

CMOS 16-BIT SINGLE CHIP OCONTROLLER  
**S5U1C17564T2 Manual**  
(Software Evaluation Tool for S1C17564)

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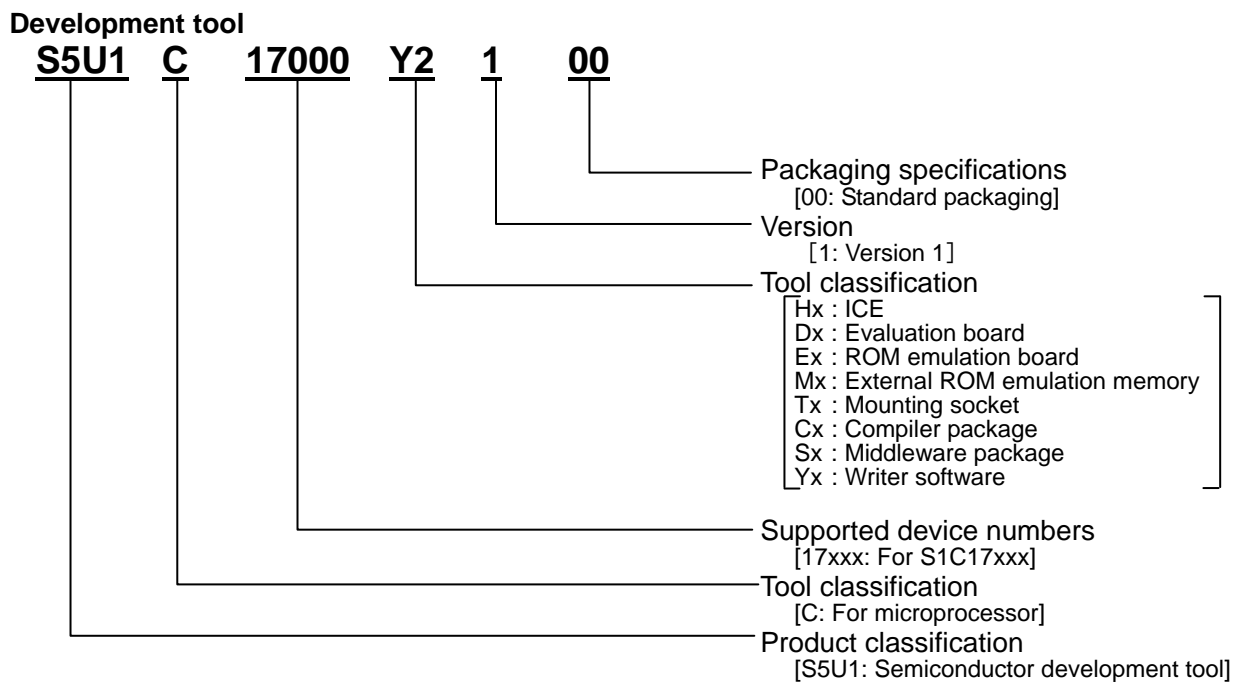
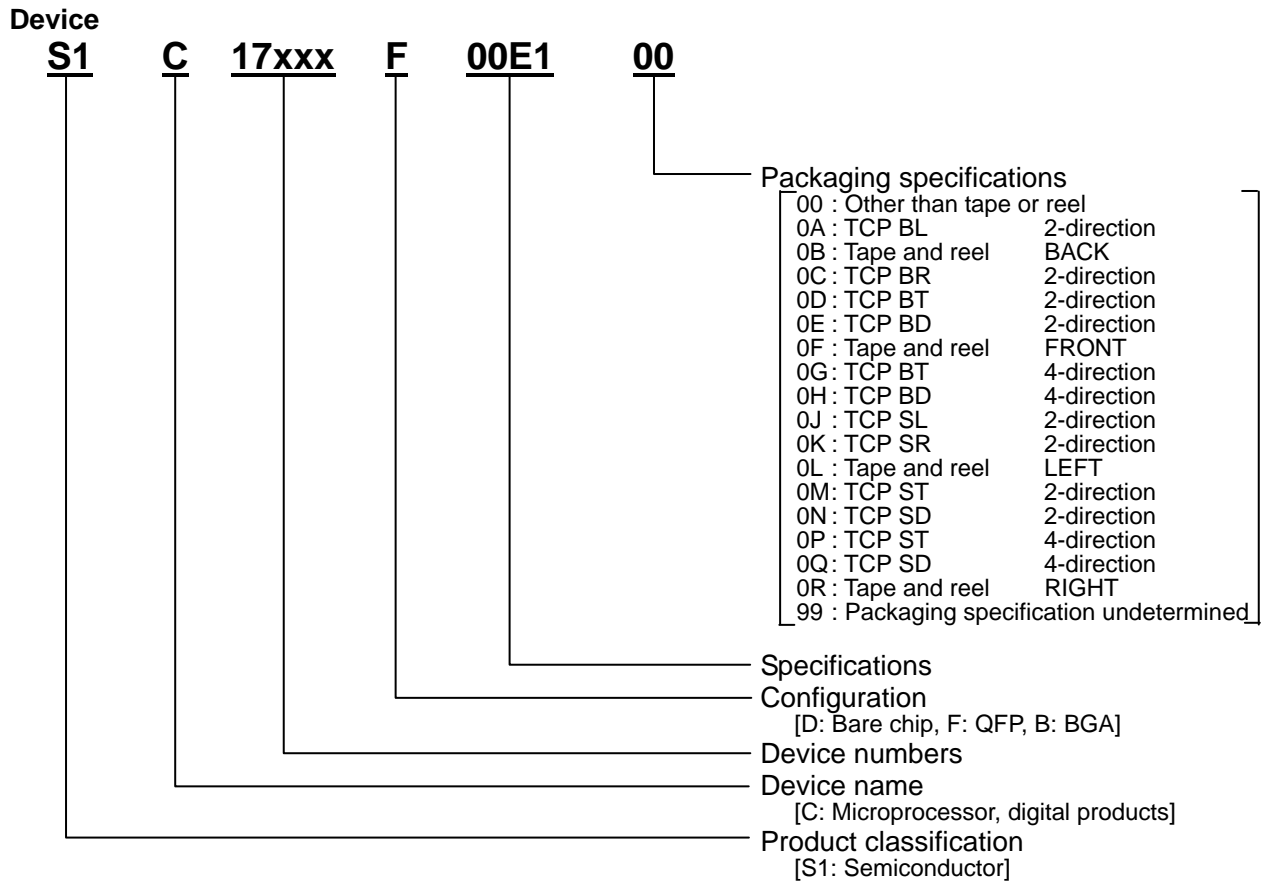
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## Product code explanation



