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SOFTWARE EVALUATION TOOL FOR S1C17602

S5U1C17602T1100
Software Manual

SEIKO EPSON CORPORATION

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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 H2 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]

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

1.1 Introduction

This document describes how to use the sample applications provided with the SVT17602 CPU board and provides basic specifications for these applications. Note that the descriptions in this document and the sample application programs are illustrative examples of the SVT17602 functions. These descriptions are not intended to assure the safety of the overall system architecture.

1.2 Related documents

Refer to the *S5U1C17001C Manual* for detailed compiler specifications and discussions of how to use the GNU17 IDE.

Refer to “SVT17602_HW_manual.pdf” for detailed SVT17602 CPU board specifications.

2. Configuration and Run Procedures

2.1 Configuration

The sample applications are configured as shown below.

```
SVT17602_sample
+---drivers                          Driver source group
+---temphumi                         Temperature/humidity calculation program
|   main.c                           Main program
|   testFact.c                       Board inspection program
|   boot.c                           Boot program
|   demoAdc.c                        Illuminance demo program
|   demoClock.c                      Clock demo program
|   demoLcd.c                        LCD demo program
|   demoRfc.c                        Temperature/humidity demo program
|   demoSvd.c                        SVD demo program
|   demo.launch                      Project launch file
|   .cdtproject                      Project file
|   .gnu17project                    Project file
|   .project                         Project file
|   svt17602_sample_gnu17IDE.cmd     GDB command file
|   svt17602_ample_gnu17IDE.lds      Linker script file
|   svt17602_sample_gnu17IDE.mak     Make file
|   svt17602_sample_gnu17IDE.par     Parameter setting file
```

2.2 Run procedures

[1] Project import

(1) Launch the IDE and import the “svt17602_sample” project.

* For detailed information on import methods, refer to “3. Software Development Procedures” in the *S5U1C17001C Manual*.

[2] Build

(1) Use the IDE to build the “svt17602_sample” project.

[3] Connection, power supply

(1) Connect the ICD board, CPU board, and PC.

(2) Reset the ICD board.

[4] Program loading

(1) Modify the path to fls17602.elf within the command file, if necessary.

The default path is C:\EPSON\GNU17\mcu_model\17602\fls\fls17602.elf.

* Refer to the *S5U1C17001C Manual* for detailed information on modifying command files.

(2) Use the IDE to load the “svt17602_sample” project.

