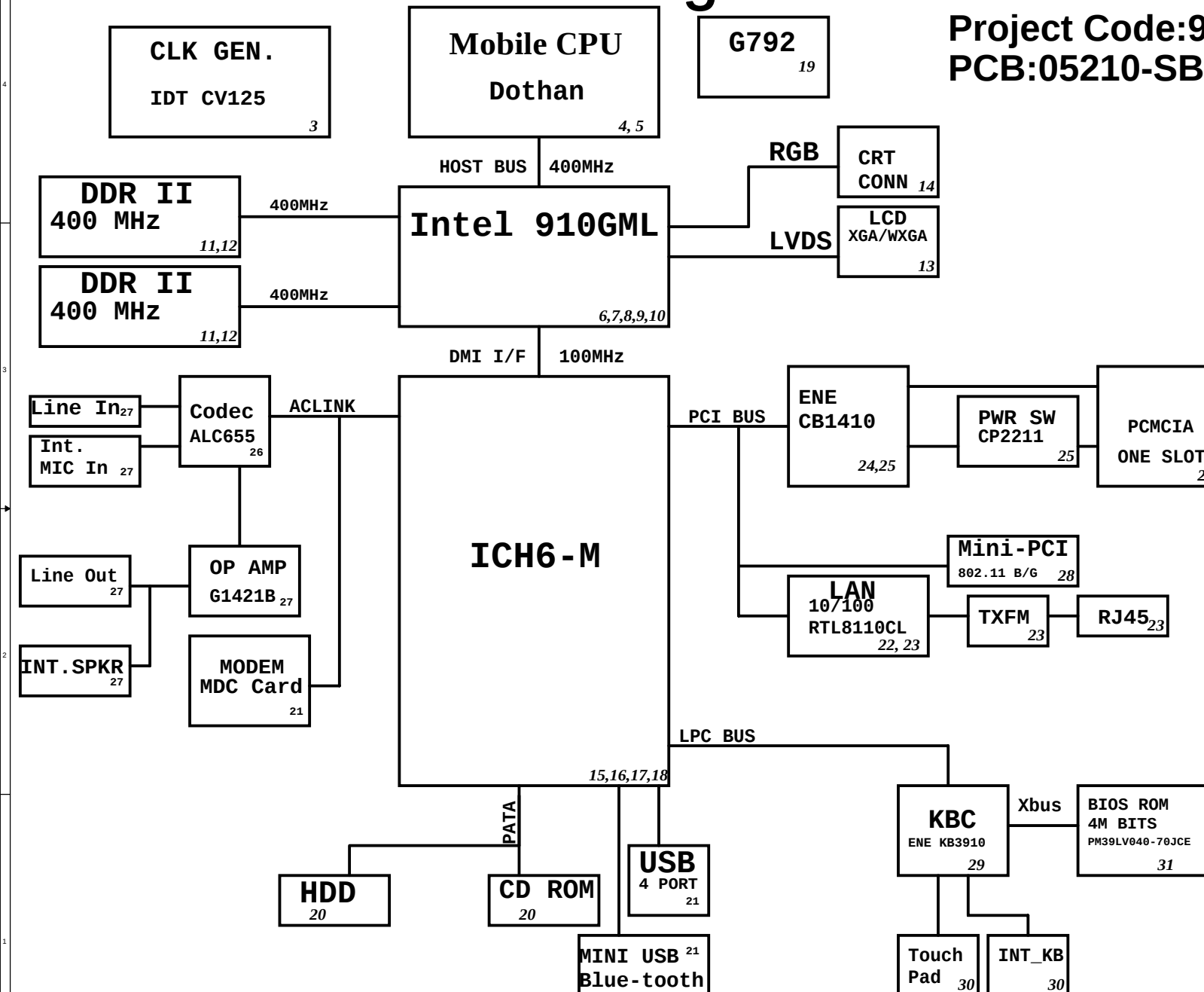


Morar Block Diagram 2005/05/28

Project Code:91.4E101.001
PCB:05210-SB



SYSTEM DC/DC	
TPS5130 35,36	
INPUTS	OUTPUTS
DCBATOUT	3D3V_S5 5V_S5 1D05V_S0 2D5V_S0 (LD0)
SYSTEM DC/DC	
ISL6227 37	
INPUTS	OUTPUTS
DCBATOUT	5V_S5 3D3V_S3
TPS51100DGQ 38	
5V_S5	DDR_VREF DDR_VREF_S3

CHARGER ISL6255	
INPUTS	OUTPUTS
DCBATOUT	BT+ 16.8V 3A

CPU DC/DC ISL6218CV-T	
INPUTS	OUTPUTS
DCBATOUT	VCC_CORE 0.844~1.3V 27A

Alviso Strapping Signals
and Configuration

page 7

Pin Name	Strap Description	Configuration
CFG[2:0]	FSB Frequency Select	000 = Reserved 001 = FSB533 010 = FSB800 011-111 = Reversed
CFG[3:4]	Reversed	
CFG5	DMI x2 Select	0 = DMI x2 1 = DMI x4 (Default)
CFG6	DDR I / DDR II	0 = DDR II 1 = DDR I
CFG7	CPU Strap	0 = Prescott 1 = Dothan (Default)
CFG[8:11]	Reversed	
CFG[12:13]	XOR/ALL Z test Straps	00 = Reserved 01 = XOR mode enabled 10 = All Z mode enabled 11 = Normal Operation (Default)
CFG[14:15]	Reversed	
CFG16	FSB Dynamic ODT	0 = Dynamic ODT Disabled 1 = Dynamic ODT Enabled (Default)
CFG17	Reversed	
CFG18	CPU 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.

PCI Routing

	IDSEL	IRQ	REQ/GNT
7411	25	B.F.G	0
MiniPCI	21	F	1
LAN	23	E	2

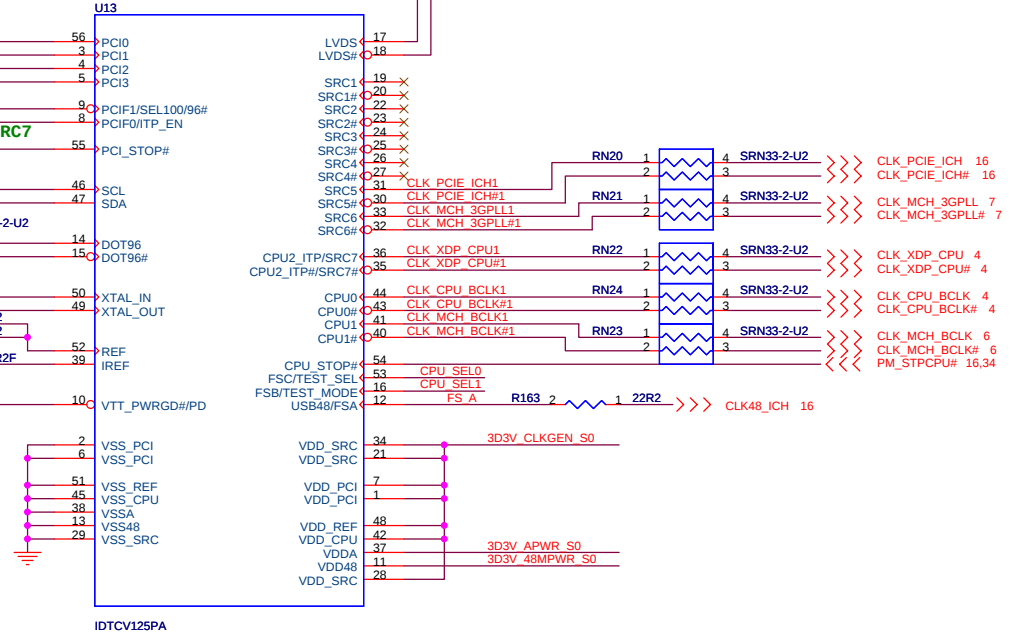
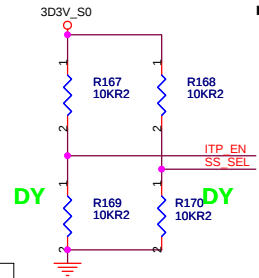
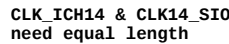
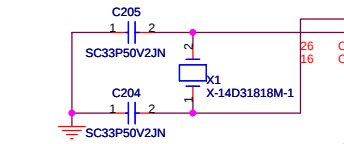
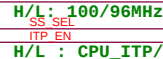
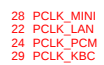
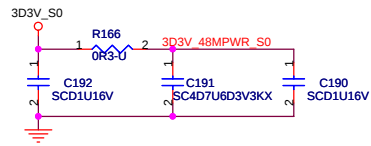
ICH6-M Integrated Pull-up
and Pull-down Resistors

ICH6-M EDS 14308 0.8V1

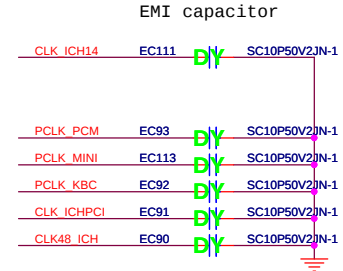
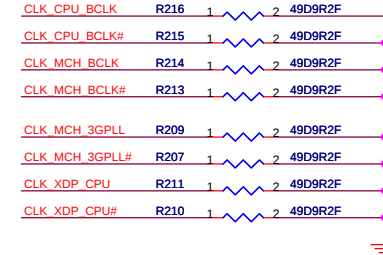
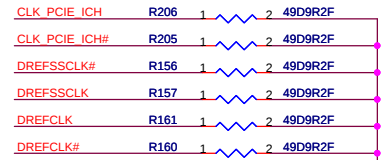
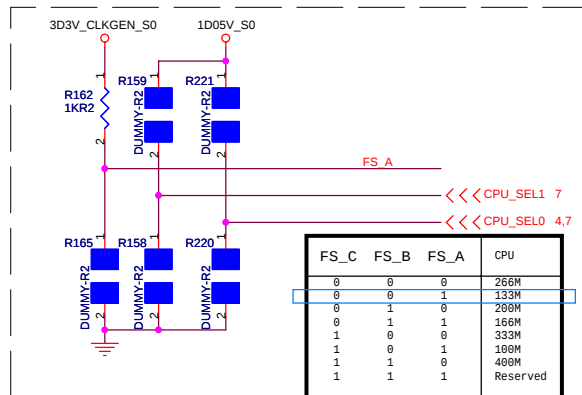
ACZ_BIT_CLK, DPRSLP#, EE_DIN, EE_DOUT, GNT[5]/GPO[17], GNT[6]/GPO[16], LDRQ[1]/GPI[41], LAD[3:0]/FB[3:0]#, LDRQ[0], PME#, PWRBTN#, TP[3]	ICH6 internal 20K pull-ups
LAN_RXD[2:0]	ICH6 internal 10K pull-ups
ACZ_RST#, ACZ_SDIN[2:0], ACZ_SYNC, ACZ_SDOUT, ACZ_BITCLK, DPRSLPVR, SPKR, EE_CS,	ICH6 internal 20K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

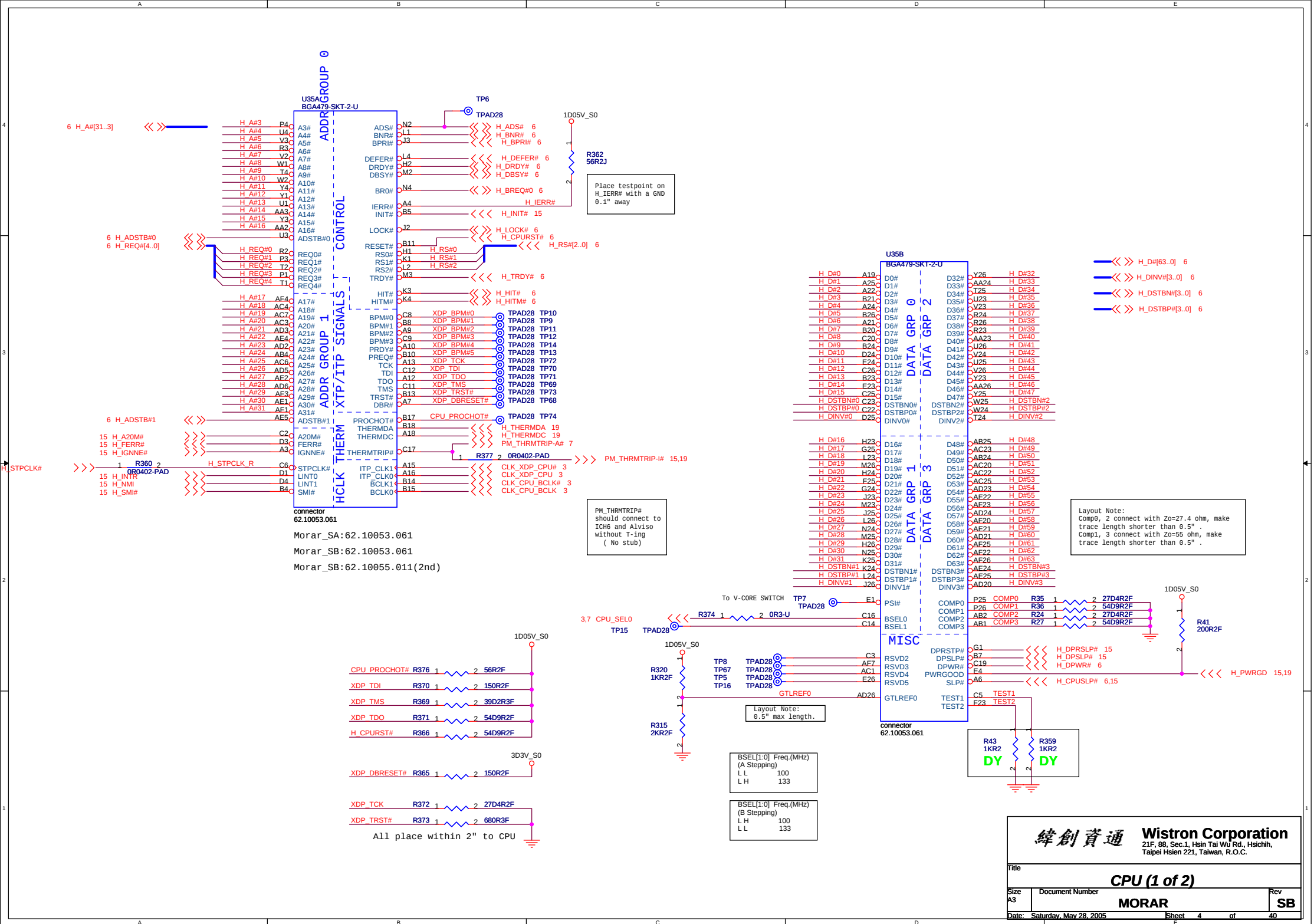
ICH6-M IDE Integrated Series
Termination Resistors

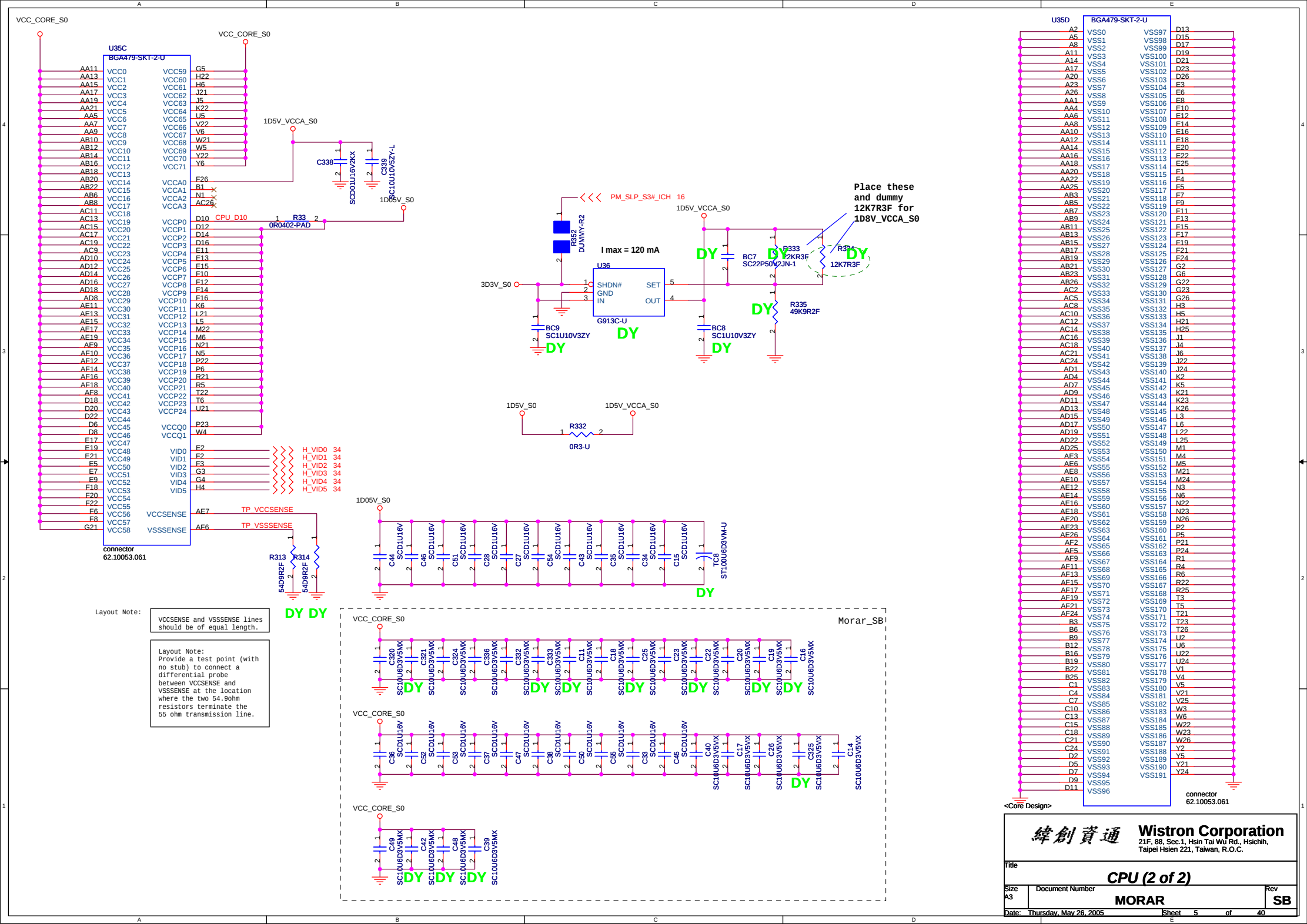
DD[15:0], DIOW#, DIOR#, DREQ, DDACK#, IORDY, DA[2:0], DCS1#, DCS3#, IDEIRQ	approximately 33 ohm
--	----------------------

