

Key West Block Diagram

Project code: 91.4D901.001
PCB P/N : 48.4D901.0SD
REVISION : 05209-SD

CLK GEN³
ICS954226AG

SB

4,5
Mobile CPU
Celeron/Dothan

Host BUS
400MHz

6,7,8,9,10
Alviso
GML

DMI I/F
100MHz

15,16,17,18
ICH6-M

DDRII*2
400MHz^{11,12}

LVDS
LCD¹³

RGB CRT
CRT¹⁴

Mini-PCI²⁵
802.11a/b/g

RJ45
CONN²²

10/100 BCM4401²¹

PCI BUS

RJ11
CONN²²

MODEM²⁶
MDC 1.5 Card

SB

AZALIA

LINE OUT²⁴

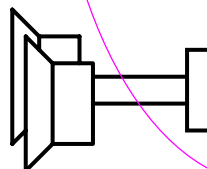
OP AMP²⁴
MAX4411

MIC IN²⁴

AC'97 CODEC²³
STAC9200

OP AMP²⁴
TPA6017

SB



2CH SPEAKER

KBC²⁷
H8S/RE144AV

SC

Touch
Pad²⁸

Int.
KB²⁸

Power
Switch²⁰
TPS2231

FlashRom²⁹
4Mb
(512kB)

SMBus

Thermal Sensor¹⁹
& Fan
ENC 6N300

SB

SYSTEM DC/DC MAX8734A ³³	
INPUTS	OUTPUTS
DCBATOUT	5V_S3 3V_S3

SYSTEM DC/DC TPS5130 ^{34,35}	
INPUTS	OUTPUTS
DCBATOUT	1D05V_S0 1D2V_S0 1D8V_S3

CPU DC/DC MAX1907 ³²	
INPUTS	OUTPUTS
DCBATOUT	BT+ 18V 4.0A 5V 100mA

PCB LAYER	
L1:	Signal 1
L2:	GND
L3:	Signal 2
L4:	Signal 3
L5:	VCC
L6:	Signal 4

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Block Diagram	
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ICH6-M Integrated Pull-up and Pull-down Resistors

ICH6-M EDS 14308 0.8V1

ACZ_BIT_CLK, DPRSLP#, EE_DIN, EE_DOUT, EE_CS, GNT[5]#/GPO[17], GNT[6]#/GPO[16], LDRQ[1]/GPI[41], LAD[3:0]#/FB[3:0]#, LDRQ[0], PME#, PWRBTN#, TP[3]	ICH6 internal 20K pull-ups
LAN_RXD[2:0]	ICH6 internal 10K pull-ups
ACZ_RST#, ACZ_SDIN[2:0], ACZ_SYNC, ACZ_SDOUT, ACZ_BITCLK, DPRSLPVR, SPKR	ICH6 internal 20K pull-downs
USB[7:0][P,N]	ICH6 internal 15K pull-downs
DD[7], SDDRQ	ICH6 internal 11.5K pull-downs
LAN_CLK	ICH6 internal 100K pull-downs

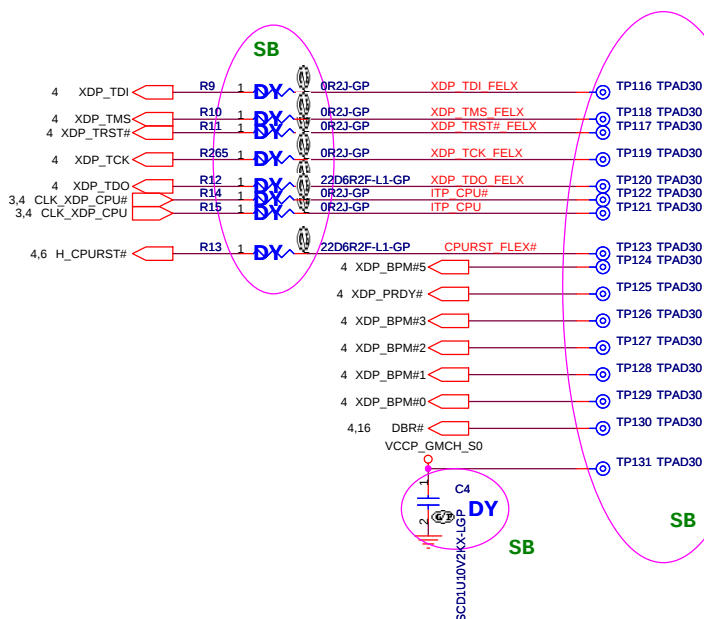
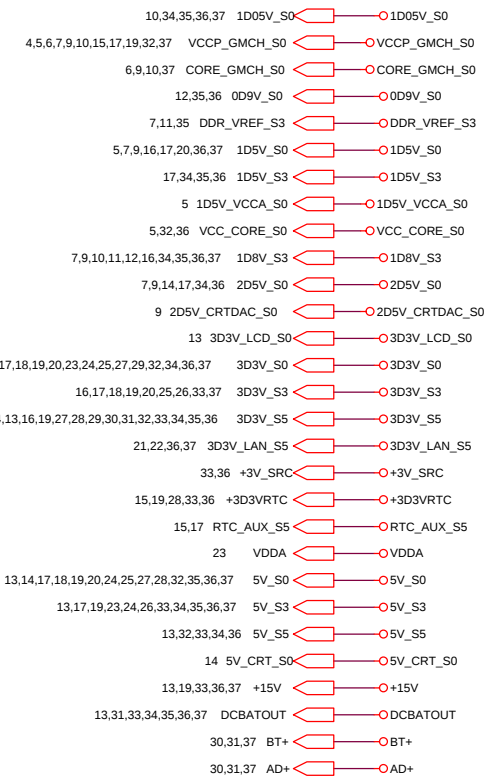
ICH6-M IDE Integrated Series Termination Resistors

DD[15:0], DIOW#, DIOR#, DREQ, DDACK#, IORDY, DA[2:0], DCS1#, DCS3#, IDEIRQ	approximately 33 ohm
--	----------------------

Power name description

5V_S0= 5 Voltage power up on system work(S0 state)
5V_S3= 5 Voltage suspend to RAM(S3 state)
5V_S5= 5 Voltage soft off(S5 state)
3D3V_S0= 3.3 Voltage power up on system work(S0 state)
3D3V_S3= 3.3 Voltage suspend to RAM(S3 state)
3D3V_S5= 3.3 Voltage soft off(S5 state)
LVDDR_2D5V= 2.5 Voltage power up on system work(S0 state)
1D8V_S3= 1.8 Voltage suspend to RAM(S3 state)
2D5V_S0= 2.5 Voltage power up on system work(S0 state)

VCC_CORE_S0= CPU VID Voltage power up on system work(S0 state)
1D5V_VCCA_S0= 1.5 Voltage power up on system work(S0 state)
1D5V_S0= 1.5 Voltage power up on system work(S0 state)
1D5V_S5= 1.5 Voltage soft off(S5 state)
DDR_VREF_S3= 0.9 Voltage suspend to RAM(S3 state)
0D9V_S0= 0.9 Voltage power up on system work(S0 state)
1D2_V6A_S0= 1.2 Voltage power up on system work(S0 state) for VGA
1D05V_S0= 1.05 Voltage power up on system work(S0 state)
CORE_GMCH_S0= 1.05 Voltage power up on system work(S0 state) for ALVISO core power
VCCP_GMCH_S0= 1.05 Voltage power up on system work(S0 state)for ALVISO BUSIO power



Device	SMBus addr.
Clock Gen.	D2
DDR Module 1	A0
DDR Module 2	A4
LCD	58
Guardian	5E
Battery	16
EEPROM	A2

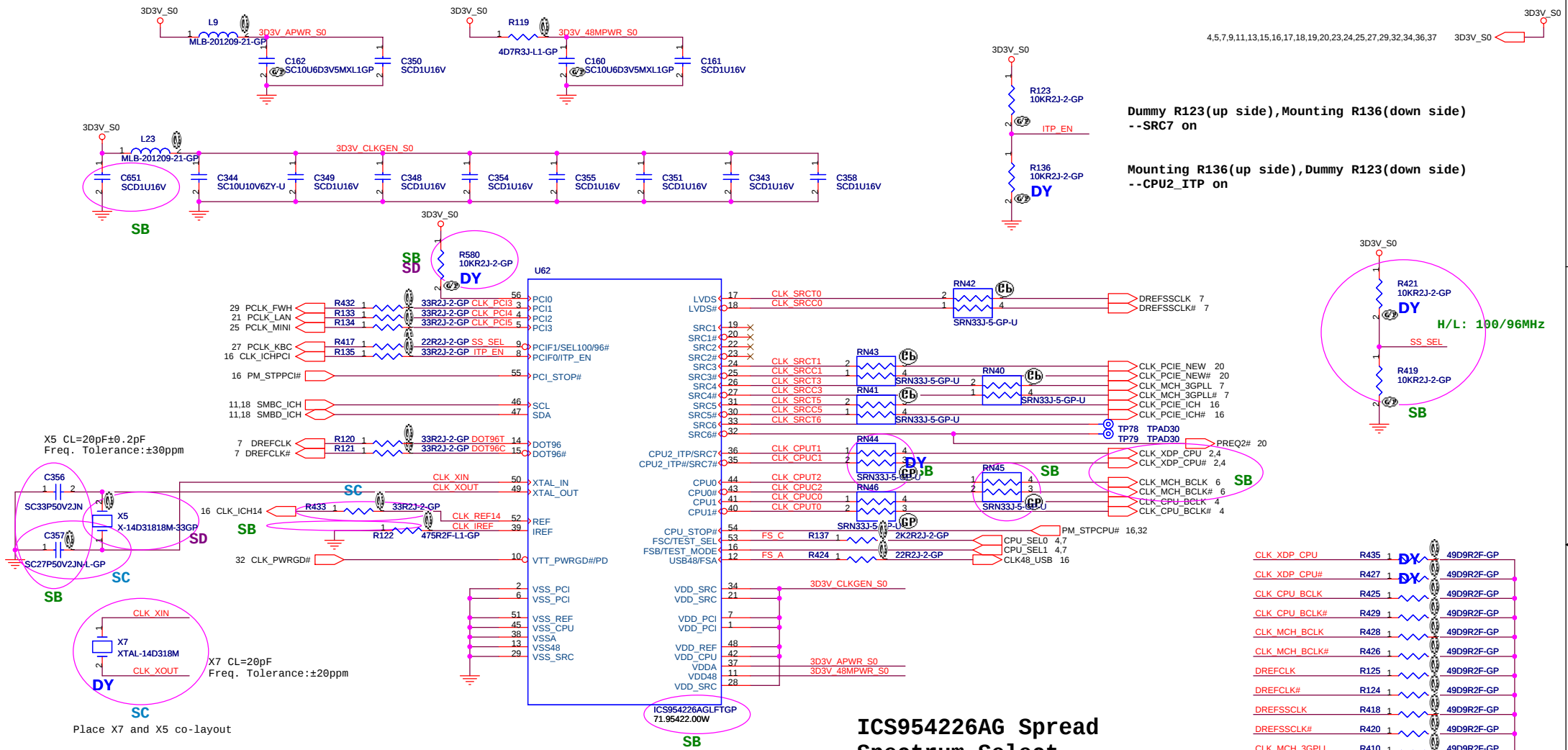
USB Port	Key West Define
USBP[0]	USB1 Up connector
USBP[1]	New card used
USBP[2]	USB1 Down connector
USBP[3]	NC
USBP[4]	USB2 connector
USBP[5]	NC
USBP[6]	NC
USBP[7]	NC

PCIE Port	Key West Define
PE[1]	NC
PE[2]	NC
PE[3]	NC
PE[4]	New card used

PCI RESOURCE TABLE

DEVICE	IDSEL	PCI IRQ	REQ#/GNT#
Mini-PCI	AD19	P_INTB# / P_INTD#	REQ3#/GNT3#
LAN	AD16	P_INTC#	REQ4#/GNT4#

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Dummy R123(up side),Mounting R136(down side)
--SRC7 on

Mounting R136(up side),Dummy R123(down side)
--CPU2_ITP on

H/L: 100/96MHz

ICS954226AG Spread Spectrum Select

S3	S2	S1	S0	Spread Amount%
0	0	0	0	-0.8
0	0	0	1	-1.0
0	0	1	0	-1.25
0	0	1	1	-1.5
0	1	0	0	-1.75
0	1	0	1	-2.0
0	1	1	0	-2.5
0	1	1	1	-3.0
1	0	0	0	+/-0.3
1	0	0	1	+/-0.4
1	0	1	0	+/-0.5
1	0	1	1	+/-0.6
1	1	0	0	+/-0.8
1	1	0	1	+/-1.0
1	1	1	0	+/-1.25
1	1	1	1	+/-1.5

<Variant Name>

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Title

Clock Generator (ICS954226AG)

Size A3

Document Number

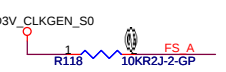
Rev

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NEAR CLKGEN



FS_C	FS_B	FS_A	CPU
0	0	0	256M
0	0	1	133M
0	1	0	200M
0	1	1	166M
1	0	0	333M
1	0	1	100M
1	1	0	400M
1	1	1	Reserved

1st source: 71.95422.00W (ICS954226AGLFTGP)
2nd source: 71.00140.00W (IDTCV140PAG-GP)
3rd source: 71.28442.00W (CY28442ZXC-2T-GP)

Place X7 and X5 co-layout

6 H_A#[31..3]

VCCP_GMCH_S0
2,5,6,7,9,10,15,17,19,32,37 VCCP_GMCH_S0

1st source:62.10079.001
2nd source:62.10053.341

Place testpoint on
H_IERR# with a GND
0.1" away

Layout Note:
Comp0, 2 connect with Zo=27.4 ohm, make
trace length shorter than 0.5" .
Comp1, 3 connect with Zo=55 ohm, make
trace length shorter than 0.5" .

PM_THRMTRIP#
should connect to
ICHS and Alviso
without T-ing
(No stub)

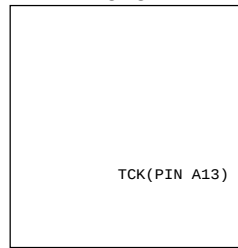
Only support 400MHz (GML)

Layout Note:
0.5" max length.

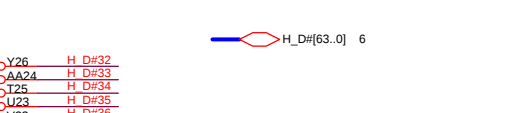
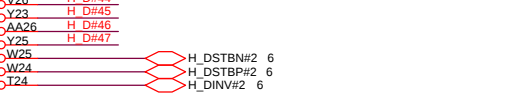
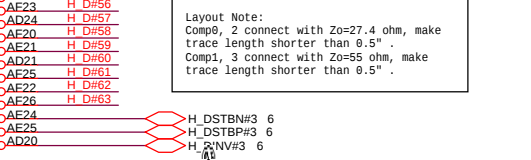
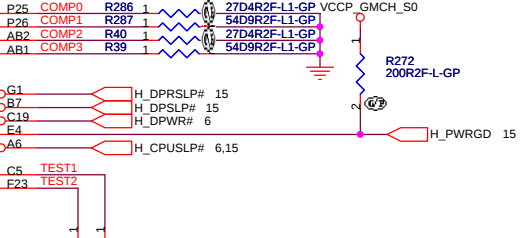
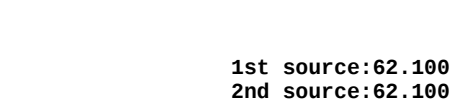
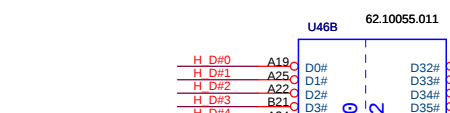
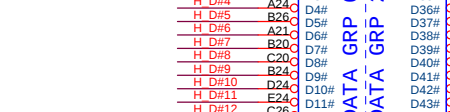
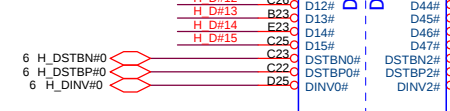
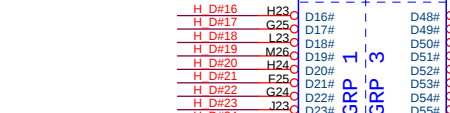
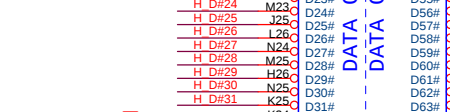
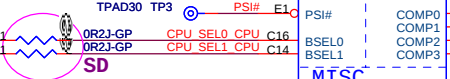
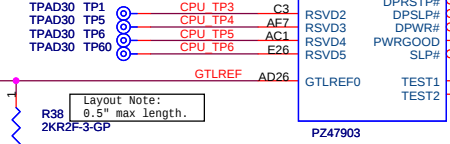
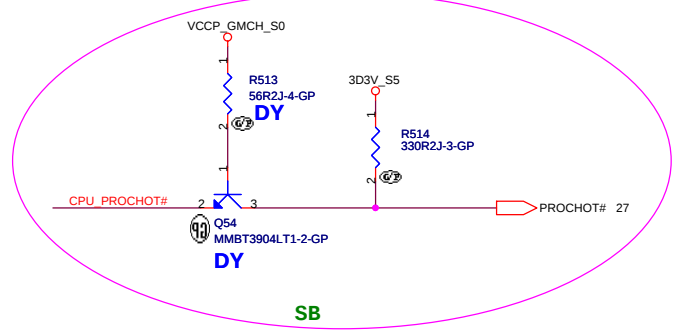
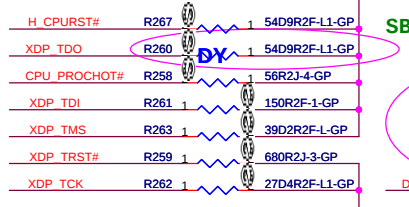
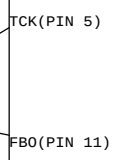
BSEL[1:0] Freq.(MHz)
LH 100
LL 133

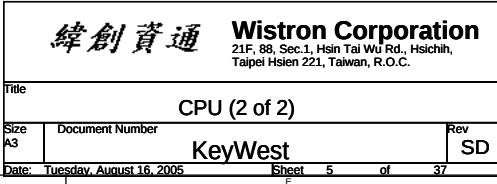
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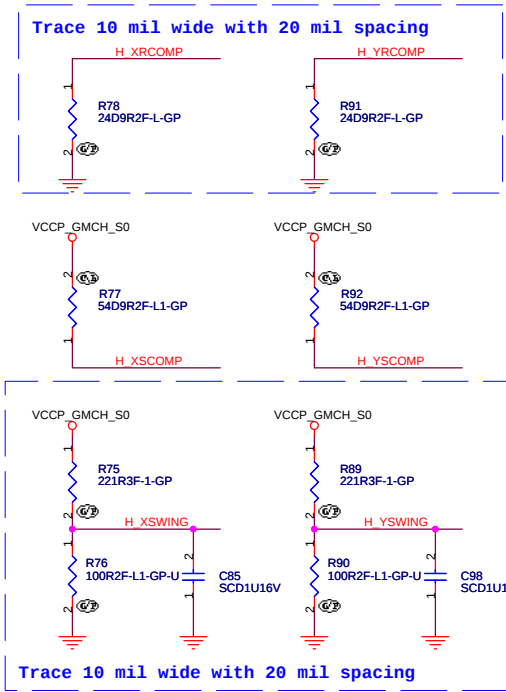
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ITP Conn.





