Epson Electronics America Inc-Semiconductor Div - S1C17W16F102100 Datasheet

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What is "Embedded - Microcontrollers"?

"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "Embedded - Microcontrollers"

Details	
Product Status	Active
Core Processor	S1C17
Core Size	16-Bit
Speed	4.2MHz
Connectivity	I²C, IrDA, SSI, UART/USART
Peripherals	LCD, POR, PWM, Voltage Detect, WDT
Number of I/O	39
Program Memory Size	64KB (64K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	8K x 8
Voltage - Supply (Vcc/Vdd)	1.2V ~ 3.6V
Data Converters	A/D 4x12b SAR
Oscillator Type	Internal
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	128-TQFP
Supplier Device Package	128-TQFP15 (14x14)
Purchase URL	https://www.e-xfl.com/product-detail/epson/s1c17w16f102100

S1C17W14/W16 (rev1.0)

EPSON
EXCEED YOUR VISION

16-bit Single Chip Microcontroller

- Low power operation from 1.2V with a single alkaline or silver oxide button battery.
- Low power consumption standby driving at HALT 0.3 µA . *super economy mode
- Built-in LCD Driver: 50 SEG x 8 COM (max.) S1C17W14
  Built-in LCD Driver: 56 SEG x 8 COM (max.) S1C17W16

■ DESCRIPTIONS

The S1C17W14/W16 is a 16-bit MCU that features low-voltage operation from 1.2 V even though Flash memory is included. The embedded high-efficiency DC-DC converter generates the constant-voltage to drive the IC with lower power consumption than 4-bit MCUs. This IC includes a real-time clock, a stopwatch, an LCD driver, and a PWM timer capable of being used to generate drive waveforms for a motor driver as well as a high-performance 16-bit CPU. It is suitable for battery-driven applications that require an LCD display and timers.

■ FEATURES

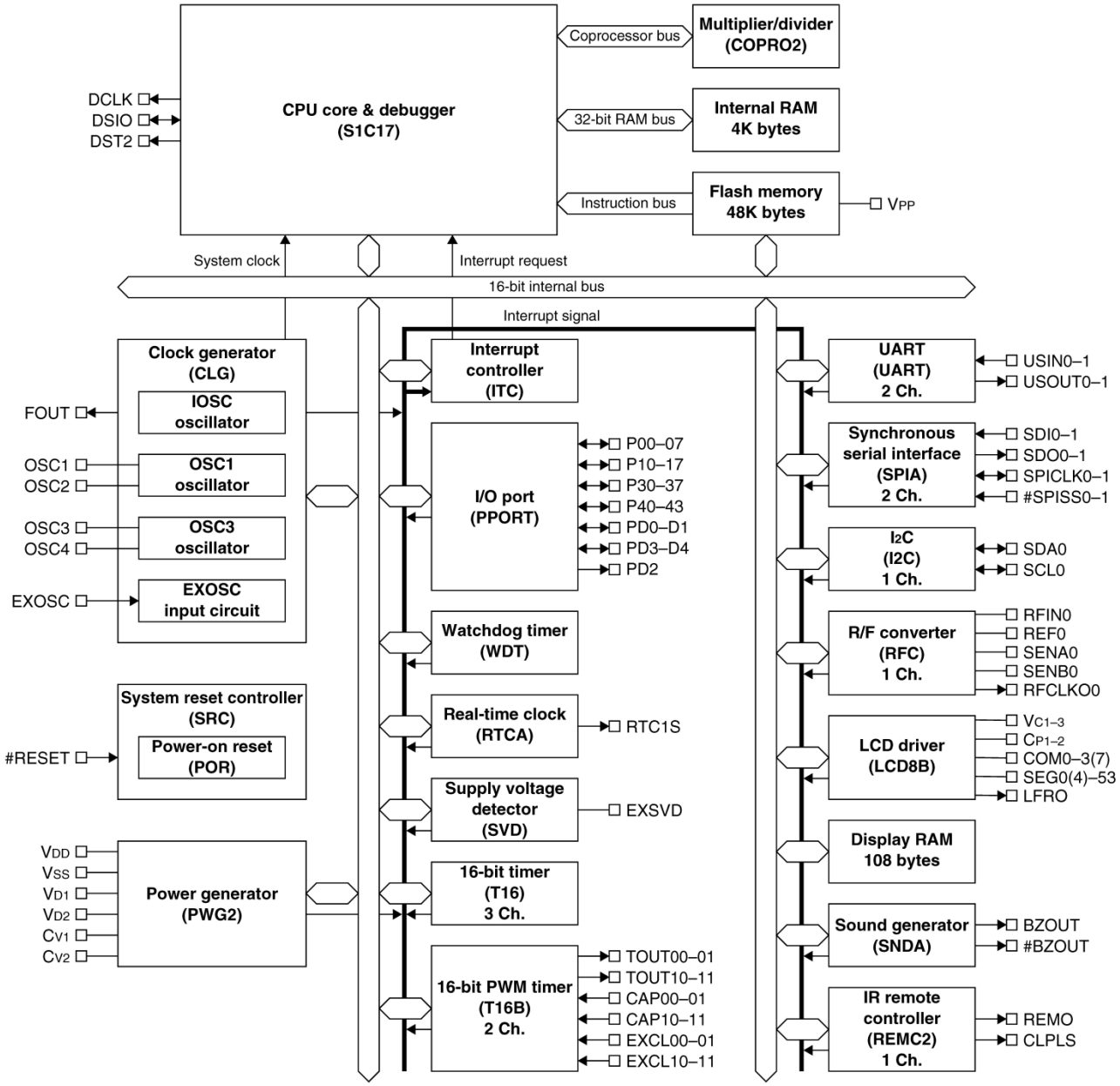
Model	S1C17W14	S1C17W16
CPU		
CPU core	Seiko Epson original 16-bit RISC CPU core S1C17	
Other	On-chip debugger	
Embedded Flash memory		
Capacity	48K bytes (for both instructions and data)	64K bytes (for both instructions and data)
Erase/program count	50 times (min.) * Programming by the debugging tool ICDmini	
Other	Security function to protect from reading/programming by ICDmini	
	On-board programming function using ICDmini	
Embedded RAM		
Capacity	4K bytes	8K bytes
Embedded display RAM		
Capacity	108 bytes	120 bytes
Clock generator (CLG)		
System clock source	4 sources (IOSC/OSC1/OSC3/EXOSC)	
System clock frequency (operating frequency)	1.1 MHz (max.) V_{DD} = 1.2 to 1.6 V	
	4.2 MHz (max.) V_{DD} = 1.6 to 3.6 V	
IOSC oscillator circuit (boot clock source)	700 kHz (typ.) embedded oscillator	
	23 µs (max.) starting time (time from cancelation of SLEEP state to vector table read by the CPU)	
OSC1 oscillator circuit	32.768 kHz (typ.) crystal oscillator	
	Oscillation stop detection circuit included	
OSC3 oscillator circuit	4.2 MHz (max.) crystal/ceramic oscillator	
	256, 384, 500 kHz, 1, 2, and 4 MHz-switchable embedded oscillator	
	2.1 MHz (max.) CR oscillator (an external R is required)	
EXOSC clock input	4.2 MHz (max.) square or sine wave input	
Other	Configurable system clock division ratio	
	Configurable system clock used at wake up from SLEEP state	
	Operating clock frequency for the CPU and all peripheral circuits is selectable.	
I/O port (PPORT)		
Number of general-purpose I/O ports	Input/output port: 32 bits (max.)	Input/output port: 39 bits (max.)
	Output port: 1 bit (max.)	
	Pins are shared with the peripheral I/O.	
Number of input interrupt ports	28 bits	35 bits
Number of ports that support universal port multiplexer (UPMUX)	24 bits	30 bits
	A peripheral circuit I/O function selected via software can be assigned to each port.	
Timers		
Watchdog timer (WDT)	Generates watchdog timer reset.	
Real-time clock (RTCA)	128–1 Hz counter, second/minute/hour/day/day of the week/month/year counters	
	Theoretical regulation function for 1-second correction	
	Alarm and stopwatch functions	

