

CMOS 16-BIT SINGLE CHIP MICROCONTROLLER  
**S5U1C17611T2 Manual**  
(Software Evaluation Tool for S1C17611)

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## Configuration of product number

### Devices

S1    C    17xxx    F    00E1    00

#### Packing specifications

00: Besides tape & reel	
0A: TCP BL	2 directions
0B: Tape & reel	BACK
0C: TCP BR	2 directions
0D: TCP BT	2 directions
0E: TCP BD	2 directions
0F: Tape & reel	FRONT
0G: TCP BT	4 directions
0H: TCP BD	4 directions
0J: TCP SL	2 directions
0K: TCP SR	2 directions
0L: Tape & reel	LEFT
0M: TCP ST	2 directions
0N: TCP SD	2 directions
0P: TCP ST	4 directions
0Q: TCP SD	4 directions
0R: Tape & reel	RIGHT
99: Specs not fixed	

#### Specification

#### Package

[D: die form; F: QFP, B: BGA]

#### Model number

#### Model name

[C: microcomputer, digital products]

#### Product classification

[S1: semiconductor]

### Development tools

S5U1    C    17000    Y2    1    00

#### Packing specifications

[00: standard packing]

#### Version

[1: Version 1]

#### Tool type

Hx: ICE
Dx: Evaluation board
Ex: ROM emulation board
Mx: Emulation memory for external ROM
Tx: A socket for mounting
Cx: Compiler package
Sx: Middleware package
Yx: Writer software

#### Corresponding model number

[17xxx: for S1C17xxx]

#### Tool classification

[C: microcomputer use]

#### Product classification

[S5U1: development tool for semiconductor products]

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## 1. Overview

S5U1C17611T2 (S5U1C17611T2: Software Evaluation Tool for S1C17611) is an evaluation and development support board for the S1C17611 single-chip microcontroller made by Seiko Epson.

S5U1C17611T2 has built-in S1C17611 and crystal unit, and the terminals of S1C17611 are outputted at the through holes on the board.

S5U1C17611T2 can be used as the software development environment of S1C17611 by connecting to the S5U1C17001H (ICD mini) and S5U1C17002H (ICD board) emulators made by Seiko Epson.

### 1.1 Usage Method

The software development environment of S1C17611 can be built through the following steps.

<When S5U1C17001H (ICD mini) is used>

- (1) Connect ICD mini to J2 and J6 of S5U1C17611T2 using the dedicated cable that comes with the ICD mini.<sup>\*1</sup>
- (2) Provide power supply<sup>\*2</sup> through connector (J8) for power supply.
- (3) Connect ICD mini to PC<sup>\*3</sup> using the USB cable that comes with the ICD mini.

<When S5U1C17002H (ICD board) is used><sup>\*4</sup>

- (1) Connect ICD board to J1 of S5U1C17611T2 such that the pin numbers on both sides match.<sup>\*5</sup>
- (2) Connect ICD board to PC<sup>\*3</sup> using the USB cable that comes with the ICD board.

\*1 For the connection between ICD mini and S5U1C17611T2, refer to the S5U1C17001H user manual.

\*2 It is prohibited to apply voltage in excess of the supply voltage input range of S1C17611. For the supply voltage input range of S1C17611, refer to the S1C17611 technical manual.

\*3 It is necessary for the software development tool (S5U1C17001C) to be installed.

\*4 Simultaneous power supply from ICD board and power supply connector (J8) is prohibited. It causes damage to S5U1C17611T2.

\*5 3.3V supply voltage is provided to S5U1C17611T2 by connecting to ICD board.

## 2. Block Diagram

## 2. Block Diagram

The block diagram of S5U1C17611T2 is as shown in Figure 2.1.

