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S1R72V18
Evaluation Board Manual

SEIKO EPSON CORPORATION

Rev.1.01

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Scope

This document applies to the “S1R72V18” USB 2.0 device - host controller LSI.

Table of Contents

1. Overview

This board is an evaluation board for the S1R72V18. This manual describes how to use the board.

2. Connector Connections

This board features the connectors listed below:

Connector No.	Use
CN1	For connecting to the Main CPU system
CN2	USB Port0 connector (mini B type)
CN3	USB Port0 connector (standard A type)
CN4	USB Port1 connector (standard A type)
CN5	Power supply connector

CN1

Connect this board to the Main CPU system via the CN1 connector.

CN5

Connect the power supply to the board via the CN5 connector as shown below. Do not connect the power supply until the board has been connected to the Main CPU and various settings (explained later) have been completed.

1pin	+5V
2pin	0V
3pin	N.C.
4pin	N.C.

CN2

Used when CN2 is used as a USB device port (USB Port0).

CN3

Used when CN3 is used as a USB host port (USB Port0).

CN4

Used when CN4 is used as a USB host port (USB Port1).

Precautions when using CN2 and CN3 (USB Port0)

The signals for CN2 and CN3 are connected through the board, since USB Port0 is used as both a USB device port and USB host port. USB communication functions may not operate correctly due to signal reflections when USB cables or USB devices are connected to the unused CN2 or CN3 connector.

Disconnect the USB cable from CN2 when using this board as a host with CN3. Likewise, disconnect the USB device or cable from CN3 when using the board as a device with CN2.

3. LEDs

The LEDs function as shown in the table below.

LED No.	Description	Remarks
LED1	USB Port0 connector (CN3) VBUS monitor On: VBUS output; Off: No VBUS output	Color: Red
LED2	USB Port1 connector (CN4) VBUS monitor On: VBUS output; Off: No VBUS output	Color: Red
LED3	Power supply monitor (CN5) On: Power On; Off: Power Off	Color: Green

4. Jumper Pins

The jumpers on the board are set as shown below. Items shaded in gray are factory default settings.

JP4 to JP15 are soldered jumpers and normally do not require alteration.

No.	Details	Setting (Details in gray are factory default settings.)	
JP1	+5 V output selection from CN1 to Main CPU	1-2	CN1: A4,B4,A5,B5 = +5V
		2-3	CN1: A4,B4,A5,B5 = 0V
JP2	Interface power supply voltage selection with Main CPU	1-2:	IOVDD = 3.3V
		2-3:	IOVDD = 1.8V
JP4	MAX8586 (IC2) automatic restart function selection (See Maxim data sheet for details.)	1-2:	MAX8586-ENRESET pin = High
		1-3:	MAX8586-ENRESET pin = Low
JP5	MAX8586 (IC3) automatic restart function selection (See Maxim data sheet for details.)	1-2:	MAX8586-ENRESET pin = High
		1-3:	MAX8586-ENRESET pin = Low
JP6	USB Port1 host VBUS output 122[µF] layout selection	1-2:	Located at MAX8586(IC3)-OUT pin
		1-3:	Located at MAX8586(IC3)-IN pin
JP7-JP9 JP11-JP12	Current consumption measurement jumper (Normally use shorted)	Short	Normal
		Open	Not permited
JP10	USB Port1 host VBUS output 122[µF] capacitor discharge resistor selection	Short	With discharge resistor
		Open	Without discharge resistor
JP13	CN2 USB port function selection	Short	Uses CN2 as USB port 0 device/host
		Open	Uses CN2 as USB port 0 device
JP14	USB Port0 host VBUS output 122[µF] layout selection	1-2:	Located at MAX8586(IC2)-OUT pin
		1-3:	Located at MAX8586(IC2)-IN pin
JP15	USB Port0 host VBUS output 122[µF] capacitor discharge resistor selection	Short	With discharge resistor
		Open	Without discharge resistor

Note: JP3 does not exist.