16-bit timer (T16)	3 channels	5 channels
	Generates the SPIA master clocks	Generates the SPIA master clocks and trigger signal of ADC12A
16-bit PWM timer (T16B)	2 channels	
	Event counter/capture function	
	PWM waveform generation function	
	Number of PWM output or capture input ports: 2 ports/channel	
Supply voltage detector (SVD)		
Detection level	30 levels (1.2 to 3.6 V)	
Detection accuracy	±3 %	
Other	Intermittent operation mode	
	Generates an interrupt and reset according to the detection level evaluation.	
Serial interfaces		
UART (UART)	2 channels	
	Baud-rate generator included, IrDA1.0 supported	
Synchronous Serial Interface (SPIA)	2 channels	3 channels
	2 to 16-bit variable data length	
	The 16-bit timer (T16) can be used for the baud-rate generator in master mode.	
I2C (I2C)	1 channel	
	Baud-rate generator included	
Sound generator (SNDA)		
Buzzer output function	512 Hz to 16 kHz output frequencies	
	One-shot output function	
Melody generation function	Pitch: 128 Hz to 16 kHz ≒ C3 to C6	
	Duration: 7 notes/rests (Half note/rest to thirty-second note/rest)	
	Tempo: 16 tempos (30 to 480)	
	Tie/Slur may be specified.	
IR remote controller (REMC2)		
Number of transmitter channels	1 channel	
Other	EL lamp drive waveform can be generated for an application example.	
LCD driver (LCD8B)		
LCD output	50 SEG × 5–8 COM (max.), 54 SEG × 1–4 COM (max.)	56 SEG × 5–8 COM (max.), 60 SEG × 1–4 COM (max.)
LCD contrast	16 levels	
Other	1/3 bias power supply included, external voltage can be applied.	
R/F converter (RFC)		
Conversion method	CR oscillation type with 24-bit counters	
Number of conversion channels	1 channel (Up to two sensors can be connected.)	2 channels (Up to two sensors can be connected to each channel.)
Supported sensors	DC-bias resistive sensors, AC-bias resistive sensors	DC-bias resistive sensors, AC-bias resistive sensors (Ch.0 only)
12-bit A/D converter (ADC12A)		
Conversion method	-	Successive approximation type
Resolution	-	12 bits
Number of conversion channels	-	1 channel
Number of analog signal inputs	-	4 ports/channel
Multiplier/divider (COPRO2)		
Arithmetic functions	16-bit × 16-bit multiplier	
	16-bit × 16-bit + 32-bit multiply and accumulation unit	
	32-bit ÷ 32-bit divider	
Reset		
#RESET pin	Reset when the reset pin is set to low.	
Power-on reset	Reset at power on.	
Key entry reset	Reset when the P00 to P01/P02/P03 keys are pressed simultaneously (can be enabled/disabled using a register).	
Watchdog timer reset	Reset when the watchdog timer overflows (can be enabled/disabled using a register).	
Supply voltage detector reset	Reset when the supply voltage detector detects the set voltage level (can be enabled/disabled using a register).	
Interrupt		
Non-maskable interrupt	4 systems (Reset, address misaligned interrupt, debug, NMI)	
Programmable interrupt	External interrupt: 1 system (8 levels)	
	Internal interrupt: 18 systems (8 levels)	Internal interrupt: 23 systems (8 levels)

