EPSON
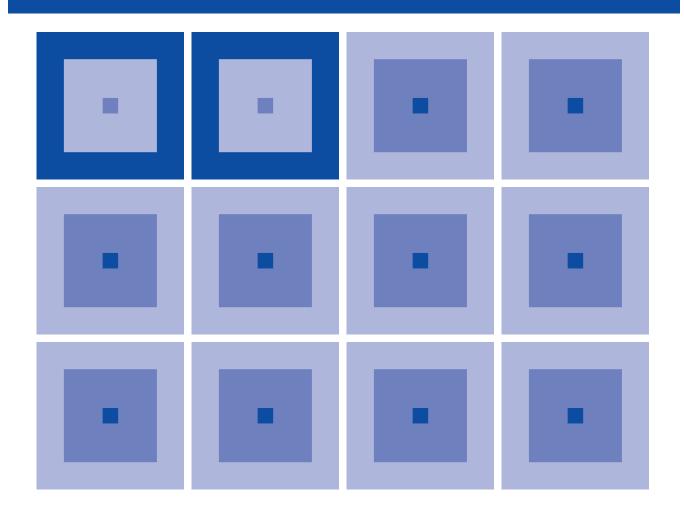
CMOS 8-BIT SINGLE CHIP MICROCOMPUTER
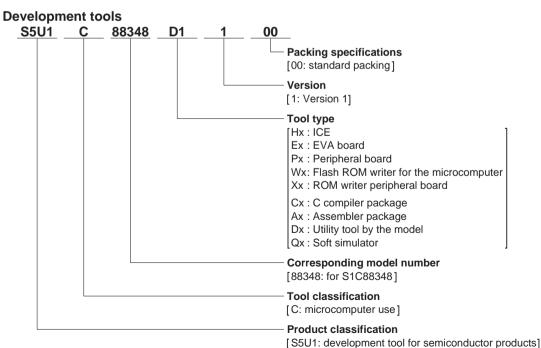# S5U1C88816P Manual
(Peripheral Circuit Board for S1C88816/8F360)

SEIKO EPSON CORPORATION

Configuration of product number

Devices

S1   C   88104   F   0A01   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]

Model number

Model name
[C: microcomputer, digital products]

Product classification
[S1: semiconductor]

Development tools

S5U1   C   88348   D1   1   00

Packing specifications
[00: standard packing]

Version
[1: Version 1]

Tool type
```
Hx : ICE
Ex : EVA board
Px : Peripheral board
Wx: Flash ROM writer for the microcomputer
Xx : ROM writer peripheral board

Cx : C compiler package
Ax : Assembler package
Dx : Utility tool by the model
Qx : Soft simulator
```

Corresponding model number
[88348: for S1C88348]

Tool classification
[C: microcomputer use]

Product classification
[S5U1: development tool for semiconductor products]

S5U1C88816P Manual (Peripheral Circuit Board for S1C88816/8F360)

In this manual we will provide explanations covering such areas as the installation of the S1C88816 ⁄ 8F360 Peripheral Circuit Board (S5U1C88816P) that provides the S1C88816 ⁄ 8F360 emulation functions to the debugging tool ICE (S5U1C88000H5) for the 8-bit single chip microcomputer S1C88 Family, and the operating test procedure.

For details on the functions and operation of the ICE, refer to the manual that has been prepared for it.

Contents

1 INTRODUCTION

1.1 S5U1C88816P Outline

The S5U1C88816P board provides the peripheral circuits other than the core CPU, for the S1C88816⁄8F360. Consequently, you should install it into the ICE and use it as the emulator for the S1C88816⁄8F360 models.

The S5U1C88816P is equipped with LEDs and terminals for monitoring the internal operating conditions, I⁄O connection connectors for the target system and other appropriate devices.

