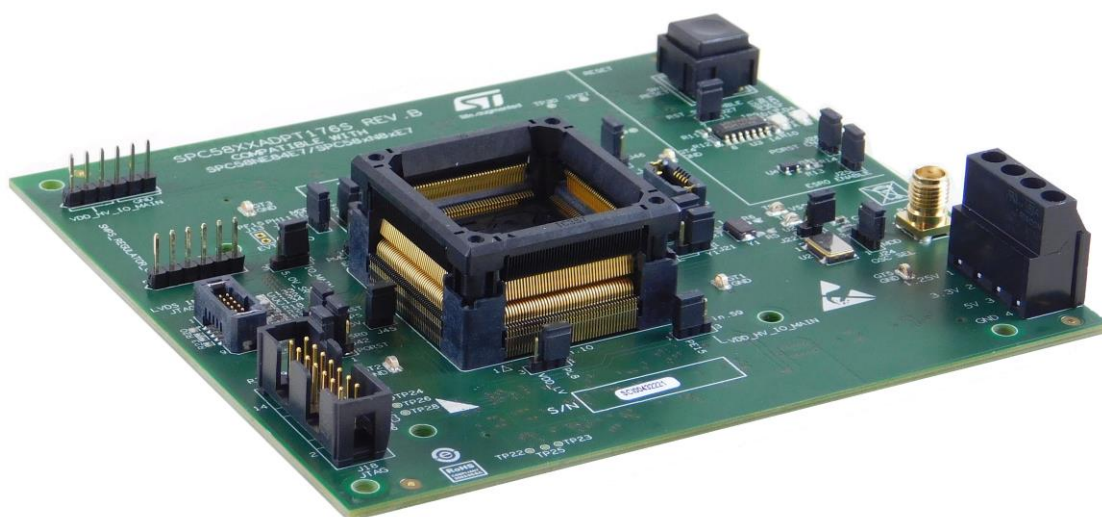


SPC58XXADPT176S Rev.B evaluation board

Introduction

The SPC58XXADPT176S Rev.B evaluation board supports STMicroelectronics SPC58EE84E7, SPC58NE84E7, SPC58XN8XE7 and SP58xG8xE7 microcontroller in LQFP 176 24x24x1.4 package with exposed pad down.

Figure 1. SPC58XXADPT176S Rev. B



1 Overview

The SPC58XXADPT176S Rev. B mini module is an evaluation board supporting STMicroelectronics SPC58EE84L7, SPC58NE84E7, SPC58XN8XE7 and SP58xG8xE7 microcontrollers in LQFP 176 24x24x1.4 package with exposed pad down.

This mini module is designed to be connected onto the SPC58XXMB motherboard, offering a mechanism for easy customer evaluation of the supported devices, and to facilitate hardware and software development.

The mini module may be used as a stand-alone unit allowing access to the CPU, but not to access to the I/O pins nor any motherboard peripherals.

By default, the mini module is configured for SPC58EE84E7/SPC58NE84E7, easily supports SPC58XN8XE7 and SPC58xG8xE7 simply changing the following through hole jumpers: J44, J45, J46 and J47.

1.1 Package contents

An SPC58XXADPT176S Rev. B adapter package includes the following item:

- SPC58XXADPT176S Rev. B mini module

1.2 Supported devices

The SPC58XXADPT176S Rev. B mini module supports the following STMicroelectronics family of microcontrollers in LQFP 176 24x24x1.4 package with exposed pad down:

- SPC58EE84E7/SPC58NE84E7
- SPC58XN8XE7
- SPC58xG8E7

2 License agreement

The packaging of this evaluation board was sealed with a seal stating, “by breaking this seal, you agree to the terms and conditions of the evaluation board license agreement, the terms and conditions of which are available at <http://www.st.com/eb1a>”. Upon breaking the seal, you and STMicroelectronics entered into the evaluation board license agreement, a copy of which is also enclosed with the evaluation board for convenience.

Attention: *This evaluation board only offers limited features for evaluating ST products. It has not been tested for use with other products and is not suitable for any safety or other commercial or consumer application. This evaluation board is otherwise provided “AS IS” and STMicroelectronics disclaims all warranties, express or implied, including the implied warranties of merchantability and fitness for a particular purpose.*

3 Handling precautions

Please take care to handle the package contents in a manner such as to prevent electrostatic discharge.
Before the EVB is used or power is applied, please fully read the following sections on how to correctly configure the board. Failure to correctly configure the board may cause irreparable component, MCU or EVB damage.

4 Hardware description

4.1 Hardware features

The SPC58XXADPT176S Rev. B mini module board has the following features:

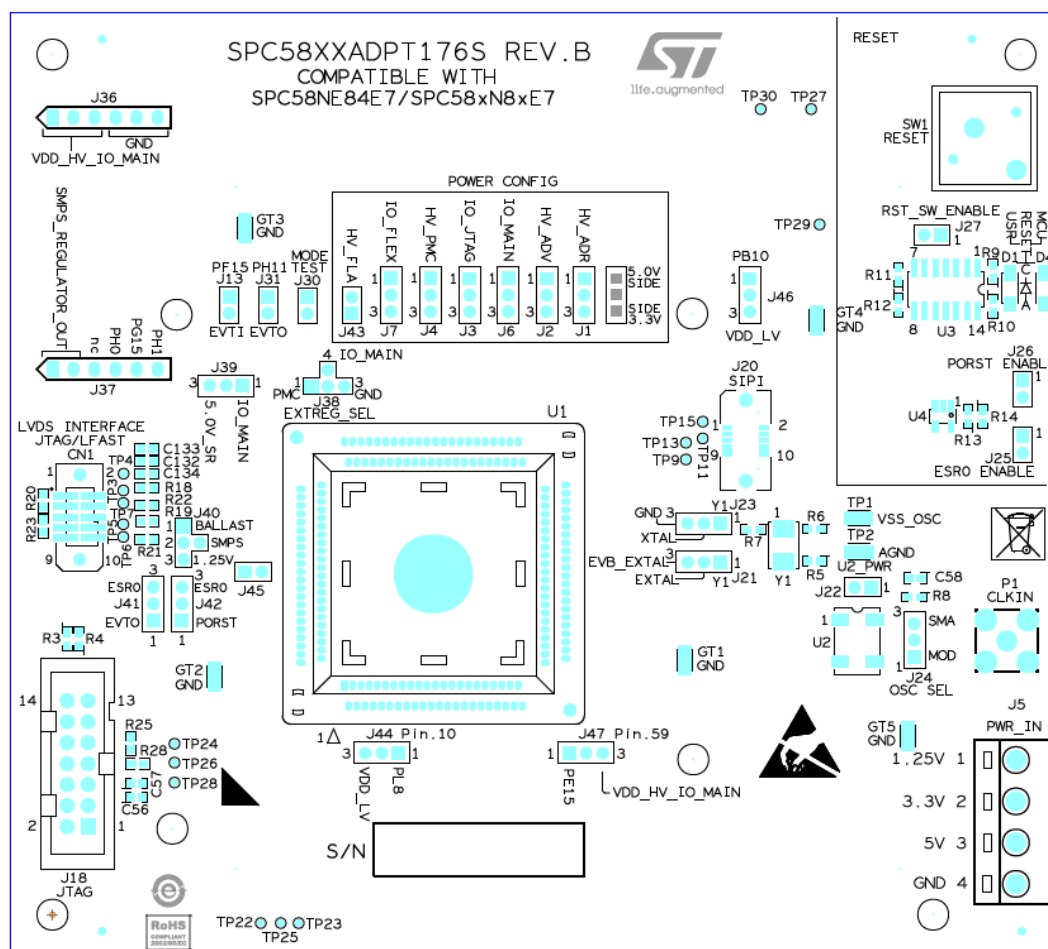
- Connector for external power supplies input (5 V, 3.3 V, 1.25 V) used in stand-alone mode
- Reset button with driver and led indicator
- Socket for device in LQFP 176 24x24x1.4 package with exposed pad down
- Debug interfaces:
 - 14-pin header connector for JTAG interface
 - 10-pin header connector for JTAG/LFAST LVDS interface
 - 10-pin header connector for SIPI interface
- 40 MHz crystal main oscillator with jumpers to optionally disconnect it
- 8 MHz oscillator with jumpers to optionally disconnect it
- Clock input through SMA connector to optionally disconnect it
- Predisposed for SMPS regulator module
- 2 X Samtec QSH series, 240 way connector to connect mini module to Motherboard

4.2 Hardware dimension

The mini module has the following dimensions:

- PCB area: 127 mm x 114.3 mm
- Top components height: 19 mm max
- Bottom components height: 3.5 mm max
- PCB thickness: 1.6 mm

Figure 2. SPC58XXADPT176S Rev. B top component view



5 Power and system configuration

5.1 Power supplies

The mini module can be powered by providing the three voltages (5 V, 3.3 V and 1.25 V) or supplied externally by the 4 pins connector (J5) or supplied by the motherboard.

When the mini module is plugged onto the motherboard, power is supplied directly by the motherboard. In this setup, the external power supply input available on the mini module should NOT be used.

When the SPC58XXADPT176S Rev. B mini module is used as a stand-alone board, external power supplies must be used (5 V, 3.3 V, 1.25 V).

The following jumpers are used to configure the power supply (common for all supported devices):

Table 1. Power configuration jumpers

Jumper	Description	Default
J1	VDD_HV_ADR voltage configuration: 1-2 5.0V_LR 2-3 3.3V_SR	1-2 (5.0V_LR)
J2	VDD_HV_ADV voltage configuration: 1-2 5.0V_LR 2-3 3.3V_SR	1-2 (5.0V_LR)
J3	VDD_HV_IO_JTAG voltage configuration: 1-2 5.0V_SR 2-3 3.3V_SR	1-2 (5.0V_SR)
J6	VDD_HV_IO_MAIN voltage configuration: 1-2 5.0V_SR 2-3 3.3V_SR	1-2 (5.0V_SR)
J7	VDD_HV_IO_FLEX voltage configuration: 1-2 5.0V_SR 2-3 3.3V_SR	1-2 (5.0V_SR)
J38	Device pin 153 EXTREG_SEL function configuration: 2-1 Reserved for STMicroelectronics 2-3 ENABLED BALLAST 2-4 DISABLE BALLAST	2-4 (DISABLE BALLAST)
J39	Supply for BALLAST circuit configuration 1-2 VDD_HV_IO_MAIN 2-3 5.0V_SR	1-2 (VDD_HV_IO_MAIN)
J40	VDD_LV voltage configuration: 2-1 (BALLAST circuit) 2-3 (1.25V_SR) 2-4 (SMPS regulator module) Do not use this configuration for SP58xG8xE7	2-3 (1.25V_SR)
J43	Device pin 155 VDD_HV_FLA voltage configuration: - OPEN – disconnect VDD_HV_FLA from VDD_HV_IO_MAIN - CLOSED - connect VDD_HV_FLA from VDD_HV_IO_MAIN	Closed (connect pin 155 VDD_HV_FLA to VDD_HV_IO_MAIN)

5.2 JTAG/LFAST LVDS interface configuration

The following jumpers need to configure the JTAG/LFAST LVDS:

Table 2. LFAST configuration jumpers

Jumper	Description	Default
J41	JTAG/LFAST LVDS pin 9 configuration 1-2: EVTO 2-3: ESR0	1-2 (EVTO)
J42	JTAG/LFAST LVDS pin 10 configuration 1-2: PORST 2-3: ESR0	1-2 (PORST)

5.3 System clock configuration

The mini module supports the usage of crystal clock sources as well as external clock source:

Table 3. Clock configuration jumpers

Jumper	Description	Default
J21	EXTAL configuration 1-2 pin 2 of 40 MHz crystal (Y1) 2-3 EVB-EXTAL	1-2 (XT1 pin2)
J23	XTAL configuration 1-2 pin 1 of 40 MHz crystal (Y1) 2-3 GND	1-2 (XT1 pin1)
J22	Enable 8 MHz oscillator power supply - Open – power off - Closed – power on	Open (power off)
J24	External 8 MHz clock source 1-2 OSC-MOD (from oscillator) 2-3 EXTAL-SMA (from SMA connector)	1-2 (8 MHz from oscillator)

5.4 Reset circuit

The mini module supports different ways to reset the microcontroller. To use and perform the reset driving there are different jumpers and switches:

Table 4. Reset configuration jumpers

Jumper	Description	Default
SW1	Reset push button	Open
J27	Connect the external reset to the reset driver for ESR0 and PORST pins	Close
J25	Connect the external reset to ESR0 pin	Close
J26	Connect the external reset to PORST pin	Close

5.5 Other jumpers

Table 5. Other jumpers

Jumper	Description	Default
J4	VDD_HV_PMC voltage configuration: 1-2 5.0V_SR 2-3 3.3V_SR	1-2 (5.0V_SR)
J30	TESTMODE settings	Close (10 KΩ down)

5.6 Configuration for SPC58EE84E7/SPC58NE84E7 (default configuration)

To configure the board for SPC58EE84E7/SPC58NE84E7 set the jumpers described in the table below.

