

CMOS 16-BIT SINGLE CHIP MICROCONTROLLER  
**S5U1C17651T2 Manual**  
(Software Evaluation Tool for S1C17651)

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## NOTICE

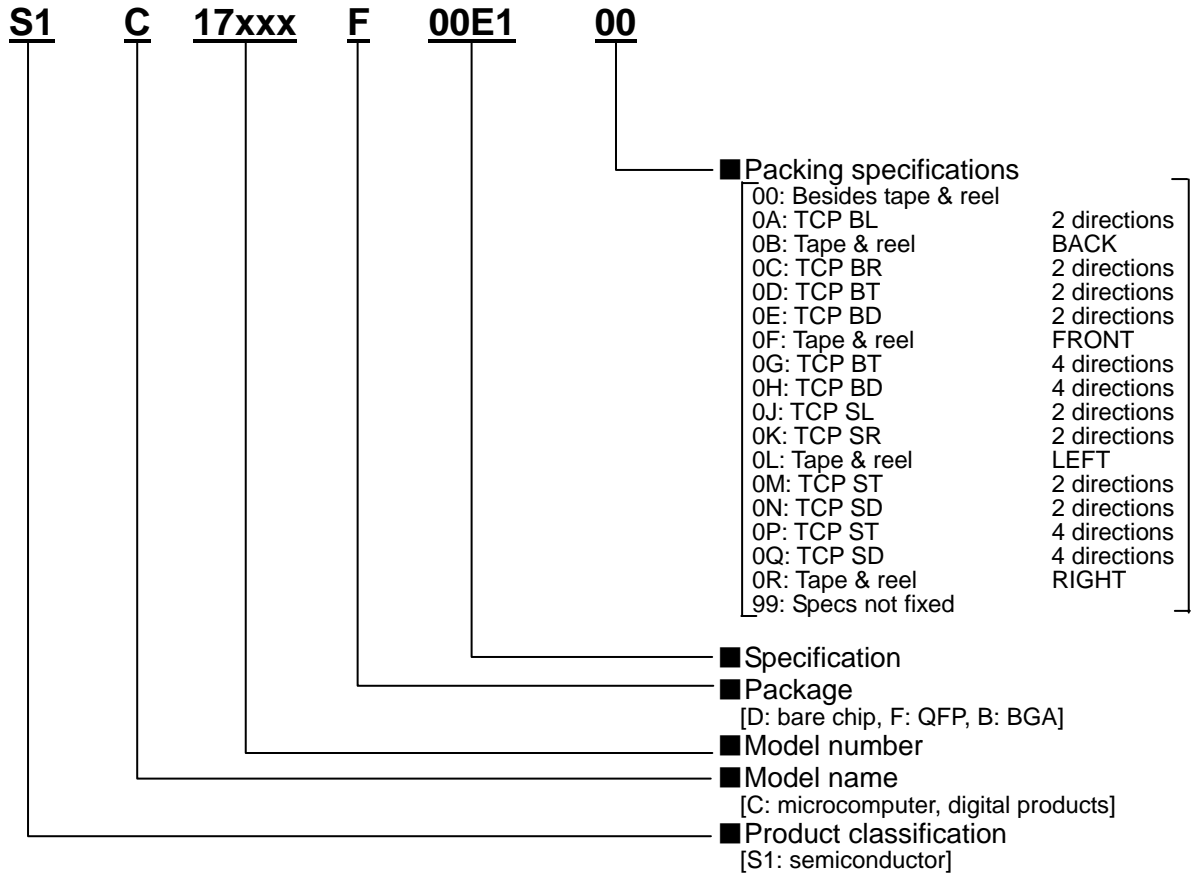
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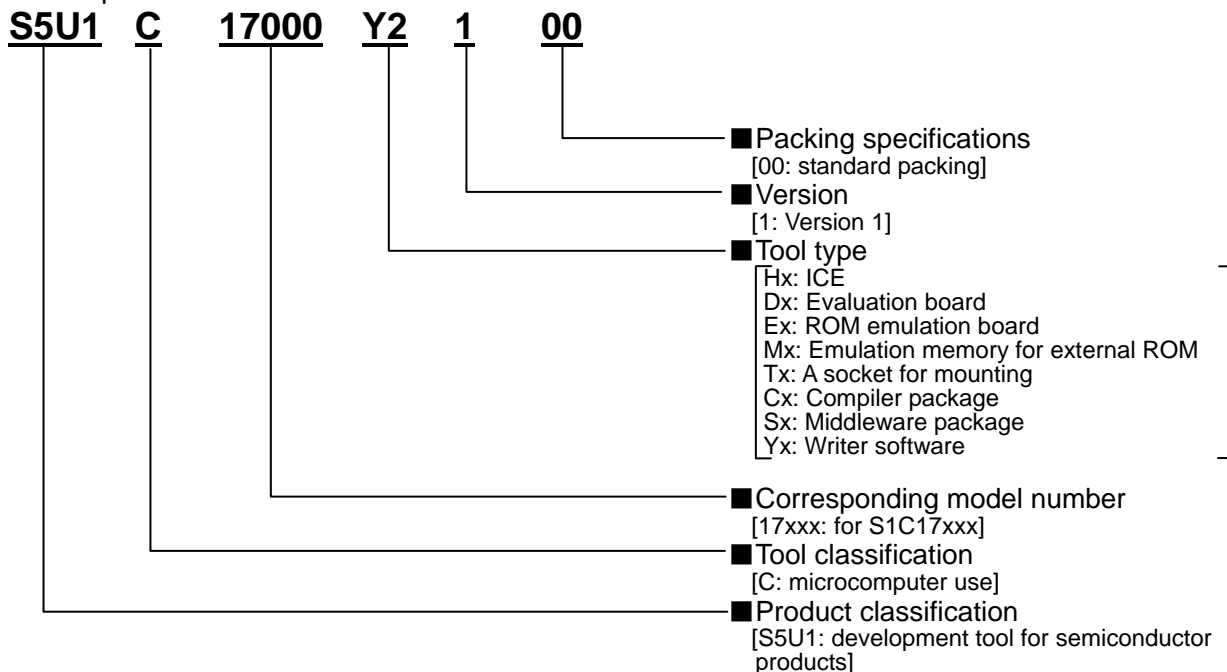
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## Configuration of product number