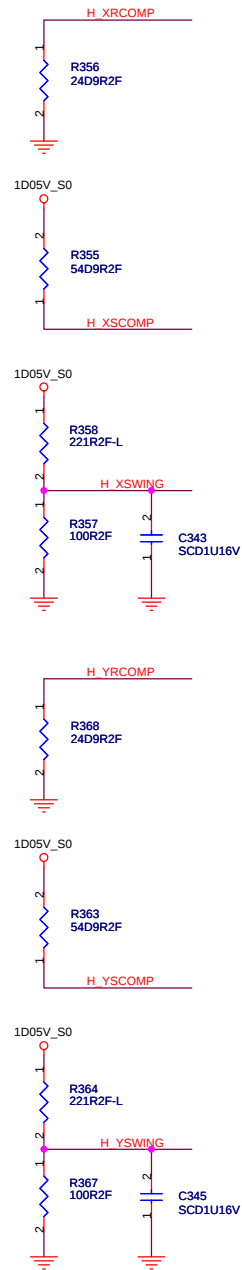


IN (3D3V_S0)	EN (6218_PG00D)	OUT (VTT_PWRGD#)
H	L	H
X	H	H1 - Z



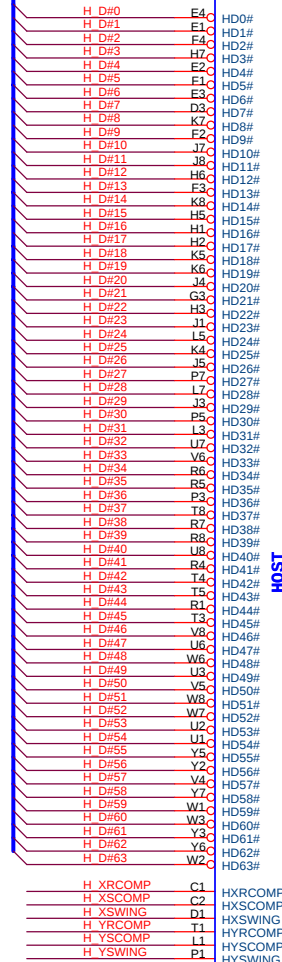




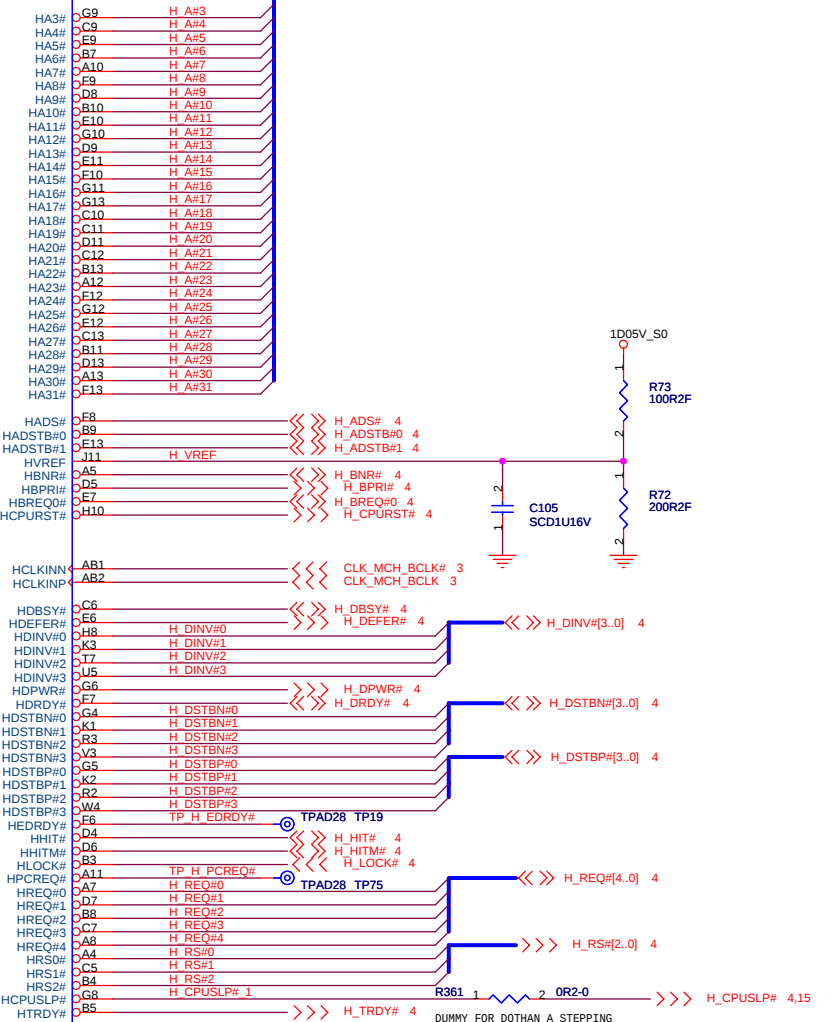


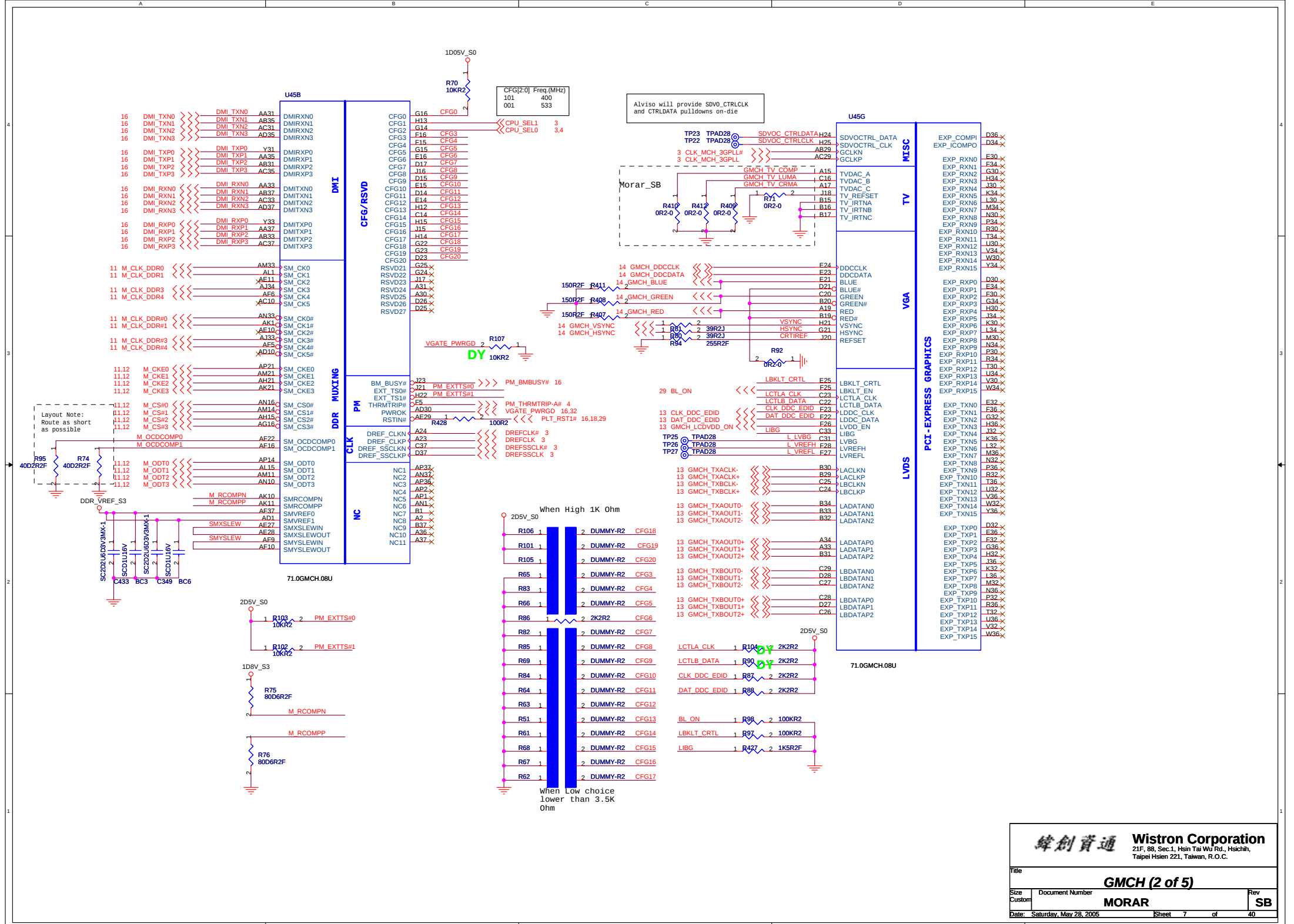
Place them near to the chip

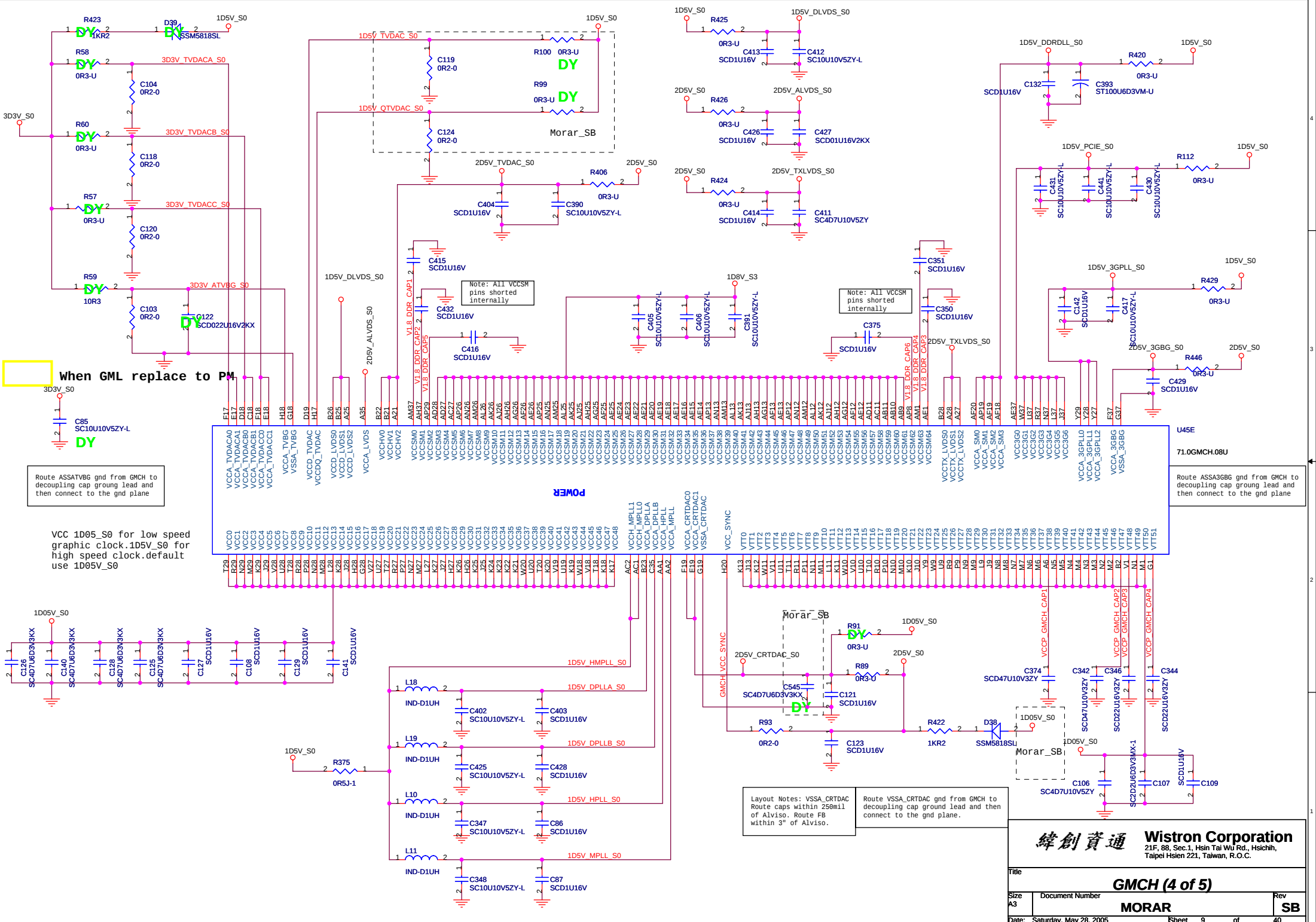
4 H_D#[63..0]