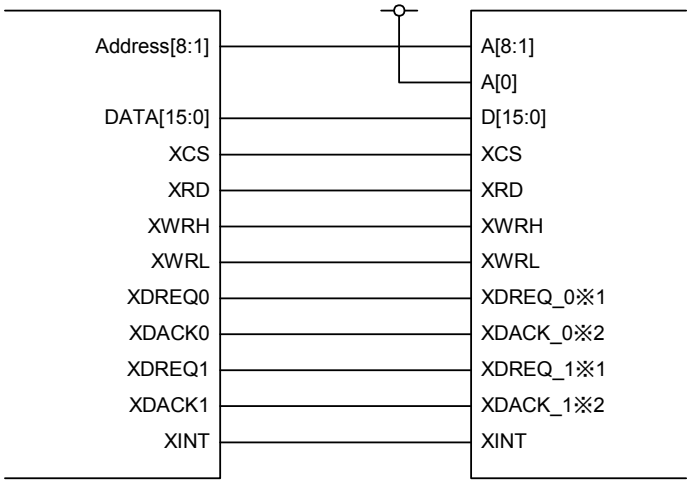
5. Product Code

The product code for the board is as follows:

S5U1R72V18F0100.

6. Appendix

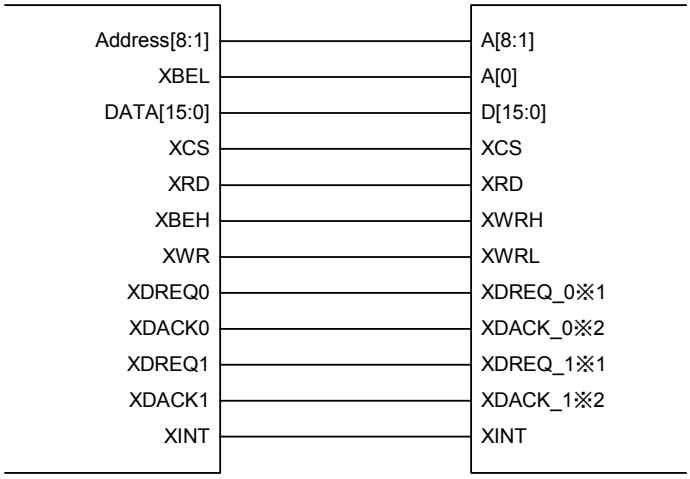
6.1 Connection Example 1 (CPU I/F connection example)



