

CMOS 32-BIT SINGLE CHIP MICROCONTROLLER S5U1C31001L1100 (Bridge Board) Manual

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Table of Contents

1.	Overview1				
2.	Connection Examples2				
3.	Name and Function of Each Part				
4.	Connectors	5			
4.	L1 Legacy Connector (20 pins)	5			
4.	.2 Micro Pitch Connector (10 pins)	5			
4.	A.3 Micro Pitch Connector (20 pins)	6			
4.	4.4 User Target Connector (10 pins)6				
5.	Circuit Diagram	7			
Rev	vision History	8			

1. Overview

The S5U1C31001L1100 (Bridge Board) is used by inserting between the user target board and a debug probe either I-jet manufactured by IAR or J-Link manufactured by SEGGER.

The embedded flash memory of Seiko Epson S1C31 Family MCUs requires a 7.5 V power supply exclusive use for high-speed programming that cannot be generated by general-purpose debug probes. The S5U1C31001L1100 (Bridge Board) generates a 7.5 V flash programming voltage from the 5 V power voltage supplied by a general-purpose debug probe and supplies it to the user target board.

If the target S1C32 Family MCU includes a voltage booster and is being used for flash programming, it is not necessary to use the S5U1C31001L1100 (Bridge Board).



Figure 1.1 S5U1C31001L1100 (Bridge Board) External View

2. Connection Examples

When J-Link (20-pin legacy connector) is used



Figure 2.1 Connection Diagram when J-Link (20-pin Legacy Connector) is Used

When I-jet (20-pin micro pitch connector) is used



Figure 2.2 Connection Diagram when I-jet (20-pin Micro Pitch Connector) is Used

When I-jet (10-pin micro pitch connector) is used



Figure 2.3 Connection Diagram when I-jet (10-pin Micro Pitch Connector) is Used



3. Name and Function of Each Part

Micro pitch connector (20 pins)



TP1 (VCCIN)

When the debug probe I-jet is connected to the 10-pin micro pitch connector, the programing power voltage (VPP) for the flash memory embedded in the S1C31 Family MCU cannot be supplied to the user target board, as this connector does not have a power supply pin used to input 5 V from the debug probe. In this case, the TP1 pin is used to supply power voltage from an external power supply (1.8 to 5.5 V, 500 mA or more). The S5U1C31001L1100 (Bridge Board) generates the VPP voltage by boosting the TP1 input voltage to supply to the user target board.

If the target S1C32 Family MCU includes a voltage booster and is being used for flash programming, it is not necessary to supply an external power voltage.





JP1, JP2

These switches select the power supply for programming the flash memory embedded in the S1C31 Family MCUs. Set both JP1 and JP2 as follows:

JP1 and JP2 settings	Flash programming power supply selected
Short (ON)	Power supply on the S5U1C31001L1100 (Bridge Board)
Open (OFF)	Power supply (voltage booster) built into the S1C31 Family MCU

Table 3.1 JP1 and JP2 Settings

4. Connectors

4.1 Legacy Connector (20 pins)

Table 4.1	20-pin Legacy	Connector Pir	n Assignment
	20-pin Legacy	CONNECTOR I II	i Assiyiiiiieii

No	Name	No	Name
1	VTref	2	VCC (optional)
3	TRST	4	GND
5	NC/TDI	6	GND
7	SWDIO / TMS	8	GND
9	SWDCLK / TCK	10	GND
11	RTCK	12	GND
13	SWO / TDO	14	GND
15	nRESET	16	GND
17	NC/DBGRQ	18	GND
19	NC/DBACK	20	GND

4.2 Micro Pitch Connector (10 pins)

Table 4.2 10-pin Micro Pitch Connector Pin Assignment

No	Name	No	Name
1	VTref	2	SWDIO / TMS
3	GND	4	SWDCLK / TCK
5	GND	6	SWO / TDO
7	KEY	8	NC / TDI
9	GNDDetect	10	nRESET

4.3 Micro Pitch Connector (20 pins)

Table 4.3	20-pin Micro Pitch Connector Pin Assignment
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No	Name	No	Name
1	VTref	2	SWDIO / TMS
3	GND	4	SWDCLK / TCK
5	GND	6	SWO / TDO / EXTa / TRACECTL
7	KEY	8	NC/EXTb/TDI
9	GNDDetect	10	nRESET
11	GND/TgtPwr+Cap	12	TRACECLK
13	GND/TgtPwr+Cap	14	TRACEDATA[0]
15	GND	16	TRACEDATA[1]
17	GND	18	TRACEDATA[2]
19	GND	20	TRACEDATA[3]

4.4 User Target Connector (10 pins)

 Table 4.4
 10-pin User Target Connector Pin Assignment

No	Name	No	Name
1	SWDCLK	2	GND
3	SWDIO	4	NC
5	VPP	6	GND
7	nRESET	8	VTref
9	VCC	10	NC

5. Circuit Diagram



Revision History

Attachment-1

Rev. No.	Date	Page	Category	Contents
Rev 1.0	2016/03/11	All	New	New establishment
Rev. 1.1	2016/06/13	3	Correction	"FIXED ON" described in Figure 3.1 was changed to "JP2."
		4	Addition	"JP2" was added to the explanation of "JP1."

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