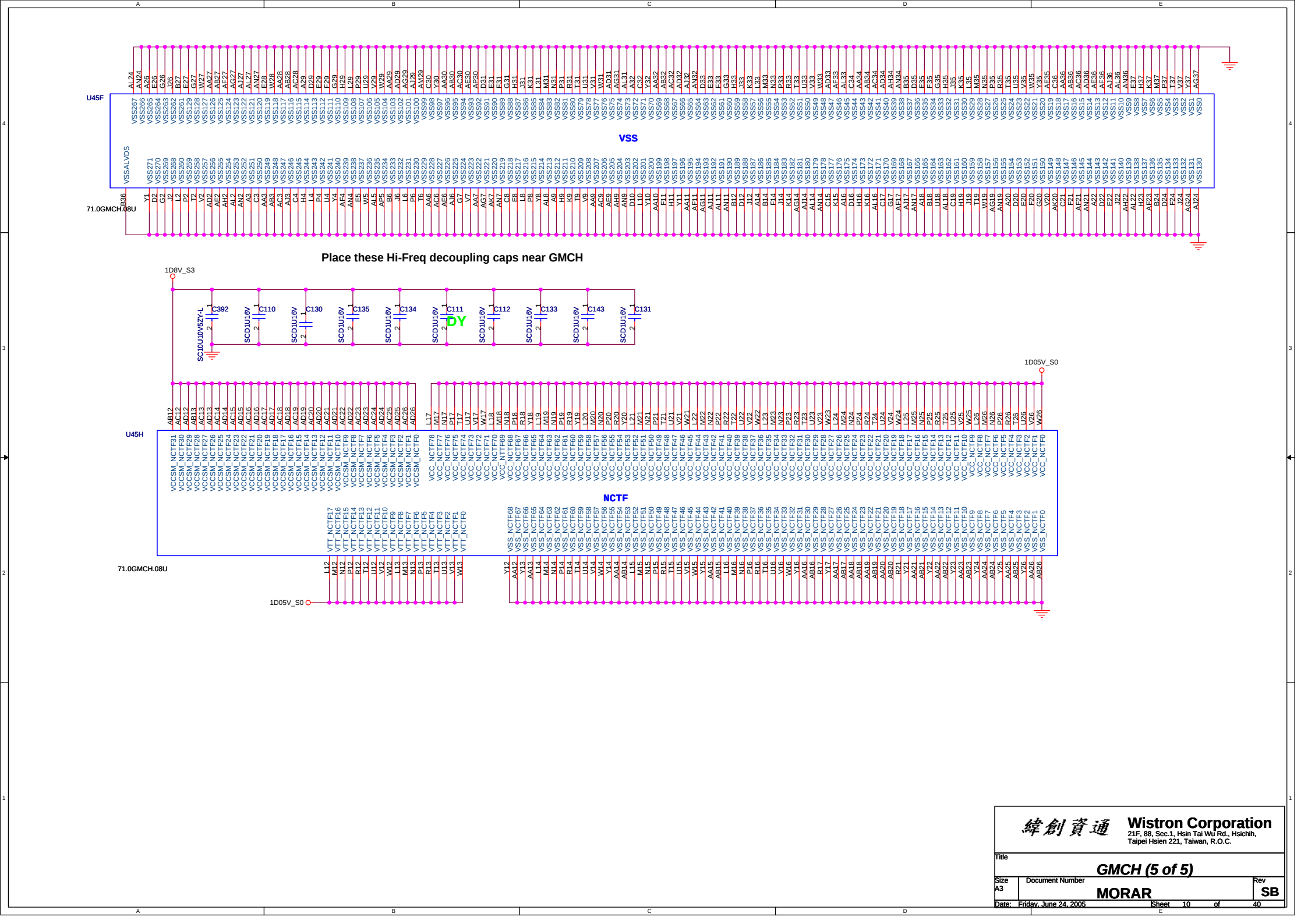


71.0GMCH.08U









REVISED TYPE

REVISED TYPE

緯創資通

Wistron Corporation

21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

File

connector
62.10017.751
Morar_SA:62.10017.751
Morar_SB:62.10017.991

DDR Socket

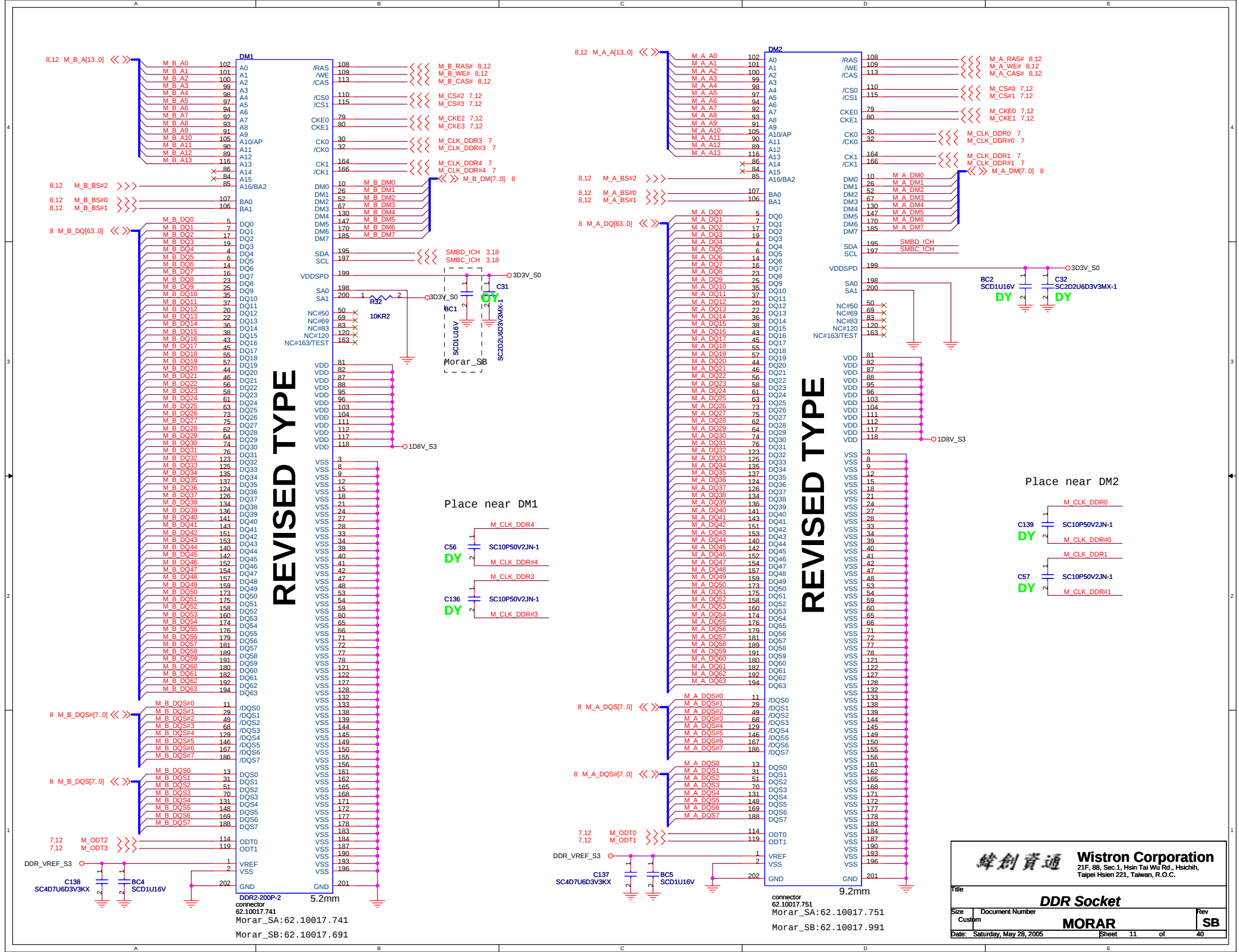
Size
Custpm

Document Number

Rev
SB

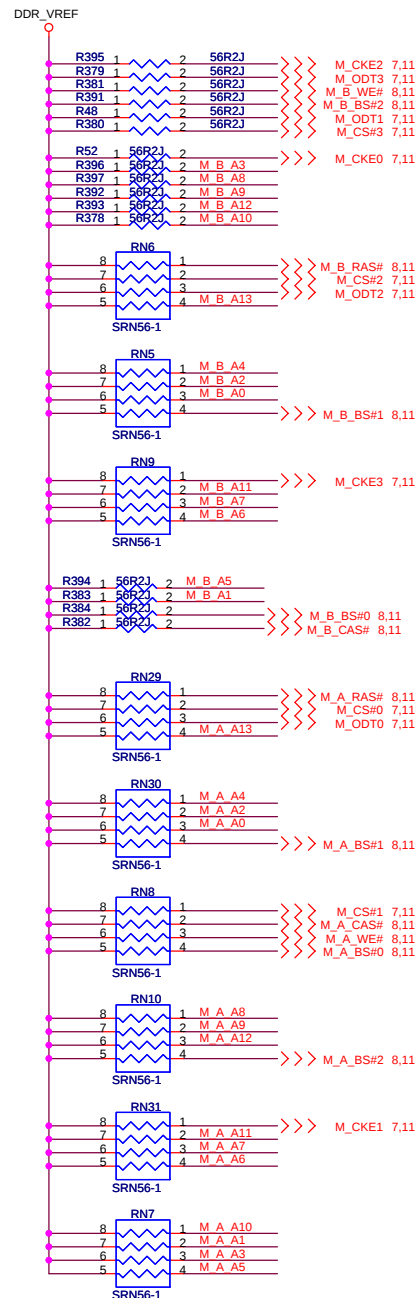
Date: Saturday, May 28, 2005

Sheet 11 of 40



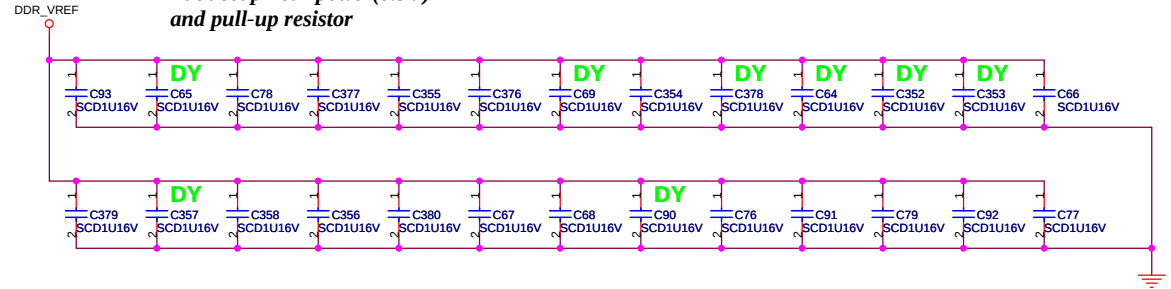
PARALLEL TERMINATION

Put decap near power(0.9V) and pull-up resistor

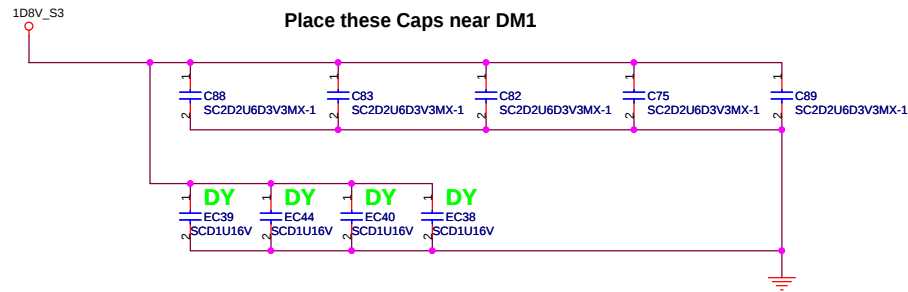


Decoupling Capacitor

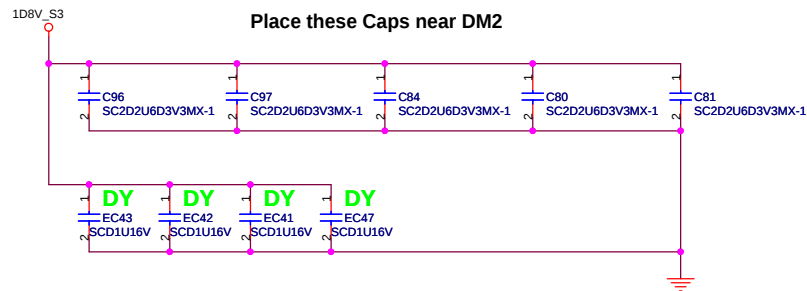
Put decap near power(0.9V) and pull-up resistor



Place these Caps near DM1



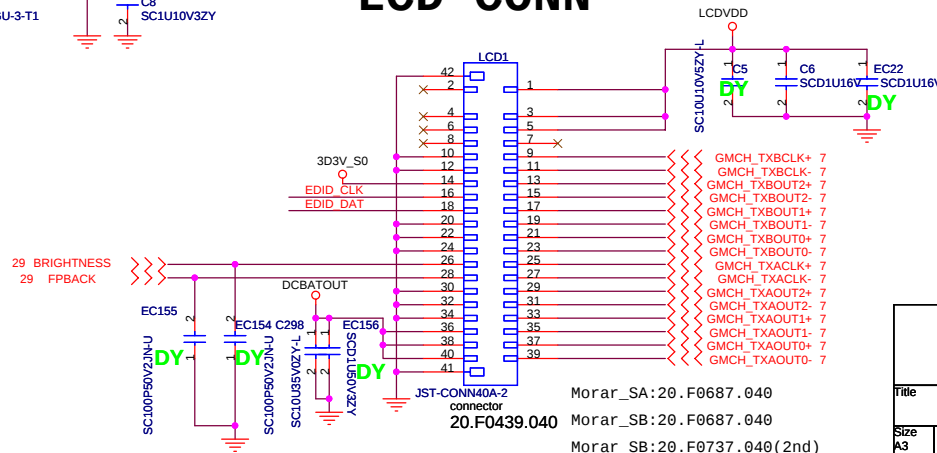
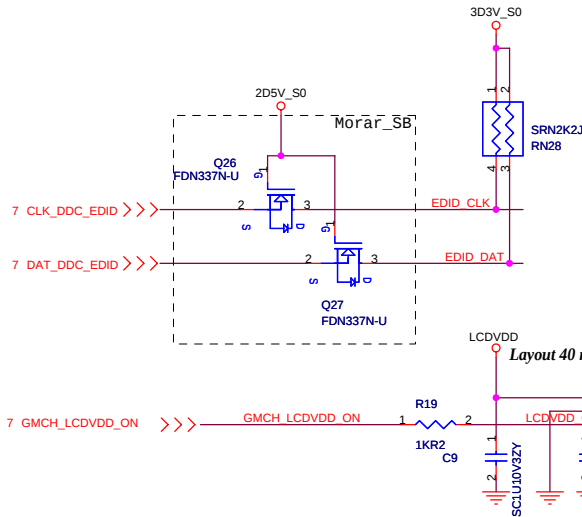
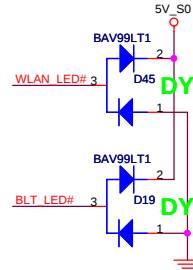
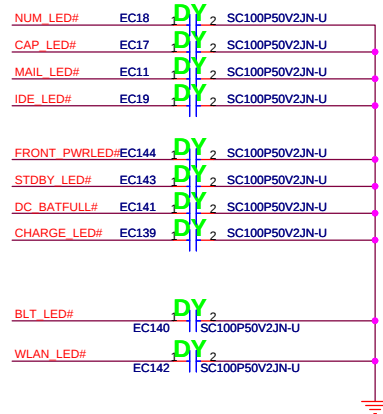
Place these Caps near DM2



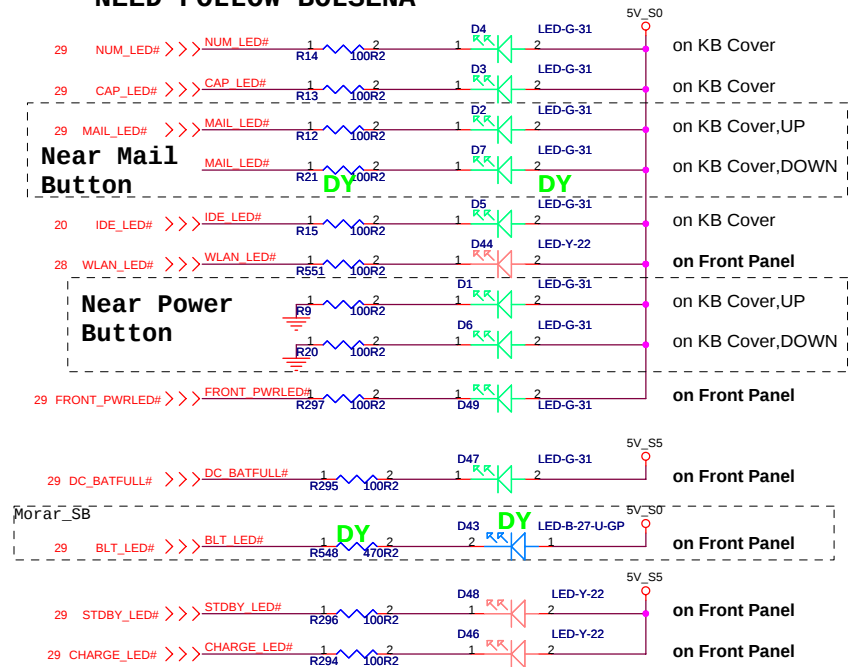
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title		DDR2 Termination Resistor	
Size	A3	Document Number	MORAR
Date:	Friday, June 24, 2005	Sheet	12 of 40
		Rev	SB

LED



NEED FOLLOW BOLSENA



on KB cover

LED	V	V	V	V	V	V	V
Button	V	V	V	V	V	V	V
	POWER1	E-MAIL	INTERNET	e-BTN	PROGRAM	CAPS	NUM

Front panel

LED	V	V	V	V	Charger:	Power2:
Button	V	V	V	V	Green : DC only or Battery full with DC	Green : S0
	Bluetooth	Wireless	Charger	Power2	Orange : Charging	Orange : S3
					Orange Blink : Battery low	Orange Blinking : Enter S4

(Please See M.E. drawing LED position)

LCD CONN

緯創資通

Wistron Corporation

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Title

LCD CONN & LED

Size

A3

Document Number

MORAR

Rev

SB

Date:

Saturday, May 28, 2005

Sheet

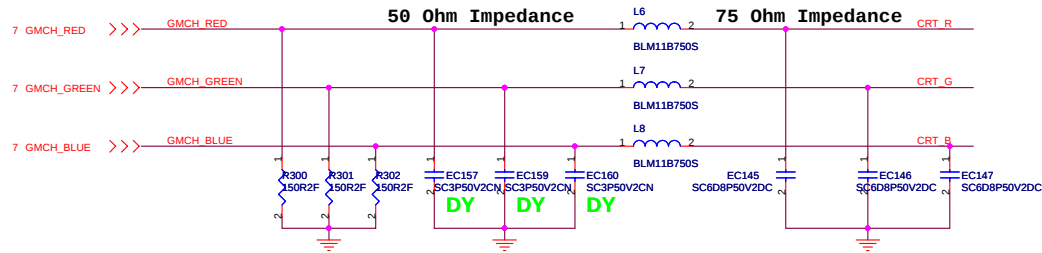
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of

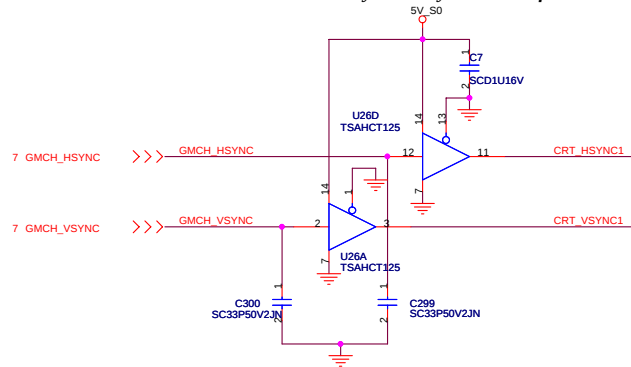
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CRT CONNECTOR

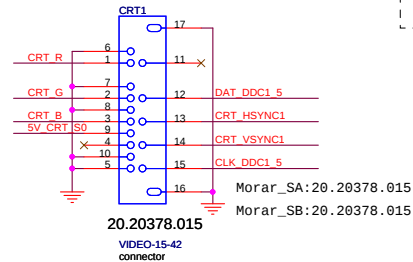
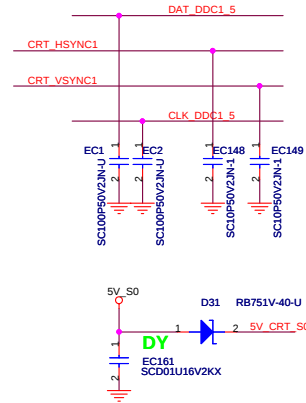
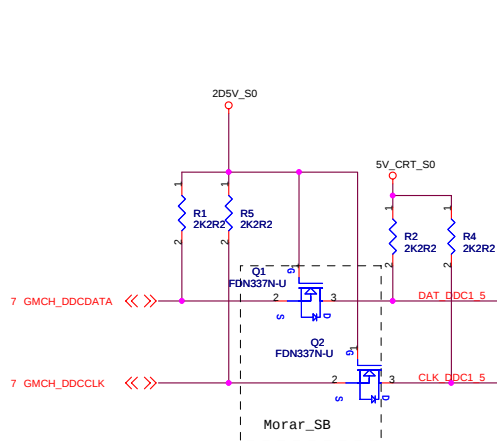
Ferrite bead impedance: 75ohm@100MHz



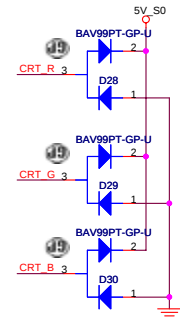
Hsync & Vsync level shift



DDC_CLK & DATA level shift



ESD Protection Diode



緯創資通

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

Title			CRT Connector
Size	Document Number	Rev	
Custom	MORAR	SB	
Date:	Saturday, May 28, 2005	Sheet	14 of 40

Layout Note:
Place above caps within
100 mils of ICH near F27, P27, AB27

Layout Note:
IDE decoupling

Layout Note:
PCI decoupling

Place within 100
mils of ICH
near pin AG5

Place within 100
mils of ICH
near pin AG9

Place within 100
mils of ICH

Place within 100
mils of ICH
near E26, E27

Place within 100
mils of ICH
pin AG10

Place within 100
mils of ICH
pin AE1

Place within 100
mils of ICH
pin A13

Place within 100
mils of ICH
pin V7

ALL NO_STUFF Caps do
not have layout
requirements but if
layout allows then place
next to ICH6

*Within a given well, 5VREF needs to be up before the
corresponding 3.3V rail

Layout Note:
Place near ICH6

Place within 100
mils of ICH

Place within 100
mils of ICH

Place within 100
mils of ICH
pin G10

Layout Note:
Place near AG23

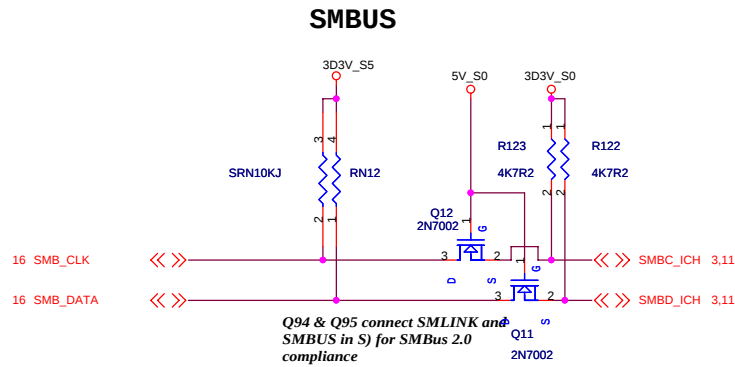
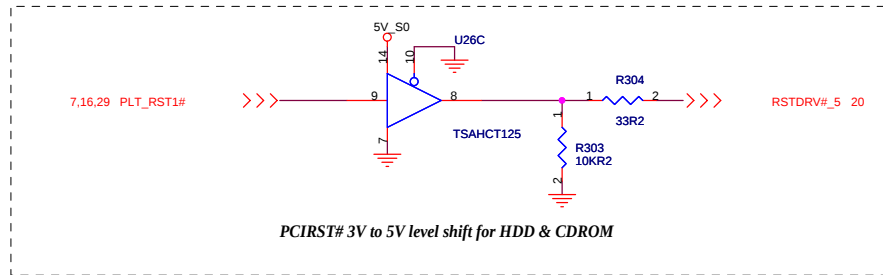
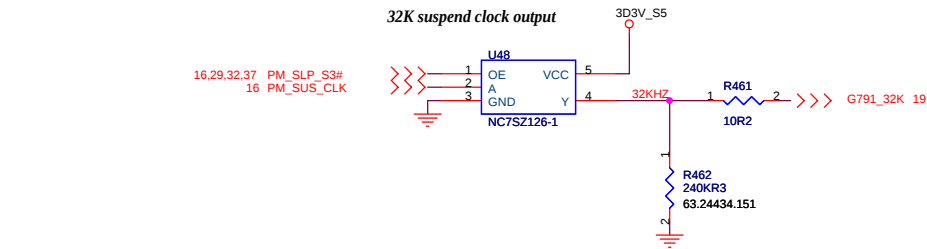
Place within 100
mils of ICH
pin A17