16-bit CPU (XWRH/XWRL) connection example

*1: Open when DMA is not in use

*2: Disabled when DMA is not in use



16-bit CPU (XBEH/XBEL) connection example

*1: Open when DMA is not in use

*2: Disabled when DMA is not in use

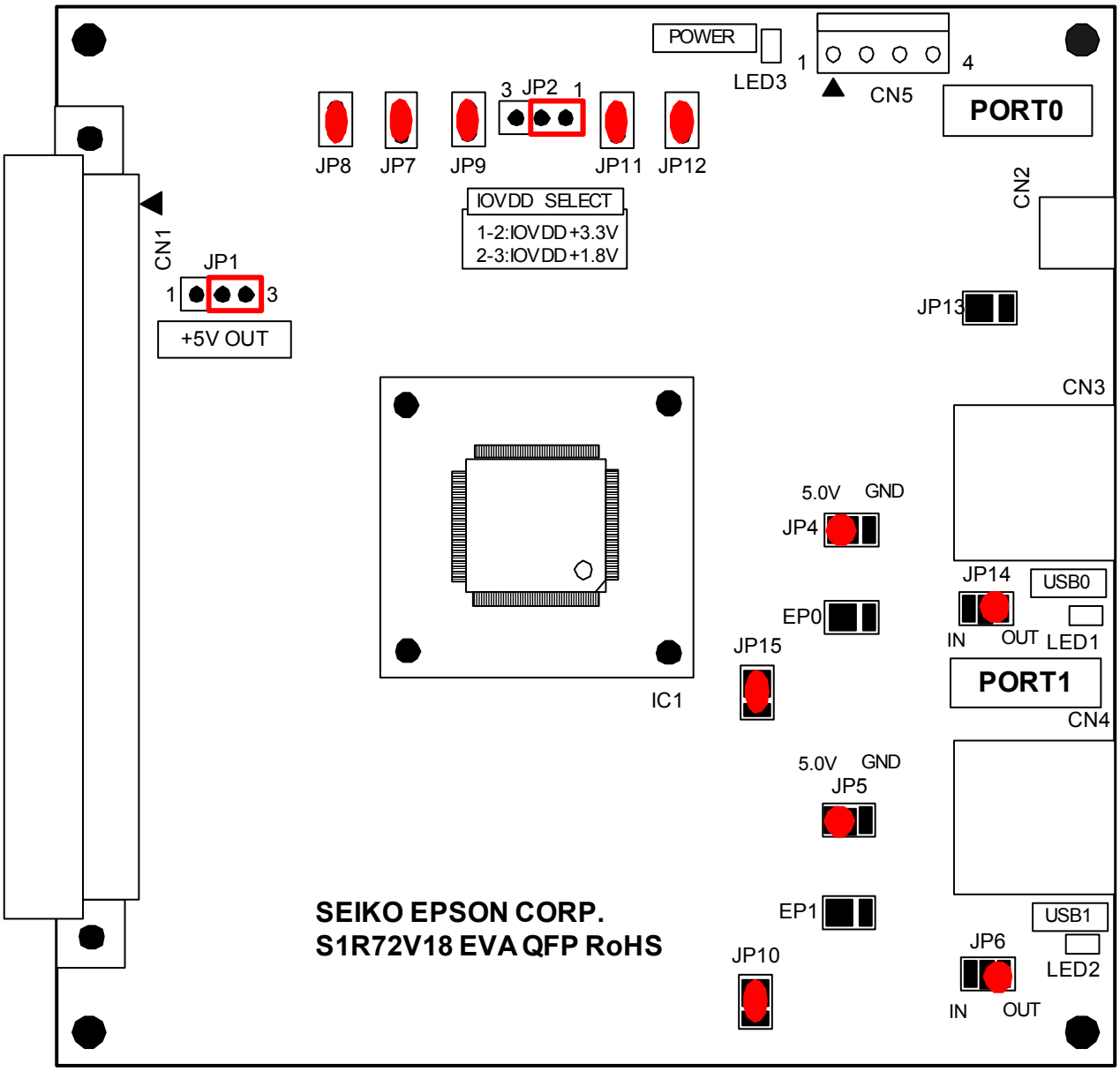
CPU Board **S1R72V18 Evaluation Board**

6.2 Connection Example 2 (USB I/F connection example)

Refer to the separate *S1R72V Series USB 2.0 Hi-Speed PCB Design Guidelines*.

6.3 Mounting Diagram

The diagram below shows the factory default configuration.



