Nozomi-4 SWG SOVP LOGIC SCHEMATICS

NZM4H-7
VER 7.54
MAR/19/2012

BASE LOGIC :Nozomi-4 SWG SVT
VER 7.03
Jan/25/2012

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82.DC/DC VCCGFXCORE_D (TPS51728)
83.DC/DC VCC1R05B_VTT(VT356)
84.DC/DC VCC1R05AMT(VT356)
85.DC/DC VCC1R5A(VT357)
86.DC/DC VCC0R75B(MAX1510)
87.DC/DC VCC1R5VIDEO(VT356)
88.DC/DC VCC1R05VIDEO_PLL(TPS74801)
89.DC/DC VCC1R8B(BD9139)
90.DC/DC VCCSA(VT370)
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EC HISTORY

NOZOMI-4 PRE-DV (BASE LOGIC :NZM3H-7 VER 7.00 Nov/30/2010)

VER.0.00 12/08/2010 APPLIED PDV_EC001
VER.0.01 12/14/2010 APPLIED PDV_EC002-012
VER.0.02 12/15/2010 APPLIED PDV_EC013-016,018
VER.0.03 12/16/2010 APPLIED PDV_EC017,019-026
VER.0.04 12/21/2010 APPLIED PDV_EC027-028
VER.0.05 12/22/2010 APPLIED PDV_EC030-034
VER.0.06 12/24/2010 APPLIED PDV_EC035-037
VER.0.07 12/27/2010 APPLIED PDV_EC038-041,043-046
VER.0.08 12/29/2010 APPLIED PDV_EC047-049
VER.0.09 01/06/2011 APPLIED PDV_EC051-058
VER.0.10 01/07/2011 APPLIED PDV_EC042,050,059-063
VER.0.11 01/11/2011 APPLIED PDV_EC064-069
VER.0.12 01/13/2011 APPLIED PDV_EC070-074
VER.0.13 01/14/2011 APPLIED PDV_EC075-077
VER.0.14 01/17/2011 APPLIED PDV_EC079,080
VER.0.15 01/19/2011 APPLIED PDV_EC078,081
VER.0.16 01/21/2011 APPLIED PDV_EC082-085
VER.0.17 01/24/2011 APPLIED PDV_EC086,087
VER.0.18 01/25/2011 APPLIED PDV_EC088-092
VER.0.19 01/26/2011 APPLIED PDV_EC093-095
VER.0.20 01/27/2011 APPLIED PDV_EC096,097
VER.0.21 01/28/2011 APPLIED PDV_EC098-100
VER.0.22 01/31/2011 APPLIED PDV_EC101,102
VER.0.23 02/01/2011 APPLIED PDV_EC103-109
VER.0.24 02/02/2011 APPLIED PDV_EC110-116
VER.0.25 02/03/2011 APPLIED PDV_EC117,118
VER.0.26 02/04/2011 APPLIED PDV_EC119-123
VER.0.27 02/07/2011 APPLIED PDV_EC124-130
VER.0.28 02/08/2011 APPLIED PDV_EC131-133
VER.0.29 02/09/2011 APPLIED PDV_EC134-136
VER.0.30 02/10/2011 APPLIED PDV_EC139,140
VER.0.31 02/14/2011 APPLIED PDV_EC137,138
VER.0.32 02/15/2011 APPLIED PDV_EC141-145
VER.0.33 02/16/2011 APPLIED PDV_EC146-148
VER.0.34 02/17/2011 APPLIED PDV_EC149-151
VER.0.35 02/18/2011 APPLIED PDV_EC152-160
VER.0.36 02/21/2011 APPLIED PDV_EC161-166
VER.0.37 02/22/2011 APPLIED PDV_EC167-183
VER.0.38 02/23/2011 APPLIED PDV_EC184-187

NOZOMI-4 SWG SDV (BASE LOGIC :Nozomi-4 SWG Pre-DV VER 0.38 Feb/23/2011)

VER.1.00 02/24/2011 APPLIED SDV_EC001
VER.1.01 02/25/2011 APPLIED SDV_EC002-007
VER.1.02 02/28/2011 APPLIED SDV_EC008-033
VER.1.03 03/01/2011 APPLIED SDV_EC034-052
VER.1.04 03/02/2011 APPLIED SDV_EC053-061
VER.1.05 03/03/2011 APPLIED SDV_EC062-076
VER.1.06 03/04/2011 APPLIED SDV_EC077-079,081-083
VER.1.07 03/07/2011 APPLIED SDV_EC084-089
VER.1.08 03/08/2011 APPLIED SDV_EC090-099,101,102
VER.1.09 03/09/2011 APPLIED SDV_EC103-114
VER.1.10 03/10/2011 APPLIED SDV_EC115-121
VER.1.11 03/11/2011 APPLIED SDV_EC122-127
VER.1.12 03/14/2011 APPLIED SDV_EC128,130
VER.1.13 03/15/2011 APPLIED SDV_EC131-134
VER.1.14 03/16/2011 APPLIED SDV_EC129
VER.1.15 03/17/2011 APPLIED SDV_EC135
VER.1.16 03/18/2011 APPLIED SDV_EC136-141
VER.1.17 03/22/2011 APPLIED SDV_EC142-144
VER.1.18 03/23/2011 APPLIED SDV_EC145-147
VER.1.19 03/24/2011 APPLIED SDV_EC149-154
VER.1.20 03/25/2011 APPLIED SDV_EC148
VER.1.21 03/28/2011 APPLIED SDV_EC155-158
VER.1.22 03/29/2011 APPLIED SDV_EC159-163
VER.1.23 03/30/2011 APPLIED SDV_EC164-168
VER.1.24 03/31/2011 APPLIED SDV_EC169-171
VER.1.25 04/01/2011 APPLIED SDV_EC172,173
VER.1.26 04/04/2011 APPLIED SDV_EC174,175
VER.1.27 04/05/2011 APPLIED SDV_EC176,177
VER.1.28 04/06/2011 APPLIED SDV_EC178-180
VER.1.29 04/07/2011 APPLIED SDV_EC181-184
VER.1.30 04/08/2011 APPLIED SDV_EC185-189
VER.1.31 04/11/2011 APPLIED SDV_EC190,191
VER.1.32 04/13/2011 APPLIED SDV_EC192-194
VER.1.33 04/14/2011 APPLIED SDV_EC195
VER.1.34 04/15/2011 APPLIED SDV_EC196
VER.1.35 04/18/2011 APPLIED SDV_EC197-199,201
VER.1.36 04/19/2011 APPLIED SDV_EC202,203
VER.1.37 04/20/2011 APPLIED SDV_EC205-208
VER.1.38 04/21/2011 APPLIED SDV_EC209-213
VER.1.39 04/22/2011 APPLIED SDV_EC214-217
VER.1.40 04/25/2011 APPLIED SDV_EC218-220,224
VER.1.41 04/26/2011 APPLIED SDV_EC228-232
VER.1.42 04/27/2011 APPLIED SDV_EC236,240,242,245,247
VER.1.43 04/28/2011 APPLIED SDV_EC248,251-254,261
VER.1.44 05/06/2011 APPLIED SDV_EC262,263
VER.1.45 05/20/2011 APPLIED SDV_EC264,265

Nozomi-4 SWG MFVT (BASE LOGIC :Nozomi-4 SWG SDV VER 1.45 May/20/2011)

VER.2.00 05/23/2011 APPLIED MFVT_EC001-008
VER.2.01 05/24/2011 APPLIED MFVT_EC009-014,017
VER.2.02 05/25/2011 APPLIED MFVT_EC010,015,016,018
VER.2.03 05/26/2011 APPLIED MFVT_EC020
VER.2.04 05/27/2011 APPLIED MFVT_EC021,022
VER.2.05 05/30/2011 APPLIED MFVT_EC023,025,026
VER.2.06 05/31/2011 APPLIED MFVT_EC028
VER.2.07 06/01/2011 APPLIED MFVT_EC029,030
VER.2.08 06/02/2011 APPLIED MFVT_EC031,032
VER.2.09 06/03/2011 APPLIED MFVT_EC033
VER.2.10 06/06/2011 APPLIED MFVT_EC037-039,041,042
VER.2.11 06/07/2011 APPLIED MFVT_EC043,045,047
VER.2.12 06/08/2011 APPLIED MFVT_EC048,053
VER.2.13 06/09/2011 APPLIED MFVT_EC055,057,058,060,061
VER.2.14 06/14/2011 APPLIED MFVT_EC063
VER.2.15 06/15/2011 APPLIED MFVT_EC066
VER.2.16 06/21/2011 APPLIED MFVT_EC067

Nozomi-4 SWG FVT (BASE LOGIC :Nozomi-4 SWG MFVT VER 2.16 Jun/21/2011)

VER.3.00 06/23/2011 APPLIED FVT_EC001-003
VER.3.01 06/29/2011 APPLIED FVT_EC006
VER.3.02 07/01/2011 APPLIED FVT_EC008
VER.3.03 07/04/2011 APPLIED FVT_EC004,009-013
VER.3.04 07/05/2011 APPLIED FVT_EC014-017,019
VER.3.05 07/06/2011 APPLIED FVT_EC020-024
VER.3.06 07/07/2011 APPLIED FVT_EC018,026
VER.3.07 07/08/2011 APPLIED FVT_EC028-031,034,036
VER.3.08 07/11/2011 APPLIED FVT_EC037
VER.3.09 07/12/2011 APPLIED FVT_EC041,044
VER.3.10 07/13/2011 APPLIED FVT_EC045,046
VER.3.11 07/14/2011 APPLIED FVT_EC048-052,055,056,058-060,063
VER.3.12 07/15/2011 APPLIED FVT_EC064
VER.3.13 07/19/2011 APPLIED FVT_EC065-070
VER.3.14 07/21/2011 APPLIED FVT_EC071-076
VER.3.15 07/22/2011 APPLIED FVT_EC078
VER.3.16 07/26/2011 APPLIED FVT_EC079-081

Nozomi-4 SWG SIT (BASE LOGIC :Nozomi-4 SWG FVT VER 3.16 Jul/26/2011)

VER.4.00 08/01/2011 APPLIED SIT_EC001-009
VER.4.01 08/02/2011 APPLIED SIT_EC010-012
VER.4.02 08/03/2011 APPLIED SIT_EC013
VER.4.03 08/04/2011 APPLIED SIT_EC014-019
VER.4.04 08/05/2011 APPLIED SIT_EC020,021
VER.4.05 08/17/2011 APPLIED SIT_EC022-031,033,034
VER.4.06 08/22/2011 APPLIED SIT_EC035,036,039-042
VER.4.07 08/23/2011 APPLIED SIT_EC044,045
VER.4.08 08/24/2011 APPLIED SIT_EC046-050
VER.4.09 08/25/2011 APPLIED SIT_EC037,052-054
VER.4.10 08/26/2011 APPLIED SIT_EC055,056
VER.4.11 08/29/2011 APPLIED SIT_EC057
VER.4.12 09/01/2011 APPLIED SIT_EC059-061
VER.4.13 09/05/2011 APPLIED SIT_EC062,063
VER.4.14 09/07/2011 APPLIED SIT_EC064,065,070-079
VER.4.15 09/08/2011 APPLIED SIT_EC080-089
VER.4.16 09/09/2011 APPLIED SIT_EC092,095,096
VER.4.17 09/12/2011 APPLIED SIT_EC099,100
VER.4.18 09/13/2011 APPLIED SIT_EC101,102
VER.4.19 09/15/2011 APPLIED SIT_EC104-106
VER.4.20 09/21/2011 APPLIED SIT_EC107

Nozomi-4 SWG SIT-R1 (BASE LOGIC :Nozomi-4 SWG SIT VER 4.20 Sep/21/2011)

VER.5.00 09/27/2011 APPLIED SIT-R_EC001-003
VER.5.01 10/11/2011 APPLIED SIT-R_EC004-006
VER.5.02 10/14/2011 APPLIED SIT-R_EC007
VER.5.03 10/28/2011 APPLIED SIT-R_EC008
VER.5.04 10/31/2011 APPLIED SIT-R_EC009-012
VER.5.05 11/01/2011 APPLIED SIT-R_EC014
VER.5.06 11/02/2011 APPLIED SIT-R_EC015
VER.5.07 11/04/2011 APPLIED SIT-R_EC017-020,022
VER.5.08 11/07/2011 APPLIED SIT-R_EC023
VER.5.09 11/09/2011 APPLIED SIT-R_EC016
VER.5.10 11/10/2011 APPLIED SIT-R_EC024
VER.5.11 11/15/2011 APPLIED SIT-R_EC025-026

Nozomi-4 SWG SIT-R2 (BASE LOGIC :Nozomi-4 SWG SIT-R1 VER 5.11 Nov/15/2011)

VER.6.00 11/18/2011 APPLIED SIT-R2_EC001-003
VER.6.01 11/22/2011 APPLIED SIT-R2_EC006
VER.6.02 11/25/2011 APPLIED SIT-R2_EC007
VER.6.03 11/28/2011 APPLIED SIT-R2_EC008
VER.6.04 11/29/2011 APPLIED SIT-R2_EC009-010
VER.6.05 11/30/2011 APPLIED SIT-R2_EC011-013
VER.6.06 12/01/2011 APPLIED SIT-R2_EC016
VER.6.07 12/05/2011 APPLIED SIT-R2_EC018

Nozomi-4 SWG SVT (BASE LOGIC :Nozomi-4 SWG SIT-R2 VER 6.07 Dec/05/2011)

VER.7.00 12/13/2011 APPLIED SVT_EC001-006
VER.7.01 12/15/2011 APPLIED SVT_EC007
VER.7.02 01/17/2012 APPLIED SVT_EC011
VER.7.03 01/25/2012 APPLIED SVT_EC012

Nozomi-4 SWG SOVP (BASE LOGIC :Nozomi-4 SWG SVT VER 7.03 Jan/25/2012)

VER.7.50 02/20/2012 APPLIED SOVP_EC001-002
VER.7.51 02/24/2012 APPLIED SOVP_EC003-004
VER.7.52 03/05/2012 APPLIED SOVP_EC005-006
VER.7.53 03/08/2012 APPLIED SOVP_EC007
VER.7.54 03/19/2012 APPLIED SOVP_EC008

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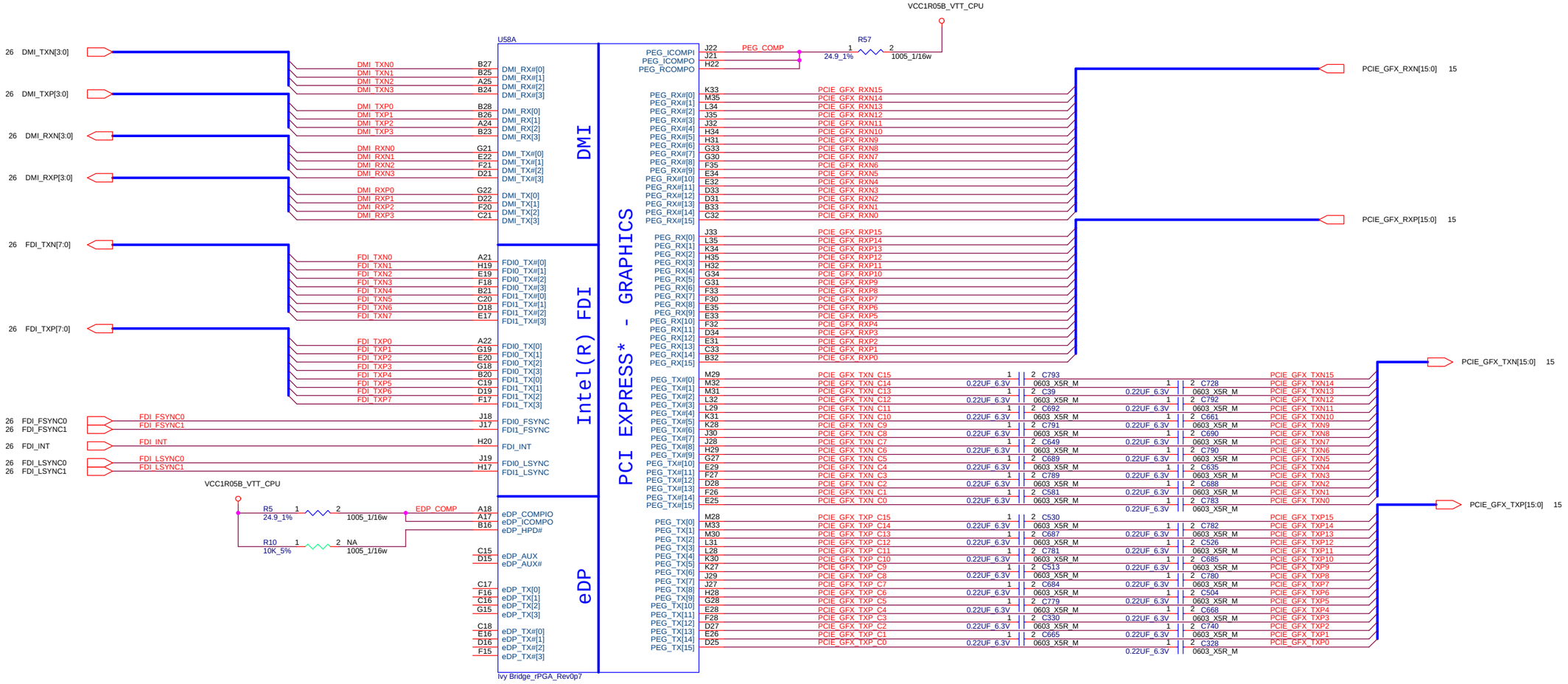

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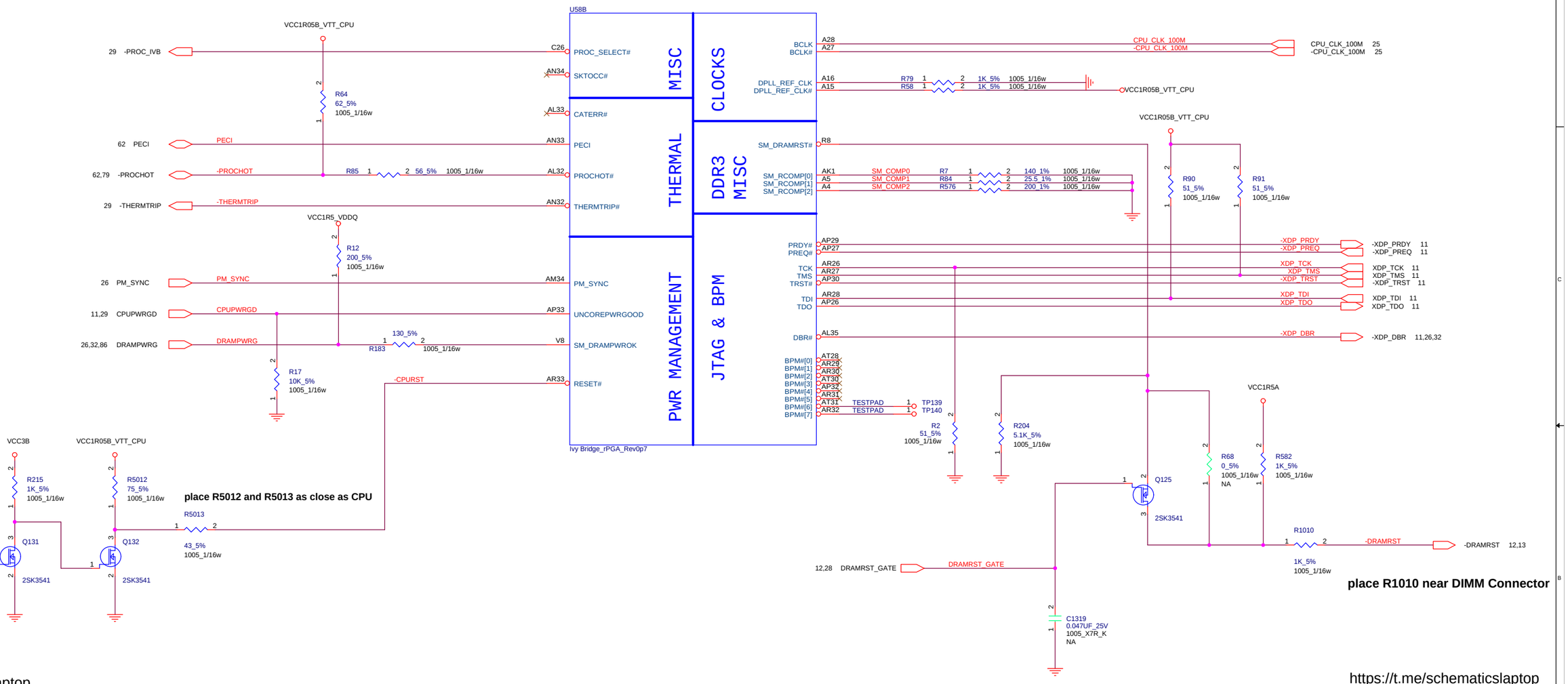
TABLE PROC_SELECT#(-PROC_IVB)

Sandy Bridge	**High**
Ivy Bridge	**Low**



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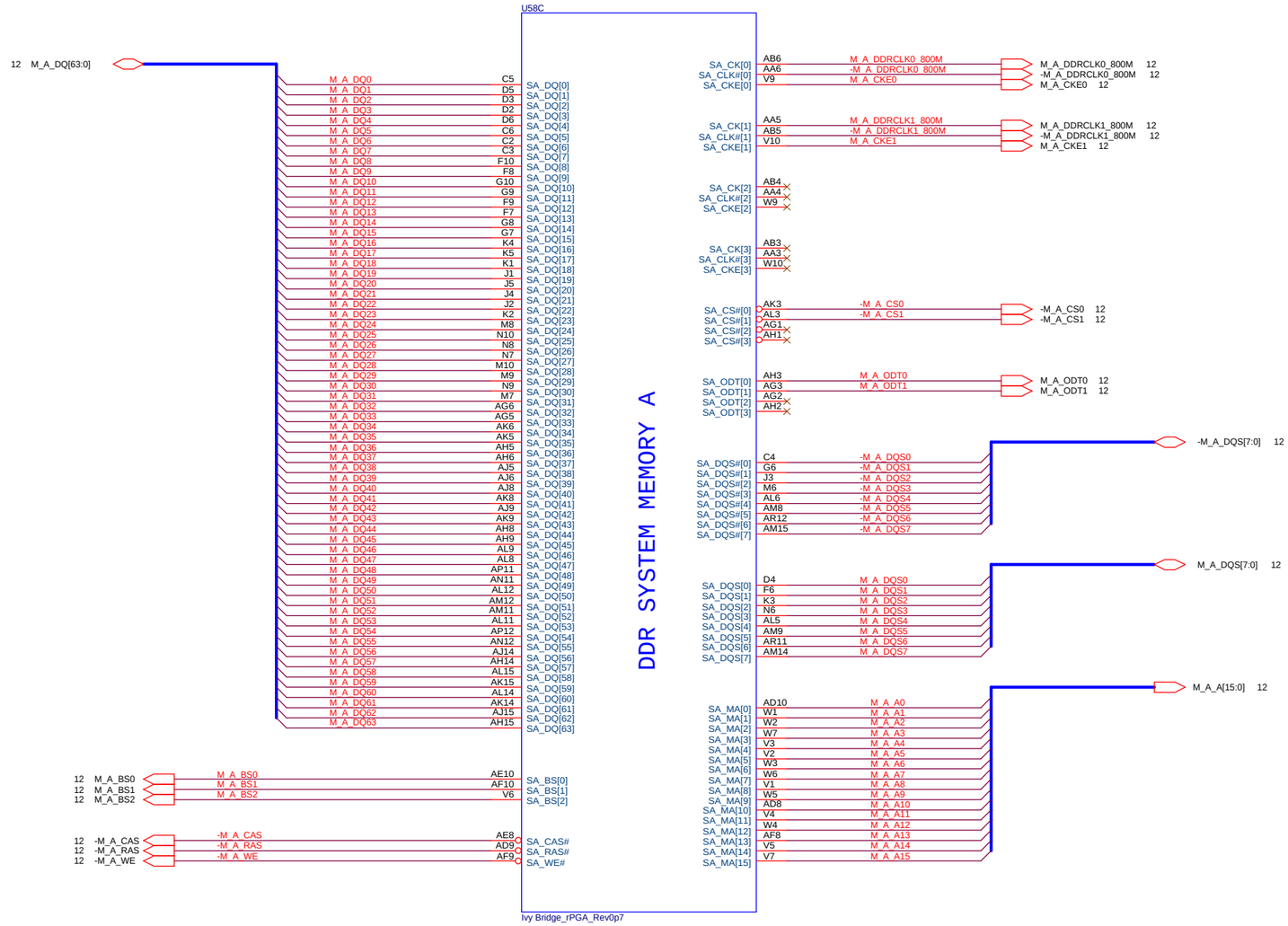

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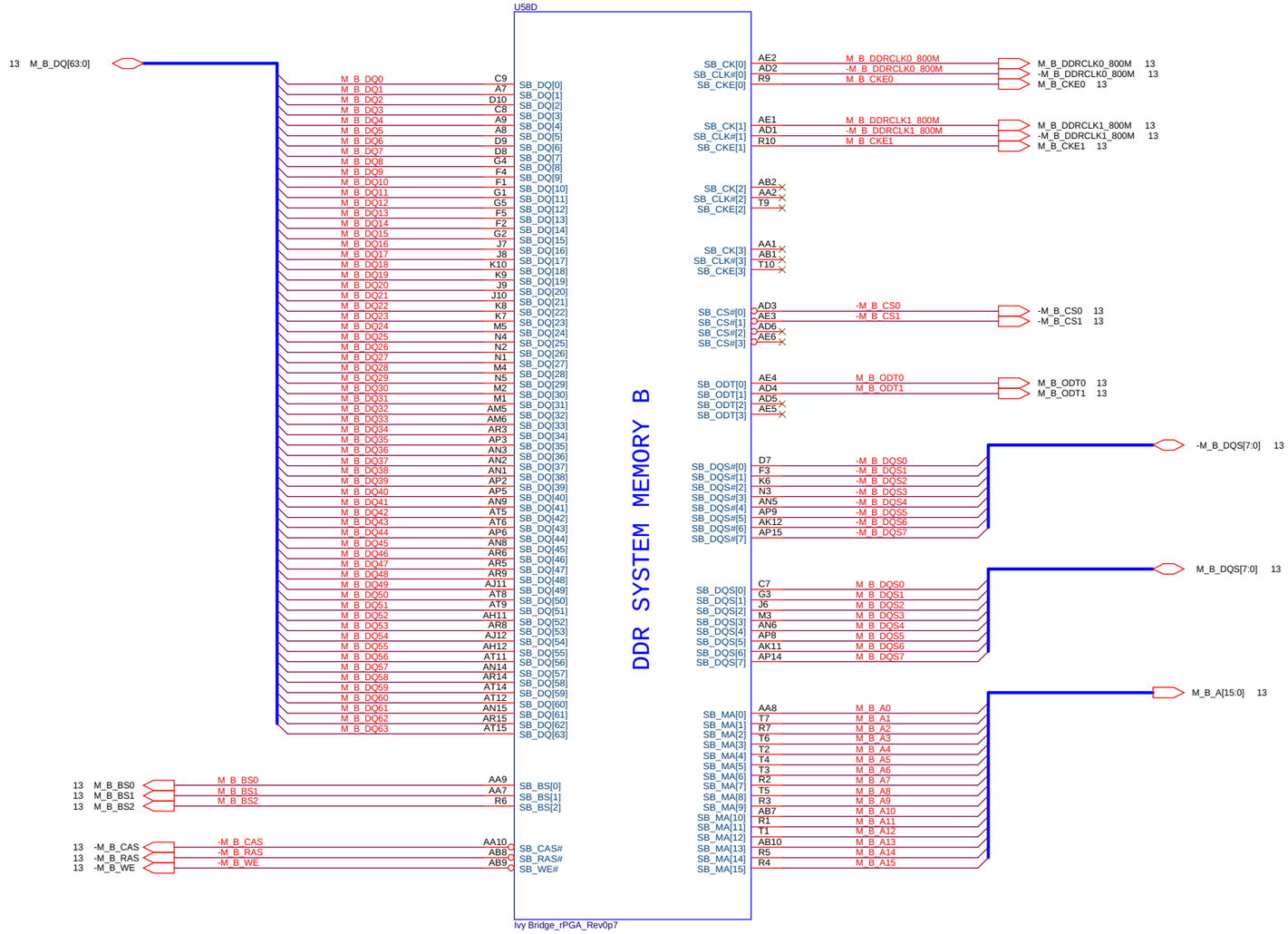

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POWER

U58F

VCCCPUCORE

CORE SUPPLY

PEG AND DDR

SVID

SENSE LINES

Ivy Bridge_rPGA_Rev0p7

VCC1R05B_VTT_CPU

VCCCPUCORE

VCC1R05B_VTT_CPU

VCC1R05B_VTT

SHORT0816_70MIL RJ84

SHORT0816_70MIL RJ85

C35 330UF_2V 3528 2TPE330MFB NA

1005_1/16w 75_5% R374

1005_1/16w 130_5% R782

R781 43_5% 1005_1/16w

-SVID_ALERT
SVID_CLK
SVID_DATA

R9 100_1% 1005_1/16w

Z0 = 27.4 OHM
PU/PD < 1INCH

VCCSENSE
VSSSENSE

R70 100_1% 1005_1/16w

1005_1/16w 100_1% R767

1005_1/16w 100_1% R768

R31 0_5% 1005_1/16w

R528 0_5% 1005_1/16w

VCC_SENSE_VTT
VSS_SENSE_VTT

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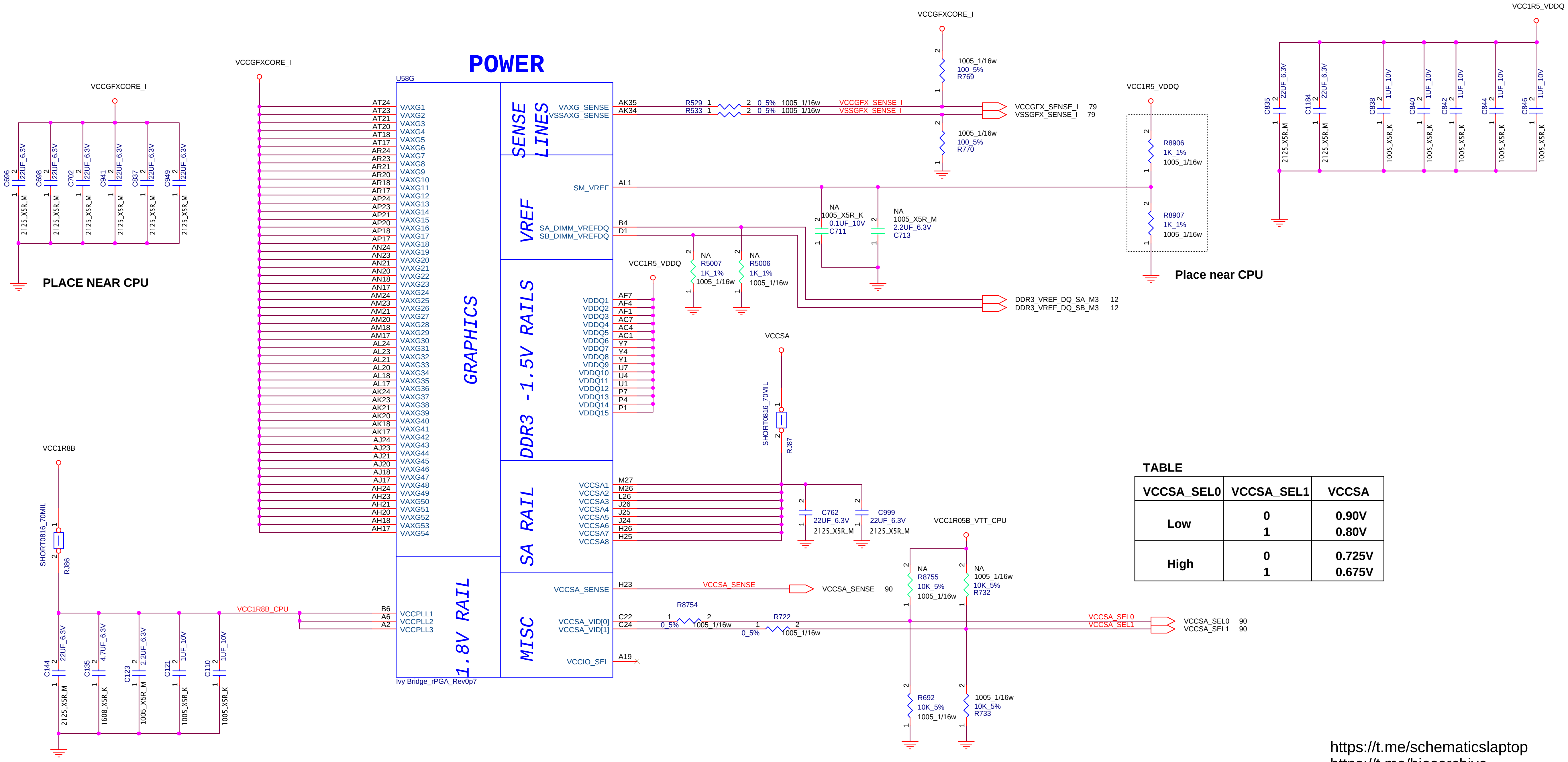

TABLE

VCCSA_SEL0	VCCSA_SEL1	VCCSA
Low	0	0.90V
	1	0.80V
High	0	0.725V
	1	0.675V

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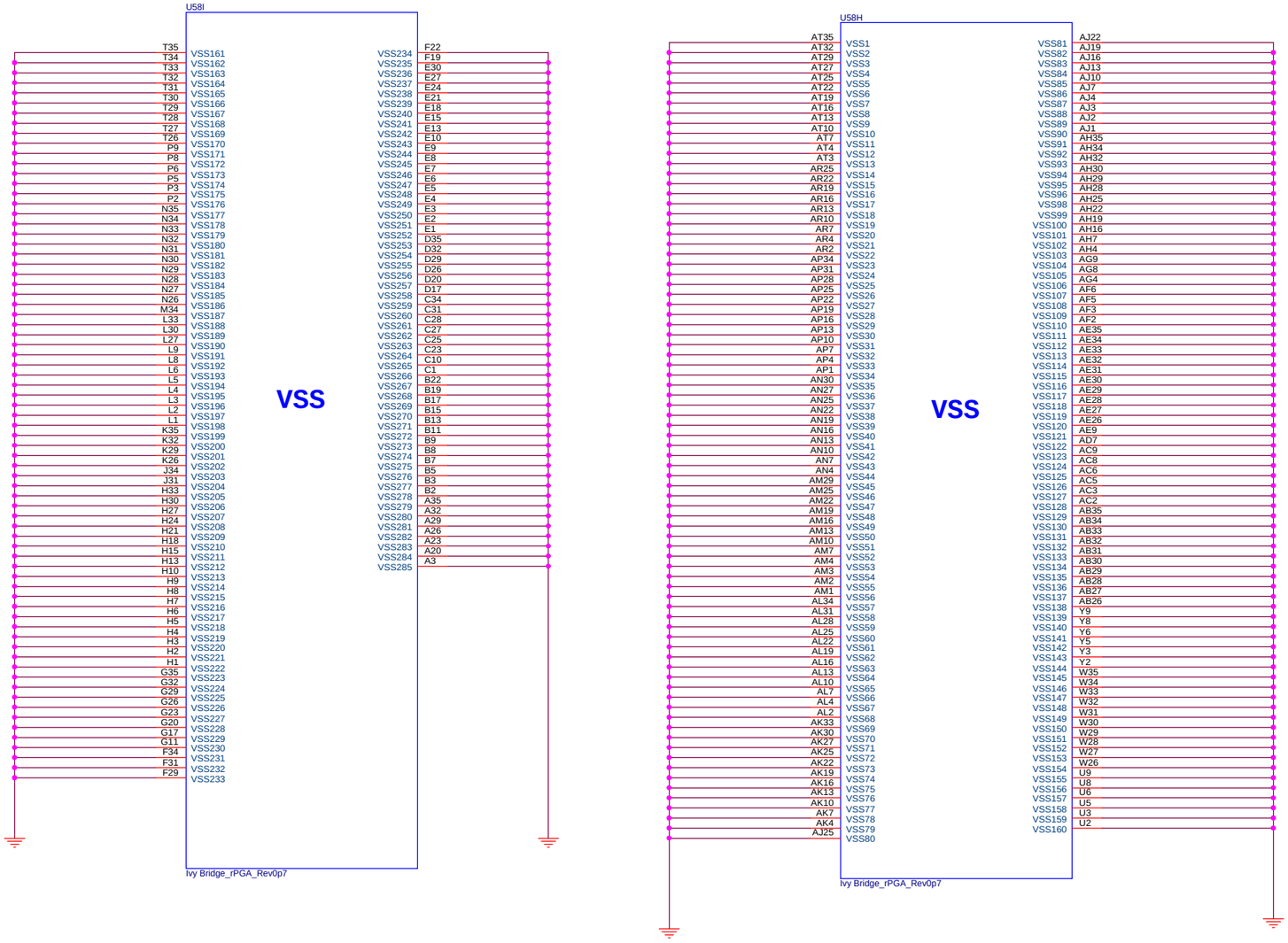

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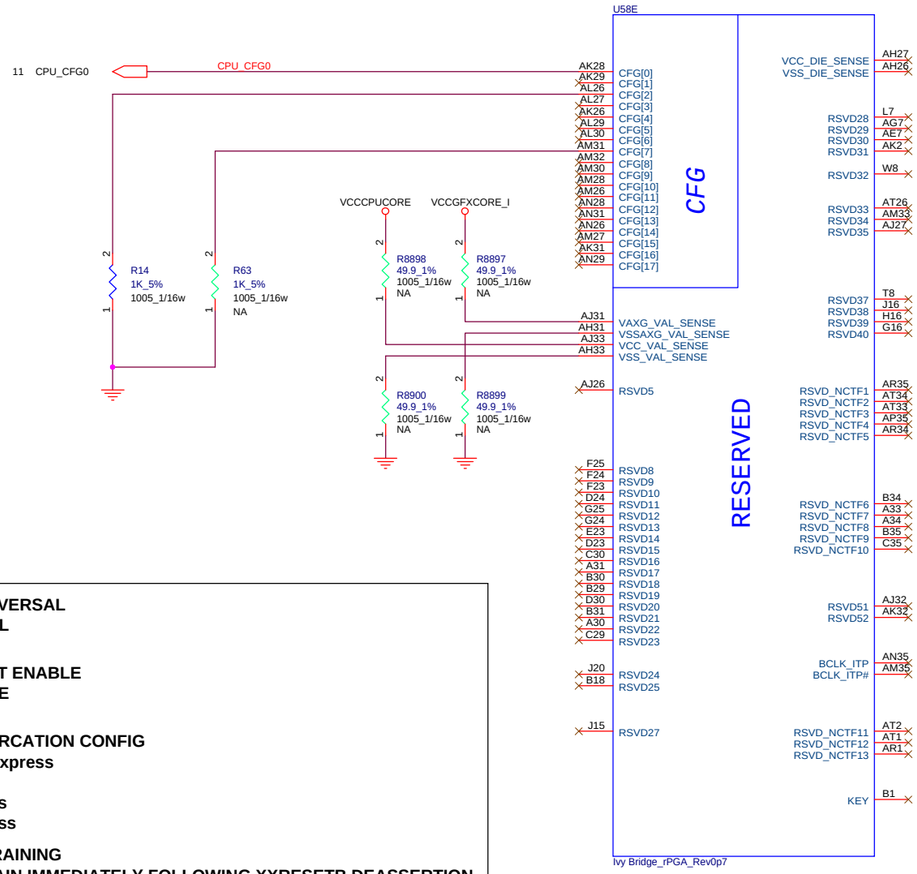

TABLE

CFG2 PEG LANE REVERSAL
1 -NO ASM : NORMAL
0 -ASM : RESVERSE

CFG4 DISPLAY PORT ENABLE
1 -NO ASM : DISABLE
0 -ASM : ENABLE

CFG[6 : 5] PEG BIFURCATION CONFIG
00 = 1 x 8, 2 x 4 PCI Express
01 = reserved
10 = 2 x 8 PCI Express
11 = 1 x 16 PCI Express

CFG7 PEG DEFER TRAINING
1 -NO ASM :PEG TRAIN IMMEDIATELY FOLLOWING XXRESETB DEASSERTION
0 -ASM : PEG WAIT FOR BIOS FOR TRAINING

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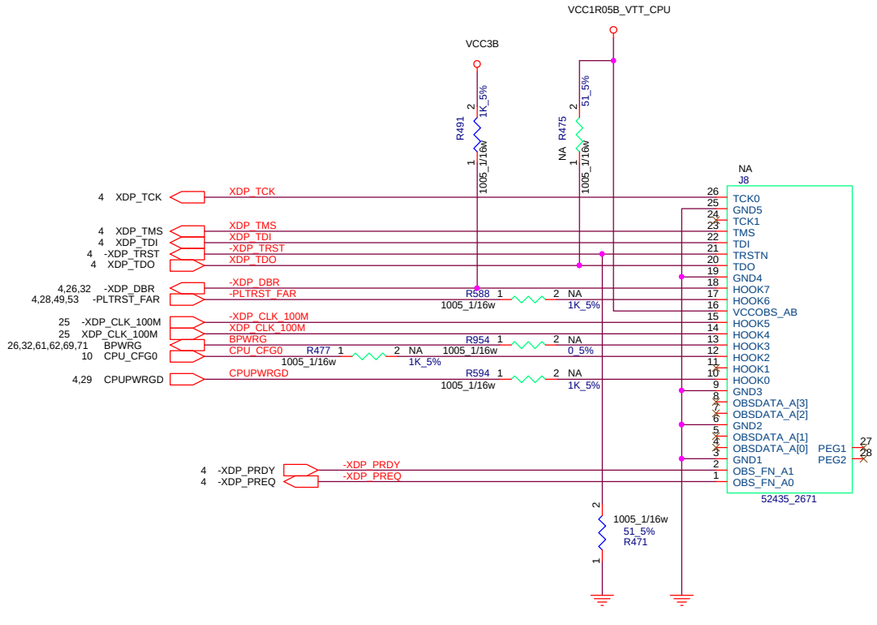

TABLE NOTE: J8 "ASM" FOR PDV/SDV ONLY.

SIGNAL	REF DES	ENABLE	DISABLE
TDO	R475	ASM	NO ASM
TRST#	R471	ASM	ASM
DBRST#	R491	ASM	ASM
RESET#	R588	ASM	NO ASM
CFG0	R477	ASM	NO ASM
PWRGD	R594	ASM	NO ASM
BPWRG	R954	ASM	NO ASM
	J8	ASM	NO ASM

LOGIC

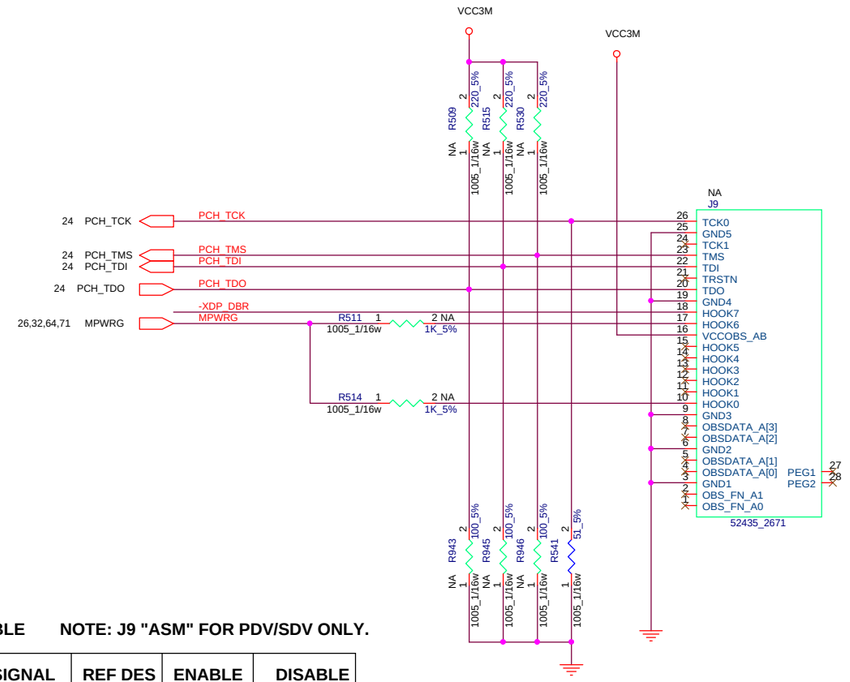

TABLE NOTE: J9 "ASM" FOR PDV/SDV ONLY.