緯創資通

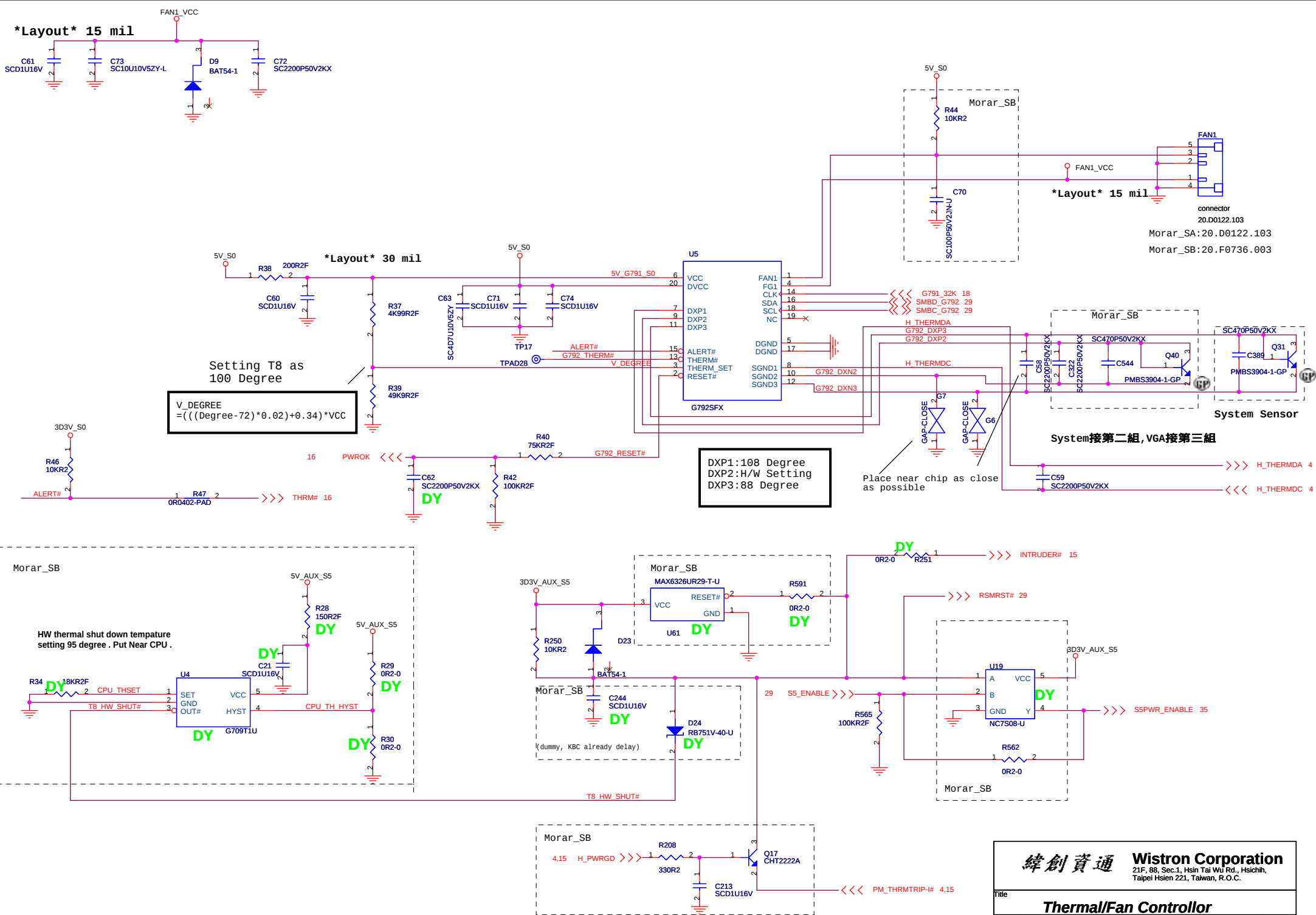
Wistron Corporation
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Taipei Hsien 221, Taiwan, R.O.C.

ICH6-M (3 of 4)

Size A3	Document Number MORAR	Rev SB
Date: Friday, June 24, 2005	Sheet 17 of 40	



U49D			
E27	VSS	VSS	F4
Y6	VSS	VSS	F22
Y27	VSS	VSS	F19
Y26	VSS	VSS	F17
Y23	VSS	VSS	E25
W7	VSS	VSS	E19
W25	VSS	VSS	E18
W24	VSS	VSS	E15
W23	VSS	VSS	E14
W1	VSS	VSS	D7
V4	VSS	VSS	D22
V27	VSS	VSS	D20
V26	VSS	VSS	D18
V23	VSS	VSS	D14
U25	VSS	VSS	D13
U24	VSS	VSS	D10
U23	VSS	VSS	D1
U15	VSS	VSS	C4
U13	VSS	VSS	C22
T7	VSS	VSS	C20
T27	VSS	VSS	C18
T26	VSS	VSS	C14
T23	VSS	VSS	B25
T16	VSS	VSS	B24
T15	VSS	VSS	B23
T14	VSS	VSS	B21
T13	VSS	VSS	B19
T12	VSS	VSS	B15
T1	VSS	VSS	B13
R4	VSS	VSS	AG7
R25	VSS	VSS	AG3
R24	VSS	VSS	AG22
R23	VSS	VSS	AG20
R17	VSS	VSS	AG17
R16	VSS	VSS	AG14
R15	VSS	VSS	AG12
R14	VSS	VSS	AG1
R13	VSS	VSS	AF7
R12	VSS	VSS	AF3
R11	VSS	VSS	AF26
P22	VSS	VSS	AF12
P16	VSS	VSS	AF10
P15	VSS	VSS	AE1
P14	VSS	VSS	AE7
P13	VSS	VSS	AE6
P12	VSS	VSS	AE25
N7	VSS	VSS	AE21
N17	VSS	VSS	AE2
N16	VSS	VSS	AE12
N15	VSS	VSS	AE11
N14	VSS	VSS	AE10
N13	VSS	VSS	AD6
N12	VSS	VSS	AD24
N11	VSS	VSS	AD2
N1	VSS	VSS	AD18
M4	VSS	VSS	AD15
M27	VSS	VSS	AD10
M26	VSS	VSS	AD1
M23	VSS	VSS	AC6
M16	VSS	VSS	AC3
M15	VSS	VSS	AC26
M14	VSS	VSS	AC24
M13	VSS	VSS	AC23
M12	VSS	VSS	AC22
L25	VSS	VSS	AC12
L24	VSS	VSS	AC10
L23	VSS	VSS	AB9
L15	VSS	VSS	AB7
L13	VSS	VSS	AB2
K7	VSS	VSS	AB19
K27	VSS	VSS	AB10
K26	VSS	VSS	AB1
K23	VSS	VSS	AA4
K1	VSS	VSS	AA16
J4	VSS	VSS	AA13
J25	VSS	VSS	AA11
J24	VSS	VSS	A9
J23	VSS	VSS	A7
H27	VSS	VSS	A4
H26	VSS	VSS	A26
H23	VSS	VSS	A23
G9	VSS	VSS	A21
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G1	VSS	VSS	A1

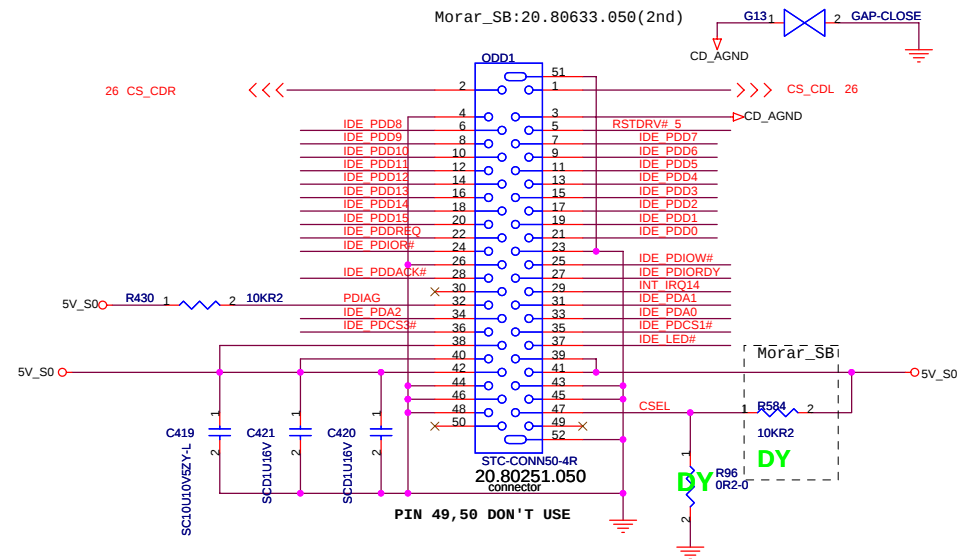


緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

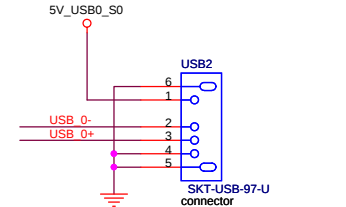
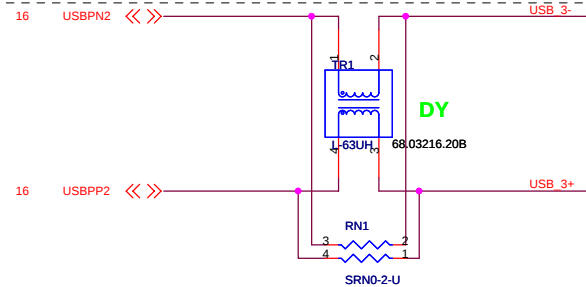
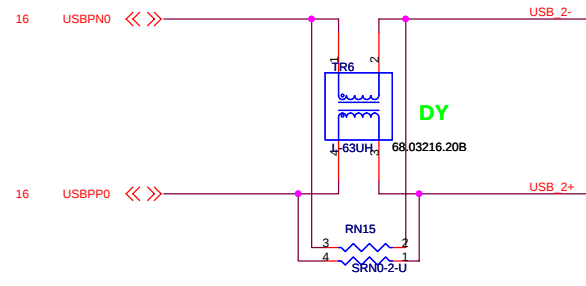
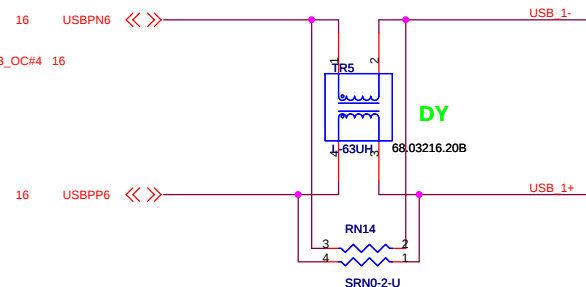
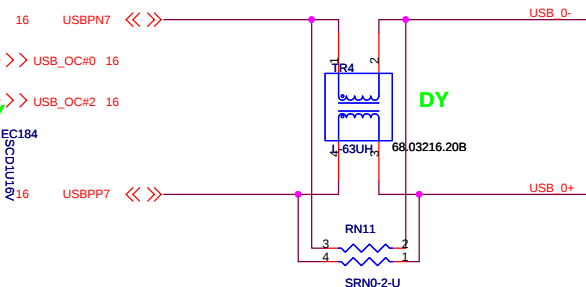
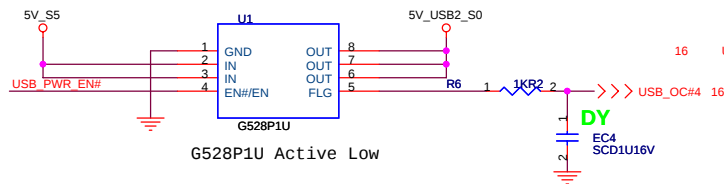
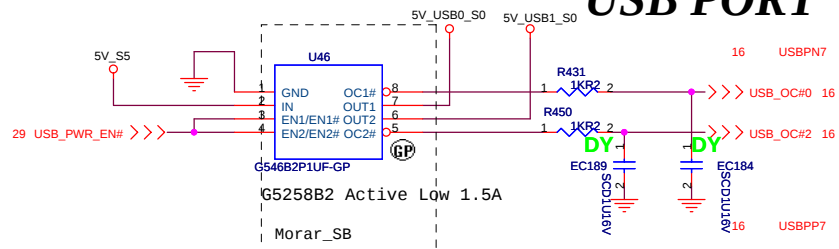
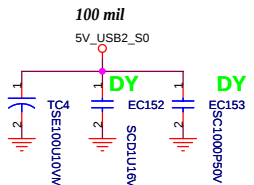
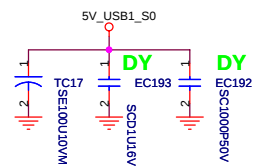
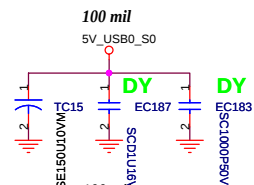
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Thermal/Fan Controller		
Size	Document Number	Rev
Custom	MORAR	SB
Date: Saturday, May 28, 2005	Sheet 19 of 40	

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Morar_SB:20.80251.050
Morar_SB:20.80633.050(2nd)

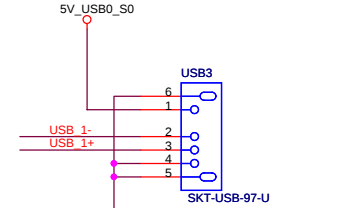
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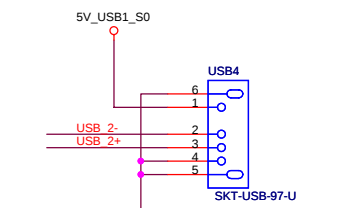
USB PORT



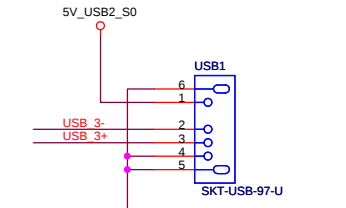
22.10218.H01
Morar_SA:22.10218.H01
Morar_SB:22.10218.H01



