

Last Schematic Update Date:
01/21/2002

MS-6567 VERSION:101
SIS 645/650 CHIPSET
Willamette/Northwood 478pin mPGA-B Processor Schematics

CPU:
Willamette/Northwood mPGA-478B Processor

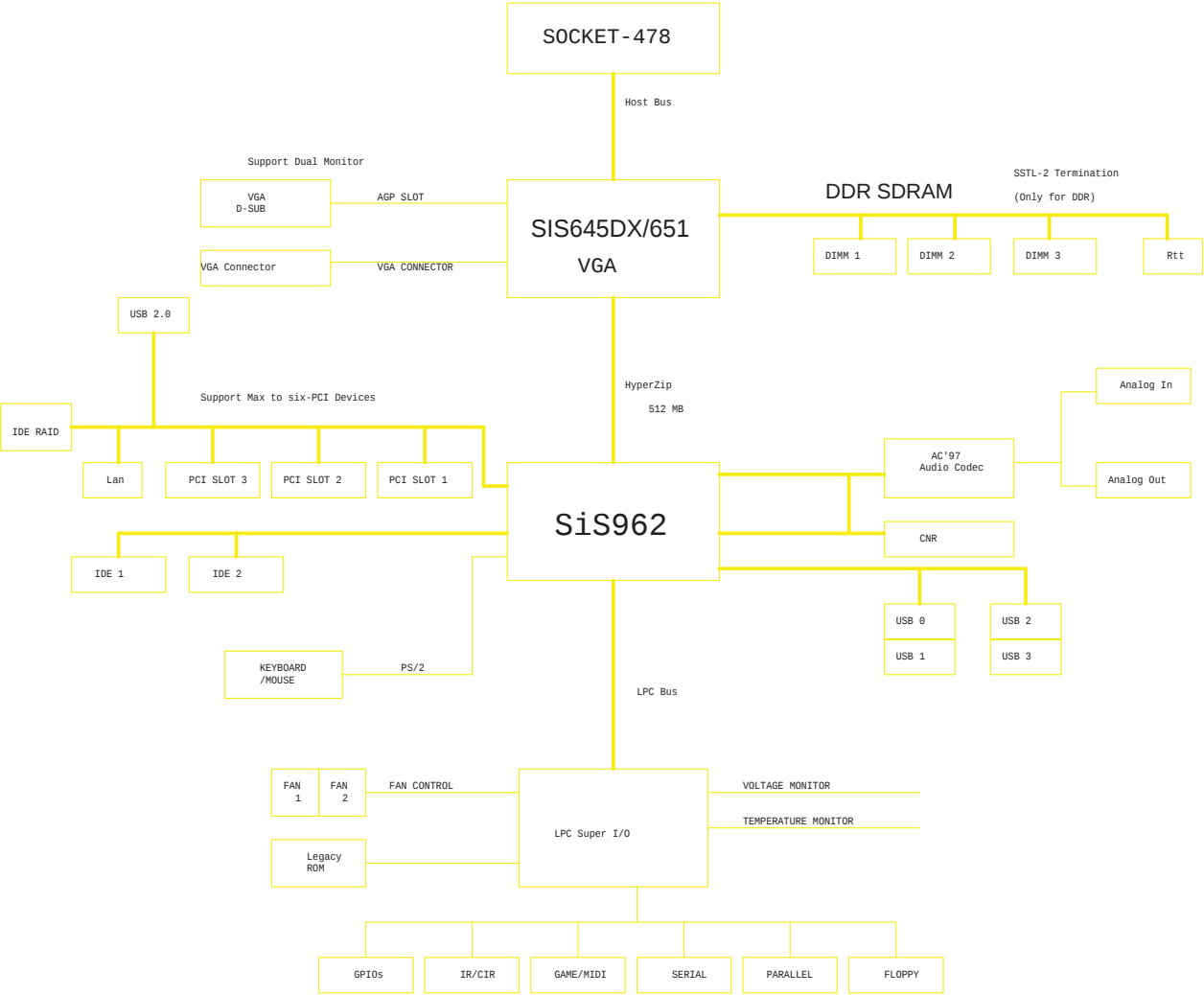
System Brookdale Chipset:
SIS 645/650 (North Bridge)
+961A (South Bridge)

On Board Chipset:
LPC Super I/O -- W83697HF
NEC uPD720100A
REALTEK RTL8100L
ACARD ATP865

Expansion Slots:
AGP2.0 SLOT * 1
PCI2.2 SLOT* 5
CNR SLOT * 1

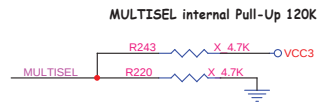
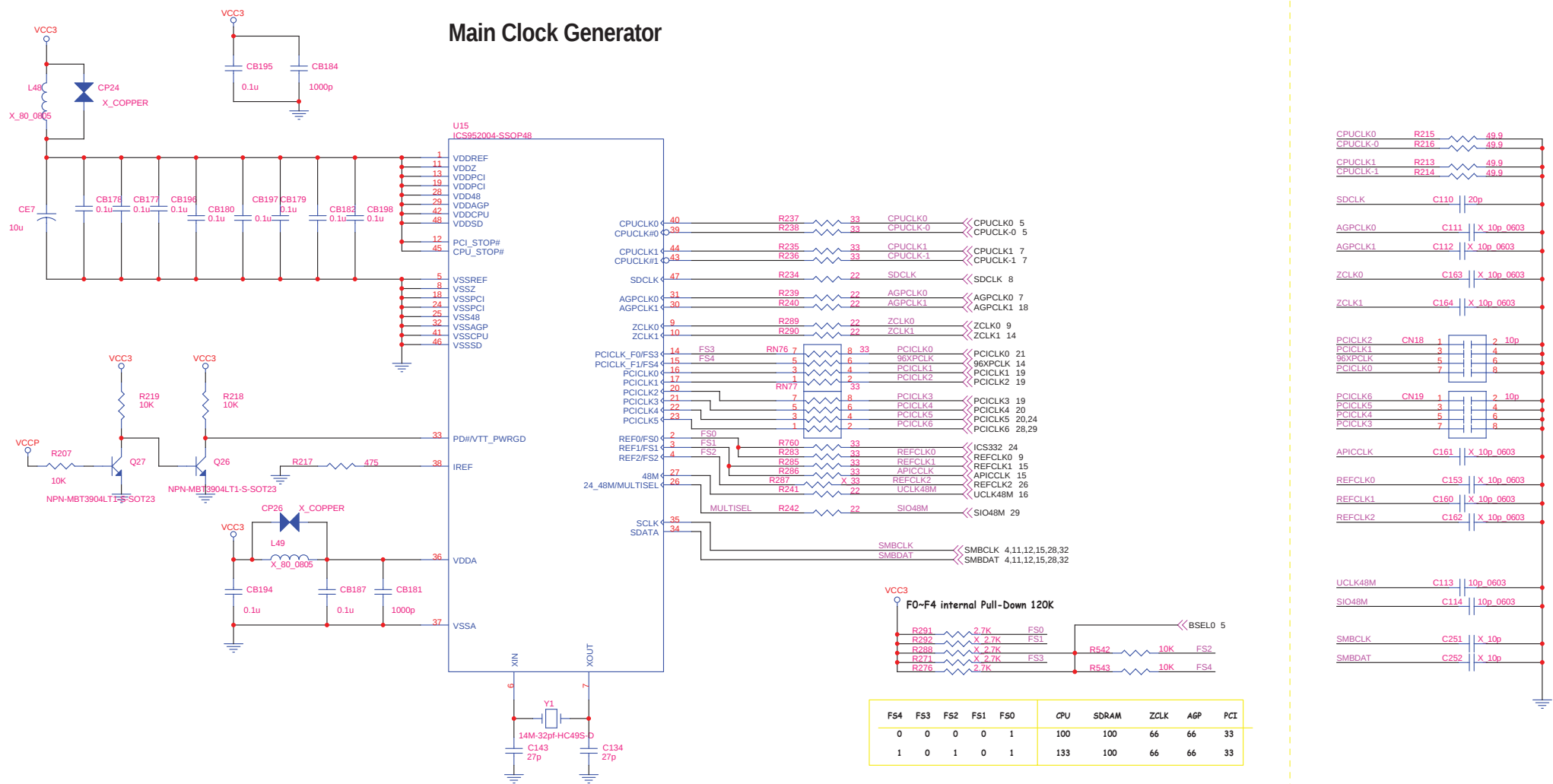
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System Block Diagram



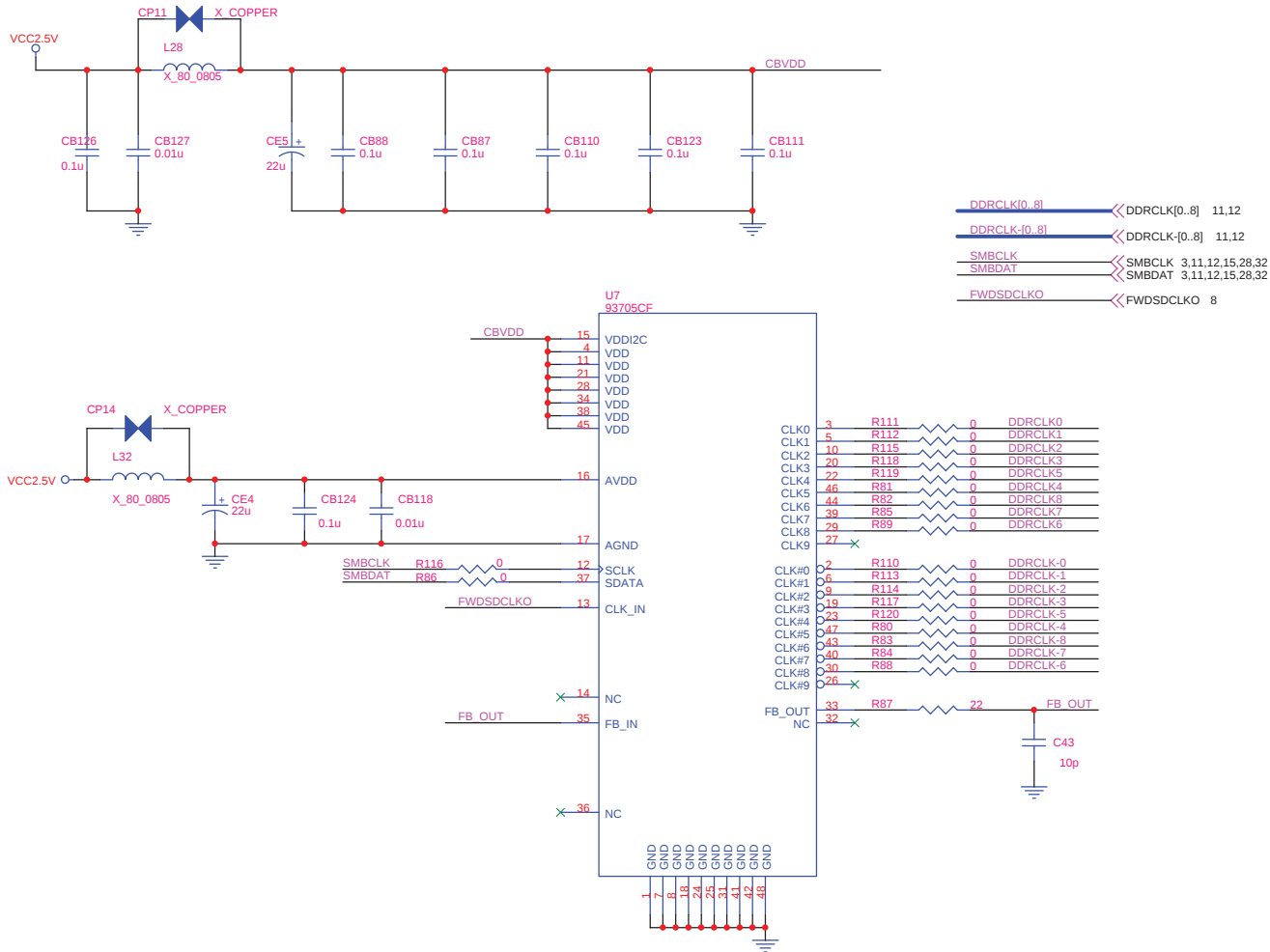
GPIO Table on SIS961

GPIO_0	I/O	MAIN	VID0
GPIO_1	I/O	MAIN	Pull-Down
GPIO_2	I/O	MAIN	THERM#
GPIO_3	I/O	MAIN	EXTSMI#
GPIO_4	I/O	MAIN	Pull-Down
GPIO_5	I/O	MAIN	PREQ#5(Pull-Up)
GPIO_6	I/O	MAIN	PGNT#5(Pull-Up)
GPI_7	I/O	RESUME	Pull-Down
GPI_8	I	RESUME	RING
GPI_9	I	RESUME	RESERVED
GPI_10	I	RESUME	RESERVED
GPIO_11	I/O	RESUME	RESERVED
GPIO_12	I/O	RESUME	Pull-Down
GPIO_13	I/O	RESUME	Flash Rom protection H: Disable, L: Enable
GPIO_14	I/O	RESUME	LAN_WAKE#
GPIO_15	I/O	RESUME	KBDAT
GPIO_16	I/O	RESUME	KBCLK
GPIO_17	I/O	RESUME	MSDAT
GPIO_18	I/O	RESUME	MSCLK
GPIO_19	I/O	RESUME	SMBCLK
GPIO_20	I/O	RESUME	SMBDAT

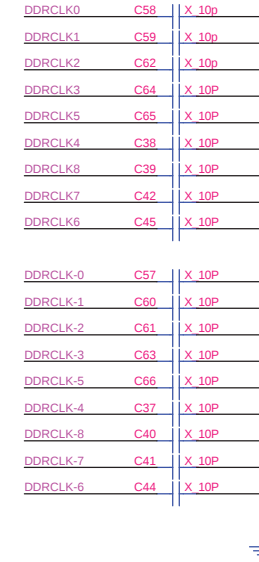


Clock Buffer (DDR)

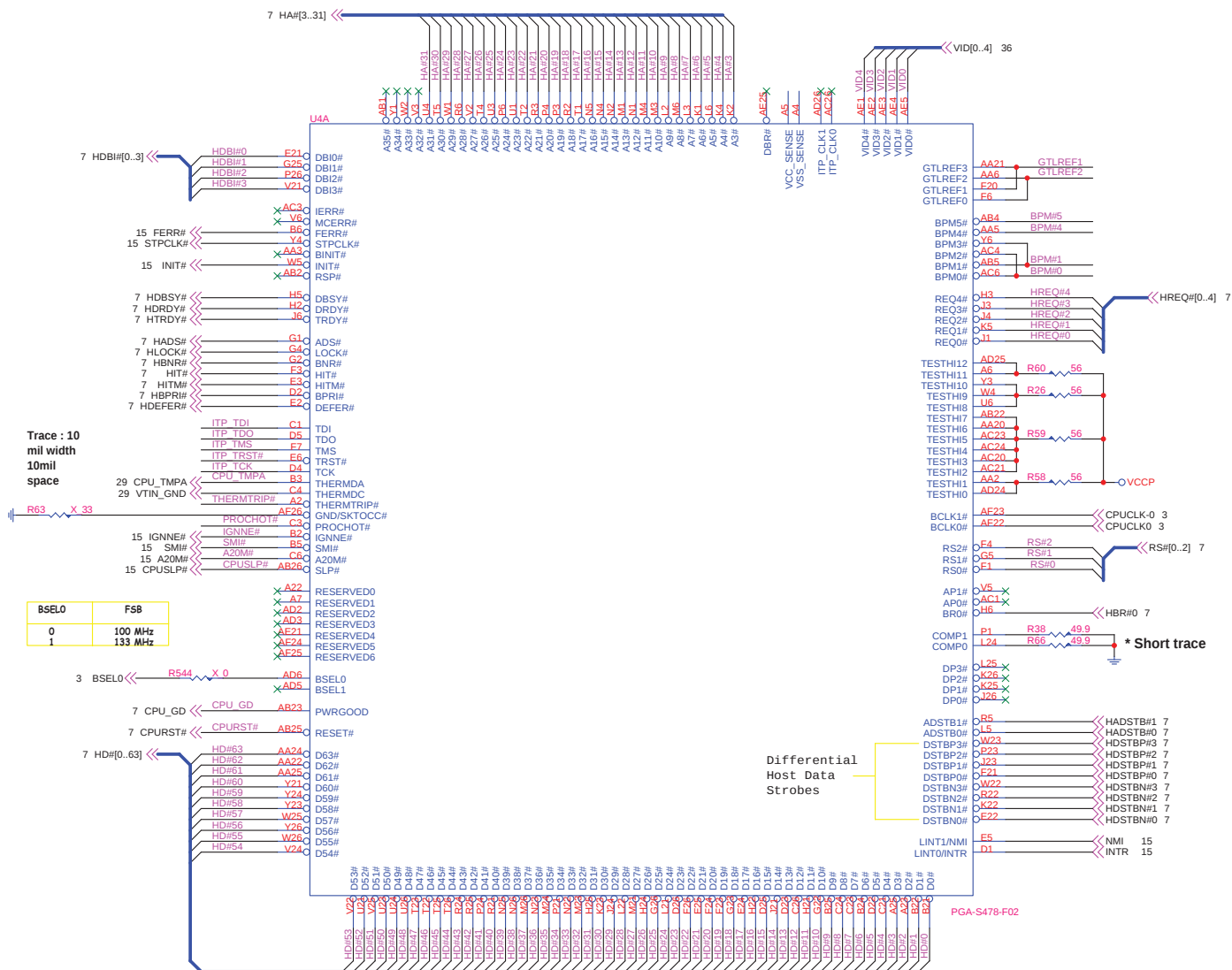
(OPTIONS)
1: (ICS-93705)