SIGNAL	REF DES	ENABLE	DISABLE
TDO	R509 R943	220 100	NO ASM NO ASM
TMS	R530 R946	220 100	NO ASM NO ASM
TDI	R515 R945	220 100	NO ASM NO ASM
TCK	R541	51	51
MPWRG	R511 R514	ASM ASM	NO ASM NO ASM
	J9	ASM	NO ASM

LOGIC

Project Name : NZM-4 SWG SOVP		Title : XDP CONNECTOR	
Size : C	Document Number :		Rev : 7.54
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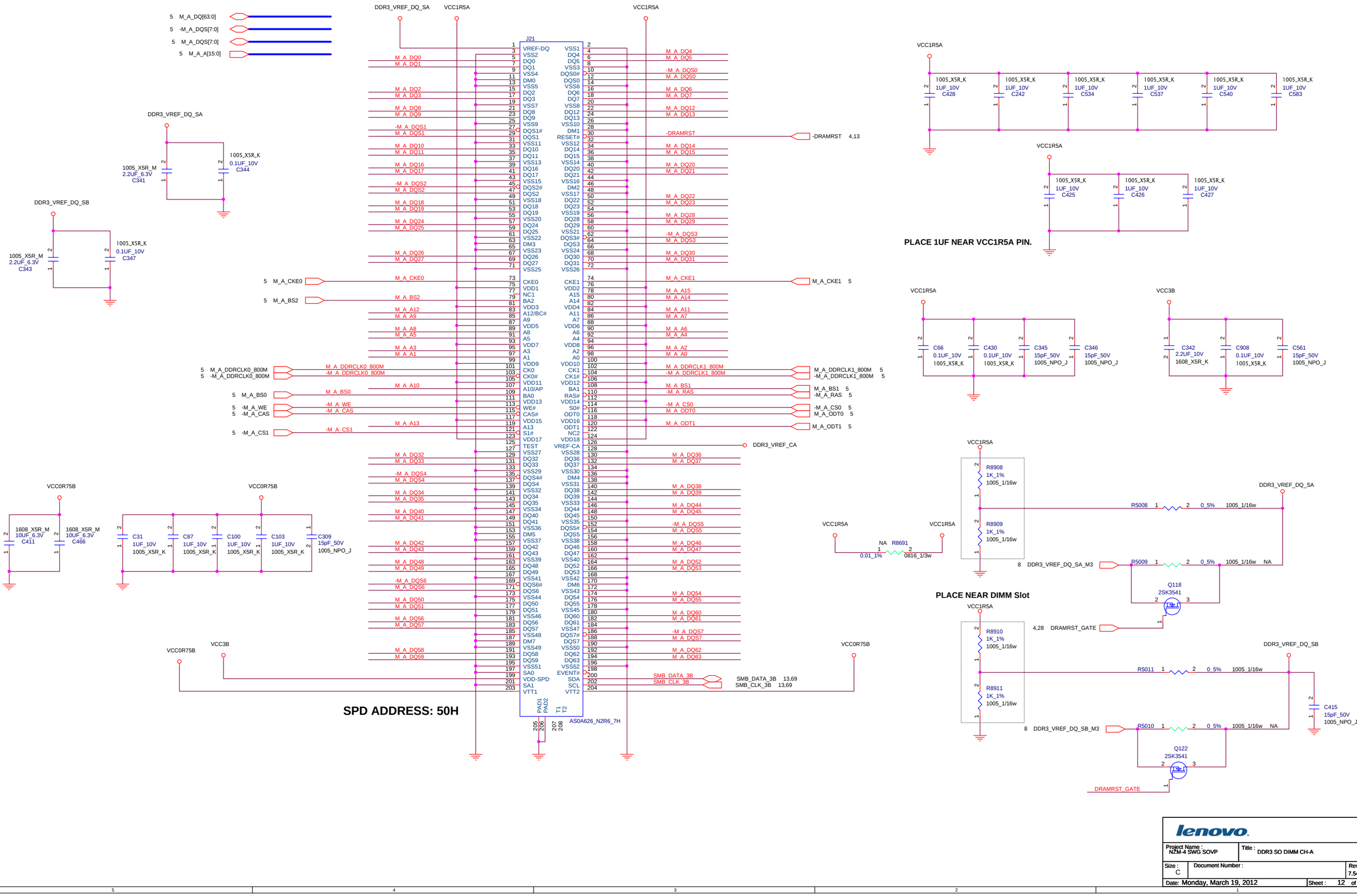
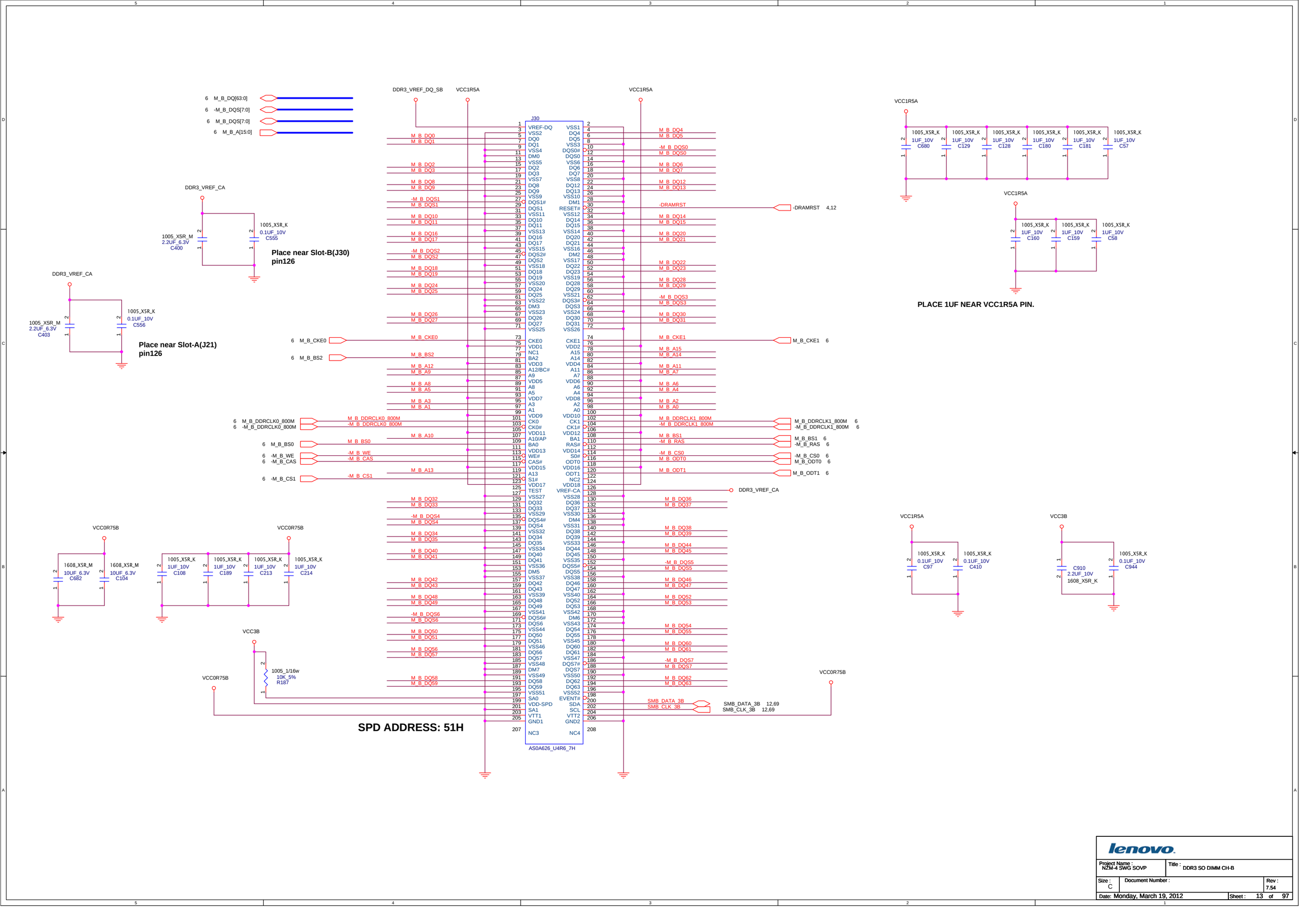
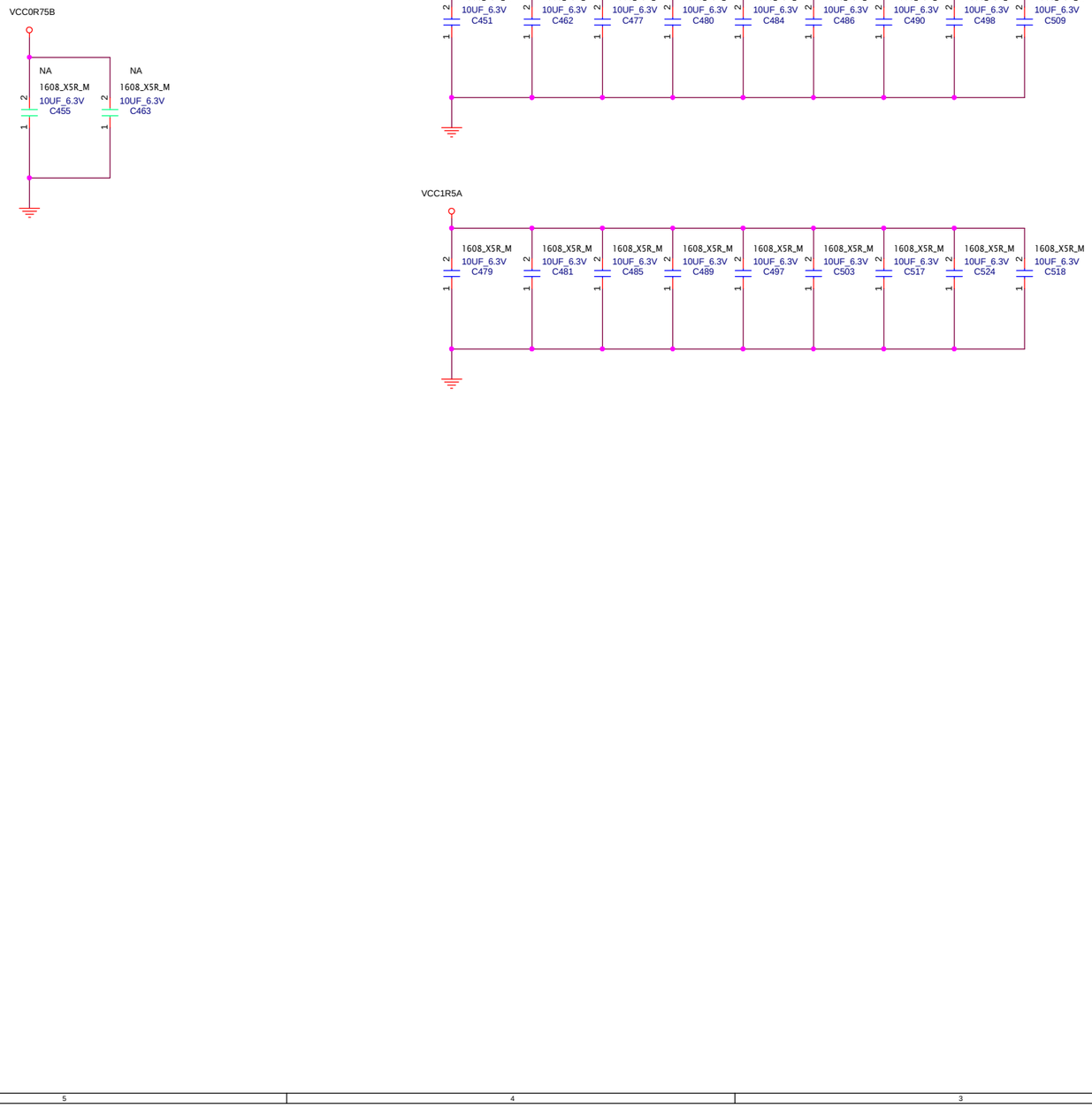


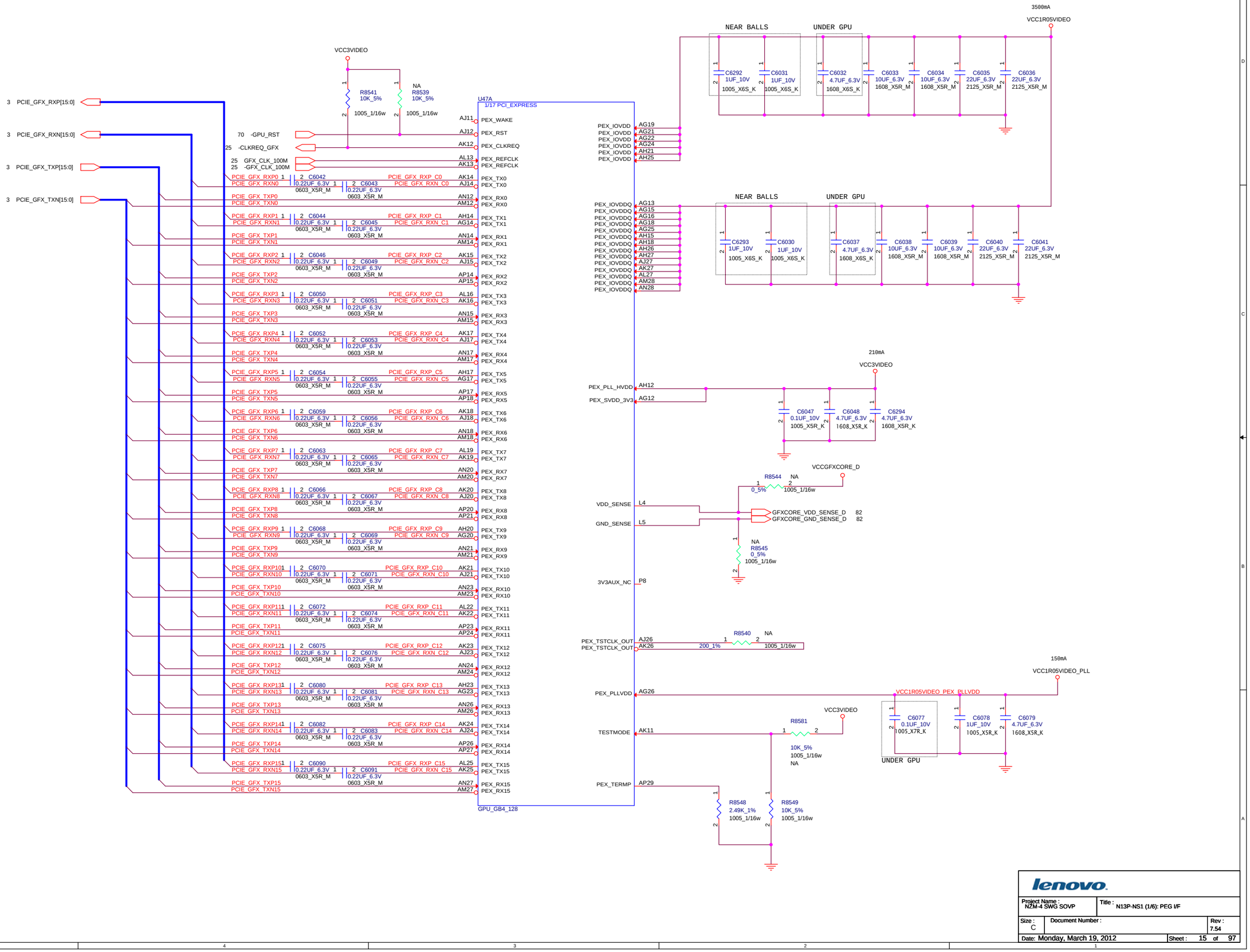
lenovo			
Project Name : NZM-4 SWG SOVP		Title : DDR3 SO DIMM CH-A	
Size : C	Document Number :		Rev : 7.54
Date: Monday, March 19, 2012		Sheet : 12 of 97	



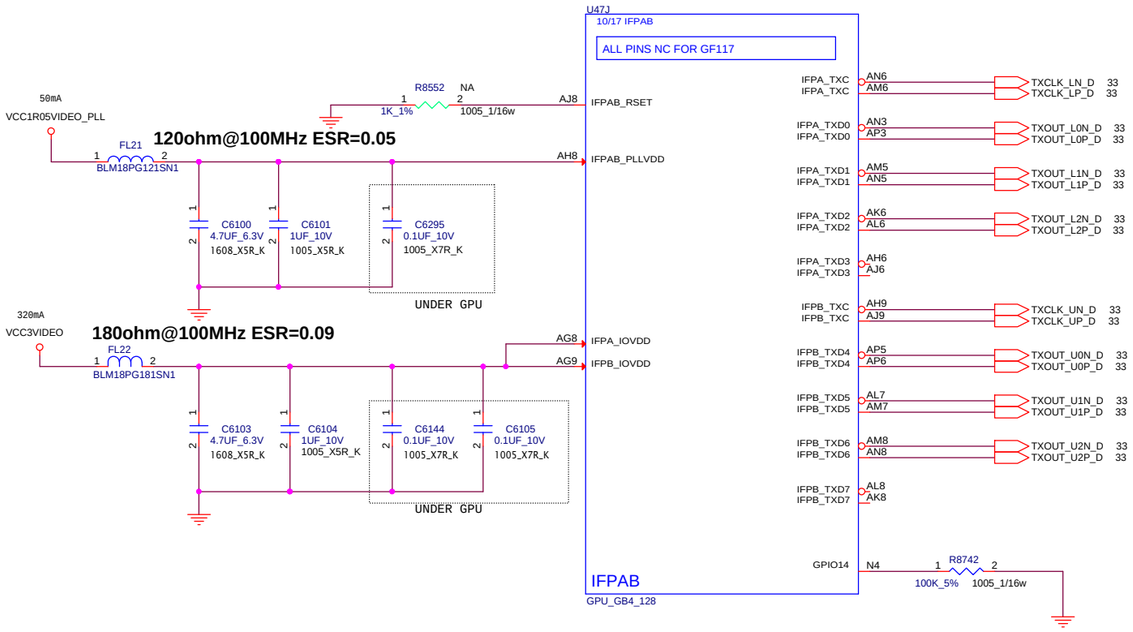
Project Name : NZM-4 SWG SOVP		Title : DDR3 SO DIMM CH-B	
Size : C	Document Number :		Rev : 7.54
Date: Monday, March 19, 2012		Sheet : 13 of 97	

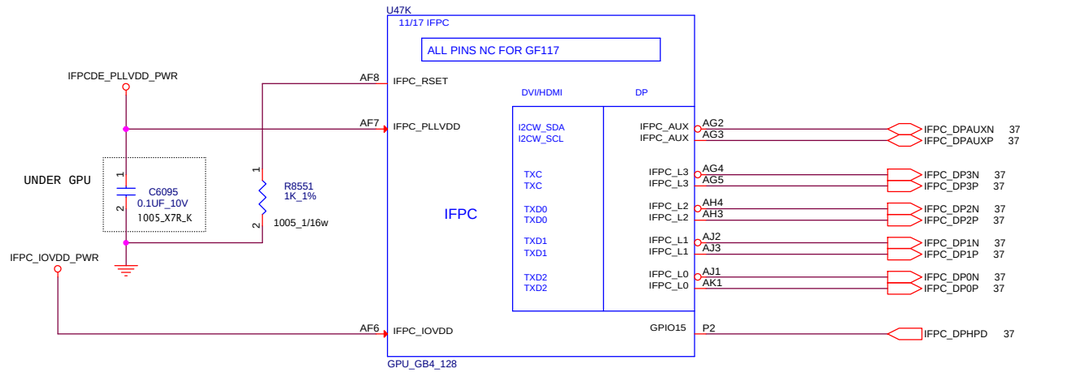


Project Name : NZM-4 SWG SOVP	Title : DDR3 DECOUPLING	
Size : C	Document Number :	Rev : 7.54
Date: Monday, March 19, 2012	Sheet : 14 of 97	

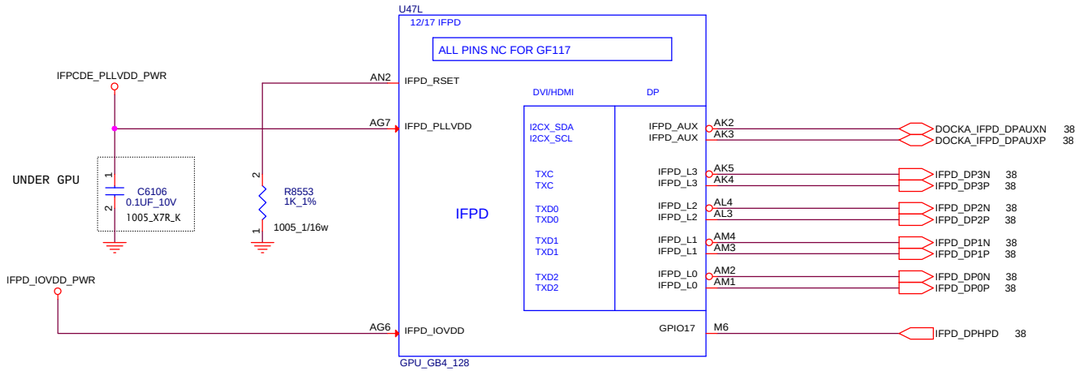


Project Name : N2M-4 SWG SOVP		Title : N13P-NS1 (1/6): PEG I/F	
Size : C	Document Number :		Rev : 7.54
Date: Monday, March 19, 2012		Sheet : 15 of 97	

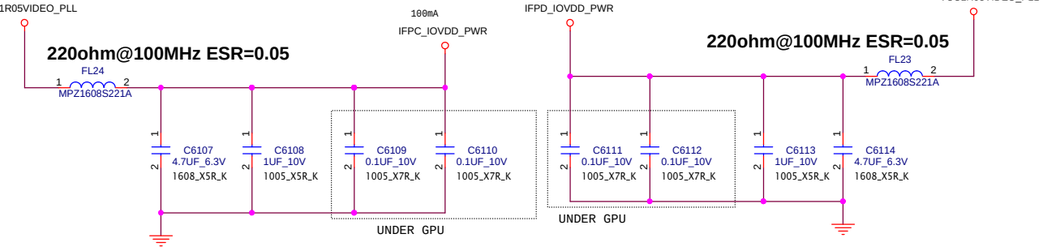


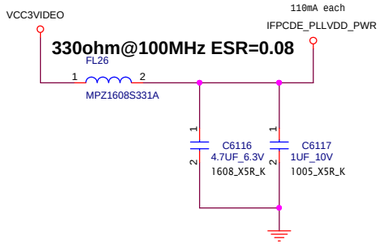


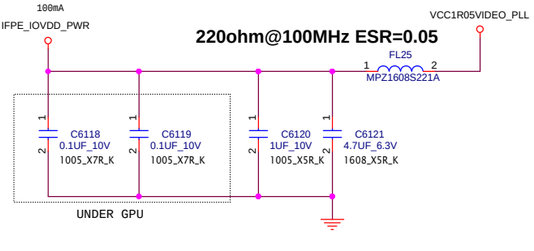
Dual Mode DP Link

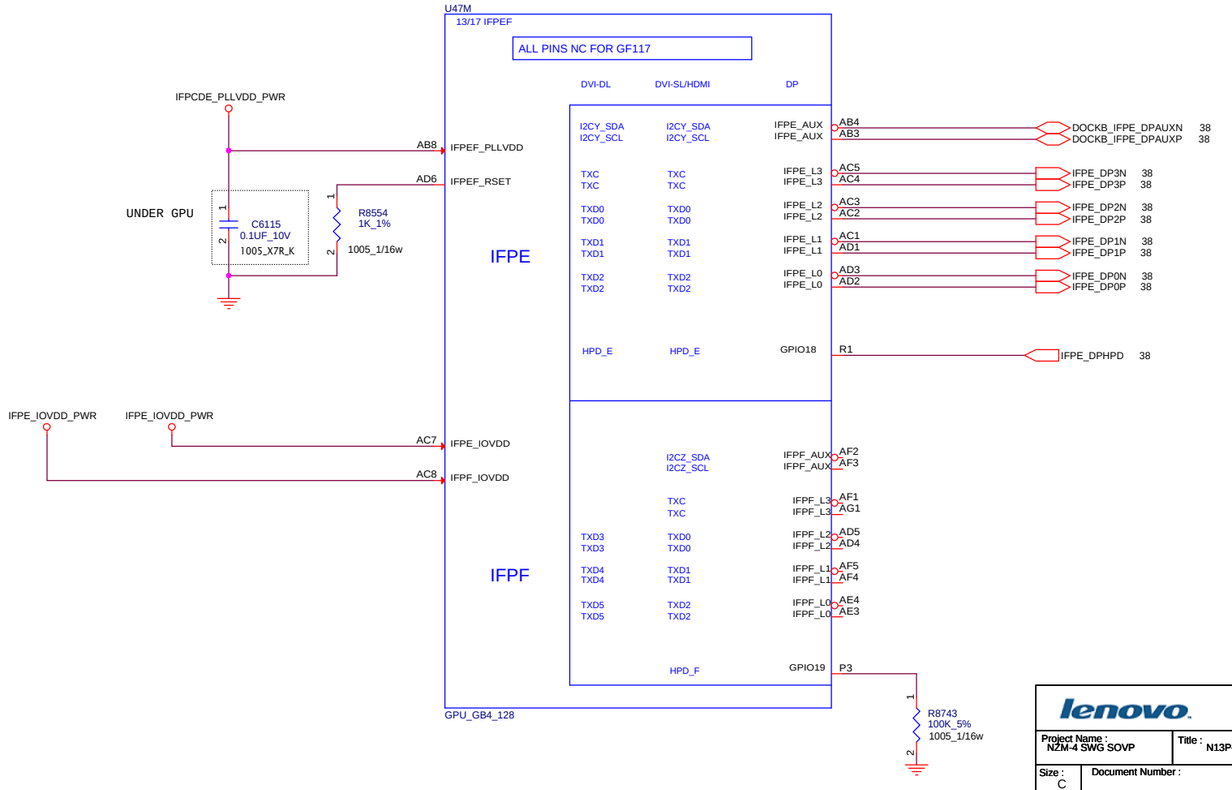


Dual Mode DP Link



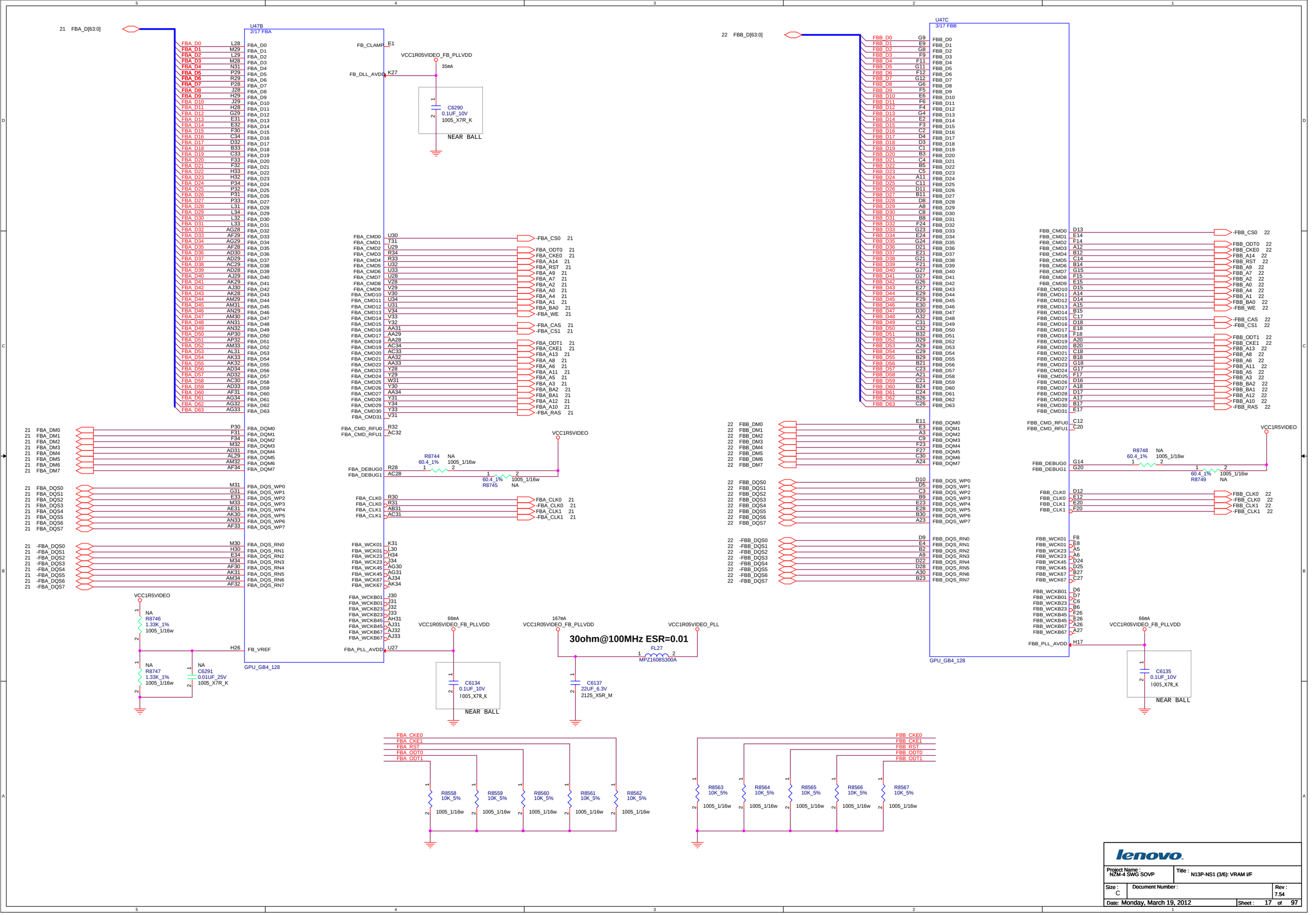






Dual Mode DP Link

lenovo		
Project Name : N2M-4 SWG SOVP	Title : N13P-NS1 (2/6): DIGITAL OUT	
Size : C	Document Number :	Rev : 7.54
Date: Monday, March 19, 2012	Sheet : 16 of 97	



Project Name : N2M-4 SWG SOVP		Title : N13P-NS1 (3/6): VRAM I/F	
Size : C	Document Number :		Rev : 7.54
Date: Monday, March 19, 2012		Sheet : 17 of 97	

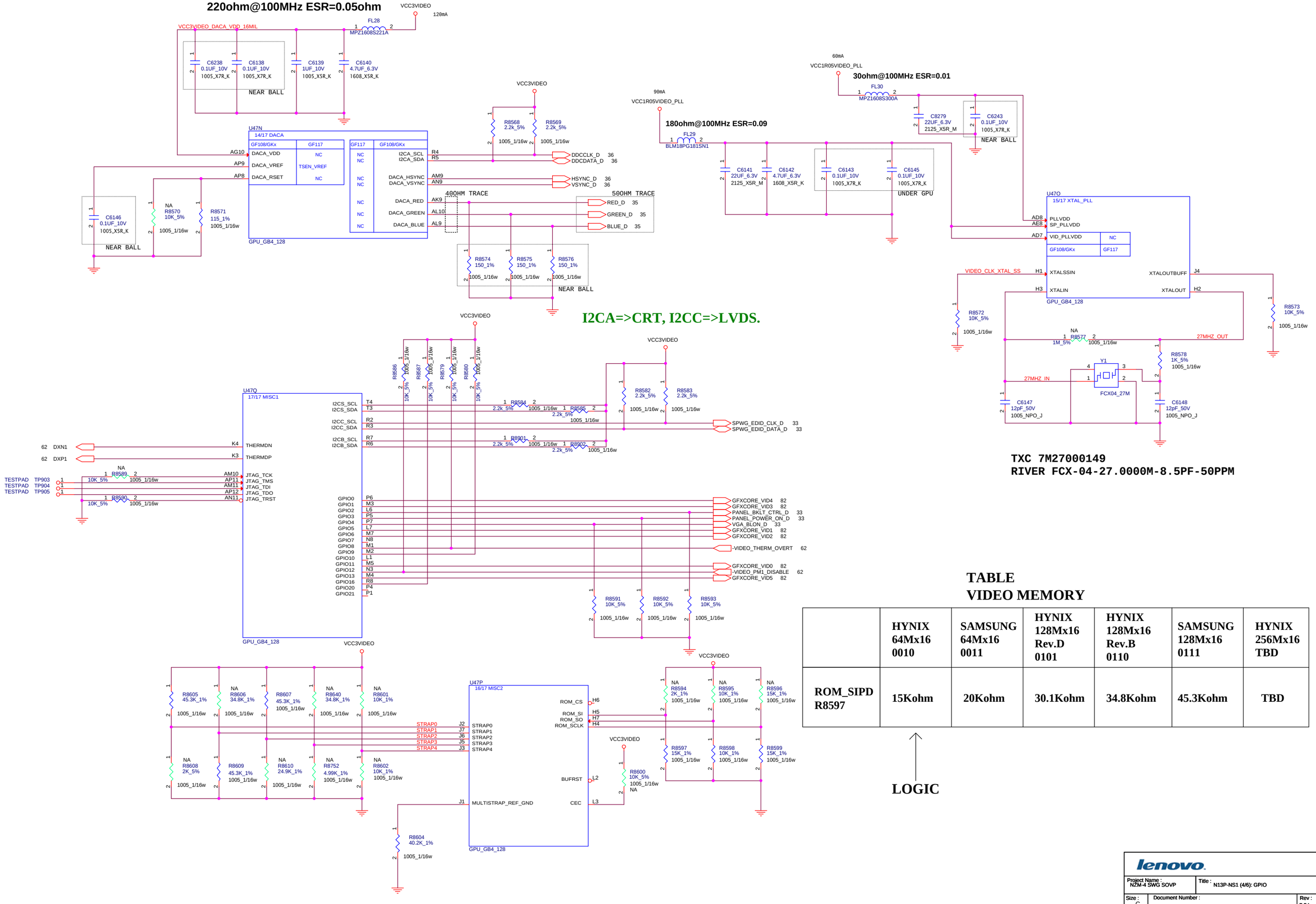


TABLE
VIDEO MEMORY

	HYNIX 64Mx16 0010	SAMSUNG 64Mx16 0011	HYNIX 128Mx16 Rev.D 0101	HYNIX 128Mx16 Rev.B 0110	SAMSUNG 128Mx16 0111	HYNIX 256Mx16 TBD
ROM_SIPD R8597	15Kohm	20Kohm	30.1Kohm	34.8Kohm	45.3Kohm	TBD

LOGIC

lenovo			
Project Name : N2M-4 SWG SOVP	Title : N13P-NS1 (4/6): GPIO		
Size : C	Document Number :		Rev : 7.54
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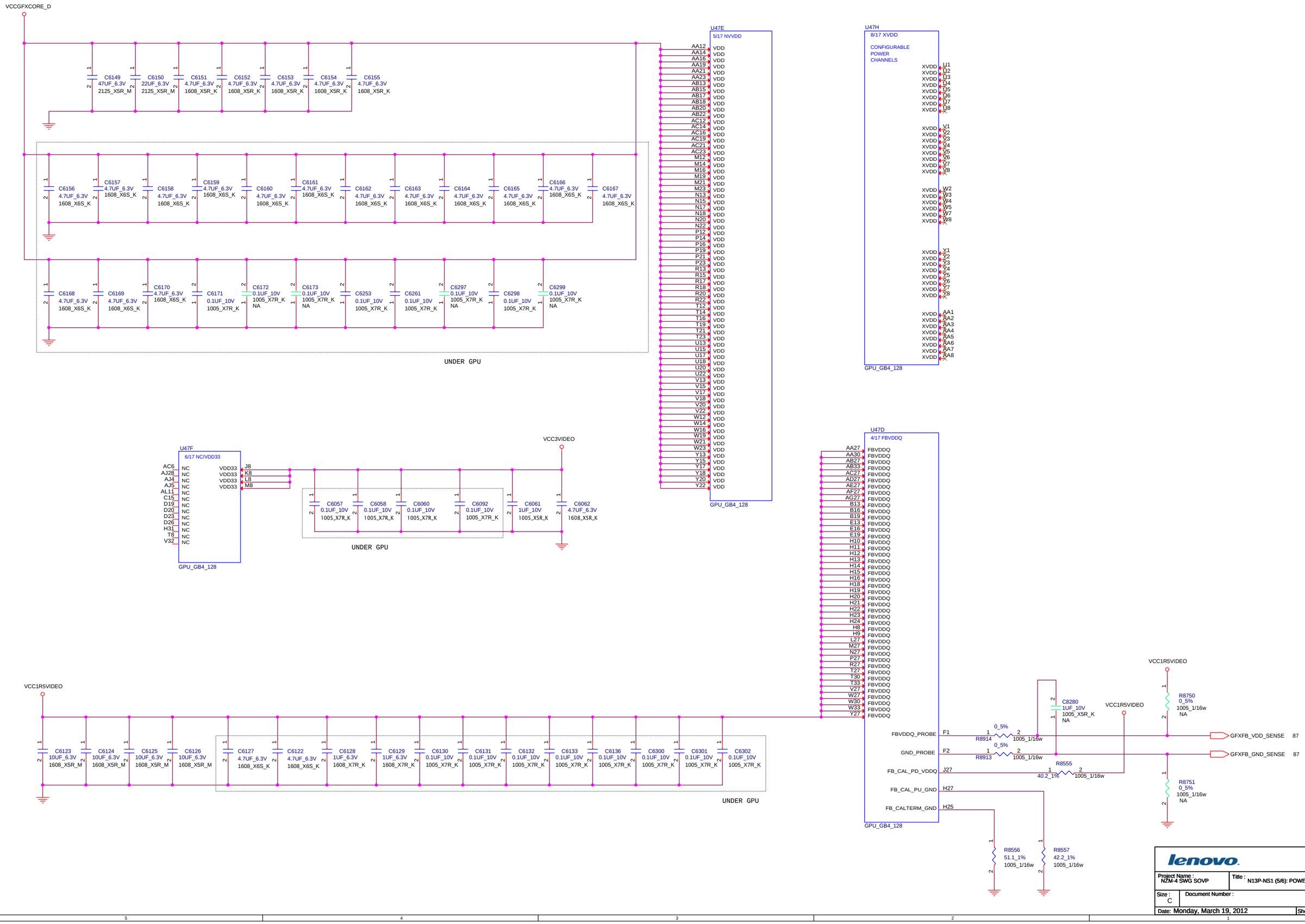
VCCGFXCORE_D
C6149 47UF_6.3V 2125_X5R_M
C6150 22UF_6.3V 2125_X5R_M
C6151 4.7UF_6.3V 1608_X5R_K
C6152 4.7UF_6.3V 1608_X5R_K
C6153 4.7UF_6.3V 1608_X5R_K
C6154 4.7UF_6.3V 1608_X5R_K
C6155 4.7UF_6.3V 1608_X5R_K
C6156 4.7UF_6.3V 1608_X6S_K
C6157 4.7UF_6.3V 1608_X6S_K
C6158 4.7UF_6.3V 1608_X6S_K
C6159 4.7UF_6.3V 1608_X6S_K
C6160 4.7UF_6.3V 1608_X6S_K
C6161 4.7UF_6.3V 1608_X6S_K
C6162 4.7UF_6.3V 1608_X6S_K
C6163 4.7UF_6.3V 1608_X6S_K
C6164 4.7UF_6.3V 1608_X6S_K
C6165 4.7UF_6.3V 1608_X6S_K
C6166 4.7UF_6.3V 1608_X6S_K
C6167 4.7UF_6.3V 1608_X6S_K
C6168 4.7UF_6.3V 1608_X6S_K
C6169 4.7UF_6.3V 1608_X6S_K
C6170 4.7UF_6.3V 1608_X6S_K
C6171 0.1UF_10V 1005_X7R_K
C6172 0.1UF_10V 1005_X7R_K NA
C6173 0.1UF_10V 1005_X7R_K NA
C6253 0.1UF_10V 1005_X7R_K
C6261 0.1UF_10V 1005_X7R_K
C6297 0.1UF_10V 1005_X7R_K NA
C6298 0.1UF_10V 1005_X7R_K
C6299 0.1UF_10V 1005_X7R_K NA
UNDER GPU
U47E
5/17 NVVDD
GPU_GB4_128
U47H
8/17 XVDD
CONFIGURABLE POWER CHANNELS
GPU_GB4_128
U47F
6/17 NC/VDD33
GPU_GB4_128
VCC3VIDEO
C6057 0.1UF_10V 1005_X7R_K
C6058 0.1UF_10V 1005_X7R_K
C6060 0.1UF_10V 1005_X7R_K
C6092 0.1UF_10V 1005_X7R_K
C6061 1UF_10V 1005_X5R_K
C6062 4.7UF_6.3V 1608_X5R_K
UNDER GPU
U47D
4/17 FBVDDQ
GPU_GB4_128
VCC1R5VIDEO
C6123 10UF_6.3V 1608_X5R_M
C6124 10UF_6.3V 1608_X5R_M
C6125 10UF_6.3V 1608_X5R_M
C6126 10UF_6.3V 1608_X5R_M
C6127 4.7UF_6.3V 1608_X6S_K
C6122 4.7UF_6.3V 1608_X6S_K
C6128 1UF_6.3V 1608_X7R_K
C6129 1UF_6.3V 1608_X7R_K
C6130 0.1UF_10V 1005_X7R_K
C6131 0.1UF_10V 1005_X7R_K
C6132 0.1UF_10V 1005_X7R_K
C6133 0.1UF_10V 1005_X7R_K
C6136 0.1UF_10V 1005_X7R_K
C6300 0.1UF_10V 1005_X7R_K
C6301 0.1UF_10V 1005_X7R_K
C6302 0.1UF_10V 1005_X7R_K
UNDER GPU
C8280 1UF_10V 1005_X5R_K NA
R8914 0_5% 1005_1/16w
R8913 0_5% 1005_1/16w
R8555 40.2_1% 1005_1/16w
R8750 0_5% 1005_1/16w NA
R8751 0_5% 1005_1/16w NA
R8556 51.1_1% 1005_1/16w
R8557 42.2_1% 1005_1/16w
FBVDDQ_PROBE
GND_PROBE
FB_CAL_PD_VDDQ
FB_CAL_PU_GND
FB_CALTERM_GND
GFXFB_VDD_SENSE 87
GFXFB_GND_SENSE 87
Project Name : N2M-4 SWG SOVP
Title : N13P-NS1 (5/6): POWER
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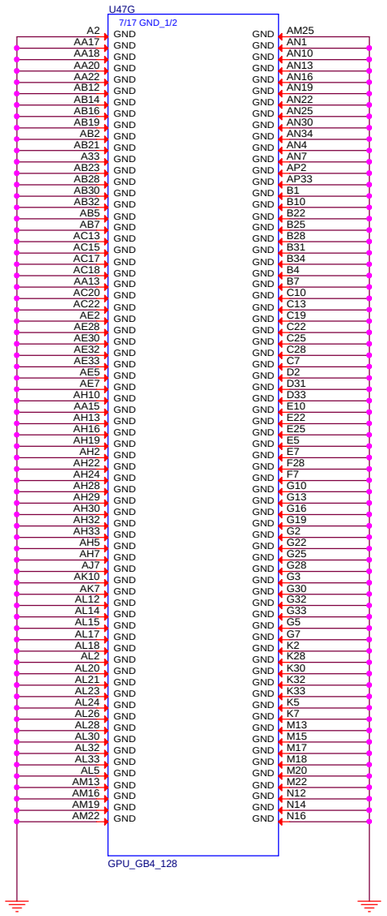

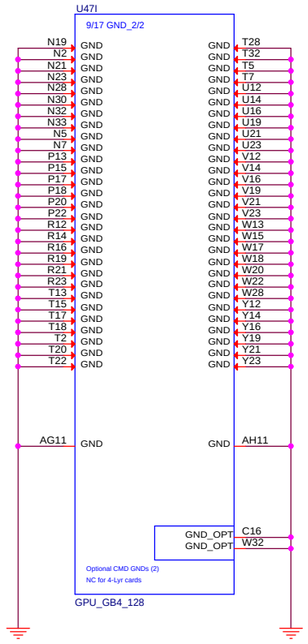

lenovo

Project Name : N2M-4 SWG SOVP	Title : N13P-NS1 (6/6): GND
Size : C	Document Number :
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17 FBA_D[63:0]

FBA_CLK0 — R8630 162_1% — 1005_1/16w — -FBA_CLK0

FBA_CLK1 — R8629 162_1% — 1005_1/16w — -FBA_CLK1

FB CMD mapping Mode D-N12x

TABLE

DDR3 VIDEO MEMORY

	HYNIX 1GBITS (64Mx16)	SAMSUNG 1GBITS (64Mx16)	HYNIX 2GBITS (128Mx16)	HYNIX 2GBITS (128Mx16)	SAMSUNG 2GBITS (128Mx16)	HYNIX 4GBITS (256Mx16)
U91 U95 U92 U96 U93 U97 U94 U98	H5TQ1G63DFR-11C	K4W1G1646G-BC11	H5TQ2G63DFR-11C	H5TQ2G63BFR-11C	K4W2G1646C-HC11	TBD

LOGIC

VCC1R5VIDEO

23 FBA_VREF_0

U91

FBA_D15	A3	DQU7	VREFDQ	H1	
FBA_D14	B8	DQU6	VREFCA	M8	
FBA_D12	A2	DQU5			
FBA_D13	A7	DQU4		B2	
FBA_D8	C2	DQU3	VDD_B2	D9	
FBA_D9	C8	DQU2	VDD_D9	G7	
FBA_D11	C3	DQU1	VDD_G7	K2	
FBA_D10	D7	DQU0	VDD_K2	K8	
			VDD_K8	N1	
17 FBA_DQS1	C7	DQSU	VDD_N1	N9	
17 -FBA_DQS1	B7	DQSU#	VDD_N9	R1	
			VDD_R1	R9	
17 FBA_DM1	D3	DMU	VDD_R9		
FBA_D22	H7	DQL7	VDDQ_A1	A1	
FBA_D16	G2	DQL6	VDDQ_A8	A8	
FBA_D20	H8	DQL5	VDDQ_C1	C1	
FBA_D17	H3	DQL4	VDDQ_C9	C9	
FBA_D23	F8	DQL3	VDDQ_D2	D2	
FBA_D18	F2	DQL2	VDDQ_E9	E9	
FBA_D21	F7	DQL1	VDDQ_F1	F1	
FBA_D19	E3	DQL0	VDDQ_H2	H2	
			VDDQ_H9	H9	
17 FBA_DQS2	F3	DQSL			
17 -FBA_DQS2	G3	DQSL#		B1	
17 FBA_DM2	E7	DML	VSSQ_B1	B9	
			VSSQ_B9	D1	
			VSSQ_D1	D8	
			VSSQ_D8	E2	
17 FBA_CLK0	J7	CK	VSSQ_E2	E8	
17 -FBA_CLK0	K7	CK#	VSSQ_E8	F9	
			VSSQ_F9	G1	
17 FBA_CKE0	K9	CKE	VSSQ_G1	G9	
			VSSQ_G9		
17 -FBA_CS0	L2	CS#		A9	
17 -FBA_RAS	J3	RAS#	VSS_A9	B3	
17 -FBA_CAS	K3	CAS#	VSS_B3	E1	
17 -FBA_WE	L3	WE#	VSS_E1	G8	
			VSS_G8	J2	
17 FBA_BA2	M3	BA2	VSS_J2	J8	
17 FBA_BA1	N8	BA1	VSS_J8	M1	
17 FBA_BA0	M2	BA0	VSS_M1	M9	
			VSS_M9	P1	
	M7	NC_A15	VSS_P1	P9	
17 FBA_A14	T7	NC_A14	VSS_P9	T1	
17 FBA_A13	T3	A13	VSS_T1	T9	
17 FBA_A12	N7	A12|BC#	VSS_T9		
17 FBA_A11	R7	A11			
17 FBA_A10	L7	A10|AP			
17 FBA_A9	R3	A9	ODT	K1	FBA_ODT0 17
17 FBA_A8	T8	A8			
17 FBA_A7	R2	A7	RESET#	T2	FBA_RST 17
17 FBA_A6	R8	A6			
17 FBA_A5	P2	A5	ZQ	L8	
17 FBA_A4	P8	A4			
17 FBA_A3	N2	A3	NC_J1	J1	
17 FBA_A2	P3	A2	NC_J9	J9	
17 FBA_A1	P7	A1	NC_L1	L1	
17 FBA_A0	N3	A0	NC_L9	L9	

H5TQ1G63DFR_11C

R8611 243_1% 1005_1/16w

VCC1R5VIDEO

FBA_VREF_0

U92

FBA_D30	A3	DQU7	VREFDQ	H1	
FBA_D24	B8	DQU6	VREFCA	M8	
FBA_D28	A2	DQU5			
FBA_D31	A7	DQU4		B2	
FBA_D29	C2	DQU3	VDD_B2	D9	
FBA_D25	C8	DQU2	VDD_D9	G7	
FBA_D26	C3	DQU1	VDD_G7	K2	
FBA_D27	D7	DQU0	VDD_K2	K8	
			VDD_K8	N1	
17 FBA_DQS3	C7	DQSU	VDD_N1	N9	
17 -FBA_DQS3	B7	DQSU#	VDD_N9	R1	
			VDD_R1	R9	
17 FBA_DM3	D3	DMU	VDD_R9		
FBA_D4	H7	DQL7	VDDQ_A1	A1	
FBA_D3	G2	DQL6	VDDQ_A8	A8	
FBA_D6	H8	DQL5	VDDQ_C1	C1	
FBA_D1	H3	DQL4	VDDQ_C9	C9	
FBA_D7	F8	DQL3	VDDQ_D2	D2	
FBA_D2	F2	DQL2	VDDQ_E9	E9	
FBA_D5	F7	DQL1	VDDQ_F1	F1	
FBA_D0	E3	DQL0	VDDQ_H2	H2	
			VDDQ_H9	H9	
17 FBA_DQS0	F3	DQSL			
17 -FBA_DQS0	G3	DQSL#		B1	
17 FBA_DM0	E7	DML	VSSQ_B1	B9	
			VSSQ_B9	D1	
			VSSQ_D1	D8	
			VSSQ_D8	E2	
FBA_CLK0	J7	CK	VSSQ_E2	E8	
-FBA_CLK0	K7	CK#	VSSQ_E8	F9	
			VSSQ_F9	G1	
FBA_CKE0	K9	CKE	VSSQ_G1	G9	
			VSSQ_G9		
-FBA_CS0	L2	CS#		A9	
-FBA_RAS	J3	RAS#	VSS_A9	B3	
-FBA_CAS	K3	CAS#	VSS_B3	E1	
-FBA_WE	L3	WE#	VSS_E1	G8	
			VSS_G8	J2	
FBA_BA2	M3	BA2	VSS_J2	J8	
FBA_BA1	N8	BA1	VSS_J8	M1	
FBA_BA0	M2	BA0	VSS_M1	M9	
			VSS_M9	P1	
	M7	NC_A15	VSS_P1	P9	
FBA_A14	T7	NC_A14	VSS_P9	T1	
FBA_A13	T3	A13	VSS_T1	T9	
FBA_A12	N7	A12|BC#	VSS_T9		
FBA_A11	R7	A11			
FBA_A10	L7	A10|AP			
FBA_A9	R3	A9	ODT	K1	FBA_ODT0
FBA_A8	T8	A8			
FBA_A7	R2	A7	RESET#	T2	FBA_RST
FBA_A6	R8	A6			
FBA_A5	P2	A5	ZQ	L8	
FBA_A4	P8	A4			
FBA_A3	N2	A3	NC_J1	J1	
FBA_A2	P3	A2	NC_J9	J9	
FBA_A1	P7	A1	NC_L1	L1	
FBA_A0	N3	A0	NC_L9	L9	

H5TQ1G63DFR_11C

R8612 243_1% 1005_1/16w

VCC1R5VIDEO

23 FBA_VREF_1

U93

FBA_D34	A3	DQU7	VREFDQ	H1	
FBA_D39	B8	DQU6	VREFCA	M8	
FBA_D32	A2	DQU5			
FBA_D35	A7	DQU4		B2	
FBA_D38	C2	DQU3	VDD_B2	D9	
FBA_D37	C8	DQU2	VDD_D9	G7	
FBA_D33	C3	DQU1	VDD_G7	K2	
FBA_D36	D7	DQU0	VDD_K2	K8	
			VDD_K8	N1	
17 FBA_DQS4	C7	DQSU	VDD_N1	N9	
17 -FBA_DQS4	B7	DQSU#	VDD_N9	R1	
			VDD_R1	R9	
17 FBA_DM4	D3	DMU	VDD_R9		
FBA_D60	H7	DQL7	VDDQ_A1	A1	
FBA_D56	G2	DQL6	VDDQ_A8	A8	
FBA_D61	H8	DQL5	VDDQ_C1	C1	
FBA_D58	H3	DQL4	VDDQ_C9	C9	
FBA_D63	F8	DQL3	VDDQ_D2	D2	
FBA_D59	F2	DQL2	VDDQ_E9	E9	
FBA_D62	F7	DQL1	VDDQ_F1	F1	
FBA_D57	E3	DQL0	VDDQ_H2	H2	
			VDDQ_H9	H9	
17 FBA_DQS7	F3	DQSL			
17 -FBA_DQS7	G3	DQSL#		B1	
17 FBA_DM7	E7	DML	VSSQ_B1	B9	
			VSSQ_B9	D1	
			VSSQ_D1	D8	
			VSSQ_D8	E2	
17 FBA_CLK1	J7	CK	VSSQ_E2	E8	
17 -FBA_CLK1	K7	CK#	VSSQ_E8	F9	
			VSSQ_F9	G1	
17 FBA_CKE1	K9	CKE	VSSQ_G1	G9	
			VSSQ_G9		
17 -FBA_CS1	L2	CS#		A9	
-FBA_RAS	J3	RAS#	VSS_A9	B3	
-FBA_CAS	K3	CAS#	VSS_B3	E1	
-FBA_WE	L3	WE#	VSS_E1	G8	
			VSS_G8	J2	
FBA_BA2	M3	BA2	VSS_J2	J8	
FBA_BA1	N8	BA1	VSS_J8	M1	
FBA_BA0	M2	BA0	VSS_M1	M9	
			VSS_M9	P1	
	M7	NC_A15	VSS_P1	P9	
FBA_A14	T7	NC_A14	VSS_P9	T1	
FBA_A13	T3	A13	VSS_T1	T9	
FBA_A12	N7	A12|BC#	VSS_T9		
FBA_A11	R7	A11			
FBA_A10	L7	A10|AP			
FBA_A9	R3	A9	ODT	K1	FBA_ODT1 17
FBA_A8	T8	A8			
FBA_A7	R2	A7	RESET#	T2	FBA_RST
FBA_A6	R8	A6			
FBA_A5	P2	A5	ZQ	L8	
FBA_A4	P8	A4			
FBA_A3	N2	A3	NC_J1	J1	
FBA_A2	P3	A2	NC_J9	J9	
FBA_A1	P7	A1	NC_L1	L1	
FBA_A0	N3	A0	NC_L9	L9	