3. Basic Function Operation

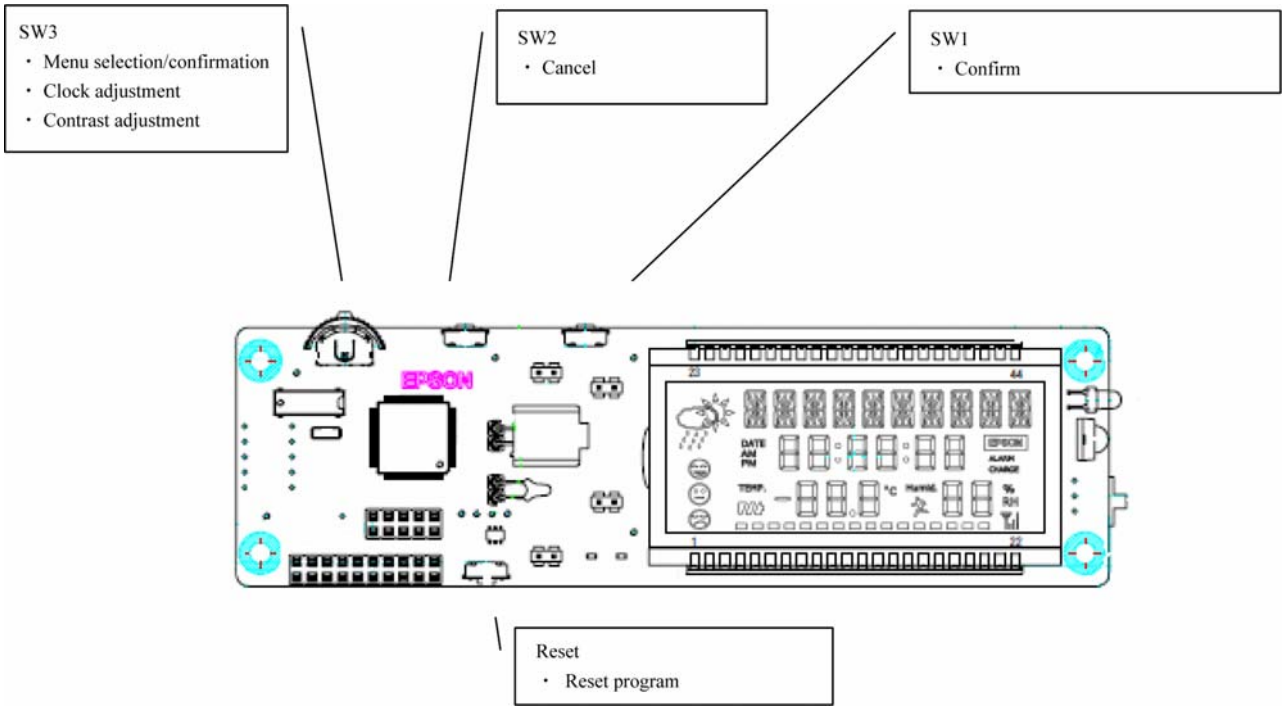
3.1 Function overview

The sample applications include the following basic functions.

Function (major)	Function (minor)	Description
Function selection	-	Selects and confirms the function to run.
Clock CLOCK	Time display TIME	Continuously displays the time set.
	Time setting CLK ADJUST	Sets the time.
Battery level BATTERY	QUANTITY	Displays the battery level in the form of a battery symbol.
Temperature and humidity RFC DEMO	Temperature measurement	Displays the temperature. (XX.X °C)
	Humidity measurement	Displays the humidity. (% RH)
Illuminance ILLUMI	Illuminance measurement	Displays the illuminance. (XXXX LUX)
Test Mode TEST MODE	SW (port) test LCD test SVD test ADC test RFC test REMC test	Inspects the SVT board.

3.2 Switches

The SVT17602 CPU board switches shown below are used with sample applications.



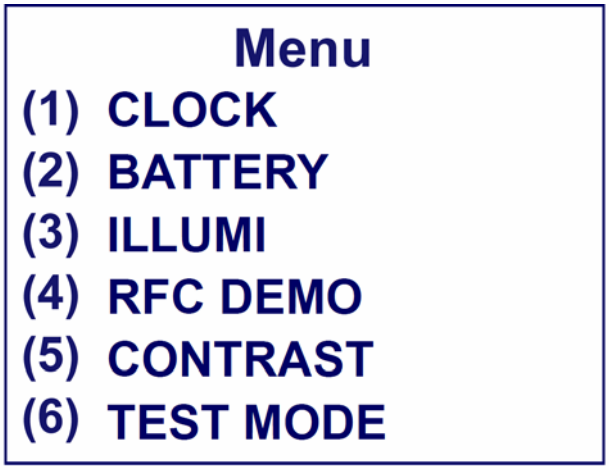
3.3 Program launch

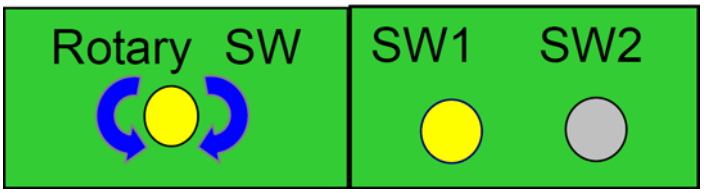
Load the program to the SVT17602 CPU board as described in “2.2 Run procedures” in this document. This command will launch the program, initialize the peripheral devices, and display “HELLO17602” on the LCD panel for 3 seconds. The display then switches to menu display.

Press SW1 or the rotary SW as instructed on the LCD panel to call functions.

3.4 Function selection menu

The following menu is displayed on the LCD panel 14SEG.





Rotate the rotary SW clockwise or counterclockwise to select from the menu.

Press SW1 or the rotary SW to enter the menu selected.

3.5 Clock [CLOCK]

3.5.1 Time display [TIME]

This function displays the time held internally.

Set the time as described in “3.5.2 Time setting.”

The clock will continue to count even while other functions run.

The clock counts up from 00:00:00 immediately after launching the program.

Restarting the SVT17602 CPU board resets the clock to 00:00:00.

Press SW2 to return to the function selection menu display.

3.5.2 Time setting [CLK ADJUST]

Press SW1 and SW2 simultaneously in clock display mode to call the clock setting function.

This function is used to set the clock.

First, set the hours. Minutes and seconds will not appear while you set the hours.

Use the rotary SW to select the correct hour.

Press SW1 or the rotary SW to confirm hours, then proceed to set minutes.

Adjust minutes using the rotary SW in the same way as for hours. Press SW1 or the rotary SW to confirm minutes, then proceed to set seconds.

Adjust seconds using the rotary SW. Press SW1 or the rotary SW to confirm seconds.

Once, hours, minutes, and seconds have been set, the display will automatically revert to Time display (TIME).