1.2 S5U1C88816P Components

When unpacking the S5U1C88816P, check that the following goods are present:

(1) S5U1C88816P board 1

(2) I/O connection cable (80-pin/40-pin flat type × 2) .. 2 sets
       (60-pin/30-pin flat type × 2) .. 1 set

(3) I/O connector for target system (40-pin) 4
       (30-pin) 2

(4) Cable for monitor terminal (10-pin) 1

(5) S5U1C88816P Manual (Peripheral Circuit Board for S1C88816/8F360) (this manual) 1

(6) Warranty 1

(7) Warranty registration card 1

(8) Report on the factory test 1

(9) Note for using 1

1.3 S5U1C88816P External Diagram

Fig. 1.3.1 S5U1C88816P external drawing

∗ The name 'PRC88816' on the development tool is the old name of the product.
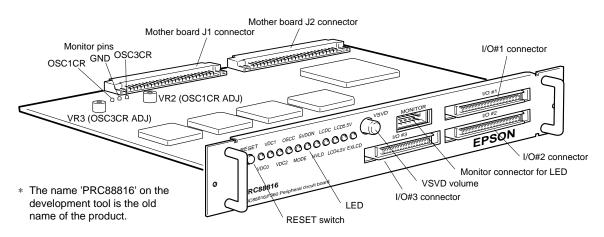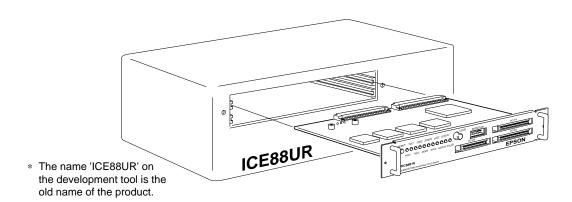
Note: Keep the JP switch on the S5U1C88816P board as it was set prior to factory shipment. In no case should you remove it or change it.

2   INSTALLATION INTO THE ICE (S5U1C88000H5)

Insert the S5U1C88816P along by the upper guide rail of the ICE, until it touches the edge of the S5U1C88816P.

∗ The name 'ICE88UR' on the development tool is the old name of the product.

Note: The S5U1C88816P may fail to operate if it is not adequately mounted, so be sure to mount it securely.

---

3 PRECAUTIONS

Take the following precautions when using the S5U1C88816P:

3.1 Precaution for Operation

(1) Turn the power of all equipment off before connecting or disconnecting cables.

(2) In normal use, other than when evaluating power voltage changes, you should turn the VSVD volume completely to the right.
When the SVD reset function has been selected using the mask option, resetting will occur when the VSVD volume is completely to the left, due to the detection of low voltage, causing the operation of the S5U1C88816P to stop. Even if the SVD reset function has not been selected using the mask option, since it will be set to SVD reset function ON by default setting until loading the mask option therefore, be sure to turn the VSVD volume all the way to the right when starting.

(3) The ICE has a built-in power supply fixed at 5 V. When the LCD drive power is externally supplied to the S5U1C88816P installed in the ICE, it must be 5 V or less. If an external LCD drive power of more than 5 V is used to supply the V_{C1}–V_{C5} terminals of the S5U1C88816P, both units may be destroyed due to the difference of the interface voltage in the ICE.
If external power is selected by mask option, it is impossible to adjust contrast by setting the LCD contrast adjustment registers LC0 to LC3 (register settings become invalid).

(4) The ICE discriminates between maximum mode and minimum mode according to the value set in the bus mode setup register (FF00H•D6, D7). Note, however, that maximum/minimum mode is selected by mask option in the S1C88816 and address FF00H is a general-purpose register that does not indicate the set mode. Therefore, it is necessary to write data to bits D6 and D7 in address FF00H in the initial routine executed after an initial reset to configure the mode in the ICE.
The S1C88xxx needs writing to FF00H and FF01H after an initial reset for releasing the interrupt mask. At this time, the above D6 and D7 bit data can be written simultaneously.
The values to be set are as follows:
For maximum mode: FF00H•D6 = "1", D7 = "1"
For minimum mode: FF00H•D6 = "0", D7 = "0"

3.2 Differences from Actual IC

Caution is called for due to the following function and property related difference with the actual IC. If these precautions are overlooked, it may not operate on the actual IC, even if it operates on the ICE with the S5U1C88816P installed.

(1) I/O differences

The logic level (5 V for the S5U1C88816P), output drive capability and pull up resistance are different. For this reason, an added circuit such as a level shifter may be necessary when interfacing with the target system. Also input setup time is different therefore, when a circuit requiring consideration of the input response time, such as a key matrix, is used, you should design the system and the software according to the spec. for the actual IC.

(2) LCD differences

The output drive capability is different. Since there will be difference with the actual IC even for the drive voltage, you should design the system and the software in order to adjust the characteristics.