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R8613 243_1% 1005_1/16w

VCC1R5VIDEO

FBA_VREF_1

U94

FBA_D47	A3	DQU7	VREFDQ	H1	
FBA_D45	B8	DQU6	VREFCA	M8	
FBA_D46	A2	DQU5			
FBA_D43	A7	DQU4		B2	
FBA_D44	C2	DQU3	VDD_B2	D9	
FBA_D40	C8	DQU2	VDD_D9	G7	
FBA_D42	C3	DQU1	VDD_G7	K2	
FBA_D41	D7	DQU0	VDD_K2	K8	
			VDD_K8	N1	
17 FBA_DQS5	C7	DQSU	VDD_N1	N9	
17 -FBA_DQS5	B7	DQSU#	VDD_N9	R1	
			VDD_R1	R9	
17 FBA_DM5	D3	DMU	VDD_R9		
FBA_D55	H7	DQL7	VDDQ_A1	A1	
FBA_D52	G2	DQL6	VDDQ_A8	A8	
FBA_D54	H8	DQL5	VDDQ_C1	C1	
FBA_D53	H3	DQL4	VDDQ_C9	C9	
FBA_D50	F8	DQL3	VDDQ_D2	D2	
FBA_D49	F2	DQL2	VDDQ_E9	E9	
FBA_D48	F7	DQL1	VDDQ_F1	F1	
FBA_D51	E3	DQL0	VDDQ_H2	H2	
			VDDQ_H9	H9	
17 FBA_DQS6	F3	DQSL			
17 -FBA_DQS6	G3	DQSL#		B1	
17 FBA_DM6	E7	DML	VSSQ_B1	B9	
			VSSQ_B9	D1	
			VSSQ_D1	D8	
			VSSQ_D8	E2	
FBA_CLK1	J7	CK	VSSQ_E2	E8	
-FBA_CLK1	K7	CK#	VSSQ_E8	F9	
			VSSQ_F9	G1	
FBA_CKE1	K9	CKE	VSSQ_G1	G9	
			VSSQ_G9		
-FBA_CS1	L2	CS#		A9	
-FBA_RAS	J3	RAS#	VSS_A9	B3	
-FBA_CAS	K3	CAS#	VSS_B3	E1	
-FBA_WE	L3	WE#	VSS_E1	G8	
			VSS_G8	J2	
FBA_BA2	M3	BA2	VSS_J2	J8	
FBA_BA1	N8	BA1	VSS_J8	M1	
FBA_BA0	M2	BA0	VSS_M1	M9	
			VSS_M9	P1	
	M7	NC_A15	VSS_P1	P9	
FBA_A14	T7	NC_A14	VSS_P9	T1	
FBA_A13	T3	A13	VSS_T1	T9	
FBA_A12	N7	A12|BC#	VSS_T9		
FBA_A11	R7	A11			
FBA_A10	L7	A10|AP			
FBA_A9	R3	A9	ODT	K1	FBA_ODT1
FBA_A8	T8	A8			
FBA_A7	R2	A7	RESET#	T2	FBA_RST
FBA_A6	R8	A6			
FBA_A5	P2	A5	ZQ	L8	
FBA_A4	P8	A4			
FBA_A3	N2	A3	NC_J1	J1	
FBA_A2	P3	A2	NC_J9	J9	
FBA_A1	P7	A1	NC_L1	L1	
FBA_A0	N3	A0	NC_L9	L9	

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R8614 243_1% 1005_1/16w

VCC1R5VIDEO

FOR U91/U92

C6174 1UF_6.3V 1608_X7R_K — C6178 1UF_6.3V 1608_X7R_K — C6179 1UF_6.3V 1608_X7R_K — C6175 1UF_6.3V 1608_X7R_K — C6180 1UF_6.3V 1608_X7R_K — C6176 1UF_6.3V 1608_X7R_K — C6181 1UF_6.3V 1608_X7R_K — C6182 1UF_6.3V 1608_X7R_K — C6183 0.1UF_10V 1005_X7R_K — C6184 0.1UF_10V 1005_X7R_K — C6185 0.1UF_10V 1005_X7R_K — C6186 0.1UF_10V 1005_X7R_K

CLOSE TO THE MEMORY

VCC1R5VIDEO

FOR U93/U94

C6189 1UF_6.3V 1608_X7R_K — C6190 1UF_6.3V 1608_X7R_K — C6191 1UF_6.3V 1608_X7R_K — C6192 1UF_6.3V 1608_X7R_K — C6193 1UF_6.3V 1608_X7R_K — C6194 1UF_6.3V 1608_X7R_K — C6195 1UF_6.3V 1608_X7R_K — C6197 1UF_6.3V 1608_X7R_K — C6198 0.1UF_10V 1005_X7R_K — C6199 0.1UF_10V 1005_X7R_K — C6200 0.1UF_10V 1005_X7R_K — C6201 0.1UF_10V 1005_X7R_K

CLOSE TO THE MEMORY

lenovo

Project Name : NZM-4 SWG SOVP	Title : VRAM CHANNEL-A	
Size : C	Document Number :	Rev : 7.54
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17 FBB_D[63:0]

FBB_CLK0 — R8628 162_1% — -FBB_CLK0 — 1005_1/16w

FBB_CLK1 — R8627 162_1% — -FBB_CLK1 — 1005_1/16w

FB CMD mapping Mode D-N12x

VCC1R5VIDEO

23 FBB_VREF_0

U95

FBB_D14	A3	DQU7	VREFDQ	H1	
FBB_D9	B8	DQU6	VREFCA	M8	
FBB_D15	A2	DQU5			
FBB_D13	A7	DQU4			
FBB_D10	C2	DQU3	VDD_B2	B2	
FBB_D8	C8	DQU2	VDD_D9	D9	
FBB_D12	C3	DQU1	VDD_G7	G7	
FBB_D11	D7	DQU0	VDD_K2	K2	
			VDD_K8	K8	
17 FBB_DQS1	C7	DQSU	VDD_N1	N1	
17 -FBB_DQS1	B7	DQSU#	VDD_N9	N9	
			VDD_R1	R1	
17 FBB_DM1	D3	DMU	VDD_R9	R9	
FBB_D7	H7	DQL7	VDDQ_A1	A1	
FBB_D5	G2	DQL6	VDDQ_A8	A8	
FBB_D2	H8	DQL5	VDDQ_C1	C1	
FBB_D6	H3	DQL4	VDDQ_C9	C9	
FBB_D3	F8	DQL3	VDDQ_D2	D2	
FBB_D4	F2	DQL2	VDDQ_E9	E9	
FBB_D0	F7	DQL1	VDDQ_F1	F1	
FBB_D1	E3	DQL0	VDDQ_H2	H2	
			VDDQ_H9	H9	
17 FBB_DQS0	F3	DQSL			
17 -FBB_DQS0	G3	DQSL#		B1	
17 FBB_DM0	E7	DML	VSSQ_B1	B9	
			VSSQ_B9	D1	
			VSSQ_D1	D8	
			VSSQ_D8	E2	
17 FBB_CLK0	J7	CK	VSSQ_E2	E8	
17 -FBB_CLK0	K7	CK#	VSSQ_E8	F9	
			VSSQ_F9	G1	
17 FBB_CKE0	K9	CKE	VSSQ_G1	G9	
			VSSQ_G9		
17 -FBB_CS0	L2	CS#		A9	
17 -FBB_RAS	J3	RAS#	VSS_A9	B3	
17 -FBB_CAS	K3	CAS#	VSS_B3	E1	
17 -FBB_WE	L3	WE#	VSS_E1	G8	
			VSS_G8	J2	
17 FBB_BA2	M3	BA2	VSS_J2	J8	
17 FBB_BA1	N8	BA1	VSS_J8	M1	
17 FBB_BA0	M2	BA0	VSS_M1	M9	
			VSS_M9	P1	
	M7				
17 FBB_A14	T7	NC_A15	VSS_P1	P9	
17 FBB_A13	T3	NC_A14	VSS_P9	T1	
17 FBB_A12	N7	A13	VSS_T1	T9	
17 FBB_A11	R7	A12|BC#	VSS_T9		
17 FBB_A10	L7	A11			
17 FBB_A9	R3	A10|AP		K1	FBB_ODT0 17
17 FBB_A8	T8	A9	ODT		
17 FBB_A7	R2	A8		T2	FBB_RST 17
17 FBB_A6	R8	A7	RESET#		
17 FBB_A5	P2	A6		L8	
17 FBB_A4	P8	A5	ZQ		
17 FBB_A3	N2	A4		J1	
17 FBB_A2	P3	A3	NC_J1	J9	
17 FBB_A1	P7	A2	NC_J9	L1	
17 FBB_A0	N3	A1	NC_L1	L9	
		A0	NC_L9		

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R8615 243_1% 1005_1/16w

VCC1R5VIDEO

FBB_VREF_0

U96

FBB_D18	A3	DQU7	VREFDQ	H1	
FBB_D21	B8	DQU6	VREFCA	M8	
FBB_D17	A2	DQU5			
FBB_D16	A7	DQU4			
FBB_D23	C2	DQU3	VDD_B2	B2	
FBB_D20	C8	DQU2	VDD_D9	D9	
FBB_D19	C3	DQU1	VDD_G7	G7	
FBB_D22	D7	DQU0	VDD_K2	K2	
			VDD_K8	K8	
17 FBB_DQS2	C7	DQSU	VDD_N1	N1	
17 -FBB_DQS2	B7	DQSU#	VDD_N9	N9	
			VDD_R1	R1	
17 FBB_DM2	D3	DMU	VDD_R9	R9	
FBB_D27	H7	DQL7	VDDQ_A1	A1	
FBB_D26	G2	DQL6	VDDQ_A8	A8	
FBB_D24	H8	DQL5	VDDQ_C1	C1	
FBB_D31	H3	DQL4	VDDQ_C9	C9	
FBB_D30	F8	DQL3	VDDQ_D2	D2	
FBB_D28	F2	DQL2	VDDQ_E9	E9	
FBB_D29	F7	DQL1	VDDQ_F1	F1	
FBB_D25	E3	DQL0	VDDQ_H2	H2	
			VDDQ_H9	H9	
17 FBB_DQS3	F3	DQSL			
17 -FBB_DQS3	G3	DQSL#		B1	
17 FBB_DM3	E7	DML	VSSQ_B1	B9	
			VSSQ_B9	D1	
			VSSQ_D1	D8	
			VSSQ_D8	E2	
FBB_CLK0	J7	CK	VSSQ_E2	E8	
-FBB_CLK0	K7	CK#	VSSQ_E8	F9	
			VSSQ_F9	G1	
FBB_CKE0	K9	CKE	VSSQ_G1	G9	
			VSSQ_G9		
-FBB_CS0	L2	CS#		A9	
-FBB_RAS	J3	RAS#	VSS_A9	B3	
-FBB_CAS	K3	CAS#	VSS_B3	E1	
-FBB_WE	L3	WE#	VSS_E1	G8	
			VSS_G8	J2	
FBB_BA2	M3	BA2	VSS_J2	J8	
FBB_BA1	N8	BA1	VSS_J8	M1	
FBB_BA0	M2	BA0	VSS_M1	M9	
			VSS_M9	P1	
	M7				
FBB_A14	T7	NC_A15	VSS_P1	P9	
FBB_A13	T3	NC_A14	VSS_P9	T1	
FBB_A12	N7	A13	VSS_T1	T9	
FBB_A11	R7	A12|BC#	VSS_T9		
FBB_A10	L7	A11			
FBB_A9	R3	A10|AP		K1	FBB_ODT0
FBB_A8	T8	A9	ODT		
FBB_A7	R2	A8		T2	FBB_RST
FBB_A6	R8	A7	RESET#		
FBB_A5	P2	A6		L8	
FBB_A4	P8	A5	ZQ		
FBB_A3	N2	A4		J1	
FBB_A2	P3	A3	NC_J1	J9	
FBB_A1	P7	A2	NC_J9	L1	
FBB_A0	N3	A1	NC_L1	L9	
		A0	NC_L9		

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R8616 243_1% 1005_1/16w

VCC1R5VIDEO

23 FBB_VREF_1

U97

FBB_D52	A3	DQU7	VREFDQ	H1	
FBB_D51	B8	DQU6	VREFCA	M8	
FBB_D50	A2	DQU5			
FBB_D49	A7	DQU4			
FBB_D53	C2	DQU3	VDD_B2	B2	
FBB_D48	C8	DQU2	VDD_D9	D9	
FBB_D54	C3	DQU1	VDD_G7	G7	
FBB_D55	D7	DQU0	VDD_K2	K2	
			VDD_K8	K8	
17 FBB_DQS6	C7	DQSU	VDD_N1	N1	
17 -FBB_DQS6	B7	DQSU#	VDD_N9	N9	
			VDD_R1	R1	
17 FBB_DM6	D3	DMU	VDD_R9	R9	
FBB_D60	H7	DQL7	VDDQ_A1	A1	
FBB_D58	G2	DQL6	VDDQ_A8	A8	
FBB_D62	H8	DQL5	VDDQ_C1	C1	
FBB_D63	H3	DQL4	VDDQ_C9	C9	
FBB_D61	F8	DQL3	VDDQ_D2	D2	
FBB_D56	F2	DQL2	VDDQ_E9	E9	
FBB_D57	F7	DQL1	VDDQ_F1	F1	
FBB_D59	E3	DQL0	VDDQ_H2	H2	
			VDDQ_H9	H9	
17 FBB_DQS7	F3	DQSL			
17 -FBB_DQS7	G3	DQSL#		B1	
17 FBB_DM7	E7	DML	VSSQ_B1	B9	
			VSSQ_B9	D1	
			VSSQ_D1	D8	
			VSSQ_D8	E2	
17 FBB_CLK1	J7	CK	VSSQ_E2	E8	
17 -FBB_CLK1	K7	CK#	VSSQ_E8	F9	
			VSSQ_F9	G1	
17 FBB_CKE1	K9	CKE	VSSQ_G1	G9	
			VSSQ_G9		
17 -FBB_CS1	L2	CS#		A9	
-FBB_RAS	J3	RAS#	VSS_A9	B3	
-FBB_CAS	K3	CAS#	VSS_B3	E1	
-FBB_WE	L3	WE#	VSS_E1	G8	
			VSS_G8	J2	
FBB_BA2	M3	BA2	VSS_J2	J8	
FBB_BA1	N8	BA1	VSS_J8	M1	
FBB_BA0	M2	BA0	VSS_M1	M9	
			VSS_M9	P1	
	M7				
FBB_A14	T7	NC_A15	VSS_P1	P9	
FBB_A13	T3	NC_A14	VSS_P9	T1	
FBB_A12	N7	A13	VSS_T1	T9	
FBB_A11	R7	A12|BC#	VSS_T9		
FBB_A10	L7	A11			
FBB_A9	R3	A10|AP		K1	FBB_ODT1 17
FBB_A8	T8	A9	ODT		
FBB_A7	R2	A8		T2	FBB_RST
FBB_A6	R8	A7	RESET#		
FBB_A5	P2	A6		L8	
FBB_A4	P8	A5	ZQ		
FBB_A3	N2	A4		J1	
FBB_A2	P3	A3	NC_J1	J9	
FBB_A1	P7	A2	NC_J9	L1	
FBB_A0	N3	A1	NC_L1	L9	
		A0	NC_L9		

H5TQ1G63DFR_11C

R8617 243_1% 1005_1/16w

VCC1R5VIDEO

FBB_VREF_1

U98

FBB_D47	A3	DQU7	VREFDQ	H1	
FBB_D42	B8	DQU6	VREFCA	M8	
FBB_D46	A2	DQU5			
FBB_D45	A7	DQU4			
FBB_D44	C2	DQU3	VDD_B2	B2	
FBB_D40	C8	DQU2	VDD_D9	D9	
FBB_D43	C3	DQU1	VDD_G7	G7	
FBB_D41	D7	DQU0	VDD_K2	K2	
			VDD_K8	K8	
17 FBB_DQS5	C7	DQSU	VDD_N1	N1	
17 -FBB_DQS5	B7	DQSU#	VDD_N9	N9	
			VDD_R1	R1	
17 FBB_DM5	D3	DMU	VDD_R9	R9	
FBB_D38	H7	DQL7	VDDQ_A1	A1	
FBB_D37	G2	DQL6	VDDQ_A8	A8	
FBB_D36	H8	DQL5	VDDQ_C1	C1	
FBB_D39	H3	DQL4	VDDQ_C9	C9	
FBB_D35	F8	DQL3	VDDQ_D2	D2	
FBB_D34	F2	DQL2	VDDQ_E9	E9	
FBB_D32	F7	DQL1	VDDQ_F1	F1	
FBB_D33	E3	DQL0	VDDQ_H2	H2	
			VDDQ_H9	H9	
17 FBB_DQS4	F3	DQSL			
17 -FBB_DQS4	G3	DQSL#		B1	
17 FBB_DM4	E7	DML	VSSQ_B1	B9	
			VSSQ_B9	D1	
			VSSQ_D1	D8	
			VSSQ_D8	E2	
FBB_CLK1	J7	CK	VSSQ_E2	E8	
-FBB_CLK1	K7	CK#	VSSQ_E8	F9	
			VSSQ_F9	G1	
FBB_CKE1	K9	CKE	VSSQ_G1	G9	
			VSSQ_G9		
-FBB_CS1	L2	CS#		A9	
-FBB_RAS	J3	RAS#	VSS_A9	B3	
-FBB_CAS	K3	CAS#	VSS_B3	E1	
-FBB_WE	L3	WE#	VSS_E1	G8	
			VSS_G8	J2	
FBB_BA2	M3	BA2	VSS_J2	J8	
FBB_BA1	N8	BA1	VSS_J8	M1	
FBB_BA0	M2	BA0	VSS_M1	M9	
			VSS_M9	P1	
	M7				
FBB_A14	T7	NC_A15	VSS_P1	P9	
FBB_A13	T3	NC_A14	VSS_P9	T1	
FBB_A12	N7	A13	VSS_T1	T9	
FBB_A11	R7	A12|BC#	VSS_T9		
FBB_A10	L7	A11			
FBB_A9	R3	A10|AP		K1	FBB_ODT1
FBB_A8	T8	A9	ODT		
FBB_A7	R2	A8		T2	FBB_RST
FBB_A6	R8	A7	RESET#		
FBB_A5	P2	A6		L8	
FBB_A4	P8	A5	ZQ		
FBB_A3	N2	A4		J1	
FBB_A2	P3	A3	NC_J1	J9	
FBB_A1	P7	A2	NC_J9	L1	
FBB_A0	N3	A1	NC_L1	L9	
		A0	NC_L9		

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R8618 243_1% 1005_1/16w

VCC1R5VIDEO

FOR U95/U96

C6204 1UF_6.3V 1608_X7R_K
C6205 1UF_6.3V 1608_X7R_K
C6206 1UF_6.3V 1608_X7R_K
C6207 1UF_6.3V 1608_X7R_K
C6208 1UF_6.3V 1608_X7R_K
C6209 1UF_6.3V 1608_X7R_K
C6210 1UF_6.3V 1608_X7R_K
C6212 1UF_6.3V 1608_X7R_K
C6213 0.1UF_10V 1005_X7R_K
C6214 0.1UF_10V 1005_X7R_K
C6215 0.1UF_10V 1005_X7R_K
C6216 0.1UF_10V 1005_X7R_K

CLOSE TO THE MEMORY

VCC1R5VIDEO

FOR U97/U98

C6219 1UF_6.3V 1608_X7R_K
C6220 1UF_6.3V 1608_X7R_K
C6221 1UF_6.3V 1608_X7R_K
C6222 1UF_6.3V 1608_X7R_K
C6223 1UF_6.3V 1608_X7R_K
C6224 1UF_6.3V 1608_X7R_K
C6225 1UF_6.3V 1608_X7R_K
C6227 1UF_6.3V 1608_X7R_K
C6228 0.1UF_10V 1005_X7R_K
C6229 0.1UF_10V 1005_X7R_K
C6230 0.1UF_10V 1005_X7R_K
C6231 0.1UF_10V 1005_X7R_K

CLOSE TO THE MEMORY

lenovo

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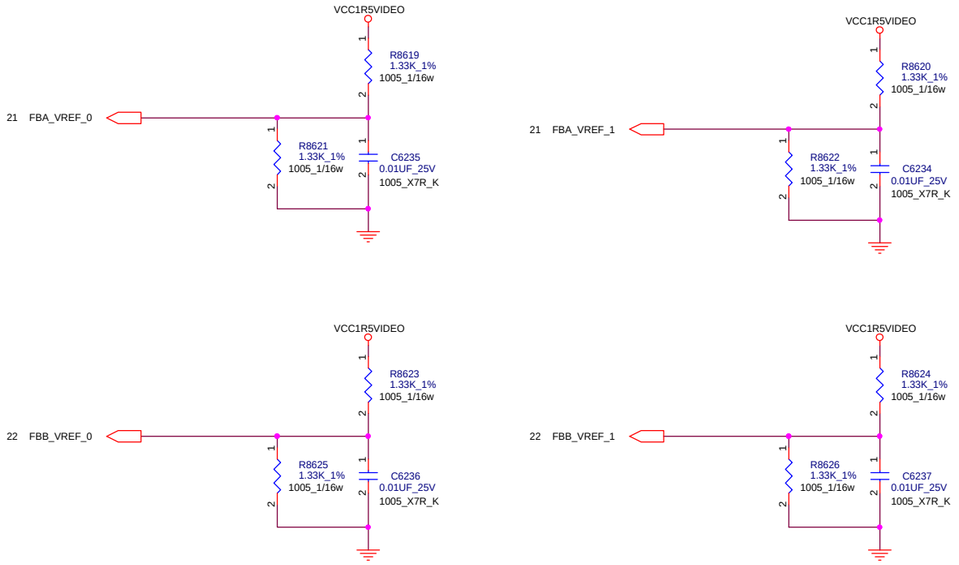

Project Name : NZM-4 SWG SOVP	Title : MEMORY TERMINATION	
Size : C	Document Number :	Rev : 7.54
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P/N 41U6143
KDS DST310S-32.768KHz-20PPM-9PF
RIVER TFX-02-32.768KJ80862

C348 10PF_50V 1005_NPO_J
C326 10PF_50V 1005_NPO_J
Y6 DST310S_32R768K
R351 10M_5% 1005_1/16w

VCC3M
R1009 1K_5% 1005_1/16w
RTCVCC
R408 330K_5% 1005_1/16w
VCC3SW
R646 1M_5% 1005_1/16w
VCC3B
R65 1K_5% 1005_1/16w NA

TABLE

U5	QM77

TABLE

SPKR TCO TIMER SYSTEM REBOOT	
HIGH	DISABLED (NO REBOOT)
LOW	ENABLED

VCC3B
R860 8.2K_5% 1005_1/16w

U5A

RTC
RTCX1 A20
RTCX2 C20
RTCRST# D20
SRTCRST# G22
INTRUDER# K22
INTVRMEN C17

LPC
FWH0 / LAD0 C38 LPC_AD0
FWH1 / LAD1 A38 LPC_AD1
FWH2 / LAD2 B37 LPC_AD2
FWH3 / LAD3 C37 LPC_AD3
FWH4 / LFRAME# D36 -LPC_FRAME 60,68,69
LDRQ0# E36 -LPC_DREQ0 69
LDRQ1# / GPIO23 K36
SERIRQ V5 IRQSER 60,68,69
LPC_AD[3:0] 60,68,69

RTCX1
RTCX2
32,39 -RTCRST
39 -SRTCRST
-INTRUDER

IHDA
HDA_BCLK N34
HDA_SYNC L34
SPKR T10
HDA_RST# K34
HDA_SDIN0 E34
HDA_SDIN1 G34
HDA_SDIN2 C34
HDA_SDIN3 A34
HDA_SDO A36
HDA_DOCK_EN# / GPIO33 C36
HDA_DOCK_RST# / GPIO13 N32

43 HDA_BCLK R60 1 2 33_5% 1005_1/16w
43 HDA_SYNC R423 1 2 33_5% 1005_1/16w
48 PCH_SPKR
43 -HDA_RST R456 1 2 33_5% 1005_1/16w
43 HDA_SDIN0
VCC3M R846 1K_5% 1005_1/16w
VCC3M NA R566 0_5% 2125_1/8w
PLACE ON TOP SIDE
TP901 TESTPAD_1P0
TP900 TESTPAD_1P0
43 HDA_SDO R74 1 2 33_5% 1005_1/16w
29 SATA_DOCK_DTCT
60 -EC_WAKE

TEST PAD
BOTTOM SIDE
DO NOT MOVE AFTER FIX

JTAG
JTAG_TCK J3
JTAG_TMS H7
JTAG_TDI K5
JTAG_TDO H1

11 PCH_TCK
11 PCH_TMS
11 PCH_TDI
11 PCH_TDO

SPI
SPI_CLK T3
SPI_CS0# Y14
SPI_CS1# T1
SPI_MOSI V4
SPI_MISO U3

58 SPI_CLK
58 -SPI_CS0
58 -SPI_CS1
58 SPI_MOSI
58 SPI_MISO

SATA
SATA0RXN AM3 SATA0_RXN_C C803 1 2 0.01UF_10V 0603_X7R_K SATA0_RXN 40
SATA0RXP AM1 SATA0_RXP_C C804 1 2 0.01UF_10V 0603_X7R_K SATA0_RXP 40
SATA0TXN AP7 SATA0_TXN_C C805 1 2 0.01UF_10V 0603_X7R_K SATA0_TXN 40
SATA0TXP AP5 SATA0_TXP_C C827 1 2 0.01UF_10V 0603_X7R_K SATA0_TXP 40
SATA1RXN AM10 SATA1_RXN_C C272 1 2 0.01UF_10V 0603_X7R_K SATA1_RXN 41
SATA1RXP AM8 SATA1_RXP_C C280 1 2 0.01UF_10V 0603_X7R_K SATA1_RXP 41
SATA1TXN AP11 SATA1_TXN_C C284 1 2 0.01UF_10V 0603_X7R_K SATA1_TXN 41
SATA1TXP AP10 SATA1_TXP_C C374 1 2 0.01UF_10V 0603_X7R_K SATA1_TXP 41
SATA2RXN AD7 SATA2_RXN_C C794 1 2 0.01UF_10V 0603_X7R_K SATA2_RXN 53
SATA2RXP AD5 SATA2_RXP_C C784 1 2 0.01UF_10V 0603_X7R_K SATA2_RXP 53
SATA2TXN AH5 SATA2_TXN_C C770 1 2 0.01UF_10V 0603_X7R_K SATA2_TXN 53
SATA2TXP AH4 SATA2_TXP_C C765 1 2 0.01UF_10V 0603_X7R_K SATA2_TXP 53
SATA3RXN AB8
SATA3RXP AB10
SATA3TXN AF3
SATA3TXP AF1
SATA4RXN Y7 SATA4_RXN 59
SATA4RXP Y5 SATA4_RXP 59
SATA4TXN AD3 SATA4_TXN_C C893 1 2 0.01UF_10V 0603_X7R_K SATA4_TXN 59
SATA4TXP AD1 SATA4_TXP_C C892 1 2 0.01UF_10V 0603_X7R_K SATA4_TXP 59
SATA5RXN Y3
SATA5RXP Y1
SATA5TXN AB3
SATA5TXP AB1
SATAICOMPO Y11
SATAICOMPI Y10 SATAICOMP 1 2 R602 37.4_1% 1005_1/16w
SATA3RCOMPO AB12
SATA3COMPI AB13 SATA3RCOMP 1 2 R604 49.9_1% 1005_1/16w
SATA3RBIAS AH1 R116 1 2 750_1% 1005_1/16w
SATALED# P3 -DASPHDD 70
SATA0GP / GPIO21 V14 -DISCRETE_PRESENCE
SATA1GP / GPIO19 P1 SATA_BAY_DTCT 29

VCC1R05B
VCC3B R996 10K_5% 1005_1/16w NA
VCC3B R99 100K_5% 1005_1/16w
VCC3B R239 10K_5% 1005_1/16w

CPT_PPT_Rev_0p7

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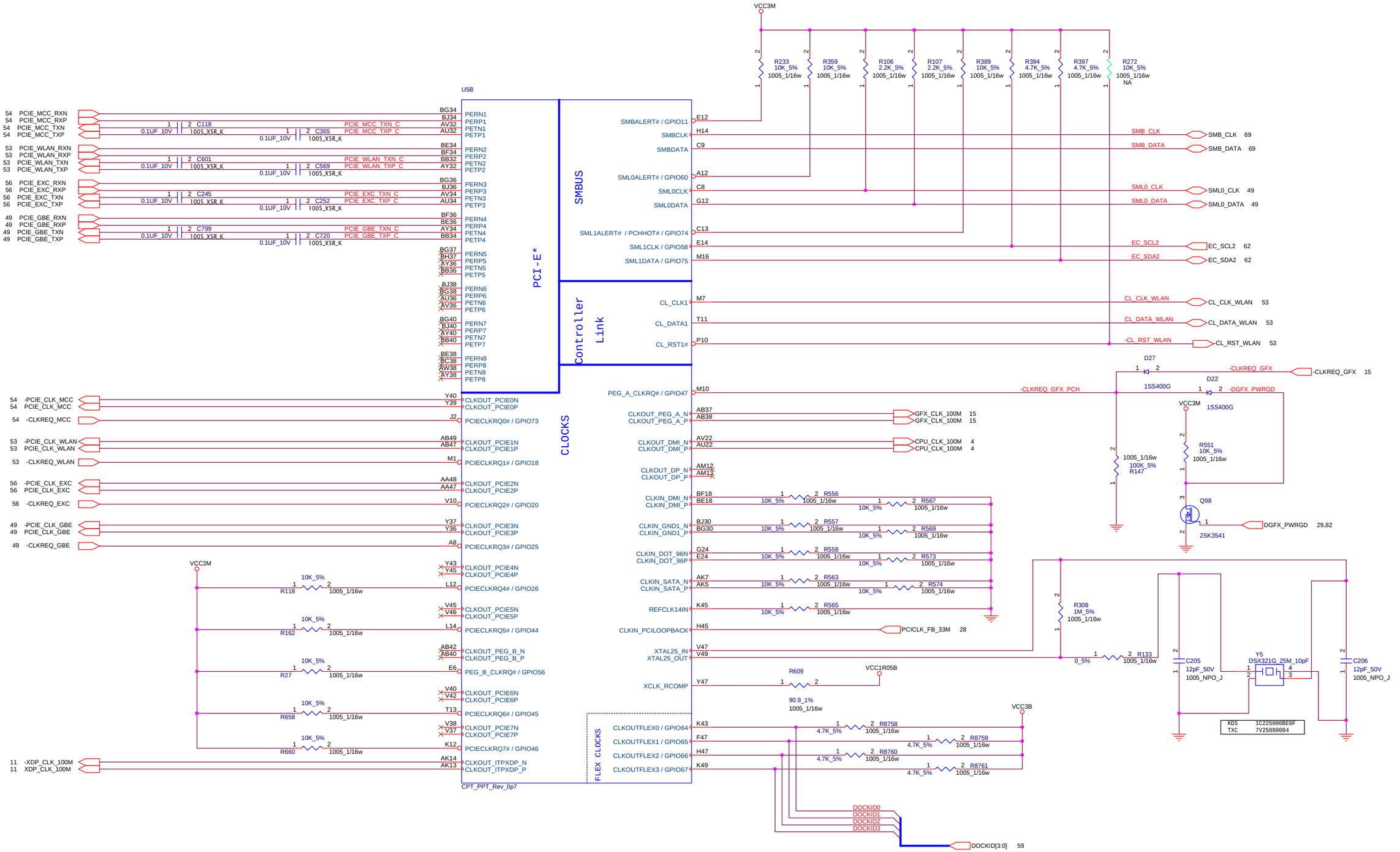

Project Name : NZM-4 SWG SOVP		Title : PCH(2/9):PCI-E/SMBUS/CLK	
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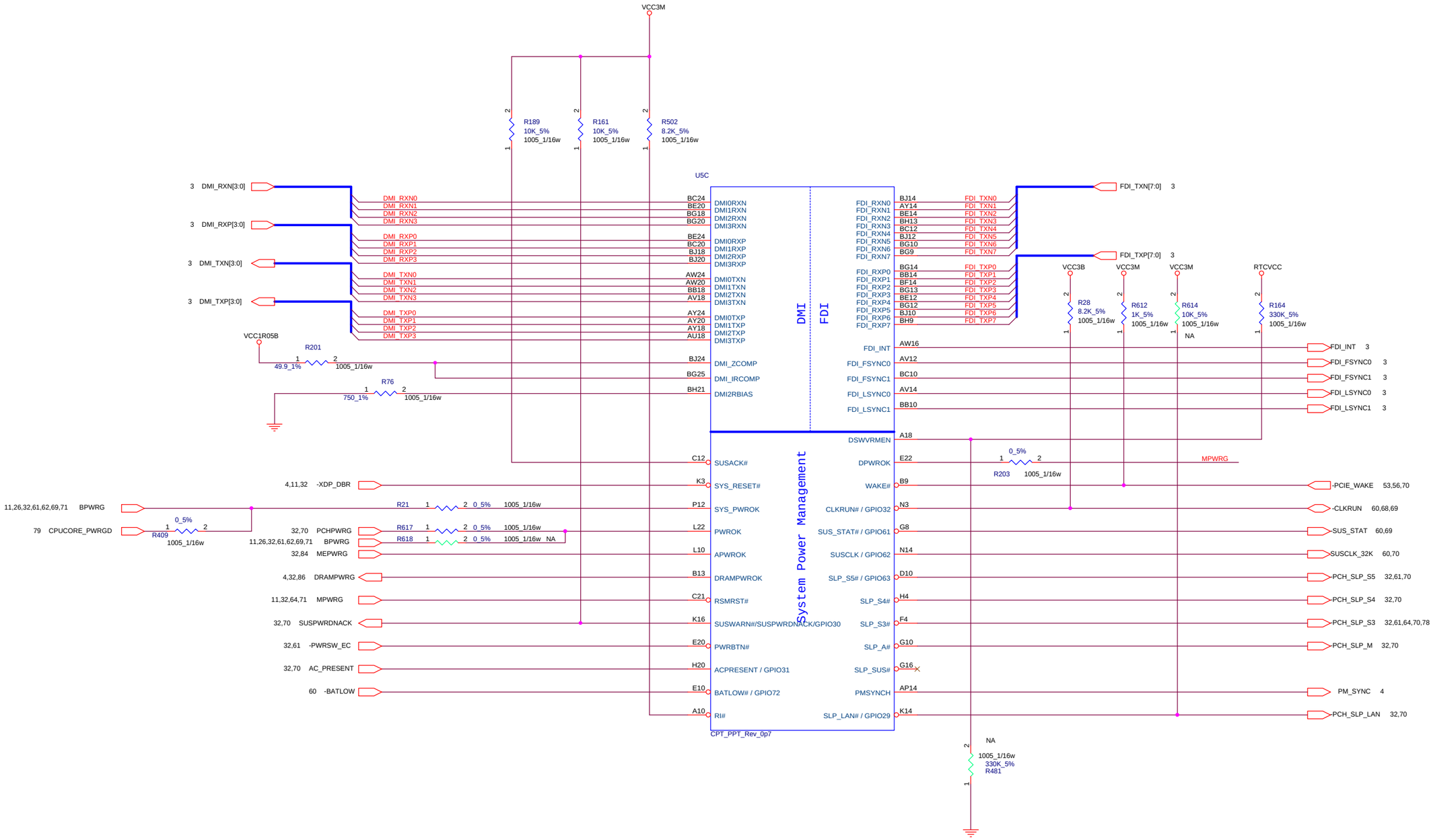

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Project Name : NZM-4 SWG SOVP		Title : PCH(3/9):DMI/FDI/PM	
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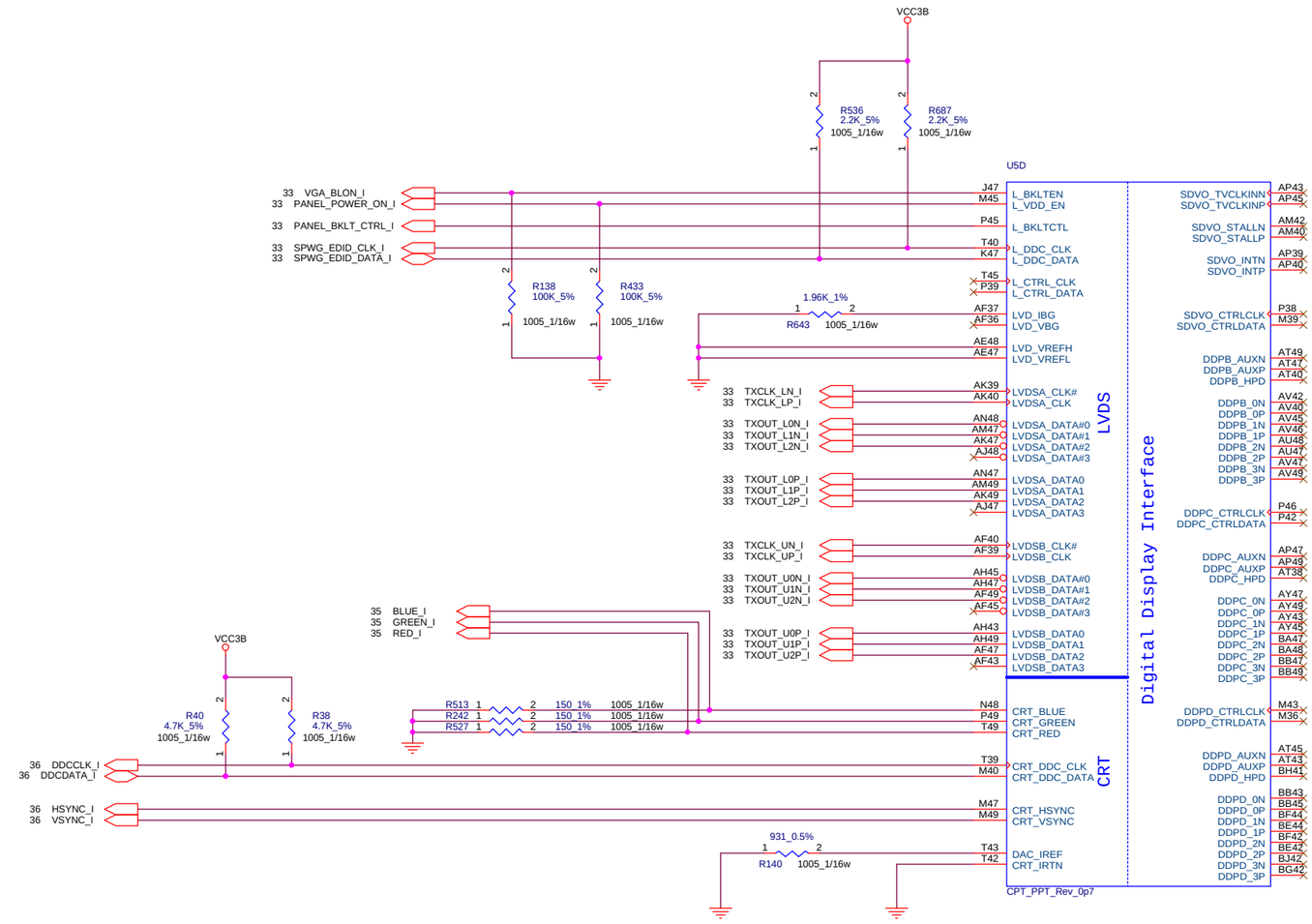

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Project Name : NZM-4 SWG SOVP	Title : PCH(4/9):LVDS/CRT/DDI	
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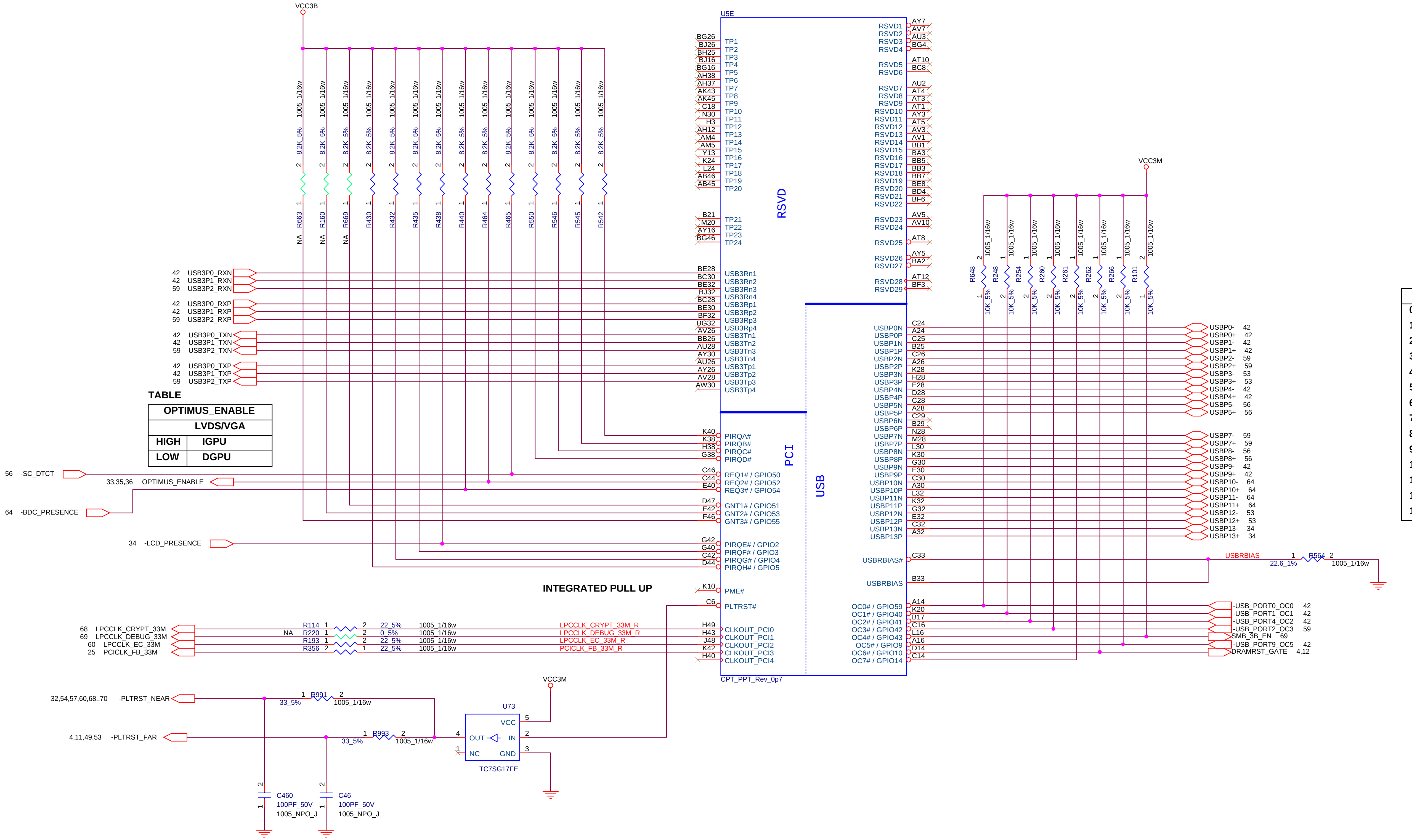

VCC3B
U5E
RSVD
PCI
USB
VCC3M
TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9 TP10 TP11 TP12 TP13 TP14 TP15 TP16 TP17 TP18 TP19 TP20 TP21 TP22 TP23 TP24
RSVD1 … RSVD29
42 USB3P0_RXN
42 USB3P1_RXN
59 USB3P2_RXN
42 USB3P0_RXP
42 USB3P1_RXP
59 USB3P2_RXP
42 USB3P0_TXN
42 USB3P1_TXN
59 USB3P2_TXN
42 USB3P0_TXP
42 USB3P1_TXP
59 USB3P2_TXP
PIRQA# PIRQB# PIRQC# PIRQD#
REQ1# / GPIO50
REQ2# / GPIO52
REQ3# / GPIO54
GNT1# / GPIO51
GNT2# / GPIO53
GNT3# / GPIO55
PIRQE# / GPIO2
PIRQF# / GPIO3
PIRQG# / GPIO4
PIRQH# / GPIO5
PME#
PLTRST#
CLKOUT_PCI0 CLKOUT_PCI1 CLKOUT_PCI2 CLKOUT_PCI3 CLKOUT_PCI4
56 -SC_DTCT
33,35,36 OPTIMUS_ENABLE
64 -BDC_PRESENCE
34 -LCD_PRESENCE
INTEGRATED PULL UP
68 LPCCLK_CRYPT_33M
69 LPCCLK_DEBUG_33M
60 LPCCLK_EC_33M
25 PCICLK_FB_33M
R114 22_5% 1005_1/16w LPCCLK_CRYPT_33M_R
NA R220 0_5% 1005_1/16w LPCCLK_DEBUG_33M_R
R193 22_5% 1005_1/16w LPCCLK_EC_33M_R
R356 22_5% 1005_1/16w PCICLK_FB_33M_R
32,54,57,60,68..70 -PLTRST_NEAR
4,11,49,53 -PLTRST_FAR
R991 33_5% 1005_1/16w
R993 33_5% 1005_1/16w
U73 TC7SG17FE
C460 100PF_50V 1005_NPO_J
C46 100PF_50V 1005_NPO_J
CPT_PPT_Rev_0p7
USBP0N … USBP13P
USBRBIAS#
USBRBIAS
R564 22.6_1% 1005_1/16w
OC0# / GPIO59
OC1# / GPIO40
OC2# / GPIO41
OC3# / GPIO42
OC4# / GPIO43
OC5# / GPIO9
OC6# / GPIO10
OC7# / GPIO14
-USB_PORT0_OC0 42
-USB_PORT1_OC1 42
-USB_PORT4_OC2 42
-USB_PORT2_OC3 59
SMB_3B_EN 69
-USB_PORT9_OC5 42
DRAMRST_GATE 4,12
10K_5% 1005_1/16w
8.2K_5% 1005_1/16w

TABLE

OPTIMUS_ENABLE	
LVDS/VGA	
HIGH	IGPU
LOW	DGPU

USB PORT TO	
0	USB 3.0 SYSTEM PORT 0
1	USB 3.0 SYSTEM PORT 1
2	USB 3.0 DOCKING
3	FULL MINICARD (WWAN)
4	USB 2.0 SYSTEM PORT (AOU)
5	EXPRESS CARD SLOT
6	RESERVED
7	USB 2.0 DOCKING
8	SMART CARD SLOT
9	USB 2.0 SYSTEM PORT (DEBUG)
10	FPR (TOUCH PAD)
11	BLUETOOTH (TOUCH PAD)
12	HALF MINICARD (WLAN)
13	USB CAMERA (LCD)

