

7/15/2000 Update

Version 100

MS-6347 Micro-ATX

CPU:
AMD Socket-462 Processor

System Chipset:
VIA KT133(North)
+ 686A (South)

Expansion:
AGP-pro SLOT* 1
PCI 2.2 SLOT* 6
CNR SLOT *

1(shared)

On Board:
AC97 Codec
SCSI AIC-7892+AIC_3860
1394

TSB12LV26+TSB41LV02

Option-C SCSI+1394

Option-A SCSI

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Size : 12"*9.6"
Layer:4
Stack:Component/Gnd/Power/Solder

5 mils trace impedance 60 Ohms
Dielectric ~ 4.1
Prepreg ~ 4.7 mils

6 mils -- 55.74 Ohm
7 mils -- 51.64 Ohm
8 mils -- 48.14 Ohm
9 mils -- 45.11 Ohm
10 mils -- 42.46 Ohm
11 mils -- 40.12 Ohm
12 mils -- 38.03 Ohm
25 mils -- 22.90 Ohm

STANDARD VIA
drill 20 mils, finished 16 mils
All drill hole are with 13 mils clearance
in Power & GND Layer only

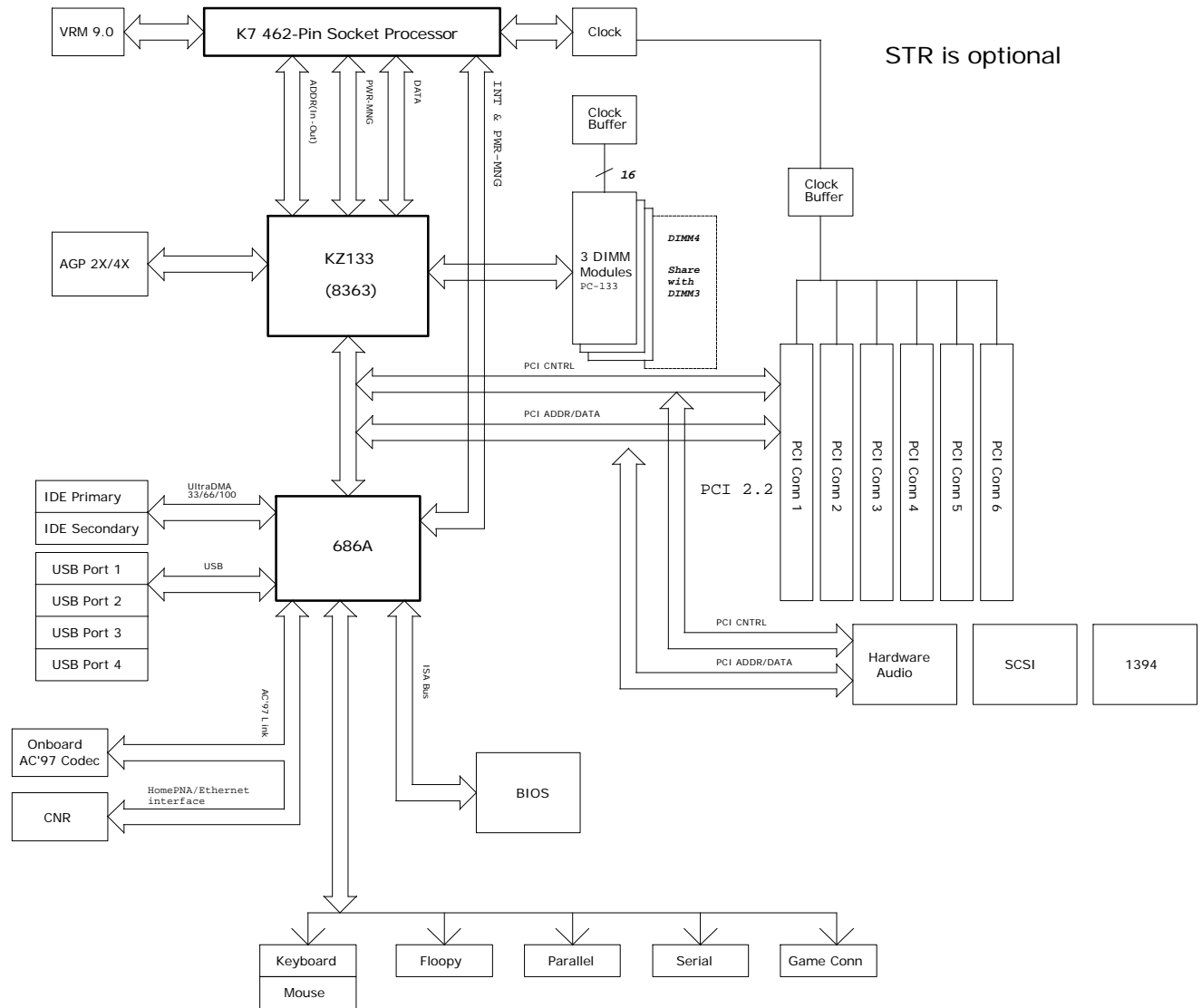
MICROSTAR P01-6347100			
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z10001
74f00

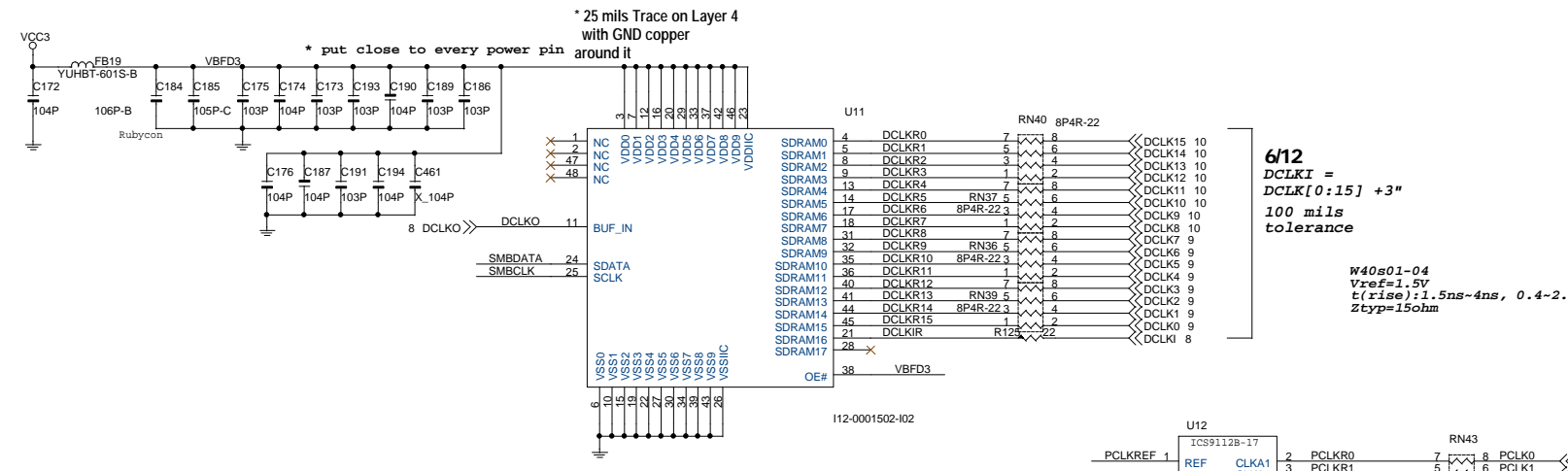
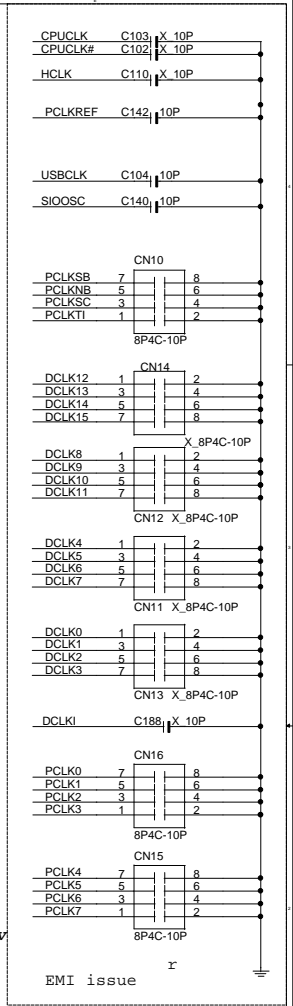
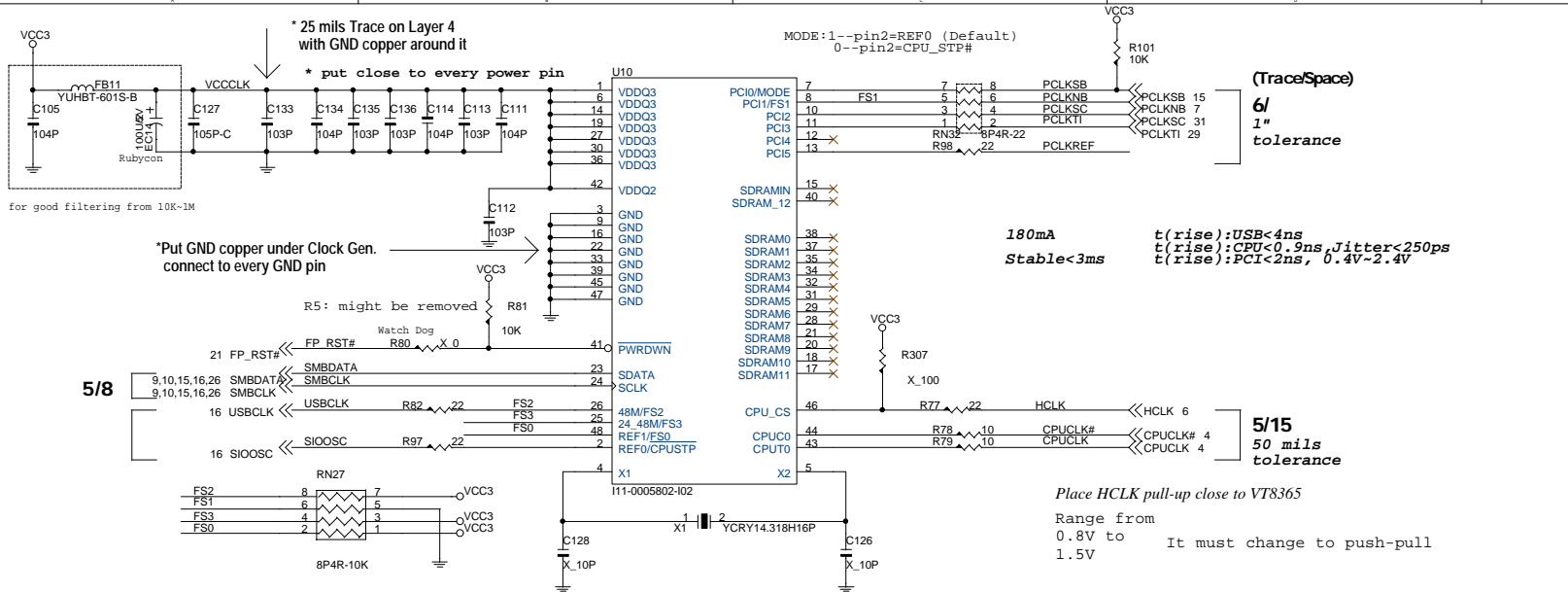


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Block Diagram



STR is optional



Frequency table for IMIC9707

FS4	FS3	FS2	FS1	CPU	PCI	CPU/PCI
1	1	1	1	133.3	33.3	4
1	1	1	0	75	37.5	2
1	1	0	1	100.2	33.3	3
1	1	0	0	66.8	33.4	2
1	0	1	1	79	39.5	2
1	0	1	0	110	36.7	3
1	0	0	1	115	38.3	3
1	0	0	0	120	30	4
0	1	1	1	133.3	33.3	4
0	1	1	0	83	27.7	3
0	1	0	1	100.2	33.3	3
0	1	0	0	66.8	33.4	2
0	0	1	1	124	31	4
0	0	1	0	129	32.3	4
0	0	0	1	138	34.5	4
0	0	0	0	143	35.8	4

Frequency table for ICS9248-114

FS4	FS3	FS2	FS1	CPU	PCI	CPU/PCI
1	1	1	1	133.3	33.3	4
1	1	1	0	105	35	3
1	1	0	1	100	33.3	3
1	1	0	0	66.8	33.4	2
1	0	1	1	124	31	4
1	0	1	0	110	36.7	3
1	0	0	1	133.3	44.4	3
1	0	0	0	83.3	41.6	2
0	1	1	1	150	37.5	4
0	1	1	0	115	38.3	3
0	1	0	1	112	37.3	3
0	1	0	0	75	37.5	2
0	0	1	1	140	35	4
0	0	1	0	120	40	3
0	0	0	1	103	34.3	3
0	0	0	0	124	41.3	3

Impedance
13.5~45
pci

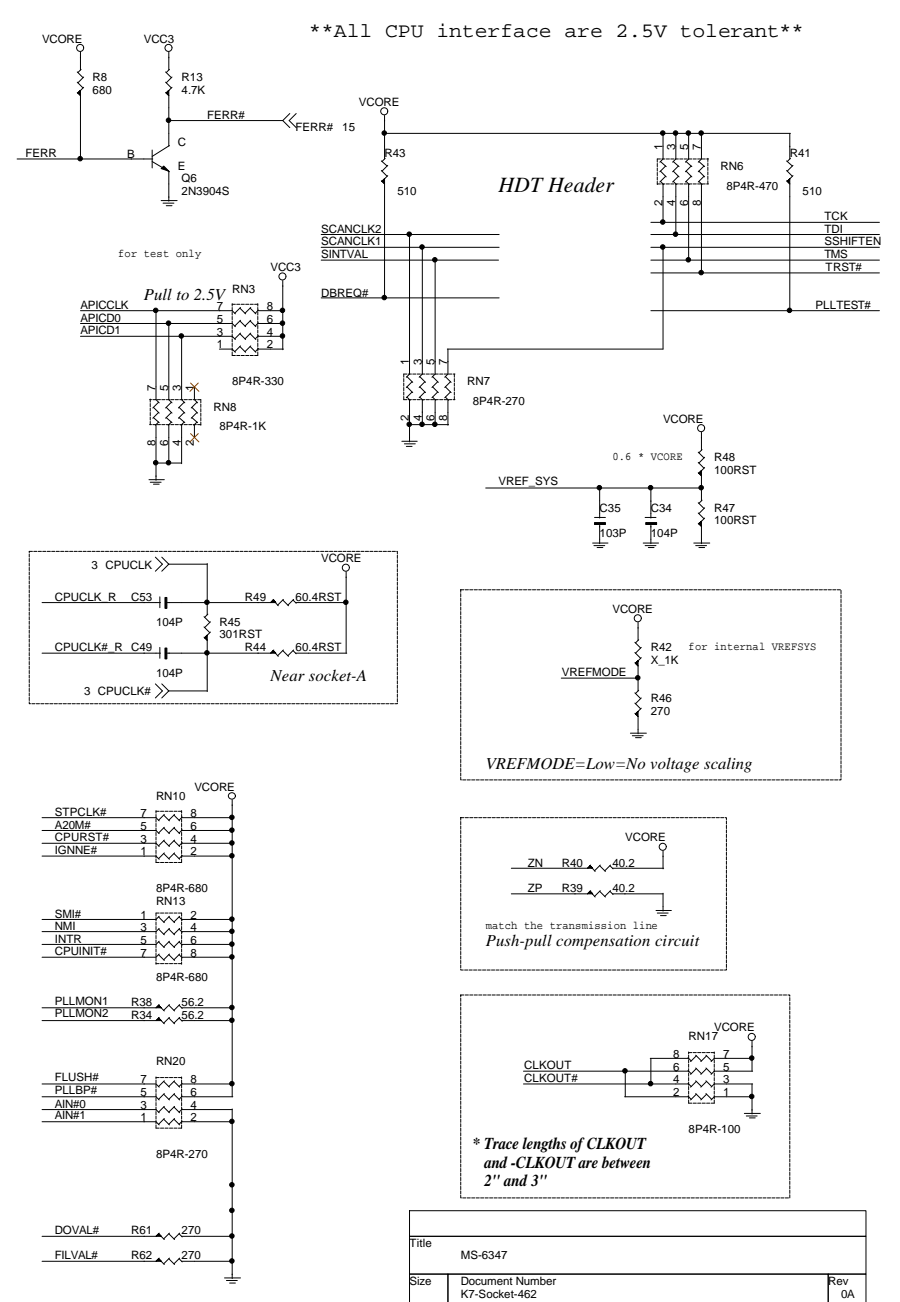
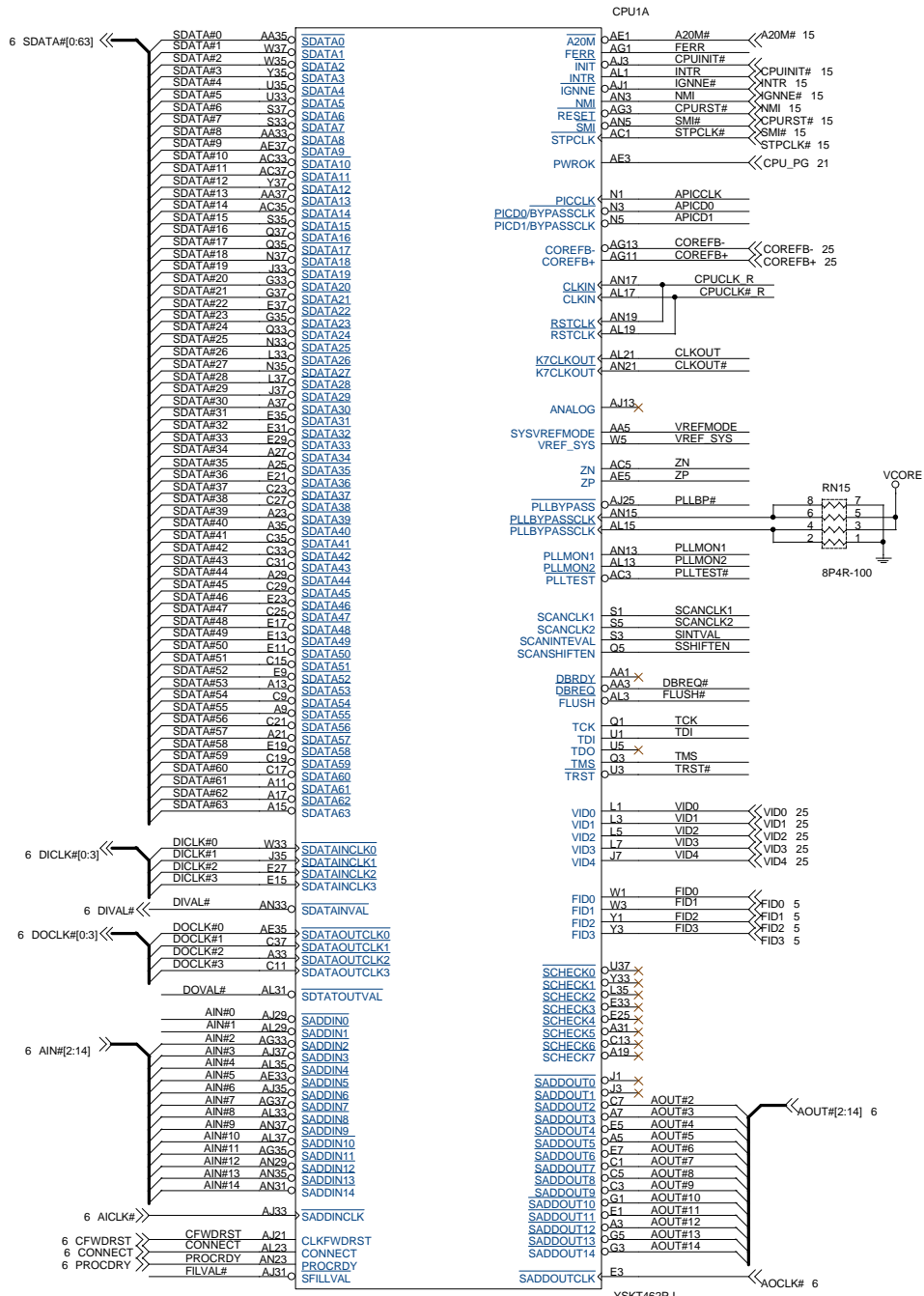
MICRO-STAR