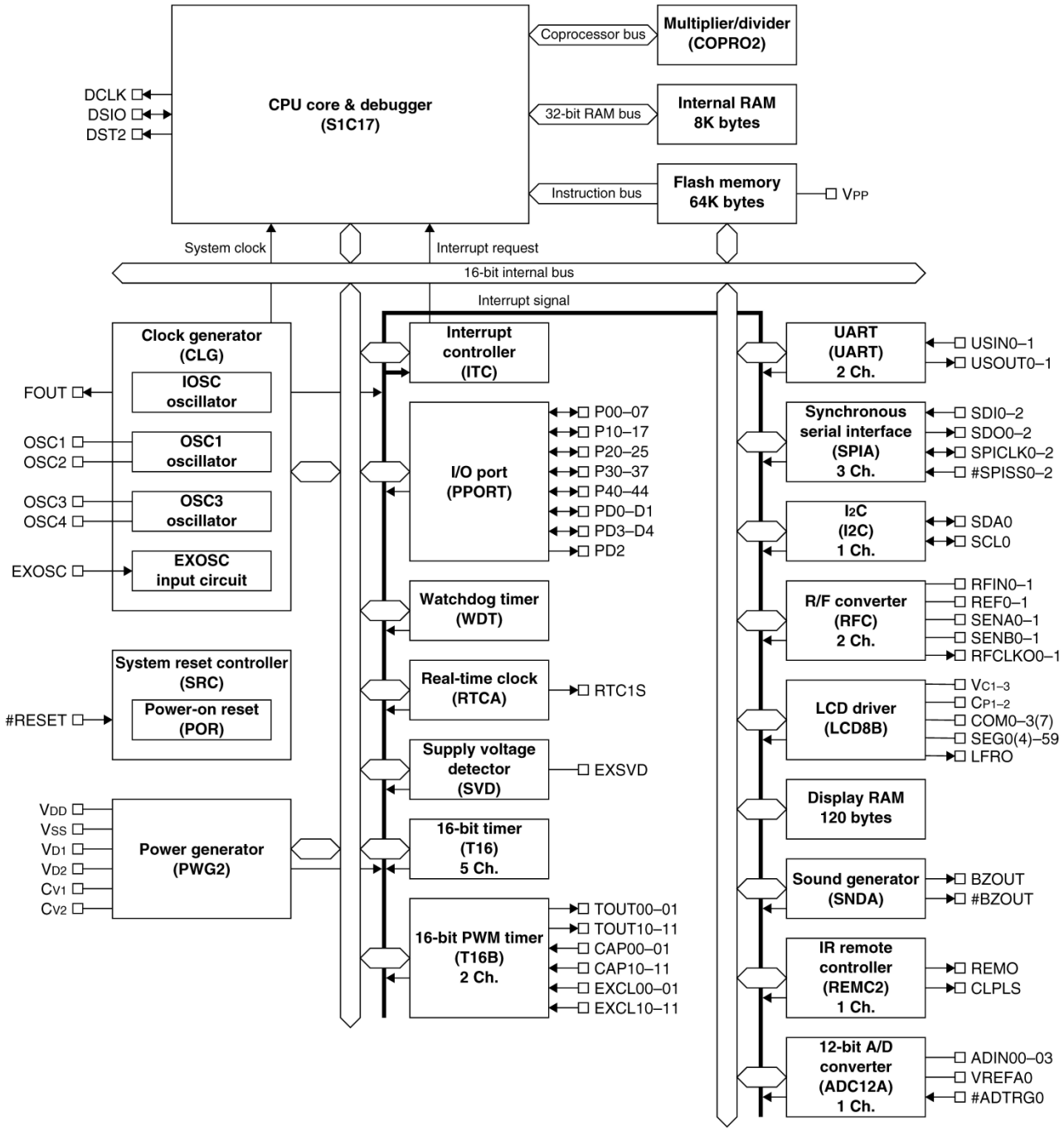
Power supply voltage		
V_{DD} operating voltage	1.2 to 3.6 V	
V_{DD} operating voltage for Flash programming	1.8 to 3.6 V (V_{PP} = 7.5 V external power supply is required.)	
V_{DD} operating voltage for super economy mode	2.5 to 3.6 V	
Operating temperature		
Operating temperature range	-40 to 85 °C	
Current consumption		
SLEEP mode	0.15 µA IOSC = OFF, OSC1 = OFF, OSC3 = OFF	
HALT mode	0.5 µA OSC1 = 32 kHz, RTC = ON	
	0.3 µA OSC1 = 32 kHz, RTC = ON, super economy mode	
RUN mode	6 µA OSC1 = 32 kHz, RTC = ON, CPU = OSC1	
	3 µA OSC1 = 32 kHz, RTC = ON, CPU = OSC1, super economy mode	
	200 µA OSC3 = 1 MHz (internal oscillator), OSC1 = 32 kHz, RTC = ON, CPU = OSC3	
Shipping form		
1	QFP15-100pin (Lead pitch: 0.5 mm)	TQFP15-128pin (Lead pitch: 0.4 mm)
2	Die form (Pad pitch: 80 µm (min.))	