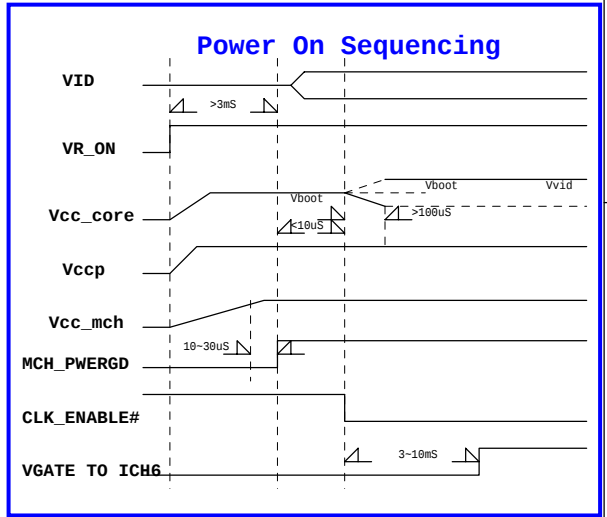
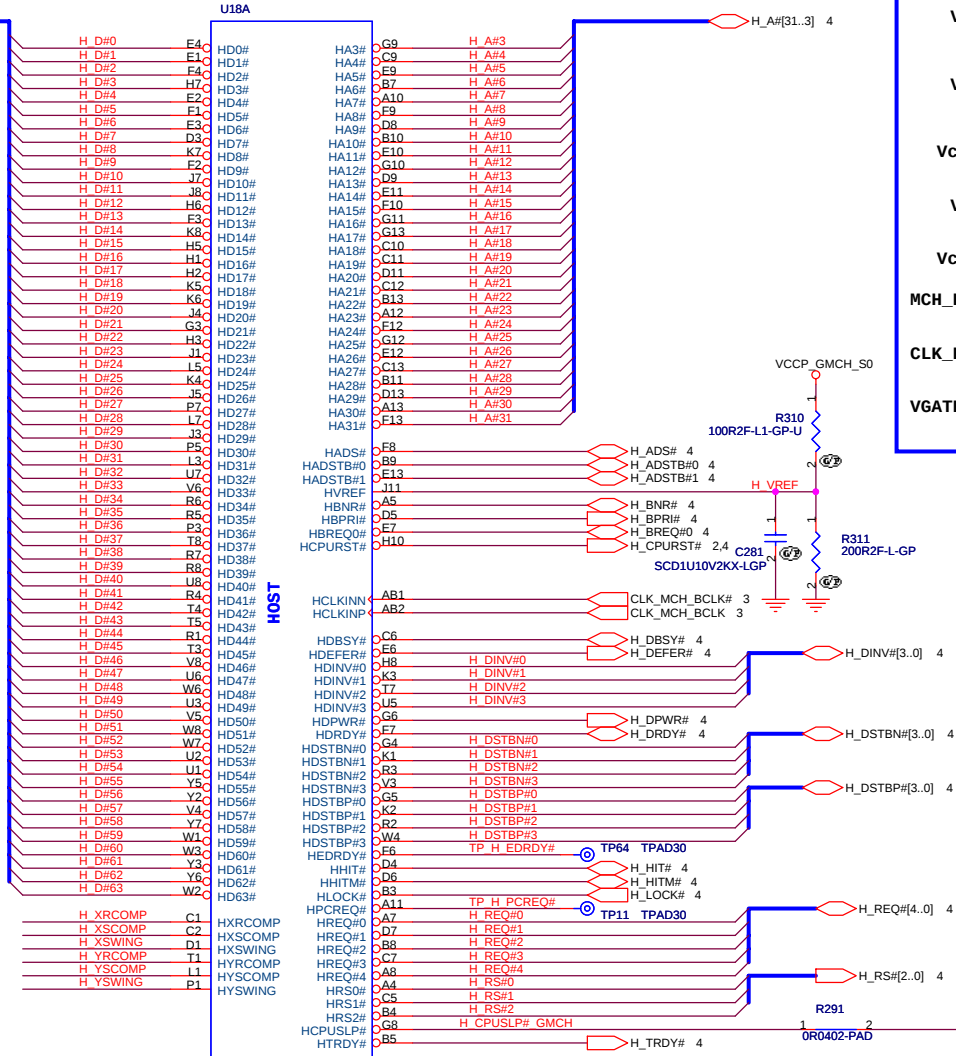


Alviso Strapping Signals and Configuration

REV.NO. 1.0
REF. NO. 15577 page 183

Pin Name	Strap Description	Configuration
CFG[2:0]	FSB Frequency Select	001 = FSB533 101 = FSB400 others = Reversed
CFG[4:3]	Reserved	
CFG5	DMI x2 Select	0 = DMI x2 1 = DMI x4 (Default)
CFG6	Reserved	0 = DDR2 (Default) 1 = DDR1
CFG7	CPU Strap	0 = Reserved 1 = Dothan (Default)
CFG8	Reserved	
CFG9	PCI Express Graphics Lane Reversal	0 = Reserve Lanes 1 = Normal (Default)
CFG[11:10]	Reserved	
CFG[13:12]	XOR/ALL Z test straps	00 = Reserved 01 = XOR mode enabled 10 = All Z mode enabled 11 = Normal Operation (Default)
CFG[15:14]	Reversed	
CFG16	FSB Dynamic ODT	0 = Dynamic ODT Disabled 1 = Dynamic ODT Enabled (Default)
CFG17	Reversed	
CFG18	GMCH core VCC Select	0 = 1.05V (Default) 1 = 1.5V
CFG19	CPU VTT Select	0 = 1.05V (Default) 1 = 1.2V
CFG20	Reversed	
SDVOCRTL_DATA	SDVO Present	0 = No SDVO device present(Default) 1= SDVO device present

NOTE: All strap signals are sampled with respect to the leading edge of the Alviso GMCH PWORK In signal.



910GML (LF C1):71.0GMCH.M28
915GM (LF C1):71.0GMCH.M27

For Banias/Celeron-M:R291=DUMMY
For Dothan A:R291=DUMMY
For Dothan B:R291=0R

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Title

GMCH (1 of 5)

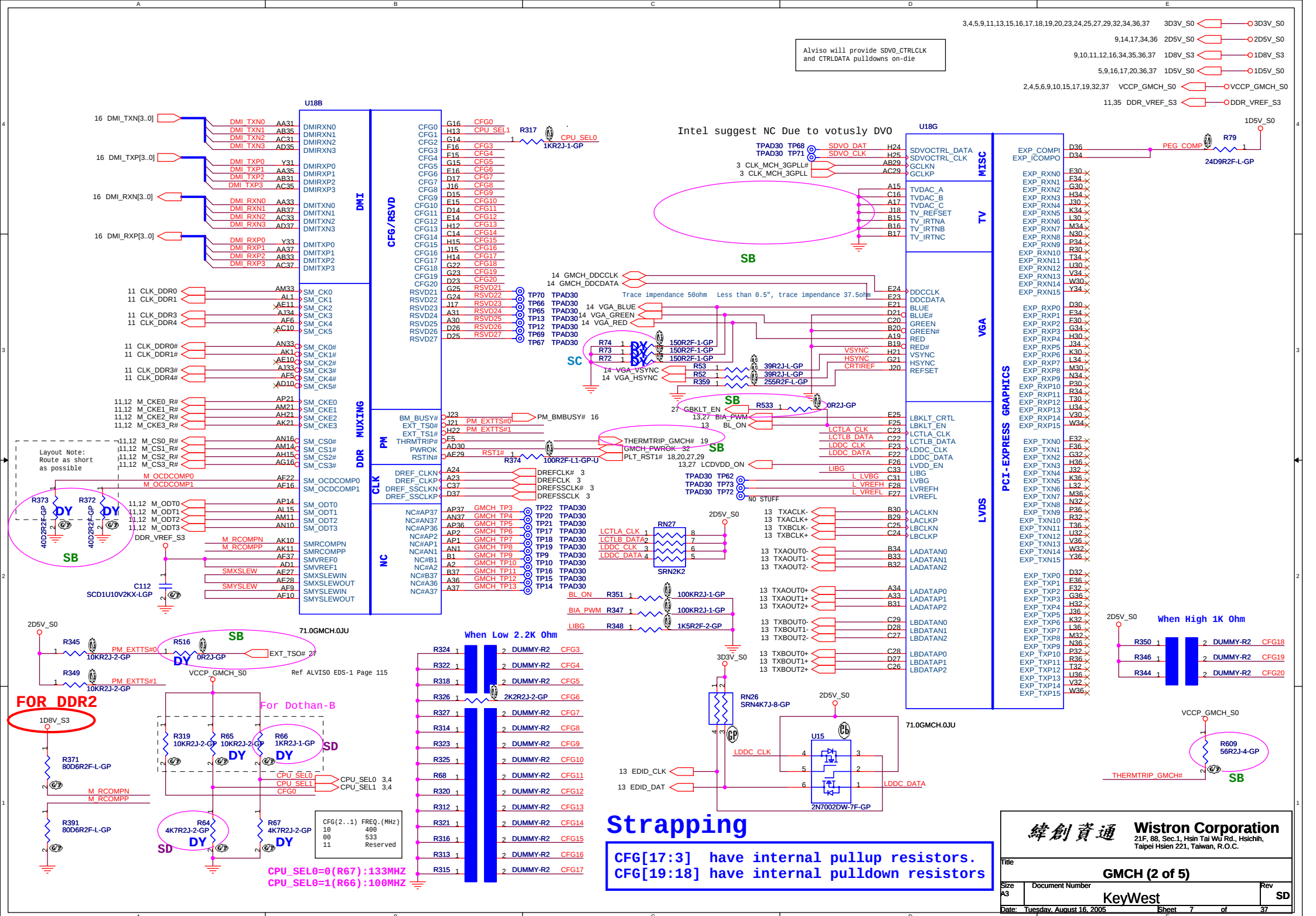
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Alviso will provide SDVO_CTRLCLK and CTRLDATA pulldowns on-die

Intel suggest NC Due to votusly DVO

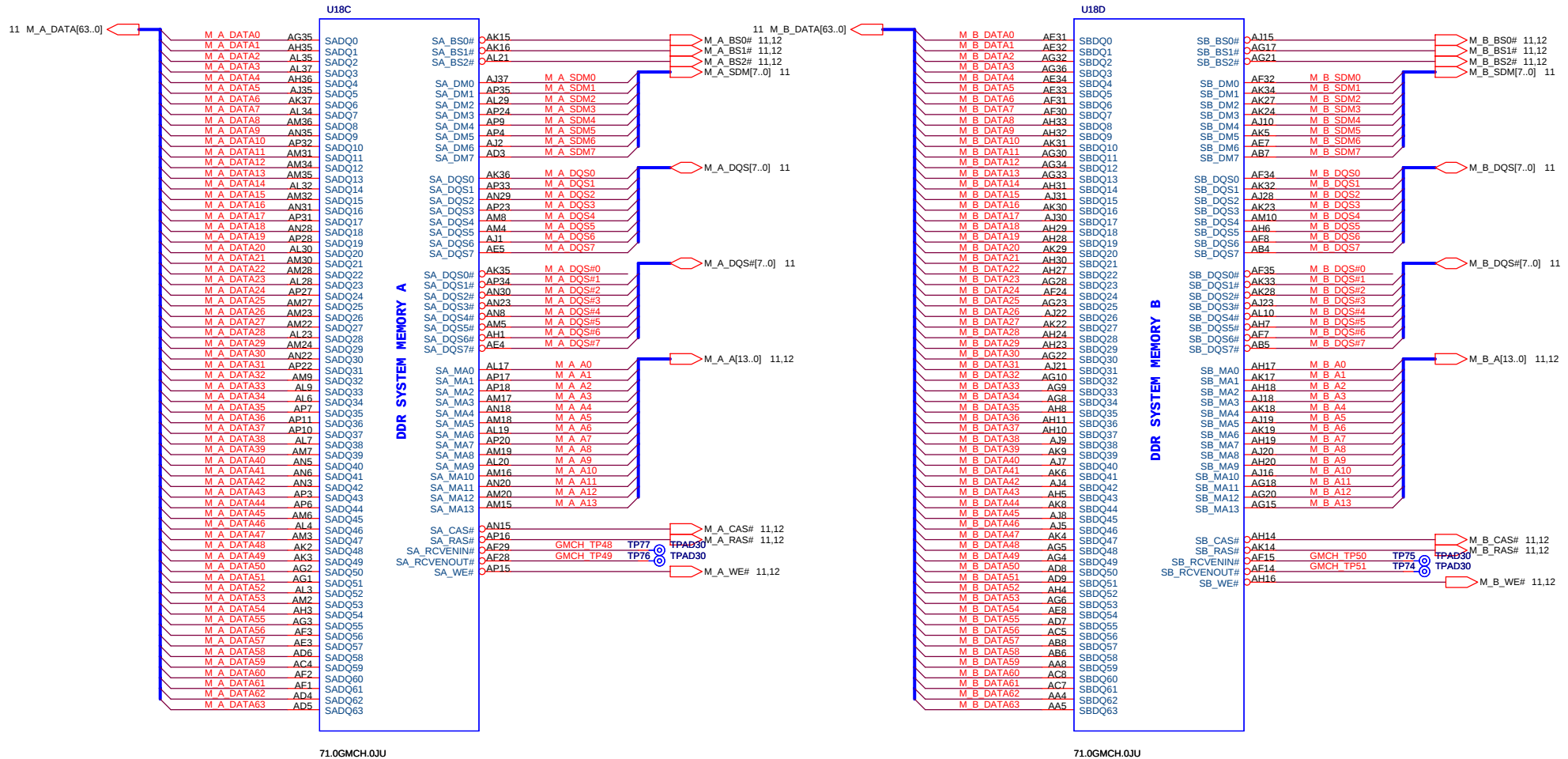
Strapping

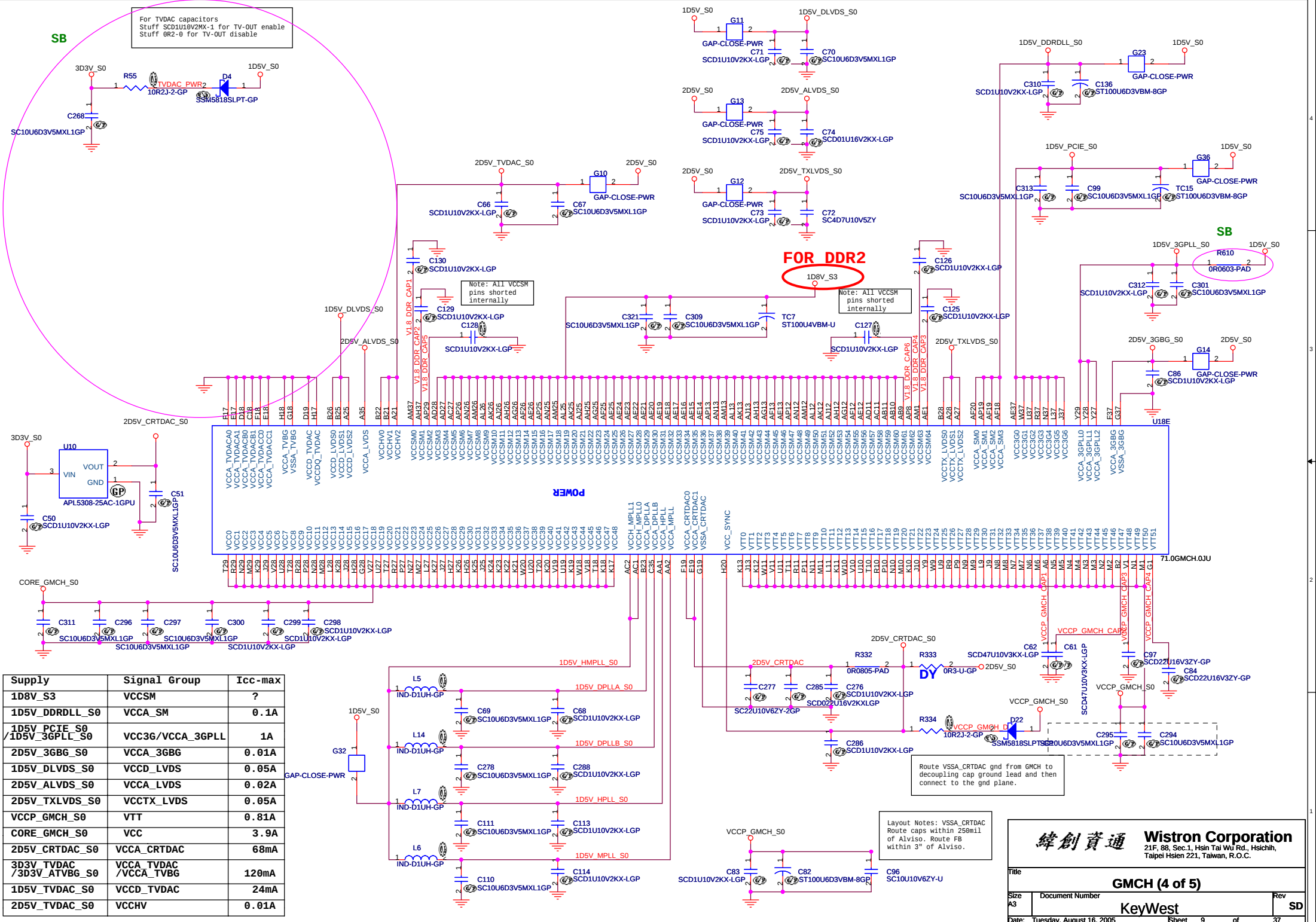
CFG[17:3] have internal pullup resistors.
CFG[19:18] have internal pulldown resistors