Title
CLOCK SYNTHESIZER

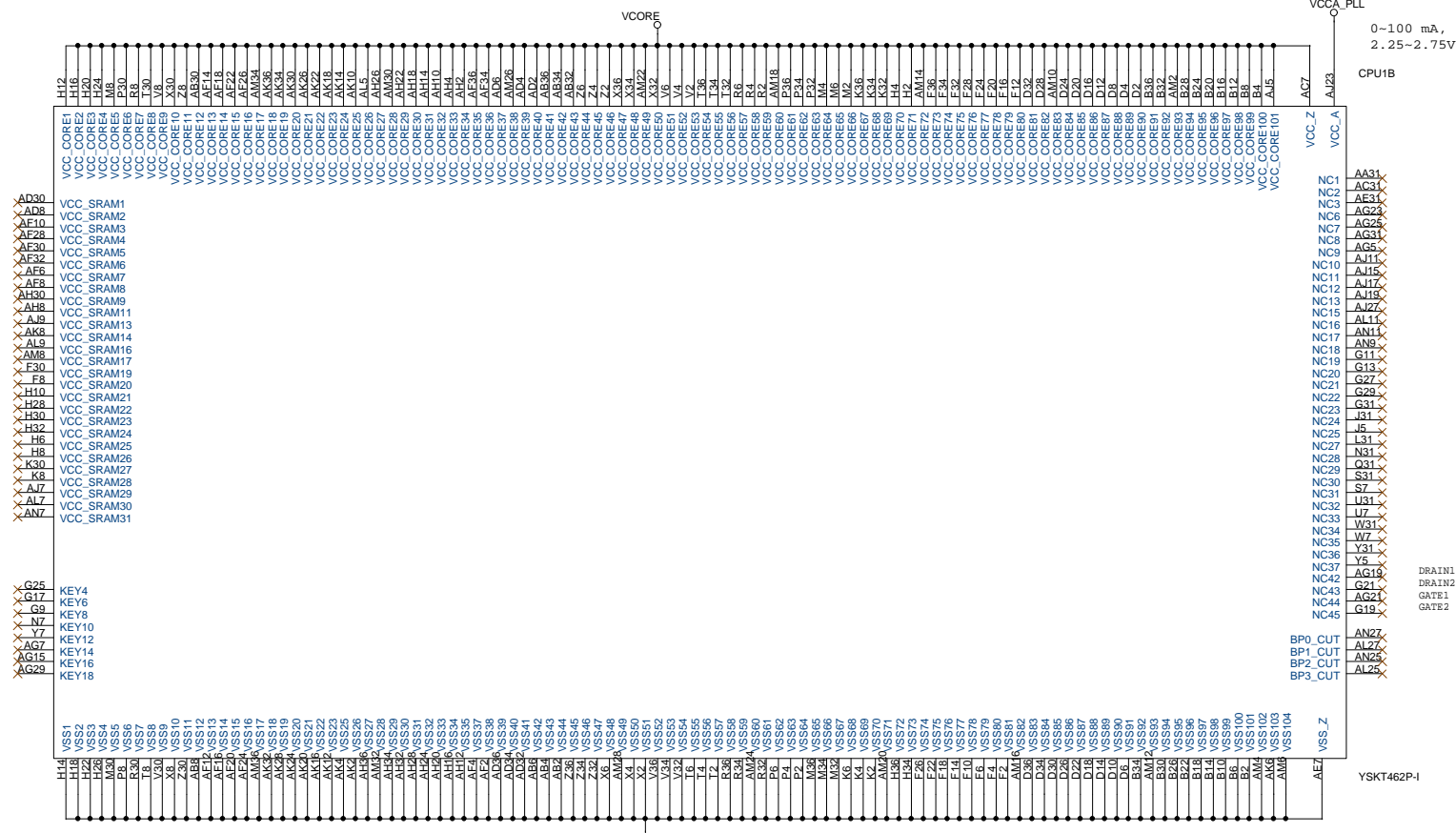
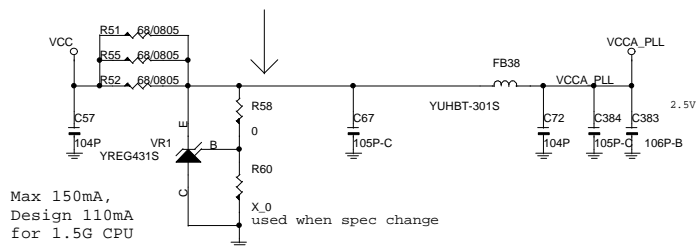
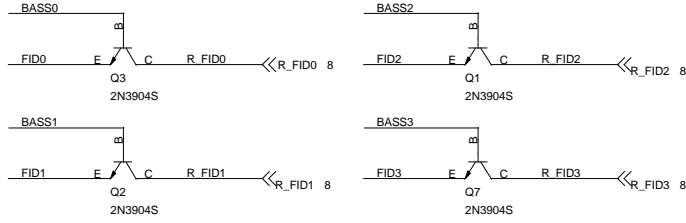
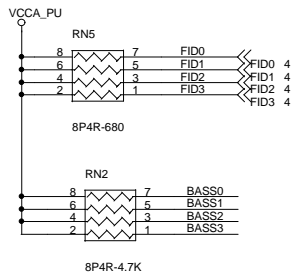
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* 25 mils Trace/ 12 mils Space

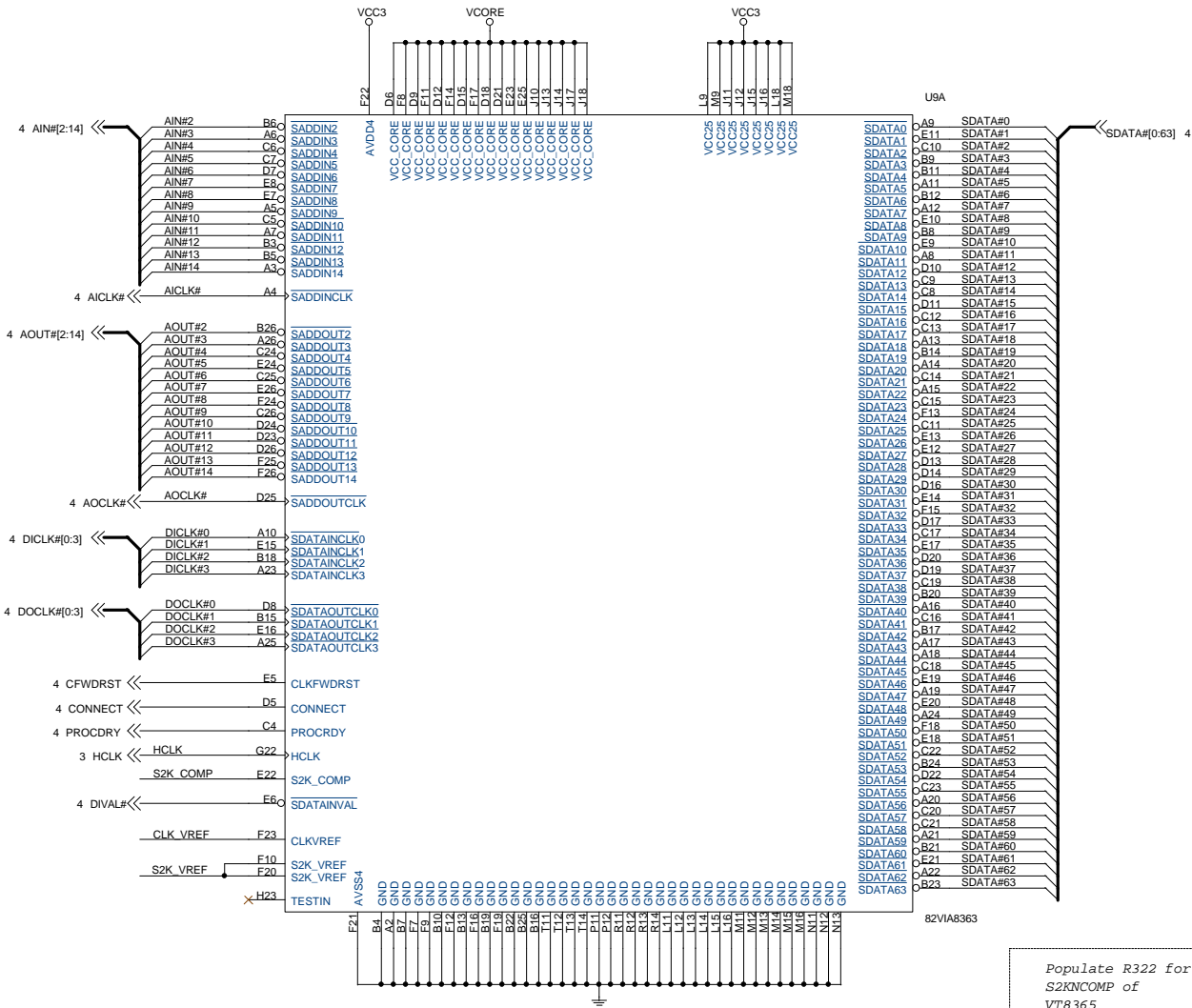


0-100 mA,
2.25-2.75V
CPU1B

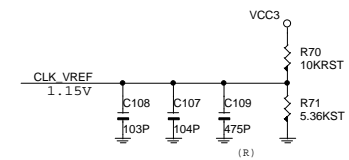
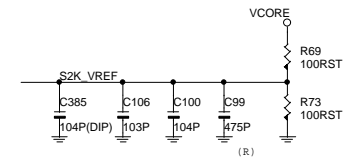
DRAIN1
DRAIN2
GATE1
GATE2

YSKT462P-1

MICRO-STAR		
Title PPGA_462 CPU (Power & Ground)		
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S2K_VREF at 50% @ 1.6V VREF = 0.8V

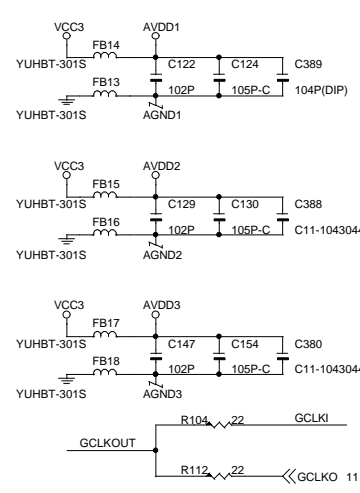
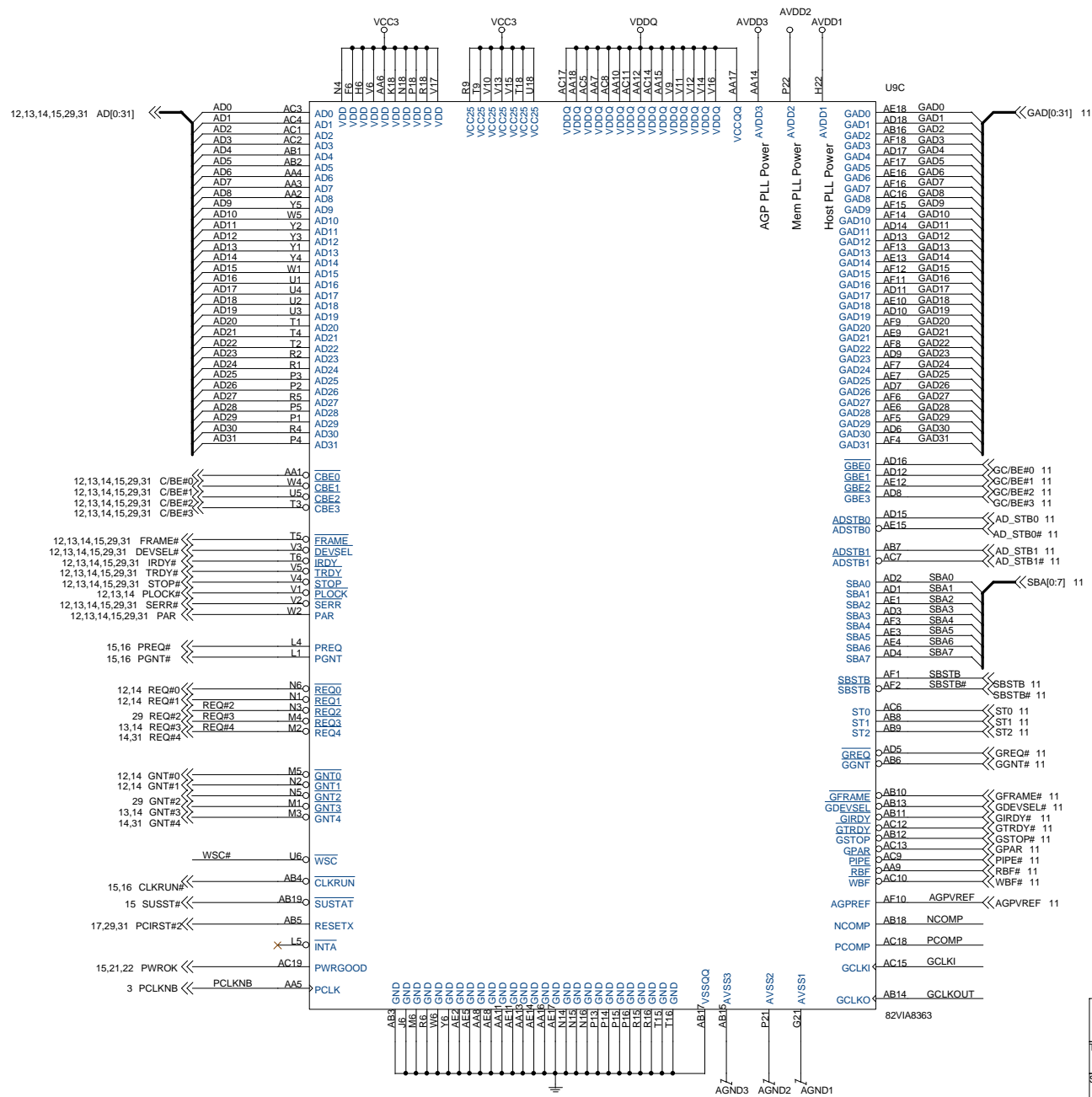


Populate R322 for
S2KNCOMP of
VT8365

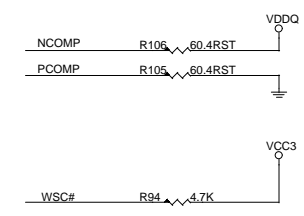
S2K COMP R63 40.2
(30-40 ohm)

Populate R322 for S2K_COMP
(S2KNCOMP) of VT8363

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Title NORTH BRIDGE VT8363 (S2K)		
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The length of GCLKOUT should be as short as possible.
 The length of GCLKI should equal to the length of GCLKO + 3".

