E266 - MXM PCI-E Desktop adapter card (Interposer)

Table of Contents:

SKU	VARIANT	NVPN	ASSEMBLY
B	BASE	600-10266-base-sch	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
1	0000BRINGUP	600-10266-0000-200	E266-A02 MXM Adapter Board
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15	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>

Revision History:

A00: INITIAL VERSION - 600-10266-0000-000

2/19/04 - Adding in the Power Supplies and Cleaning up the look.
2/25/04 - Need to change back to P266 from E266
3/01/04 - Major Schematic Changes: All Power Supplies and I/O
3/04/04 - Cleaning up some Power Net errors + other stuff
3/10/04 - Updating changes from design review
3/12/04 - Change names back to E266, Pullups on DDCB_S* and swap Drain/
src on Q16 and Q17. Fixed 5V_DDC net. Added Pullups on I2C
nets and changed to the correct voltage.
3/16/04 - Added New Docking Station Connector Page 9.
3/17/04 - Added Mechanical HW page 8: Bracket and screws
3/19/04 - Added gnd to bracket, added net rules to TV and Dock TMDS nets
U1 now power to 3V3_PEX was 3VRUN. deleted r155,157,159 tv.
Extin CKT: D4 changed pkg from sot23 to SMA. Moved D2 to Q1.
Q1 - changed part number same package, flipped Drain & SRC.
1V3_INT CKT: Use RUN_PWR_OK to EN.
Docking Connector TV signal pins changed, DDC SDATA/CLK pins
Changed.
2V5RUN: EN added 2 resistors from 5VRUN.
Fixed PWM controller: Had some wrong pins.
3/24/04 - Board has been REFDES re-sequenced, added 3 reserved signals
from MXM CN1 to docking connector.

A00: 600-10266-0000-100

4/06/04 - Fixed J2 4-pin power panel net from VBATT to VBAT.
Added N-chn fet for the 1V8 Power supply LED to 5V. Was not
bright enough before.
Changed value of R502 on 2V5RUN linear to 8.2K. Voltage on
enable pin was too low before.
5VRUN, 1V8RUN, and 3V3RUN ISL6224 switcher EN pin 3 was
getting too high with VBAT >19V or 7V EN. This caused the
switcher not to work. Added Comparator to EN 5VRUN, and used
5VRUN for 1V8RUN and 3V3RUN.
External/12V_PEX input sense circuit did not work on A00.
Added 2 more FETS to set the external VBAT switcher voltage.
CN1 mxm connector changed 4 pin nets. 1V8RUN, 5VRUN, RUNPWROK.
Added MXM_CUTOUT symbol to ground the mxm mounting holes.

A02: 600-10266-0000-200

6/01/04 - Fixed VBAT FET swapped Drain and Source
Added LVDS ZIF connector for Panel Power
6/07/04 - Added R117 1210 1/4W pull-down to sink diode
leakage current at high temp.
6/09/04 - Fixed DAC/TV Impedance rule 50+/-2. This changes 75 to 150.

A03: 600-10266-0000-300

9/16/04 - Add New MXM Connector for P311.
Change Board outline in Lower right corner to fit into Alviso.
10/18/04 - C14 package change to 1206 from 1210.
Added Page 10. LVDS brd to Brd Daughter board interface.
New 2x30 brd tio brd connector for LVDS qualification.
Power Supply fets changed to 12V_PEX from VBAT.
Added AC_BATT* circuit.