■ BLOCK DIAGRAM

S1C17W14

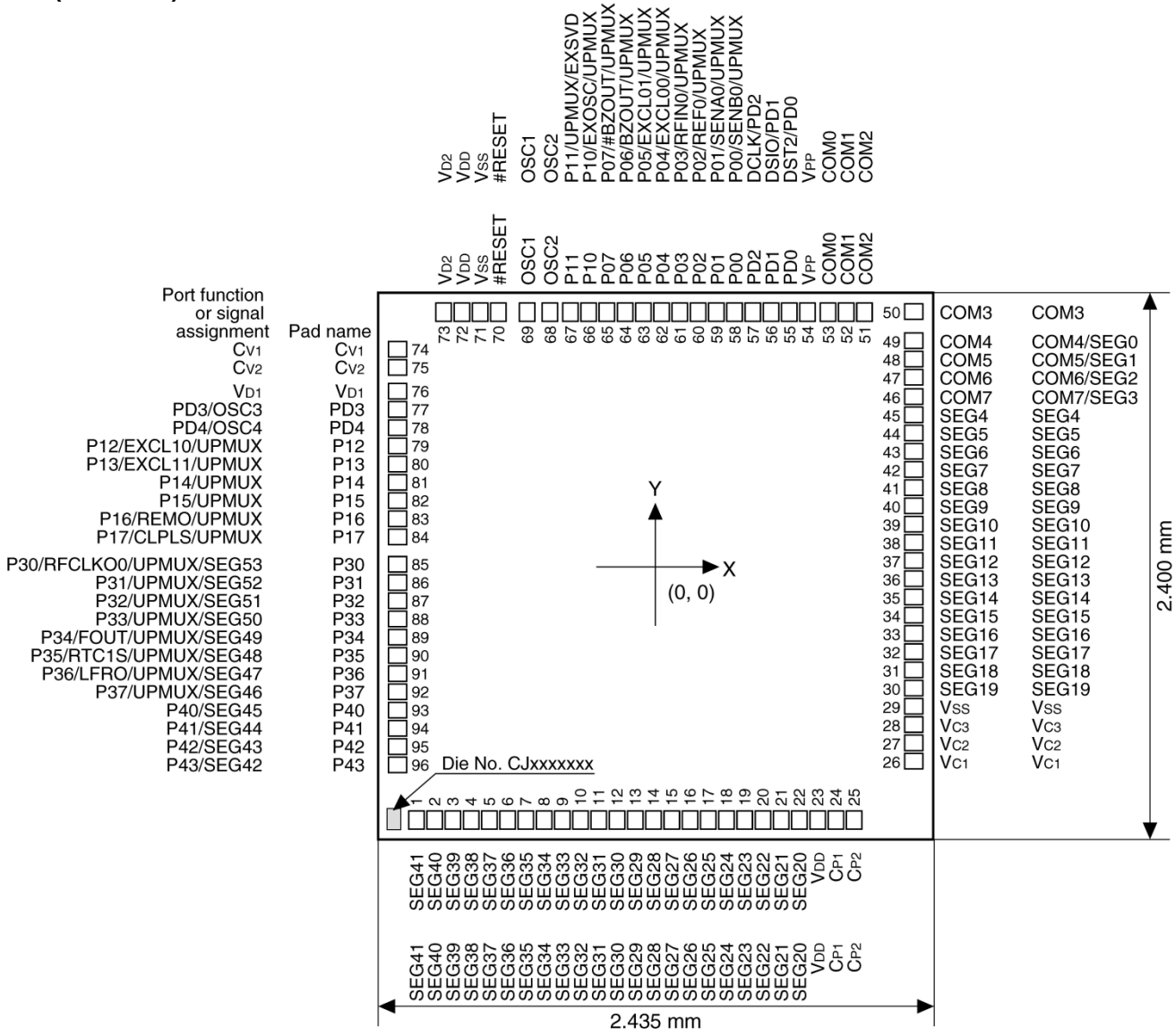


S1C17W16


CPU core & debugger
(S1C17)
DCLK
DSIO
DST2
Coprocessor bus
Multiplier/divider
(COPRO2)
32-bit RAM bus
Internal RAM
8K bytes
Instruction bus
Flash memory
64K bytes
VPP
System clock
Interrupt request
16-bit internal bus
Interrupt signal
Clock generator
(CLG)
IOSC
oscillator
OSC1
oscillator
OSC3
oscillator
EXOSC
input circuit
FOUT
OSC1
OSC2
OSC3
OSC4
EXOSC
System reset controller
(SRC)
Power-on reset
(POR)
#RESET
Power generator
(PWG2)
VDD
VSS
VD1
VD2
CV1
CV2
Interrupt
controller
(ITC)
I/O port
(PPORT)
P00–07
P10–17
P20–25
P30–37
P40–44
PD0–D1
PD3–D4
PD2
Watchdog timer
(WDT)
Real-time clock
(RTCA)
RTC1S
Supply voltage
detector
(SVD)
EXSVD
16-bit timer
(T16)
5 Ch.
16-bit PWM timer
(T16B)
2 Ch.
TOUT00–01
TOUT10–11
CAP00–01
CAP10–11
EXCL00–01
EXCL10–11
UART
(UART)
2 Ch.
USIN0–1
USOUT0–1
Synchronous
serial interface
(SPIA)
3 Ch.
SDI0–2
SDO0–2
SPICLK0–2
#SPISS0–2
I2C
(I2C)
1 Ch.
SDA0
SCL0
R/F converter
(RFC)
2 Ch.
RFIN0–1
REF0–1
SENA0–1
SENB0–1
RFCLKO0–1
LCD driver
(LCD8B)
VC1–3
CP1–2
COM0–3(7)
SEG0(4)–59
LFRO
Display RAM
120 bytes
Sound generator
(SNDA)
BZOUT
#BZOUT
IR remote
controller
(REMC2)
1 Ch.
REMO
CLPLS
12-bit A/D
converter
(ADC12A)
1 Ch.
ADIN00–03
VREFA0
#ADTRG0

