S1C17 Family Technical Manual Errata

ITEM A part of shipping form is discontinued				
Object manual	Document code	Object item	Page	
S1C17121 Technical Manual	411723702	Configuration as shipped	1-2	
1.1 Features				
(Error) Configuration as shipped	 TQFP14-100 12 mm x 12 mm body, 0.4 mm pitch VFBGA7H-144 7 mm x 7 mm, body, 0.5 mm pitch Bare chip 100 µm pitch 			
(Correct)				
Configuration as shipped	 TQFP14- VFBGA7 Bare chip #1: VFBGA 	100 12 mm x 12 mm body, 0.4 H-144 7 mm x 7 mm, body, 0.5 100 μm pitch A7H-144 is discontinued.	mm pitch 5 mm pitch #1	

S1C17 Family Technical Manual Errata

ITEM Heavy Load Protection Function				
Object manual	Document code	Object item	Page	
S1C17121 Technical Manual	411723702	4.4 Heavy Load Protection Function	4-4	
(Error)				
The internal constant-voltage circ	cuit is switched	to Heavy Load mode by writing 1	to HVLD	
(D5/VD1_CTLregister), stabilizing VI	D1 output. Make th	is setting before driving heavy loads suc	ch as lamps	
and buzzers using the port output.				
* HVLD: VD1 Heavy Load Protection	n Mode Bit in the VI	D1 Control (VD1_CTL) Register (D5/0x5	120)	
The LCD constant-voltage circuit is	s switched to Hea	vy Load Protection mode by writing 1	to LHVLD	
(D4/LCD_VREG register), stabilizing	g the VC1 to VC5	output. Make this setting if you observe	e brightness	
fluctuations on the LCD display.				
* LHVLD: LCD Heavy Load Protect	ction Mode Bit in	the LCD Voltage Regulator Control (L	CD_VREG)	
Register				
(D4/0x50a3)				
Note: Current consumption will b	e higher in Heavy	Load Protection mode than normal	operations.	
Avoid setting Heavy Load Protection via software unless necessary.				
(Correct)				
The internal constant-voltage circuit is switched to Heavy Load mode by writing 1 to HVLD				
(D5/VD1_CTLregister), stabilizing VI	D1 output. Make th	is setting before driving heavy loads suc	ch as lamps	
and buzzers using the port output.				
* HVLD: VD1 Heavy Load Protection Mode Bit in the VD1 Control (VD1_CTL) Register (D5/0x5120)				
The LCD constant-voltage circuit is	s switched to Hea	vy Load Protection mode by writing 1	to LHVLD	
(D4/LCD_VREG register), stabilizing	g the VC1 to VC5	output. Make this setting if you observe	e brightness	
fluctuations on the LCD display.				
* LHVLD: LCD Heavy Load Protection Mode Bit in the LCD Voltage Regulator Control (LCD_VREG)				
Register				
(D4/0x50a3)				
Note: Current consumption will be higher in Heavy Load Protection mode than normal operations.				
Avoid setting Heavy Load Protection via software unless necessary. HVLD register can't use in				
<u>S1C17121.</u>				