Table 6. SPC58EE84E7/SPC58NE84E7 configuration jumpers (default configuration)

Jumper	Description	Default
J44	Device pin 10 port configuration 1-2 PL8 2-3 VDD_LV_BD	1-2 (PL 8)
J45	Device pin 154 function configuration - OPEN – disconnect BCTRL with ballast circuit - CLOSED – connect BCTRL with ballast circuit	Closed (connect BCTRL with BALLAST circuit)
J46	Device pin 79 configuration 1-2 PB10 (GPIO) 2-3 VDD_LV_BD (1.25V)	1-2 (PB10)
J47	Device pin 59 configuration 1-2 PE15 (GPIO) 2-3 VDD_HV_IO_MAIN	1-2 (PE15)

5.7 Configuration for SPC58EE84E7/SPC58NE84E7

To configure the board for SPC58EE84E7/SPC58NE84E7 set the jumpers described in the table below.

Table 7. SPC58EE84E7/SPC58NE84E7 configuration jumpers

Jumper	Description	Default
J44	Device pin 10 port configuration 1-2 PL8 2-3 VDD_LV_BD	1-2 (PL 8)
J45	Device pin 154 function configuration • OPEN – disconnect BCTRL with ballast circuit • CLOSED – connect BCTRL with ballast circuit	Closed (connect BCTRL with BALLAST circuit)
J46	Device pin 79 configuration • 1-2 PB10 (GPIO) • 2-3 VDD_LV_BD (1.25V)	1-2 (PB10)
J47	Device pin 59 configuration • 1-2 PE15 (GPIO) • 2-3 VDD_HV_IO_MAIN	2-3 (VDD_HV_IO_BD)

5.8 Configuration for SPC58XN8XE7

To configure the board for SPC58XN8XE7 set the jumpers described in the table below.

Table 8. SPC58XN8XE7 configuration jumpers

Jumper	Description	Configuration
J44	Device pin 10 port configuration 1-2 PL8 2-3 VDD_LV_BD	1-2 (PL 8)
J45	Device pin 154 function configuration • OPEN – disconnect BCTRL with ballast circuit • CLOSED – connect BCTRL with ballast circuit	Open (device pin 154 not connected)
J46	Device pin 79 configuration • 1-2 PB10 (GPIO) • 2-3 VDD_LV_BD (1.25V)	1-2 (PB10)
J47	Device pin 59 configuration • 1-2 PE15 (GPIO) • 2-3 VDD_HV_IO_MAIN	1-2 (PE15)

5.9 Configuration for SPC58XN8XE7 ED

To configure the board for SPC58XN8XE7 set the jumpers described in the table below.

Table 9. SPC58XN8XE7 ED configuration jumpers

Jumper	Description	Configuration
J44	Device pin 10 port configuration 1-2 PL8 2-3 VDD_LV_BD	2-3 (VDD_LV_BD)
J45	Device pin 154 function configuration • OPEN – disconnect BCTRL with ballast circuit • CLOSED – connect BCTRL with ballast circuit	Open (device pin 154 not connected)
J46	Device pin 79 configuration • 1-2 PB10 (GPIO) • 2-3 VDD_LV_BD (1.25V)	2-3 (VDD_LV_BD)
J47	Device pin 59 configuration • 1-2 PE15 (GPIO) • 2-3 VDD_HV_IO_MAIN	2-3 (VDD_HV_IO_BD)

5.10 Configuration for SP58xG8xE7

To configure the board for SP58xG8xE7 set the jumpers described in the table below.

Table 10. SP58xG8xE7 configuration jumpers

Jumper	Description	Configuration
J44	Device pin 10 port configuration • 1-2 PL8 • 2-3 VDD_LV_BD	1-2 (connect pin 10 to PL 8)
J45	Device pin 154 function configuration • OPEN – disconnect BCTRL with ballast circuit • CLOSED – connect BCTRL with ballast circuit	Closed (connect BCTRL with BALLAST circuit)
J46	Device pin 79 configuration • 1-2 PB10 (GPIO) • 2-3 VDD_LV_BD (1.25V)	1-2 (PB10)
J47	Device pin 59 configuration • 1-2 PE15 (GPIO) • 2-3 VDD_HV_IO_MAIN	1-2 (PE15)

6 Hardware description

6.1 Jumpers

The following table describes all the jumpers of the mini module, their default configuration and their position on PCB.

Table 11. Jumpers

Jumper	Description	Default	Position
J1	VDD_HV_ADR voltage configuration: 1-2 5.0V_LR 2-3 3.3V_SR	1-2 (5.0V_LR)	Figure 1. SPC58XXADPT176S Rev. B - C2
J2	VDD_HV_ADV voltage configuration: 1-2 5.0V_LR 2-3 3.3V_SR	1-2 (5.0V_LR)	Figure 1. SPC58XXADPT176S Rev. B - C2
J3	VDD_HV_IO_JTAG voltage configuration: 1-2 5.0V_SR 2-3 3.3V_SR	1-2 (5.0V_SR)	Figure 1. SPC58XXADPT176S Rev. B - B2
J4	Reserved for STMicroelectronics VDD_HV_PMC voltage configuration: 1-2 5.0V_SR 2-3 3.3V_SR	1-2 (5.0V_SR)	Figure 1. SPC58XXADPT176S Rev. B - B2
J6	VDD_HV_IO_MAIN voltage configuration: 1-2 5.0V_SR 2-3 3.3V_SR	1-2 (5.0V_SR)	Figure 1. SPC58XXADPT176S Rev. B - B2
J7	VDD_HV_IO_FLEX voltage configuration: 1-2 5.0V_SR 2-3 3.3V_SR	1-2 (5.0V_SR)	Figure 1. SPC58XXADPT176S Rev. B - B2
J13	PF[15]/EVT1 connection to QSH motherboard connectors	Not mounted	Figure 1. SPC58XXADPT176S Rev. B - A2
J21	EXTAL configuration 1-2 pin 2 of 40 MHz crystal (Y1) 2-3 EVB-EXTAL	1-2 (XT1 pin2)	Figure 1. SPC58XXADPT176S Rev. B - C3
J22	Enable 8 MHz oscillator power supply - open – power off - closed – power on	Open (power off)	Figure 1. SPC58XXADPT176S Rev. B - D3
J23	XTAL configuration 1-2 pin 1 of 40 MHz crystal (Y1) 2-3 GND	1-2 (XT1 pin1)	Figure 1. SPC58XXADPT176S Rev. B - C3
J24	External 8 MHz clock source 1-2 OSC-MOD (from oscillator) 2-3 EXTAL-SMA (from SMA connector)	1-2 (8 MHz from oscillator)	Figure 1. SPC58XXADPT176S Rev. B - D3
J25	Connect the external reset to ESR0 pin	Close	Figure 1. SPC58XXADPT176S Rev. B - D2
J26	Connect the external reset to PORST pin	Close	Figure 1. SPC58XXADPT176S Rev. B - D2
J27	Connect the external reset to the reset driver for ESR0 and PORST pins	Close	Figure 1. SPC58XXADPT176S Rev. B - D1
J30	Testmode settings	Close (10 KΩ down)	Figure 1. SPC58XXADPT176S Rev. B - B2

