Model : P71EN0

Mobile Dothan with INTEL 915PM / ICH6-M Chipset

Revision History		
A	10/2004	ORIGINAL RELEASE
B	1/2005	REV.B RELEASE

P71EN0 P/N: 37-UJ0000-00B ; 82-UJ0001-00B

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Title: P71EN0		
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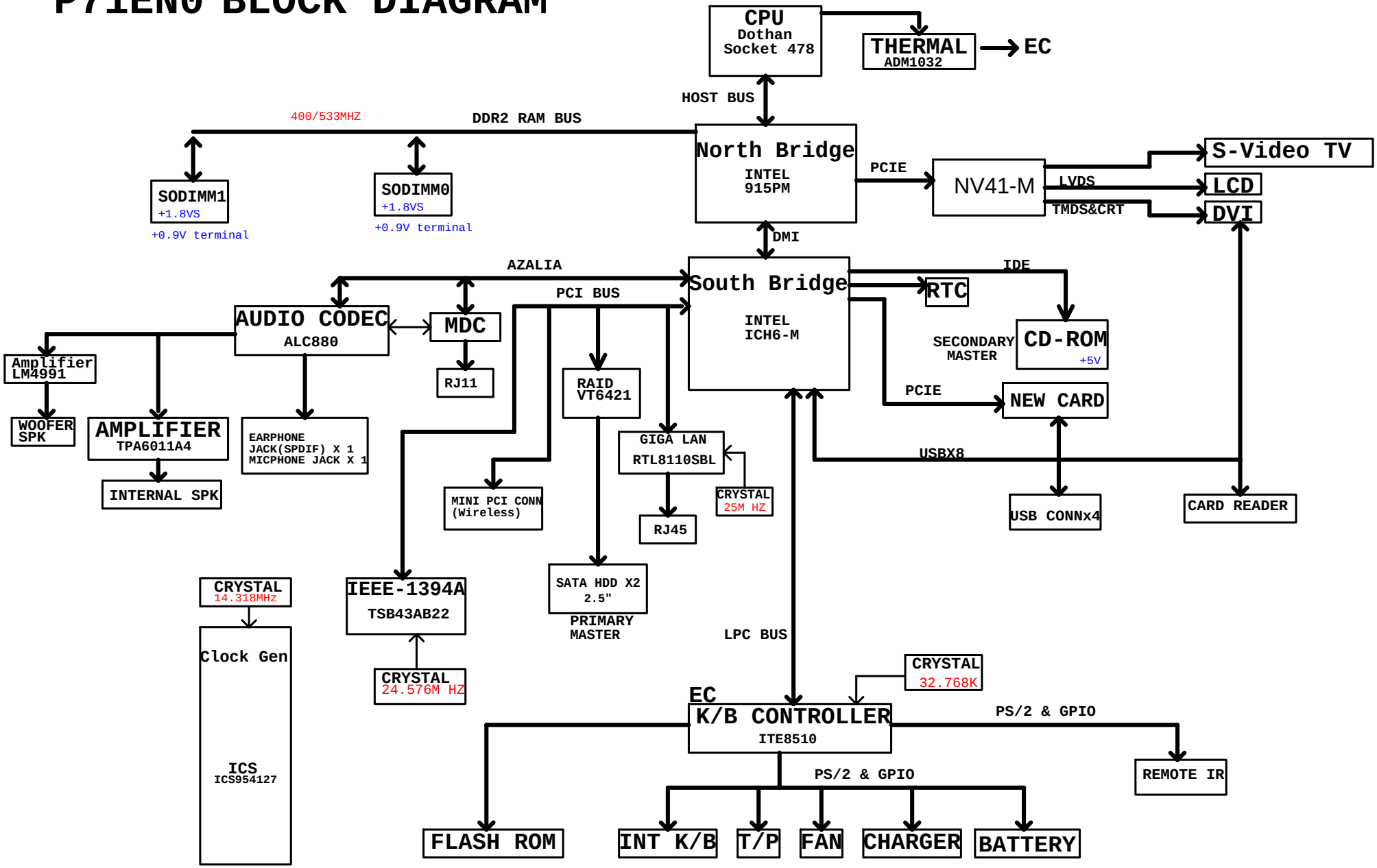
P71EN0 BLOCK DIAGRAM



UNIWILL COMPUTER CORP.		
Title: P71EN0		
Size	Document Number: 2963 SYSTEM BLOCK DIAGRAM	Rev: B
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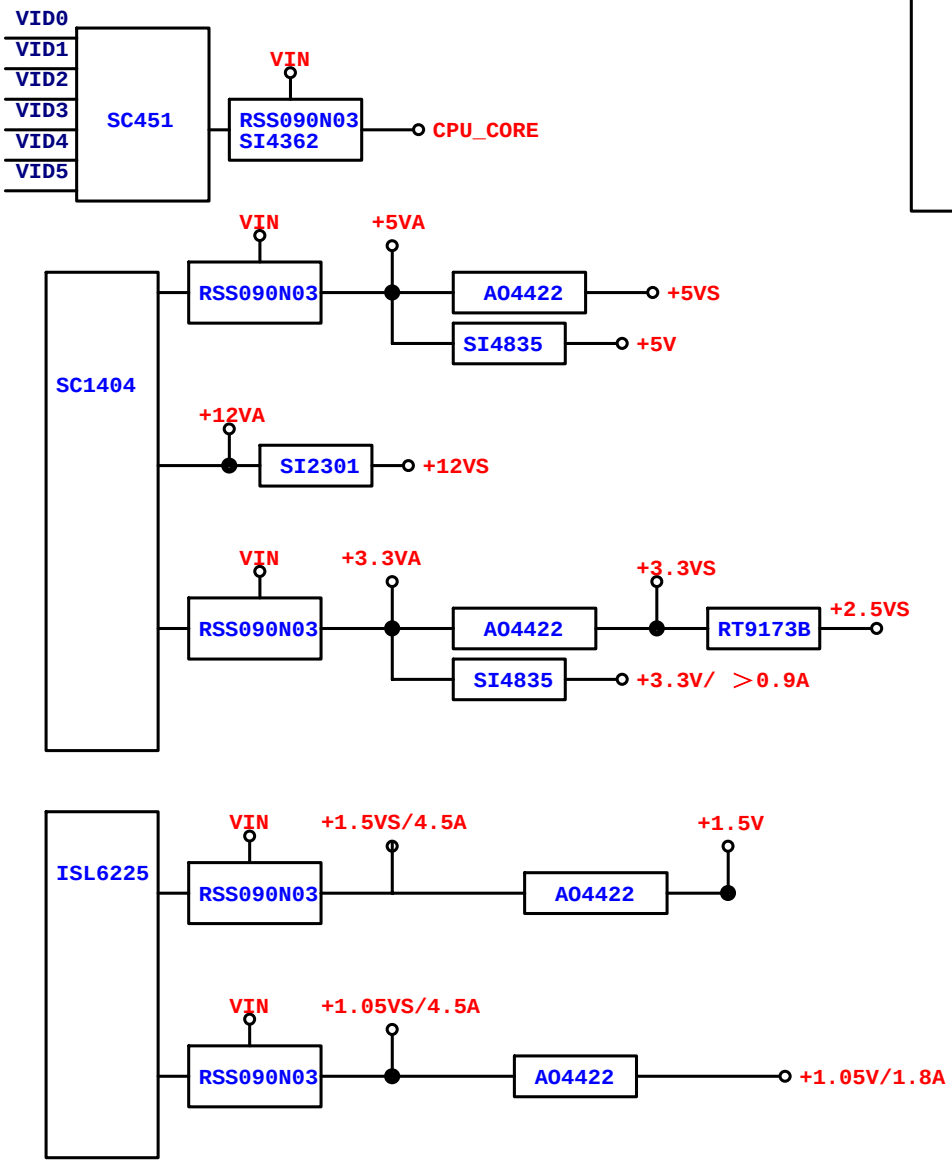
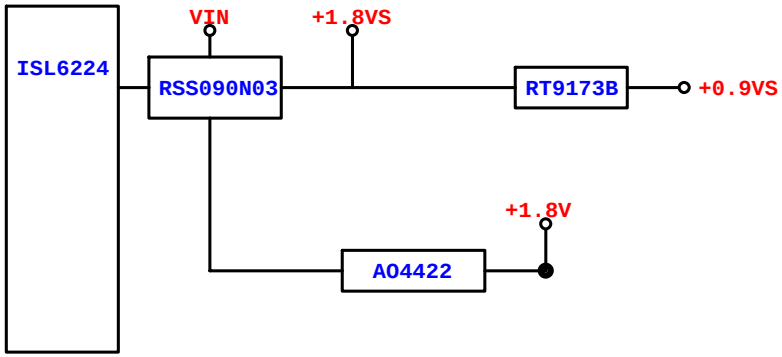
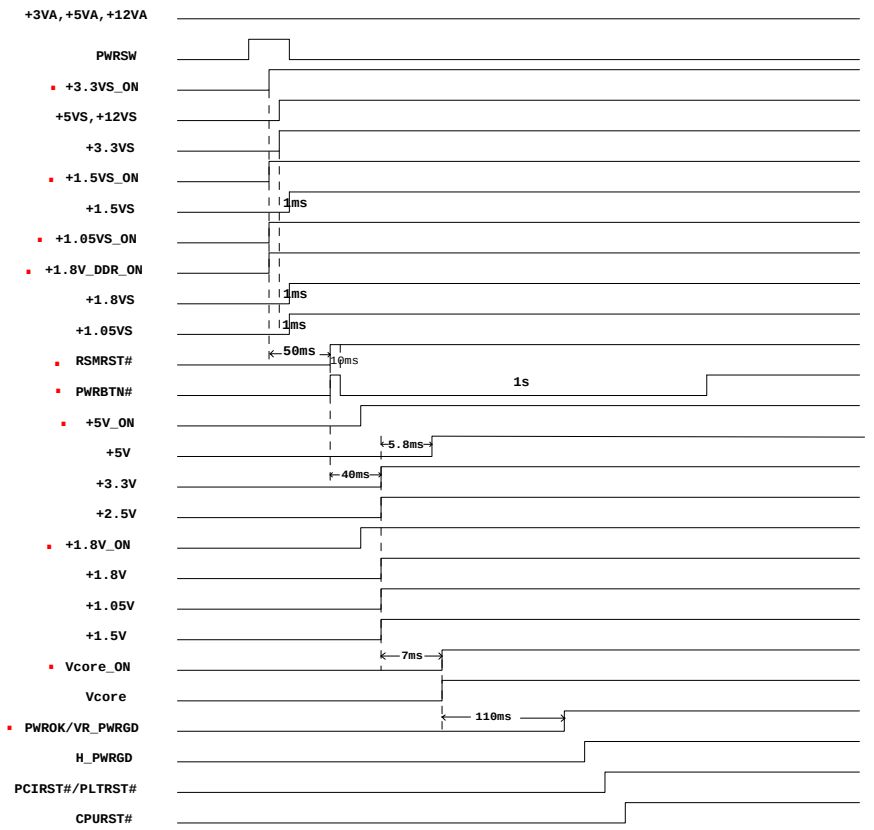
POWER BLOCK DIAGRAM





POWER Sequence



▪ EC Control Pin

UNIWILL COMPUTER CORP.		
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ICH6-M GPIO

GPI6	BM_BUSY#
GP7	
GP8	EC_EXTSMI#
GPI11	SMB_ALERT#
GPI12	
GPI13	
GPO18	PM_STPPCI_ICH#
GPO19	
GPO20	PM_STPCPU_ICH#
GPO21	TPM_EN
GPO23	
GPIO24	
GPIO25	
GPIO26	SATA0_GP
GPIO27	
GPIO28	
GPIO29	PNLSW1
GPIO30	PNLSW2
GPIO31	PNLSW0
GPIO32	PM_CLKRUN#
GPIO33	
GPIO34	

ITE8510E GPIO

GPCF0	RF_SW#
GPCF1	SILENT#/
GPCF2	IR_PS2CLK1
GPCF3	IR_PS2DAT1
GPCF4	TP_CLK
GPCF5	TP_DATA
GPCF6	MAIL#
GPCF7	BROWSER#
GPI0	SCROLL#
GPI1	CAPS#
GPI2	NUM#
GPI3	CHG_R_LED#
GPI4	CHG_G_LED#
GPI5	SUSLED_LED#
GPI6	***VOLMAX***
GPH0	+1.8V_DDR_ON
GPH1	+1.8V_ON
GPH2	+1.05VS_ON
GPH3	+3.3VS_ON
GPH4	+5V_ON
GPH5	SET_V
GPH6	+1.5VS_ON
GPH7	VCORE_ON
GPG4	TP_DISABLE
GPG5	LCDSW
GPG6	MUTE#
GPG7	EXTTS#0
GPB0	CELERON_VO_DET
GPB1	CPPE#
GPB2	PM_RSMRST#
GPB3	BAT_SMBCLK
GPB4	BAT_SMBDAT
GPB5	H_A20GATE
GPB6	H_RCIN#
GPB7	RFLED_ON#
GPE0	***NA***
GPE1	CPU_BSEL0
GPE2	***NA***
GPE3	***NA***
GPE4	PWRSW
GPE5	LID#
GPE6	PCM#
GPE7	PM_SLP_S3#
GPD0	ADAP_IN
GPD1	REMOTE_ON#
GPD2	PCI_RST#/PLT_RST#
GPD3	EC_EXTSMI#
GPD4	PM_SLP_S4#
GPD5	PM_THROTTLING#
GPD6	FAN_SPD#
GPD7	EC_PREST#
GPA0	BTL_BEEP
GPA1	EC_VID1
GPA2	EC_VID2
GPA3	EC_VID3
GPA4	EC_VID4
GPA5	SMP1_EN#
GPA6	SMP2_EN#
GPA7	PWRBTN#

ITE8510E GPIO

GPC0	PWROK
GPC1	BAT2_SMBCLK
GPC2	BAT2_SMBDAT
GPC3	SB_ALERT#1
GPC4	SB_ALERT#2
GPC5	TP_LED#
GPC6	CHG_ON
GPC7	SILENT_LED#
ADC0	BAT_TEMP
ADC1	ADAPTOR_I
ADC2	DDR2_TEMP
ADC3	VGA_TEMP
DAC0	BRIGHTADJ
DAC1	CHG_I
DAC2	FAN_CTRL0
DAC3	***NA***

CPU

	CPU CORE(V)	ICC(mA)	W	TEMP(℃)
2.0G	1.525	35.7	54.3	69
2.2G	1.525	37.5	57.1	70
2.26G	1.525	38.1	58.0	70
2.4G	1.525	39.3	59.8	71
2.5G	1.525	40	61.0	72
2.53G	1.525	40.4	61.5	72
2.6G	1.525	41.05	62.6	72
2.66G	1.525	43.35	66.1	74
2.8G	1.525	44.86	68.4	75
3.06G	1.525	55.9	85.2	81

MCHE

VCC	ICC(mA)	W	TEMP(℃)
+3.3V	108.19	0.357	70
+3.3VA	501.3	1.254	
+2.5V	1390	2.502	
+1.5V	33.4	0.084	
+VCCP	10	0.018	
+VCC_GMCH_CORE	266	0.452	

ICH6-M

VCC	ICC(mA)	W	TEMP(℃)
+3.3V	96	0.315	70
+3.3VA	275	0.909	
+1.5V	487	0.876	
+1.5VA	27	0.049	
+3.3VA_RTC	0.003	0.00001	

ITE8510E

VCC	ICC(mA)	W	TEMP(℃)
+3.3V	300	1	70

CLOCK GENERATOR

VCC	ICC(mA)	W	TEMP(℃)
+3.3V	180	0.594	70

ALC880

VCC	ICC(mA)	W	TEMP(℃)
+3.3V(DVDD)	71	0.234	70

TPA6011A4

VCC	ICC(mA)	W	TEMP(℃)
3.3V	30	0.099W	85

ADM1032

VCC	ICC	W	TEMP(℃)
+3.3V	170uA	0.56mW	150

UNIWILL COMPUTER CORP.