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## 1. Overview

The S5U1C17564T2 (S5U1C17564T2: Software Evaluation Tool for S1C17564) is a board used to support the development and evaluation of the Seiko Epson S1C17564 single-chip microcontroller.

The S5U1C17564T2 features through-holes for attaching expansion connectors to provide I/O pins for the S1C17564, and can be used to expand functions by connecting a user board or similar via these connector through-holes.

The S5U1C17564T2 can be used for developing S1C17564 software by connecting to the Seiko Epson S5U1C17001H (ICDmini) emulator.

This product includes an IC socket, enabling it to be used with the Seiko Epson S1C17554 single-chip micro-controller in addition to the S1C17564 included.

### 1.1 Usage Method

The S1C17564 software development environment can be set up using the procedure described below.

- (1) Insert the S1C17564\*<sup>1</sup> into the IC socket (U1). \*<sup>2</sup> (It is already inserted at the time of shipping.)
- (2) Connect the S5U1C17001H (ICDmini) to J5 and J6 on the S5U1C17564T2 via the dedicated cable provided with the ICDmini. \*<sup>3</sup>
- (3) Provide power via the power supply connectors (J7, J8, J9). \*<sup>4</sup>
- (4) Connect the ICDmini to the PC\*<sup>5</sup> via the USB cable provided with the ICDmini.

\*1: The S1C17554 can also be mounted.

\*2: Insert so that the triangular mark printed on the board aligns with pin 1 on the S1C17564. There is a risk of damaging the S1C17564 if power is turned on while inserted incorrectly.

