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April 1st, 2010
Renesas Electronics Corporation

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User's Manual

M66291GP Utility Board M3A-0032

Instruction Manual 2007-03-13

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Rev.1.03 2007.3

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Contents

The product composition is shown below. Please check that all the following products are complete before use.

Model Name	Contents	Quantity
M3A-0032	M66291GP Utility Board	1
REJ11F0006	M3A-0032 Instruction Manual (English)	1

This product is thus complied with European RoHS Directive.
The restriction of the use of certain Hazardous Substances in electrical and electronic equipment.

Chapter 1. Summary

M3A-0032 is an evaluation board to evaluate M66291GP chip,

The board has the following features :

(1)Processor bus interface connector that allows to connect the board to an MCU evaluation board.

(2)Test pins that allows user to monitor D+ and D- signal waveforms.

(3)Special pads that is laid out for ESD protection component installation.

(4)Two clock resonators that are selectable from either ceramic resonator or crystal resonator.
A crystal resonator is mounted as factory default installation.

(5)Jumper JP2 setting that allows to connect the target board previously prepared for the M3A-0029B board. Set Jumper JP2 on “290” side to use this board.

(6)Jumper JP1 that allows to supply power separately to IOVcc and COREVcc.
3.3V must be supplied to Pin COREVcc (Pin 19 and 20 of Connector CN3).
The target board must be connected accordingly.

(7)Jumper JP2 that allows to select one of bus interface functions of the chip:
16-bit, 8-bit, and 16-bit write formats.

Figure 2 shows the connection direction for the M3A-0033 board.

Chapter 2. Outline

Figure 1 shows the top view of M3A-0032 board. The actual dimension is shown in Figure 3 and 4.

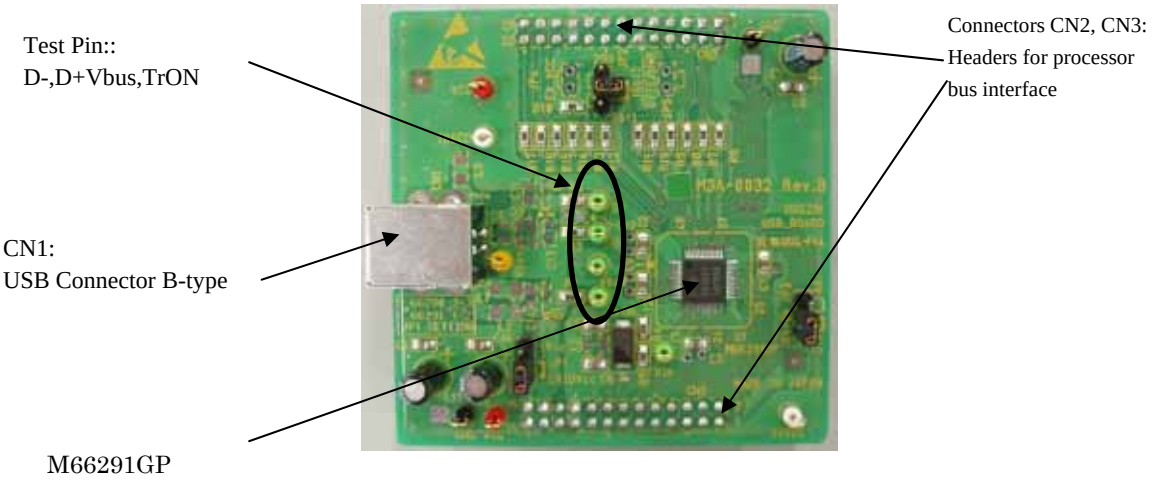


Figure 1 Top View of M3A- 0032 Board

Chapter 3. Specifications

- Board Size: 70mm X 70mm
- Supply Power: COREVcc --- 3.3V +/- 0.3V,
- IOVcc – 5V +/- 0.5V (5.0V type) or 3.3V + 0.3V – 0.5V (3.0V type)
- Interface: 26-pin Connector X 2 (2.54 mm pitch, dual straight header, male type),
- USB Connecter (B-type)

Connector Definition

Connectors CN2 and CN3 provide all bus interface pins of the chip such as processor bus interface and DMA interface. Therefore, these pins provide the same pin characteristics of the chip such as electric characteristic, IO direction, and functions. The following tables show the pin number and function correspondences.