Title: P71EN0

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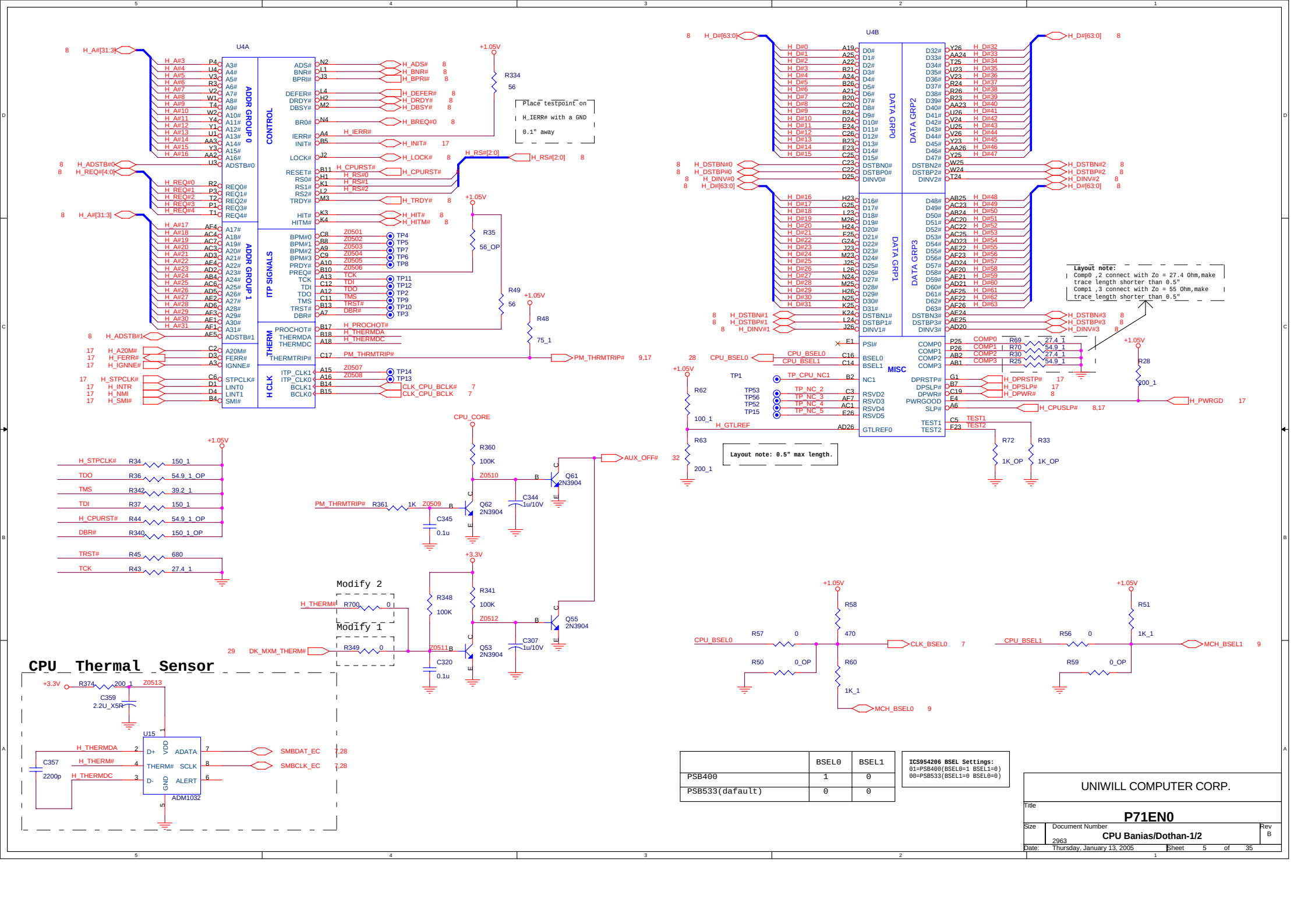

	BSEL0	BSEL1
PSB400	1	0
PSB533(dafault)	0	0

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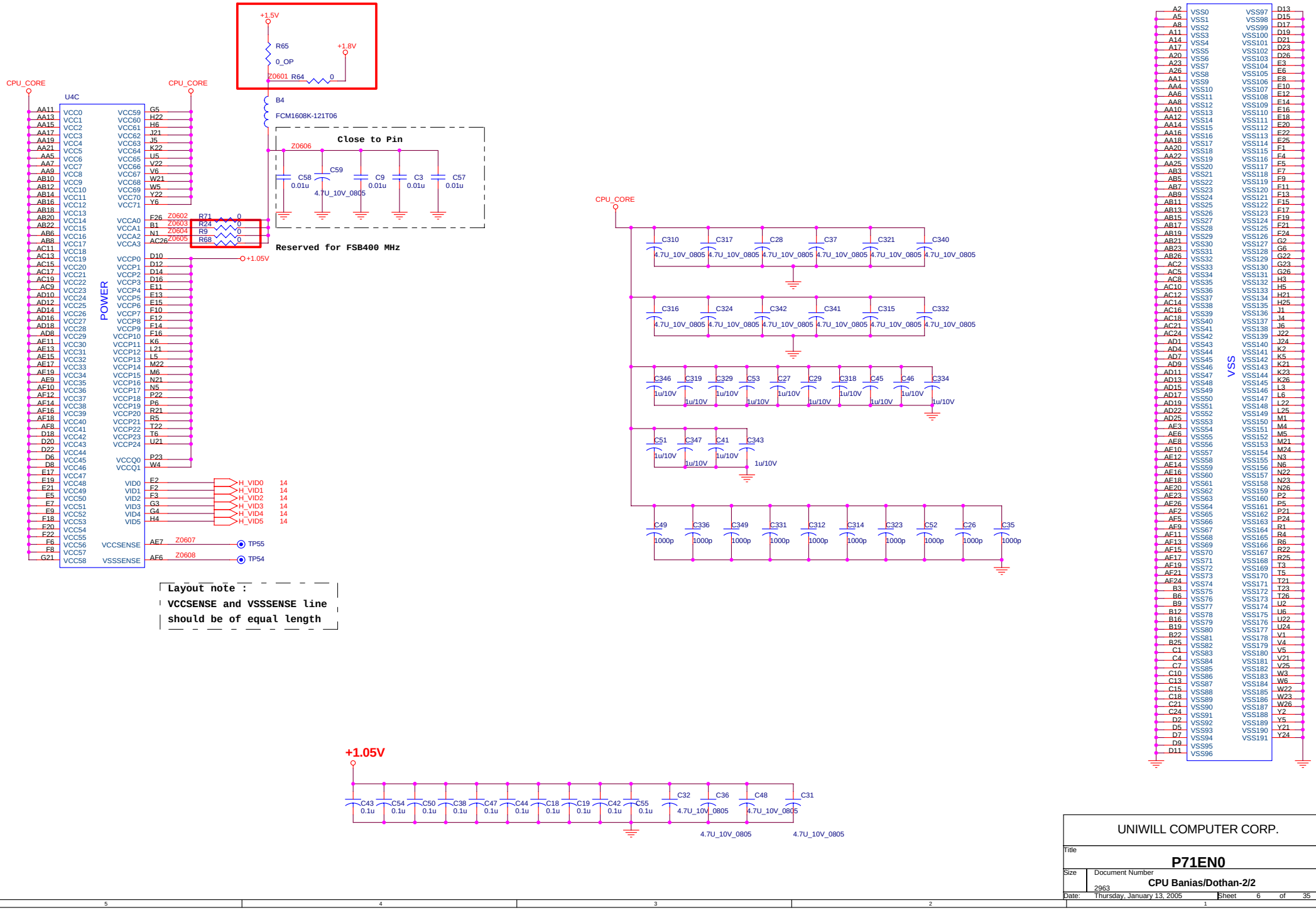

UNIWILL COMPUTER CORP.		
Title: **P71EN0**		
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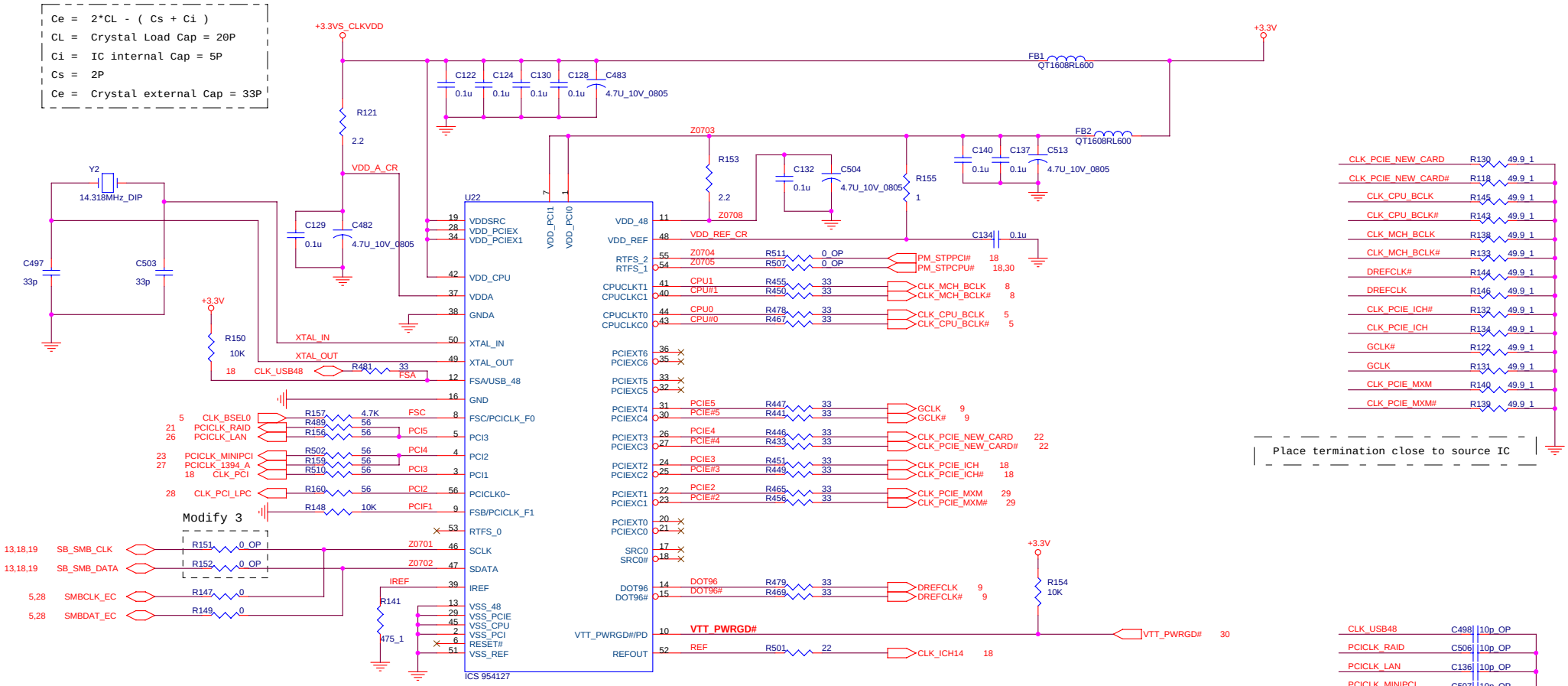

FSA BSEL2	FSB BSEL1	FSC BSEL0	Host Clock frequency
1	0	1	100
1	0	0	133

UNIWILL COMPUTER CORP.

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Reference from demo circuit

UNIWILL COMPUTER CORP.		
Title: **P71EN0**		
Size	Document Number: **NB_Alviso Host-1/5**	Rev: B
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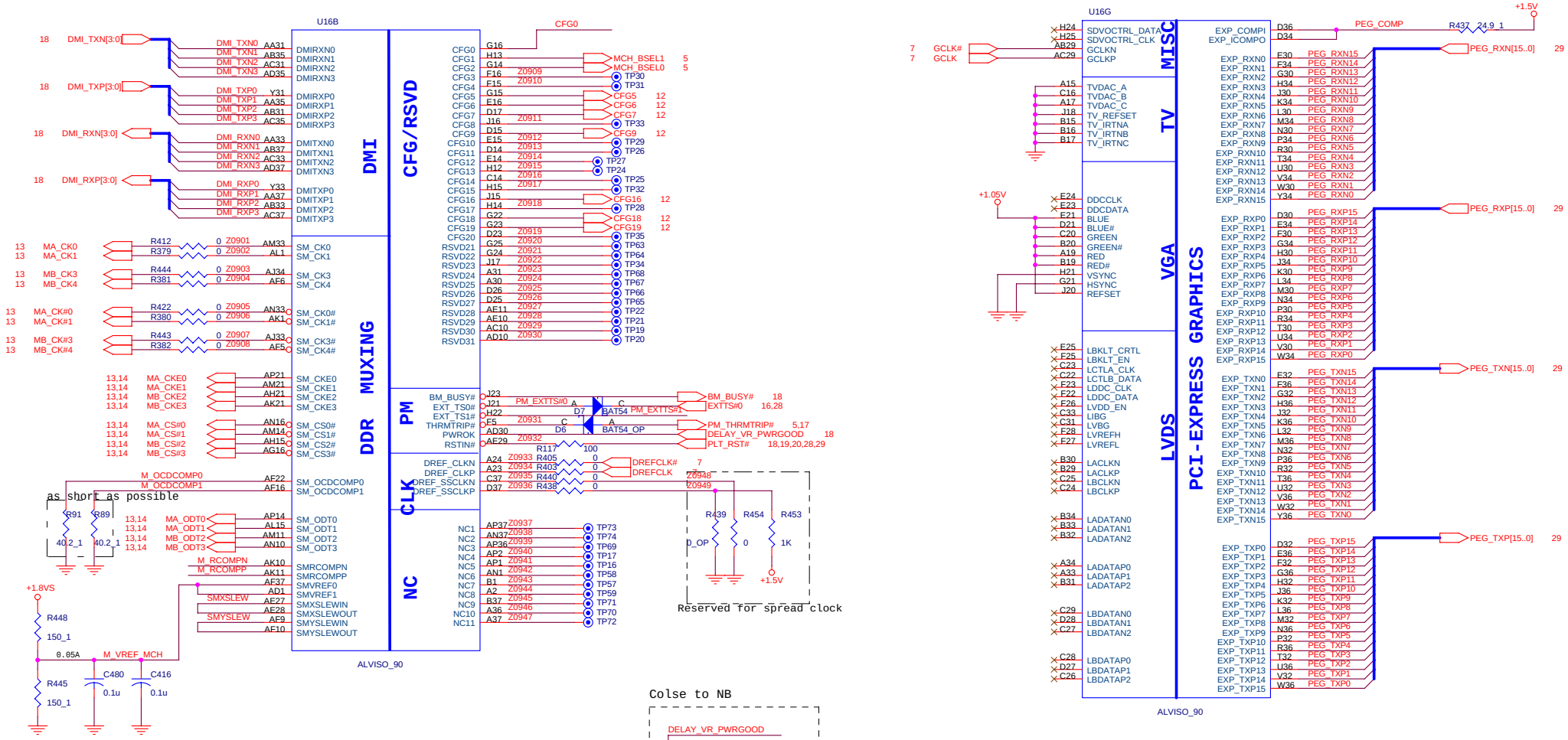

CFG0	CFG1	CFG2	Host Clock frequency
1	0	1	100
1	0	0	133

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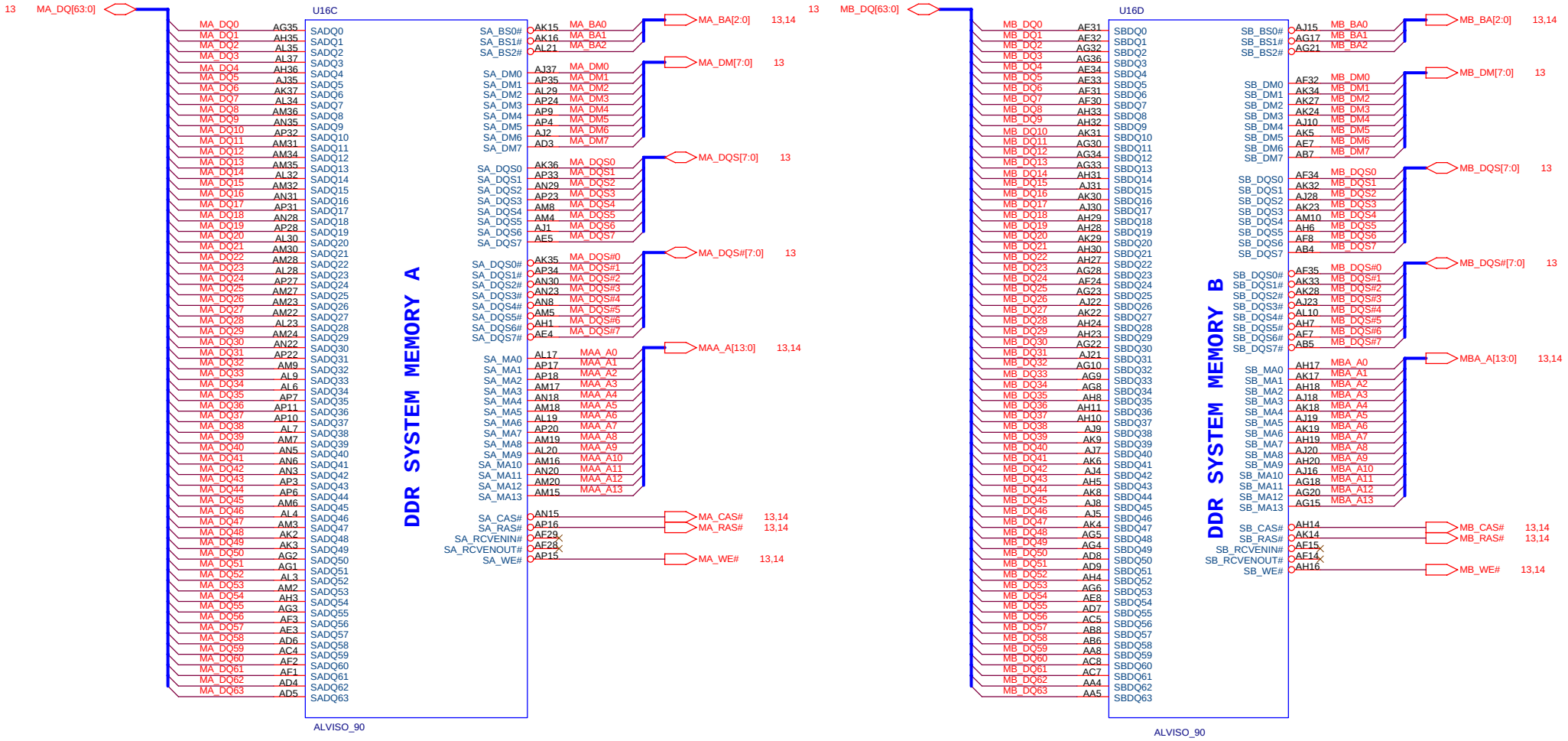

UNIWILL COMPUTER CORP.