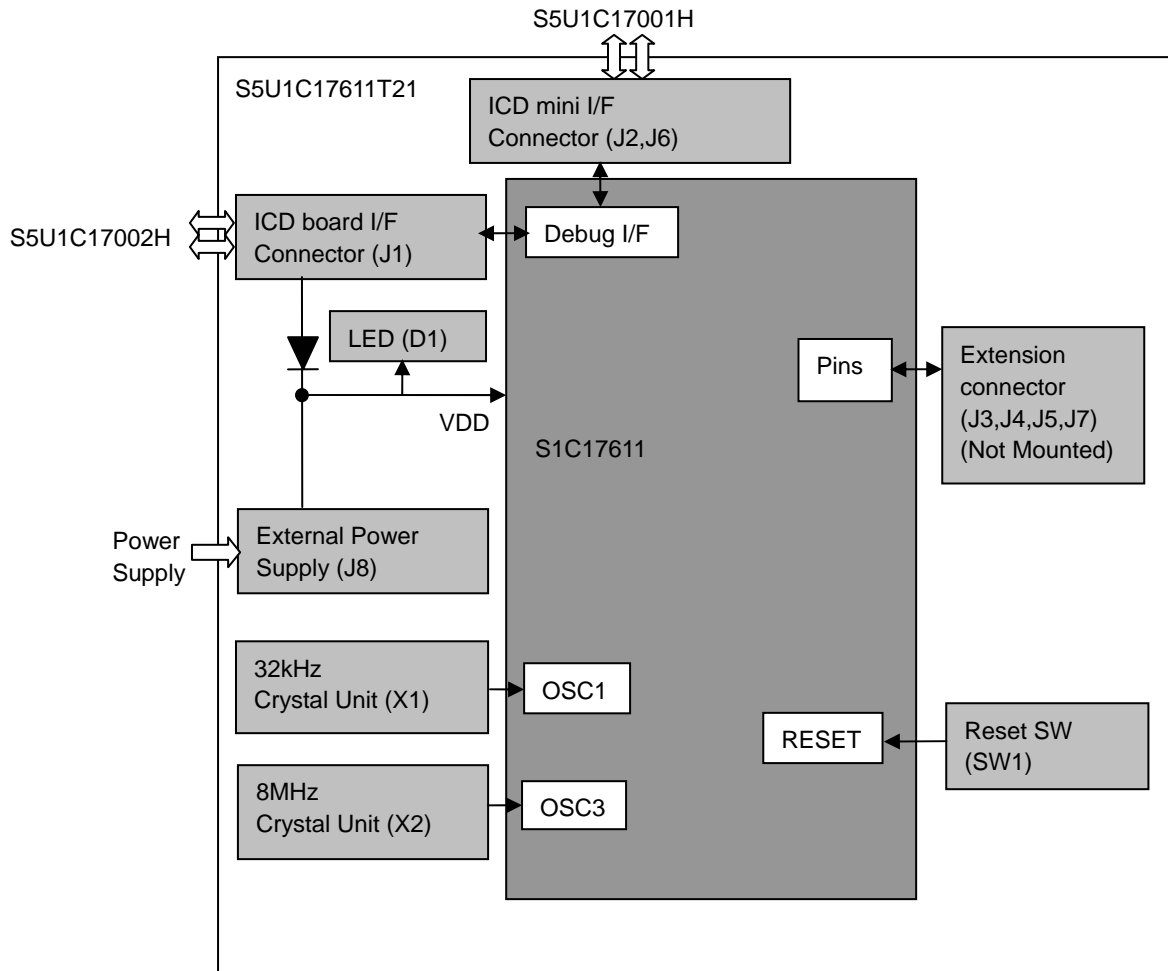
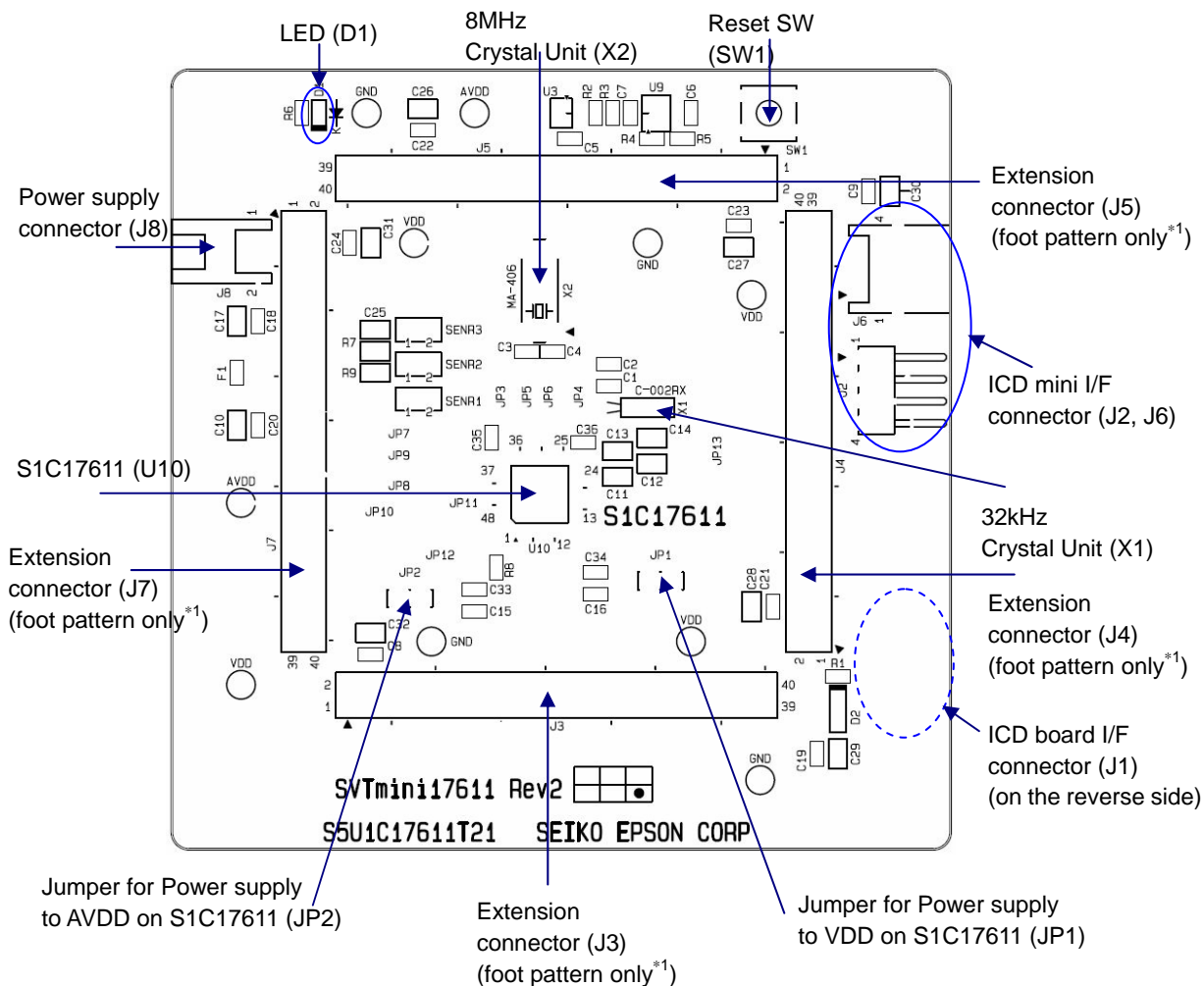