\*3: For more information on connecting this device, refer to the S5U1C17001H User Manual (ICDmini Ver.2.0). Note that this device should be used with S5U1C17001H2 (ICDmini Ver 2.0) or later. It cannot be connected to the S5U1C17002H (ICD Board).

\*4: Never apply a voltage exceeding the power supply voltage input range for the S1C17564. For more information on the S1C17564 power supply voltage input range, refer to the S1C17564 Technical Manual. There is no need to supply power via J8 if the S1C17564 internal regulator is used. For more information, refer to Section 3.

\*5: The PC used for S1C17564 development must be installed with the GNU17 (S5U1C17001C) software development tool. Note that this device should be used with GNU17 Ver 2.0.0 or later.

Note: When using the S5U1C17564T2, the spacers provided should be used to prevent shorting of the mounted components.

## 2. Block Diagram

## 2. Block Diagram

The S5U1C17564T2 block diagram is as shown below.

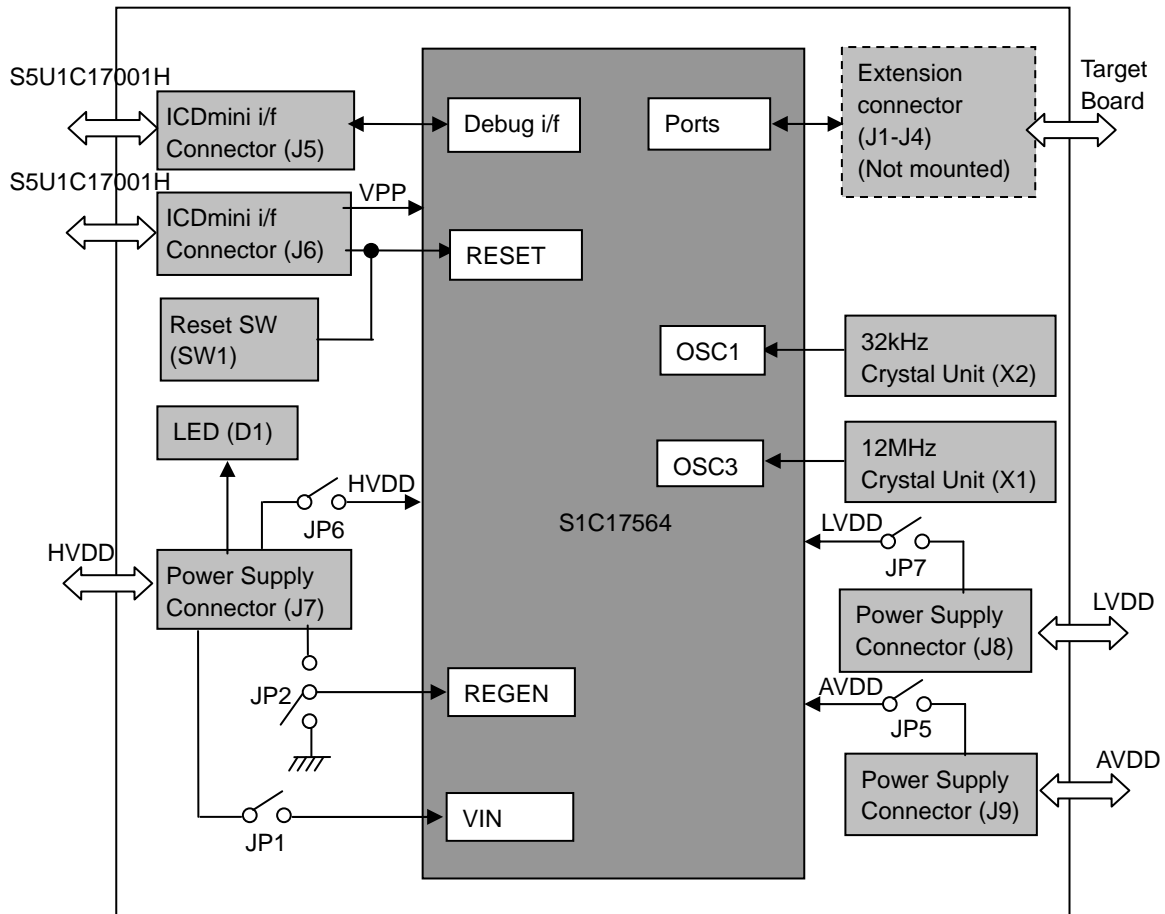


Figure 2.1 S5U1C17564T2 block diagram

### 3. Hardware Information

#### 3.1 Layout information

The S5U1C17564T2 component layout is as shown in Figures 3.1 and 3.2.