Title: **P71EN0**

Size	Document Number	Rev
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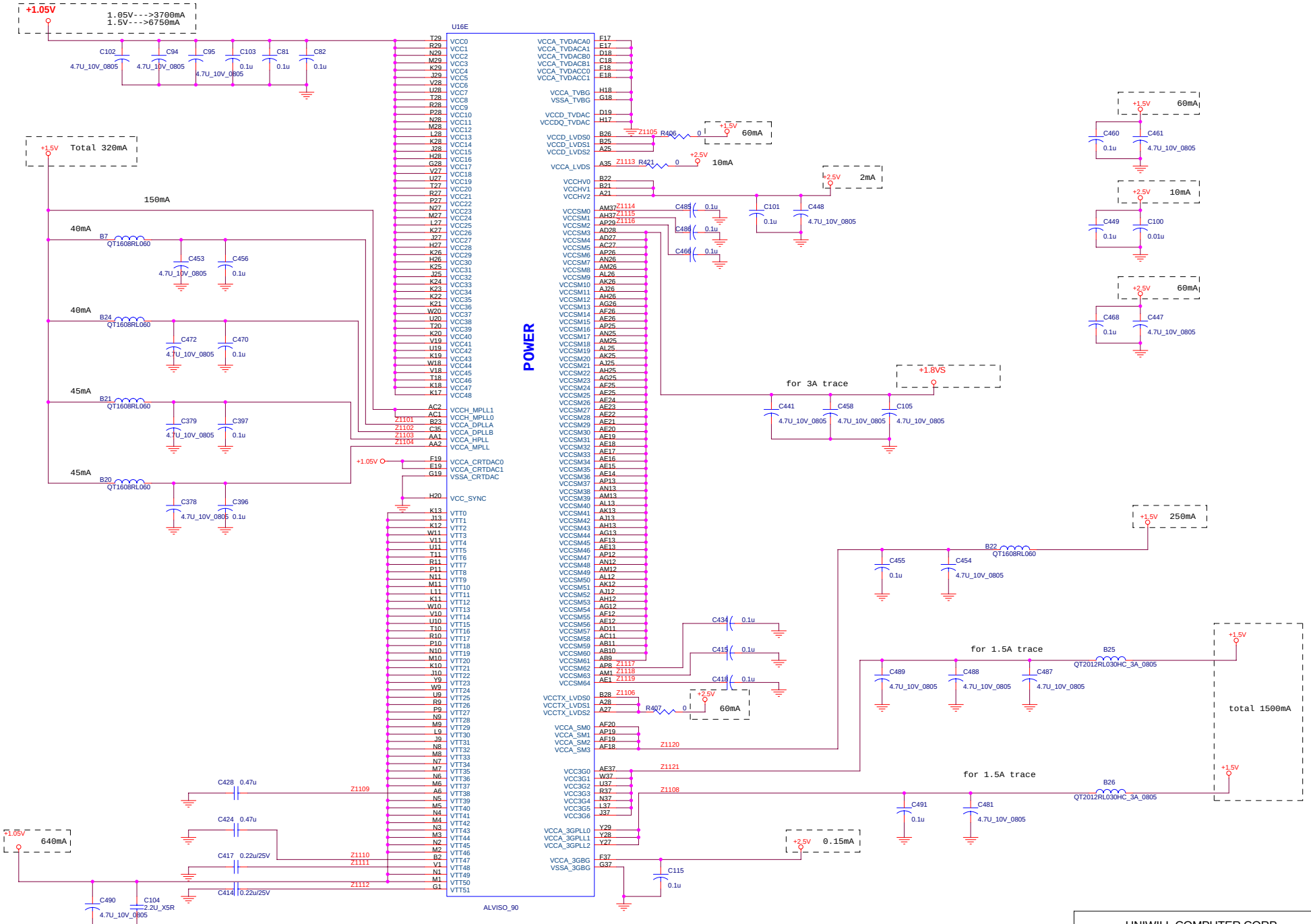
+1.05V
1.05V--->3700mA
1.5V--->6750mA
U16E
POWER
ALVISO_90
Total 320mA
150mA
40mA
45mA
640mA
for 3A trace
for 1.5A trace
total 1500mA
0.15mA
60mA
10mA
2mA
250mA
UNIWILL COMPUTER CORP.
P71EN0
NB POWER-4/5
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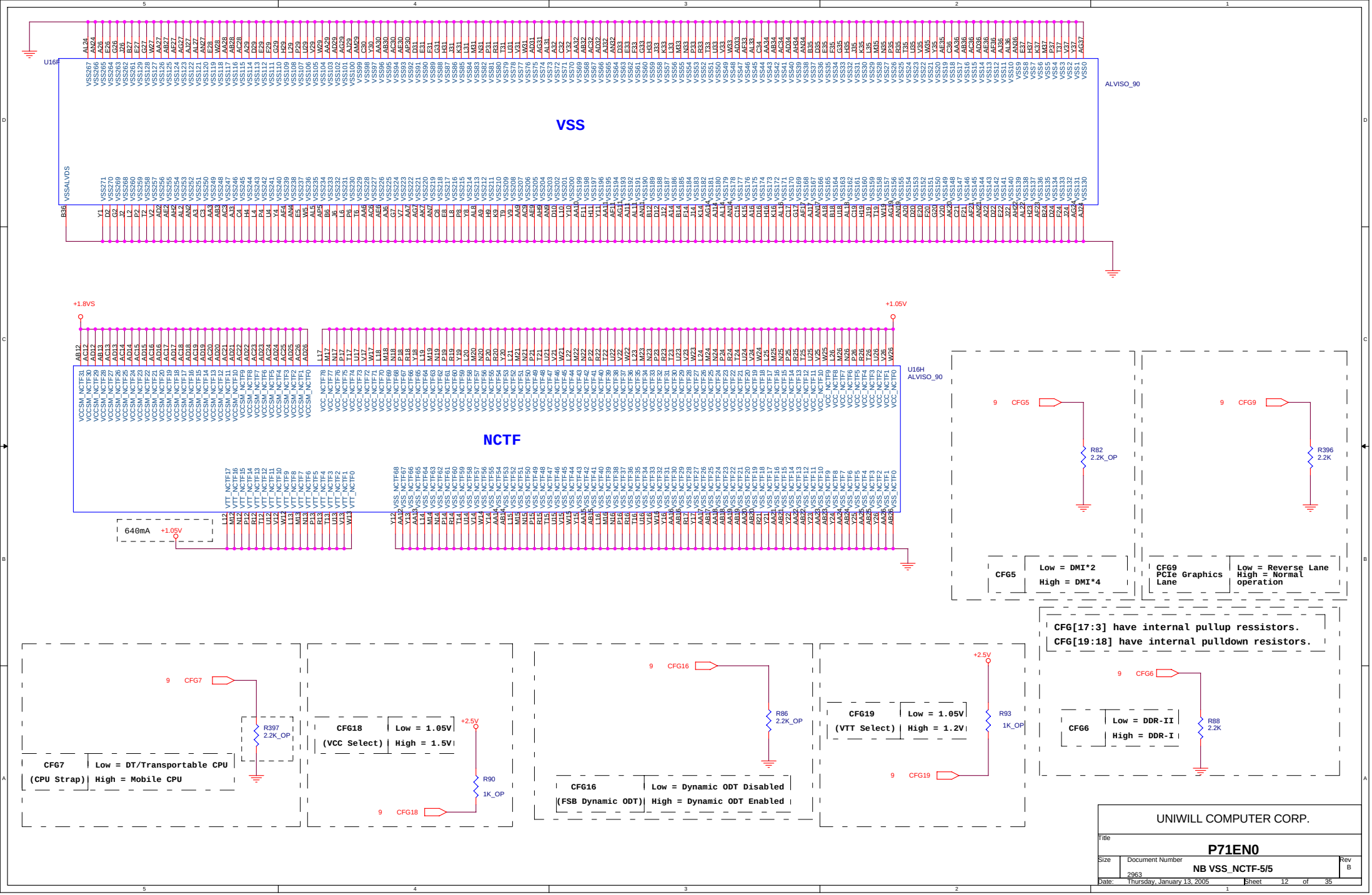

Title	UNIWILL COMPUTER CORP.
	P71EN0
Size	Document Number: NB VSS_NCTF-5/5 (2963)
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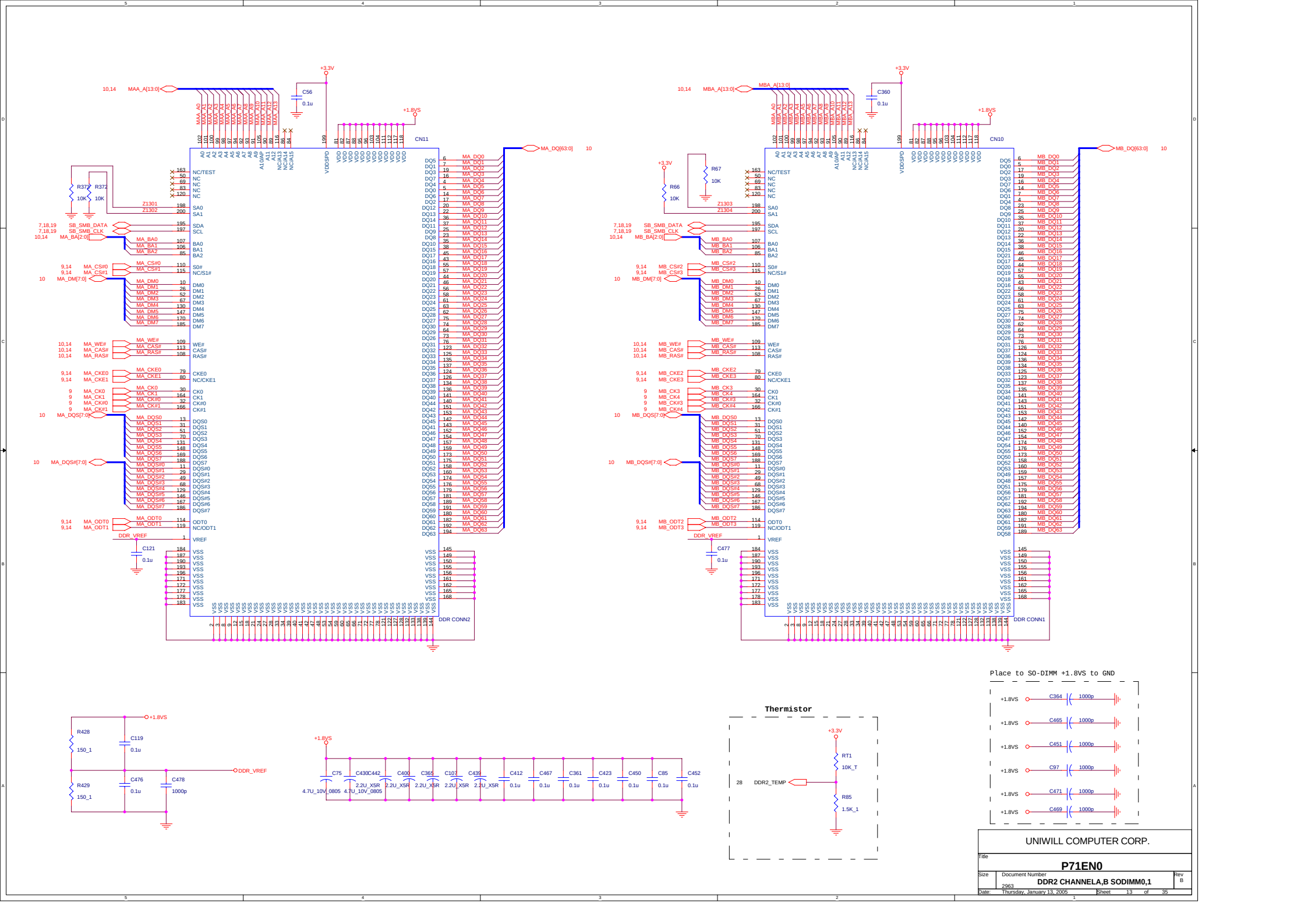
CN11
CN10
DDR CONN2
DDR CONN1
MAA_A[13:0]
MBA_A[13:0]
MA_DQ[63:0]
MB_DQ[63:0]
+3.3V
+1.8VS
C56
C360
C121
C477
R372
R371
R67
R66
DDR_VREF
Thermistor
RT1
10K_T
R85
1.5K_1
DDR2_TEMP
Place to SO-DIMM +1.8VS to GND
C364
C465
C451
C97
C471
C469
1000p
R428
R429
150_1
C119
C476
C478
C75
C430
C442
C400
C365
C107
C439
C412
C467
C361
C423
C450
C85
C452
2.2U_X5R
4.7U_10V_0805
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P71EN0
DDR2 CHANNELA,B SODIMM0,1
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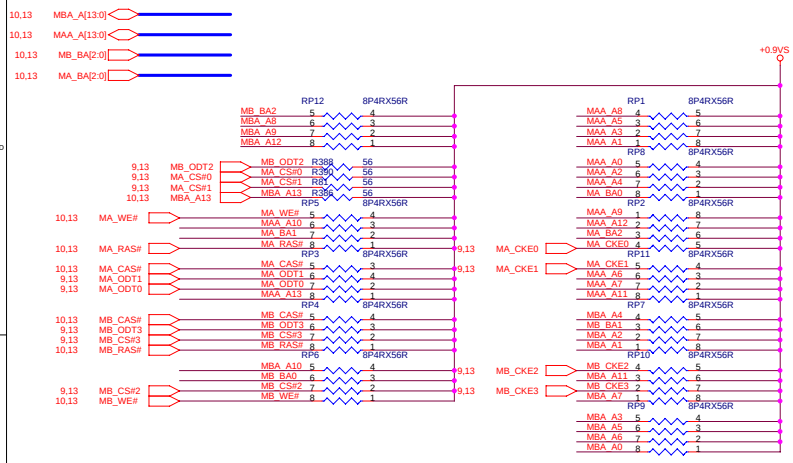

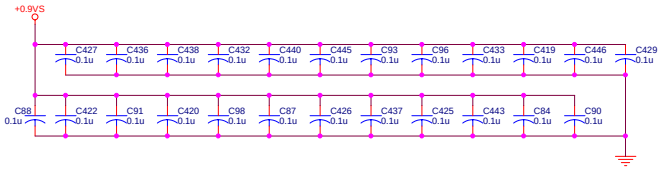

Layout note: Place one cap close to every 2 pullup resistors terminated to DDR_VREF

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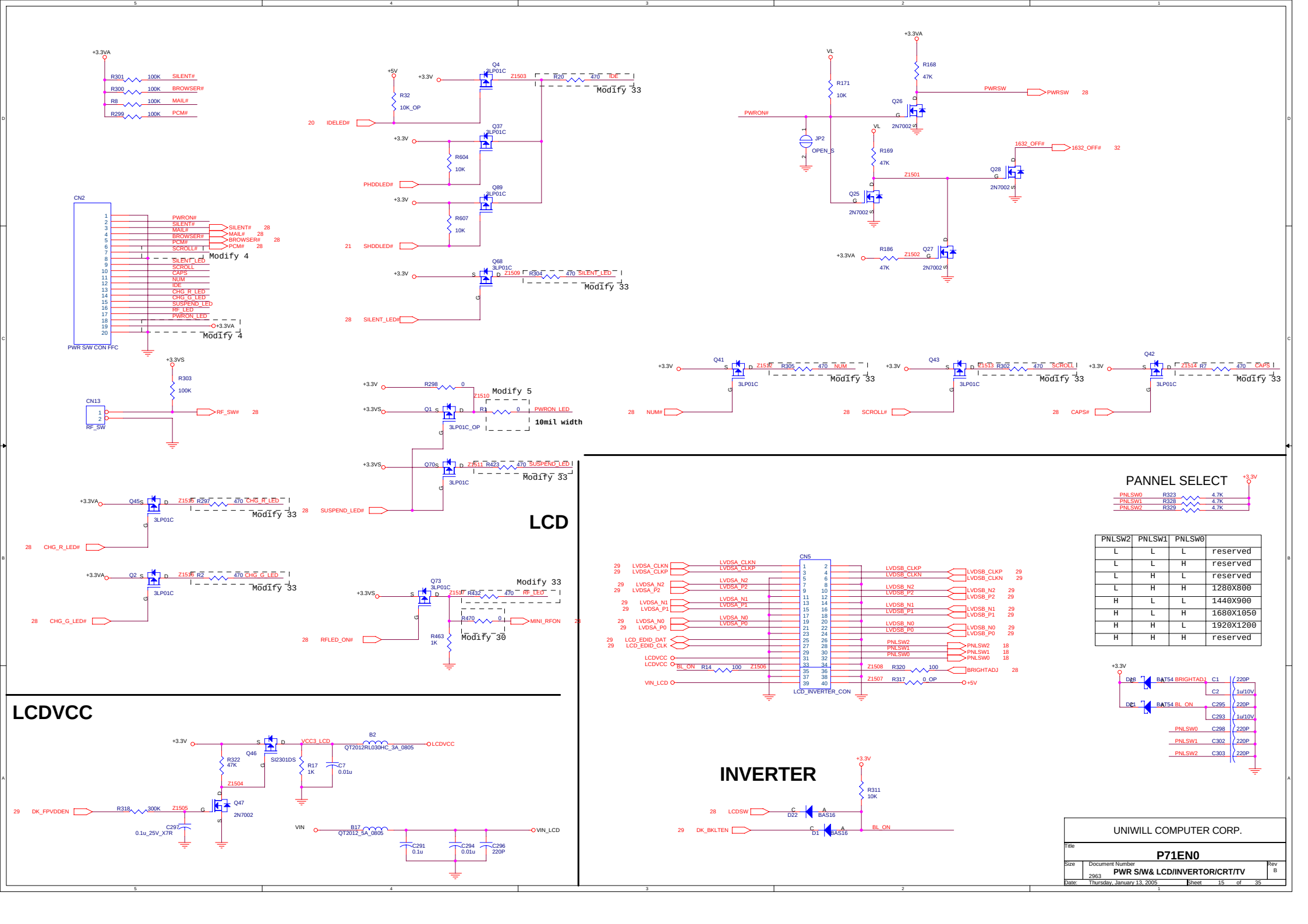