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
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2701 SAN TOMAS EXPRESSWAY
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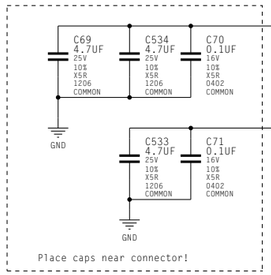
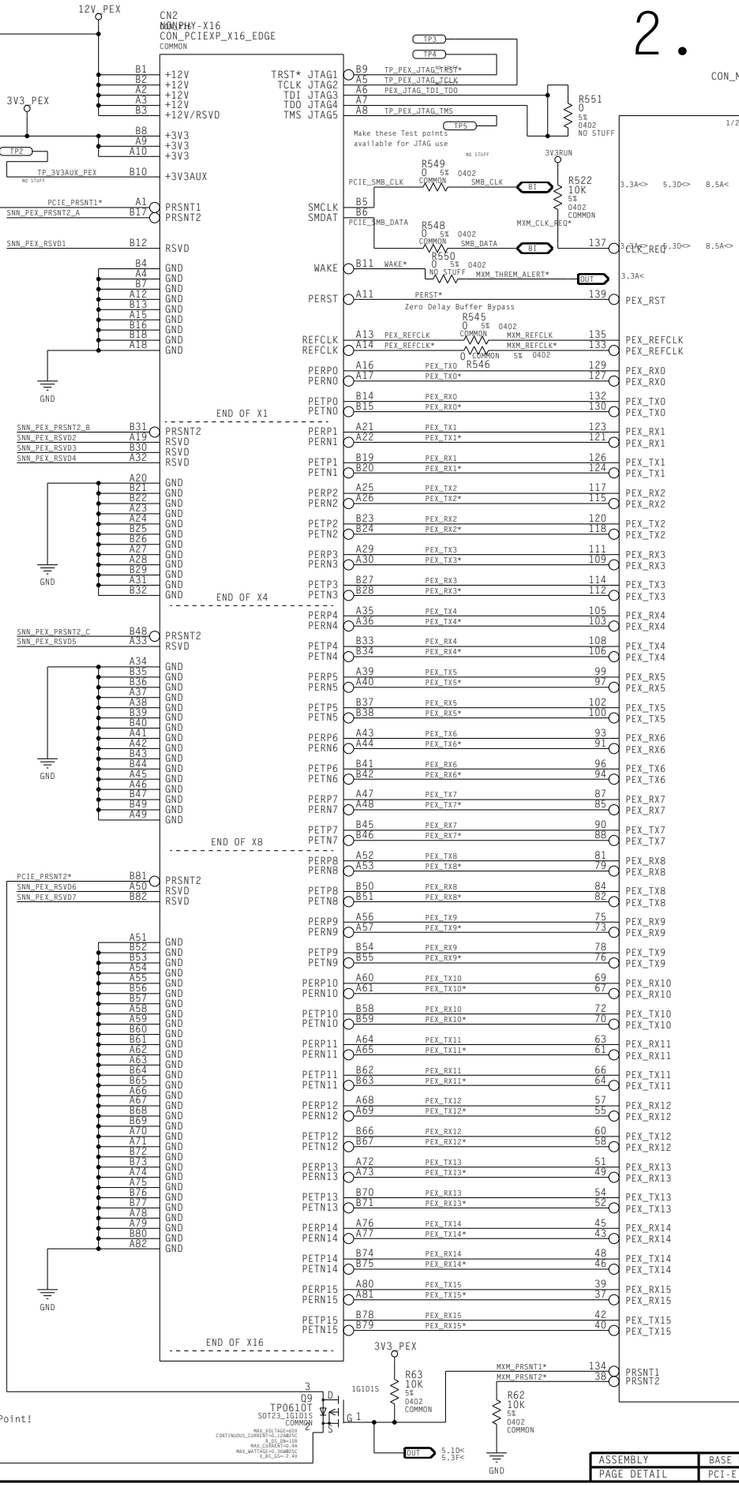
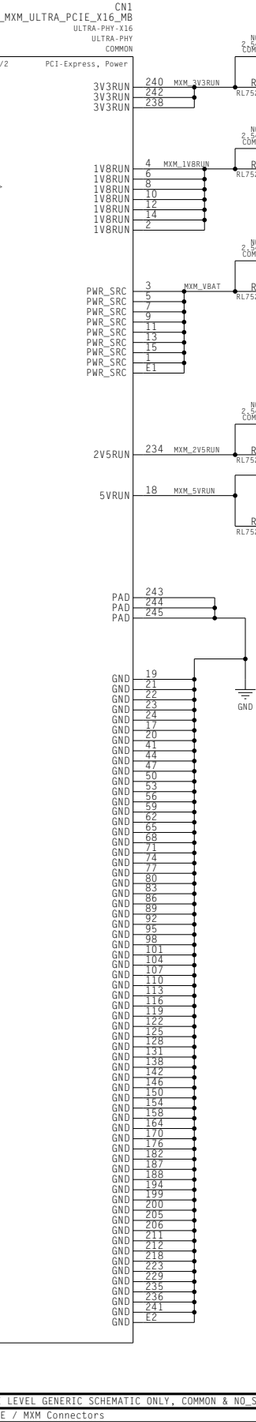
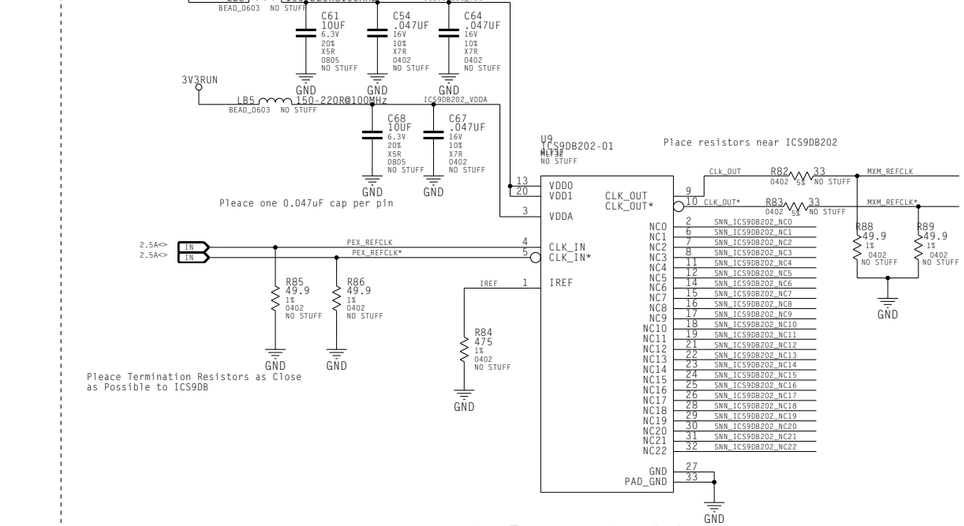
2. PCI-E / MXM Connectors