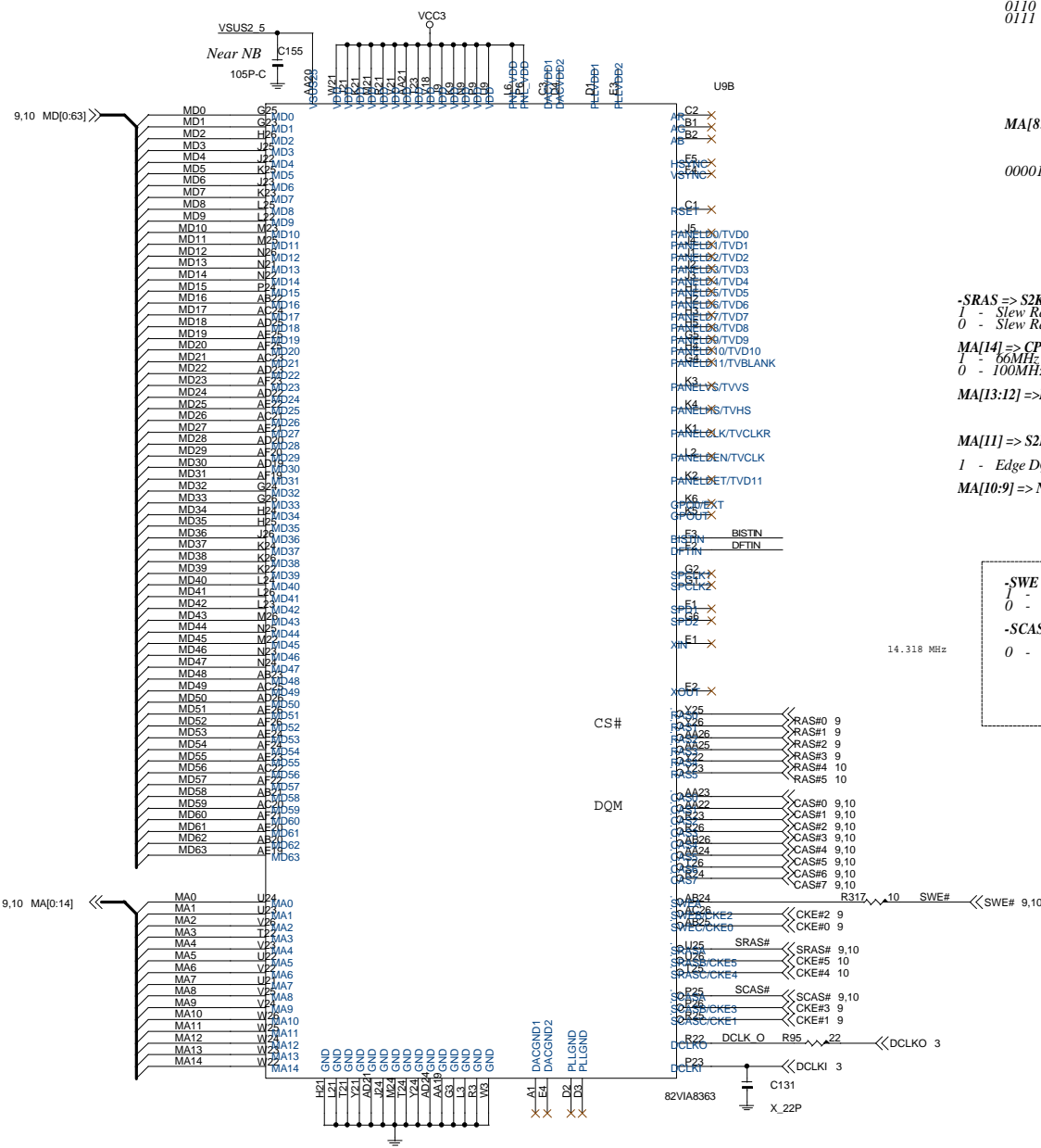


Place these bypassing capacitors near VT8363.

MICRO-STAR

Title: NORTH BRIDGE VT8363 (PCI & AGP)

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Power Up Strappings : For Debug Only

MA[3:0] => CPU Clock Divider

0000	3	1000	7.5
0001	3.5	1001	7.5
0011	4.5	1010	8
0100	5	1011	8.5
0101	5.5	1100	9
0110	6	1101	9.5
0111	6.5	1110	10
		1111	Reserved

MA[8:4] => S2K Strobe Delay Counter in Edge Mode

00001~11111 - Strapping Mode (default)

-SRAS => S2K Slew Rate Control

1 - Slew Rate Control Disable

0 - Slew Rate Control Enable (Default)

MA[14] => CPU Clock Frequency

1 - 66MHz

0 - 100MHz (Default)

MA[13:12] => PMOS Output Strength

MA[11] => S2K DQ Select

1 - Edge DQ

MA[10:9] => NMOS Output Strength

01 is via default

-SWE => Processor DQ Select

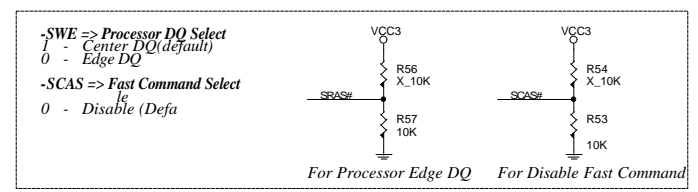
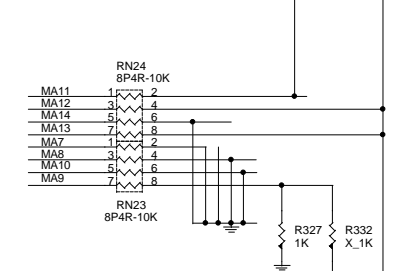
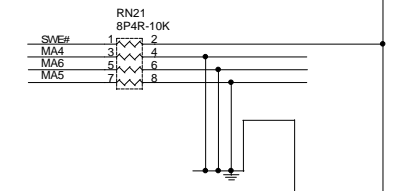
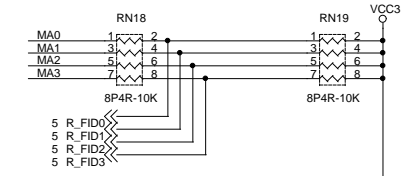
1 - Center DQ (default)

0 - Edge DQ

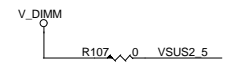
-SCAS => Fast Command Select

0 - Disable (Default)

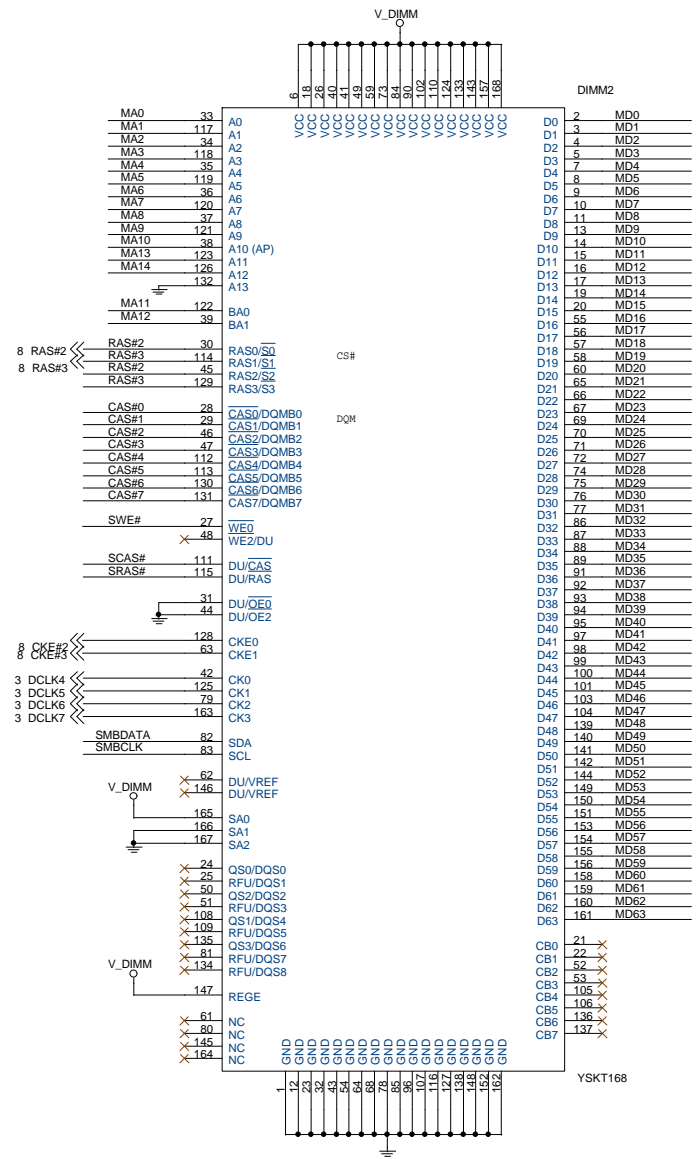
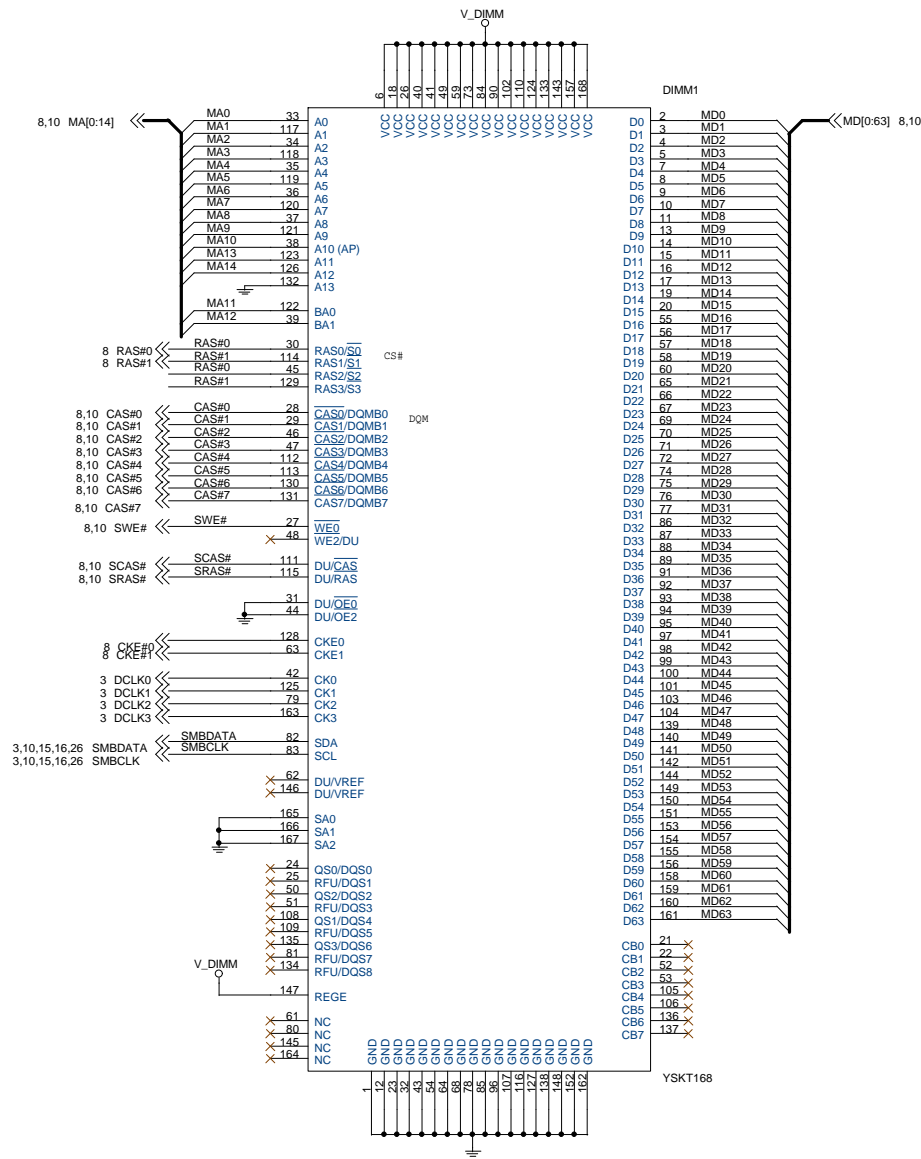
14.318 MHz



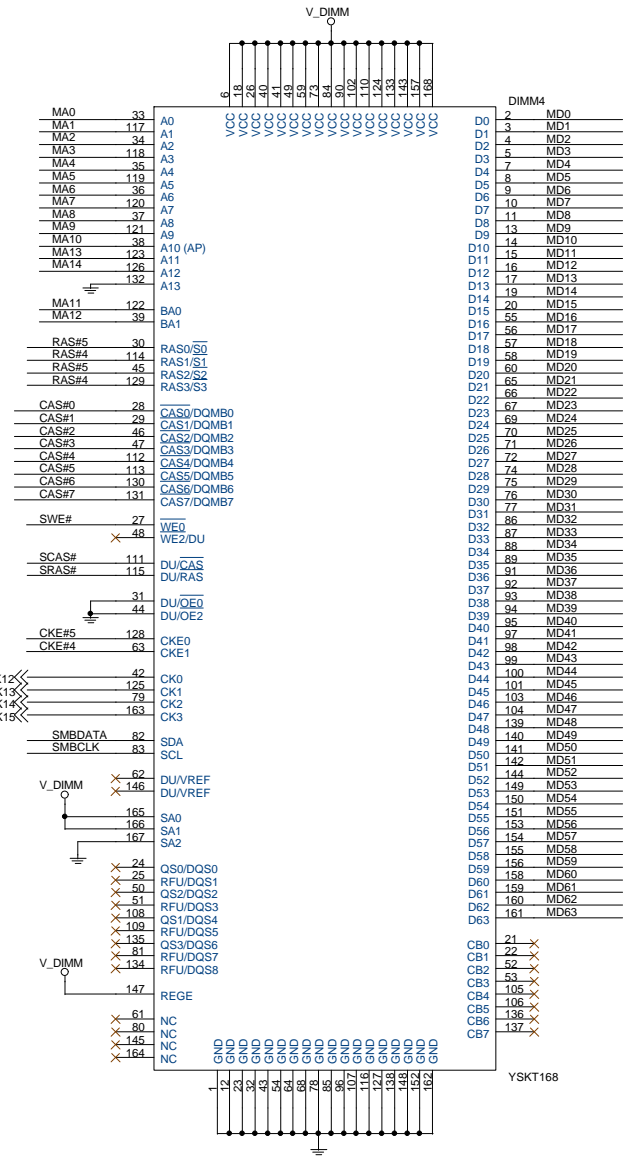
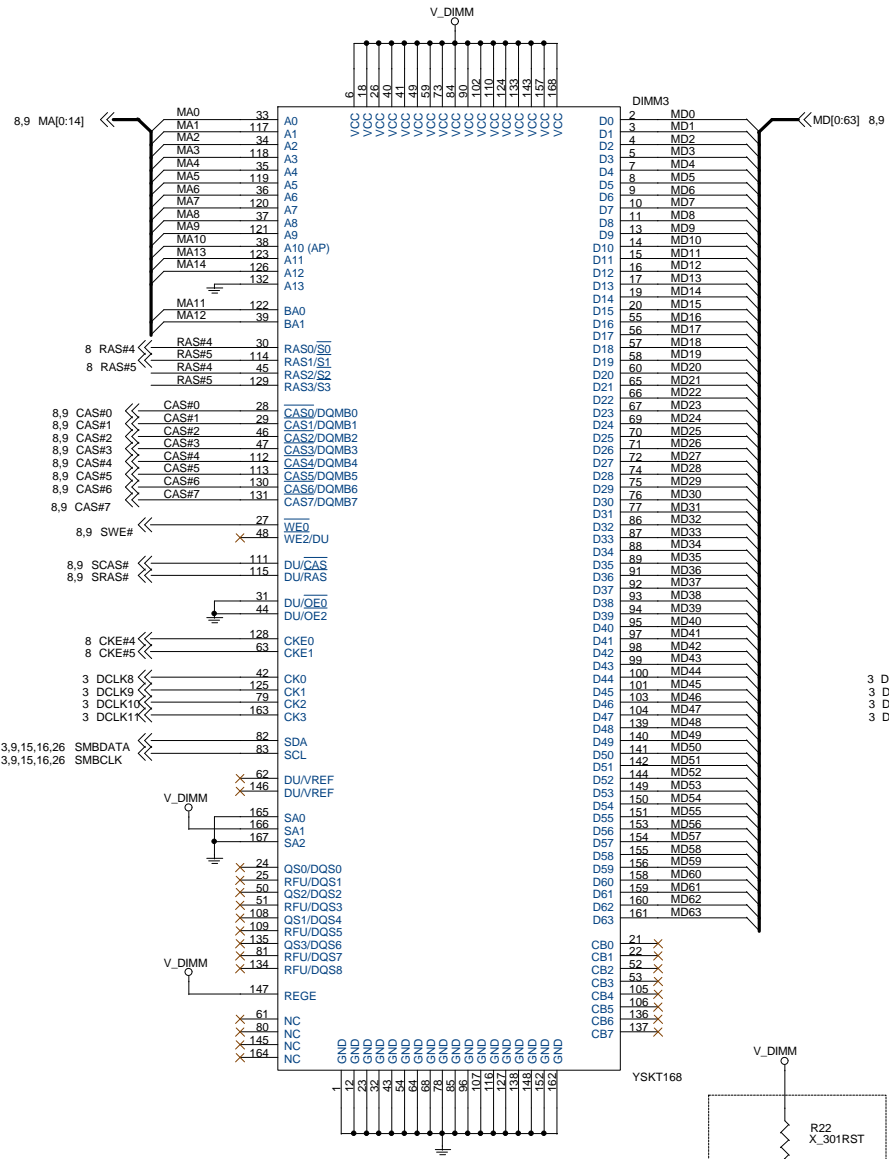
For Processor Edge DQ For Disable Fast Command



