

DSI to Raspberry Pi[®] LCD adapter board**Introduction**

The DSI to Raspberry Pi[®] LCD adapter board (order code B-LCDAD-RPI1) provides a flexible connector from the microcontroller motherboard (Samtec High speed connector QTH-030) to the standard Raspberry Pi[®] display connector (TE 1-1734248). It can be used on STM32 evaluation boards or Discovery boards to connect a Raspberry Pi[®] display, which is compatible with the Raspberry Pi[®] board DSI interface connector.

The B-LCDAD-RPI1 adapter board features up to two lanes of MIPI/DSI data and I2C interface support, and enables the use of extended displays with standard Raspberry Pi[®] DSI interface on STM32 EVAL/DK board family.

Figure 1. Adapter board (left: backside, right: front)

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1 Hardware layout and configuration

The board is designed for easy use of the Raspberry Pi® display.

The block diagram shown in *Figure 2* illustrates the DSI and I2C control connection on the Raspberry Pi® LCD adapter board. *Figure 3* indicates how to locate the components on the evaluation board (both front and back side are shown).

Figure 2. Block diagram

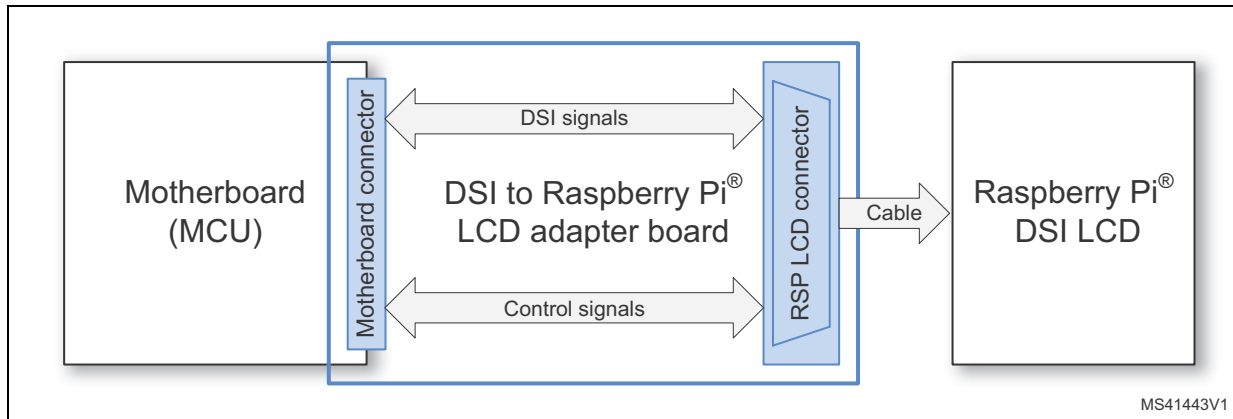
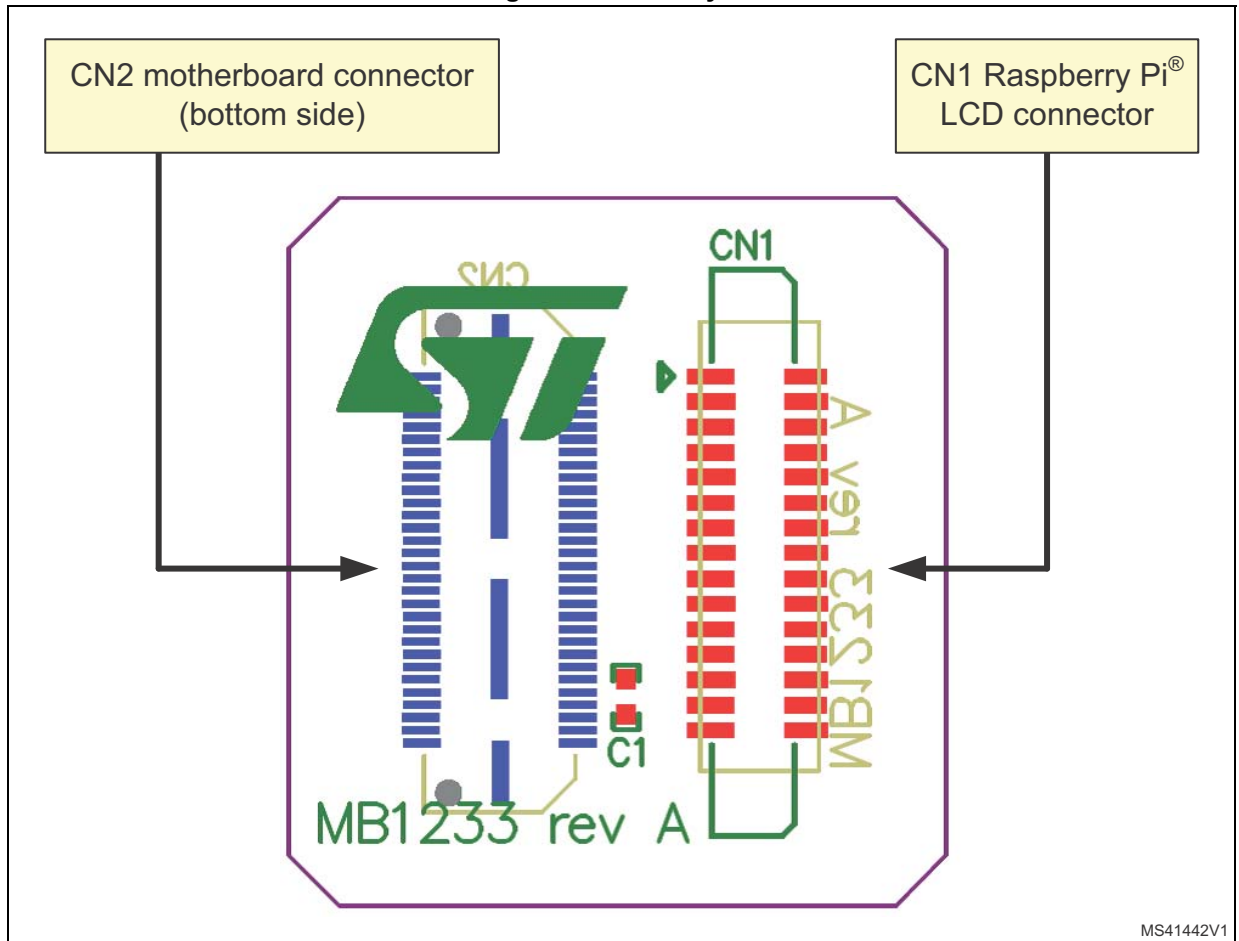