Figure 2.1 S5U1C17611T2 block diagram

### 3. Hardware Information

#### 3.1 Layout Information

The parts layout of S5U1C17611T2 is as shown in Figure 3.1.



\*1 The J3, J4, J5 and J7 connectors are for patternization only. The connector parts are included with the main product, so mount and use when required.

Figure 3.1 S5U1C17611T2 parts layout

### 3. Hardware Information

#### 3.2 Jumper, and Each Type of Mounting Pattern

The list of jumper functions of S5U1C17611T2 is as shown in Figure 3.1. In addition, each type of mounting pattern is as shown in Table 3.2.

Table 3.1 List of jumper functions

Jumper	Jumper Type	Setting When Shipped	Selectable Function
JP1	Pin	Connected: VDD supply to S1C17611	Unconnected: No VDD supply to S1C17611
JP2	Pin	Connected: AVDD supply to S1C17611	Unconnected: No AVDD supply to S1C17611
JP3	Solder bridge	Unconnected: OSC3 is unconnected to J5-17 pin	Connected: OSC3 connected to J5-17 pin
JP4	Solder bridge	Unconnected: OSC4 is unconnected to J5-20 pin	Connected: OSC4 connected to J5-20 pin
JP5	Solder bridge	Connected: OSC3 is connected to X2 (Crystal unit)	Unconnected: OSC3 unconnected to X2 (Crystal unit)
JP6	Solder bridge	Connected: OSC4 is connected to X2 (Crystal unit)	Unconnected: OSC4 unconnected to X2 (Crystal unit)
JP7	Solder bridge	Connected: P07/RFIN is connected to J7-15 pin	Unconnected: P07/RFIN unconnected to J7-15 pin
JP8	Solder bridge	Connected: P11/SENA is connected to J7-17 pin	Unconnected: P11/SENA unconnected to J7-17 pin
JP9	Solder bridge	Connected: P10/REF is connected to J7-16 pin	Unconnected: P10/REF unconnected to J7-16 pin
JP10	Solder bridge	Connected: P12/SENB is connected to J7-18 pin	Unconnected: P12/SENB unconnected to J7-18 pin
JP11	Solder bridge	Connected: P12/SCLK is connected to J5-12 pin	Unconnected: P12/SCLK unconnected to J5-12 pin
JP12	Solder bridge	Connected: P14/SIN is connected to J5-4 pin	Unconnected: P14/SIN unconnected to J5-4 pin
JP13	Solder bridge	Connected: P13/SOUT is connected to J5-8 pin	Unconnected: P13/SOUT unconnected to J5-8 pin

