

# Hardware Documentation

*ADP-MIPI2MIPI1  
for HW Revision 1.20*

## Preliminary

Version 001  
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# About This Document

This document describes how to use the [ADP-MIPI2MIPI1](#) adapter board with mechanical and electrical information. The latest version of this document can be found at:

<http://www.fs-net.de>.

## ESD Requirements



All F&S hardware products are ESD (electrostatic sensitive devices). All products are handled and packaged according to ESD guidelines. Please do not handle or store ESD-sensitive material in ESD-unsafe environments. Negligent handling will harm the product and warranty claims become void.

## History

Date	V	Platform	A,M,R	Chapter	Description	Au
27.04.2021	001	All		-	Initial Version	MW

V       Version  
A, M, R   Added, Modified, Removed  
Au       Author

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# 1 Physical Characteristics

ADP-MIPI2MIPI1 is a passive shield adapter which is compatible with F&S baseboard, which offers a MIPI-DSI Interface. The adapter can be used to connect the F&S 3.5" MIPI-DSI Display.

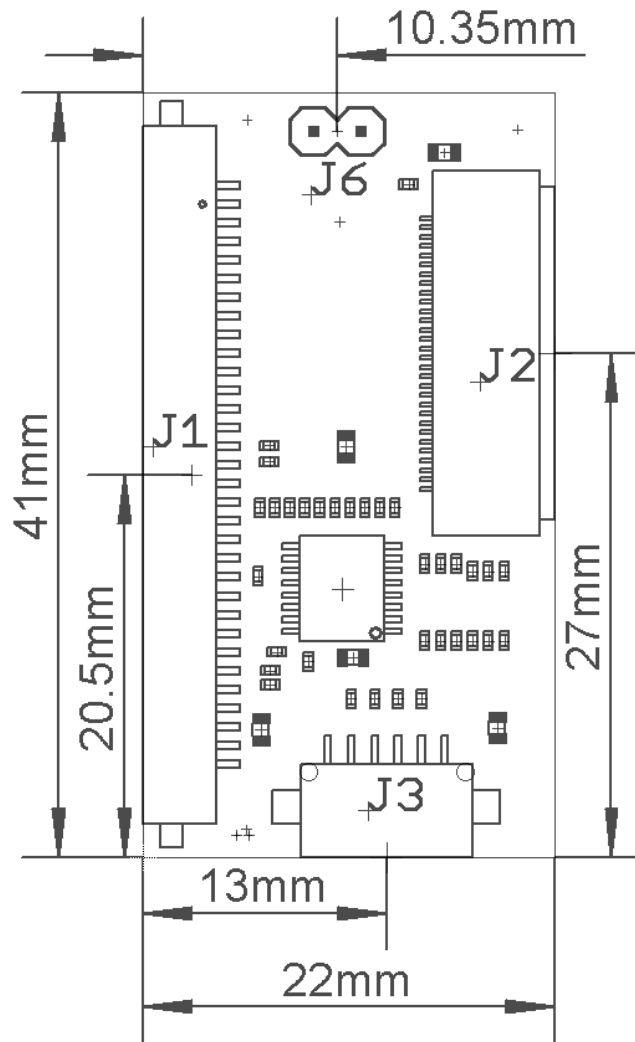


Figure 1: ADP-MIPI2MIPI1 Adapter Board

Ref	Description	I/O	No. of Pins	Connector Type
J1	MIPI-DSI Input Connector	I	30	FI-X30SSLA-HF-R2500
J2	MIPI-DSI Output Connector	O	30	FH28D-30S (HIROSE)
J3	Power and I2C Input Connector	I/O	6	DF13A-6P (HIROSE)
J6	Backlight Input Connector	I/O	2	Pin Header (2.54mm)
---	Mating Connector for J1	-	30	FI-X30H & FI-X30HL

Table 1: Connectors List and Types



## 2 Connector Pin Layouts

J1: MIPI-DSI Input Connector				
Pin	Signal Name	I/O	Voltage	Description
1	DSI_A_DATA0_N	I/Odiff	220mV	DSI Chanel A Data Lane 0-
2	DSI_A_DATA0_P	I/Odiff	220mV	DSI Chanel A Data Lane 0+
3	DSI_A_DATA1_N	I/Odiff	220mV	DSI Chanel A Data Lane 1-
4	DSI_A_DATA1_P	I/Odiff	220mV	DSI Chanel A Data Lane 1+
5	DSI_A_DATA2_N	I/Odiff	220mV	DSI Chanel A Data Lane 2-
6	DSI_A_DATA2_P	I/Odiff	220mV	DSI Chanel A Data Lane 2+
7	GND			
8	DSI_A_CLK_N	I/Odiff	220mV	DSI Chanel A Clock Signal-
9	DSI_A_CLK_P	I/Odiff	220mV	DSI Chanel A Clock Signal+
10	DSI_A_DATA3_N	I/Odiff	220mV	DSI Chanel A Data Lane 3-
11	DSI_A_DATA3_P	I/Odiff	220mV	DSI Chanel A Data Lane 3+
12	N.C.	X	X	Not Connected
13	N.C.	X	X	Not Connected
14	GND			
15	N.C.	X	X	Not Connected
16	N.C.	X	X	Not Connected
17	GND			
18	N.C.	X	X	Not Connected
19	N.C.	X	X	Not Connected
20	N.C.	X	X	Not Connected
21	N.C.	X	X	Not Connected
22	N.C.	X	X	Not Connected
23	N.C.	X	X	Not Connected
24	GND			
25	I2C_SDA	I/O	3.3V	I2C Serial Data
26	I2C_IRQn	O	3.3V	I2C Interrupt Request
27	I2C_SCL	I	3.3V	I2C Clock
28	MIPI_RSTn	I	3.3V	MIPI Reset Signal
29	VLCD	PWR	3.3V	LCD Supply Voltage
30	VLCD	PWR	3.3V	LCD Supply Voltage