Aug/10/2010 errata_c17121_9

Pin No.	Name	Pin No.	Name
1	NC	65	Voo
	0501	66	0004
2		00	0304
3	N.C.	67	OSC3
4	SEG2	68	Vss
5	SEG3	69	VD1
6	SEG4	70	0.502
7	<u> </u>	70	0502
/	3203	71	<u> </u>
8	SEGO	12	#IESI
9	SEG7	73	#RESET
10	SEG8	74	N.C.
11	SEG9	75	P00/REMO
12	NC	76	NC
12	EE010	70	
13	SEGIU	77	
14	N.C.	/8	PU2/EXGLU
15	SEG11	79	N.C.
16	SEG12	80	P03/#ADTRG
17	N.C.	81	N.C.
18	SEG13	82	POA/SPICIK
10		02	
19	<u>SEG14</u>	83	PU3/ SDU
20	SEG15	84	N.C.
21	<u>SEG1</u> 6	<u>8</u> 5	P06/SDI
22	SEG17	86	P07/#SPISS
23	SEG18	87	P10/SCI K0
20		00	
24	<u> 36018</u>	00	
25	SEG20	89	N.C.
26	SEG21	90	P12/SIN0
27	SEG22	91	N.C.
28	SEG23	92	P13/EXCL1/AIN7
29	SEG24	93	
20		04	
30	N.C.	94	PT5/EAGL3/AIN5
31	SEG25	95	Vss
32	N.C.	96	AVDD
33	N.C.	97	P16/SCLK1/AIN4
34	SEG26	98	P17/AIN3
35	NC	00	
00	N.O.	100	
30	SEG27	100	
37	N.C.	101	P22/AIN0
38	SEG28	102	VDD
39	SEG29	103	P23/SENB0
40	SEG30	104	P24/SENA0
40	<u> </u>	105	
41	35031	100	FZJ/REFU
42	SEG32	106	P26/RFINU
43	SEG33	107	Vss
44	SEG34	108	N.C.
45	SEG35	109	P27/SOUT1/RFIN1
46	NC	110	P30/SIN1/REF1
10	COM7/SEC26	111	NC
4/		110	
48	GUM0/SEG3/	112	P31/SULU/SENAI
49	COM5/SEG38	113	P32/SDA0/SENB1
50	COM4/SEG39	114	P33/SCL1/SCL0
51	N.C.	115	N.C.
52	COM3	116	P34/SDA1/SDA0
52	COM2	117	P35/FOUT1/#BEP
55		110	
54		118	P30/IUUI3/RFCLKU
55	COMO	119	P37/TOUTN3/LFRO/TOUT4
56	N.C.	120	N.C.
57	TEST2	121	P40/FOUTH
58	N C	122	P41
	<u>^P</u>	100	
50	VD	123	<u>F42</u>
59	~ •	1 1 1 / 1	I NC
59 60	CA	124	
59 60 61	CA Vc3	124	P43
59 60 61 62	CA Vc3 Vc2	124 125 126	P43 N.C.
59 60 61 62 63	CA Vo3 Vo2 Vo1	124 125 126 127	P43 N.C. SEG0

ITEM: SPI Clock		
Object manuals	Document code	Object number
S1C17121	411723700	P19-3
S1C17702	411581700	P19-3
S1C17003	411635100	P19-3
S1C17601	411805700	P19-3
S1C17611	411882300	P19-3
S1C17705	411706600	P15-2
S1C17621/S1C17602/S1C17622/	411914900	P19-3
S1C17604/S1C17624		

P19-3(S1C17602,S1C17121,S1C17702,S1C17003,S1C17601,S1C17611)

(Error)

The Master mode SPI uses the internal clock output by the 16-bit timer Ch.1 as SPI clock. This clock is output from the SPICLK pin to slave device while also driving the shift register. Use the MCLK(D9/SPI_CTL register) to select to use the 16-bit timer ch.1 output clock or PCLK-1/4 clock. Setting MCLK to 1 selects the 16-bit timer Ch.1 output clock; setting to 0 selects to 0 selects the PCLK-1/4 clock.

*MCLK: SPI Clock Source Select Bit in the SPI Control(SPI_CTL)Register(D9/0x4326) Using the 16-bit timer Ch.1 output clock enables programmable transfer rates. For more information on 16-bit timer control, see "11 16-bit Timer(T16)."





P19-3(S1C17621/S1C17602/S1C17622/S1C17604/S1C17624)			
(Error)			
16-bit timer Ch.1 output clock			
PCLK/4			
SPI clock (SPICLKx output)			
Figure 19.3.1 Master Mode SPI Clock			
(Correct)			
16-bit timer Ch.1 output clock			
SPI clock (SPICLK <i>x</i> output) Figure 19.3.1 Master Mode SPI Clock			