Table 3.2 Each mounting pattern

Location	Mounting pattern	Remarks
J3	2 rows×20-pin connector (2.54mm pitch)	Comes with the connector (FFC-40BMEP1B)
J4	2 rows×20-pin connector (2.54mm pitch)	Comes with the connector (FFC-40BMEP1B)
J5	2 rows×20-pin connector (2.54mm pitch)	Comes with the connector (FFC-40BMEP1B)
J7	2 rows×20-pin connector (2.54mm pitch)	Comes with the connector (FFC-40BMEP1B)
SENR1	Thermistor, humidity sensor (2.54mm pitch)	For external connection of RF converter*1
SENR2	Thermistor, humidity sensor (2.54mm pitch)	For external connection of RF converter*1
SENR3	Thermistor, humidity sensor (2.54mm pitch)	For external connection of RF converter*1
R7	Chip resistor (2.0×1.25mm)	For external connection of RF converter*1
R9	Chip resistor (2.0×1.25mm)	For external connection of RF converter*1
C25	Chip capacitor (2.0×1.25mm)	For external connection of RF converter*1

\*1 This mounting pattern is assumed to be built into the external circuit of RF converter and the parts are not built-in.



3.3 Circuit Diagram

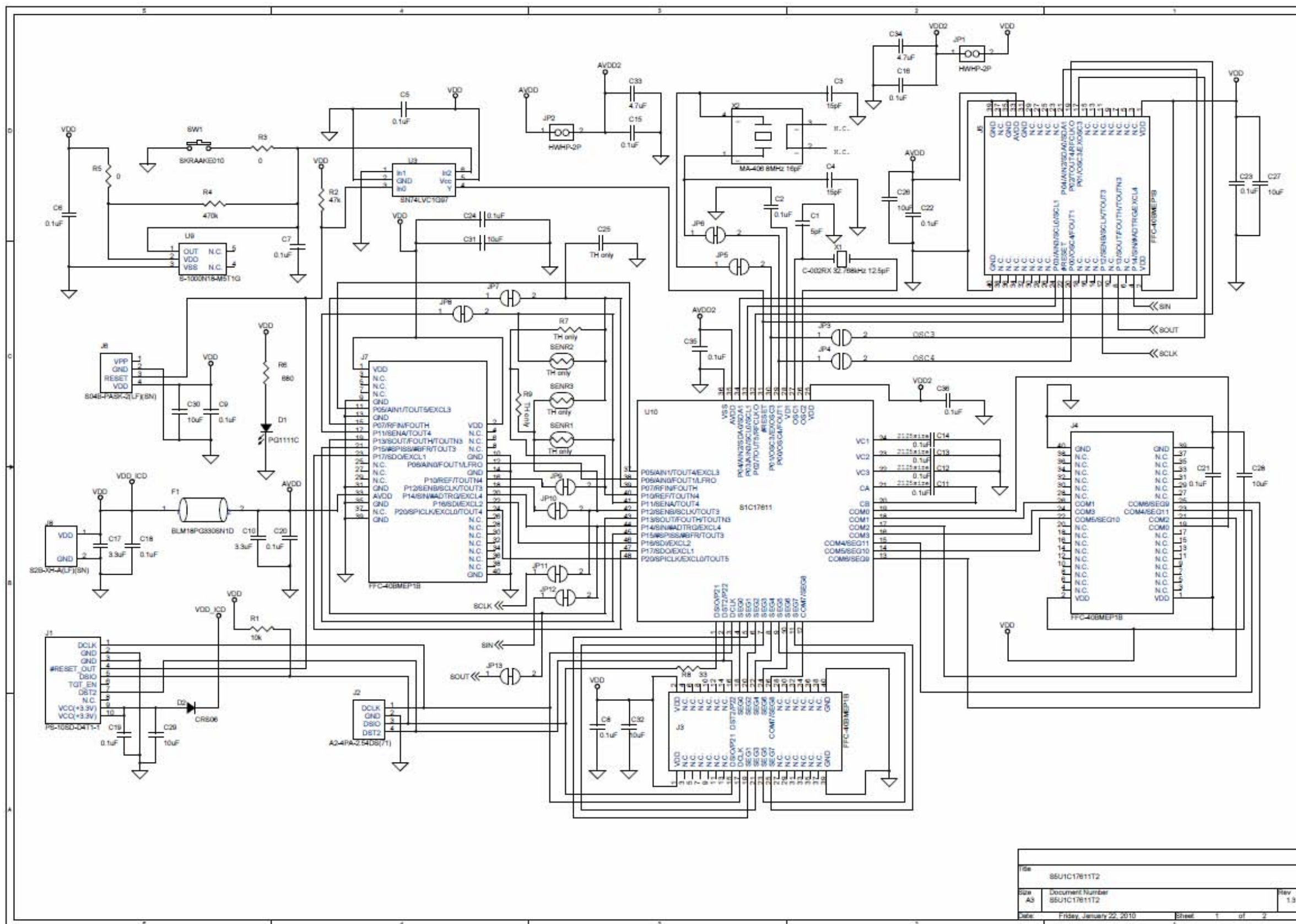


Figure 3.2 S5U1C17611T2 circuit diagram

### 3. Hardware Information

#### 3.4 Parts List

Table 3.3 S5U1C17611T2 parts list\*1

Parts Name	Location	Model No., Specs	Qty.	Manufacturer
MCU	U10	S1C17611F (TQFP12-48)	1	SEIKO EPSON CORPORATION
Crystal unit	X1	C-002RX 32.768kHz 12.5pF/20PPM	1	EPSON TOYOCOM CORPORATION
