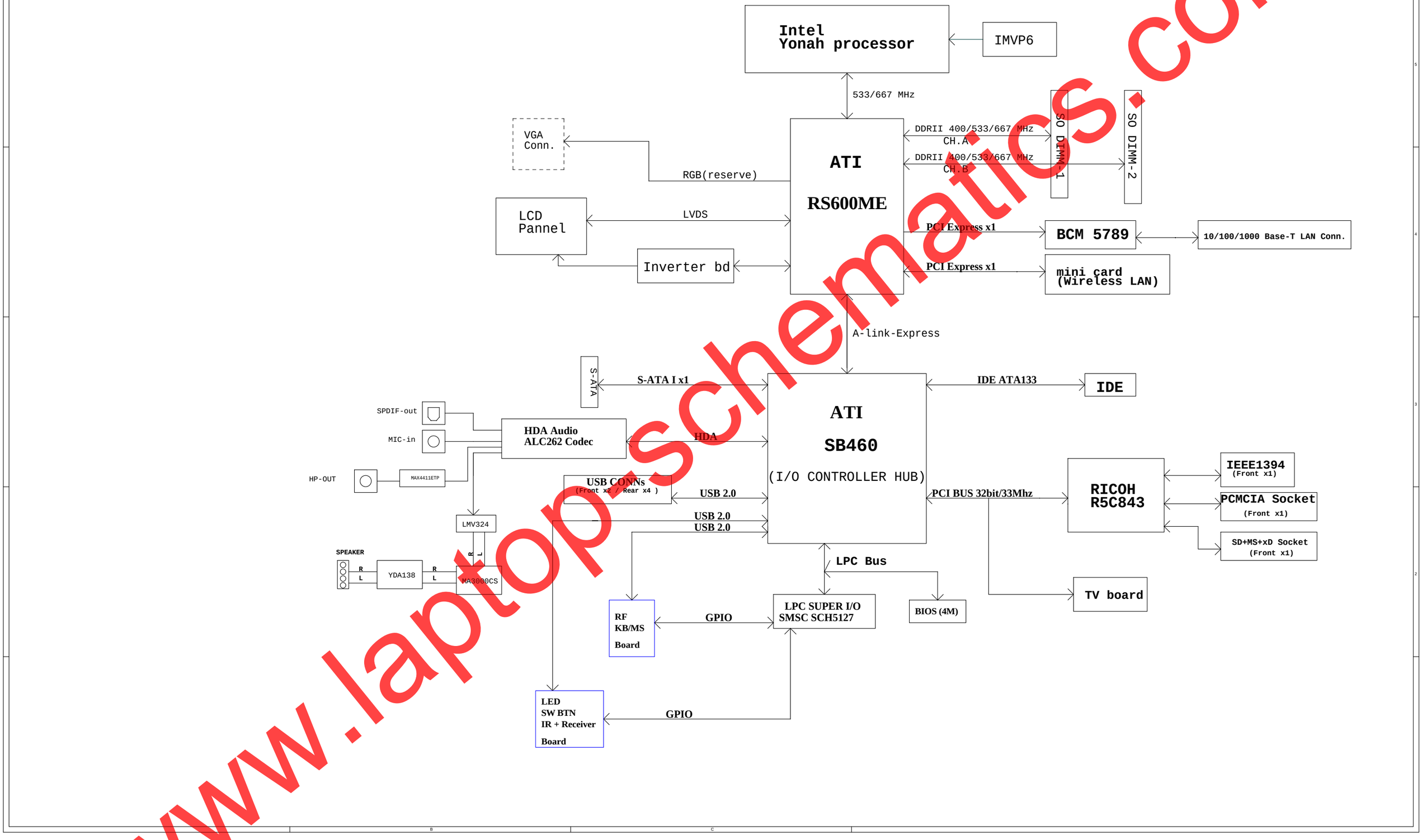


CPU heatsink MTG

MTG6 MTG/ID4/OD8
MTG7 MTG/ID4/OD8
MTG8 MTG/ID4/OD8
MTG9 MTG/ID4/OD8

CPU1A — Yonah 478P 10" White

ADDR GROUP 0 / ADDR GROUP 1 / XDP/ITP SIGNALS / THERM / HCLK / CONTROL / RESERVED

H_A-[31:3]	ADDR GROUP 0	
H_A-3	A3#	J4
H_A-4	A4#	L4
H_A-5	A5#	M3
H_A-6	A6#	K5
H_A-7	A7#	M1
H_A-8	A8#	N2
H_A-9	A9#	J1
H_A-10	A10#	N3
H_A-11	A11#	P5
H_A-12	A12#	P2
H_A-13	A13#	L1
H_A-14	A14#	P4
H_A-15	A15#	P1
H_A-16	A16#	R1
H_ADSTB-0	ADSTB0#	L2
H_REQ-[4:0]		
H_REQ-0	REQ0#	K3
H_REQ-1	REQ1#	H2
H_REQ-2	REQ2#	K2
H_REQ-3	REQ3#	J3
H_REQ-4	REQ4#	L5
H_A-[31:3]	ADDR GROUP 1	
H_A-17	A17#	Y2
H_A-18	A18#	U5
H_A-19	A19#	R3
H_A-20	A20#	W6
H_A-21	A21#	U4
H_A-22	A22#	Y5
H_A-23	A23#	U2
H_A-24	A24#	R4
H_A-25	A25#	T3
H_A-26	A26#	T2
H_A-27	A27#	W3
H_A-28	A28#	W5
H_A-29	A29#	Y4
H_A-30	A30#	W2
H_A-31	A31#	Y1
H_ADSTB-1	ADSTB1#	V4
H_A20M-	A20M#	A6
H_FERR-	FERR#	A5
H_IGNNE-	IGNNE#	C4
H_STPCLK-	STPCLK#	D5
H_INTR	LINT0	C6
H_NMI	LINT1	B4
H_SMI-	SMI#	A3
TP1	RSVD01	AA1
TP3	RSVD02	AA4
TP5	RSVD03	AB2
TP6	RSVD04	AA3
TP7	RSVD05	M4
TP9	RSVD06	N5
TP11	RSVD07	T4
TP13	RSVD08	V2
TP15	RSVD09	B2
TP17	RSVD10	C3
TP20	RSVD11	B25
	RSVD12	T22
	RSVD13	D2
	RSVD14	F6
	RSVD15	D3
	RSVD16	C1
	RSVD17	AF1
	RSVD18	D22
	RSVD19	C23
	RSVD20	C24
ADS#	H1	H_ADS-
BNR#	E2	H_BNR-
BPRI#	G5	H_BPRI-
DEFER#	H5	H_DEFER-
DRDY#	F21	H_DRDY-
DBSY#	E1	H_DBSY-
BR0#	F1	H_BREQ-0
IERR#	D20	H_IERR-
INIT#	B3	H_INIT-
LOCK#	H4	H_LOCK-
RESET#	B1	H_CPURST-
RS0#	F3	H_RS-0
RS1#	F4	H_RS-1
RS2#	G3	H_RS-2
TRDY#	G2	H_TRDY-
HIT#	G6	H_HIT-
HITM#	E4	H_HITM-
BPM0#	AD4	XDP_BPM-0
BPM1#	AD3	XDP_BPM-1
BPM2#	AD1	XDP_BPM-2
BPM3#	AC4	XDP_BPM-3
PRDY#	AC2	XDP_BPM-4
PREQ#	AC1	XDP_BPM-5
TCK	AC5	H_TCK
TDI	AA6	H_TDI
TDO	AB3	H_TDO
TMS	AB5	H_TMS
TRST#	AB6	H_TRST-
DBR#	C20	TP2
PROCHOT#	D21	PROCHOT- 14,33
THERMDA	A24	H_THERMDA 22
THERMDC	A25	H_THERMDC 22
THERMTRIP#	C7	H_THRMTRIP- S
BCLK0	A22	CK_H_CPU 32
BCLK1	A21	CK_H_CPU- 32

V_1P05 pull-ups: R2052 56 0402 1%; R4172 200 0402 1%; R4093 62 0402; R2070 56 0402 1%

H_BREQ-0; 11 H_FERR-

R2069 0 0402: 11 H_STPCLK- → H_STPCLK-_R

11 H_A20M-, 11 H_FERR-, 11 H_IGNNE-

11 H_INTR, 11 H_NMI, 11 H_SMI-

Layout note: Zo=55 om, 0.5" max for GTLREF.

R3 1K 0402 1% H_GTLREF; R7 2K 0603 1%

R4215 1K_NA 0402; R10 51 0402 1%

SB460 only: VCC3; R113 56 0402; R112 1K 0402; R116 10K 0402; Q103 MMBT3904LT1 SOT23 .2A/40V; H_THRMTRIP- S → H_THRMTRIP- 14

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

R26 COMP0 1% 0402 R5 27.4; U26 COMP1 1% 0402 R6 54.9; U1 COMP2 1% 0402 R8 27.4; V1 COMP3 1% 0402 R9 54.9

Layout : Connect test point TP? with no stub.

H_TMS R11 54.9 0402 1%; H_TDI R12 54.9 0402 1%; H_TDO R26 62 0402; H_TRST- R27 62 0402; H_TCK R13 54.9 0402 1%

C5 .1U 0402 16V Y5V

CPU1B — Yonah 478P 10" White

H_D-[63:0]	DATA GRP 0	
H_D-0	D0#	E22
H_D-1	D1#	F24
H_D-2	D2#	E26
H_D-3	D3#	H22
H_D-4	D4#	F23
H_D-5	D5#	G25
H_D-6	D6#	E25
H_D-7	D7#	E23
H_D-8	D8#	K24
H_D-9	D9#	G24
H_D-10	D10#	J24
H_D-11	D11#	J23
H_D-12	D12#	H26
H_D-13	D13#	F26
H_D-14	D14#	K22
H_D-15	D15#	H25
H_DSTBN-0	DSTBN0#	H23
H_DSTBP-0	DSTBP0#	G22
H_DINV-0	DINV0#	J26
H_D-[63:0]	DATA GRP 1	
H_D-16	D16#	N22
H_D-17	D17#	K25
H_D-18	D18#	P26
H_D-19	D19#	R23
H_D-20	D20#	L25
H_D-21	D21#	L22
H_D-22	D22#	L23
H_D-23	D23#	M23
H_D-24	D24#	P25
H_D-25	D25#	P22
H_D-26	D26#	P23
H_D-27	D27#	T23
H_D-28	D28#	R24
H_D-29	D29#	L26
H_D-30	D30#	T25
H_D-31	D31#	N24
H_DSTBN-1	DSTBN1#	M24
H_DSTBP-1	DSTBP1#	N25
H_DINV-1	DINV1#	M26
H_D-[63:0]	DATA GRP 2	
H_D-32	D32#	AA23
H_D-33	D33#	AB24
H_D-34	D34#	Y24
H_D-35	D35#	V26
H_D-36	D36#	W25
H_D-37	D37#	U23
H_D-38	D38#	U25
H_D-39	D39#	U22
H_D-40	D40#	AB25
H_D-41	D41#	W22
H_D-42	D42#	Y23
H_D-43	D43#	AA26
H_D-44	D44#	Y26
H_D-45	D45#	Y22
H_D-46	D46#	AC26
H_D-47	D47#	AA24
H_DSTBN-2	DSTBN2#	W24
H_DSTBP-2	DSTBP2#	Y25
H_DINV-2	DINV2#	V23
H_D-[63:0]	DATA GRP 3	
H_D-48	D48#	AC22
H_D-49	D49#	AC23
H_D-50	D50#	AB22
H_D-51	D51#	AA21
H_D-52	D52#	AB21
H_D-53	D53#	AC25
H_D-54	D54#	AA22
H_D-55	D55#	AE22
H_D-56	D56#	AF23
H_D-57	D57#	AD24
H_D-58	D58#	AE24
H_D-59	D59#	AD21
H_D-60	D60#	AE25
H_D-61	D61#	AF25
H_D-62	D62#	AF22
H_D-63	D63#	AF26
H_DSTBN-3	DSTBN3#	AD23
H_DSTBP-3	DSTBP3#	AE24
H_DINV-3	DINV3#	AC20
GTLREF	AD26	
TEST1	C26	
TEST2	D25	
BSEL0	B22	
BSEL1	E23	
BSEL2	C21	
COMP0	R26	
COMP1	U26	
COMP2	U1	
COMP3	V1	
DPRSTP#	E5	H_DPRSTP- 33
DPSLP#	B5	H_DPSLP- 11
DPWR#	D24	H_DPWR- 3
PWRGOOD	D6	H_PWRGD 11
SLP#	D7	H_CPUSLP- 3,11
PSI#	AE6	PSI- 33

H_DSTBN-0 3, H_DSTBP-0 3, H_DINV-0 3, H_D-[63:0] 3

H_DSTBN-1 3, H_DSTBP-1 3, H_DINV-1 3

H_DSTBN-2 3, H_DSTBP-2 3, H_DINV-2 3, H_D-[63:0] 3

H_DSTBN-3 3, H_DSTBP-3 3, H_DINV-3 3

DN12

R23 R22 R213 R212 R217 R214 62 0402

XDP_BPM-0
XDP_BPM-1
XDP_BPM-2
XDP_BPM-3
XDP_BPM-4
XDP_BPM-5

PLACE BPM TERMINATION NEAR CPU

ALL CPU SIDE-BAND SIGNALS DRIVEN BY SB600 ARE PUSH/PULL EXCEPT FOR SLP# AND DPSLP#. FOR SB460 THEY ARE INTERNALLY PULLED UP.

H_INIT- R4057 200_NA 0402
H_A20M- R4058 200_NA 0402
H_INTR R4059 200_NA 0402
H_NMI R4060 200_NA 0402
H_SMI- R4061 200_NA 0402
H_STPCLK- R4062 200_NA 0402
H_IGNNE- R4063 200_NA 0402
H_PWRGD R4064 200_NA 0402
H_CPUSLP- R4065 200 0402
H_DPSLP- R4066 200 0402

DN12

H_A20M-, H_IGNNE#, H_INIT#, H_INTR, H_NMI, H_SMI#, H_STPCLK#

near CPU within 1.5"

C2046 180P_NA C2271 180P_NA C2047 180P_NA C2039 180P_NA C2040 180P_NA C2041 180P_NA C2043 180P_NA C2044 180P_NA C2045 180P_NA C2042 180P_NA
0402 50V NPO

CPU1D — Yonah 478P 10" White

VSS: A4 A8 A11 A14 A16 A19 A23 A26 B6 B8 B11 B13 B16 B19 B21 B24 C5 C8 C11 C14 C16 C19 C2 C22 C25 D1 D4 D8 D11 D13 D16 D19 D23 D26 E3 E6 E8 E11 E14 E16 E19 E21 E24 F5 F8 F11 F13 F16 F19 F2 F22 F25 G4 G1 G23 G26 H3 H6 H21 H24 J2 J5 J22 J25 K1 K4 K23 K26 L3 L6 L21 L24 M2 M5 M22 M25 N1 N4 N23 N26 P3

VSS: P6 P21 P24 R2 R5 R22 R25 T1 T4 T23 T26 U3 U6 U21 U24 V2 V5 V22 V25 W1 W4 W23 W26 Y3 Y6 Y21 Y24 AA2 AA5 AA8 AA11 AA14 AA16 AA19 AA22 AA25 AB1 AB4 AB8 AB11 AB13 AB16 AB19 AB23 AB26 AC3 AC6 AC8 AC11 AC14 AC16 AC19 AC21 AC24 AD2 AD5 AD8 AD11 AD13 AD16 AD19 AD22 AD25 AE1 AE4 AE8 AE11 AE14 AE16 AE19 AE23 AE26 AF3 AF6 AF8 AF11 AF13 AF16 AF19 AF21 AF24

CPU1C — Yonah 478P 10" White

VCCP: A7 A9 A10 A12 A13 A15 A17 A18 A20 B7 B9 B10 B12 B14 B15 B17 B18 B20 C9 C10 C12 C13 C15 C17 C18 D9 D10 D12 D14 D15 D17 D18 E7 E9 E10 E12 E13 E15 E17 E18 E20 F7 F9 F10 F12 F14 F15 F17 F18 F20 AA7 AA9 AA10 AA12 AA13 AA15 AA17 AA18 AA20 AB9 AC10 AB10 AB12 AB14 AB15 AB17 AB18

VCC: AB20 AB7 AC7 AC9 AC12 AC13 AC15 AC17 AC18 AD7 AD9 AD10 AD12 AD14 AD15 AD17 AD18 AE9 AE10 AE12 AE13 AE15 AE17 AE18 AE20 AF9 AF10 AF12 AF14 AF15 AF17 AF18 AF20

VCCP: V6 G21 J6 K6 M6 J21 K21 M21 N21 N6 R21 R6 T21 T6 V21 W21

VCCA: B26

VID0 AD6 VR_VID0 33
VID1 AF5 VR_VID1 33
VID2 AE5 VR_VID2 33
VID3 AE4 VR_VID3 33
VID4 AE3 VR_VID4 33
VID5 AF2 VR_VID5 33
VID6 AE2 VR_VID6 33

VCCSENSE AF7 → VCCSENSE 33
VSSSENSE AE7 → VSSSENSE 33

C3 330U 7343 2V/6A 9m H2.8/PP

C2107 .01U 0402 16V Y5V; C2237 10U 0805 6.3V X5R

VCCA 20 mil width; L38 10uH 0805 1A 5000m; C1788 1U 0402 16V Y5V; C1789 10U 0805 6.3V X5R