Jumper	Description	Default	Position
J31	PH[11]/EVTO connection to QSH motherboard connectors	Not mounted	Figure 1. SPC58XXADPT176S Rev. B - A2
J38	Device pin 153 EXTREG_SEL function configuration: 2-1 Reserved for ST 2-3 ENABLED BALLAST 2-4 DISABLE BALLAST	2-4 (DISABLE BALLAST)	Figure 1. SPC58XXADPT176S Rev. B - B2
J39	Supply for BALLAST circuit configuration 1-2 VDD_HV_IO_MAIN 2-3 5.0V_SR	1-2 (VDD_HV_IO_MAIN)	Figure 1. SPC58XXADPT176S Rev. B - A2
J40	VDD_LV voltage configuration: 2-1 (BALLAST circuit) 2-3 (1.25V_SR) 2-4 (SMPS regulator module)	2-3 (1.25V_SR)	Figure 1. SPC58XXADPT176S Rev. B - A3
J41	JTAG/LFAST LVDS pin 9 configuration 1-2: EVTO 2-3: ESR0	1-2 (EVTO)	Figure 1. SPC58XXADPT176S Rev. B - A3
J42	JTAG/LFAST LVDS pin 10 configuration 1-2: PORST 2-3: ESR0	1-2 (PORST)	Figure 1. SPC58XXADPT176S Rev. B - A3
J43	Device pin 155 VDD_HV_FLTA voltage configuration: - OPEN - disconnect VDD_HV_FLTA from VDD_HV_IO_MAIN - CLOSED - connect VDD_HV_FLTA from VDD_HV_IO_MAIN	Closed (connect pin 155 VDD_HV_FLTA to VDD_HV_IO_MAIN)	Figure 1. SPC58XXADPT176S Rev. B - B2
J44	Device pin 10 port configuration / function configuration 1-2 PL8 2-3 VDD_LV_BD	1-2 (connect pin 10 to PL 8)	Figure 1. SPC58XXADPT176S Rev. B - B4
J45	Device pin 154 function configuration - OPEN - disconnect BCTRL with ballast circuit - CLOSED - connect BCTRL with ballast circuit	Closed (connect BCTRL with BALLAST circuit)	Figure 1. SPC58XXADPT176S Rev. B - A3
J46	Device pin 79 configuration (SUPPLY/GPIO) 1-2 pin 79 configured as GPIO (PB10) 2-3 VDD_LV_BD (1.25V_SR)	1-2 (PB10)	Figure 1. SPC58XXADPT176S Rev. B - C2
J47	Device pin 59 configuration (SUPPLY/GPIO) 1-2 pin 59 configured as GPIO (PE15) 2-3 pin 59 configured as supply (VDD_HV_IO_MAIN)	1-2 (PE15)	Figure 1. SPC58XXADPT176S Rev. B - C4
SW1	Reset push button	Open	Figure 1. SPC58XXADPT176S Rev. B - D1

6.2 Test points

The mini module has several test points, described in the table below.

Table 12. Test points

Test point	Description	Position
GT1, GT2, GT3, GT4, GT5	GND test point	
TP1	VSS_OSC test point	Figure 1. SPC58XXADPT176S Rev. B - D3
TP2	AGND test point	Figure 1. SPC58XXADPT176S Rev. B - D3
TP3	JCOMP_RxDATA_N test point	Figure 1. SPC58XXADPT176S Rev. B - A3
TP4	TCK test point	Figure 1. SPC58XXADPT176S Rev. B - A2
TP5	TMS_TxDATA_P test point	Figure 1. SPC58XXADPT176S Rev. B - A3
TP6	TDI_TxDATA_N test point	Figure 1. SPC58XXADPT176S Rev. B - A3
TP7	TDO_RxDATA_P test point	Figure 1. SPC58XXADPT176S Rev. B - A3
TP9	SIPI_RXN test point	Figure 1. SPC58XXADPT176S Rev. B - C2
TP11	SIPI_TXN test point	Figure 1. SPC58XXADPT176S Rev. B - C2
TP13	SIPI_RXP test point	Figure 1. SPC58XXADPT176S Rev. B - C2
TP15	SIPI_TXP test point	Figure 1. SPC58XXADPT176S Rev. B - C2
TP22	J16A, QSH connector, pin10 (PA5) test point	Figure 1. SPC58XXADPT176S Rev. B - A4
TP23	J16A, QSH connector, pin14 (PA9) test point	Figure 1. SPC58XXADPT176S Rev. B - B4
TP24	J16A, QSH connector, pin19 (PA14) test point	Figure 1. SPC58XXADPT176S Rev. B - A4
TP25	J16A, QSH connector, pin12 (PA7) test point	Figure 1. SPC58XXADPT176S Rev. B - B4
TP26	J16A, QSH connector, pin13 (PA8) test point	Figure 1. SPC58XXADPT176S Rev. B - A4
TP27	J17B, QSH connector, pin209 (PD7) test point	Figure 1. SPC58XXADPT176S Rev. B - D1
TP28	J16A, QSH connector, pin11 (PA6) test point	Figure 1. SPC58XXADPT176S Rev. B - A4
TP29	J17B, QSH connector, pin210 (PD6) test point	Figure 1. SPC58XXADPT176S Rev. B - D1
TP30	J17B, QSH connector, pin183 (PF13) test point	Figure 1. SPC58XXADPT176S Rev. B - C1

6.3 Connectors

The mini module has the following connectors:

Table 13. Connectors

Connectors	Description
J18	14-pin header connector for JTAG interface
CN1	10-pin header connector for JTAG/LFAST LVDS interface
J20	10-pin header connector for SIPI interface
J36, J37	SMPS regulator module
J16, 17	2 X Samtec QSH series, 240 way connector to connect mini module to Motherboard
J5	External power supplies input (5 V, 3.3 V, 1.25 V)
P1	SMA connector for external clock Input

Figure 3. Overview of SPC58XXADPT176S Rev. B mini module - top

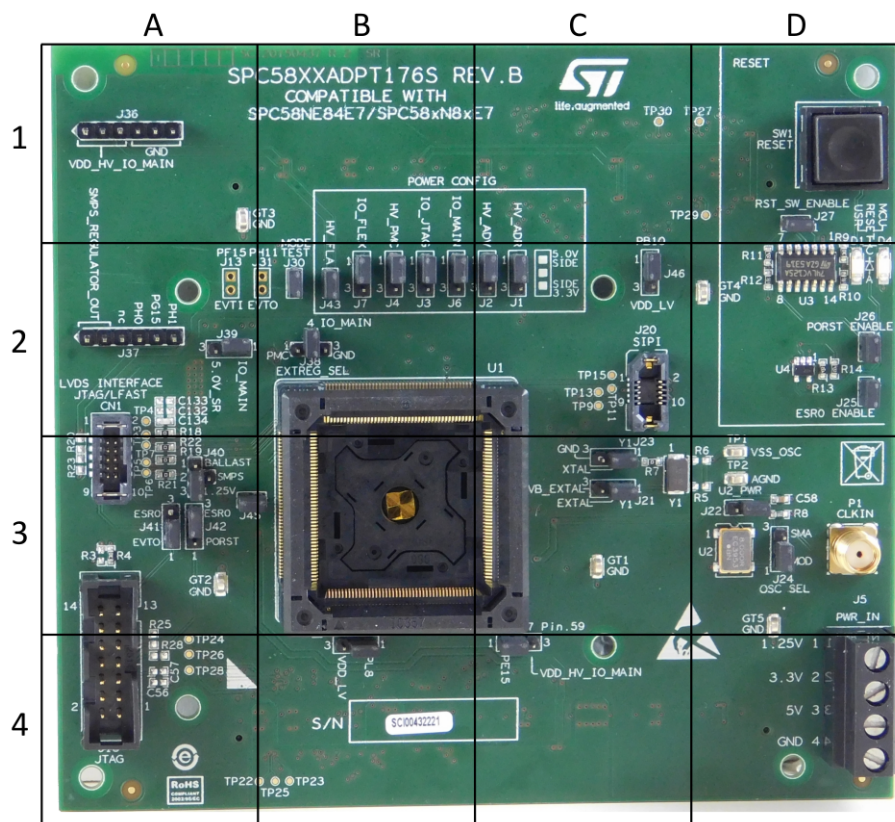
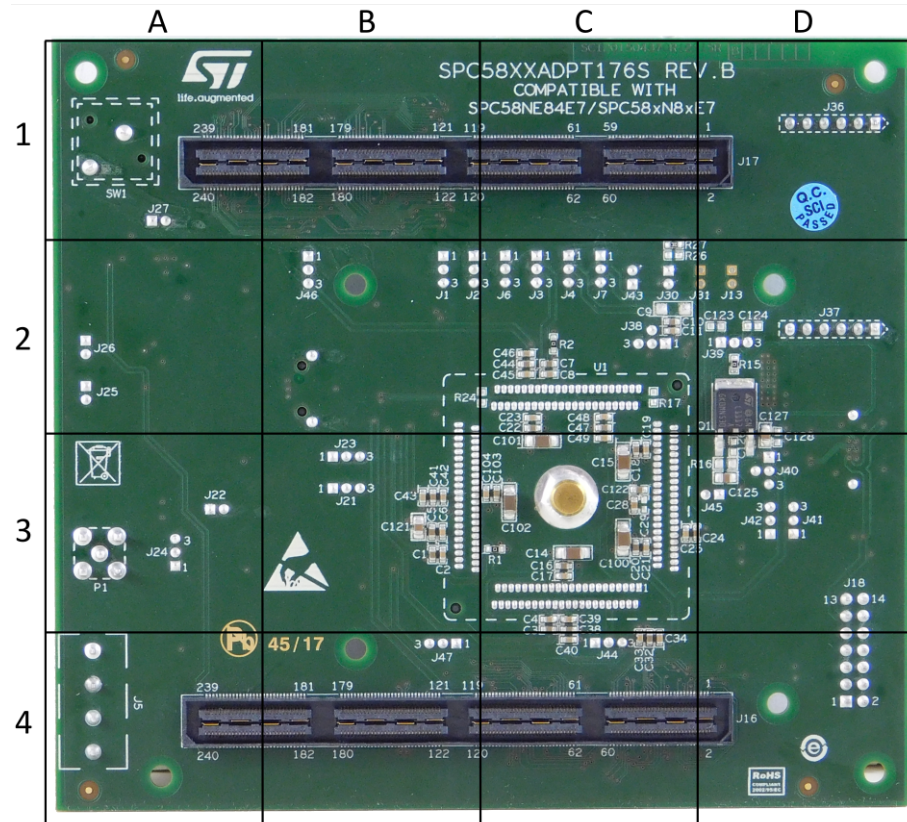