3.6 Battery level [BATTERY]

3.6.1 Battery level

This function indicates remaining battery level and voltage.

The voltage is displayed on the 14SEG, while battery level is indicated by the battery icon.

Press SW2 to return to the function selection menu display.

3.7 Temperature and humidity [RFC DEMO]

3.7.1 Temperature

This function displays temperature converted input from a thermistor.

Temperature measurement will continue until the operator presses SW2.

Press SW2 to return to the function selection menu display.

3.7.2 Humidity

This function displays humidity converted input from a humidity sensor.

Humidity measurement continues until the operator presses SW2.

Press SW2 to return to the function selection menu display.

3.8 Illuminance [ILLUMI]

3.8.1 Illuminance measurement

This function displays illuminance converted input from an illuminance sensor.

Illuminance measurement continues until the operator presses SW2.

Press SW2 to return to the function selection menu display.

4. Board Inspection Function Operation

4.1 Function overview

The sample applications include the following board inspection functions.

Inspection sequence	Function	Description
1	Switch inspection	Examines SW1 to SW4 input.
2	LCD panel inspection	Examines LCD panel display.
3	Battery inspection	Displays battery level in volts.
4	Illuminance sensor (ADC) inspection	Performs inspection to determine whether the illuminance sensor is connected correctly.
5	Temperature/humidity sensor (RFC) inspection	Performs inspection to determine whether temperature/humidity sensor is connected correctly.
6	Infrared inspection	Performs inspection to determine whether remote control communication is possible.

4.2 Board inspection [TEST MODE]

Select TEST MODE from the menu, as described in “2.2 Run Procedures” in this document, then press SW1 or the rotary SW.

This launches the program and starts the board inspection.

4.3 Switch inspection

This inspection confirms that the correct input has been obtained when SW1, SW2, and the rotary SW are pressed.

[Inspection details]

Has a SW1 input been detected?

Has a SW2 input been detected?

Has a rotary SW input been detected?

Has a rotary SW rotation to clockwise been detected?

Has a rotary SW rotation to counterclockwise been detected?

[Inspection method]

Press SW1 as indicated on the LCD.

The program proceeds to the SW2 inspection once the SW1 input has been correctly detected.

Inspect SW2 and the rotary SW in the same way.

LCD panel inspection begins once switch inspection is complete.

4.4 LCD panel inspection

This inspection checks that the LCD panel is correctly connected to the SVT17602 CPU board.

[Inspection details]

The LCD panel is fully illuminated to check that the panel is not defective.

[Inspection method]

Visually inspect the LCD panel. If you detect no problems, press SW2 to proceed to battery inspection.

4.5 Battery inspection

This inspection confirms that the correct voltage is supplied to the SVT17602 CPU board.

[Inspection details]

The inspection confirms battery level (for the button cell) and SVD functioning.

[Inspection method]

Check the SVD displayed on the panel. Voltage is checked as shown in the following table.

Battery level	Display	Battery level	Display
More than 3.2 V	32 OR MORE	2.5 V to 2.6 V	26 OR LESS
3.1 V to 3.2 V	32 OR LESS	2.4 V to 2.5 V	25 OR LESS
3.0 V to 3.1 V	31 OR LESS	2.3 V to 2.4 V	24 OR LESS
2.9 V to 3.0 V	30 OR LESS	2.2 V to 2.3 V	23 OR LESS
2.8 V to 2.9 V	29 OR LESS	2.1 V to 2.2 V	22 OR LESS
2.7 V to 2.8 V	28 OR LESS	2.0 V to 2.1 V	21 OR LESS
2.6 V to 2.7 V	27 OR LESS	Less than 2.0 V	---

∗ Note that the SVT17602 CPU board cannot detect voltages below 2.0 V.

Following confirmation, press SW2 to start the illuminance sensor inspection.

4.6 Illuminance sensor (ADC) inspection

This inspection checks that the illuminance sensor is connected correctly.

[Inspection details]

This inspection confirms that the input from the illuminance sensor is correctly A/D converted and that the illuminance is correctly displayed.

[Inspection method]

Confirm that the illuminance value displayed on the panel varies when the light level is altered.

Following confirmation, press SW2 to start temperature/humidity sensor inspections.

4.7 Temperature/humidity sensor (RFC) inspection

This inspection checks that the temperature and humidity sensors are connected correctly.

[Inspection details]

This inspection confirms that the input from the temperature and humidity sensors are correctly R/F converted and that temperature and humidity are correctly displayed.

[Inspection method]

Confirm that the temperature and humidity values displayed on the panel change when heat is applied to the temperature sensor.