22.10218.H01
Morar_SA:22.10218.H01
Morar_SB:22.10218.H01

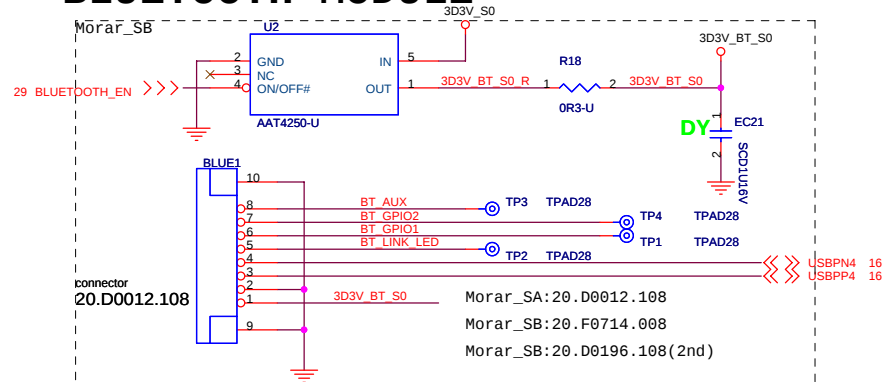


22.10218.H01
Morar_SA:22.10218.H01
Morar_SB:22.10218.H01

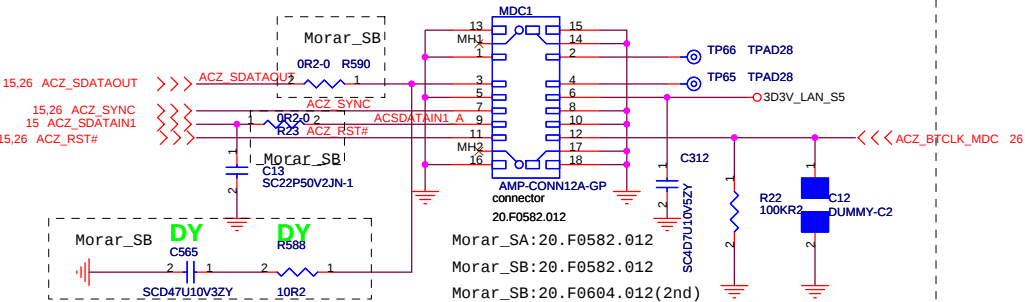


22.10218.H01
Morar_SA:22.10218.H01
Morar_SB:22.10218.H01

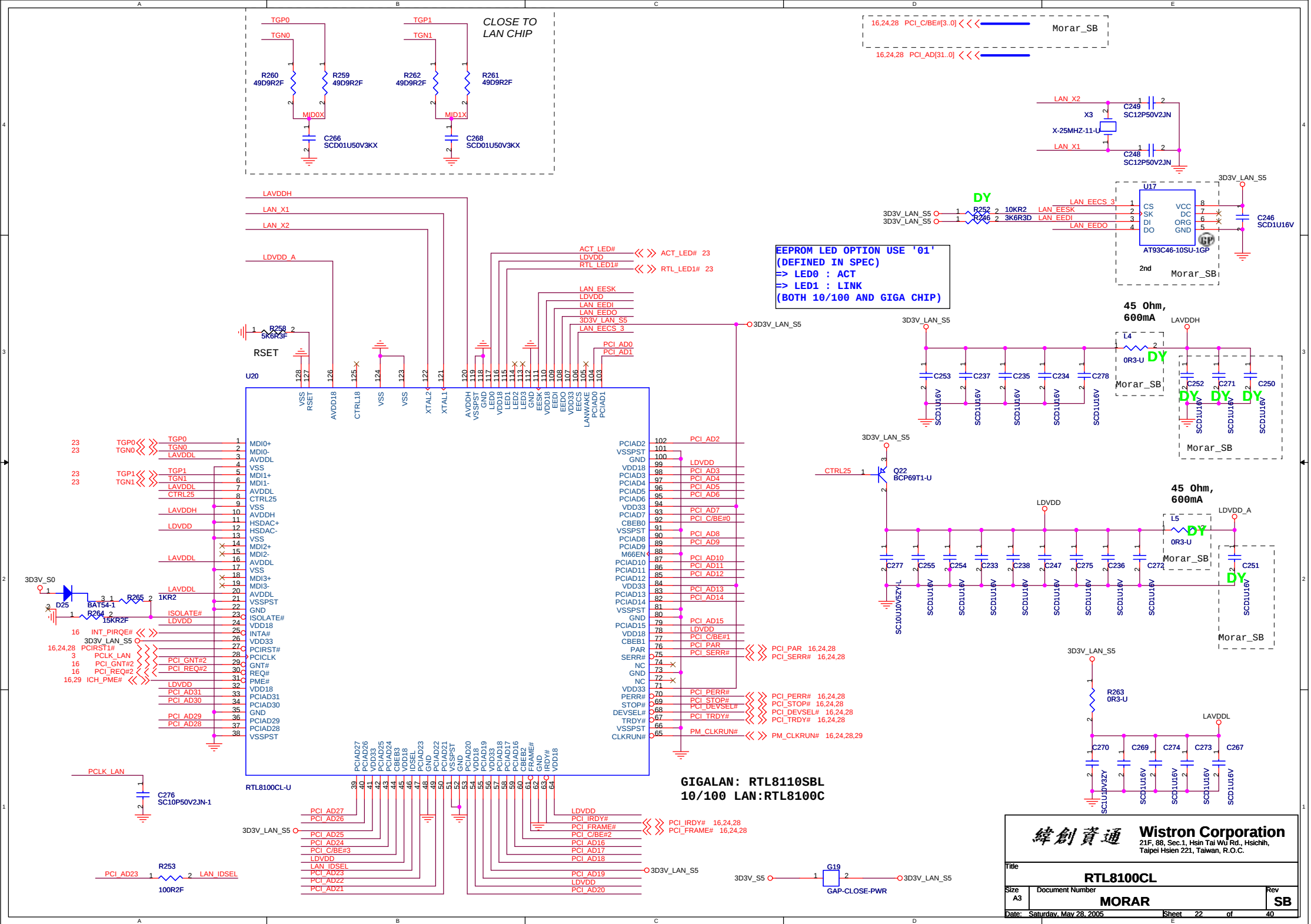
BLUETOOTH MODULE

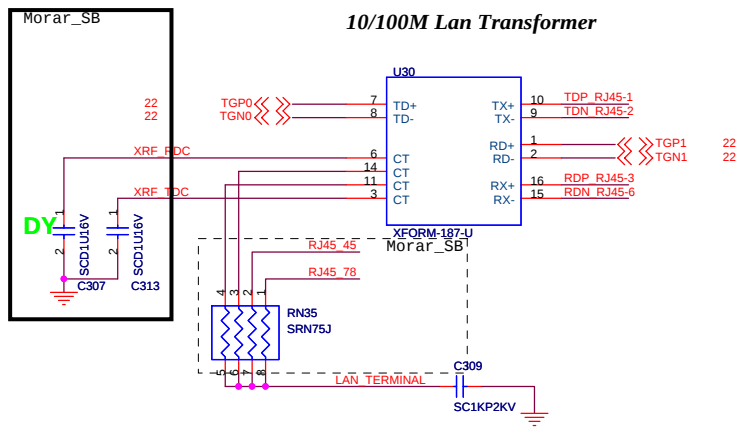


MDC 1.5 CONNECTOR

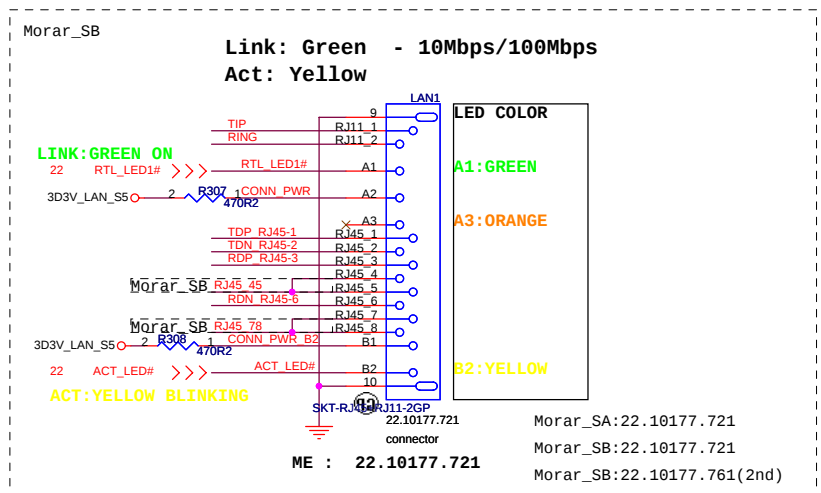
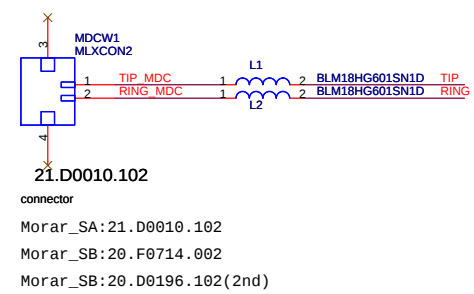
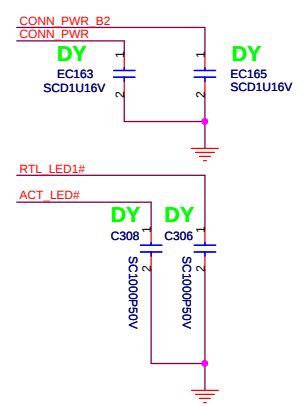


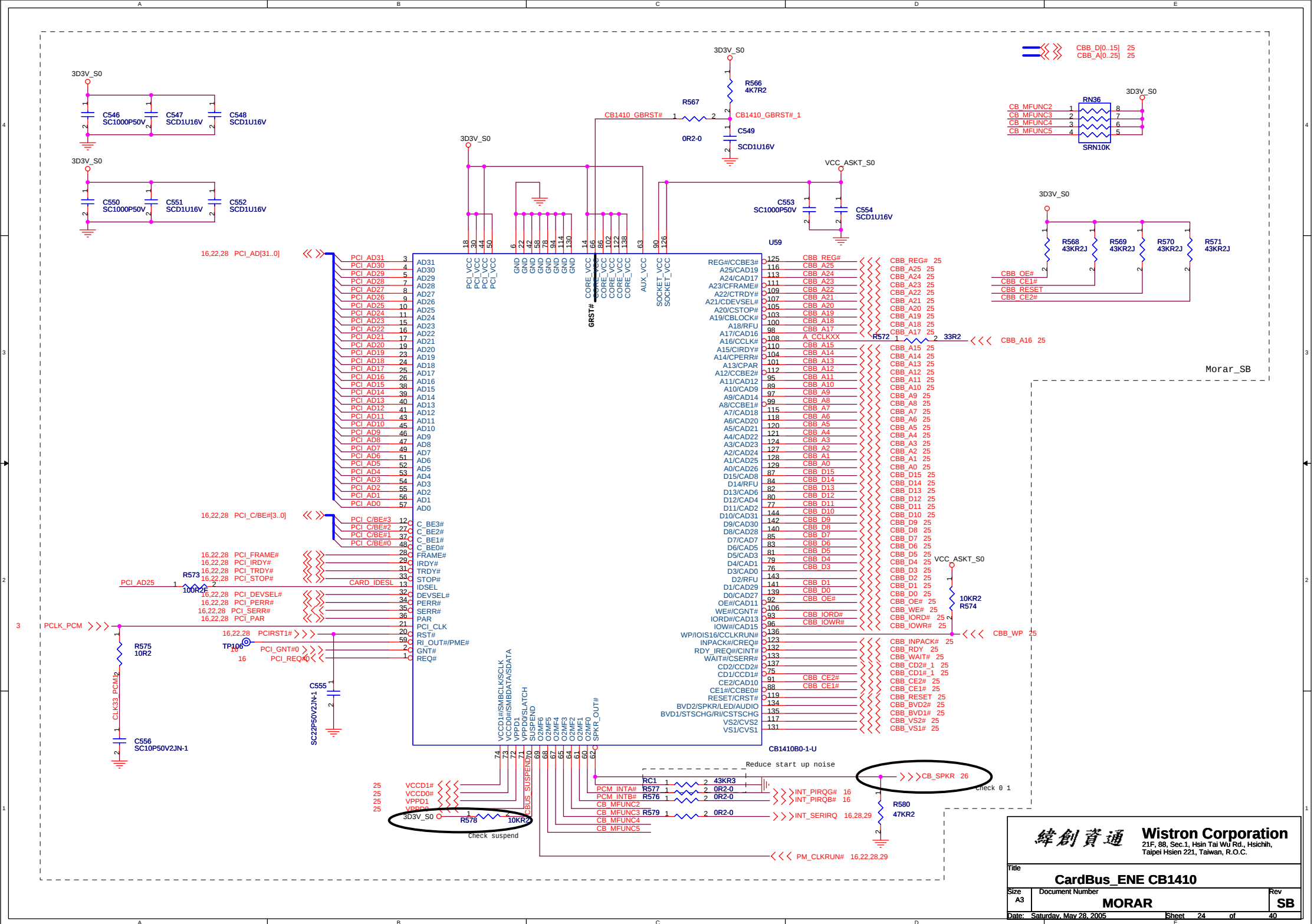
緯創資通 Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title		
USB / MDC / BLUETOOTH		
Size	Document Number	Rev
A3	MORAR	SB
Date: Saturday, May 28, 2005		
Sheet 21 of 40		



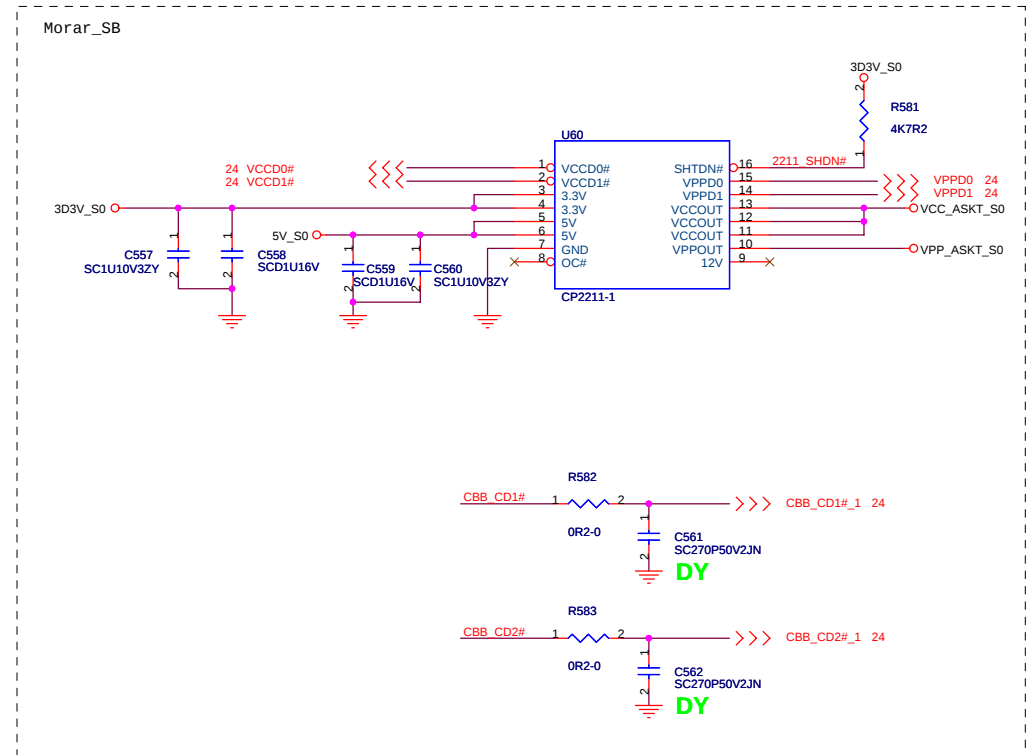
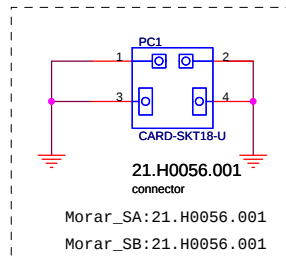


- 1.route on bottom as differential pairs.
- 2.Tx+/Tx- are pairs. Rx+/Rx- are pairs.
- 3.No vias, No 90 degree bends.
- 4.pairs must be equal lengths.
- 5.6mil trace width,12mil separation.
- 6.36mil between pairs and any other trace.
- 7.Must not cross ground moat,except RJ-45 moat.

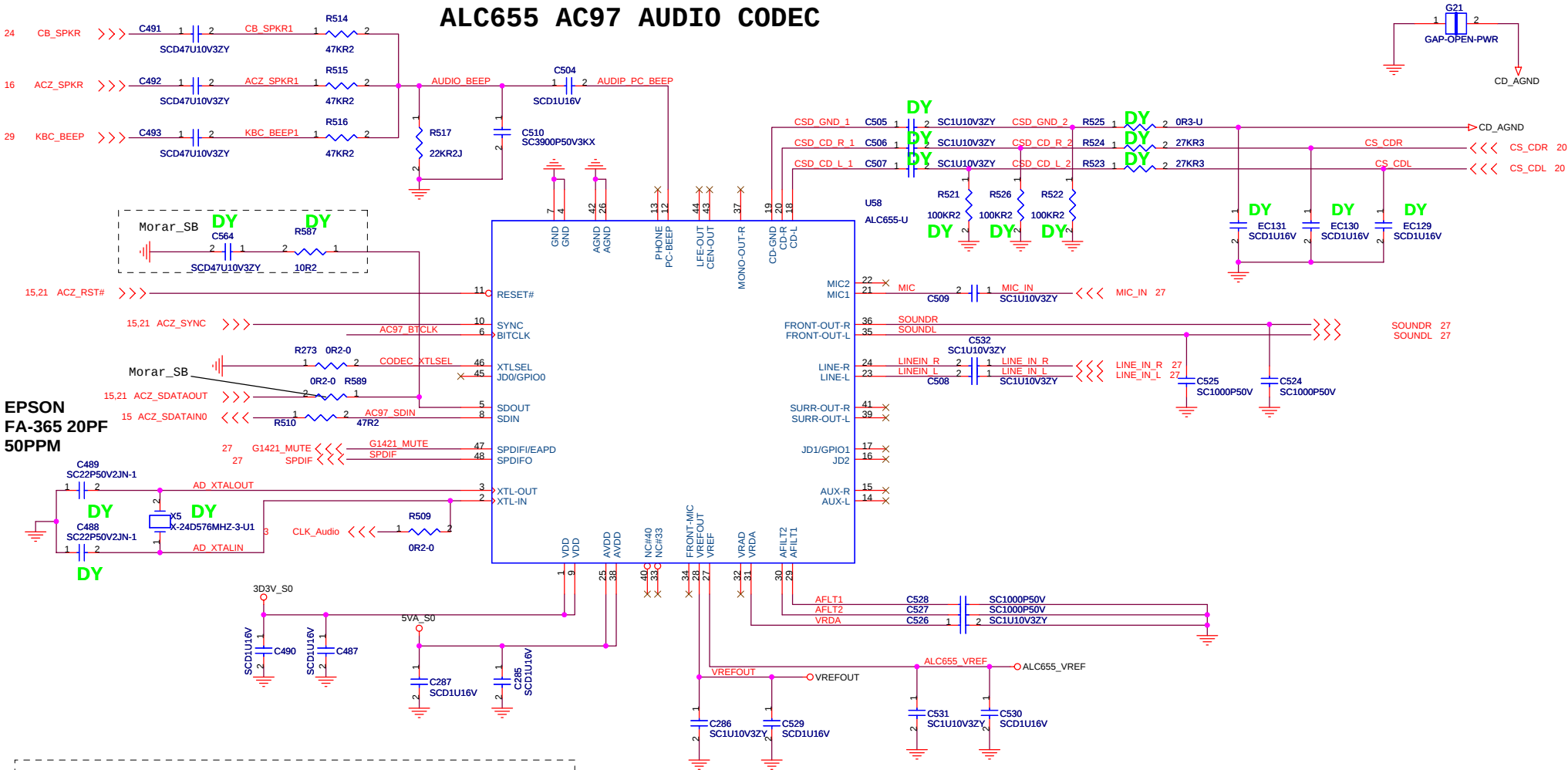




Power switch



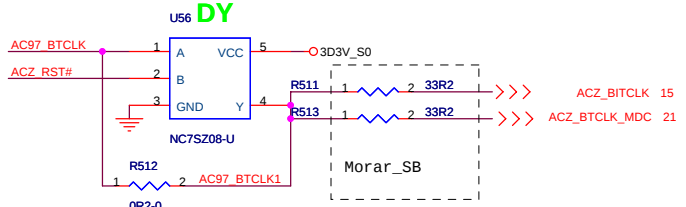
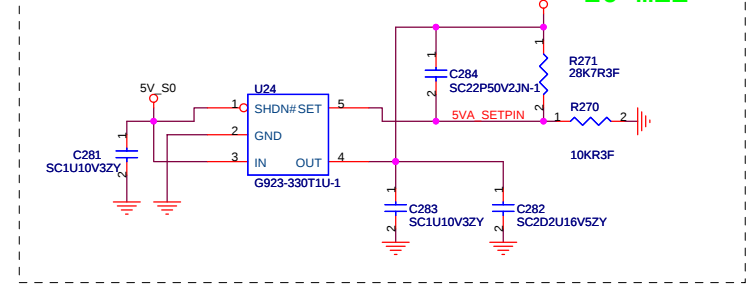
ALC655 AC97 AUDIO CODEC