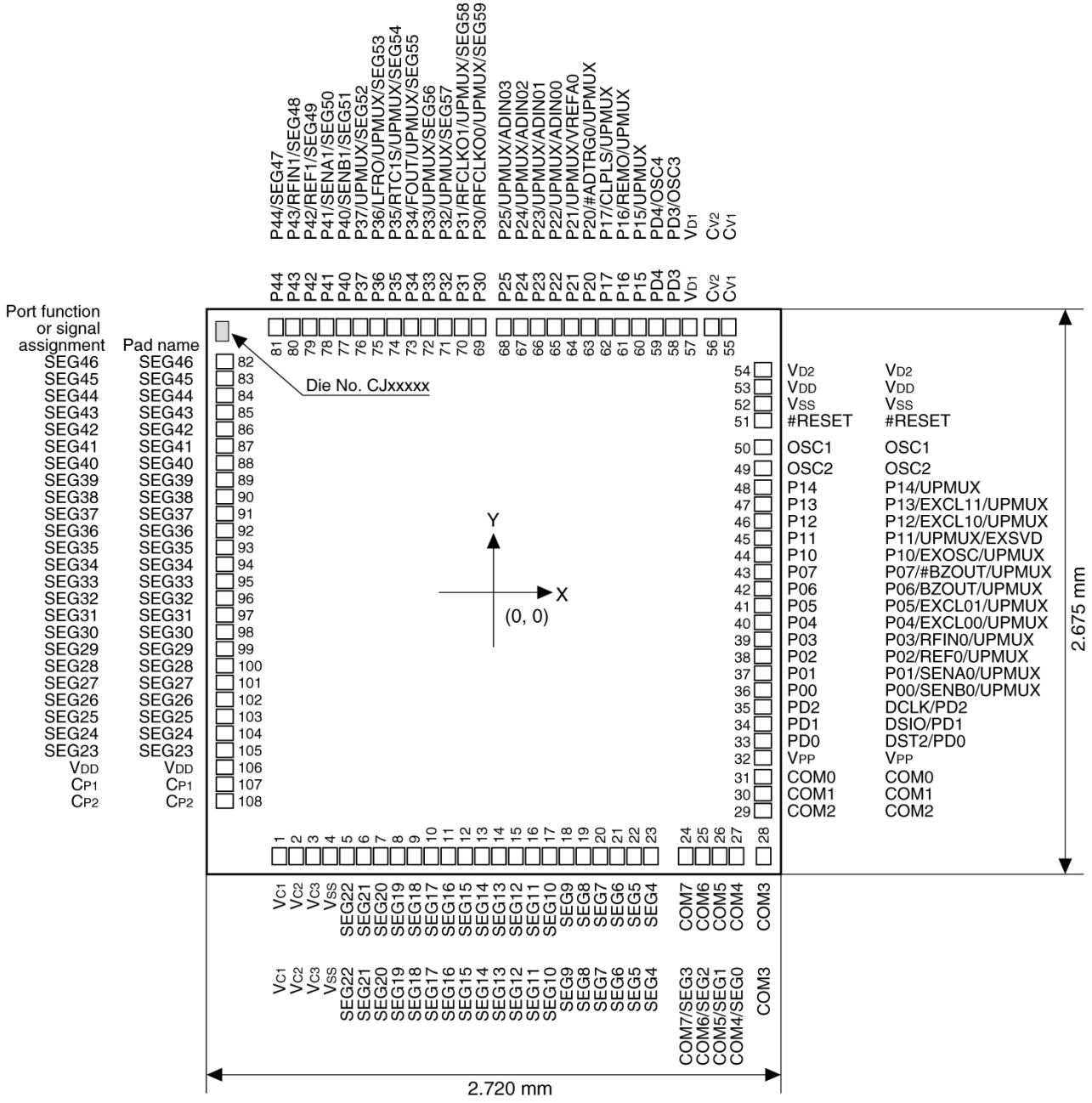
■ Pin Configuration Diagram

CHIP (S1C17W14)



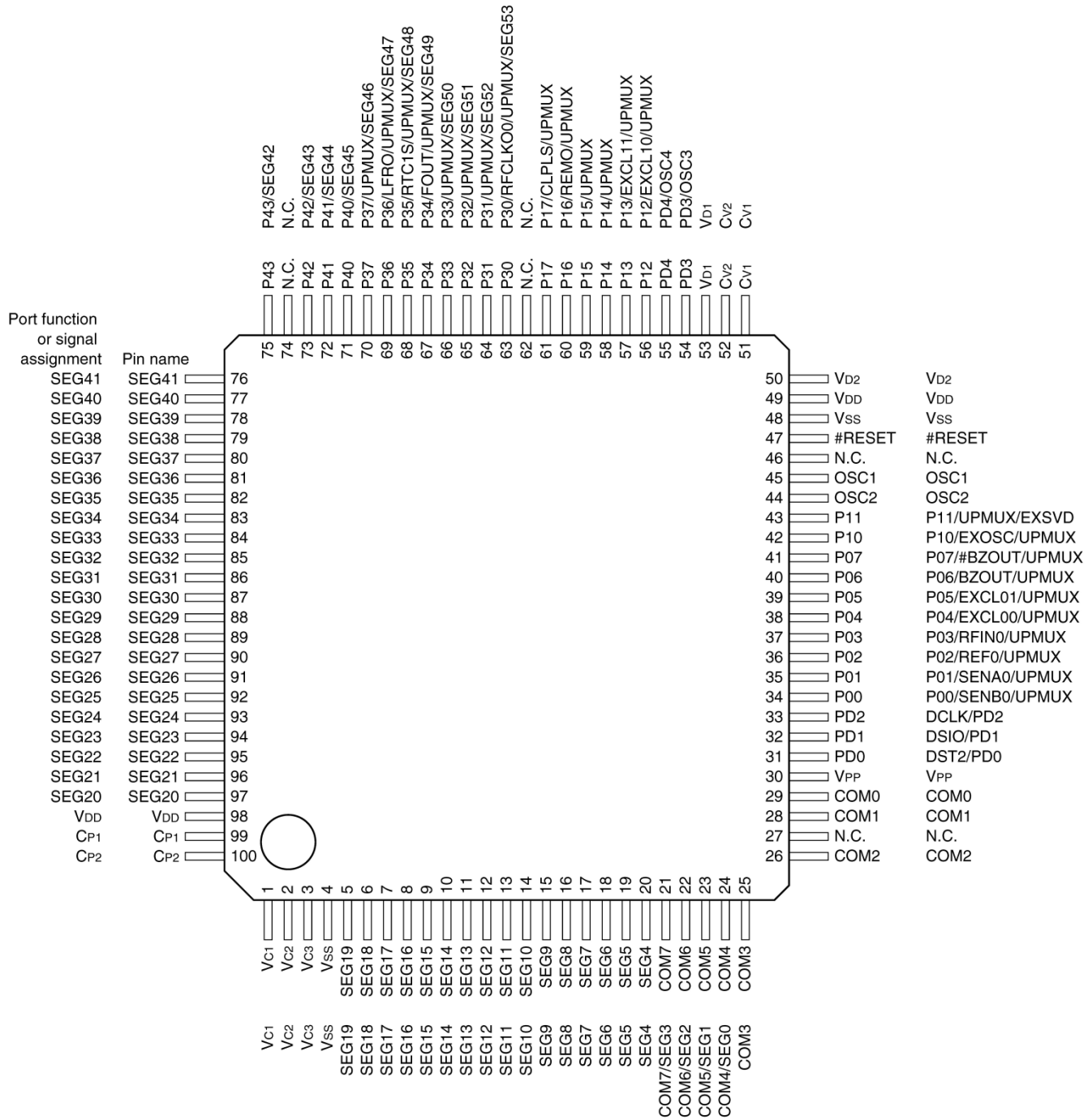
Pad opening	No. 1–25, 51–73: X = 68 µm, Y = 80 µm
	No. 26–50, 74–96: X = 80 µm, Y = 68 µm
Chip thickness	400 µm