3GIO NET RULES

NET	MIN_LINE_WIDTH	DIFFPAIR	NET_SPACING_RULE
PEX_TX0	4MILS	PEX_TX0	20MIL_G2G_30MIL
PEX_TX0*	4MILS	PEX_TX0	20MIL_G2G_30MIL
PEX_TX1	4MILS	PEX_TX1	20MIL_G2G_30MIL
PEX_TX1*	4MILS	PEX_TX1	20MIL_G2G_30MIL
PEX_TX2	4MILS	PEX_TX2	20MIL_G2G_30MIL
PEX_TX2*	4MILS	PEX_TX2	20MIL_G2G_30MIL
PEX_TX3	4MILS	PEX_TX3	20MIL_G2G_30MIL
PEX_TX3*	4MILS	PEX_TX3	20MIL_G2G_30MIL
PEX_TX4	4MILS	PEX_TX4	20MIL_G2G_30MIL
PEX_TX4*	4MILS	PEX_TX4	20MIL_G2G_30MIL
PEX_TX5	4MILS	PEX_TX5	20MIL_G2G_30MIL
PEX_TX5*	4MILS	PEX_TX5	20MIL_G2G_30MIL
PEX_TX6	4MILS	PEX_TX6	20MIL_G2G_30MIL
PEX_TX6*	4MILS	PEX_TX6	20MIL_G2G_30MIL
PEX_TX7	4MILS	PEX_TX7	20MIL_G2G_30MIL
PEX_TX7*	4MILS	PEX_TX7	20MIL_G2G_30MIL
PEX_TX8	4MILS	PEX_TX8	20MIL_G2G_30MIL
PEX_TX8*	4MILS	PEX_TX8	20MIL_G2G_30MIL
PEX_TX9	4MILS	PEX_TX9	20MIL_G2G_30MIL
PEX_TX9*	4MILS	PEX_TX9	20MIL_G2G_30MIL
PEX_TX10	4MILS	PEX_TX10	20MIL_G2G_30MIL
PEX_TX10*	4MILS	PEX_TX10	20MIL_G2G_30MIL
PEX_TX11	4MILS	PEX_TX11	20MIL_G2G_30MIL
PEX_TX11*	4MILS	PEX_TX11	20MIL_G2G_30MIL
PEX_TX12	4MILS	PEX_TX12	20MIL_G2G_30MIL
PEX_TX12*	4MILS	PEX_TX12	20MIL_G2G_30MIL
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PEX_TX15	4MILS	PEX_TX15	20MIL_G2G_30MIL
PEX_TX15*	4MILS	PEX_TX15	20MIL_G2G_30MIL
PEX_RX0	4MILS	PEX_RX0	20MIL_G2G_30MIL
PEX_RX0*	4MILS	PEX_RX0	20MIL_G2G_30MIL
PEX_RX1	4MILS	PEX_RX1	20MIL_G2G_30MIL
PEX_RX1*	4MILS	PEX_RX1	20MIL_G2G_30MIL
PEX_RX2	4MILS	PEX_RX2	20MIL_G2G_30MIL
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PEX_RX12	4MILS	PEX_RX12	20MIL_G2G_30MIL
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PEX_RX13	4MILS	PEX_RX13	20MIL_G2G_30MIL
PEX_RX13*	4MILS	PEX_RX13	20MIL_G2G_30MIL
PEX_RX14	4MILS	PEX_RX14	20MIL_G2G_30MIL
PEX_RX14*	4MILS	PEX_RX14	20MIL_G2G_30MIL
PEX_RX15	4MILS	PEX_RX15	20MIL_G2G_30MIL
PEX_RX15*	4MILS	PEX_RX15	20MIL_G2G_30MIL
PEX_REFCLK	4MILS	PEX_REFCLK	20MIL_G2G_30MIL
PEX_REFCLK*	4MILS	PEX_REFCLK	20MIL_G2G_30MIL