Following confirmation, press SW2 to start infrared inspection.

4.8 Infrared inspection

This inspection checks that infrared signals are correctly received and transmitted. (Two SVT17602 CPU boards are required.)

[Inspection details]

This inspection confirms infrared transmission and reception.

[Inspection method]

The inspected board is referred to here as “A” and the opposite board as “B.”

(1) Download the “svt17602_remc_test” remote control resistance inspection firmware to B.

(2) Turn on power to B and reset.

→ “RCV WAIT” is displayed. The board awaits transmission.

(3) When “REMC TEST” is displayed for A, press SW1 to begin sending data from A to B.

Panel display:

A: “TRANS X,” where X is the number transmitted

B: “RCVDAT X,” where X is the number received

(4) Once transmission from A to B has been completed correctly, the panel will appear as shown below.

A: “RCV WAIT”

B: “REMC TRANS”

(5) Press SW1 on B to start the reception test for A.

A: “RCVDAT X,” where X is the number received

B: “TRANS X,” where X is the number transmitted

(6) Once reception at A has been completed correctly, the panel will appear as shown below.

A: “REMC OK”

B: “TRANS END”

If “REMC OK” is displayed for A after remote control transmission and reception is complete, the inspection is complete.

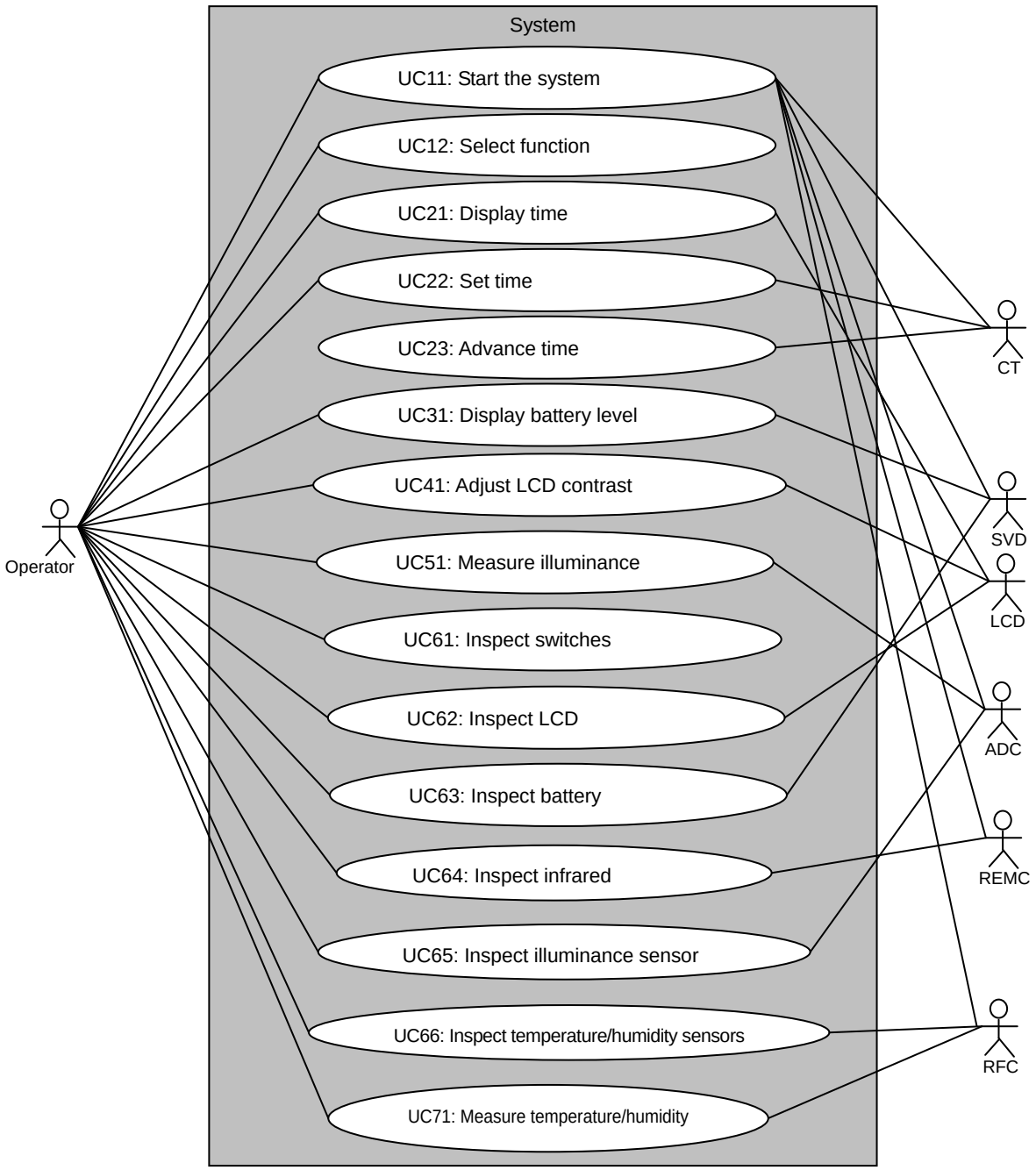
This completes all inspections. Press SW2 to return to the menu.