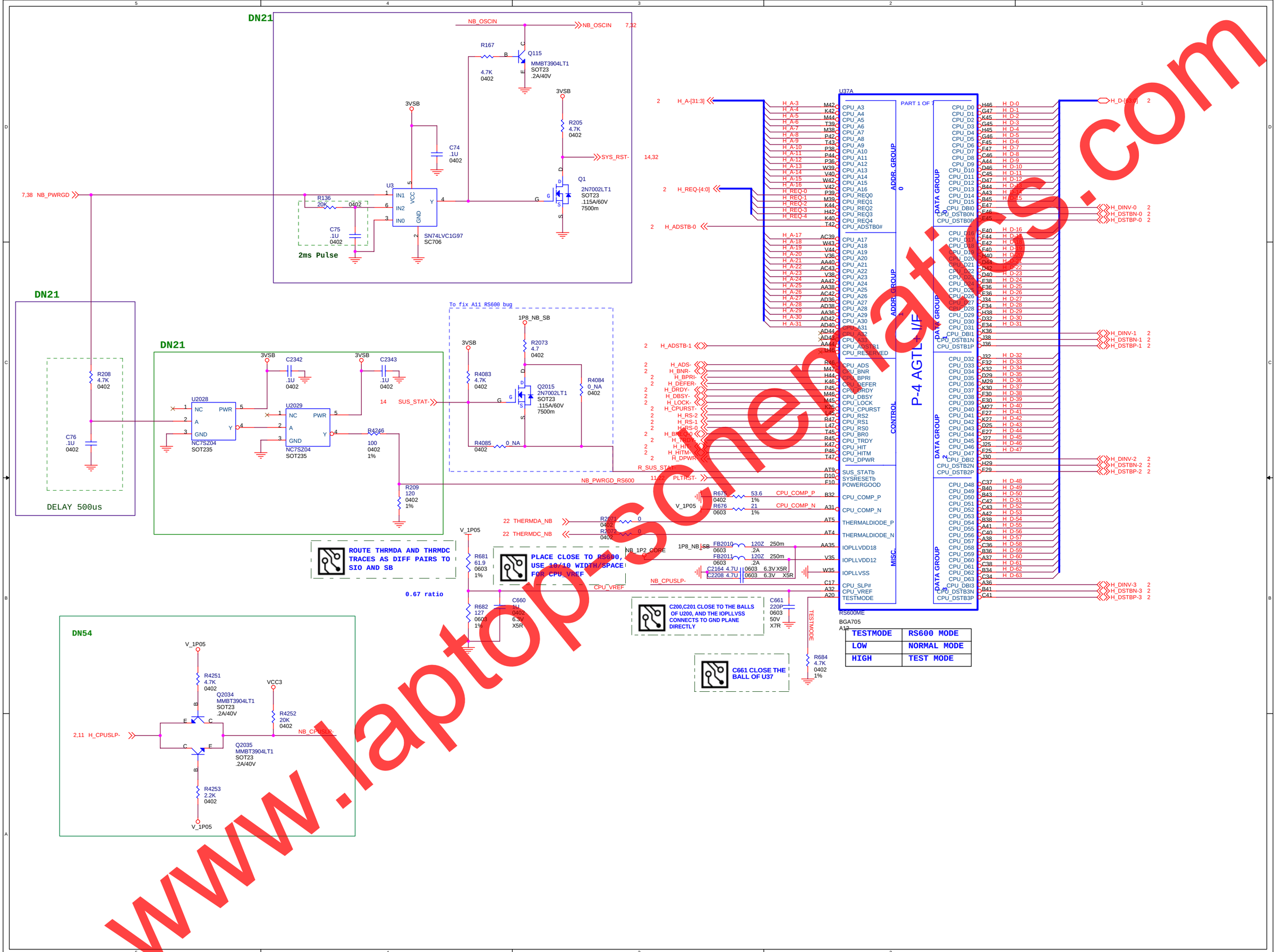
R14 100 0402; R15 100 0402

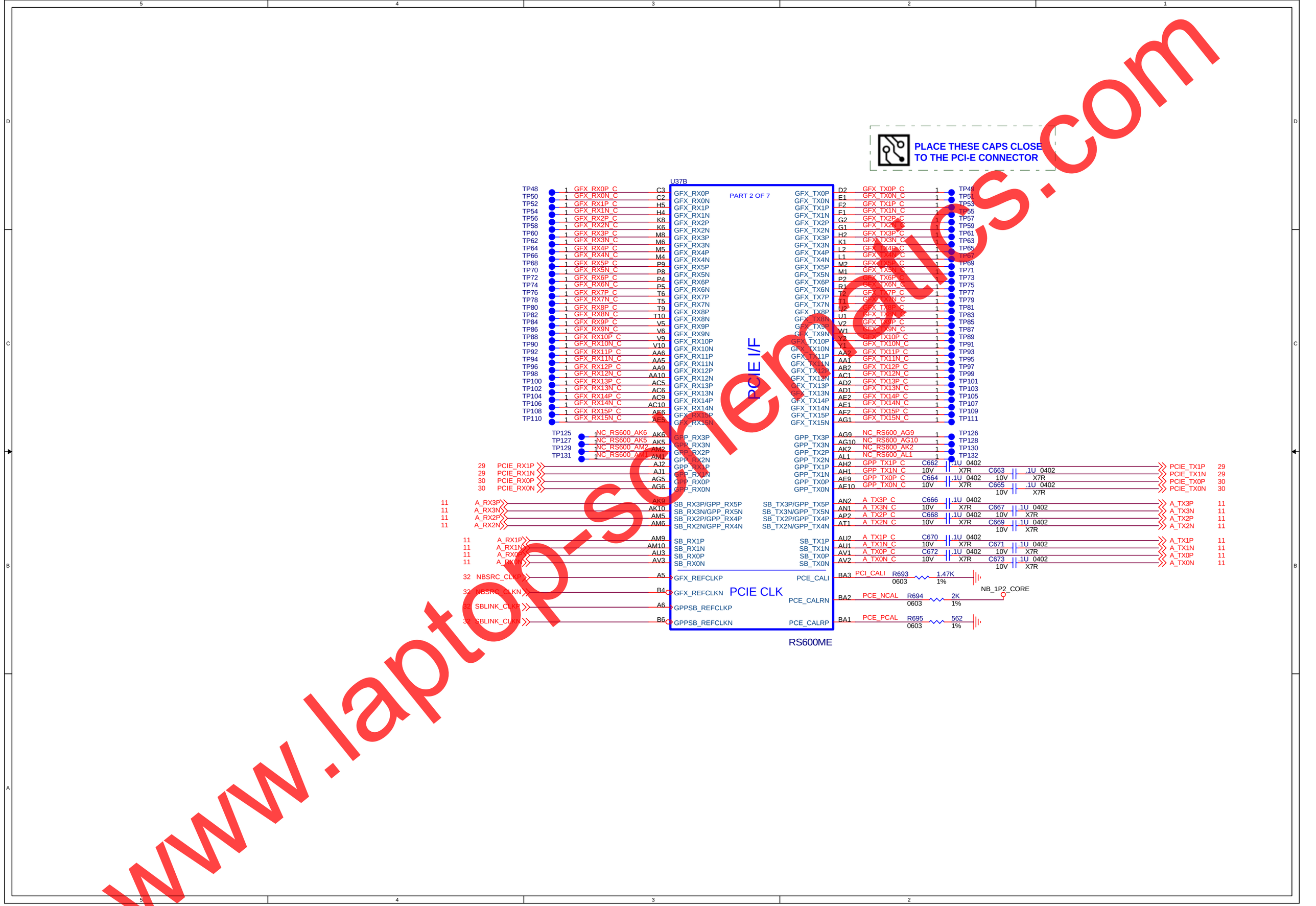
Layout Note: Route VCCSENSE and VSSSENSE traces at 27.4 Ohms with 50mil spacing. Place PU and PD within 1 inch of CPU.

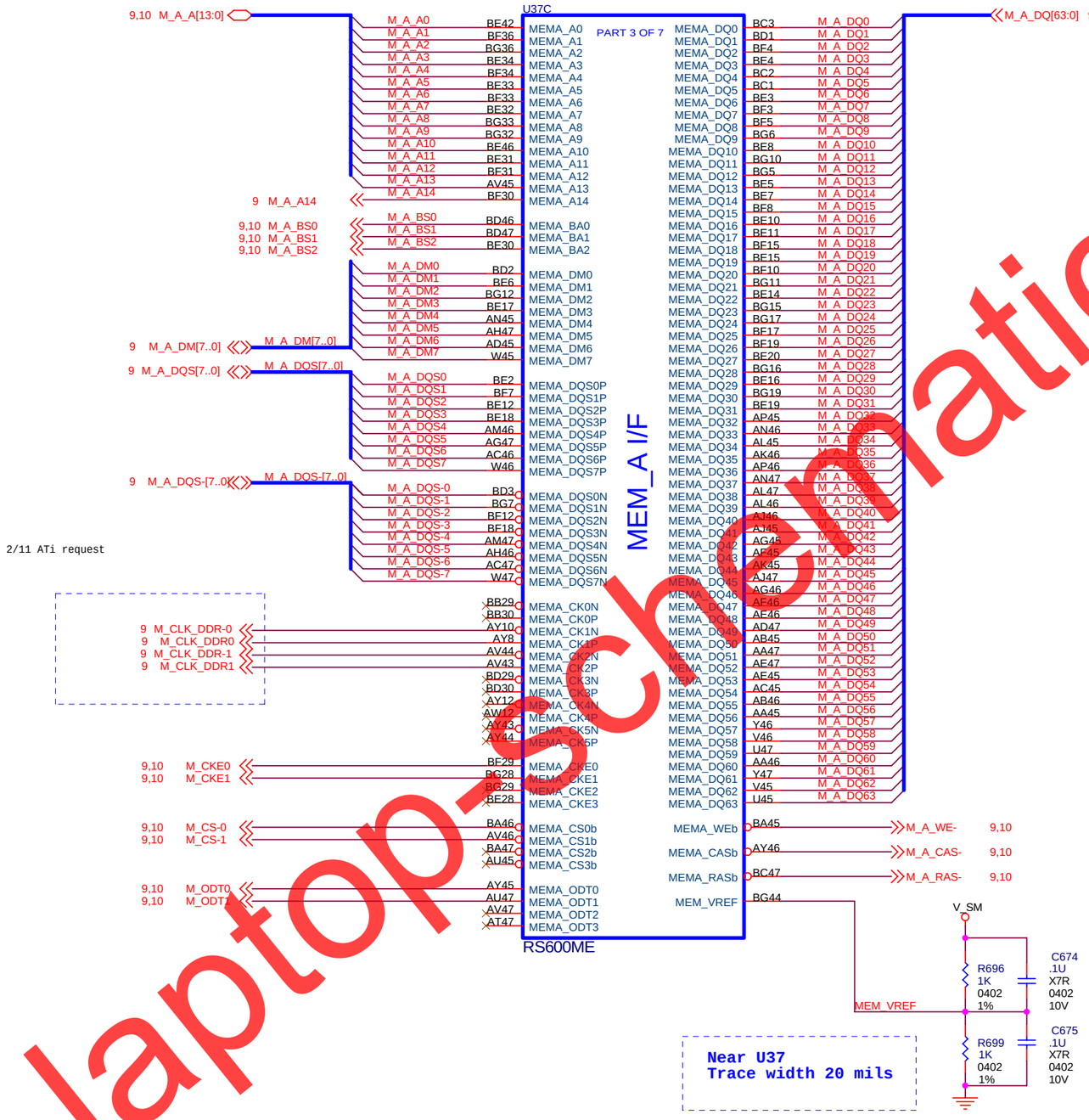
H_DPRSTP- R115 0 0402 → Q102 MMBT3904LT1 SOT23 .2A/40V → R111 470 0402 → DPRSLPVR_SB 11,33

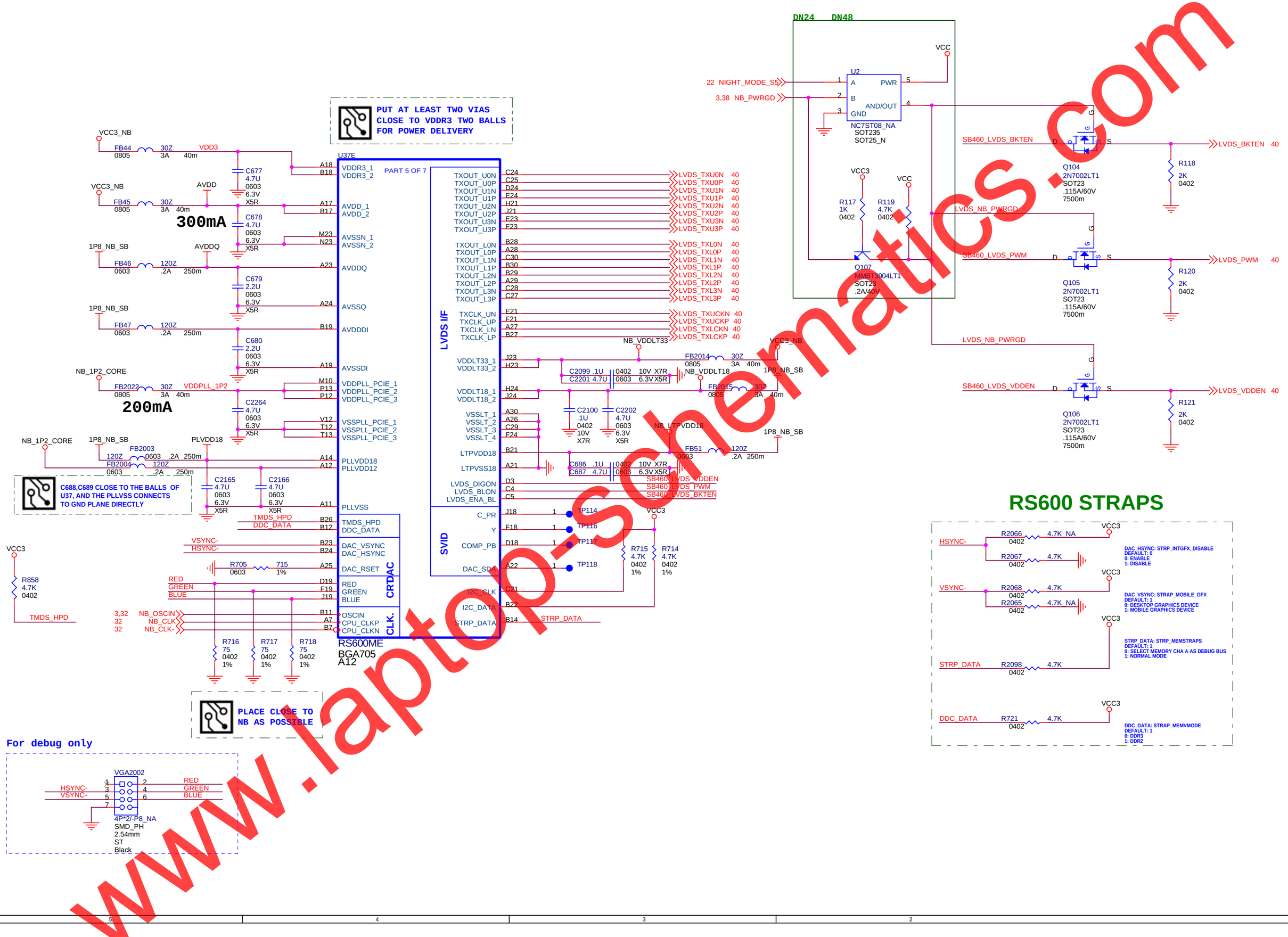
R114 470 0402

R1 0_NA 0402 → DPRSTP- 11









GROUND

PART 7 OF 7

U37G
RS600ME
BGA705
A12

current :3.5A

VDD_PCIE

NB_1P2_CORE

C2062 1U 0402 16V Y5V
C2063 1U 0402 16V Y5V
C690 10U 0805 6.3V X5R
C2233 10U 0805 6.3V X5R
C692 1U 0402 16V Y5V
C693 1U_NA 0402 6.3V X5R
C694 10U_NA 0805 6.3V X5R
C695 1U_NA 0402 10V X7R
C696 22U 1206 6.3V X5R
FB54 30Z 0805 3A 40m
FB2012 30Z 0805 3A 40m

NB_1P2_CORE

C2239 22U 1206 6.3V X5R
C698 1U 0402 6.3V X5R
C2124 1U_NA 0402 6.3V X5R
C2121 1U_NA 0402 6.3V X5R
C2220 10U 0805 6.3V X5R
C2122 1U 0402 16V Y5V
C2123 1U 0402 16V Y5V
C2091 1U 0402 16V Y5V

G1 HOLE_NA
G2 HOLE_NA

VDD_PCIE
NB_1P2_CORE

U37F
RS600ME
BGA705
A12

PCIE PWR
CORE POWER
CPU TRANS. PWR
MEM TRANS. PWR
CPU I/F PWR
MEM I/F PWR

PART 6 OF 7

V_SM

VDD18_CPU
VDD18_MEM
V_1P05

200mA
400mA

1P8_NB_SB

FB55 30Z 0805 3A 40m
C2060 1U_NA 0402 6.3V X5R
C2061 1U_NA 0402 6.3V X5R
C2098 1U_NA 0402 6.3V X5R
C2219 10U 0805 6.3V X5R
C719 1U_NA 0402 6.3V X5R
C720 22U 1206 6.3V X5R

V_1P05

C2112 1U 0402 16V Y5V
C2219 10U 0805 6.3V X5R
C2245 22U 1206 6.3V X5R
C2059 1U 0402 16V Y5V
C731 1U_NA 0402 10V X7R
C2235 10U_NA 0805 6.3V X5R
C2234 10U 0805 6.3V X5R

1P8_NB_SB

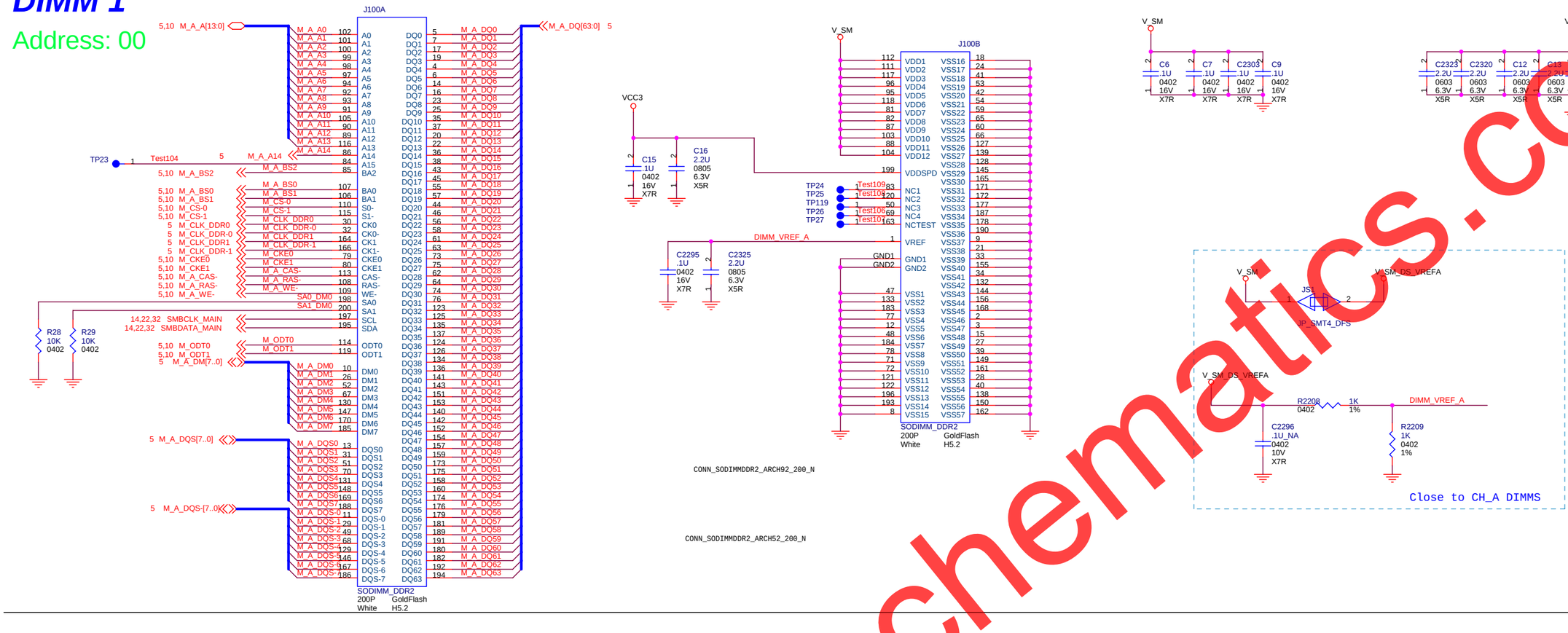
FB56 30Z 0805 3A 40m
C721 1U_NA 0402 6.3V X5R
C722 1U 0402 6.3V X5R
C723 1U 0402 6.3V X5R
C724 10U_NA 0805 6.3V X5R
C725 1U_NA 0402 6.3V X5R
C726 22U 1206 6.3V X5R

C704 10U 0805 6.3V X5R
C705 10U_NA 0805 6.3V X5R
C706 10U_NA 0805 6.3V X5R
C707 10U 0805 6.3V X5R
C708 10U_NA 0805 6.3V X5R
C709 10U 0805 6.3V X5R
C2240 22U 1206 6.3V X5R
C2110 1U_NA 0402 6.3V X5R
C2090 1U 0402 16V Y5V
C2089 1U 0402 16V Y5V
C2111 1U_NA 0402 6.3V X5R

THE CAPS HAVE TO BE PLACED UNDER NB. ALL CAPS' GND USE COPPER FLOOD TOGETHER, AND POWER ALSO LIKE THIS WAY.