Zero Delay Buffer

For High Jitter Motherboard PEX_REFCLKs

NET	MIN_LINE_WIDTH		VOLTAGE
MXM_VBAT	50 MIL	15.0	12V
MXM_2V5RUN	12 MIL		2.5V
MXM_1V8RUN	50 MIL	6.0	1.8V
MXM_3V3RUN	12 MIL		3.3V
MXM_5VRUN	12 MIL		5V

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PCI-E / MXM Connectors

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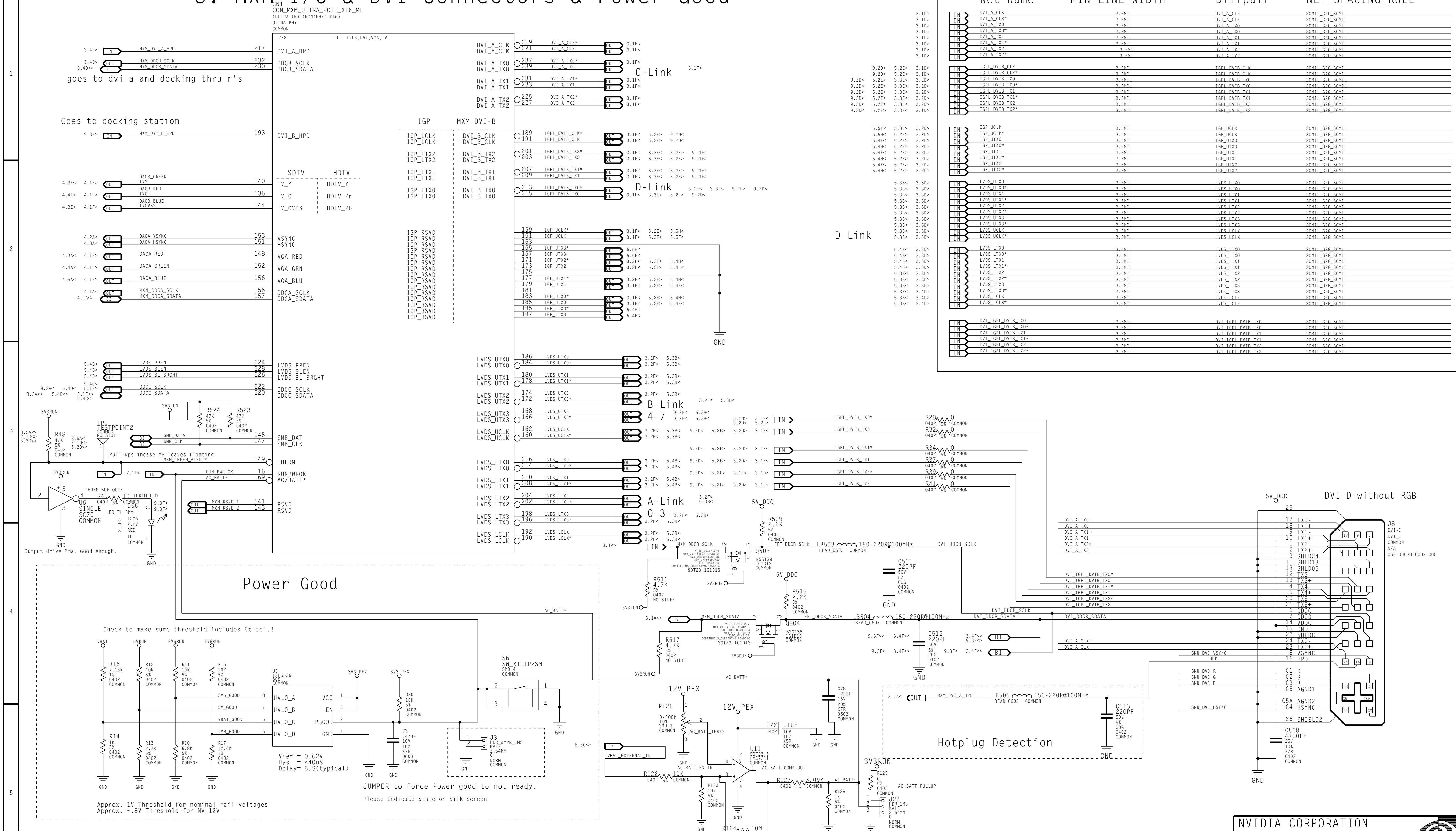
3. MXM I/O & DVI Connectors & Power Good