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Title		GMCH (2 of 5)	
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SUPPORT DDRII 400





Supply	Signal Group	Icc-max
1D8V_S3	VCCSM	?
1D5V_DDRDLL_S0	VCCA_SM	0.1A
1D5V_PCIE_S0 1D5V_3GPLL_S0	VCC36/VCCA_3GPLL	1A
2D5V_3GBG_S0	VCCA_3GBG	0.01A
1D5V_DLVD_S0	VCCD_LVDS	0.05A
2D5V_ALVD_S0	VCCA_LVDS	0.02A
2D5V_TXLVD_S0	VCCTX_LVDS	0.05A
VCCP_GMCH_S0	VTT	0.81A
CORE_GMCH_S0	VCC	3.9A
2D5V_CRTDAC_S0	VCCA_CRTDAC	68mA
3D3V_TVDAC /3D3V_ATVBG_S0	VCCA_TVDAC /VCCA_TVBG	120mA
1D5V_TVDAC_S0	VCCD_TVDAC	24mA
2D5V_TVDAC_S0	VCCHV	0.01A

Layout Notes: VSSA_CRTDAC
Route caps within 250mil
of Alvissio. Route FB
within 3" of Alvissio.

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Title

GMCH (4 of 5)

Size

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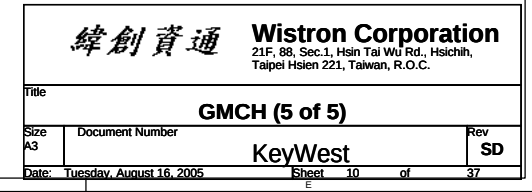
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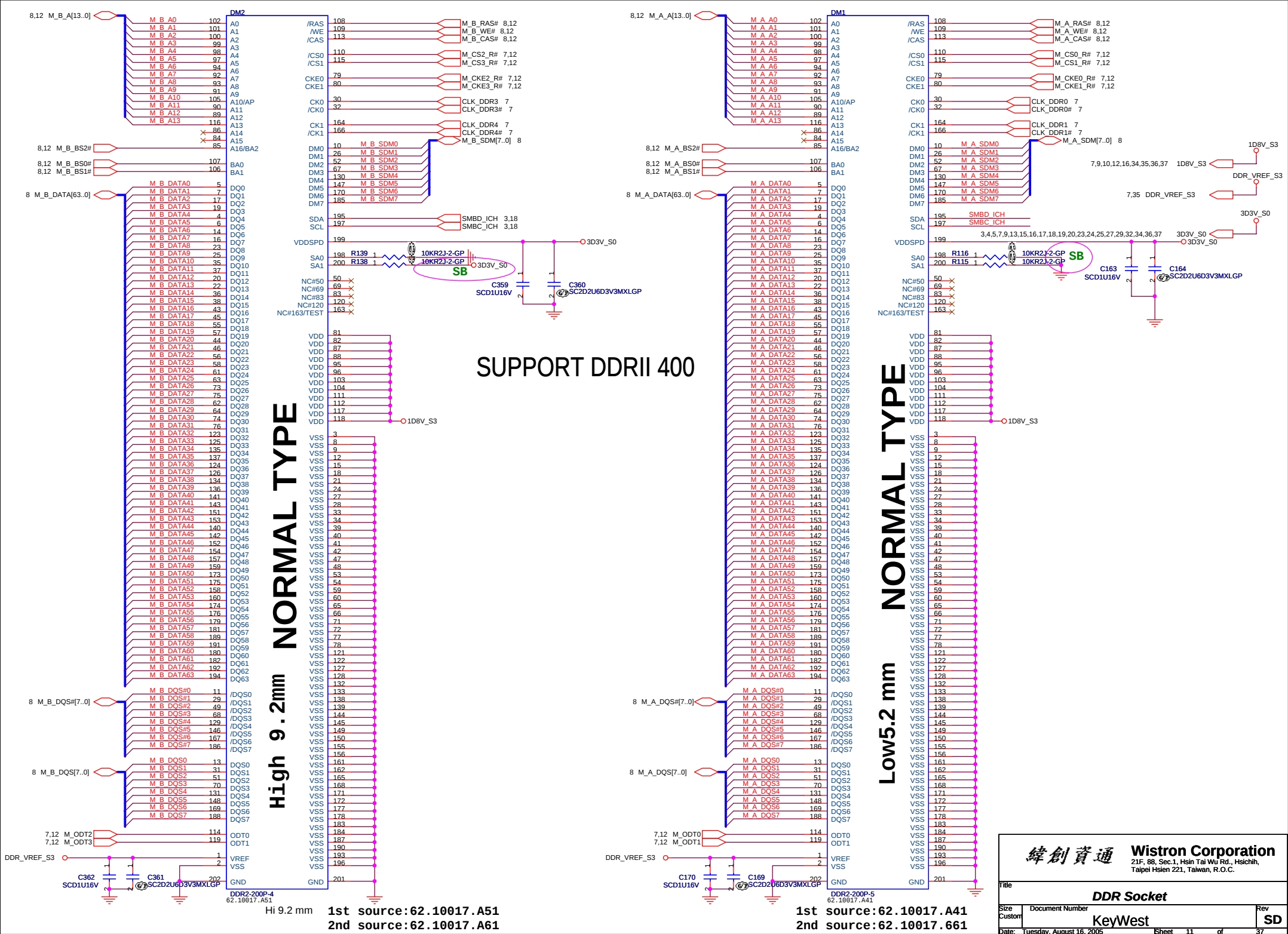
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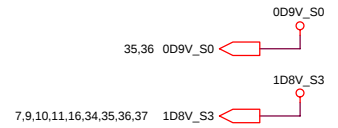
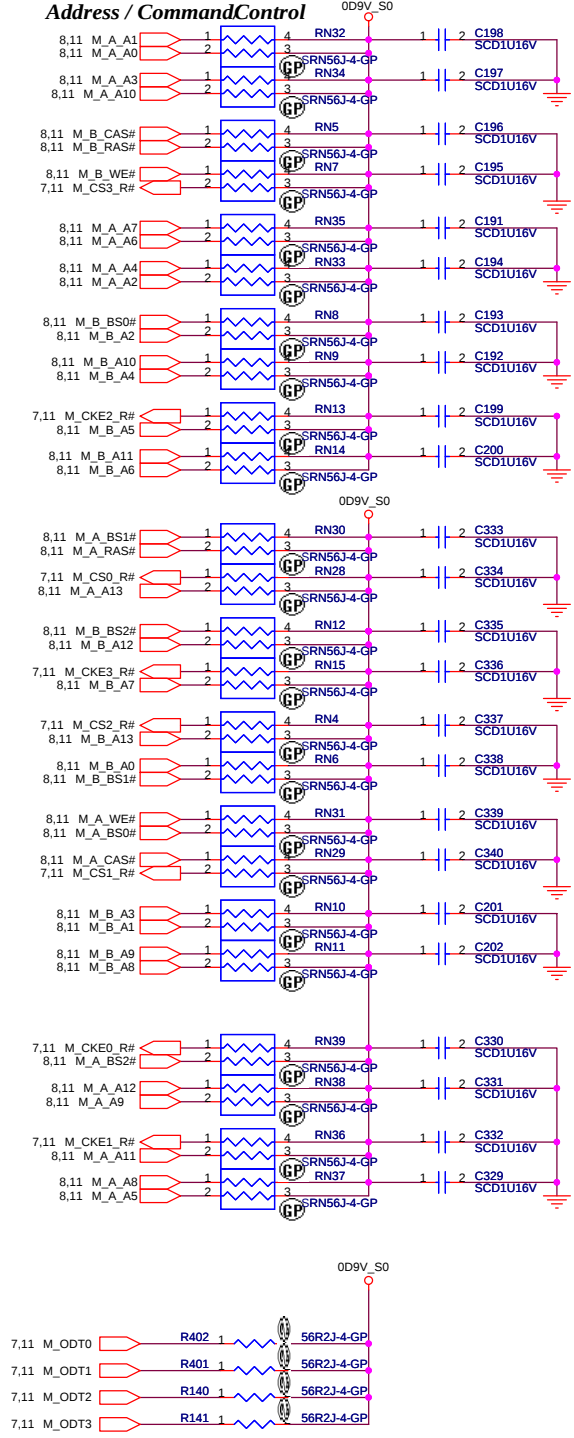
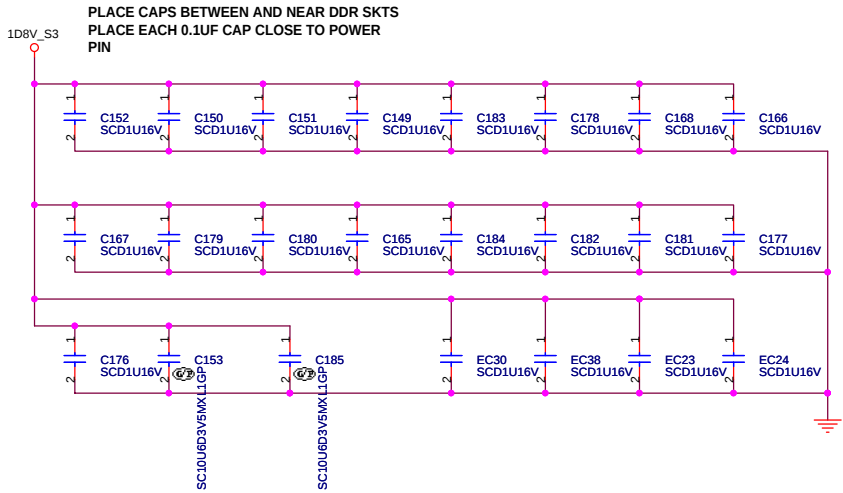
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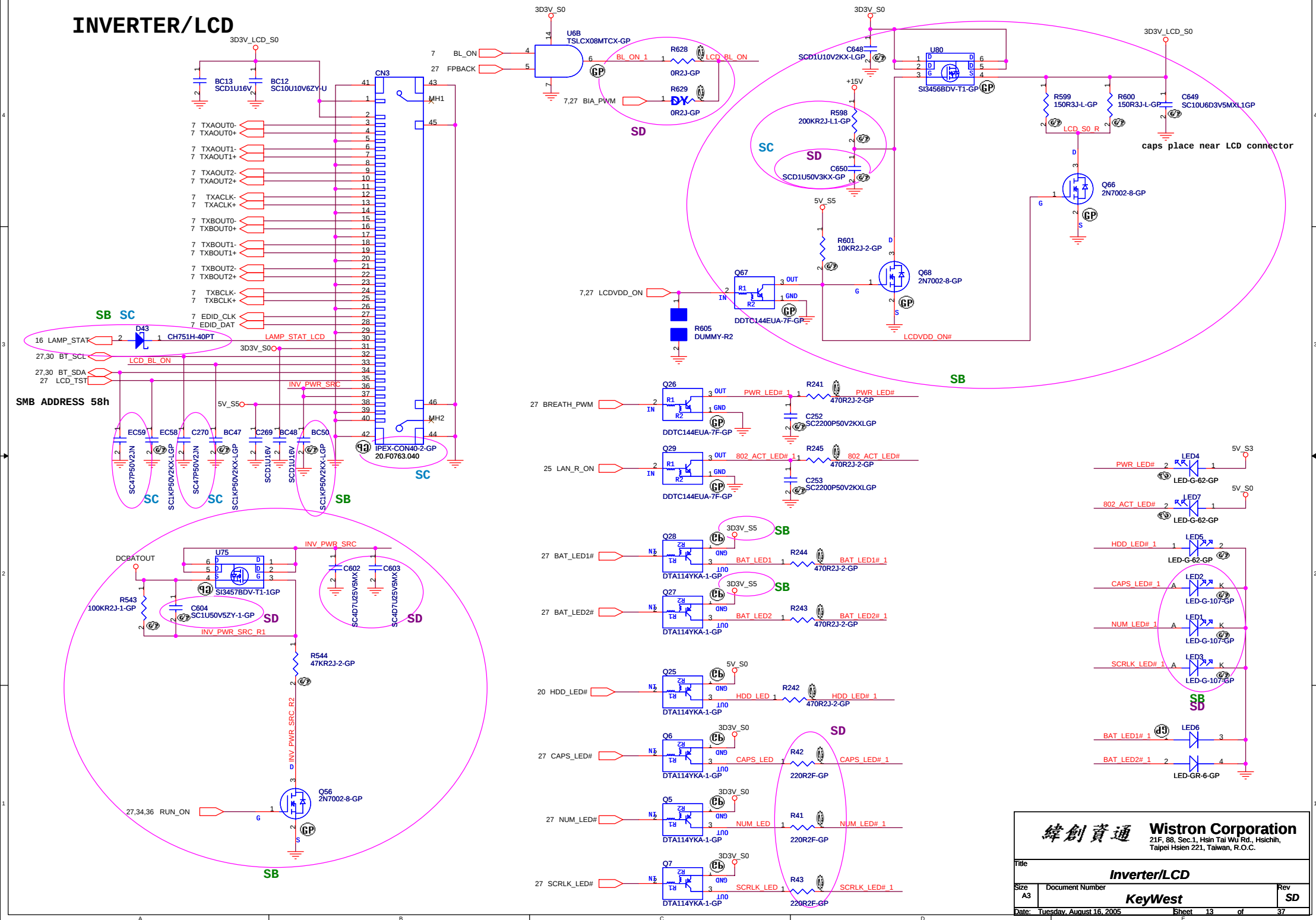
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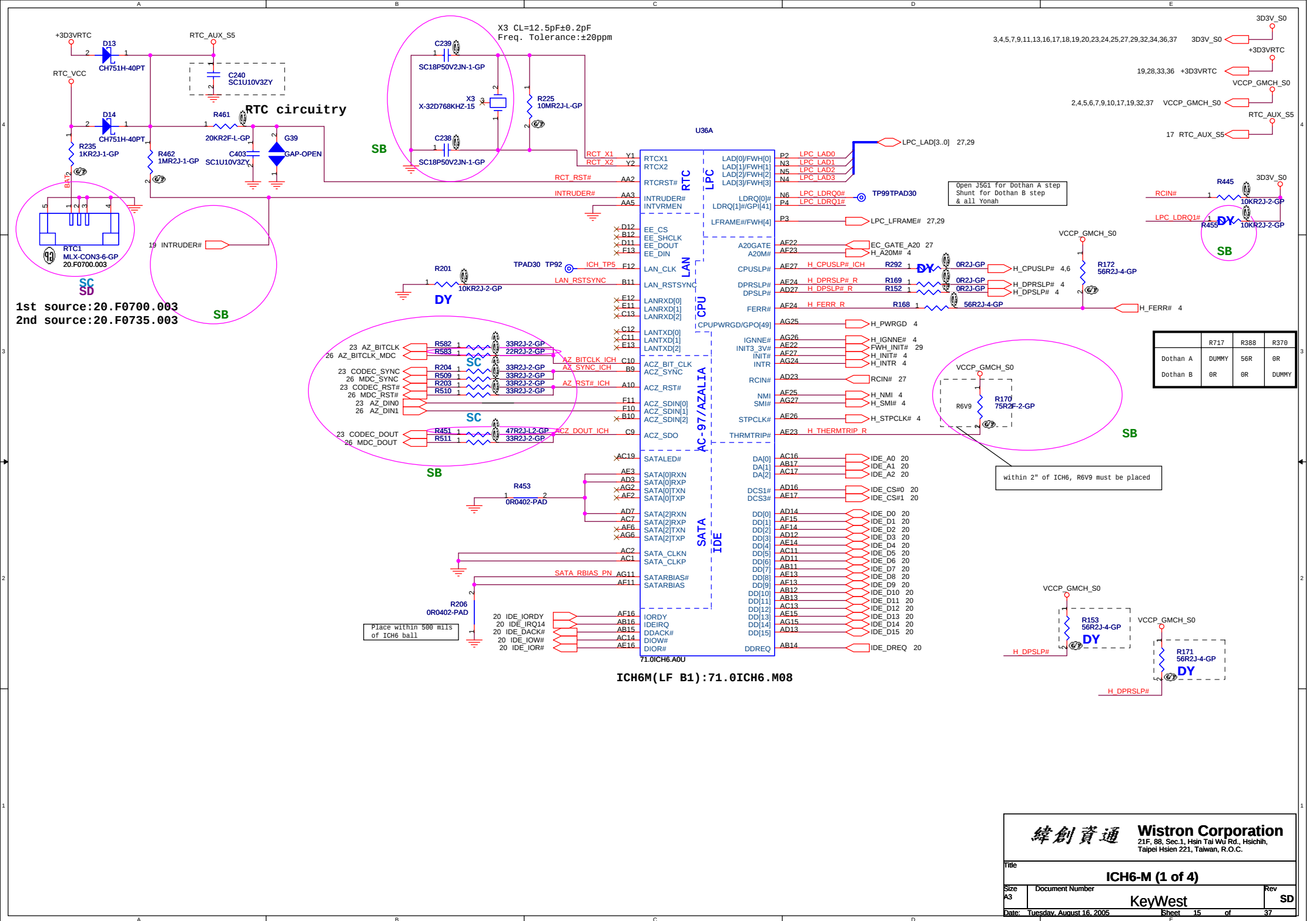