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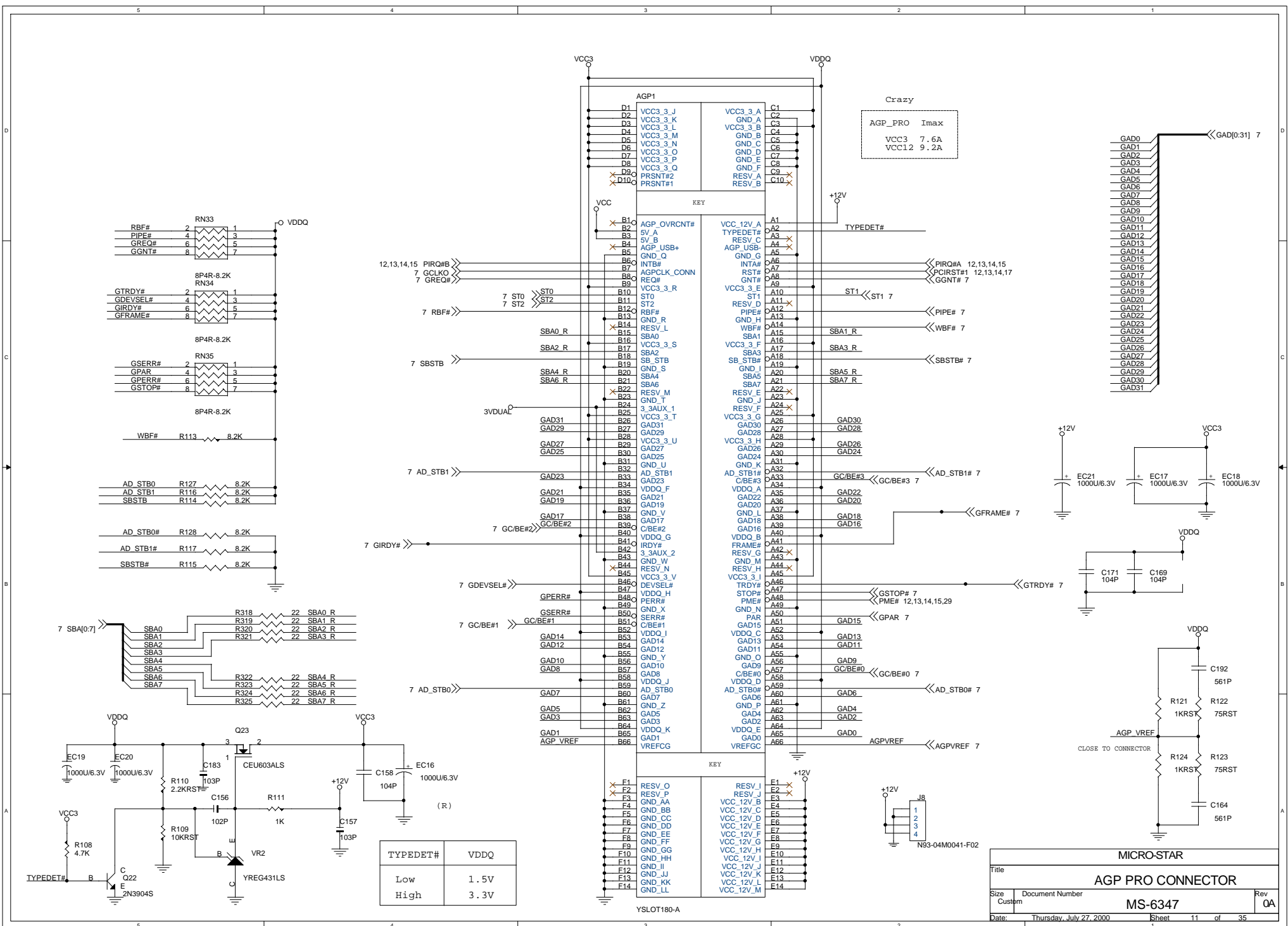


MICRO-STAR		
Title SDRAM (DIMM1 AND DIMM2)		
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To avoid plugging in when STR conditon

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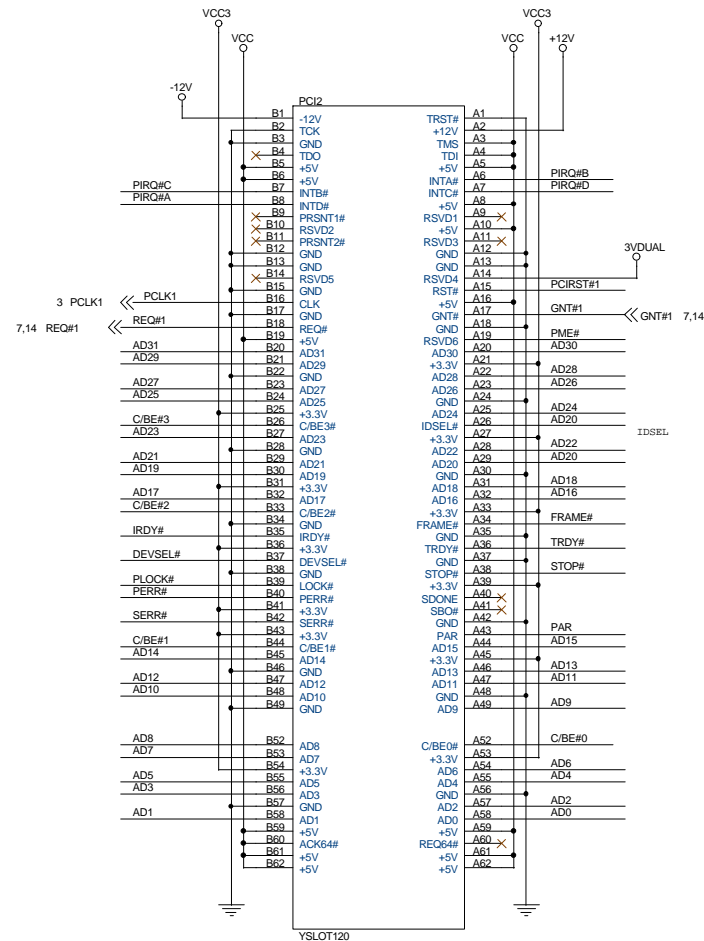
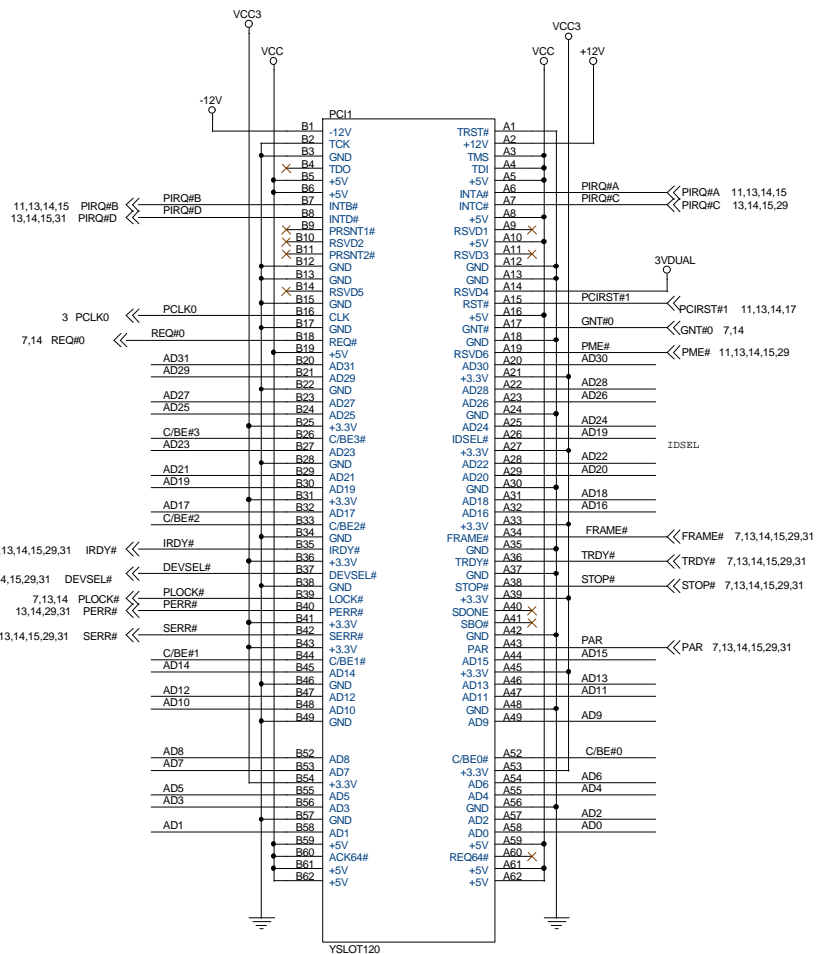


TYPEDET#	VDDQ
Low	1.5V
High	3.3V

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AGP PRO CONNECTOR

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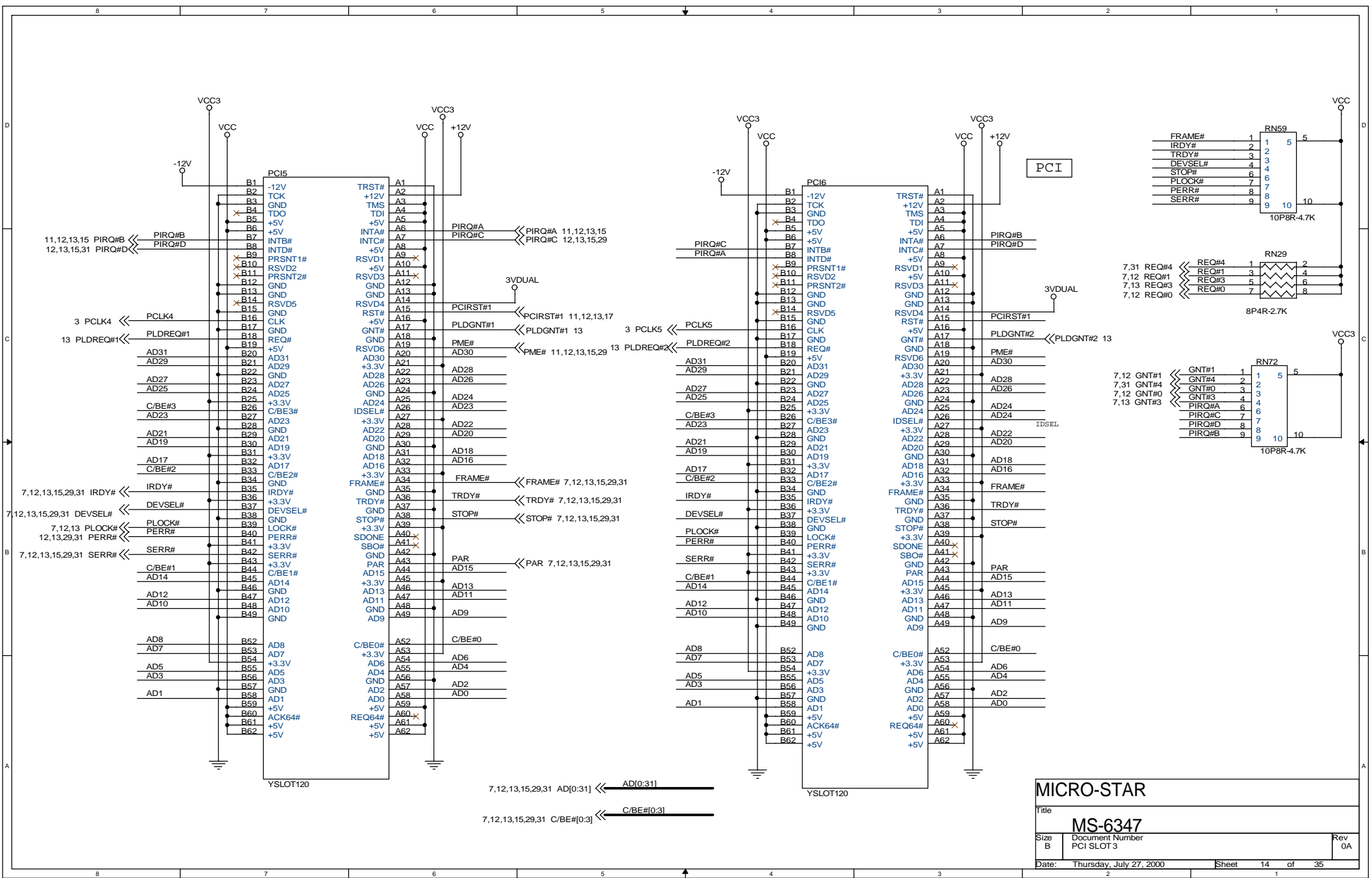


7,13,14,15,29,31 AD[0:31] << AD[0:31]

7,13,14,15,29,31 C/BE#[0:3] << C/BE#[0:3]

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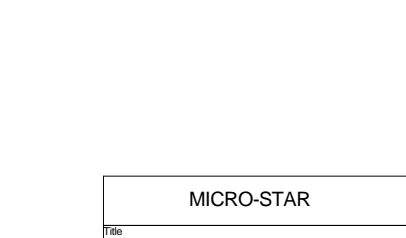
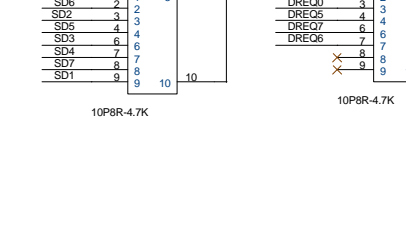
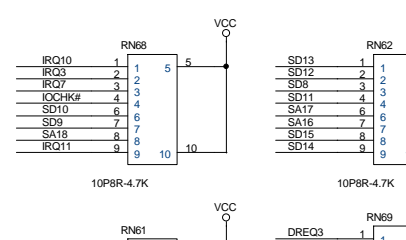
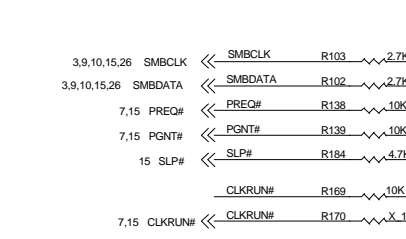
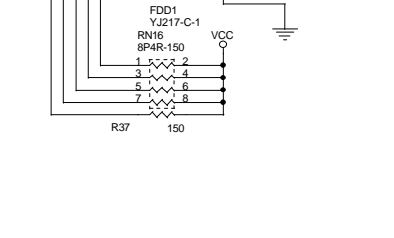
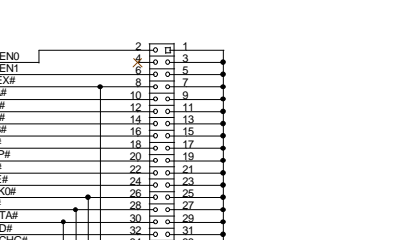
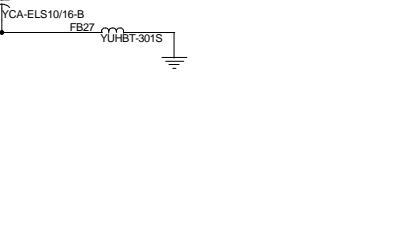
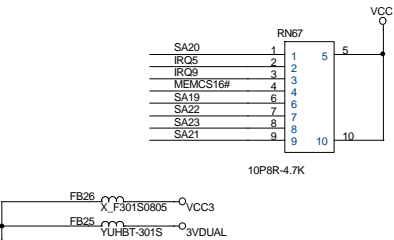
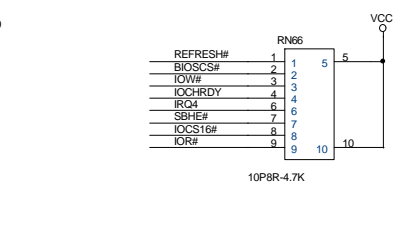
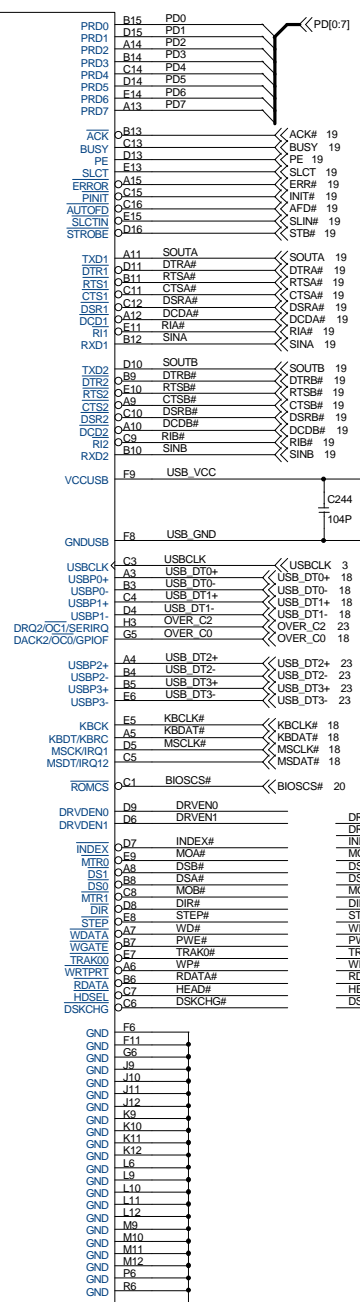
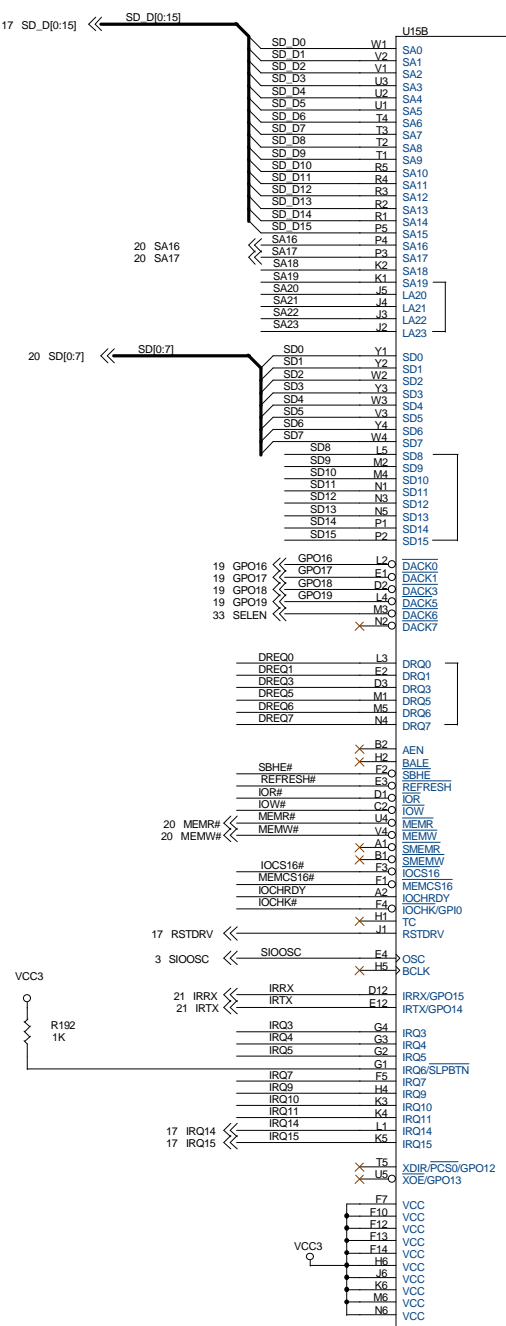