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Project Name : NZM-4 SWG SOVP
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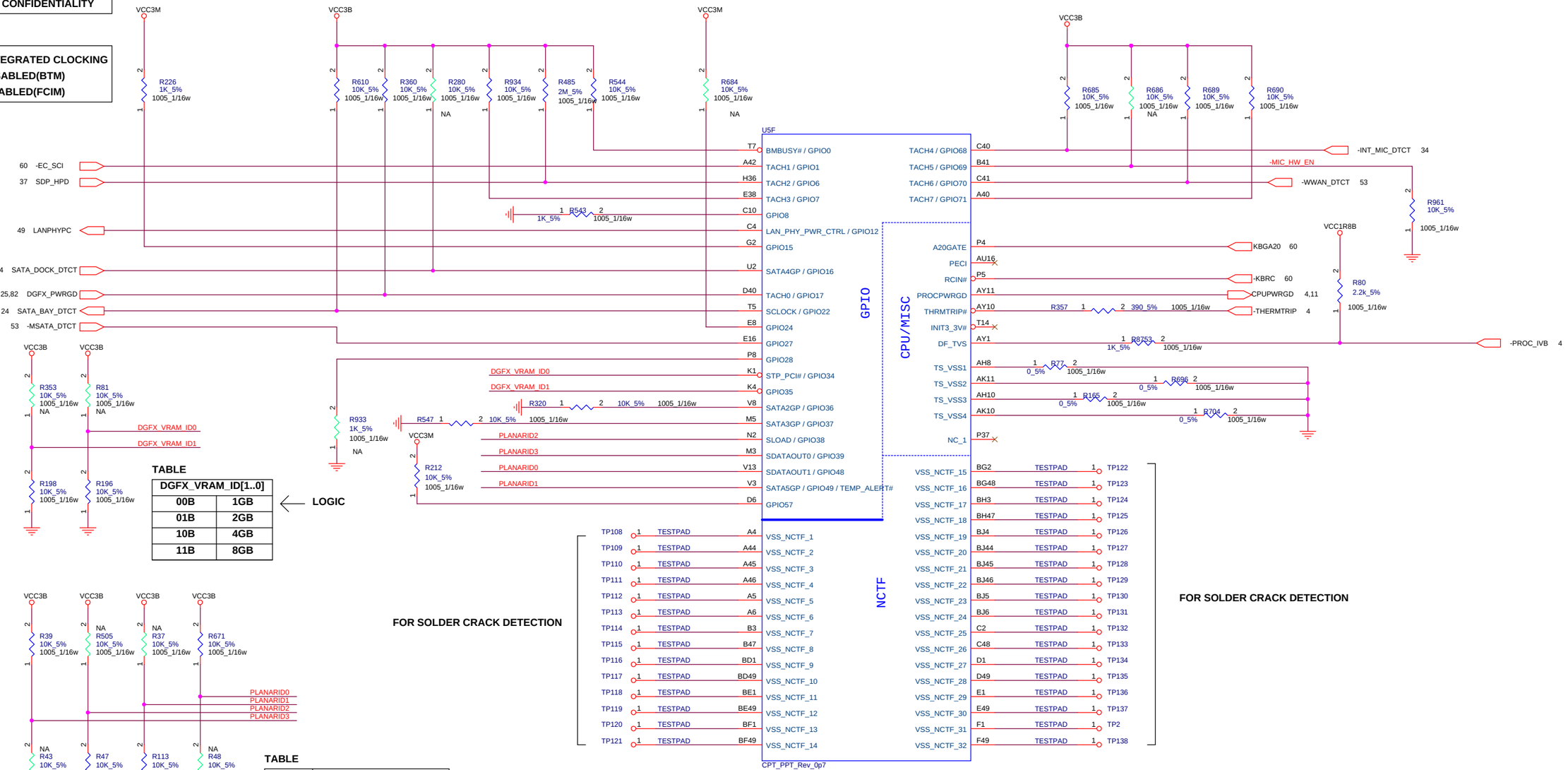
TABLE

GPIO15	ME CRYPTO STRAP
HIGH	WITH CONFIDENTIALITY
LOW	NO CONFIDENTIALITY

TABLE

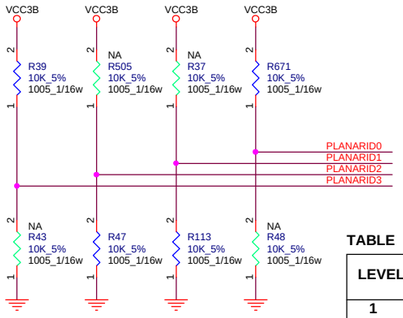
GPIO8	INTEGRATED CLOCKING
HIGH	DISABLED(BTM)
LOW	ENABLED(FCIM)



TABLE

DGFX_VRAM_ID[1..0]	
00B	1GB
01B	2GB
10B	4GB
11B	8GB

LOGIC



TABLE

LEVEL	PLANAR ID			
	3	2	1	0
1	R39	R505	R37	R671
0	R43	R47	R113	R48

TABLE

LEVEL	PLANARID[3..0]
PDV	0000B
SDV	0001B
MFVT	0010B
FVT	0011B
SW SIT-1	0100B
SIT	0101B
SIT-R1	0110B
SIT-R2	0111B
SVT	1000B
SOVP	1001B

FOR SOLDER CRACK DETECTION

FOR SOLDER CRACK DETECTION

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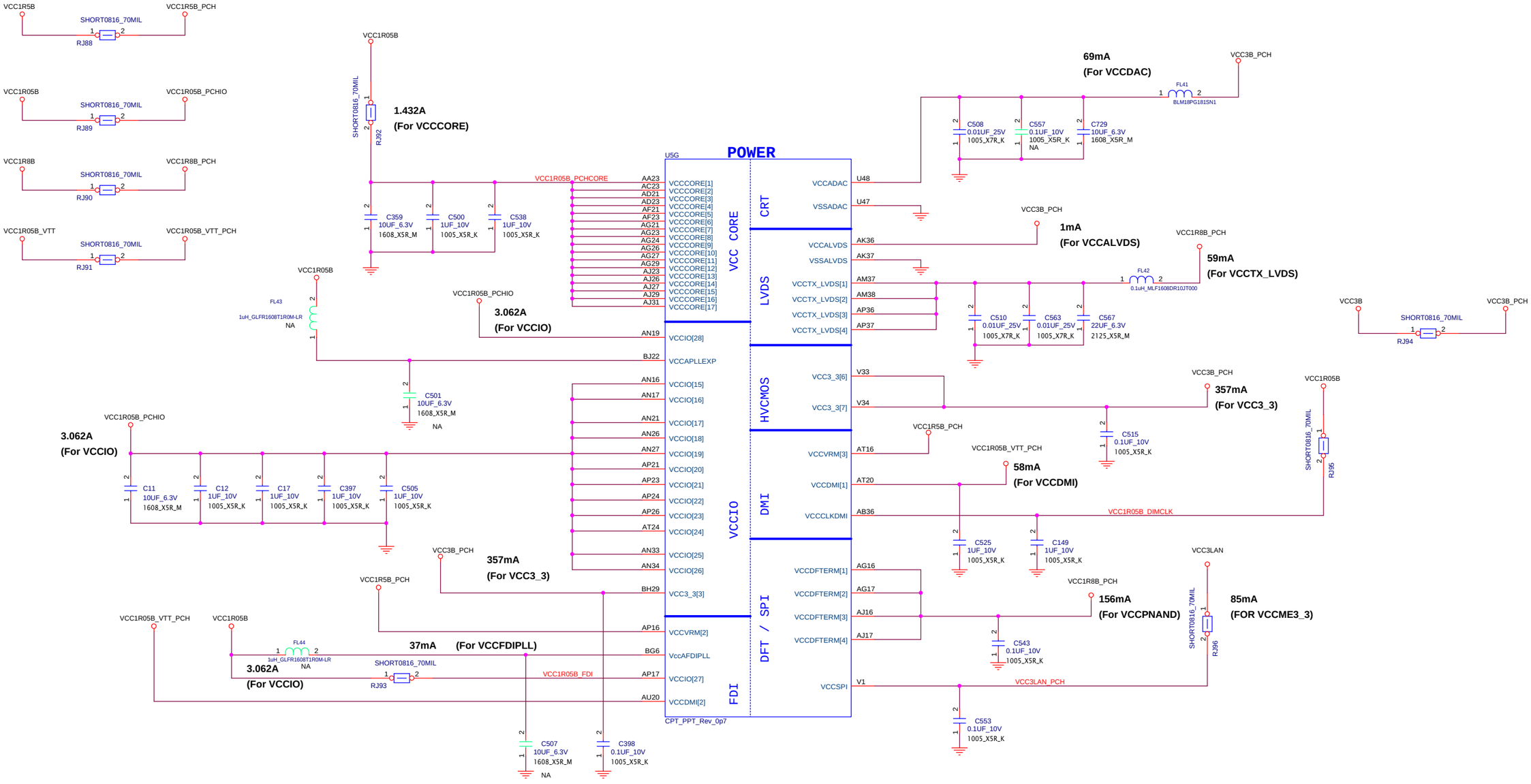

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POWER

U5J

Clock and Miscellaneous

AD49	VCCACLK
T16	VCCDSW3_3
V12	DCPSUSBYP
T38	VCC3_3[5]
BH23	VCCAPLLDMI2
AL29	VCCIO[14]
AL24	DCPSUS[3]
AA19	VCCASW[1]
AA21	VCCASW[2]
AA24	VCCASW[3]
AA26	VCCASW[4]
AA27	VCCASW[5]
AA29	VCCASW[6]
AA31	VCCASW[7]
AC26	VCCASW[8]
AC27	VCCASW[9]
AC29	VCCASW[10]
AC31	VCCASW[11]
AD29	VCCASW[12]
AD31	VCCASW[13]
W21	VCCASW[14]
W23	VCCASW[15]
W24	VCCASW[16]
W26	VCCASW[17]
W29	VCCASW[18]
W31	VCCASW[19]
W33	VCCASW[20]
N16	DCPRTC
Y49	VCCVRM[4]
BD47	VCCADPLLA
BF47	VCCADPLLB
AF17	VCCIO[7]
AF33	VCCDIFFCLKN[1]
AF34	VCCDIFFCLKN[2]
AG34	VCCDIFFCLKN[3]
AG33	VCCSSC
V16	DCPSST
T17	DCPSUS[1]
V19	DCPSUS[2]
BJ8	V_PROC_IO
A22	VCCRTC

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USB

N26	VCCIO[29]
P26	VCCIO[30]
P28	VCCIO[31]
T27	VCCIO[32]
T29	VCCIO[33]
T23	VCCSUS3_3[7]
T24	VCCSUS3_3[8]
V23	VCCSUS3_3[9]
V24	VCCSUS3_3[10]
P24	VCCSUS3_3[6]
T26	VCCIO[34]
M26	V5REF_SUS
AN23	DCPSUS[4]
AN24	VCCSUS3_3[1]

PCI/GPIO/LPC

P34	V5REF
N20	VCCSUS3_3[2]
N22	VCCSUS3_3[3]
P20	VCCSUS3_3[4]
P22	VCCSUS3_3[5]
AA16	VCC3_3[1]
W16	VCC3_3[8]
T34	VCC3_3[4]
AJ2	VCC3_3[2]

SATA

AF13	VCCIO[5]
AH13	VCCIO[12]
AH14	VCCIO[13]
AF14	VCCIO[6]
AK1	VCCAPLLSATA
AF11	VCCVRM[1]
AC16	VCCIO[2]
AC17	VCCIO[3]
AD17	VCCIO[4]

MISC

T21	VCCASW[22]
V21	VCCASW[23]
T19	VCCASW[21]

CPU

RTC

HDA

P32	VCCSUSHDA

VCC1R05B
R707 1 2 0_5% NA 1005_1/16w
VCC3M_PCH
R705 1 2 0_5% 1005_1/16w
VCC3B_PCH
VCC1R05B_CLKGEN
C620 0.1UF_10V 1005_X5R_K
C759 NA 0.1UF_10V 1005_X5R_K
VCC1R05B
FL32 10uH_GLFR1608T100M-LR NA
C619 10UF_6.3V 1608_X5R_M NA
C822 0.1UF_10V 1005_X5R_K
C621 1UF_10V 1005_X5R_K NA
1.849A
(For VCCME)
VCC1R05AMT_PCH
C749 22UF_6.3V 2125_X5R_M
C757 22UF_6.3V 2125_X5R_M
C785 1UF_10V 1005_X5R_K
C801 1UF_10V 1005_X5R_K
C818 1UF_10V 1005_X5R_K
VCC1R05AMT_PCH
SHORT0816_70MIL RJ97
VCC1R05AMT
VCC1R05B
SHORT0816_70MIL RJ98
68mA
(For VCCADPLLA)
VCC1R05B_DPLL
FL33 10uH_GLFR1608T100M-LR
FL35 10uH_GLFR1608T100M-LR
69mA
(For VCCADPLLB)
C701 1UF_10V 1005_X5R_K
C721 220UF_2.5V 2R5TPE220MLB_3528_M
C726 1UF_10V 1005_X5R_K
C700 220UF_2.5V 2R5TPE220MLB_3528_M
VCC1R05B_CLKGEN
3.062A (For VCCIO)
C760 1UF_10V 1005_X5R_K
C796 1UF_10V 1005_X5R_K
C833 1UF_10V 1005_X5R_K
C731 0.1UF_10V 1005_X5R_K
C748 1UF_10V 1005_X5R_K NA
VCC3M_PCH
C821 0.1UF_10V 1005_X5R_K
VCC1R05B_VTT_PCH
1mA
(For V_CPU_IO)
C756 4.7UF_6.3V 1608_X5R_K
C761 0.1UF_10V 1005_X5R_K
C831 0.1UF_10V 1005_X5R_K
RTCVCC
(For VCCRTC)
C763 0.1UF_10V 1005_X5R_K
C832 0.1UF_10V 1005_X5R_K
C380 1UF_10V 1005_X5R_K
VCC1R5B_PCH
C795 0.1UF_10V 1005_X5R_K
VCC1R05B
SHORT0816_70MIL RJ99
3.062A
(For VCCIO)
C848 1UF_10V 1005_X5R_K
VCC3M_PCH
163mA
(For VCCSUS3_3)
C849 0.1UF_10V 1005_X5R_K
C850 0.1UF_10V 1005_X5R_K
1mA
(FOR V5REFSUS)
VCC3M_PCH
D17 RB461F
VCC5M
R655 100_5% 1005_1/16w
C855 1UF_10V 1005_X5R_K
C638 NA 1UF_10V 1005_X5R_K
VCC3B_PCH
D46 RB461F
VCC5B
R656 100_5% 1005_1/16w
1mA
(For V5REF)
C860 1UF_10V 1005_X5R_K
VCC3B_PCH
357mA
(For VCC3_3)
C851 0.1UF_10V 1005_X5R_K
C852 0.1UF_10V 1005_X5R_K
VCC1R05B
SHORT0816_70MIL RJ102
3.062A
(For VCCIO)
VCC1R05B_SATA
C853 1UF_10V 1005_X5R_K
VCC1R5B_PCH
VCC1R05AMT_PCH
1.849A
(For VCCME)
VCC3M_PCH
6mA
(For VCCSUSHDA)
C834 1UF_10V 1005_X5R_K
VCC3M
SHORT0816_70MIL RJ100
VCC3M_PCH
VCC1R05B
SHORT0816_70MIL RJ101
VCC1R05B_CLKGEN
31mA
(For VCCSATAPLL)
VCC1R05B
FL34 10uH_GLFR1608T100M-LR NA
C854 1UF_10V 1005_X5R_K NA
C856 10UF_6.3V 1608_X5R_M NA

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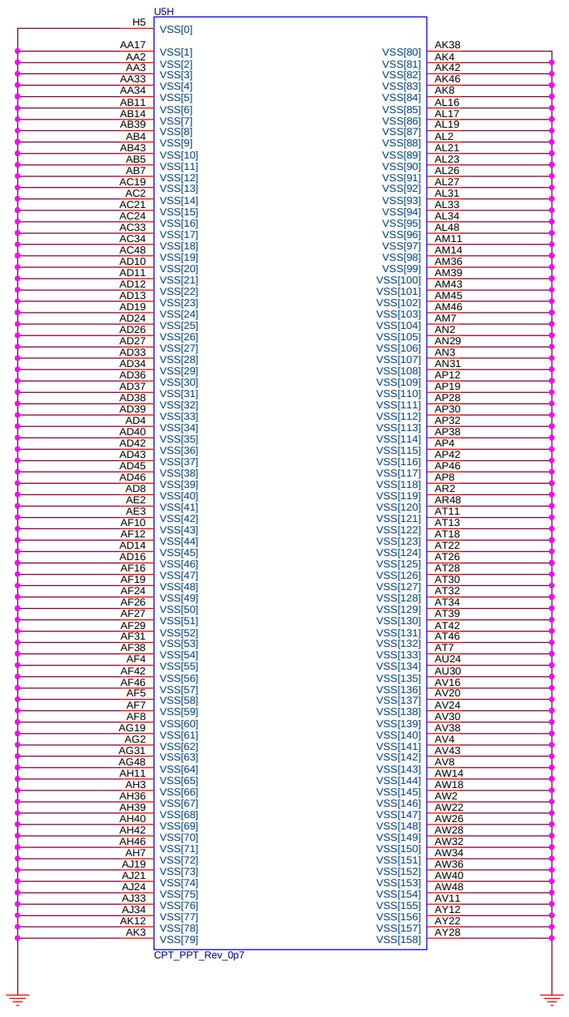
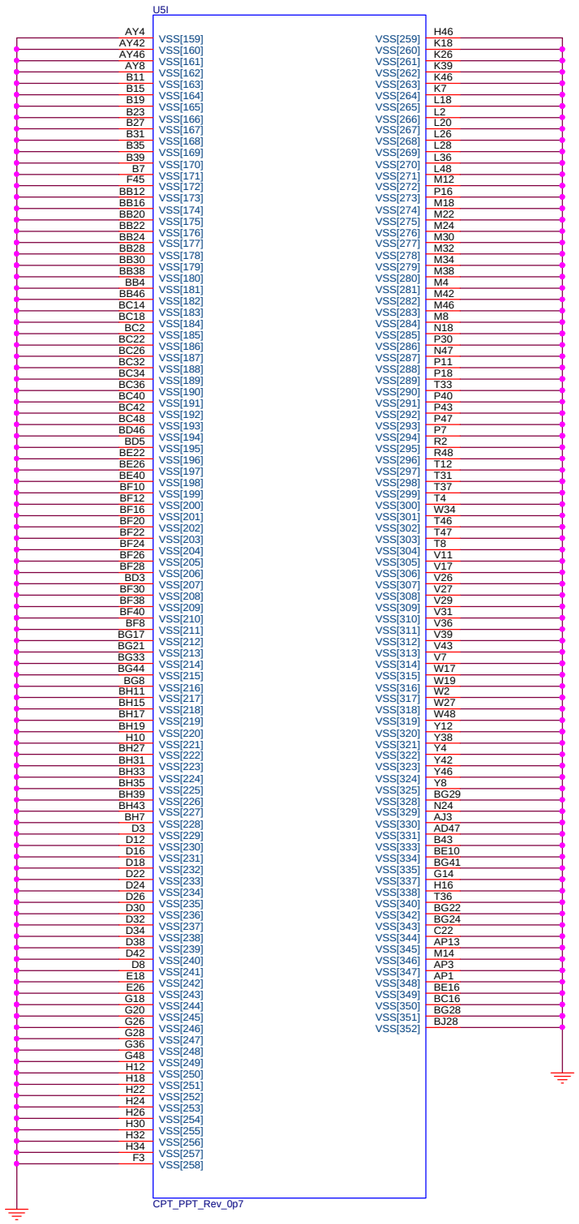
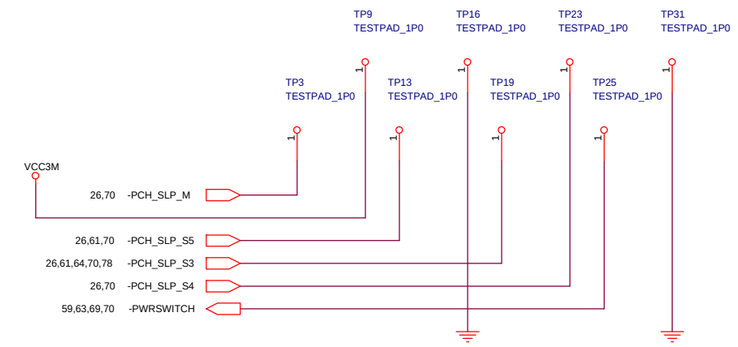
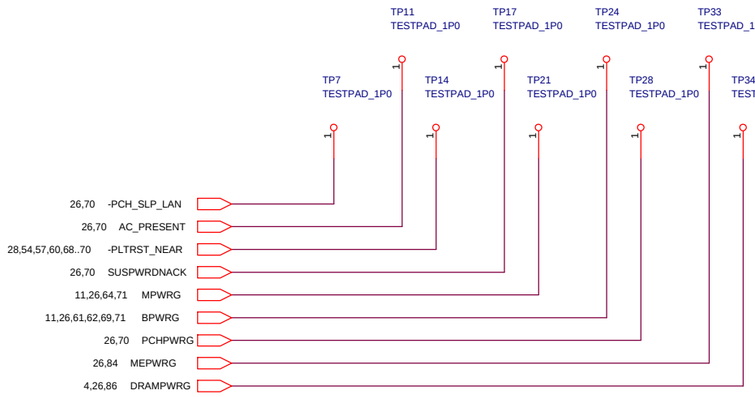
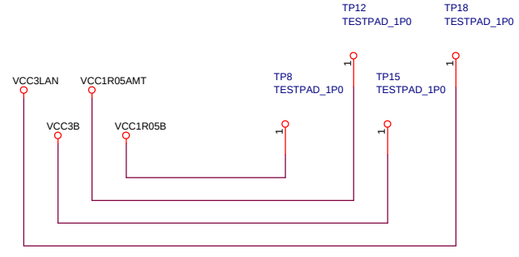


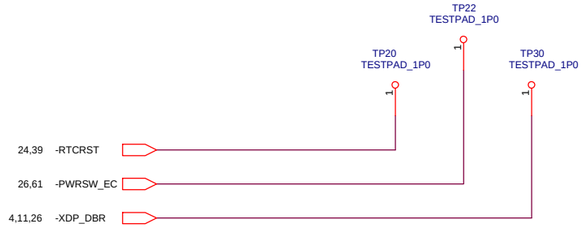


TEST PAD FOR METS/APS









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Project Name : NZM-4 SWG SOVP	Title : PCH(9/9):GND
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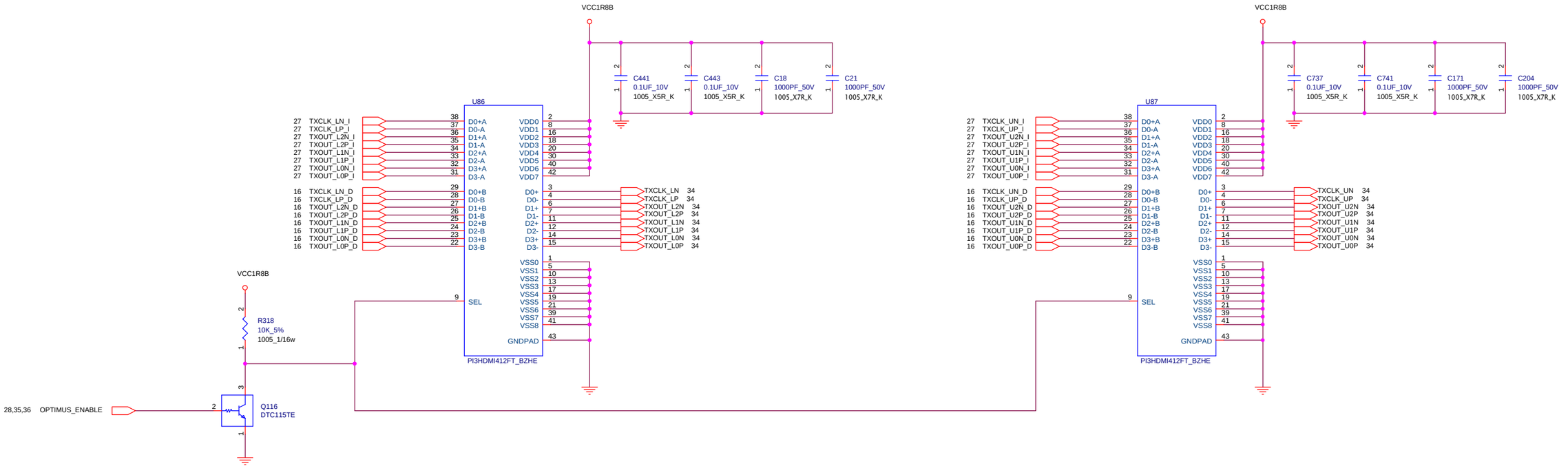

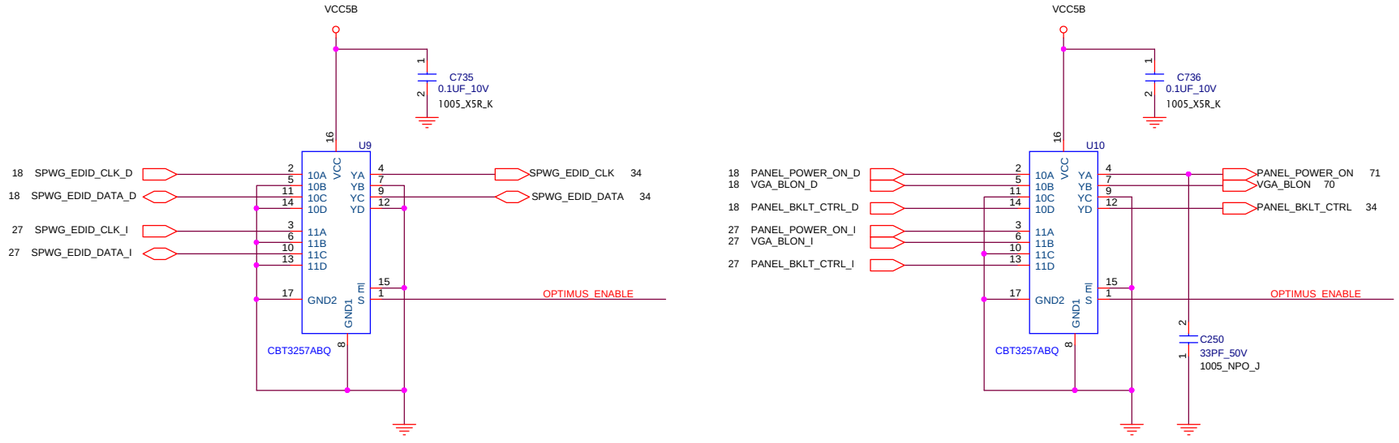

lenovo		
Project Name : NZM-4 SWG SOVP	Title : LVDS SWITCH	
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LCD CONNECTOR

VCC3M
VCC3P
Q22
TPCF8002
1005_1/16w
47_5%
R361
D63
RB521S_30
71 VCC3P_DRV
VCC3P_DRV
1005_1/16w
47K_5%
R714
C603
0.068UF_25V
1608_X7R_K
VCC3P
0.9A
F3
ERBRD3R00X
1005_X5R_K
1UF_10V
C315
1005_X5R_K
0.1UF_10V
C311
1005_X7R_K
0.01UF_25V
C308
VBL20
1.2A
1005_X7R_K
0.01UF_25V
C307
1608_X7R_K
0.1UF_25V
C310
C313
1UF_25V
1608_X5R_K
VINT20
VBL20
F7
ERBRD3R00X
1005_X7R_K
0.01UF_25V
C724
VCC3P
VCC3B
R668
47K_5%
1005_1/16w
NA
F19
ERBRD0R50X
28 -LCD_PRESENCE
-LCD_PRESENCE
33 PANEL_BKLT_CTRL
70 BACKLIGHT_ON
33 TXCLK_UP
33 TXCLK_UN
PANEL_BKLT_CTRL
BACKLIGHT_ON
TXCLK_UP
TXCLK_UN
33 TXOUT_U2P
33 TXOUT_U2N
33 TXOUT_U1P
33 TXOUT_U1N
33 TXOUT_U0P
33 TXOUT_U0N
TXOUT_U2P
TXOUT_U2N
TXOUT_U1P
TXOUT_U1N
TXOUT_U0P
TXOUT_U0N
33 TXCLK_LP
33 TXCLK_LN
TXCLK_LP
TXCLK_LN
33 TXOUT_L2P
33 TXOUT_L2N
33 TXOUT_L1P
33 TXOUT_L1N
TXOUT_L2P
TXOUT_L2N
TXOUT_L1P
TXOUT_L1N
33 TXOUT_L0P
33 TXOUT_L0N
33 SPWG_EDID_DATA
33 SPWG_EDID_CLK
TXOUT_L0P
TXOUT_L0N
SPWG_EDID_DATA
SPWG_EDID_CLK
NA
1005_X7R_K
1000PF_50V
C929
J10
2023308_3_40
NC1
NC2
GND1
GND2
GND3
GND4
GND5
GND6
61 KBD_LIGHT_ON
KBD_LIGHT_ON
Q5
DTC114EE
VCC3SW
VCC3B
100K_5%
1005_1/16w
R8954
F16
ERBRD0R50X
WIDE
PATTERN
(10MIL)
VCC5M
2125_1/8w
100_5%
R174
VCC3M
F8
ERBRD0R50X
VCC3M
F14
ERBRD0R50X
NA
VCC3SW
RJ132
SHORT1005_20MIL
J11
61,70 LID_SWITCH
70 -LEDSUS
70 -LEDFUEL0
70 -LEDFUEL1
70 -LEDDRIVE
43 MIC_CLK
43 MIC_DATA
LID_SWITCH
-LEDSUS
-LEDFUEL0
-LEDFUEL1
-LEDDRIVE
MIC_CLK
MIC_DATA
GND1
GND2
NC1
NC2
JST_BM20B_SRDS_A_G_TFC_LF_SN
C955
33PF_50V
1005_NPO_J
C173
1000PF_50V
1005_X7R_K
C927
1000PF_50V
1005_X7R_K
C928
1000PF_50V
1005_X7R_K
C926
1000PF_50V
1005_X7R_K
C924
1000PF_50V
1005_X7R_K
NA
USBP13+_CONN
USBP13-_CONN
R785 1 2 0_5% 1005_1/16w USBP13+
R786 1 2 0_5% 1005_1/16w USBP13-
USBP13+ 28
USBP13- 28
-LED_WIRELESS
-INT_MIC_DTCT
-LED_WIRELESS 53
-INT_MIC_DTCT 29
1005_X7R_K
0.01UF_25V
C130
C237
33PF_50V
1005_NPO_J
Q7
DTC114EE
LED_BDC_IN
LED_BDC_IN 64

lenovo			
Project Name : NZM-4 SWG SOVP		Title : LCD CONNECTOR	
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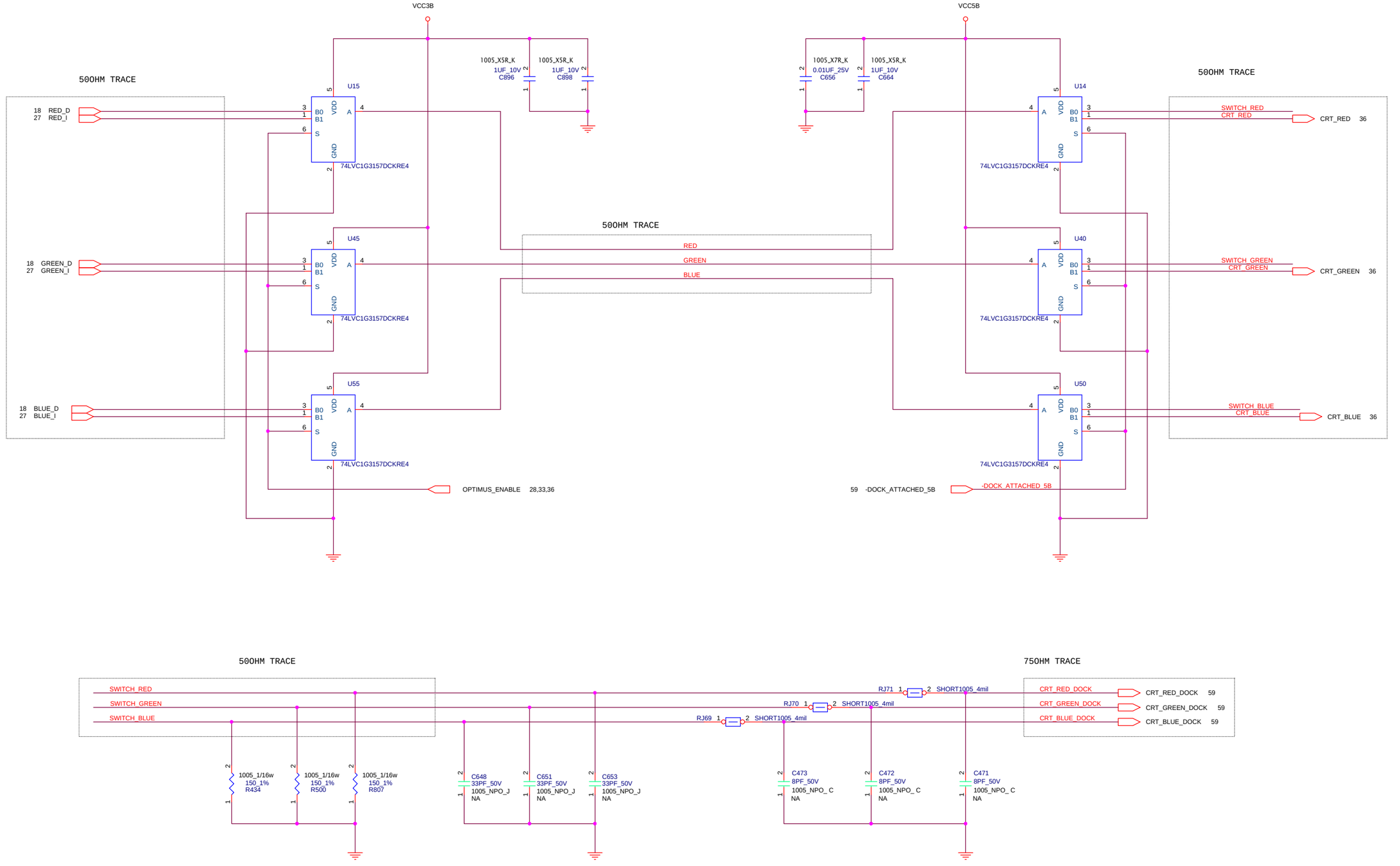

Project Name : NZM-4 SWG SOVP	Title : RGB SWITCH	
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CRT CONN

50OHM TRACE

35 CRT_RED — CRT_RED — 1005_1/16w 150_1% R55
35 CRT_GREEN — CRT_GREEN — 1005_1/16w 150_1% R61
35 CRT_BLUE — CRT_BLUE — 1005_1/16w 150_1% R72

FL15 BLM15BB220SN1 — C542 33PF_50V 1005_NPO_J NA
FL16 BLM15BB220SN1 — C433 33PF_50V 1005_NPO_J NA
FL17 BLM15BB220SN1 — C469 33PF_50V 1005_NPO_J NA

NEAR CRT CONN

75OHM TRACE

CRT_RED_CONN
CRT_GREEN_CONN
CRT_BLUE_CONN

C487 8PF_50V 1005_NPO_C
C499 8PF_50V 1005_NPO_C
C506 8PF_50V 1005_NPO_C

J31 NORTHSTAR 71441530311

NEAR CRT CONN

D233 RCLAMP0504S
NA
VCC3B
CRT_RED 1
CRT_GREEN 6
2
5
3
CRT_BLUE 4

NEAR CRT CONN

D234 RCLAMP0504S
VCCCRT
CRT_HSYNC_DOCK 1
CRT_VSYNC_DOCK 6
2
5
DDCDATA_CONN 3
DDCCLK_CONN 4

VCC5B
F22 NANOSMDC150F
1005_X5R_K 0.1UF_10V C522

VCCCRT
1005_1/16w 4.7K_5% R370
1005_1/16w 4.7K_5% R372
C527 100PF_50V 1005_NPO_J NA
C528 100PF_50V 1005_NPO_J NA
DDCDATA_CONN
DDCCLK_CONN

VCCCRT
1005_X5R_K 1UF_10V C1293

U38 TC7WT125FU
18 VSYNC_D — 2 — 6 CRT_VSYNC — R154 1 — 2 27_5% 1005_1/16w
18 HSYNC_D — 5 — 3 CRT_HSYNC — R92 1 — 2 27_5% 1005_1/16w
28,33,35 OPTIMUS_ENABLE — 7

FL18 BLM15BB220SN1 — C512 100PF_50V 1005_NPO_J NA
CRT_VSYNC_CONN
CRT_HSYNC_CONN

FL19 BLM15BB220SN1 — C516 100PF_50V 1005_NPO_J NA

CRT_VSYNC_DOCK — CRT_VSYNC_DOCK 59
CRT_HSYNC_DOCK — CRT_HSYNC_DOCK 59

VCC5B
C521 0.1UF_10V 1005_X5R_K

U11 CBT3257ABQ
18 DDCCLK_D
18 DDCDATA_D
27 DDCCLK_I
27 DDCDATA_I
OPTIMUS_ENABLE

DDCCLK — NA 1005_1/16w 4.7K_5% R771 — Q47 2SK3541 — DDCCLK_CONN — DDCCLK_CONN 59
DDCDATA — NA 1005_1/16w 4.7K_5% R772 — Q48 2SK3541 — DDCDATA_CONN — DDCDATA_CONN 59

VCCCRT
U56 TC7WT126FU
27 VSYNC_I
27 HSYNC_I
OPTIMUS_ENABLE

VCC5B
1005_X7R_K 0.01UF_25V C470
D35 RB461F
VCCCRT
1005_X5R_K 1UF_10V C474

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Project Name : NZM-4 SWG SOVP	Title : EXT CRT I/F	
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FOR SYSTEM DP NEAR DP CONN

16 IFPC_DP3N — C339 2 — 1 0.1UF_10V 1005_X5R_K — DP3N
16 IFPC_DP3P — C323 2 — 1 0.1UF_10V 1005_X5R_K — DP3P

16 IFPC_DP2N — C312 2 — 1 0.1UF_10V 1005_X5R_K — DP2N
16 IFPC_DP2P — C317 2 — 1 0.1UF_10V 1005_X5R_K — DP2P

16 IFPC_DP1N — C277 2 — 1 0.1UF_10V 1005_X5R_K — DP1N
16 IFPC_DP1P — C276 2 — 1 0.1UF_10V 1005_X5R_K — DP1P

16 IFPC_DP0N — C218 2 — 1 0.1UF_10V 1005_X5R_K — DP0N
16 IFPC_DP0P — C226 2 — 1 0.1UF_10V 1005_X5R_K — DP0P

VCC5B
C496 0.1UF_10V 1005_X5R_K

16 IFPC_DPAUXP
16 IFPC_DPAUXN
R1027 100K_5% 1005_1/16w
R1028 100K_5% 1005_1/16w
C468 0.1UF_10V 1005_X5R_K
C659 0.1UF_10V 1005_X5R_K

U6
A1, A2, B1, B2, VCC, OE1, OE2, GND
TC7WB126FK
DVI_DONGLE_DTCT

VCC3VIDEO
R1029 1M_5% 1005_1/16w
16 IFPC_DPHPD
R1030 100K_5% 1005_1/16w NA
Q26 2SK3541
R1037 100K_5% 1005_1/16w

VCC3B
R94 100K_5% 1005_1/16w
R98 100K_5% 1005_1/16w
D224 DF2S6_8UFS NA
D225 DF2S6_8UFS NA
D226 DF2S6_8UFS

29 SDP_HPD
Q80 2SK3541

DP_HPD_CONN
DP_AUXP_CONN
DP_AUXN_CONN
DP3P
DP3N
DP2P
DP2N
DP1P
DP1N
DP0P
DP0N

DP CONN

J6
HPD, AUXP, AUXN, LANE_3P, LANE_3N, LANE_2P, LANE_2N, LANE_1P, LANE_1N, LANE_0P, LANE_0N, PWR, PWER_RET, GND6, GND5, MODE, GND4, GND3, GND2, GND1, SHIELD1, SHIELD2, SHIELD3, SHIELD4, HOLE1, HOLE2
2129320_1

DVI_DONGLE_DTCT
VCC3VIDEO_DP
C1112 0.1UF_10V 1005_X5R_K
R93 5.1M_5% 1005_1/16w
C139 0.1UF_25V 1608_X7R_K
R97 1M_5% 1005_1/16w
C67 0.01UF_25V 1005_X7R_K NA

D86 RCLAMP0524PA
DP0P, DP0N, DP3P, DP3N

NEAR DP CONN

D88 RCLAMP0524PA
DP2N, DP2P, DP1N, DP1P

NEAR DP CONN

D95 RCLAMP0522P NA

NEAR DP CONN

VCC3B
F18 NANOSMDC150F
Q88 TPCF8002
71,94 VCC3B_DRV
VCC3B_DRV
R20 470K_5% 1005_1/16w NA
C1133 0.01UF_25V 1005_X7R_K

VCC3VIDEO_DP
C1113 4.7UF_6.3V 1608_X5R_K
C714 100UF_6.3V 3216_X5R_M NA

Typ. 500mA
Max 3A

lenovo

Project Name : NZM-4 SWG SOVP	Title : DISPLAY PORT CONN	
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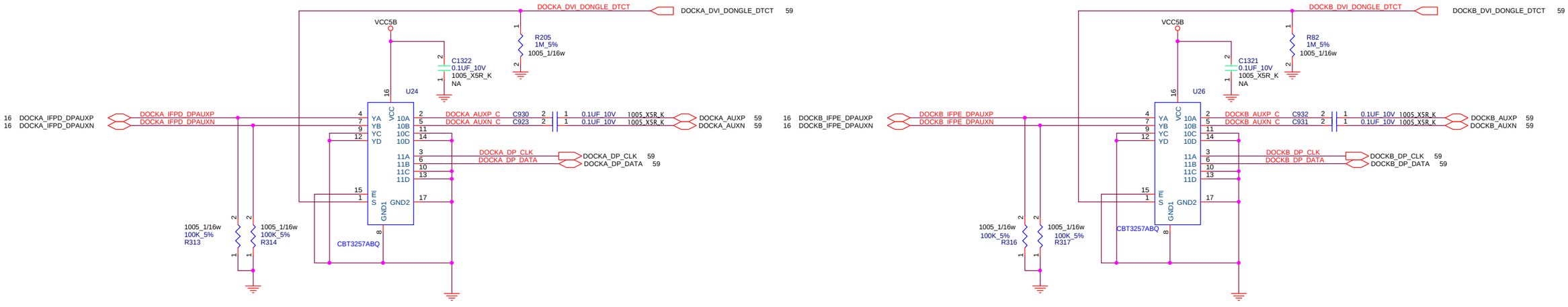
NEAR DOCK CONN

16	IFPD_DP3N	C841	2	1	0.1UF_10V	1005_X5R_K	DOCKA_DP3N	59
16	IFPD_DP3P	C843	2	1	0.1UF_10V	1005_X5R_K	DOCKA_DP3P	59
16	IFPD_DP2N	C883	2	1	0.1UF_10V	1005_X5R_K	DOCKA_DP2N	59
16	IFPD_DP2P	C887	2	1	0.1UF_10V	1005_X5R_K	DOCKA_DP2P	59
16	IFPD_DP1N	C901	2	1	0.1UF_10V	1005_X5R_K	DOCKA_DP1N	59
16	IFPD_DP1P	C900	2	1	0.1UF_10V	1005_X5R_K	DOCKA_DP1P	59
16	IFPD_DP0N	C903	2	1	0.1UF_10V	1005_X5R_K	DOCKA_DP0N	59
16	IFPD_DP0P	C902	2	1	0.1UF_10V	1005_X5R_K	DOCKA_DP0P	59

NEAR DOCK CONN

16	IFPE_DP3N	C904	2	1	0.1UF_10V	1005_X5R_K	DOCKB_DP3N	59
16	IFPE_DP3P	C907	2	1	0.1UF_10V	1005_X5R_K	DOCKB_DP3P	59
16	IFPE_DP2N	C909	2	1	0.1UF_10V	1005_X5R_K	DOCKB_DP2N	59
16	IFPE_DP2P	C906	2	1	0.1UF_10V	1005_X5R_K	DOCKB_DP2P	59
16	IFPE_DP1N	C922	2	1	0.1UF_10V	1005_X5R_K	DOCKB_DP1N	59
16	IFPE_DP1P	C920	2	1	0.1UF_10V	1005_X5R_K	DOCKB_DP1P	59
16	IFPE_DP0N	C919	2	1	0.1UF_10V	1005_X5R_K	DOCKB_DP0N	59
16	IFPE_DP0P	C918	2	1	0.1UF_10V	1005_X5R_K	DOCKB_DP0P	59



lenovo			
Project Name : NZM-4 SWG SOVP		Title : DISPLAY PORT MUX	
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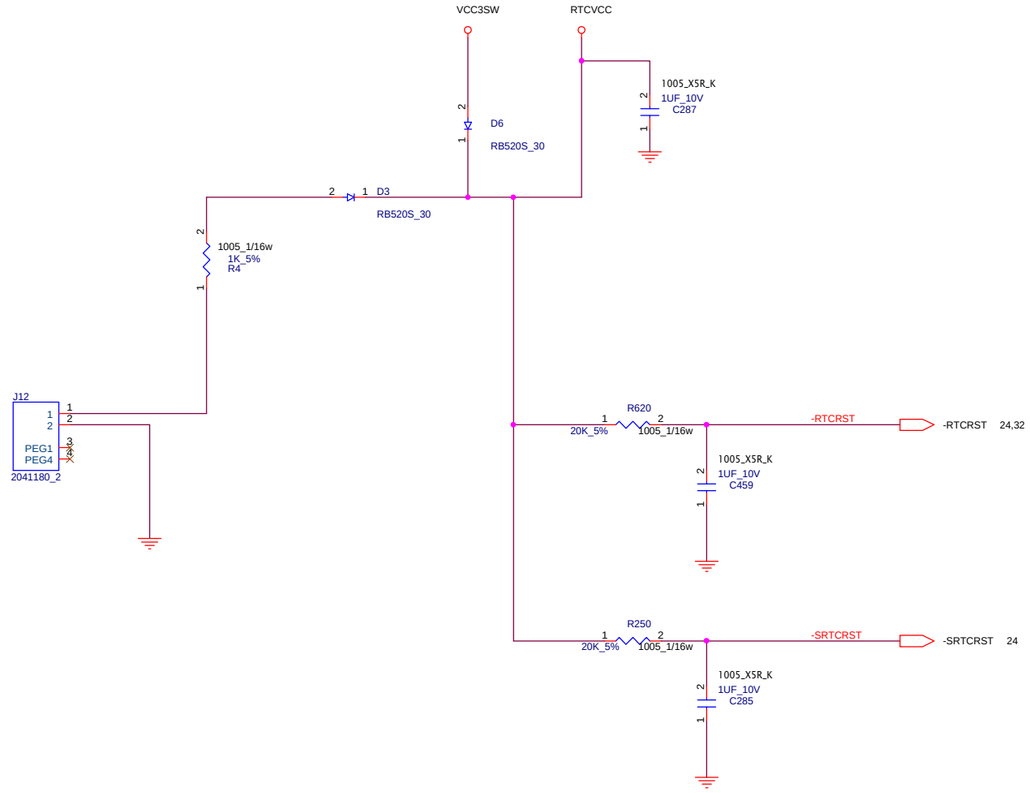