Figure 4. Overview of SPC58XXADPT176S Rev. B mini module - bottom



7 BOM

Table 14. BOM

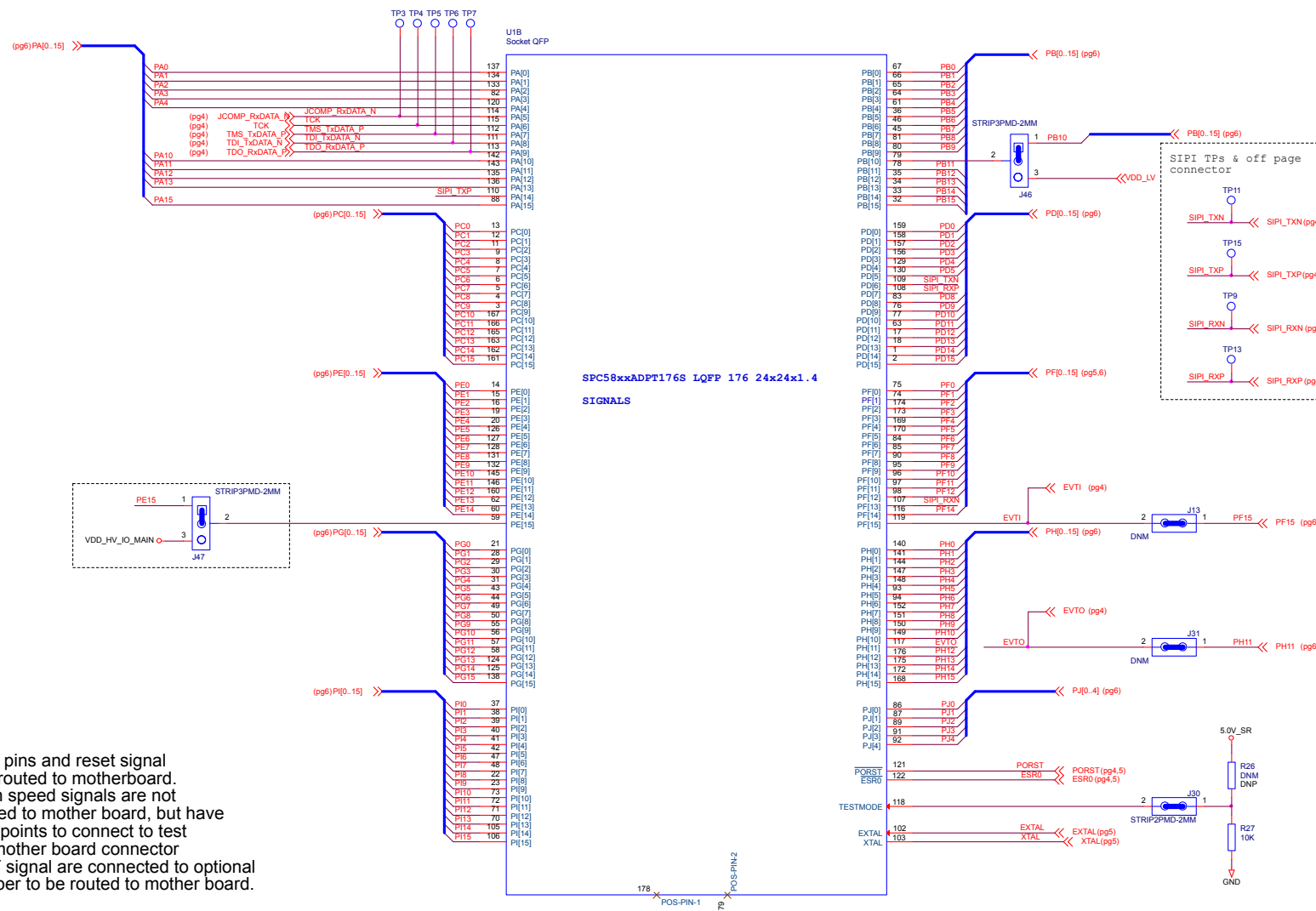
Qty	Ref. designator	Value	Description	Manufacturer	Manufcode
1	CN1	Samtec TFM-105-02-L-D-WT	Conn TFM 10 pin, with weld Tabs	Samtec	TFM-105-02-L-D-WT
13	C1, C3, C5, C7, C10, C16, C18, C20, C22, C24, C58, C103, C122	100 nF	Mult. cer. cap.		
16	C2, C4, C6, C8, C11, C17, C19, C21, C23, C25, C33, C39, C42, C45, C48, C104	10 nF	Mult. cer. cap.		
1	C9	DNM	Mult. cer. cap.		
5	C14, C15, C100, C101, C102	4.7 uF	Mult. cer. cap.		
1	C28	1 uF	Mult. cer. cap.		
1	C29	DNM	Mult. cer. cap.		
5	C32, C38, C41, C44, C47	47 nF	Mult. cer. cap.		
5	C34, C40, C43, C46, C49	2.2 uF	Mult. cer. cap.		
4	C56, C57, C132, C133	DNM	Mult. cer. cap.		
3	C121, C125, C127	2.2 uF	Mult. cer. cap.		
4	C123, C124, C126, C128	DNM	Mult. cer. cap.		
1	C134	27 pF	Mult. cer. cap.		
1	D1	Yellow	Led diode yellow	Agilent	HSMY-C150
1	D4	Red	Led diode red	Agilent	HSMS-C150
7	TP1, GT1, TP2, GT2, GT3, GT4, GT5	TEST1-SMD	SMD PCB test point		
3	J1, J2, J3, J4, J6, J7, J21, J23, J24, J39, J41, J44, J46, J47, J42	STRIP3-2MM	Strip male 20 pin, 1 row , 180° see match parts	Harwin	M22-2512005
1	J5	METZ 31072104	CONN Metz Connect 4 poli 16A 31072104	Metz Connect	31072104

Qty	Ref. designator	Value	Description	Manufacturer	Manufcode
2	J13, J31	DNM	Strip male 2 pin, 1 row , 180°	Harwin	M22-2512005
2	J16, J17	Samtec QSH-120-01-L-D-A	Samtec 0.5 mm pitch high speed socket	Samtec	SAM-QSH12001LDA
1	J18	N2514-6002RB	Conn flat male 14 pin, 180°	3M	N2514-6002RB
1	J20	ERF8-005-05.0-L-DV-L-TR	Conn rugged female 10 pin, high speed	Samtec	ERF8-005-05.0-L-DV-L-TR
1	J25, J26, J27, J30, J43, J45, J22	STRIP2-2MM	Strip male 20 pin, 1 row , 180° see match parts	Harwin	M22-2512005
2	J36, J37	STRIP6	Male strip 36 pins pitch 2.54 180°	Preci-dip	
1	J38, J40	STRIP3+1PMD-2MM	Strip mamle 20 pin, 1 row , 180° see match parts	Harwin	M22-2512005
1	P1	SMA-FEM-180	Coax conn female 5 pin, 180°	Samtec	SMA-J-P-H-ST-TH1
1	Q1	NJD2873T4G	Trans. NPN plastic pow er	ON Semiconductor	NJD2873T4G
8	R1, R2, R7, R15, R18, R19, R21, R22	0R	Resistor		
2	R3, R26	DNM	Resistor		
3	R4, R9, R27	10K	Resistor		
8	R5, R6, R17, R20, R23, R24, R25, R28	DNM	Resistor		
1	R8	100R	Resistor		
2	R10, R12	560R	Resistor		
3	R11, R13, R14	4K7	Resistor		
1	R16	DNM	Resistor		
1	SW1	Pushbutton NO B6110-0	Pushbutton NO B6110-0 low profile for pcb	Delta Elettronica	B6110-0
18	TP3, TP4, TP5, TP6, TP7, TP9, TP11, TP13, TP15, TP22, TP23, TP24, TP25, TP26, TP27, TP28, TP29, TP30	Test point	Testpoint SMD - ignore		
1	U1	Socket QFP	Socket 176 QFP OPEN TOP Yamaichi IC357-1764-168P-2	Yamaichi	IC357-1764-168P-2
1	U2	8 MHz	Clock oscillator	ECS	ECS-3953M-080-BN-TR