EPSON
FA-365 20PF
50PPM

POWER GENERATE

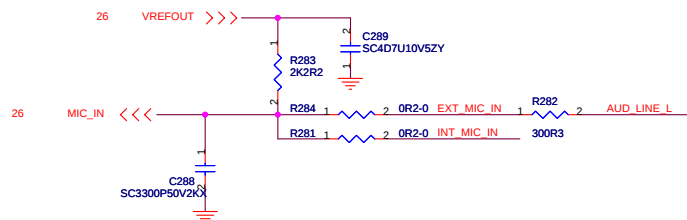
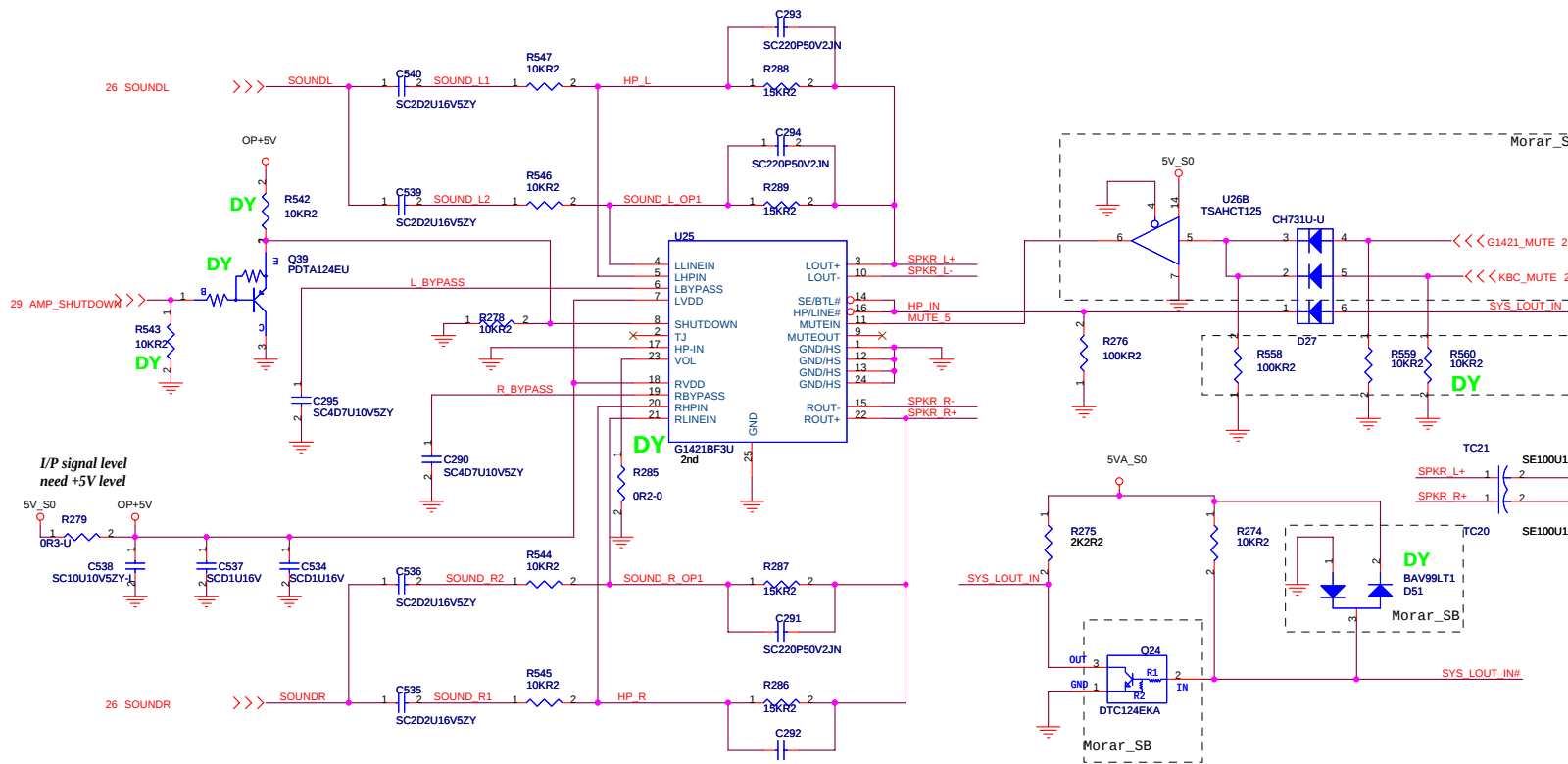
Layout
20 mil



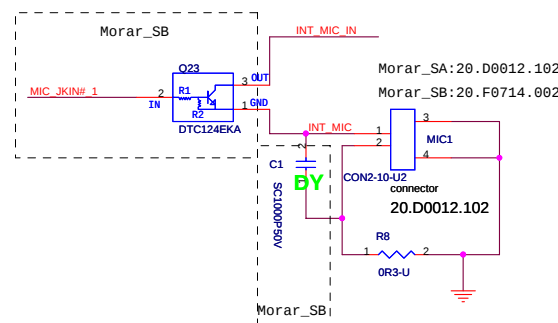
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title		
AC'97 CODEC - ALC655		
Size A3	Document Number	Rev
	MORAR	SB
Date: Saturday, May 28, 2005	Sheet 26	of 40

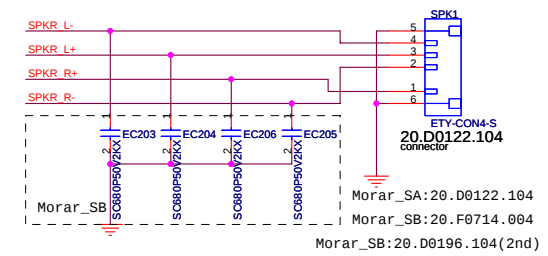
AUDIO OP AMPLIFIER



Internal Mic

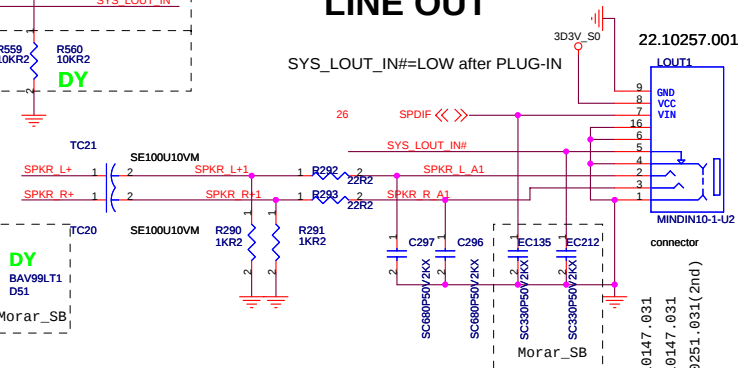


Internal Speaker

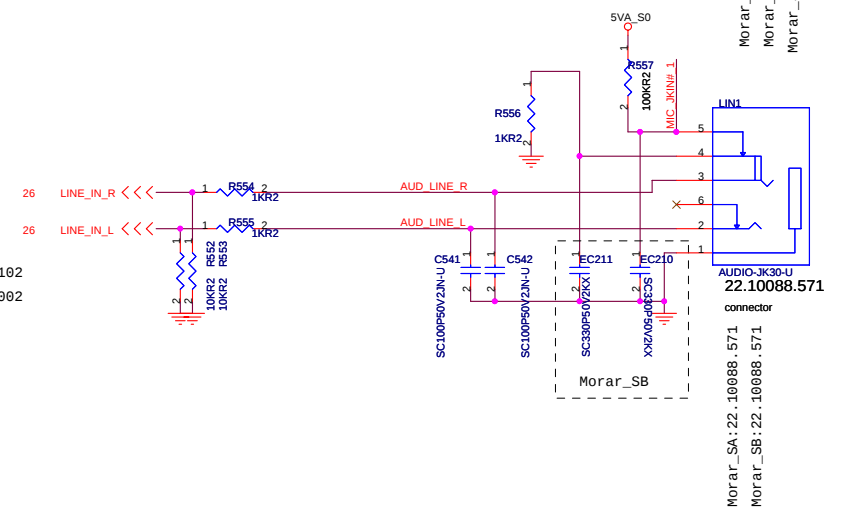


LINE OUT

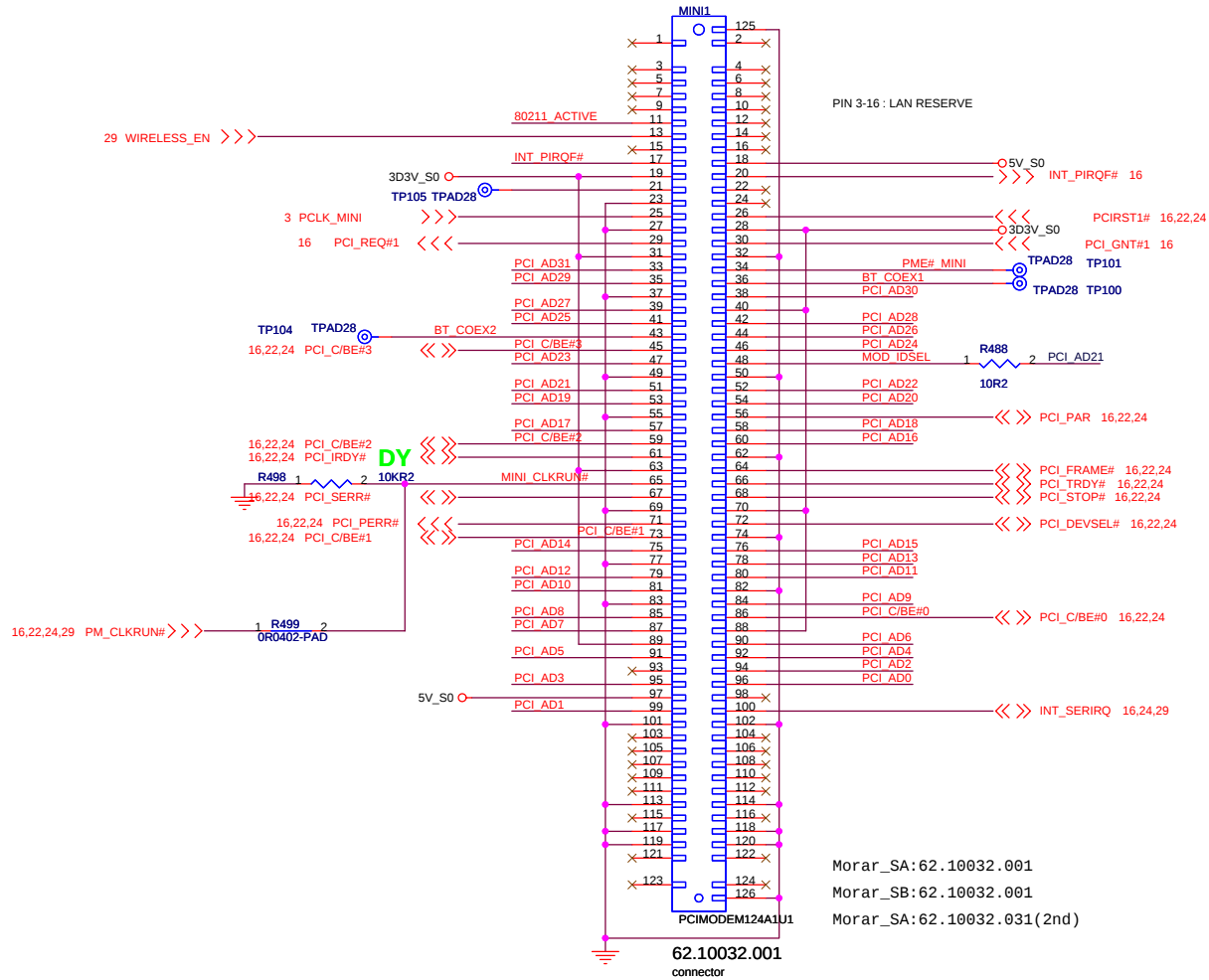
SYS_LOUT_IN#=LOW after PLUG-IN



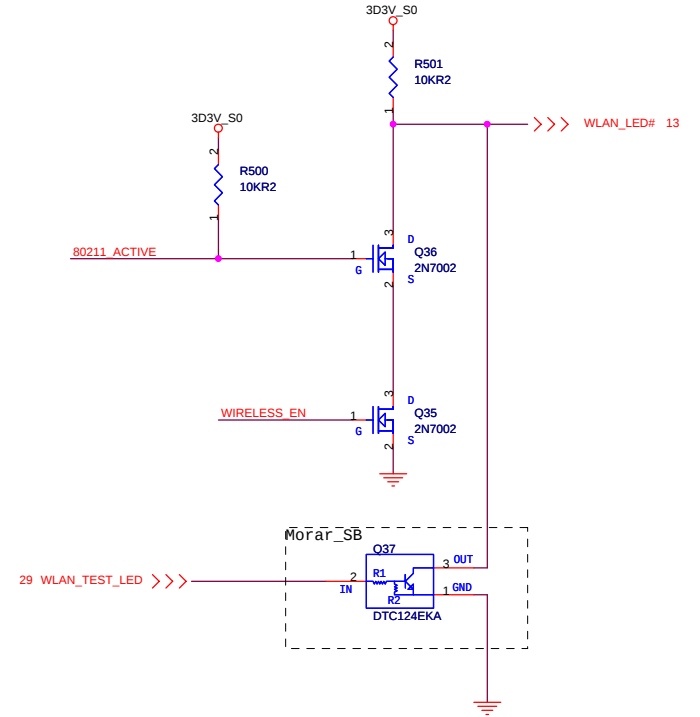
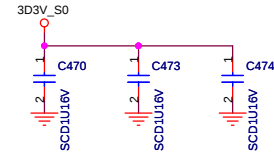
LINE IN/MIC IN



16,22,24 PCI_AD[31..0] <<<



Morar_SA:62.10032.001
Morar_SB:62.10032.001
Morar_SA:62.10032.031(2nd)



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

Title			MINI-PCI	
Size	Document Number			Rev
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POWER BUTTON

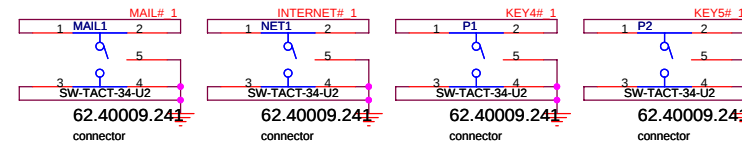
Buttons

Mail

Internet

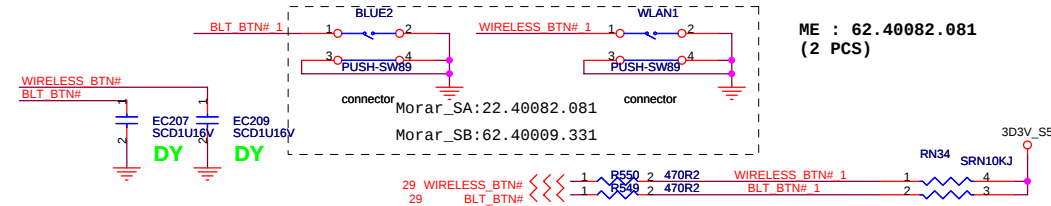
P1

P2

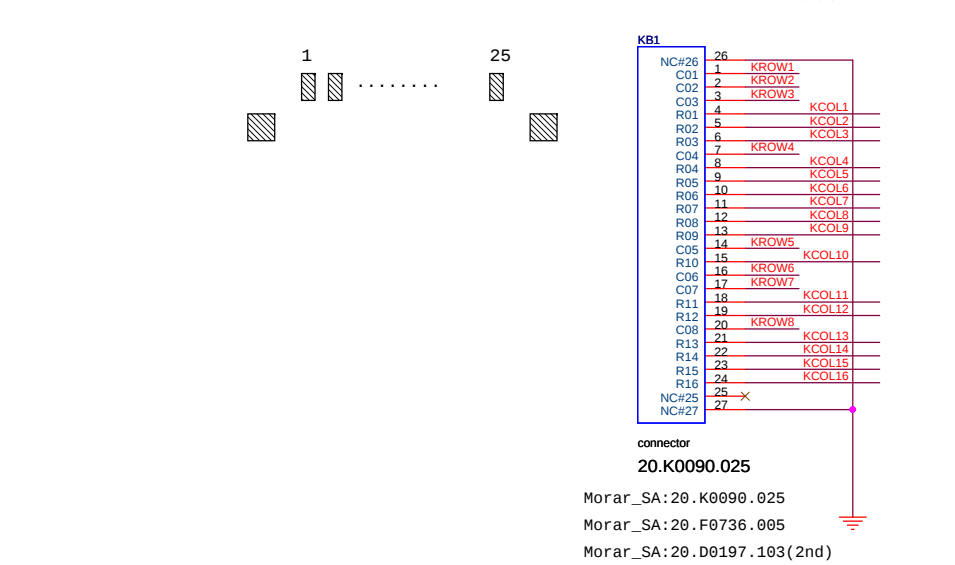


BlueTooth ON/OFF

Wireless ON/OFF

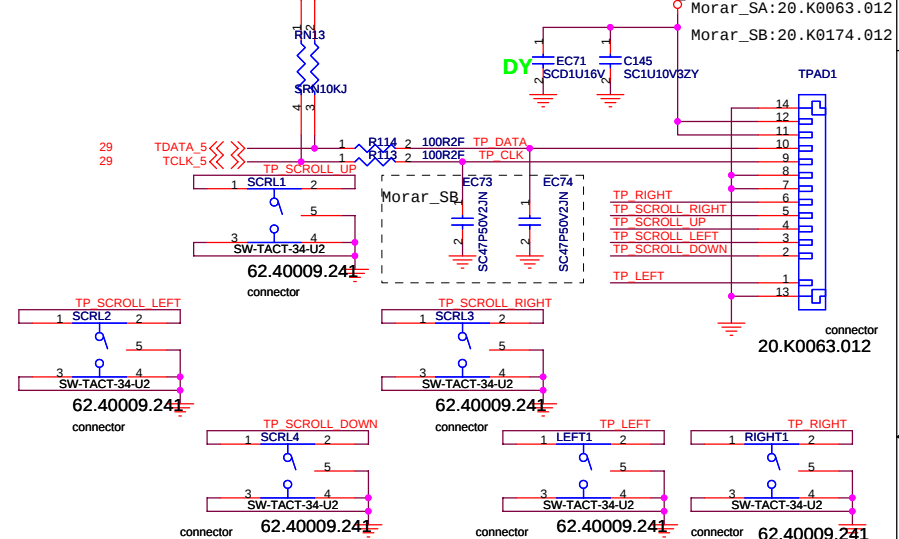


Internal KeyBoard CONN

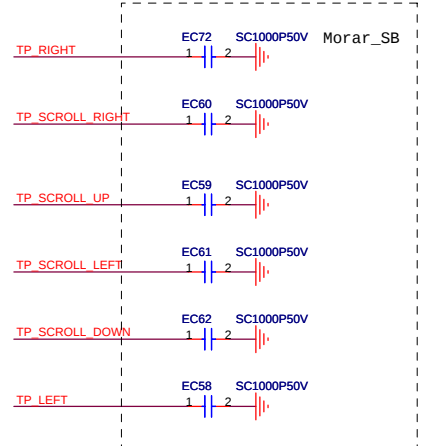
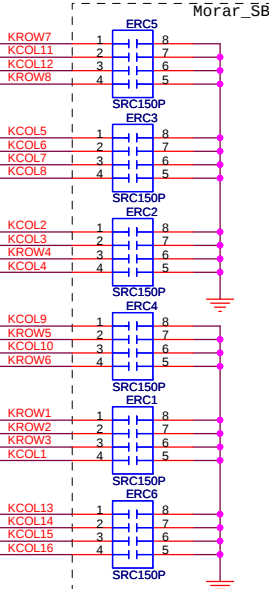


Cover Up Switch

TOUCH PAD



EMI Bypass cap.