Project Name : NZM-4 SWG SOVP		Title : RTC BATTERY	
Size : C	Document Number :		Rev : 7.54
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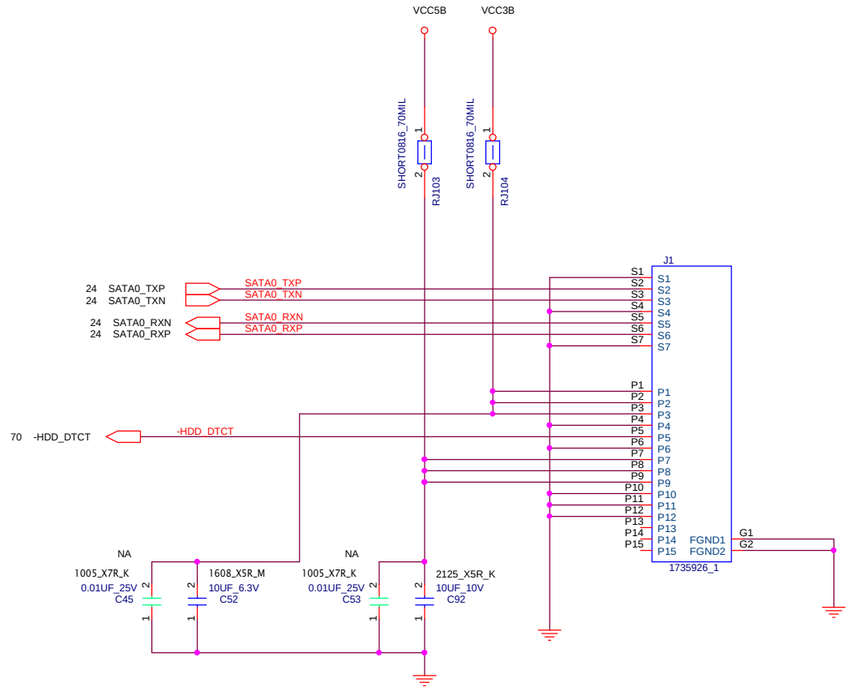

lenovo		
Project Name : NZM-4 SWG SOVP	Title : SATA HDD CONN	
Size : C	Document Number :	Rev : 7.54
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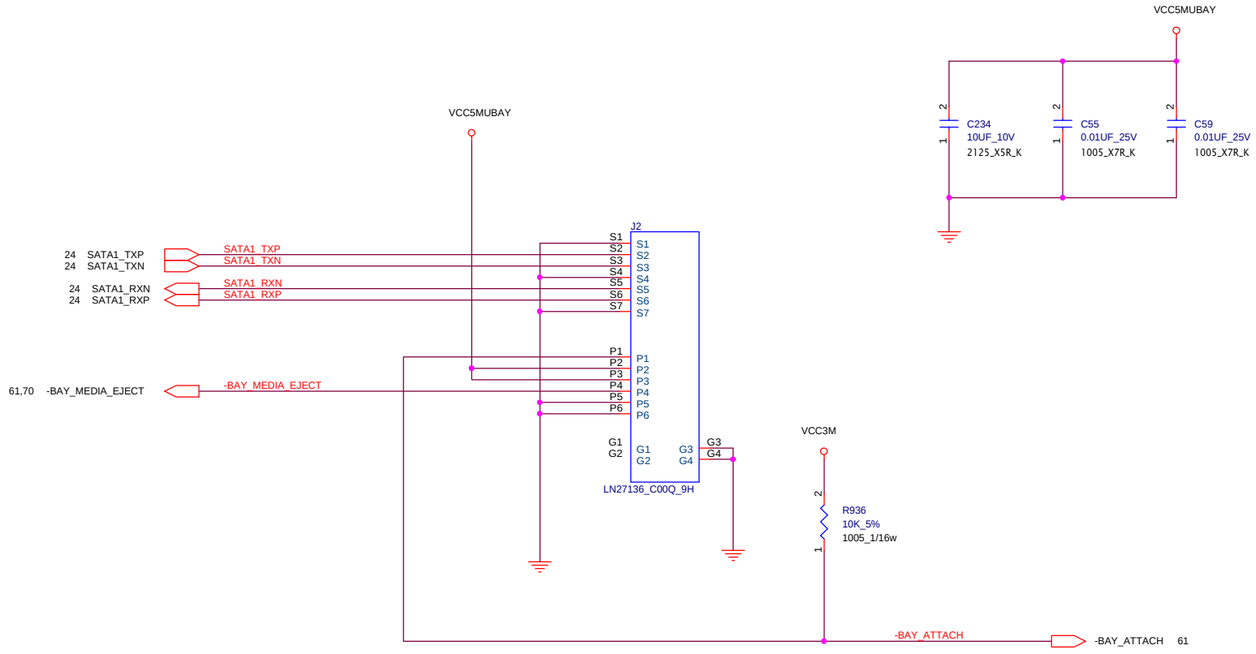

Project Name : NZM-4 SWG SOVP	Title : SATA BAY I/F CONN	
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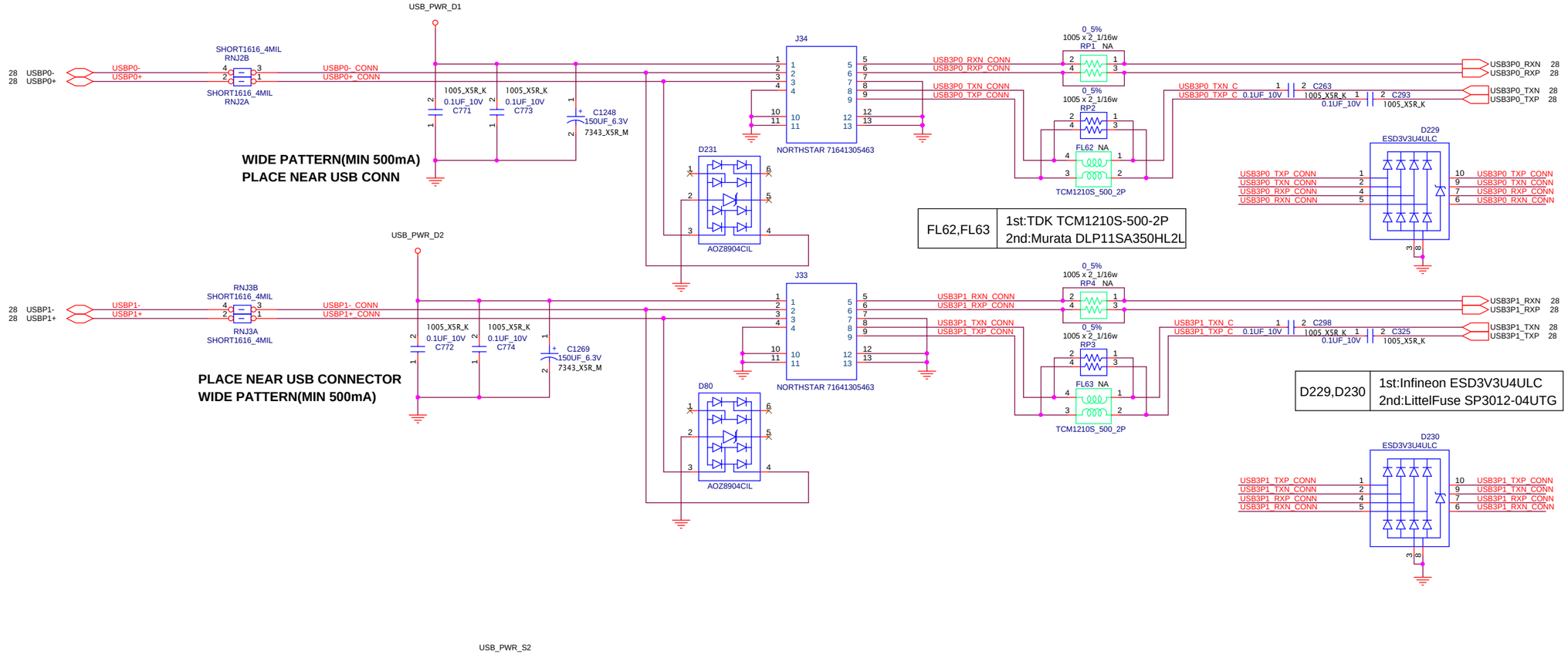
USB_PWR_D1
28 USBP0-
28 USBP0+
USBP0-
USBP0+
SHORT1616_4MIL
RNJ2B
SHORT1616_4MIL
RNJ2A
USBP0- CONN
USBP0+ CONN
1005_X5R_K
0.1UF_10V
C771
1005_X5R_K
0.1UF_10V
C773
C1248
150UF_6.3V
7343_X5R_M
J34
NORTHSTAR 71641305463
USB3P0_RXN_CONN
USB3P0_RXP_CONN
USB3P0_TXN_CONN
USB3P0_TXP_CONN
0_5%
1005 x 2_1/16w
RP1 NA
RP2
FL62 NA
TCM1210S_500_2P
USB3P0_TXN_C
USB3P0_TXP_C
0.1UF_10V
C263
C293
USB3P0_RXN
USB3P0_RXP
USB3P0_TXN
USB3P0_TXP
28
D229
ESD3V3U4ULC
D231
AOZ8904CIL
WIDE PATTERN(MIN 500mA)
PLACE NEAR USB CONN
FL62,FL63
1st:TDK TCM1210S-500-2P
2nd:Murata DLP11SA350HL2L
USB_PWR_D2
28 USBP1-
28 USBP1+
USBP1-
USBP1+
RNJ3B
SHORT1616_4MIL
RNJ3A
SHORT1616_4MIL
USBP1- CONN
USBP1+ CONN
1005_X5R_K
0.1UF_10V
C772
1005_X5R_K
0.1UF_10V
C774
C1269
150UF_6.3V
7343_X5R_M
J33
NORTHSTAR 71641305463
USB3P1_RXN_CONN
USB3P1_RXP_CONN
USB3P1_TXN_CONN
USB3P1_TXP_CONN
RP4 NA
RP3
FL63 NA
TCM1210S_500_2P
USB3P1_TXN_C
USB3P1_TXP_C
C298
C325
USB3P1_RXN
USB3P1_RXP
USB3P1_TXN
USB3P1_TXP
D80
AOZ8904CIL
PLACE NEAR USB CONNECTOR
WIDE PATTERN(MIN 500mA)
D229,D230
1st:Infineon ESD3V3U4ULC
2nd:LittelFuse SP3012-04UTG
D230
ESD3V3U4ULC
USB_PWR_S2
28 USBP9-
28 USBP9+
USBP9-
USBP9+
RNJ1A
SHORT1616_4MIL
RNJ1B
SHORT1616_4MIL
USBP9- CONN
USBP9+ CONN
1005_X5R_K
0.1UF_10V
C351
1005_X5R_K
0.1UF_10V
C364
C395
150UF_6.3V
7343_X5R_M
J29
1932854_1
D5
AOZ8904CIL
PLACE NEAR USB CONNECTOR
WIDE PATTERN(MIN 500mA)
VCC5M
USB_PWR_D2
USB_PWR_D1
C1290
4.7UF_10V
NA
1608_X5R_K
C239
0.1UF_10V
1005_X5R_K
U52
GND1OC1#
IN OUT1
EN1 OUT2
EN2 OC2#
GND2
TPS2064DGN
USB_ON1
-USB_PORT0_OC0
-USB_PORT1_OC1
-USB_PORT0_OC0 28
-USB_PORT1_OC1 28
TABLE of USB3.0 Dual
TI TPS2064DGN
GMT G546A1F51U
FOR ON BOARD DUAL USB 3.0 CONNECTOR
VCC5M
C1291
4.7UF_10V
1608_X5R_K
NA
C257
0.1UF_10V
1005_X5R_K
R1104
37.4K_1%
1005_1/16w
Current Limit Target: 1.6A
U88
USB_PWR_S1
GND2 GND1
ILIM0 FAULT#
ILIM1
IN OUT
DM_OUT DM_IN
DP_OUT DP_IN
ILIM_SEL NC
DSC
CTL1
CTL2
CTL3
TPS2541A
-USB_PORT4_OC2 28
28 USBP4-
28 USBP4+
USBP4- CONN
USBP4+ CONN
USBP4-_CONN 52
USBP4+_CONN 52
70 USB_ON2
70 AO_USB_SEL
TABLE of AOU port
TI TPS2541A
Pericom PI5USB2541
VCC5M
C3
4.7UF_10V
NA
1608_X5R_K
C179
0.1UF_10V
1005_X5R_K
U53
GND1OUT3
IN1 OUT2
IN2 OUT1
EN OC#
GND2
TPS2065DGN
70 USB_ON1
USB_ON1
-USB_PORT9_OC5
-USB_PORT9_OC5 28
TABLE of USB2.0 Single
TI TPS2065DGN
Rohm BD8012FVJ
FOR ON BOARD SINGLE USB 2.0 CONNECTOR
lenovo
Project Name : NZM-4 SWG SOVP
Title : USB POWER/CONN
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TABLE MIC HW ENABLE/DISABLE

	ENABLE	DISABLE
R686	NO ASM	ASM
R961	ASM	NO ASM
R119	ASM	NO ASM
FL9	ASM	NO ASM
R22	ASM	NO ASM

LOGIC

U8 ALC3202_GR

Layout Note: place R631 and R632 near dock conn

PLACE UNDER CX20561

PLACE NEAR U8

Project Name :	Title :
NZM-4 SWG SOVP	AUDIO ALC3202-GR
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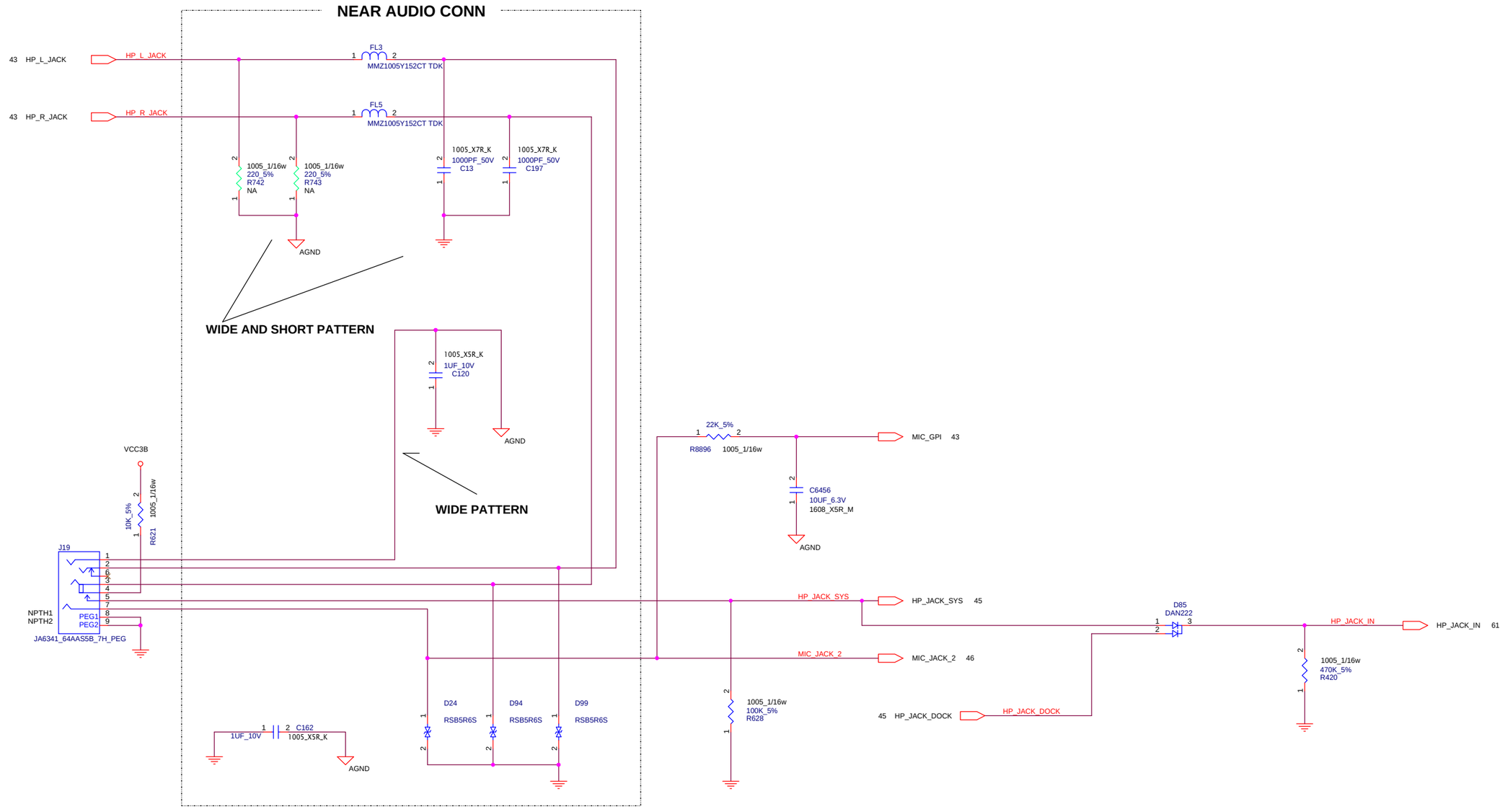

lenovo		
Project Name : NZM-4 SWG SOVP	Title : AUDIO CONN	
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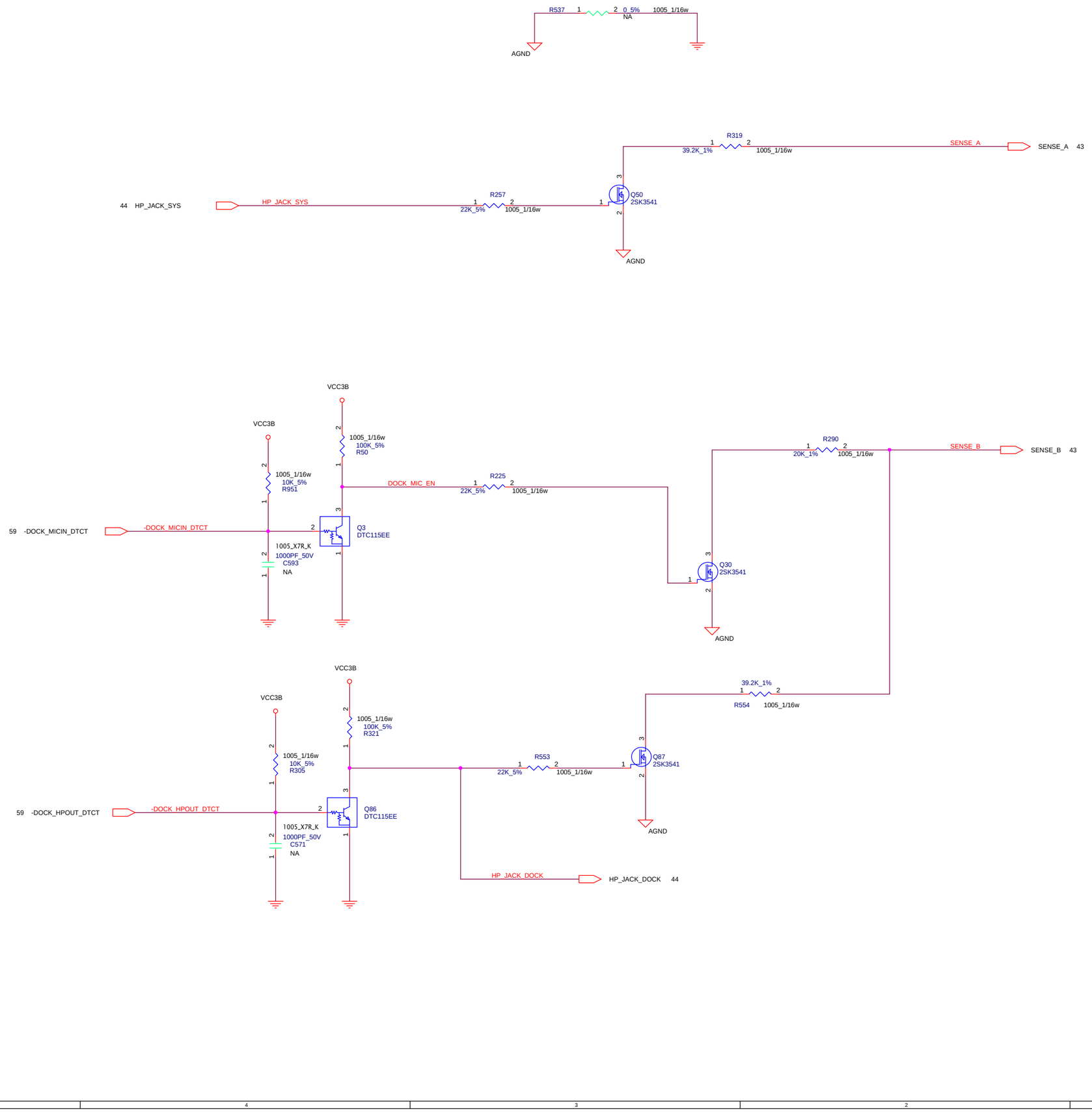

Project Name : NZM-4 SWG SOVP	Title : AUDIO JACK SENSE	
Size : C	Document Number :	Rev : 7.54
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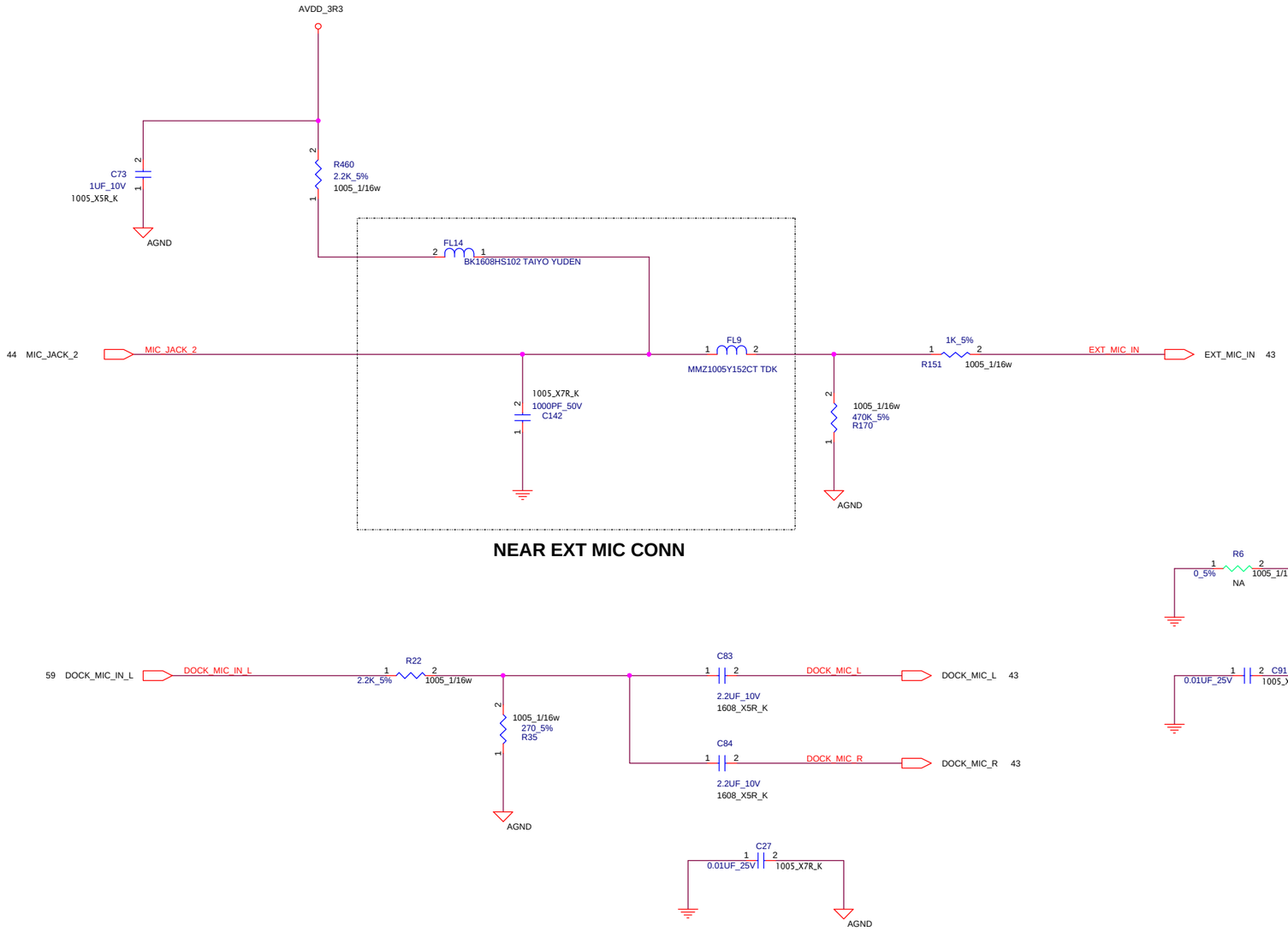

Project Name : NZM-4 SWG SOVP	Title : AUDIO EXT MIC I/F	
Size : C	Document Number :	Rev : 7.54
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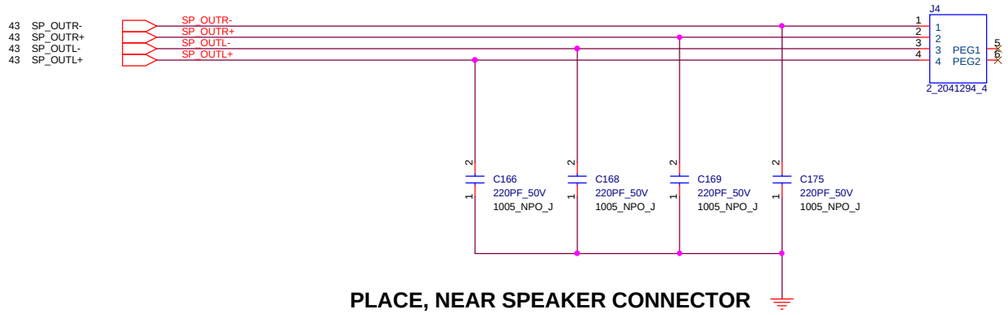
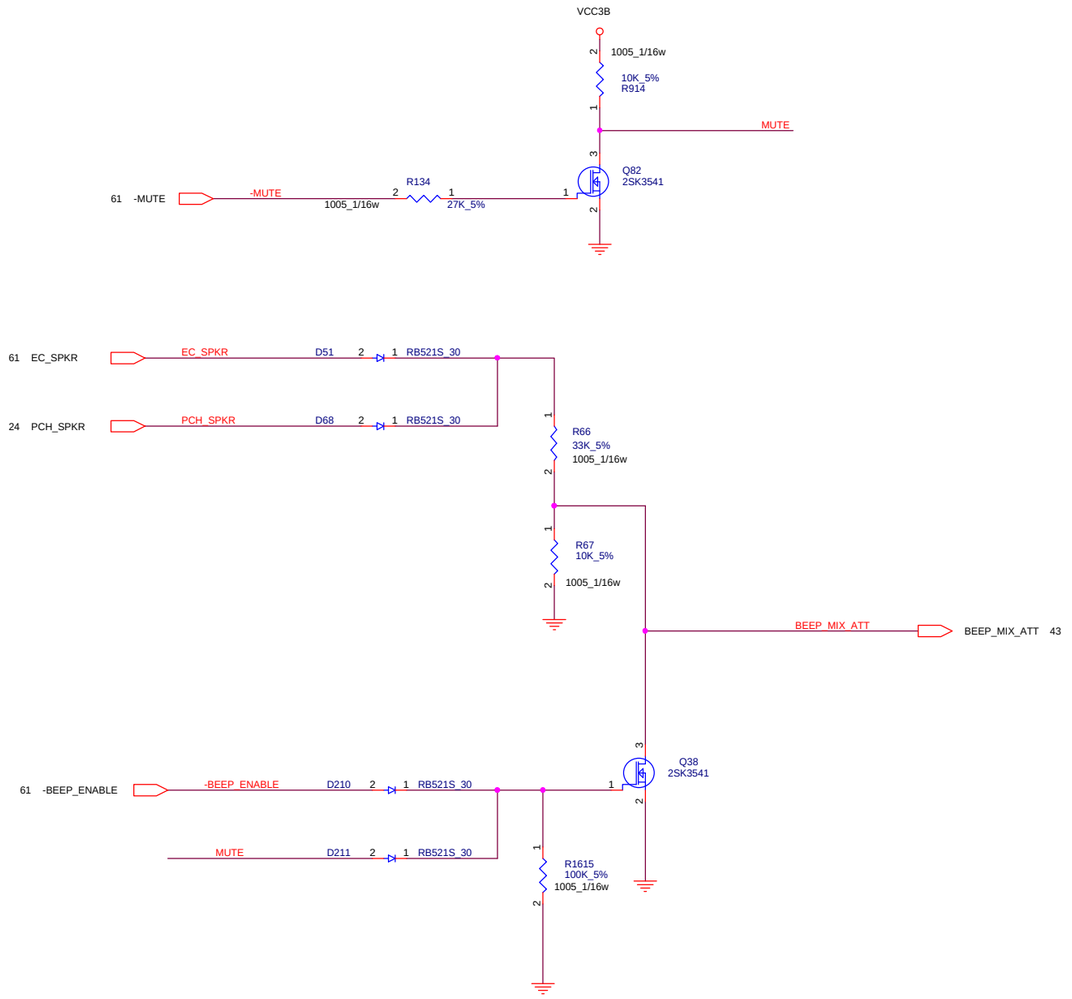
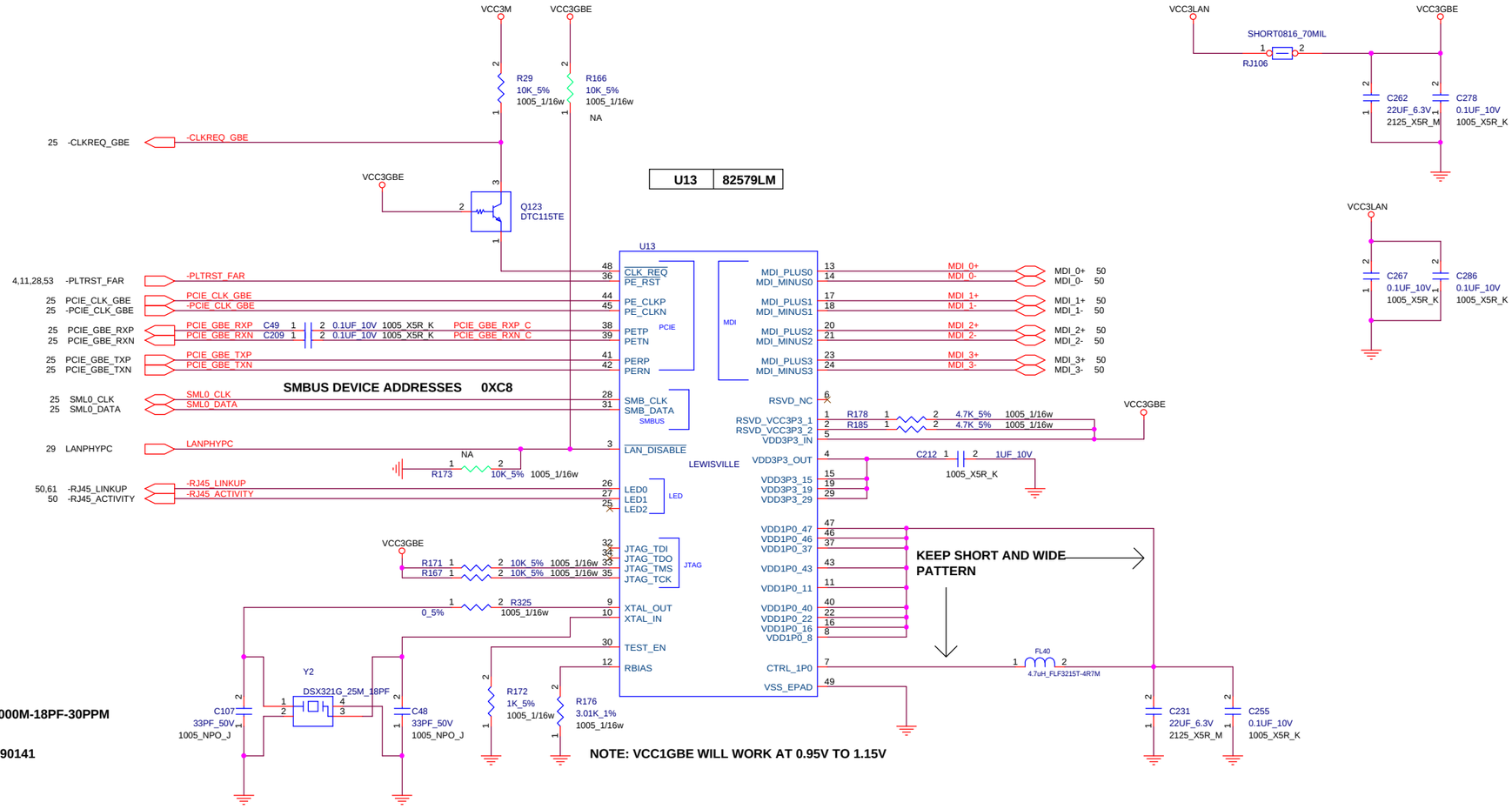


PLACE, NEAR SPEAKER CONNECTOR

lenovo		
Project Name : NZM-4 SWG SOVP	Title : AUDIO SPEAKER	
Size : C	Document Number :	Rev : 7.54
Date: Monday, March 19, 2012	Sheet : 47 of 97	



Project Name : NZM-4 SWG SOVP	Title : AUDIO BEEP	
Size : C	Document Number :	Rev : 7.54
Date: Monday, March 19, 2012	Sheet : 48 of 97	



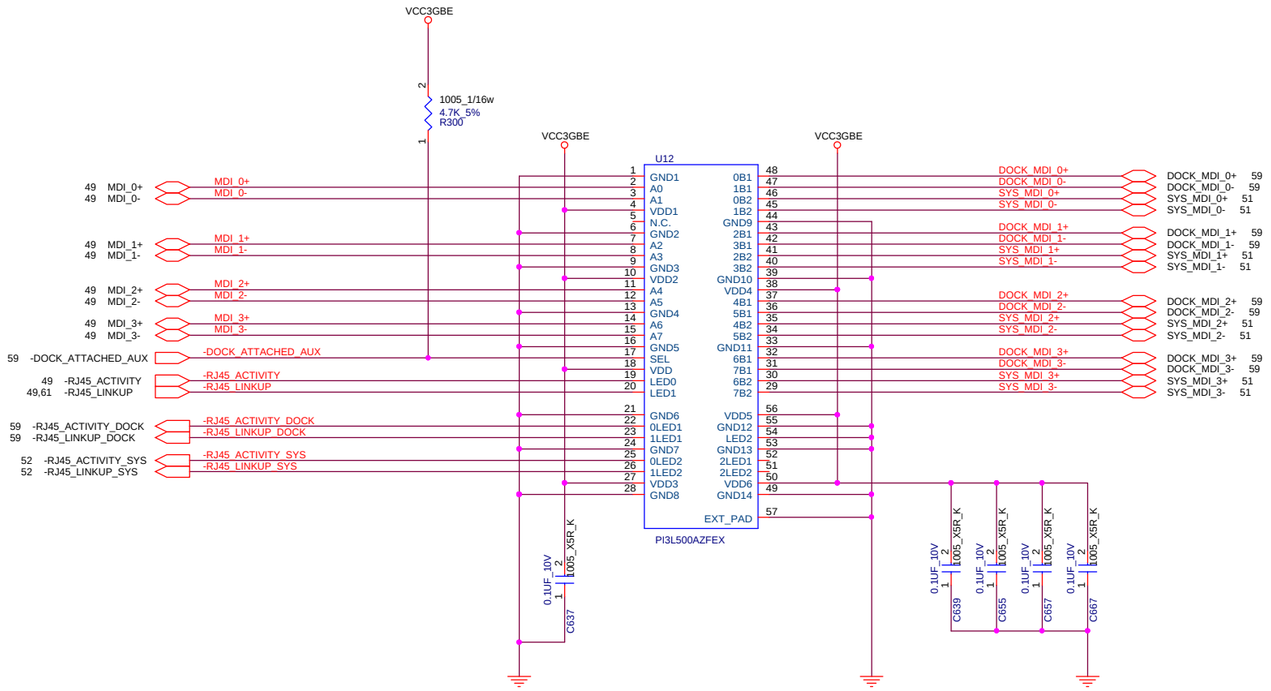
P/N 41U6141

KDS DSX321G-25.000M-18PF-30PPM

TXC 7V25020001

RIVER FCX-04-25MJ90141

lenovo			
Project Name : N2M-4 SWG SOVP		Title : GBE LEWISVILLE	
Size : C	Document Number :		Rev : 7.54
Date: Monday, March 19, 2012		Sheet : 49 of 97	



Project Name : NZM-4 SWG SOVP		Title : GBE LAN SWITCH	
Size : C	Document Number :		Rev : 7.54
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THE WIDTH OF THESE TRACE SHOULD BE WIDER THAN 35MIL TO PREVENT VOLTAGE DROP.

C303
SHOULD BE PLACED AS CLOSE TO MAGNETICS AS POSSIBLE.

PULSE H0068A(NL) OR MIDCOM 000-7219-35R

PULSE H0068A(NL) OR MIDCOM 000-7219-35R

PATTERN MUST BE SHORT AND WIDE.

HIGH VOLTAGE 1500PF CAP IS OPTIONAL

ESD REASON

Project Name : NZM-4 SWG SOVP		Title : GBE MAGNETICS	
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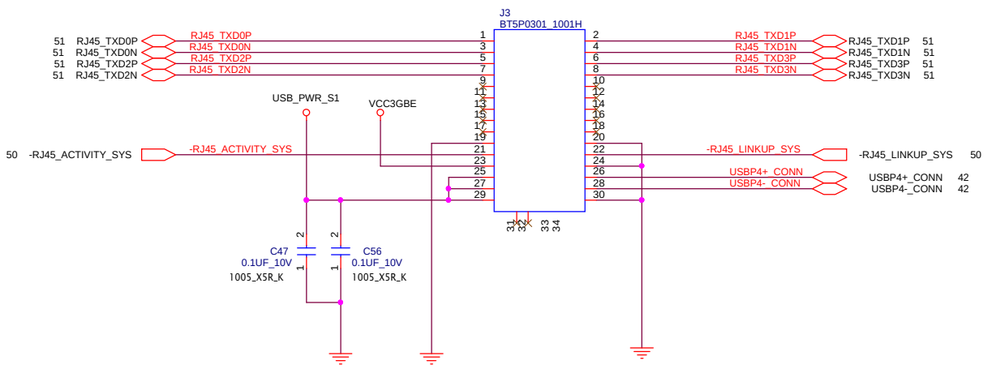

PLACE NEAR SUB CARD CONNECTOR
WIDE PATTERN(MIN 500mA)

Project Name : NZM-4 SWG SOVP	Title : I/O SUB CARD I/F	
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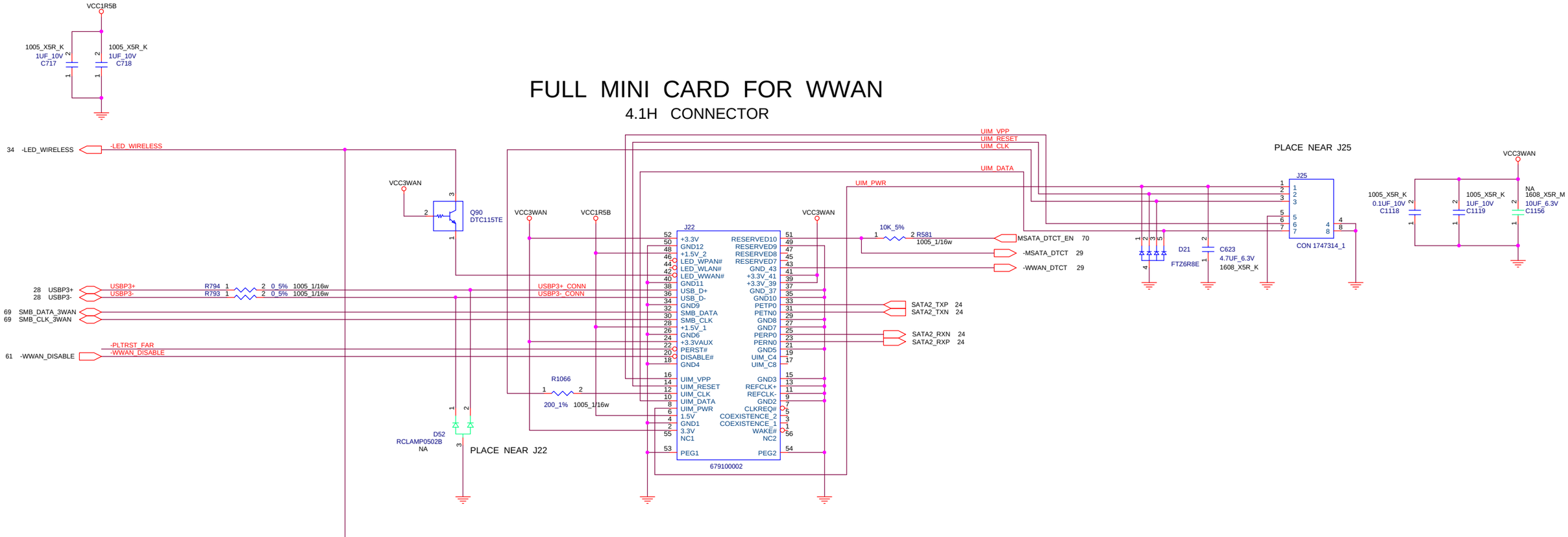
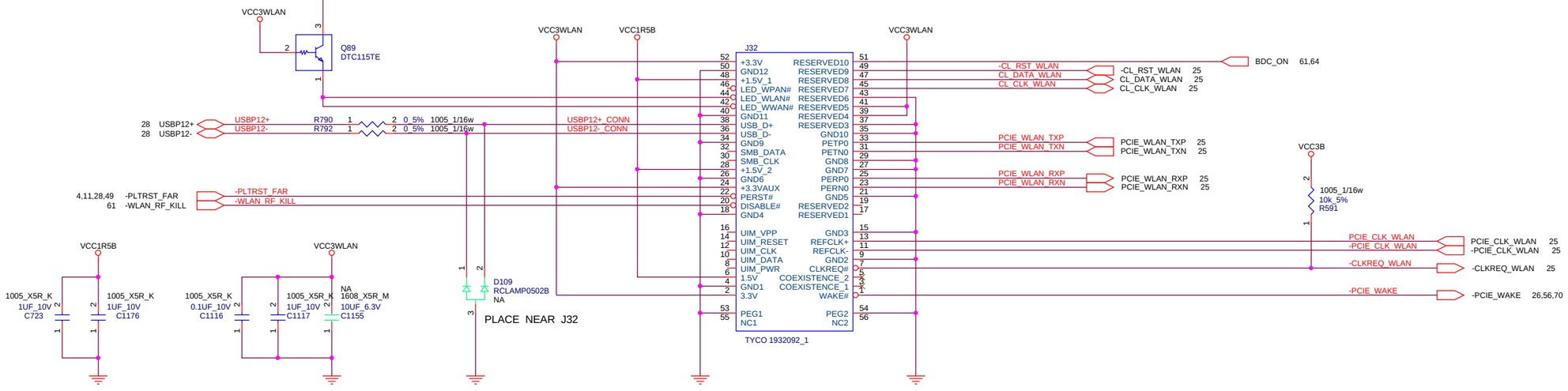
FULL MINI CARD FOR WWAN

4.1H CONNECTOR

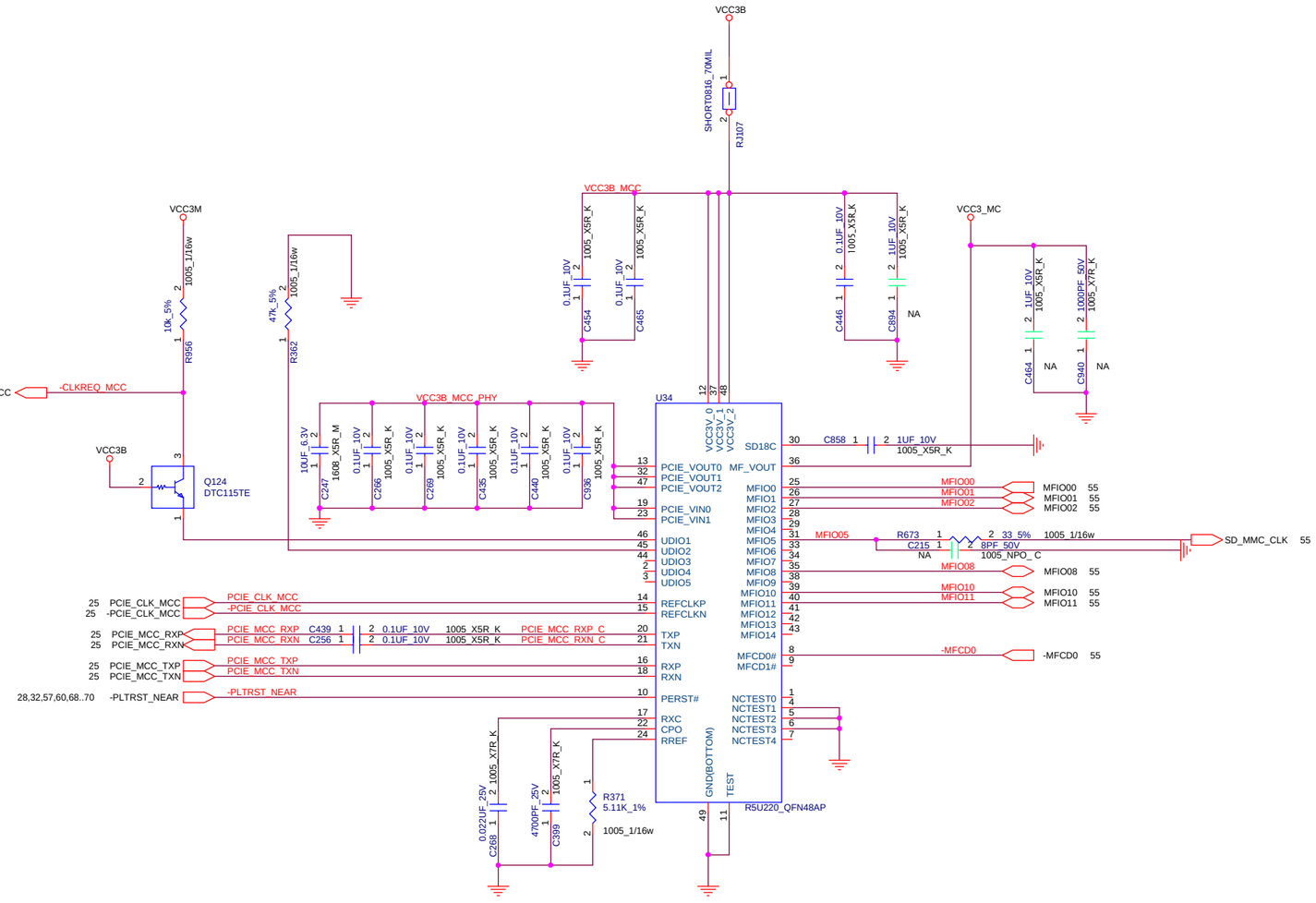


HALF MINI CARD FOR WLAN

7.0H CONNECTOR



lenovo		
Project Name : NZM-4 SWG SOVP	Title : PCIE MINI CARD SLOT	
Size : C	Document Number :	Rev : 7.54
Date: Monday, March 19, 2012	Sheet : 53 of 97	



TABLE

MEDIA I/F	SD/MMC	MEMORSTICK	XD
MFIO00	SDWP#	MSBS	XD_D7
MFIO01	SD_D1		XD_D6
MFIO02	SD_D0	MS_D1	XD_D5
MFIO03	(SD_D7)		XD_D4
MFIO04	(SD_D6)	(MS_D5)	XD_D3
MFIO05	SD_CLK	MS_D0	XD_D2
MFIO06			XD_D1
MFIO07	(SD_D5)	(MS_D4)	XD_D0
MFIO08	SD_CMD	MS_D2	XD_WP#
MFIO09	(SD_D4)	(MS_D6)	XD_WE#
MFIO10	SD_D3	MS_D3	XD_ALE
MFIO11	SD_D2		XD_CLE
MFIO12			XD_CE#
MFIO13		(MS_D7)	XD_RE#
MFIO14		MS_CLK	XD_R/B#
MFCD0#	SDCD#		XDCD0#
MFCD1#		MSINS#	XDCD1#

UDIO Pin Assignment Table

UDIO	Default
01	CLKREQ#
02	SCL/SROM_EN
03	SDA

MFCDxN Detection Table

MFCDxN		Card Type
1	0	
H	H	(No Card)
H	L	SD Card/MMC
L	H	MemoryStick
L	L	XD Card

Project Name : NZM-4 SWG SOVP	Title : MEDIA CARD CONTROLLER	
Size : C	Document Number :	Rev : 7.54
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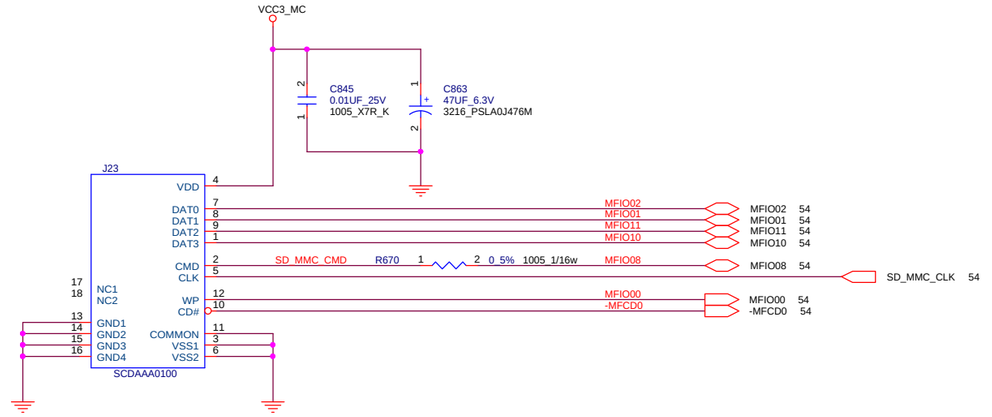