Title	UNIWILL COMPUTER CORP.
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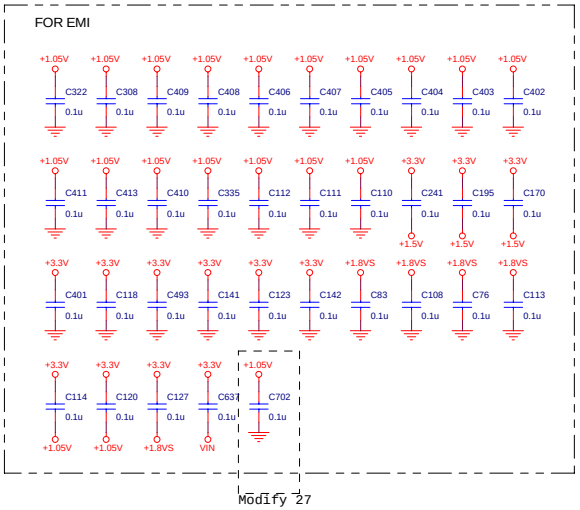

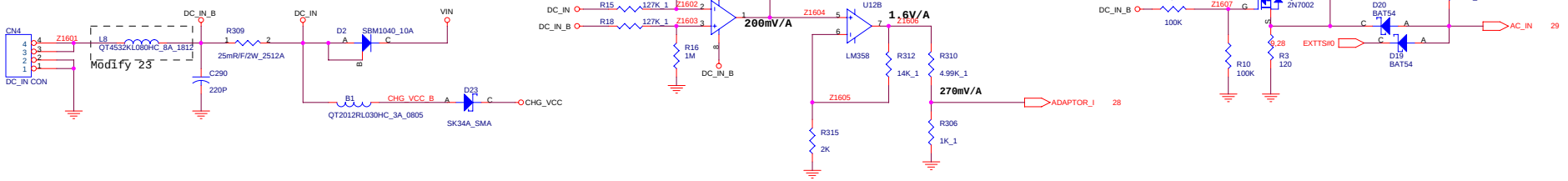

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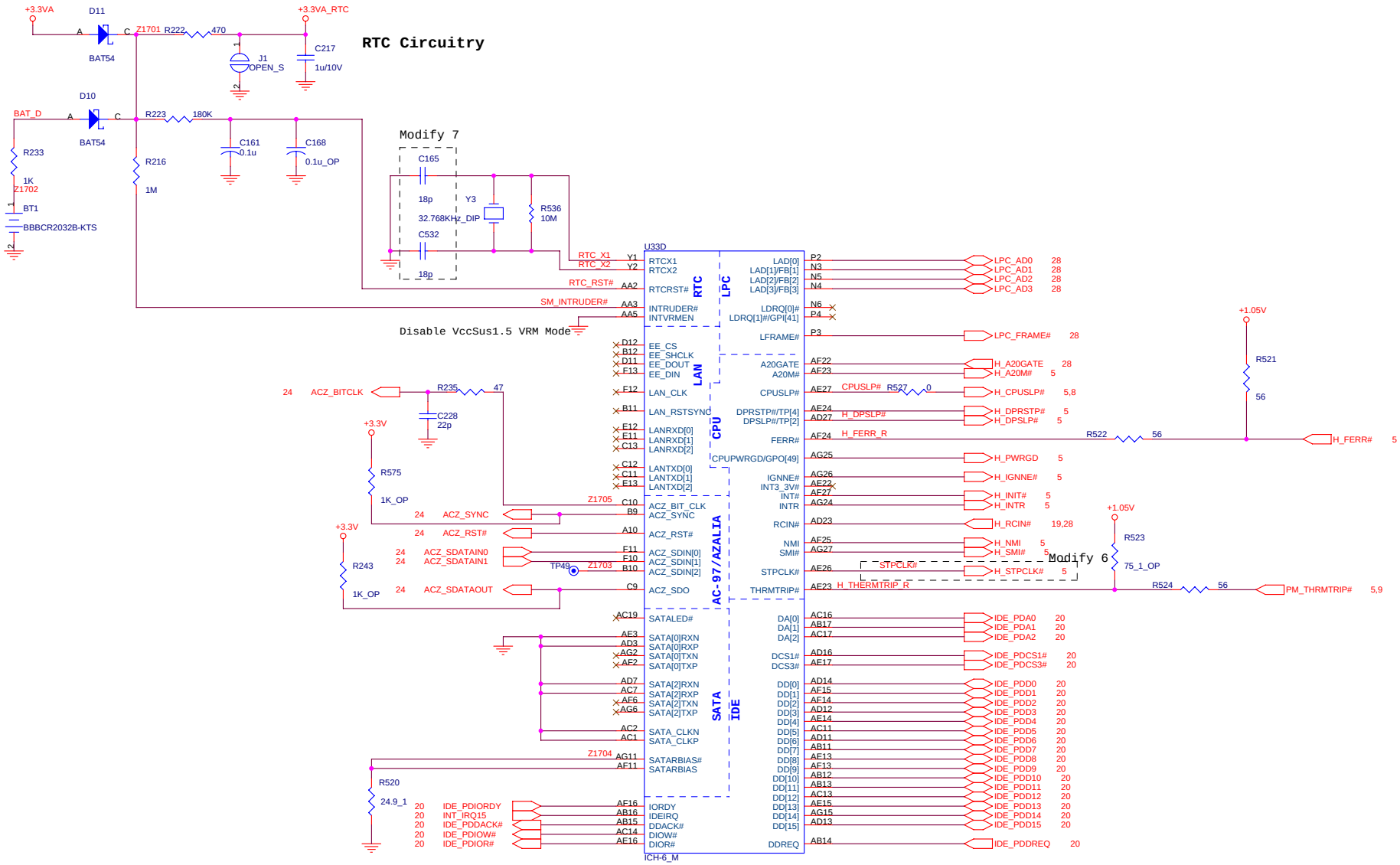

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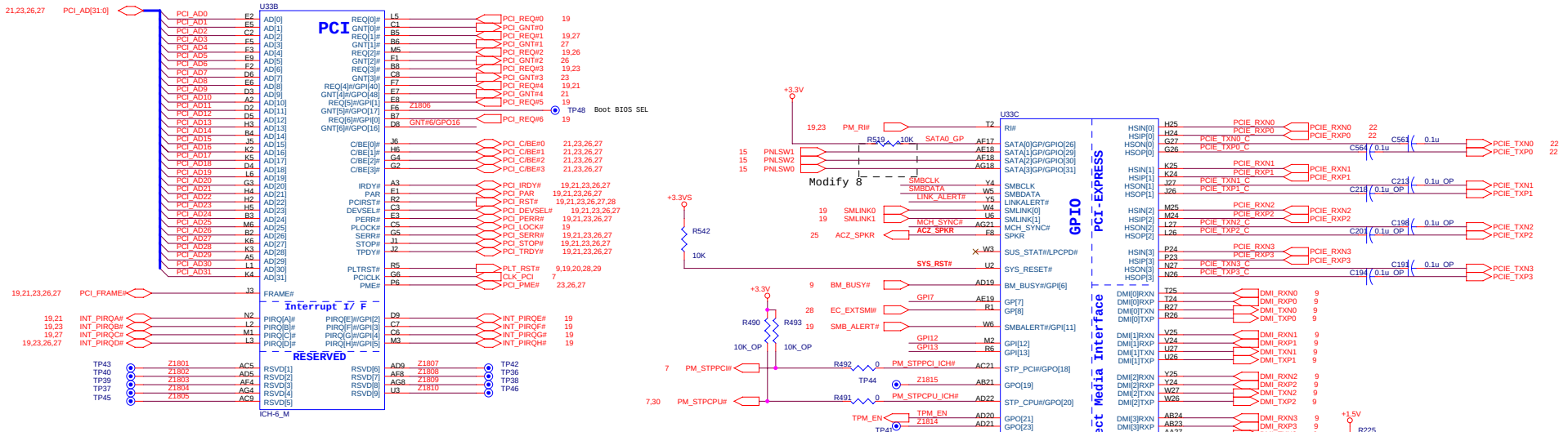
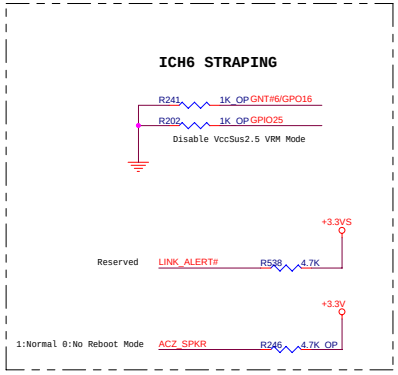
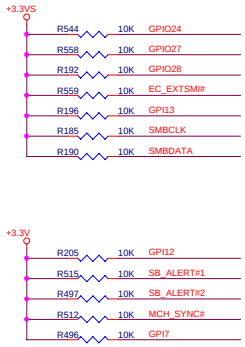


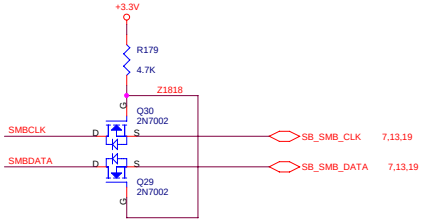
PAD19 : MINPCI
PAD20 : 1394A
PAD21 : LAN
PAD23 : VT6421

INTA# : VT6421
INTB# : MINIPCI
INTC# : 1394
INTD# : LAN, (MINIPCI)

PREQ#0 : X
PREQ#1 : 1394
PREQ#2 : LAN
PREQ#3 : MINI PCI
PREQ#4 : VT6421







	550INX	570INX
USB0	CardReader	CardReader
USB1	CON(USB BD)	CON(USB BD)
USB2	CON(USB BD)	CON(USB BD)
USB3	NEW CARD	NEW CARD
USB4	X	CON(USB BD)
USB5	DOCKING	DOCKING
USB6	CON(DC BD)	CON(DC BD)
USB7	CON(DC BD)	X

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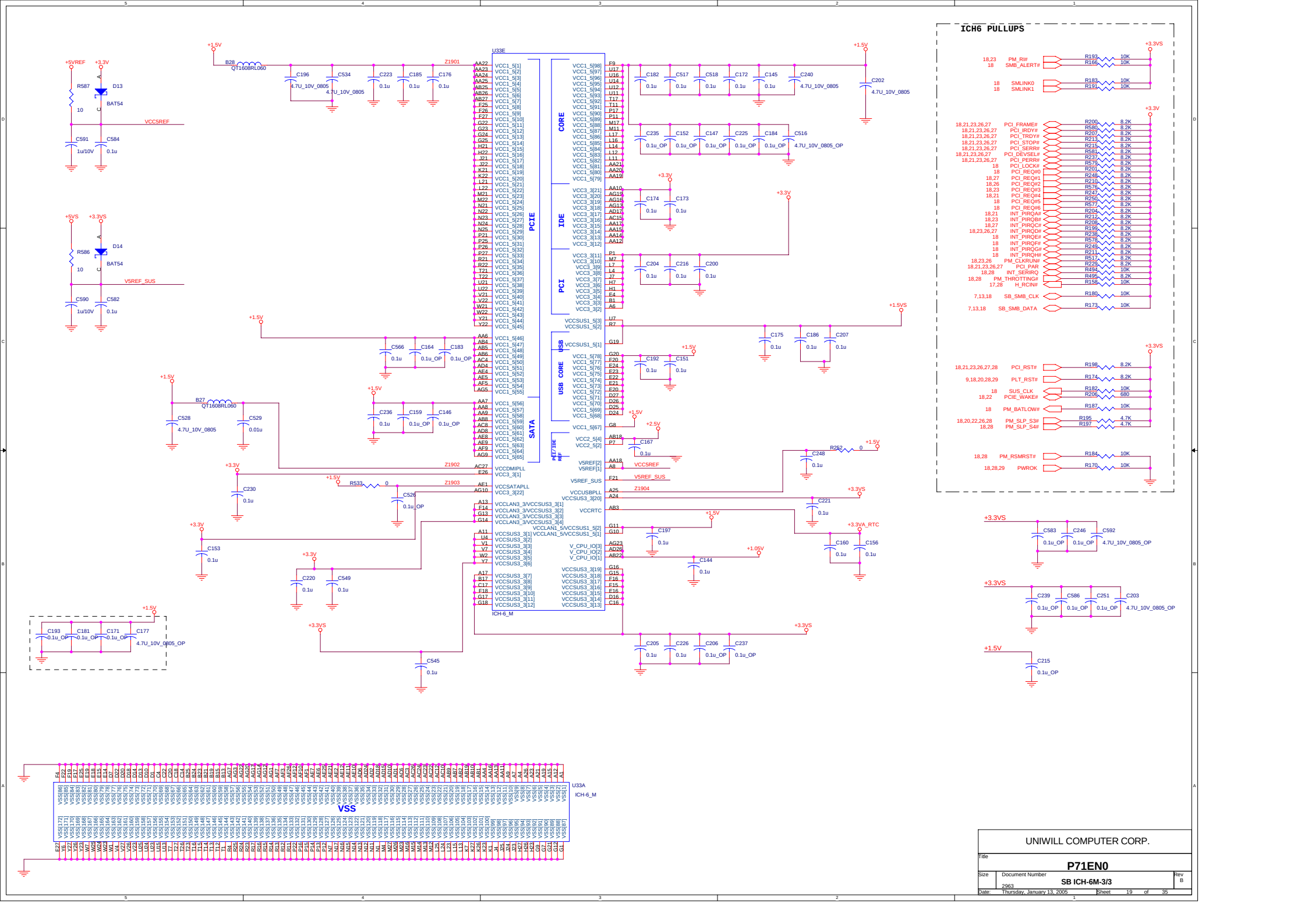
ICH6 PULLUPS
U33E
ICH-6_M
U33A
ICH-6_M
VSS
CORE
PCIE
IDE
PCI
USB
USB CORE
SATA
UNIWILL COMPUTER CORP.
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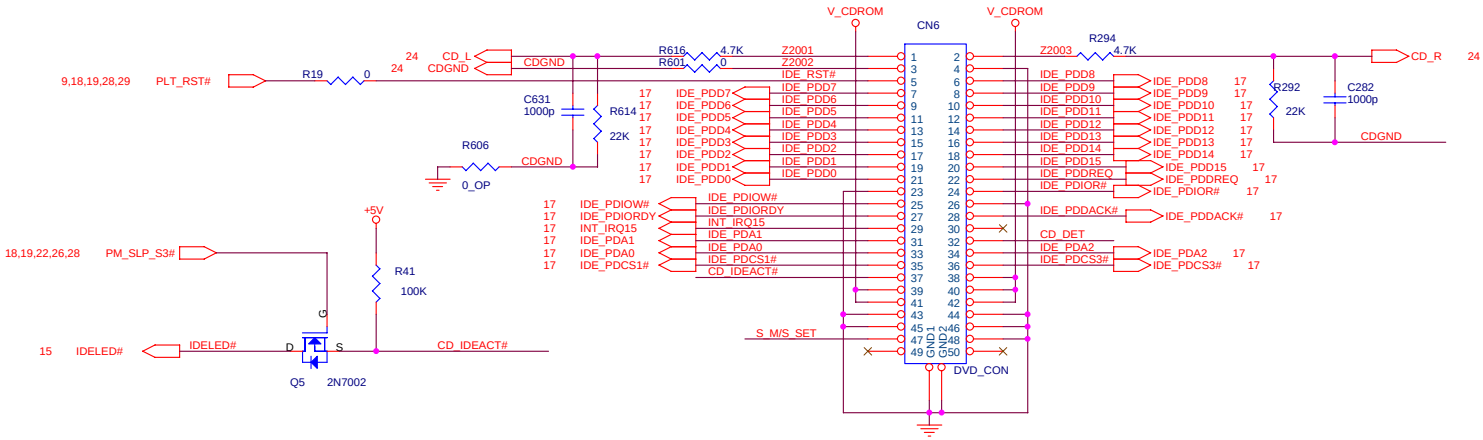
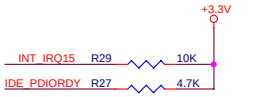
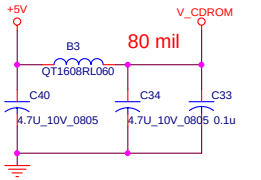
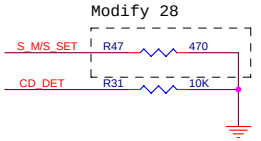
CR-ROM