ITEM: Input/Output Port Chattering Filter Function (P)				
Object manuals	Document	Items	Pages	
	codes			
	411723701	10.6 P0 and P1 Port Chattering Filter	10-7	
		Function		
		10.8 Control Register Details	10-20	
S1C17121		10.9 Precautions	10-32	
	411914400	8.5 P0-P3 Port Chattering Filter	8-4	
		Function		
S1C17554/564		8.8 Control Register Details	8-10	
	411805700	10.6 P0 and P1 Port Chattering Filter	10-7	
		Function		
		10.8 Control Register Details	10-20	
S1C17601		10.9 Precautions	10-29	
	411882300	10.6 P0 and P1 Port Chattering Filter	10-7	
		Function		
		10.8 Control Register Details	10-20	
S1C17611		10.9 Precautions	10-28	
S1C17624/604/622/602/621	411914900	9.6 P0 and P1 Port Chattering Filter	9-4	
		Function		
		9.9 Control Register Details	9-11	
	411706600	8.6 P0-P3 Port Chattering Filter	8-4	
		Function		
S1C17705		8.9 Control Register Details	8-10	
	411905600	8.6 P0-P3 Port Chattering Filter	8-4	
		Function		
S1C17711		8.9 Control Register Details	8-10	

(Correct)

(1) Add following description to the note of "Chattering Filter Function".

(2) Add following description to the note of "Control Register Details /Px_CHAT register".

(3) Add following description to "P0/P1 Port chattering filter circuit" of "Precautions". (S1C17121/601/611)

• An unexpected interrupt may occur after SLEEP status is canceled if the slp instruction is executed while the chattering filter function is enabled. The chattering filter must be disabled before placing the CPU into SLEEP status.

ITEM: Data Transmit Control (I2CS)			
Object manuals	Document	Items	Pages
	codes		
S1C17002	411554401	V.3.5 Data Transmit/Receive Control	V-3-7
S1C17003	411645101	21.5 Data Transmit/Receive Control	21-7
S1C17121	411723701	21.5 Data Transmit/Receive Control	21-7
S1C17554/564	411914400	18.5 Data Transmit/Receive Control	18-4
S1C17601	411805700	21.5 Data Transmit/Receive Control	21-7
S1C17611	411882300	21.5 Data Transmit/Receive Control	21-7
S1C17624/604/622/602/621	411914900	21.5 Data Transmit/Receive Control	21-4
S1C17705	411706600	17.5 Data Transmit/Receive Control	17-4
S1C17711	411905600	17.5 Data Transmit/Receive Control	17-4

(Error)

Data transmission

When the clock stretch function is disabled (default)

Transmit data must be written to SDATA[7:0] within 1 cycle of the I2C clock (SCL* input clock) after TX-EMP has been set to 1. This time is not enough for data preparation, so write transmit data before TXEMP has been set to 1. If the previous transmit data is still stored in SDATA[7:0], it is overwritten with the new data to be transferred. Therefore, the clear operation (see below) using TBUF_CLR is unnecessary. When the clock stretch function is enabled

The master device is placed into wait status by the clock stretch function, so transmit data can be written after TXEMP is set. However, if the previous transmit data is still stored in SDATA[7:0], it will be sent immediately after TXEMP has been set. In order to avoid this problem, clear the I2CS_TRNS register using TBUF_CLR/I2CS_CTL register before this module is selected as the slave device. The I2CS_TRNS register is cleared by writing 1 to TBUF_CLR then writing 0 to it.

It is not necessary to clear the I2CS_TRNS register if the first transmit data is written before TXEMP has been set.

(Correct)

Data transmission

When the clock stretch function is disabled (default)

Transmit data must be written to SDATA[7:0] within 1 cycle of the I₂C clock (SCL* input clock) after TX-EMP has been set to 1. This time is not enough for data preparation, so write transmit data before TXEMP has been set to 1. If the previous transmit data is still stored in SDATA[7:0], it is overwritten with the new data to be transferred. Therefore, the clear operation (see below) using TBUF_CLR is unnecessary. When the asynchronous address detection function is used, the data written before ASDET_EN is reset in 0 becomes invalid. Therefore, the transmission data must be written, after TXEMP has been set to 1.

When the clock stretch function is enabled

The master device is placed into wait status by the clock stretch function, so transmit data can be written after TXEMP is set. However, if the previous transmit data is still stored in SDATA[7:0], it will be sent immediately after TXEMP has been set. In order to avoid this problem, clear the I2CS_TRNS register using TBUF_CLR/I2CS_CTL register before this module is selected as the slave device. The I2CS_TRNS register is cleared by writing 1 to TBUF_CLR then writing 0 to it.