CHIP (S1C17W16)

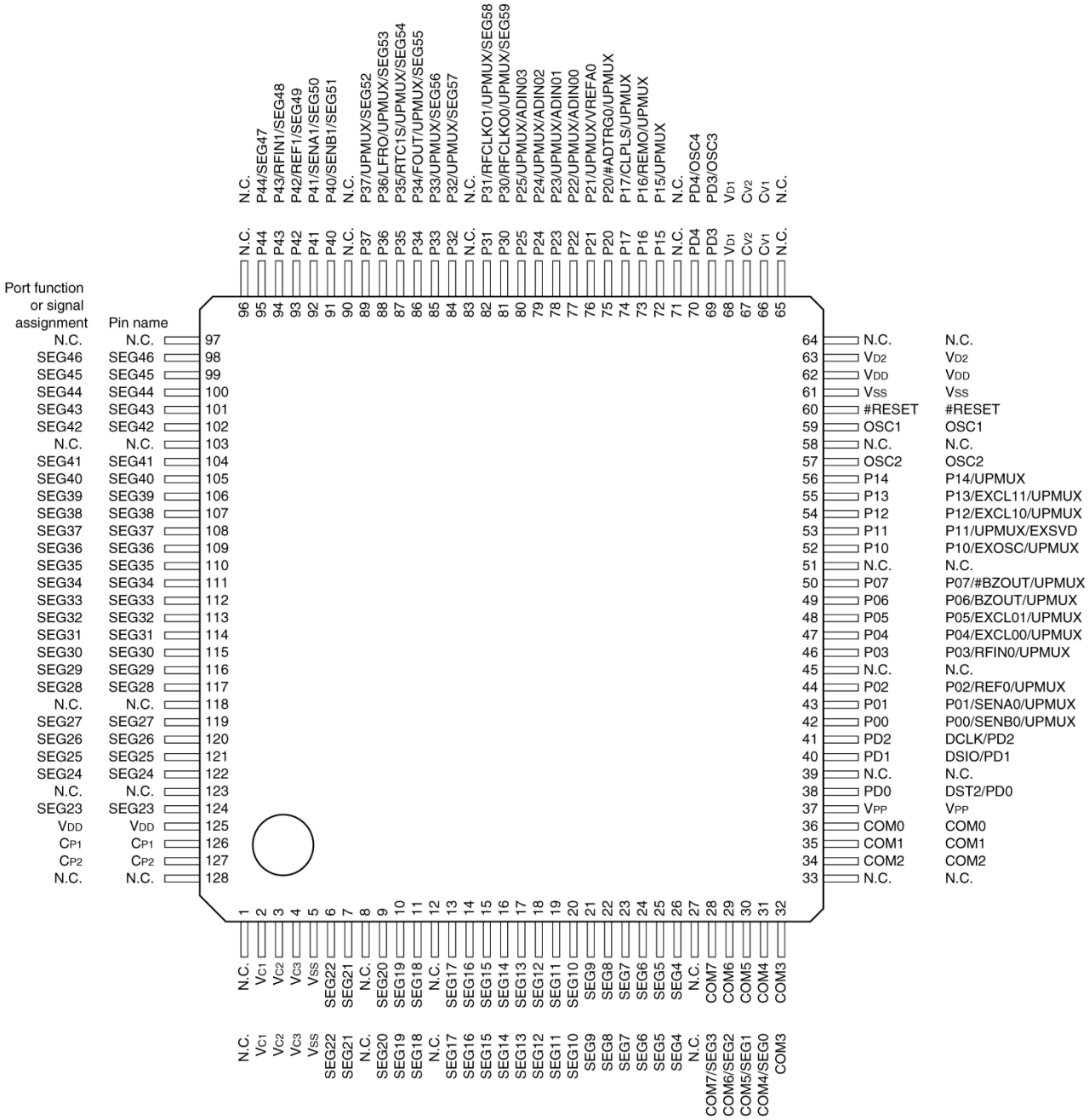


Pad opening	No. 1–28, 55–81: X = 68 µm, Y = 80 µm
	No. 29–54, 82–108: X = 80 µm, Y = 68 µm
Chip thickness	400 µm

S1C17W14 (QFP15-100pin)



S1C17W16 (TQFP15-128pin)



■ Pin Descriptions

Symbol meanings

Assigned signal: The signal listed at the top of each pin is assigned in the initial state. The pin function must be switched via software to assign another signal (see the “I/O Ports” chapter).