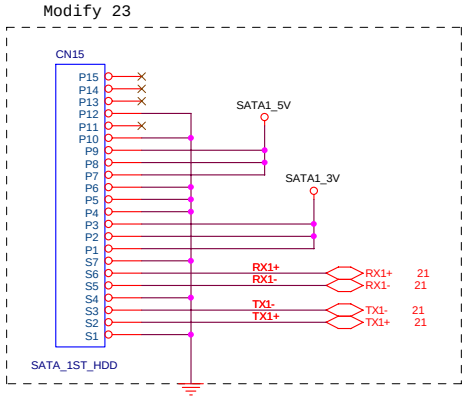


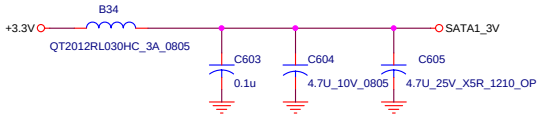


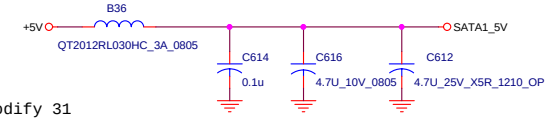


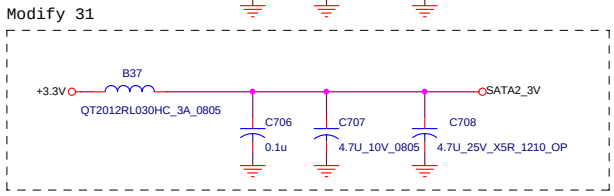
CSEL : Master = 0 / Slave = 1

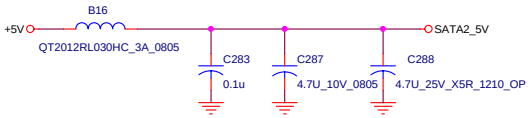
HDD

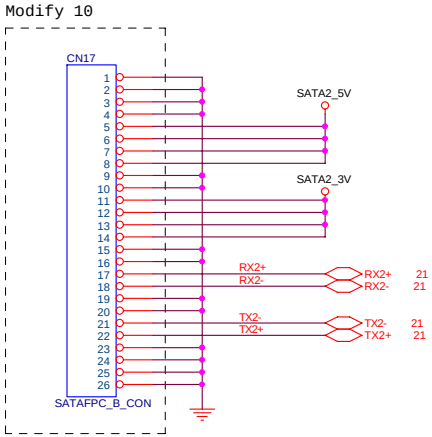












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Size	Document Number: **HDD / CD-ROM CONN** 2963	Rev B
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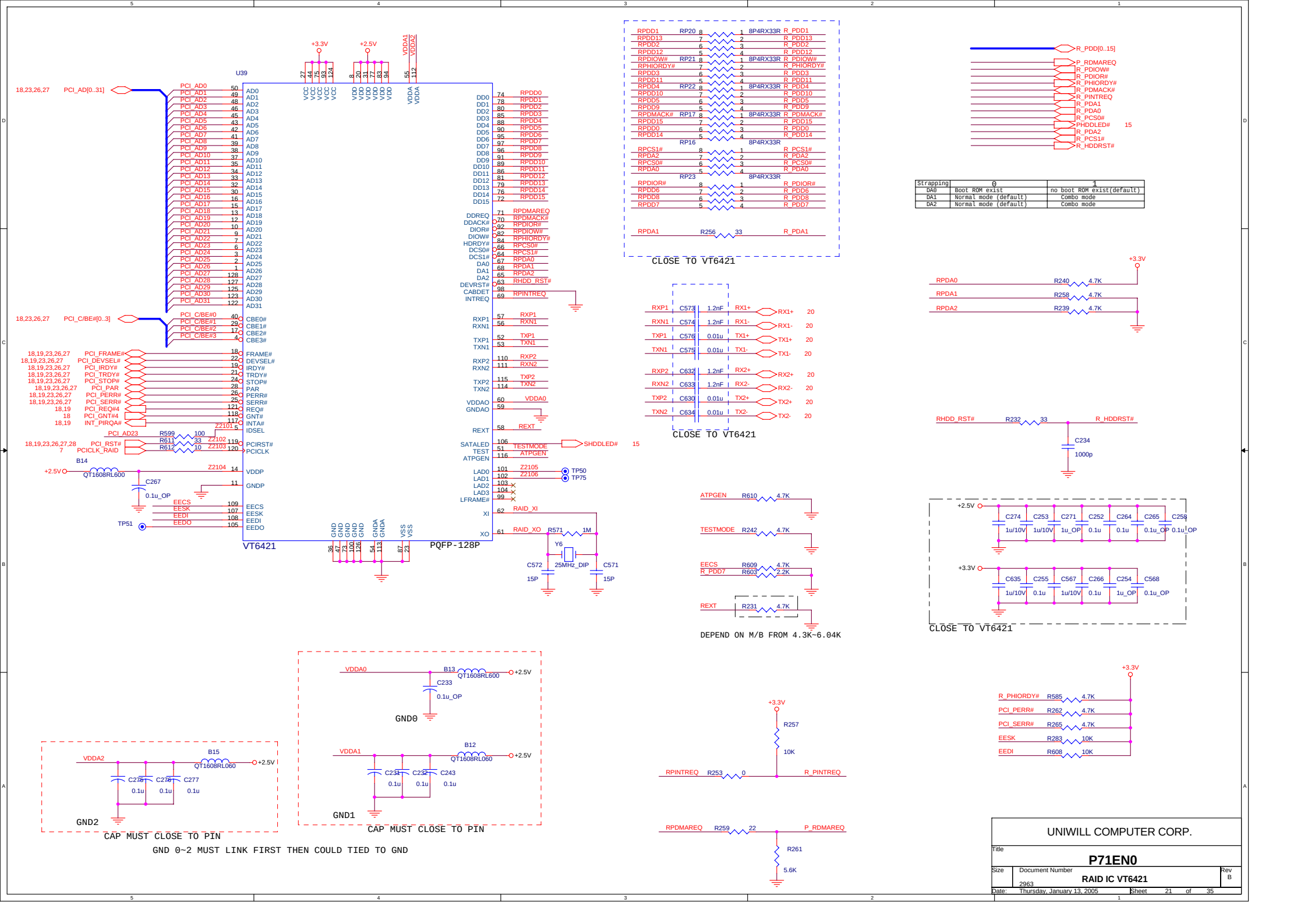
U39
VT6421
PQFP-128P
PCI_AD[0..31]
PCI_C/BE#[0..3]
PCI_FRAME#
PCI_DEVSEL#
PCI_IRDY#
PCI_TRDY#
PCI_STOP#
PCI_PAR
PCI_PERR#
PCI_SERR#
PCI_REQ#4
PCI_GNT#4
INT_PIRQA#
PCI_AD23
PCI_RST#
PCICLK_RAID
+3.3V
+2.5V
VDDA1
VDDA2
B14
QT1608RL600
C267
0.1u_OP
TP51
EECS
EESK
EEDI
EEDO
RPDD0
RPDD1
RPDD2
RPDD3
RPDD4
RPDD5
RPDD6
RPDD7
RPDD8
RPDD9
RPDD10
RPDD11
RPDD12
RPDD13
RPDD14
RPDD15
RPDMAREQ
RPDMACK#
RPDIOR#
RPDIOW#
RPHIORDY#
RPCS0#
RPCS1#
RPDA0
RPDA1
RPDA2
RHDD_RST#
RPINTREQ
RXP1
RXN1
TXP1
TXN1
RXP2
RXN2
TXP2
TXN2
VDDA0
REXT
SATALED
TESTMODE
ATPGEN
SHDDLED#
LAD0
LAD1
LAD2
LAD3
LFRAME#
TP50
TP75
XI
XO
RAID_XI
RAID_XO
R571
1M
Y6
25MHz_DIP
C572
C571
15P
GND0
GND1
GND2
B13
B12
B15
C233
C231
C232
C243
C276
C277
0.1u
CAP MUST CLOSE TO PIN
GND 0~2 MUST LINK FIRST THEN COULD TIED TO GND
RP20
RP21
RP22
RP17
RP16
RP23
8P4RX33R
R_PDD[0..15]
R_PDMAREQ
R_PDIOW#
R_PDIOR#
R_PHIORDY#
R_PDMACK#
R_PINTREQ
R_PDA1
R_PDA0
R_PCS0#
PHDDLED#
R_PDA2
R_PCS1#
R_HDDRST#
CLOSE TO VT6421
Strapping
DA0
DA1
DA2
Boot ROM exist
Normal mode (default)
no boot ROM exist(default)
Combo mode
RXP1
RXN1
TXP1
TXN1
RXP2
RXN2
TXP2
TXN2
C573
C574
C576
C575
C632
C633
C630
C634
1.2nF
0.01u
RX1+
RX1-
TX1+
TX1-
RX2+
RX2-
TX2+
TX2-
DEPEND ON M/B FROM 4.3K~6.04K
ATPGEN
TESTMODE
EECS
R_PDD7
REXT
R610
R242
R609
R603
R231
4.7K
2.2K
R240
R258
R239
R232
33
C234
1000p
C274
C253
C271
C252
C264
C265
C258
C635
C255
C567
C266
C254
C568
1u/10V
1u_OP
0.1u
0.1u_OP
R_PHIORDY#
PCI_PERR#
PCI_SERR#
EESK
EEDI
R585
R262
R265
R283
R608
10K
R257
RPINTREQ
R253
0
R_PINTREQ
RPDMAREQ
R259
22
P_RDMAREQ
R261
5.6K
UNIWILL COMPUTER CORP.
Title
P71EN0
Size
Document Number
RAID IC VT6421
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B
2963
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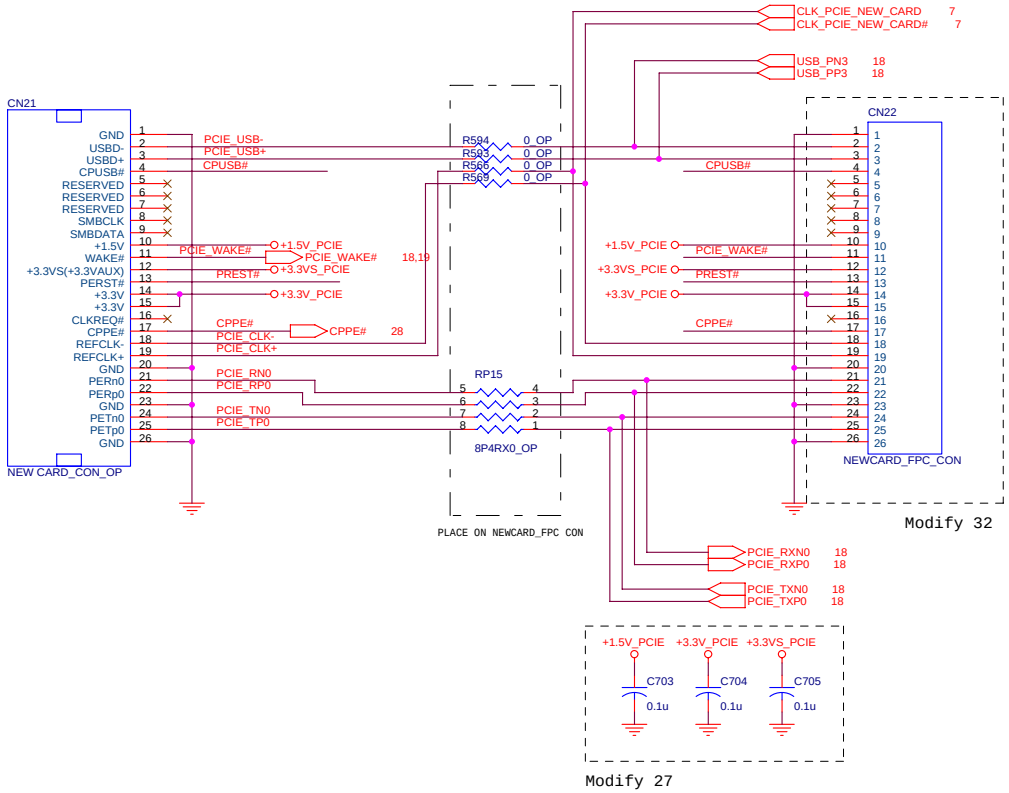
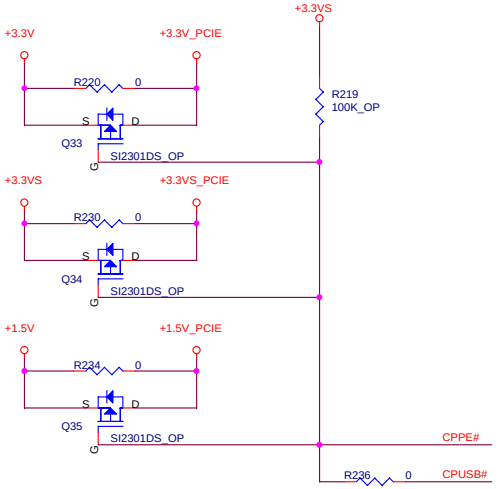
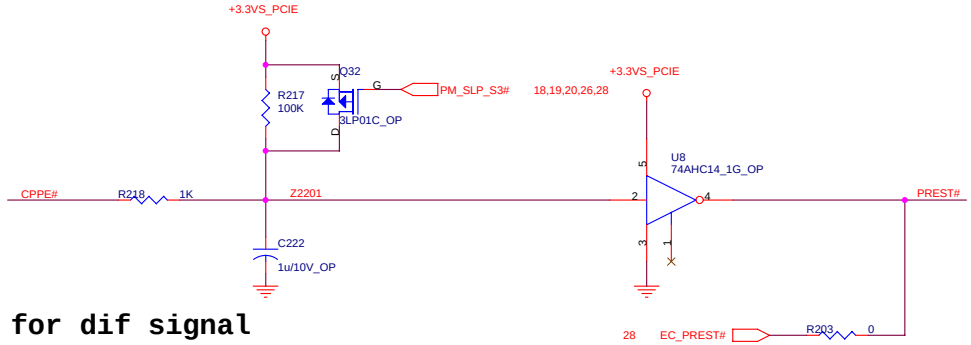
35







add resister for dif signal

UNIWILL COMPUTER CORP.

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	2963 **NEW CARD**	B

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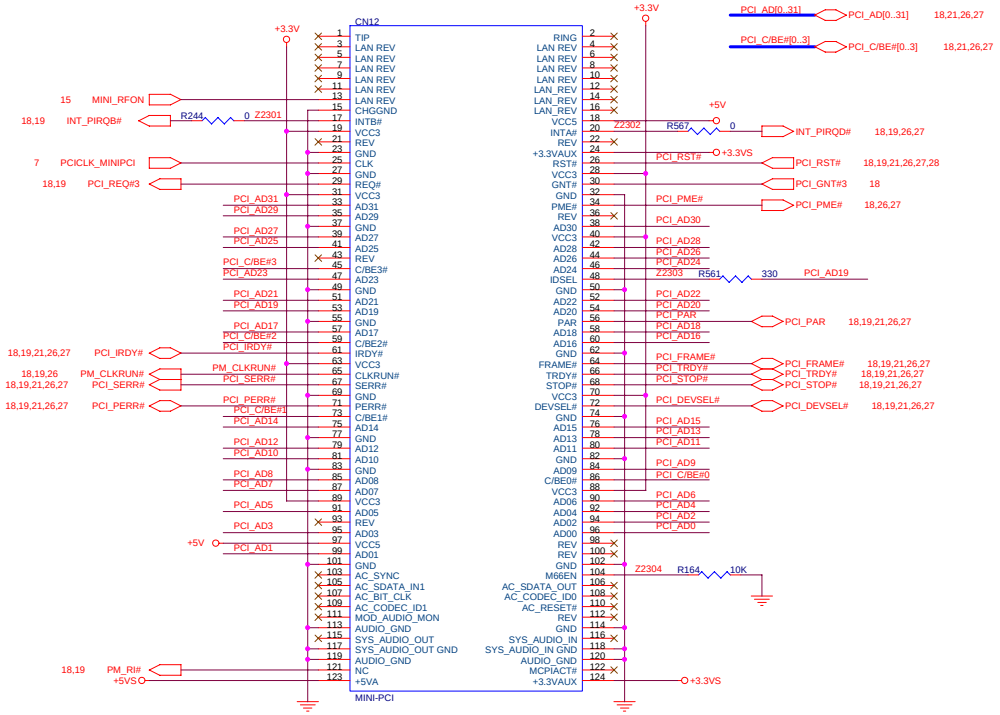
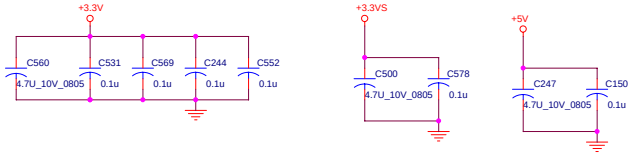
MINI PCI CONN

Intel PRO/Wireless 2100 LAN

PIN11	LED_WLAN_LINK	Hi(3.3V)	Solid ON	Associated AP
			1 flash/3 sec	Not Associated with an AP
		Low(0V)	LED OFF	Power OFF or RF_Kill active
PIN12	LED_WLAN_ACT	Hi(3.3V)	Rapid Blinking	Passing data traffic to AP
			Slow Blinking	Beacon traffic to Ap
		Low(0V)	LED OFF	Power OFF or not activity or RF_Kill active
PIN13	HW_RadioXMIT_OFF#	Hi(3.3V)	Enable	Radio transmitter is ON
		Low(0V)	Disable	Radio transmitter turn off





UNIWILL COMPUTER CORP.