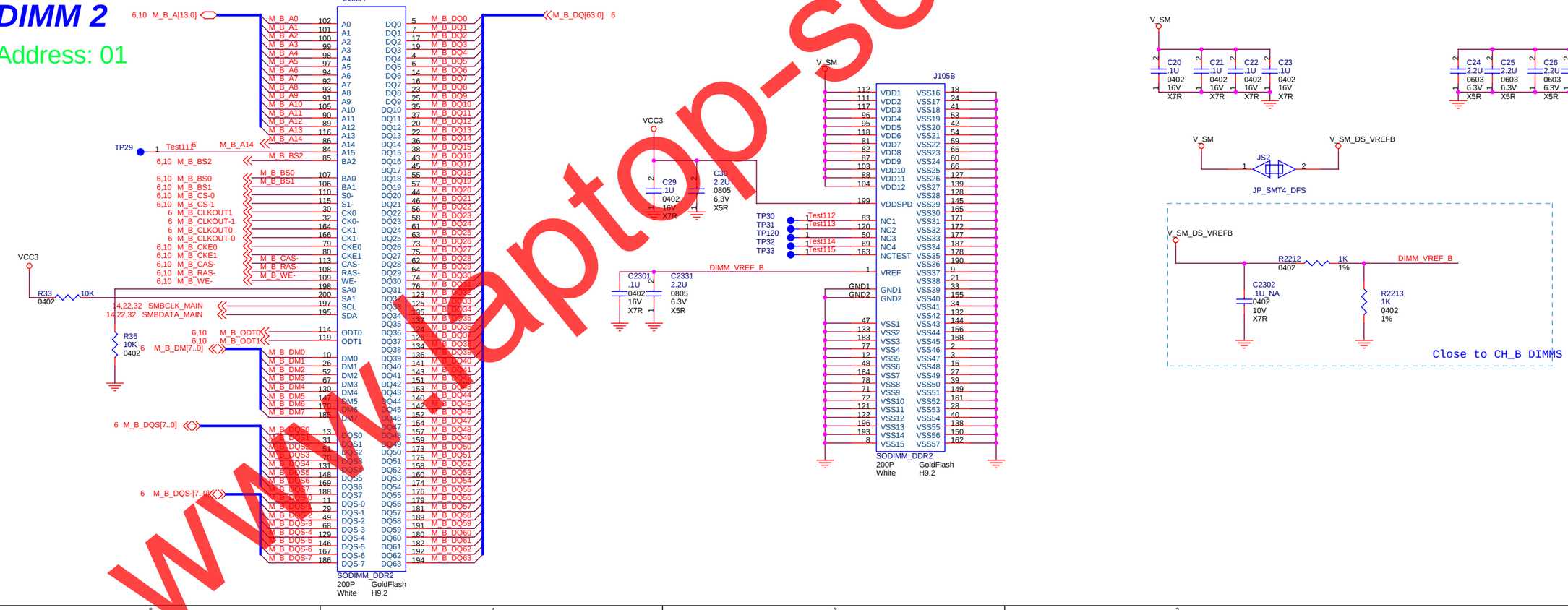
DIMM 1

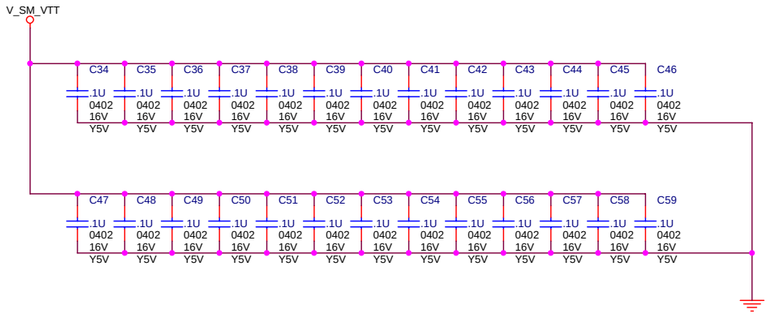
Address: 00

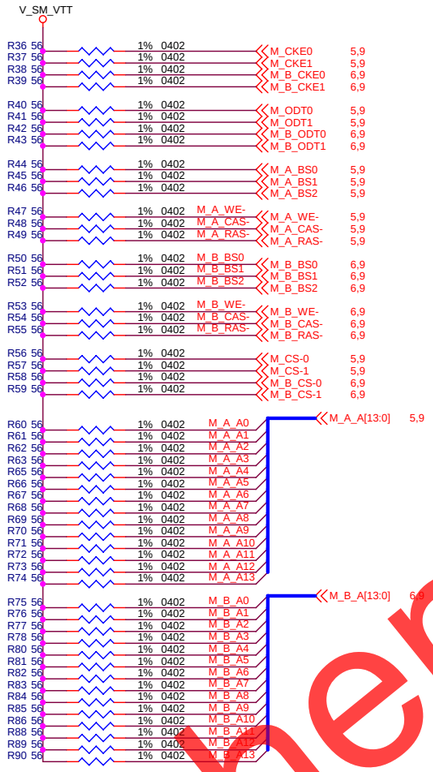


DIMM 2

Address: 01







PCI PULL UPS

SERIRQ	R257	8.2K	0402
PCI_CLKRUN	R258	10K	0402
REQ-0	R240	8.2K	0402
REQ-1	R242	8.2K	0402
REQ-2	R2041	8.2K	0402
REQ-3	R244	8.2K	0402
REQ-4	R245	8.2K	0402
PIRQ-A	R265	8.2K	0402
PIRQ-B	R266	8.2K	0402
PIRQ-C	R2028	8.2K	0402
PIRQ-D	R268	8.2K	0402
FRAME-	R246	8.2K	0402
TRDY-	R247	8.2K	0402
IRDY-	R2029	8.2K	0402
DEVSEL-	R249	8.2K	0402
STOP-	R250	8.2K	0402
SERR-	R251	8.2K	0402
PERR-	R252	8.2K	0402
PLOCK-	R2025	8.2K	0402

SB460 only

LPC PULL UPS

LDRQ-0	R259	10K	0402
LDRQ1_SB	R260	10K	0402
LAD3/FWH3	R2019	100K	0402
LAD2/FWH2	R2010	100K	0402
LAD1/FWH1	R2017	100K	0402
LAD0/FWH0	R2018	100K	0402

SB460 only

Only SB600

BM_REQ- R97 8.2K NA 0402

SB460 SB 27X27mm

Part 1 of 4

	R256	R253	R254
SB460	4.12K	150	150
SB600	0	562	2.05K

PLACE THESE CAPS CLOSE TO THE U7

For SB600 VCC_SB=1.2V
For SB460 VCC_SB=1.8V

C1464 ,C611,C612 CLOSE TO SB460

For SB600

PCI CLKS

PCI EXPRESS INTERFACE

PCI INTERFACE

CPU

LPC

XTAL

RTC

SB460
BGA549
A12

C4 Timing on Yonah

DN37

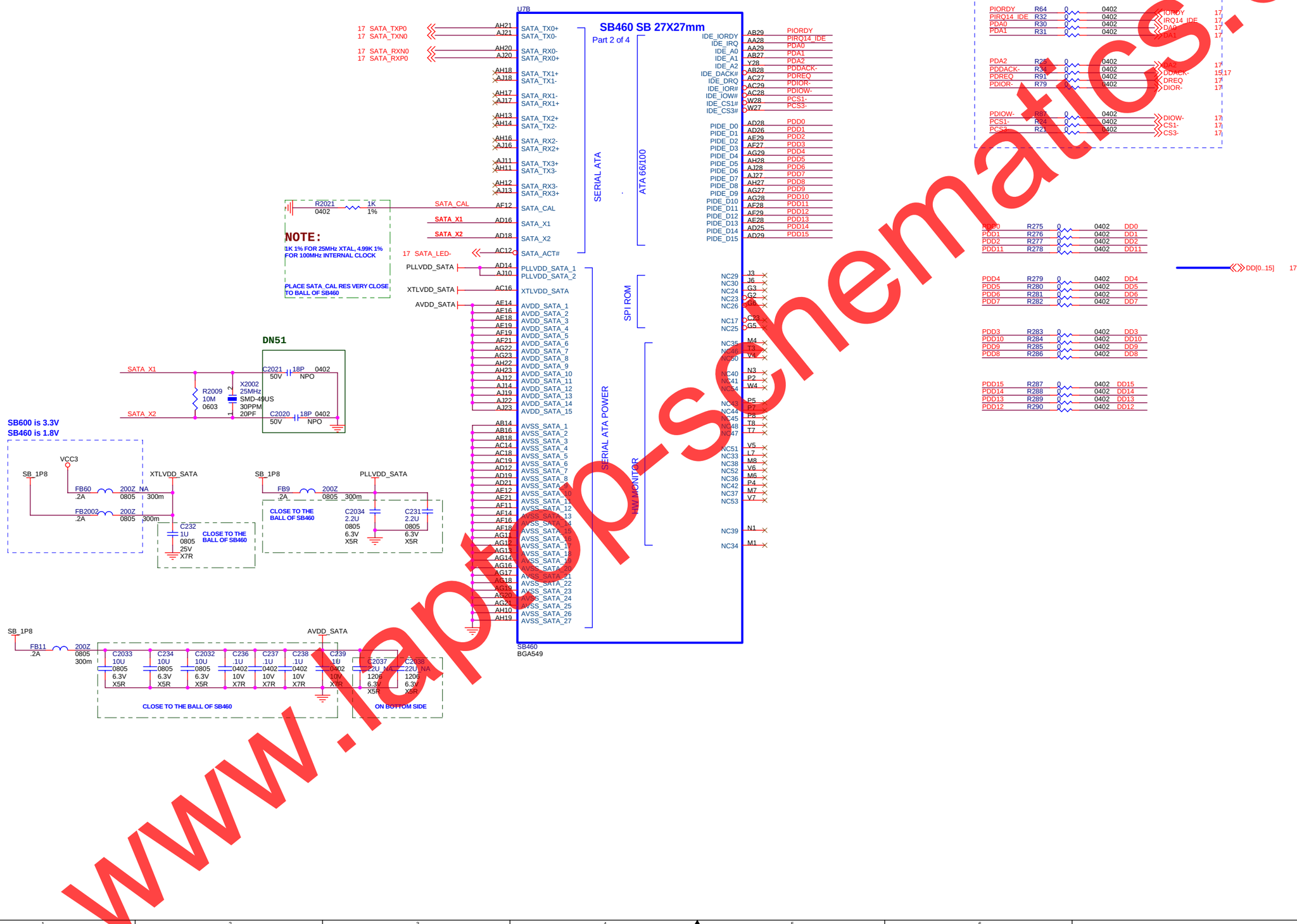
C4 Timing on Yonah

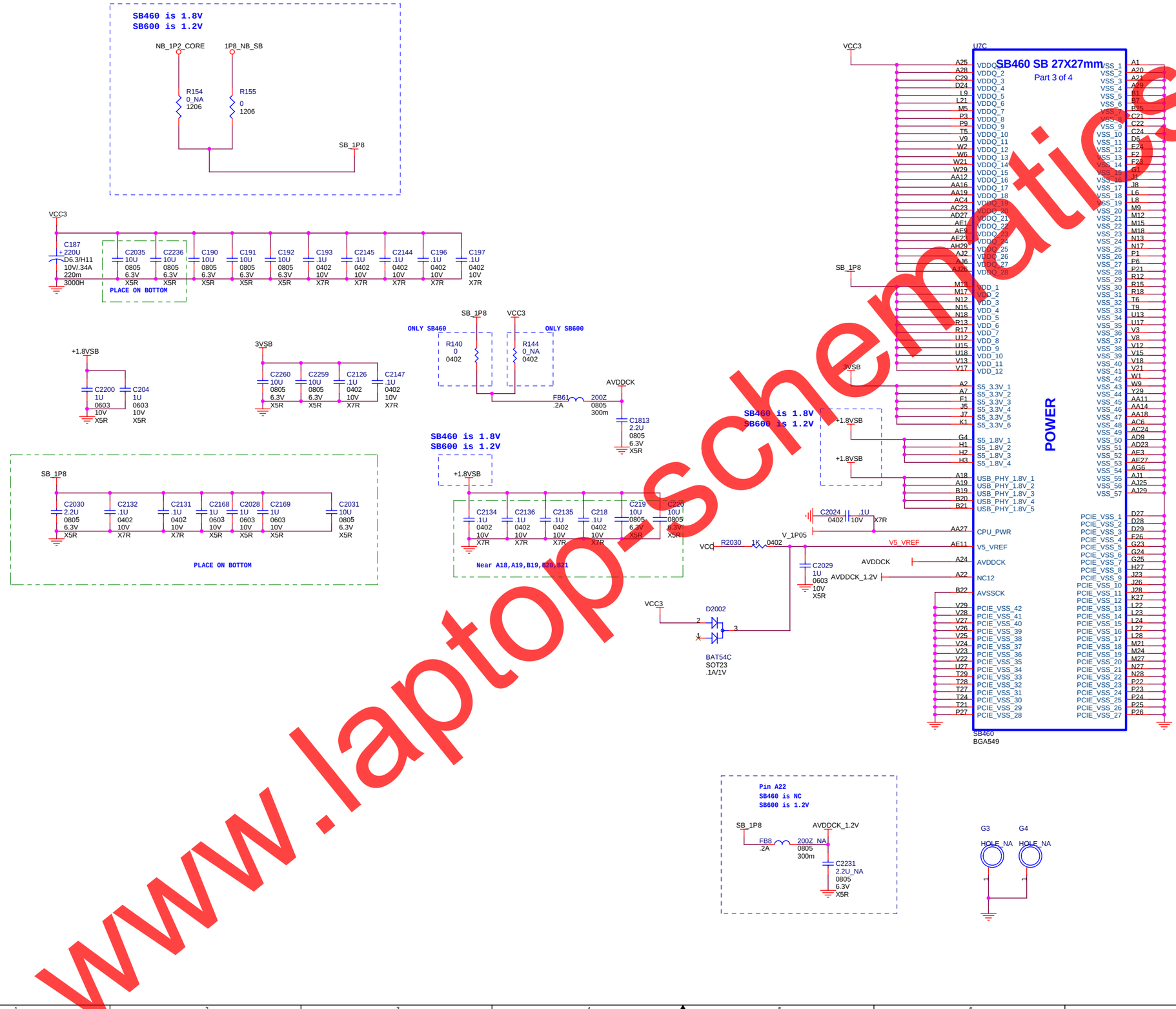
DN12

SB460 only for R4068/4070
SB600 only for R4067/4069

DN35

DN55





SB460 stuff R4077,R223,R224,Q12
SB600 stuff R4076,R4222

SB460 SB 27X27mm Part 4 of 4

U7D

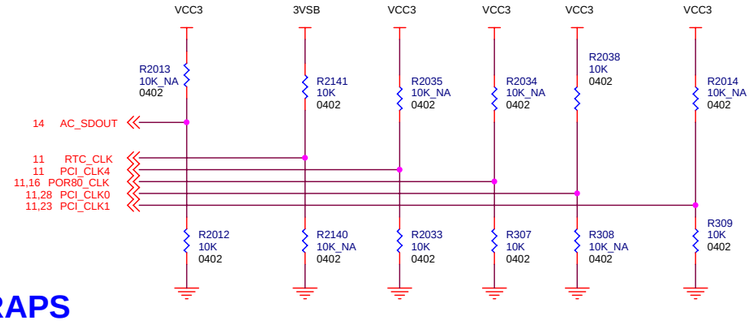
SB460
BGA549

ACPI / WAKE UP EVENTS
OSC / RST
GPIO
USB INTERFACE
USB PWR
AZALIA
ACPI

Only SB460
Only SB600

PLACE C142 AND C143 CLOSE TO U7

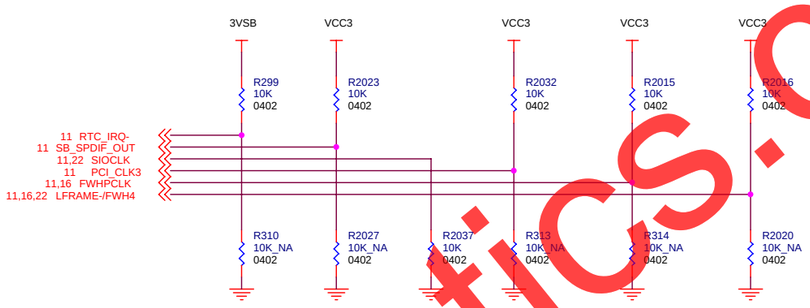
200mA



REQUIRED STRAPS

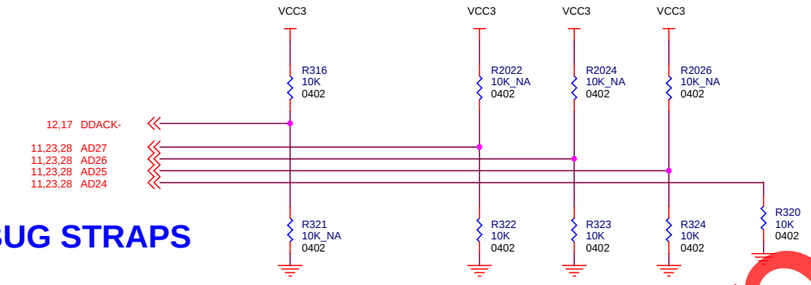
	AC_SDOUT	RTC_CLK	PCI_CLK4	PCI_CLK6	PCI_CLK0 PCI_CLK1
PULL HIGH	USE DEBUG STRAPS	INTERNAL RTC DEFAULT	USE INT. PLL48	CPU IF=K8	ROM TYPE: H, H = PCI ROM H, L = LPC TYPE I ROM DEFAULT L, H = LPC TYPE II ROM L, L = FWH ROM
PULL LOW	IGNORE DEBUG STRAPS DEFAULT	EXTERNAL RTC	USE EXT. 48MHZ DEFAULT	CPU IF=P4 DEFAULT	

NOTE:FOR SB460,PCICLK[8:7] ARE CONNECTED TO SUBSTRATE BALLS PCICLK[1:0]



NEEDED FOR SB460 ONLY

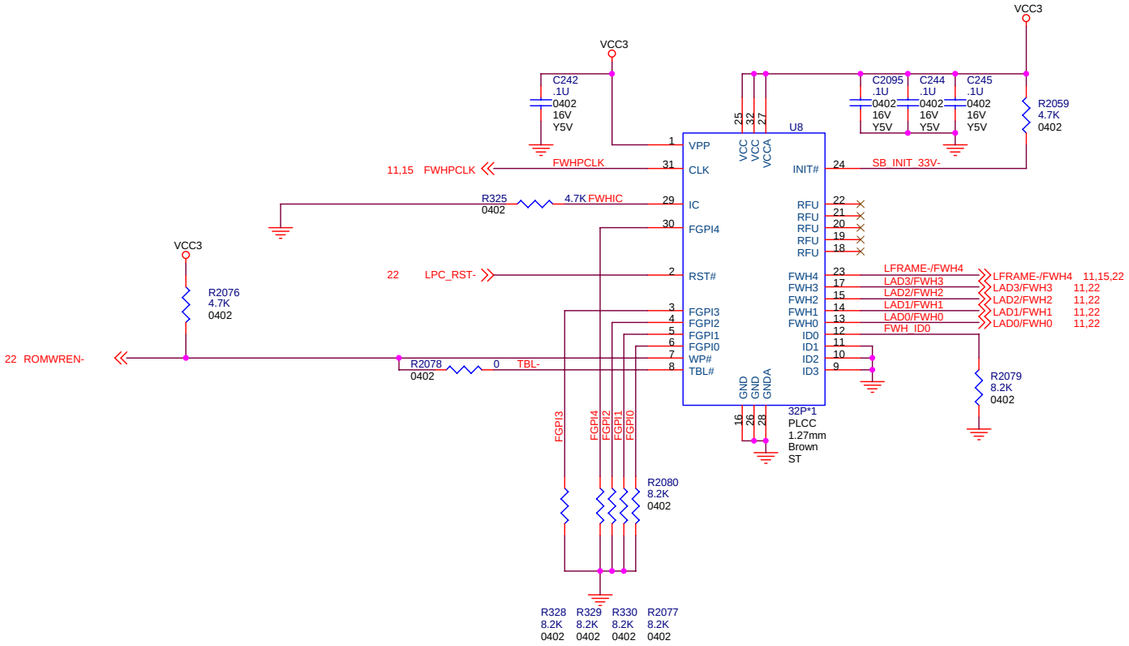
	ACPWRON	SPDIF_OUT	SIOCLK	PCI_CLK3	FWHPCLK	LFRAME#
PULL HIGH	MANUAL PWR ON DEFAULT	SIO 24MHz DEFAULT	XTAL MODE NOT SUPPORTED	USB PHY POWERDOWN DISABLE DEFAULT	ALINK_AUTO DEFAULT	ENABLE THERMTRIP# DEFAULT
PULL LOW	AUTO PWR ON	SIO 48MHz	48MHZ OSC MODE DEFAULT	USB PHY POWERDOWN ENABLE	ALINK_x2	DISABLE THERMTRIP#