5. Sample Application Specifications

5.1 Use case configuration

The sample applications are configured as shown in the use case diagram(*) below.

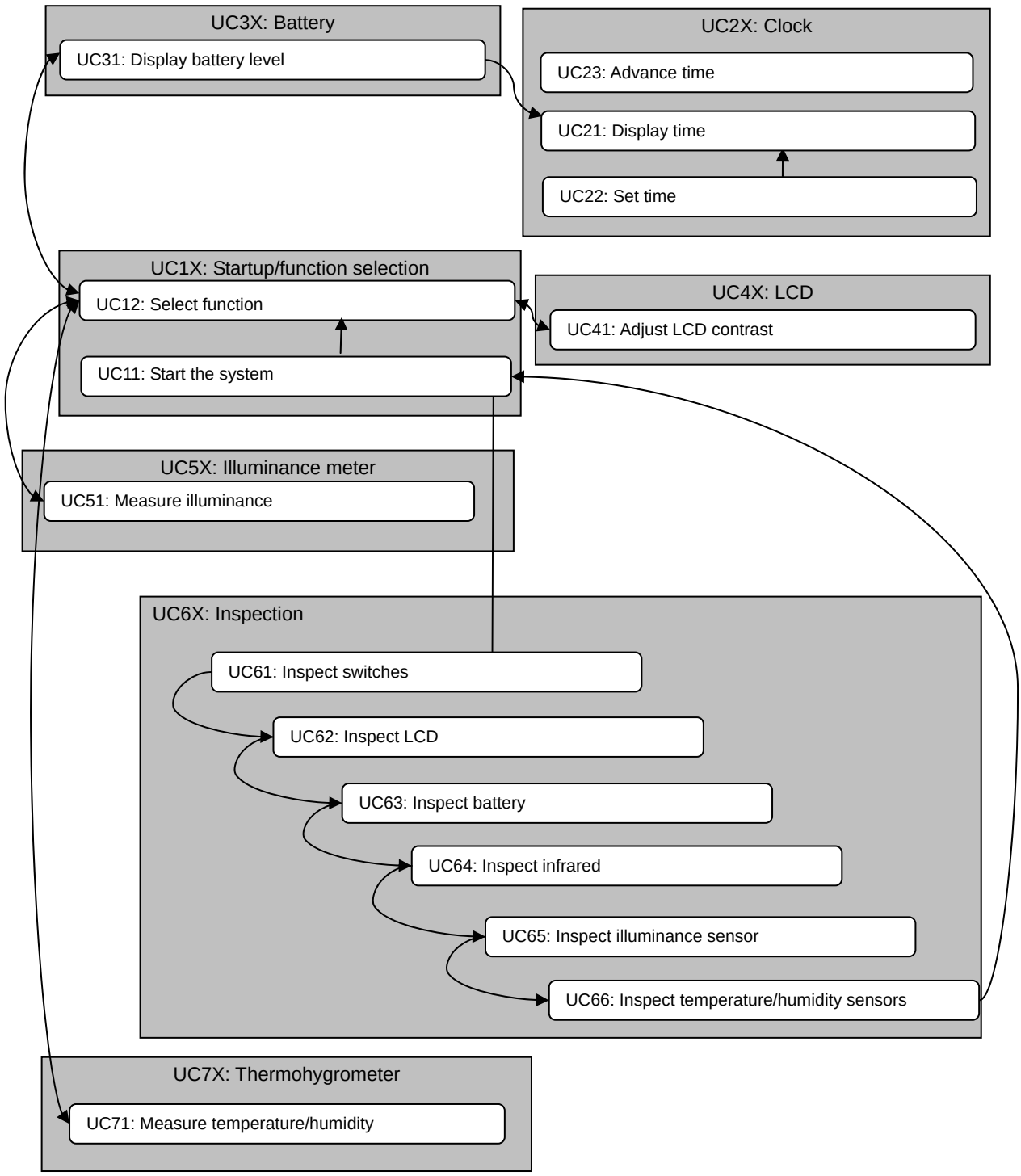
* Use case diagram: A diagram used for defining system requirements in UML (Unified Modeling Language). It describes the system configuration, surrounding environment, and usage methods from a viewpoint outside the system.