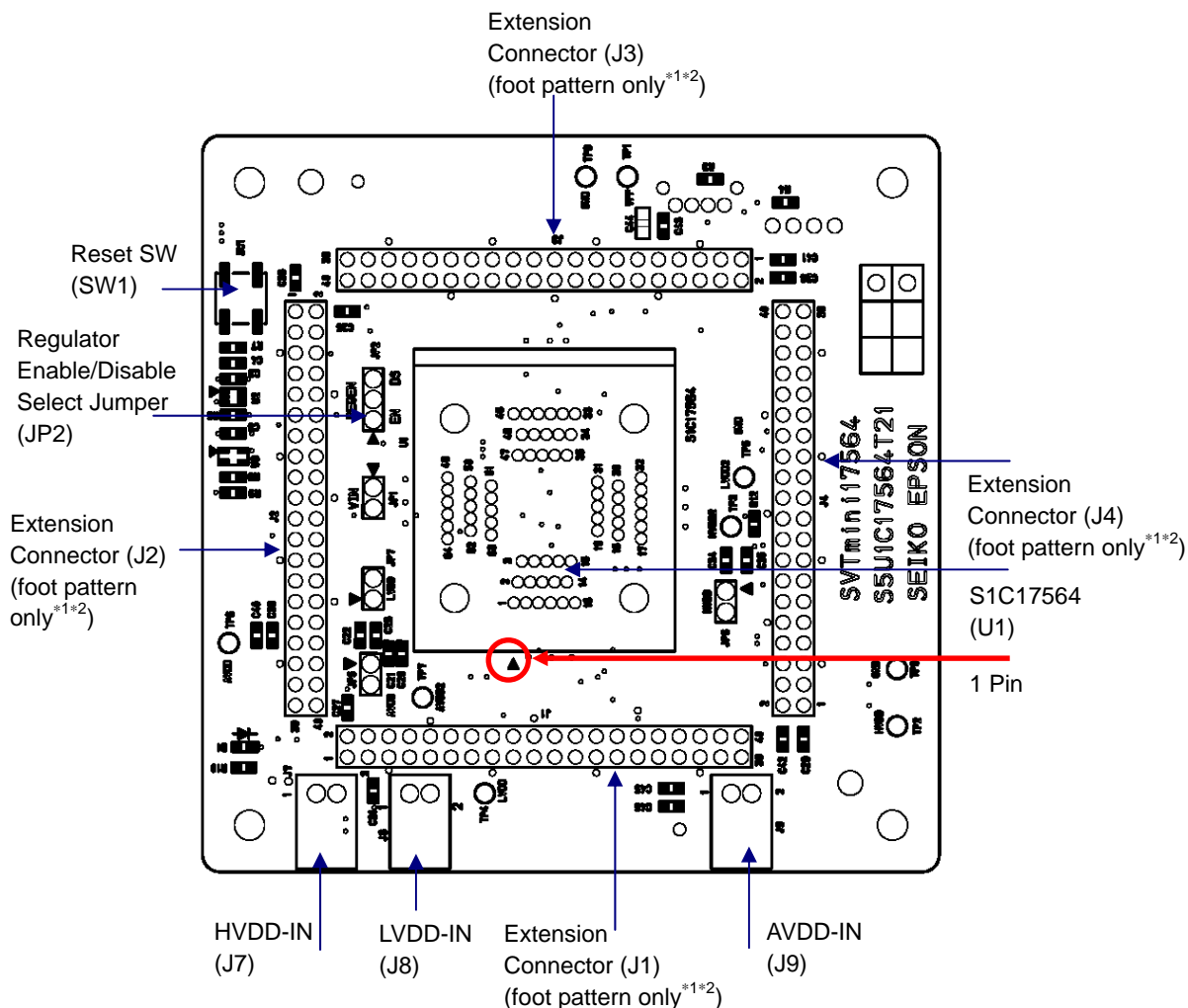


Figure 3.1 S5U1C17564T2 component layout (upper side)

\*1: Connectors J1, J2, J3, and J4 are patterns only, and the actual connectors are provided together with the product for mounting as necessary.