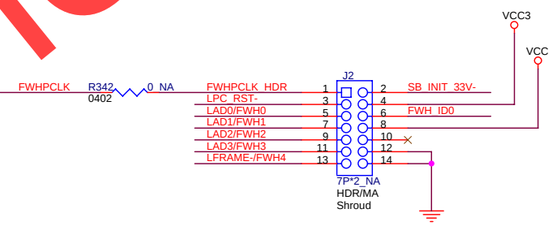


DEBUG STRAPS

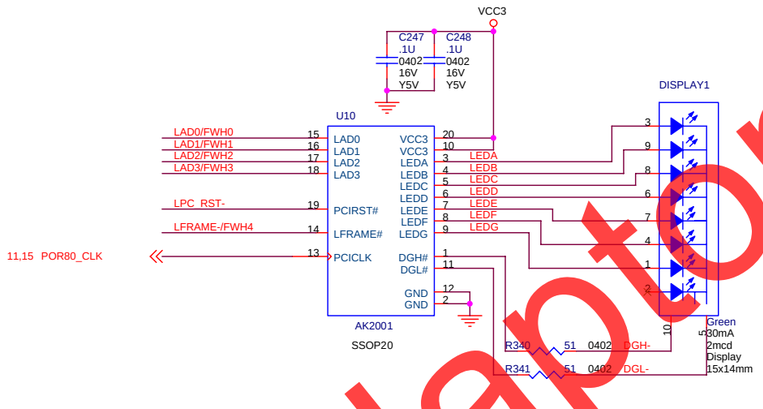
	PDACK#	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24
PULL HIGH	USE LONG RESET DEFAULT	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	
PULL LOW	USE SHORT RESET	USE PCI PLL DEFAULT	USE ACPI BCLK DEFAULT	USE IDE PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT

FWH

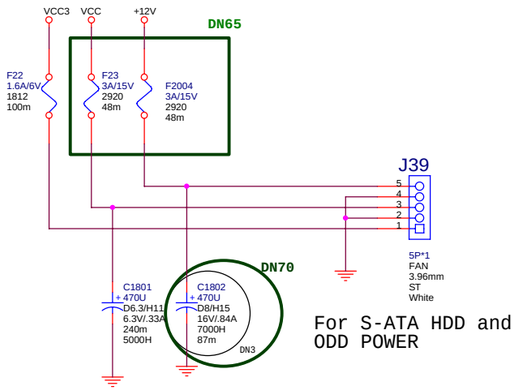




LPC Debug Header



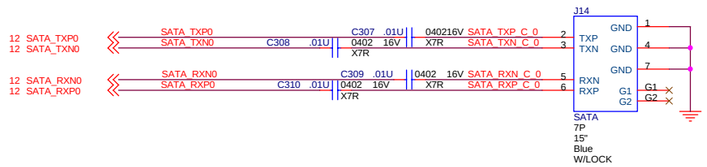
Only for debug

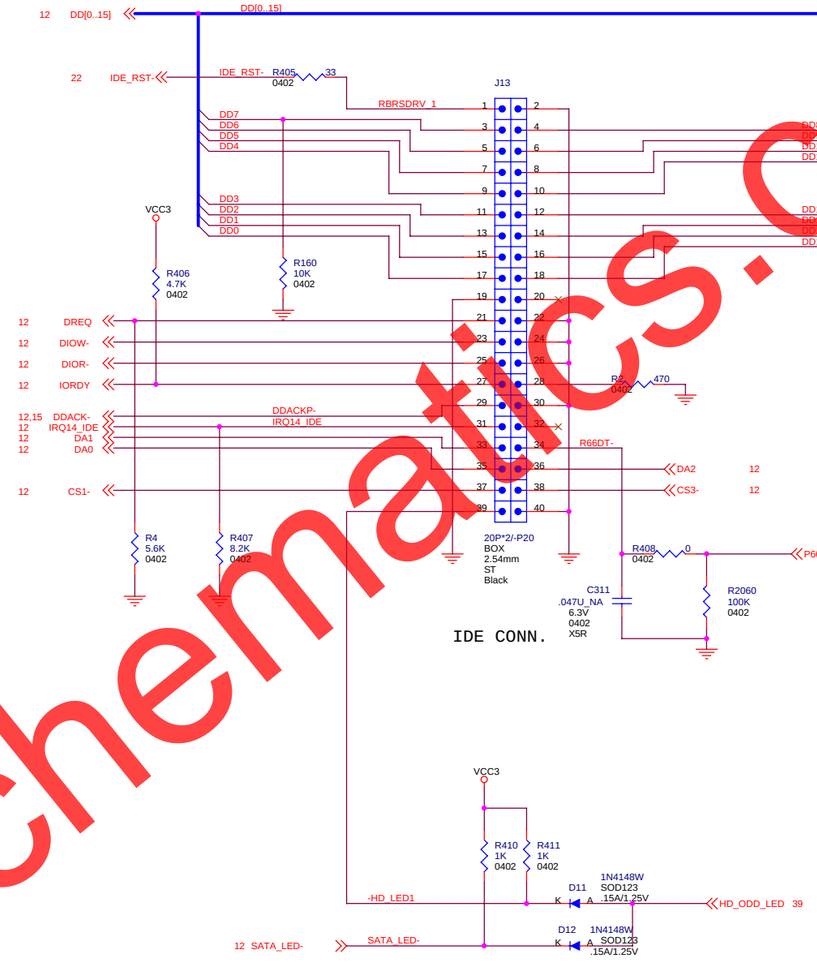


For S-ATA HDD and ODD POWER

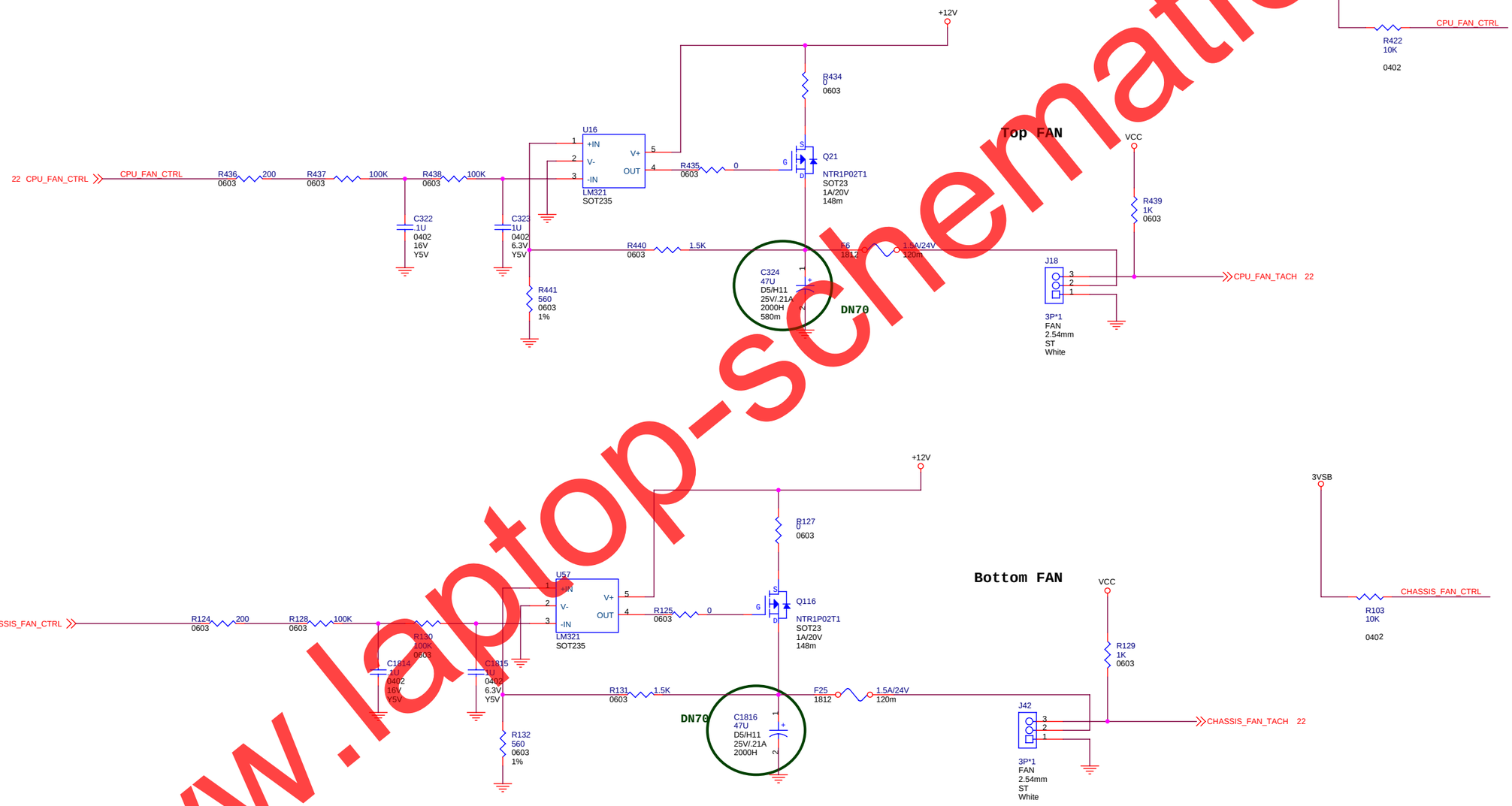
Primary

SATA CONNECTOR



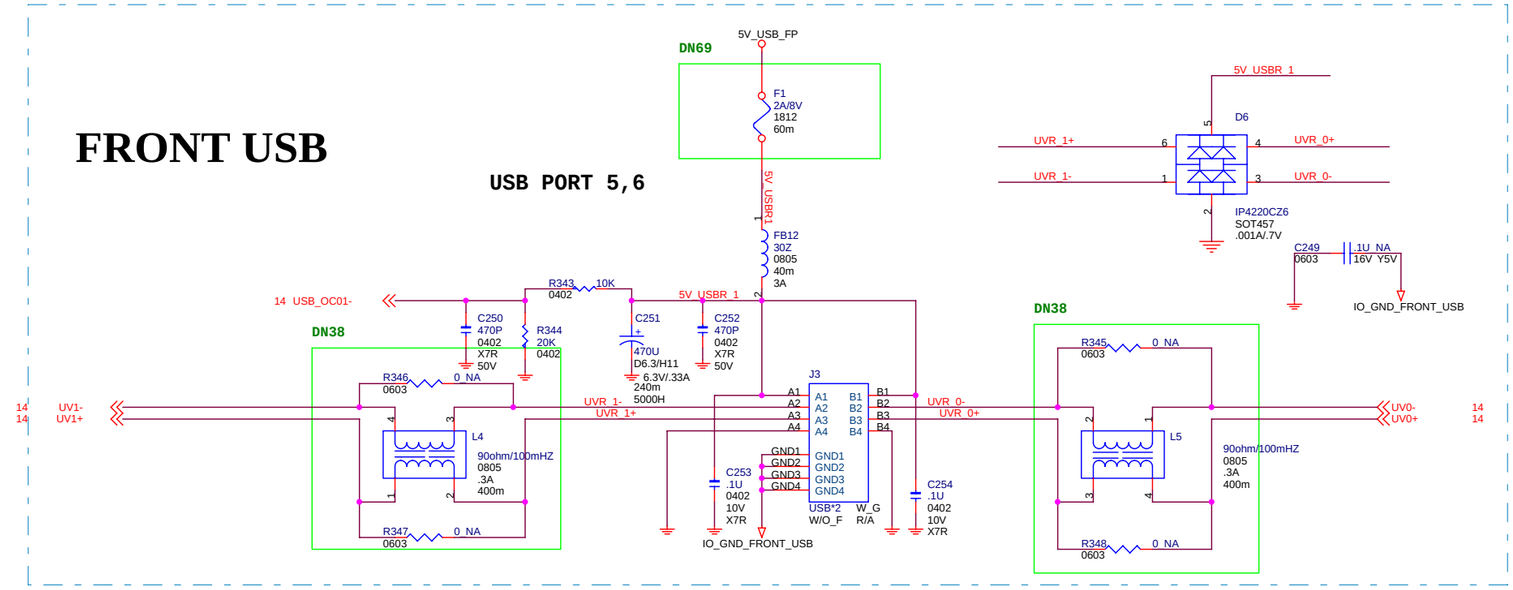


IDE CONN.



FRONT USB

USB PORT 5,6



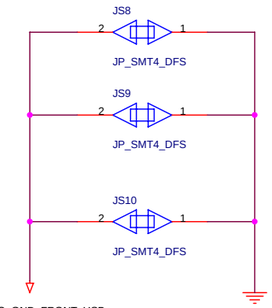
Route traces with 90
Ohm Differential
Impedance

4-Layer FR4 PCB: 7.5 mil width,
7.5 mil space for diff. pair

Keep space at least 20 mil
from diff. pair to others

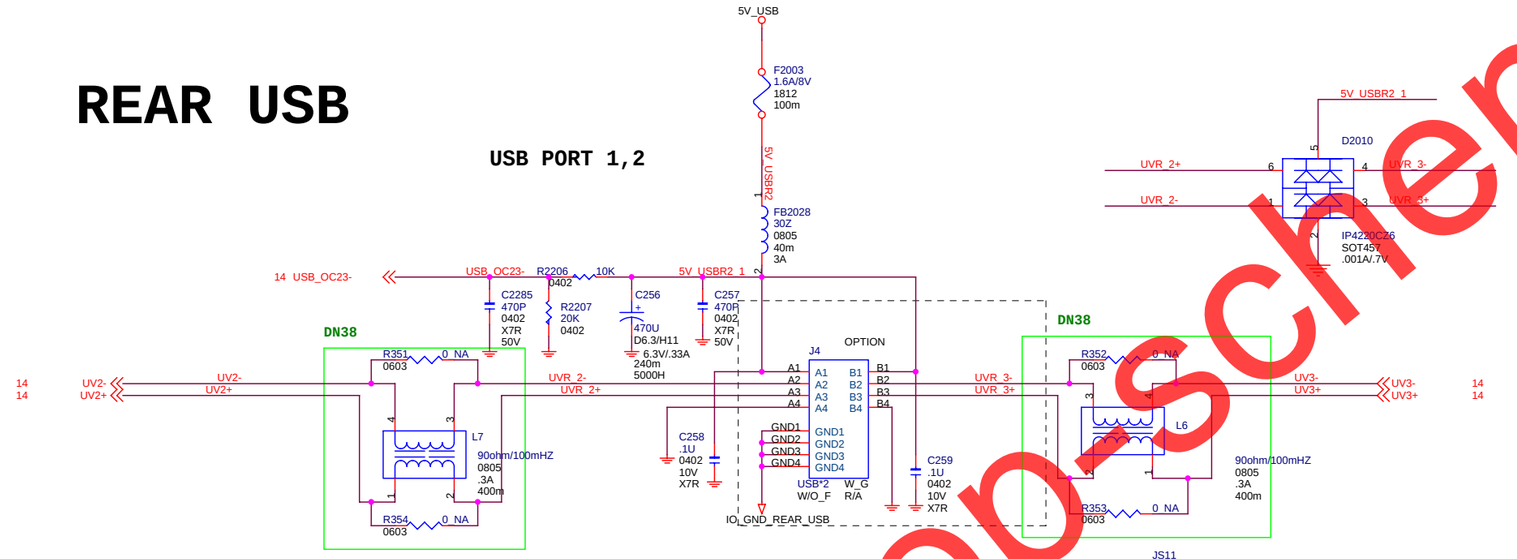
*GND guard to shield USB signals

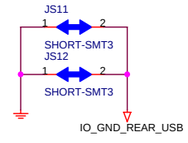
Others - space - GND - space - UVx+ - space - UVx- - space - GND - space - Others
***** -7.5mil - 5mil- 7.5mil- 7.5mil- 7.5mil-7.5mil- 7.5mil- 5mil- 7.5mil- *****



REAR USB

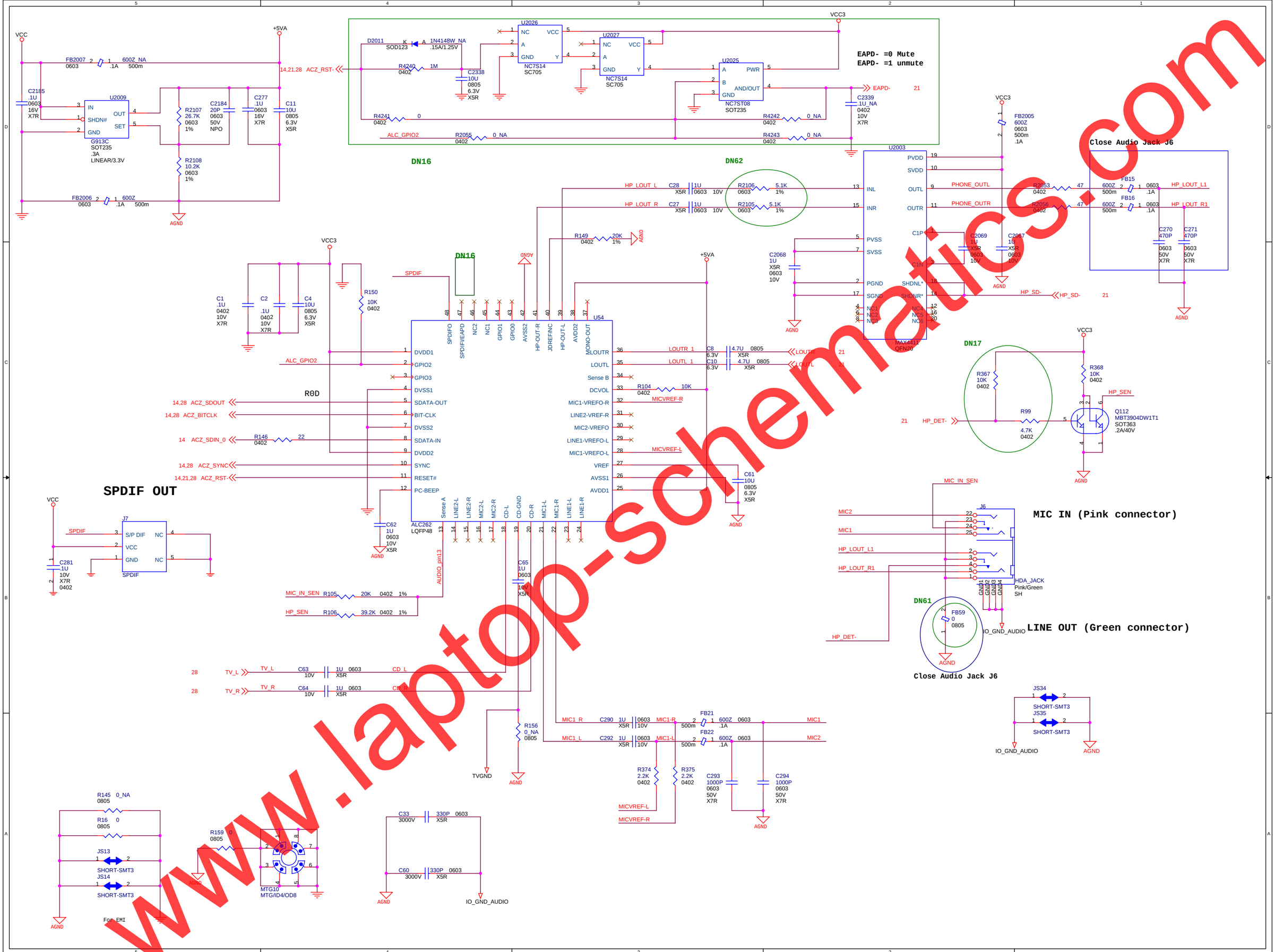
USB PORT 1,2





SHARE PCB footprint with
CO2 Frnot CNN & SD/MS/xD
cnt

USB PORT 3,4



Voltage Level of Speaker=1.69Vp-p X 8V/V(18db)=13.5V
W=(13.5/2.83)*2/8 ohms=2.85W at 1KHZ (5.7W at 100MHZ)