Title: **P71EN0**

Size: | Document Number: 2963 **USB CON / MINI PCI(Wireless)** | Rev: B

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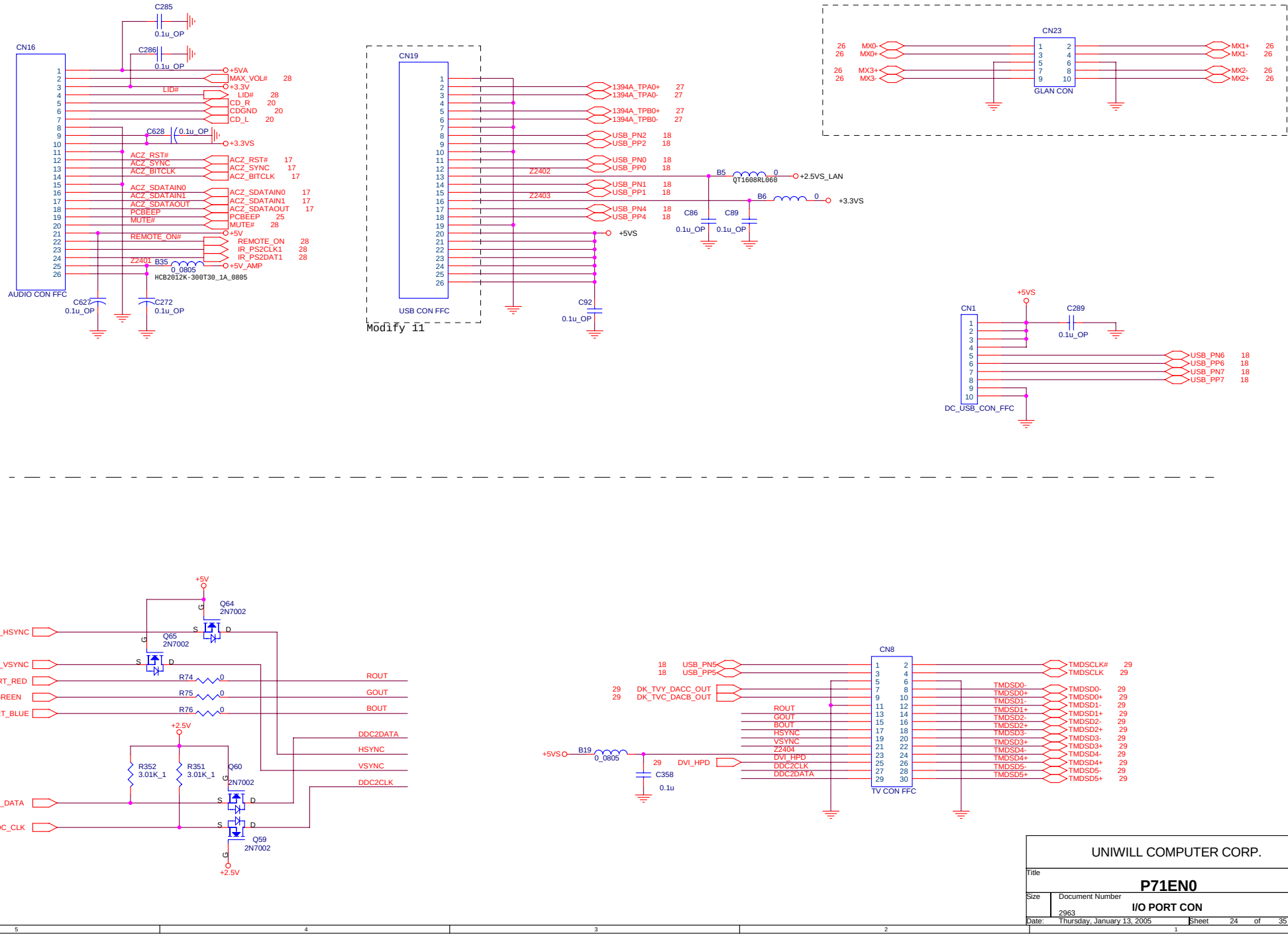

UNIWILL COMPUTER CORP.

Title

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Size	Document Number	Rev
	2963 **I/O PORT CON**	B

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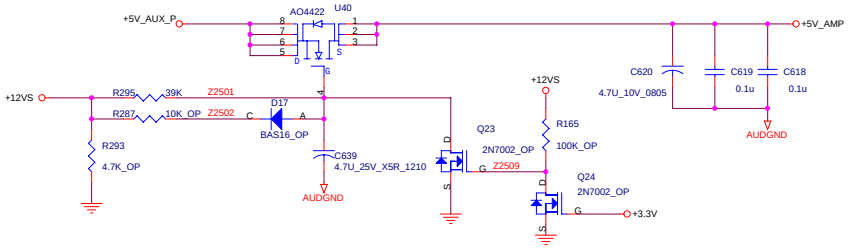
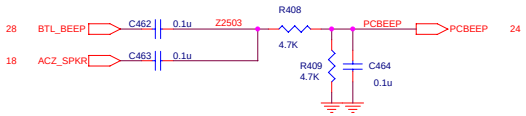
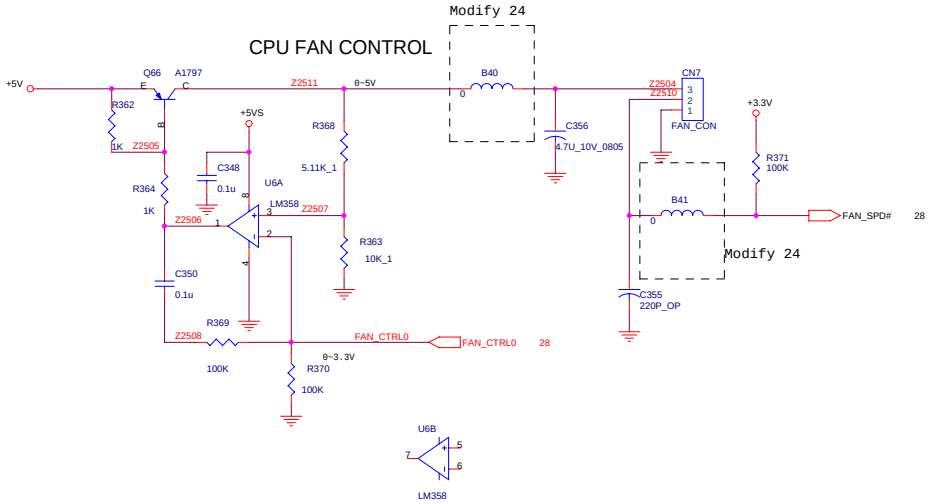
AMP VDD





CPU FAN CONTROL



UNIWILL COMPUTER CORP.	
Title	**P71EN0**
Size	Document Number: 2963 — **AZALIA AUDIO CODEC & MDC** — Rev: B
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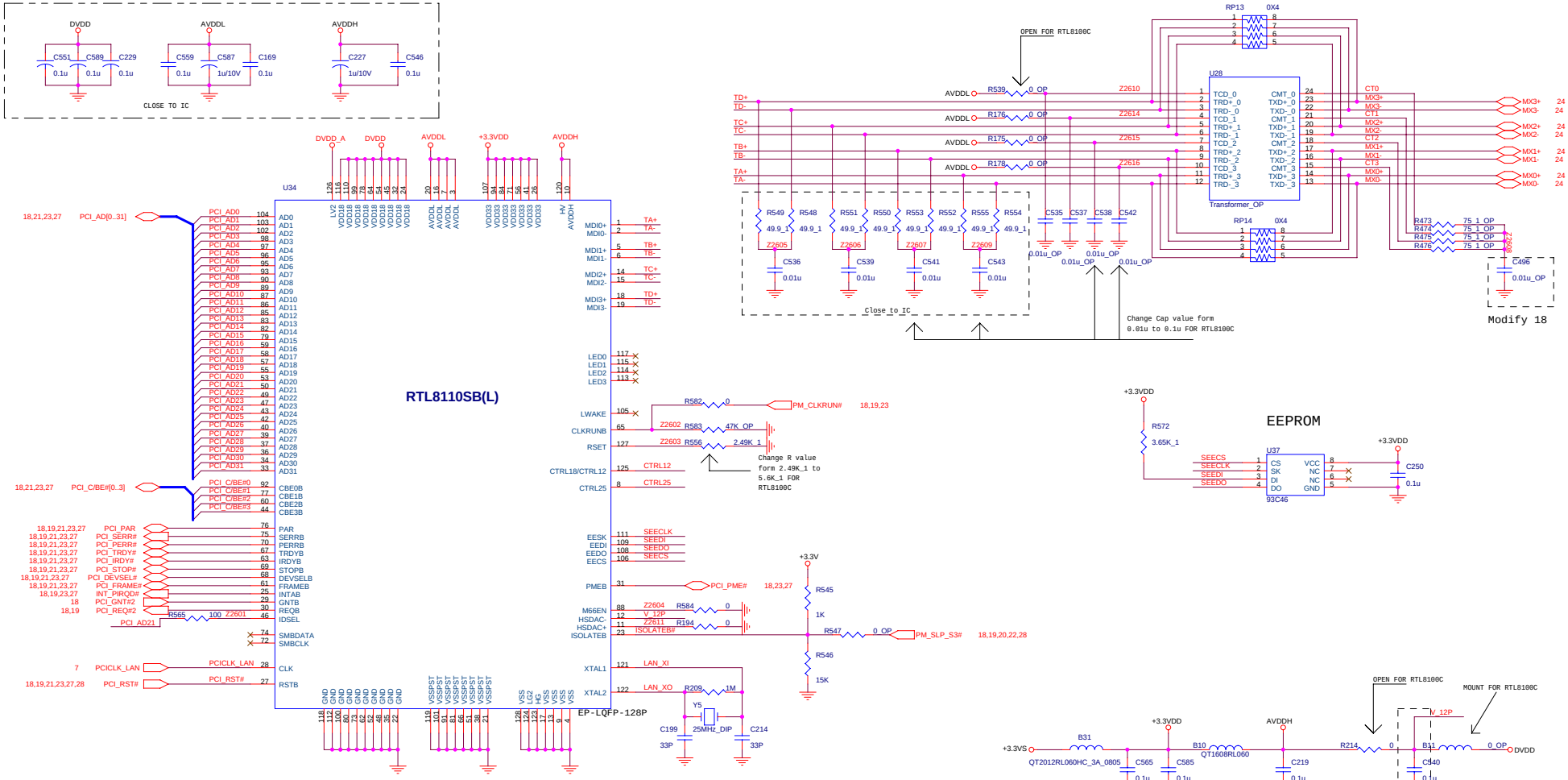

	RTL8100C	RTL8110S / RTL8169S	RTL8110SB / RTL8169SB
AVDDH	N/A	3.3AVDD	3.3AVDD
V_12P	2.5AVDD	N/A	3.3AVDD
AVDDL	3.3AVDD	2.5AVDD	2.5AVDD
V_DAC	N/A	2.5AVDD	2.5AVDD
DVDD	2.5VDD	1.8VDD	1.2VDD
DVDD_A	N/A	1.8AVDD	1.2AVDD

UNIWILL COMPUTER CORP.

Title

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Size	Document Number	Rev
	GIGA LAN RTL8110SBL	B
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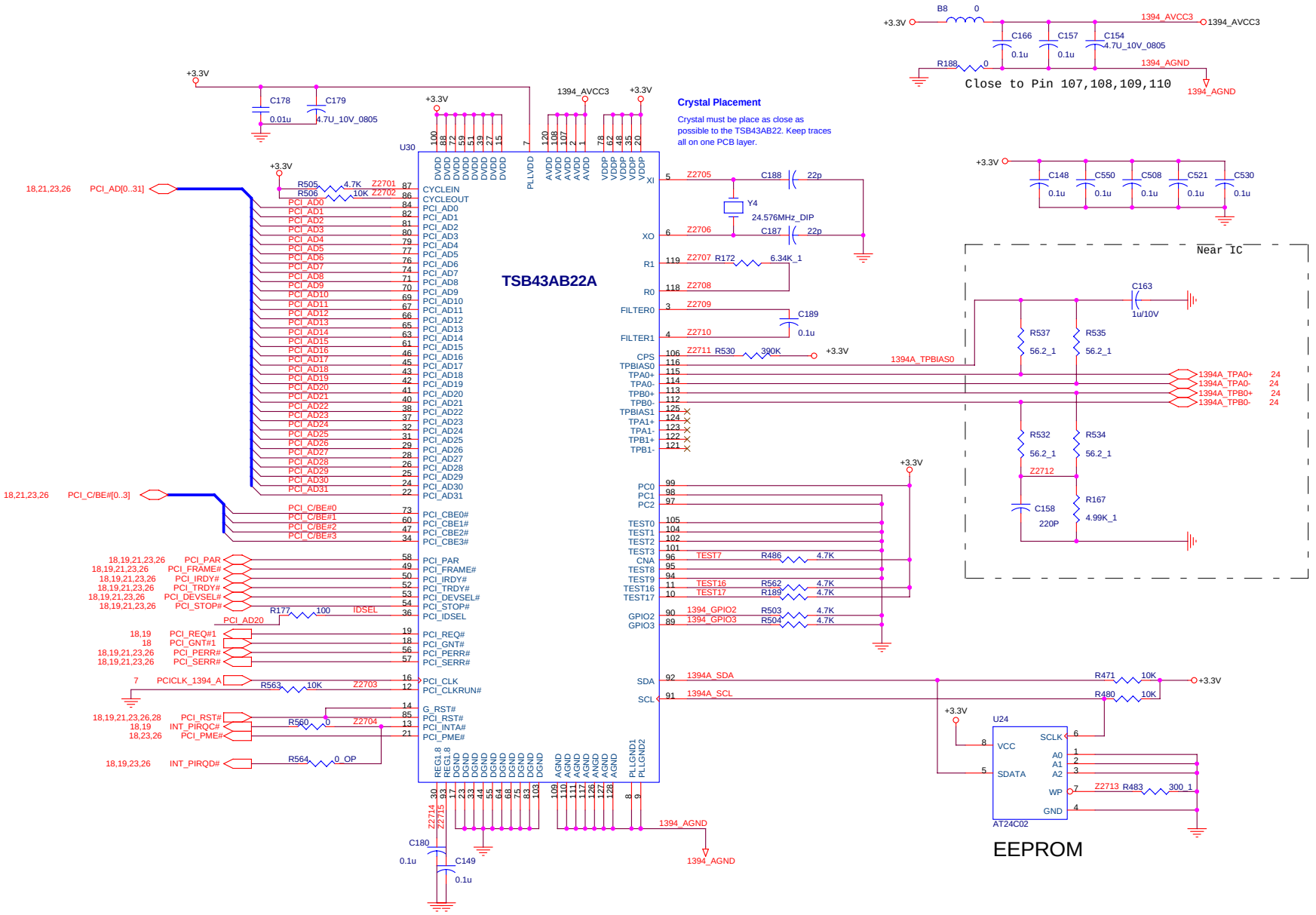