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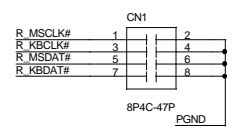
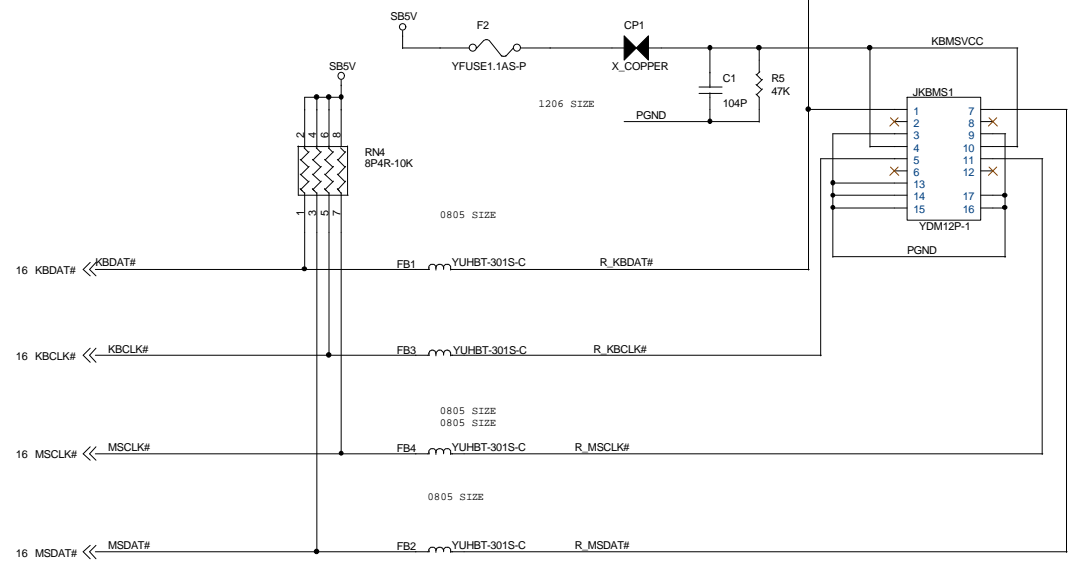
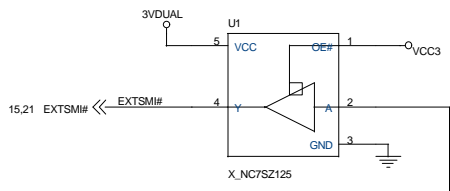
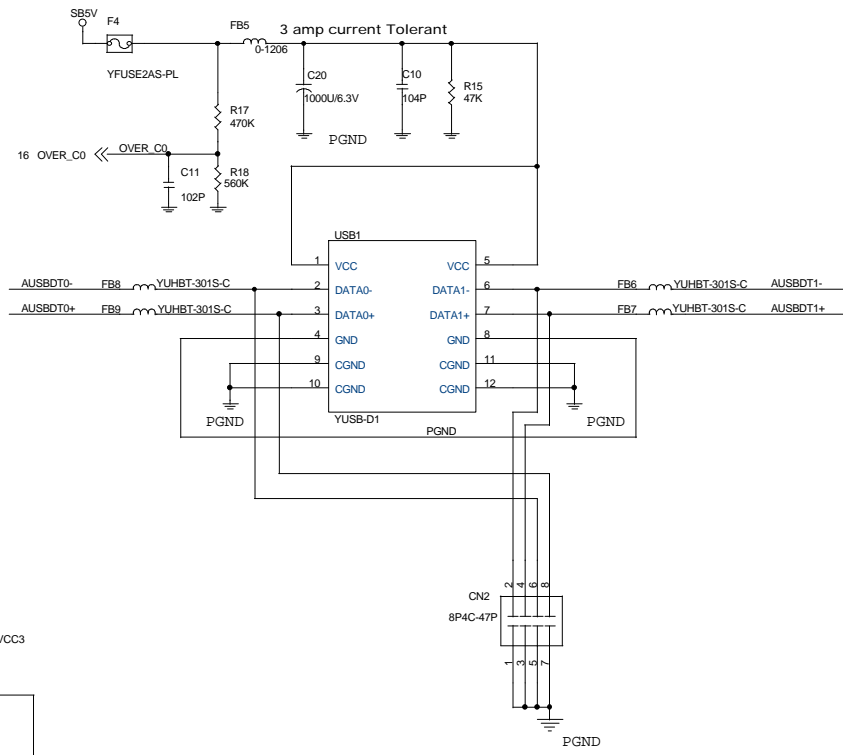
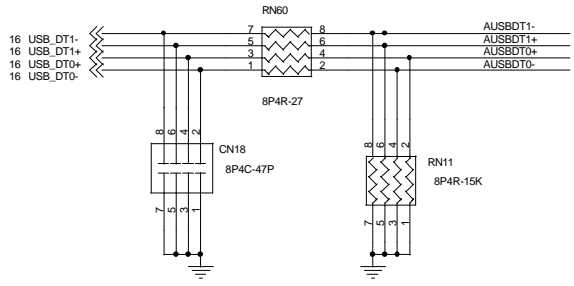
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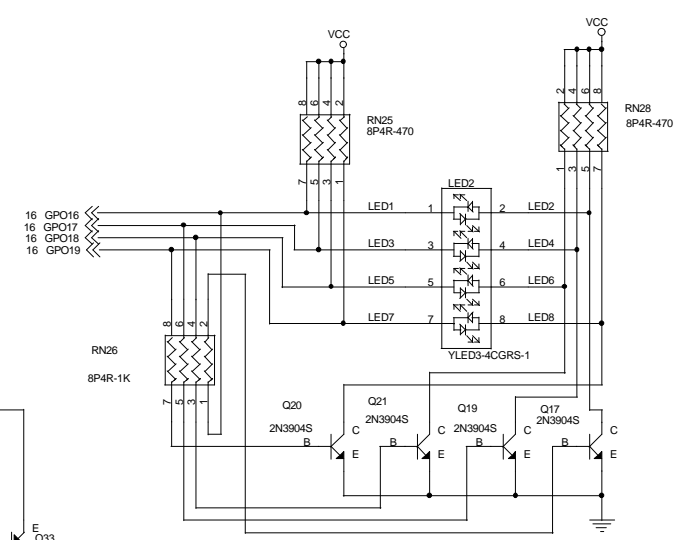
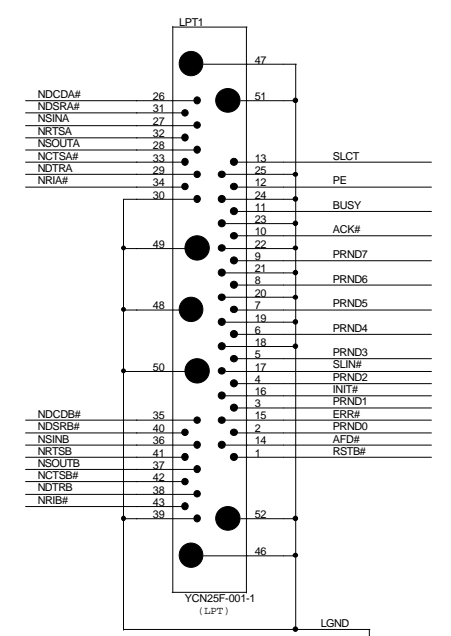
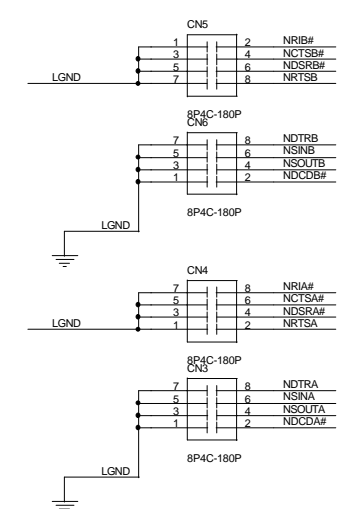
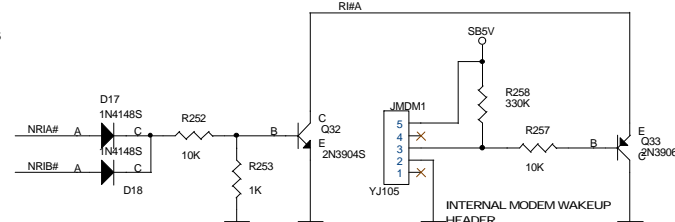
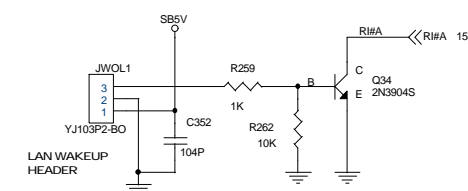
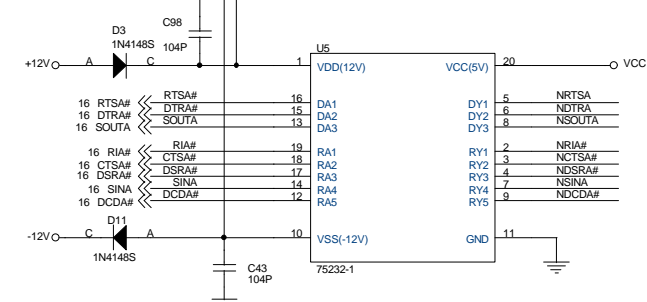
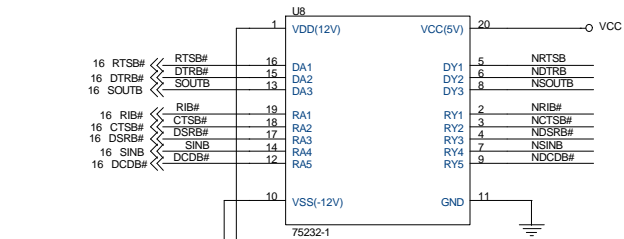
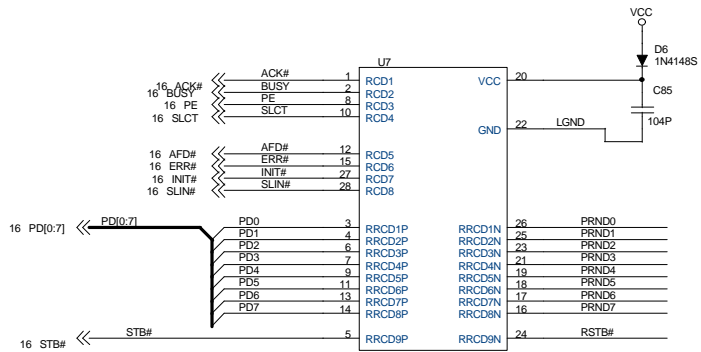


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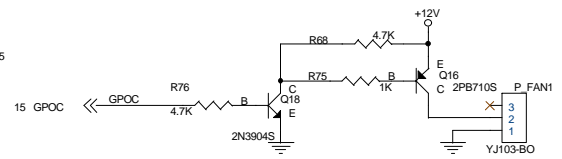
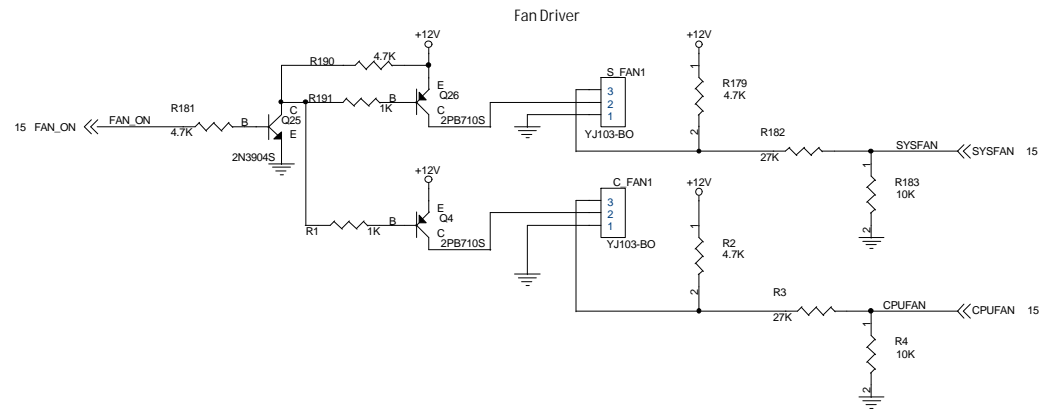
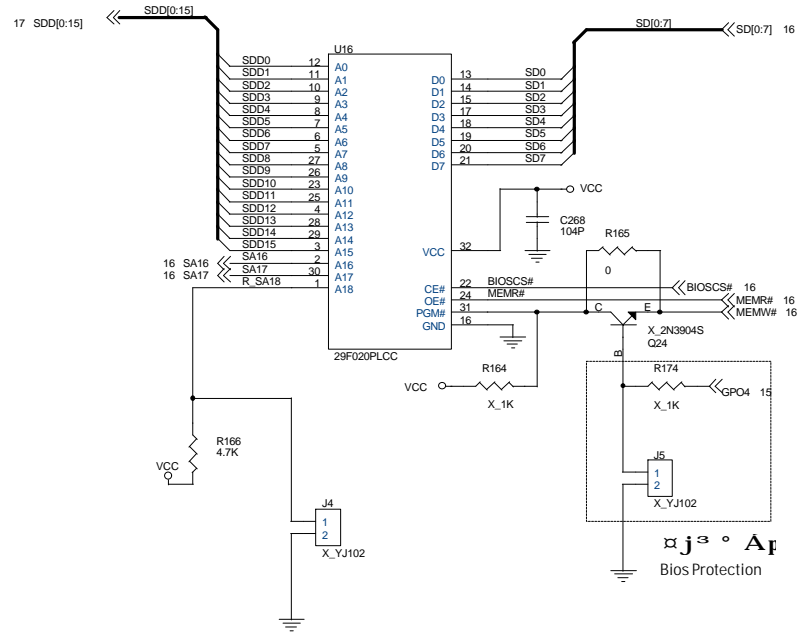
82VIA686A-1