MX3000AS_INR
MX3000AS_INL
C2175 33P 0603 25V NPO
C2207 33P 0603 25V NPO
AGND AGND
Close to MX3000CS

MX3000AS_OUTL
C31 33P 0603 25V NPO
AGND
MX3000AS_OUTR
C32 33P 0603 25V NPO
AGND
Close to MX3000CS

VCC3
FB2008 0603 600Z .1A
C2190 .1U 0603 16V X7R
C2254 10U 0805 6.3V X5R
AGND
500m
C631 .1U 0603 16V X7R
C632 10U 0805 6.3V X5R
R657 4.7K 0603
R658 4.7K 0603

U1
AVDD DVDD
SPOUT_L_R C2230 4.7U 6.3V X5R 0805 — 2 INL
SPOUT_R_R C2229 4.7U 6.3V X5R 0805 — 3 INR
MX3000AS_INL
MX3000AS_INR
1 REF0V
15 MXBSOUT
16 CAP
AVSS
4
14 OUTL — MX3000AS_OUTL
13 OUTR — MX3000AS_OUTR
6 RESET — MX_RESET
7 SCL
8 SDA
9 OSCI
10 OSCO
12 DVSS
R9B
MX3000CS SO16
R659 510K 0603
X5
C19 22P 0603 50V NPO
10MHZ SMD-49US 30PPM 20PF
C18 22P 0603 50V NPO
R4247 4.7K_NA 0603
R4248 4.7K_NA 0603
DN43
DN51
C14 .015U 0603 50V X7R
C17 1U 0603 10V X7R
AGND
Close to MX3000CS

Max 1.69Vp-p
C2196 1U X7R 0603 10V
C2199 1U X7R 0603 10V
AGND
C2194 1U X7R 0603 10V
AGND

Near YDA138
C2064 1U X7R 0603 10V
5 INR
4 VREFR

SLEEPN-
R2118 100K 0603
R2117 0 0603 AMPSD-
TP209 TP210 YDP138_Pin19 YDP138_Pin20
AMP_GND

+12V
FB2009 0603 600Z
C2192 .1U 0603 16V X7R
C2191 .1U 0603 16V X7R
C2193 .1U 0603 16V X7R
C2198 .1U 0603 16V X7R
C624 100U D6.3/H11 220m 5000H
.1A 500m
AMP_GND
C2197 .1U 0603 16V X7R
C2241 10U 1206 16V X5R
AGND

U2005 YDA138 SSOP42
7 PVDDR PVDDL
36 PVDDL
35 PVDDR
28 PVDDMR PVDDML
40 PVDDREG VSSBGR
3 VSSBGR
38 INL
39 VREFL
9 PVSSR1
10 PVSSR2
11 PVSSR3
12 PVSSR4
13 PVSSR5
6 MUTEN
16 PWDTN
17 SLEEPN
19 CKLO
20 XO
21 XI
41 REFA
22 DVDD
GND THERMAL
2 AVSS
18 DVSS
35 OUTPL
29 OUTML
1 HPOR
42 HPOL
37 HP
8 OUTPR
14 OUTMR
34 PVSSL1
33 PVSSL2
32 PVSSL3
31 PVSSL4
30 PVSSL5
27 VOL1
26 VOL0
25 MODE2
24 MODE1
23 MODE0
AMP_GND
REFA
AGND

OUTPL_L 22uH L2005 2321 1.3A 180m OUTPL_R
OUTML_L 22uH L2006 2321 1.3A 180m OUTML_R
YDP138_Pin1 YDP138_Pin42 TP207 TP208
OUTPR_L 22uH L2007 2321 1.3A 180m OUTPR_R
OUTMR_L 22uH L2002 2321 1.3A 180m OUTMR_R
C2268 .22U 0603 16V X7R
C2026 .22U 0603 16V X7R
AMP_GND AMP_GND
0712
J33 2P*1 WAFER 2.0mm ST White/HTP
3P*1/-P2 WAFER 2.0mm ST White/HTP
C2025 .01U 50V C2203 .01U 50V C2227 .01U 50V C2266 .01U 50V
X7R X7R X7R X7R
0603 0603 0603 0603
50V 50V 50V 50V
SPK CONN

REFA
R2115 0 0603
R2113 0_NA 0603
R2116 0_NA 0603
R2114 0 0603
AGND

C2195 1U X5R 0603 10V
AGND

For EMI
JS36
JS37
JS2002
AMP_GND AGND
JS38
JS39
JS40
AMP_GND

YDA138 SPEC.
Output Power 10W at T.H.D.=10%
When VCC=12V 8ohms Speaker

GOL1	GOL0	Fixed gain
0	0	36dB (64 V/V)
0	1	30dB (32 V/V)
1	0	24dB (16 V/V)
1	1	18dB (8 V/V)

MAX 1Vrms input from Buffer-AMP
20 LOUTL — LOUTL — R2110 12K 1% 0603 — SPOUT_L_R
20 LOUTR — LOUTR — R2111 12K 1% 0603 — SPOUT_R_R
MAX 0.85Vp-p
R2109 9.1K 0603 1% — C2188 560P 0603 50V NPO
R2112 9.1K 0603 1% — C2189 560P 0603 50V NPO
DN44
DN44
AGND AGND

DN18
14 BASS_OFF- — BASS_OFF-
14,20,28 ACZ_RST-
U2012 NC7SZ08 SOT235 A B GND PWR AND/OUT
VCC3
MX_RESET 22

DN40
MUTE MUTE-
EAPD- 20 EAPD-
U2011 NC7SZ08 SOT235 A B GND PWR AND/OUT
VCC3
HP_SD-

20 HP_DET-
20 HP_SD-
U2010 NC7ST08 SOT25_N SOT235 A B GND AND/OUT PWR
VCC3
AMPSD-
DN19
R2058 4.7K 0402
+12V
R4129 4.7K 0402
R4128 4.7K 0402
SLEEPN-
Q2004 MBT3904DW1T1 SOT363 .2A/40V

32.768KHz for 5017 only

Y2002
32.768KHZ_NA
7x5mm
25PPM
R4056 4.7K_NA 0402
SUS_CLK

5017 connect VCC3
5127 connect 3VSB

R4174 0 0603
R4175 0_NA 0603

U2017
SCH5127
QFP128
C1777 near pin32

For 5017
DN45
R2054 10K 0402
R4196 1K 0402
R4197 1K_NA 0402
R2085 1K 0402
R2081 1K 0402
R2084 1K 0402
R2083 1K 0402
R2082 1K 0402
R4212 4.7K 0402
R4136 4.7K 0402
NC_SIO_PIN108
NC_SIO_PIN109
INDEX-
TRK0-
WRTPRT-
RDATA-
DSKCHG-
F_CAP
NC_SIO_PIN103
NC_SIO_pin92

Only SB460
R2093 10K 0402
R2089 10K 0402
RN2003 2.7K*4 8P1206
LPC_SMI-
LPC_PME-
NIGHT_LED
PC_LED

R4176 4.7K 0402
R4177 4.7K 0402
RN2002 2.7K*4 8P1206
R2086 2.7K 0402
R4168 2.7K 0402
R2087 10K 0402
H_THERMDC
H_THERMDA
C2217 100P 0603 50V NPO
C2216 100P 0603 50V NPO
THERMDC_NB
THERMDA_NB

Near pin102
5127 only
F_CAP
C1797 4.7U 0805 6.3V X5R
C2092 .1U 0402 10V X7R

Floppy Interface
Parallel Port Interface
LPC Interface
Serial Port 1
Serial Port 2
SMBus
Keyboard/ Mouse
Hardware Monitoring and FAN Control
System Signals

pin define 5127/(5017)

A20GATE
KBRST-
R2095 8.2K 0402
R2094 8.2K 0402

JP1
R402 20K 0402
R110 1M 0402
R109 10 0402
INTRUDER-
JP1 -
2-3 : Clear CMOS
1-2 : Normal
(Default)

JP2
R108 8.2K 0402
CLEAR_PW
JP2 -
1-2 : Clear password
OPEN: Keep Password
(Default OPEN)

ODD_EJECT
R4155 10K 0402
VISUAL_LED
R4138 4.7K 0402
NIGHT_MODE
R107 4.7K_NA 0402
NIGHT_MODE_S5
R4249 4.7K 0402
DN75
DN56
R2097 10K 0402
pullup 4E
pull down 2E

R650 10K 0603
R649 10K 0603
BRIGHT_UP
BRIGHT_DN

R2096 1K 0402
MINICARD_RST-
LPC_RST-
LAN_RST-
SM1V9_CTRL
INTRUDER-
R2090 10K 0402
PSU_PWROK
ATXOK
SIO_3VSB_GATE
SIO_pin86
TP211
U48A 74HCT14 SO14
3V_GATE
RSMRST-
R2088 10K 0402
R3957 8.2K 0402
SLP_S5-
SLP_S3-

R4165 8.2K 0402
R2091 8.2K 0402
R2092 8.2K 0402
R4213 8.2K 0402
SM1V9_CTRL
VISUAL_BTN
MUTE-
NC_SIO_PIN30

R2008 0_NA 0402 — D1.8V_CORE — REG_EN-
R2007 100K 0402

	Internal regulator	External regulator
R2, U2	NA	POP-IN
R3, R4	POP-IN	NA

IDSEL=19
PCI_INT#=A-B-C-D
GNT#/REQ#=0

AS CLOSE AS POSSIBLE TO DEVICE TERMINALS.

VCC3_DUAL
R486 0 1206
U19 AME8800_NA SOT893 (V_IN, V_OUT, GND)
D1.8V_CORE
R487 0_NA 1206
C2036 10U 1206; C2011 .01U 0402; C407 .01U 0402; C2019 .01U 0402
C409 10U 1206; C2012 .01U 0402; C2018 .01U 0402; C412 .01U 0402
C419 .01U 0402; C2015 .01U 0402 16V Y5V; C2013 .47U 0402 16V Y5V; C2016 .47U 0402 16V Y5V

VCC3_DUAL
FB35 40Z FB0805C_N
AVCC3_PHY_PCI
C413 4.7U 0805
C2247 10U 0805; C415 .01U 0402; C416 .01U 0402; C417 .01U 0402
GUARD GND

*Layout as close as possible to AVCC3_PHY_PCI pins.

U59B

W3	VCC_PCI1	VCC_3V1 F5
R11	VCC_PCI2	VCC_3V2 J19
R12	VCC_PCI3	VCC_3V3 K19
R6	VCC_RIN1	VCC_SC/3V G5
E13	VCC_RIN2	
L1	VCC_ROUT1	
E14	VCC_ROUT2	VCC_MD A4
R7	REGEN#	

VCC3_DUAL
R489 0402 0
C2014 .01U 0402; C2256 10U 0805
C425 .01U 0402; C426 10U 0805

GND1 J1; GND2 J5; GND3 K5; GND4 E9; GND5 R10; GND6 T10; GND7 V10; GND8 W10; GND9 L15; GND10 M19; AGND1/GND A9; AGND2/GND B9; AGND3/GND D9; AGND4/GND D14; AGND5/GND A15; AGND6/GND B15

VCC3_DUAL
R493 10K 0402
TEST F4

HWSPND# F2
SPKROUT F1 — PCMCIA_SPKR 14
R494 100K 0402

UDIO5 G1 — CARDBUS_G1 — TP198
UDIO4 H5
UDIO3 H4
UDIO2 H2 — CARDBUS_H2 — TP199
UDIO1 H1 — CARDBUS_H1 — TP200
UDIO0/SRIRQ# J4 — SERIRQ_A

INTA# J2 — PIRQ-A 11
INTB# K4 — R500 0402 — PIRQ-B 11,28
INTC# K2 — R501 0402 — PIRQ-C 11
INTD# L2 — 0 — PIRQ-D 11

R5C843

PCI / OTHER

PCI Bus

11,15,28 AD[0..31] >> AD[0..31]

AD31	M2	AD31
AD30	M1	AD30
AD29	N5	AD29
AD28	N4	AD28
AD27	N2	AD27
AD26	N1	AD26
AD25	P5	AD25
AD24	P4	AD24
AD23	R4	AD23
AD22	R2	AD22
AD21	R1	AD21
AD20	T2	AD20
AD19	T1	AD19
AD18	U2	AD18
AD17	U1	AD17
AD16	V1	AD16
AD15	T7	AD15
AD14	V7	AD14
AD13	W7	AD13
AD12	R8	AD12
AD11	T8	AD11
AD10	V8	AD10
AD9	W8	AD9
AD8	R9	AD8
AD7	V9	AD7
AD6	W9	AD6
AD5	T11	AD5
AD4	V11	AD4
AD3	W11	AD3
AD2	T12	AD2
AD1	V12	AD1
AD0	W12	AD0

PowerOnReset

VCC3_DUAL
R492 100K 0402
C427 1U
GRESET-

PCI Bus

11,28	PCIRST-	R495 0 0402	V6 PAR
11,28	PAR		P2 C/BE3#
11,28	C/BE-3		W2 C/BE2#
11,28	C/BE-2		W6 C/BE1#
11,28	C/BE-1		T9 C/BE0#
11,28	C/BE-0		P1 IDSEL
AD19		R496 0 0402 AD19_R	
11	REQ-0		M4 REQ#
11	GNT-0		M5 GNT#
11,28	FRAME-		V3 FRAME#
11,28	IRDY-		V4 IRDY#
11,28	TRDY-		W4 TRDY#
11,28	DEVSEL-		T5 DEVSEL#
11,28	STOP-		V5 STOP#
11,28	PERR-		W5 PERR#
11,28	SERR-		T6 SERR#
			G2 GBRST#
			L4 PCIRST#
			K1 PCICLK
11,15	PCI_CLK1		L5 CLKRUN#
			G4 PME#/RI_OUT#

SHIELD GND

CoreLogic CLOCKRUN#

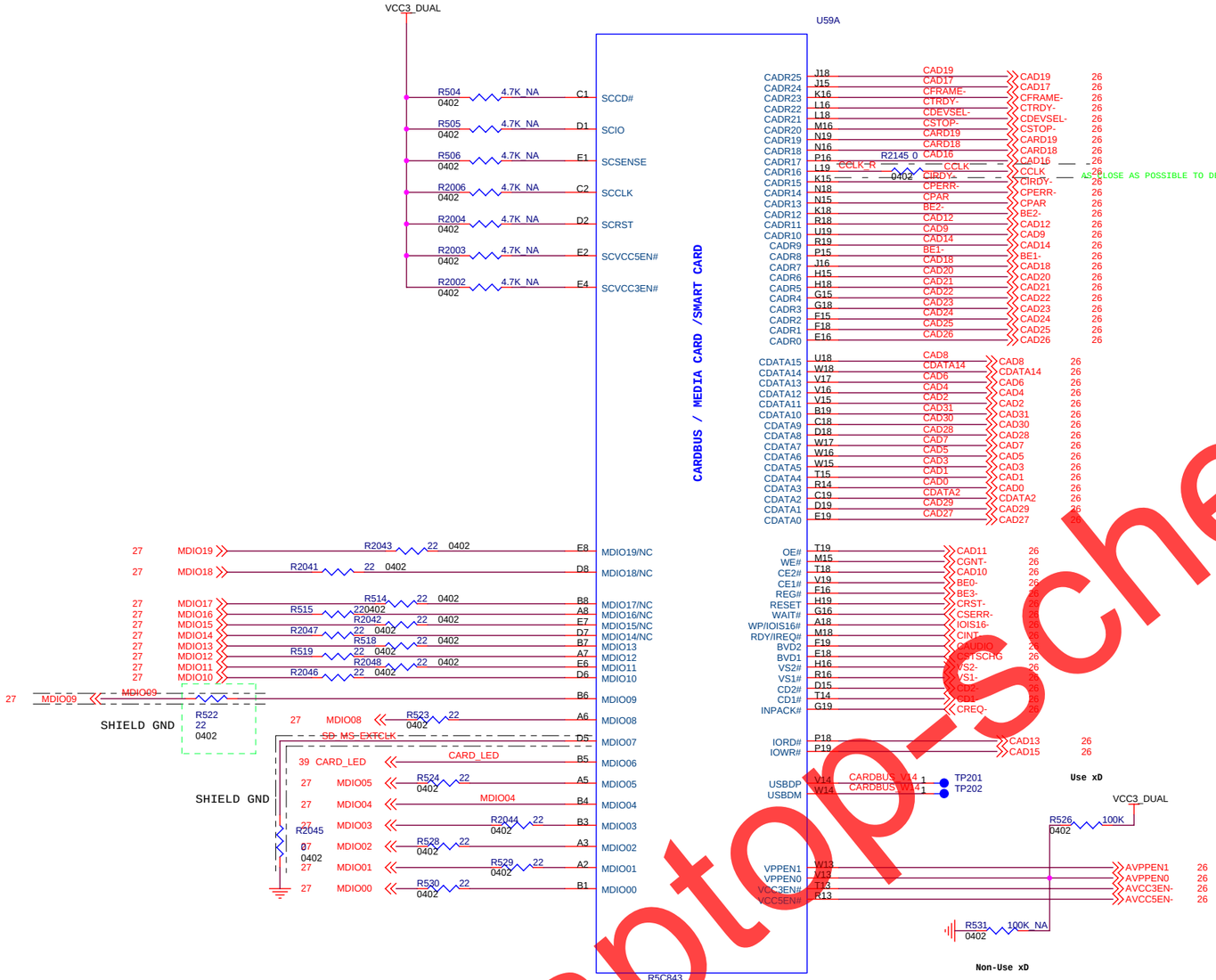
VCC3_DUAL
R503 10K_NA 0402
R502 100K 0402
14 PME#