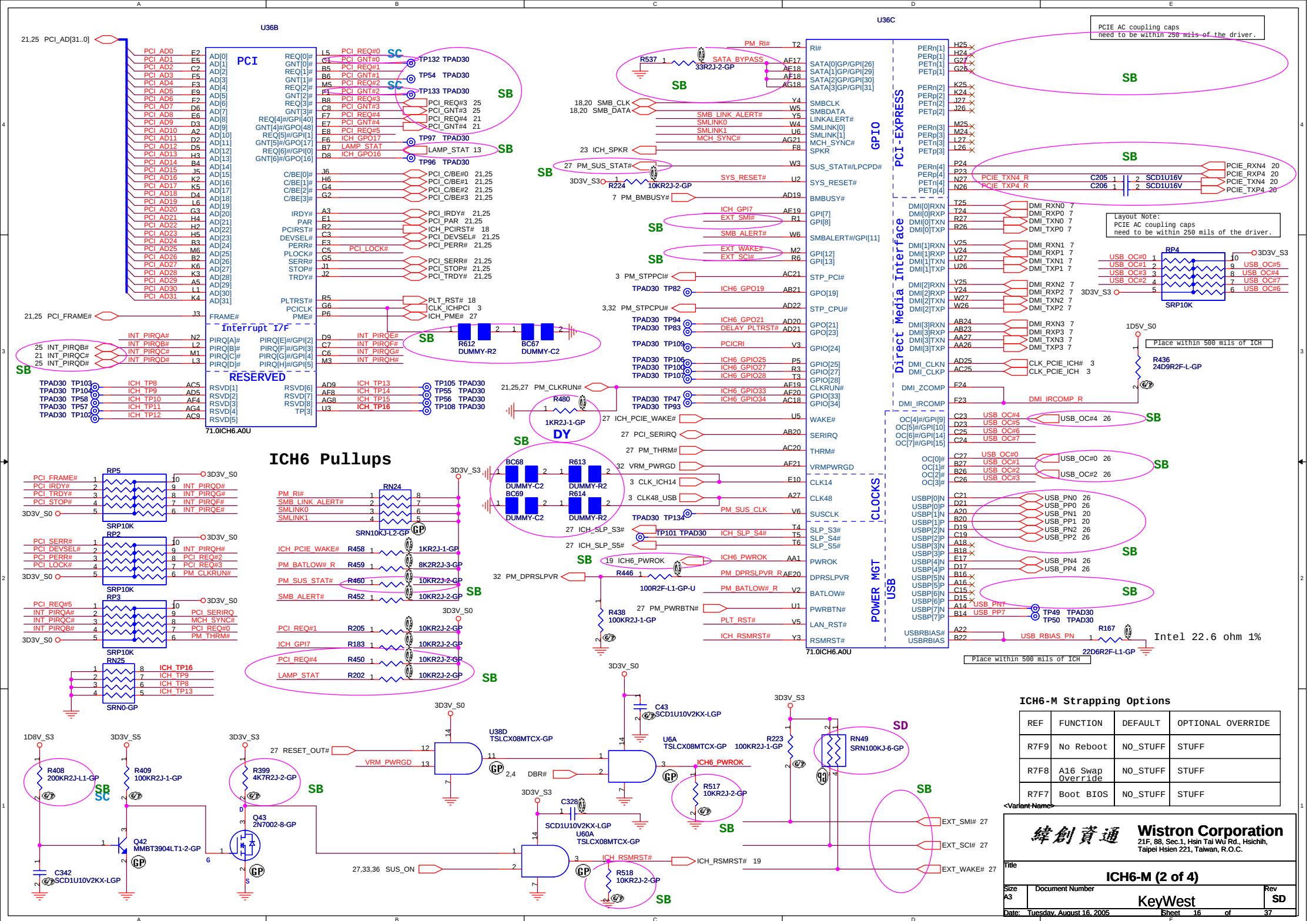
INVERTER/LCD

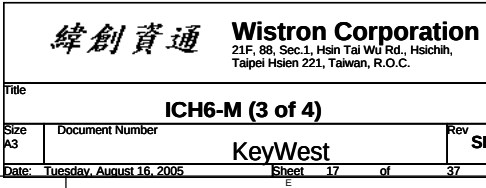


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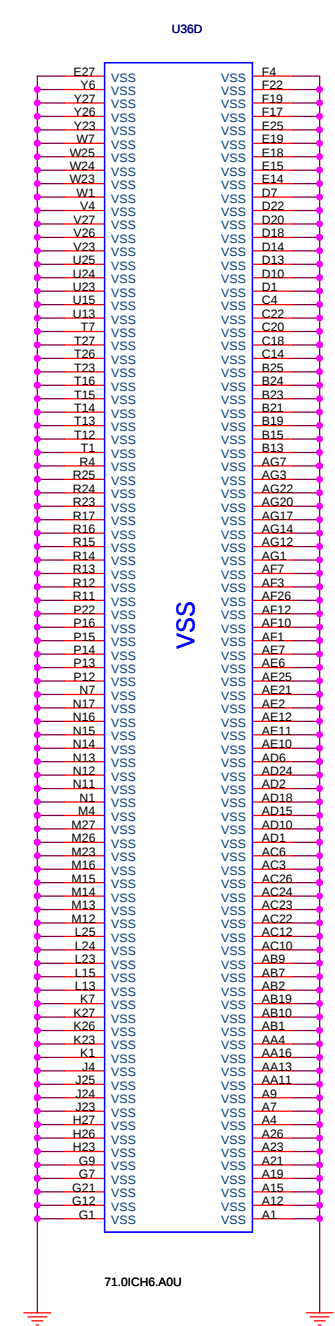
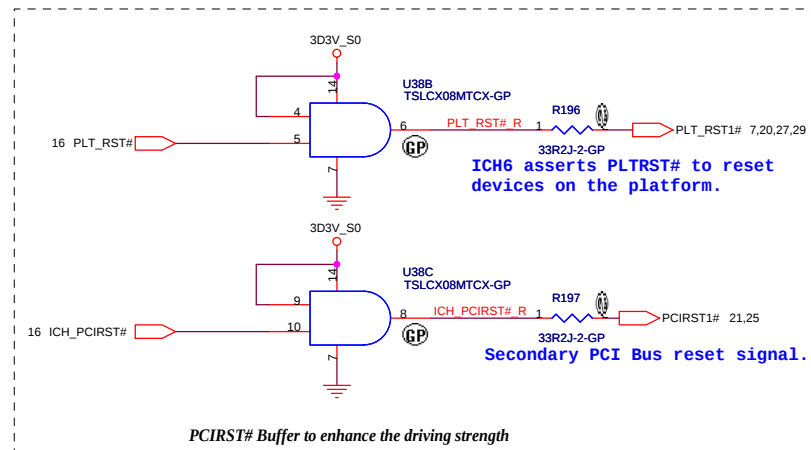
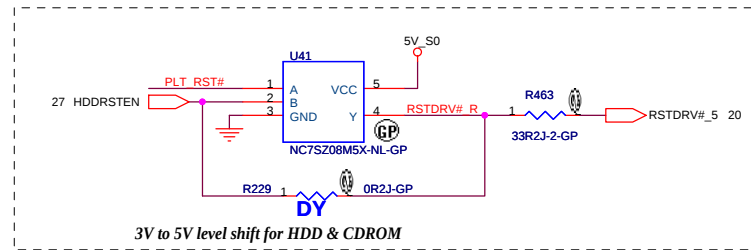
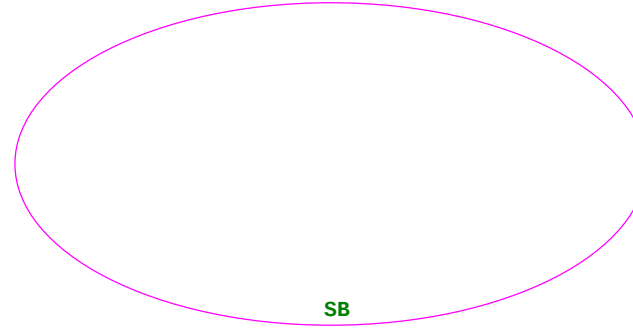
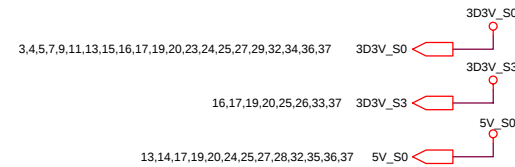
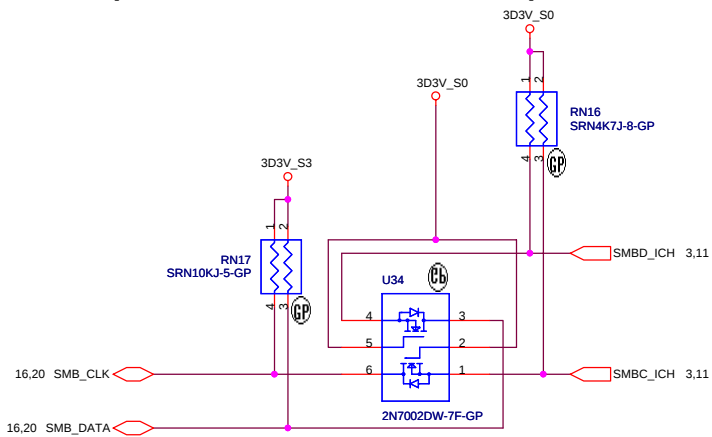
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Inverter/LCD			
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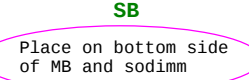
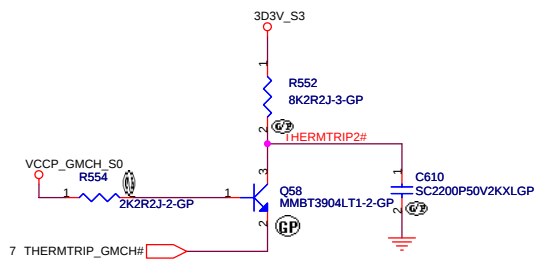






SMBUS(ICH6 ---> SODIMM,CLKGEN)





RT1:

- 1.Mitsubishi 1% 0603 10K ohm@25 degree C. P/N:TH11-3h103FT
- 2.Panasonic 1% 0603 10K ohm@25 degree C. P/N:ERTJ1VG103FA

RT1 should be placed near NB

Notes:

$V_{set} = (T_p - 75) / 16$

Where $T_p = 75$ to 106 degree C

Set trip point $= 85$ degree C

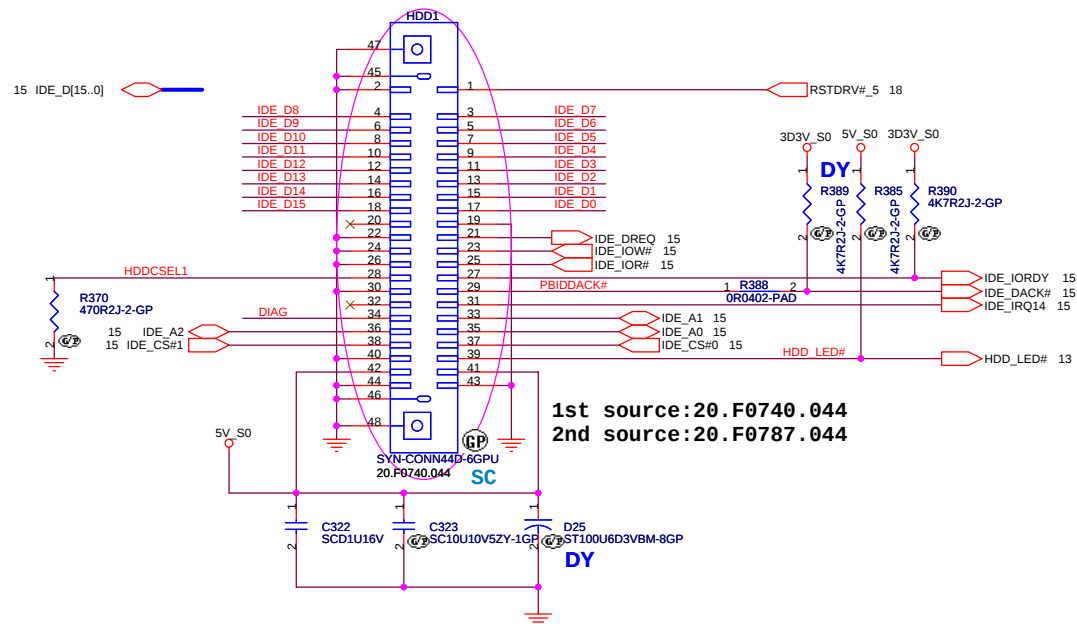
$V_{set} = (85 - 75) / 16 = 0.625V$

Guardian temp-tolerance $= \pm 3$ degree C

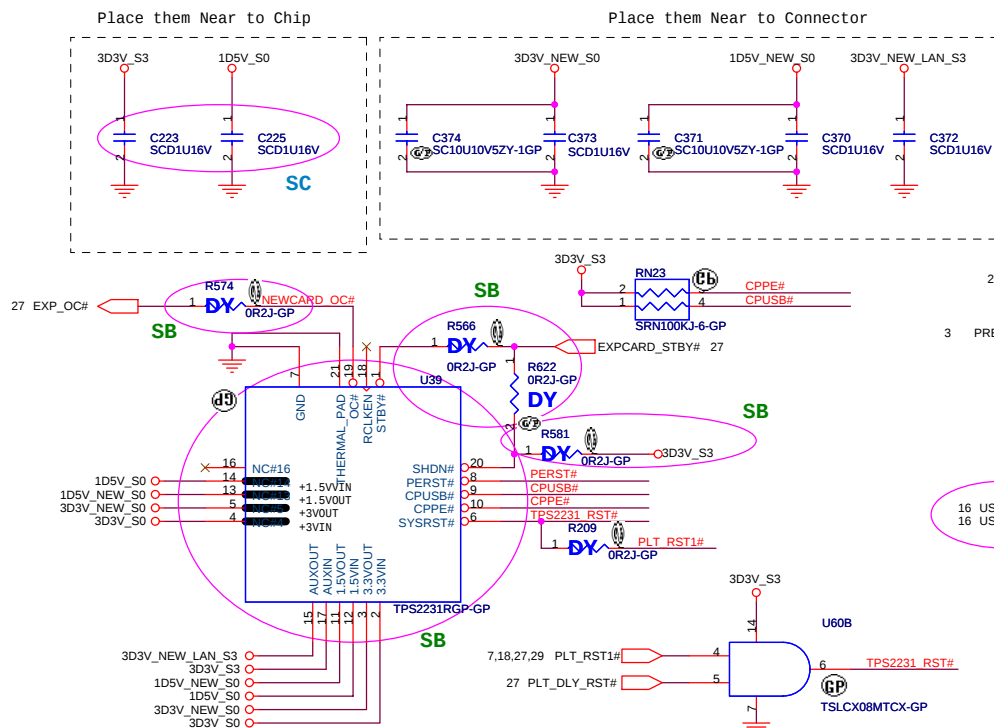
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title			
MC6N300,Fan Control			
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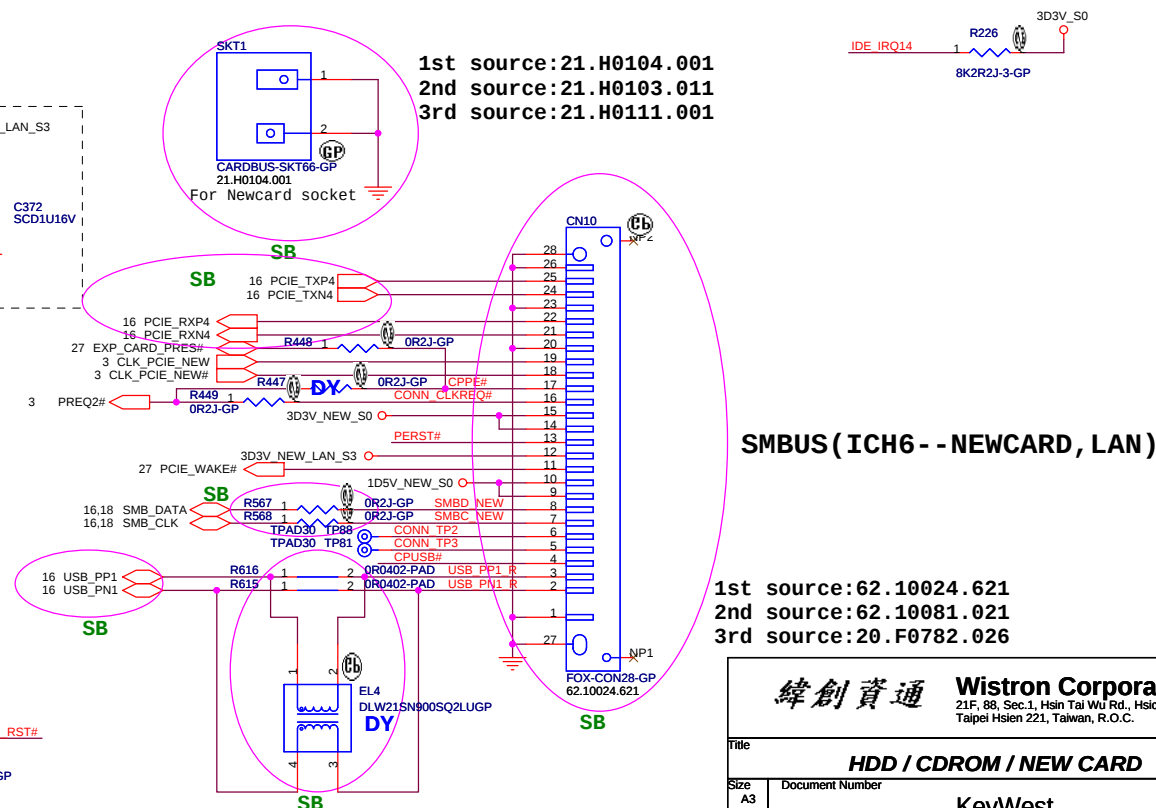
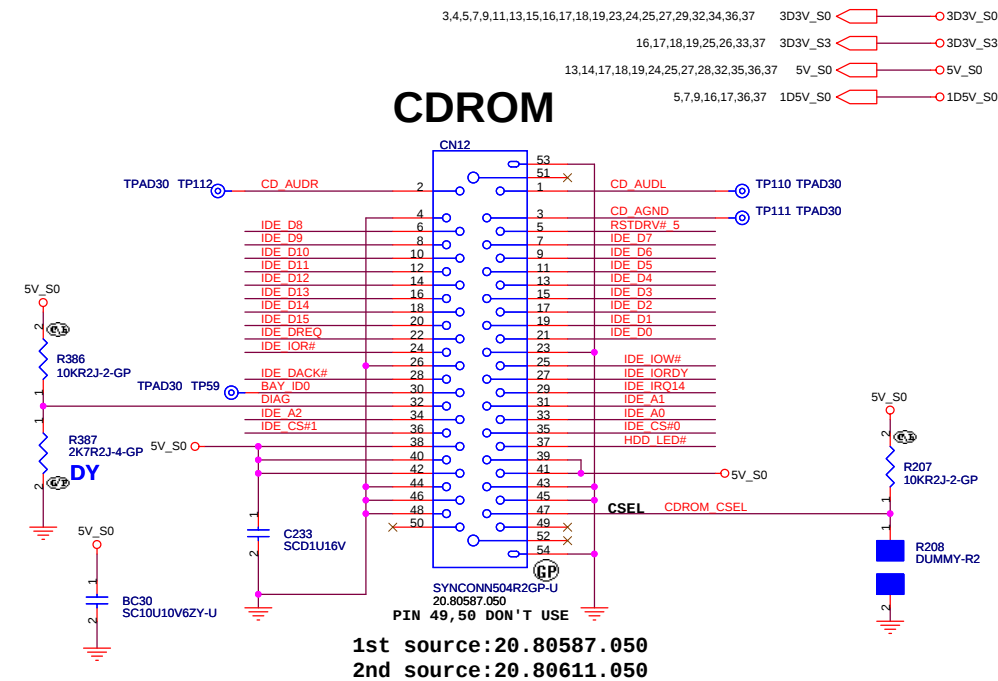
HDD Connector



NEWCARD Connector

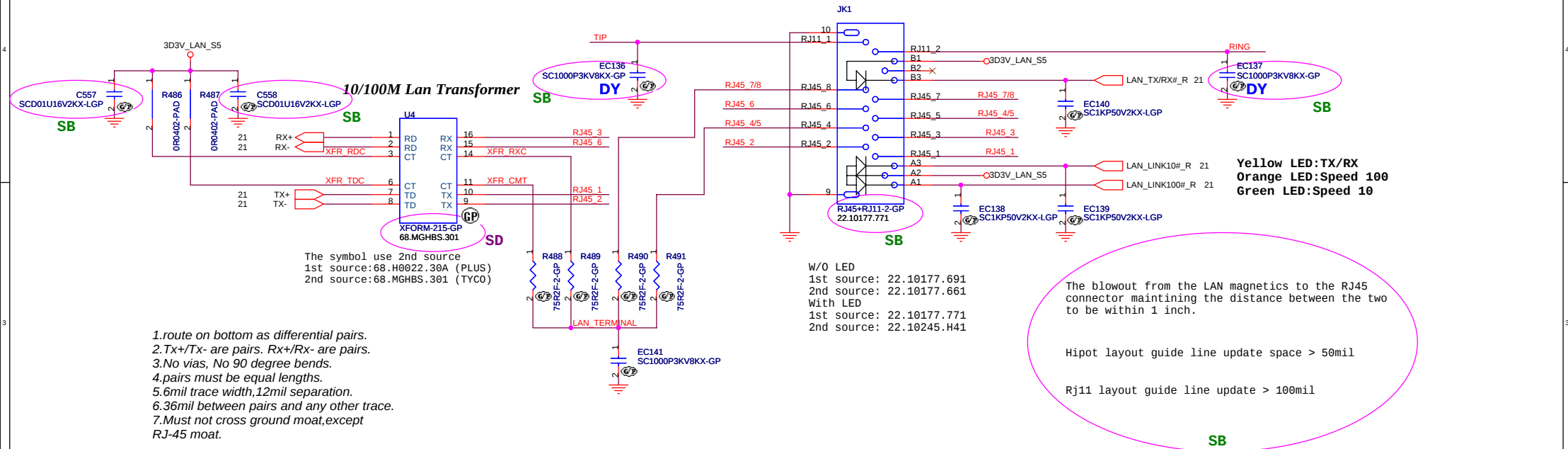


CDROM

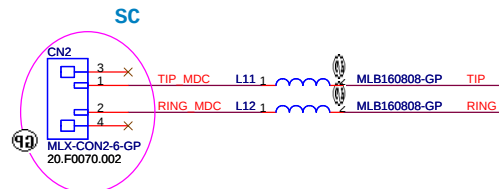


LAN/MODEM CONN

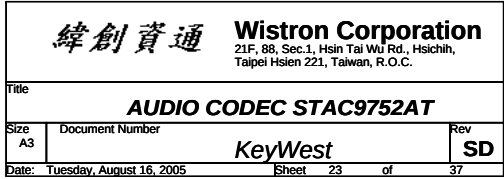
21.36,37 3D3V_LAN_S5

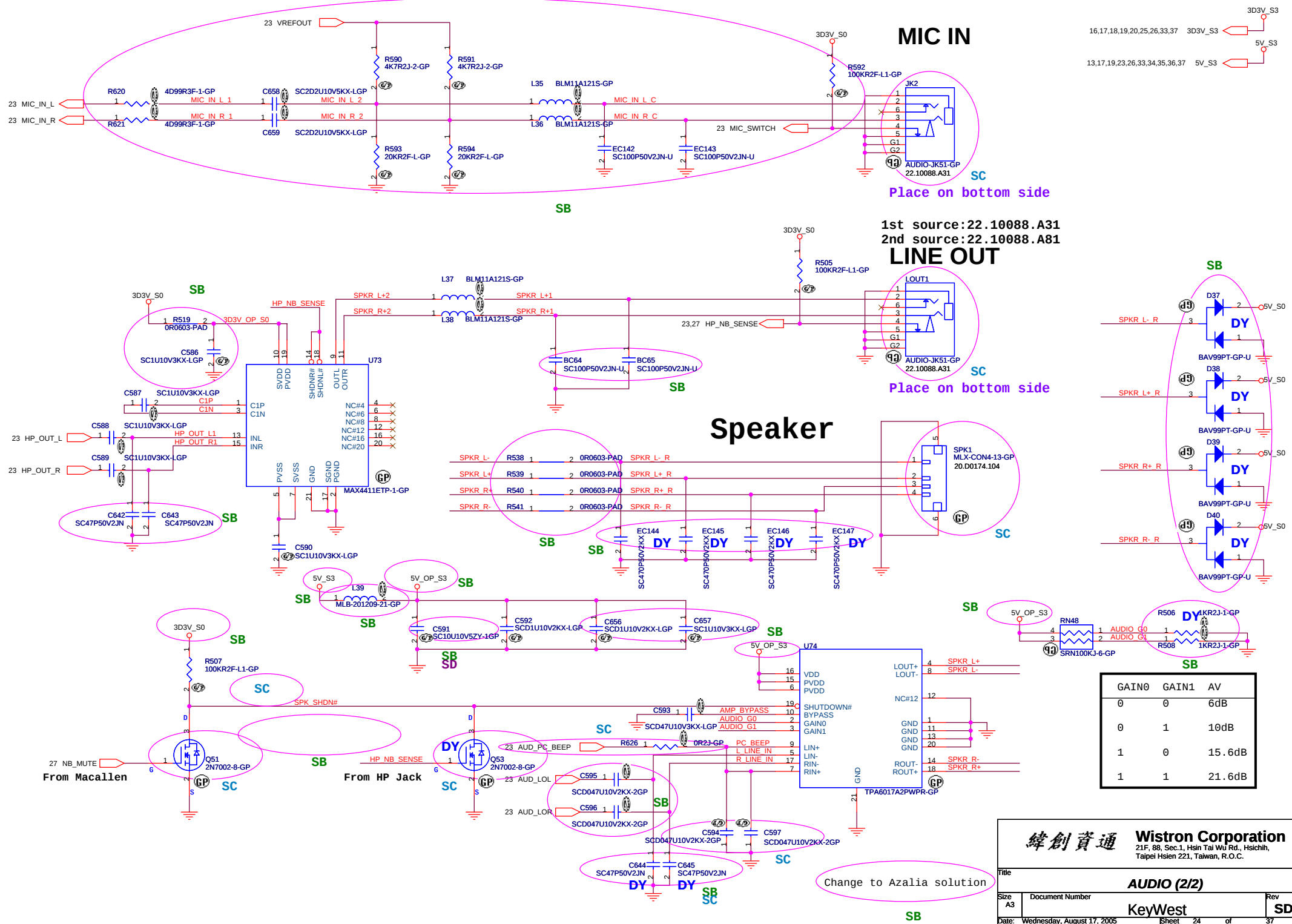


10/100 LAN Transformer	RJ45 PIN
TD+ --> TX+	RJ45-1
TD- --> TX-	RJ45-2
RD+ --> RX+	RJ45-3
RD- --> RX-	RJ45-6