緯創資通

Wistron Corporation

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Title

Buttons / KB / TOUCHPAD

Size

A3

Document Number

MORAR

Rev

SB

Date: Saturday, May 28, 2005

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>>> KBC_D[0..7] 29

29 KBCBIOS_WE#
29 KBCBIOS_RD#
29 KBCBIOS_CS#

29 KBC_D0
29 KBC_D1
29 KBC_D2
29 KBC_D3
29 KBC_D4
29 KBC_D5
29 KBC_D6
29 KBC_D7

29
29
29
29
29
29
29
29

A0
A1
A2
A3
A4
A5
A6
A7

3D3V_AUX_S5

C475
SCD1U16V

U53

SST39VF040-70-1

(SOCKET) 62.10002.032 - (IC)72.39040.H03 IN DIP,SMT

ROM SIZE MAX. 512KBYTE

PLCC32 Socket P/N:
SSKT3262.10002.032
SSKT32 62.10005.032

3D3V_S0

DY

RN4
SRN10KJ

PH at ICH6M

SW1

SW-2184LPSTR
connector
62.40059.001

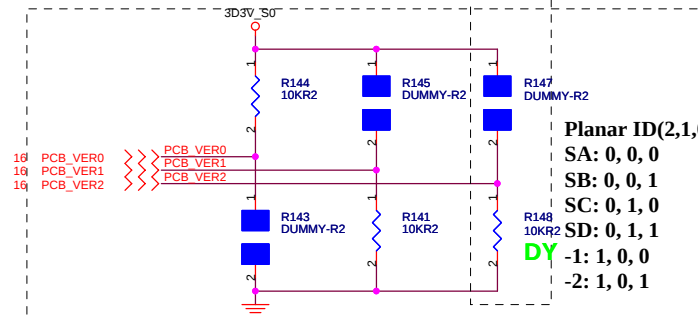
EC24
SC1000P50V
DY

Keyboard matrix (from vendor)

	US	Jap	Eur	Other
Low Bit				
MATRIXID1#	1	1	0	0
High Bit				
MATRIXID2#	1	0	1	0

Board ID

Morär_SB:Can not use in Board ID

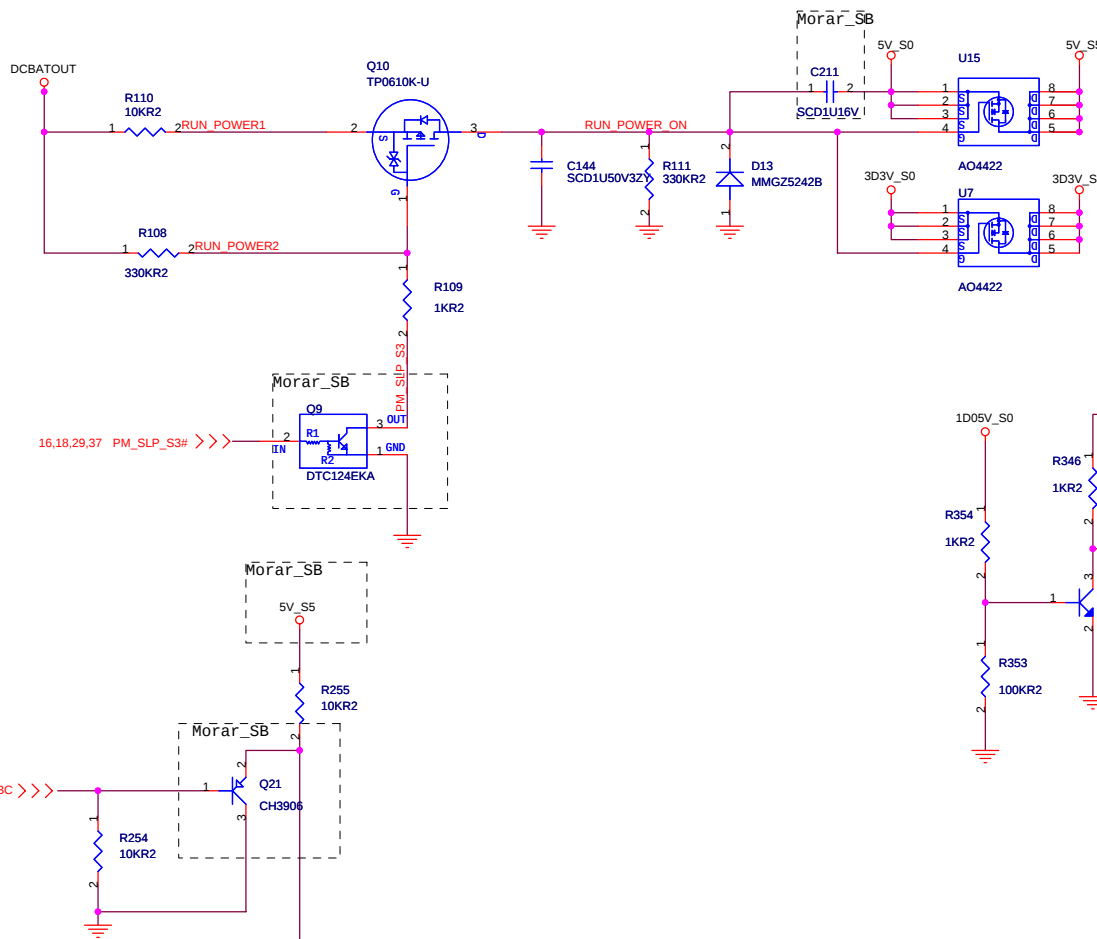


緯創資通

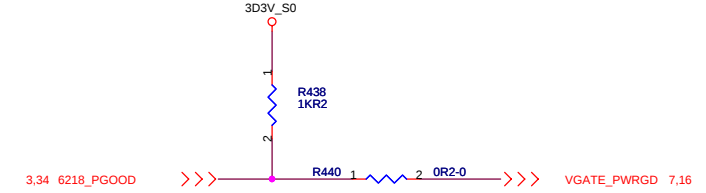
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title			BIOS ROM	
Size	Document Number			Rev
A3		MORAR		SB
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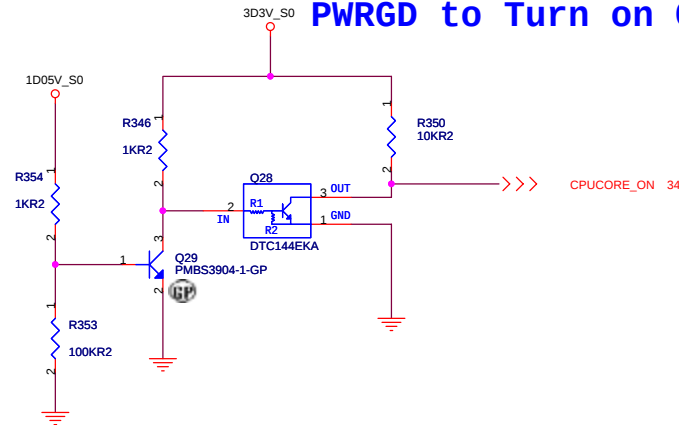
Run Power



PWRGD for NB and SB

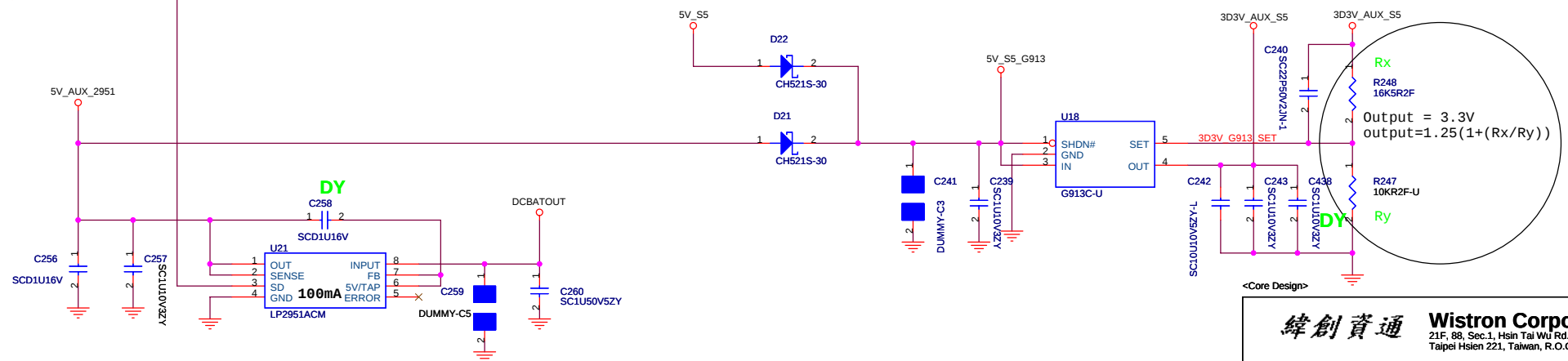


PWRGD to Turn on CPU_Core_Power



Aux Power

3D3V_AUX_S5



緯創資通

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

Title

RUN POWER and 3D3V AUX S5

Size
A3

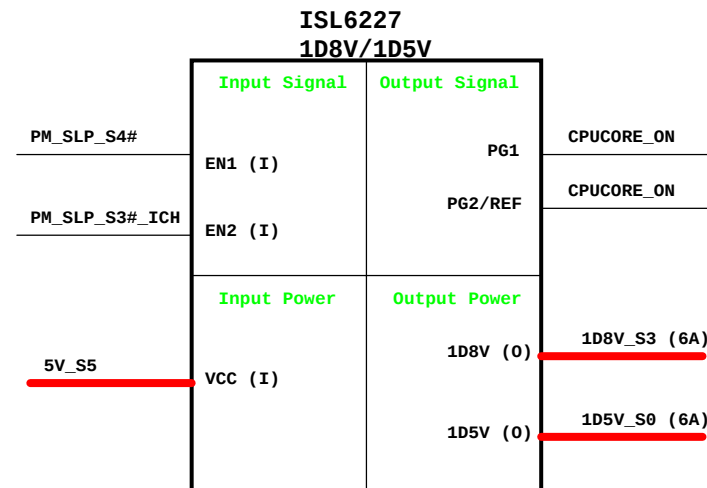
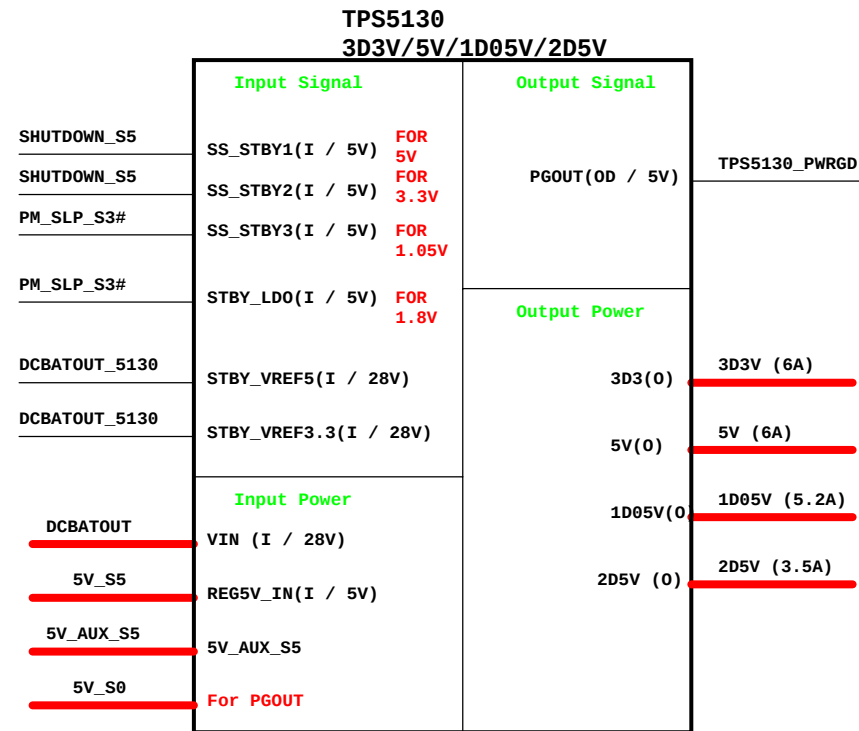
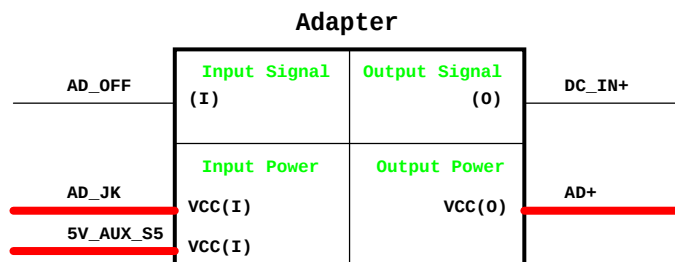
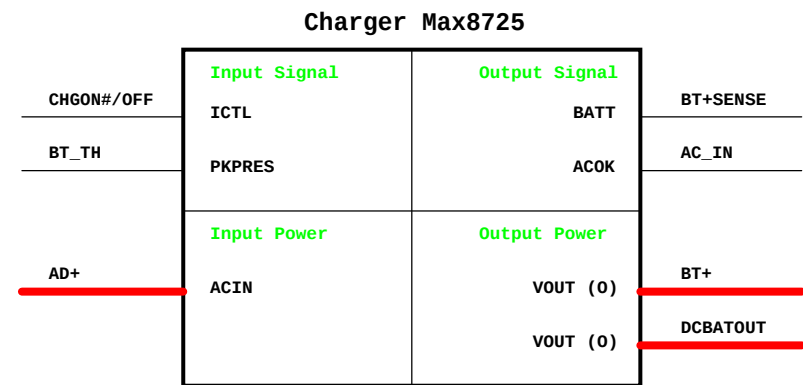
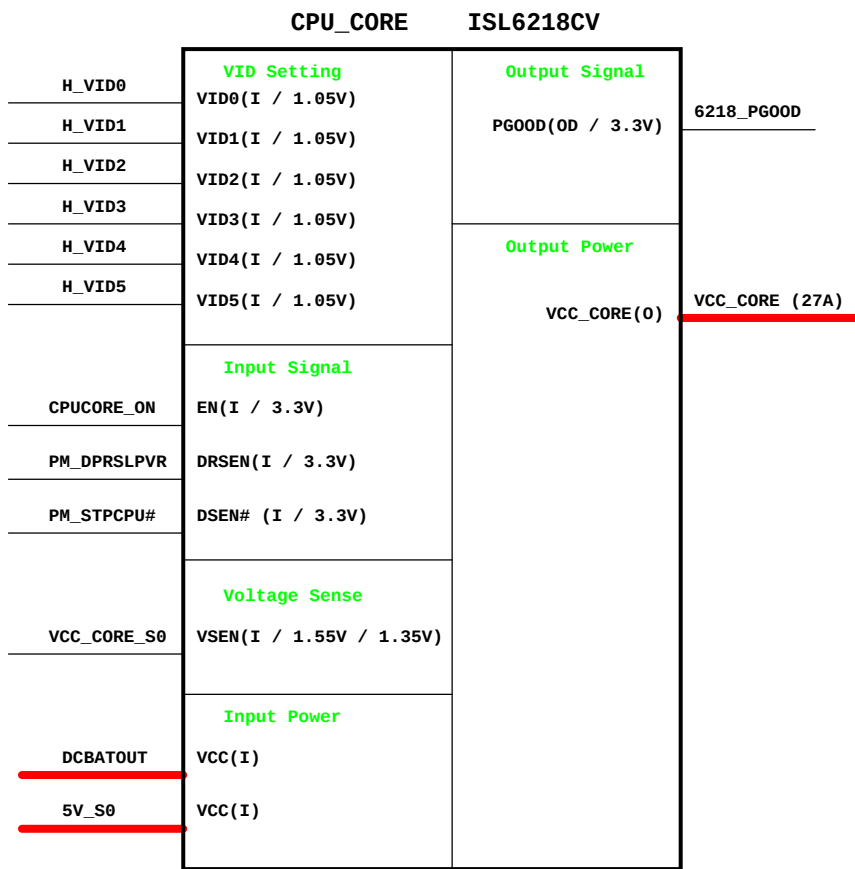
Document Number

MORAR

Rev
SB

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32 CPUCORE_ON
16 PM_DPRSPLVR
3,16 PM_STPCPU#
5 H_VID0
5 H_VID1
5 H_VID2
5 H_VID3
5 H_VID4
5 H_VID5