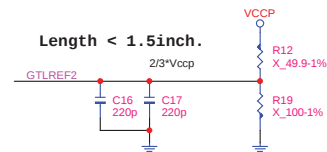
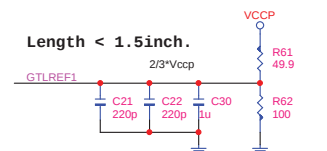
By-Pass Capacitors
Place near to the Clock Buffer



CPU SIGNAL BLOCK



CPU GTL REFERENCE VOLTAGE BLOCK



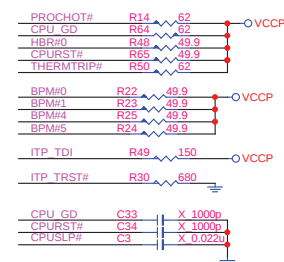
Every pin put one 220pF cap near it.
Trace Width 15mils, Space 15mils.
Keep the voltage dividers within 1.5 inches of the
first GTLREF Pin

CPU ITP BLOCK

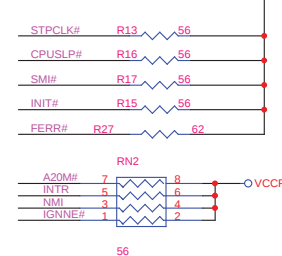


CPU STRAPPING RESISTORS

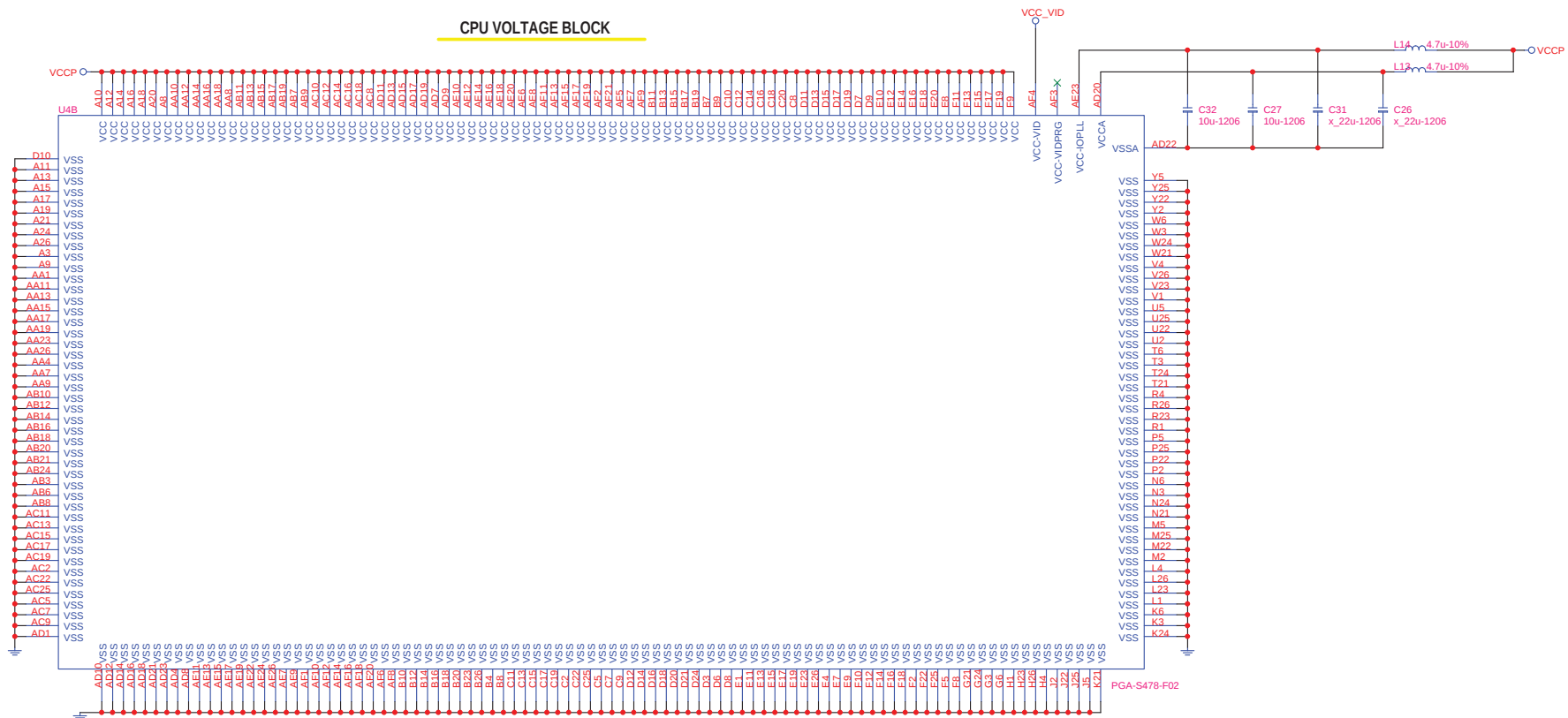
CLOSED TO SOCKET478



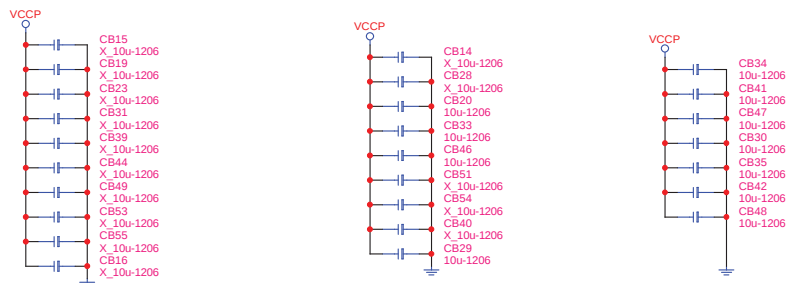
CLOSED TO SOCKET478



CPU VOLTAGE BLOCK



CPU DECOUPLING CAPACITORS



PLACE CAPS WITHIN CPU CAVITY

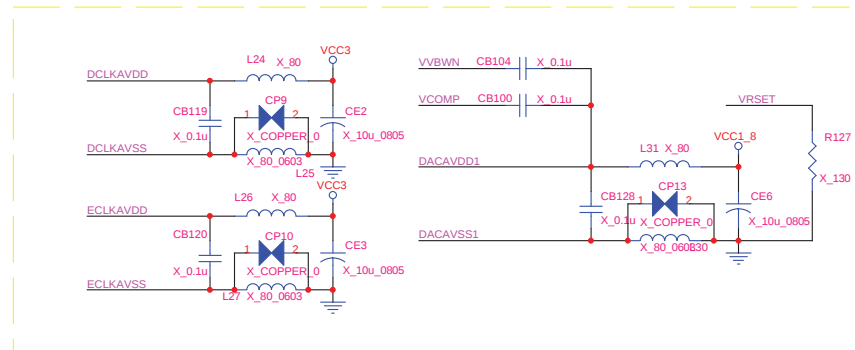
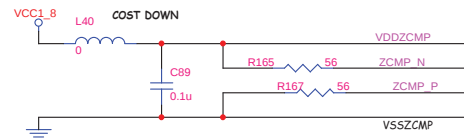
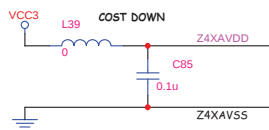
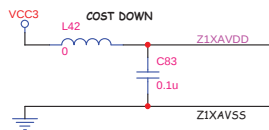
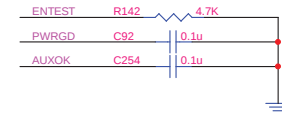
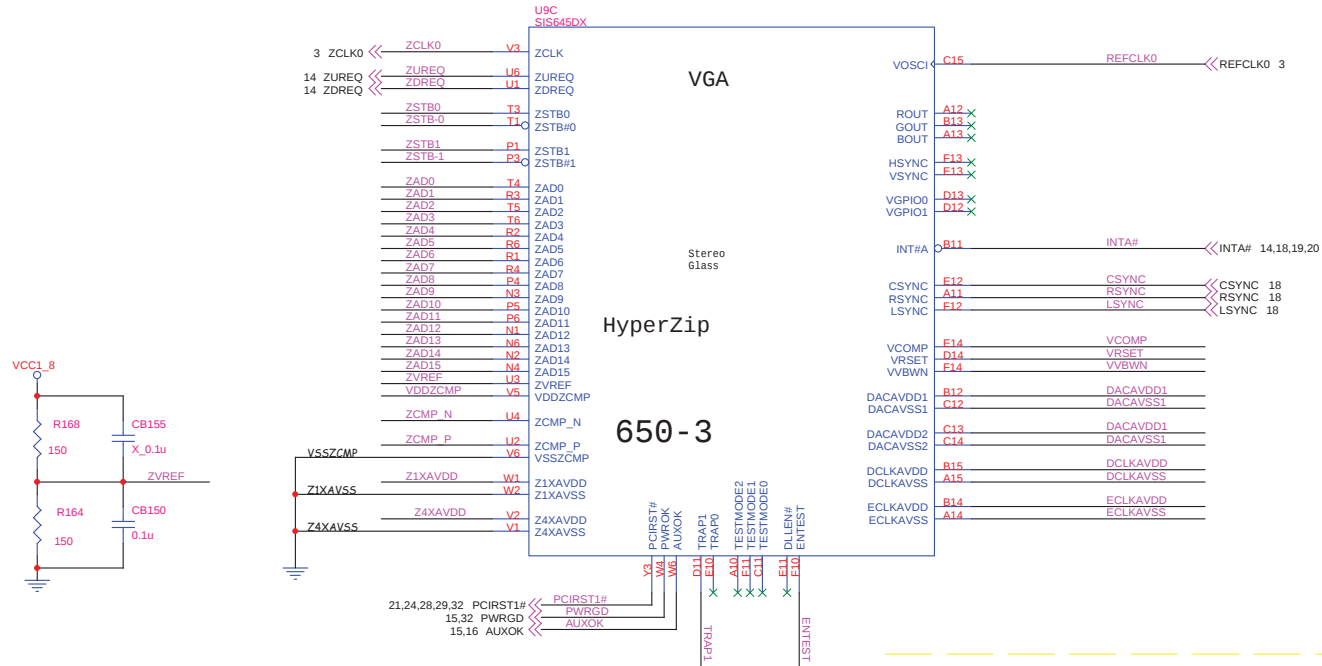
NB Hardware Trap Table