Pin Name	Connector	Pin Number	Function of M66291GP
D15:0	CN2	2:9(D15:8),11:18(D7:0)	Data Bus
A6:1	CN3	12:17(A1:6)	Address Bus
/HWR,BYTE *	CN2	23	Hi Write Strobe
Vbus	CN2	24	Vbus
EXIOVcc(IOVcc)	CN2	25,26	IOVcc
/LWR *	CN3	1	Low-write strobe
/RD *	CN3	3	Read strobe
/CS *	CN3	5	Chip select
/RST	CN3	6	Reset
/DREQ0 *	CN3	7	DMA0 Request
/DACK0 *	CN3	8	DMA0 Acknowledge
/INT0 *	CN3	9	Interrupt Request
COREVcc(EX_VCC)	CN3	19,20	Supply (3.3V)
A0	CN3	22	A0
/TC1 *	CN3	23	End of transfer cycle of DMA1
/INT1,/SOF *	CN3	24	INT Request/SOF Output
/DACK1 *	CN3	25	DMA1 Acknowledge
/DREQ1 *	CN3	26	DMA1 Requst
GND	CN2	1,10,19,20	GND
GND	CN3	2,4,10,11,18	GND
NC	CN2	21,22	NC
NC	CN3	21	NC

* : pulled-up with 10K ohm

Note: Pins 23 – 26 are new factions due to the M66291GP function upgrade.

Chapter 4. Jumper Settings

JP NO	Function	
	EXIOVCC	VCC
JP1(IOVCC)	Supplies MCU supply power (3.3V or 5.0V) to IOVcc	Supply 3.3V to IOVcc

JP NO	Function		
	16-bit	8-bit	290
JP2(BYTE/HWR)	16 bits Bus	8 bits Bus	16-bit write-type of M66290

JP NO	Function	
	16 bit	8 bit
JP3(16b/8b)	Connects pin 40 of M66291GP to pin 2 of CN3	Connects pin 40 of M66291Gpto pin 22 of CN3

***: refer details for the connection diagrams**

Chapter 5. Cautions for Vbus line

Cautions for Vbus-line concerning to USB 1.1 Specification

USB Ver 1.1 specifies a capacitance (1uF - 10uF) insertion between Vbus and GND so that a proper arrangement on the target board side is required to meet this requirement.