### ● Devices



### ● Development tools



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## 1. Overview

The S5U1C17651T2 (SVTmini17651: Software eValuation Tool for S1C17651) is an evaluation and development support board for the Seiko Epson single-chip microcontroller S1C17651.

The board has an IC socket for the S1C17651 and a crystal oscillator, and provides through-holes that draw out each of the S1C17651 terminals. The S5U1C17651T2 can be used as the S1C17651 software development environment, by connecting to the Seiko Epson emulator S5U1C17001H2 (ICDminiVer.2).

Operating Temperature Range: 5°C to 35°C

Operating Voltage Range: 2.0 V to 3.6 V

### 1.1 Usage Method

The S1C17651 software development environment can be set up with the following procedures.

- (1) Connect the ICDminiVer.2 to the S5U1C17651T2 connectors (CN2-1 (J2), CN2-2 (J5)) using the dedicated cables included in the ICDminiVer.2. <sup>\*1</sup>
- (2) Provide the S5U1C17651T2 operating power supply through the power supply connector (CN3 (J7)). <sup>\*2</sup>
- (3) Connect the ICDminiVer.2 to the PC <sup>\*3</sup> using the USB cable included in the ICDminiVer.2.

\*1 For more information on connecting the ICDminiVer.2 to the S5U1C17651T2, refer to the S5U1C17001H User Manual.

\*2 Applying a voltage exceeding the S1C17651 allowable power supply voltage range is prohibited. For the S1C17651 power supply voltage range, refer to the S1C17651 Technical Manual.

\*3 The software development tool (S1C17Family Compiler Package (S5U1C17001C)) should be installed in the PC.

