

Last Schematic Update Date:

10/29/2001

MS-6558

VERSION:100

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

Expansion Slots:

AGP2.0 SLOT * 1

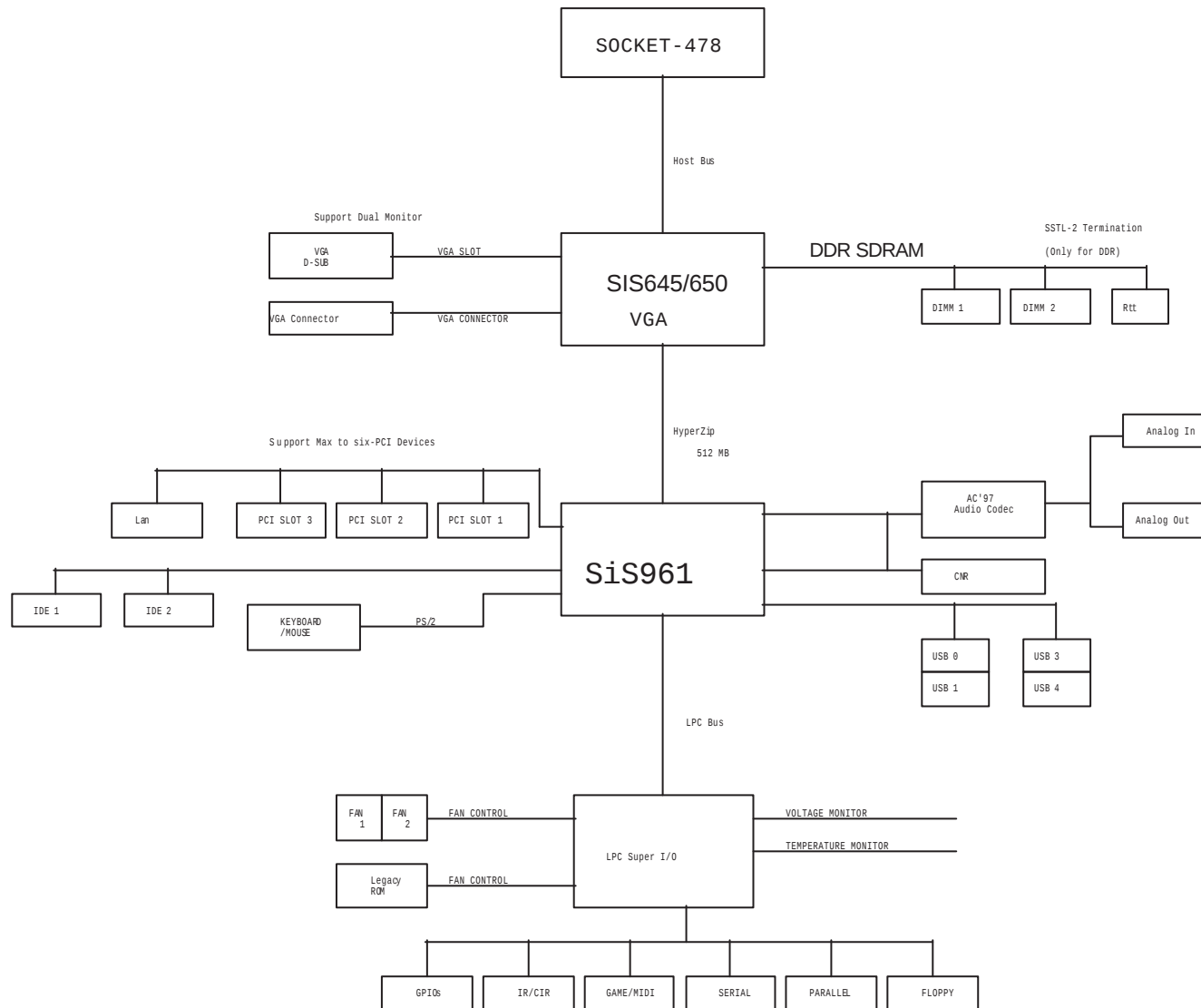
PCI2.2 SLOT* 3

CNR SLOT * 1

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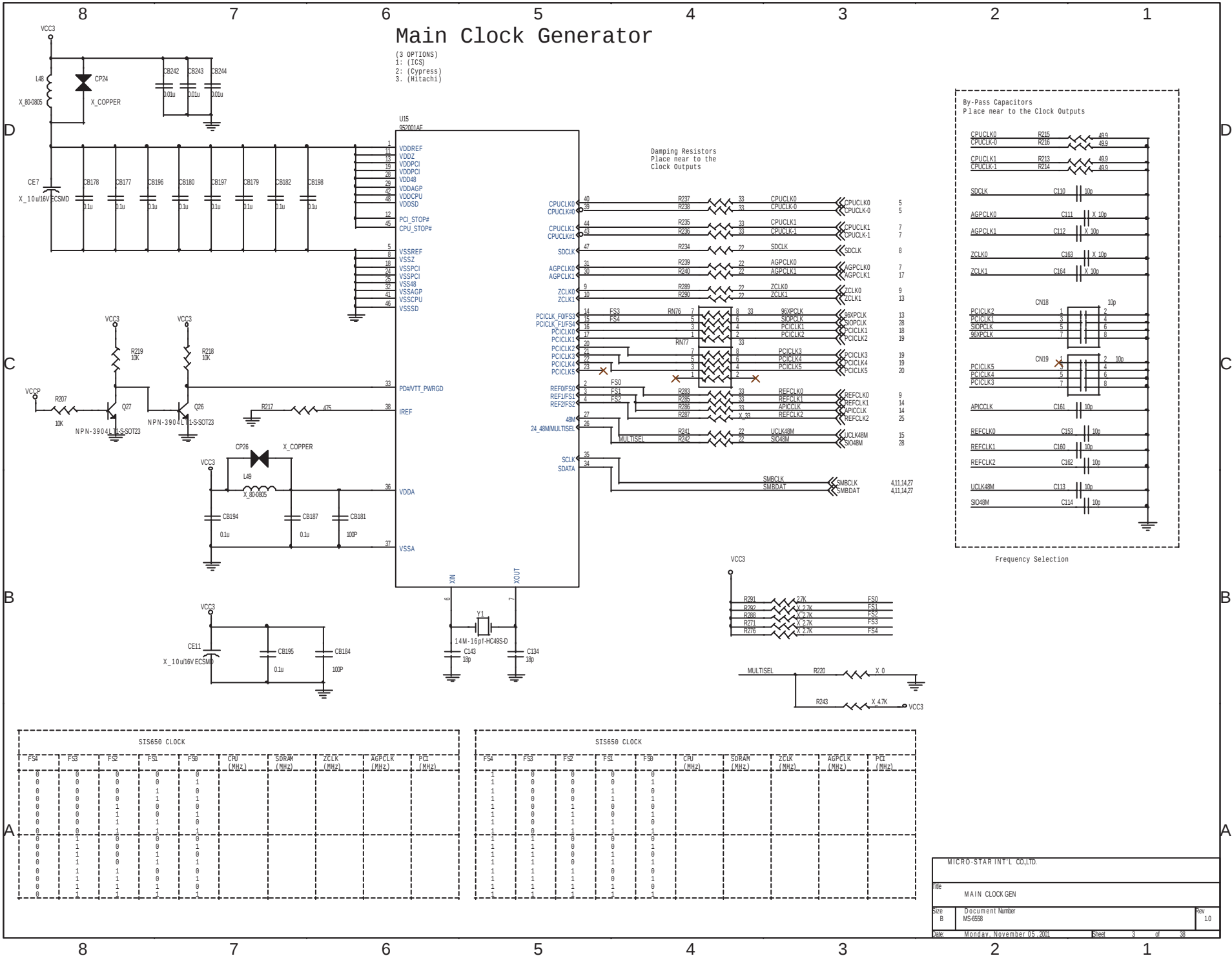
System Block Diagram



MICRO-STAR INT'L CO.,LTD.			
File System Block Diagram			
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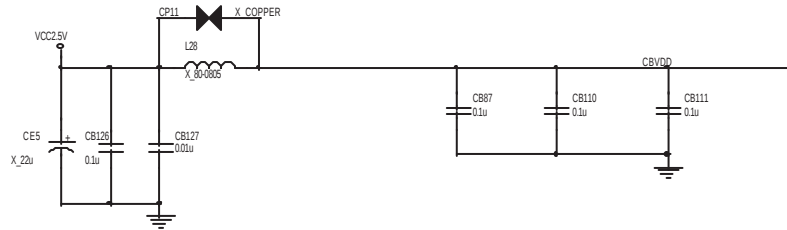
Main Clock Generator

(3 OPTIONS)
1: (ICS)
2: (Cypress)
3: (Hitachi)

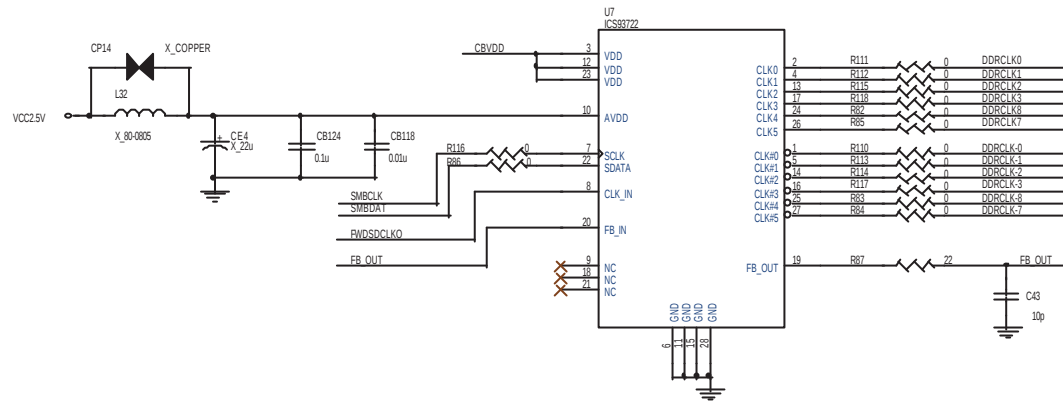


Clock Buffer (DDR)

(OPTIONS)
1: (ICS-93785)



DDRCLK0[0..8]	DDRCLK0[0..8]	11
DDRCLK1[0..8]	DDRCLK1[0..8]	11
SMBCLK	SMBCLK	3,11,14,27
SMBDAT	SMBDAT	3,11,14,27
PWSDCLK0	PWSDCLK0	8

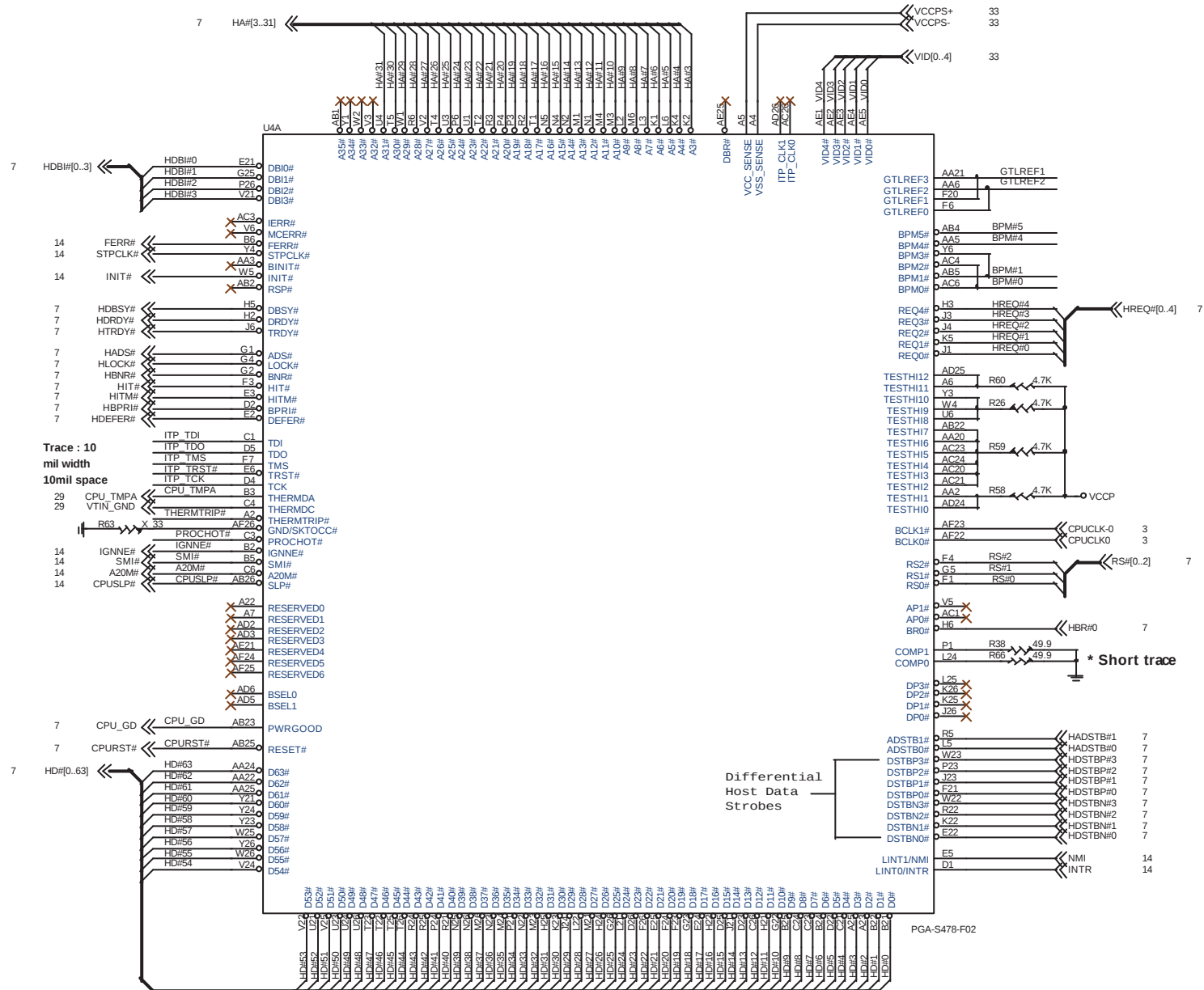


By-Pass Capacitors
Place near to the Clock Buffer

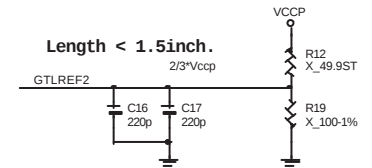
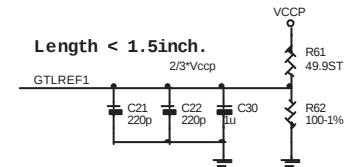
DDRCLK0	C58	X 10p
DDRCLK1	C59	X 10p
DDRCLK2	C62	X 10p
DDRCLK3	C64	X 10p
DDRCLK8	C39	X 10p
DDRCLK7	C42	X 10p
DDRCLK-0	C57	X 10p
DDRCLK-1	C60	X 10p
DDRCLK-2	C61	X 10p
DDRCLK-3	C63	X 10p
DDRCLK-8	C40	X 10p
DDRCLK-7	C41	X 10p

MICRO-STAR INT'L CO., LTD.			
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CPU SIGNAL BLOCK



CPU GTL REFERENCE VOLTAGE BLOCK



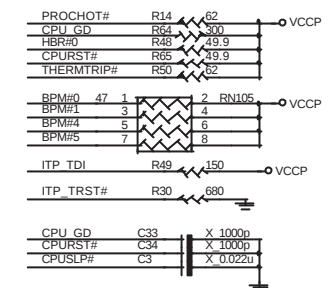
Every pin put one 220pF cap near it.
Trace Width 15mils, Space 15mils.
Keep the voltage dividers within 1.5 inches of the first GTLREF Pin