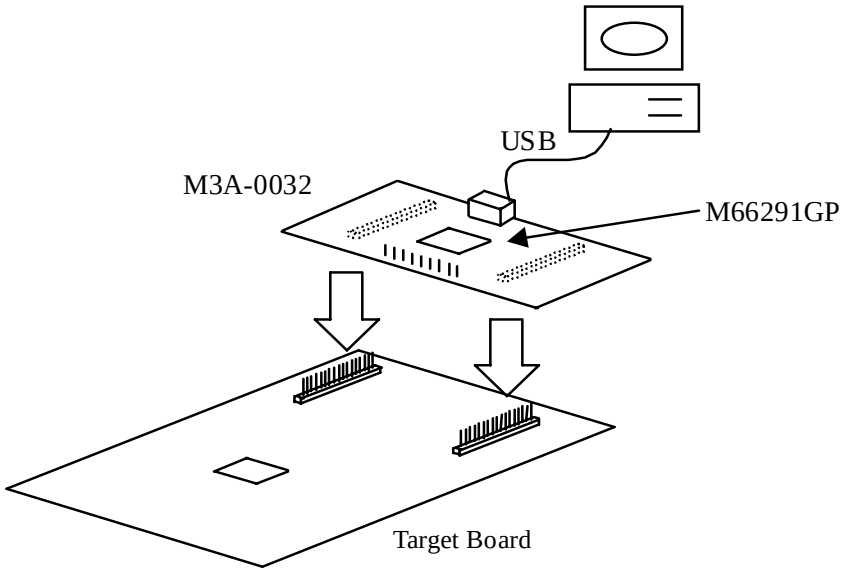


Figure 2 Target Board Connection Direction

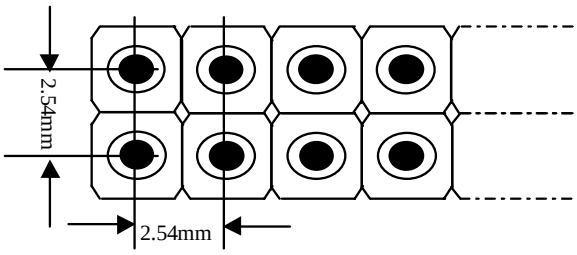


Figure 3 Pin Pitch of Connectors CN2 and CN3

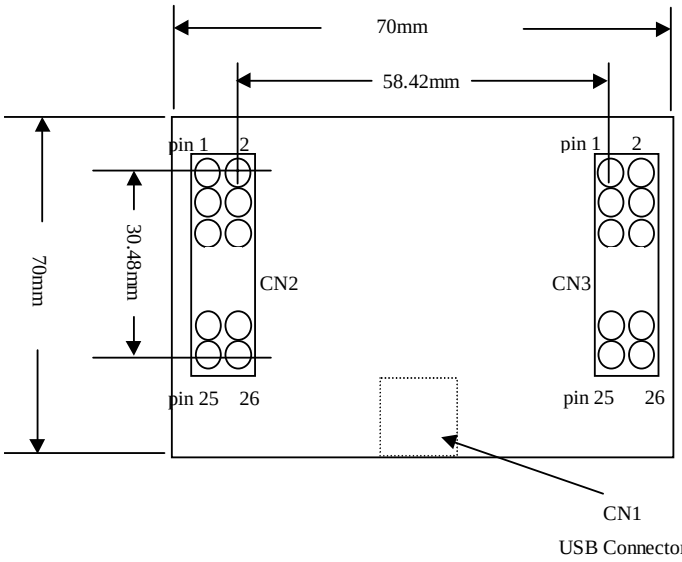


Figure 4 Pin Direction of Connector CN2 and CN3 (Bottom View)