\*2: The through-hole bore diameter is 0.85 mm.

### 3. Hardware Information

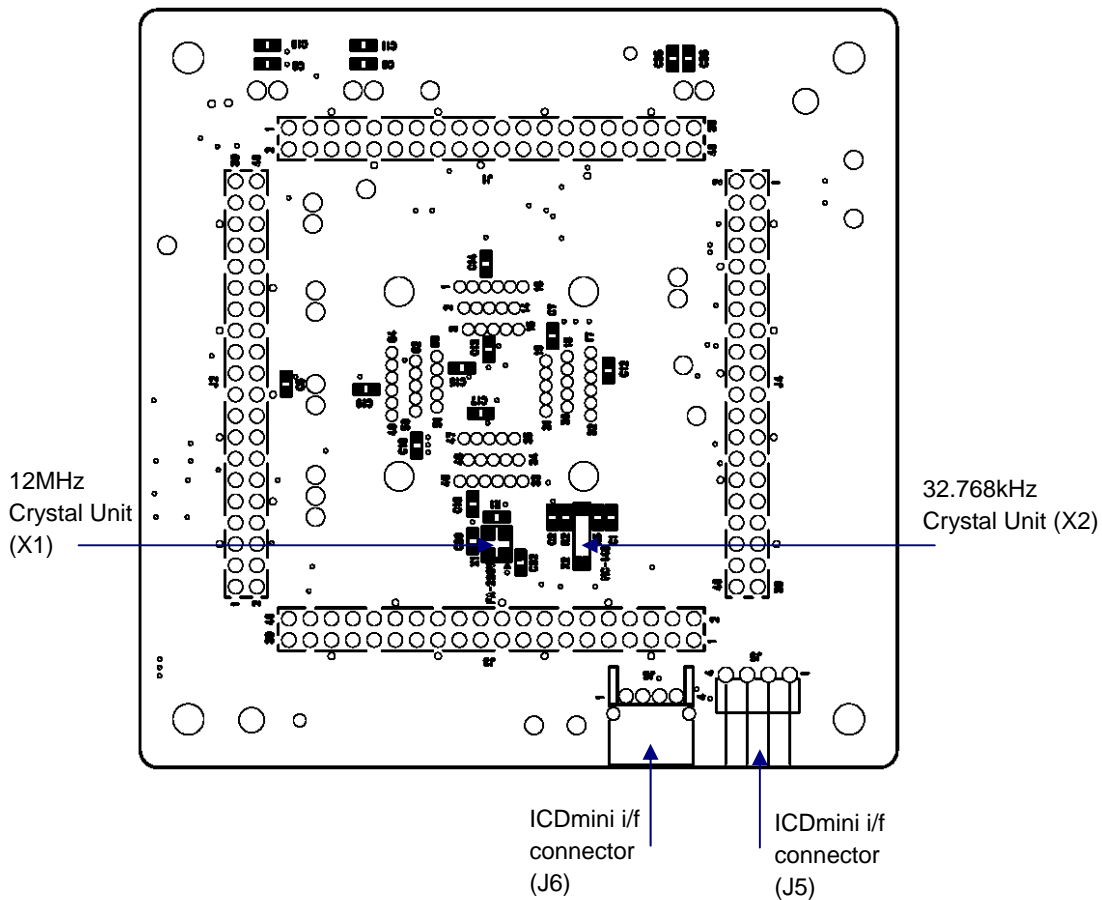


Figure 3.2 S5U1C17564T2 component layout (underside)

## 3.2 Jumper information

### 3.2.1 Jumper settings when using S1C17564

Table 3.1 lists the S5U1C17564T2 jumper functions (for when using the S1C17564).