## 2. Block Diagram

## 2. Block Diagram

Figure 2.1 shows the S5U1C17651T2 block diagram.

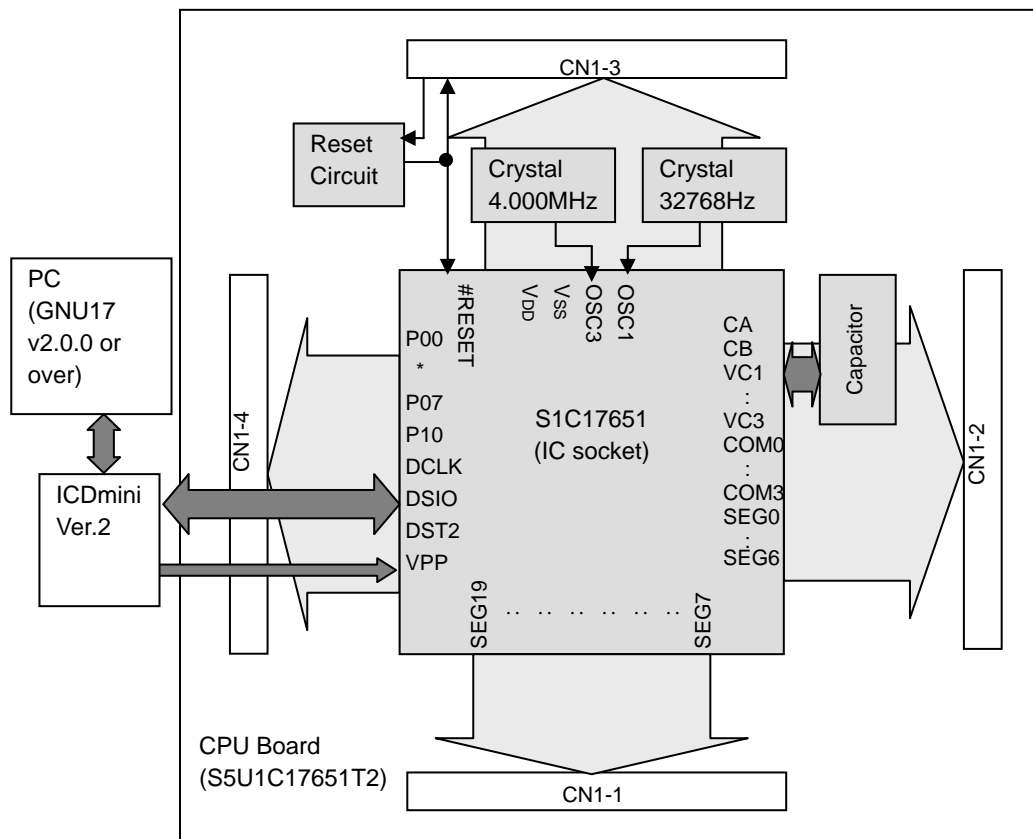


Figure 2.1 S5U1C17651T2 block diagram

### 3. Hardware Information

The S5U1C17651T2 component layout is shown in Figures 3.1 and Figure 3.2.