* Ports for switch input and LCD panels can also be regarded as actors, but they are grouped with the operators here.

5.2 Status transition between use cases

The diagram below illustrates the status transition for use cases with sample applications.



* UC23 does not feature transitions from other UCs, since it corresponds to interrupt processing.

5.3 Use case scenarios

5.3.1 How to read use case scenarios

Detailed use case scenarios are provided in this document in the table format shown below. This table will be used starting in the next section to describe various use case scenarios.

<table>
<tr><td colspan="3">--- Basic information ---</td></tr>
<tr><td>ID</td><td colspan="2">Unique ID identifying use case</td></tr>
<tr><td>Title</td><td colspan="2">Use case title</td></tr>
<tr><td>Actors</td><td colspan="2">List of actors involved in this use case</td></tr>
<tr><td>Overview</td><td colspan="2">Overview of use case</td></tr>
<tr><td>Pre-conditions</td><td colspan="2">Processes and conditions assumed to be complete before starting the use case</td></tr>
<tr><td>Post-conditions</td><td colspan="2">Processes and conditions assumed to be complete after performing the use case</td></tr>
<tr><td colspan="3">--- Basic flow ---</td></tr>
<tr><td>1</td><td colspan="2" rowspan="6">Describes basic processing details for this use case in chronological order.
Actions performed by actors, actions performed by the system as a result, actions performed by actors as a result...
Describes alternate flows when the process flow includes a branch. The left-hand number is italicized to indicate the presence of an alternate flow. (In this example, alternate flows exist for basic flows 3 and 4.)</td></tr>
<tr><td>2</td></tr>
<tr><td>3</td></tr>
<tr><td>4</td></tr>
<tr><td>5</td></tr>
<tr><td>6</td></tr>
<tr><td colspan="3">--- Alternate flow ---</td></tr>
<tr><td rowspan="3">3a</td><td colspan="2">Conditions for transition from basic flow 3. The processing follows the flow described below if conditions satisfy those described here.</td></tr>
<tr><td>1</td><td rowspan="2">Describes alternate flow details in chronological order. The description is the same as for the basic flow.</td></tr>
<tr><td>2</td></tr>
<tr><td rowspan="3">3b</td><td colspan="2">Alternate flows are numbered “3a,” “3b,” etc. if there are multiple transitions from the basic flow.</td></tr>
<tr><td>1</td><td></td></tr>
<tr><td>2</td><td></td></tr>
<tr><td rowspan="2">4a</td><td colspan="2">Conditions for transition from basic flow 4.</td></tr>
<tr><td>1</td><td></td></tr>
<tr><td colspan="3">--- Remarks ---</td></tr>
<tr><td colspan="3">Other precautions and notes are described here.</td></tr>
</table>

5.3.2 UC11: Start the system

--- Basic information ---	
ID	UC11
Title	Start the system
Actors	Operator, CT, SVD, REMC, SWT, LCD, ADC, RFC
Overview	Start the system and initialize peripheral devices.
Pre-conditions	None
Post-conditions	Any of the following: • Calls “UC12: Select function” • Calls “UC61: Inspect switches”

--- Basic flow ---		
1	The operator resets the C17602 CPU board.	
2	The program starts, initializing the peripheral devices (CT, PORT, LCD, SVD, REMC, ADC, RFC). Certain peripheral devices will begin operating.*1 *2	
3	The system confirms that SW2 is not depressed.	
4	The system indicates on the LCD panel that the program has started and that peripheral devices have been initialized.	
5	The operator presses SW1 as instructed on the LCD panel.	
6	The system calls “UC12: Select function.” (To UC12)	
--- Alternate flow ---		
3a	If the system detects that SW4 is depressed	
	1	The system calls “UC61: Inspect switches.” (To UC61)

--- Remarks ---

*1 MISC, PSC, CLG, and LCD settings are initialized, although they are not involved as actors.