Table 3.1 Jumper function list (when using S1C17564)

Jumper	Enable internal regulator (default setting)	Disable internal regulator
JP1	CLOSE (VIN=HVDD)	–
JP2	REGEN EN CLOSE (Enable S1C17564 internal regulator)	REGEN DS CLOSE (Disable S1C17564 internal regulator)
JP5	CLOSE (Supply AVDD (supplied via J9) to S1C17564)	–
JP6	CLOSE (Supply HVDD (supplied via J7) to S1C17564)	–
JP7	OPEN*1	CLOSE (Supply LVDD (supplied via J8) to S1C17564)

\*1: There is no need to supply LVDD power via J8 if the S1C17564 internal regulator is used.

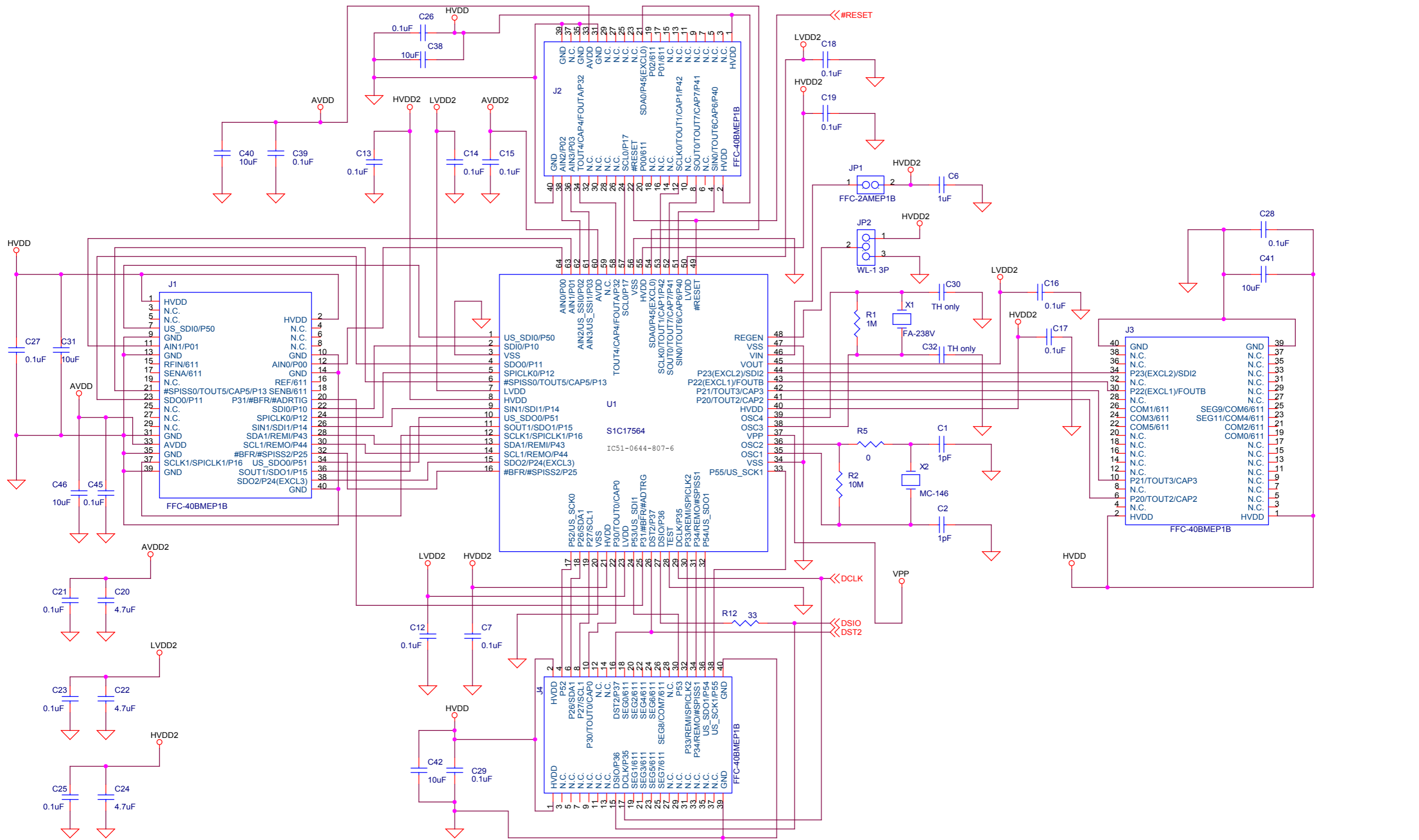


### 3.2.2 Jumper settings when using S1C17554

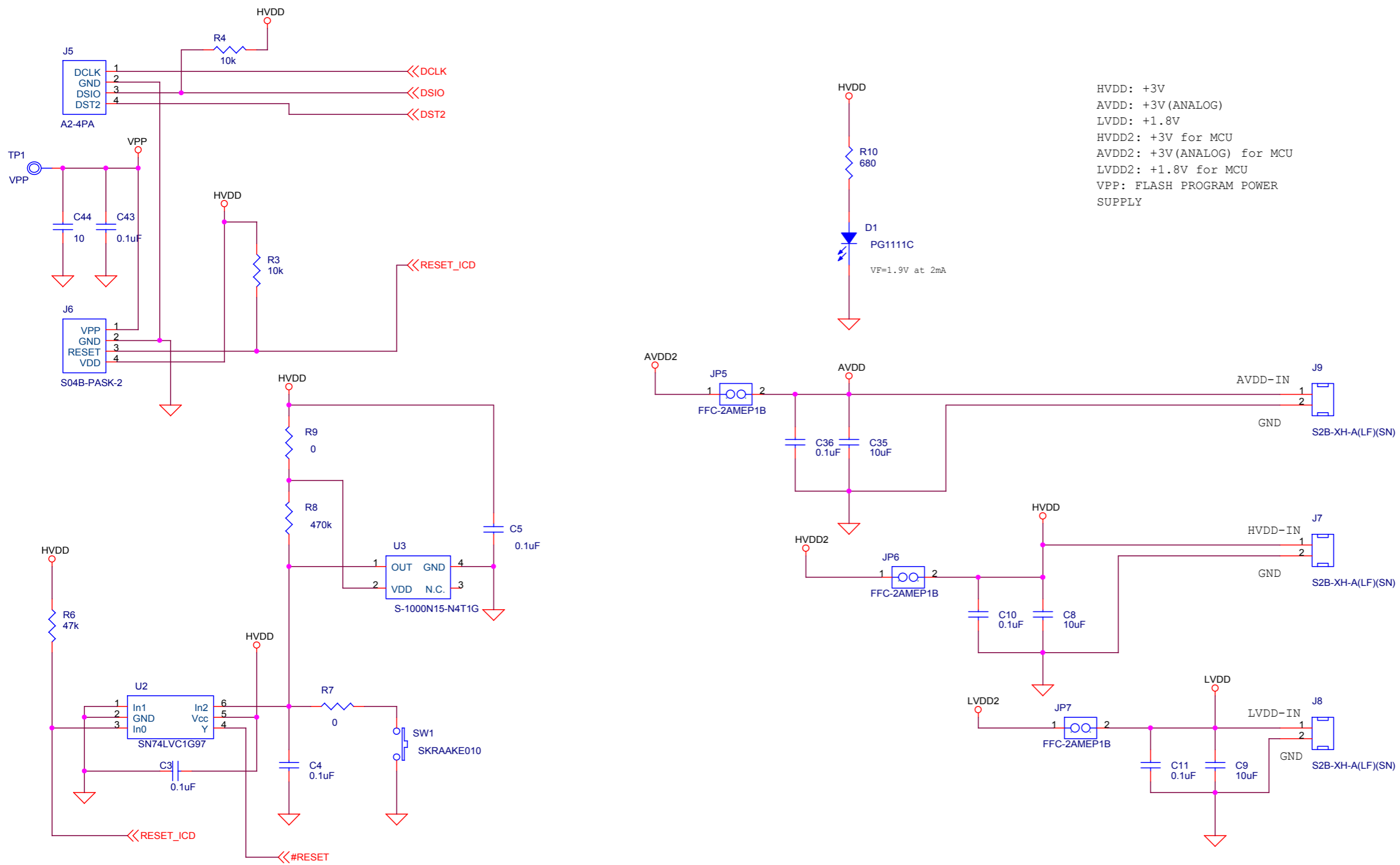
Table 3.2 lists the S5U1C17564T2 jumper functions (for when using the S1C17554).