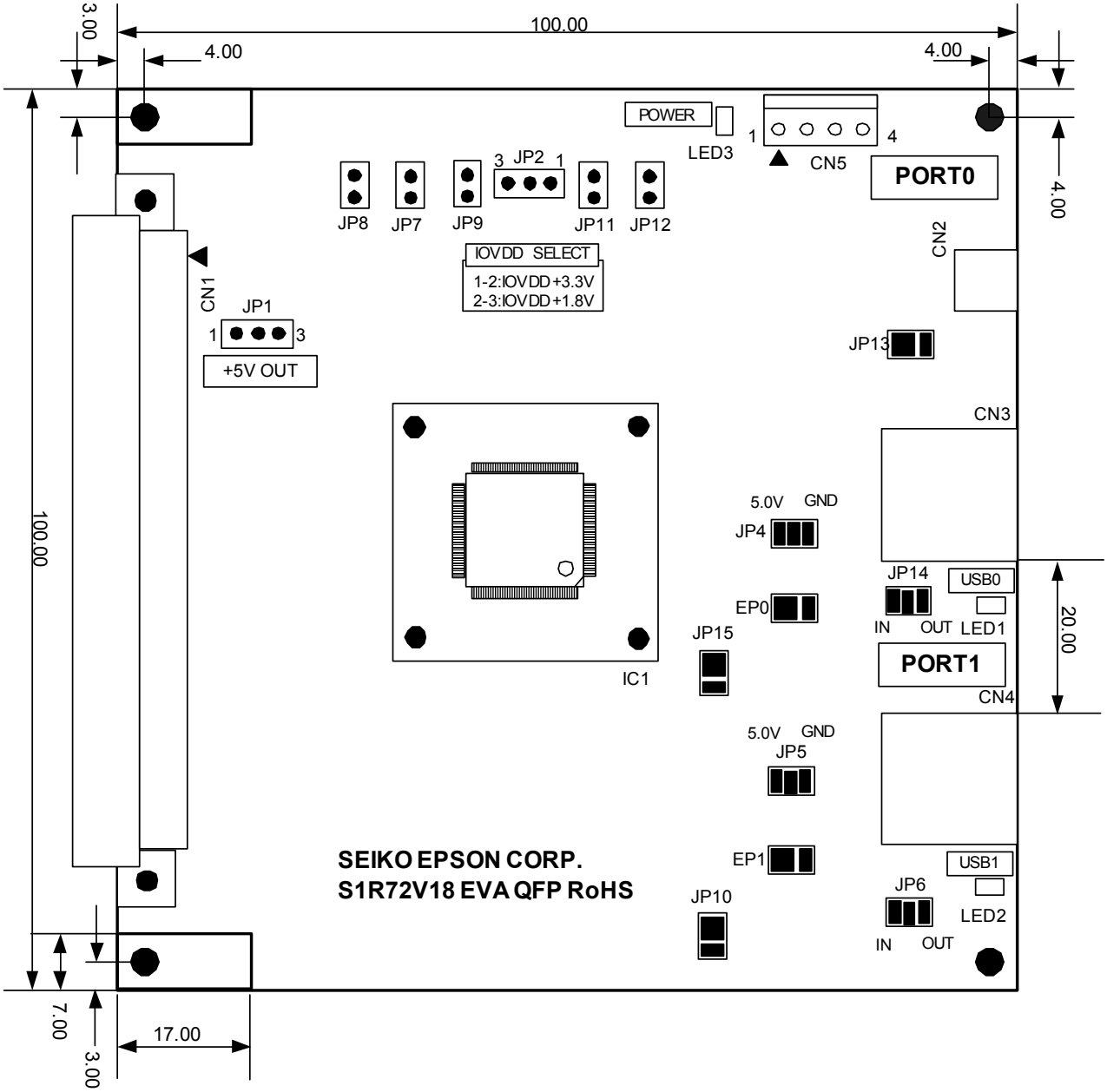
6.4 Circuit Diagram

Refer to the Appendix.

6.5 Component List

Refer to the Appendix.

6.6 Dimensional Diagram



CPU Interface

NDP100-002-BF
CN1

JP1 Setting :
* Connect 1-2 when suppling Power(+5.0V) to CPU board
* Connect 2-3 or Open when No suppling Power to CPU board

JP2 Setting :
* Connect 3-2 when CPU I/F level is +1.8V.
* Connect 1-2 when CPU I/F level is +3.3V.

When you use CN2 as USB-Device and CN3 as USB-Host:
JP13 = OPEN
JP14 = Connect 1-2
JP15 = Connect

When you use only CN2 as USB-Device/Host :
JP13 = Connect
JP14 = Connect 1-3
JP15 = OPEN
R9,R10 = No Mount is recommended.