*2 The peripheral device initialization and settings are as follows.
MISC
  Flash controller read access cycles: 1 cycle
PSC
  Prescaler start
CLG
  Clock division: No division
Clock generator start
CT
  CT interrupt level: 3
  1 Hz interrupt: Permitted, 2 Hz interrupt: Prohibited, 8 Hz interrupt: Permitted, 32 Hz interrupt: Prohibited
  CT start
LCD
  LCD clock setting
Drive duty setting
LCD normal display start (Epson log displayed)
PORT
  Port input/output setting
  P02 (SW1), P15 (SW2), P36, P37, P03 (SW3)
  Port interrupt setting
SVD
  SVD stop
ADC
  A/D conversion stop
RFC
  R/F conversion stop

5.3.3 UC12: Select function

--- Basic information ---	
ID	UC12
Title	Select function
Actors	Operator (rotary SW)
Overview	Selects and confirms the function to run.
Pre-conditions	Any of the following: • Called when system has been started via “UC11: Start the system.” • Called to return to function selection via “UC21: Display time.” • Called to return to function selection via “UC31: Display battery level.” • Called to return to function selection via “UC41: Adjust LCD contrast.” • Called to return to function selection via “UC51: Measure illuminance.” • Called to return to function selection via “UC71: Measure temperature/humidity.”
Post-conditions	Any of the following: • Calls “UC21: Display time.” • Calls “UC31: Display battery level.” • Calls “UC41: Adjust LCD contrast.” • Calls “UC51: Measure illuminance.” • Calls “UC71: Measure temperature/humidity.”

--- Basic flow ---	
1	The system displays Function 1 (alphabet) on the LCD panel 14SEG. Display menu 1: CLOCK 2: BATTERY 3: ILLUMI 4: RFC DEMO 5: CONTRAST 6: TEST MODE
2	The operator rotates the rotary SW to select a function.
3	The system changes the function displayed on the LCD panel. Clockwise: Up *1 Counterclockwise: Down *2
4	The operator presses SW1 to confirm the function displayed on the LCD panel.
5	The system confirms the function and calls the UC for the function selected.

--- Alternate flow ---	
	None

--- Remarks ---	
*1	When this is rotated clockwise, the menus are displayed in the sequence 6 → 1 → 2…
*2	When this is rotated counterclockwise, menus are displayed in the sequence 1 → 6 → 5…

5.3.4 UC21: Display time

--- Basic information ---	
ID	UC21
Title	Display time
Actors	Operator, LCD
Overview	Continuously displays the time held internally on the LCD panel. Ends time display and returns to function selection.
Pre-conditions	• This function was selected and confirmed via “UC12: Select function.”
Post-conditions	Calls “UC12: Select function.” Calls “UC22: Set time.”

--- Basic flow ---		
1	The system switches the system clock from OSC1 to OSC3 to reduce power consumption and halts OSC3.	
2	The system displays the time held internally on the LCD panel.	
3	The operator presses SW2 to return to function selection.	
4	The system restarts OSC3 and returns the system clock from OSC1 to OSC3.	
5	The system calls “UC12: Select function.” (To UC12)	
--- Alternate flow ---		
3a	If the time held internally advanced before the operator pressed SW2 *1	
	1	To basic flow 2
3b	If SW1 and SW2 are pressed simultaneously	
	1	“UC22: Set time” is called.
--- Remarks ---		
*1 The time held internally is updated each second by UC23: Advance time.		

5.3.5 UC22: Set time

--- Basic information ---	
ID	UC22
Title	Set time
Actors	Operator, CT
Overview	Sets the time held internally. Confirms the time and proceeds to function selection.
Pre-conditions	This function was called via “UC21: Display time.”
Post-conditions	Calls “UC21: Display time.”
--- Basic flow ---	
1	The system stops CT.
2	The system displays the time held internally on the LCD panel. Displays the hours held internally (Digits marked “XX” are not displayed). 12:XX:XX
3	The operator rotates the rotary SW to adjust hours. Clockwise: +1 Counterclockwise: -1
4	The system increments or decrements the hours displayed on the LCD panel.
5	The operator presses SW1 to confirm the hours.
6	The system confirms the hours and switches to minutes setting displayed on the LCD panel. Displays the minutes held internally. (Digits marked “XX” are not displayed) 12:34:XX
7	The operator rotates the rotary SW to adjust minutes. Clockwise: +1 Counterclockwise: -1
8	The system increments or decrements the minutes displayed on the LCD panel.
9	The operator presses SW1 to confirm minutes.
10	The system confirms minutes and switches to the seconds setting displayed on the LCD panel. Displays seconds held internally. 12:34:56
11	The operator rotates the rotary SW to adjust seconds. Clockwise: +1 Counterclockwise: -1
12	The system increments or decrements the seconds displayed on the LCD panel.
13	The operator presses SW1 to confirm seconds.
14	The system restarts the CT.
15	The system calls “UC21: Display time.” (To UC21)
--- Alternate flow ---	
5a	If SW1 is not pressed, to basic flow 3
9a	If SW1 is not pressed, to basic flow 7
13a	If SW1 is not pressed, to basic flow 11
--- Remarks ---	
None	