Table 3.2 Jumper function list (when using S1C17554)

Jumper	(No internal regulator)
JP1	CLOSE (VIN=HVDD)
JP2	REGEN DS CLOSE
JP5	CLOSE (Supply AVDD (supplied via J9) to S1C17554)
JP6	CLOSE (Supply HVDD (supplied via J7) to S1C17554)
JP7	CLOSE (Supply LVDD (supplied via J8) to S1C17554)



Title		
SVTmini17564 CPU Board		
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\* Note: J1-7. J1-34, J4-36, and J4-38 are marked with signal names related to the universal serial interface (USI), which can be used by the S1C17564, but this function cannot be used if the S1C17554 is mounted.

Title		
SVTmini17564 CPU Board		
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### 3. Hardware Information

#### 3.4 Parts List

Table 3.3 S5U1C17564T2 parts list\*1

Part name	Location	Code, specifications	Qty.	Manufacturer
MCU	U1	S1C17564F (TQFP13-64)	1	SEIKO EPSON CORPORATION
IC socket	(U1)	IC51-0644-807-6	1	YAMAICHI electronics
Crystal oscillator	X1	FA-238V 12 MHz (10pF ±50ppm)	1	EPSON TOYOCOM CORPORATION
Crystal oscillator	X2	MC-146(7pF) 32.768 kHz	1	EPSON TOYOCOM CORPORATION
Voltage detector IC	U3	S-1000N15-N4T1G	1	Seiko Instruments Inc.
General logic device	U2	SN74LVC1G97DCK	1	Texas Instruments
LED	D1	PG1111C	1	STANLEY ELECTRIC CO., LTD.
Switch	SW1	SKRAAKE010	1	ALPS ELECTRIC CO., LTD.
Connector	J5	A2-4PA-2.54DS(71)	1	HIROSE ELECTRIC CO., LTD.
Connector	J6	S04B-PASK-2(LF)(SN)	1	JST Mfg. Co., Ltd
Connector	J7, J8, J9	S2B-XH-A(LF)(SN)	3	JST Mfg. Co., Ltd
Jumper pin	JP1, JP5, JP6, JP7	FFC-2AMEP1B	4	Honda Tsushin Kogyo Co., Ltd.
Jumper pin	JP2	WL-1-3P	1	Mac-Eight Co.,Ltd.
Jumper socket	JP1, JP2, JP5, JP6, JP7		5	
Chip ceramic capacitor	C1, C2	1 pF/100V	2	
	C3, C4, C5, C7, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C21, C23, C25, C26, C27, C28, C29, C36, C39, C43, C45	0.1 μ/16 V	25	
	C6	1 μ/6.3 V	1	
	C20, C22, C24	4.7 μ6.3 V	3	
	C8, C9, C31, C35, C38, C40, C41, C42, C46	10 μ/6.3 V	9	
	C44	10 μ/16 V	1	
	Chip resistor	R5, R7, R9	0 Ω/0.1 W	3
R10		680 Ω/0.1 W	1	
R12		33 Ω/0.1 W	1	
R3,R4		10 kΩ/0.1 W	2	
R6		47 kΩ/0.1 W	1	
R8		470 kΩ/0.1 W	1	
R1		1 MΩ/0.1 W	1	
R2		10 MΩ/0.1 W	1	
Power cable (housing)	Included	XHP-2	3	JST Mfg. Co., Ltd
Power cable (contact)	Included		6	
Power cable (lead)	Included		6	
Spacer	Included		4	
Screw	Included		4	
Connector	Included (can be mounted on J1, J2, J3, J4)	FFC-40BMEP1B	4	Honda Tsushin Kogyo Co., Ltd.

\*1: Components described here are subject to change without notice.



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