It is not necessary to clear the I2CS_TRNS register if the first transmit data is written before TXEMP has been set.

When the asynchronous address detection function is used, the data written before ASDET_EN is reset in 0 becomes invalid. Therefore, the transmission data must be written, after TXEMP has been set to 1.

ITEM:			
Object manuals	Document	Items	Pages
	codes		
S1C17704 technical manual	411511902	18.10 Precautions	18-21
S1C17702 technical manual	411581701	18.10 Precautions	18-21
S1C17705 technical manual	411706600	14.9 Control Register Details	14-10
S1C17601 technical manual	411805700	18.10 Precautions	18-21
S1C17602 technical manual	411620100	18.10 Precautions	18-21
S1C17611 technical manual	411882300	18.10 Precautions	18-21
S1C17121 technical manual	411723701	18.10 Precautions	18-21
S1C17003 technical manual	411635101	18.10 Precautions	18-21
(Error)	•		•

(Error) For S1C17705

The following UART bits should be set with transfers disabled (RXEN = 0).

All UART_CTLx register bits other than RXEN (RBFI, TIEN, RIEN, REIEN, TEIEN)

..... For S1C17704

• Before setting the bits listed below, make sure the transmit and receive operations are disabled (RXEN = 0).

- All bits (RBFI, TIEN, RIEN, and REIEN except RXEN) of the UART_CTL register

..... For Others

• The following UART bits should be set with transfers blocked (RXEN = 0).

- All UART_CTL register (0x4104) bits other than RXEN (RBFI, TIEN, RIEN, REIEN)

(Correct)

• The following UART bits should be set with transfers disabled (RXEN = 0).

.....

- RBFI bit in the UART_CTLx register

.....

ITEM: I2CM Interrupts				
Object manuals	Document codes	Items	Pages	
S1C17701 technical manual	411089903	20.6 I2C Interrupt	20-11	
S1C17704 technical manual	411511902	20.6 I2C Interrupt	20-11	
S1C17702 technical manual	411581701	20.6 I2C Interrupt	20-10	
S1C17705 technical manual	411706600	16.6 I2CM Interrupts	16-6	
S1C17601 technical manual	411805700	20.6 I2C Master Interrupts	20-10	
S1C17602 technical manual	411620100	20.6 I2C Master Interrupts	20-10	
S1C17611 technical manual	411882300	20.6 I2C Master Interrupts	20-10	
S1C17121 technical manual	411723701	20.6 I2C Master Interrupts	20-10	
S1C17001 technical manual	411412301	20.6 I2C Interrupt	250	
S1C17003 technical manual	411635101	20.6 I2C Master Interrupts	20-10	

(Error)

Transmit buffer empty interrupt

To use this interrupt, set TINTE/I2CM_ICTL register to 1. If TINTE is set to 0 (default), interrupt requests for this cause will not be sent to the ITC.

If transmit buffer empty interrupts are enabled (TINTE = 1), an interrupt request is output to the ITC as soon as the transmit data set in RTDT[7:0]/I2CM_DAT register is transferred to the shift register.

An interrupt occurs if other interrupt conditions are satisfied.

Receive buffer full interrupt

To use this interrupt, set RINTE/I2CM_ICTL register to 1. If RINTE is set to 0 (default), interrupt requests for this cause will not be sent to the ITC.

If receive buffer full interrupts are enabled (RINTE = 1), an interrupt request is output to the ITC as soon as the data received in the shift register is loaded to RTDT[7:0].

An interrupt occurs if other interrupt conditions are met.

For more information on interrupt processing, see the "Interrupt Controller (ITC)" chapter. (Correct)

Transmit buffer empty interrupt

To use this interrupt, set TINTE/I2CM_ICTL register to 1. If TINTE is set to 0 (default),

interrupt requests for this cause will not be sent to the ITC.