#### 3.1 Layout Information

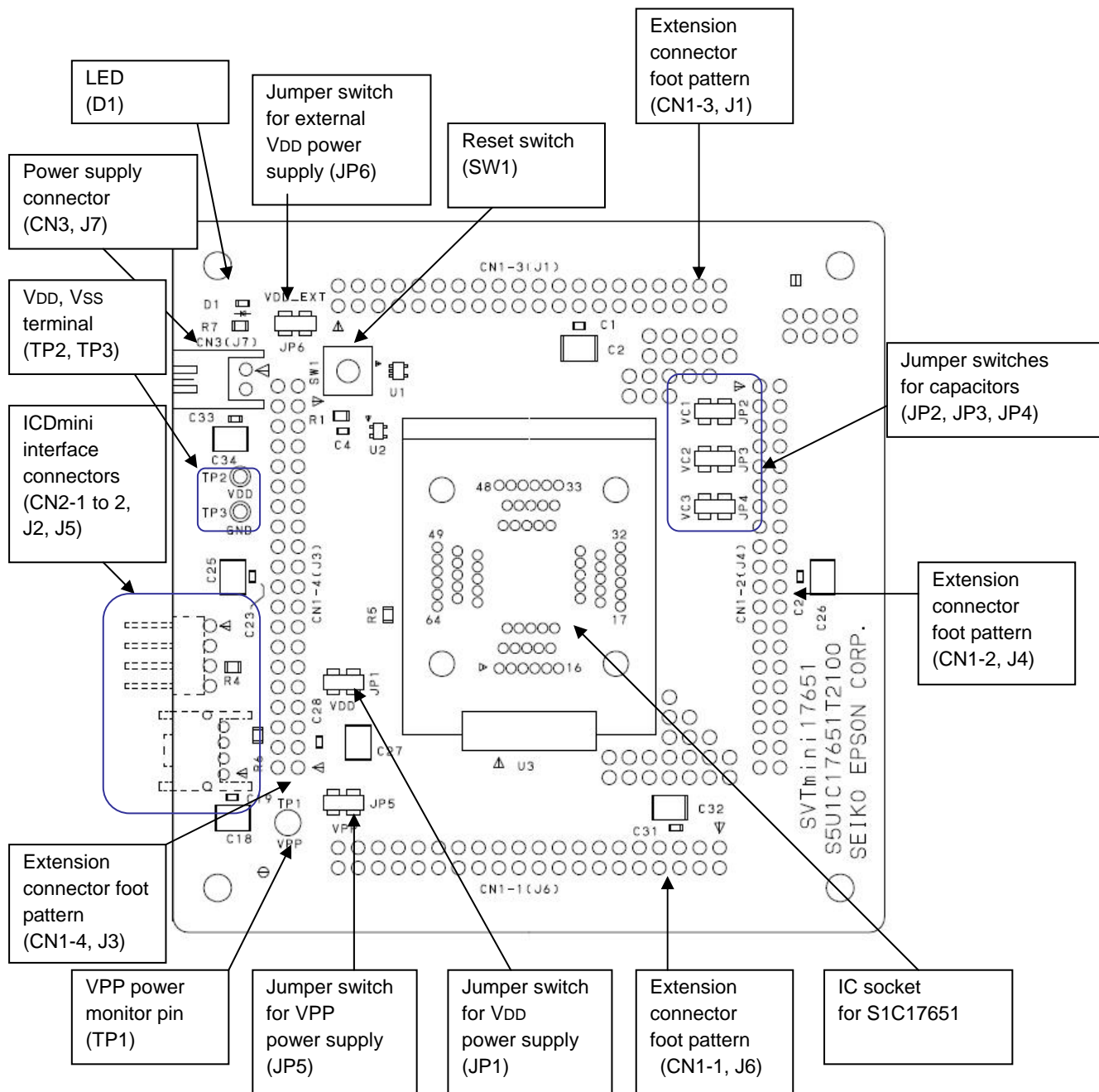


Figure 3.1 S5U1C17651T2 component layout (front side)