Crystal unit	X2	MA-406 8MHz 16pF/50PPM	1	EPSON TOYOCOM CORPORATION
Voltage detection IC	U9	S-1000N18-M5T1G	1	Seiko Instruments Inc.
General-purpose logic	U3	SN74LVC1G97DCK	1	Texas Instruments
LED	D1	PG1111C	1	STANLAY ELECTRIC CO., LTD.
Diode	D2	CRS06(Q)	1	TOSHIBA CORPORATION
Ferrite beads	F1	BLM18PG330SN1D	1	Murata Manufacturing Co., Ltd.
Switch	SW1	SKRAAKE010	1	ALPS ELECTRIC CO., LTD.
Connector	J1	PS-10SD-D4T1-1	1	Japan Aviation Electronics Industry, Ltd.
Connector	J2	A2-4PA-2.54DS(71)	1	HIROSE ELECTRIC CO., LTD.
Connector	J6	S04B-PASK-2(LF)(SN)	1	JST Mfg. Co., Ltd
Connector	J8	S2B-XH-A(LF)(SN)	1	JST Mfg. Co., Ltd
Jumper pin	JP1, JP2		2	
Jumper socket	JP1, JP2		2	
Ceramic chip capacitor	C1	5pF	1	
	C2, C5, C6, C7, C8, C9, C11, C12, C13, C14, C15, C16, C18, C19, C20, C21, C22, C23, C24, C35, C36	0.1μF	21	
	C3, C4	15pF	2	
	C10, C17	3.3μF	2	
	C26, C27, C28, C29, C30, C31, C32	10μF	7	
	C33, C34	4.7μF	2	
	Chip resistor	R1	10kΩ	1
R2		47kΩ	1	
R3, R5		0Ω	2	
R4		470kΩ	1	
R6		680Ω	1	
R8		33Ω	1	
Power cable (housing)	Included	XHP-2	1	JST Mfg. Co., Ltd
Power cable (contact)	Included		2	
Power cable (wire)	Included		2	
Spacer	Included		4	
Flat washer	Included		4	
Connector	Included (can mount to J3, J4, J5, J7)	FFC-40BMEP1B	4	Honda Tsushin Kogyo Co., Ltd.

\*1 There may be changes to built-in parts without prior notice.



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