CPU ITP BLOCK



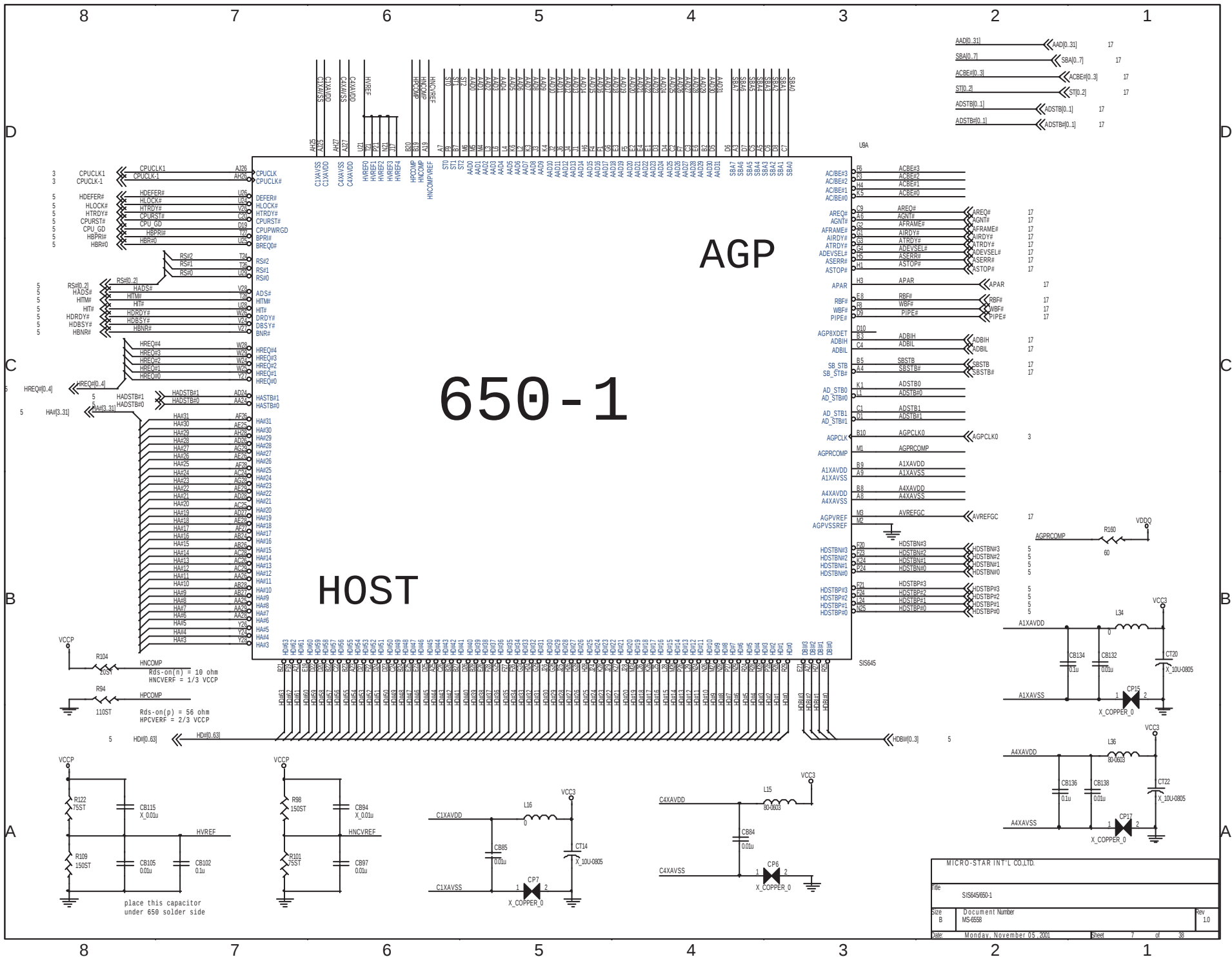
CPU STRAPPING RESISTORS

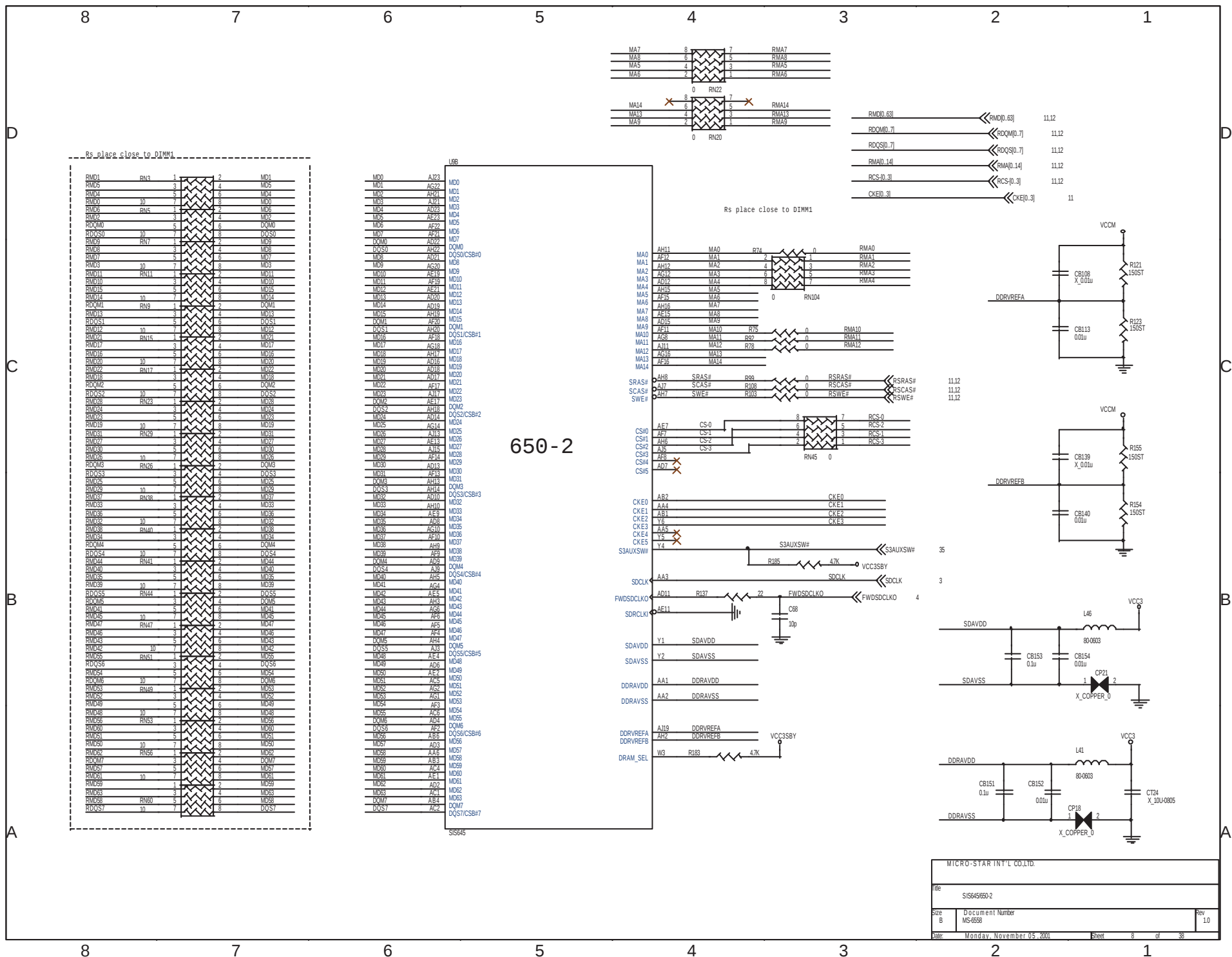
ALL COMPONENTS CLOSE TO CPU



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Title			
mPGA478 CPU-1			
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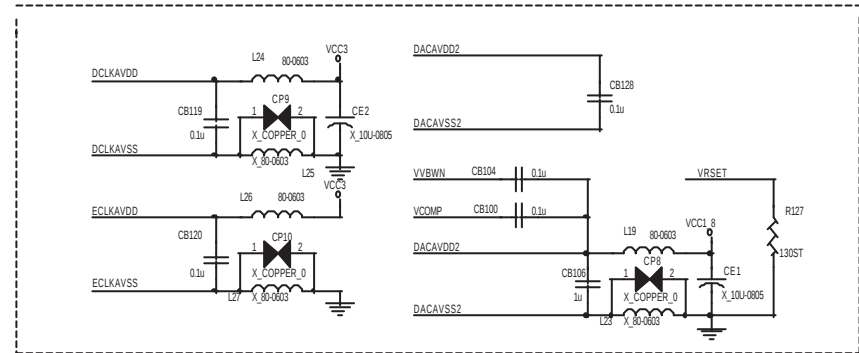
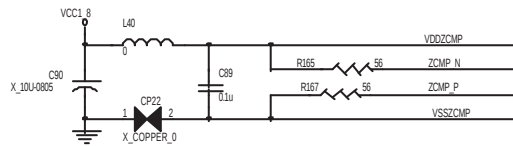
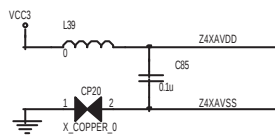
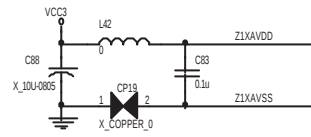
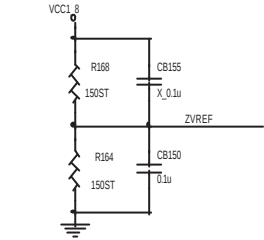
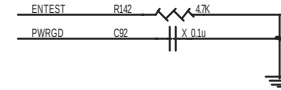
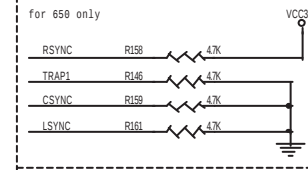
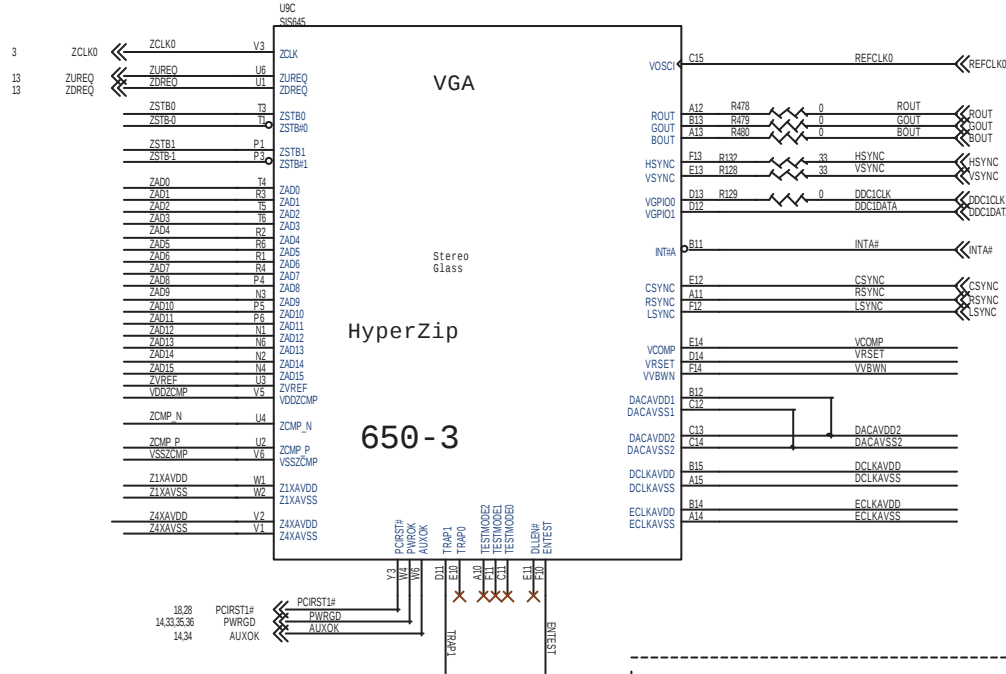
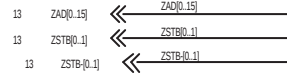
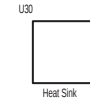
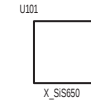


NOTE: This page is for universal PCB design(suitable for both 645 or 650)