Qty	Ref. designator	Value	Description	Manufacturer	Manufcode
1	U3	74LVC125AMTR	HCMOS buffer	STMicroelectronics	74LVC125AMTR
1	U4	74V1G08STR	CMOS AND gate	STMicroelectronics	74V1G08STR
1	Y1	40 MHz	Quartz	NDK	NX5032GA
1	PCB		SPC58xxADPT176S EVB for SPC58EE84E7/ SPC58NE84E7 eTQFP176(A0A4)		
24	J1, J2, J3, J4, J6, J7, J21, J23, J24, J39, J41, J44, J22, J25, J26, J27, J30, J43, J45, J46, J38, J40, J42, J47		Bridge 2 pins female 2 mm pitch	Harwin	H3161-05



Figure 5. Microcontroller pins



Port pins and reset signal are routed to motherboard. High speed signals are not routed to mother board, but have test points to connect to test on mother board connector. EVT signal are connected to optional jumper to be routed to mother board.

Figure 6. JTAG, JTAG/LFAST LVDS interface, SIPI I/F and SMPS interface CONN

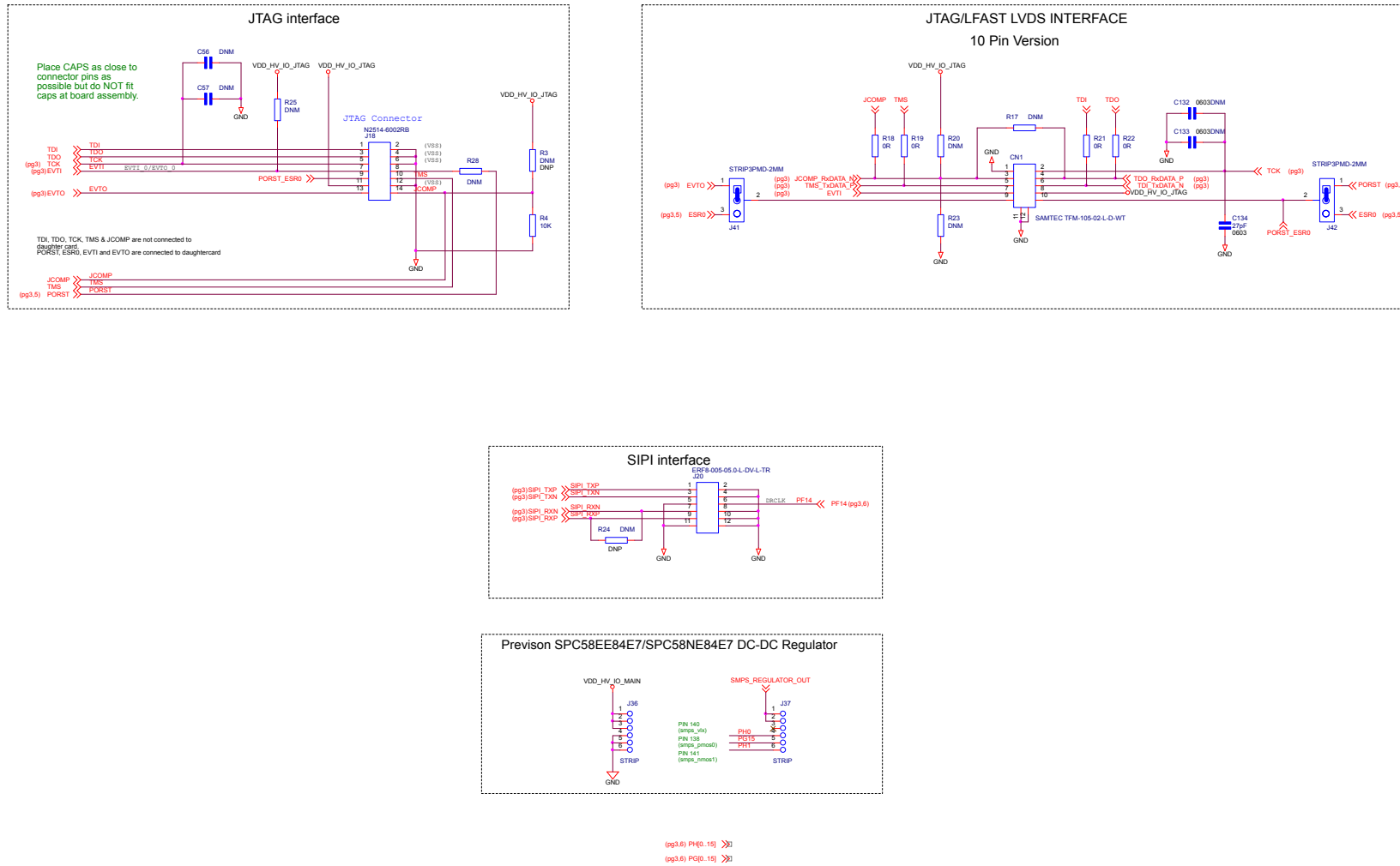
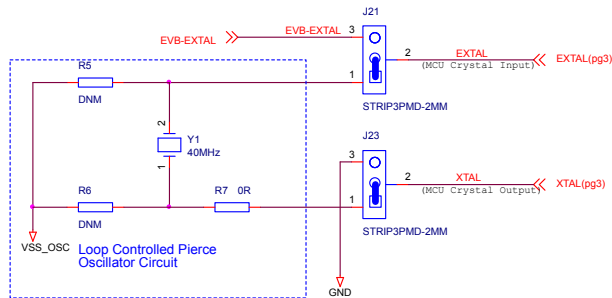
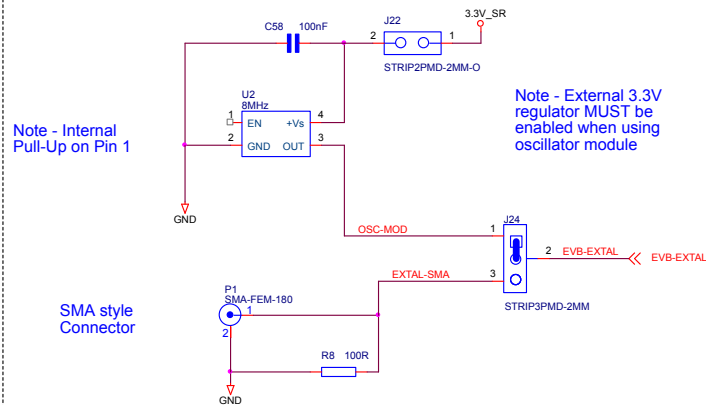