I/O:
- I = Input
- O = Output
- I/O = Input/output
- P = Power supply
- A = Analog signal
- Hi-Z = High impedance state

Initial state:
- I (Pull-up) = Input with pulled up
- I (Pull-down) = Input with pulled down
- Hi-Z = High impedance state
- O (H) = High level output
- O (L) = Low level output

Tolerant fail-safe structure:
- ✓ = Over voltage tolerant fail-safe type I/O cell included (see the “I/O Ports” chapter)

Pin/pad name	Assigned signal	I/O	Initial state	Tolerant fail-safe structure	Function	S1C17W14	S1C17W16
V_{DD}	V_{DD}	P	–	–	Power supply (+)	✓	✓
V_{SS}	V_{SS}	P	–	–	GND	✓	✓
V_{PP}	V_{PP}	P	–	–	Power supply for Flash programming	✓	✓
V_{D1}	V_{D1}	A	–	–	DC-DC converter output	✓	✓
V_{D2}	V_{D2}	A	–	–	DC-DC converter stabilization capacitor connect pin	✓	✓
$C_{V1–2}$	$C_{V1–2}$	A	–	–	DC-DC converter charge pump capacitor connect pins	✓	✓
$V_{C1–3}$	$V_{C1–3}$	P	–	–	LCD panel driver power supply	✓	✓
$C_{P1–2}$	$C_{P1–2}$	A	–	–	LCD power supply booster capacitor connect pins	✓	✓
OSC1	OSC1	A	–	–	OSC1 oscillator circuit input	✓	✓
OSC2	OSC2	A	–	–	OSC1 oscillator circuit output	✓	✓
#RESET	#RESET	I	I (Pull-up)	–	Reset input	✓	✓
P00	P00	I/O	Hi-Z	–	I/O port	✓	✓
	SENB0	A			R/F converter Ch.0 sensor B oscillator pin	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P01	P01	I/O	Hi-Z	–	I/O port	✓	✓
	SENA0	A			R/F converter Ch.0 sensor A oscillator pin	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P02	P02	I/O	Hi-Z	–	I/O port	✓	✓
	REF0	A			R/F converter Ch.0 reference oscillator pin	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P03	P03	I/O	Hi-Z	–	I/O port	✓	✓
	RFIN0	A			R/F converter Ch.0 oscillation input	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P04	P04	I/O	Hi-Z	–	I/O port	✓	✓
	EXCL00	I			16-bit PWM timer Ch.0 event counter input 0	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P05	P05	I/O	Hi-Z	–	I/O port	✓	✓
	EXCL01	I			16-bit PWM timer Ch.0 event counter input 1	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P06	P06	I/O	Hi-Z	–	I/O port	✓	✓
	BZOUT	O			Sound generator output	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P07	P07	I/O	Hi-Z	–	I/O port	✓	✓
	#BZOUT	O			Sound generator inverted output	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P10	P10	I/O	Hi-Z	–	I/O port	✓	✓
	EXOSC	I			Clock generator external clock input	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓

P11	P11	I/O	Hi-Z	–	I/O port	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
	EXSVD	A			External power supply voltage detection input	✓	✓
P12	P12	I/O	Hi-Z	–	I/O port	✓	✓
	EXCL10	I			16-bit PWM timer Ch.1 event counter input 0	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P13	P13	I/O	Hi-Z	–	I/O port	✓	✓
	EXCL11	I			16-bit PWM timer Ch.1 event counter input 1	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P14	P14	I/O	Hi-Z	–	I/O port	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P15	P15	I/O	Hi-Z	–	I/O port	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P16	P16	I/O	Hi-Z	–	I/O port	✓	✓
	REMO	O			IR remote controller transmit data output	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P17	P17	I/O	Hi-Z	–	I/O port	✓	✓
	CLPLS	O			IR remote controller clear pulse output	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
P20	P20	I/O	Hi-Z	–	I/O port	-	✓
	#ADTRG0	I			12-bit A/D converter Ch.0 trigger input	-	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	-	✓
P21	P21	I/O	Hi-Z	–	I/O port	-	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	-	✓
	VREFA0	A			12-bit A/D converter Ch.0 reference voltage input	-	✓
P22	P22	I/O	Hi-Z	–	I/O port	-	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	-	✓
	ADIN00	A			12-bit A/D converter Ch.0 analog signal input 0	-	✓
P23	P23	I/O	Hi-Z	–	I/O port	-	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	-	✓
	ADIN01	A			12-bit A/D converter Ch.0 analog signal input 1	-	✓
P24	P24	I/O	Hi-Z	–	I/O port	-	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	-	✓
	ADIN02	A			12-bit A/D converter Ch.0 analog signal input 2	-	✓
P25	P25	I/O	Hi-Z	–	I/O port	-	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	-	✓
	ADIN03	A			12-bit A/D converter Ch.0 analog signal input 3	-	✓
P30	P30	I/O	Hi-Z	✓	I/O port	✓	✓
	RFCLKO0	O			R/F converter Ch.0 clock monitor output	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
	SEG53	A			LCD segment output	✓	-
	SEG59	A			LCD segment output	-	✓
P31	P31	I/O	Hi-Z	✓	I/O port	✓	✓
	RFCLKO1	O			R/F converter Ch.1 clock monitor output	-	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
	SEG52	A			LCD segment output	✓	-
	SEG58	A			LCD segment output	-	✓
P32	P32	I/O	Hi-Z	✓	I/O port	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
	SEG51	A			LCD segment output	✓	-
	SEG57	A			LCD segment output	-	✓
P33	P33	I/O	Hi-Z	✓	I/O port	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
	SEG50	A			LCD segment output	✓	-
	SEG56	A			LCD segment output	-	✓
P34	P34	I/O	Hi-Z	✓	I/O port	✓	✓
	FOUT	O			Clock external output	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
	SEG49	A			LCD segment output	✓	-
	SEG55	A			LCD segment output	-	✓