### 3. Hardware Information

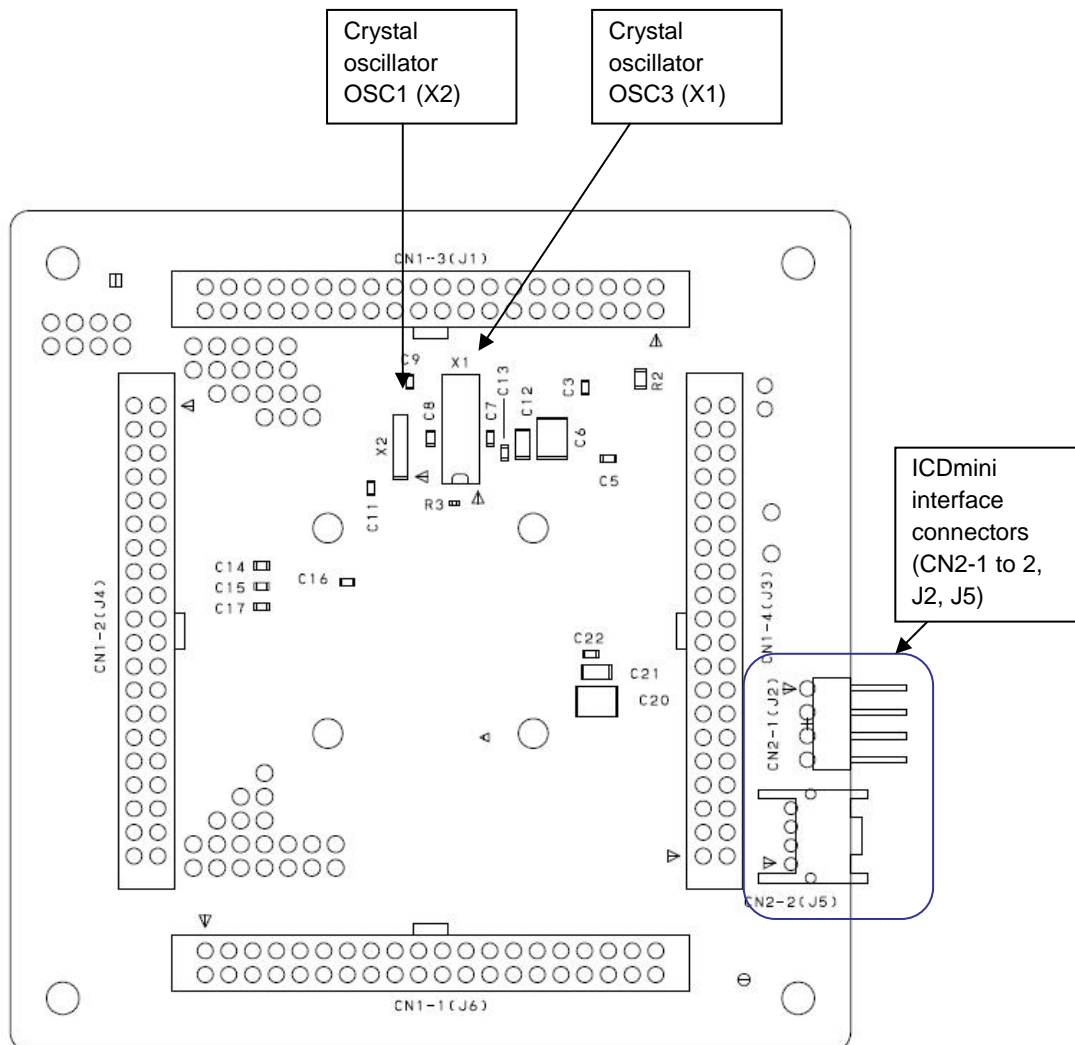


Figure 3.2 S5U1C17651T2100 component layout (reverse side)



#### 3.2 Jumpers and Mounting Patterns

Table 3.1 shows the S5U1C17651T2 jumper function list. Table 3.2 shows the mounting patterns.