(3) Analog comparator differences

The response time and characteristics of the analog comparator are different. Consequently, you should design the system and the software according to the spec. for the actual IC.

(4) Current consumption differences

The current consumption evaluation is impossible.

(5) Function differences

<SVD circuit>
The SVD function is implemented by varying the apparent power supply voltage with the VSVD volume.

<Oscillation circuit>
• The S5U1C88816P has a built-in crystal oscillation circuit for OSC1. The crystal oscillation frequency is fixed at 32.768 kHz.

• The OSC1 crystal oscillation circuit is the same regardless of whether the gate capacitor is connected or not.

- If OSC1 is used in an oscillation frequency other than 32.768 kHz, select "USER CLOCK" in the "OSC1 SYSTEM CLOCK" of the "S5U1C88816P OPTION" using winfog, and supply an external clock with the desired frequency to the OSC1 terminal. Or select CR oscillation and adjust its oscillation frequency using the VR2 control on the S5U1C88816P. When adjusting the frequency, use the OSC1CR pin on the board for monitoring the CR oscillation frequency.

- The S5U1C88816P has built-in three types of OSC3 oscillation circuits, crystal oscillation circuit (4.9152 MHz), ceramic oscillation circuit (8 MHz) and CR oscillation circuit (variable frequency).

- If OSC3 is used in an oscillation frequency other than 4.9152 MHz (crystal) and 8 MHz (ceramic), select "USER CLOCK" in the "OSC3 SYSTEM CLOCK" of the "S5U1C88816P OPTION" using winfog, and supply an external clock with the desired frequency to the OSC3 terminal. Or select CR oscillation and adjust its oscillation frequency using the VR3 control on the S5U1C88816P. When adjusting the frequency, use the OSC3CR pin on the board for monitoring the CR oscillation frequency.

- When using an external clock for OSC1 or OSC3, adjust the external clock (amplitude: 5 V ±5%, duty: 50% ±10%) and input into the OSC1 or OSC3 terminal with V_{SS} as GND.

- In the S5U1C88816P, the oscillation stability time of the OSC3 is short compared with the actual IC. You should assure the time from OSC3 oscillation start to OSC3 system clock change (min. oscillation stability time required) according to the actual IC using software.

- The timings such as the oscillation start and stop times are different from those of the actual IC because the logic level of S5U1C88816P is higher than it of actual IC.

- When switching the clock from OSC3 to OSC1, be sure to switch OSC3 oscillation OFF with separate instructions. Using a single instruction to process simultaneously can cause a malfunction of the CPU.

- Do not turn the OSC3 oscillation circuit ON in the low power mode.
  Do not switch over the operating mode (normal mode ↔ high speed mode) in the OSC3 oscillation circuit ON status, as this will cause faulty operation.

<Internal power supply circuit>
On the actual IC, you can change over the internal power voltage (set by VDC2, VDC1 and VDC0), but in the S5U1C88816P you cannot change the actual power voltage, simply by changing VDC2, VDC1 and VDC0.
For this reason, since the S5U1C88816P will operate, even if the stable time required for changeover is not taken, you should be sure that the stable time is provided by the software.
Also, since the usable frequency of OSC1 and OSC3 depends on the internal power voltage, you should refer to the Technical Manual for the S1C88816 or S1C8F360 and take care so as not to operate it with an inappropriate combination.
When turning the OSC3 oscillation circuit after switching the operating voltage, you should allow a voltage stable waiting time of 5 msec by the software.

<LCD drive power>
- When the internal LCD power is selected using winfog, the S5U1C88816P generates the same LCD drive voltage regardless of the selected voltage (4.5 V or 5.5 V). However, the selected voltage level is indicated with the LED.

- When external LCD power is selected using winfog, the internal LCD power supply circuit is disconnected and an external power can be supplied to the V_{C1}–V_{C5} terminals.

- Since the internal LCD power voltage is lower than the power supply voltage (5 V), the display contrast may be lowered if a 5.5 V LCD panel is used. To check the LCD display in this case, select external LCD power using winfog and supply 5 V for the LCD drive voltage.

<Accessing unused addresses>
- When reading or writing to/from an unused address in the I/O space and ROM/RAM space, the value is undefined. Be aware that the undefined value in the S5U1C88816P is different from the actual IC.