Project Name : NZM-4 SWG SOVP		Title : MEDIA CARD INTERFACE	
Size : C	Document Number :		Rev : 7.54
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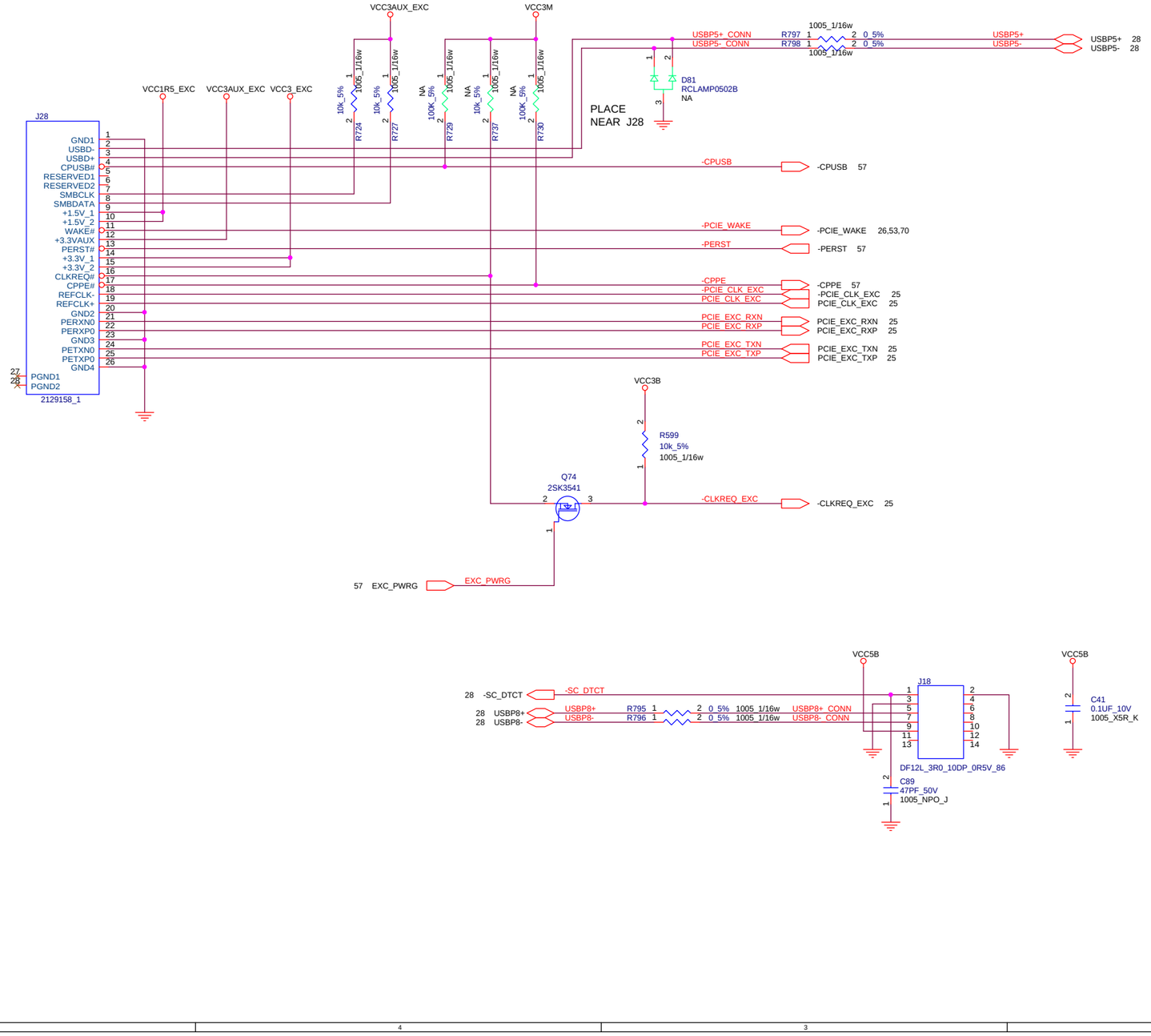

Project Name : NZM-4 SWG SOVP		Title : EXPRESS CARD/SMART CARD I/F	
Size : C	Document Number :		Rev : 7.54
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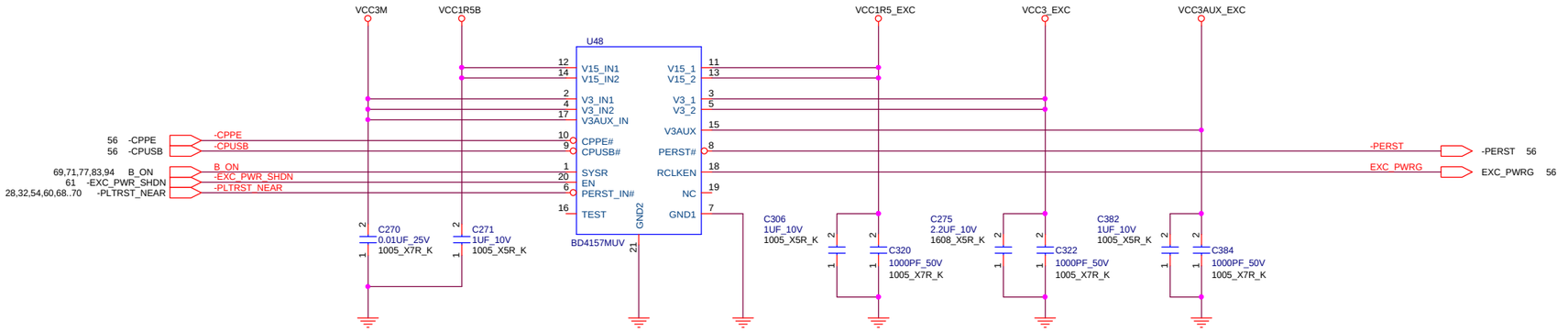

lenovo		
Project Name : NZM-4 SWG SOVP	Title : SLOT POWER CONTROL	
Size : C	Document Number :	Rev : 7.54
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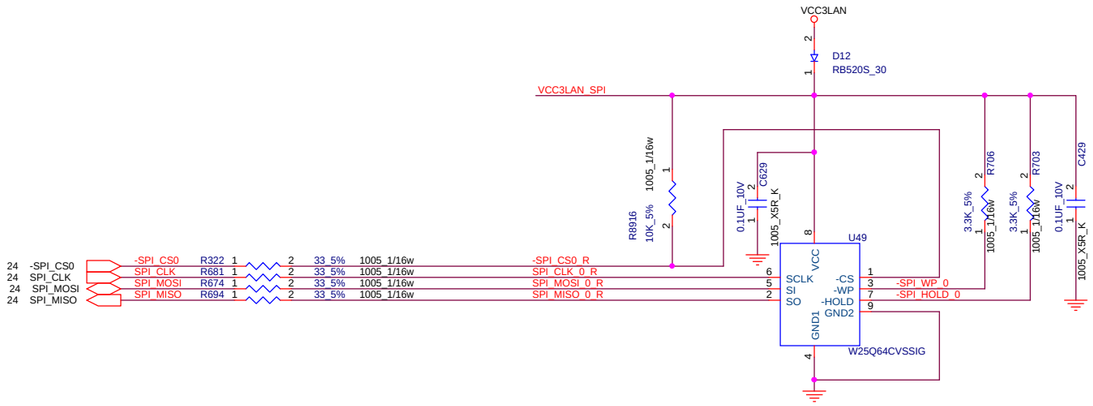
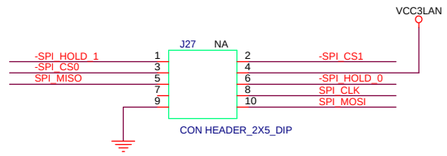


8MB SOIC8
MACRONIX MX25L6406EM2I-12G
WINBOND W25Q64CVSSIG

16MB WSON8
MACRONIX MX25L12835EZNI-10G
WINBOND W25Q128BVEIG



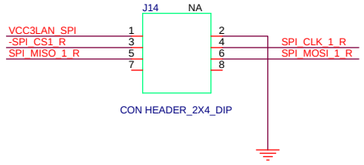
TABLE

EM100 PIN HEADER INTERFACE (TOP VIEW)			
1	(HOLD1#)	(CS1#)	2
3	CS0#	VCC	4
5	MISO	HOLD0#	6
7	WP0#	CLK	8
9	GND	MOSI	10

TABLE

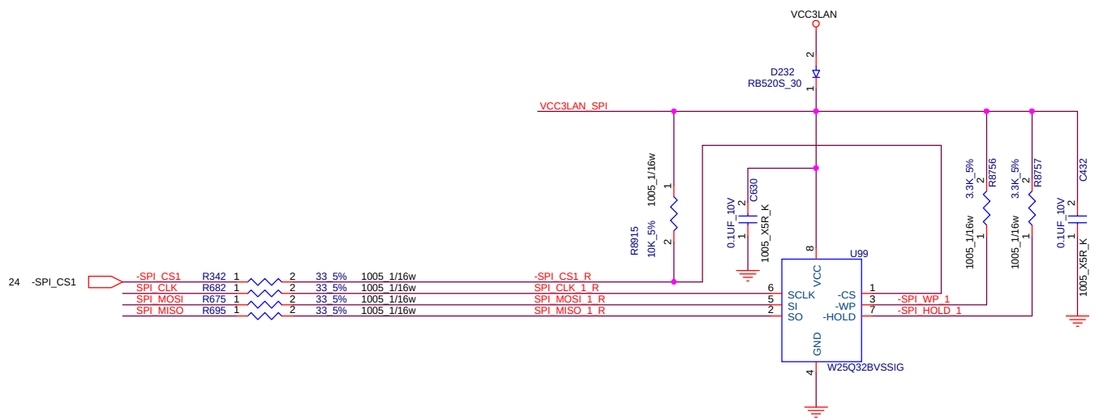
	CONFIG-1 16MB	CONFIG-2 12MB	CONFIG-3 8MB
U49 U99	16MB NO_ASM	8MB 4MB	8MB NO_ASM
D232	NO_ASM	ASM	NO_ASM
R8756	NO_ASM	ASM	NO_ASM
R8757	NO_ASM	ASM	NO_ASM
R8915	NO_ASM	ASM	NO_ASM
C432	NO_ASM	ASM	NO_ASM
C630	NO_ASM	ASM	NO_ASM
R342	NO_ASM	ASM	NO_ASM
R682	NO_ASM	ASM	NO_ASM
R675	NO_ASM	ASM	NO_ASM
R695	NO_ASM	ASM	NO_ASM

LOGIC



TABLE

SF100 PIN HEADER INTERFACE (TOP VIEW)					
1	VCC	D232.1	GND	GND	2
3	CS#	R342.2	R682.2	CLK	4
5	MISO	R695.2	R675.2	MOSI	6
7	(KEY)	N/A	N/A	(RESET)	8



4MB SOIC8
MACRONIX MX25L3206EM2I-12G
WINBOND W25Q32BVSSIG

Project Name : NZM-4 SWG SOVP	Title : SPI FLASH
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J17 WD3M148UQ-6
5.9H CONNECTOR

VCC3B
R375 1005_1/16w 2.2K_5% 2 1
R429 1005_1/16w 2.2K_5% 2 1
DOCKA_DP_CLK
DOCKB_DP_CLK

VCC3GBE
R302 1005_1/16w 10k_5% 2 1
S-BAT-PWR

VCC5B
R236 1 2 47k_5% 1005_1/16w
-DOCK_ATTACHED_5B
-DOCK_ATTACHED_5B 35
Q71 DTC115EE 2 3 1

VCC3B
R245 1005_1/16w 2.2K_5% 2 1
R279 1005_1/16w 2.2K_5% 2 1
DOCKA_DP_DATA
DOCKB_DP_DATA

DOCKID[3:0] 25

DOCK_DCIN20

-DOCKED0

J17A
WD3M148UQ_6

		VOID_1		DOCKED0#	2
50	DOCK_MDI_0+	DOCK_MDI_0+	3	DOCK_MDI_0P	4
50	DOCK_MDI_0-	DOCK_MDI_0-	5	DOCK_MDI_0N	6
		VOID_7		DOCK_PWRON#	8
		DOCK_MDI_1P		DOCK_PWRGOOD	10
50	DOCK_MDI_1+	DOCK_MDI_1+	9	GND2	12
50	DOCK_MDI_1-	DOCK_MDI_1-	11	DOCK_EJECT_LEVER#	14
		VOID_13		RESERVE7	16
50	DOCK_MDI_2+	DOCK_MDI_2+	15	DOCK_S_TEMP	18
50	DOCK_MDI_2-	DOCK_MDI_2-	17	DOCK_I2C_CLK_BT_R	20
		VOID_19		DOCK_I2C_DATA_BT_R	22
50	DOCK_MDI_3+	DOCK_MDI_3+	21	DOCK_SBAT_PWR	24
50	DOCK_MDI_3-	DOCK_MDI_3-	23	DOCK_BAT_GATE_ON1	26
		VOID_25		DOCK_BAT_GATE_ON2	28
		VOID_27		DOCK_VCC5MUBAY_DRV	30
		VOID_29		DOCK_BAYLED	32
		VOID_31		DOCK_BAT_MEDIA_EJECT#	34
		VOID_33		DOCK_BAY_EJECT#	36
		VOID_35		DOCK_BAY_ATTACH#	38
		AGND1	37	DOCK_MICROP_FLASHUP#	40
45	-DOCK_HPOUT_DTCT	-DOCK_HPOUT_DTCT	39	DOCK_RJ45_LINK_LED#	42
45	-DOCK_MICIN_DTCT	-DOCK_MICIN_DTCT	41	DOCK_RJ45_ACT_LED#	44
		DOCK_MICIN_DTCT#	43	DOCK_RJ45_LED_EN	46
		DOCK_SPDIF_RTN	45	DOCK_RK45_CENTER_TAP	48
		DOCK_SPDIF_DATA	47	CRT_GND1	50
		DOCK_SPK_MUTE	49	DOCK_VGA_RED	52
		AGND2	51	CRT_GND2	54
		DOCK_SPKOUT_R	53	DOCK_VGA_GREEN	56
		DOCK_SPKOUT_L	55	CRT_GND3	58
		AGND3	57	DOCK_VGA_BLUE	60
		DOCK_DP_DGL_DIS#	59	CRT_GND4	62
46	DOCK_MIC_IN_L	DOCK_MICIN	61	DOCK_CRT_HSYNC	64
		AGND4	63	DOCK_CRT_VSYNC	66
43	DOCK_HP_OUT_R	DOCK_HP_OUT_R	65	DOCK_CRT_DDCCLK	68
43	DOCK_HP_OUT_L	DOCK_HP_OUT_L	67	DOCK_CRT_DDCDATA	70
		AGND5	69	DOCK_ACDC_ID	72
38	DOCKB_AUXN	DOCKB_AUXN	71	DOCK_ID0	74
38	DOCKB_AUXP	DOCKB_AUXP	73	DOCK_ID1	
		GND1		DOCK_ID2	

-PWRON_DOCK
-PWRON_DOCK 70
EXTPWRG
EXTPWRG 70
-SLICE_EJECT_LEVER
-SLICE_EJECT_LEVER 61
S_TEMP_DOCK
I2C_CLK_BT1_DOCK
I2C_DATA_BT1_DOCK
S_TEMP_DOCK 73
I2C_CLK_BT1_DOCK 73
I2C_DATA_BT1_DOCK 73
S1_DRV
S2_DRV
S1_DRV 71
S2_DRV 71
-RJ45_LINKUP_DOCK
-RJ45_ACTIVITY_DOCK
-RJ45_LINKUP_DOCK 50
-RJ45_ACTIVITY_DOCK 50
CRT_RED_DOCK
CRT_RED_DOCK 35
CRT_GREEN_DOCK
CRT_GREEN_DOCK 35
CRT_BLUE_DOCK
CRT_BLUE_DOCK 35
CRT_HSYNC_DOCK
CRT_VSYNC_DOCK
DDCCLK_CONN
DDCDATA_CONN
ACDC_ID
DOCKID0
DOCKID1
DOCKID2
CRT_HSYNC_DOCK 36
CRT_VSYNC_DOCK 36
DDCCLK_CONN 36
DDCDATA_CONN 36
ACDC_ID 61,72

38	DOCKB_DP3N	DOCKB_DP3N	75
38	DOCKB_DP3P	DOCKB_DP3P	77
38	DOCKB_DP2N	DOCKB_DP2N	81
38	DOCKB_DP2P	DOCKB_DP2P	83
38	DOCKB_DP1N	DOCKB_DP1N	87
38	DOCKB_DP1P	DOCKB_DP1P	89
38	DOCKB_DP0N	DOCKB_DP0N	93
38	DOCKB_DP0P	DOCKB_DP0P	95
38	DOCKB_DVI_DONGLE_DTCT	DOCKB_DVI_DONGLE_DTCT	99
38	DOCKB_HPD	DOCKB_HPD	101
38	DOCKB_DP_DATA	DOCKB_DP_DATA	103
38	DOCKB_DP_CLK	DOCKB_DP_CLK	105
38	DOCKA_DVI_DONGLE_DTCT	DOCKA_DVI_DONGLE_DTCT	107
38	DOCKA_HPD	DOCKA_HPD	109
38	DOCKA_DP_DATA	DOCKA_DP_DATA	111
38	DOCKA_DP_CLK	DOCKA_DP_CLK	113
38	DOCKA_AUXN	DOCKA_AUXN	117
38	DOCKA_AUXP	DOCKA_AUXP	119
38	DOCKA_DP3N	DOCKA_DP3N	123
38	DOCKA_DP3P	DOCKA_DP3P	125
38	DOCKA_DP2N	DOCKA_DP2N	129
38	DOCKA_DP2P	DOCKA_DP2P	131
38	DOCKA_DP1N	DOCKA_DP1N	135
38	DOCKA_DP1P	DOCKA_DP1P	137
38	DOCKA_DP0N	DOCKA_DP0N	141
38	DOCKA_DP0P	DOCKA_DP0P	143

J17B
WD3M148UQ_6

		RESERVE8	76
		RESERVE9	78
		DOCK_STATUS_LED	80
		RESERVE10	82
		DOCK_DCIN20	86
		VOID_88	
		DOCK_PWRSHUTDOWN#	90
		VOID_92	
		DOCK_PWRDCT#	94
		RESERVE2	96
		VOID_98	
		DOCK_PWR_SW#	100
		DOCK_DISCHARGE	102
		GND10	104
		DOCK_USB2N_PT	108
		DOCK_USB2P_PT	110
		GND11	112
		-CRV_ID	114
		RESERVE6	116
		GND12	118
		DOCK_USB_SS_RXN	120
		DOCK_USB_SS_RXP	122
		GND13	124
		DOCK_USB_SS_TXN	126
		DOCK_USB_SS_TXP	128
		GND14	130
		DOCK_USB_HS	132
		DOCK_USB_HS_P	134
		GND15	136
		DOCK_SATA_RXN	138
		DOCK_SATA_RXP	140
		GND16	142
		DOCK_SATA_TXN	144
		DOCK_SATA_TXP	146
		DOCKED1#	148
		DOCK_CONSUMP	
		GND3	91
		GND4	97
		DOCK_DP1_DGL_DCT	99
		DOCK_DP1_HPD	101
		DOCK_DP1_DDC_DATA	103
		DOCK_DP1_DDC_CLK	105
		DOCK_DP0_DGL_DCT	107
		DOCK_DP0_HPD	109
		DOCK_DP0_DDC_DATA	111
		DOCK_DP0_DDC_CLK	113
		GND5	115
		DOCK_DP0_AUXN	117
		DOCK_DP0_AUXP	119
		GND6	121
		DOCK_DP0_LANE3N	123
		DOCK_DP0_LANE3P	125
		GND7	127
		DOCK_DP0_LANE2N	129
		DOCK_DP0_LANE2P	131
		GND8	133
		DOCK_DP0_LANE1N	135
		DOCK_DP0_LANE1P	137
		GND9	139
		DOCK_DP0_LANE0N	141
		DOCK_DP0_LANE0P	143
		DOCKED2#	145
		RESERVE1	147

-PWRSHUTDOWN
-PWRSHUTDOWN 71,72,74,78
-DOCK_PWRDCT
-DOCK_PWRDCT 73
DOCKID3
D101 1 2 1SS400G
-DOCK_ATTACHED_S_BAT
-DOCK_ATTACHED_S_BAT 73
-PWRSWITCH
-PWRSWITCH 32,63,69,70
DISCHARGE
DISCHARGE 60,71
USBP2-
USBP2+
USBP2- 28
USBP2+ 28
-USB_PORT2_OC3
-USB_PORT2_OC3 28
USB3P2_RXN
USB3P2_RXP
USB3P2_RXN 28
USB3P2_RXP 28
USB3P2_TXN
USB3P2_TXP
USB3P2_TXN 28
USB3P2_TXP 28
USBP7- CONN 1 2 0_5% USBP7-
USBP7+ CONN R777 1005_1/16w 1 2 0_5% USBP7+
R779 1005_1/16w
USBP7- 28
USBP7+ 28
SATA4_RXN
SATA4_RXP
SATA4_RXN 24
SATA4_RXP 24
SATA4_TXN
SATA4_TXP
SATA4_TXN 24
SATA4_TXP 24
DOCK_CONSUMP
DOCK_CONSUMP 74

R1137 1K_5% 1005_1/16w
R1138 1K_5% 1005_1/16w
C666 1000PF_50V 1005_X7R_K
C764 1000PF_50V 1005_X7R_K
C1087 1000PF_50V 1005_X7R_K
R881 1005_1/16w 0_5%
R858 0_5% 1005_1/16w NA
AGND

C550 4.7UF_6.3V 1608_X5R_K NA
C566 0.1UF_25V 1608_X7R_K NA

D2 1SS400G
-DOCK_ATTACHED_20
R603 1 2 100K_5% 1005_1/16w VCC3M
DAN222
-DOCK_ATTACHED_3M
-DOCK_ATTACHED_AUX
-DOCK_ATTACHED_3M 61
-DOCK_ATTACHED_AUX 50
D61
DCIN_PWR20_F
R230 NA 1005_1/16w 1M_5%
D26
-DOCK_ATTACHED_BAT_OP
-DOCK_ATTACHED_BAT_OP 72,74
RB520S_30 NA
R232 NA 1005_1/16w 1M_5%

DCIN_PWR20_F
R519 1M_5% 1005_1/16w NA
Q114 NA 2SK3541
R736 NA 1005_1/16w 1M_5%
-DOCK_ATTACHED_BAT_OP

DCIN_PWR20_F
R738 1M_5% 1005_1/16w NA
Q115 NA 2SK3541
R739 NA 1005_1/16w 1M_5%

VCC3SW
R228 100K_5% 1005_1/16w NA
DISCHARGE2
DISCHARGE2 72
Q44 NA 2SK3541
R229 1005_1/16w 0_5%
Q14 NA 2SK3541
DISCHARGE

DOCK_PWR20
Q85 SI7121DN
R731 200K_5% 1005_1/16w
DOCK_PWR20_IN
C24 1608_X7R_K 0.1UF_25V
-DOCK_ATTACHED_20
R657 100K_5% 1005_1/16w

S_BAT_IN
DOCK_PWR20_IN

J17C
WD3M148UQ_6

149	PWR20_1	FGND1	157
150	PWR20_2	FGND2	158
151	GND1	FGND3	159
152	GND2	FGND4	160
153	SBAT1	FGND5	161
154	SBAT2	FGND6	162
155	VCC3M	NC1	163
156	VCC5M	NC2	164

lenovo

Project Name : NZM-4 SWG SOVP	Title : DOCKING CONNECTOR	
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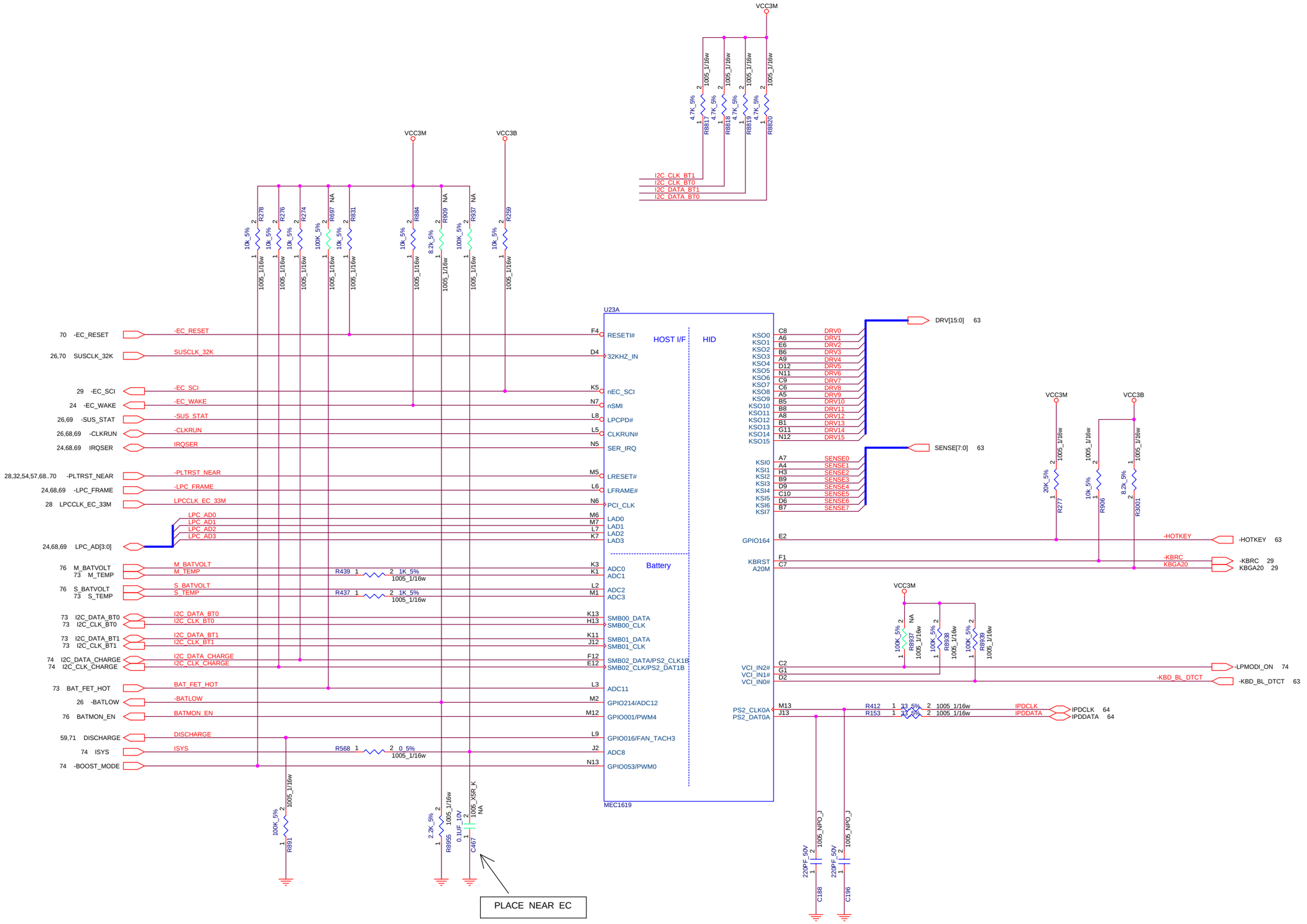
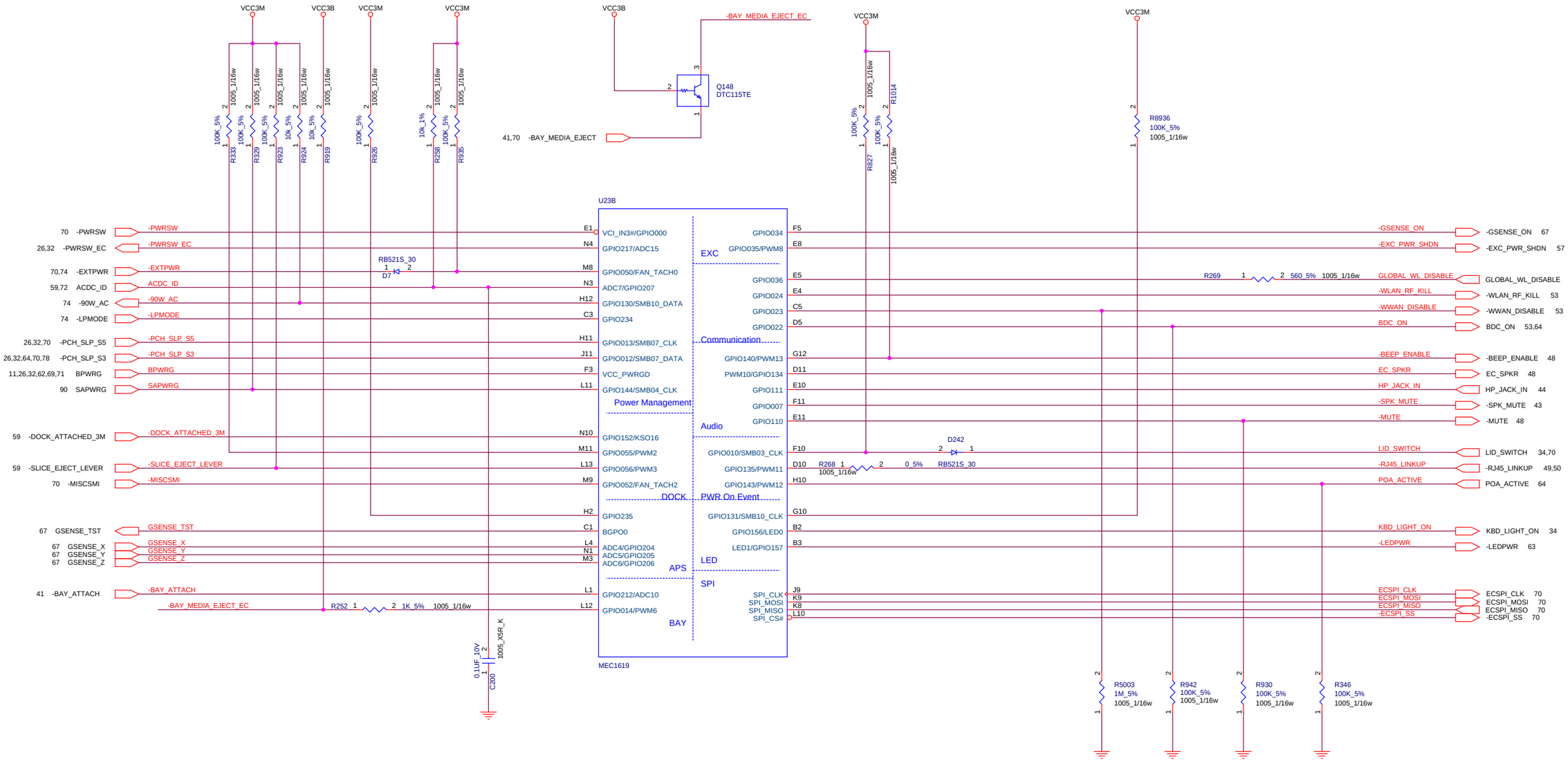


lenovo			
Project Name : NZM-4 SWG SOVP		Title : MEC1619(1/3)	
Size : C	Document Number :		Rev : 7.54
Date: Monday, March 19, 2012		Sheet : 60 of 97	



Project Name : NZM-4 SWG SOVP	Title : MEC1619(2/3)
Size : C	Document Number :
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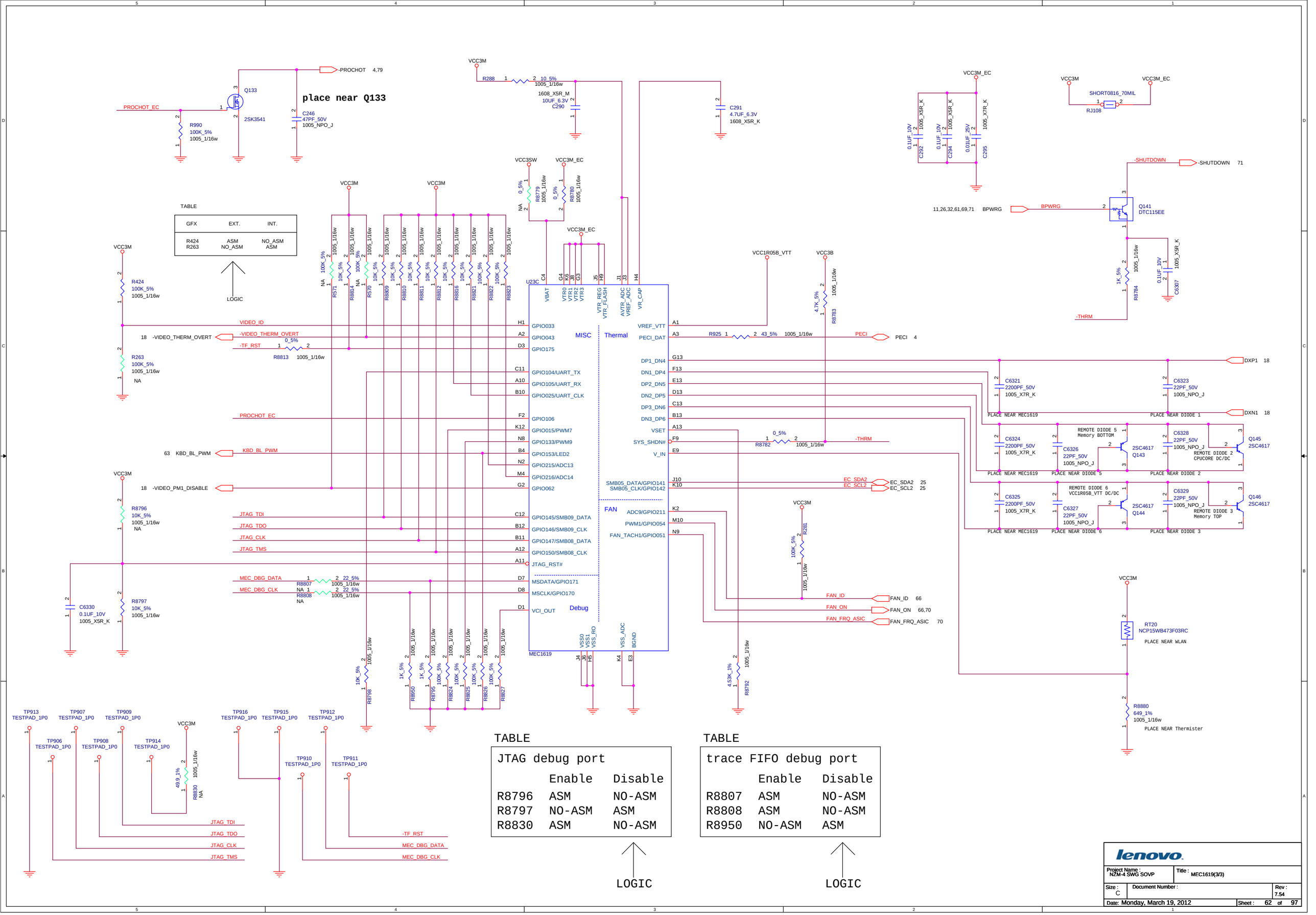
	Rev : 7.54


place near Q133
Q133
2SK3541
R990 100K_5% 1005_1/16w
C246 47PF_50V 1005_NPO_J
PROCHOT_EC
-PROCHOT 4,79
R288 10_5% 1005_1/16w
1608_X5R_M 10UF_6.3V C290
C291 4.7UF_6.3V 1608_X5R_K
VCC3M
VCC3SW
VCC3M_EC
VCC1R05B_VTT
VCC3B
C292 0.1UF_10V 1005_X5R_K
C294 0.1UF_10V 1005_X5R_K
C295 0.01UF_25V 1005_X7R_K
SHORT0816_70MIL
RJ108
-SHUTDOWN
-SHUTDOWN 71
BPWRG
11,26,32,61,69,71 BPWRG
Q141 DTC115EE
R8784 1K_5% 1005_1/16w
C6307 0.1UF_10V 1005_X5R_K
-THRM
TABLE
GFX EXT. INT.
R424 R263 ASM NO_ASM NO_ASM ASM
LOGIC
R424 100K_5% 1005_1/16w
R263 100K_5% 1005_1/16w NA
R571 R8814 R570 R8809 R8810 R8811 R8812 R8816 R8821 R8822 R8823
R8813 0_5% 1005_1/16w
R8879 R8790 0_5% 1005_1/16w
U23C MEC1619
VBAT VTR0 VTR1 VTR2 VTR3 VTR_REG VTR_FLASH AVTR_ADC VREF_ADC VR_CAP
MISC Thermal Debug FAN
VIDEO_ID
-VIDEO_THERM_OVERT
-TF_RST
PROCHOT_EC
KBD_BL_PWM
63 KBD_BL_PWM
18 -VIDEO_PM1_DISABLE
JTAG_TDI
JTAG_TDO
JTAG_CLK
JTAG_TMS
MEC_DBG_DATA
MEC_DBG_CLK
GPIO033
GPIO043
GPIO175
GPIO104/UART_TX
GPIO105/UART_RX
GPIO025/UART_CLK
GPIO106
GPIO015/PWM7
GPIO133/PWM9
GPIO153/LED2
GPIO215/ADC13
GPIO216/ADC14
GPIO062
GPIO145/SMB09_DATA
GPIO146/SMB09_CLK
GPIO147/SMB08_DATA
GPIO150/SMB08_CLK
JTAG_RST#
MSDATA/GPIO171
MSCLK/GPIO170
VCI_OUT
VREF_VTT
PECI_DAT
R925 43_5% 1005_1/16w
PECI 4
R8783 4.7K_5% 1005_1/16w
DP1_DN4
DN1_DP4
DP2_DN5
DN2_DP5
DP3_DN6
DN3_DP6
VSET
SYS_SHDN#
V_IN
R8782 0_5% 1005_1/16w
SMB05_DATA/GPIO141
SMB05_CLK/GPIO142
EC_SDA2 25
EC_SCL2 25
ADC9/GPIO211
PWM1/GPIO054
FAN_TACH1/GPIO051
FAN_ID
FAN_ON
FAN_FRQ_ASIC
FAN_ID 66
FAN_ON 66,70
FAN_FRQ_ASIC 70
R281 100K_5% 1005_1/16w
4.53K_1% 1005_1/16w R8792
VSS0 VSS1 VSS_HO VSS_ADC BGND
DXP1 18
DXN1 18
C6321 2200PF_50V 1005_X7R_K
C6323 22PF_50V 1005_NPO_J
C6324 2200PF_50V 1005_X7R_K
C6326 22PF_50V 1005_NPO_J
C6328 22PF_50V 1005_NPO_J
C6325 2200PF_50V 1005_X7R_K
C6327 22PF_50V 1005_NPO_J
C6329 22PF_50V 1005_NPO_J
Q143 2SC4617
Q144 2SC4617
Q145 2SC4617
Q146 2SC4617
REMOTE DIODE 5 Memory BOTTOM
REMOTE DIODE 2 CPUCORE DC/DC
REMOTE DIODE 6 VCC1R05B_VTT DC/DC
REMOTE DIODE 3 Memory TOP
PLACE NEAR MEC1619
PLACE NEAR DIODE 1
PLACE NEAR DIODE 5
PLACE NEAR DIODE 2
PLACE NEAR DIODE 6
PLACE NEAR DIODE 3
RT20 NCP15WB473F03RC
PLACE NEAR WLAN
R8880 649_1% 1005_1/16w
PLACE NEAR Thermister
R8796 10K_5% 1005_1/16w NA
R8797 10K_5% 1005_1/16w
C6330 0.1UF_10V 1005_X5R_K
R8807 22_5% 1005_1/16w
R8808 NA 22_5% 1005_1/16w NA
R8798 10K_5% 1005_1/16w
R8950 R8795 R8824 R8825 R8826 R8827 1K_5% 100K_5% 1005_1/16w
R8830 NA 49.9_1% 1005_1/16w
TP913 TP907 TP909 TP916 TP915 TP912 TESTPAD_1P0
TP906 TP908 TP914 TP910 TP911 TESTPAD_1P0
TABLE
JTAG debug port
Enable Disable
R8796 ASM NO-ASM
R8797 NO-ASM ASM
R8830 ASM NO-ASM
TABLE
trace FIFO debug port
Enable Disable
R8807 ASM NO-ASM
R8808 ASM NO-ASM
R8950 NO-ASM ASM
LOGIC
LOGIC
lenovo
Project Name : NZM-4 SWG SOVP
Title : MEC1619(3/3)
Size : C
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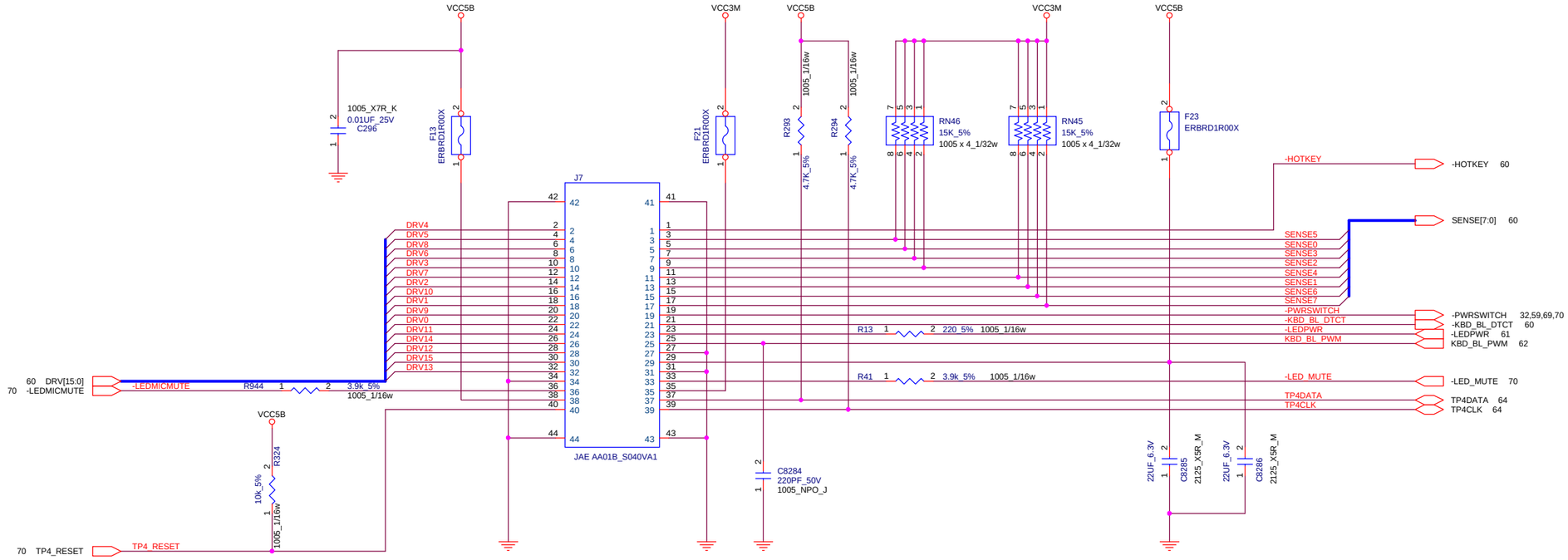

lenovo			
Project Name : NZM-4 SWG SOVP		Title : KEYBOARD CONNECTOR	
Size : C	Document Number :		Rev : 7.54
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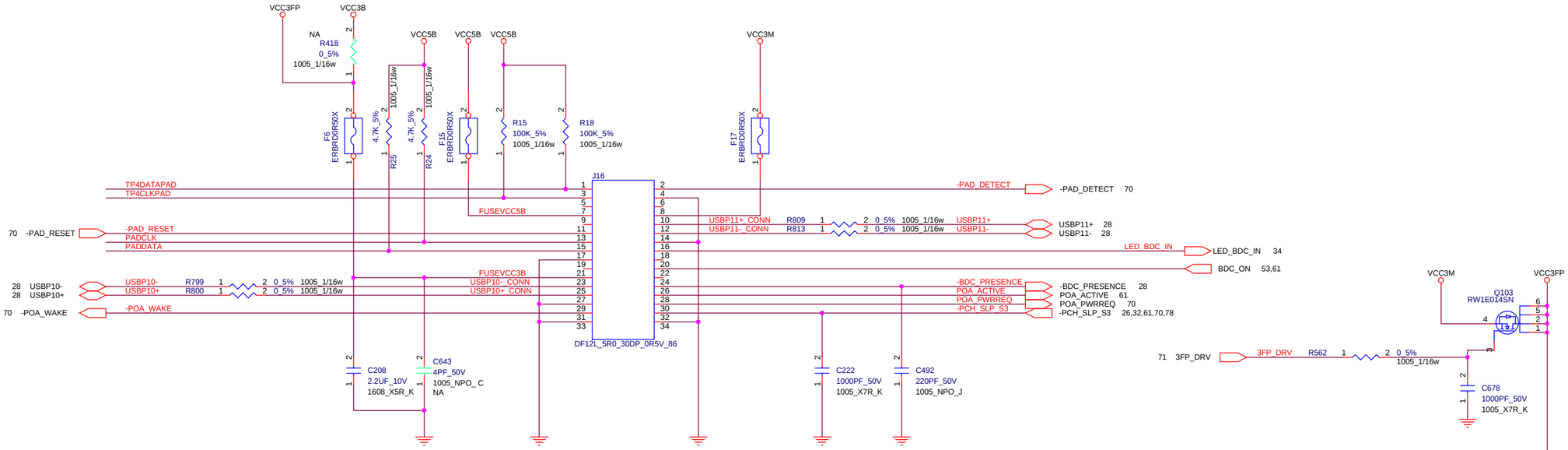

lenovo		
Project Name : NZM-4 SWG SOVP	Title : TOUCH PAD CONNECTOR	
Size : C	Document Number :	Rev : 7.54
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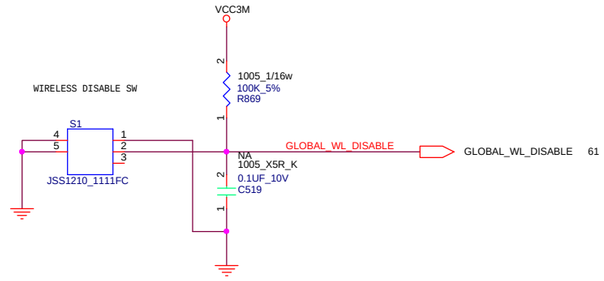

lenovo		
Project Name : NZM-4 SWG SOVP	Title : WIRELESS DISABLE SW	
Size : C	Document Number :	Rev : 7.54
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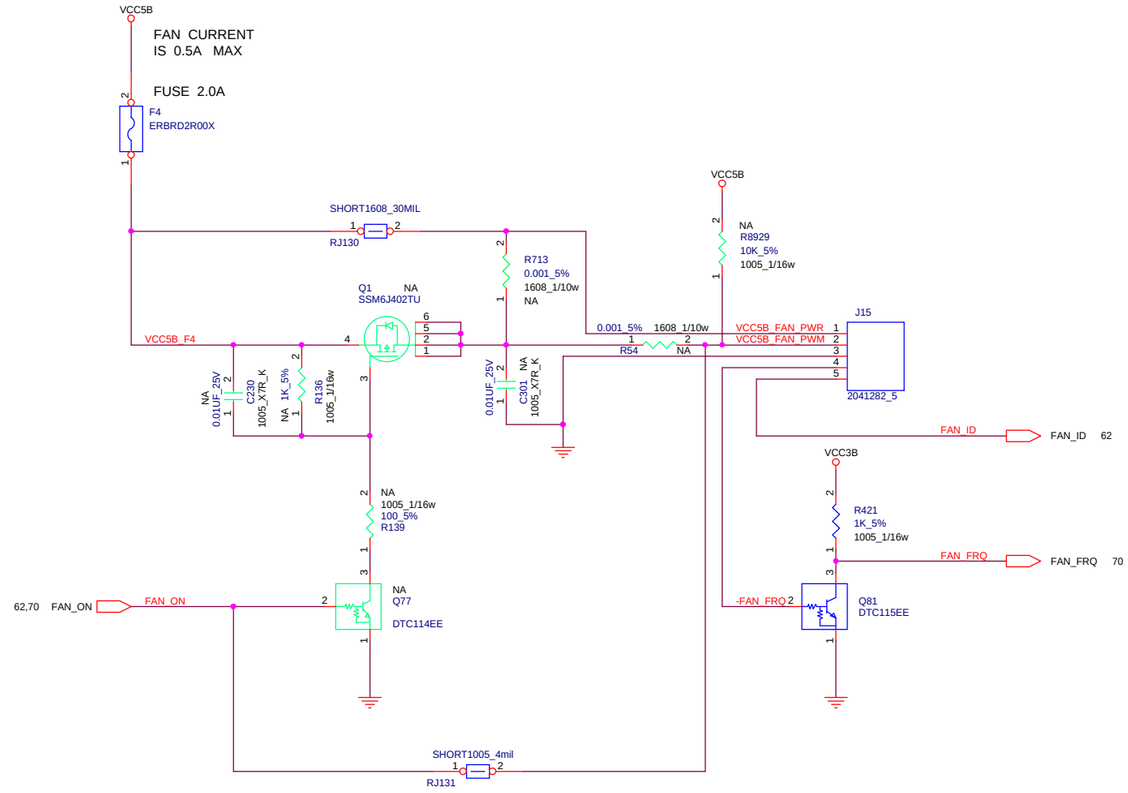

lenovo		
Project Name : NZM-4 SWG SOVP	Title : FAN CONNECTOR	
Size : C	Document Number :	Rev : 7.54
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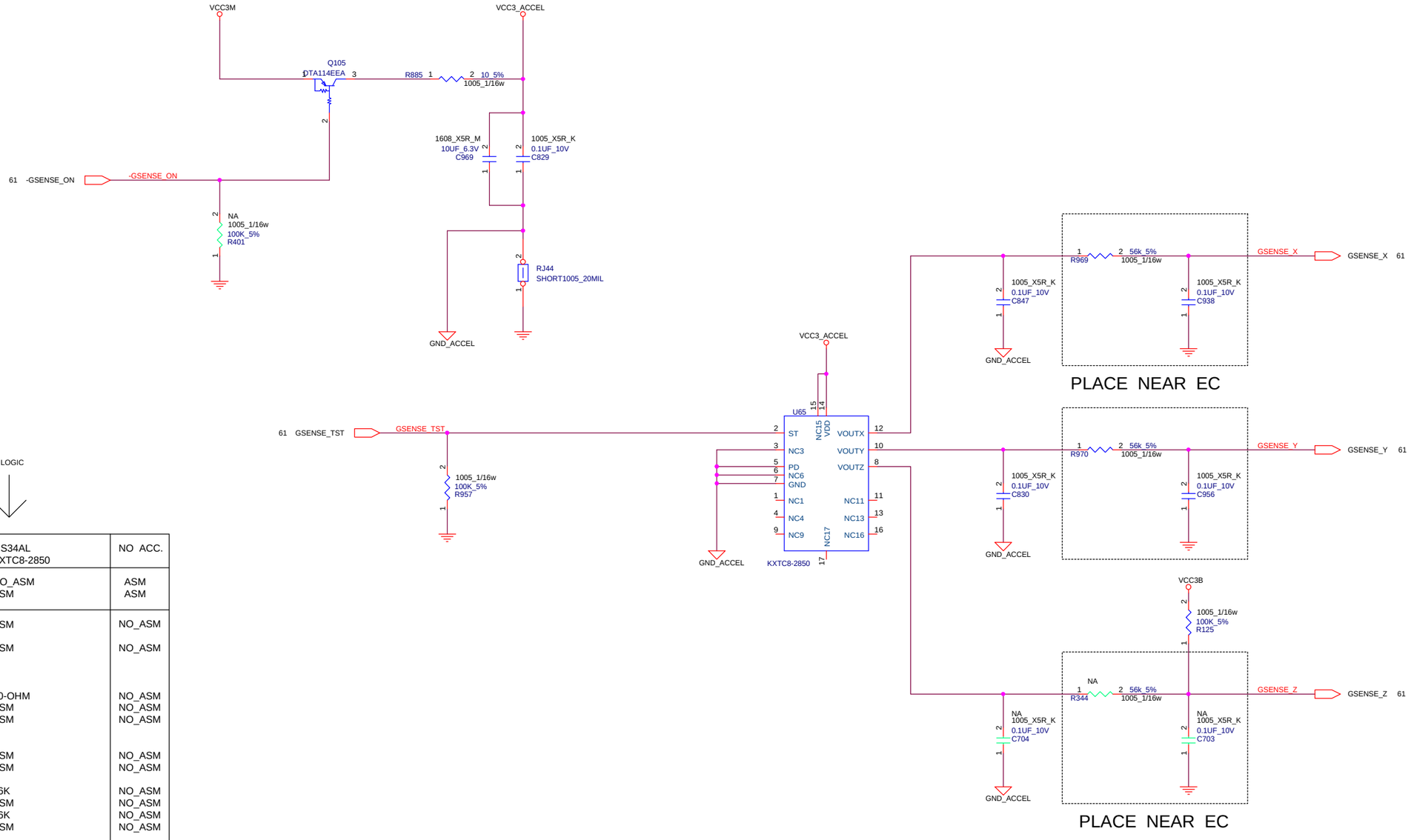