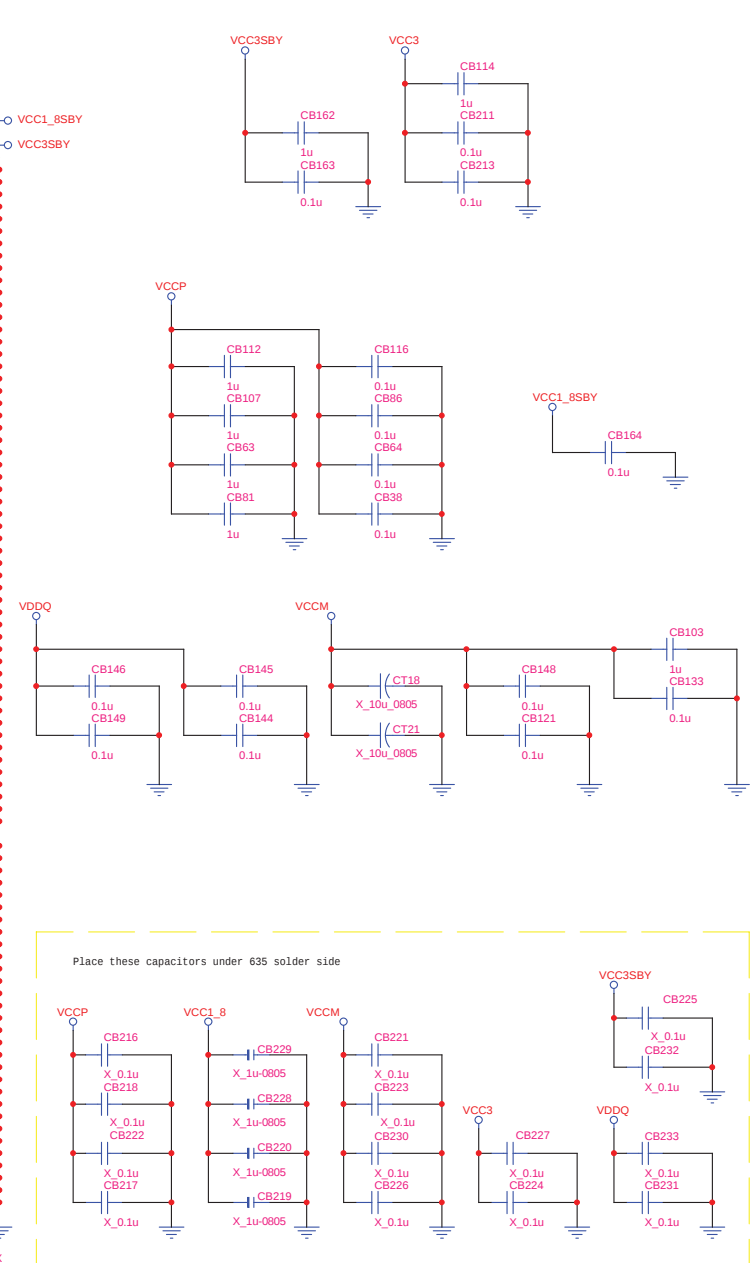
```

embedded pull-low
(30-50K Ohm)
    yes
    yes
    yes

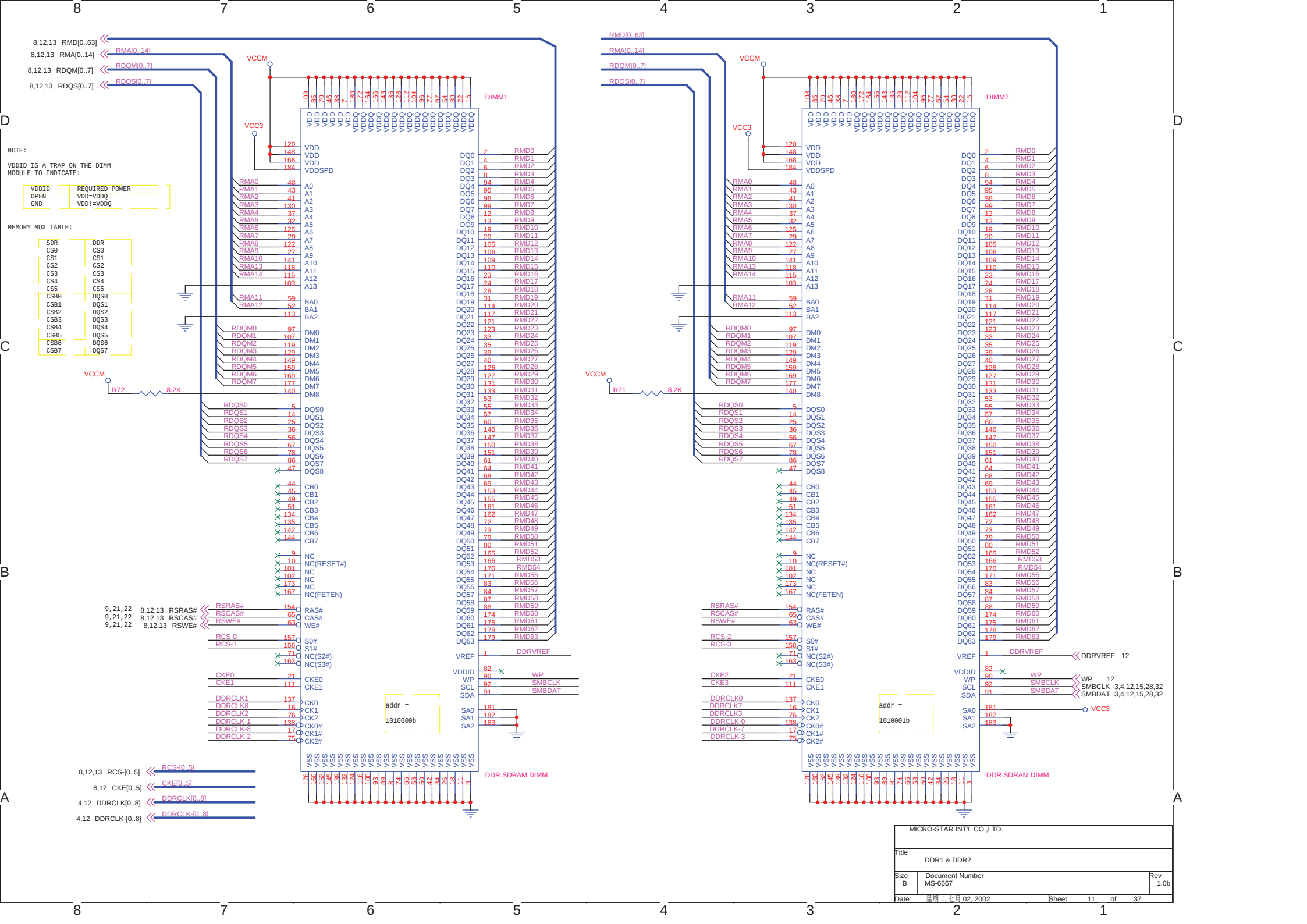
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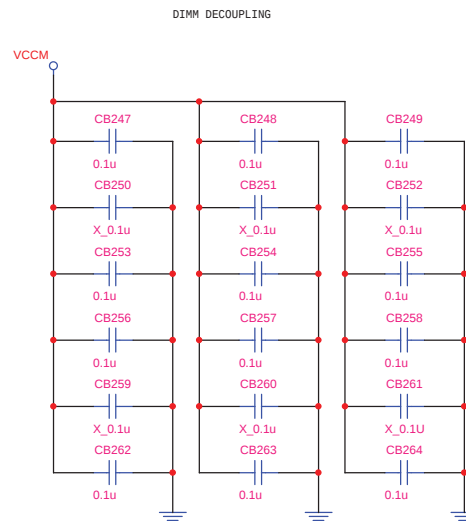
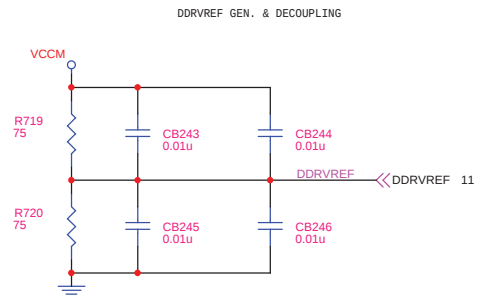
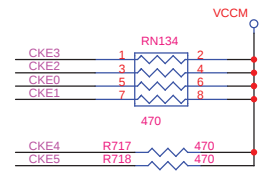
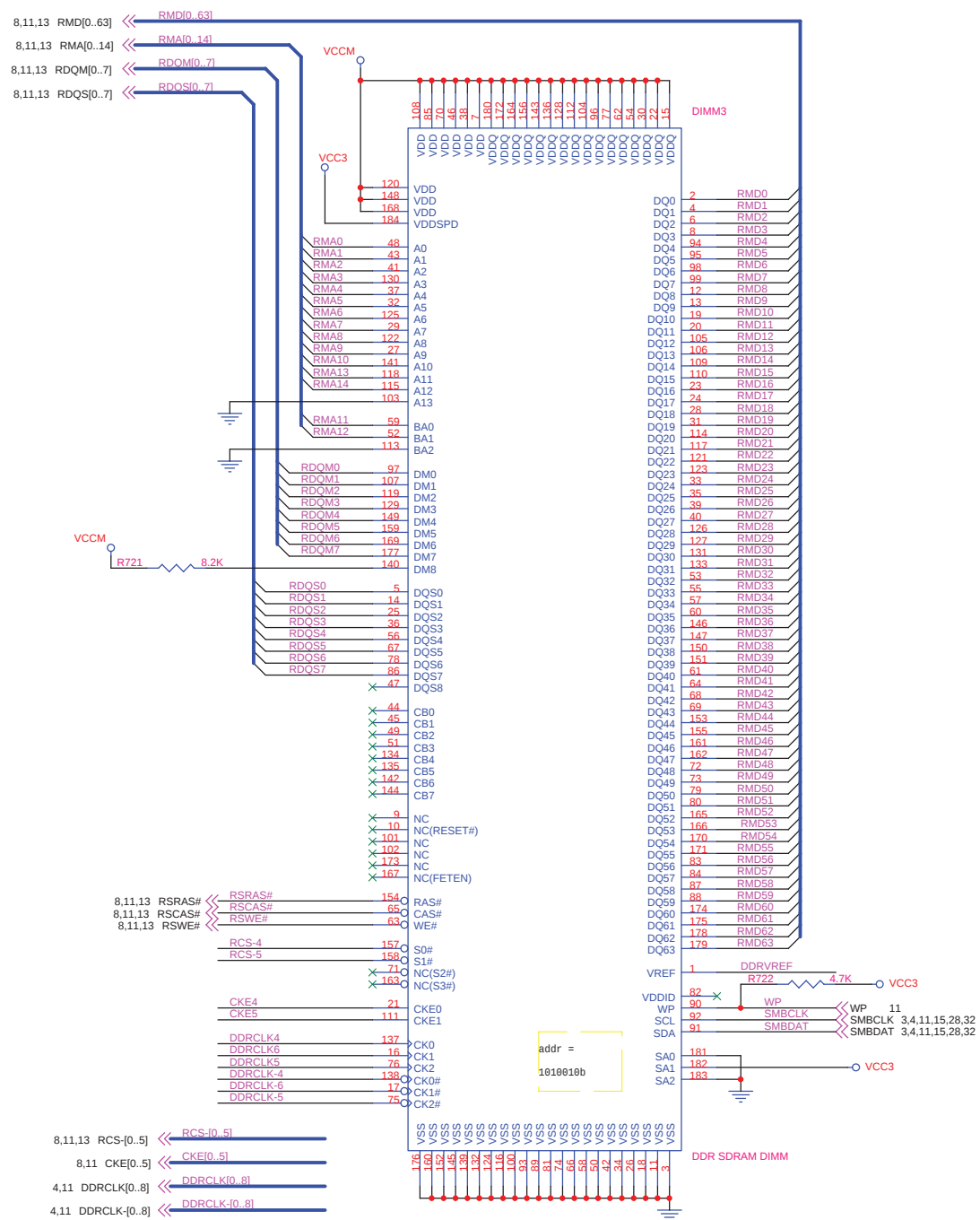
14 ZAD[0..15] << ZAD[0..15]
14 ZSTB[0..1] << ZSTB[0..1]
14 ZSTB[0..1] << ZSTB[0..1]





MICRO-STAR INT'L CO.,LTD.			
Title			
SIS645/650-4			
Size	Document Number		Rev
	MS-6567		1.0b
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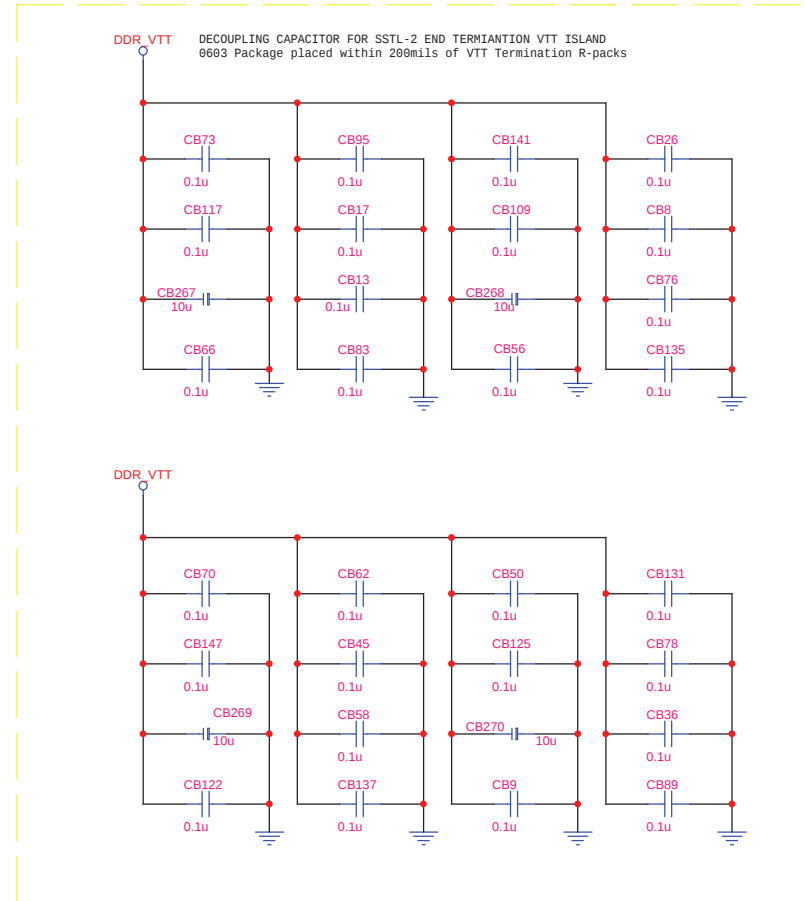
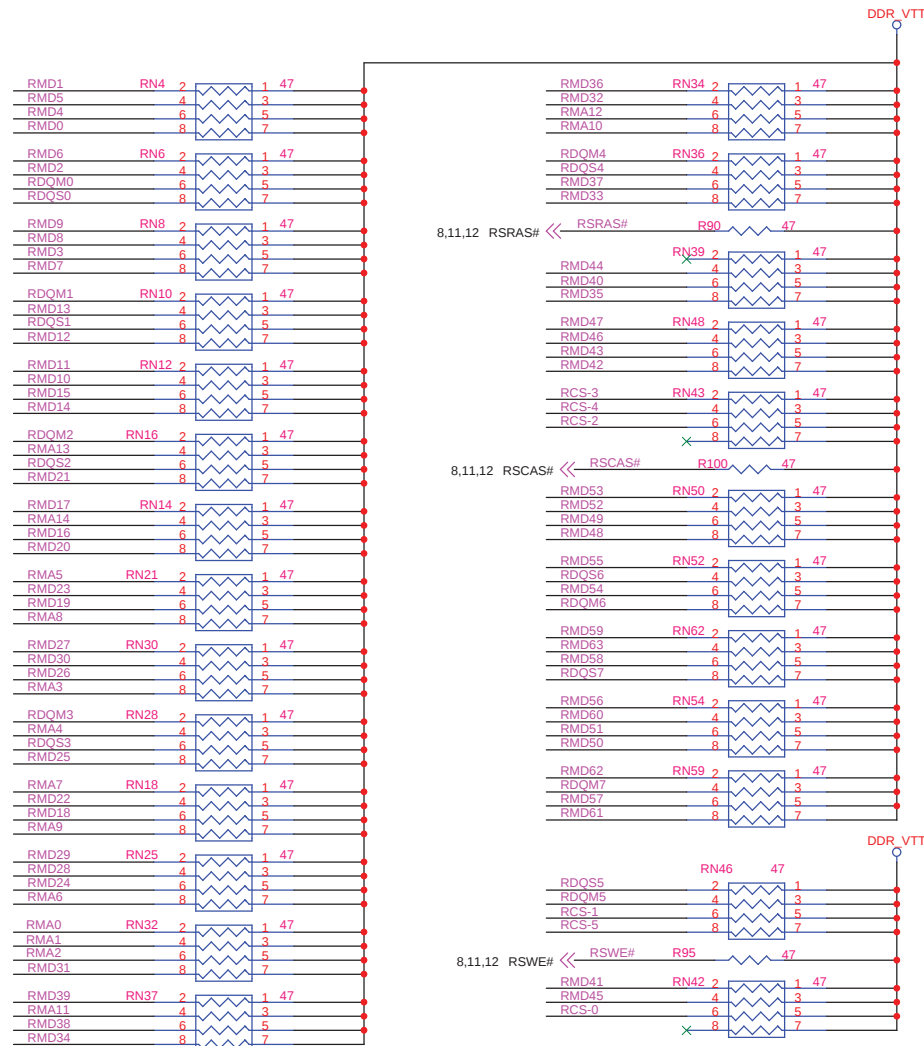


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Date:	星期二, 七月 02, 2002	Sheet	12 of	37

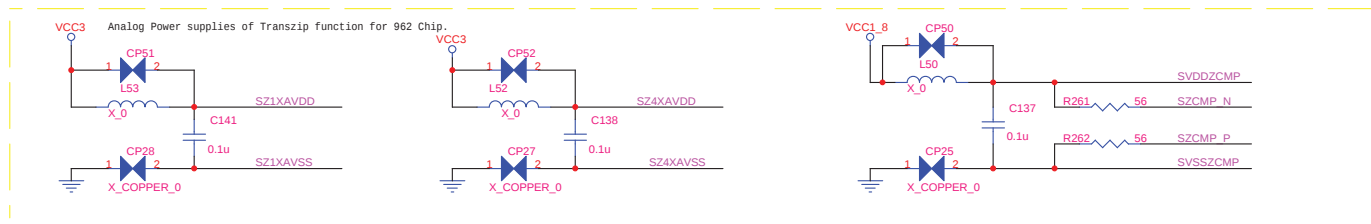
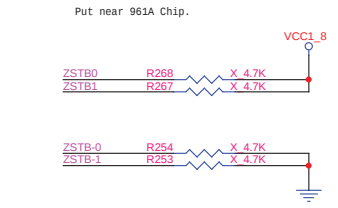
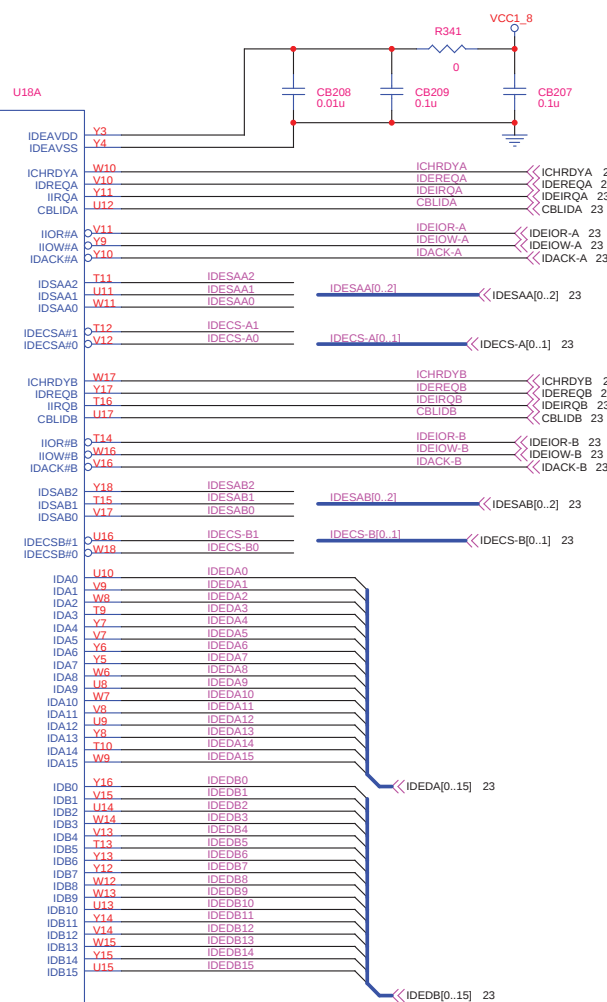
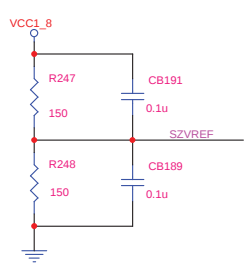
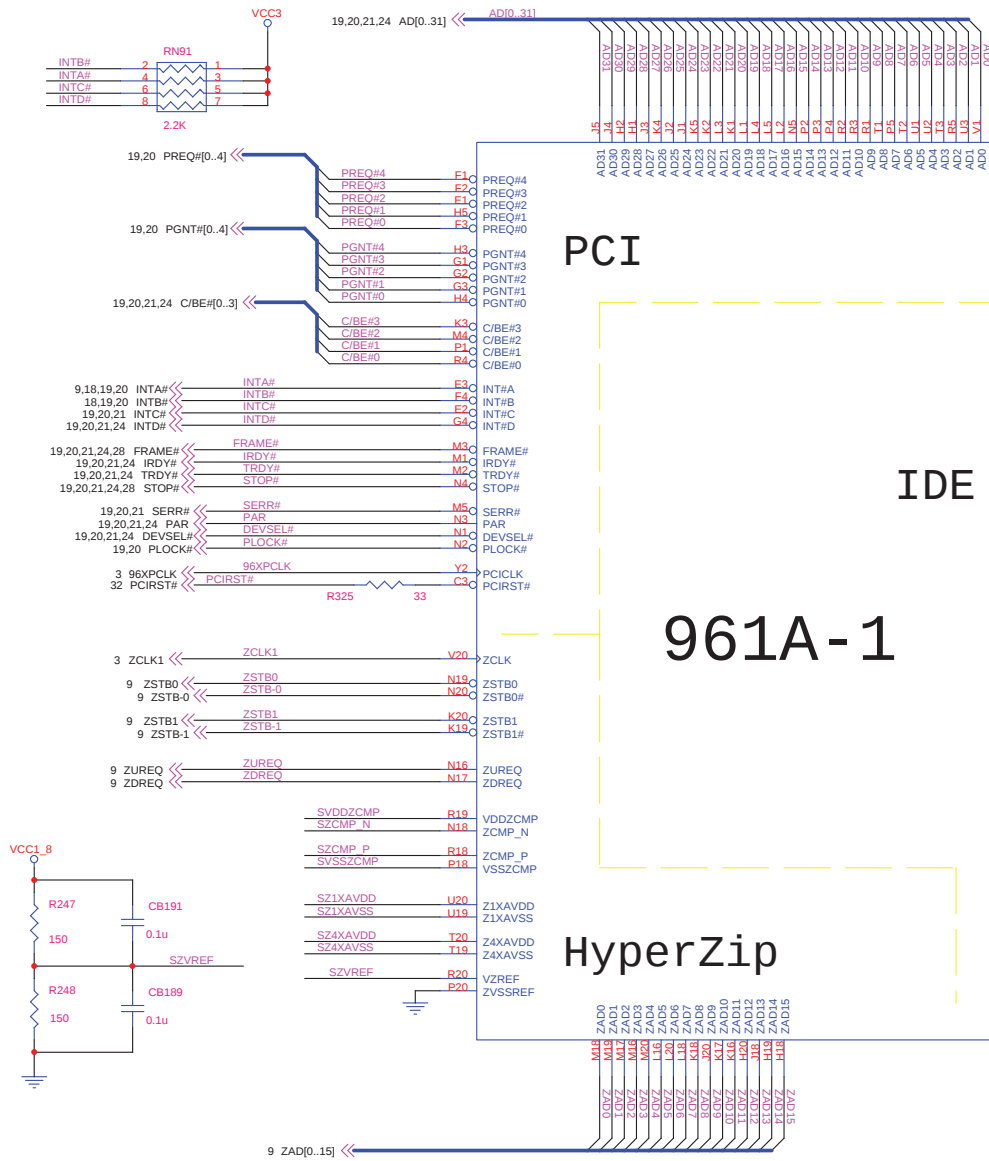
SSTL-2 Termination Resistors