- When the S5U1C88816P is used with the ICE, accessing unused addresses can be detected using the 88816.PAR (for S1C88816) or 88F360.PAR (for S1C8F360) file.

4 NAMES AND FUNCTIONS OF PARTS

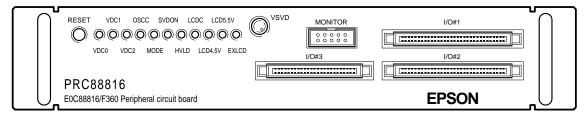This section describes the names and functions of the parts of the S5U1C88816P.

Fig. 4.1 Panel layout

(1) RESET switch

This switch resets the S5U1C88816P circuit, and provides the reset signal to ICE.

(2) VDC2, VDC1 and VDC0 LEDs

The LED will go ON/OFF according to the below combinations, depending on the internal operating voltage that has been set.

Table 4.1 Display of VDC2, VDC1 and VDC0 LED

Internal	LED		
operating voltage	VDC2	VDC1	VDC0
1.3 V	OFF	OFF	ON
2.2 V	OFF	ON	OFF
3.3 V	ON	OFF	OFF

(3) OSCC LED

This LED goes ON when the OSCC register is set to "1" and OFF when the register is set to "0".

(4) MODE LED

This LED goes ON when the S1C88 Core CPU operates in maximum mode and OFF when it operates in minimum mode.

(5) SVDON LED

This LED goes ON when the SVDON register is set to "1" also during auto sampling operation, and OFF when the register is set to "0".

(6) HVLD LED

This LED goes ON when the OSCC register or BZON register is set to "1" and OFF when the register is set to "0".
Furthermore, the LED goes ON during buzzer or melody output when heavy load protection mode is selected by mask option.

(7) LCDC LED

This LED goes ON when the LCD0 and LCD1 registers are set to "1" and OFF when the registers are both set to "0".

(8) LCD4.5V LED

This LED goes ON when the 4.5 V LCD power supply is used.

(9) LCD5.5V LED

This LED goes ON when the 5.5 V LCD power supply is used.

(10) EXLCD LED

This LED goes ON when an external LCD power supply is used.

(11) VSVD volume

This is the volume for varying the power supply voltage apparently to confirm the supply voltage detection function. (Refer to Section 3.2, "Differences from Actual IC".)

(12) LED monitor connector (MONITOR)

This is a connector for monitoring the above LED signals. The following signals are output from the connecter pins.

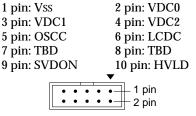|	
1 pin: V_{SS}	2 pin: VDC0
3 pin: VDC1	4 pin: VDC2
5 pin: OSCC	6 pin: LCDC
7 pin: TBD	8 pin: TBD
9 pin: SVDON	10 pin: HVLD

Fig. 4.2 Pin assignment of LED monitor connector

(13) I/O #1, I/O #2 and I/O #3 connectors

These are the connectors for connecting the I/O and LCD. The I/O cables (80-pin/40-pin × 2 flat type and 60-pin/30-pin × 2 flat type) are used to connect the S5U1C88816P to the target system.

5 CONNECTION TO TARGET SYSTEM

This section describes how to connect the S5U1C88816P to the target system.

Note: Turn the power of all equipment off before connecting or disconnecting cables.

(1) The I/O #1, I/O #2 and I/O #3 connectors are used to connect the S5U1C88816P to the target system.
Use the attached I/O connection cable (80-pin/ 40-pin × 2 flat type and 60-pin/30-pin × 2 flat type) for connection. Connect the 80-pin and 60-pin connectors to the S5U1C88816P side and the 40-pin × 2 and 30-pin × 2 connectors to the target system side.
Be careful as power (VDD) is supplied to I/O #1 and #2 connectors.

(2) If a clock of a frequency other than that gener-ated∗ by the internal oscillation circuit is necessary, an external clock can be used by selecting the external clock option. Use the function option generator (winfog) to select the external clock input. When using the ICE, load the function option HEX data (C8816XXX.FSA, XXX is a customer code) to the ICE.

