08)

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

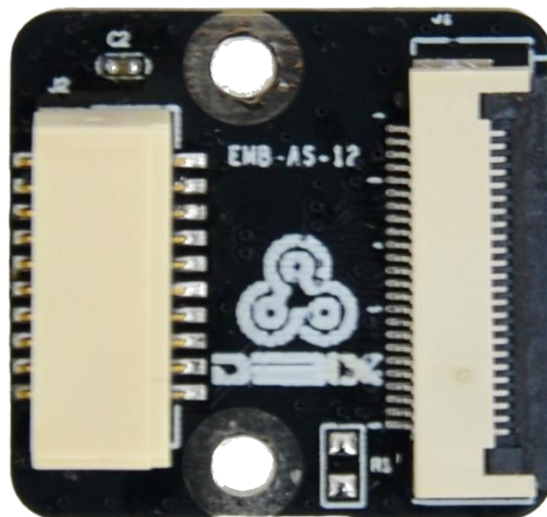


Figure 1 MIPI DSI Adapter Board for DEBIX SOM A I/O Board

REVISION HISTORY		
Rev.	Date	Description
1.0	2025.08.19	First edition

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

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

Main features:

- Double-row DSI connection cable
- Designed for DEBIX SOM A I/O Board
- Compatible with DEBIX 8-inch MIPI DSI display

1.1. Overview

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

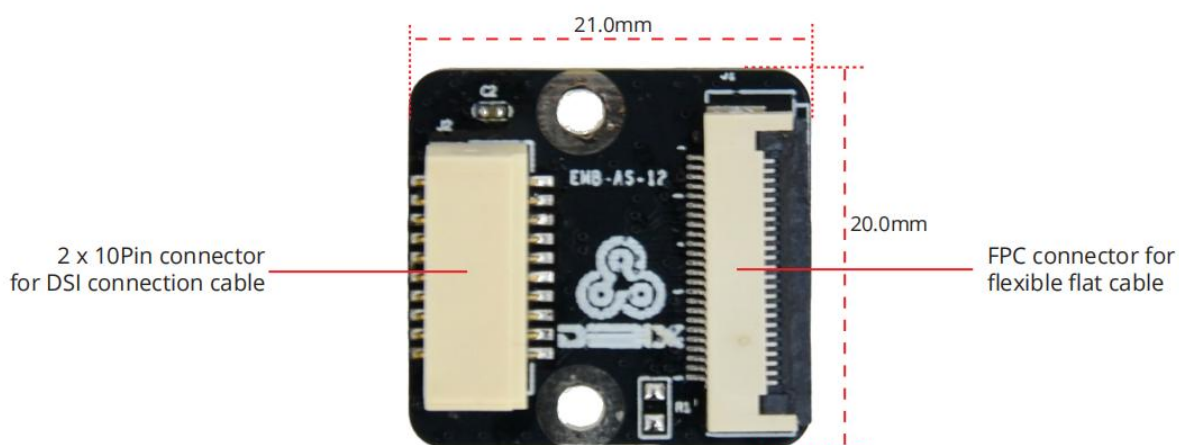


Figure 2 MIPI DSI Adapter Board

Table 1 MIPI DSI Adapter Board specification

I/O Interface	
Connector	1 x 24pin/0.5mm Pitch FPC socket 1 x 20pin/1.25mm Pitch MIPI_DSI socket

1.2. Interface

The MIPI DSI Adapter Board provides two interfaces:

- One is a 24pin/0.5mm FPC socket (J1) for connection to the DEBIX MIPI DSI display.
- One is a 20pin/1.25mm MIPI_DSI 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:

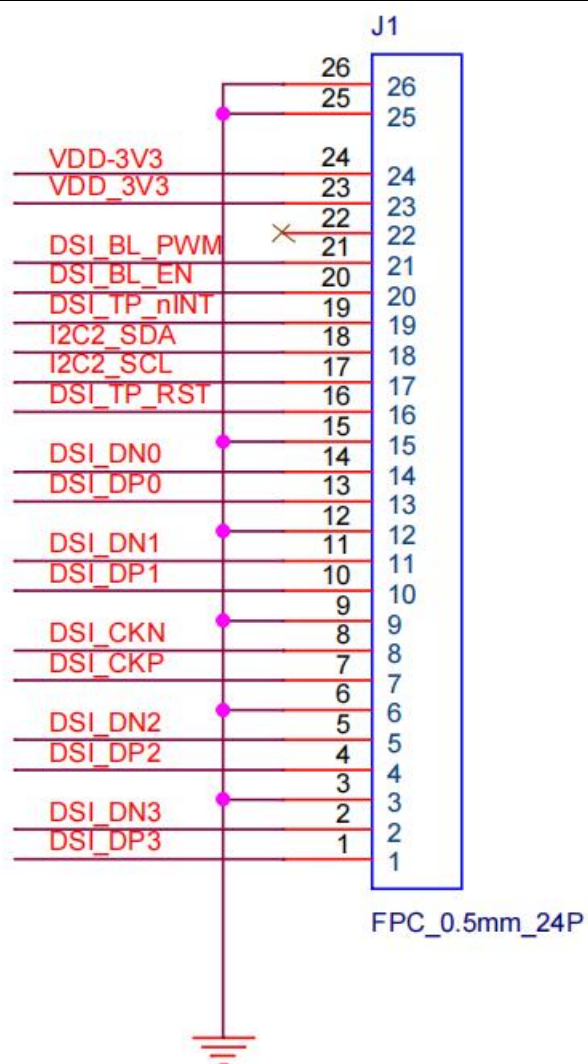


Figure 3 Pin sequence of J1

The interface is defined as follows:

Table 2 Pin definition of J1 interface

Pins	Definition	Description
1	DSI_DP3	DSI Differential data channel 3 (+)
2	DSI_DN3	DSI Differential data channel 3 (-)
3	GND	To ground
4	DSI_DP2	DSI Differential data channel 2 (+)
5	DSI_DN2	DSI Differential data channel 2 (-)
6	GND	To ground

7	DSI_CKP	DSI Differential Clock Channels (+)
8	DSI_CKN	DSI Differential Clock Channels (-)
9	GND	To ground
10	DSI_DP1	DSI Differential data channel 1 (+)
11	DSI_DN1	DSI Differential data channel 1 (-)
12	GND	To ground
13	DSI_DP0	DSI Differential data channel 0 (+)
14	DSI_DN0	DSI Differential data channel 0 (-)
15	GND	To ground
16	DSI_TP_RST	Reset
17	I2C2_SCL	I2C clock signal (controlled by I2C2)
18	I2C2_SDA	I2C data signal (controlled by I2C2)
19	DSI_TP_nINT	Touch interrupt pin
20	DSI_BL_EN	LCD enable signal
21	DSI_BL_PWM	Backlight control signal
22	NC	Not connected
23	VDD_3V3	3.3V output
24	VDD-3V3	3.3V output