RMD[0..63]	<<	RMD[0..63]	8,11,12
RDQM[0..7]	<<	RDQM[0..7]	8,11,12
RDQS[0..7]	<<	RDQS[0..7]	8,11,12
RMA[0..14]	<<	RMA[0..14]	8,11,12
RCS[0..5]	<<	RCS[0..5]	8,11,12

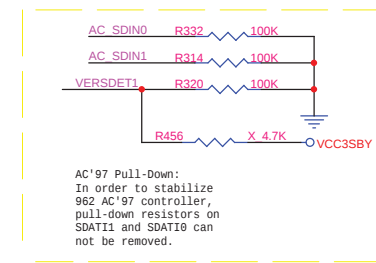
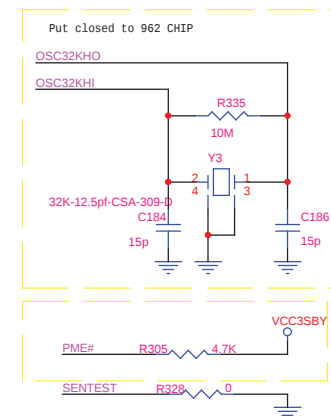
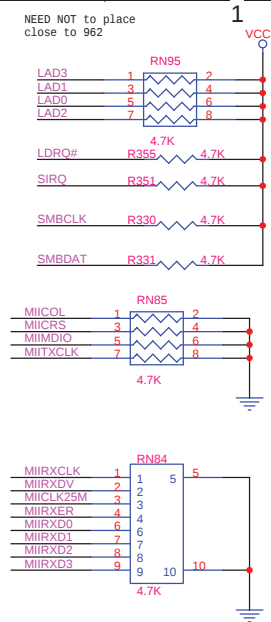
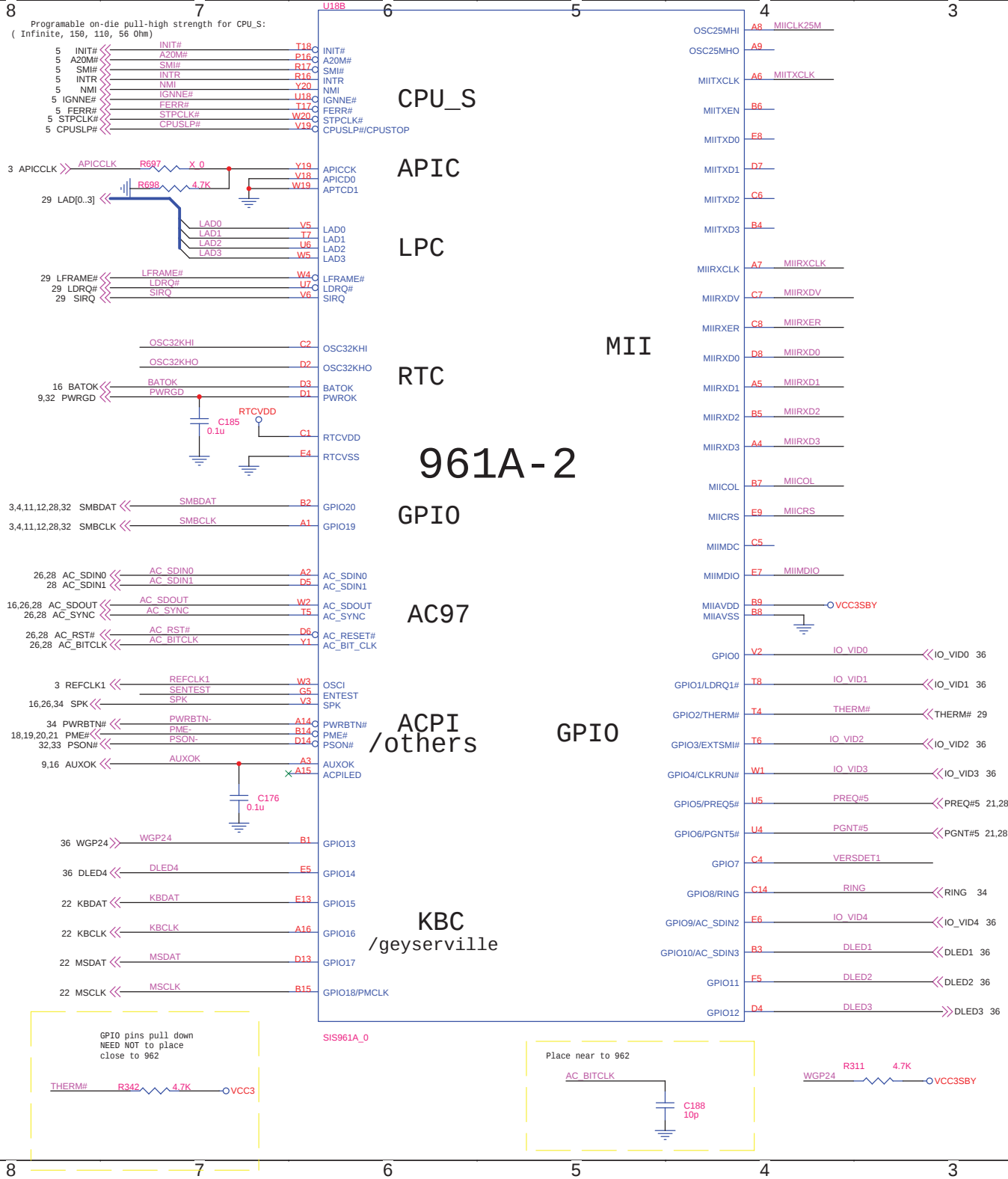
	SDR		DDR		
MD/DQM(/DQS)	LV-CMOS	Rs	SSTL-2	Rs	Rtt
MA/Control	LV-CMOS	0/10/-	SSTL-2	10	47
CS	LV-CMOS	10	SSTL-2	0	47
CKE	OD 3.3V	0	SSTL-2	0	47
			OD 2.5V		



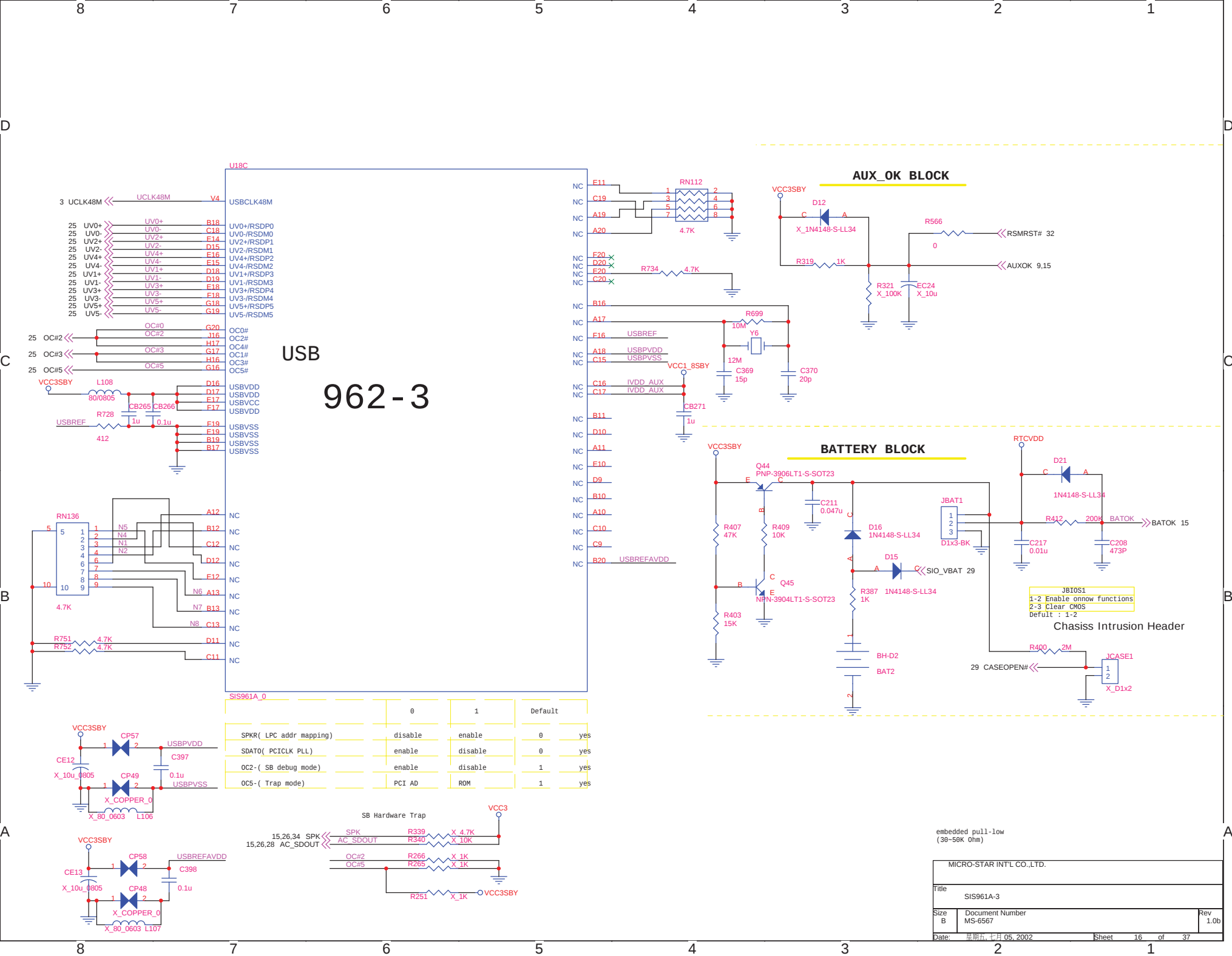
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Size Custom	Document Number MS-6567	Rev 1.0b	
Date: 星期二, 七月 02, 2002	Sheet 13	of 37	

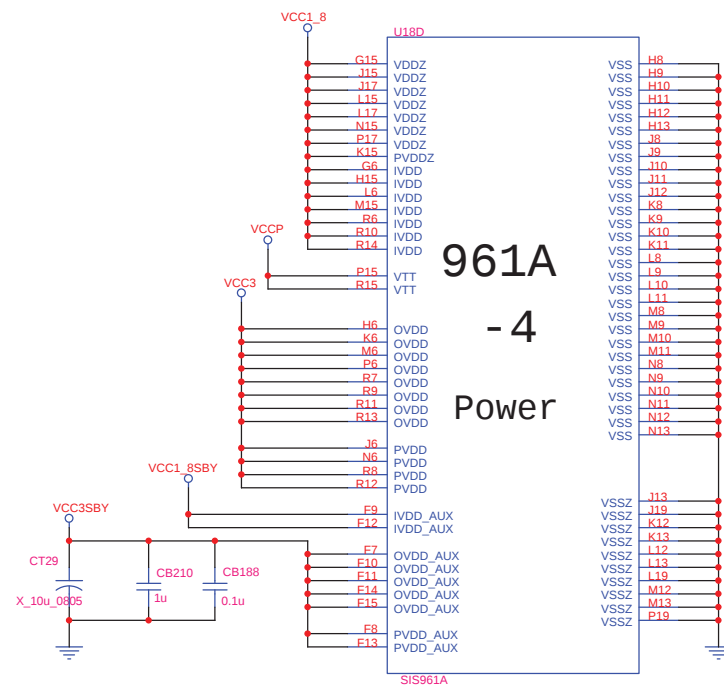
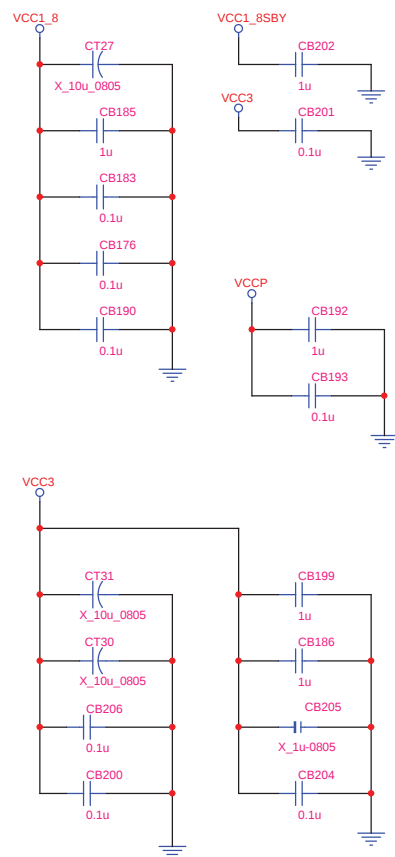


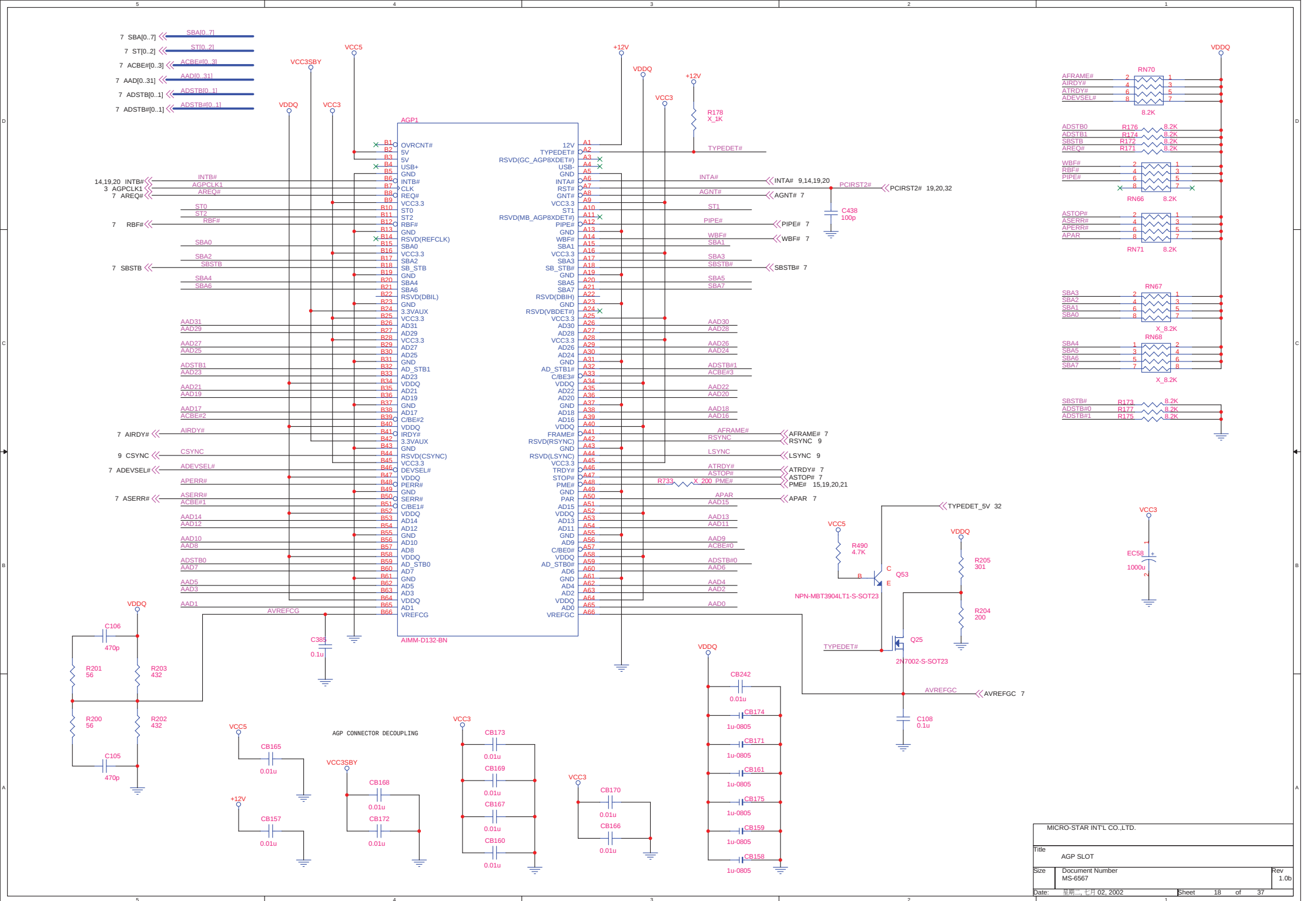
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SIS961A-1		
Size	Document Number	Rev
	MS-6567	1.0b
Date:	星期三, 七月 03, 2002	Sheet 14 of 37

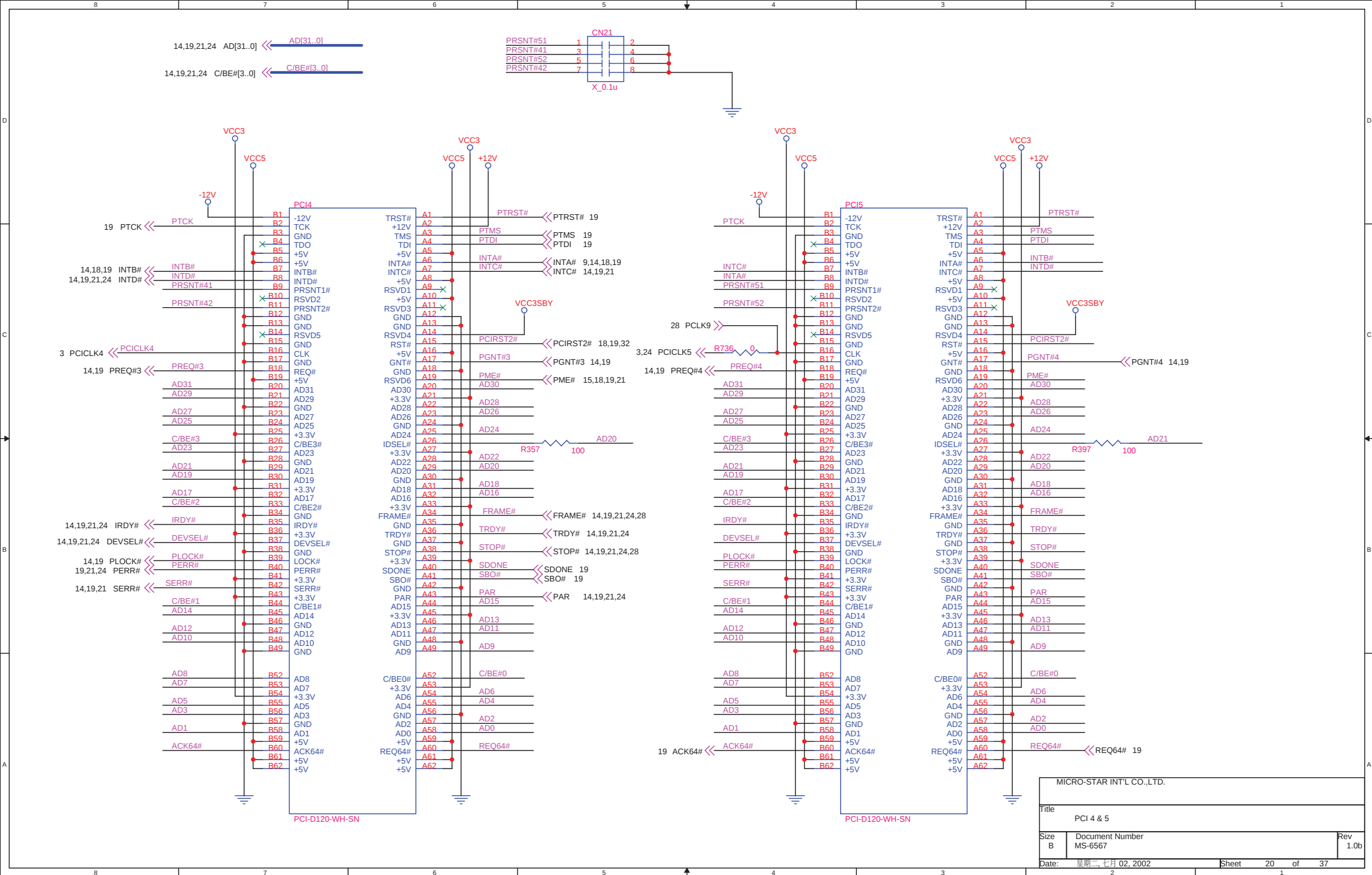


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Size B	Document Number MS-6567		Rev 1.0b