LOGIC

TABLE

	LIS34AL KXTC8-2850	NO ACC.
R401 R957	NO_ASM ASM	ASM ASM
U65 Q105	ASM ASM	NO_ASM NO_ASM
R885 C829 C969	10-OHM ASM ASM	NO_ASM NO_ASM NO_ASM
C830 C847	ASM ASM	NO_ASM NO_ASM
R969 C938 R970 C956	56K ASM 56K ASM	NO_ASM NO_ASM NO_ASM NO_ASM
C704 R344 C703	NO_ASM NO_ASM NO_ASM	NO_ASM NO_ASM NO_ASM
R125	ASM	ASM

lenovo		
Project Name : NZM-4 SWG SOVP	Title : G-SENSOR	
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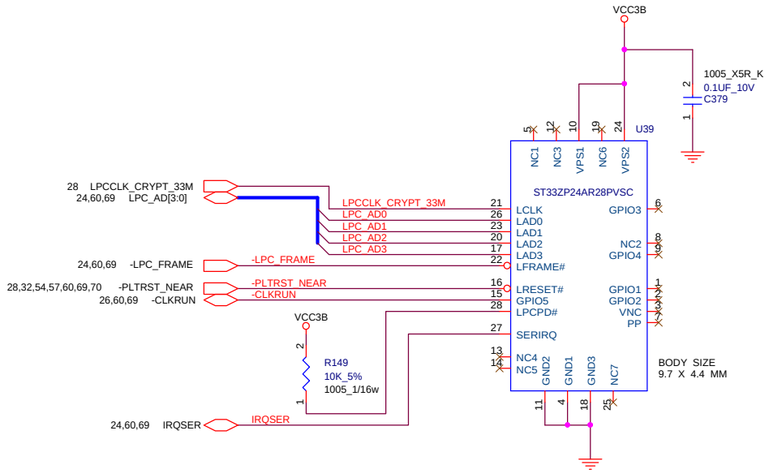

TABLE

SDV and Mech FVT	ST19NP18ER28PVMO	1.2.8.20
FVT	ST33ZP24AR28PVOG	1.2.A.C
SW SIT-1, SIT, and SIT-R1	ST33ZP24AR28PVRC	1.2.C.0
SIT-R2 and SVT	ST33ZP24AR28PVSC Rev.I	1.2.D.0
SOVP	ST33ZP24AR28PVSC Rev.J	(1.2.D.0) 1.2.D.8 by FW Update
MP	ST33ZP24AR28PVSH	1.2.D.8

lenovo

Project Name : N2M-4 SWG SOVP	Title : TPM	
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TABLE

EEPROM	U22	U23
U22	ASM	NO_ASM
C1005	ASM	NO_ASM
R577	ASM	NO_ASM
Q97	ASM	NO_ASM

LOGIC

PHILIPS 1024 X 8 EEPROM W/ACCESS PROTECTION

VCC3M

1005_1/16w 4.7K_5% R577

U22 PCA24S08DP

1005_X5R_K 0.1UF_10V C1005

SMB_CLK

SMB_DATA

Q97 DTC115TE

-PLTRST_NEAR

R150 10k_5% 1005_1/16w

R177 10k_5% 1005_1/16w

R291 47K_5% 1005_1/16w

12,13 SMB_CLK_3B

12,13 SMB_DATA_3B

11,26,32,61,62,71 BPWRG

28 SMB_3B_EN

Q84 DTC115TE

VCC3WAN

R454 0_5% 1005_1/16w NA

R482 0_5% 1005_1/16w NA

R395 10k_5% 1005_1/16w NA

R396 10k_5% 1005_1/16w NA

R8917 47K_5% 1005_1/16w NA

53 SMB_CLK_3WAN

53 SMB_DATA_3WAN

Q151 DTC115TE NA

VCC5M

U21 TC7SB385FU

U31 TC7SB385FU

1005_X7R_K 0.01UF_25V C25

R8940 0_5% NA 1005_1/16w

R8941 0_5% NA 1005_1/16w

R8942 0_5% NA 1005_1/16w

R8943 0_5% NA 1005_1/16w

U27 TC7SB385FU NA

U33 TC7SB385FU NA

C297 NA 0.01UF_25V 1005_X7R_K

R30 1005_1/16w 10k_5%

R45 1005_1/16w 10k_5%

SMB_CLK SMB_CLK 25

SMB_DATA SMB_DATA 25

TABLE

REF DES	ENABLE	DISABLE
J5	ASM	NO_ASM
R220	ASM	NO_ASM

LOGIC

J5 NA

JST_BM20B_SRDS_A_G_TFC_LF_SN

28 LPCCLK_DEBUG_33M	LPCCLK_DEBUG_33M	1	-PLTRST_NEAR
24,60,68 -LPC_FRAME	-LPC_FRAME	3	LPC_AD0
24 -LPC_DREQ0	-LPC_DREQ0	5	LPC_AD1
26,60,68 -CLKRUN	-CLKRUN	7	LPC_AD2
26,60 -SUS_STAT	-SUS_STAT	9	LPC_AD3
24,60,68 IRQSER	IRQSER	11	
57,71,77,83,94 B_ON	B_ON	13	
32,59,63,70 -PWRSWITCH	-PWRSWITCH	15	
		17	
		19	
		21	

VCC3B VCC5B

-PLTRST_NEAR -PLTRST_NEAR 28,32,54,57,60,68,70

LPC_AD[3:0] LPC_AD[3:0] 24,60,68

TABLE

AOAC	YES	YES	YES	YES	NO	NO	NO	NO
Anti Theft	YES	YES	NO	NO	YES	YES	NO	NO
EEPROM	U22	U23	U22	U23	U22	U23	U22	U23
U27	ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM
U33	ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM
C297	ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM
R395	ASM	ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM
R396	ASM	ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM
R8917	ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM
Q151	ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM
U21	ASM	ASM	ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM
U31	ASM	ASM	ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM
C25	ASM	ASM	ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM
R291	ASM	ASM	ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM
Q84	ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM
R454	NO_ASM	NO_ASM	NO_ASM	NO_ASM	ASM	ASM	NO_ASM	NO_ASM
R482	NO_ASM	NO_ASM	NO_ASM	NO_ASM	ASM	ASM	NO_ASM	NO_ASM
R8943	NO_ASM	ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM
R8942	NO_ASM	ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM	NO_ASM
R8941	NO_ASM	NO_ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM	ASM
R8940	NO_ASM	NO_ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM	ASM
R30	ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM
R45	ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM	ASM	NO_ASM

LOGIC

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Project Name : NZM-4 SWG SOVP	Title : EEPROM/SMBUS SW	
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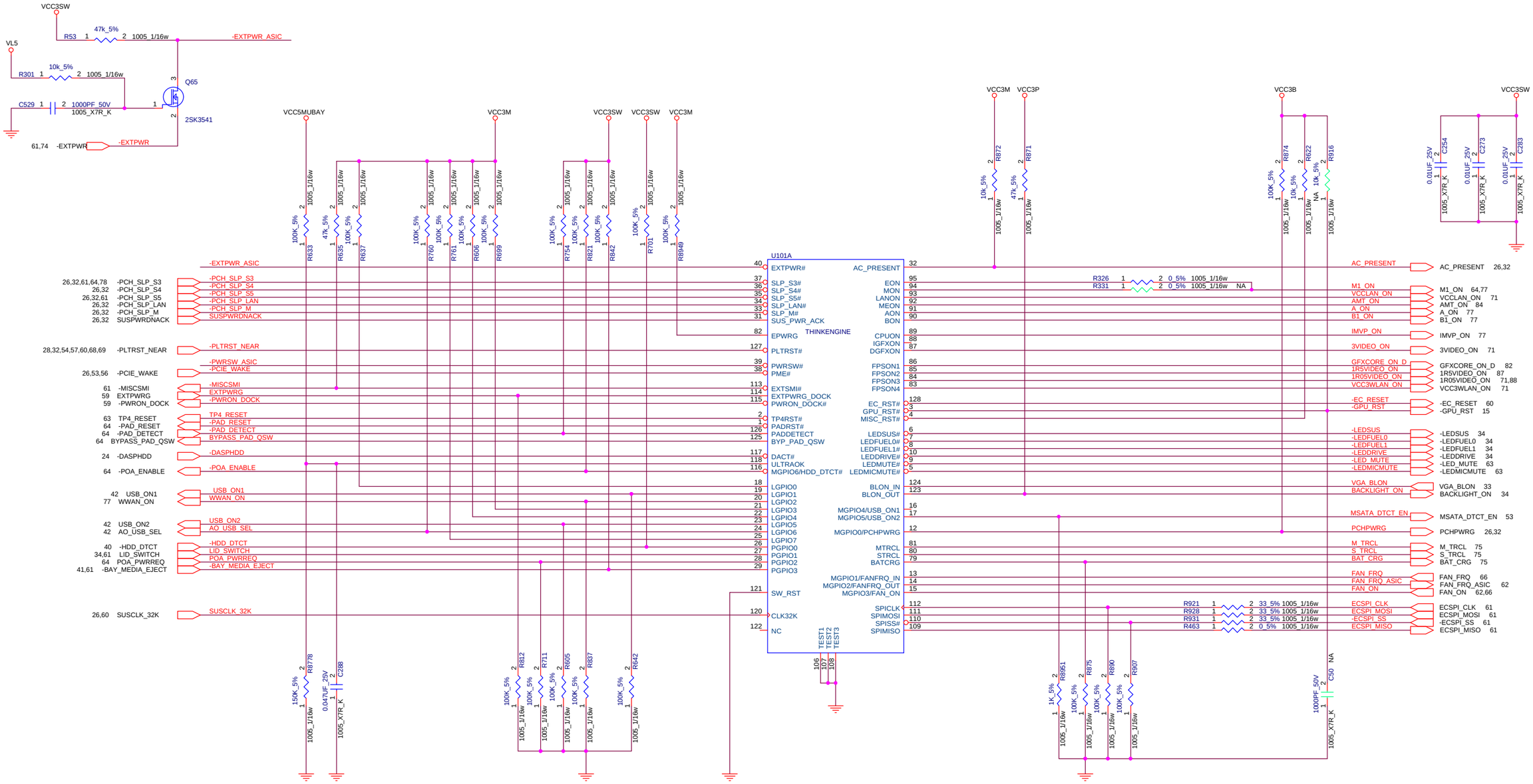

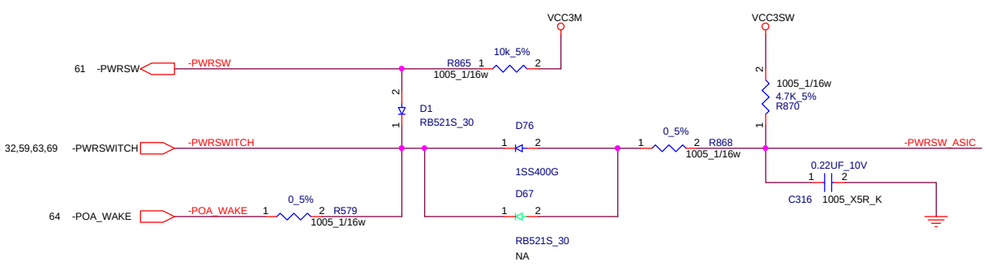

lenovo			
Project Name : NZM-4 SWG SOVP		Title : THINK ENGINE(1/2)	
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REFER TO VCPIN28 CIRCUIT

U101B THINKENGINE

Ref. Des.	Target
RT1	VCC3M to VCC3WAN Load Switch (Q94)
RT2	VCC3M to VCC3WLAN Load Switch (Q100)
RT3	VCC3M Switching DC/DC High/Low Side FET (Q18/Q17)
RT4	VCC5M Switching DC/DC High Side FET (Q2/Q16)
RT5	VCC5M Switching DC/DC Low Side FET (Q6/Q46)
RT6	Battery Charger High Side FET (Q4)
RT7	M_BAT_PWR to M_BAT_PWR_A FET (Q8)
RT8	DOCK_PWR20_IN to DOCK_PWR20 FET (Q85) CV20 to DOCK_PWR20 FET (Q36)
RT9	DCIN_PWR20_F to CV20 FET (Q9)
RT10	VCCGFXCORE_I Volterra Driver IC VT1317S (U25)
RT11	VCCGPUCORE Volterra Driver IC VT1317S Phase 1 (U16) VCCGPUCORE Volterra Driver IC VT1317S Phase 2 (U19)
RT12	VCC1R5VIDEO Volterra IC VT356 (U66)
RT13	VCCGFXCORE_D Switching DC/DC High/Low Side FET (Q40/Q95)
RT14	CPU Die (U58)

lenovo

Project Name : NZM-4 SWG SOVP	Title : THINK ENGINE(2/2)	
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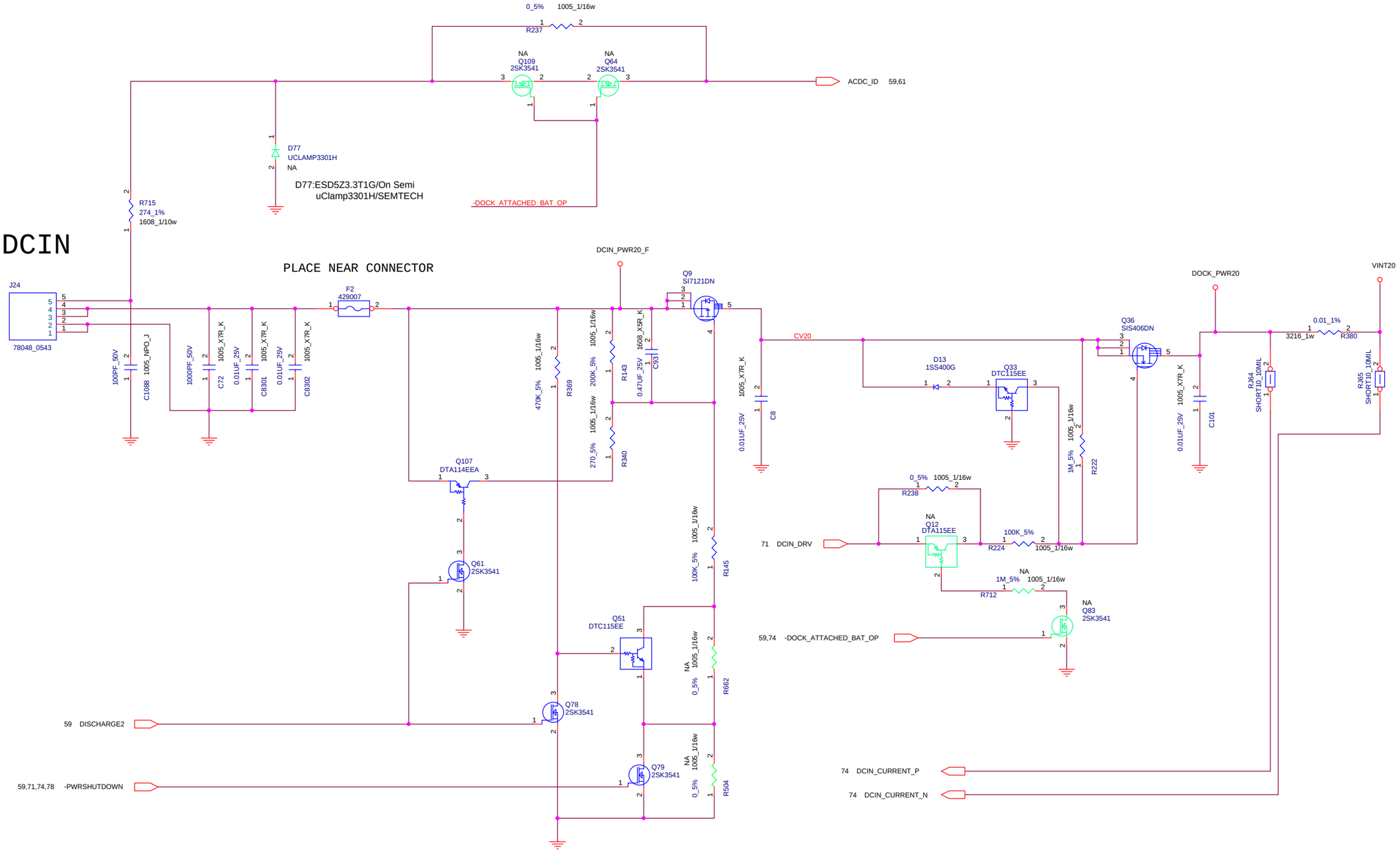
DCIN

PLACE NEAR CONNECTOR



TABLE

PEAK SHIFT	YES	NO
R662	NO-ASM	ASM
R369	ASM	NO-ASM
Q78	ASM	NO-ASM
Q51	ASM	NO-ASM

LOGIC

lenovo		
Project Name : NZM-4 SWG SOVP	Title : DC-IN	
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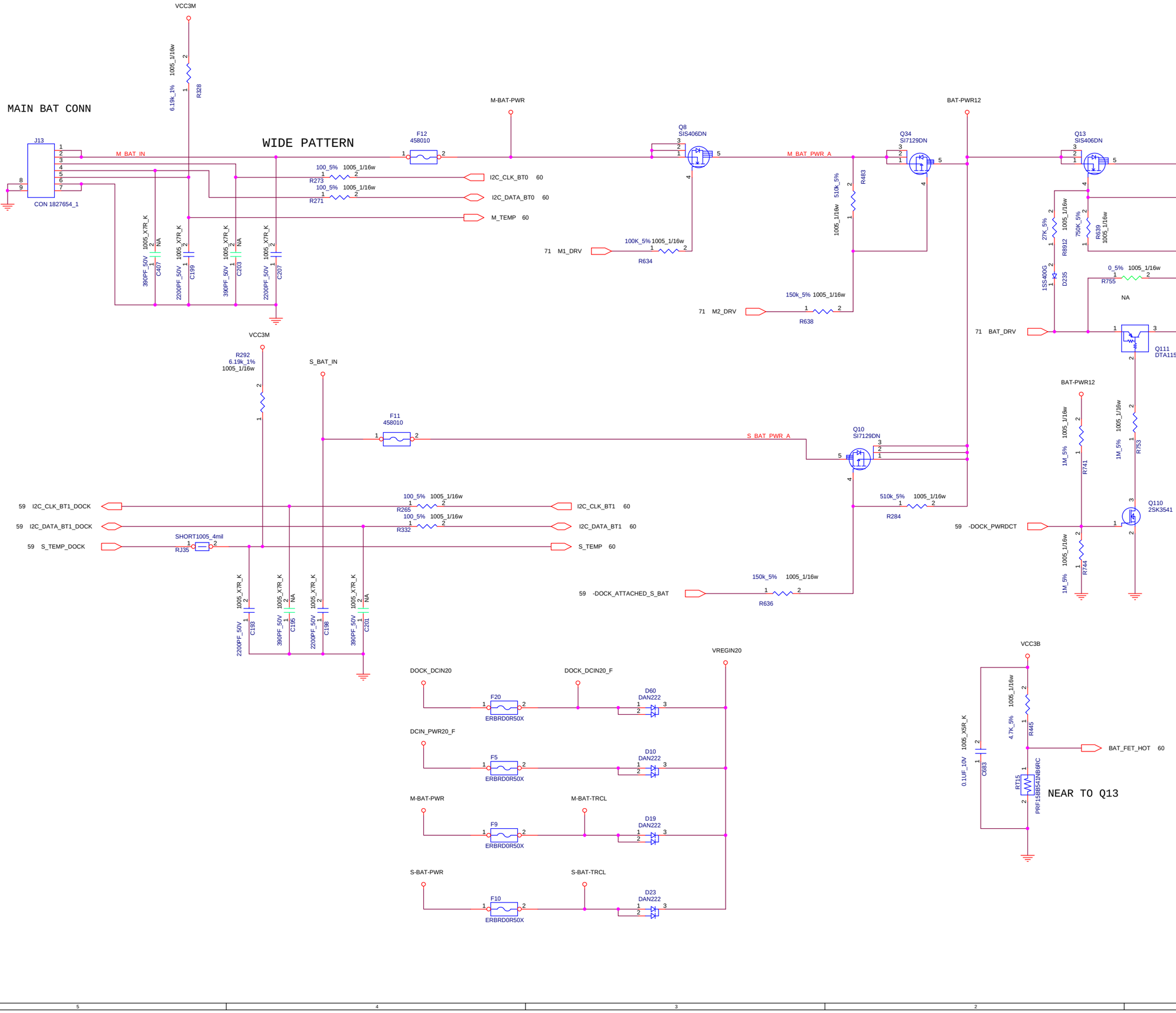

lenovo		
Project Name : NZM-4 SWG SOVP	Title : BATTERY INPUT	
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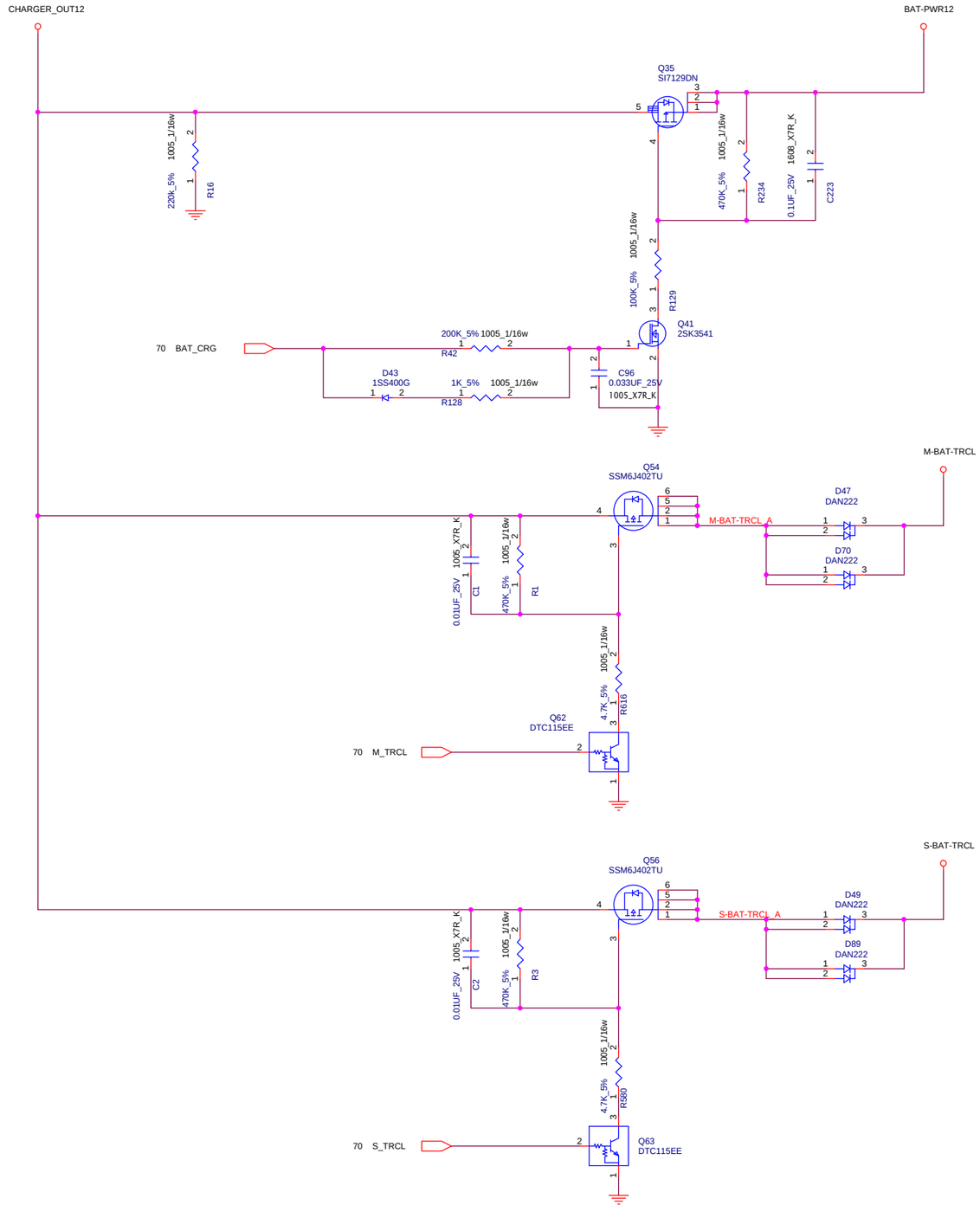
All the input MLCCs on 20V must be placed symmetrically on Top and Bottom.

to connect lines of I2C_DATA and I2C_CLK in parallel

I_limit:
In charging=>4A
In boosting=>6A

place R735 and C299 near EC

Project Name : NZM-4 SWG SOVP	Title : BATTERY CHARGER
Size : C	Document Number :
Date: Monday, March 19, 2012	Sheet : 74 of 97



Project Name : NZM-4 SWG SOVP	Title : CHARGER SELECTOR
Size : C	Document Number :
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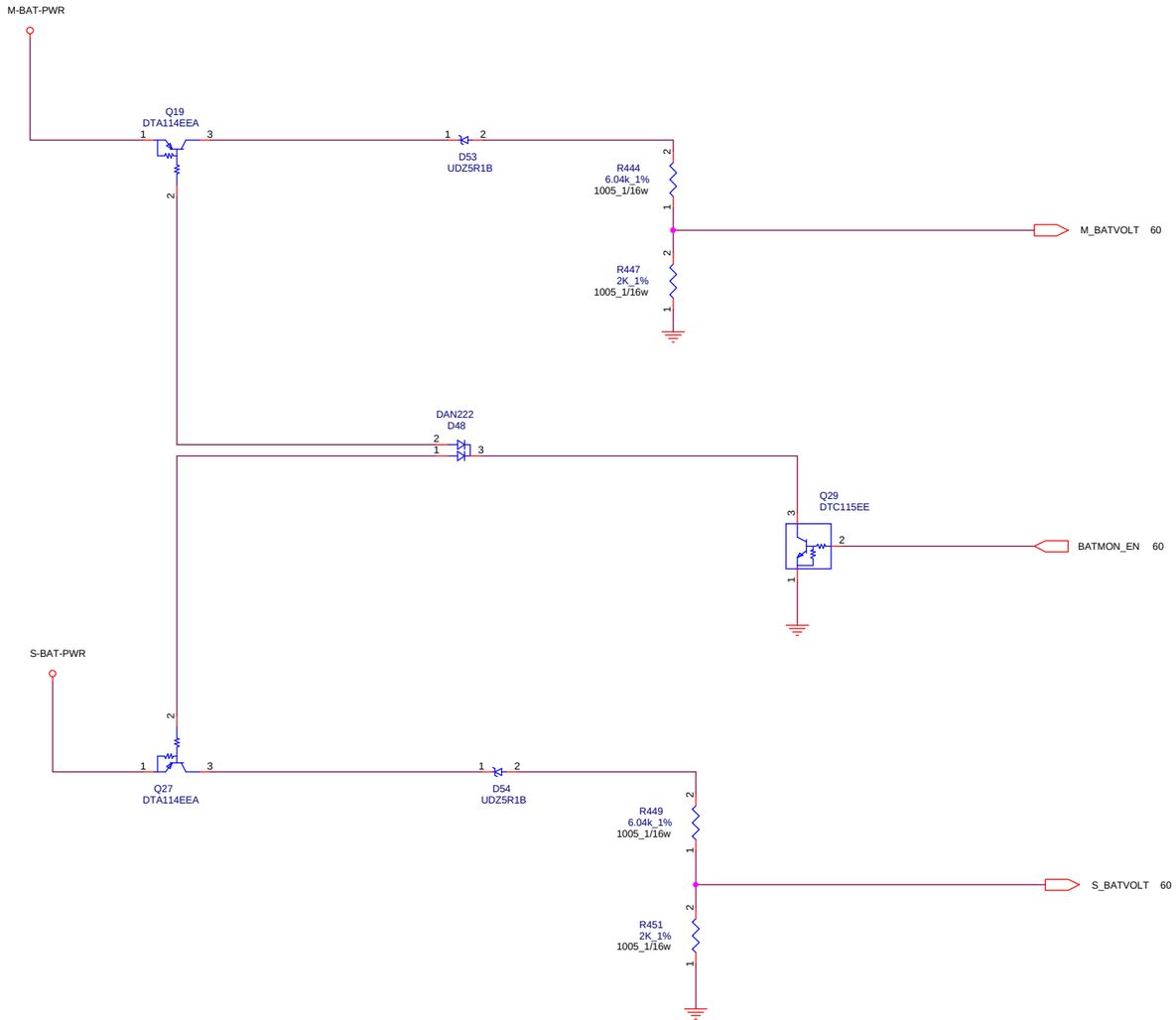

Project Name : N2M-4 SWG SOVP		Title : BATTERY MONITOR	
Size : C	Document Number :		Rev : 7.54
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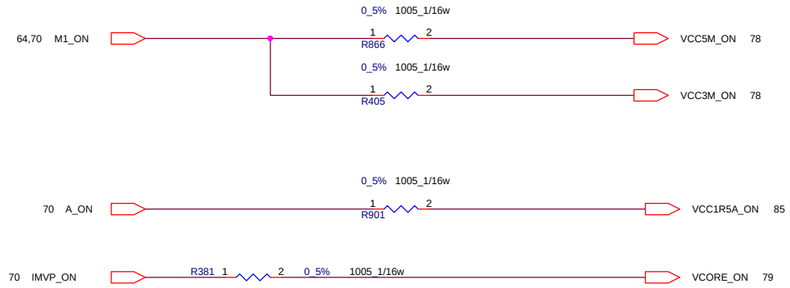

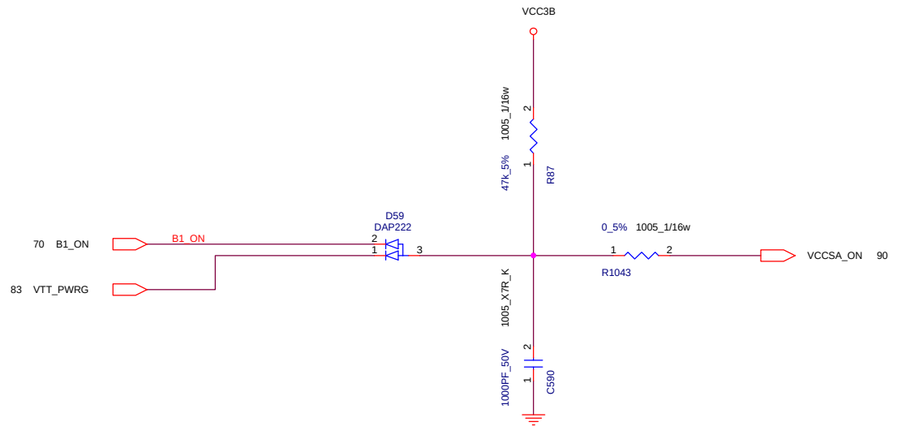

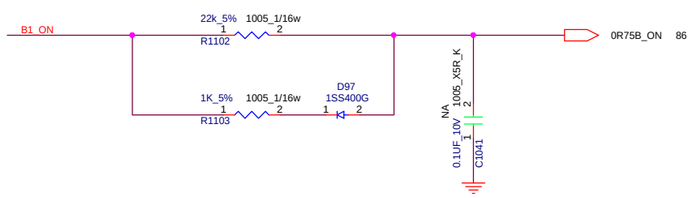

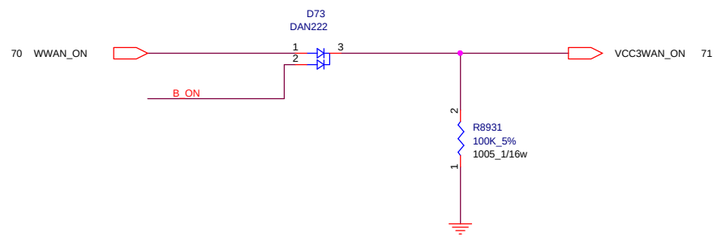

TABLE

AOAC	YES	NO
D73	ASM	NO-ASM
R8931	ASM	ASM
	100K-ohm	0-ohm

LOGIC

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Project Name : NZM-4 SWG SOVP	Title : POWER SEQUENCE
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All the input MLCCs on 20V must be placed symmetrically on Top and Bottom.

All the input MLCCs on 20V must be placed symmetrically on Top and Bottom.

16A

9A

ESR=18mOHM

ESR=12mOHM

Project Name : NZM-4 SWG SOVP	Title : DC/DC VCC5M/VCC3M
Size : C	Document Number :
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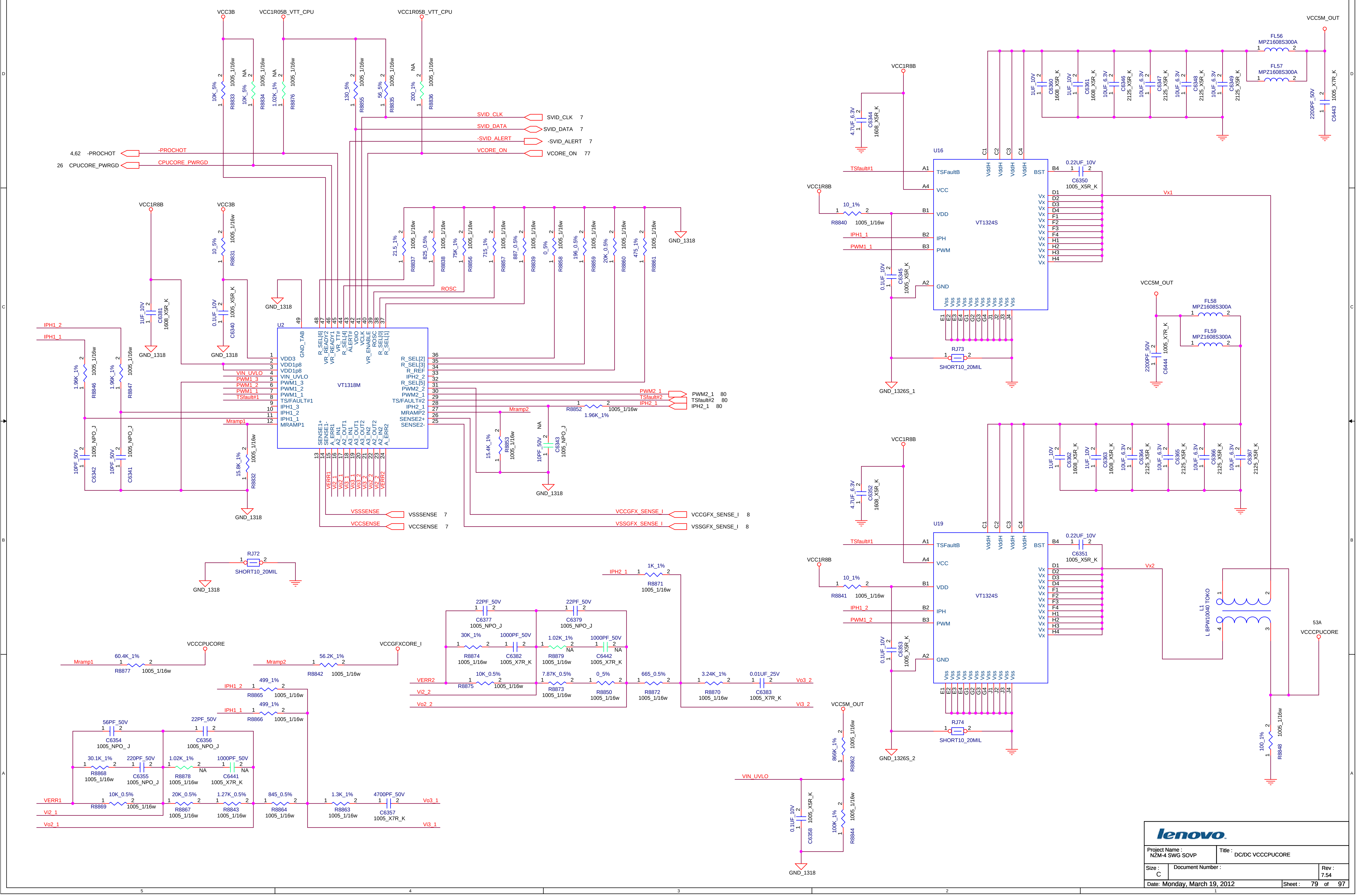

VCC3B
VCC1R05B_VTT_CPU
VCC5M_OUT
VCC1R8B
VT1318M
U2
VT1324S
U16
U19
SVID_CLK 7
SVID_DATA 7
-SVID_ALERT 7
VCORE_ON 77
4,62 -PROCHOT
26 CPUCORE_PWRGD
PWM2_1 80
TSfault#2 80
IPH2_1 80
VSSSENSE 7
VCCSENSE 7
VCCGFX_SENSE_I 8
VSSGFX_SENSE_I 8
GND_1318
GND_1326S_1
GND_1326S_2
VCCCPUCORE
VCCGFXCORE_I
53A
VCCCPUCORE
RJ72 SHORT10_20MIL
RJ73 SHORT10_20MIL
RJ74 SHORT10_20MIL
FL56 MPZ1608S300A
FL57 MPZ1608S300A
FL58 MPZ1608S300A
FL59 MPZ1608S300A
L1 L BPW10040 TOKO

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Project Name : NZM-4 SWG SOVP

Title : DC/DC VCCCPUCORE

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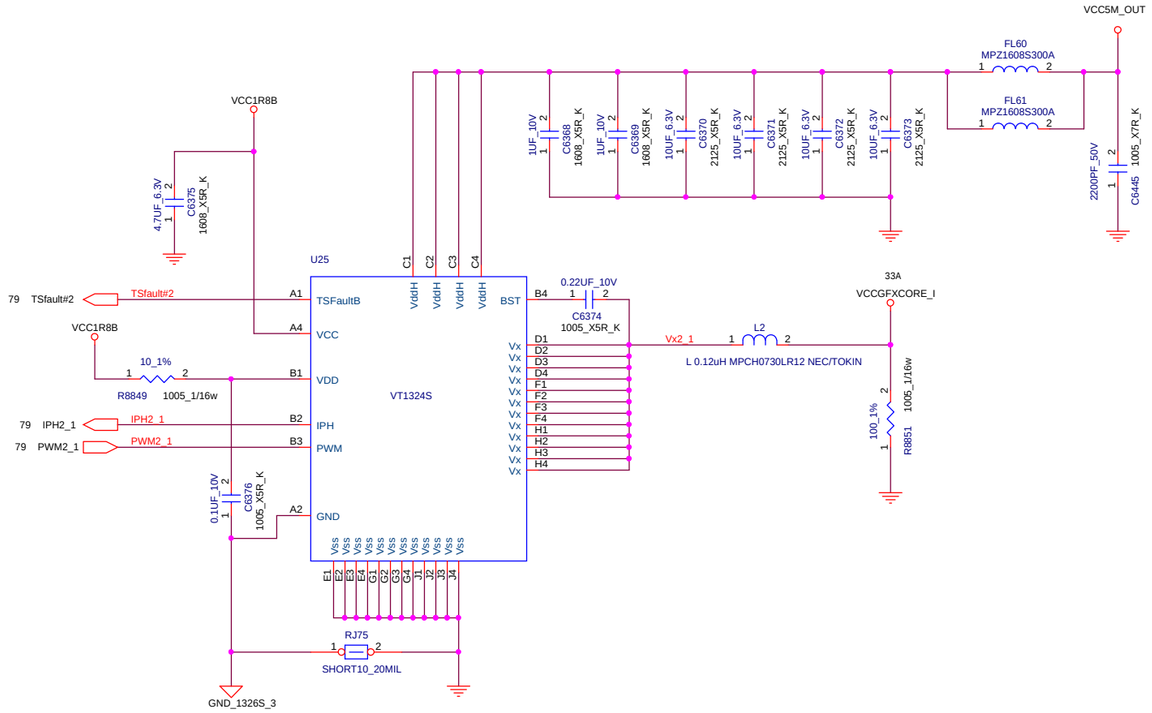

Project Name : NZM-4 SWG SOVP		Title : DC/DC VCCGFXCORE_I	
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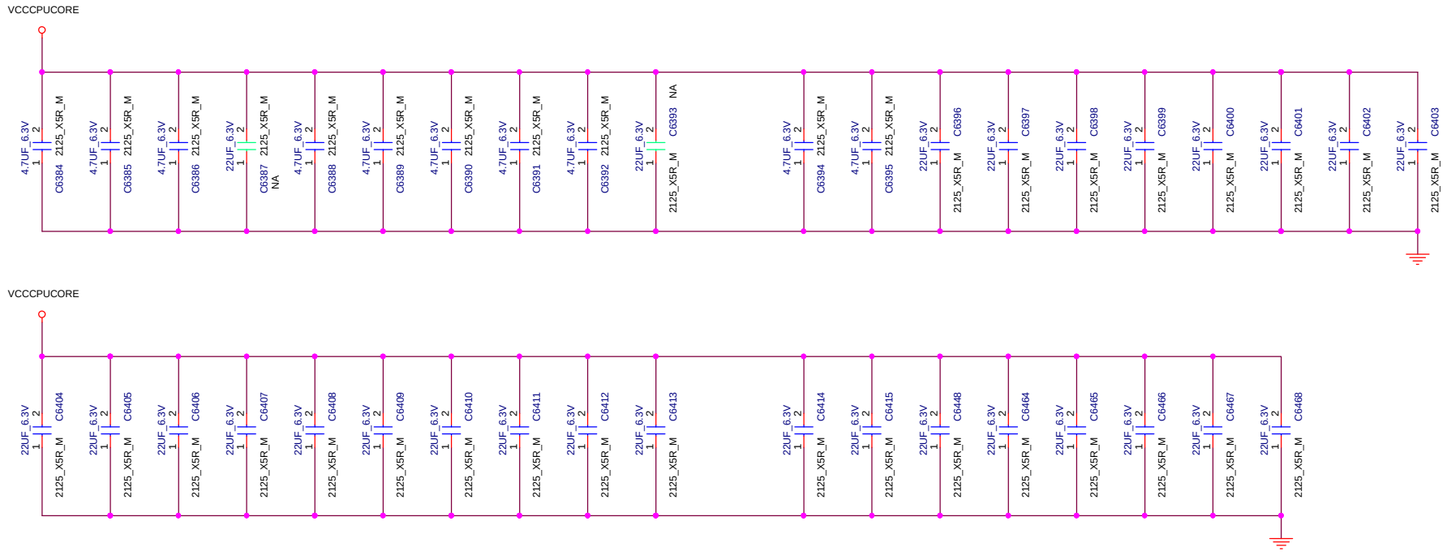
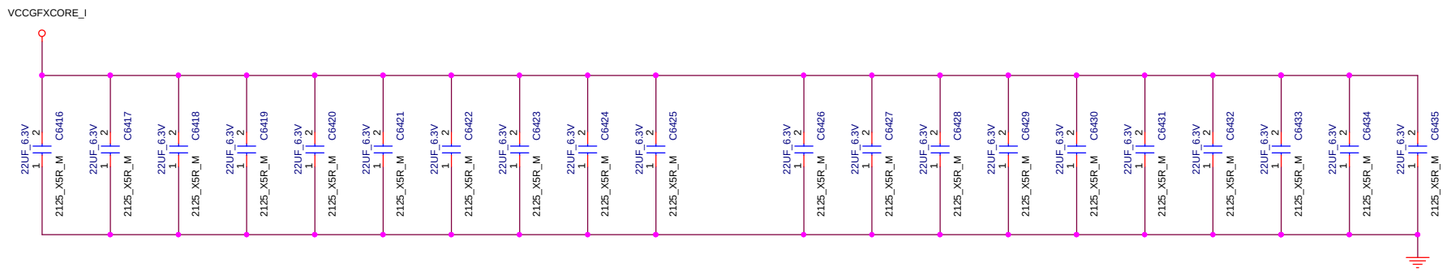
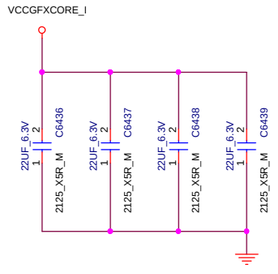


26pcs 22uF and 10pcs 4.7uF for VCCCPUCORE



24 x 22uF MLCC for VCCGFXCORE_I



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Project Name : NZM-4 SWG SOVP	Title : VCCCPUCORE DECOUPLING	
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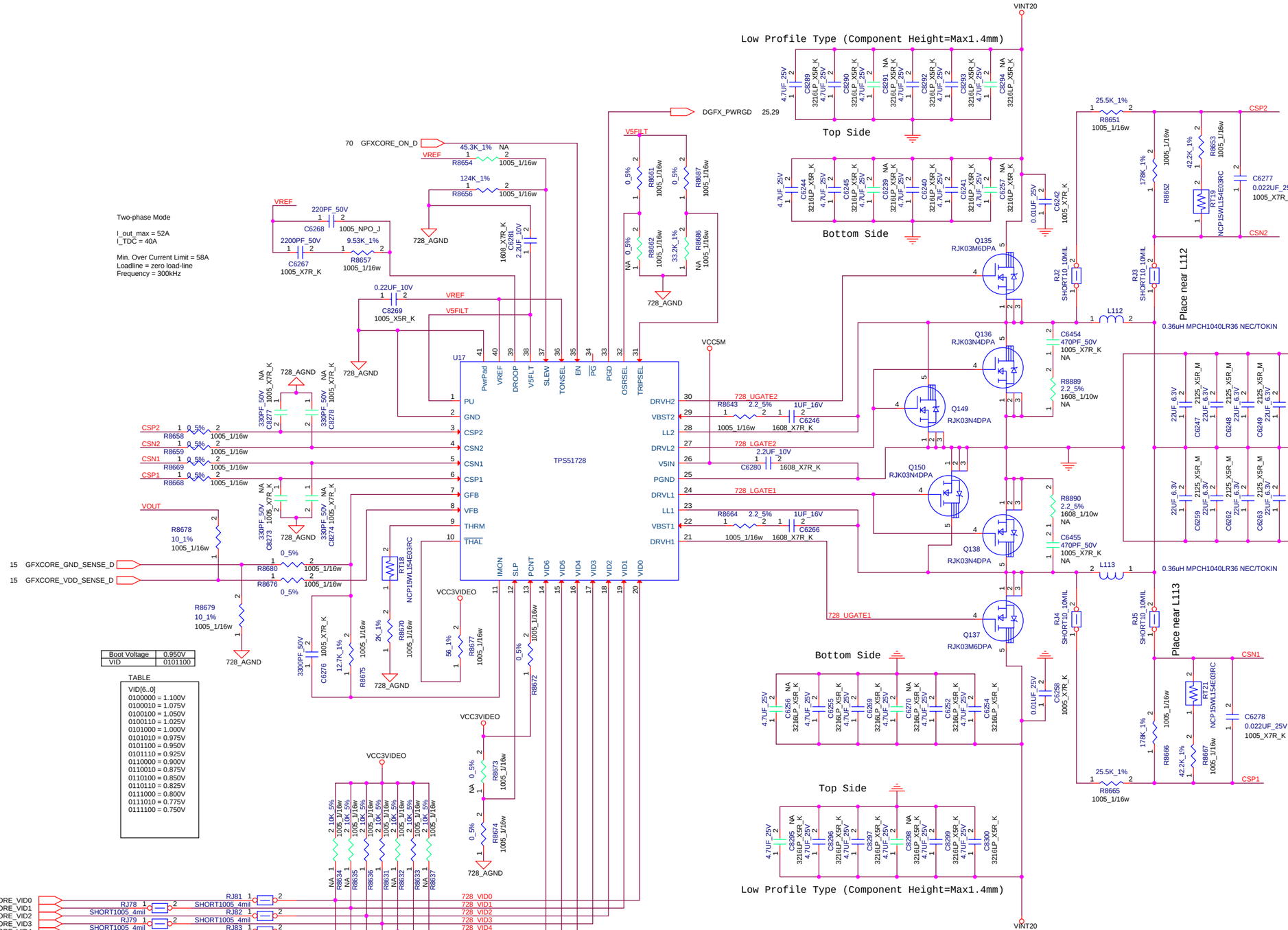
All the input MLCCs on 20V must be placed symmetrically on Top and Bottom.