Table 3.1 Jumper function list

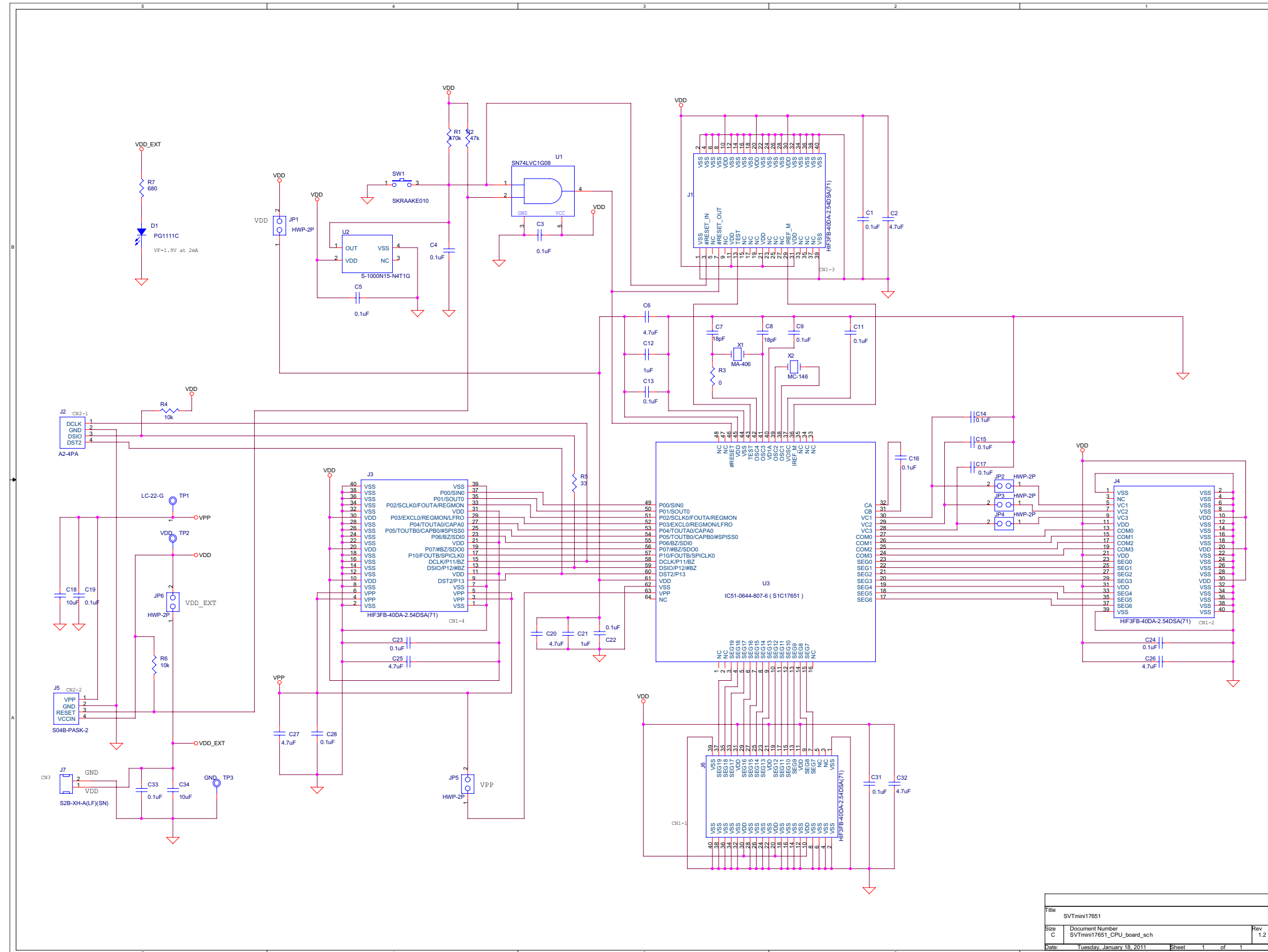
Name	Type	Function	Factory default setting	Selectable setting
JP1	Pin	To connect the S1C17651 VDD terminal to the VDD power supply.	Connected	Open
JP2, JP3, JP4	Pin	To connect the S1C17651 VC1, VC2 and VC3 terminals to the connectors (CN1-2, J4), respectively.	Connected	Open
JP5	Pin	To connect the S1C17651 VPP terminal to the VPP power supply.	Connected	Open

Table 3.2 Mounting Patterns

Description	Location	Function
Connector	CN1-1 to 4 (J6,J4,J1,J3)	External interface
Monitor terminal	TP2, TP3(VDD, GND)	Power supply (VDD, GND)

### 3. Hardware Information

#### 3.3 Circuit Diagram



File	SVTmini17651	
Size	Document Number	Rev
C	SVTmini17651_CPU_board_sch	1.2
Date	Tuesday, January 18, 2011	Sheet 1 of 1