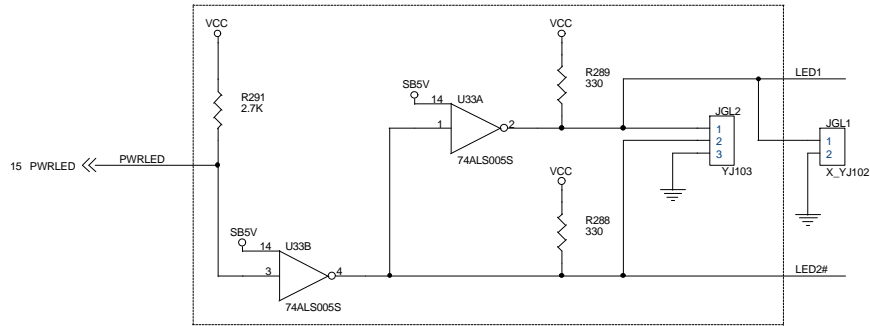
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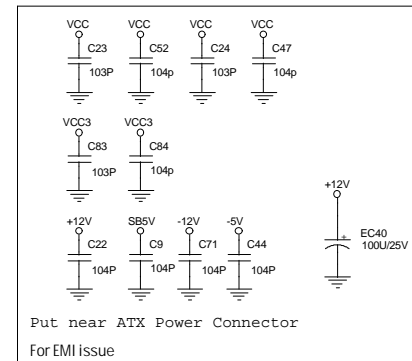
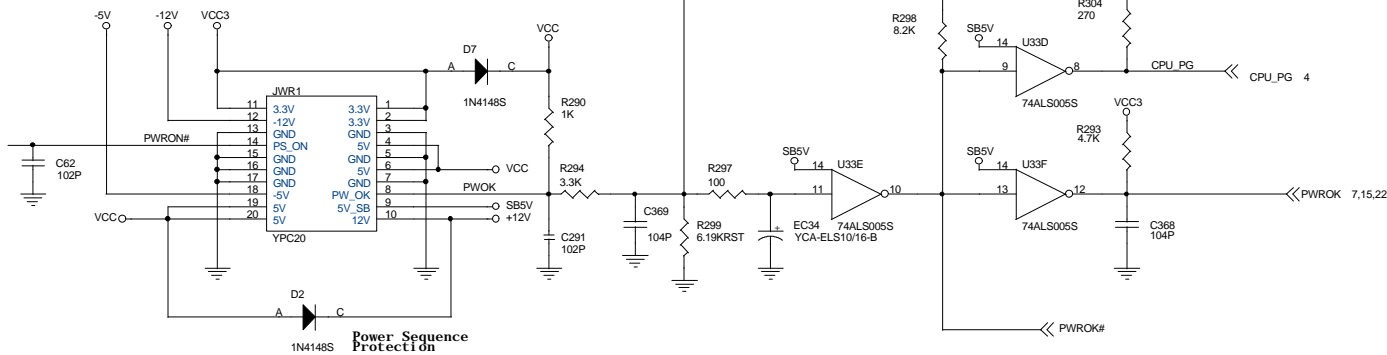
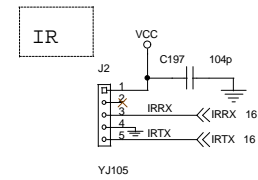
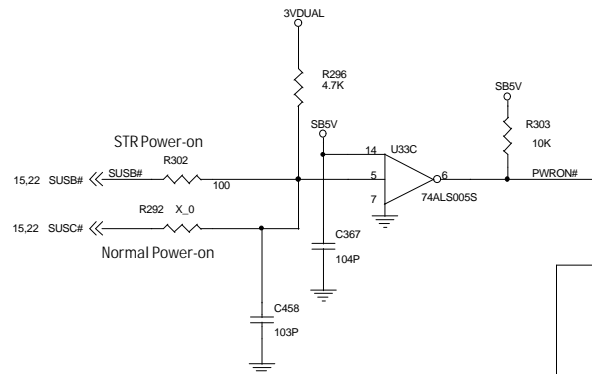
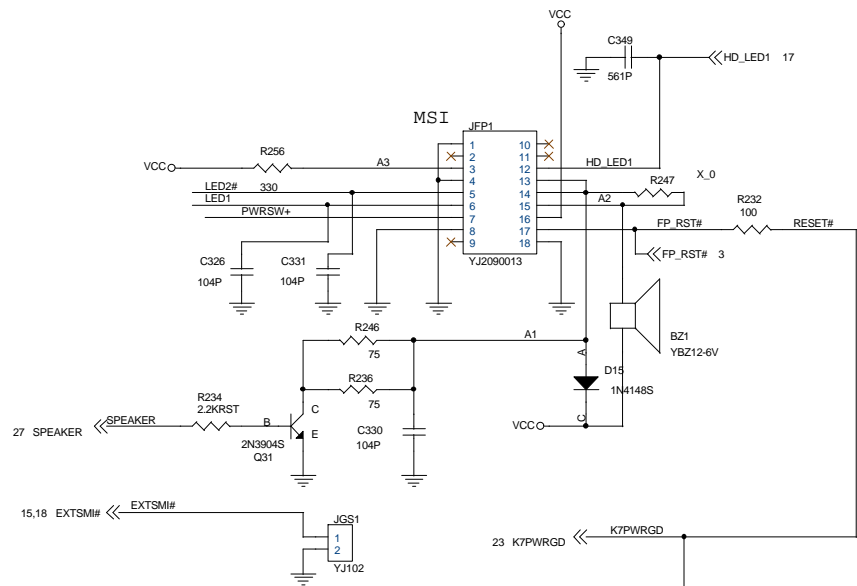
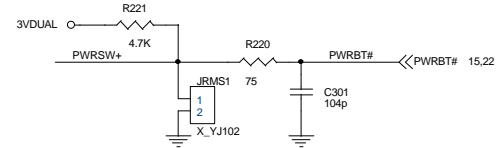
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Size: B	Document Number: PARALLEL PORT	Rev: 0A
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MICRO-SATR		
Title		
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B	FLASH MEMORY	0A
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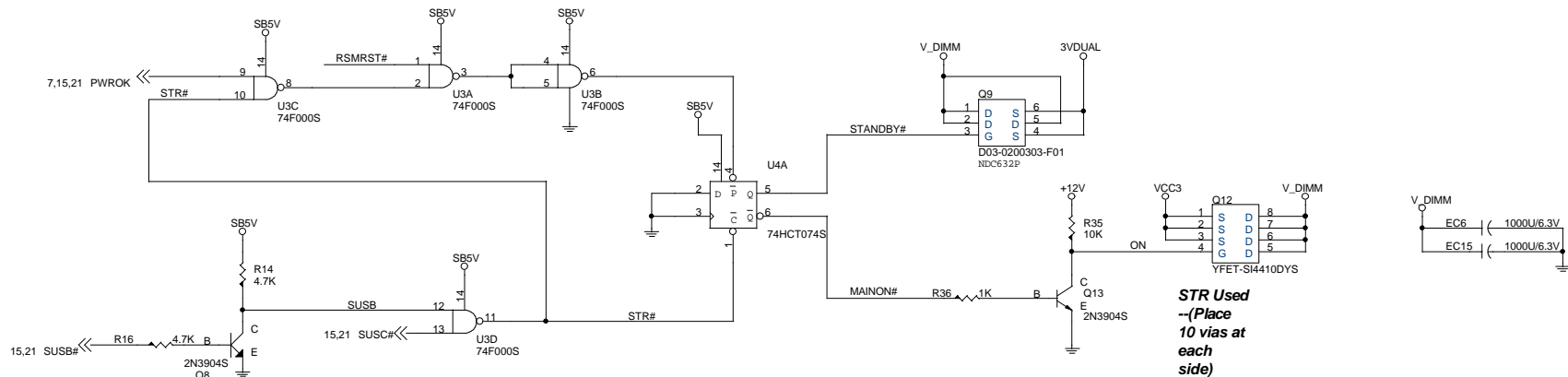


This block is reserved for two color LED indicate system power state.

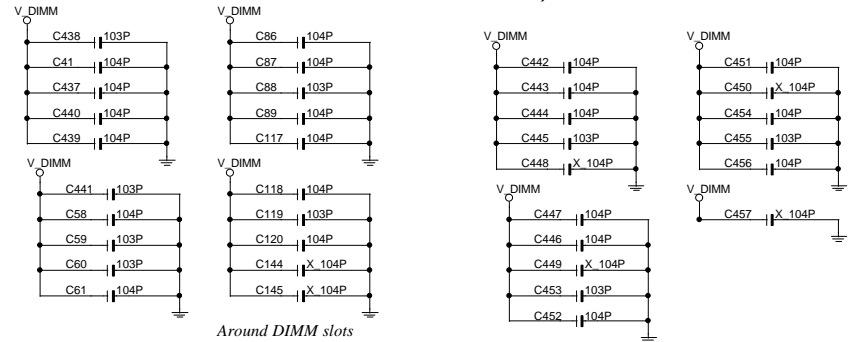
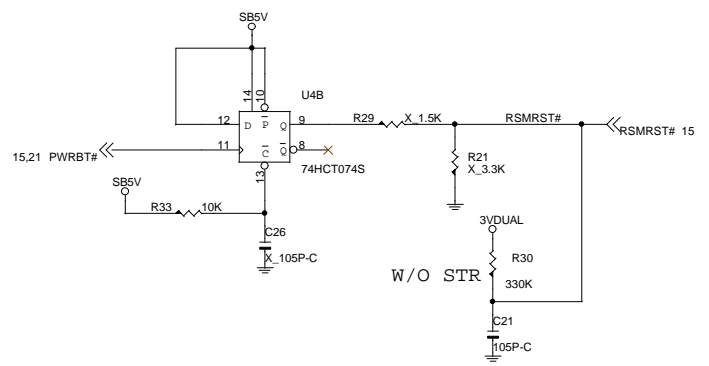


Put near ATX Power Connector
For EMI issue

MICRO-STAR		
Title	MS-6347	
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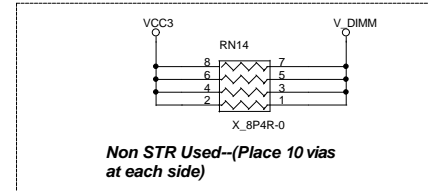


STR Used
 --(Place
 10 vias at
 each
 side)

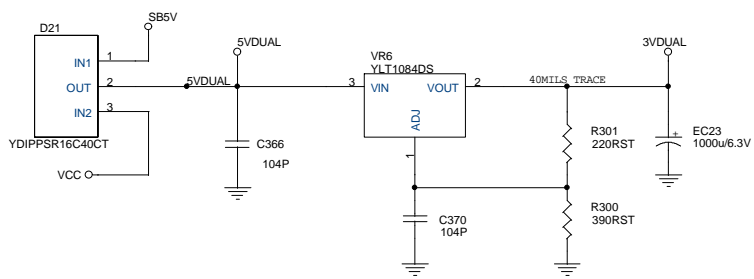
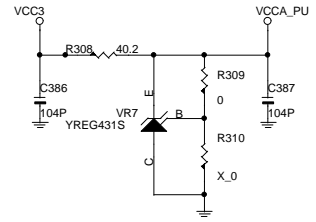


Around DIMM slots

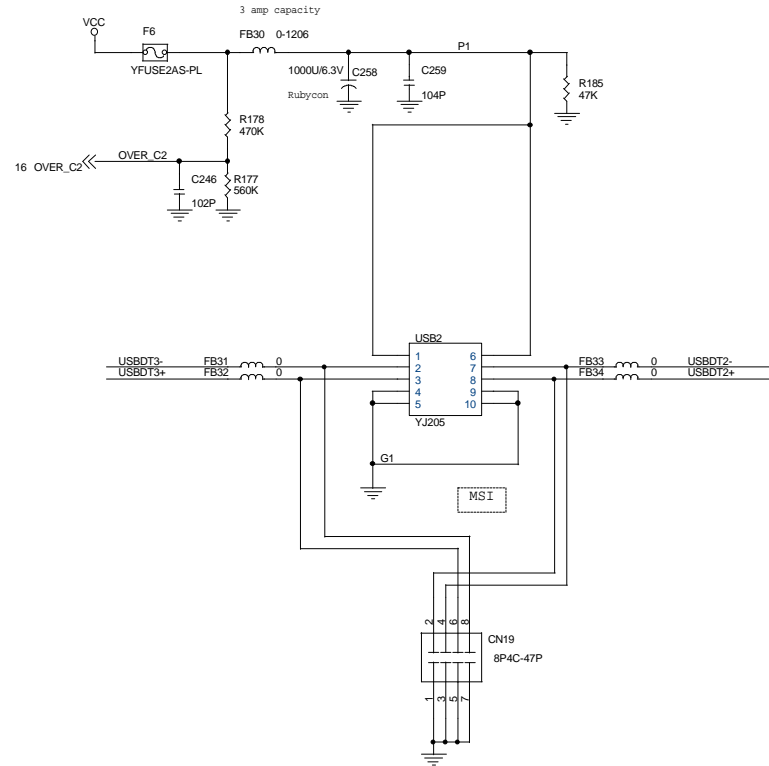
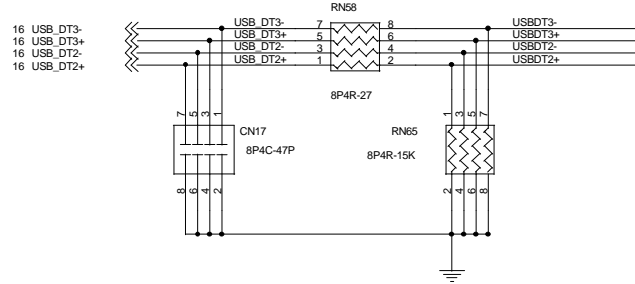
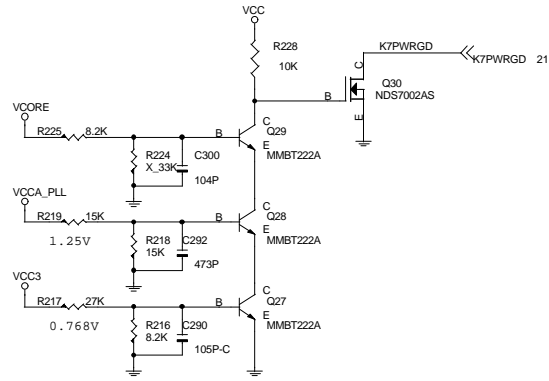
Around DIMM slots



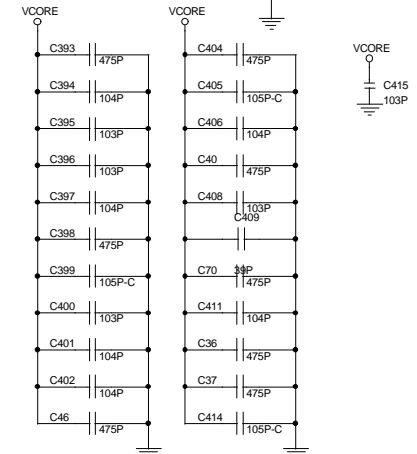
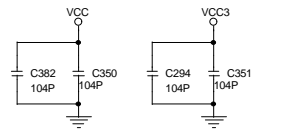
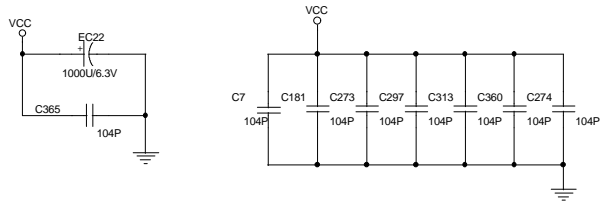
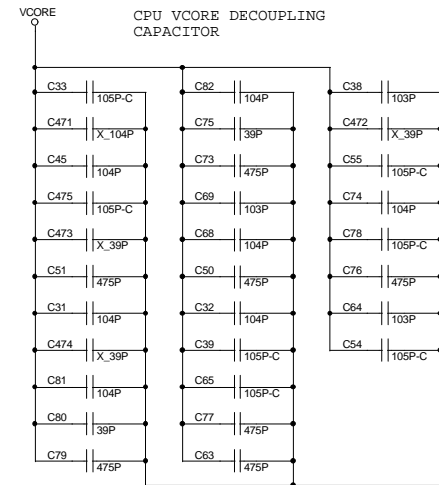
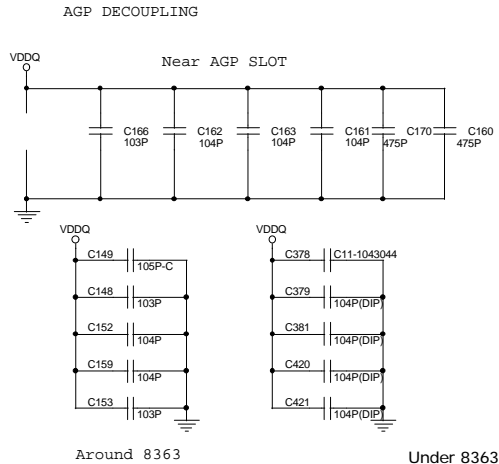
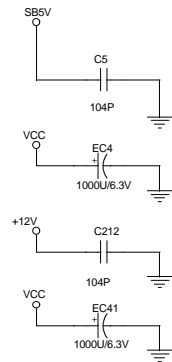
Non STR Used--(Place 10 vias
 at each side)