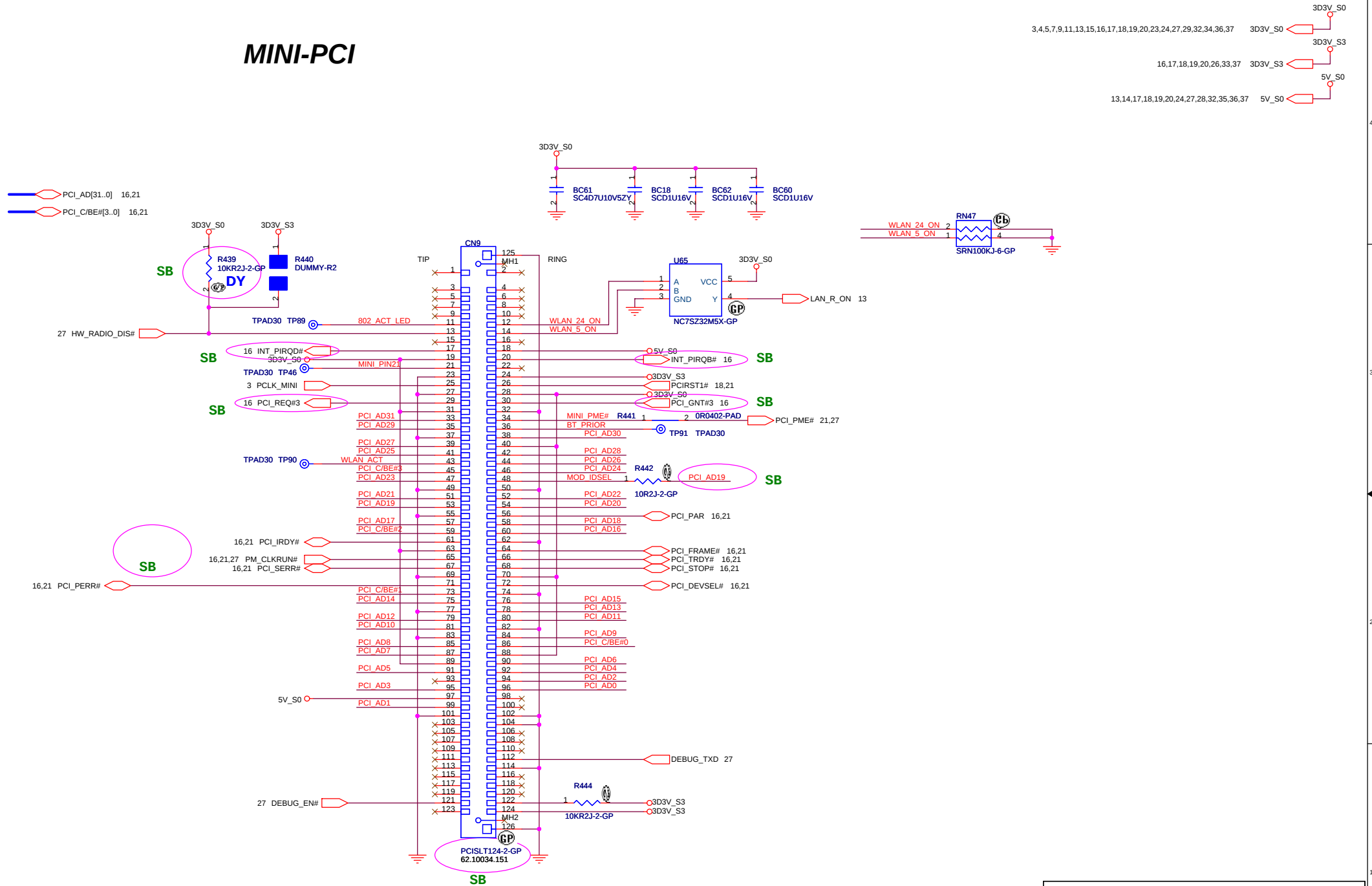


Change LAN solution



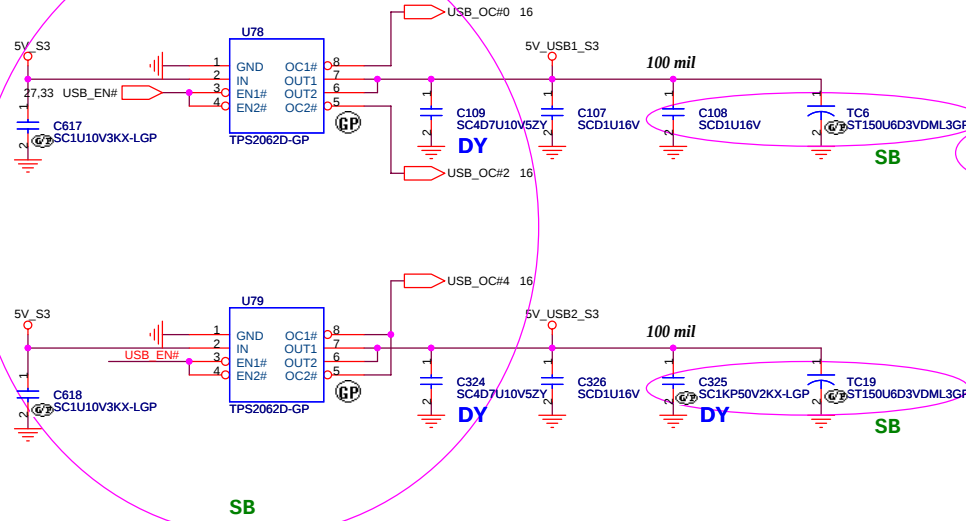


MINI-PCI

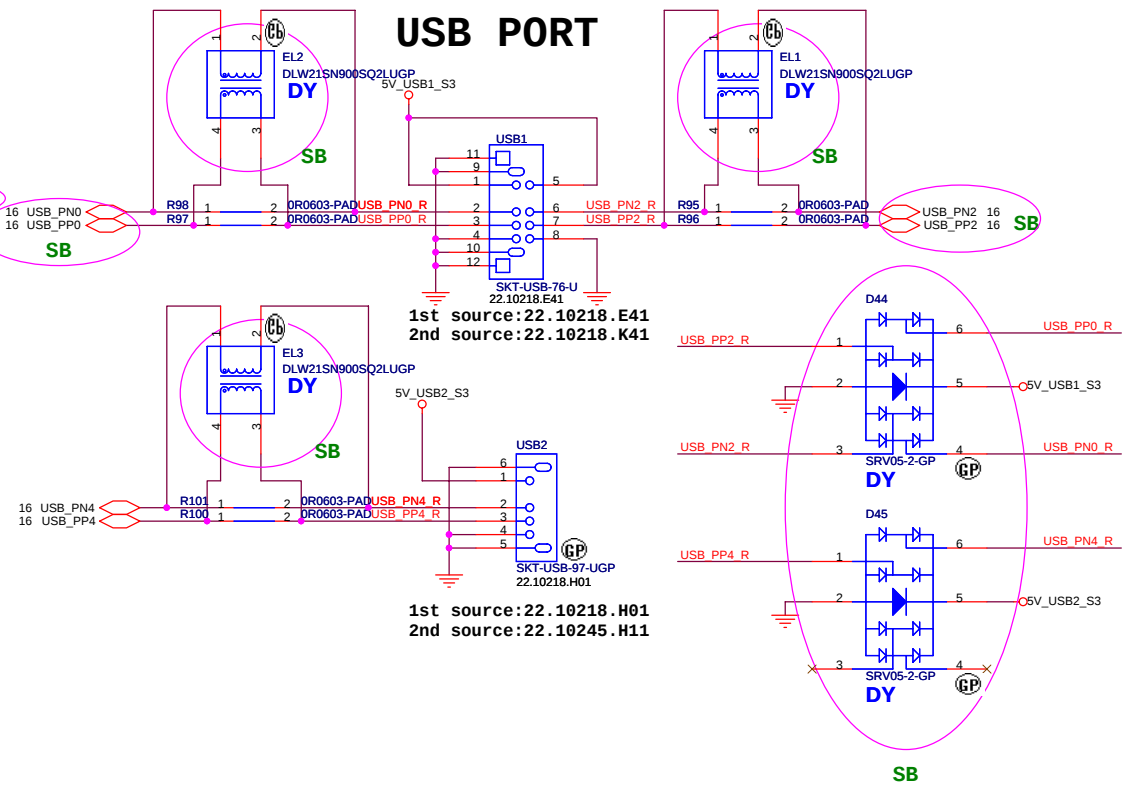


1st source:62.10034.151
2nd source:62.10043.151

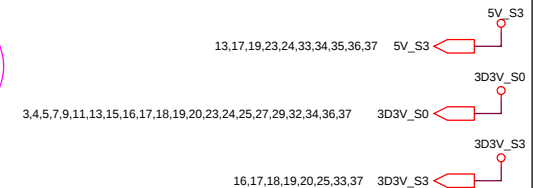
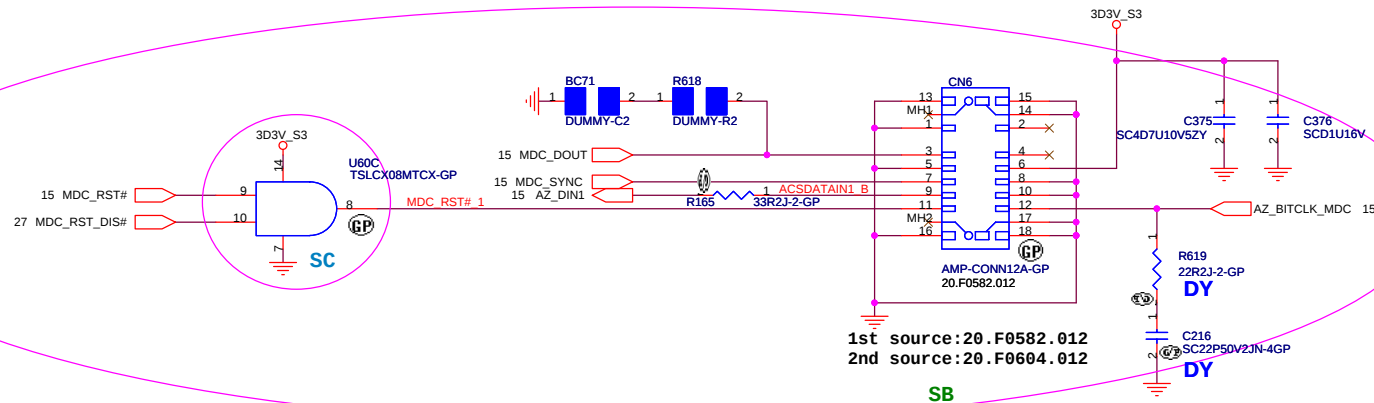
USB POWER



USB PORT

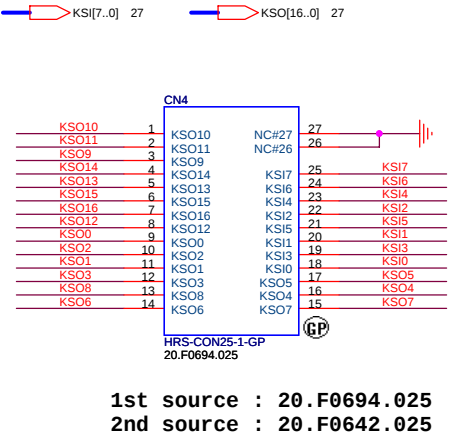


MDC Connector

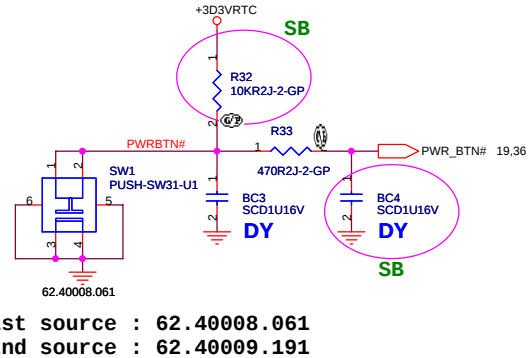




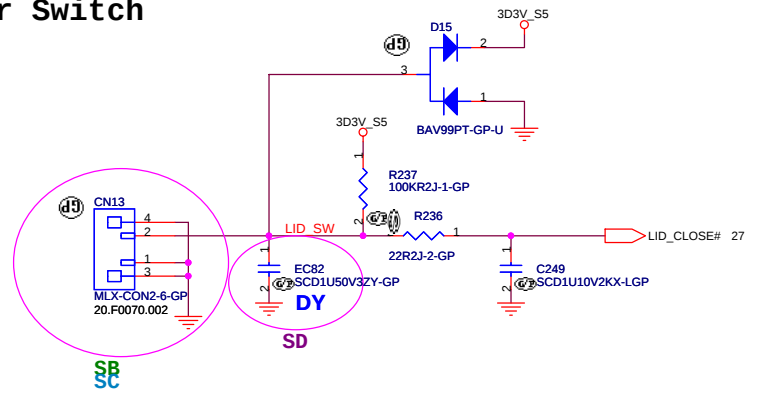
INTERNAL KEYBOARD CONNECTOR



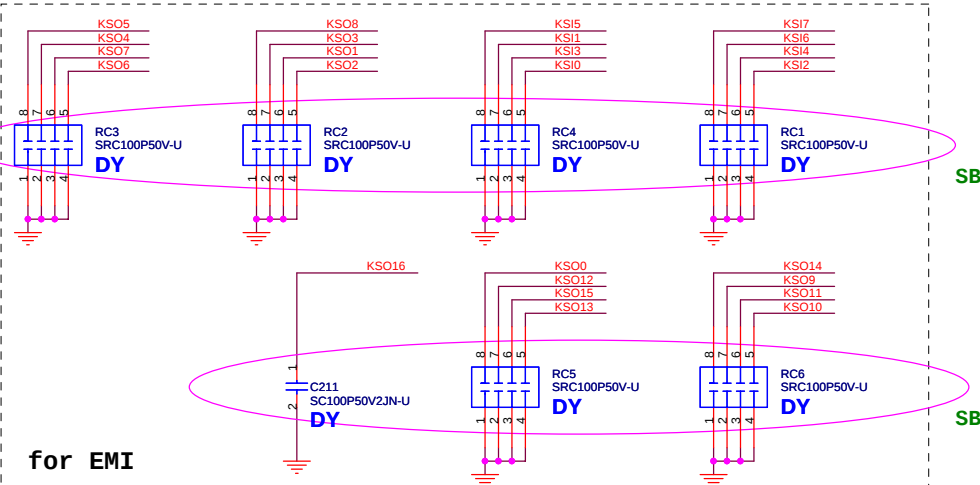
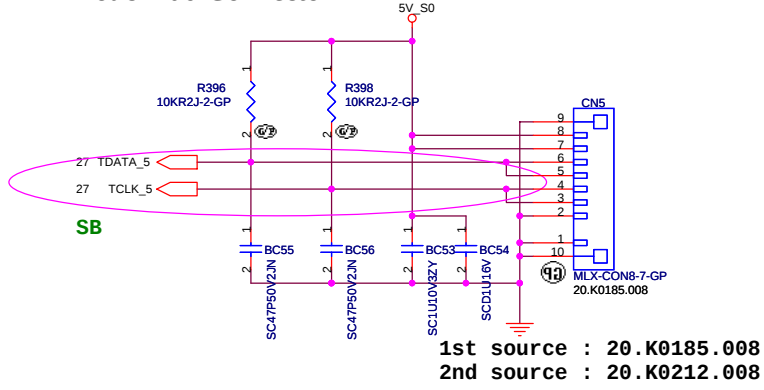
POWER BUTTON



Cover Switch

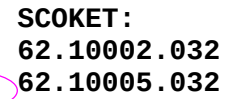


TouchPad Connector



LPC_LAD[3..0] 15,27

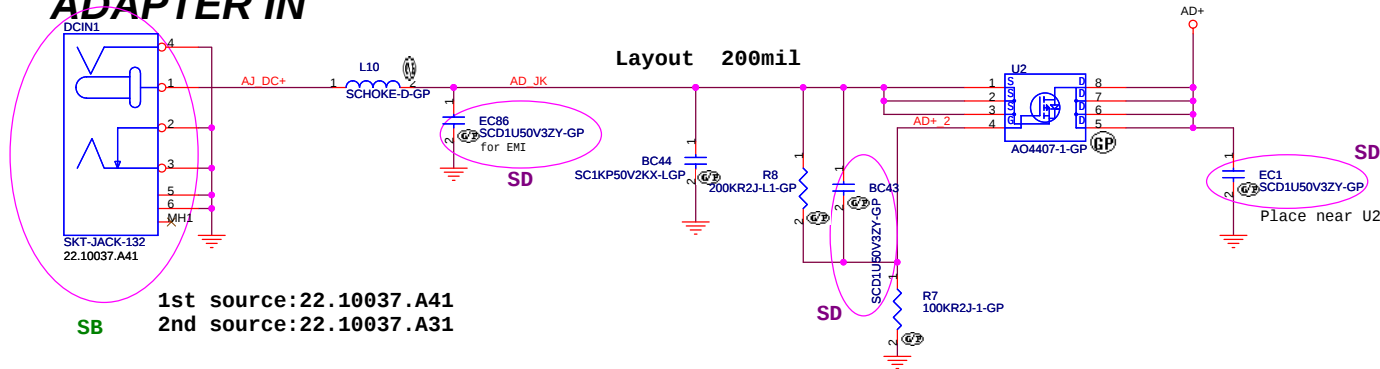
Diagram of the RP1 component showing its pin connections. The component is a blue rectangle labeled 'RP1' with a 'SRP10K' label below it. It has 10 pins. Pin 1 is connected to 'SELECT FWH'. Pin 2 is connected to 'FWH FGPI4'. Pin 3 is connected to 'FWH FGPI3'. Pin 4 is connected to 'FWH FGPI2'. Pin 5 is connected to ground. Pin 10 is connected to ground. Pin 9 is connected to 'FWH FGPI1'. Pin 8 is connected to 'FWH FGPI0'. Pin 6 is connected to 'FWH FGPI0'.



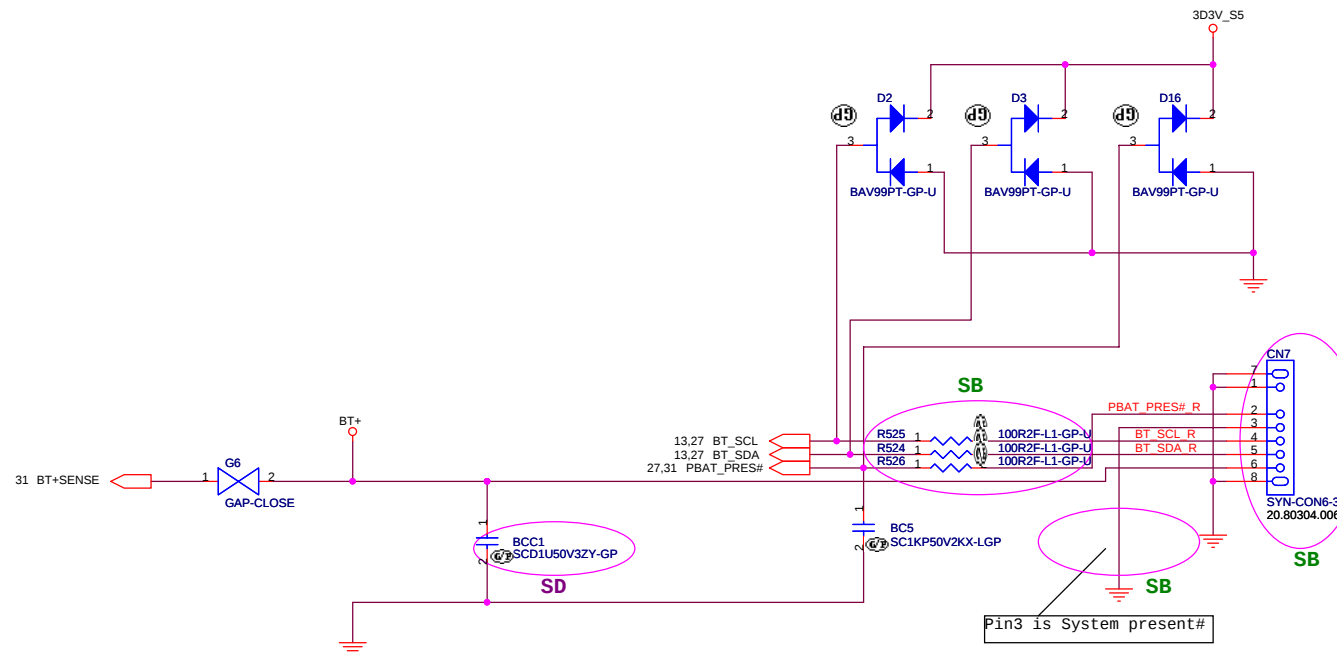
The symbol use 2nd source
1st source:72.24C04.G01 (ST)
2nd source:72.24C04.E01 (ATMEL)