Unwill International Corp.	
Title	IEEE1394A TSB43AB22
Size	Document Number: P71EN0 (2963) — Rev: B
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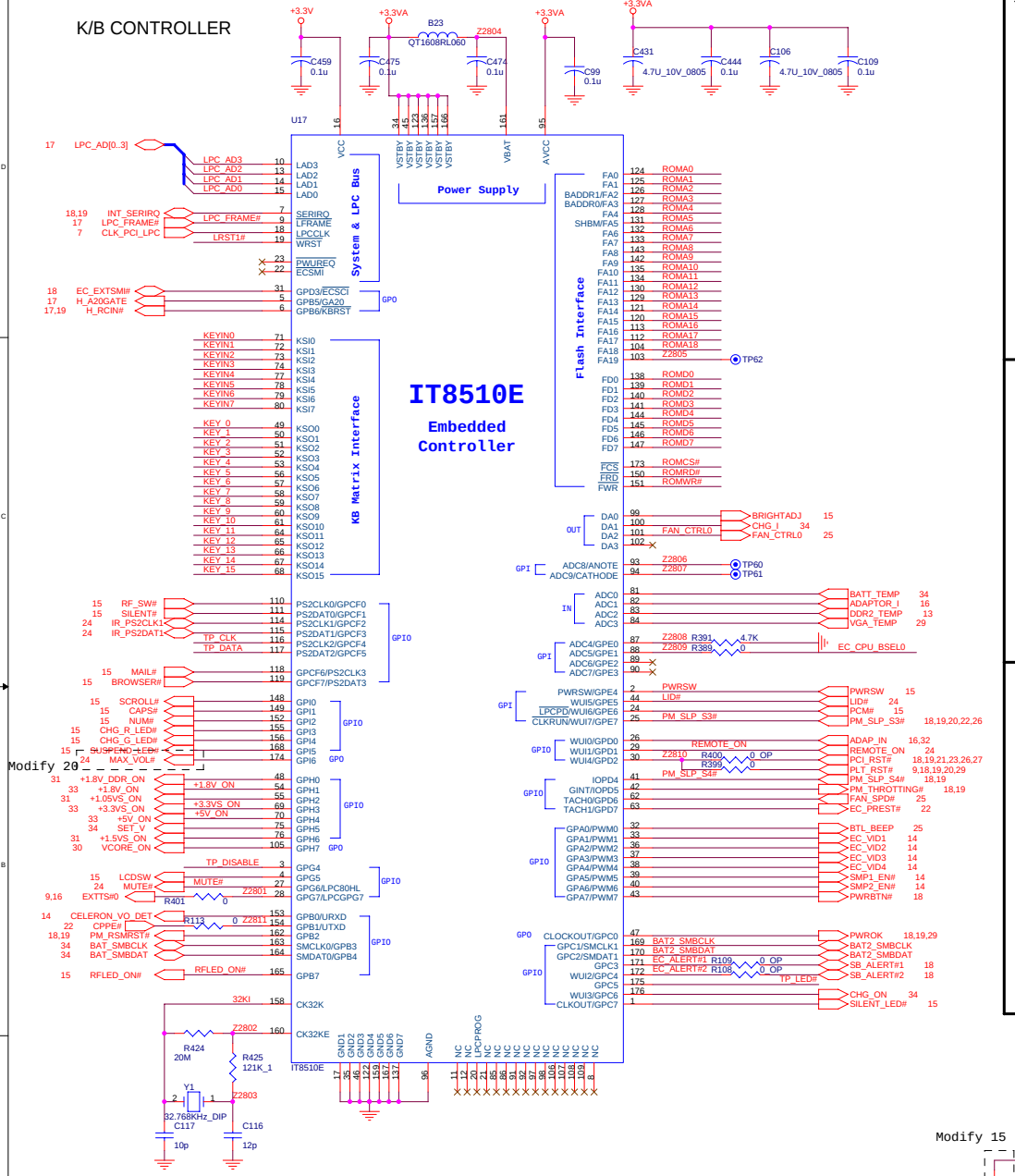
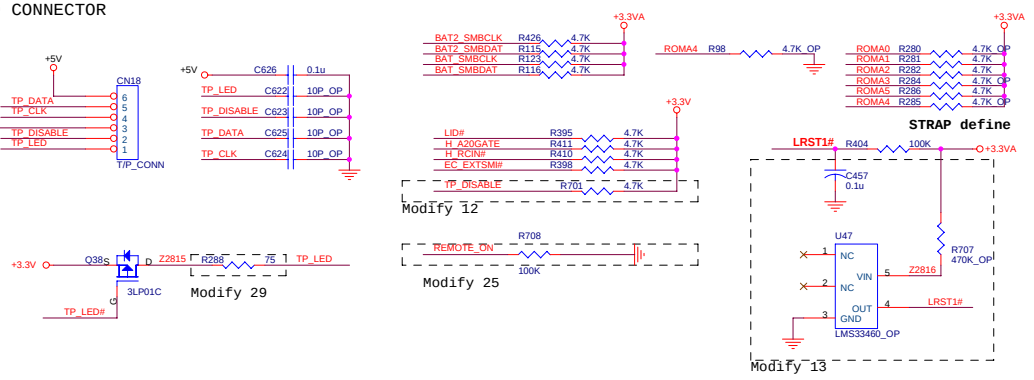
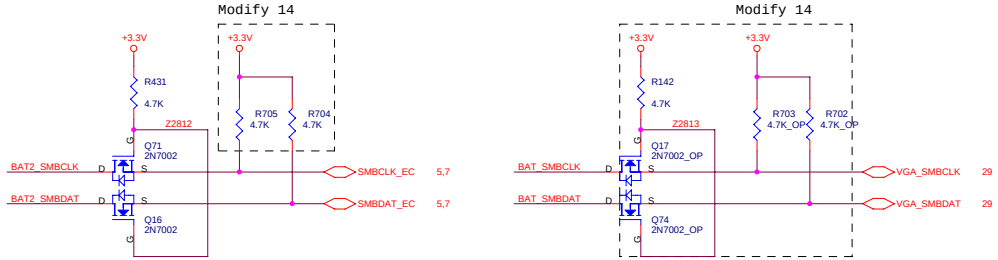
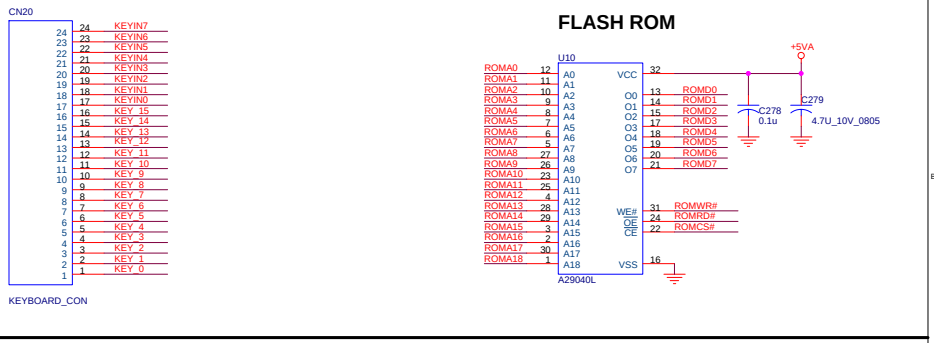
K/B CONTROLLER

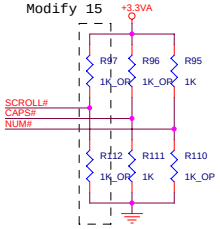


TOCHPAD CONNECTOR

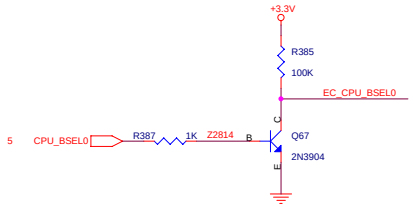








(ID2) NUMLED#	(ID1) CAPLED#	(ID0) SCROLED#	ID / MODEL
0	0	0	223
0	0	1	245
0	1	0	255
0	1	1	259
1	0	0	P71EN0
1	0	1	P50EN0
1	1	0	XXX
1	1	1	XXX



UNIWILL COMPUTER CORP.

Title: **P71EN0**

Size: | Document Number: 2963 | **EC IT8510E / BIOS / TP CONN** | Rev: B

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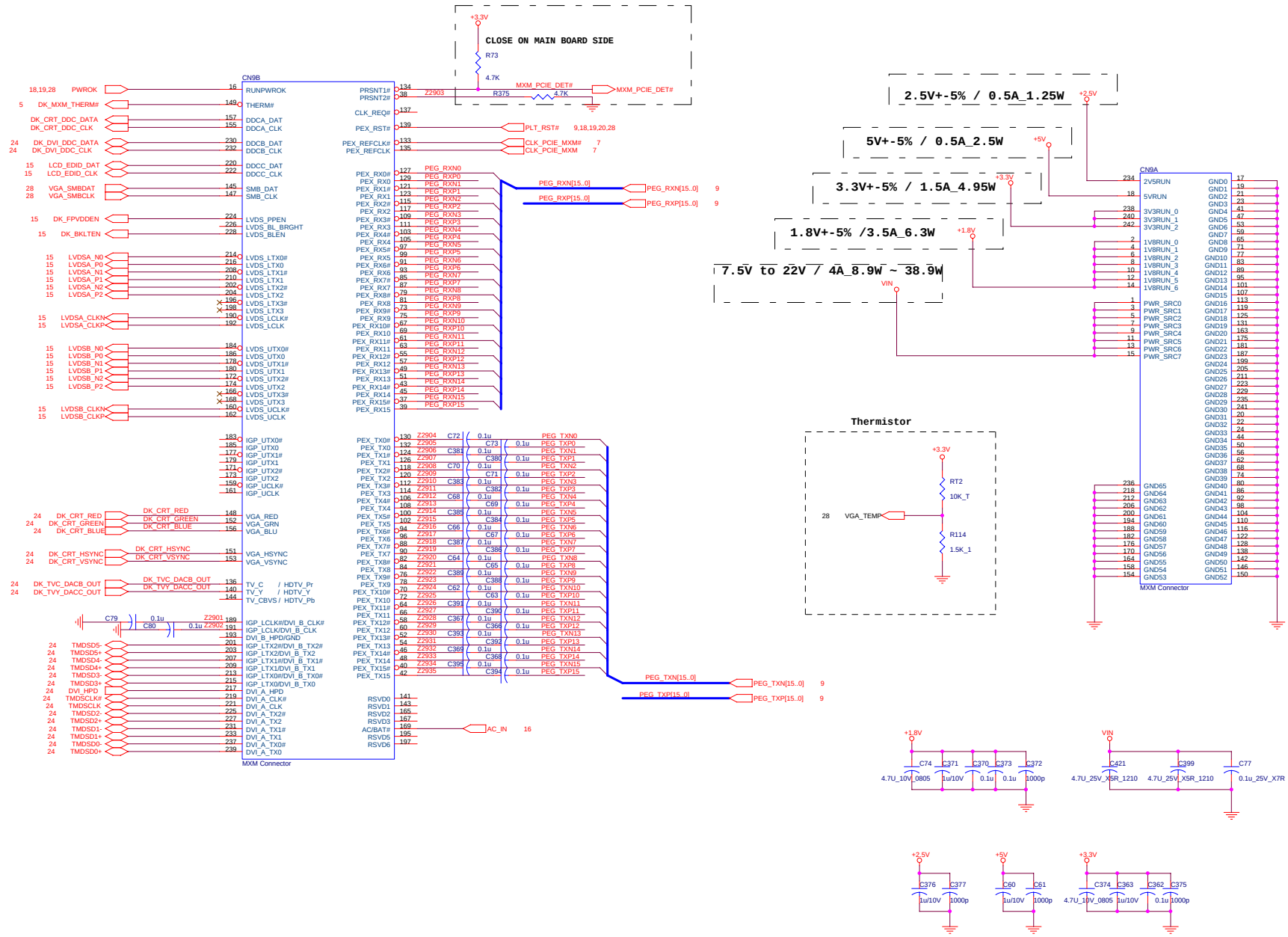

UNIWILL COMPUTER CORP.	
Title	P71EN0
Size C / Document Number	VGA MXM CON / 2963
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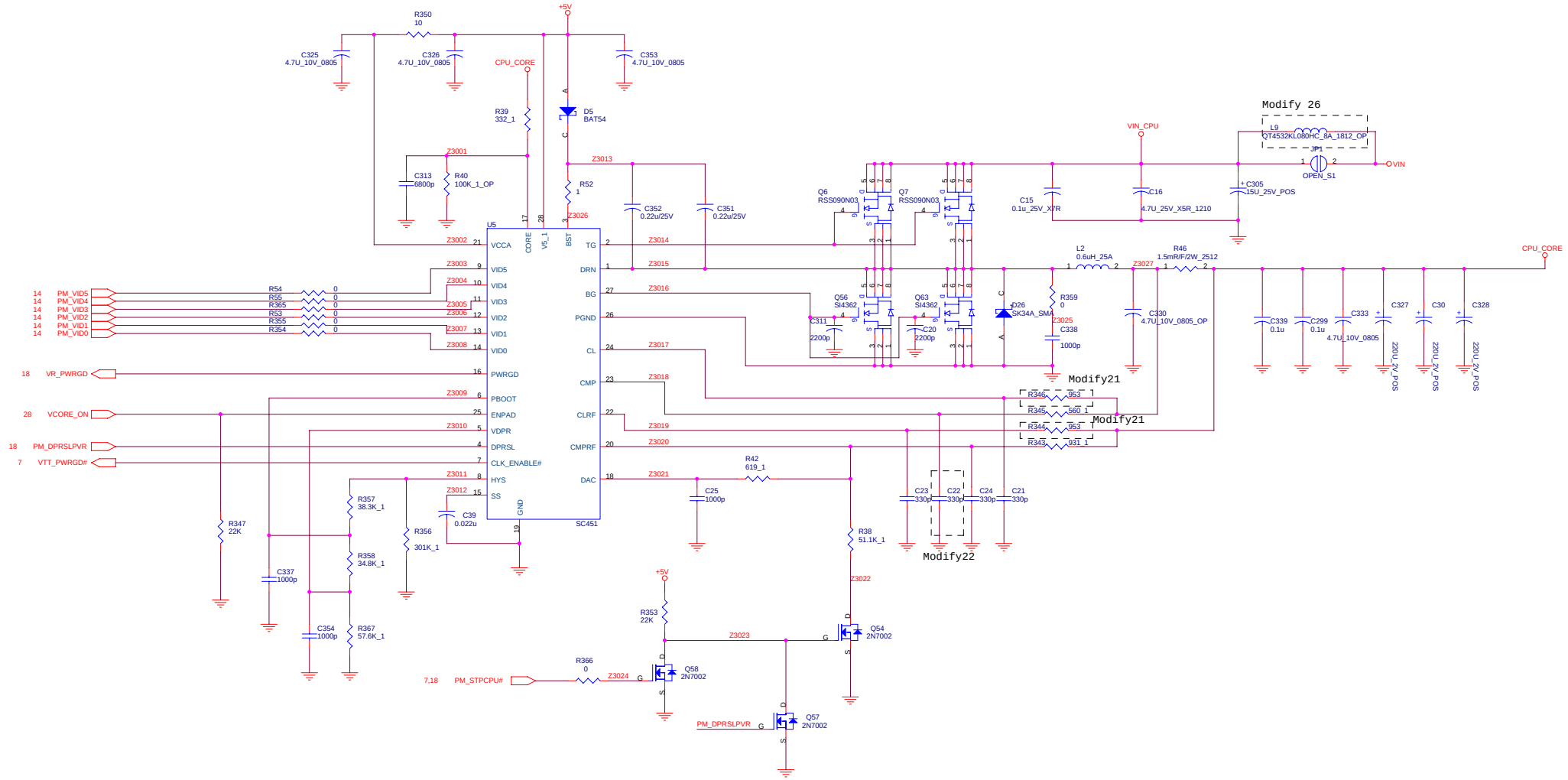
Date: Thursday, January 13, 2005	Sheet 29 of 35



H12 C264D107 H5 C264D107 H3 C315D154 H7 C315D154 H4 C315D154 H2 C264D107 H6 C264D107 H10 C264D107 H15 C264D107 H14 C264D107 H9 C264D107 H8 C264D107 H1 C264D107 H13 C197D118 H11 C197D118 H16 C158D158 H17 C158D158 H18 C158D158 H19 C158D158 H20 C315B178D178 H21 C256B126D126

M6 M-MARK1 M9 M-MARK1 M8 M-MARK1 M7 M-MARK1 M10 M-MARK1 M15 M-MARK1 M12 M-MARK1 M16 M-MARK1 M18 M-MARK1 M13 M-MARK1 M11 M-MARK1 M3 M-MARK1 M2 M-MARK1 M20 M-MARK1 M4 M-MARK1 M19 M-MARK1 M5 M-MARK1 M1 M-MARK1 M21 M-MARK1 M22 M-MARK1 M23 M-MARK1 M24 M-MARK1 M25 M-MARK1 M26 M-MARK1 M27 M-MARK1 M28 M-MARK1

UNIWILL COMPUTER CORP.		
Title: P71EN0		
Size	Document Number: CPU_CORE 2963	Rev: B
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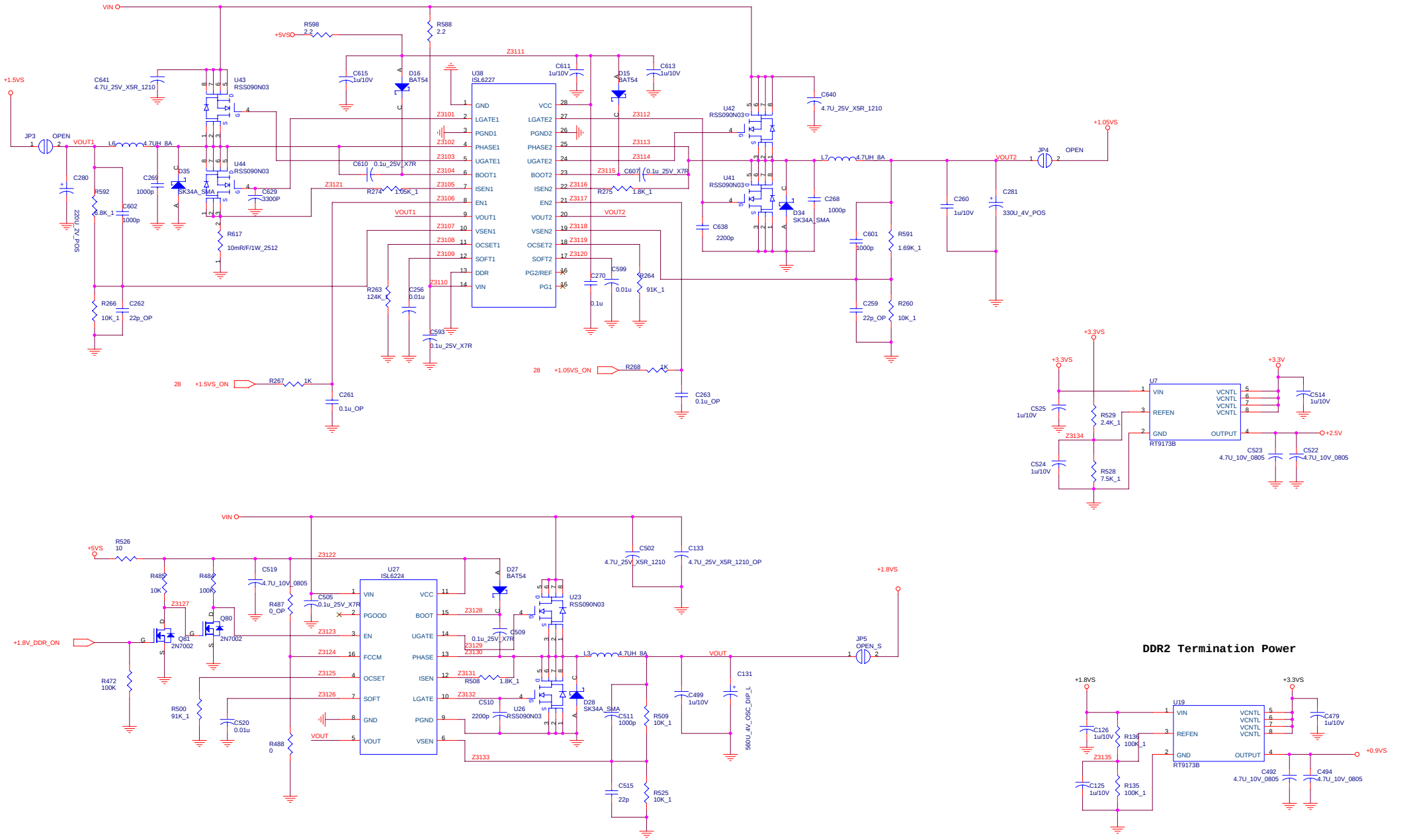

UNIWILL COMPUTER CORP.