### 3. Hardware Information

#### 3.4 Components List

Table 3.3.1 S5U1C17651T2 Components list (mounted parts) \*1

Description	Location	Model no. / specifications	Qty	Manufacturer
Capacitor	C1,C3,C4,C5,C9,C11, C13,C14,C15,C16, C17,C19,C22,C23, C24,C28,C31,C33	C1608JB1H104K 0.1μF, 50V,1608,JB	18	TDK CORPORATION
Capacitor	C2,C6,C20,C25,C26, C27,C32	C4532JB1H475K 4.7μF, 50V,JB	7	TDK CORPORATION
Capacitor	C7,C8	C1608CH1H180J 18pF, 50V,1608,CH	2	TDK CORPORATION
Capacitor	C12,C21	C3216JB1H105K 1μF, 50V,JB	2	TDK CORPORATION
Capacitor	C34,C18	C4532JB1E106K 10μF, 25V,JB	2	TDK CORPORATION
LED	D1	PG1111C Green	1	STANLAY ELECTRIC CO., LTD
Checkpin	JP1,JP2,JP3,JP4,JP5, JP6	HWP-2P 2pin	6	Mac-Eight Co.,Ltd.
Connector CN2-1	J2	A2-4PA-2.54DS(71) 4pin	1	HIROSE ELECTRIC CO., LTD.
Connector CN2-2	J5	S04B-PASK-2 4pin	1	JST Mfg. Co., Ltd.
Connector CN3	J7	S2B-XH-A(LF)(SN) 2pin	1	JST Mfg. Co., Ltd.
Resistor	R1	RK73H2ATTD4703F 470kΩ, 2125	1	KOA CORPORATION
Resistor	R2	RK73H2ATTD4702F 47kΩ, 2125	1	KOA CORPORATION
Resistor	R3	RK73Z1ETTP(1005) 0Ω	1	KOA CORPORATION
Resistor	R6,R4	RK73H2ATTD1002F 10kΩ, 2125	2	KOA CORPORATION
Resistor	R5	RK73H2ATTD33R0F 33Ω, 2125	1	KOA CORPORATION
Resistor	R7	RK73H2ATTD6800F 680Ω, 2125	1	KOA CORPORATION
Tact switch	SW1	SKRAAKE010 Surface mount	1	ALPS ELECTRIC CO., LTD.
Checkpin	TP1	LC-22-G-Red Red, φ1.0mm	1	Mac-Eight Co.,Ltd.
IC	U1	SN74LVC1G08DCK SOT(SC-70)-DCK	1	Texas Instruments Incorporated
IC	U2	S-1000N15-N4T1G	1	Seiko Instruments Inc.
IC socket	U3	IC51-0644-807-6	1	Yamaichi Electronics Co., Ltd.
Crystal oscillator	X1	MA-406 (CL=16pF)	1	EPSON TOYOCOM CORPORATION
Crystal oscillator	X2	MC-146 (CL=9pF)	1	EPSON TOYOCOM CORPORATION

### 3. Hardware Information

Table 3.3.2 S5U1C17651T2 Components list (installed or included parts) \*1

Description	Location	Model no. / specifications	Qty	Manufacturer
Jumper Switch	Installed	JS-1	6	Mac-Eight Co.,Ltd.
IC	Installed	S1C17651	1	SEIKO EPSON CORPORATION
Spacer clamping screw	Installed	FB-0305N	4	Wilco
Spacer	Installed	ASB-312E	4	HIROSUGI-KEIKI Co., Ltd.
Power supply cable connector	Included	XHP-2, Housing	1	JST Mfg. Co., Ltd.
		BXH-001T-P0.6, Contact	1	JST Mfg. Co., Ltd.
		AWM1007/TR-64, Wire: AWG#24, Length:20cm	1	SHINAGAWA ELECTRIC WIRE CO.,LTD

\*1: The parts are subject to change without notice.

## Revision History

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## Revision History

Attachment-1

Code No.	Page	Contents
412124700	All	Newly established

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