1.2.2. J2

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

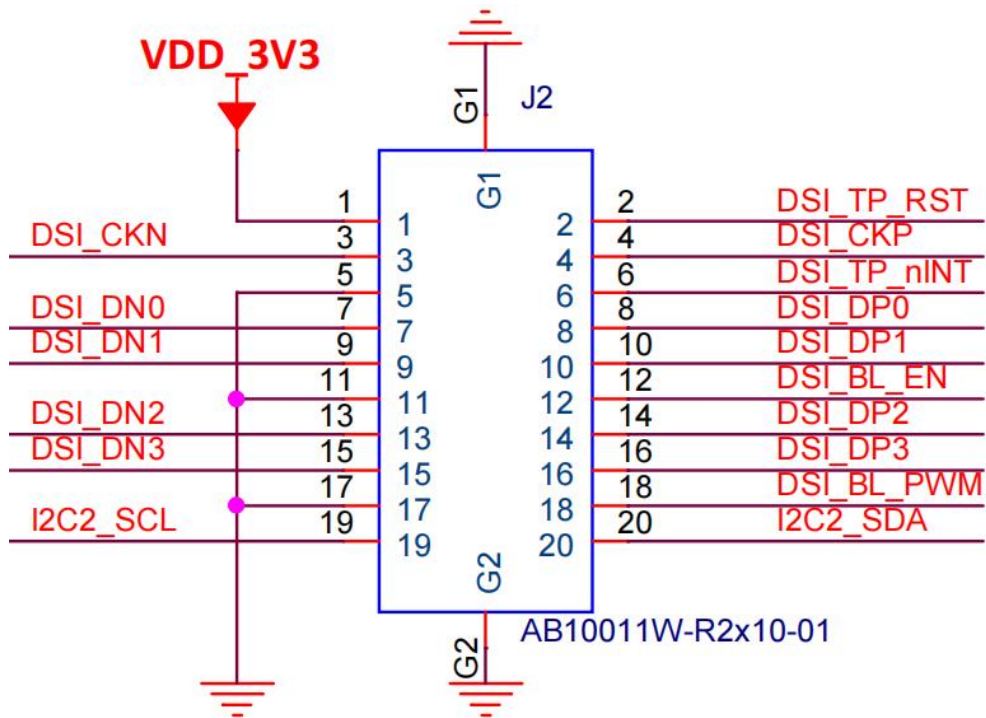


Figure 4 Pin sequence of J2

The interface is defined as follows:

Table 3 Pin definition of J2 interface

Pins	Definition	Description
1	VDD3V3	3.3V input
2	DSI_TP_RST	DSI reset
3	DSI_CKN	DSI Differential Clock Channels(-)
4	DSI_CKP	DSI Differential Clock Channels(+)
5	GND	To Ground
6	DSI_TP_nINT	touch interrupt pin
7	DSI_DN0	DSI Differential data channel 0(-)
8	DSI_DP0	DSI Differential data channel 0(+)
9	DSI_DN1	DSI Differential data channel 1(-)
10	DSI_DP1	DSI Differential data channel 1(+)
11	GND	To Ground

12	DSI_BL_EN	LCD enable signal
13	DSI_DN2	DSI Differential data channel 2(-)
14	DSI_DP2	DSI Differential data channel 2(+)
15	DSI_DN3	DSI Differential data channel 3(-)
16	DSI_DP3	DSI Differential data channel 3(+)
17	GND	To Ground
18	DSI_BL_PWM	Backlight control signal
19	I2C2_SCL	I2C clock signal (controlled by I2C2)
20	I2C2_SDA	I2C data signal (controlled by I2C2)

1.3. Packing List

- 1 x MIPI DSI Adapter Board
- 1 x 20pin/1.25mm Pitch MIPI_DSI cable
- 1 x 24pin/0.5mm Pitch FPC cable

Chapter 2 Getting Started

2.1. Hardware Installation

- **Component Preparation**

- ✓ 1 x MIPI DSI Adapter Board
- ✓ 1 x 24Pin/0.5mm Pitch FPC cable
- ✓ 1 x 2*10Pin/1.25mm Pitch MIPI_DSI cable
- ✓ 1 x DEBIX SOM A + I/O Board
- ✓ 1 x DEBIX 8-inch MIPI DSI display

- **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. **Insert the cables:** Pull up the black rubber snap of J1 interface on the MIPI DSI adapter board, insert the FPC cable that is for connecting to the DEBIX 8-inch MIPI DSI display (Note the direction of the gold finger: Gold finger facing down), press the snap. And then connect the double-row DSI connection cable to J2 interface, as follows:

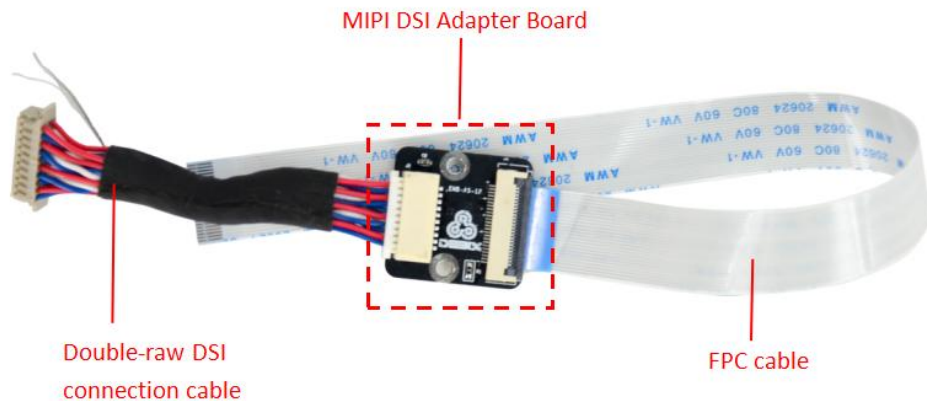


Figure 5

- 2. Insert the other end of the FPC cable:** Pull up the black rubber snap of the interface on the DEBIX 8-inch MIPI DSI display, insert the FPC cable with gold finger facing down, and then press the snap.

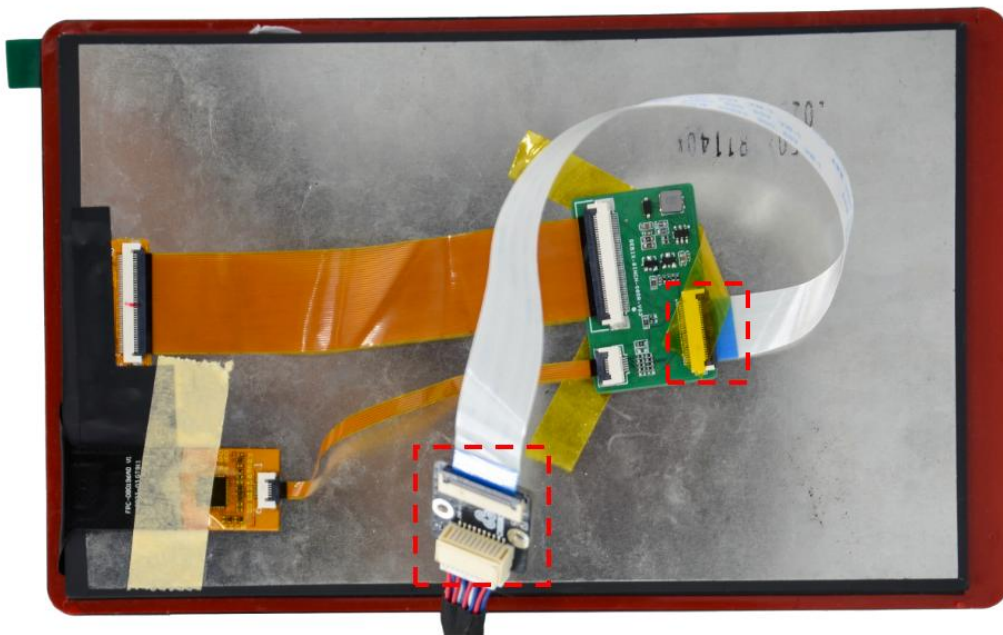


Figure 6

- 3. Insert the other end of the double-row DSI cable:** Remove the white rubber snap from the DSI interface on the DEBIX SOM A I/O Board, then insert the other end of the double-row DSI connection cable, as shown below after installation.