∗ The following shows the internal oscillation clock frequencies:
OSC1 crystal oscillation: 32.768 kHz
OSC3 crystal oscillation: 4.9152 MHz
OSC3 ceramic oscillation: 8 MHz

When CR oscillation is selected for OSC1 or OSC3, the oscillation frequency can be adjusted using the variable resistor (VR2 for OSC1, VR3 for OSC3) on the S5U1C88816P. Since the CR oscillation frequency monitor pins (OSC1CR for OSC1 and OSC3CR for OSC3) are provided on the board for connecting a frequency counter or other equipment, use them when adjusting the oscillation frequency. The initial CR oscillation frequencies of OSC1 and OSC3 are undefined, so they should be checked using the OSC1CR and OSC3CR monitor pins.
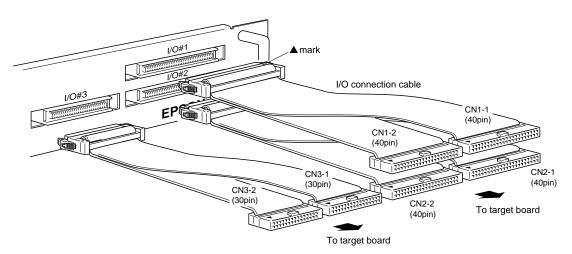

Fig. 5.1 Connection of target system

(3) I/O connector pin assignment for S1C88816
Table 5.1 lists the I/O connector pin assignment when using the S5U1C88816P for the S1C88816.

Table 5.1 Pin assignment of I/O connector (for S1C88816)

I/O#1 connector				I/O#2 connector				I/O#3 connector			
40-pin CN1-1		40-pin CN1-2		40-pin CN2-1		40-pin CN2-2		30-pin CN3-1		30-pin CN3-2	
No.	Pin name	No.	Pin name	No.	Pin name	No.	Pin name	No.	Pin name	No.	Pin name
1	VDD	1	N.C.	1	VDD	1	SEG27	1	SEG51	1	SEG81
2	VDD	2	N.C.	2	VDD	2	SEG28	2	SEG52	2	SEG82
3	VSS	3	N.C.	3	VSS	3	SEG29	3	SEG53	3	SEG83
4	VSS	4	N.C.	4	VSS	4	SEG30	4	SEG54	4	SEG84
5	K00	5	N.C.	5	RESET	5	SEG31	5	SEG55	5	SEG85
6	K01	6	N.C.	6	N.C.	6	SEG32	6	SEG56	6	SEG86
7	K02	7	N.C.	7	OSC1	7	SEG33	7	SEG57	7	SEG87
8	K03	8	N.C.	8	OSC3	8	SEG34	8	SEG58	8	N.C.
9	K04	9	N.C.	9	VC1	9	SEG35	9	SEG59	9	N.C.
10	K05	10	N.C.	10	VC2	10	SEG36	10	SEG60	10	N.C.
11	K06	11	N.C.	11	VC3	11	SEG37	11	SEG61	11	N.C.
12	K07	12	N.C.	12	VC4	12	SEG38	12	SEG62	12	N.C.
13	K10	13	R26	13	VC5	13	SEG39	13	SEG63	13	N.C.
14	N.C.	14	R27	14	SEG0	14	SEG40	14	SEG64	14	N.C.
15	P00	15	N.C.	15	SEG1	15	SEG41	15	SEG65	15	N.C.
16	P01	16	N.C.	16	SEG2	16	SEG42	16	SEG66	16	N.C.
17	P02	17	N.C.	17	SEG3	17	SEG43	17	SEG67	17	MOUT
18	P03	18	N.C.	18	SEG4	18	SEG44	18	SEG68	18	MOUT
19	P04	19	R34	19	SEG5	19	SEG45	19	SEG69	19	N.C.
20	P05	20	N.C.	20	SEG6	20	SEG46	20	SEG70	20	N.C.
21	P06	21	N.C.	21	SEG7	21	SEG47	21	SEG71	21	N.C.
22	P07	22	N.C.	22	SEG8	22	SEG48	22	SEG72	22	N.C.
23	P10	23	R50	23	SEG9	23	SEG49	23	SEG73	23	N.C.
24	P11	24	R51	24	SEG10	24	SEG50	24	SEG74	24	N.C.
25	P12	25	COM0	25	SEG11	25	COM31	25	SEG75	25	N.C.
26	P13	26	COM1	26	SEG12	26	COM30	26	SEG76	26	N.C.
27	P14	27	COM2	27	SEG13	27	COM29	27	SEG77	27	N.C.
28	P15	28	COM3	28	SEG14	28	COM28	28	SEG78	28	N.C.
29	P16	29	COM4	29	SEG15	29	COM27	29	SEG79	29	N.C.
30	P17	30	COM5	30	SEG16	30	COM26	30	SEG80	30	N.C.
31	N.C.	31	COM6	31	SEG17	31	COM25				
32	N.C.	32	COM7	32	SEG18	32	COM24				
33	N.C.	33	COM8	33	SEG19	33	COM23				
34	N.C.	34	COM9	34	SEG20	34	COM22				
35	N.C.	35	COM10	35	SEG21	35	COM21				
36	N.C.	36	COM11	36	SEG22	36	COM20				
37	N.C.	37	COM12	37	SEG23	37	COM19				
38	N.C.	38	COM13	38	SEG24	38	COM18				
39	N.C.	39	COM14	39	SEG25	39	COM17				
40	N.C.	40	COM15	40	SEG26	40	COM16				