Adaptor in to generate DCBATOUT

ADAPTER IN



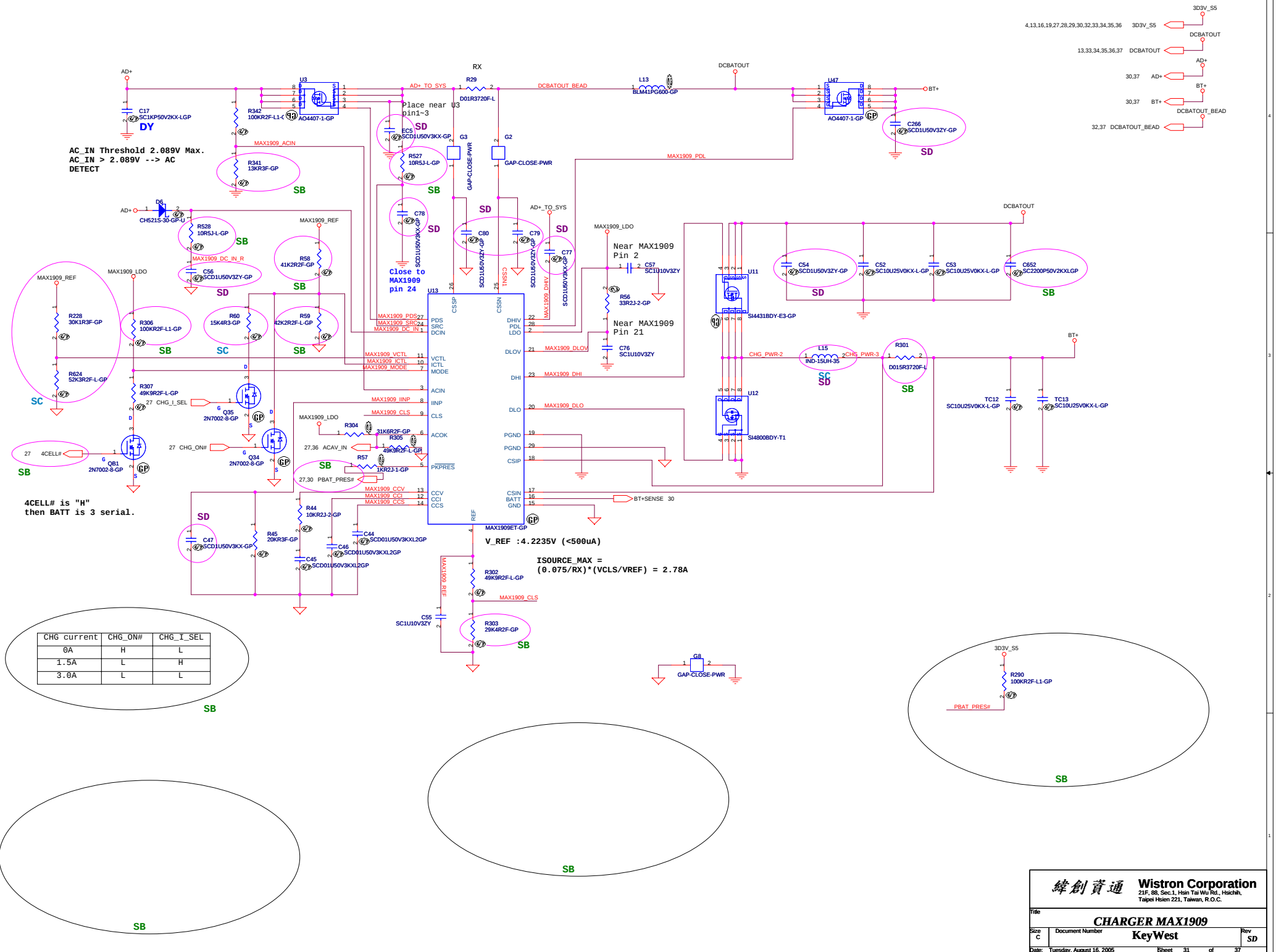
BATTERY CONNECTOR



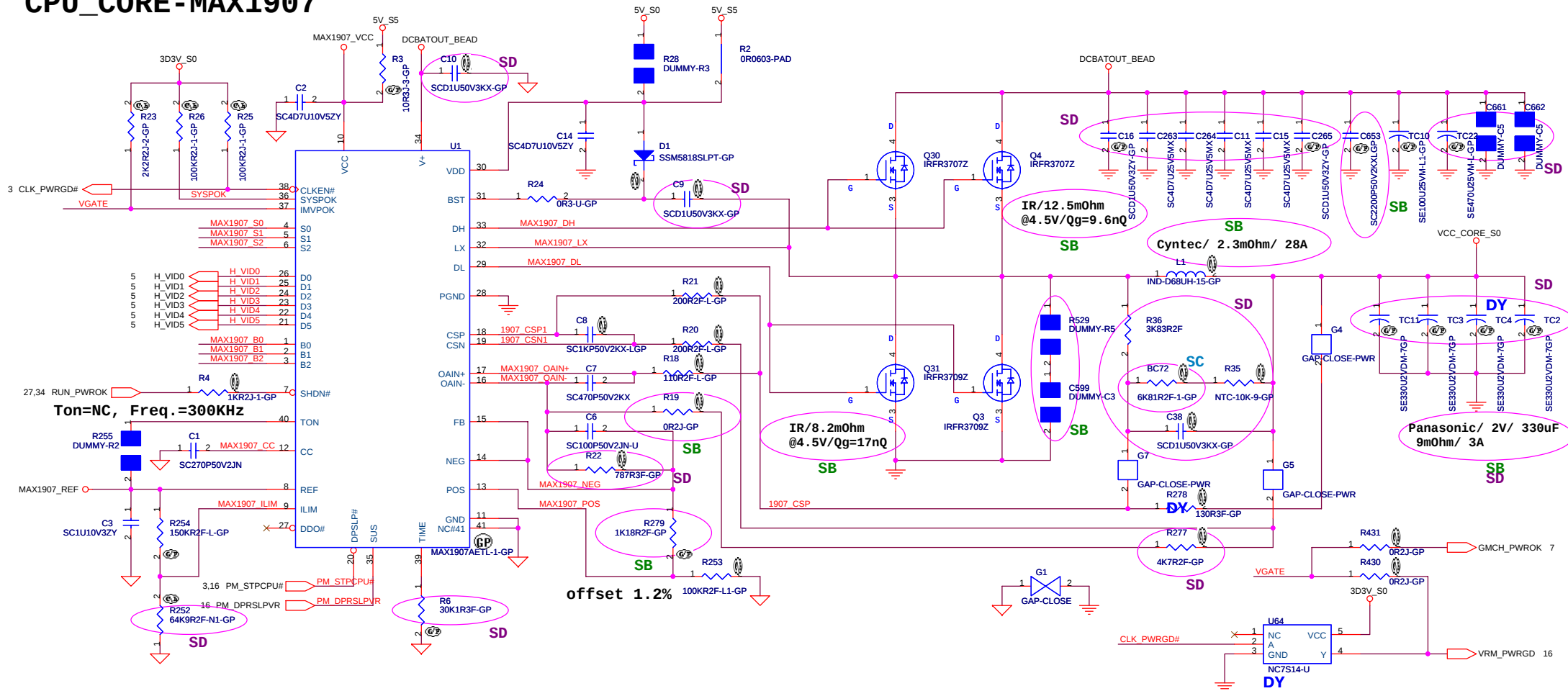
1st source: 20.80304.006
2nd source: 20.80385.006

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Taipei Hsien 221, Taiwan, R.O.C.

Title			
Adaptor/ Battery conn.			
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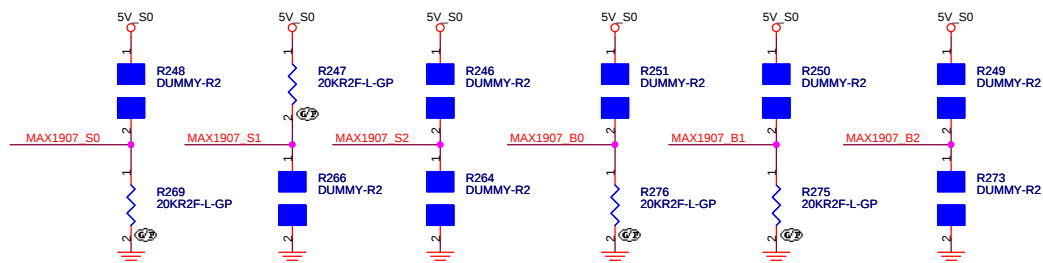
CPU_CORE-MAX1907



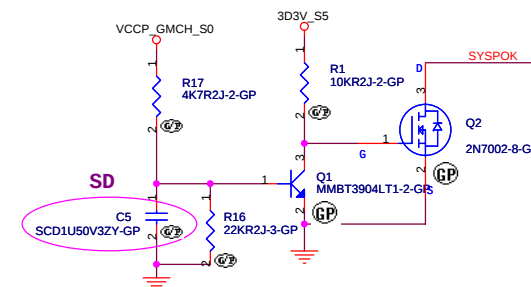
OCP=30A, Vally current = 27.5A,
Vilim=550mV(55mVp-p*10)

Deeper Sleep Voltage : 0.748V
, S0=L, S1=H, S2=open,

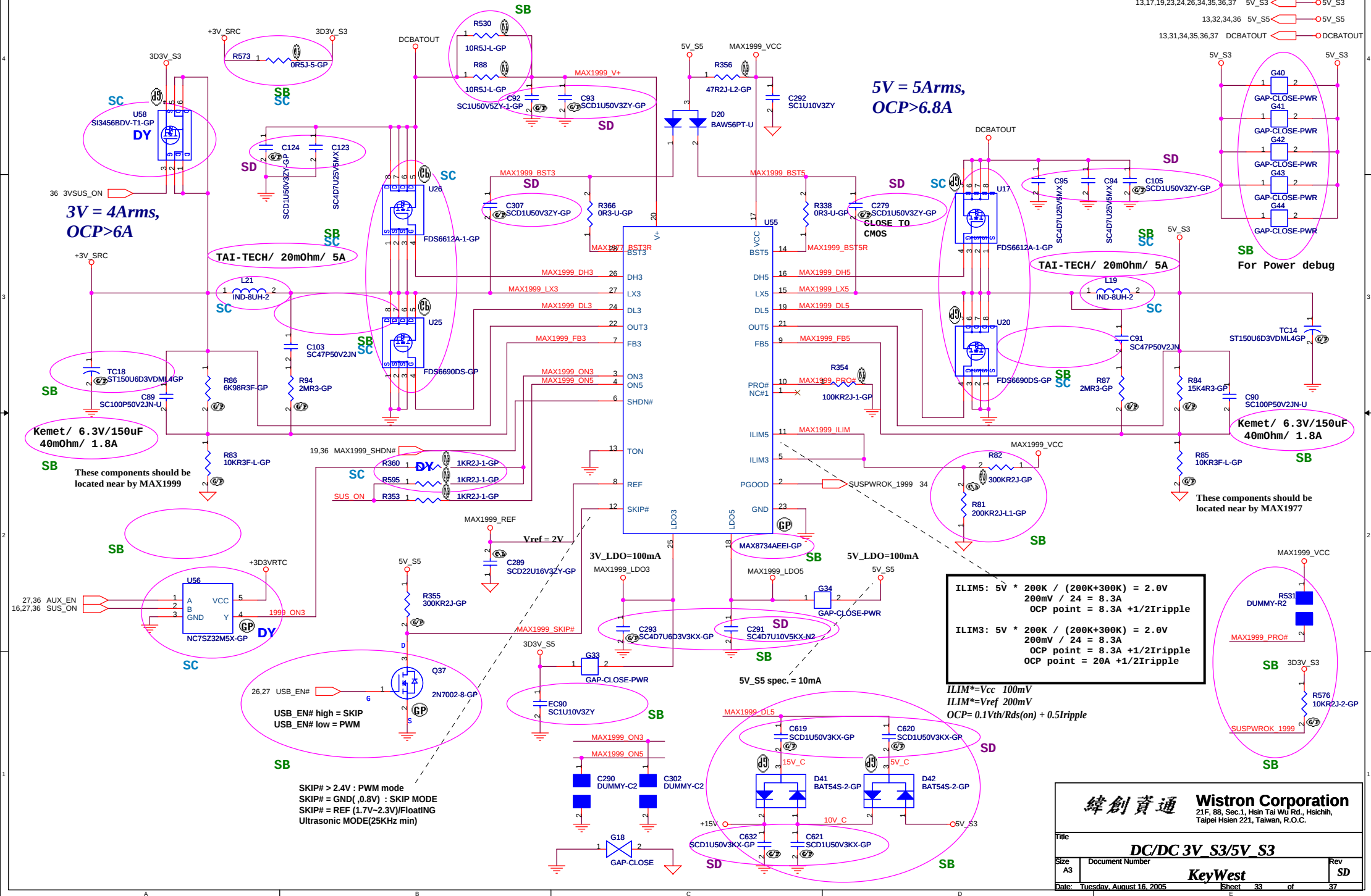
Boot-up Voltage : 1.2V
, B0=L, B1=L, B2=Open



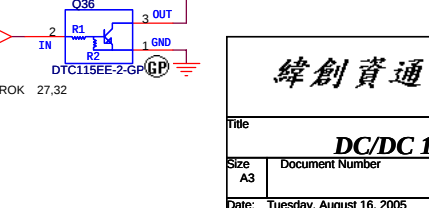
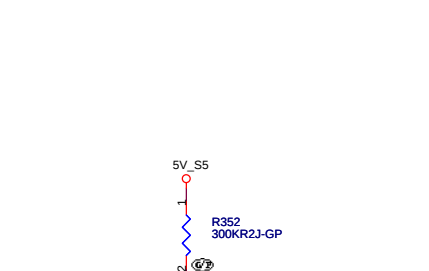
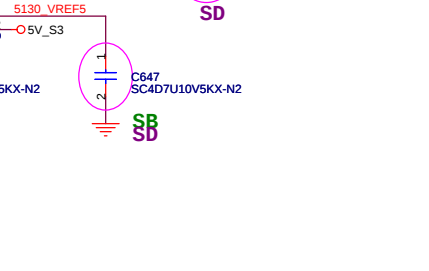
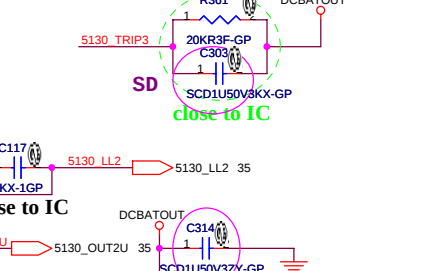
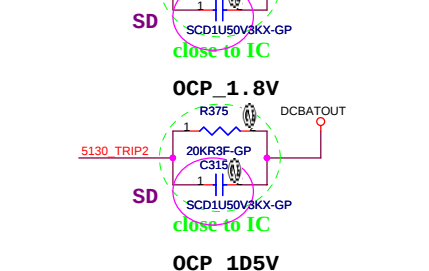
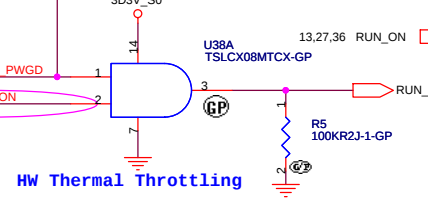
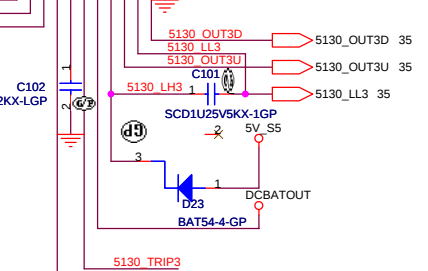
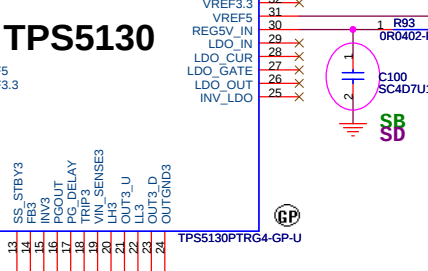
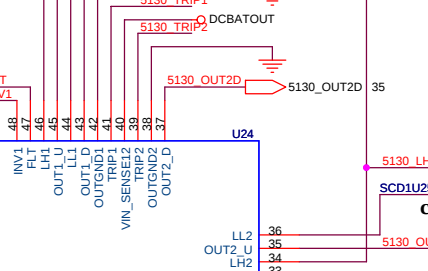
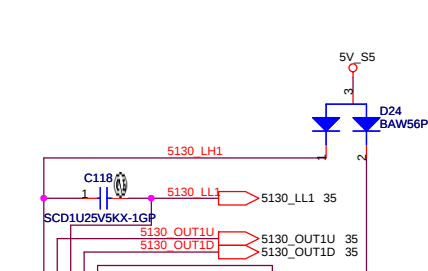
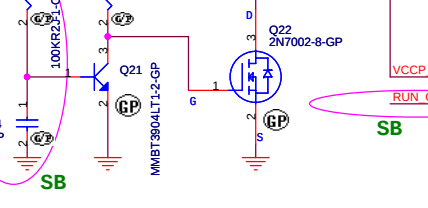
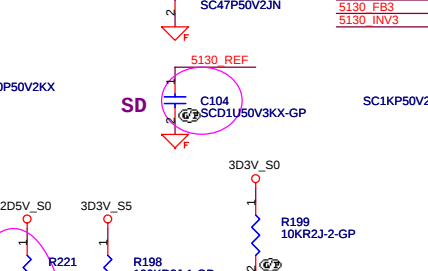
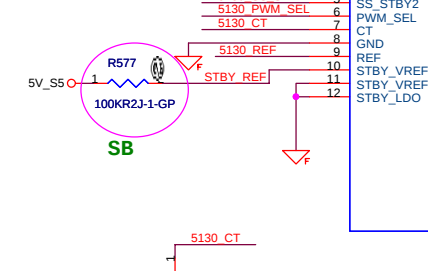
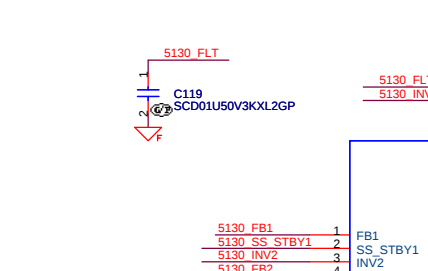
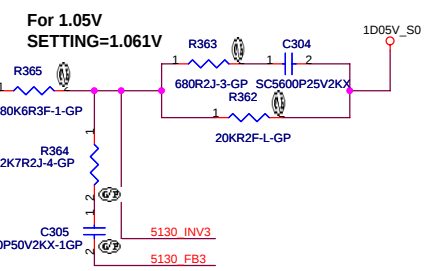
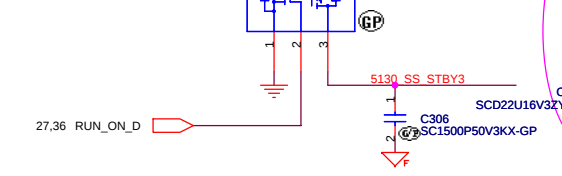
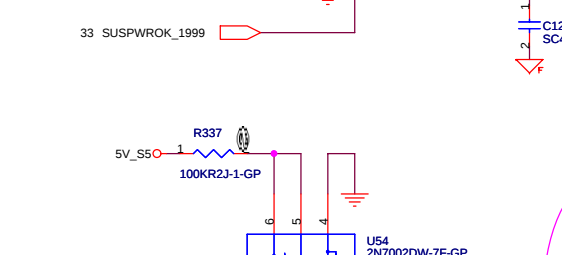
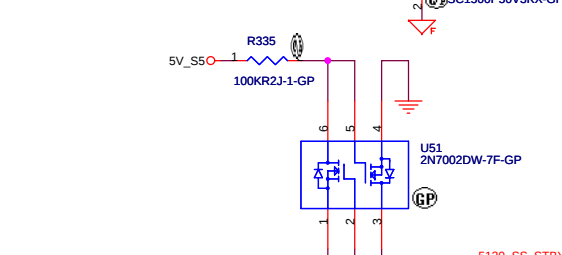
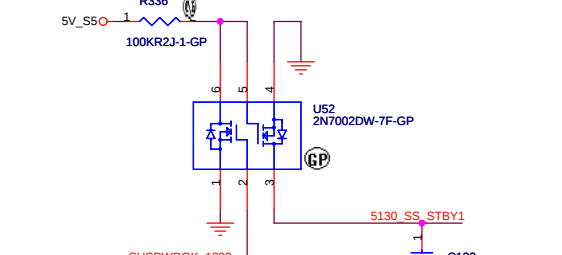
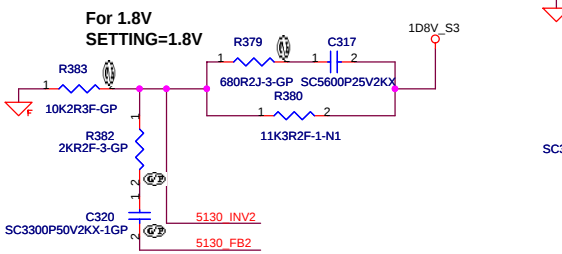
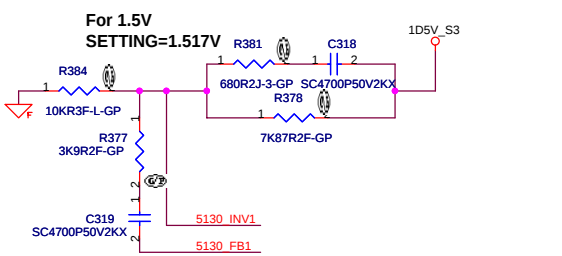
VID						Vcore
VID5	VID4	VID3	VID2	VID1	VID0	V
0	1	0	1	1	1	1.340
0	1	1	0	0	0	1.324
0	1	1	0	1	0	1.292
0	1	1	1	0	0	1.266
0	1	1	1	0	1	1.244
0	1	1	1	1	1	1.212
1	0	0	0	0	1	1.180
1	0	0	0	1	1	1.148
1	0	0	1	1	0	1.100
1	0	1	0	0	1	1.052
1	0	1	0	1	1	1.020
1	0	1	1	1	0	0.972
1	1	0	0	0	0	0.940