P35	P35	I/O	Hi-Z	✓	I/O port	✓	✓
	RTC1S	O			Real-time clock 1-second cycle pulse output	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
	SEG48	A			LCD segment output	✓	-
	SEG54	A			LCD segment output	-	✓
P36	P36	I/O	Hi-Z	✓	I/O port	✓	✓
	LFRO	O			LCD frame signal monitor output	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
	SEG47	A			LCD segment output	✓	-
	SEG53	A			LCD segment output	-	✓
P37	P37	I/O	Hi-Z	✓	I/O port	✓	✓
	UPMUX	I/O			User-selected I/O (universal port multiplexer)	✓	✓
	SEG46	A			LCD segment output	✓	-
	SEG52	A			LCD segment output	-	✓
P40	P40	I/O	Hi-Z	✓	I/O port	✓	✓
	SENB1	A			R/F converter Ch.1 sensor B oscillator pin	-	✓
	SEG45	A			LCD segment output	✓	-
	SEG51	A			LCD segment output	-	✓
P41	P41	I/O	Hi-Z	✓	I/O port	✓	✓
	SENA1	A			R/F converter Ch.1 sensor A oscillator pin	-	✓
	SEG44	A			LCD segment output	✓	-
	SEG50	A			LCD segment output	-	✓
P42	P42	I/O	Hi-Z	✓	I/O port	✓	✓
	REF1	A			R/F converter Ch.1 oscillation input	-	✓
	SEG43	A			LCD segment output	✓	-
	SEG49	A			LCD segment output	-	✓
P43	P43	I/O	Hi-Z	✓	I/O port	✓	✓
	RFIN1	A			R/F converter Ch.1 oscillation input	-	✓
	SEG42	A			LCD segment output	✓	-
	SEG48	A			LCD segment output	-	✓
P44	P44	I/O	Hi-Z	✓	I/O port	-	✓
	SEG47	A			LCD segment output	-	✓
PD0	DST2	O	O (L)	–	On-chip debugger status output	✓	✓
	PD0	I/O			I/O port	✓	✓
PD1	DSIO	I/O	I (Pull-up)	–	On-chip debugger data input/output	✓	✓
	PD1	I/O			I/O port	✓	✓
PD2	DCLK	O	O (H)	–	On-chip debugger clock output	✓	✓
	PD2	O			Output port	✓	✓
PD3	PD3	I/O	Hi-Z	–	I/O port	✓	✓
	OSC3	A			OSC3 oscillator circuit input	✓	✓
PD4	PD4	I/O	Hi-Z	–	I/O port	✓	✓
	OSC4	A			OSC3 oscillator circuit output	✓	✓
COM0–3	COM0–3	A	Hi-Z	–	LCD common output	✓	✓
COM4	COM4	A	Hi-Z	–	LCD common output	✓	✓
	SEG0	A			LCD segment output	✓	✓
COM5	COM5	A	Hi-Z	–	LCD common output	✓	✓
	SEG1	A			LCD segment output	✓	✓
COM6	COM6	A	Hi-Z	–	LCD common output	✓	✓
	SEG2	A			LCD segment output	✓	✓
COM7	COM7	A	Hi-Z	–	LCD common output	✓	✓
	SEG3	A			LCD segment output	✓	✓
SEG4–41	SEG4–41	A	Hi-Z	–	LCD segment output	✓	✓
SEG42–46	SEG42–46	A	Hi-Z	–	LCD segment output	-	✓

Notes: · In the peripheral circuit descriptions, the assigned signal name is used as the pin name.

Universal port multiplexer (UPMUX)

The universal port multiplexer (UPMUX) allows software to select the peripheral circuit input/output function to be assigned to each pin from those listed below.

Peripheral circuit	Signal to be assigned	I/O	Channel number *n*	Function
Synchronous serial interface (SPIA)	SDI*n*	I	S1C17W14: *n* = 0,1 S1C17W16: *n* = 0, 1, 2	SPIA Ch.*n* data input
	SDO*n*	O		SPIA Ch.*n* data output
	SPICLK*n*	I/O		SPIA Ch.*n* clock input/output
	#SPISS*n*	I		SPIA Ch.*n* slave-select input
I2C (I2C)	SCL*n*	I/O	S1C17W14: *n* = 0 S1C17W16: *n* = 0	I2C Ch.*n* clock input/output
	SDA*n*	I/O		I2C Ch.*n* data input/output
UART (UART)	USIN*n*	I	S1C17W14: *n* = 0, 1 S1C17W16: *n* = 0, 1	UART Ch.*n* data input
	USOUT*n*	O		UART Ch.*n* data output
16-bit PWM timer (T16B)	TOUT*n*0/CAP*n*0	I/O	S1C17W14: *n* = 0, 1 S1C17W16: *n* = 0, 1	T16B Ch.*n* PWM output/capture input 0
	TOUT*n*1/CAP*n*1	I/O		T16B Ch.*n* PWM output/capture input 1

Note: Do not assign a function to two or more pins simultaneously.

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