Figure 7. Clock and reset circuitry

External Oscillator



External Clock Input



Reset Circuit

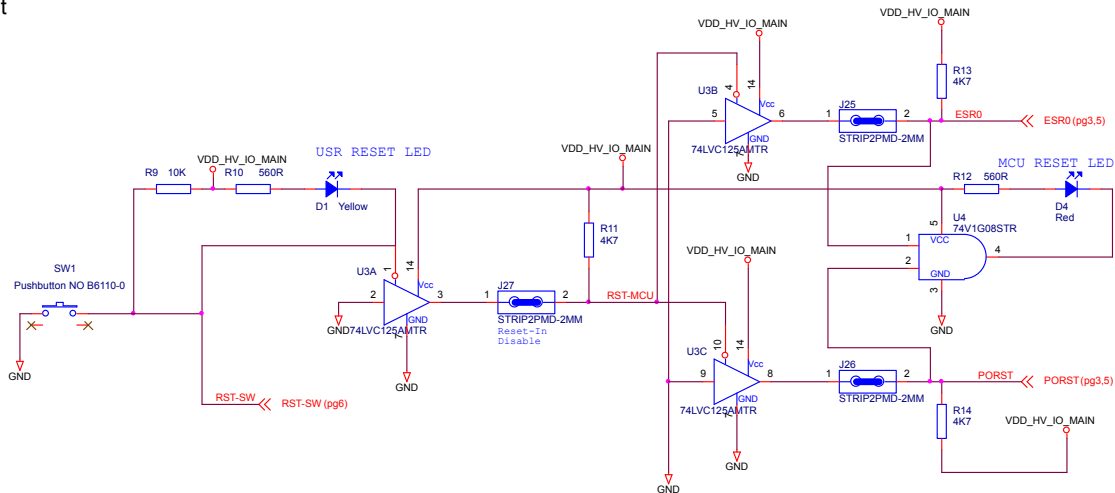
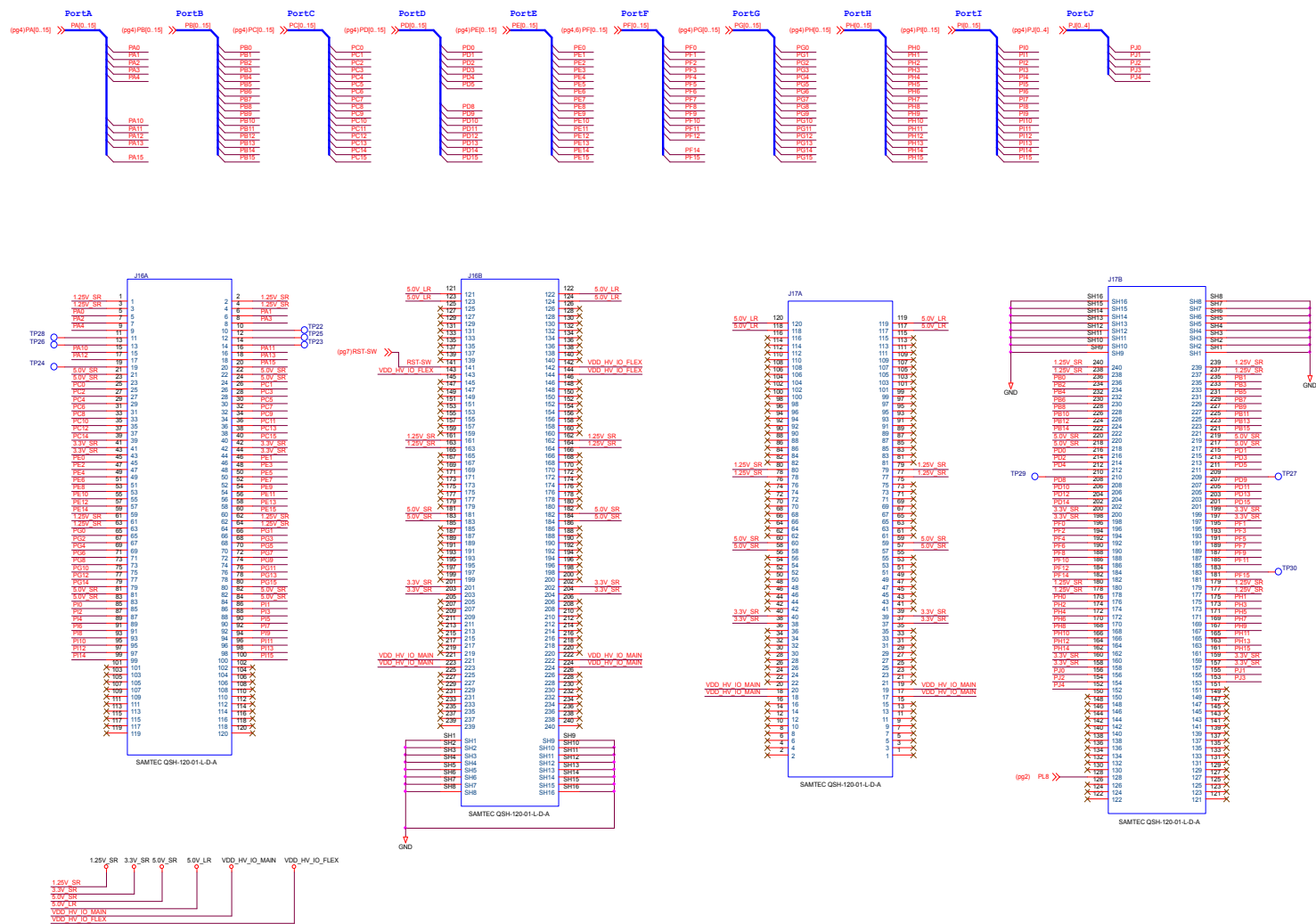


Figure 8. Daughter card to motherboard connector



Revision history

Table 15. Document revision history

Date	Version	Changes
16-Jun-2020	1	Initial release.

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