(4) I/O connector pin assignment for S1C8F360
Table 5.2 lists the I/O connector pin assignment when using the S5U1C88816P for the S1C8F360.

Table 5.2 Pin assignment of I/O connector (for S1C8F360)

I/O#1 connector				I/O#2 connector				I/O#3 connector			
40-pin CN1-1		40-pin CN1-2		40-pin CN2-1		40-pin CN2-2		30-pin CN3-1		30-pin CN3-2	
No.	Pin name	No.	Pin name	No.	Pin name	No.	Pin name	No.	Pin name	No.	Pin name
1	VDD	1	R12	1	VDD	1	SEG27	1	SEG51	1	N.C.
2	VDD	2	R13	2	VDD	2	SEG28	2	SEG52	2	N.C.
3	VSS	3	R14	3	VSS	3	SEG29	3	SEG53	3	N.C.
4	VSS	4	R15	4	VSS	4	SEG30	4	SEG54	4	N.C.
5	K00	5	R16	5	RESET	5	SEG31	5	SEG55	5	N.C.
6	K01	6	R17	6	MCU/MPU	6	SEG32	6	SEG56	6	N.C.
7	K02	7	R20	7	OSC1	7	SEG33	7	SEG57	7	N.C.
8	K03	8	R21	8	OSC3	8	SEG34	8	SEG58	8	N.C.
9	K04	9	R22	9	VC1	9	SEG35	9	SEG59	9	N.C.
10	K05	10	R23	10	VC2	10	SEG36	10	SEG60	10	N.C.
11	K06	11	R24	11	VC3	11	SEG37	11	SEG61	11	N.C.
12	K07	12	R25	12	VC4	12	SEG38	12	SEG62	12	N.C.
13	K10	13	R26	13	VC5	13	SEG39	13	SEG63	13	N.C.
14	K11	14	R27	14	SEG0	14	SEG40	14	SEG64	14	N.C.
15	P00	15	R30	15	SEG1	15	SEG41	15	SEG65	15	N.C.
16	P01	16	R31	16	SEG2	16	SEG42	16	SEG66	16	N.C.
17	P02	17	R32	17	SEG3	17	SEG43	17	N.C.	17	N.C.
18	P03	18	R33	18	SEG4	18	SEG44	18	N.C.	18	N.C.
19	P04	19	R34	19	SEG5	19	SEG45	19	N.C.	19	N.C.
20	P05	20	R35	20	SEG6	20	SEG46	20	N.C.	20	N.C.
21	P06	21	R36	21	SEG7	21	SEG47	21	N.C.	21	N.C.
22	P07	22	R37	22	SEG8	22	SEG48	22	N.C.	22	N.C.
23	P10	23	R50	23	SEG9	23	SEG49	23	N.C.	23	N.C.
24	P11	24	R51	24	SEG10	24	SEG50	24	N.C.	24	N.C.
25	P12	25	COM0	25	SEG11	25	COM31	25	N.C.	25	N.C.
26	P13	26	COM1	26	SEG12	26	COM30	26	N.C.	26	N.C.
27	P14	27	COM2	27	SEG13	27	COM29	27	N.C.	27	N.C.
28	P15	28	COM3	28	SEG14	28	COM28	28	N.C.	28	N.C.
29	P16	29	COM4	29	SEG15	29	COM27	29	N.C.	29	N.C.
30	P17	30	COM5	30	SEG16	30	COM26	30	N.C.	30	N.C.
31	R00	31	COM6	31	SEG17	31	COM25				
32	R01	32	COM7	32	SEG18	32	COM24				
33	R02	33	COM8	33	SEG19	33	COM23				
34	R03	34	COM9	34	SEG20	34	COM22				
35	R04	35	COM10	35	SEG21	35	COM21				
36	R05	36	COM11	36	SEG22	36	COM20				
37	R06	37	COM12	37	SEG23	37	COM19				
38	R07	38	COM13	38	SEG24	38	COM18				
39	R10	39	COM14	39	SEG25	39	COM17				
40	R11	40	COM15	40	SEG26	40	COM16				