IMVP IV
Load Line Slope :3mR
25A*3mV/A=> 75mV
Idroop = 75mV / 6.04K = 12.4uA

C2_SB:change R100 to debug Core power

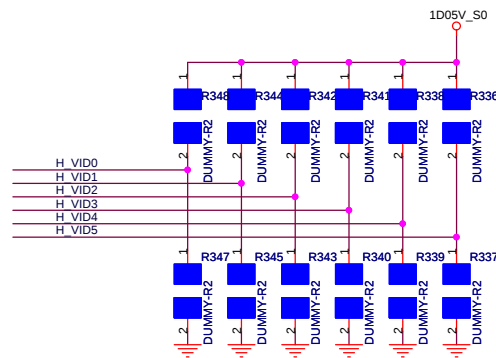
$$12.4\mu A / 0.87 / 0.5 = 28.54\mu A$$

$$R_{ds(on)} * I_o = I_{sen} * R_{sen}$$

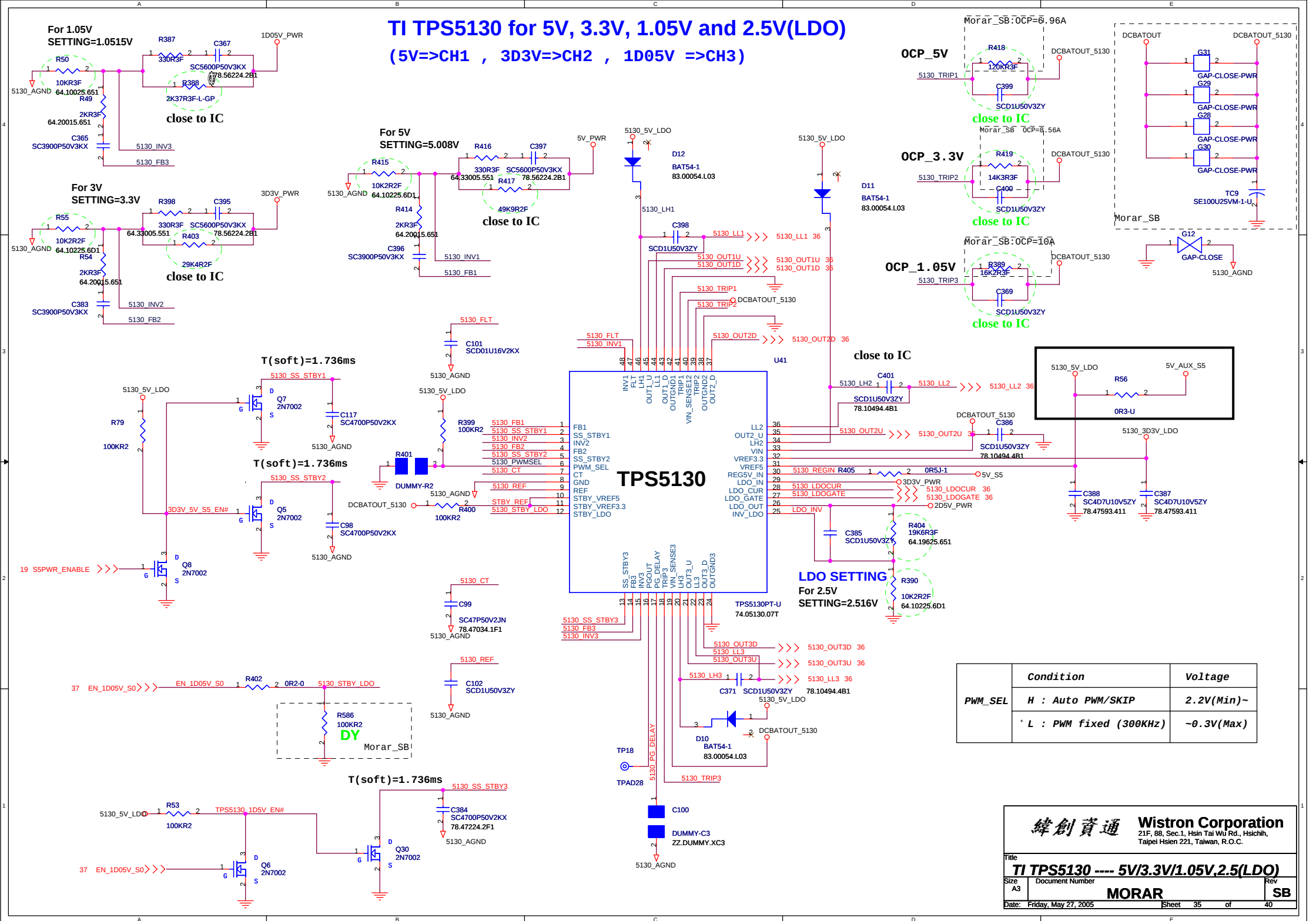
$$(5m/2) * 25A = 28.54\mu A * R_{sen}$$

$$R33 = 2.18K \sim 2.15K$$

1. U12,U14:A04422 84.04422.037
U13,U15:A04430 84.04430.B37
R100:3K83R2F
2. U12,U14:IRF7413 84.07413.037
U13,U15:IRF7832-U 84.07832.037
R100:2K43R2F

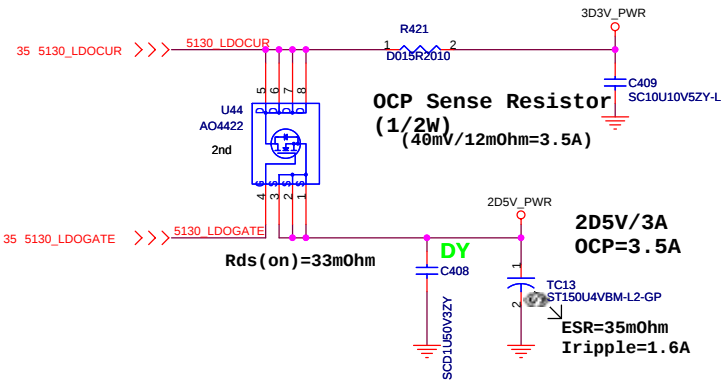
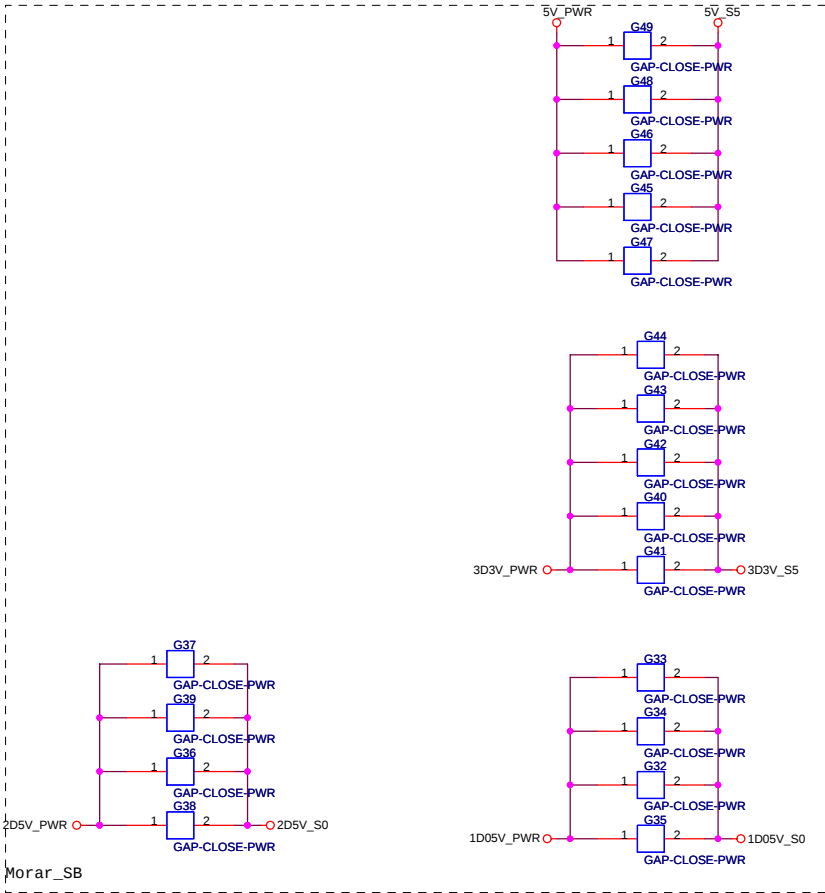
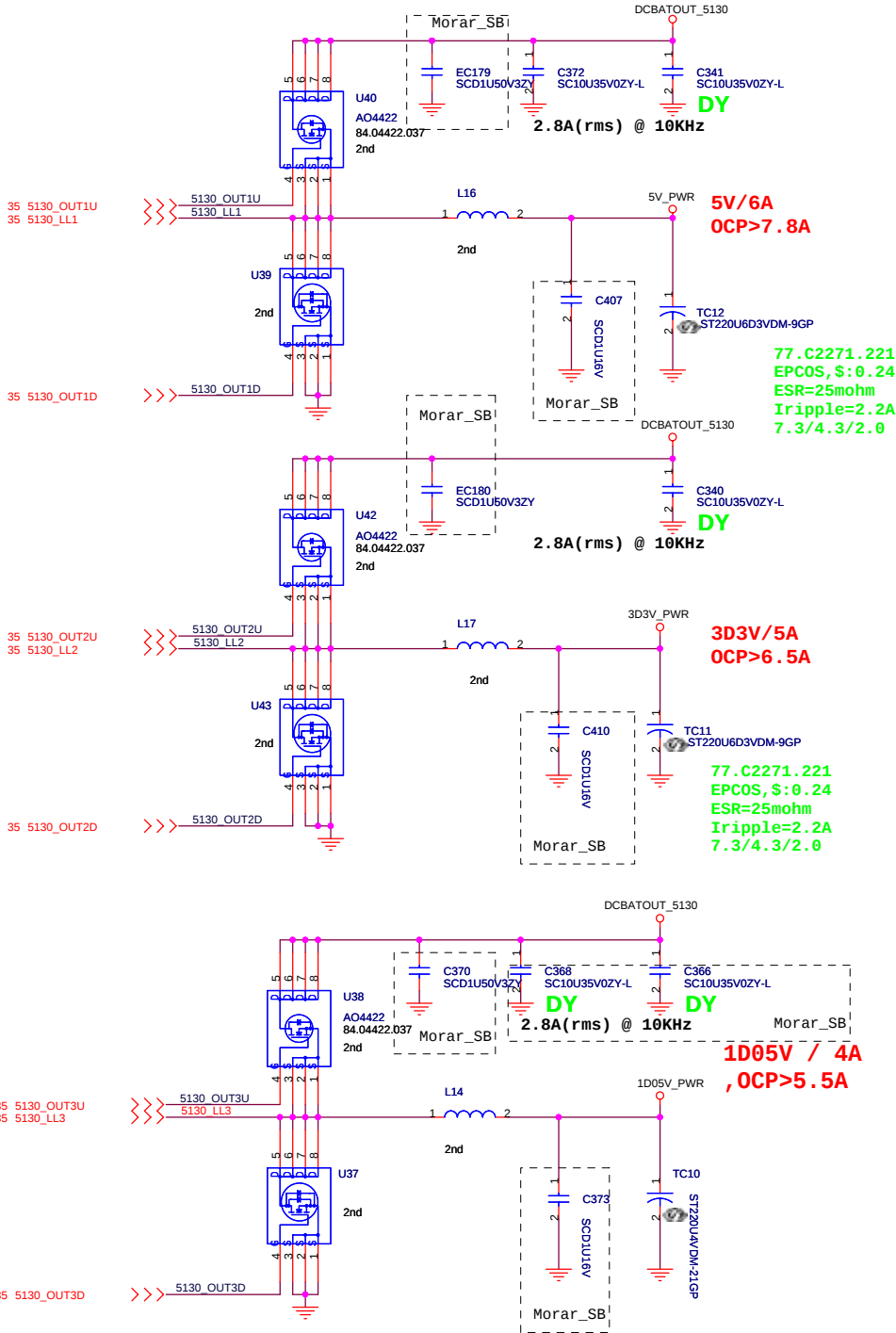


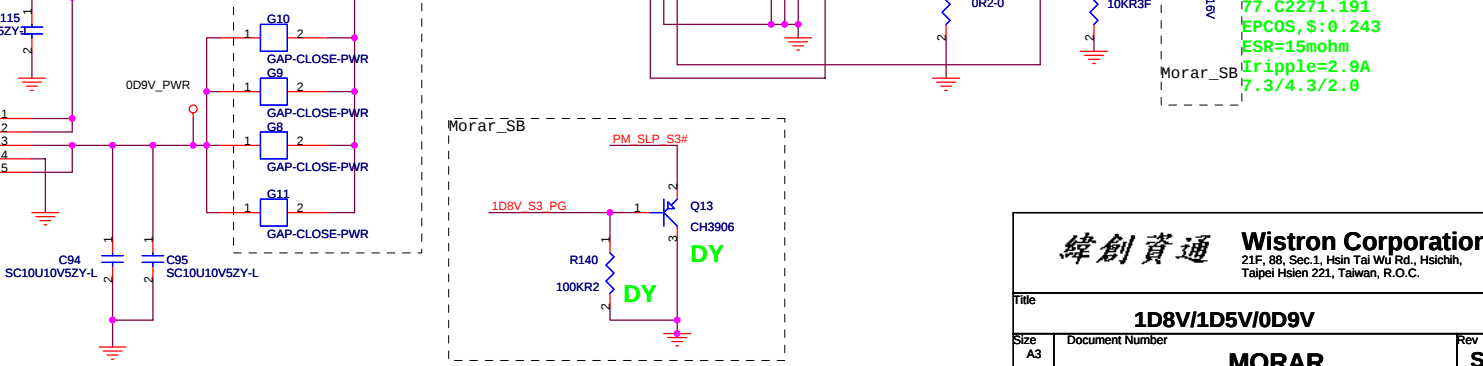
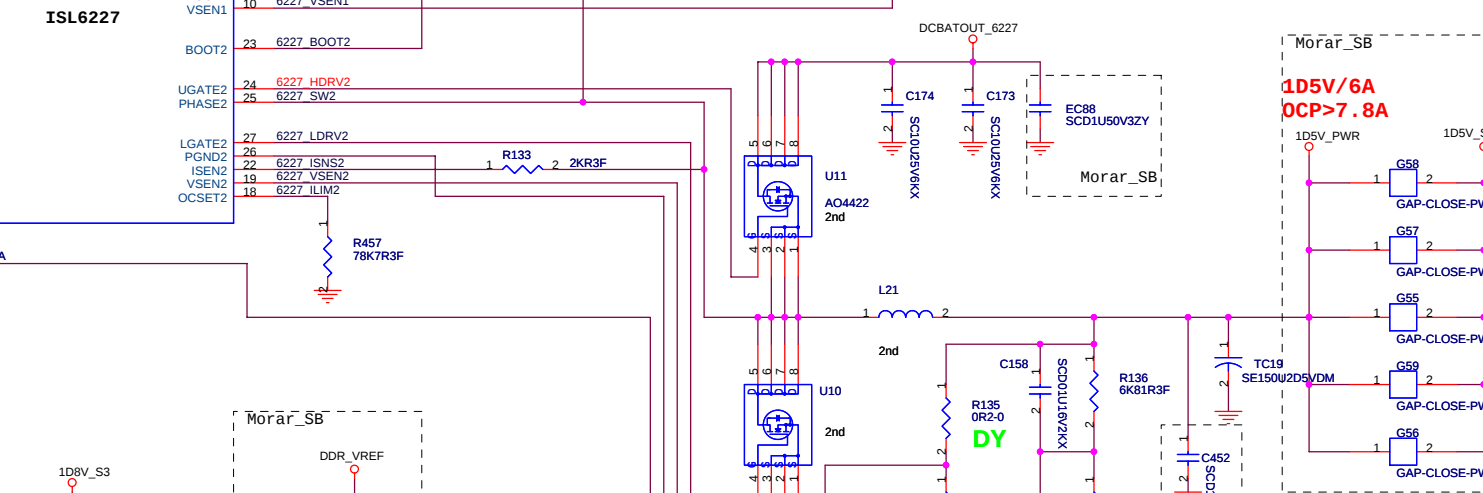
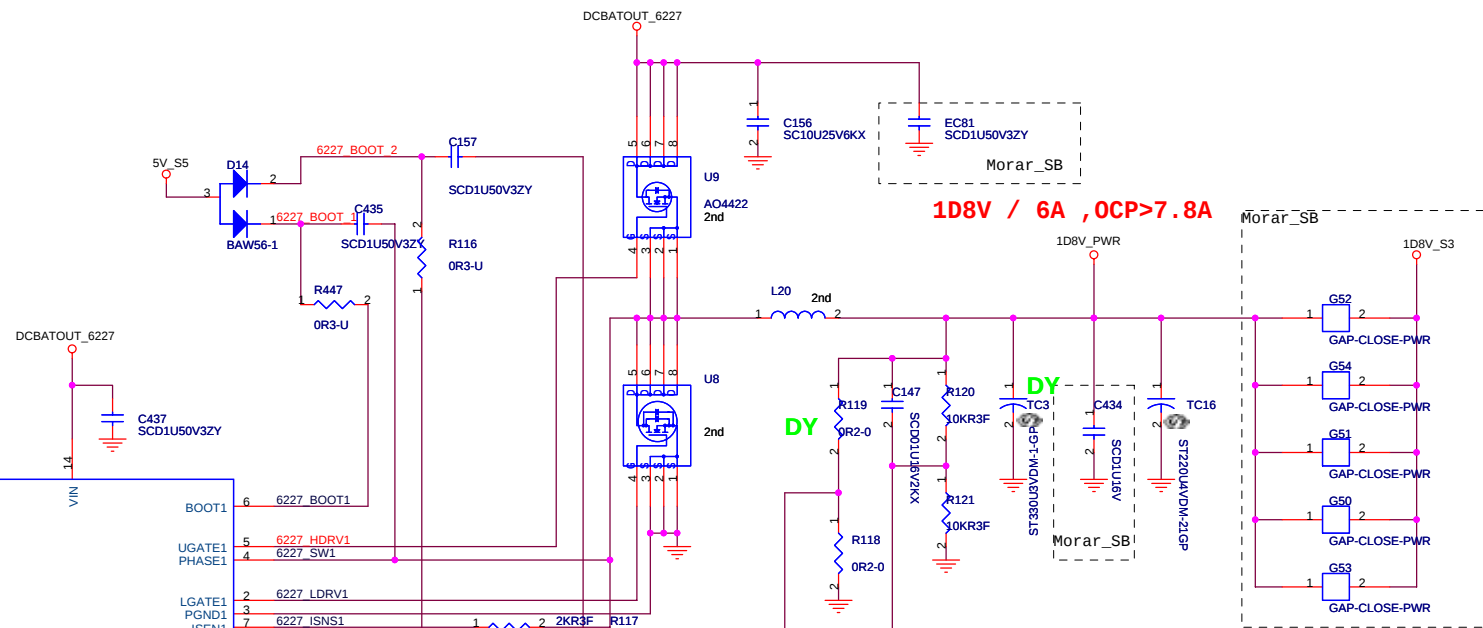
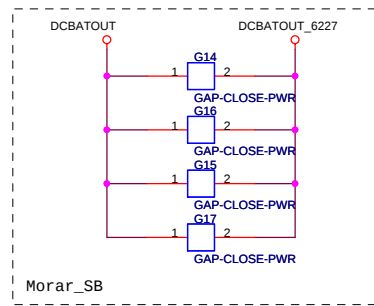
(5V=>CH1 , 3D3V=>CH2 , 1D05V =>CH3)



PWM_SEL	Condition	Voltage
	H : Auto PWM/SKIP	2.2V(Min)-
	L : PWM fixed (300KHz)	-0.3V(Max)

TI TPS5130 for 5V, 3.3V, 1.05V and 2.5V(LDO)
(5V=>CH1 , 3D3V=>CH2 , 1D05V =>CH3)





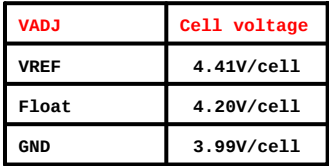
0D9V

OCF
7.8A=>R169=151K
9.0A=>R169=133K

NEED?

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

Title			1D8V/1D5V/0D9V		
Size	A3	Document Number	MORAR		
Date:	Thursday, May 26, 2005	Sheet	37	of	40
			SB		

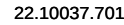


ISOURCE_MAX = (((ACLIM/VREF)*0.05+0.05)/Rsense)
Adaptor is 65W/19V : I_LIMIT = 2.9A (85%)

CELLS	Operate Mode
VDD	4S
GND	3S
Float	2S

		Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title			
CHARGER ISL6225			
Size A3	Document Number	Rev	
MORAR		SB	
Date:	Friday, May 27, 2005	Sheet	38 of 40

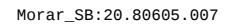
Morar_SB:22.10037.B02(2nd)



```

29 BAT_SCL
29 BAT_SDA
29 BAT_IN#

```



40