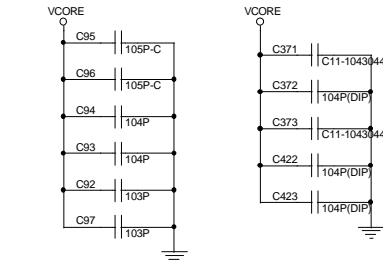
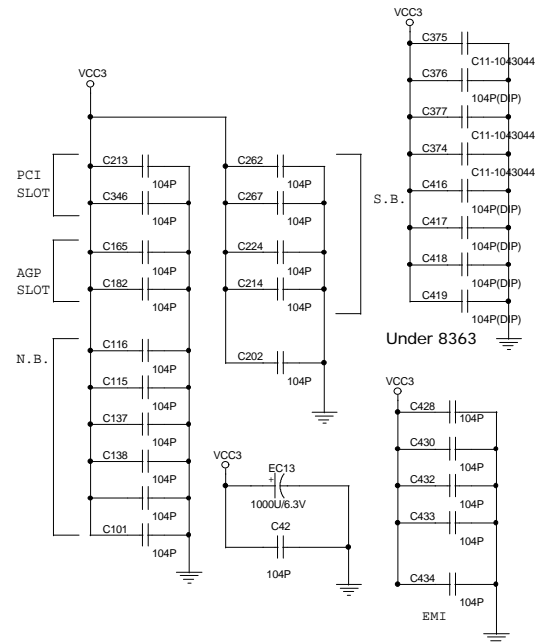
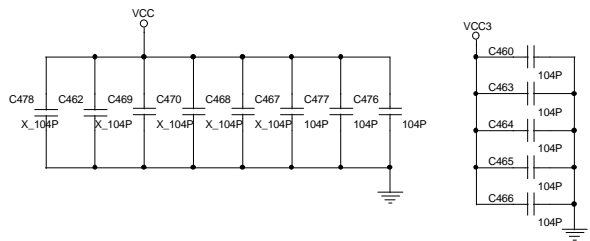
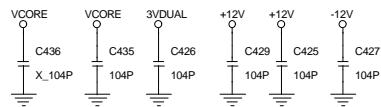
MICRO-STAR		
Title SUSPEND TO RAM (STR)		
Size C	Document Number MS-6347	Rev 0A
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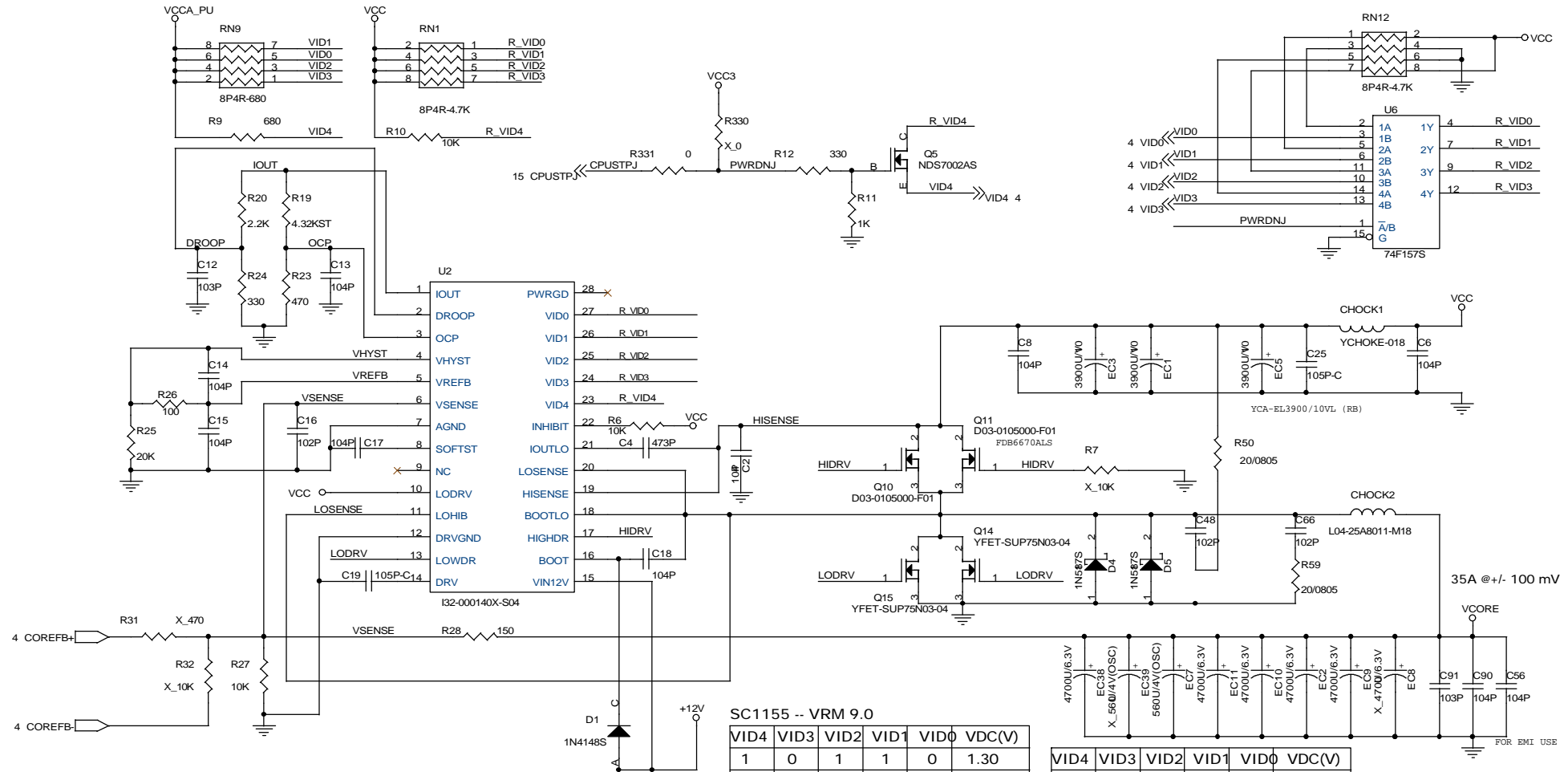
Title		
(Title)		
Size	Document Number (Doc)	Rev
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1. OVER FOR EMI



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B	DRAM AND 440BX DECOUPLING CAPACITOR	0A
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$I_{OUT} = 2 * R_{ds(on)} * I_{load}$
 Hysteretic = $2 * (REFB - HYST)$
 $V_{out} = V_{ref} * (1 + R_{26}/R_{25}) - I_{OUT} * (R_{24}/(R_{20} + R_{42}))$
 OVP occur at $V_{REF} * 140\%$
 OCP is set at 100mV 1 mS deglitch
 $I_{ss} = I(REFB) / 5$

SC1155 -- VRM 9.0

VID4	VID3	VID2	VID1	VID0	VDC(V)
1	0	1	1	0	1.30
1	0	0	0	1	1.425
1	0	0	0	0	1.45
0	1	1	1	1	1.475
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

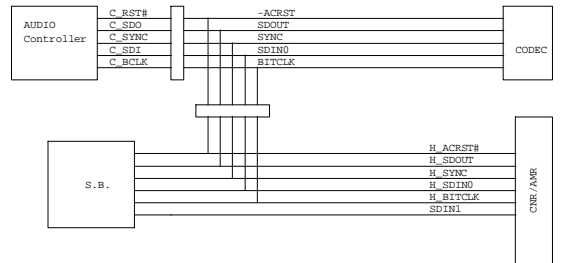
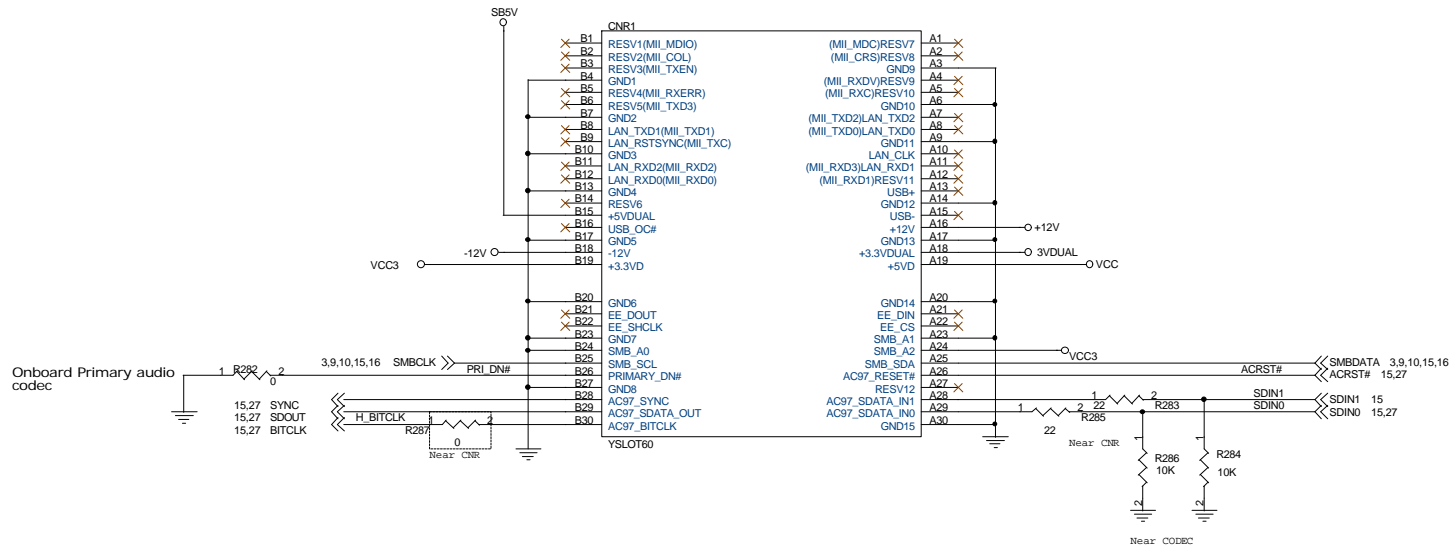
VID4	VID3	VID2	VID1	VID0	VDC(V)
1	0	1	1	0	1.70
0	0	1	0	1	1.725
0	0	1	0	0	1.75
0	0	0	1	1	1.775
0	0	0	1	0	1.80
0	0	0	0	1	1.825
0	0	0	0	0	1.85
1	1	1	1	1	NO CPU

MICRO-STAR

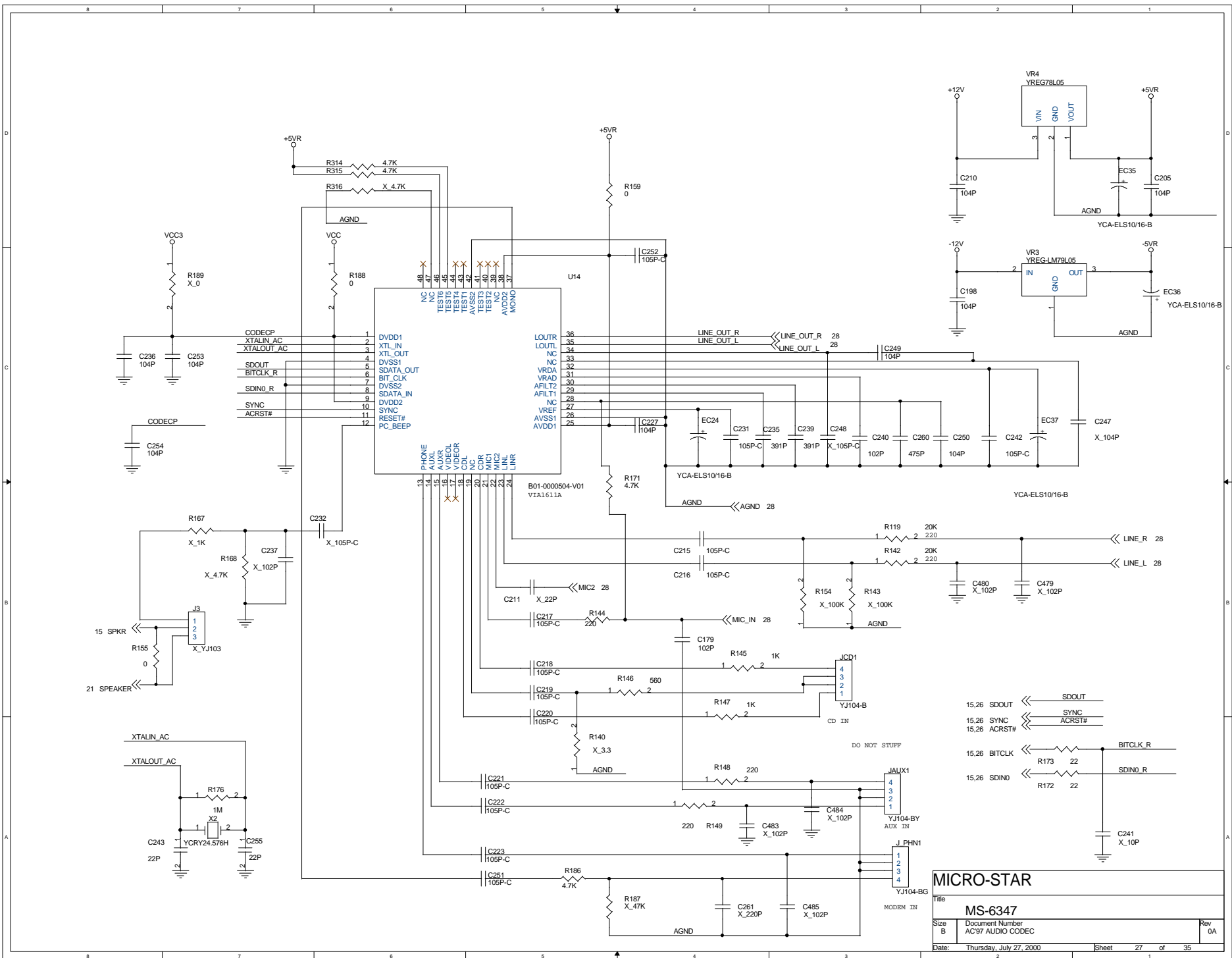
Title: MS-6347

Size B	Document Number	Rev 0A
	VRM SC1154	
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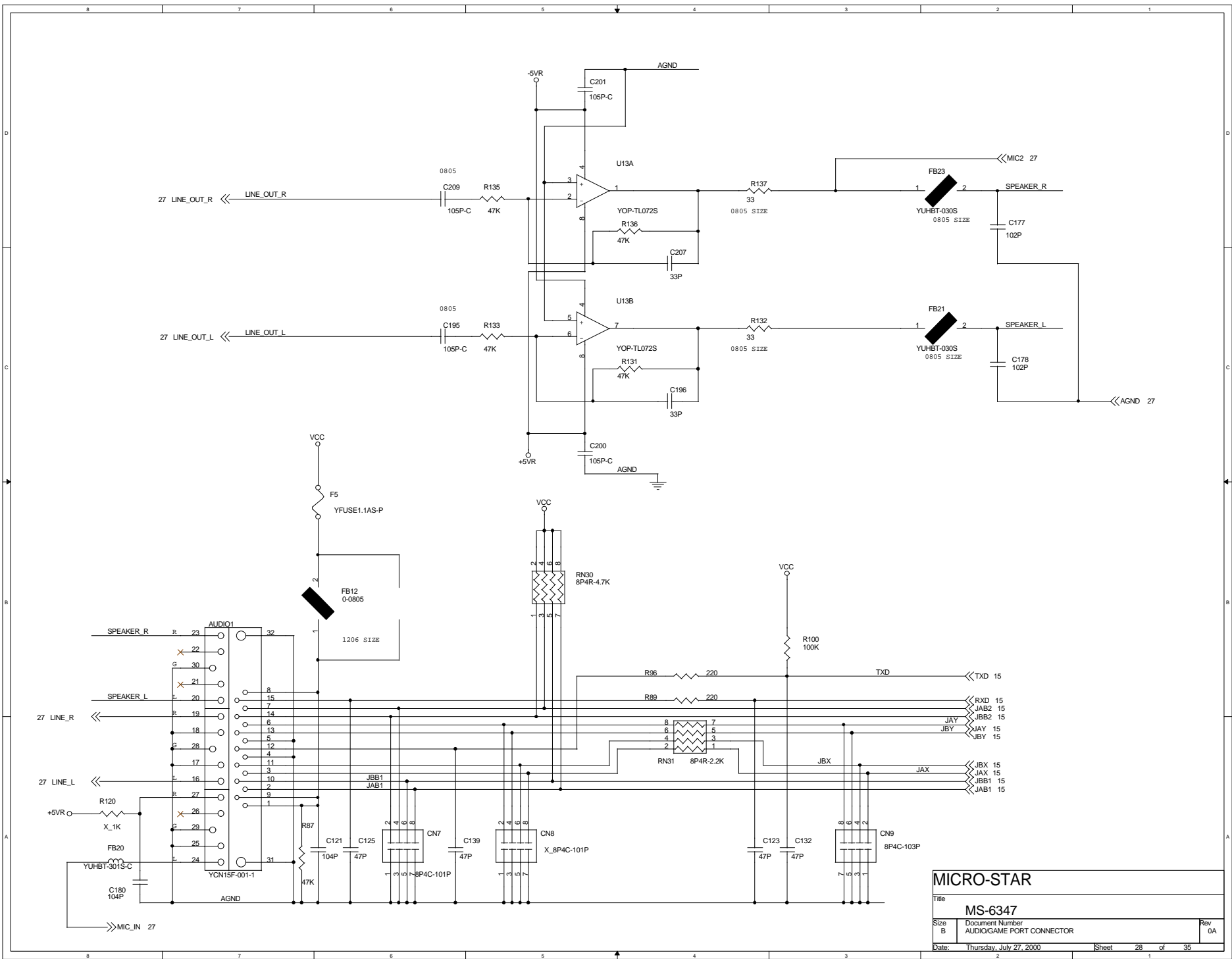
CNR RISER