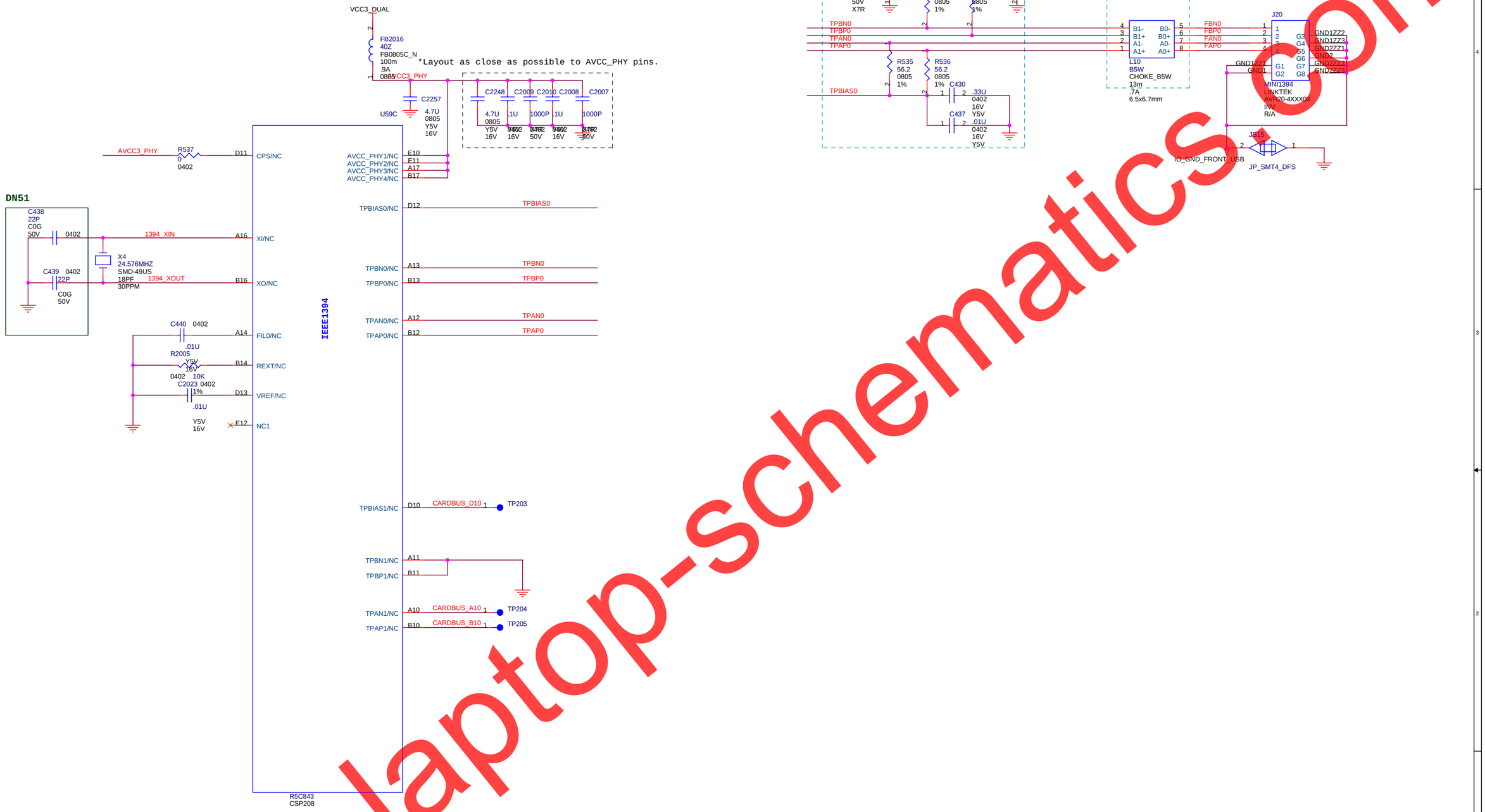
Serial IRQ

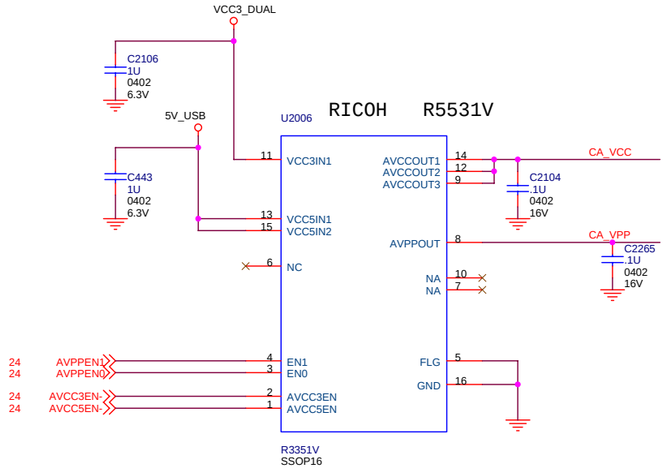
SERIRQ_A — R491 0 0402 — SERIRQ 11,22

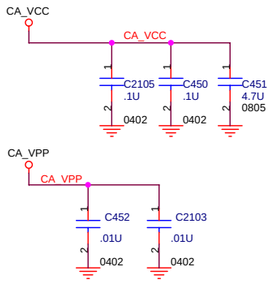
Serial EEPROM

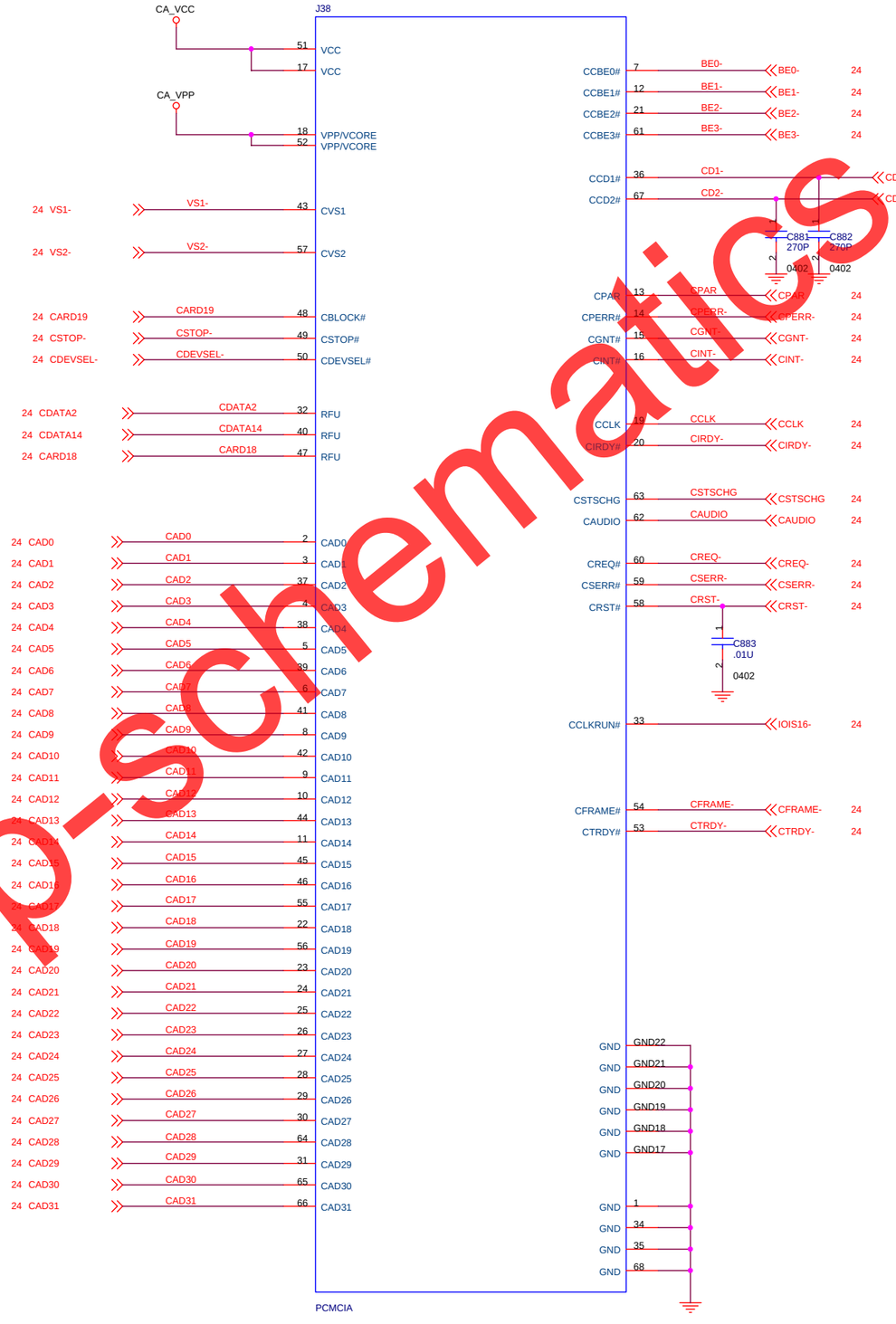
VCC3_DUAL
R2050 10k 0402; R2049 10k 0402
EE_CLK
EE_DAT
C2017 .01U 0402
U2002 AT24C02B SO8 (VCC, WP, SCL, SDA, A0, A1, A2, GND)
R2051 0 0402











SD \ MS \ xD Socket

Circuit of POWER Control

IDSEL=20
PCI_INT#=B
GNT#/REQ#=1

U2020
B/B_CON
53553-1079

11,15,23 AD[0..31]

AD0 13 AD00
AD1 12 AD01
AD2 15 AD02
AD3 16 AD03
AD4 17 AD04
AD5 18 AD05
AD6 19 AD06
AD7 22 AD07
AD8 24 AD08
AD9 25 AD09
AD10 28 AD10
AD11 29 AD11
AD12 30 AD12
AD13 31 AD13
AD14 34 AD14
AD15 33 AD15
AD16 49 AD16
AD17 50 AD17
AD18 51 AD18
AD19 54 AD19
AD20 55 AD20
AD21 56 AD21
AD22 57 AD22
AD23 60 AD23
AD24 63 AD24
AD25 64 AD25
AD26 65 AD26
AD27 66 AD27
AD28 67 AD28
AD29 68 AD29
AD30 71 AD30
AD31 70 AD31

11,23 C/BE-0 C/BE-0 23 C/BE0#
11,23 C/BE-1 C/BE-1 36 C/BE1#
11,23 C/BE-2 C/BE-2 48 C/BE2#
11,23 C/BE-3 C/BE-3 62 C/BE3#

AD20 R2124 0402 100 AD20_R 61 IDSEL

11 REQ-1 74 REQ#

11 GNT-1 75 GNT#

11,15 PCI_CLK0 78 PCICLK

11,23 FRAME- FRAME- 45 FRAME#
11,23 TRDY- TRDY- 43 TRDY#
11,23 IRDY- IRDY- 46 IRDY#
11,23 PIRQ-B 84 INT#

11,23 SERR- SERR- 42 SERR#

11,23 STOP- STOP- 41 STOP#

11,23 PERR- PERR- 38 PERR#

11,23 DEVSEL- DEVSEL- 37 DEVSEL#

11,23 PAR PAR 53 PAR

11,23 PCIRST- PCIRST- 79 PCIRST#

1 NC
2 NC
3 NC
4 NC
5 NC
6 NC
7 NC
8 NC
9 NC
10 NC

59 58 73 52 11 26 27 35 40 47 76 80 89 32 GND

VCC
C1803
470U
D6.3/H11
6.3V/.33A
240m
5000H

VCC5 92 VCC5
VCC5 91 VCC5

VCC3
C2332
4.7U
0805
Y5V
16V

VCC3R3 69 VCC3R3
VCC3R3 72 VCC3R3
VCC3R3 82 VCC3R3
VCC3R3 81 VCC3R3
VCC3R3 77 VCC3R3

V_2P5

VCC2R5 14 VCC2R5
VCC2R5 21 VCC2R5
VCC2R5 20 VCC2R5

V_1P5
C2249
4.7U
0805
Y5V
16V

VCC1R5 39 VCC1R5
VCC1R5 44 VCC1R5

TV_R 98 TV_R TV_R 20
TV_L 97 TV_L TV_L 20

AGND 100 AGND
AGND 99 AGND
AGND 96 AGND
AGND 95 AGND
TVGND

NC 94 NC
NC 93 NC
NC 90 NC
NC 89 NC
NC 88 NC
NC 87 NC
NC 86 NC
NC 85 NC

GND MTG3 MTG3Z1 MTG3Z2 MTG3Z3 MTG3Z4 MTG3Z5 MTG3Z6 MTG3Z7 GND
GND MTG4 MTG4Z1 MTG4Z2 MTG4Z3 MTG4Z4 MTG4Z5 MTG4Z6 MTG4Z7 GND

MDC

J23
B/B_CON
QT8A0121-1011-8F

14 ACZ_SDIN_1
14,20,21 ACZ_RST-
14,20 ACZ_SYNC
14,20 ACZ_SDOUT
R2074 22 0402
3VSB
ACZ_BITCLK 14,20
C1804 1U 0402 16V Y5V
R9B DN-E8

DN48 for EMI

R4256 0 0603
R4257 0 0603
GND1 GND1
GND2 GND2

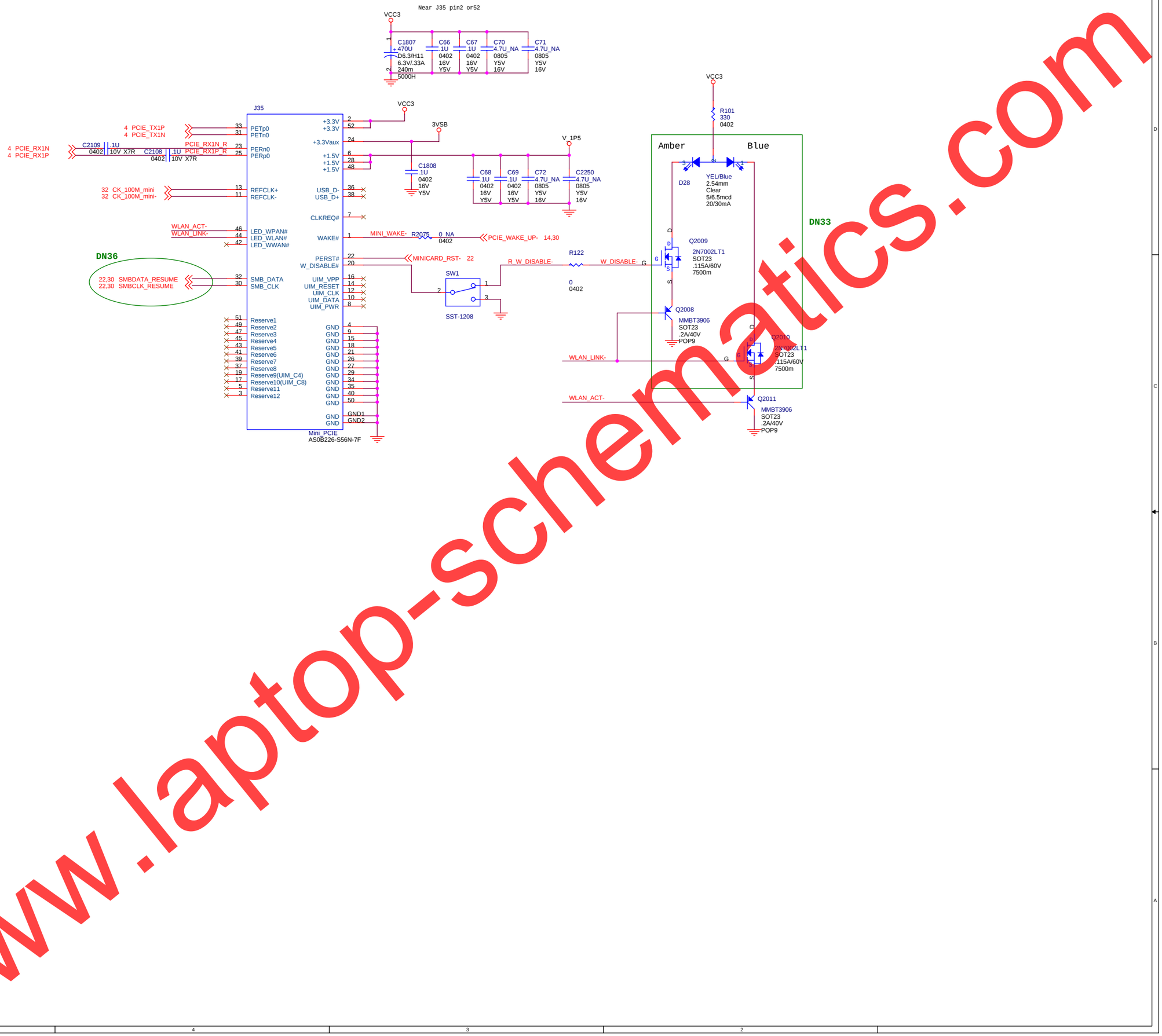
J11
RJ11
4P
INV

C297 1000P 1808 3KV X7R
C298 1000P 1808 3KV X7R

FB2026 .2A 2 120Z 0603 250m
FB2027 0603 .2A 1 2 120Z 250m

J12
2P*1
WAFER
1.25mm
ST
White/HTP

Connect to MDC module



	R2196	R2195	R178	R4257	R165
5789	Stuff	Stuff	Stuff	NA	Stuff
5787	NA	NA	NA	Stuff	NA