Table 2: MIPI-DSI Input Connector Pin Layout

J2: MIPI-DSI Output Connector				
Pin	Signal Name	I/O	Voltage	Description
1	VBL	PWR	3.3V/5V	Backlight Supply Voltage
2	VBL	PWR	3.3V/5V	Backlight Supply Voltage
3	GND			
4	GND			
5	BL_PWM	O	3.3V	Backlight PWM → Display
6	BL_ON	O	3.3V	Backlight On (Enable) → Display
7	GND			
8	DSI_A_DATA3_P	I/Odiff	220mV	DSI Chanel A Data Lane 3+
9	DSI_A_DATA3_N	I/Odiff	220mV	DSI Chanel A Data Lane 3-
10	GND			
11	DSI_A_DATA2_P	I/Odiff	220mV	DSI Chanel A Data Lane 2+
12	DSI_A_DATA2_N	I/Odiff	220mV	DSI Chanel A Data Lane 2-
13	GND			
14	DSI_A_CLK_P	I/Odiff	220mV	DSI Chanel A Clock Signal+
15	DSI_A_CLK_N	I/Odiff	220mV	DSI Chanel A Clock Signal-
16	GND			
17	DSI_A_DATA1_P	I/Odiff	220mV	DSI Chanel A Data Lane 1+
18	DSI_A_DATA1_N	I/Odiff	220mV	DSI Chanel A Data Lane 1-
19	GND			
20	DSI_A_DATA0_P	I/Odiff	220mV	DSI Chanel A Data Lane 0+
21	DSI_A_DATA0_N	I/Odiff	220mV	DSI Chanel A Data Lane 0-
22	GND			
23	MIPI_RSTn	O	3.3V	MIPI Reset Signal
24	VLCD	PWR	3.3V	LCD Supply Voltage
25	VLCD	PWR	3.3V	LCD Supply Voltage
26	MIPI_STBYB	O	3.3V	MIPI Standby Signal (n.u. for EE0350ET)
27	I2C_SCL	O	3.3V	I2C Clock
28	I2C_SDA	I/O	3.3V	I2C Serial Data
29	I2C_RSTn	O	3.3V	I2C Reset
30	I2C_IRQn	I	3.3V	I2C Interrupt Request

Table 3: MIPI-DSI Output Connector Pin Layout

Power and I2C Input Connector				
Pin	Signal Name	I/O	Voltage	Description
1	+3V3	PWR	3.3V	3.3V Supply Voltage
2	I2C_SDA	I/O	3.3V	I2C Serial Data
3	I2C_SCL	I	3.3V	I2C Clock
4	I2C_RSTn	I	3.3V	I2C Reset
5	I2C_IRQn	O	3.3V	I2C Interrupt Request
6	GND			

Table 4: Power and I2C Input Connector Pin Layout

Backlight Input Connector				
Pin	Signal Name	I/O	Voltage	Description
1	VBL	PWR	3.3V / 5V	Backlight Supply Voltage
2	GND			

Table 5: Backlight Input Connector Pin Layout

Backlight Input Connector can be leaved open, if +3V3 from “Power and I2C Input Connector” is used.

### 3 Electrical Characteristics

Signal Name	Description	Min	Typ.	Max	Unit
+5VS	Input Supply Voltage	4.5	5.0	5.5	V
+3V3	Input Supply Voltage	3.0	3.3	3.6	V
VLCD	LCD Supply Voltage	3.0	3.3	3.6	V
GND	Ground	-	-	-	-

Table 6: Electrical Characteristics



## 4 ESD and EMI Implementation

The MIPI DSI data lanes were not filtered to reduce the EMI. We highly recommend using the adapter board with wires as short as possible.

The ESD Protection is located on the EE0350ET Display which is tested with  $\pm 4\text{kV}$ .

A helpful guide is available from TI; just search for slva680 at ti.com.

## 5 Second source rules

F&S qualifies their second sources for parts autonomously, as long as this does not touch the technical characteristics of the product. This is necessary to guarantee delivery times and product life. A setup of release samples with released second sources is not possible.

F&S does not use broker components without the consent of the customer.

## 6 Storage conditions

Maximum storage on room temperature with non-condensing humidity: 6 months

Maximum storage on controlled conditions  $25 \pm 5 \text{ }^\circ\text{C}$ , max. 60% humidity: 12 months

For longer storage, we recommend vacuum dry packs.

## 7 ROHS and REACH statement

All F&S designs are created from lead-free components and are completely ROHS compliant.

The products we supply do not contain any substance on the latest candidate list published by the European Chemicals Agency according to Article 59(1,10) of Regulation (EC) 1907/2006 (REACH) in a concentration above 0.1 mass %.

Consequently, the obligations in No. 1 and 2 paragraphs in Annex are not relevant here.

Please understand that F&S is not performing any chemical analysis on its products to testify REACH compliance and is therefore not able to fill out any detailed inquiry forms.

## 8 Packaging

All F&S ESD-sensitive products will shipping either in trays or in bags.

## 9 Matrix Code Sticker

All F&S hardware will ship with a matrix code sticker including the serial number. Enter your serial number here <https://www.fs-net.de/en/support/serial-number-info-and-rma/> to get information on shipping date and type of board.



*Figure 2: Matrix Code Sticker*

# 10 Appendix

## Important Notice

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