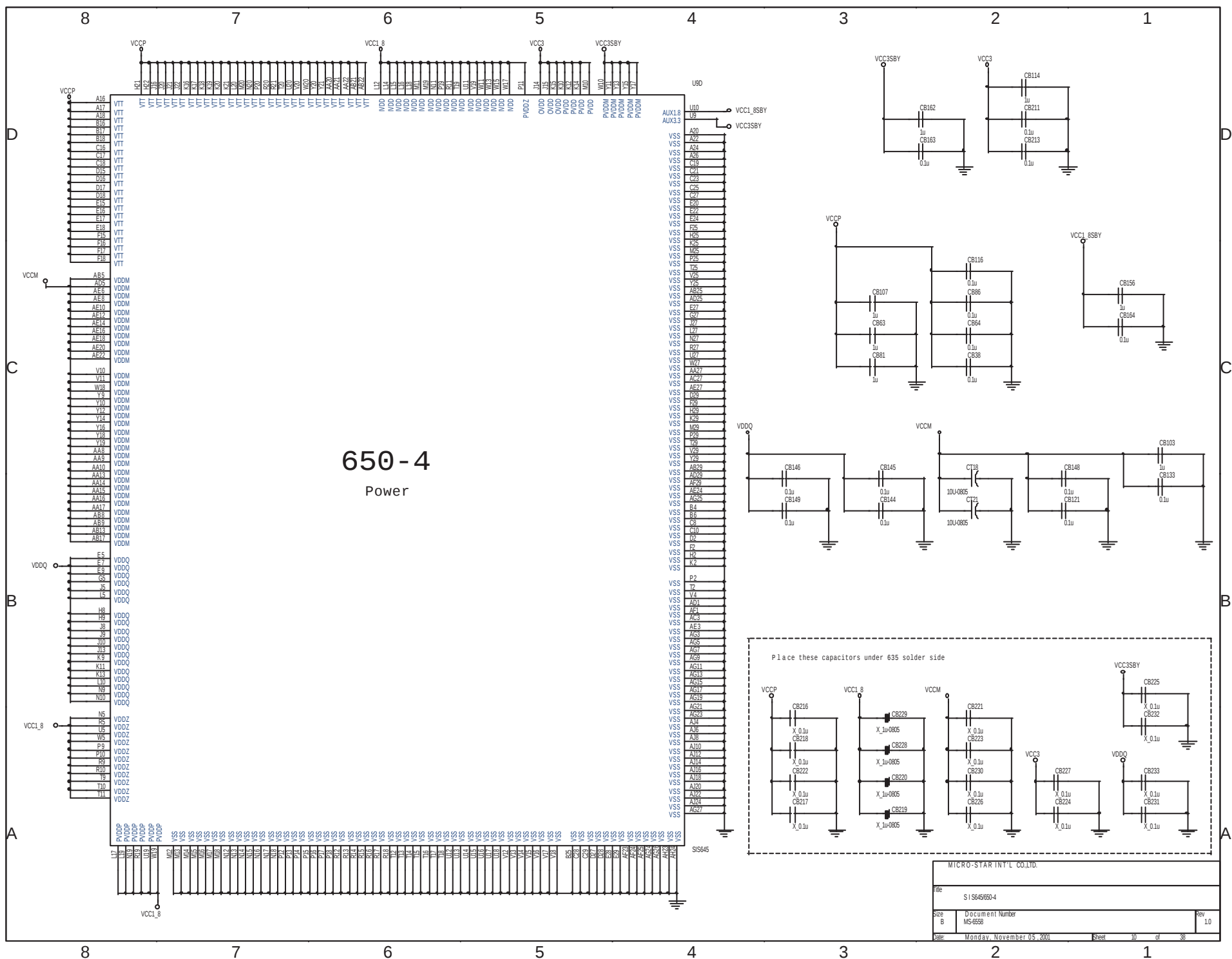
NB Hardware Trap Table

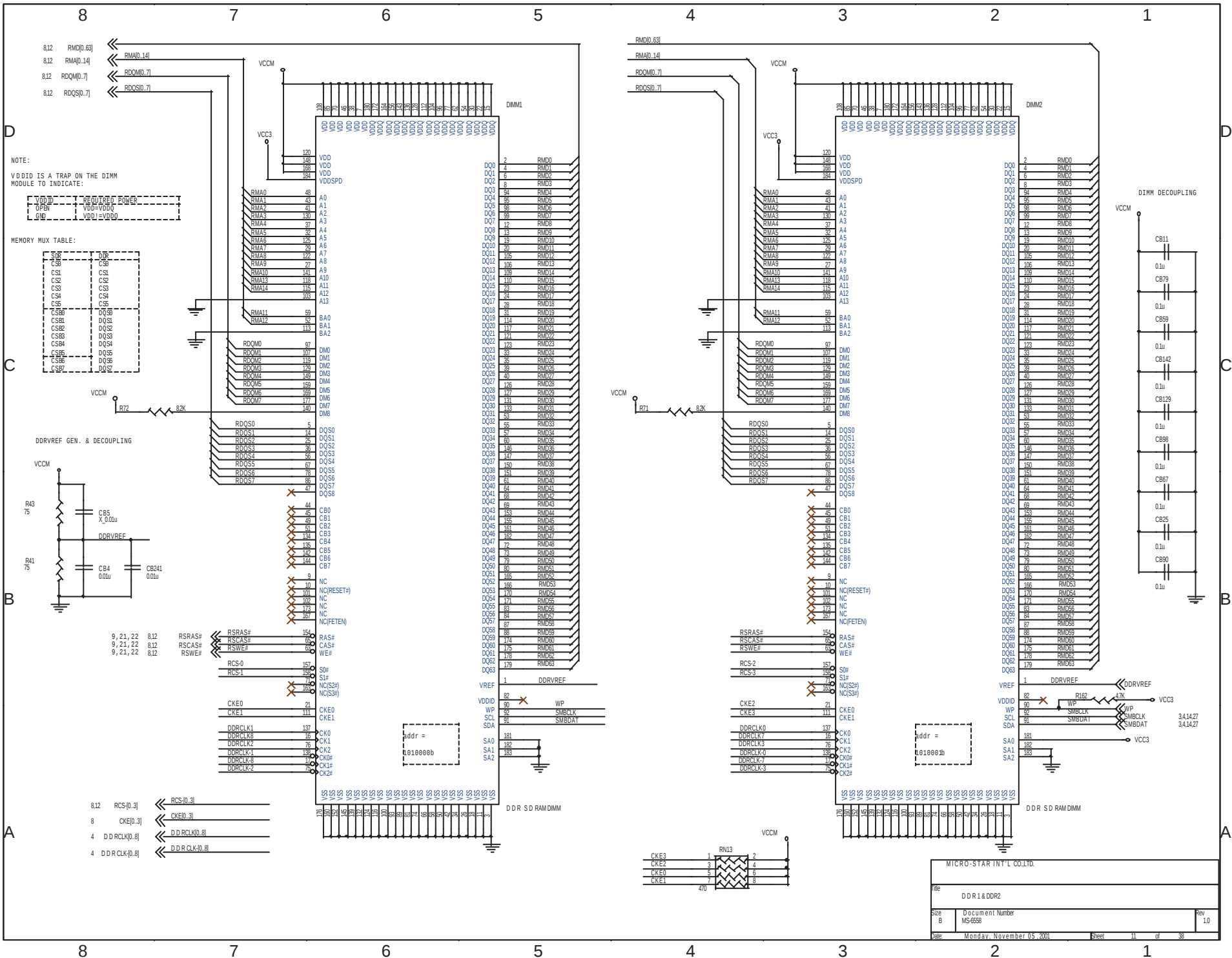
DLEW	0	1	Default
enable PLT	0	1	0
enable SE	0	1	0
TRAP	normal	NB debug mode	1 (000)
TRAP	TV selection, NTSC/PAL(0/1)		0
CSYNC	enable V8		0
RSYNC	enable VGA interface		1
LSYNC	enable panel link		0

embedded pull-low
(39-50K Ohm)
yes
yes
yes

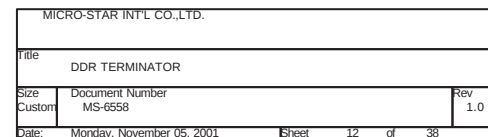
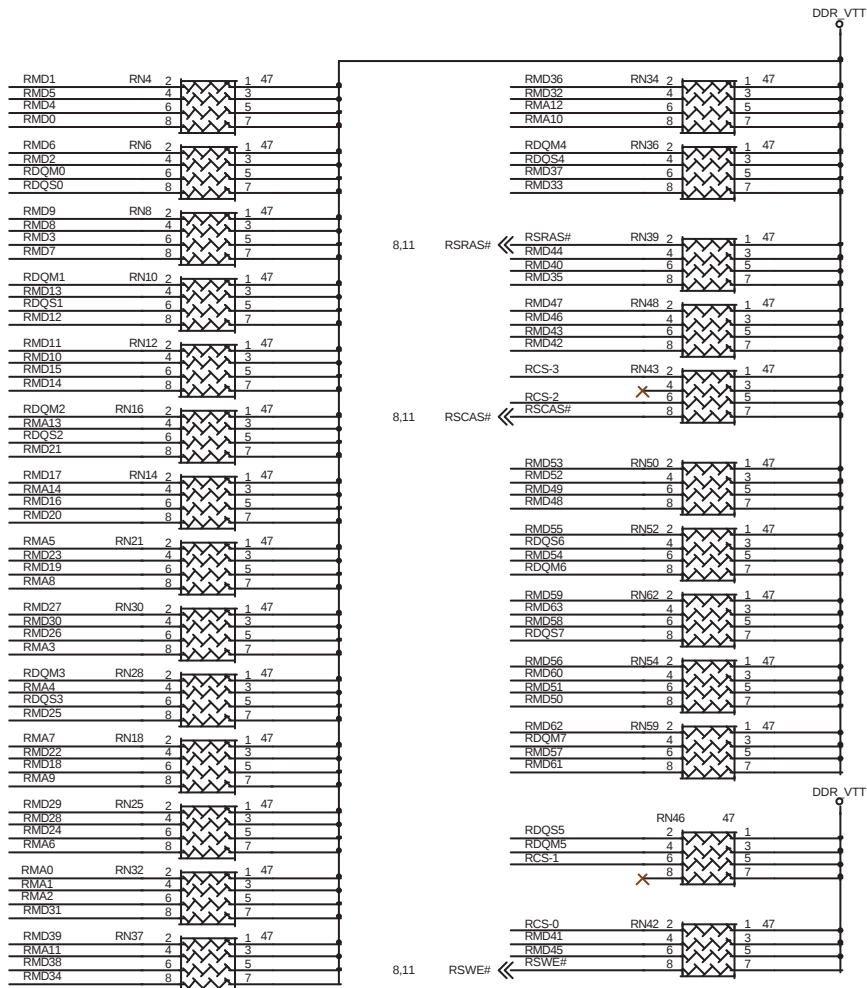


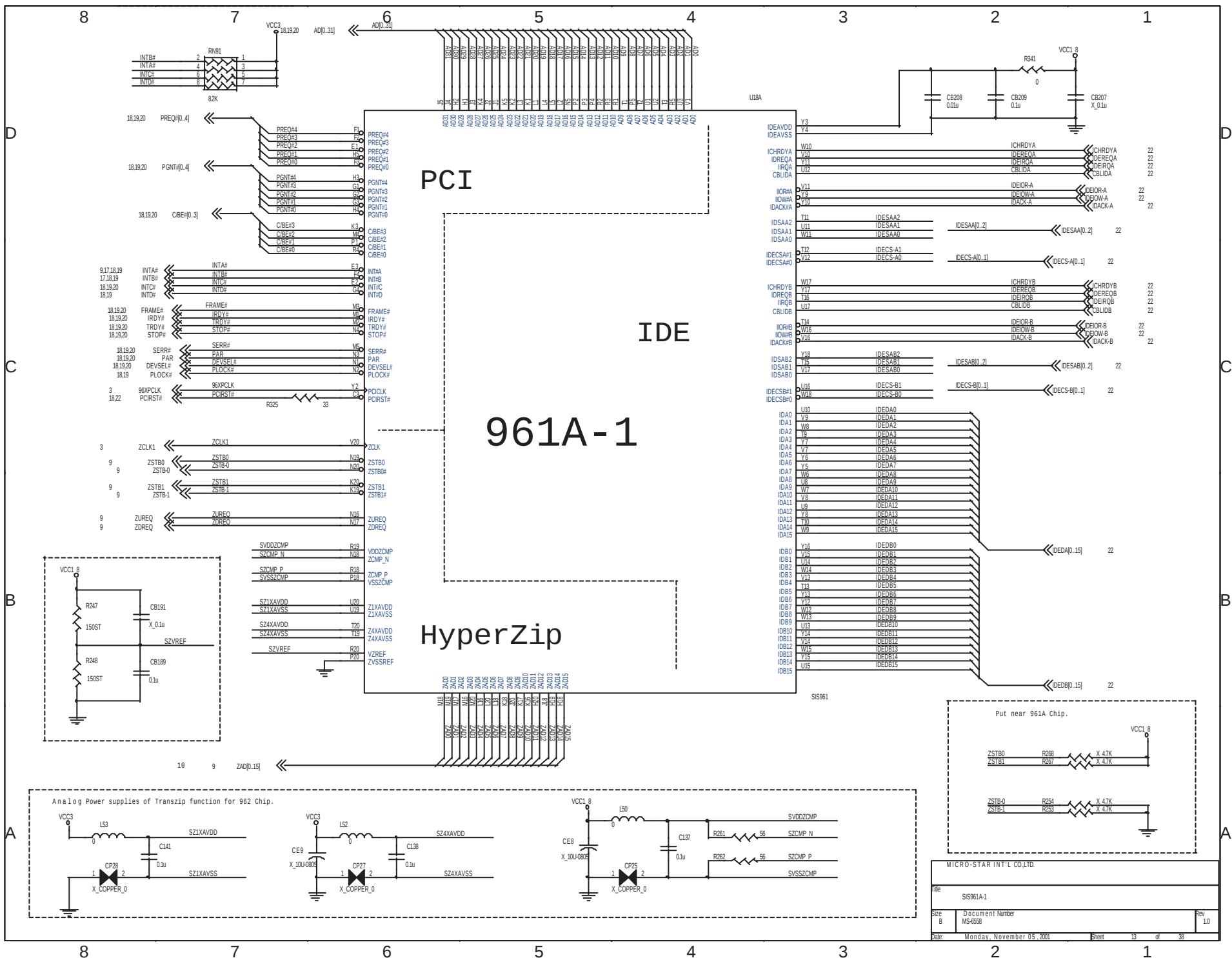
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File SIS645650			
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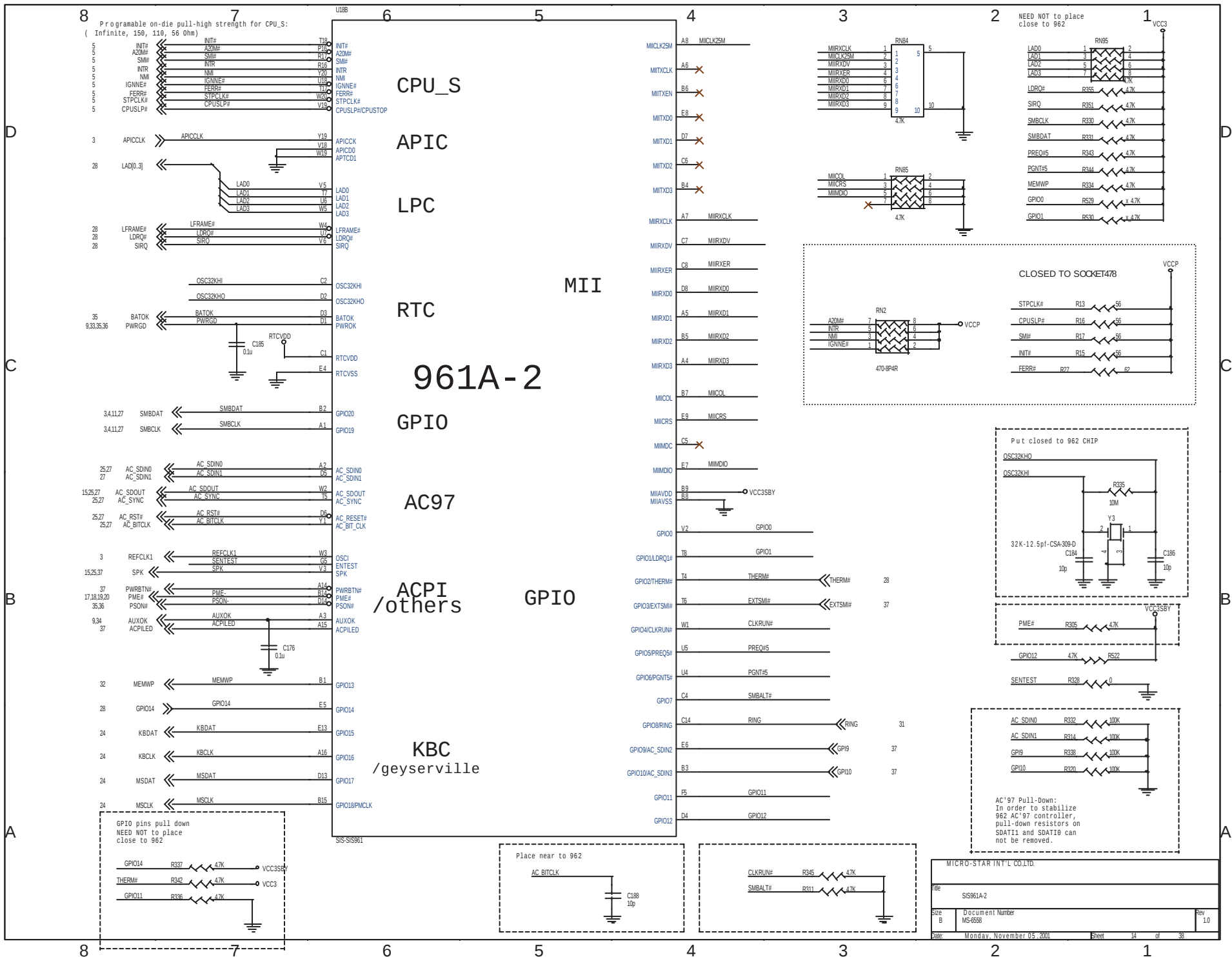