Near pin M14

BCM5789KFBG

C1

15mm x 15mm

BGA196

FPBGA196

Rev 1.0

ATTN_BTTN#

R457 V_3P3_LAN for 5787

R4117 VCC3 for 5789

AT24C256

SO8

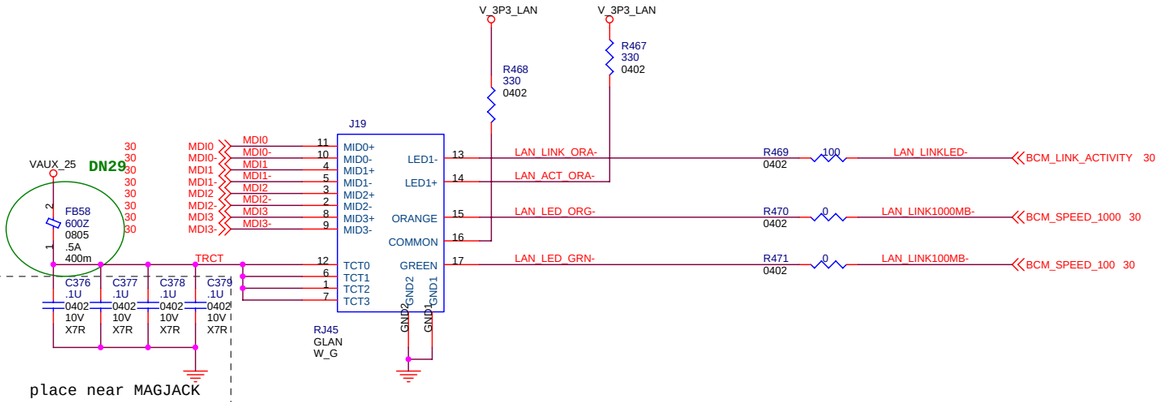
256K

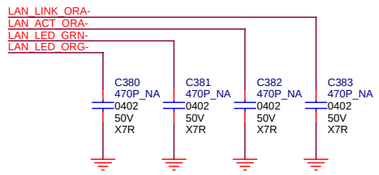
2.7V

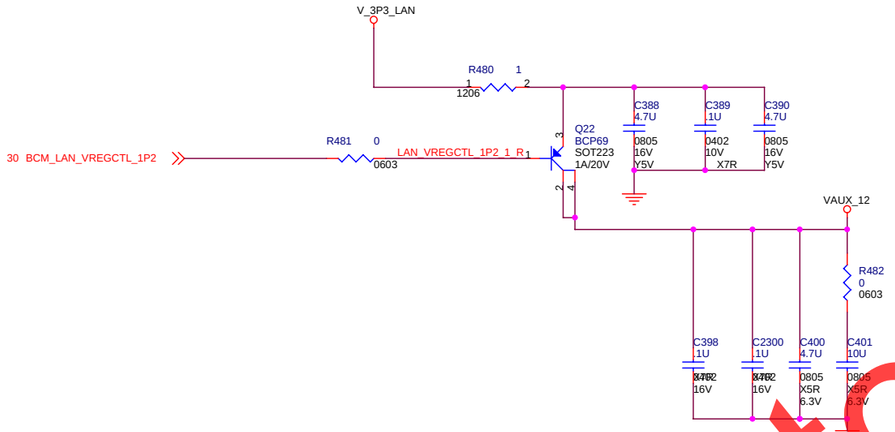
EEPROM

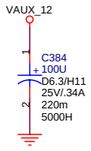
SHORT-SMT3

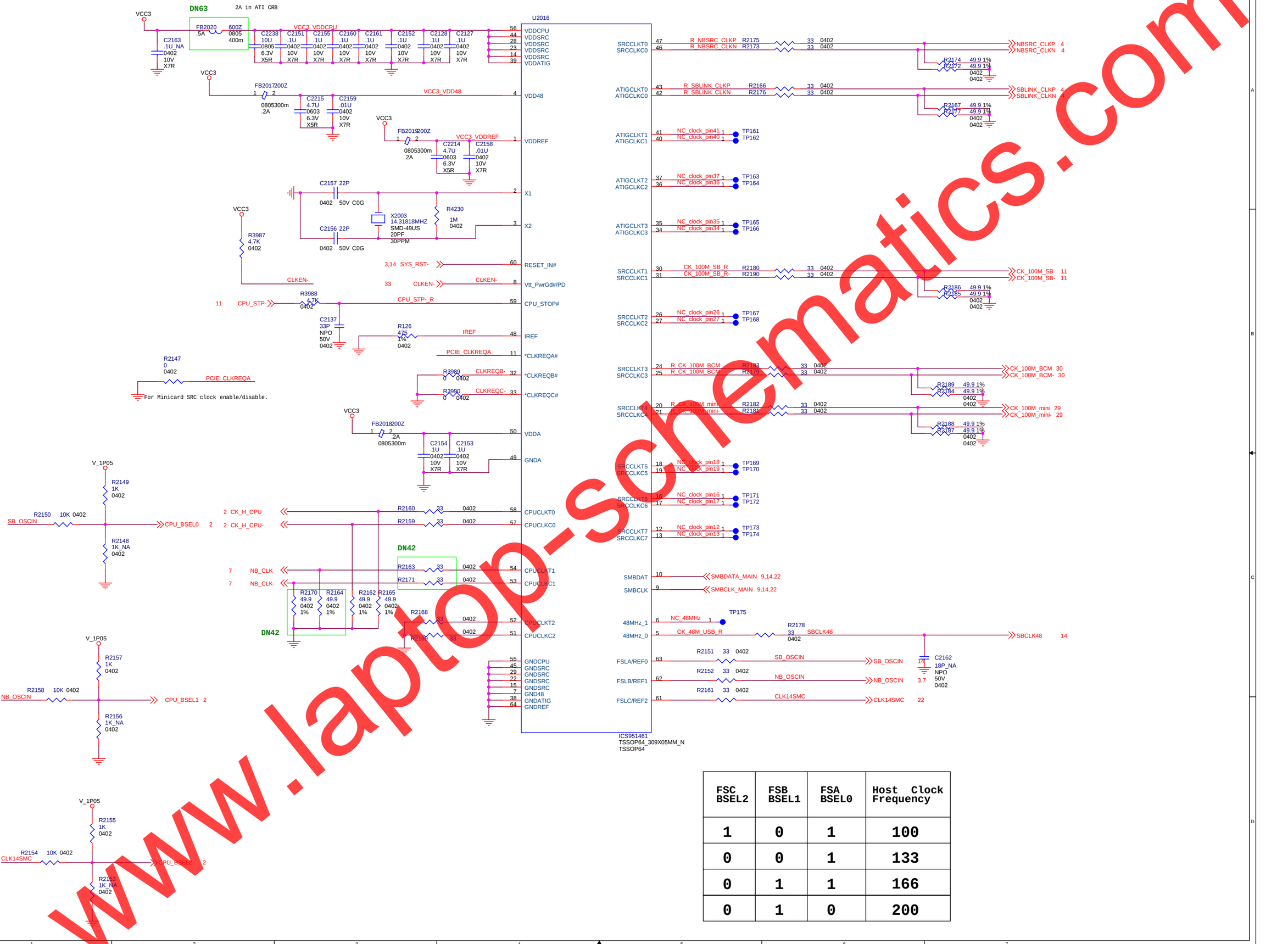
SHORT-SMT3



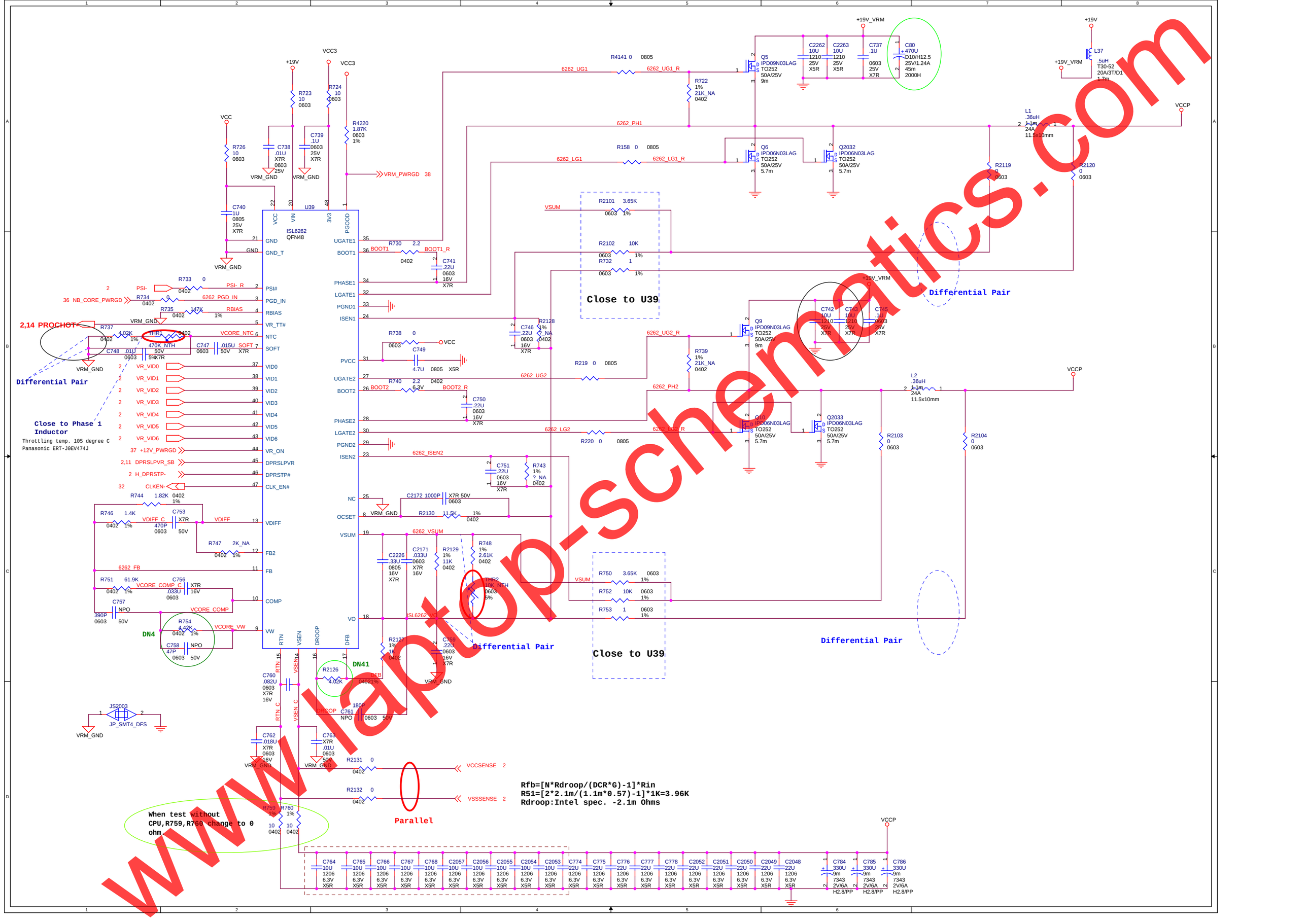








FSC BSEL2	FSB BSEL1	FSA BSEL0	Host Clock Frequency
1	0	1	100
0	0	1	133
0	1	1	166
0	1	0	200



DN53

+19V_adout

+19V_input

J36
2 4 6 / 1 3 5
3P*2
S_WAFER
2.5mm
ST
White

F2005
4A/30V
50m
14x22MM

F19
4A/30V
50m
14x22MM

DN71
EMI

C2383
.1U
0603
25V
X7R

DN71
EMI

C2384
.1U
0603
25V
X7R

RLD30P400UF: I(hold)=4A , I(trip)=8A
,V(max)=30V ,I(max)=40A, [Time-to-trip:12.7sec
under 20A]

DN20

ATX
power

2/7 --Add Soft-start circuit

DN46

+19V_adout

C2333
10U_NA
1210
25V
X5R

R3999
100K
1%
0402

C2317
1U
0805
25V
X7R

R4001
100K
1%
0402

Q2021
FDS6679
9m
13A/30V
SO8

+19V

DN9

C97
220U
D8/H11.5
25V/.76A
2000H
72m

C96
220U
D8/H11.5
25V/.76A
2000H
72m

C95
220U
D8/H11.5
25V/.76A
2000H
72m

5VSB /3VSB Regulator

VCC_5V by ISL6443 internal LDO

+19V

VCC_5V

C2085
4.7U
0805
25V
X5R

C1767
.1U
X7R
0402
16V

C79
10U
1210
25V
X5R

C2334
10U
1210
25V
X5R

D2008
1N4148W
SOD123
.15A/1.25V

C1744 .1U X7R 040216V

U40

SS1
BOOT1
UGATE1
PHASE1
ISEN1
LGATE1
PGND
FB1
SD1-
SD2
OCSET1
VIN
VCC_5V
BOOT2
UGATE2
PHASE2
ISEN2
LGATE2
FB2
GATE3
FB3
OCSET2
SS2
SYNC
PGOOD
SGND
GND1

ISL6443
QFN28

C1746
.1U
X7R
0402
16V

Q55
FDD6035AL
TO252
46A/30V
12m

6443_BOOT1

R4146 0 0805

6443_UGATE1

6443_PHASE1

R191 3K 1% 0402

6443_ISEN1

Q56
FDD6035AL
TO252
46A/30V
12m

R199 0 0805

6443_LGATE1

6443_FB1

TP184 SD1-

TP185 SD2-

OCSET1

R190
120K
0402
1%

R192
120K
0402

OCSET2

5VSB_PWRGD

R4054
10K
0402

VCC_5V

VCC3

C1744 .1U X7R 040216V

C1745
1U
0402
16V
X7R

D2009
1N4148W
SOD123
.15A/1.25V

C2324
4.7U
0805
16V
Y5V

C1743
1U
X7R
0805
25V

C2335
10U
1210
25V
X5R

C93
10U
1210
25V
X5R

DN8

DN39

C2340
470U
18m
7343
6.3V/3.5A
H3.8/PP

C2341
470U
18m
7343
6.3V/3.5A
H3.8/PP

C1748
100U
D6.3/H11
25V/.34A
220m
5000H

5VSB

C2314
1U
0603
10V
X5R

L20
2.5uH
12m
10.5A
10x9mm

R182
10.5K
0603
1%

R181
2K
0603
1%

R4147 0 0805

Q58
FDD6035AL
TO252
46A/30V
12m

6443_UGATE2_R

6443_UGATE2

6443_PHASE2

DN11

R183 3K 1% 0603

6443_ISEN2

R202 0 0805

6443_LGATE2

6443_LGATE2_R

Q57
FDD6035AL
TO252
46A/30V
12m

6443_FB2

R4150 0 0805

6443_GATE3

6443_FB3

C2284
.1U
X7R
0402
16V

L21
2.5uH
12m
10.5A
10x9mm

R184
31.6K
0603
1%

R185
10K
0603
1%

DN7

3VSB

C87
470U
18m
7343
6.3V/3.5A
H3.8/PP

C88
470U
18m
7343
6.3V/3.5A
H3.8/PP

C1830
100U
D6.3/H11
25V/.34A
220m
5000H

C94
1U
0603
10V
X5R

VCC3_6443

R4050
100
1%
0402

C2058
1u
10V
X7R
0402

DN6

Q2013
FDD6685
TO252
30m
40A/30V

FDD306P(12V,Vgs=-1.5max) and
FDD6685(30V,Vgs=-3max)

V_1P05

R186
499
0603
1%

R180
1.6K
0603
1%

C2232
4.7U
0805
16V
Y5V

C1753
470U
D6.3/H11
6.3V/.33A
240m
5000H

DN50

VCC3_NB

VCC3

R4244
0
1206

R4245
0_NA
1206

VCC3_6443

DN1

1P8_NB_SB

Power sequence V_SM and VCC3_NB_SB

VCC3

+12V

R134 4.7K 0402

R135 4.7K 0402

V_SM

R139 4.7K 0402

C2381 .1U 0402 16V Y5V

R4254 5.1K 0402

Q120 MBT3904DW1T1 SOT363

DN57

Q119 FDS8878 10.2A/30V 14m

C1818 1U 0402 16V Y5V

C1819 4.7U 0805 Y5V 16V

U61 AMS1084 TO2523 4.5A

1P8_NB_SB

R19 300 0603 1%

R20 130 0603 1%

C1820 4.7U 0805 Y5V 16V

C1821 .1U 0402 16V Y5V

C1823 470U D6.3/H11 6.3V/.33A 240m 5000H

C1822 .1U 0402 16V Y5V

FAN1084 4.5A

RC1117D 1A

Resume_power

5VSB

Main_power

VCC

Q2006 FDS8878 10.2A/30V 14m

D2003 SMB

AURS120T3_NA

Q2019 FDC638P SSOT6 4.5A/20V 65m

C2114 2200P 0402 50V X7R

5VDUAL

S0, S1 -> VCC

S3 -> 5VSB

S4, S5 -> OFF

1.8V - S0~S3

5VDUAL

L33 .5uH T30-52 20A/3T/D1

D2004 BAT54C SOT23 .1A/1V

C2242 4.7U 1206 16V X5R

C2243 4.7U 1206 16V X5R

C1683 1500U D10/H20 16V/2.55A 13m 2000H

R102 30K 0402 1%

U51

VCC BOOT

OCSET PHASE

FB UGATE

GND LGATE

ISL6520 SO8

R3968 30K 0402

C1685 100P 0603 50V NPO

C2070 .01U 0402 16V Y5V

C1686 .1U 0402 16V Y5V

C1687 1U 0603 10V X5R

Q79 FDD6035AL TO252 45A/30V 12m

R3967 0805

Q80 FDD6035AL TO252 45A/30V 12m

R157 0805

C2107 .1U 0603 16V X7R

L34 2.5uH IND_CHILSCD1006T_2_N

C1693 1000P 0603 50V X7R

R123 2.2 0603

V_SM

1.8V - S0~S3

DN70

C1689 1500U D10/H12.5 6.3V/2.35A 26m 2000H

C1691 .1U 0402 X7R

C2255 4.7U 0805 X5R

DN10

SM1V9_CTRL_R

R4183 39K 0603 1%

New Memory VR solution

+12V

5VSB

Q2028 2N7002LT1 SOT23 .115A/60V

22 SM1V9_CTRL

R3970 2.43K 0603 1%

R3972 3.16K 0603 1%

R2063 2.7K 0402

R2064 2.7K 0402

Main_power

Main_power 36

Resume_power

Resume_power 36

Q2005

22 3V_GATE

R2062 4.7K 0402

R2061 4.7K 0402

MBT3904DW1T1 SOT363 .2A/40V

	S4/5	S0/1	S3
3V_GATE	L	L	H
Main_power	L	H	L
Resume_power	H	H	L

V_SM_VTT

V_SM

R3973 1K R0402_N

R3974 1K R0402_N

C1694 470U D6.3/H11 6.3V/.33A 240m 5000H

C2315 .022U C0603D_N X7R

U52

VI VO

VCNTL

REFEN GND VCNTL_B

AP1250 TO2525 1.5A Bus/1.25V

V_SM_VTT

0.9V - S0~S3

3VSB

C1697 470U D6.3/H11 6.3V/.33A 240m 5000H

+1.8VSB

3VSB

C884 .1U 0402 16V Y5V

C885 10U 1206 16V Y5V

U62 FAN1117 SOT2234 1A

R833 300 0603 1%

R835 130 0603 1%

1.25V

C886 10U 0805 10V Y5V

C887 .1U 0402 16V Y5V

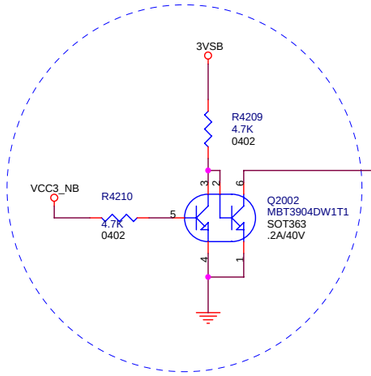
C893 .1U 0402 16V Y5V

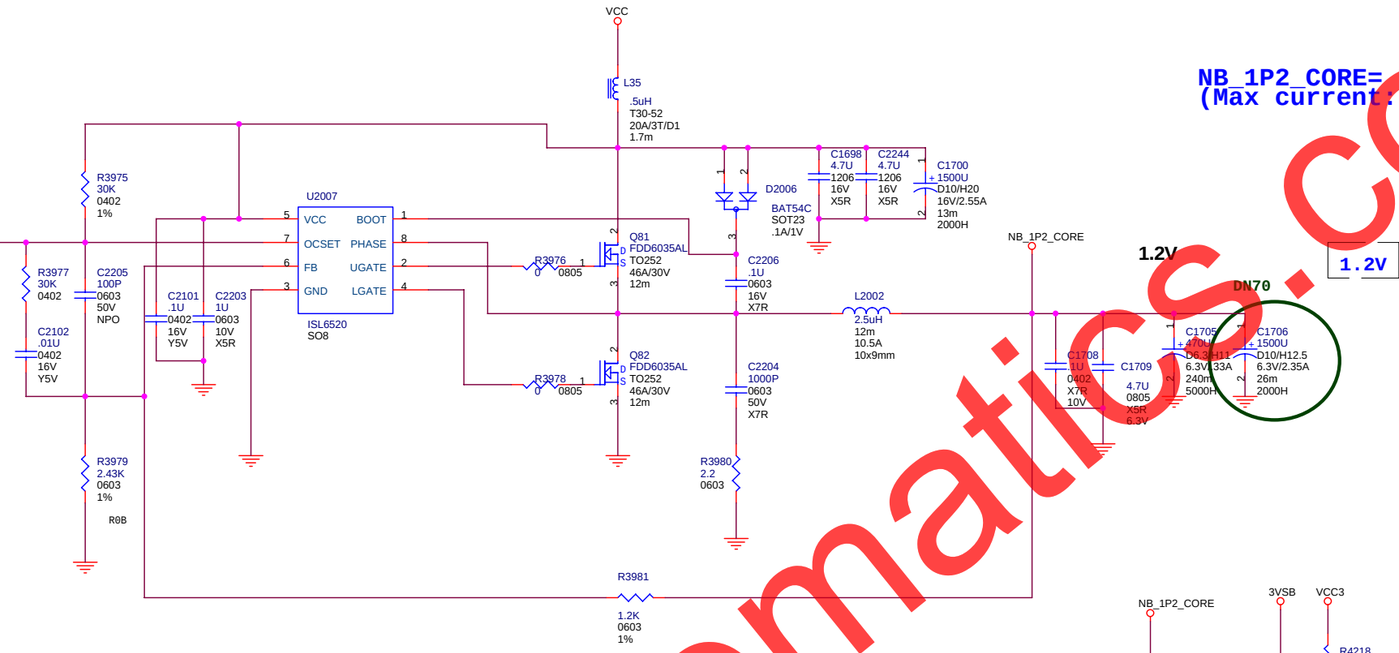
	Q71	R833	R835
SB460	RC1117ST	300	130
SB600	FAN1112	NA	0

SB460 is 1.8V

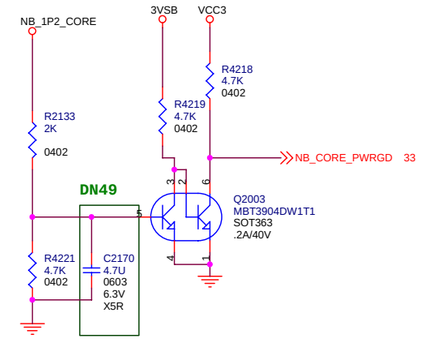
SB600 is 1.2V

Power sequence VCC3_NB and 1.2V

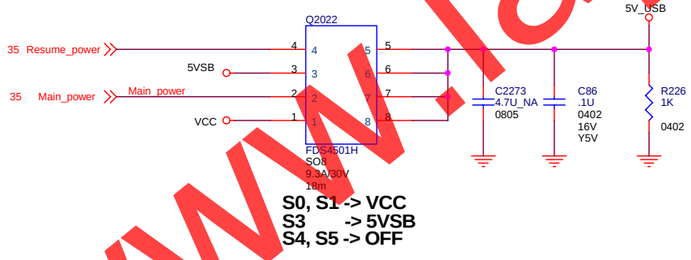


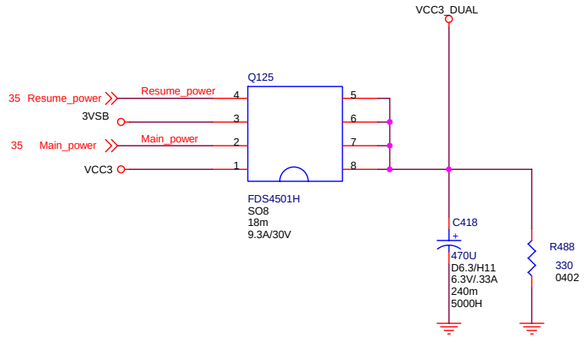


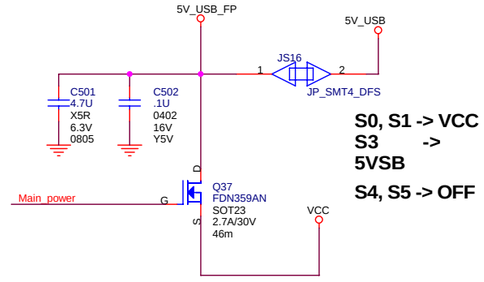
NB_1P2_CORE= 1.2V
(Max current: 10A)