Date:	星期四, 七月 04, 2002	Sheet	15 of 37

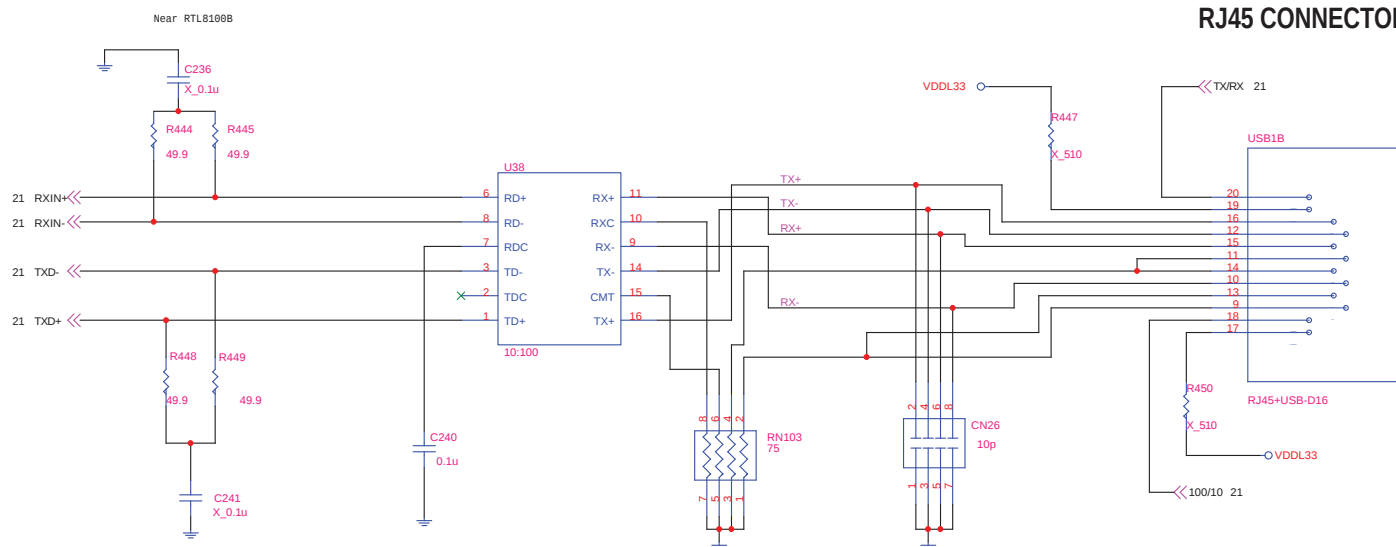


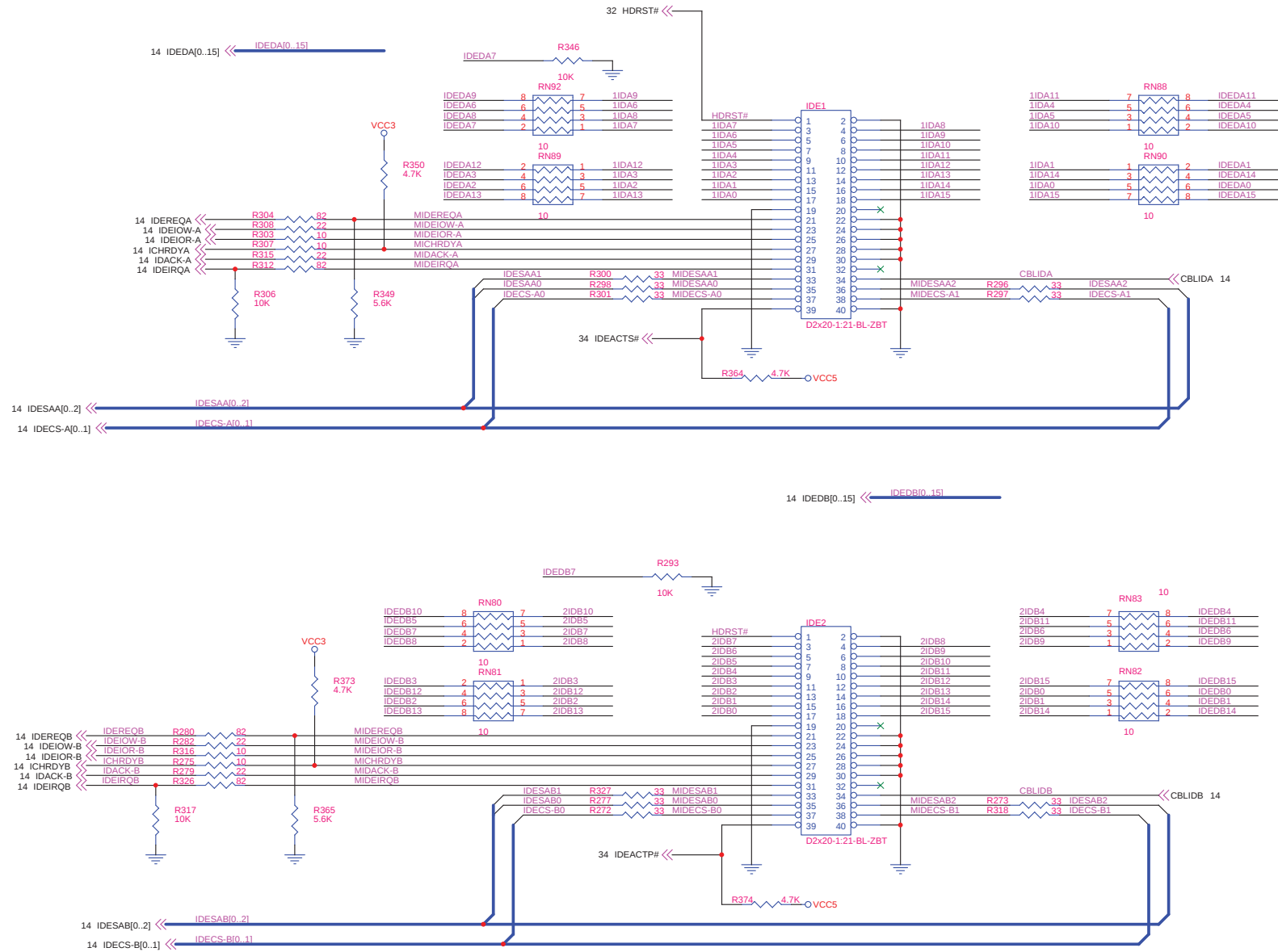




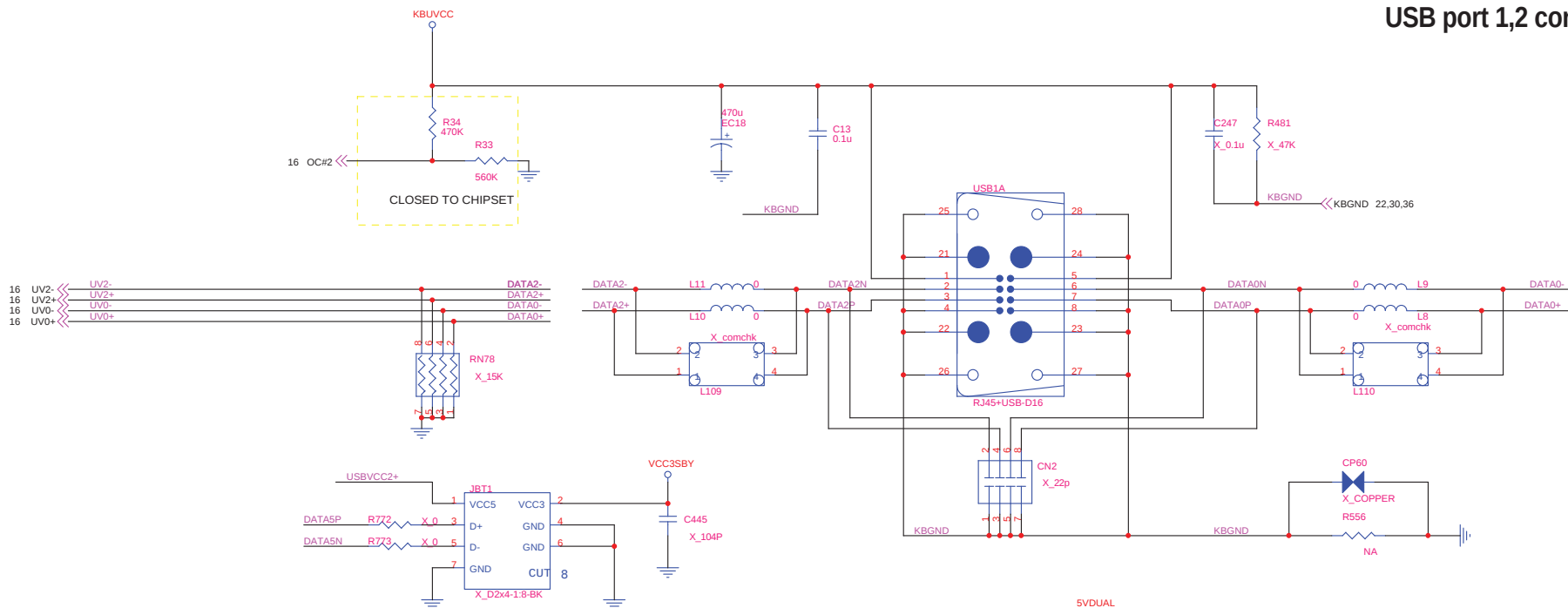


MICRO-STAR INT'L CO.,LTD.			
Title RJ45 & PS/2			
Size	Document Number MS-6567		Rev 1.0b
Date:	星期五, 七月 05, 2002	Sheet	22 of 37

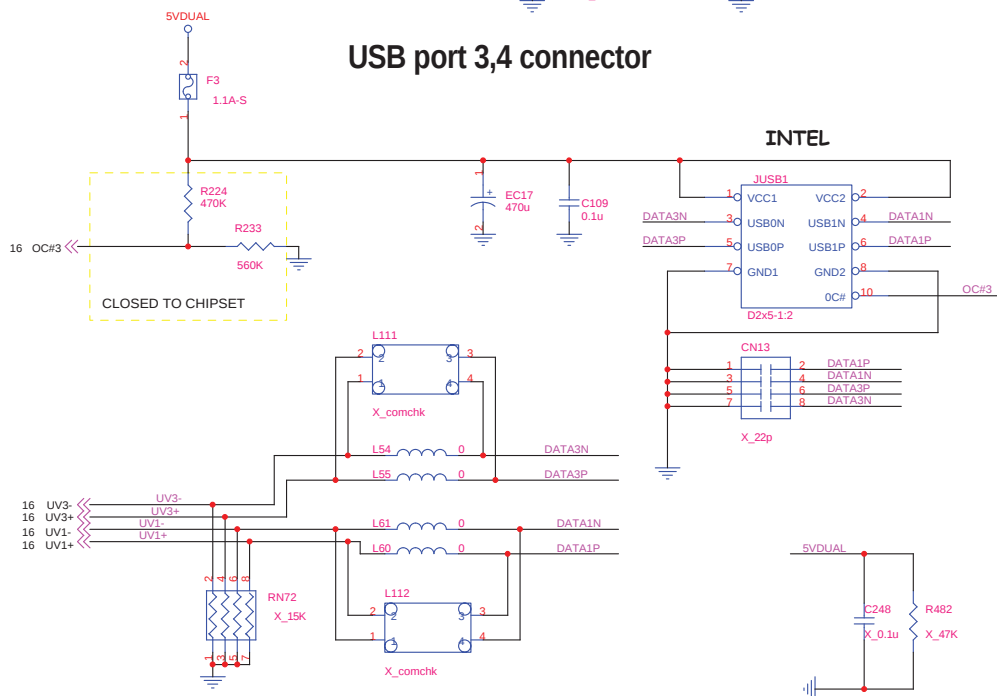




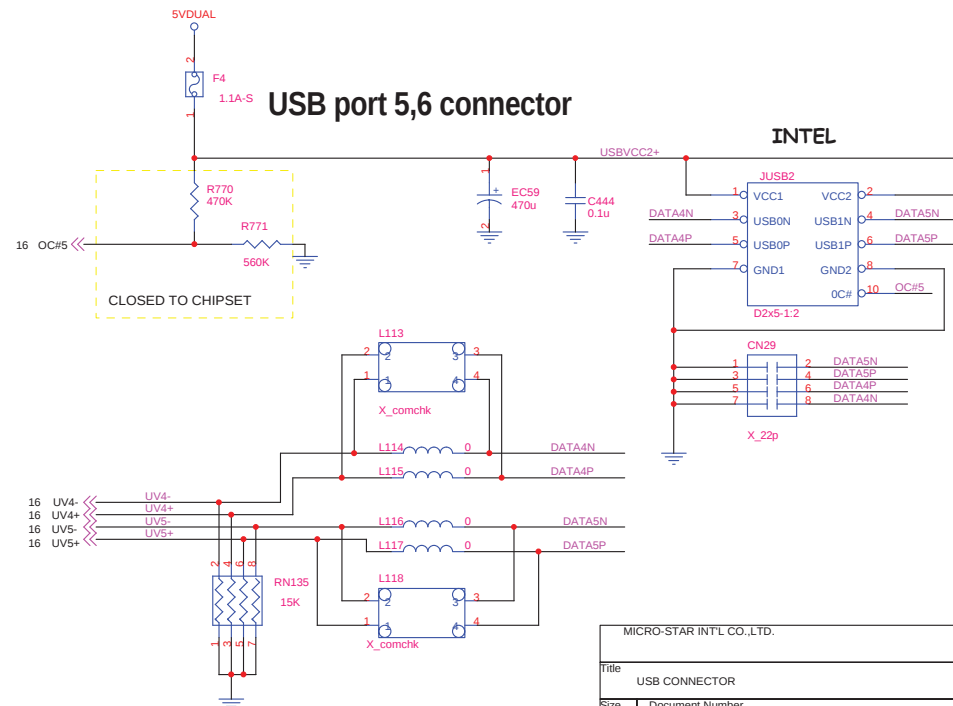
USB port 1,2 connector

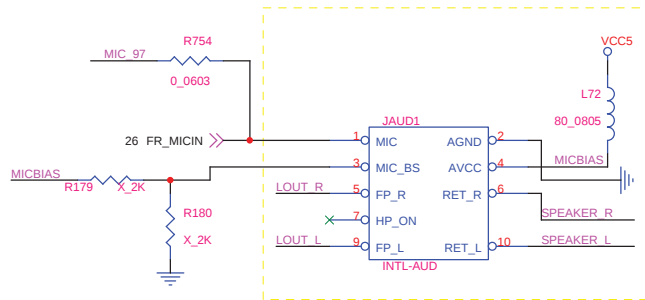


USB port 3,4 connector

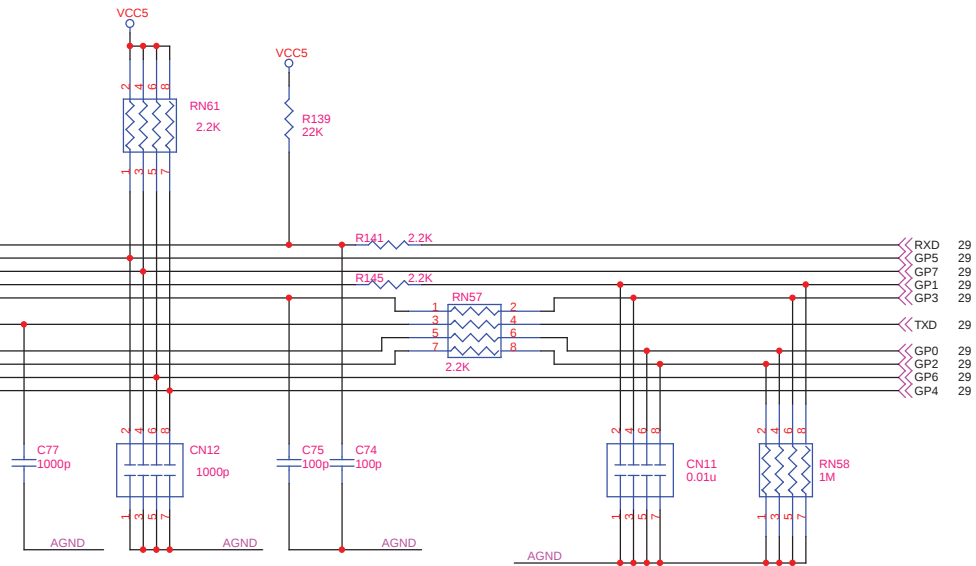
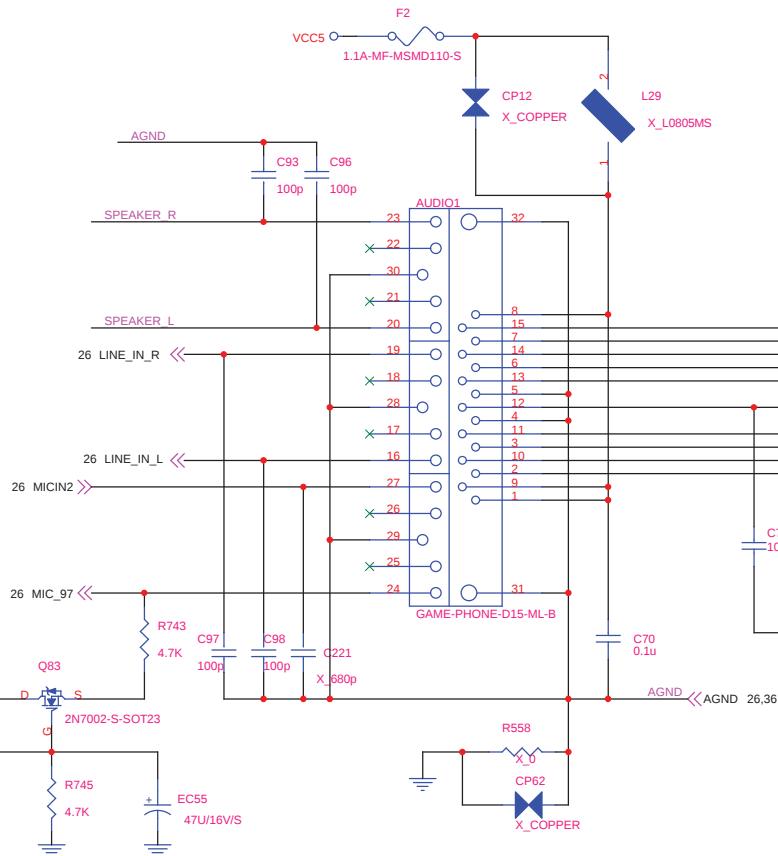
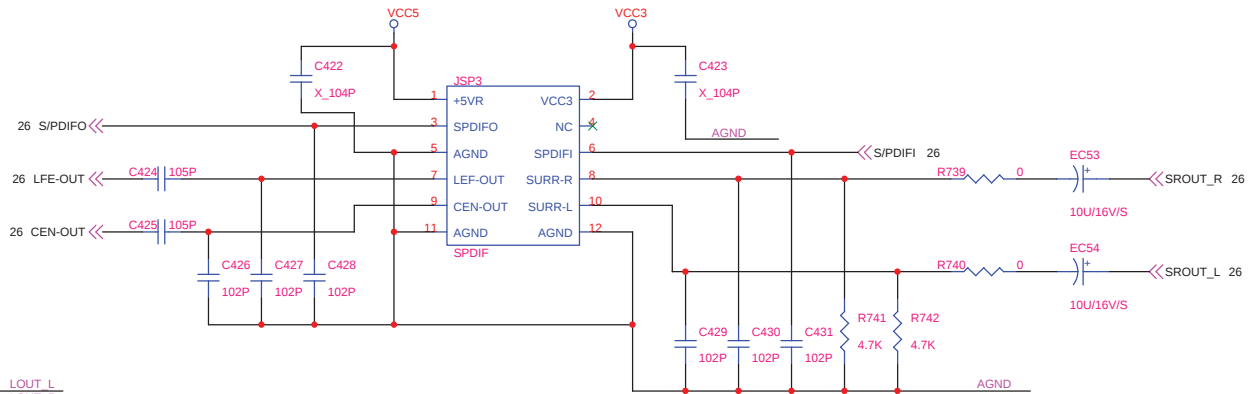
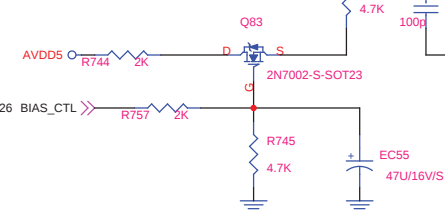
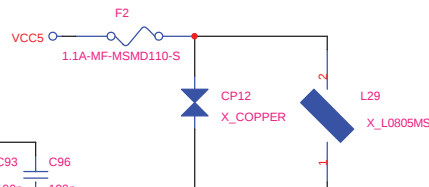
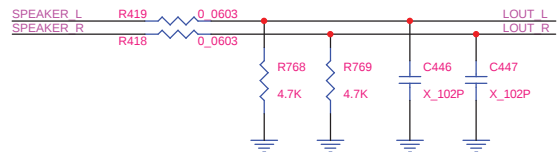


USB port 5,6 connector

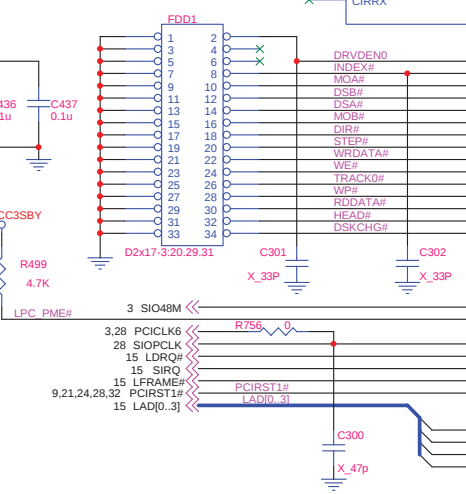
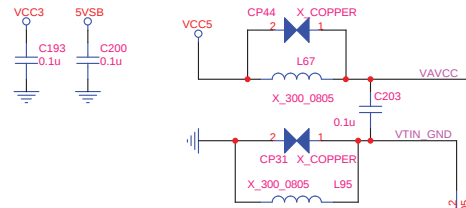
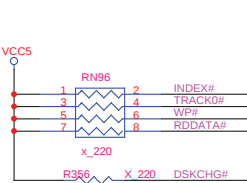




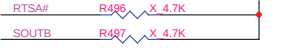
26 LOUT_R >> LOUT_R
26 LOUT_L >> LOUT_L



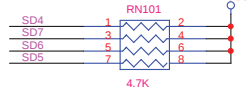