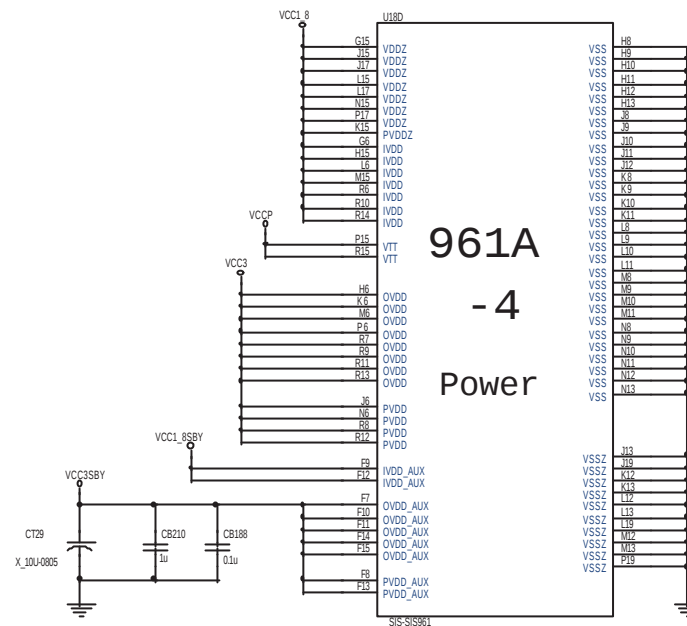


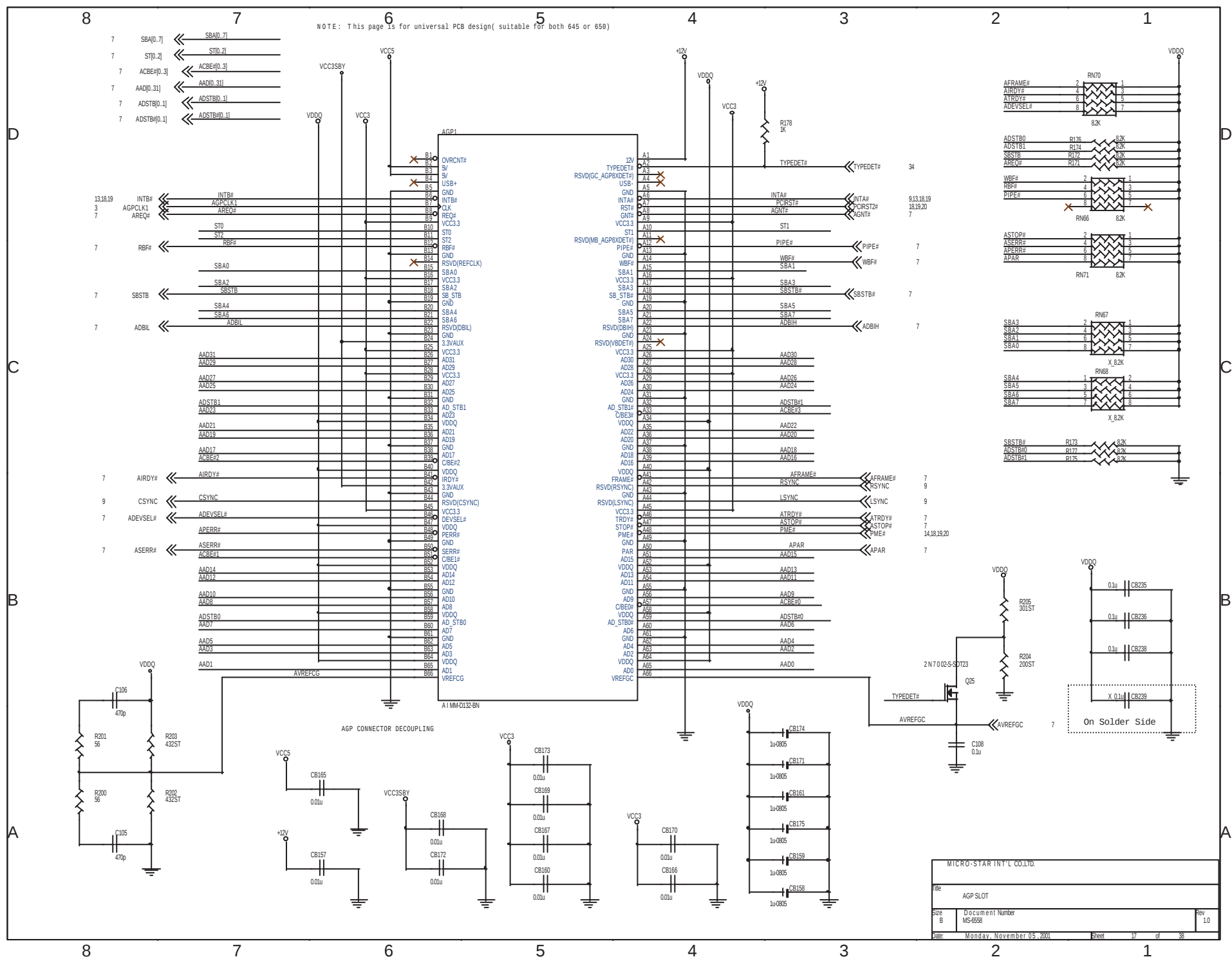
FOR		NDR	
	FS		FS
MD/DQM(/DQS)	LV-CMOS	6/10/-	6/10
MA/Control	LV-CMOS	6/10	6/10
CS	LV-CMOS	6	6
CKE	OD 3.3V	OD 2.5V	



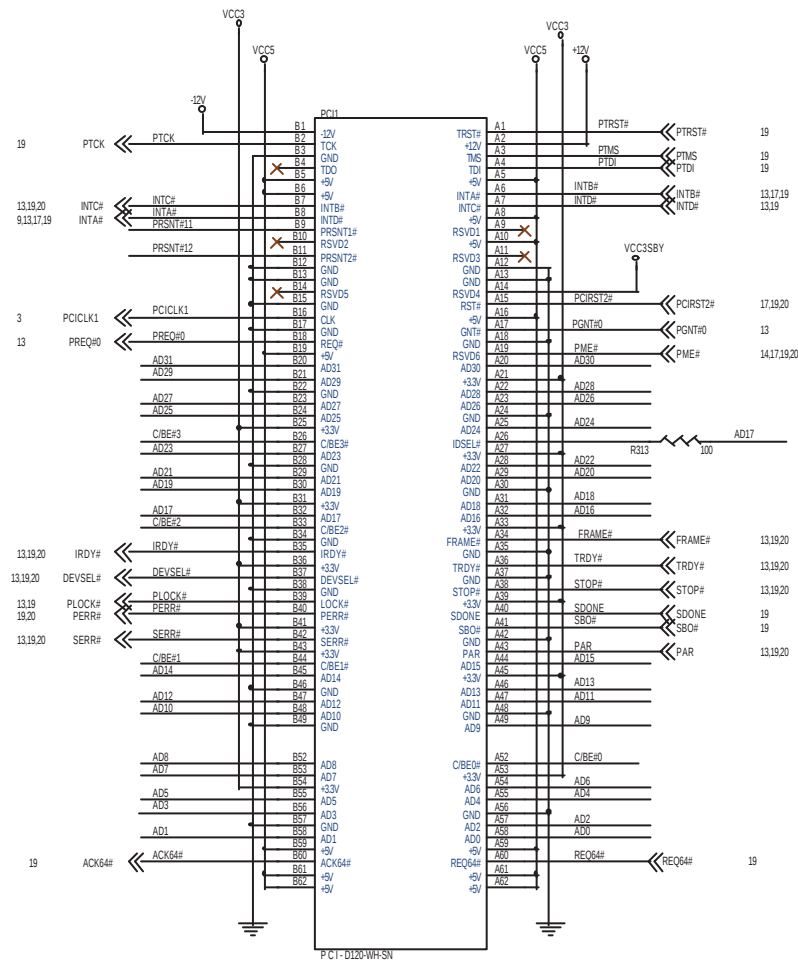




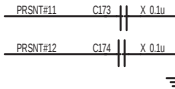
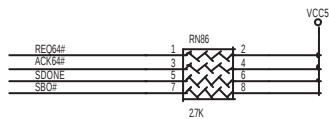
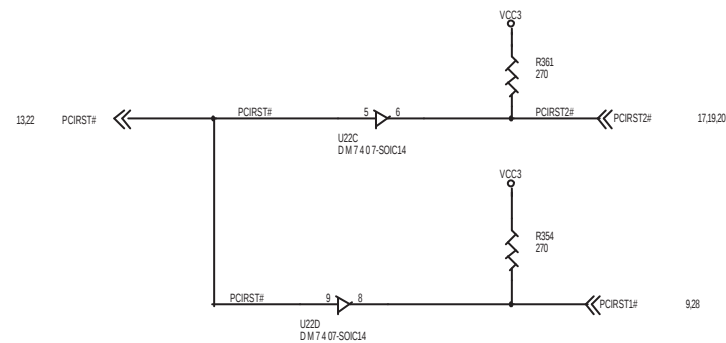
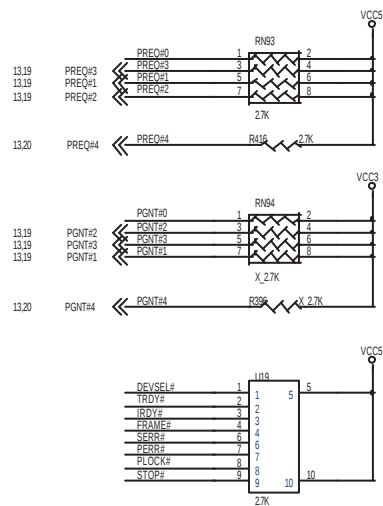




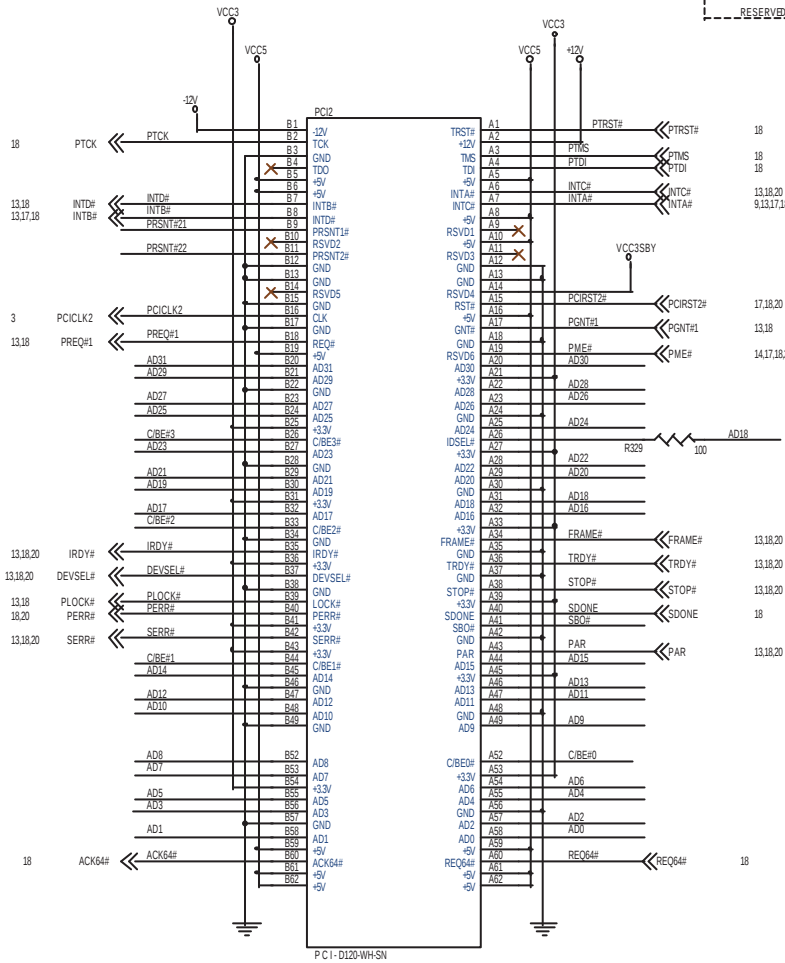
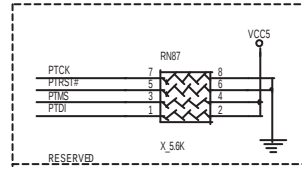
13,19,20 AD[31..0] << AD31..0
13,19,20 CBE#[3..0] << CBE#[3..0]



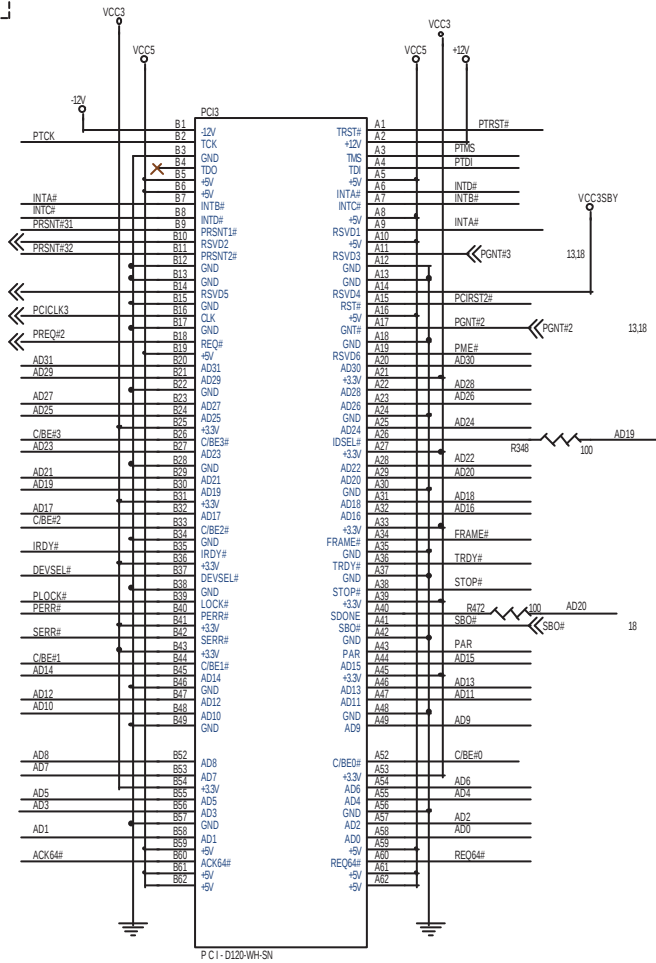
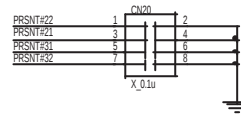
PCI BUS PULL-UP



13,18,20 AD[31..0] << AD[31..0]
13,18,20 CBE#[3..0] << CBE#[3..0]

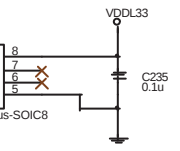
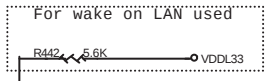
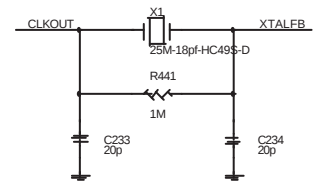
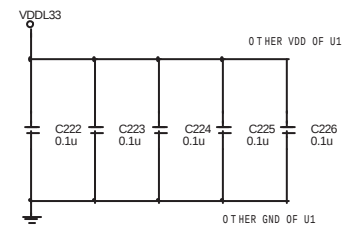
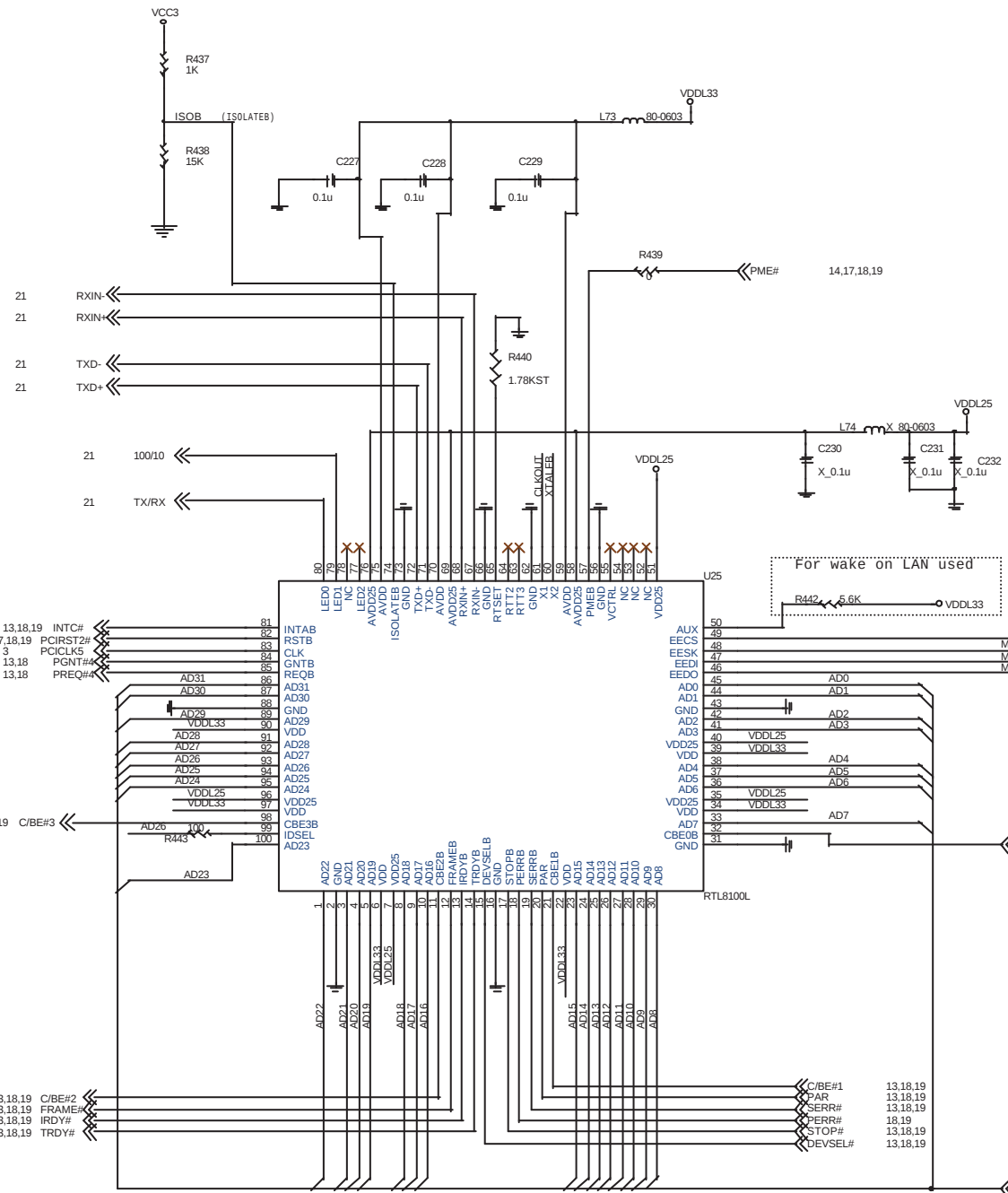