6 OPERATION CHECK

Following installation in the ICE, self-diagnosis of the S5U1C88816P is done by means of the below operating test. The self-diagnostic program (T88816.PSA) and function option HEX data (T88816.FSA) packed together with the Development Tool for S1C88816 or S1C8F360 are necessary for performing the below operating test.
Perform the below operation for the ICE.

Diagnostic procedure

(1) Execute by reading the self-diagnostic program (T88816.PSA) with the "LF" of the ICE command and reading the function option HEX data (T88816.FSA) with the "LO" command.

(2) Check using the VDC0–2, OSCC, MODE, SVDON, HVLD, LCDC, LCD4.5V, LCD5.5V and EXLCD LEDs on the S5U1C88816P. If the below light statuses are verified following system reset, it is normal. The cycle count indicates a 1 second interval and the light status of the below LED changes every second. When it returns to 1 after 20, it then repeats the cycle again.

Cycle count	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1	2
VDC0	–	○	–	–	–	○	–	–	–	○	–	–	–	○	–	–	–	○	–	–	–	○
VDC1	○	–	○	–	○	–	○	–	○	–	○	–	○	–	○	–	○	–	○	–	○	–
VDC2	–	–	–	○	–	–	–	○	–	–	–	○	–	–	–	○	–	–	–	○	–	–
OSCC	–	–	–	○	–	–	–	○	–	–	–	○	–	–	–	○	–	–	–	○	–	–
MODE	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
SVDON	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲	✲
HVLD	–	✲	–	○	–	✲	–	○	–	✲	–	○	–	✲	–	○	–	✲	–	○	–	✲
LCDC	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	–	○	○	○
LCD4.5V	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
LCD5.5V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
EXLCD	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

○: ON (lit)
–: OFF (not lit)
✲: Brinking

7   PRODUCT SPECIFICATIONS

The components specifications of the S5U1C88816P are listed below.

S5U1C88816P

Dimensions (mm): 247.5 (W) × 165 (D) × 44.6 (H)
Weight: Approx. 460 g (board)
Power supply: DC 5 V ± 5%, 1 A or less
                 (power is supplied to mother
                 board connector from the ICE)

I/O connection cable (80-pin/40-pin x 2, 2 sets)

S5U1C88816P connector:
           KEL 8830-80-170L or equivalent
Cable connector (80-pin):
           KEL 8822E-080-171   1/1 set
Cable connector (40-pin):
           3M 7940-6500SC   2/1 set
Cable: 40-pin flat cable   2/1 set
Interface: CMOS interface (5 V)
Length: Approx. 40 cm (Two cables are same)

I/O connection cable (60-pin/30-pin x 2, 1 set)

S5U1C88816P connector:
           KEL 8830E-060-170
Cable connector (60-pin):
           KEL 8822E-060-171   1/1 set
Cable connector (30-pin):
           3M 7930-6500SC or equivalent 2/1 set
Cable: 30-pin flat cable   2/1 set
Interface: CMOS interface (5 V)
Length: Approx. 40 cm

Monitor terminal cable

S5U1C88816P connector:
           3M 7610-5002SC or equivalent
Cable connector (10-pin):
           3M 7910-6500SC   1 pcs
Interface: CMOS interface (5 V)
Length: Approx. 40 cm

Accessories

40-pin connector for connecting to target system:
           3M 3432-6002LCSC   4 pcs
30-pin connector for connecting to target system:
           3M 3440-6002LCSC   2 pcs

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S5U1C88816P Manual
(Peripheral Circuit Board for S1C88816/8F360)