Figure 3. Board layout



2 Motherboard connector

A male high speed connector CN2 on bottom side is used to implement DSI to Raspberry Pi[®] LCD adapter board on the motherboard. Two-lanes DSI signals and control signals (I2C bus) are on this connector. The pinout is detailed in [Table 1](#).

Table 1. Motherboard connector CN2

Pin no. (odd)	Description	Interface	Pin no. (even)	Description	Interface
1	GND	-	2	-	-
3	DSI_CK_P	DSI	4	-	-
5	DSI_CK_N	DSI	6	-	-
7	GND	-	8	-	-
9	DSI_D0_P	DSI	10	-	-
11	DSI_D0_N	DSI	12	-	-
13	GND	-	14	-	-
15	DSI_D1_P	DSI	16	-	-
17	DSI_D1_N	DSI	18	-	-
19	GND	-	20	-	-
21	-	-	22	-	-
23	-	-	24	-	-
25	-	-	26	-	-
27	-	-	28	-	-
29	-	-	30	-	-
31	-	-	32	-	-
33	-	-	34	-	-
35	-	-	36	+3.3V	-
37	-	-	38	-	-
39	-	-	40	I2C_SDA	I2C
41	-	-	42	-	-
43	-	-	44	I2C_SCL	I2C
45	-	-	46	-	-
47	-	-	48	-	-
49	-	-	50	-	-
51	-	-	52	-	-
53	-	-	54	-	-
55	-	-	56	-	-
57	-	-	58	-	-
59	-	-	60	-	-

3 Raspberry Pi® LCD connector

A standard Raspberry Pi® LCD connector CN1 is implemented on DSI to Raspberry Pi® LCD adapter board. The pinout is detailed in [Table 2](#).

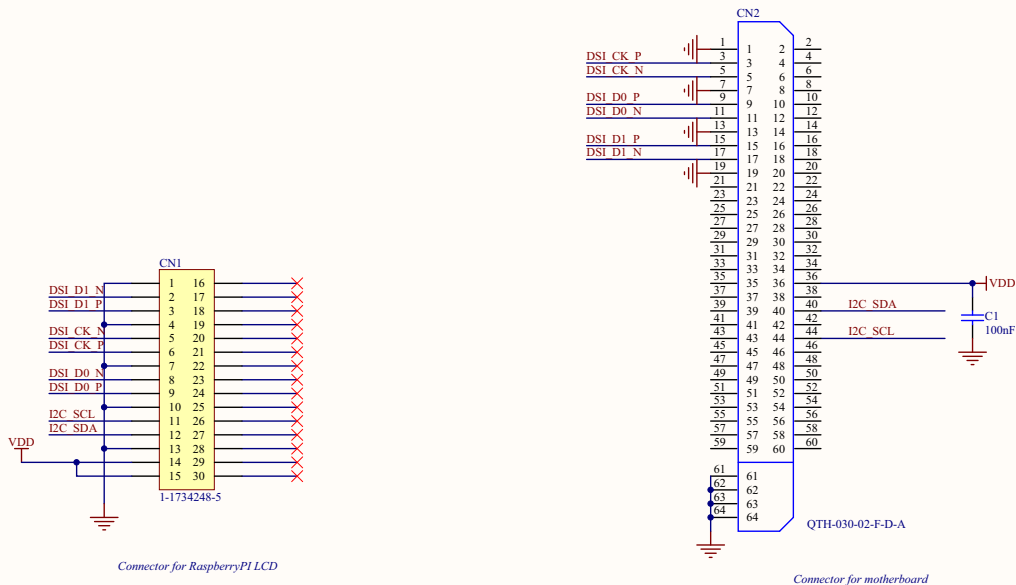
Table 2. Raspberry Pi® connector CN1

Pin number	Description	Pin number	Description
1	GND	16	-
2	DSI_D1_N	17	-
3	DSI_D1_P	18	-
4	GND	19	-
5	DSI_CK_N	20	-
6	DSI_CK_P	21	-
7	GND	22	-
8	DSI_D0_N	23	-
9	DSI_D0_P	24	-
10	GND	25	-
11	I2C_SCL	26	-
12	I2C_SDA	27	-
13	GND	28	-
14	+3.3V	29	-
15	+3.3V	30	-

4 Schematics



Figure 4. Board schematics



Title: Overview		
Project: RaspberryPI Adapter		
Size: A4	Reference: MB1233	Revision: A.1
Date: 5/23/2016	Sheet: 1 of 1	



5 Revision history

Table 3. Document revision history

Date	Revision	Changes
30-May-2016	1	Initial release.

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