P C1 - D120-WH-SN

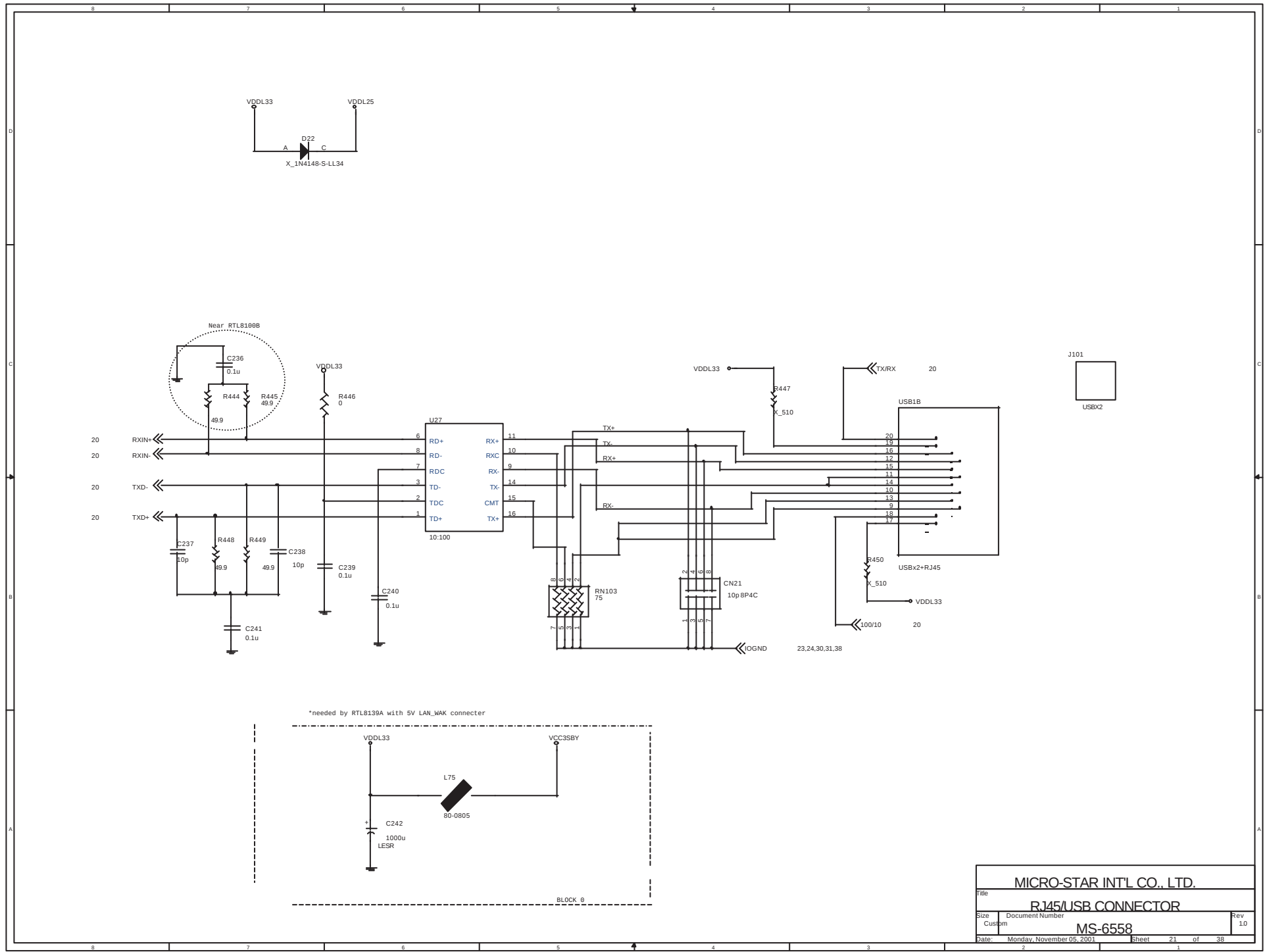


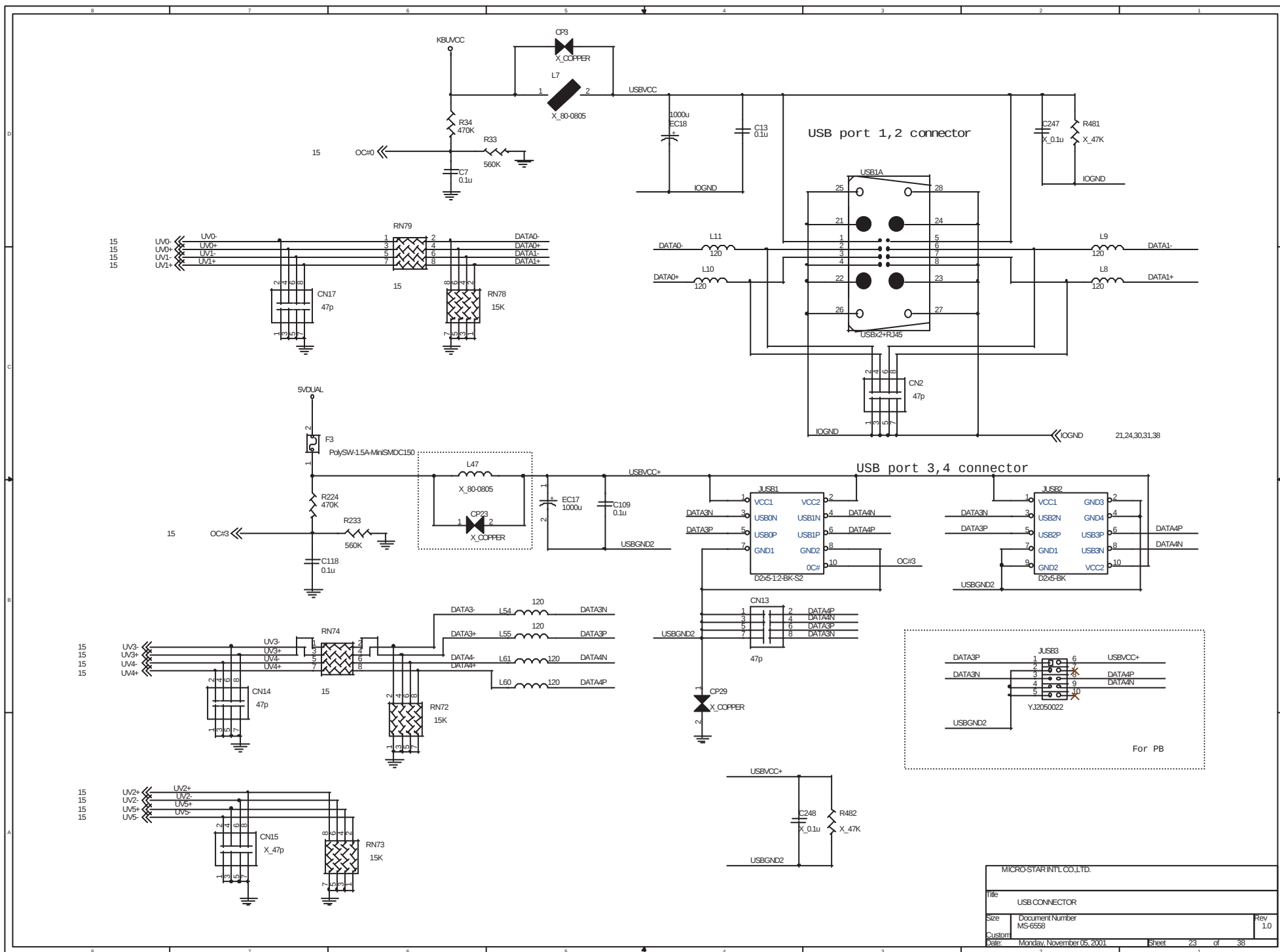
P C1 - D120-WH-SN

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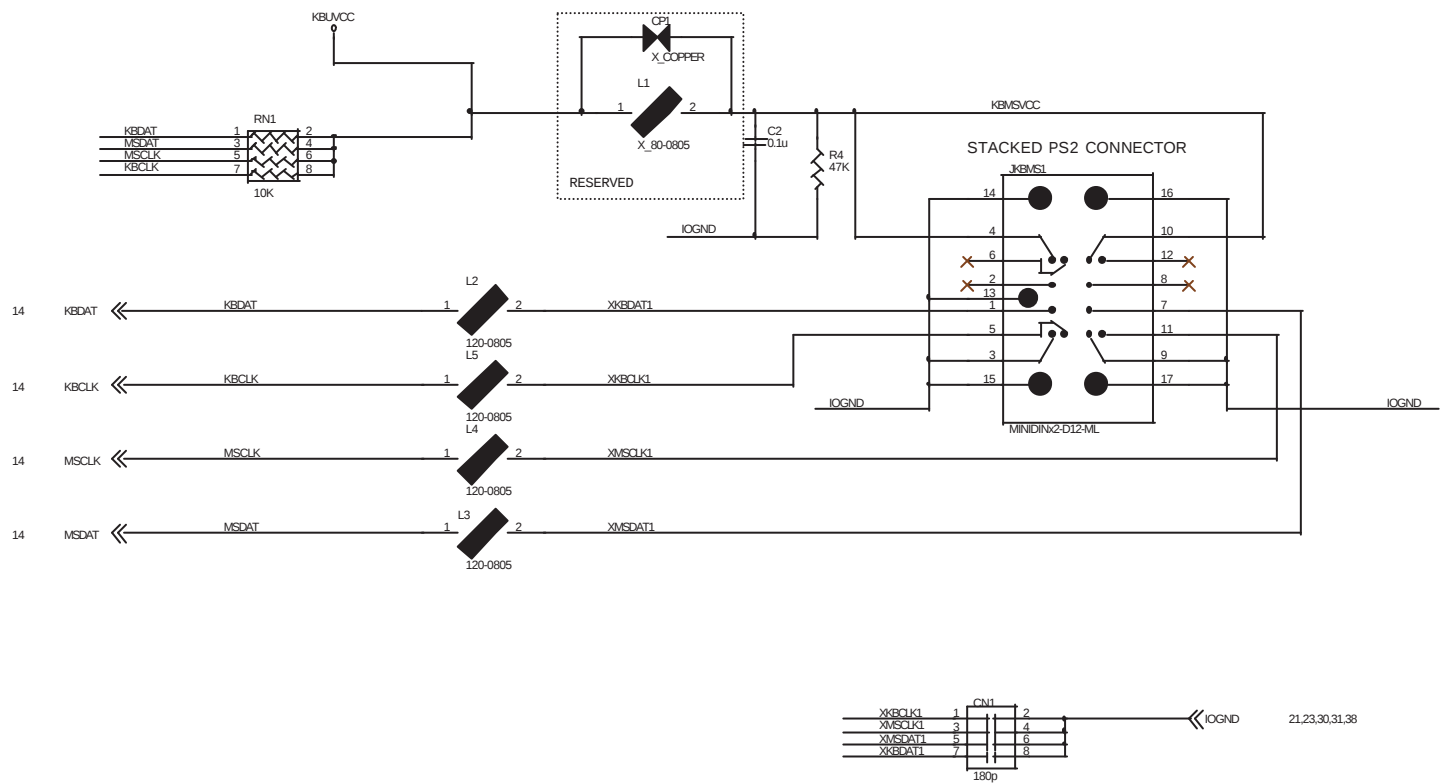


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Title: LAN CONTROLLER			
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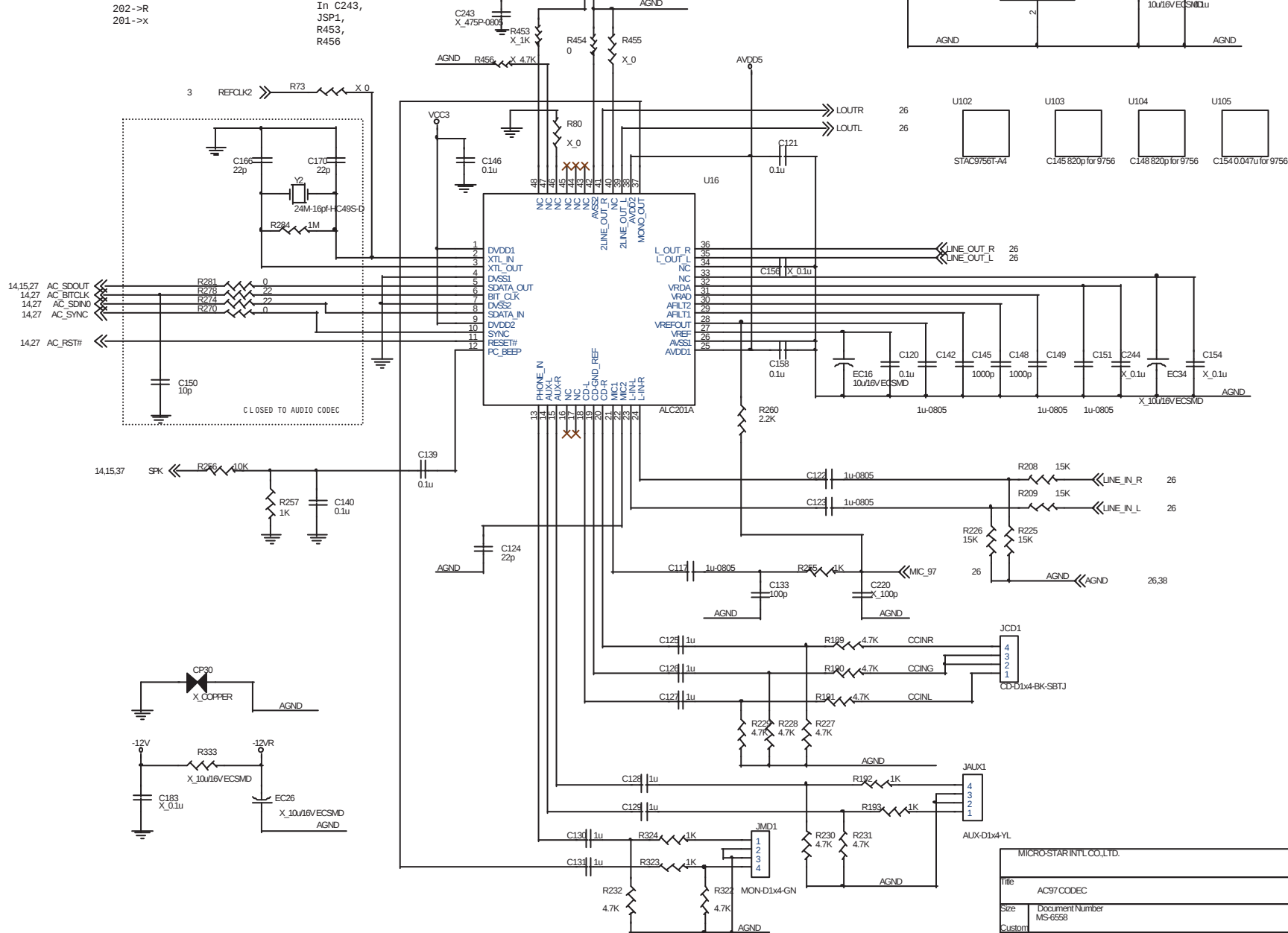