VCC3_DUAL

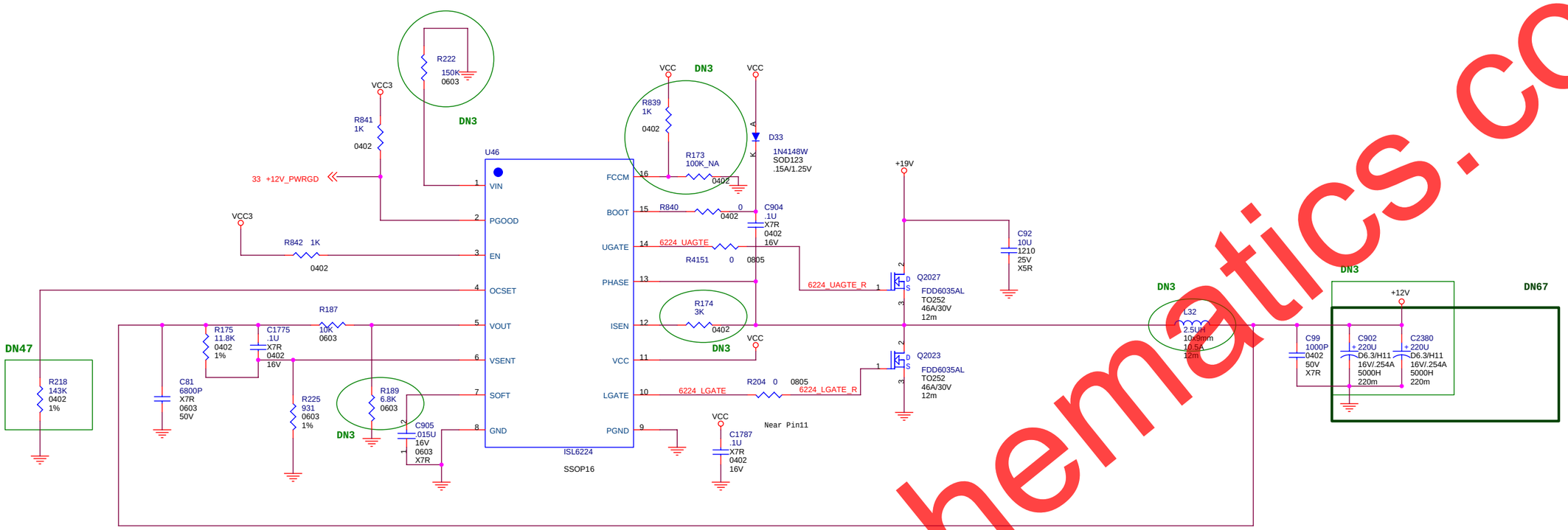




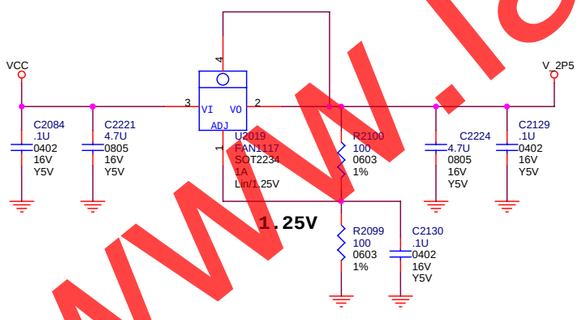


For Front USB

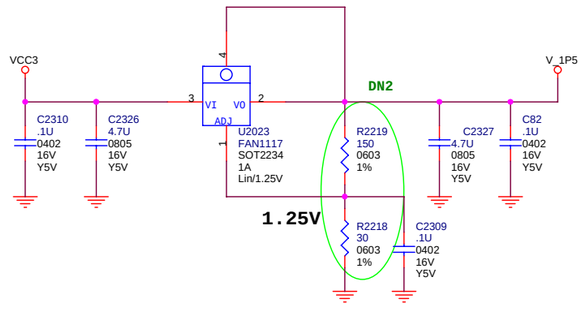
+12V Regulator



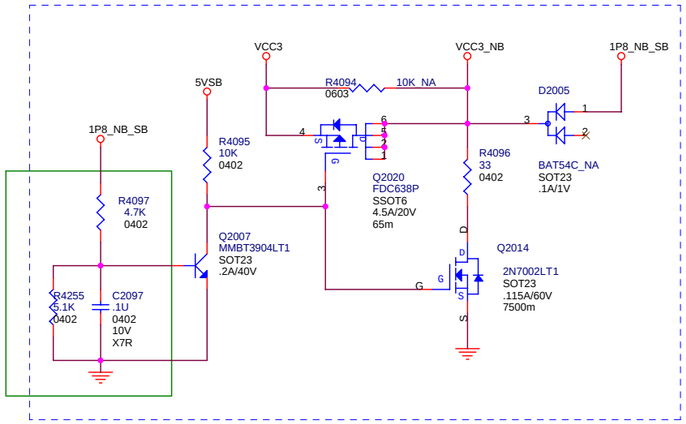
2.5V



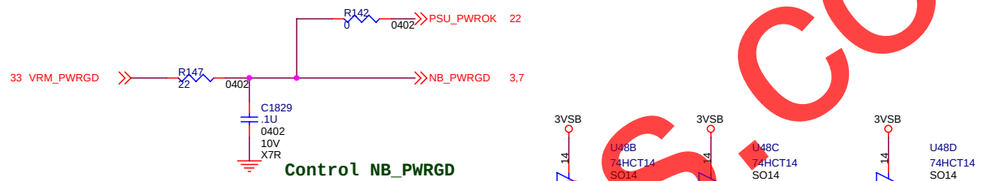
1.5V



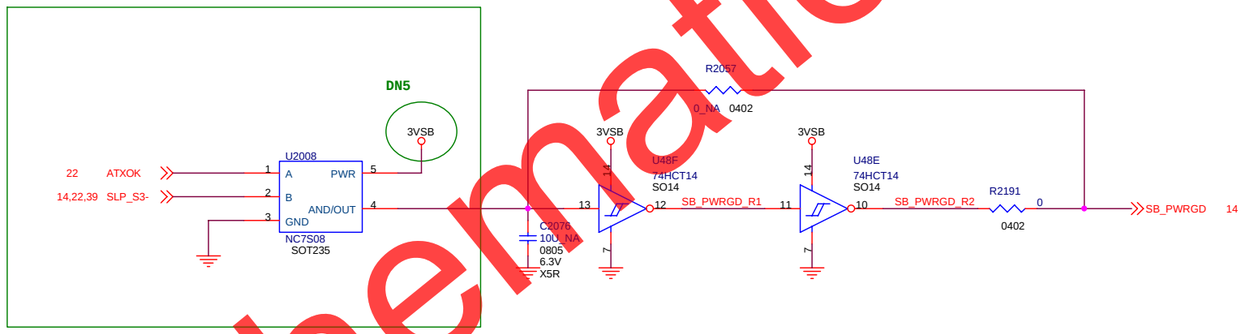
2/11 VCC3_NB control circuit

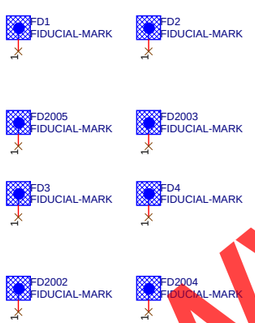


Control NB_PWRGD

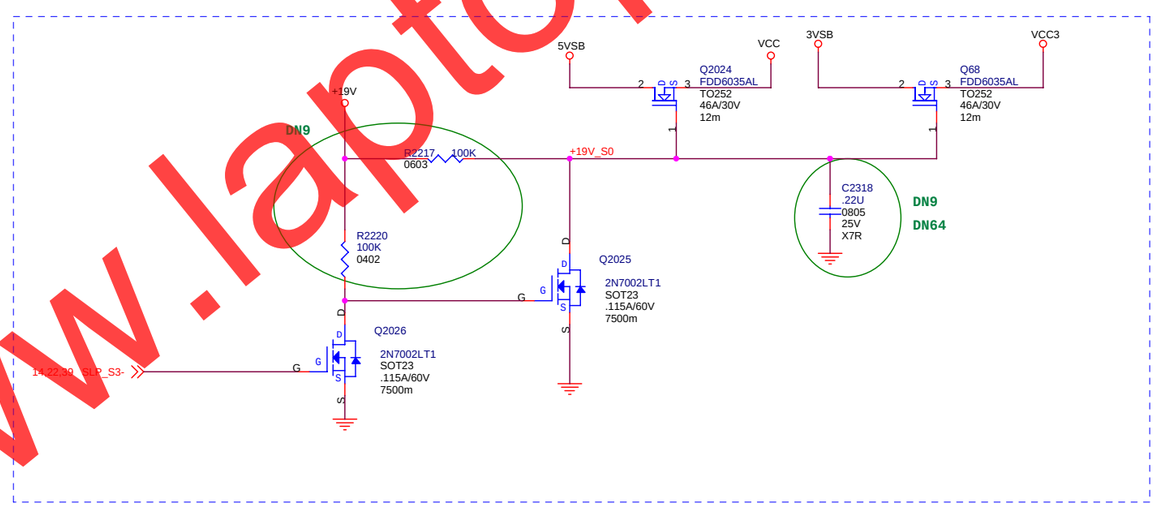


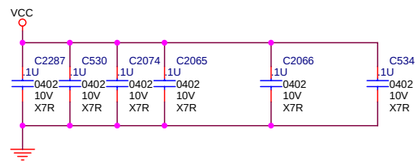
Control SB_PWRGD

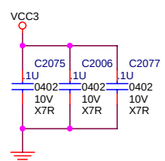


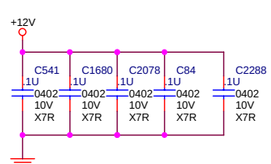


S3 Power Control









DN48 for EMI

3VSB
C2344 .1U 10V X7R 0402
C2346 .1U 10V X7R 0402

5VSB
C2345 .1U 10V X7R 0402
C2347 .1U 10V X7R 0402

+19V
C2353 .1U 10V X7R 0402
C2357 .1U 10V X7R 0402
C2361 .1U 10V X7R 0402
C2362 .1U 10V X7R 0402
C2364 .1U 10V X7R 0402
C2366 .1U 10V X7R 0402
C2367 .1U 10V X7R 0402

+19V_ADOUT
C2354 .1U 10V X7R 0402
C2358 .1U 10V X7R 0402

For EMI

VCC3
C2003 .01U X7R 16V 0402
C2004 .01U X7R 16V 0402
C2005 .01U X7R 16V 0402
C2286 .01U X7R 16V 0402
C91 .01U X7R 16V 0402
C2278 .01U X7R 16V 0402
C584 .01U X7R 16V 0402

VCC3
C2071 .01U X7R 16V 0402
C564 .01U X7R 16V 0402
C2073 .01U X7R 16V 0402
C2348 .01U X7R 16V 0402
C2350 .01U X7R 16V 0402
C2352 .01U X7R 16V 0402
C2355 .01U X7R 16V 0402
C2359 .01U X7R 16V 0402

DN48 for EMI

VCC
C2002 .1U X7R 10V 0402
C2279 .1U X7R 10V 0402
C78 .1U X7R 10V 0402
C85 .1U X7R 10V 0402
C2293 .1U X7R 10V 0402
C585 .1U X7R 10V 0402
C73 .1U X7R 10V 0402
C90 .1U X7R 10V 0402

VCC
VCC3
C2072 .01U X7R 16V 0402
C2282 .1U X7R 16V 0402

DN48 for EMI

VCC
C2349 .1U X7R 10V 0402
C2351 .1U X7R 10V 0402
C2356 .1U X7R 10V 0402
C2360 .1U X7R 10V 0402
C2363 .1U X7R 10V 0402
C2365 .1U X7R 16V 0402

VCC3_DUAL 5V_USB 5VSB VCC VCC3 3VSB

R4236 0 1206
R161 0 1206
R193 0 1206
R227 0 1206
R194 0 1206
R162 0 1206

J32
12P*2/-P8
WAFER
2.0mm
ST
White

22 PC_LED
22 NIGHT_LED
22 NIGHT_MODE
22 VISUAL_LED
22 VISUAL_BTN
TV_BTN
14 UV5-
14 UV5+

PC_LED
NIGHT_LED
NIGHT_MODE
VISUAL_LED
VISUAL_BTN
TV_BTN

CAPS_LED
SCROLL_LED
NUM_LED
CARD_LED 24
HD_ODD_LED 17
-PWRBTN 14

Connect to LED board

5V_USB
C574 .1U 10V X7R 0402

V_1P05
C2080 .1U X7R 10V 0402
C2079 .1U X7R 10V 0402
C2083 .1U X7R 10V 0402
C2082 .1U X7R 10V 0402
C2081 .1U X7R 10V 0402

VCCP
C593 .1U X7R 10V 0402
C639 .1U X7R 10V 0402
C597 .1U X7R 10V 0402

VCC
C2086 .1U X7R 10V 0402
C1781 .1U X7R 10V 0402
AGND

Connect to RF KB/MS BD

VCC3_DUAL 5VSB

F12 .75A/6V 1206 290m
F13 .75A/6V 1206 290m

J26
9P*2/-P17
WAFER
2.0mm
ST
White/HTP

14,22 SLP_S5-
TV_BTN
NUM_LED
SCROLL_LED
-PWRBTN
SLP_S3- 14,22,38
-PWRBTN 14
CAPS_LED

R628 0 0603
R630 0 0603
UV4-_R
UV4+_R
KB_SW

14 UV4-
14 UV4+
L15
90OHM/100MHZ_NA
2012

R629 2.2K_NA 0402

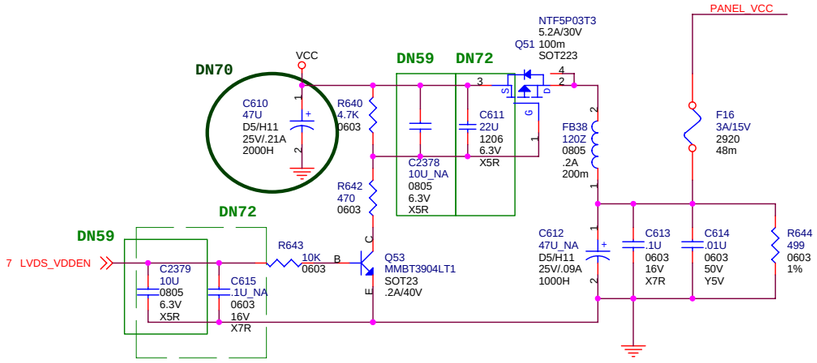
J28
2P*1
FAN
2.54mm
ST
White/HTP

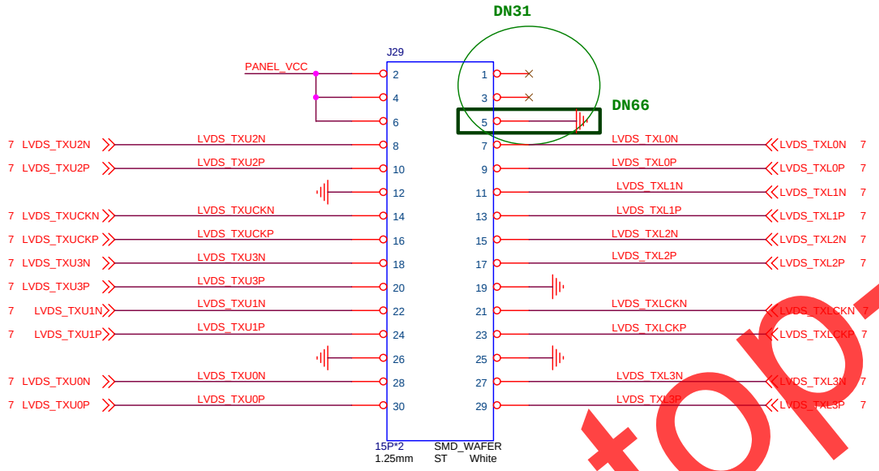
R632 2.2K 0402
R633 0 0402
R631 0 0402
Q48 MMBT3904_NA SOT23 .2A/40V

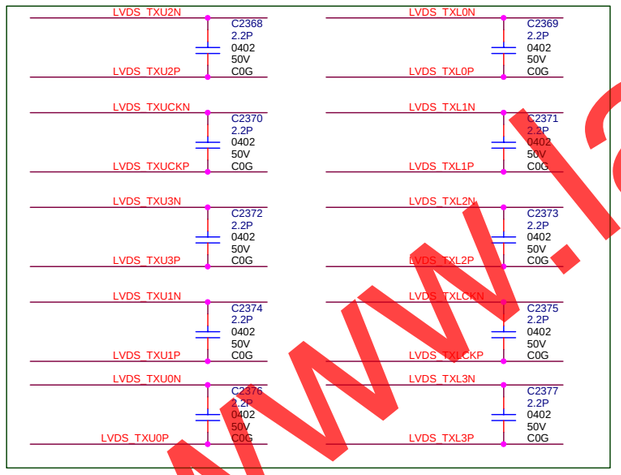
Connect to KB SW BD

J27
3P*1/-P2
WAFER
1.25mm
ST
White/HTP

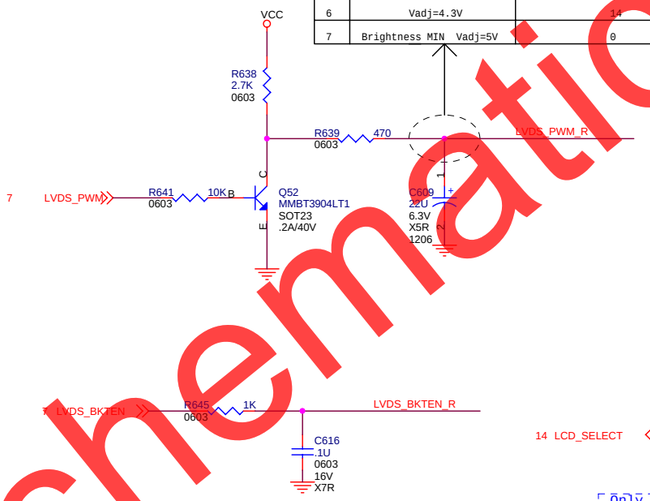
ODD_EJECT 22
C602 1U 0603 10V X5R



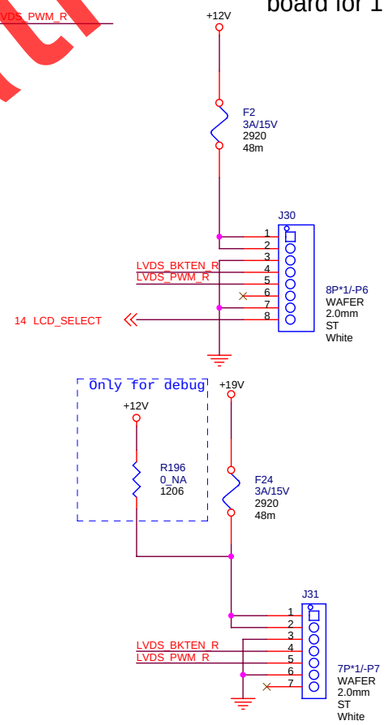




	Inverter Board	Duty cycle setting for PWM
0	Brightness MAX Vadj=0V	100
1	Vadj=0.8V	84
2	Vadj=1.5V	70
3	Vadj=2.2V	56
4	Vadj=2.9V	42
5	Vadj=3.6V	28
6	Vadj=4.3V	14
7	Brightness MIN Vadj=5V	0

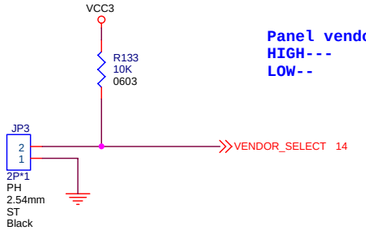


J10: Connect to Inverter board for 17" LCD



HIGH--20"
LOW--17"

J7: Connect to Inverter board for 20" LCD



Panel vendor
HIGH---
LOW--