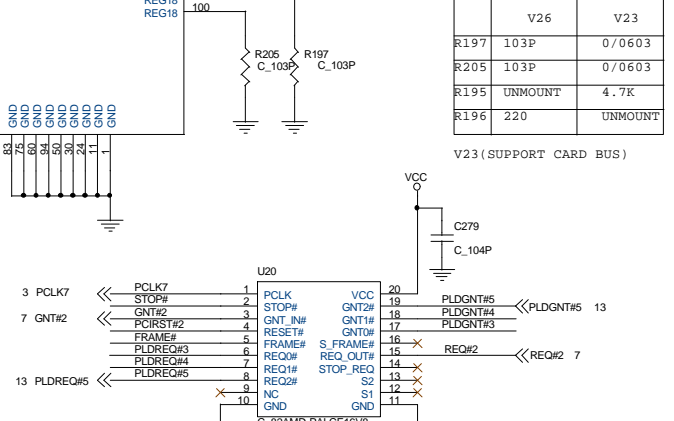
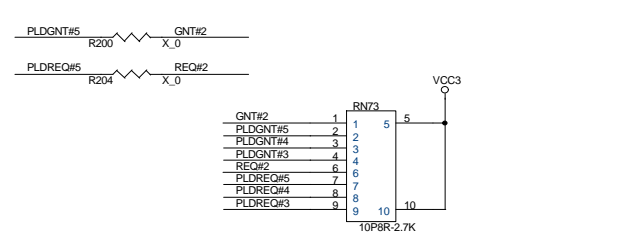
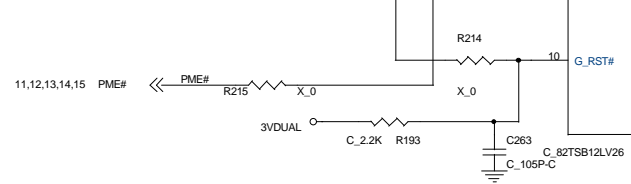
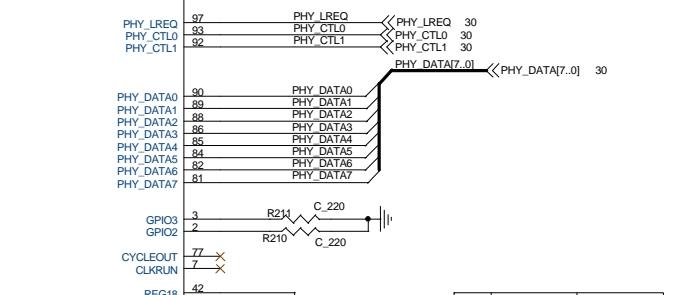
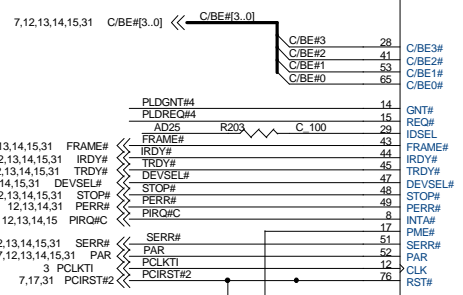
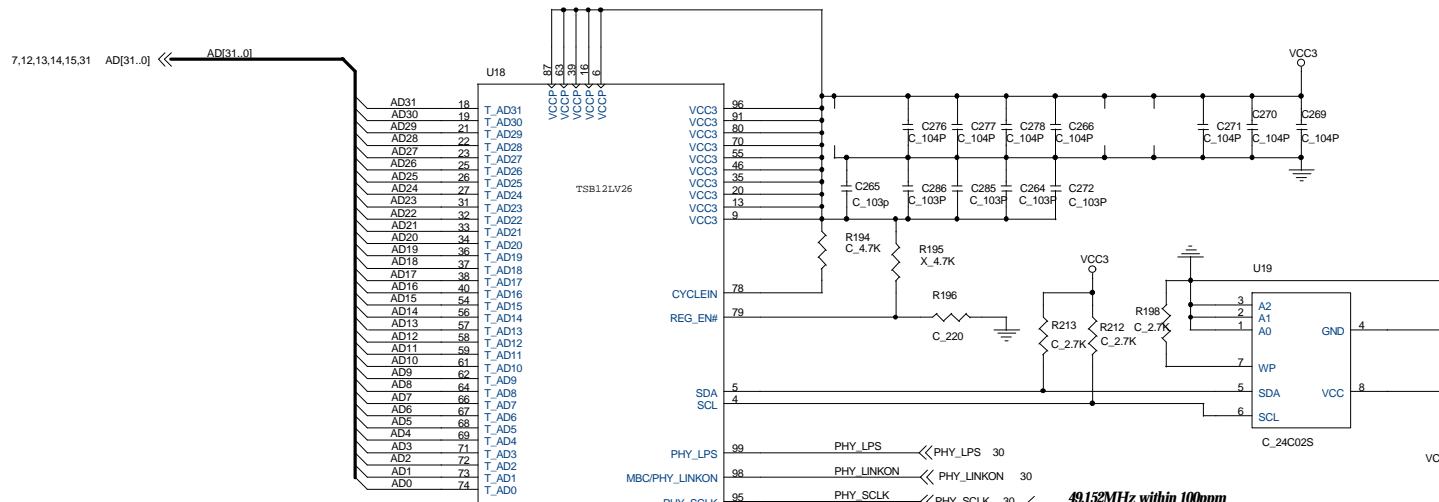
MICRO-STAR		
Title: MS-6347		
Size: CNR	Document Number: CNR	Rev: 0A
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MICRO-STAR		
Title MS-6347		
Size B	Document Number AC'97 AUDIO CODEC	Rev 0A
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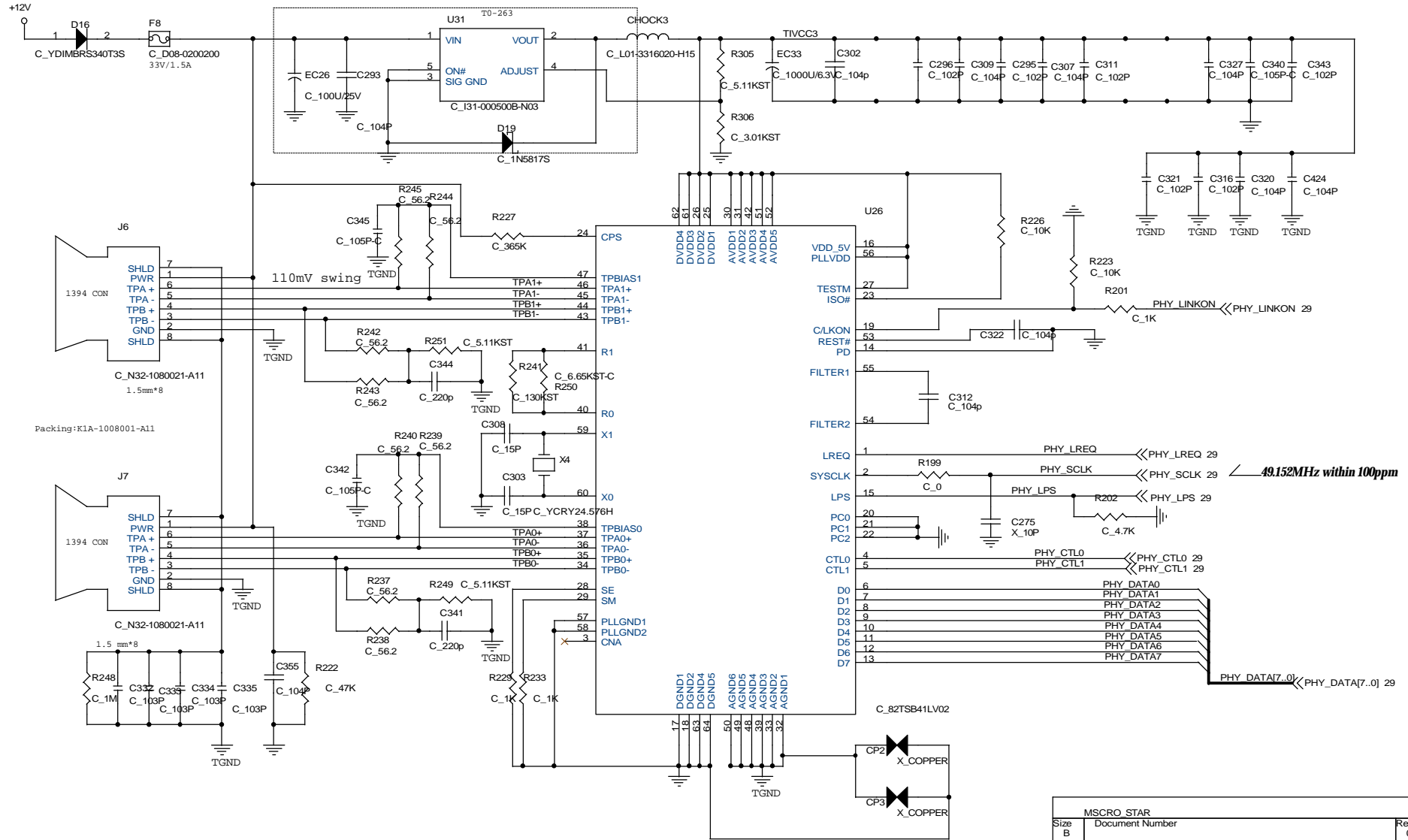
MICRO-STAR		
Title		
MS-6347		
Size	Document Number	Rev
B	AUDIO/GAME PORT CONNECTOR	0A
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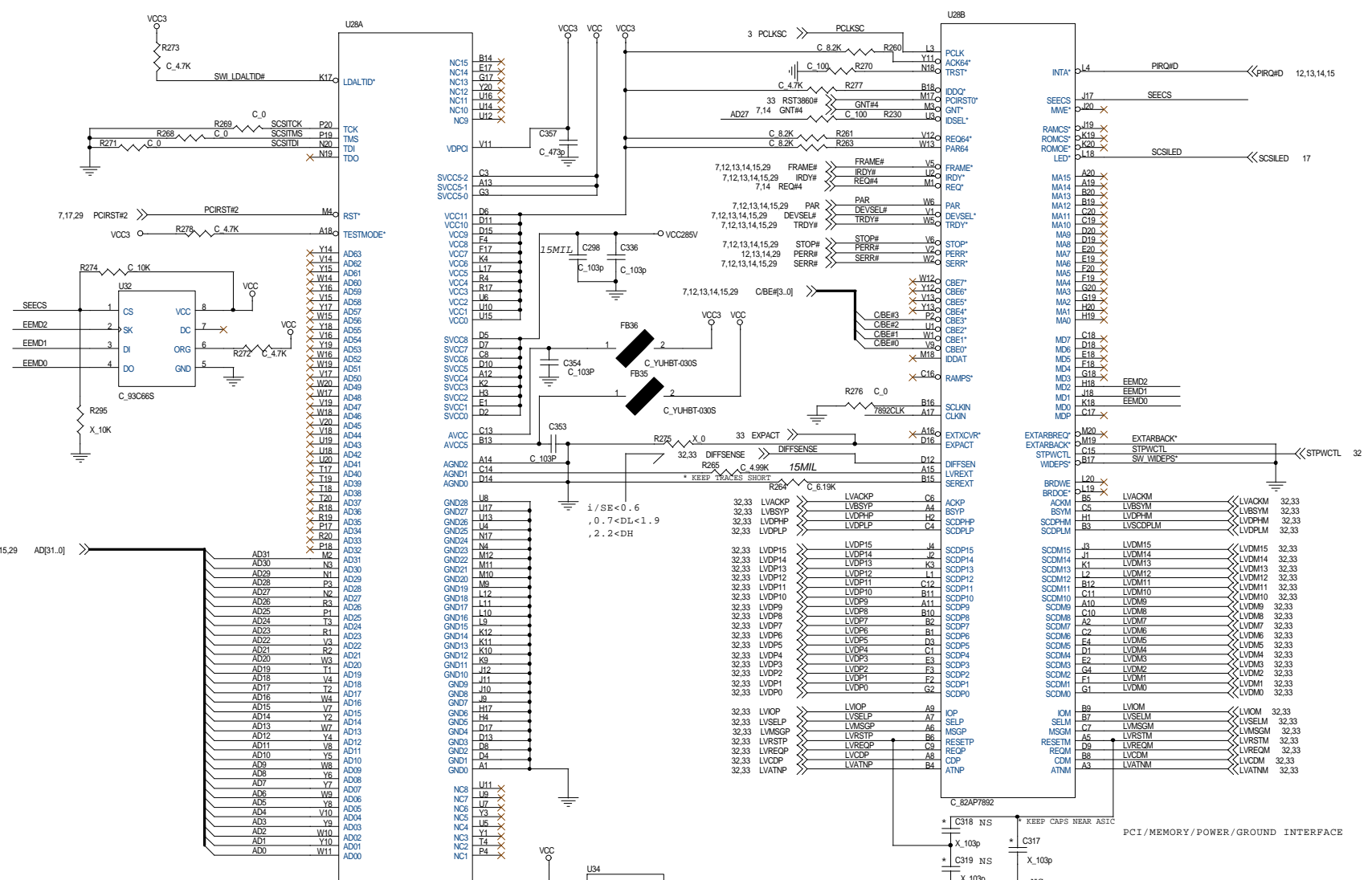
MICRO-STAR		
Title	MS-6347	
Size	Document Number	Rev
B	TI 1394 LINK LAYER	0A
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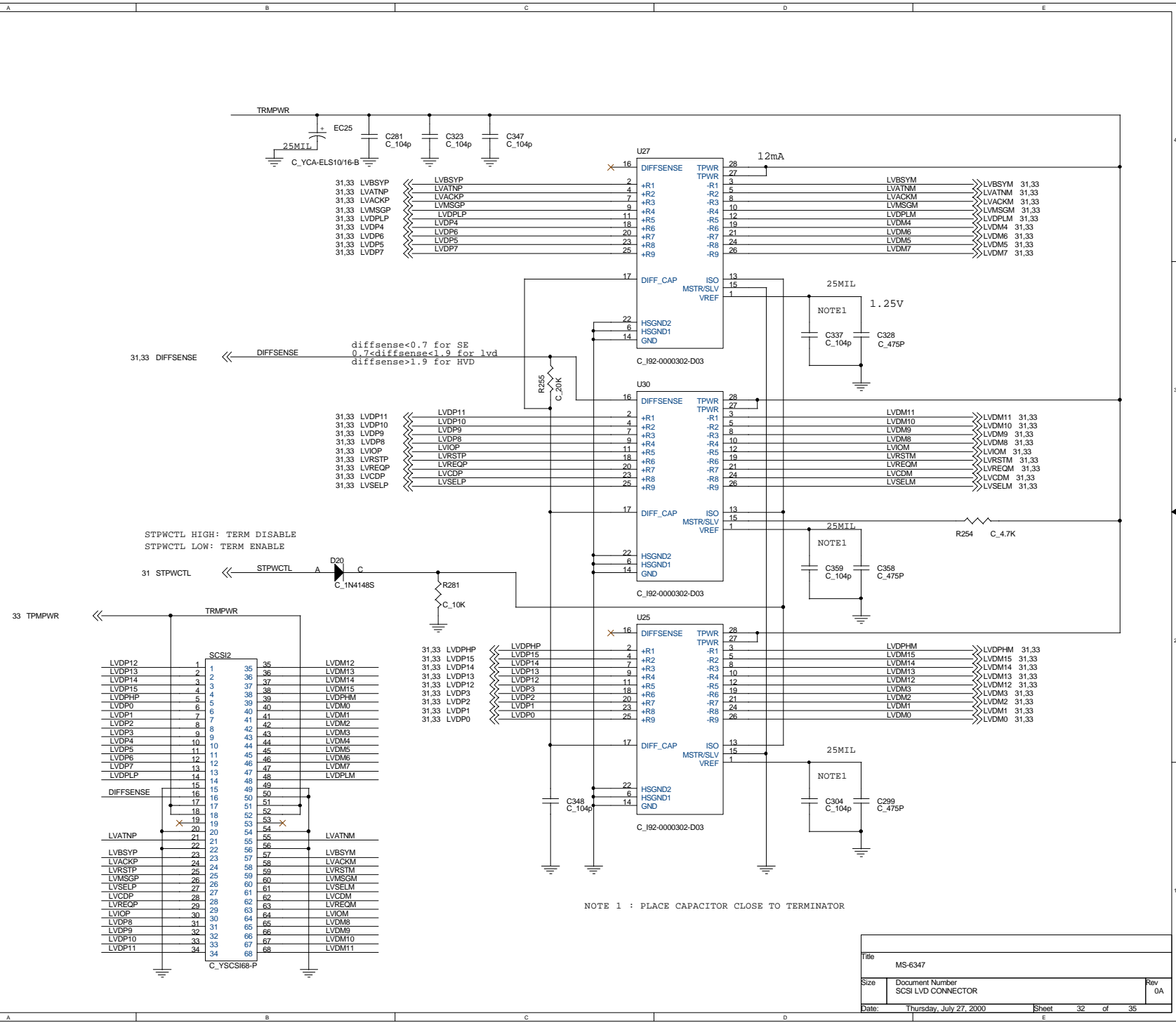
I32-000150B-N04 FOR FIXED 3.3

5.6/3.32
5.11/3.01
5.6/3.3



MSCRO STAR		
Size B	Document Number	Rev 0A
TSB41LV02 2 PORT PHY		
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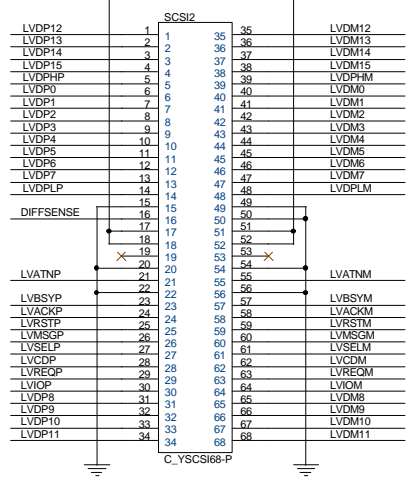


31.33 DIFFSENSE << DIFFSENSE

diffsense<0.7 for SE
0.7<diffsense<1.9 for lvd
diffsense>1.9 for HVD

STPWCTL HIGH: TERM DISABLE
STPWCTL LOW: TERM ENABLE

33 TRMPWR



NOTE 1 : PLACE CAPACITOR CLOSE TO TERMINATOR

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	SCSI LVD CONNECTOR	0A
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D

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C

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Size A	Document Number ECN	Rev
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JBAT1_X U9_X COM1 U16-1
JUMPER-MG YHS-030 YCN9M-1 YSKT032PLCC



BAT1_X JFP1_X COM2 PCB
YBA3V JUMPER-MG YCN9M-1 P01-6347100



Title		
{Title}		
Size	Document Number	Rev
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