Title

P71EN0

Size	Document Number	Rev
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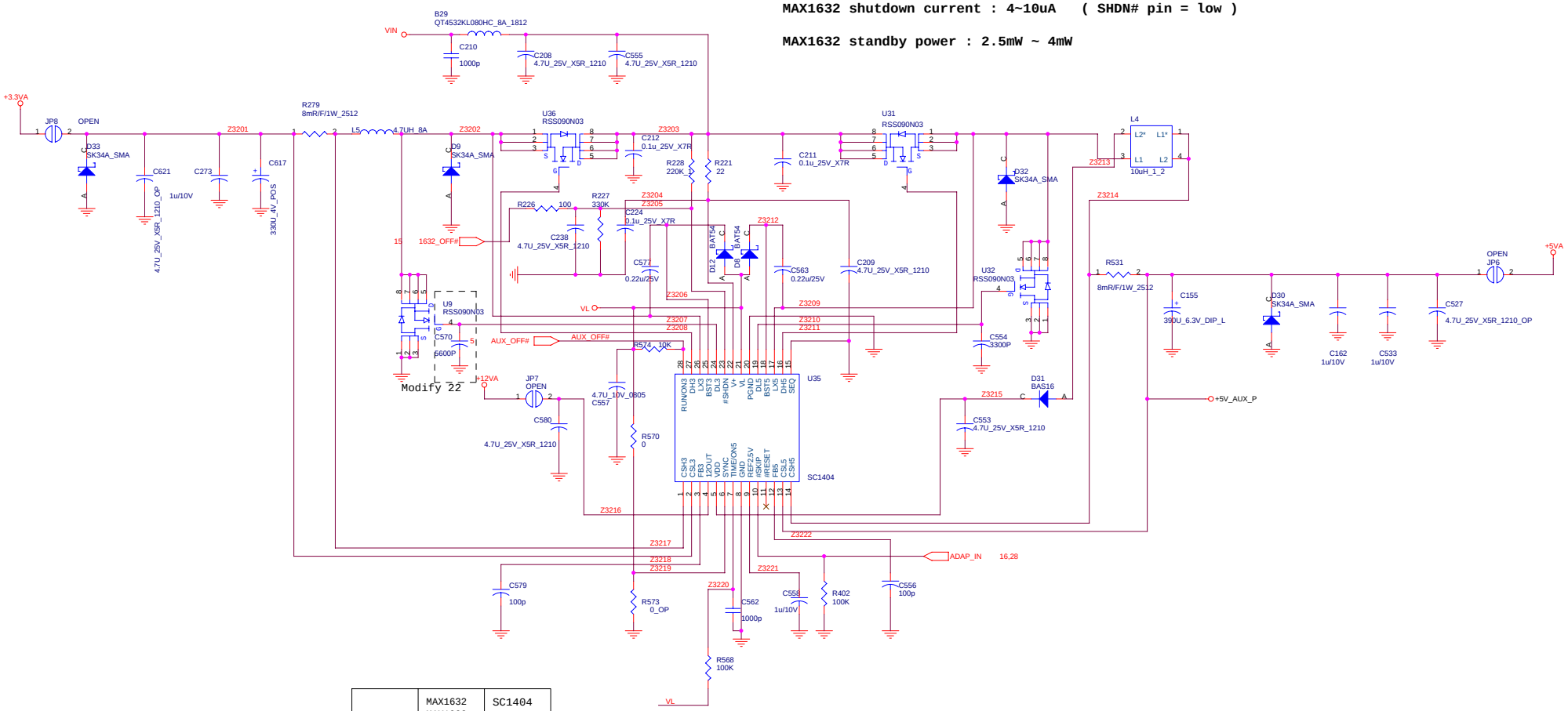
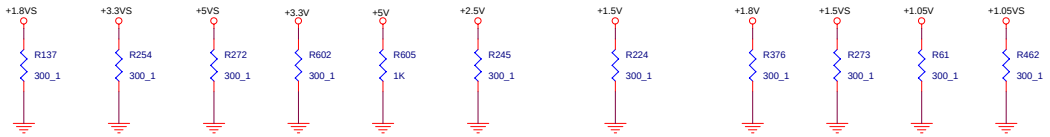


	MAX1632 MAX1902	SC1404
C680	0	100pF
R628	100K_OP	100K
C681	0	100pF
R618,R623	15mR,15mR	8mR,8mR



UNIWILL COMPUTER CORP.

Title: **P71EN0**

Size: | Document Number: 2963 | **+3.3VA/+5VA/+12VA** | Rev: B

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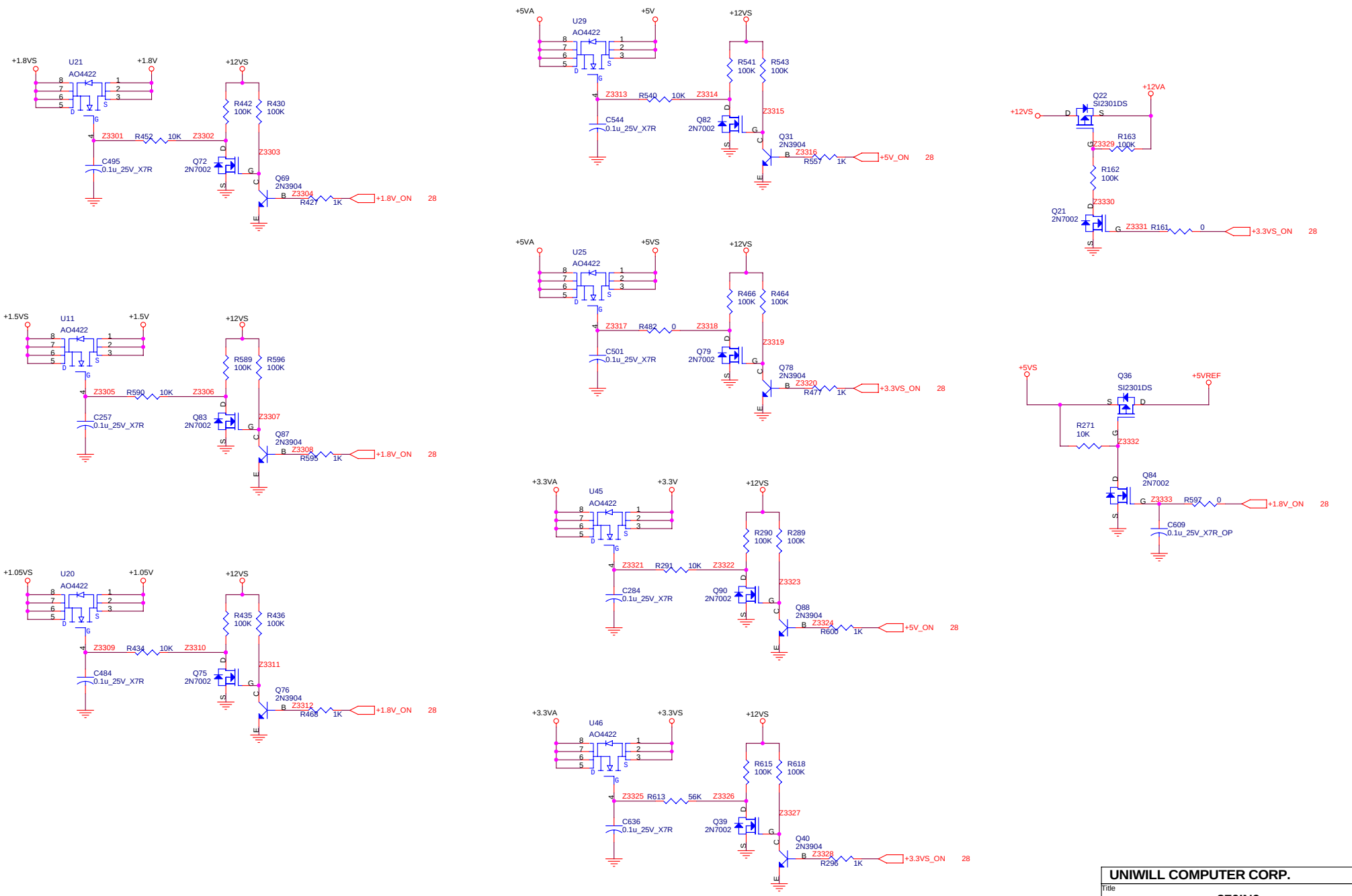
+1.8VS
U21
AO4422
+1.8V
+12VS
R442 100K
R430 100K
Z3301
R452 10K
Z3302
Z3303
C495 0.1u_25V_X7R
Q72 2N7002
Q69 2N3904
Z3304
R427 1K
+1.8V_ON 28
+5VA
U29
AO4422
+5V
+12VS
R541 100K
R543 100K
Z3313
R540 10K
Z3314
Z3315
C544 0.1u_25V_X7R
Q82 2N7002
Q31 2N3904
Z3316
R557 1K
+5V_ON 28
+12VA
Q22 SI2301DS
+12VS
R163 100K
Z3329
R162 100K
Z3330
Q21 2N7002
Z3331
R161 0
+3.3VS_ON 28
+1.5VS
U11
AO4422
+1.5V
+12VS
R589 100K
R596 100K
Z3305
R590 10K
Z3306
Z3307
C257 0.1u_25V_X7R
Q83 2N7002
Q87 2N3904
Z3308
R595 1K
+1.8V_ON 28
+5VA
U25
AO4422
+5VS
+12VS
R466 100K
R464 100K
Z3317
R482 0
Z3318
Z3319
C501 0.1u_25V_X7R
Q79 2N7002
Q78 2N3904
Z3320
R477 1K
+3.3VS_ON 28
+5VS
Q36 SI2301DS
+5VREF
R271 10K
Z3332
Q84 2N7002
Z3333
R597 0
+1.8V_ON 28
C609 0.1u_25V_X7R_OP
+1.05VS
U20
AO4422
+1.05V
+12VS
R435 100K
R436 100K
Z3309
R434 10K
Z3310
Z3311
C484 0.1u_25V_X7R
Q75 2N7002
Q76 2N3904
Z3312
R468 1K
+1.8V_ON 28
+3.3VA
U45
AO4422
+3.3V
+12VS
R290 100K
R289 100K
Z3321
R291 10K
Z3322
Z3323
C284 0.1u_25V_X7R
Q90 2N7002
Q88 2N3904
Z3324
R600 1K
+5V_ON 28
+3.3VA
U46
AO4422
+3.3VS
+12VS
R615 100K
R618 100K
Z3325
R613 56K
Z3326
Z3327
C636 0.1u_25V_X7R
Q39 2N7002
Q40 2N3904
Z3328
R296 1K
+3.3VS_ON 28
UNIWILL COMPUTER CORP.
Title
270IN0
Size
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Document Number
P71EN0
2963
VCC SW/+1.05VS/+1.5VS
Rev
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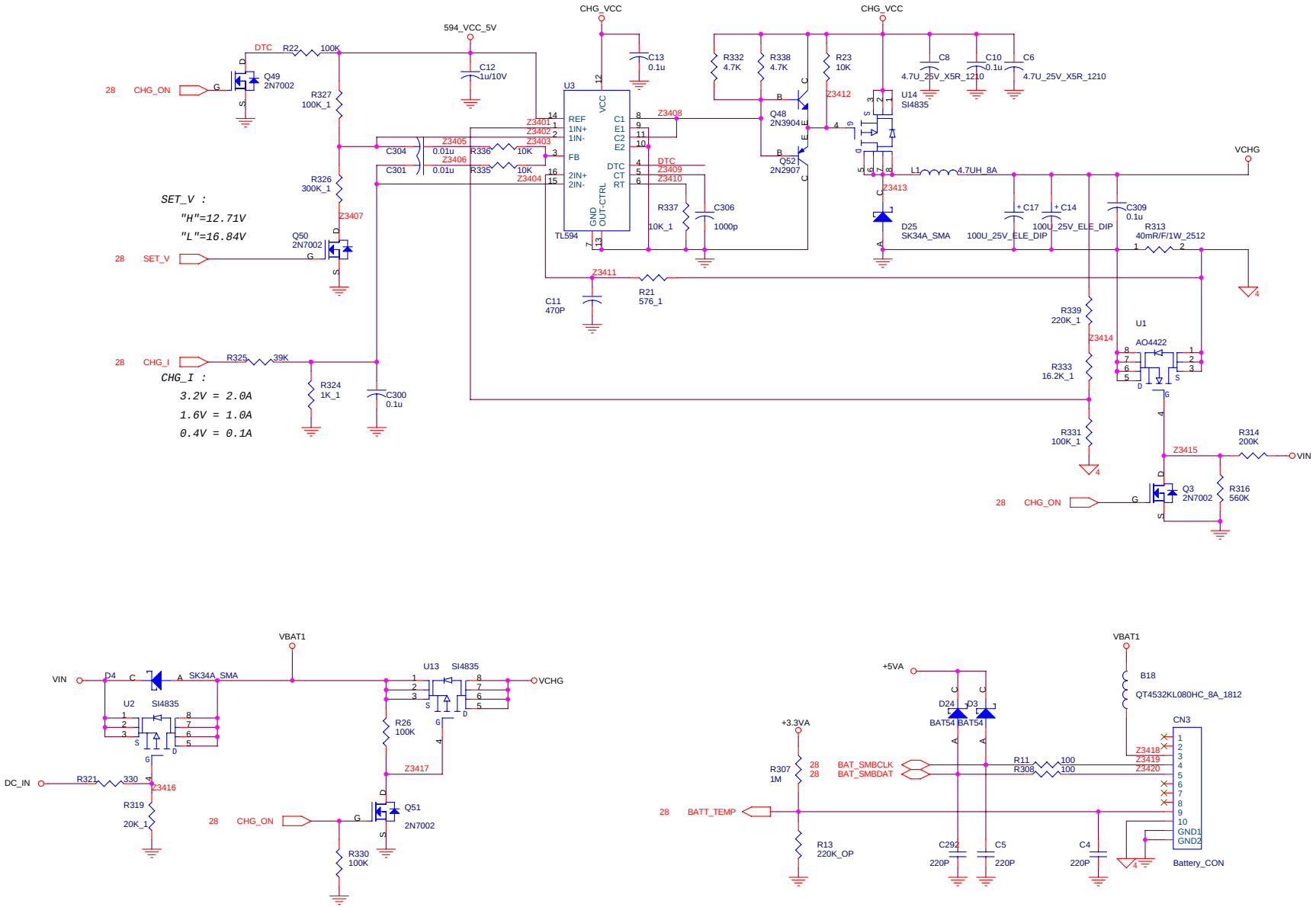

UNIWILL COMPUTER CORP.

Title

P71EN0

Size	Document Number	Rev
	2963 **BATT IN / Charger**	B

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R:A INITINAL

R:A to R:B modify:

Modify 1: R349 value change from 1K to 0 ohm
Modify 2: Add R700 0 ohm and H_THERM# net for thertmal protection require by FSC
Modify 3: R151&R152 value change from 0 ohm to OP for cut of net S/B SMBus to CLK GEN
Modify 4: CN2.7 add net SCROLL# for project ID select by S/W BD
Modify 5: R1 form 120 to 0 ohm for solving light three LED on daughter BD issue
Modify 6: Del D29 for solving VIL too higher issue
Modify 7: C165 & C532 change form 20p to 18p for solving RTC accurate
Modify 8: Del R499, R518, R498 for solving design issue
Modify 9: R514 form 100K to 10K for solving driving current lower issue
Modify 10: CN17 was changed pin define for solving FPC layout smooth issue
Modify 11: CN19 was changed from 36PIN to 26 PIN and add CN23 for solving Giga LAN signal impendence issue
Modify 12: Add R701 4.7K pull high to +3.3V for solving net TP_DISABLE# unstable issue
Modify 13: C457 change form 1uF to 0.1uF for sloving EC reset fail issue ; Reserved reset IC U47_OP and R707 470K_OP
Modify 14: Add R702 & R703 4.7K_OP and R704 & R705 4.7K pull up to +3.3Vfor sloving SMBus voltage level unstable issue; Q17,Q74_OP for solving S3 resume failed
Modify 15: R97 change from 1K to 1K_OP for solving project ID select issue.
Modify 16: R99 1K->1K_OP ; R101 1K_OP-> 1K; R104&R106 0->0_OP; R120 0_OP->0; R126 1K_OP-> 1K for improving smart power reliability(128mV->64mV).
Modify 17: Power plan from +3.3VS to +3.3V for solving design issue
Modify 18: C496 form 0.01u to 0.01u_OP for solving lost issue
Modify 19: Add C700, C701 0.1UF and R706 0 ohm for solving ESD issue
Modify 20: Add net MAX_VOL# reserved for ctrl AMP max gain
Modify 21: R344, R346 change form 820 to 931 ohm for OCP on 27A
Modify 22: C570 change form 3900p to 5600p for improving +3.3VA induce
Modify 22: Add L8 for EMI require
Modify 23: Modify CN15 CONN type and del CN14,R255,B9,C190,C548,C547 for FSC require
Modify 24: Add B40, B41 reserved for EMI
Modify 25: REMOTE_ON net change form low to high actived and add R708 100K to GND for saving power
Modify 26: Add L9 resvered for EMI
Modify 27: Add C702, C703,C704,C705 for solving PCIE bus cross different power plane
Modify 28: R47 change from 470_OP to 470 for solving change ODD slaver to master on second IDE by FSC requirement
Modify 29: R288 change from 120_OP to 75 for solving T/P LED too dark
Modify 30: R470 change from 1K to 0 ohm for solving desing lost issue
Modify 31: Add B37(3A), C706(0.1u),C707(4.7u),C708(OP)for solving SATA HDD 3V issue
Modify 32: CN22 CHANGE CONN TYPE for solving ME ssue
Modify 33: R2, R7, R302, R305, R20, R304, R423, R432, R297change from 120 to 470 ohm for solving LED too bright issue