5.3.6 UC23: Advance time

--- Basic information ---	
ID	UC23
Title	Advance time
Actors	CT
Overview	Advances the time held internally.
Pre-conditions	A CT 1 Hz interrupt has occurred.
Post-conditions	Awaits CT 1 Hz interrupt.
--- Basic flow ---	
1	The CT issues a 1 Hz interrupt.
2	The system advances the time held internally. Seconds: Advanced in the sequence 00 → 01 → 02… → 59. After 59, reverts to 00 and increments the minutes count by 1. Minutes: Advanced in the sequence 00 → 01 → 02… → 59. After 59, reverts to 00 and increments the hours count by 1. Hours: Advanced in the sequence 00 → 01 → 02… → 23. After 23, reverts to 00.
3	The system clears the 1 Hz interrupt and awaits the next 1 Hz interrupt.
--- Remarks ---	
An 8 Hz interrupt is also used for rotary SW.	

5.3.7 UC31: Display battery level

--- Basic information ---	
ID	UC31
Title	Display battery level
Actors	Operator, SVD
Overview	Measures battery level and displays the measurement on the LCD panel. Ends the battery level display and returns to function selection.
Pre-conditions	This function was selected and confirmed via “UC12: Select function.”
Post-conditions	Calls “UC12: Select function.”
--- Basic flow ---	
1	The system switches the system from OSC3 to OSC1 to reduce power consumption and halts OSC3.
2	The system sets the comparison voltage and starts SVD.
3	The system displays the battery level based on voltage.
5	The system halts the SVD.
4	The operator presses SW2 to return to function selection.
6	The system restarts OSC3 and returns the system clock from OSC1 to OSC3.
7	The system calls “UC12: Select function.” (To UC12)
--- Alternate flow ---	
None	
--- Remarks ---	
Battery level is displayed as full (3), medium (2), low (1), empty (0).	

5.3.8 UC41: Adjust contrast

--- Basic information ---		
ID	UC41	
Title	Adjust contrast	
Actors	Operator, LCD	
Overview	Adjusts the LCD panel contrast.	
Pre-conditions	This function was selected and confirmed via “UC12: Select function.”	
Post-conditions	Calls “UC12: Select function.”	
--- Basic flow ---		
1	The system fully illuminates the LCD panel.	
2	The operator rotates the rotary SW to adjust contrast. Adjustable in 16 steps from 0 to 15. Clockwise: +1 Counterclockwise: -1	
3	The operator presses SW2 to return to function selection.	
4	The system calls “UC12: Select function.” (To UC12)	
--- Alternate flow ---		
3a	If SW2 is not pressed	
	1	To basic flow 2
--- Remarks ---		
None		

5.3.9 UC51: Measure illuminance

--- Basic information ---	
ID	UC51
Title	Measure illuminance
Actors	Operator, ADC, LCD
Overview	Measures illuminance and displays the results on the LCD (14seg).
Pre-conditions	This function was selected and confirmed via “UC12: Select function.”
Post-conditions	Calls “UC12: Select function.”
--- Basic flow ---	
1	The system starts A/D conversion.
2	The system converts the A/D values obtained from the thermistor to illuminance.
3	The system displays the illuminance on the LCD panel.
4	The operator presses SW2 to return to function selection.
5	The system halts A/D conversion.
6	The system calls “UC12: Select function.” (To UC12)
--- Alternate flow ---	
4a	If SW2 is not pressed, to basic flow 1
--- Remarks ---	
Results are updated using A/D conversion complete interrupt.	

5.3.10 UC71: Measure temperature/humidity

--- Basic information ---		
ID	UC71	
Title	Measure temperature/humidity	
Actors	Operator, RFC, LCD	
Overview	Measures temperature and humidity and displays the results on the LCD.	
Pre-conditions	This function was selected and confirmed via “UC12: Select function.”	
Post-conditions	Calls “UC12: Select function.”	
--- Basic flow ---		
1	The system starts R/F conversion.	
2	The system obtains the counter value using the senA conversion complete interrupt, then calculates the temperature.	
3	The system obtains the counter value using the senB conversion complete interrupt, then calculates humidity.	
4	The system displays the calculated results on the LCD panel.	
5	The operator presses SW2 to return to function selection.	
6	The system halts R/F conversion.	
7	The system calls “UC12: Select function.” (To UC12)	
--- Alternate flow ---		
5a	If SW2 is not pressed	
	1	To basic flow 2 for re-measurement
--- Remarks ---		
None		

6. Known Bugs

Date identified	Version	Details	Revision version

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