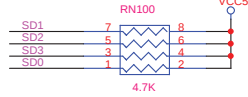
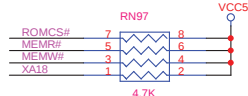
MICRO-STAR INT'L CO.,LTD.		
Title	AUDIO CONNECTOR	
Size	Document Number MS-6567	Rev 1.0b
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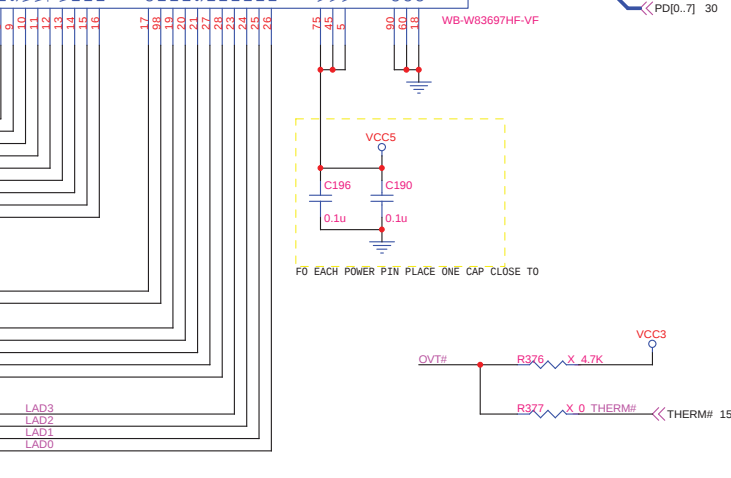
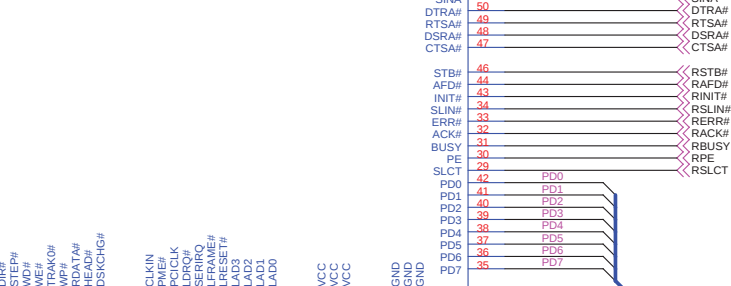
RTSA#	L: CFAD=2E	H: CFAD=4E
SOUTB	L: 24MHZ	H: 48MHZ



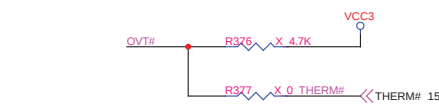
STRAPS



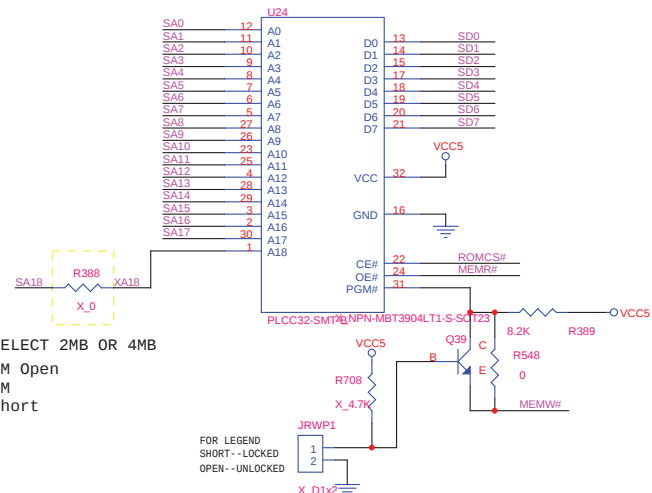
W83697HF



FO EACH POWER PIN PLACE ONE CAP CLOSE TO

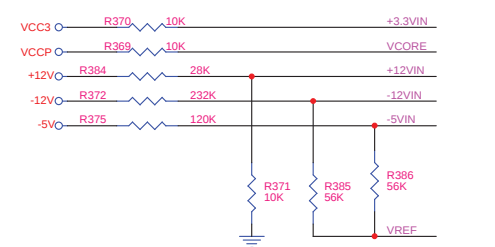
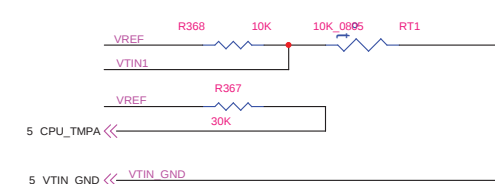


SELECT 2MB OR 4MB
2M Open
4M Short



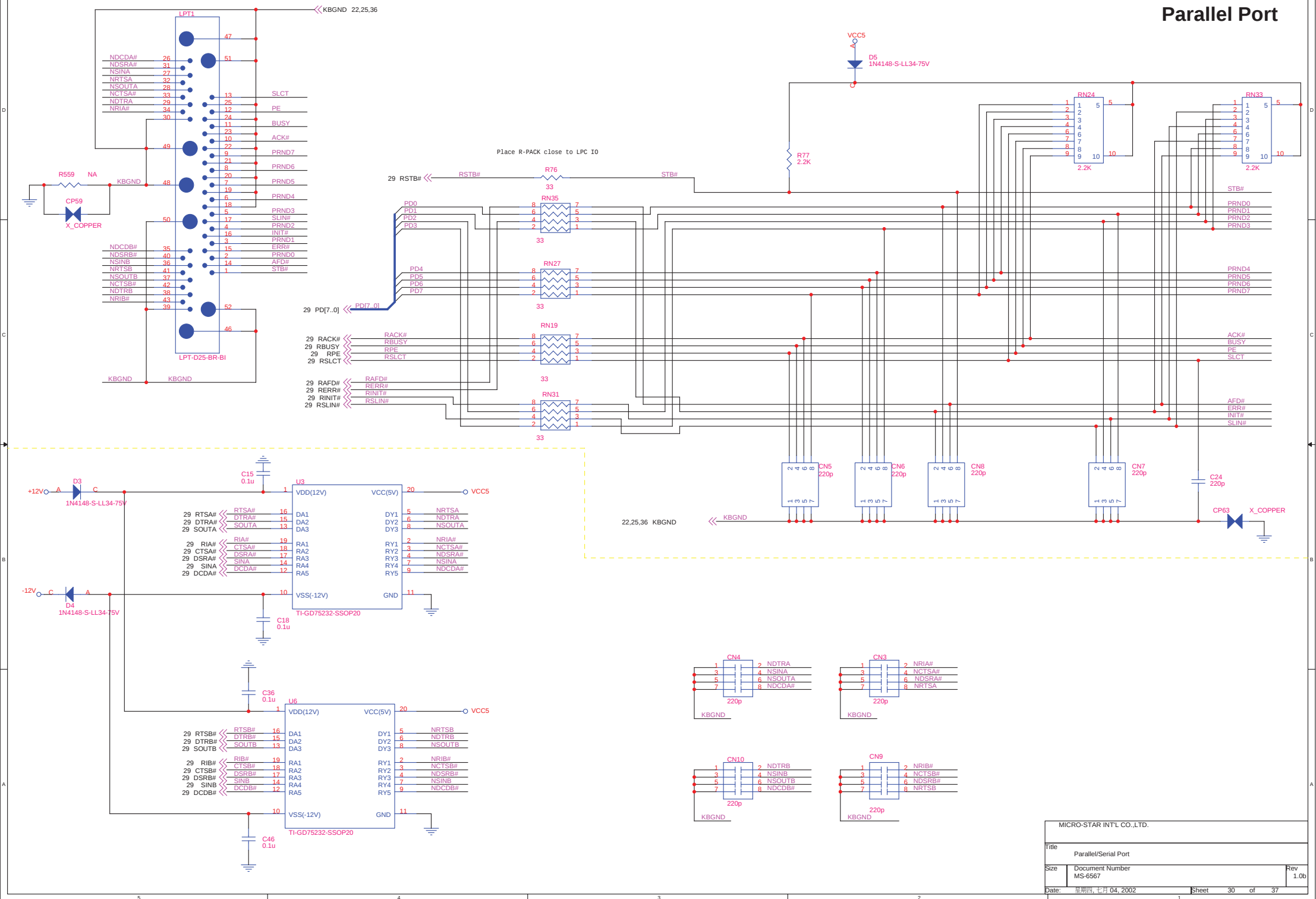
Flash Rom

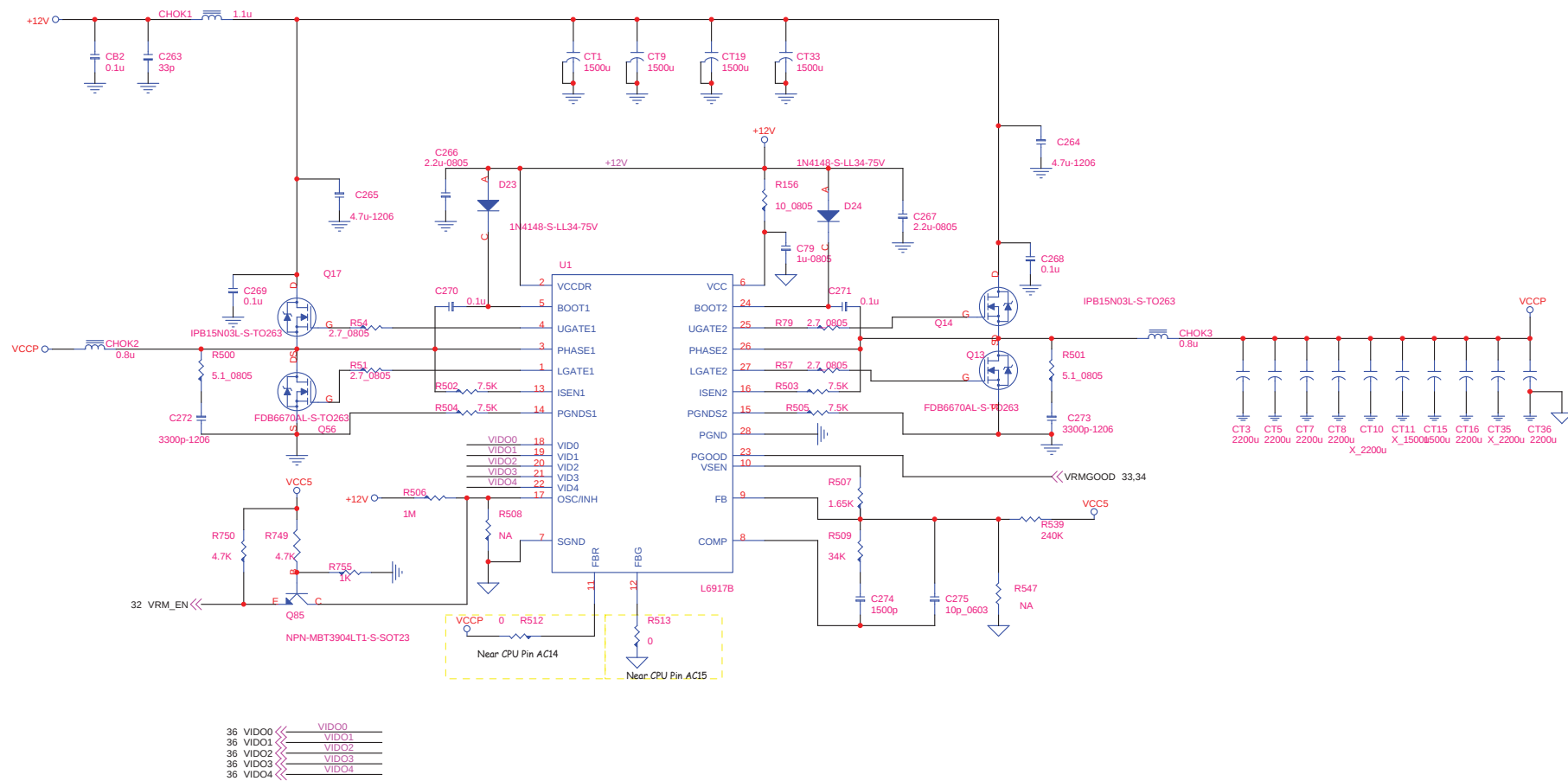
Hardware Monitor



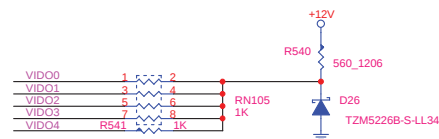
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Title LPC I/O(W83697HF)		
Size Document Number MS-6567	Rev 1.0b	
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Parallel Port

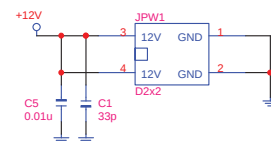