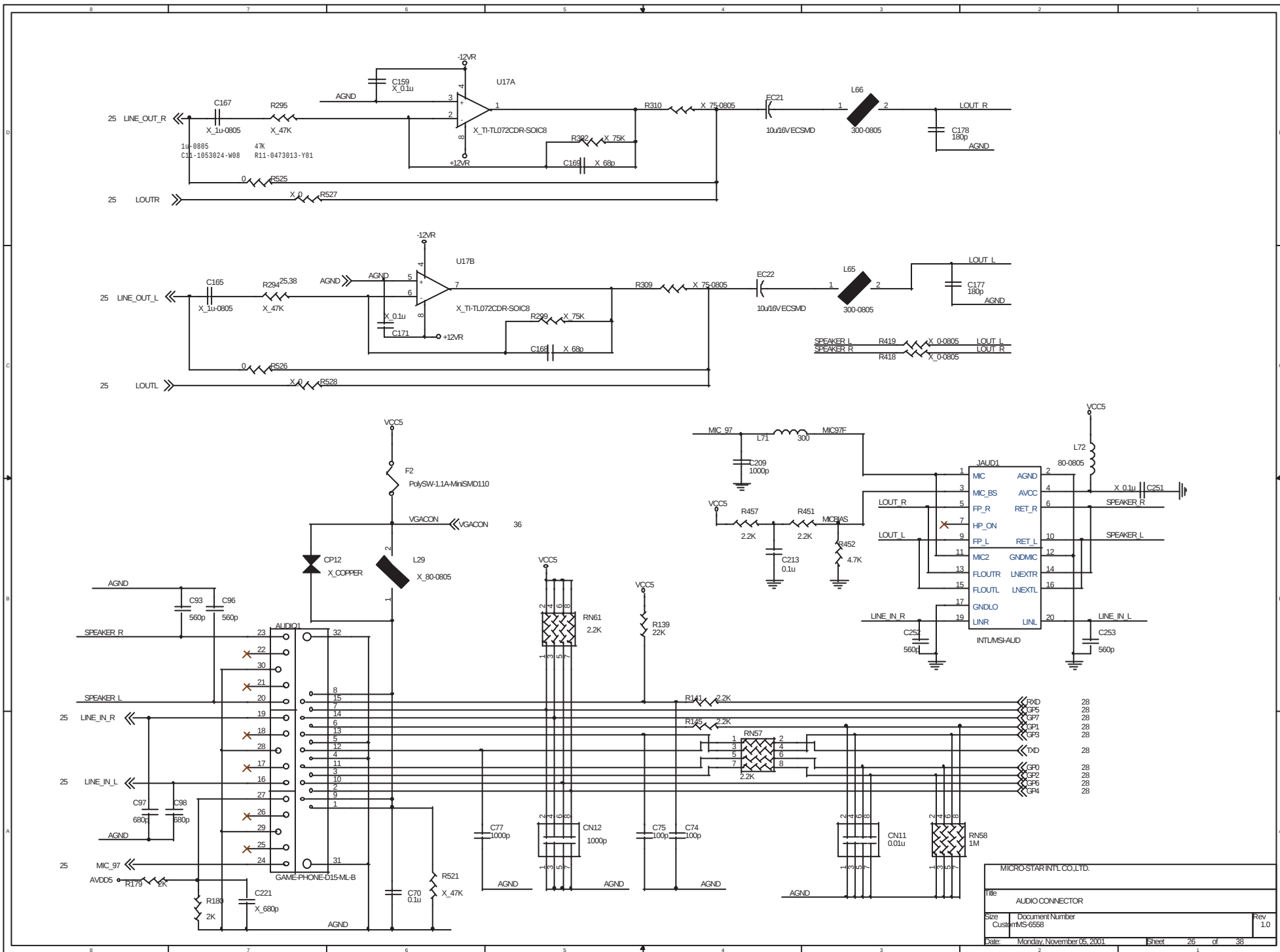


KEYBOARD/MOUSE PORTS

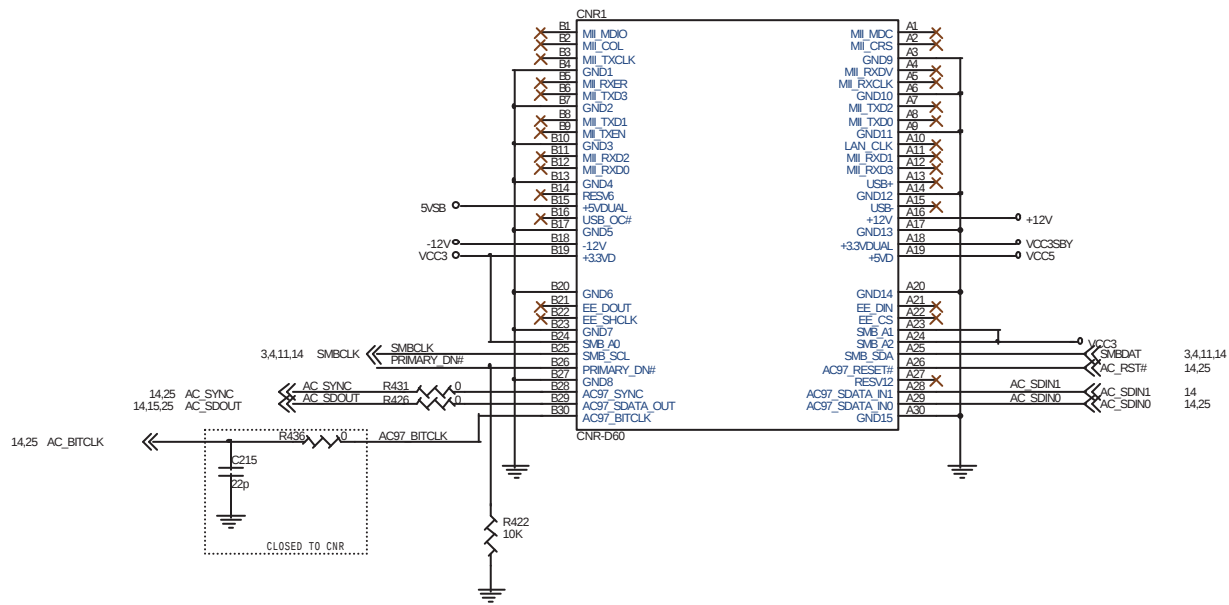


2	202->R	In C243,
46	201->X	JSP1,

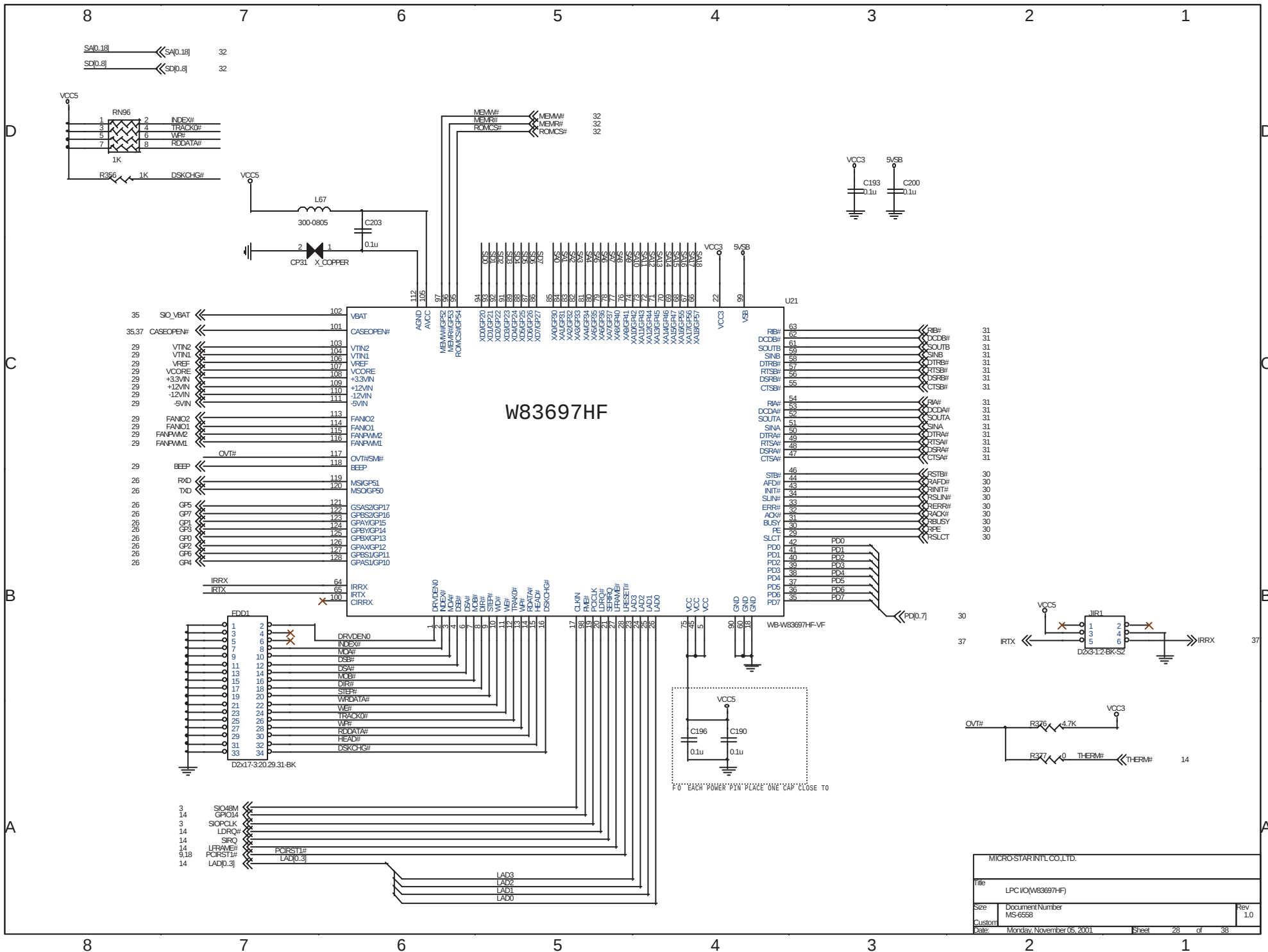




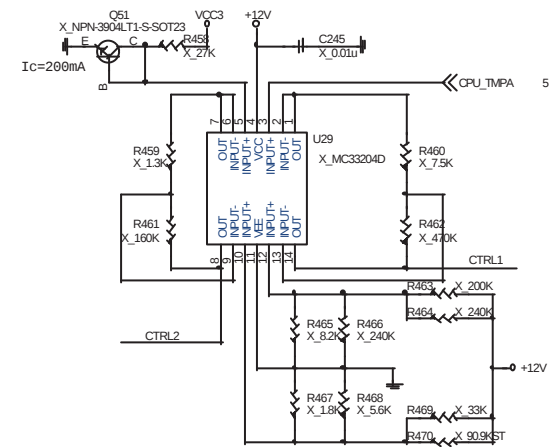
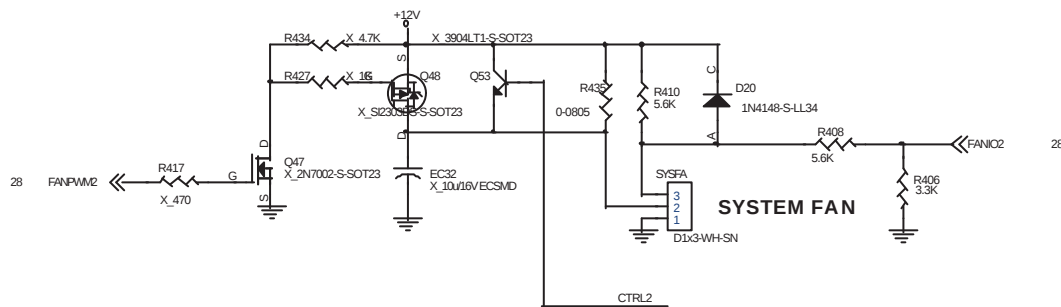
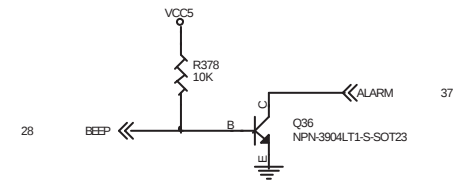
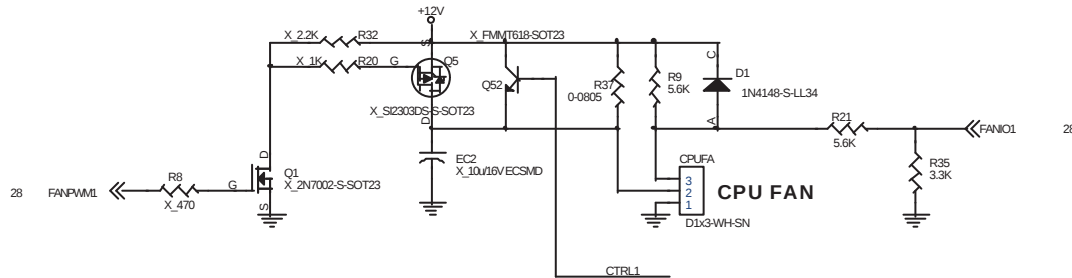
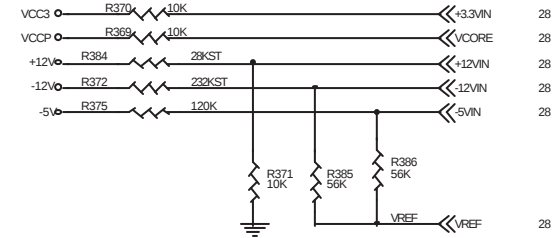
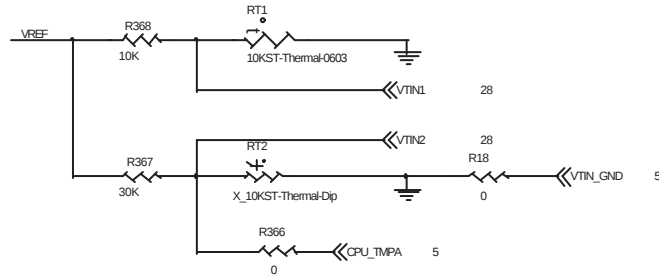
MICRO-STAR INT'L CO., LTD.		
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Size: Custom	Document Number: MS-6558	Rev: 1.0
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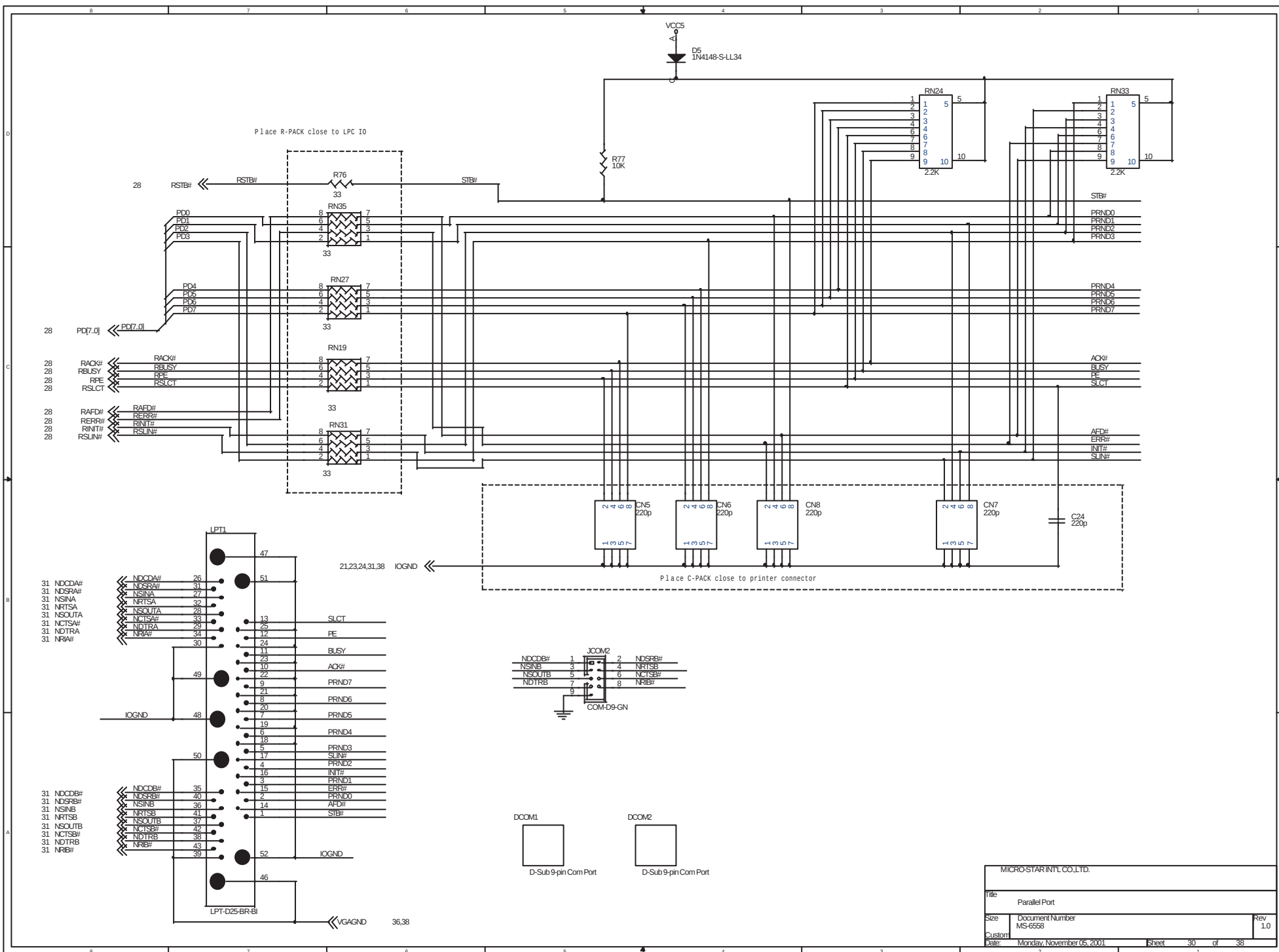
MICRO-STAR INT'L CO., LTD.			
Title			
CNR CONNECTOR			
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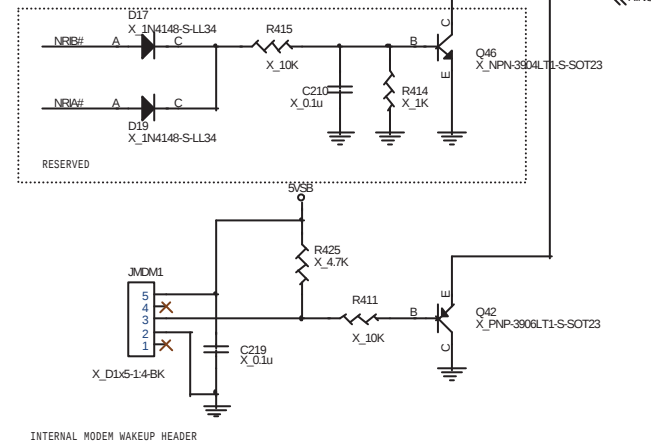
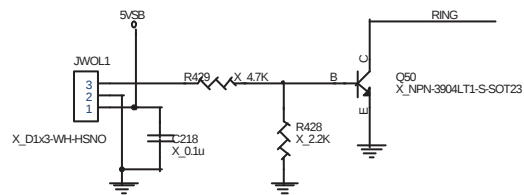
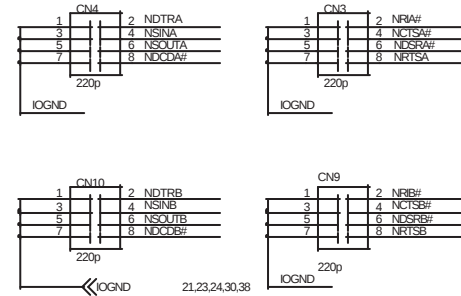
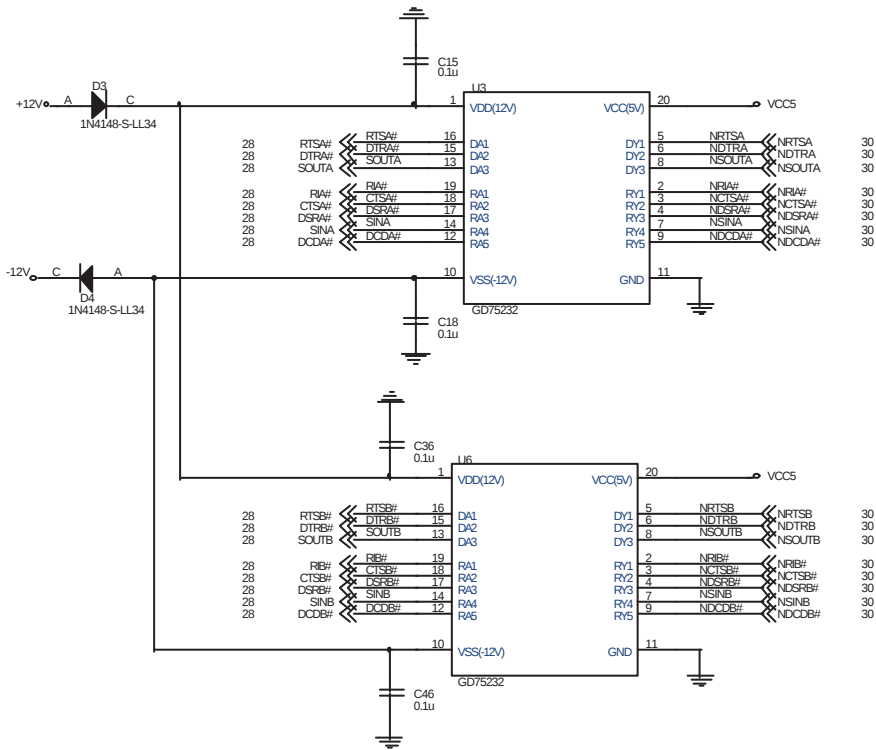