If transmit buffer empty interrupts are enabled (TINTE = 1), an interrupt request is output to the ITC as soon as the transmit data set in RTDT[7:0]/I2CM_DAT register is transferred to the shift register.

An interrupt occurs if other interrupt conditions are satisfied.

Transmit buffer empty interrupt occurs when the data was only sent.

The clear method of transmit buffer empty flag
 Write the data to RTDT/I2CM_DAT.
 When TXE/I2CM_DAT is 0, the data doesn't send and the flag is only cleared.

Receive buffer full interrupt

To use this interrupt, set RINTE/I2CM_ICTL register to 1. If RINTE is set to 0 (default), interrupt requests for this cause will not be sent to the ITC. If receive buffer full interrupts are enabled (RINTE = 1), an interrupt request is output to the

ITC as soon as the data received in the shift register is loaded to RTDT[7:0].

An interrupt occurs if other interrupt conditions are met.

Receive buffer full interrupt occurs when the data was only received.

• The clear method of receive buffer full flag Read the data from RTDT/I2CM_DAT.

NOTE: When I2CM interrupt occurs, decide the transmit buffer empty interrupt or the receive buffer full interrupt by the program sequence of the I2C master. There're not registers to decide which interrupt occurred.

For more information on interrupt processing, see the "Interrupt Controller (ITC)" chapter.

ITEM: Mistakes of a meth	od to clear receiv	e data buffer.	
Object manuals	Document codes	Items	Pages
S17C17121 Technical Manual	411723700	18 UART	18-7, 18-19,
			18-21
P18-7(S1C17121)			
(Error)			
Setting the RXEN bit to 0 e	empties the trans	mission and receive data bu	uffers, clearing an
remaining data. The data b	eing transferred	cannot be guaranteed if RXE	EN is set to 0 whil
data is being sent or receive	ed.		
(Correct)			
Setting the RXEN bit to 0 e	empties the trans	mission and receive data bu	uffers, clearing an
remaining data. The data b	eing transferred	cannot be guaranteed if RXE	EN is set to 0 while
data is being sent or receive	ed.		
P18-19(S1C17121)			
(Error) D0 RXEN: UART E	nable Bit		
Permits data transfer by the	UART.		
1 (R/W): Permitted			
0 (R/W): Prohibited (default)		
Set RXEN to 1 before start	ing UART transf	ers. Setting RXEN to 0 will s	stop data transfers
Set the transfer conditions	while RXEN is 0.		
Preventing transfers by writ	ing 0 to RXEN al	so clears transfer data buffer	ſS.
(Correct) D0 RXEN: UART	Enable Bit		
Permits data transfer by the	UART.		
1 (R/W): Permitted			
0 (R/W): Prohibited (default)		
Set RXEN to 1 before start	ing UART transf	ers. Setting RXEN to 0 will s	stop data transfers
Set the transfer conditions while RXEN is 0.			
Preventing transfers by writing 0 to RXEN also clears transfer transmit data buffers.			
P18-21(S1C17121)			
(Error)			
Preventing transfer by sett	ing RXEN to 0	clears (initializes) transfer da	ata buffers. Befor
writing 0 to RXEN, confirm	n the absence c	f data in the buffers awaiting	ng transmission c
reading.			
(Correct)			

Preventing transfer by setting RXEN to 0 clears (initializes) transfer data buffers. Before writing 0 to RXEN, confirm the absence of data in the buffers awaiting transmission-or reading.