All the input MLCCs on 20V must be placed symmetrically on Top and Bottom.

Project Name : NZM-4 SWG SOVP	Title : DC/DC VCCGFXCORE_D (TPS51728)
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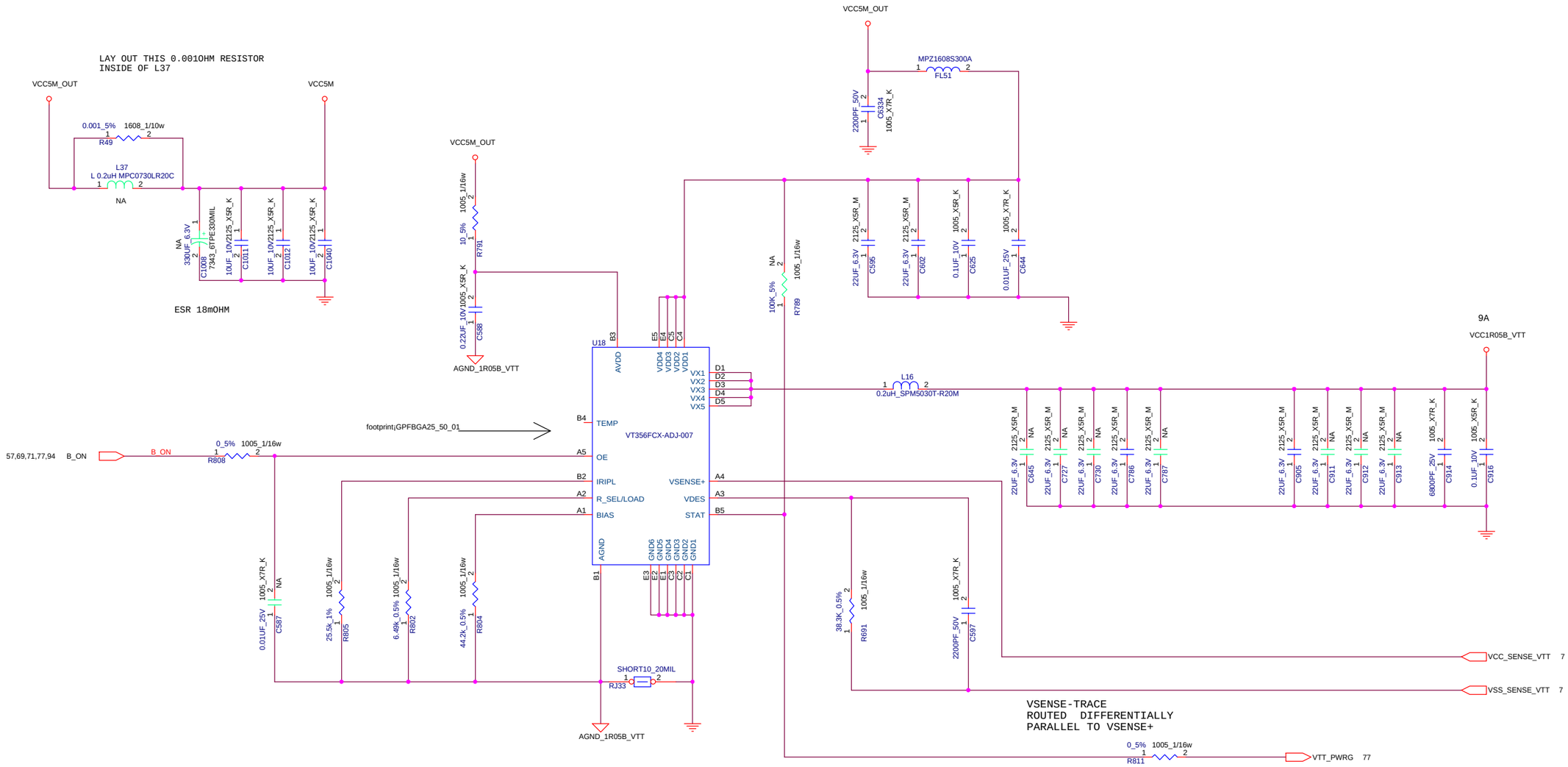

TO ASSIGN VT356 IN BOM

```
1.10V R691 = 40.2K
1.05V R691 = 38.3K
1.00V R691 = 36.5K
VOUT = 1.212*R691/44.2K
```

TABLE

Processor	VCC1R05B_VTT
Sandy Bridge	1.05V
Ivy Bridge ES2	1.05V
Ivy Bridge ES1	1.00V

Project Name : NZM-4 SWG SOVP	Title : DC/DC VCC1R05B_VTT	
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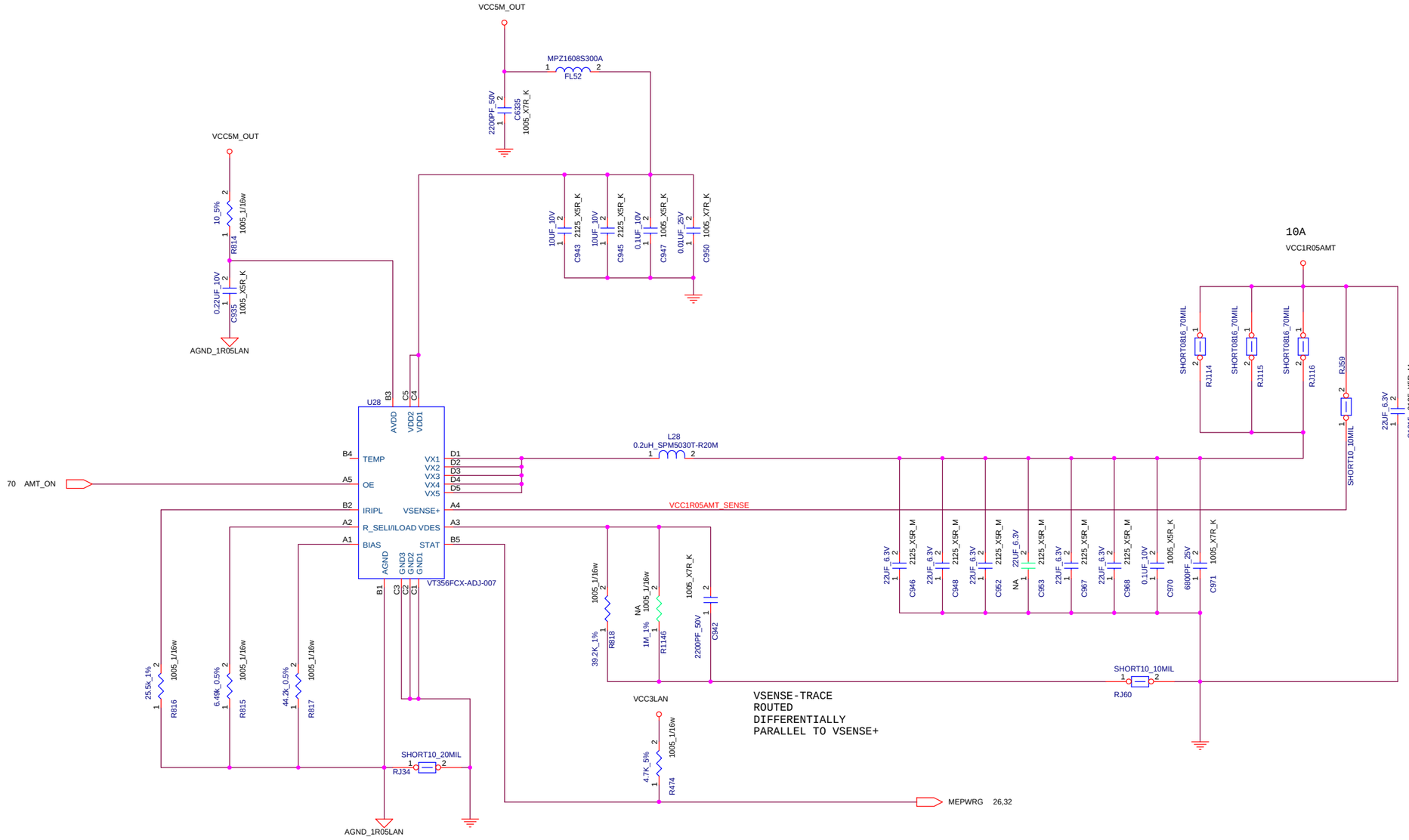

lenovo		
Project Name : NZM-4 SWG SOVP	Title : DC/DC VCC1R05AMT	
Size : C	Document Number :	Rev : 7.54
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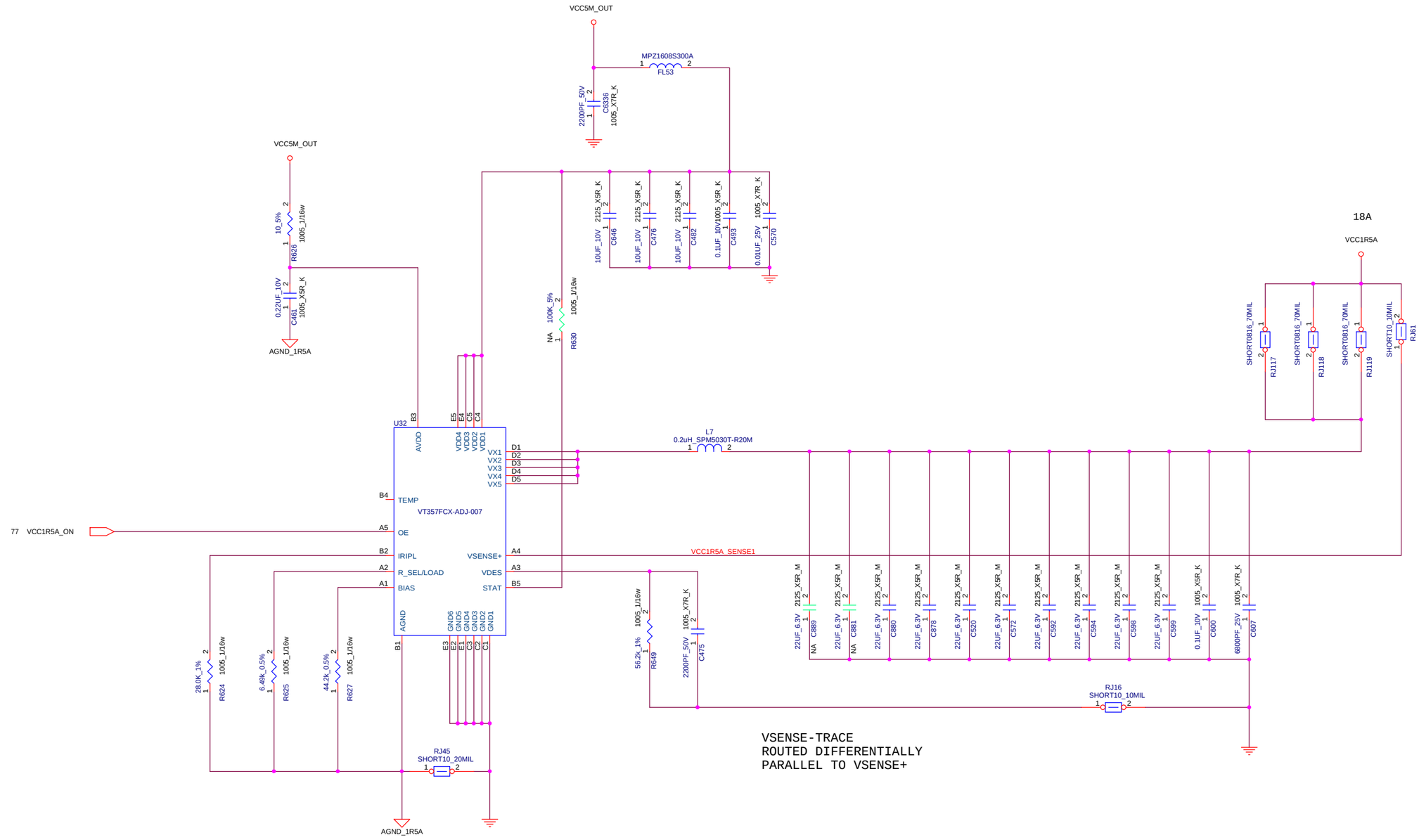

lenovo		
Project Name : NZM-4 SWG SOVP	Title : DC/DC VCC1R5A	
Size : C	Document Number :	Rev : 7.54
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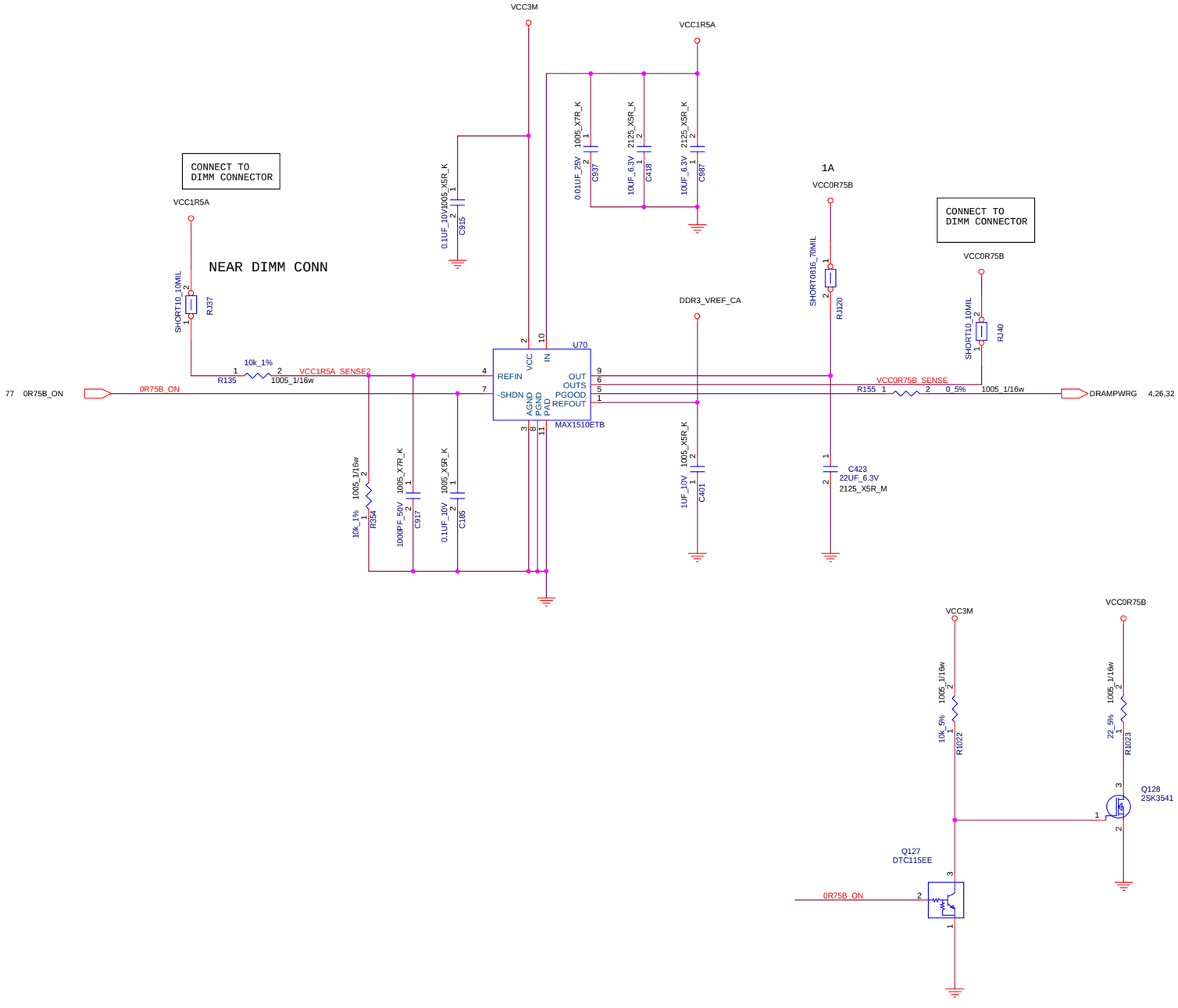

lenovo

Project Name : NZM-4 SWG SOVP	Title : DC/DC VCC0R75B
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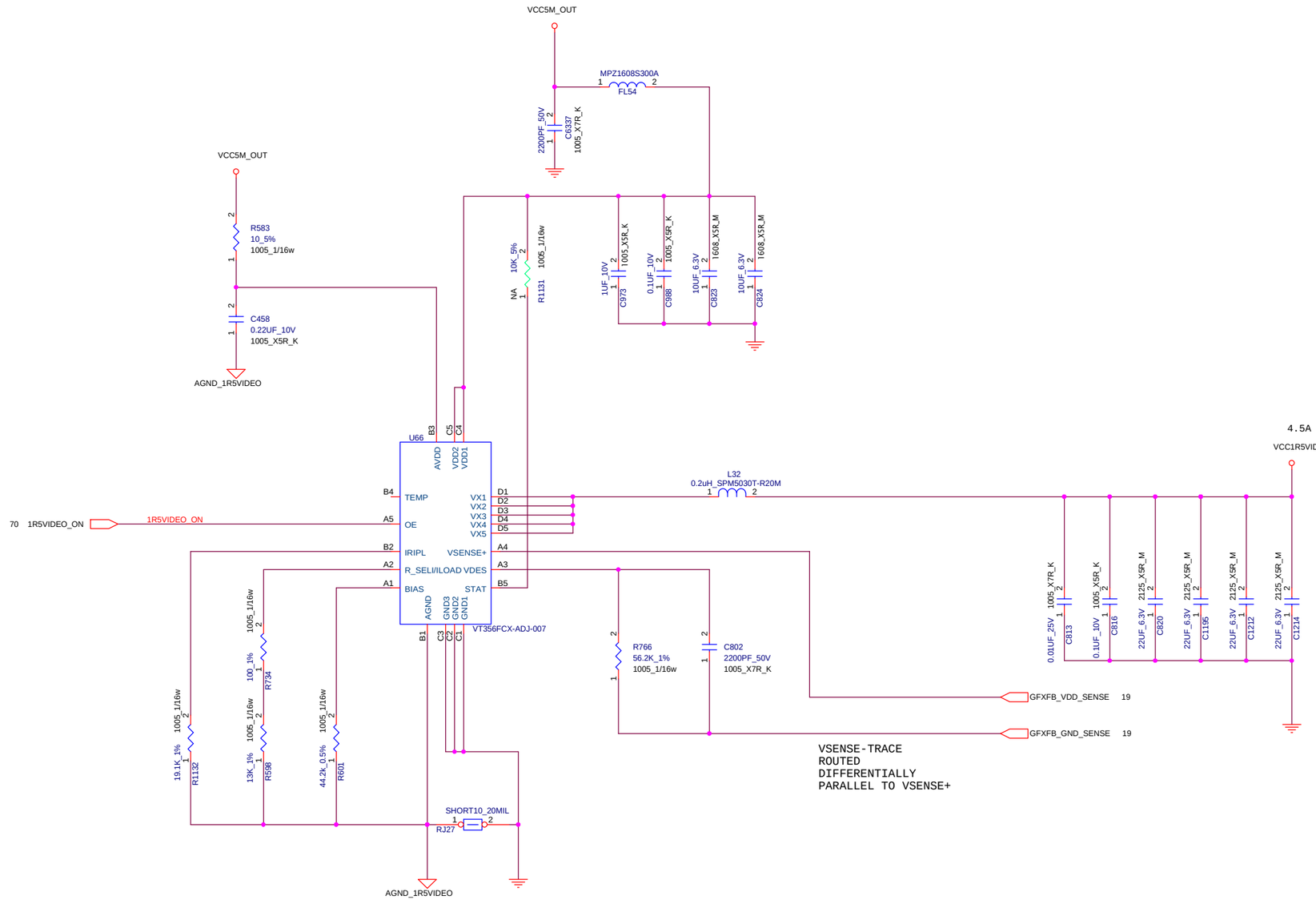

Project Name : NZM-4 SWG SOVP	Title : DC/DC VCC1R5VIDEO	
Size : C	Document Number :	Rev : 7.54
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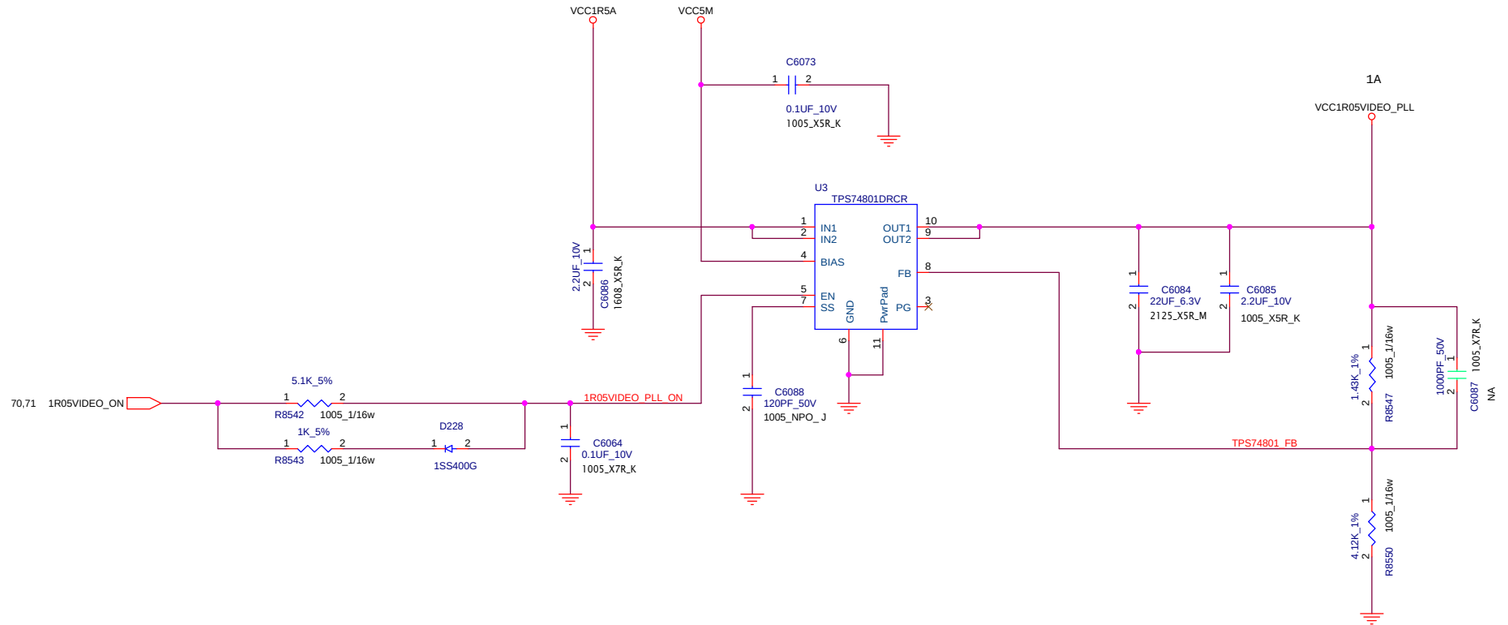

lenovo		
Project Name : NZM-4 SWG SOVP	Title : DC/DC VCC1R5VIDEO_PLL	
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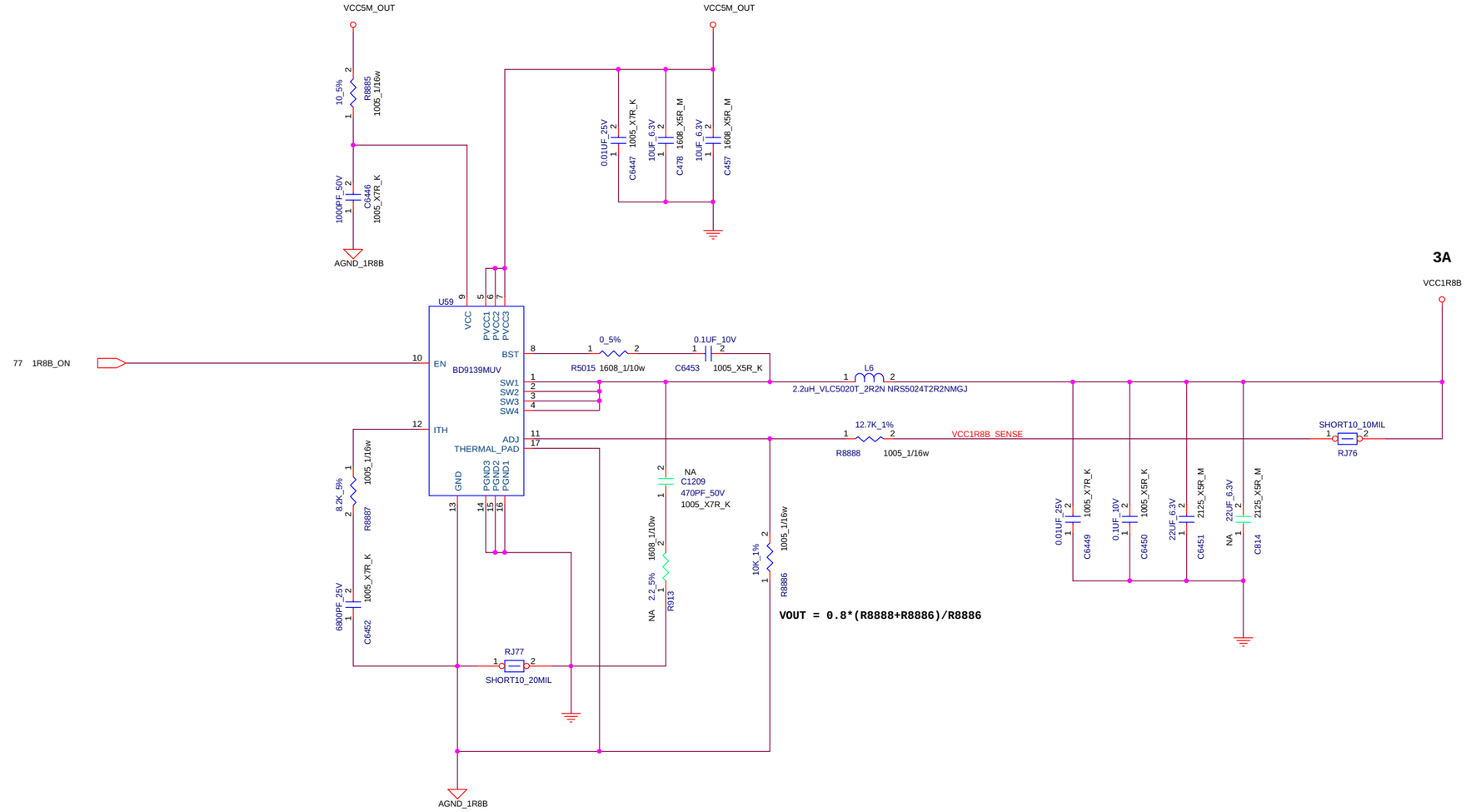

Project Name : NZM-4 SWG SOVP		Title : DC/DC VCC1R8B	
Size : C	Document Number :		Rev : 7.54
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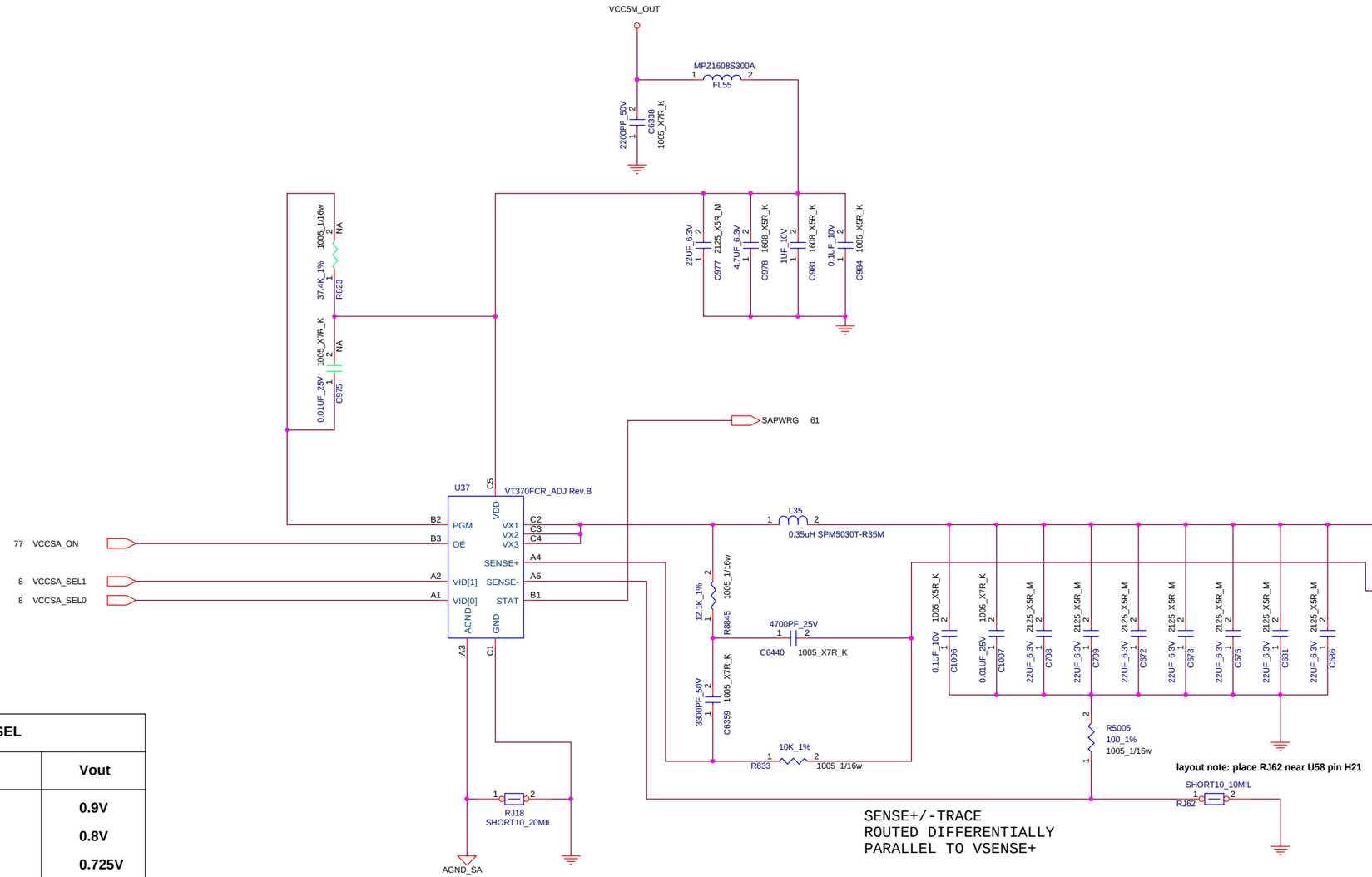

VCCSA_SEL		
VID0	**VID1**	**Vout**
L	**L**	**0.9V**
L	**H**	**0.8V**
H	**L**	**0.725V**
H	**H**	**0.675V**

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Project Name : NZM-4 SWG SOVP	Title : DC/DC VCCSA	
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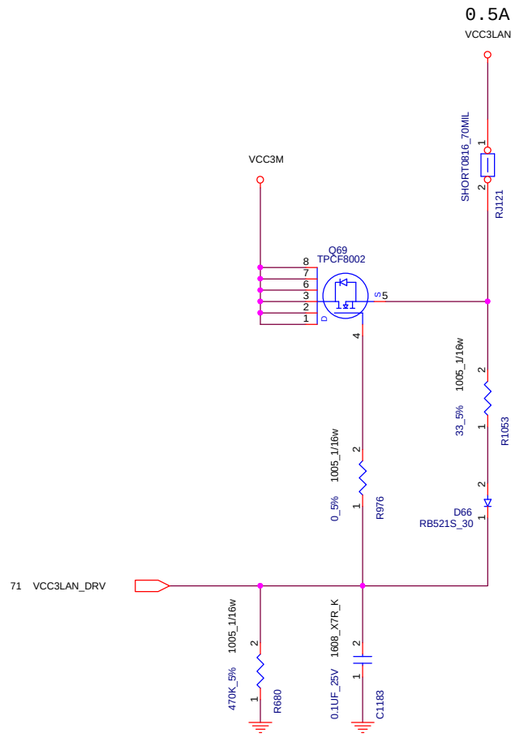

lenovo		
Project Name : NZM-4 SWG SOVP	Title : LOAD SW LAN	
Size : C	Document Number :	Rev : 7.54
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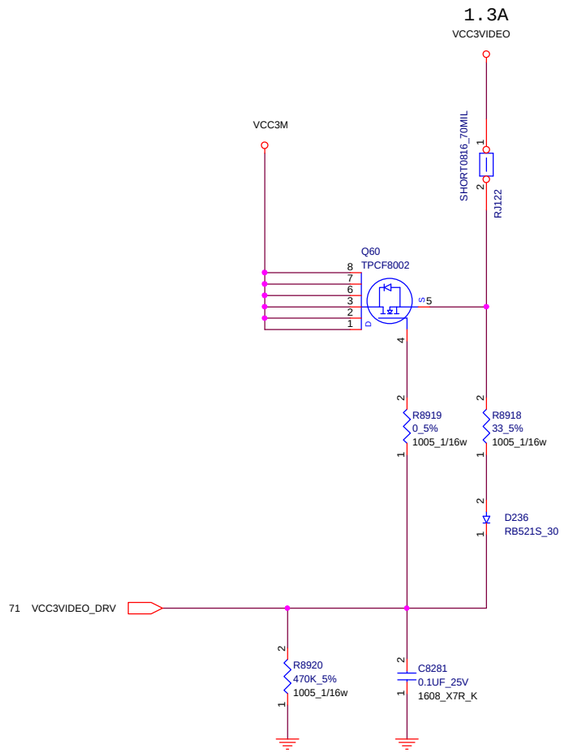

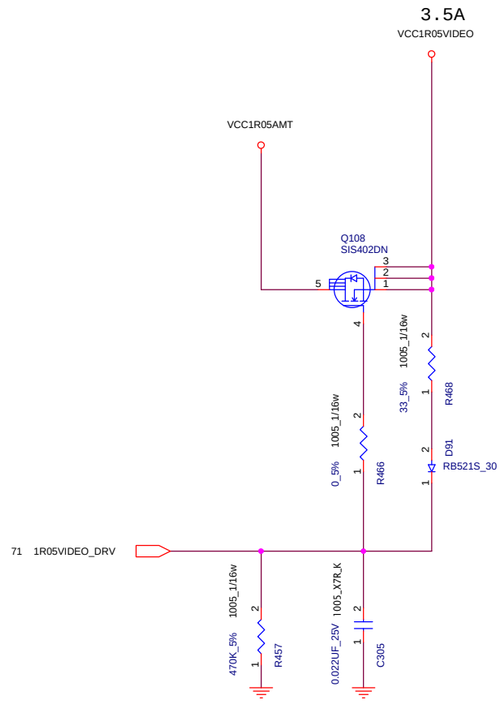

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Project Name : NZM-4 SWG SOVP	Title : LOAD SW VIDEO	
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BLANK

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Project Name : NZM-4 SWG SOVP		Title : BLANK	
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7.2A
VCC3B
SHORT0816_70MIL
RJ123
VCC3M
Q24
SIS402DN
270_5%
1005_1/16w
R532
RB521S_30
D30
37,71 VCC3B_DRV
470K_5%
1005_1/16w
R866
0.1UF_25V
1608_X7R_K
C604

4A
VCC5M
VCC5B
TPCF8002
Q23
100_5%
1005_1/16w
R830
RB521S_30
D72
71 VCC5B_DRV
470K_5%
1005_1/16w
R46
0.047UF_25V
1005_X7R_K
C706

10A
VCC1R5_VDDQ
SHORT0816_70MIL
RJ124
SHORT0816_70MIL
RJ125

6A
VCC1R05B
SHORT0816_70MIL
RJ126

VCC3M
VCC1R5_VDDQ
10k_5%
1005_1/16w
R1024
220_5%
1005_1/16w
R1025
Q130
2SK3541
Q129
DTC115EE
57,69,71,77,83 B_ON

0.4A
VCC1R5A
VCC1R5B
Q11
TPCF8002
0_5%
1005_1/16w
R338
47_5%
1005_1/16w
R806
RB521S_30
D71
71 B_DRV
470K_5%
1005_1/16w
R801
0.022UF_25V
1005_X7R_K
C614

VCC1R5A
Q126
TPCA8056-H
NA
0.001_5%
1608_1/10w
R710
0_5%
1005_1/16w
R587
47_5%
1005_1/16w
R619
RB521S_30
D92
0.022UF_25V
1005_X7R_K
C864

STITCHING CAPACITORS
VCC1R5_VDDQ
VCC1R5A
0.1UF_10V 1005_X5R_K C865
0.1UF_10V 1005_X5R_K C866
0.1UF_10V 1005_X5R_K C867
0.1UF_10V 1005_X5R_K C868

VCC1R05AMT
Q120
TPCA8024_DUAL
0_5%
1005_1/16w
R888
47_5%
1005_1/16w
R899
RB521S_30
D44
0.022UF_25V
1005_X7R_K
C1217

Rds_on = 4.5m ohm MAX @ 10V

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Project Name : NZM-4 SWG SOVP	Title : LOAD SW B	
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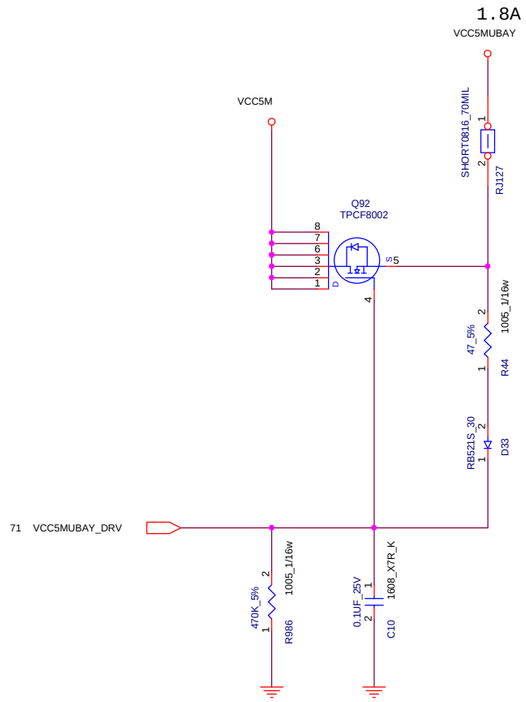

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Project Name : NZM-4 SWG SOVP	Title : LOAD SW VCC5MUBAY	
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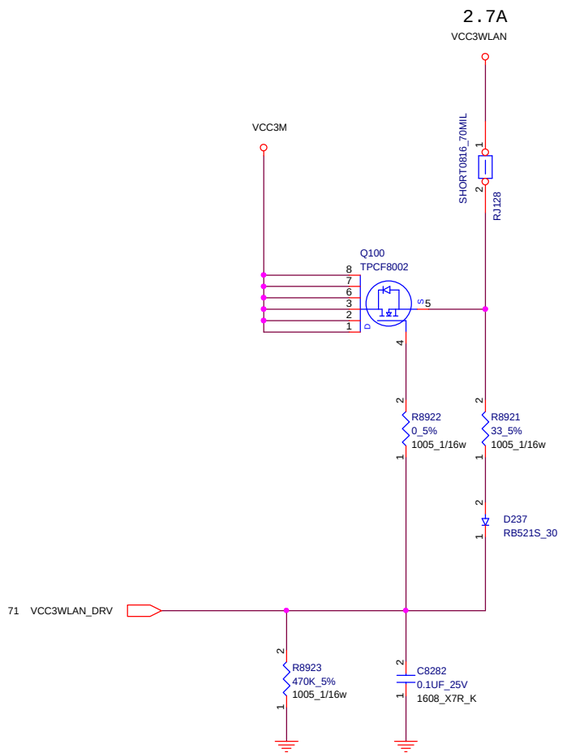

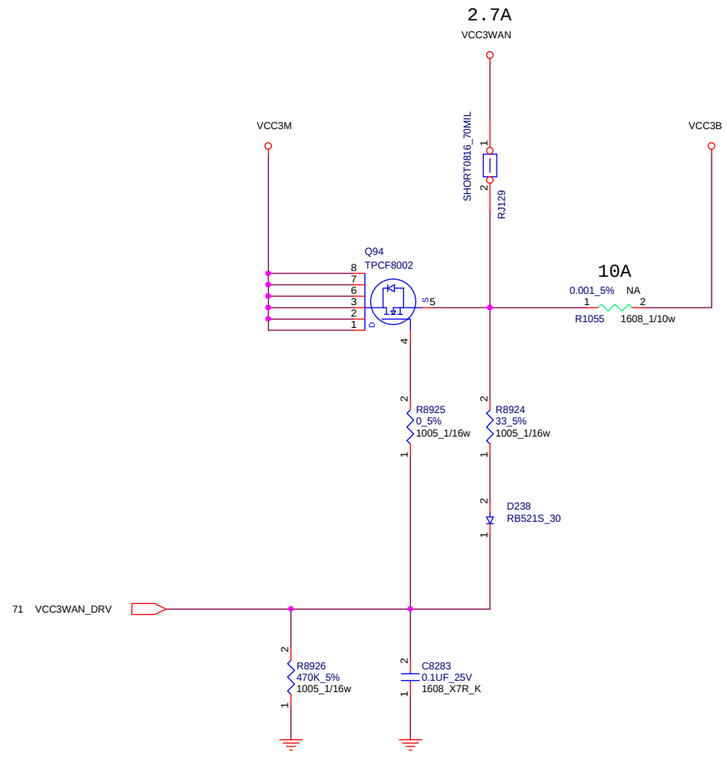

TABLE

AOAC	YES	NO
R1055	NO-ASM	ASM
Q94	ASM	NO-ASM
R8924	ASM	NO-ASM
R8925	ASM	NO-ASM
R8926	ASM	NO-ASM
C8283	ASM	NO-ASM
D238	ASM	NO-ASM

LOGIC

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Project Name : NZM-4 SWG SOVP	Title : LOAD SW WAN & WLAN	
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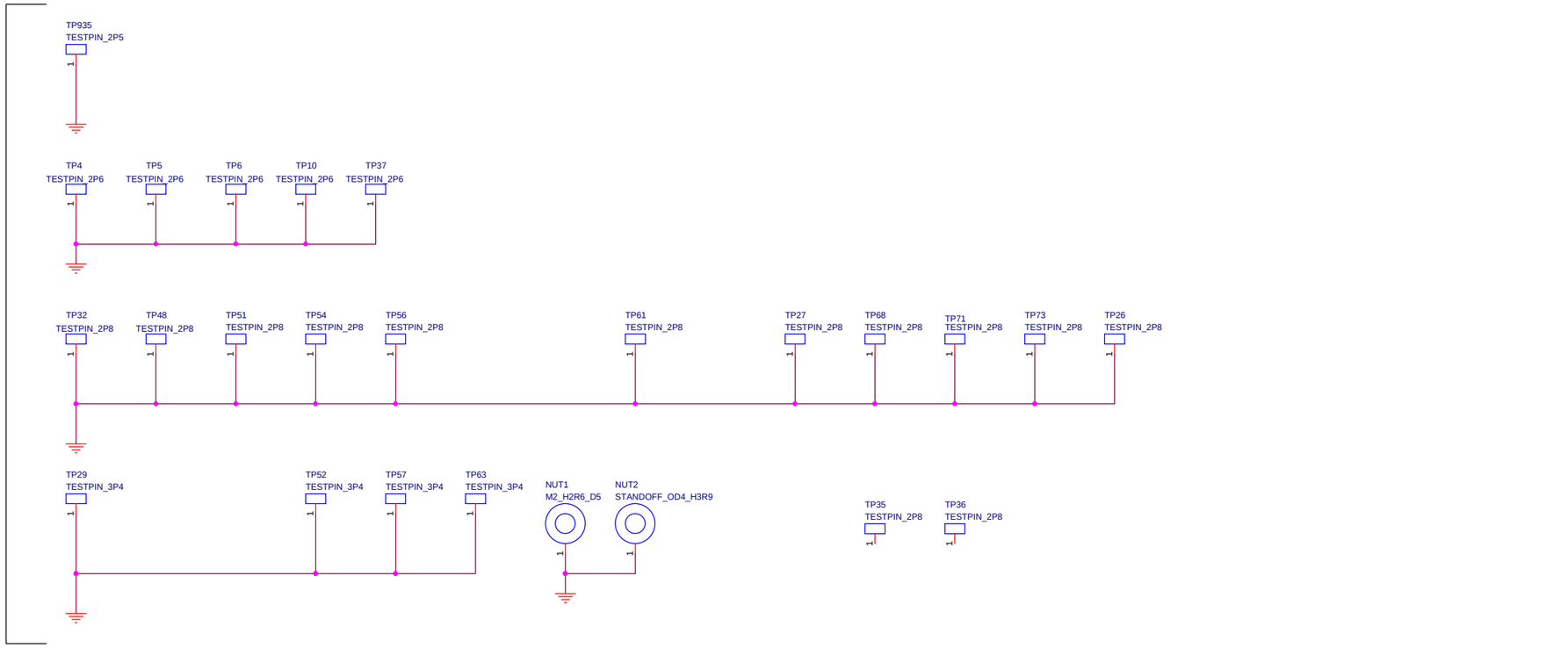
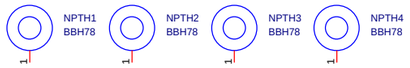
PTH FOR SCREW HOLE



NPTH



FID
Board Area

FD1 NC, NO CONNECT TO ANY.
FD2 NC, NO CONNECT TO ANY.
FD3 NC, NO CONNECT TO ANY.
FD4 NC, NO CONNECT TO ANY.
FD5 NC, NO CONNECT TO ANY.
FD6 NC, NO CONNECT TO ANY.

CF25 NC, NO CONNECT TO ANY.
CF26 NC, NO CONNECT TO ANY.

FID
Component Area

CF1 NC, NO CONNECT TO ANY.
CF2 NC, NO CONNECT TO ANY.
CF3 NC, NO CONNECT TO ANY.
CF4 NC, NO CONNECT TO ANY.
CF5 NC, NO CONNECT TO ANY.
CF6 NC, NO CONNECT TO ANY.
CF7 NC, NO CONNECT TO ANY.
CF8 NC, NO CONNECT TO ANY.
CF9 NC, NO CONNECT TO ANY.
CF10 NC, NO CONNECT TO ANY.
CF15 NC, NO CONNECT TO ANY.
CF16 NC, NO CONNECT TO ANY.
CF17 NC, NO CONNECT TO ANY.
CF18 NC, NO CONNECT TO ANY.
CF19 NC, NO CONNECT TO ANY.
CF20 NC, NO CONNECT TO ANY.
CF21 NC, NO CONNECT TO ANY.
CF22 NC, NO CONNECT TO ANY.
CF23 NC, NO CONNECT TO ANY.
CF24 NC, NO CONNECT TO ANY.

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Project Name : NZM-4 SWG SOVP	Title : PTH FOR SCREW HOLES	
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