Appendix 1

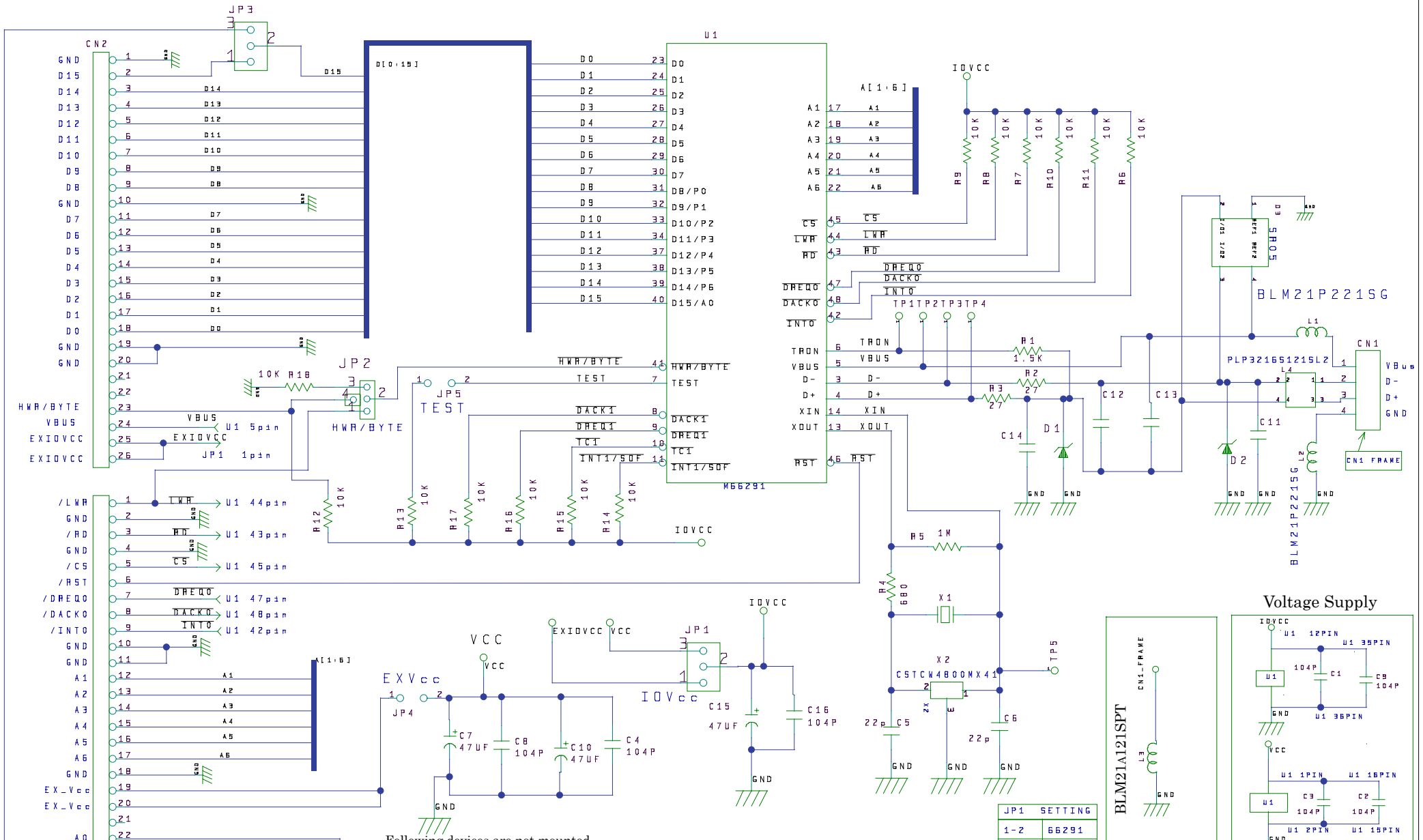
Part List

No.	Component Name		Component Specification			Units / board		Notes
	Type	Symbol on Board	Product Number	Manufacturer	Instruction			
1	USB ASSP	U1	M66291GP	Renesas	Mounted	1		
2	D3	D3	SR05	SEMTECH	Not Mounted	(1)		Note-1
3	EMIFilfer	L4	PLP3216S 121SL2	Murata	Not Mounted	(1)		Note-1
4	Connector	CN1	UBB-4R-D14T-1(LF)(SN)	JST	Mounted	1		
5	Jumper SW (2 lines 13 Rows)	CN2, CN3	FFC-26BSM-1	Honda	Mounted	2		
6	Jumper SW	JP1	WL-1	MAC8	Mounted	1		
7	Jumper SW	JP2	WL-1	MAC8	Mounted	1		4 pin
8	Jumper SW	JP3	WL-1	MAC8	Mounted	1		
9	Jumper SW	JP4	WL-1	MAC8	Not Mounted	(1)		Note-1
10	Jumper SW	JP5	WL-1	MAC8	Not Mounted	(1)		Note-1
11	Test Pin	TP 1 - TP5	LC-2-G (Green)	MAC8	Mounted	5		
12	Test Pin	TP IOVcc	LC-2-G (White)	MAC8	Mounted	2		
13	Test Pin	TP EX_Vcc	LC-2-G (Red)	MAC8	Mounted	2		
14	Test Pin	TP Vbus	LC-2-G (Yellow)	MAC8	Mounted	1		
15	Test Pin	TP GND	LC-2-G (Black)	MAC8	Mounted	2		
16	Ceramic Capacitor	C1,C2,C3,C4,C9,C8,C16	GRM219F11H104ZA01D (0.1µ)	Murata	Mounted	7		
17	Ceramic Capacitor	C12,C13	GRM2162C1H330JD01 (33p)	Murata	Not Mounted	(2)		Note-1
18	Ceramic Capacitor	C5, C6	GRM2162C1H220JD01D (22p)	Murata	Mounted	2		
19	Ceramic Capacitor	C11,C14	GRM2162C1H220JD01D (22p)	Murata	Not Mounted	(2)		Note-1
20	Electrolytic Capacitor	C7,C10,C15	ECEA1CKA470(47µ/16V)	MEC	Mounted	3		
21	Crystal Oscillator	X1	DSX630G 12.000MHz	DAISHINKU	Mounted	1		
22	Ceramic Oscillator	X2	CSTCW4800MX41	Murata	Not Mounted	(1)		Note-1
23	Resister	R2,R3	MCR10EZPJ270	Rohm	Mounted	2		
24	Resister	R1	MCR10EZPJ152	Rohm	Mounted	1		
25	Resister	R4	MCR10EZPJ681	Rohm	Mounted	1		
26	Resister	R5	MCR10EZPJ105	Rohm	Mounted	1		
27	Resister	R6 - R11	MCR10EZPJ103	Rohm	Mounted	6		
28	Resister	R12 - R18	MCR10EZPJ103	Rohm	Mounted	7		
29	Diode	D1,D2	HZU6.2ZTRF-E	Hitachi	Not Mounted	(2)		Note-1
30	EMI FILTER	L1,L2	BLM21P 221SG	Murata	Not Mounted	(2)		Note-1
31	EMI FILTER	L3	BLM21A 121SPT	Murata	Not Mounted	(1)		Note-1
32	Jumper Socket		JS-1	MAC8		3		

Notes

Note-1: Only printed pattern is available. No part is installed.

TYTLE	M66291GP (USB ASSP) Utility Board
DRAWING No.	PPL-M3A-0032



JP1	SETTING
1-2	66291
2-3	66290

Following devices are not mounted.
C11, C12, C13, C14, D1, D2, D3, L1, L2, L3, L4, JP4, JP5, X2

Note:
1) The land patterns of L1 are shorted. Please cut the shorted pattern, when you mount L1.
2) The land patterns of L2 are shorted.
   Please cut the shorted pattern, when you mount L2.
3) The frame CN1 is connected to GND via L3 whose land patterns are shorted.
   Please cut the shorted pattern, when you mount L3.
4) The L4 1pin and L4 2pin are shorted, and L4 3pin and L4 4pin are shorted also.
5) The pins of JP4 are shorted. Please cut the shorted pattern, when you use JP4.

Appendix 2

Revision History	M3A-0032 Instruction Manual

Rev.	Date	Description	
		Page	Summary
1.00	Oct.02.02	—	First edition issued
1.01	Jul.01.03		Change of the company name.
1.02	Dec.01.04		Change Part list
1.03	Mar.13.07	Contens	Addition: This product is thus complied with European RoHS Directive.
		Appendix 1	Parts List Modified : # 4,16,17,18,19,22,23,24,25,26,27,28,29 (Part type name is thus complied with European RoHS Directive)

M66291GP Utility Board M3A-0032
Instruction Manual Mar.13.'07