SYSTEM DC/DC 3D3V_S3 / 5V_S3



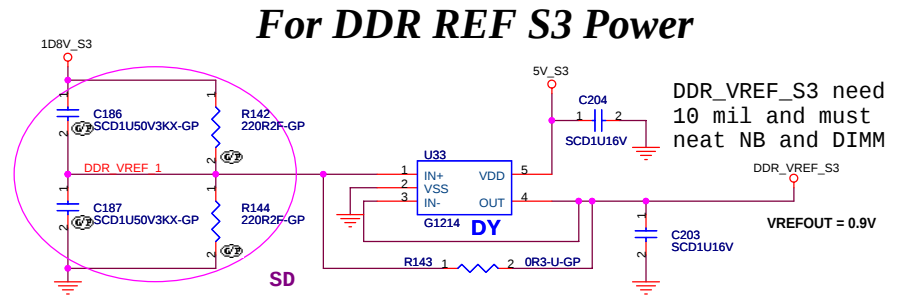
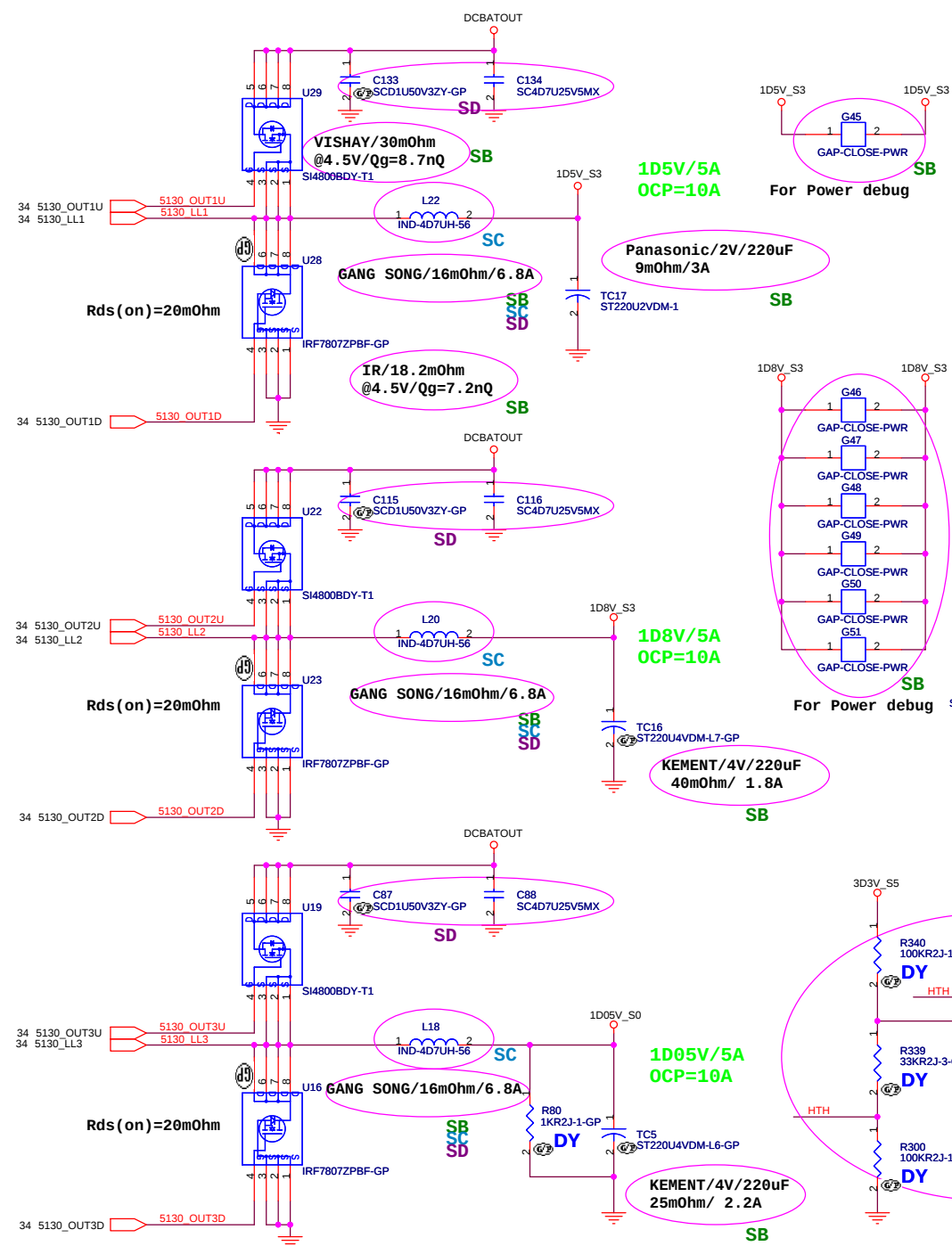
TI TPS5130 for 1.5V, 1.8V, 1.05V. (1D5V=>CH1 , 1D8V=>CH2 , 1D05V =>CH3)



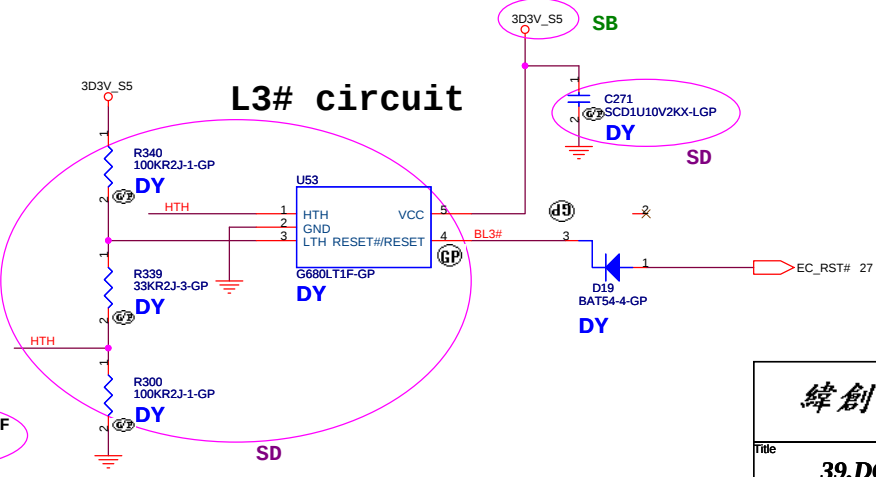
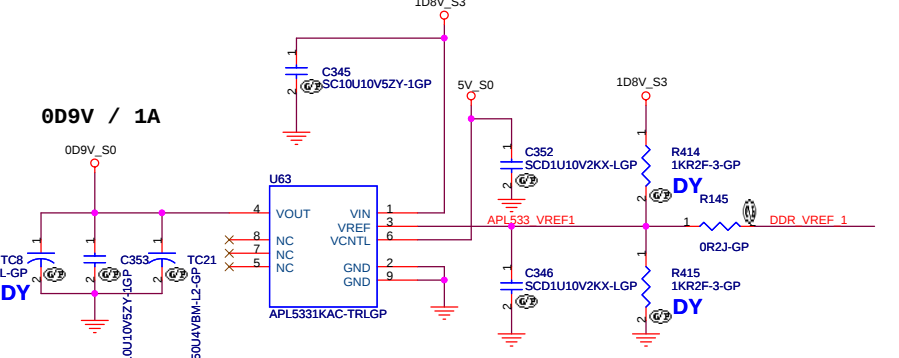
TPS5130

HW Thermal Throttling

TI TPS5130 for 1.5V, 1.8V, 1.05V
(1D5V=>CH1 , 1D8V=>CH2 , 1D05V =>CH3)

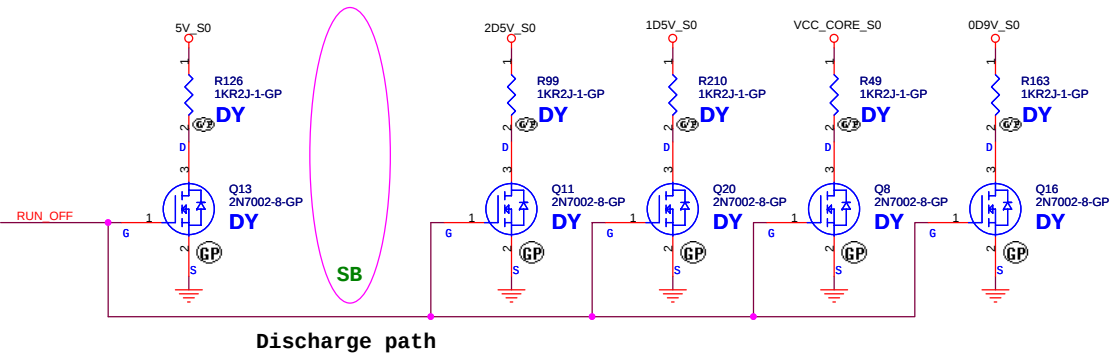
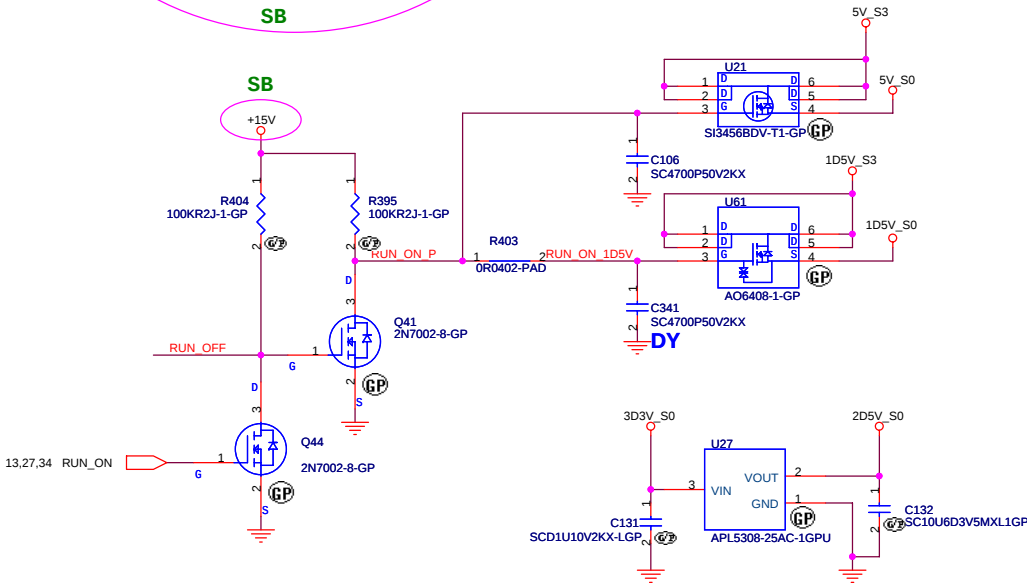
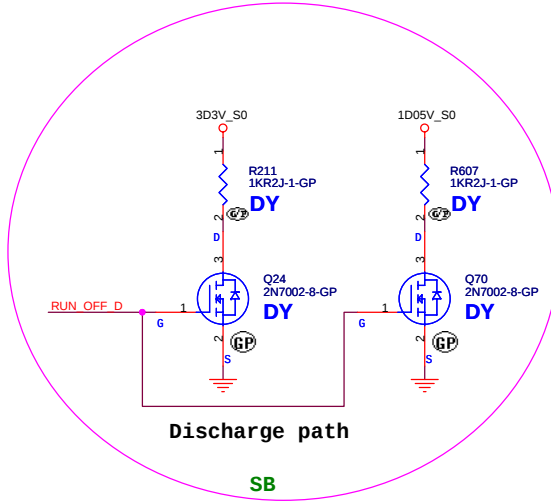


Power budget: 0.9V/2.2Apeak (For DDR2_VTT)



- 13,31,33,34,36,37 DCBATOUT
- 13,32,33,34,36 5V_S5
- 10,34,36,37 1D05V_S0
- 7,9,10,11,12,16,34,36,37 1D8V_S3
- 13,14,17,18,19,20,24,25,27,28,32,36,37 5V_S0
- 12,36 0D9V_S0
- 17,34,36 1D5V_S3

Run Power



SB

SB

SC

DY

DY

DY

DY

DY

DY

DY

DY

DY

DY

DY

DY

DY

DY

DY

DY

DY

DY

DY

DY

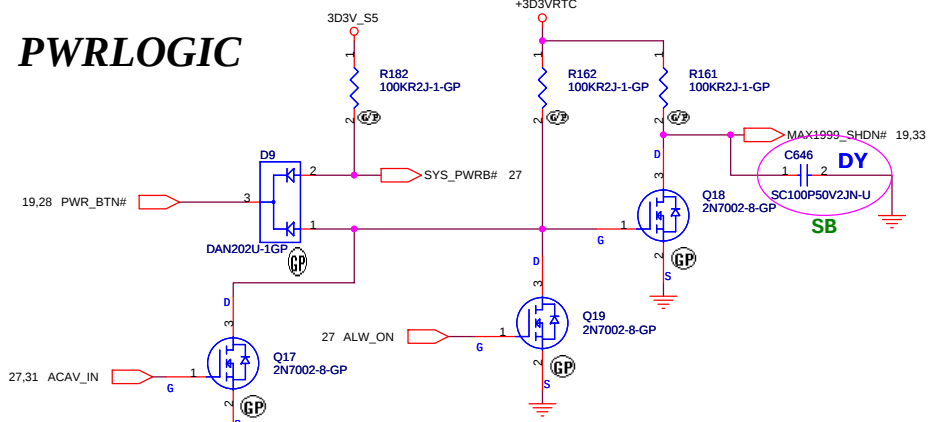
DY

DY

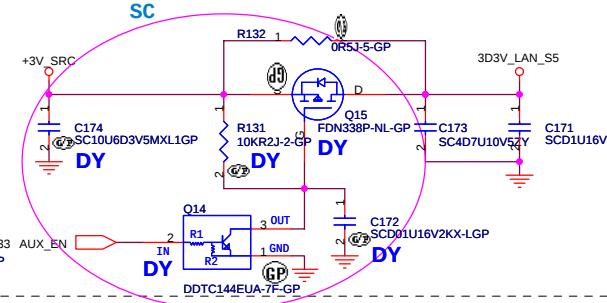
DY

DY

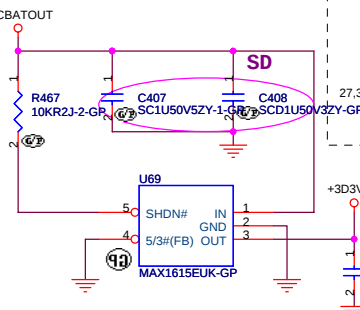
PWRLOGIC



3D3V_LAN_S5 power 500mW



+3D3VRTC



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Taipei Hsien 221, Taiwan, R.O.C.

Title			PWRPLANE&PWRLOGIC		
Size			KeyWest		
Date: Tuesday, August 16, 2005			Sheet 36 of 37		