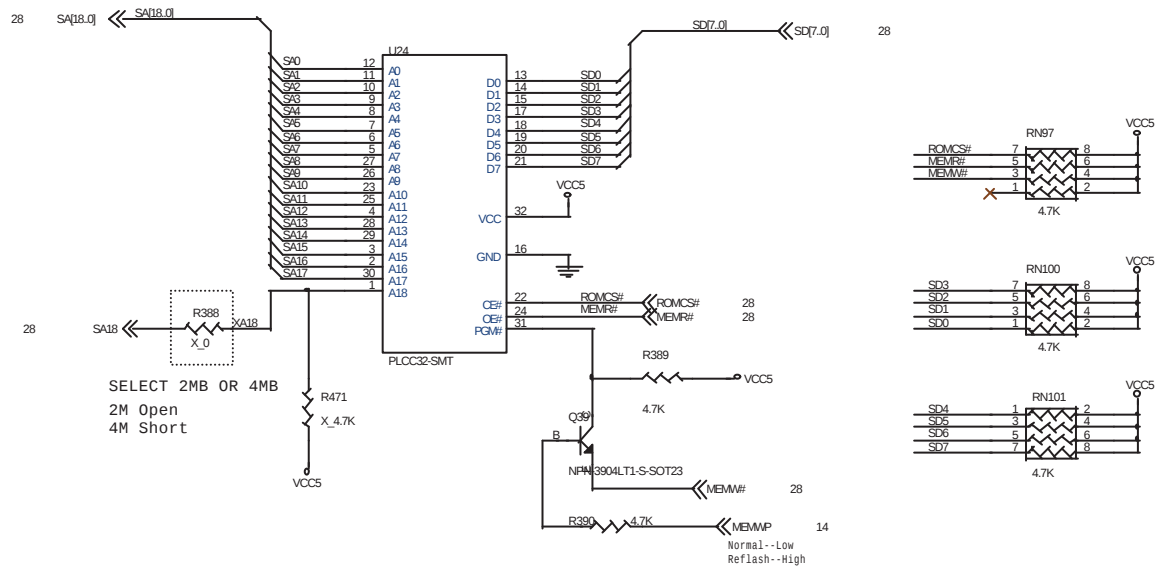
Hardware Monitor

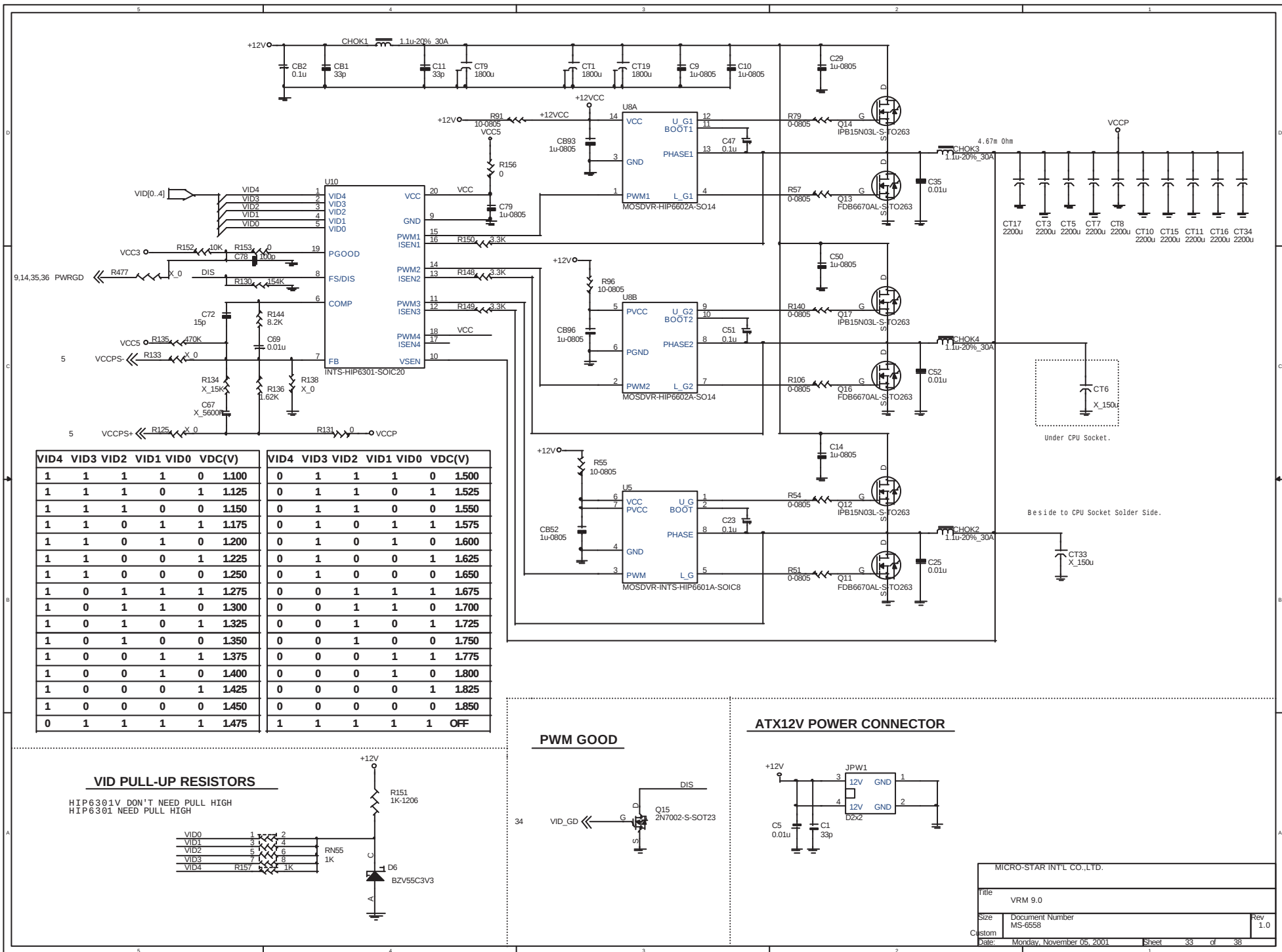


MICRO-STAR INT'L CO., LTD.			
Title: HARDWARE MONITOR			
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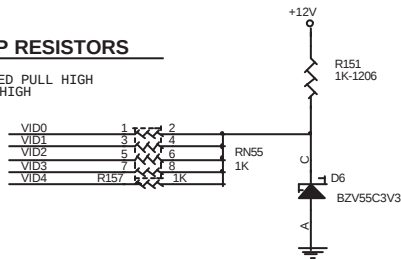


VID4	VID3	VID2	VID1	VID0	VDC(V)
1	1	1	1	0	1.100
1	1	1	0	1	1.125
1	1	1	0	0	1.150
1	1	0	1	1	1.175
1	1	0	1	0	1.200
1	1	0	0	1	1.225
1	1	0	0	0	1.250
1	0	1	1	1	1.275
1	0	1	1	0	1.300
1	0	1	0	1	1.325
1	0	1	0	0	1.350
1	0	0	1	1	1.375
1	0	0	1	0	1.400
1	0	0	0	1	1.425
1	0	0	0	0	1.450
0	1	1	1	1	1.475

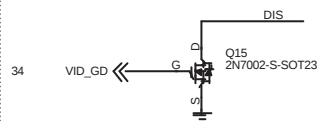
VID4	VID3	VID2	VID1	VID0	VDC(V)
0	1	1	1	0	1.500
0	1	1	0	1	1.525
0	1	1	0	0	1.550
0	1	0	1	1	1.575
0	1	0	1	0	1.600
0	1	0	0	1	1.625
0	1	0	0	0	1.650
0	0	1	1	1	1.675
0	0	1	1	0	1.700
0	0	1	0	1	1.725
0	0	1	0	0	1.750
0	0	0	1	1	1.775
0	0	0	1	0	1.800
0	0	0	0	1	1.825
0	0	0	0	0	1.850
1	1	1	1	1	OFF

VID PULL-UP RESISTORS

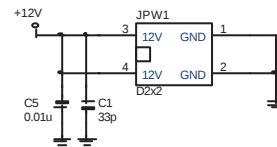
HIP6301V DON'T NEED PULL HIGH
HIP6301 NEED PULL HIGH



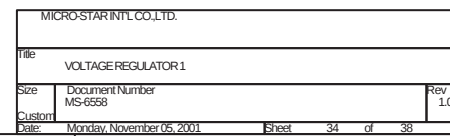
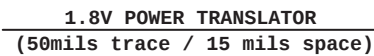
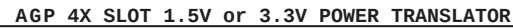
PWM GOOD



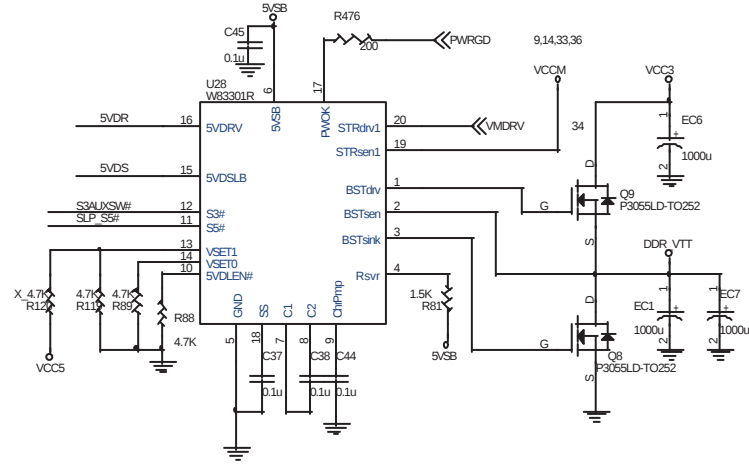
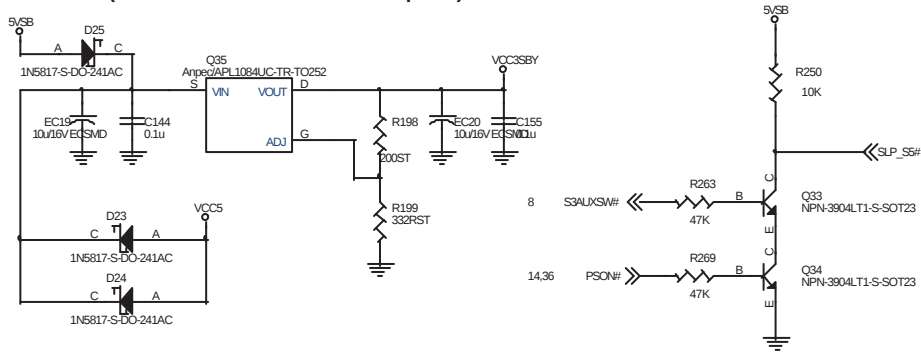
ATX12V POWER CONNECTOR