Note: Close the capacitor to the IC's specified pin.

JP4 and R5:
See MAX8566 Document sheet.

JP5 and R6:
See MAX8566 Document sheet.

担当	検図	確認	承認	S1R72V18 Evaluation Board
Ebata				USB2.0
				Ver 1.00
				2007/10/22

1/1

セイコーエプソン　株式会社

S1R72V18 Evaluation Board Parts List

Attention! : A red letter of 'Reference' is noimplement.

PartName	Quantity	Maker	Value	Rating	Tolerance	Reference
C1608CH1H090D	2	TDK	9p	50V	±5%	C6,C8
GRM188R11H104KA93	8	Murata	0.1u	50V	±5%	C10,C11,C12,C14, C16,C18,C20,C22
GRM188F11A105ZA01	14	Murata	1u	10V	+80/-20%	C1,C2,C3,C4,C5,C7, C9,C23,C24,C25,C27 ,C28,C33,C34
GRM31MF11E105ZA01L	1	Murata	1u	25V		C26
UWT1C220MCL	2	Nichicon	22u	16V	±20%	C29,C30
UWT1V101MCL	2	Nichicon	100u	35V	±20%	C31,C32
NDP100-002-BF	1	Yamaichi				CN1
NDS100-002-BF	1	Yamaichi				-
CAM-E42F-005-8904A	1	Mitsumi				CN2
DUSB-ARA42-T11A-FA	2	DDK				CN3,CN4
171825-4	1	AMP				CN5
FA-128	1	EPSON TOYOCOM		24.000MHz	CL=10pF, 50ppm	CR1
HRW0202B	1	日立				DM1
S1R72V18F14E100	1	EPSON				IC1
MAX8586ETA+	2	Maxim				IC2,IC3
S1F78B20M18000R	1	EPSON				IC4
S1F78B20M33000R	1	EPSON				IC5
XJ8D-0311	2	OMRON				JP1,JP2
JP-2-L	3	No_maker				JP10,JP13,JP15 JP7,JP8,JP9,JP11,JP12
JP-3-L	4	No_maker				JP4,JP5,JP6,JP14
DLW21SN900SQ2L	3	Murata	90			**L1,L2,L3**
BLM21PG600SN1	6	Murata	60			L4,L5,L6,L7,L8,L9
SML-310LTT86	2	ROHM				LED1,LED2
SML-310MTT86	1	ROHM				LED3
RR0816P-622-D	2	SSM	6.2k	1/16W	0.5%	R1,R3
MCR03EZHJ102	1	ROHM	1k	1/16W	5%	R4
MCR03EZHJ393	2	ROHM	39k	1/16W	5%	R5,R6
MCR03EZHJ000	5	ROHM	0	1/16W	5%	R7,R8,R9,R10,R12
MCR03EZHJ100	1	ROHM	10	1/16W	5%	R11
MCR03EZHJ104	2	ROHM	100k	1/16W	5%	R13,R16
MCR03EZHJ271	3	ROHM	270	1/16W	5%	R14,R15,R17
LC-33-S-Black	4	Mac8				TP2,TP3,TP4,TP5
LC-33-S-Red	4	Mac8				TP1,TP15,TP16,TP17
LC-33-S-Yellow	11	Mac8				**TP6,TP7,**TP8,TP9, TP10,TP11,TP12, TP13,TP14,TP18, TP19
RSB6.8S	1	ROHM				**ZD1**
AVRL161A6R8GBA	2	TDK				**ZD3,ZD4**
XJ8A-0211	7	OMRON				JP1,JP2

Revision History

Date	Revision details			
	Rev.	Page	Type	Details
10/25/2007	1.00	All pages	New	New issue.
11/05/2007	1.01	2	Correction	Add CN2/CN3 usage precautions to “2. Connector Connections.”

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