VID PULL-UP RESISTORS

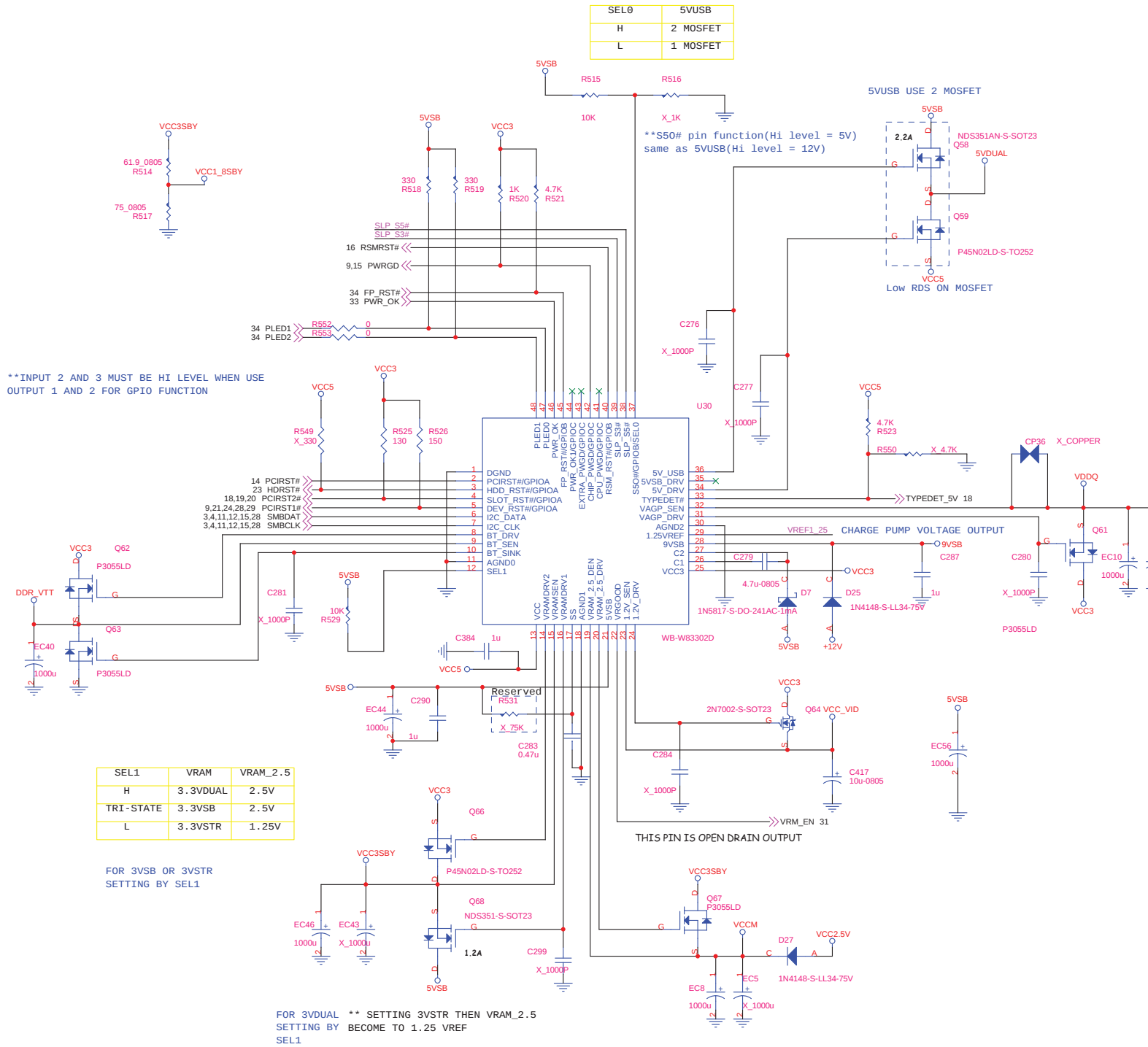


ATX12V POWER CONNECTOR



MICRO-STAR INT'L CO., LTD.		
Title		
VRM 9.0		
Size	Document Number	Rev
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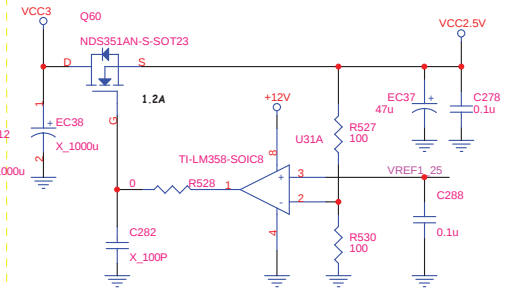
SEL0	5VUSB
H	2 MOSFET
L	1 MOSFET



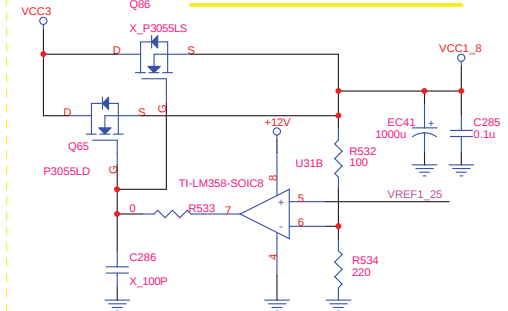
SEL1	VRAM	VRAM_2.5
H	3.3VDUAL	2.5V
TRI-STATE	3.3VSB	2.5V
L	3.3VSTR	1.25V

	S0	S3	S5
S3AUXSW#	1	0	1
PSON#	0	1	1
SLP_S5#	1	1	0
SLP_S3#	1	0	0

2.5V POWER TRANSLATOR

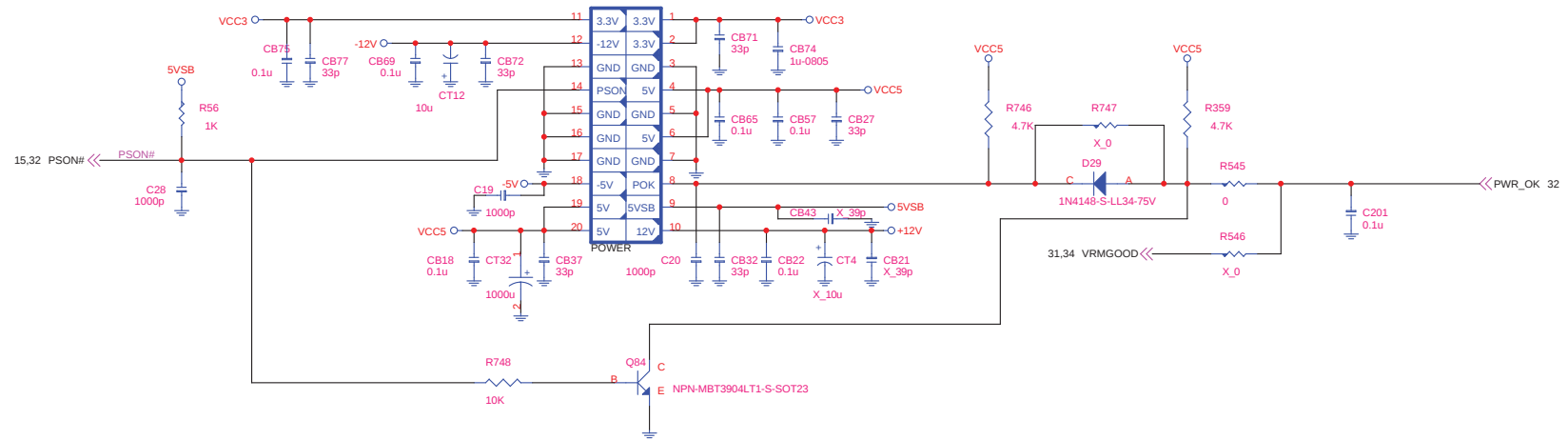


1.8V POWER TRANSLATOR

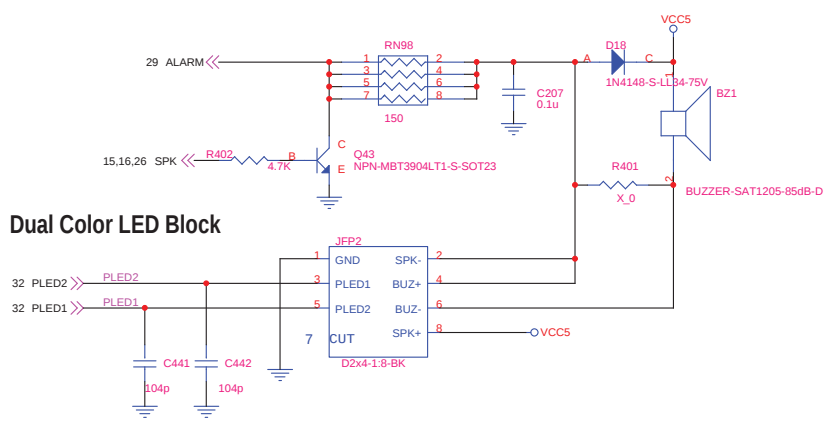


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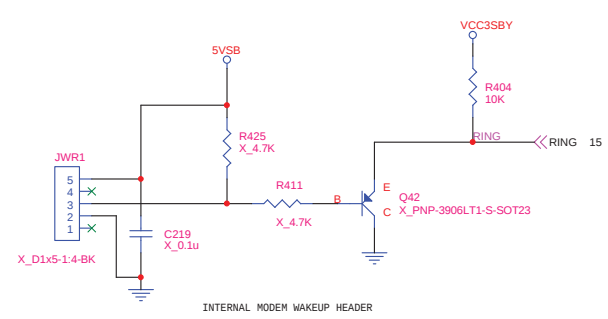
ATX CONNECTOR



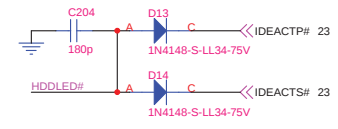
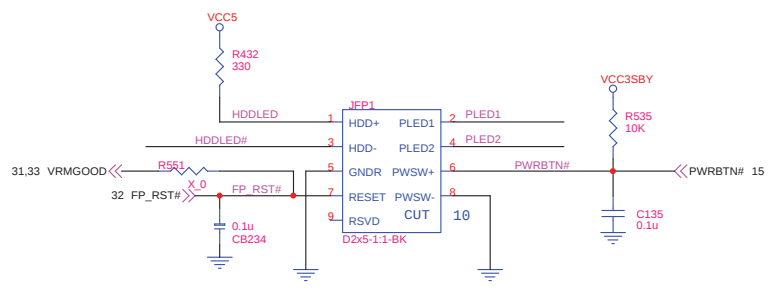
Dual Color LED Block



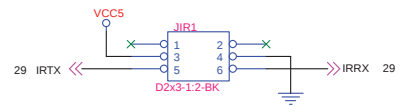
Wake by Modem



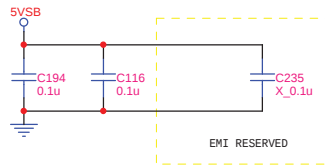
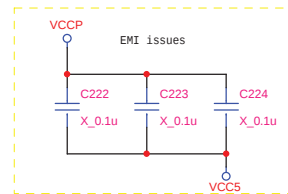
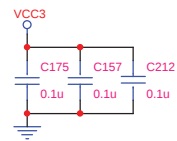