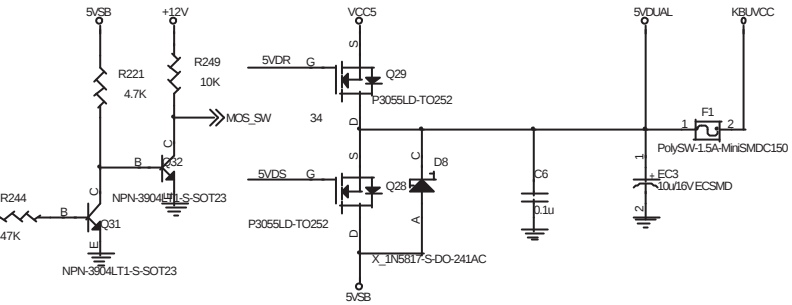
(30mils trace / 15 mils space)



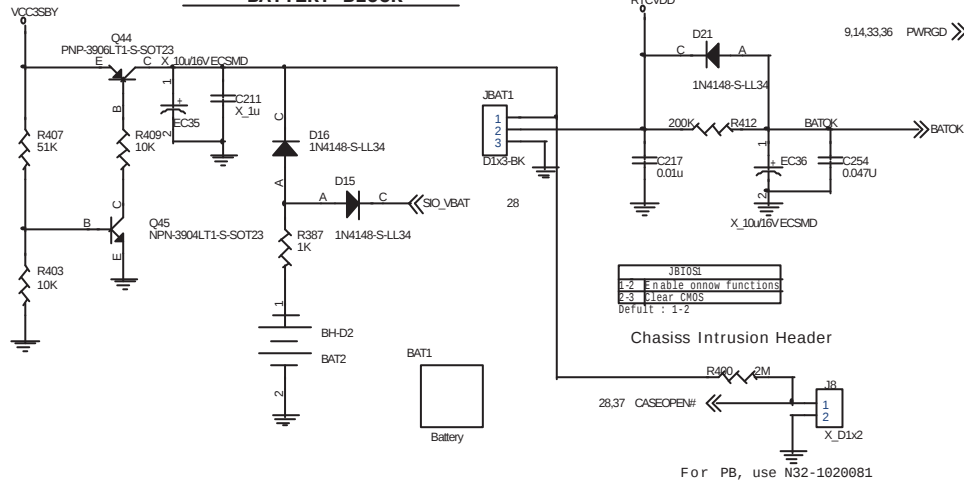
3.3V STANDBY POWER TRANSLATOR (40mils trace / 15 mils space)



5VDUAL & 5VUSB POWER TRANSLATOR

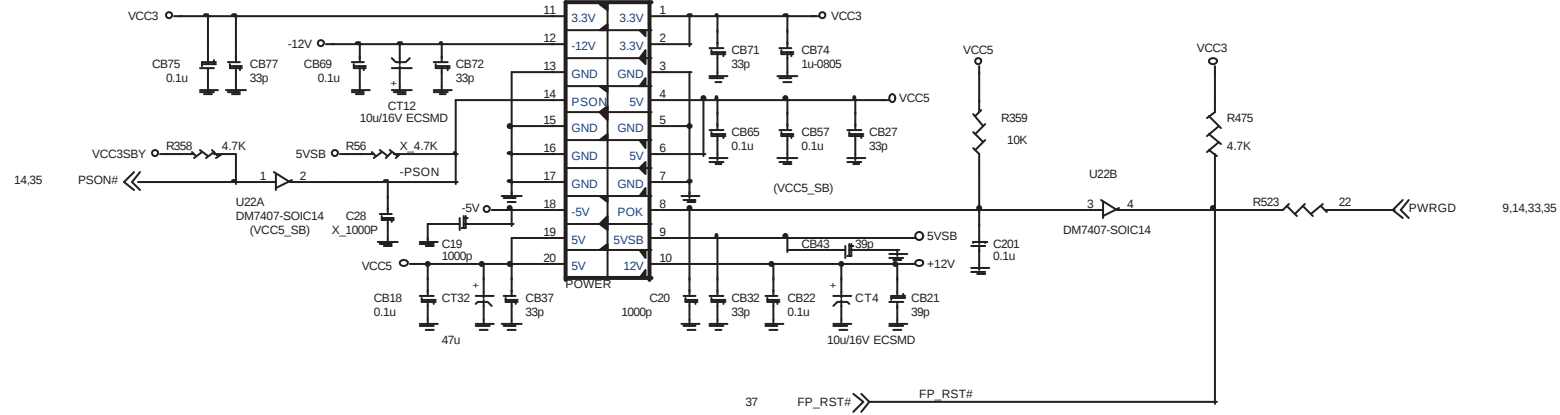


BATTERY BLOCK

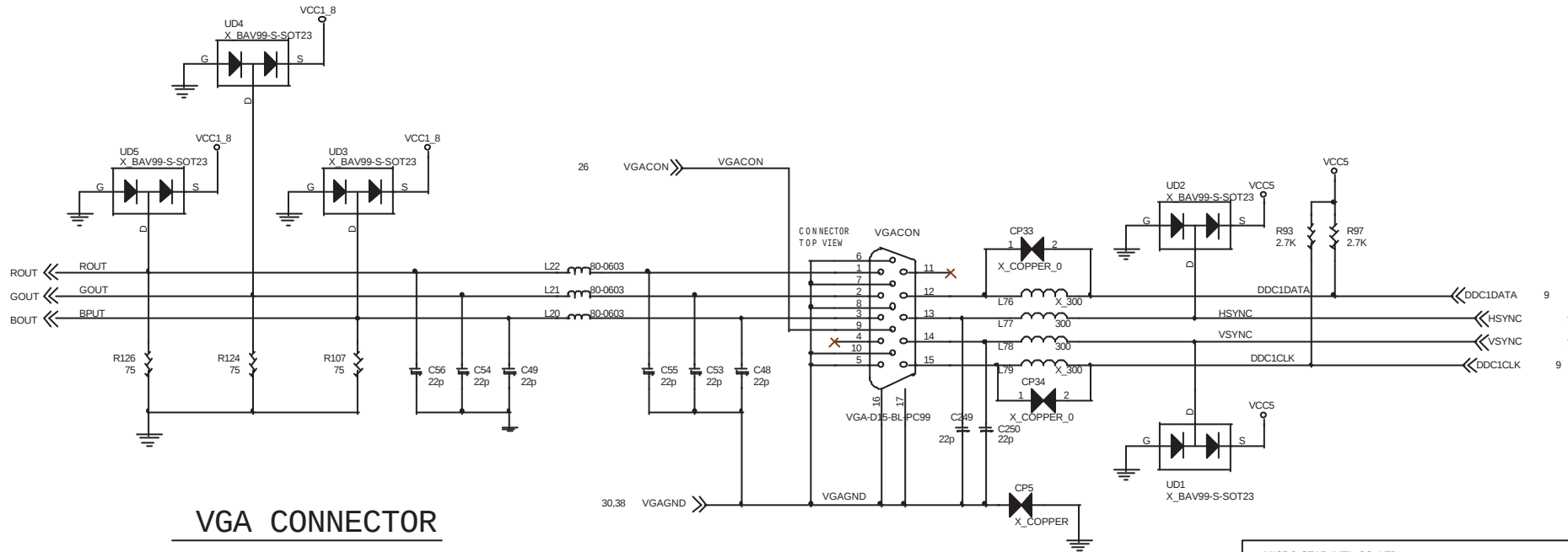


MICRO-STAR INT'L CO., LTD.		
Title: VOLTAGE REGULATOR 2		
Size: Document Number MS-6558	Rev: 1.0	
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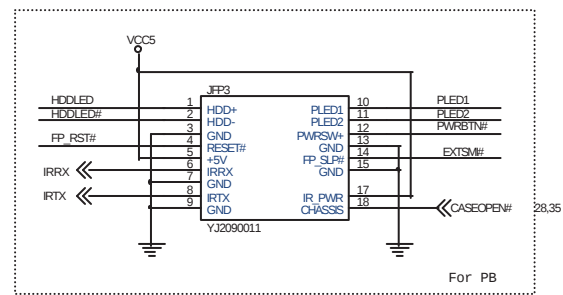
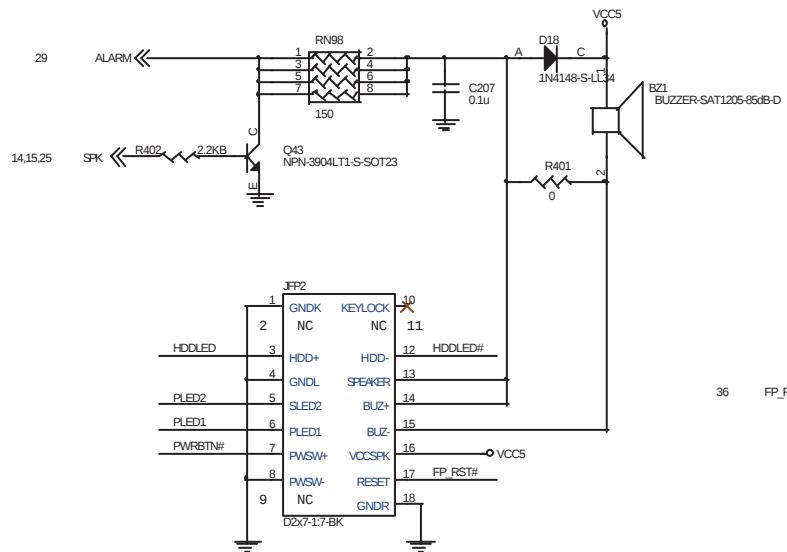
ATX CONNECTOR



VGA CONNECTOR



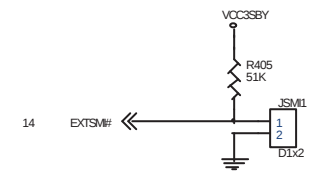
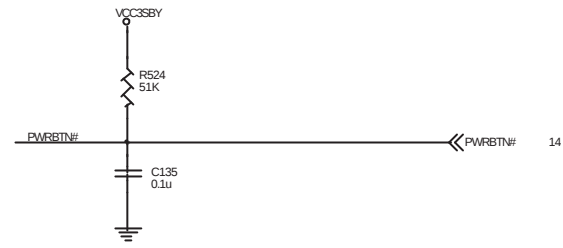
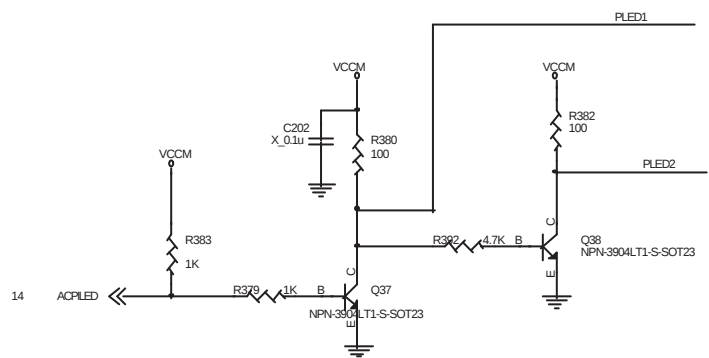
MICRO-STAR INT'L CO.,LTD.		
Title ATX Power Conn. & VGA Conn.		
Size B	Document Number MS-6558	Rev 1.0
Date: Monday, November 05, 2001		
Sheet 36 of 38		



For PB

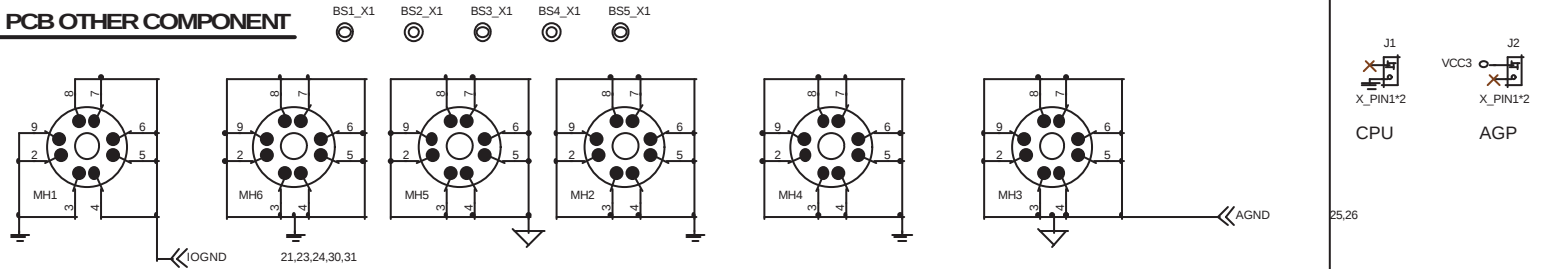
JBST1 Fx
1-2 Normal Mode
2-3 Safe Mode
Open Auto Recovery

Dual Color LED Block

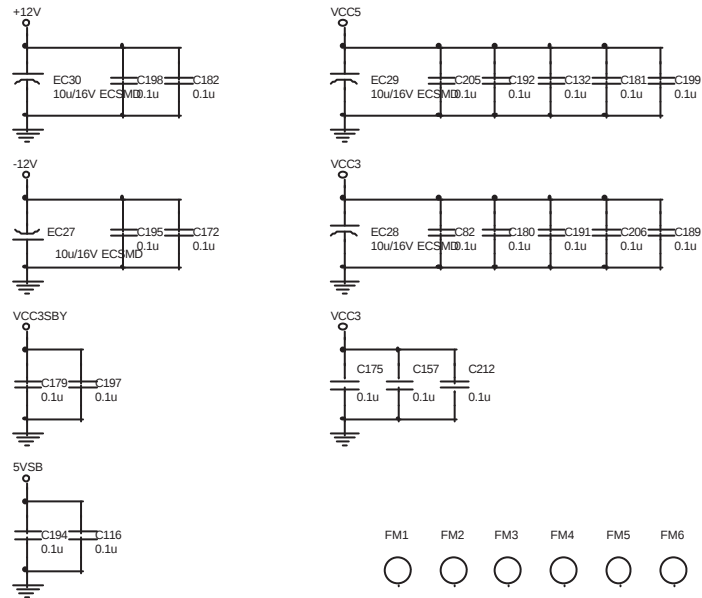


MICRO-STAR INT'L CO., LTD.			
Title FRONT PANEL			
Size	Document Number	Rev 1.0	
Custom	MS-6558		
Date	Monday, November 05, 2001	Sheet	37 of 38

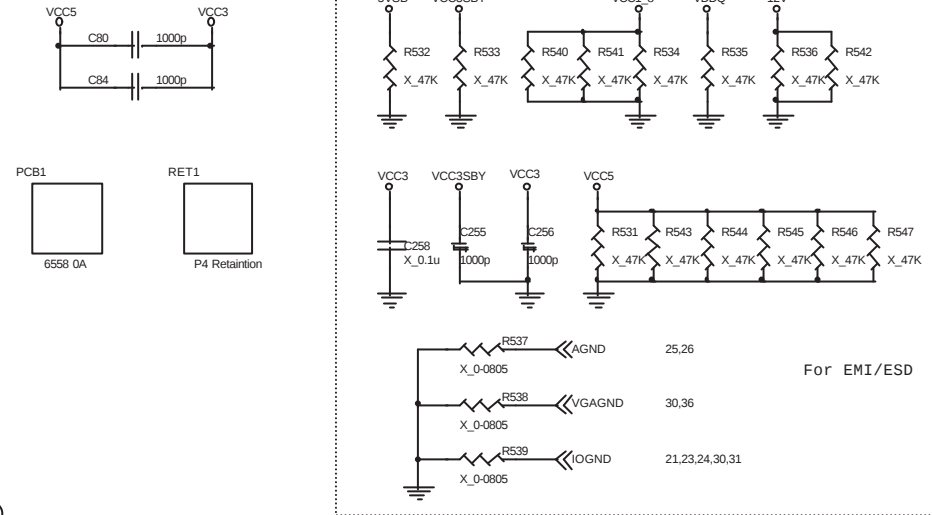
PCB OTHER COMPONENT



System Decoupling Capacitors



High Freq. return current decoupling



MICRO-STAR INT'L CO.,LTD.

DECOUPLING CAPACITOR

Size B Document Number MS-6558 Rev 1.0

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