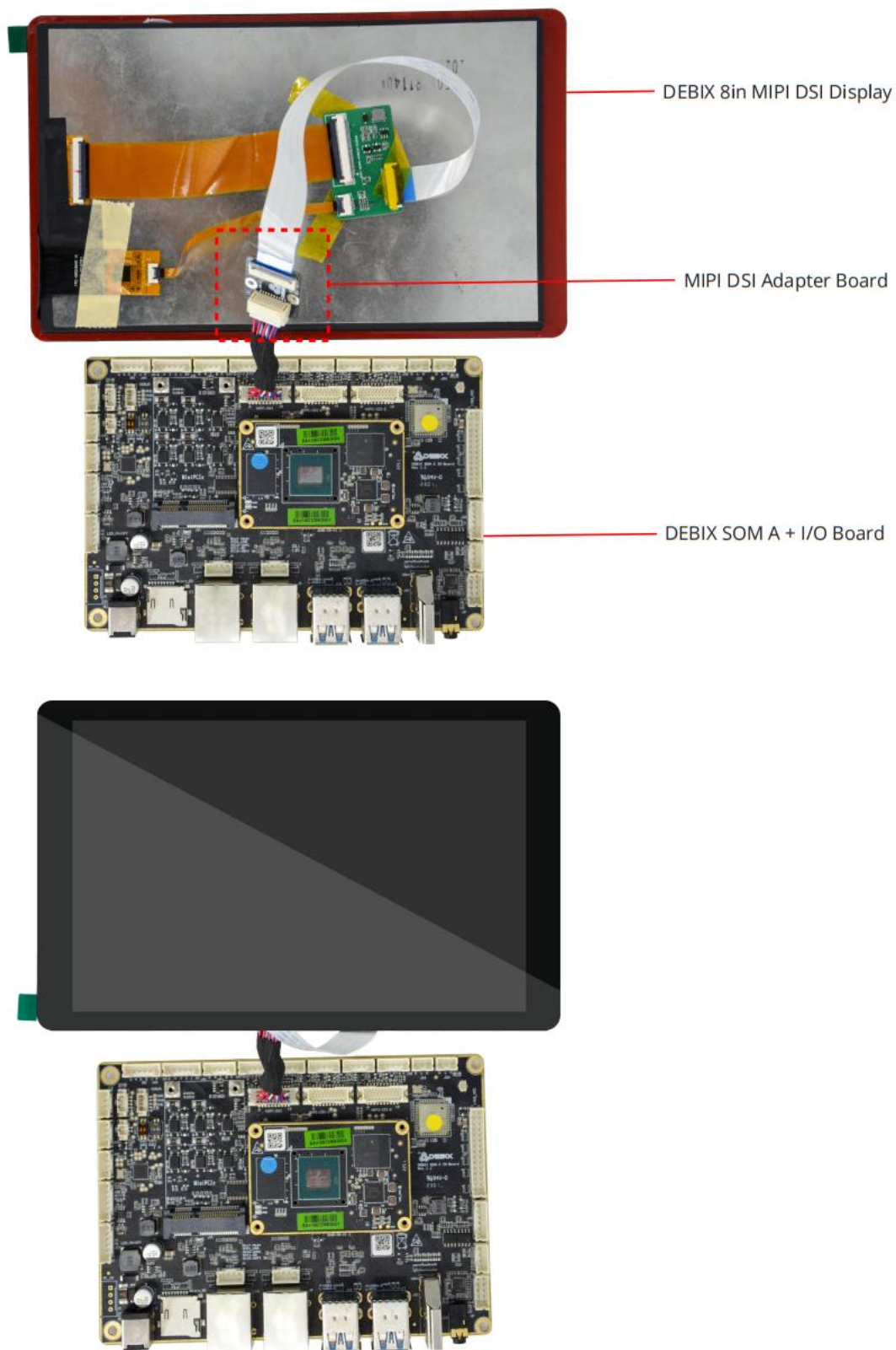


Figure 7