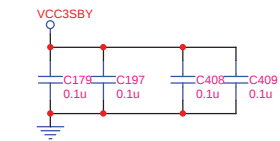
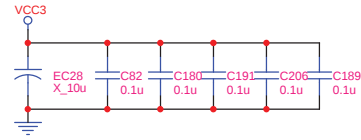
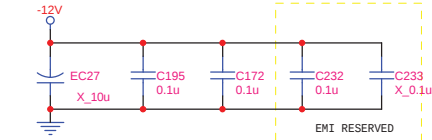
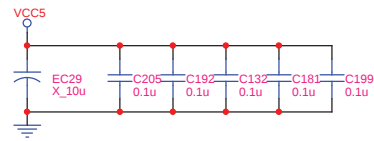
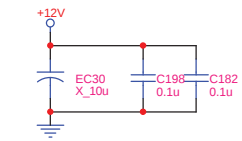
MSI



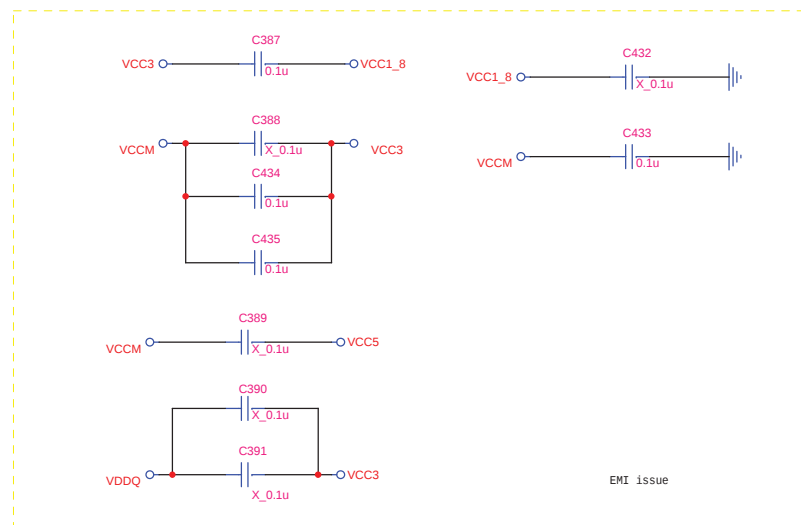
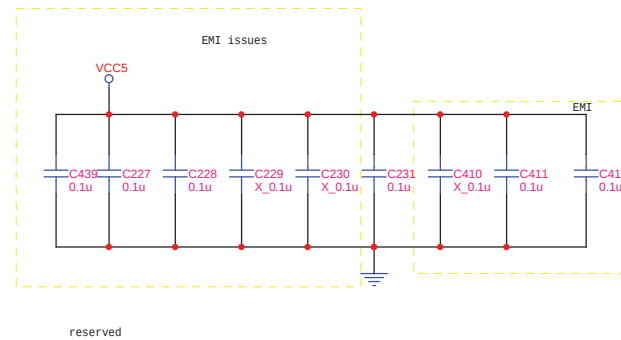
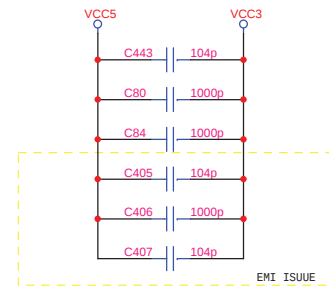
INTEL IR



System Decoupling Capacitors

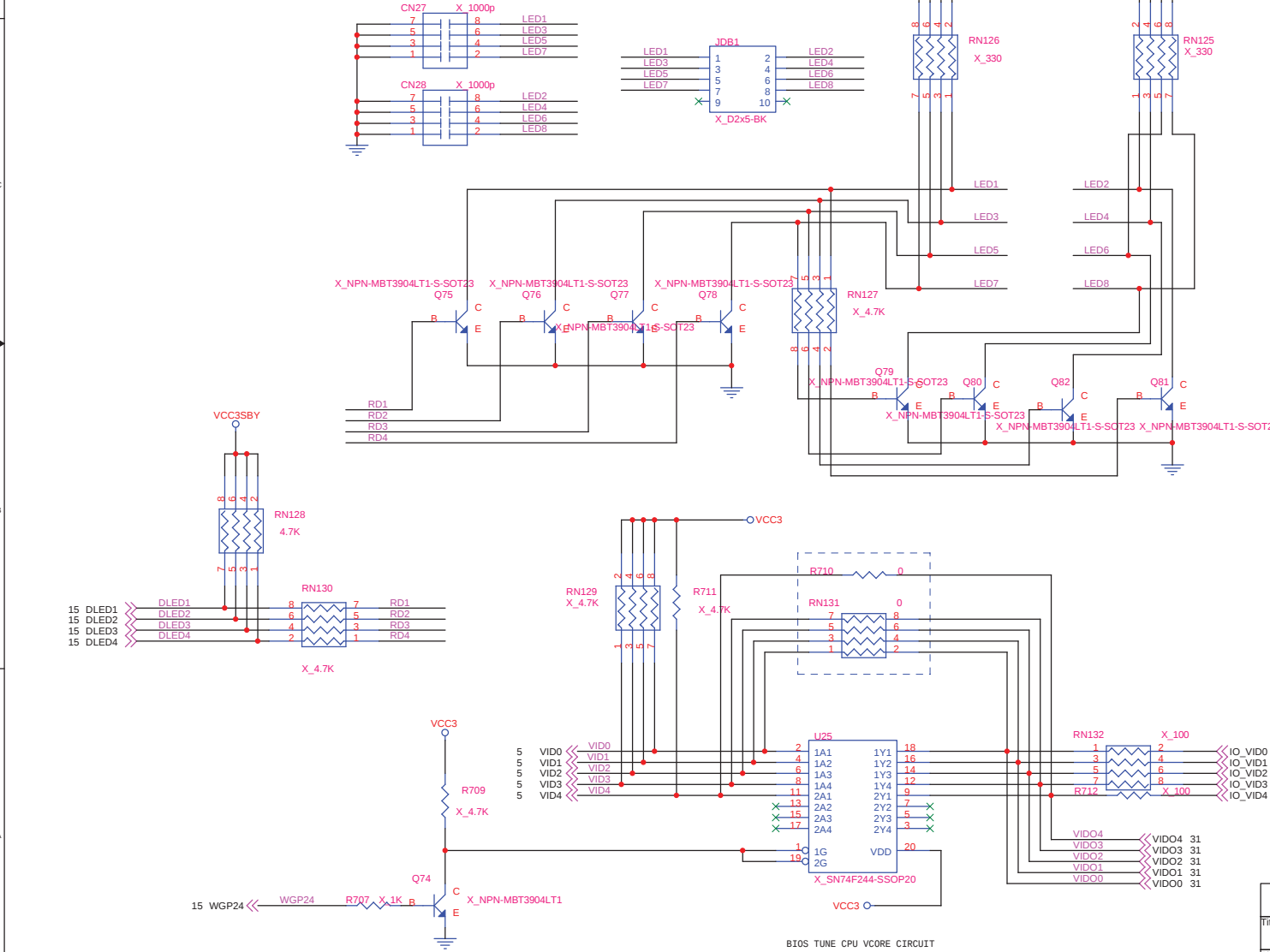
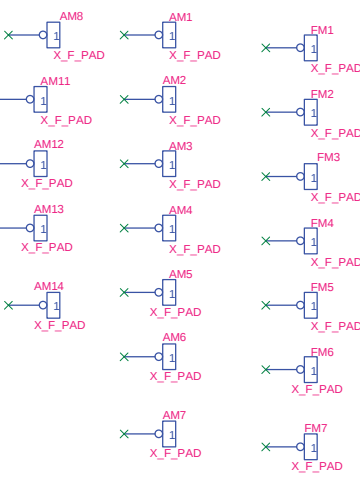
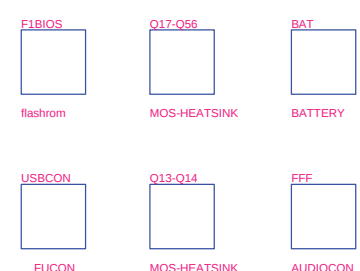
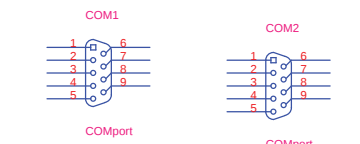
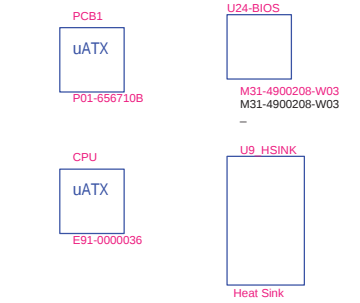
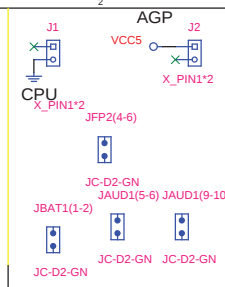
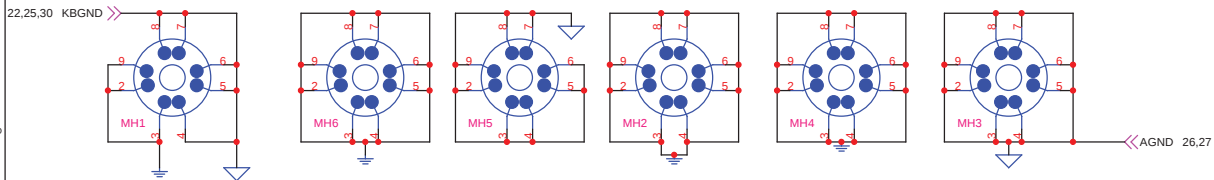


High Freq. return current decoupling



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PCB OTHER COMPONENT



BIOS TUNE CPU VCORE CIRCUIT

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6567 0A->0B HISTORY

Item	Page	Description	Component Change
1	24	50/66M CLOCK SOURCE FROM IC332	
2	31	Q39.E CONNECTED TO MEMW#	
3	03		
4			
5			
6			
7			
8			
9			