ITEM: Mistakes of a meth	ITEM: Mistakes of a method to reset of receive err flags.				
Object manuals	Document codes	Items	Pages		
S17C17121 Technical Manual	411723700	18 UART	18-14		
P18-14(S1C17121)			<u> </u>		
(Error) D6 FER: Framing E	rror Flag Bit				
Indicates whether a framing	error has occuri	ed or not.			
1 (R): Error occurred					
0 (R): No error (default)					
1 (W): Reset to 0					
0 (W): Ignored					
FER is set to 1 when a fra	ming error occur	s. Framing errors occur when data	a is received		
with the stop bit set to 0. FE	ER is reset by wr	ting 1 or by setting RXEN/UART_C	TLx register		
to 0.					
D5 PER: Parity Error Flag	Bit				
Indicates whether a parity e	error has occurred	d or not.			
1 (R): Error occurred					
0 (R): No error (default)					
1 (W): Reset to 0					
0 (W): Ignored					
PER is set to 1 when a pa	arity error occurs	. Parity checking is enabled only v	vhen PREN/		
UART_MOD <i>x</i> register is se	et to 1 and is per	formed when received data is tran	sferred from		
the shift register to the receive data buffer. PER is reset by writing 1 or by setting					
RXEN/UART_CTL <i>x</i> register to 0.					
D4 OER: Overrun Error Fl	ag Bit				
Indicates whether an overru	in error has occu	rred or not.			
1 (R): Error occurred					
0 (R): No error (default)					
1 (W): Reset to 0					
0 (W): Ignored					
OER is set to 1 when an ov	verrun error occu	rs. Overrun errors occur when data	a is received		
in the shift register when th	ne receive data b	ouffer is already full and additional	data is sent.		
The receive data buffer is not overwritten even if this error occurs. The shift register is					
overwritten as soon as the error occurs.					
OER is reset by writing 1 or	by setting RXEN	I/UART_CTLx register to 0.			

(Correct) D6 FER: Framing Error Flag Bit

Indicates whether a framing error has occurred or not.

1 (R): Error occurred

0 (R): No error (default)

1 (W): Reset to 0

0 (W): Ignored

FER is set to 1 when a framing error occurs. Framing errors occur when data is received with the stop bit set to 0. FER is reset by writing 1 or by setting RXEN/UART_CTLx register to 0.

D5 PER: Parity Error Flag Bit

Indicates whether a parity error has occurred or not.

1 (R): Error occurred

0 (R): No error (default)

1 (W): Reset to 0

0 (W): Ignored

PER is set to 1 when a parity error occurs. Parity checking is enabled only when PREN/ UART_MOD*x* register is set to 1 and is performed when received data is transferred from the shift register to the receive data buffer. PER is reset by writing 1 or by setting RXEN/UART_CTLx register to 0.

D4 OER: Overrun Error Flag Bit

Indicates whether an overrun error has occurred or not.

1 (R): Error occurred

0 (R): No error (default)

1 (W): Reset to 0

0 (W): Ignored

OER is set to 1 when an overrun error occurs. Overrun errors occur when data is received in the shift register when the receive data buffer is already full and additional data is sent. The receive data buffer is not overwritten even if this error occurs. The shift register is overwritten as soon as the error occurs.

OER is reset by writing 1 or by setting RXEN/UART_CTLx register to 0.

S1C17 series Manual errata

ITEM: Addition of the attention point at the time of HSCLK switching				
Object manuals	Document code	Object number		
S1C17702 Technical Manual	411581700	7-5		
S1C17602 Technical Manual	411620100	7-5		
S1C17121 Technical Manual	411723700	7-5		

7-5 S1C17702 Technical Manual

(Error)

Note: Both the IOSC and OSC3 oscillator circuits must be turned on when selecting HSCLK. Otherwise, the system will fail to switch to HSCLK even when HSCLKSEL is written to, and the HSCLKSEL value will remain unchanged.

(Correct)

Note: Both the IOSC and OSC3 oscillator circuits must be turned on when selecting HSCLK. Otherwise, the system will fail to switch to HSCLK even when HSCLKSEL is written to, and the HSCLKSEL value will remain unchanged. Additionally, please make the PCLKEN (D[1:0]/0x5080 :0x3) enabled if you want switch HSCLK.

7-5 S1C17602/ S1C17121 Technical Manual

(Error)

Note: To select HSCLK, both of the IOSC and OSC3 must be turned on. Writing to HSCLKSEL while both of them are not turned on does not switch HSCLK, and does not change the HSCLKSEL value.

(Correct)

Note: To select HSCLK, both of the IOSC and OSC3 must be turned on. Writing to HSCLKSEL while both of them are not turned on does not switch HSCLK, and does not change the HSCLKSEL value. Additionally, please make the PCLKEN (D[1:0]/0x5080 :0x3) enabled if you want switch HSCLK.