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MXM I/O & DVI Connectors

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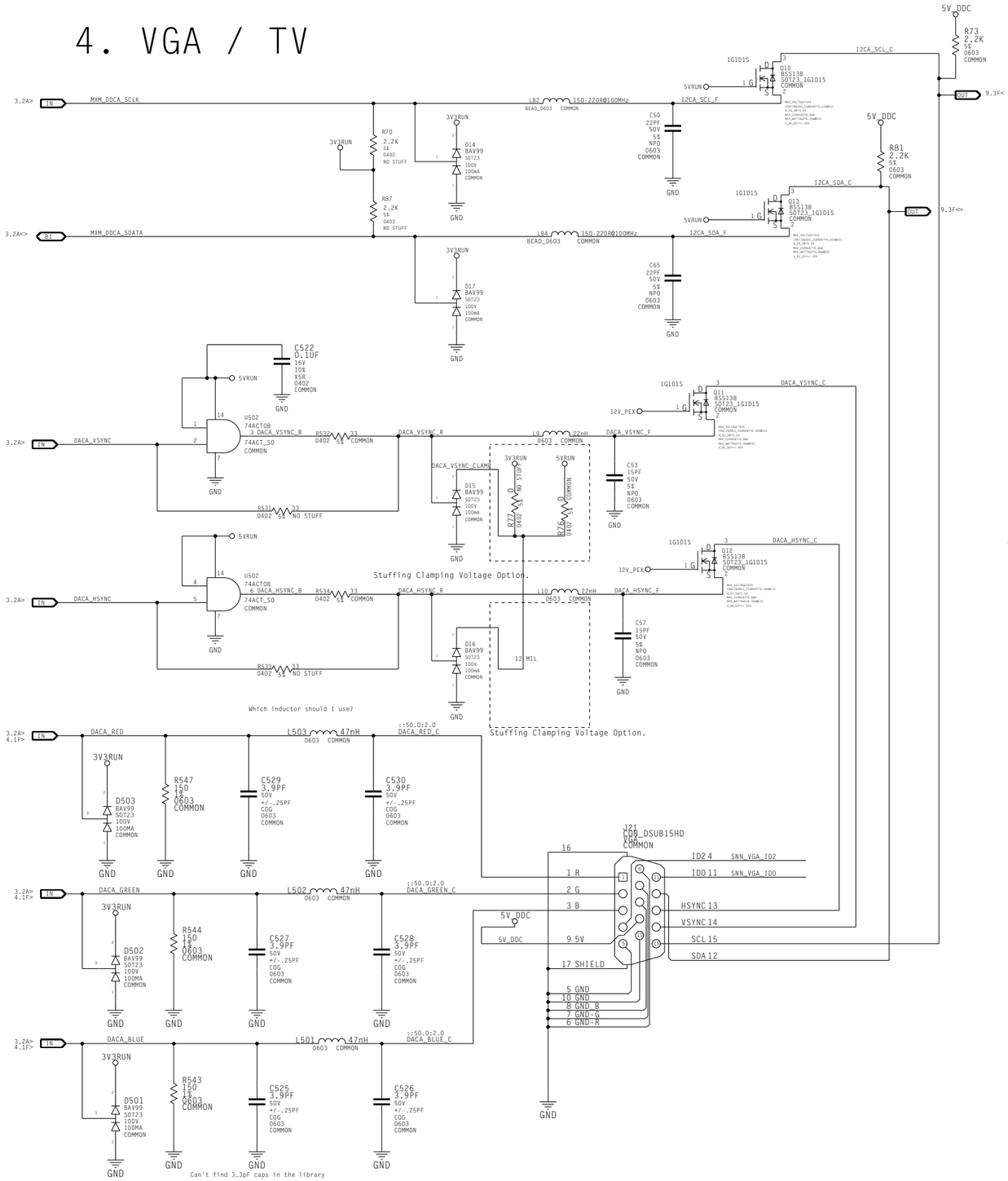
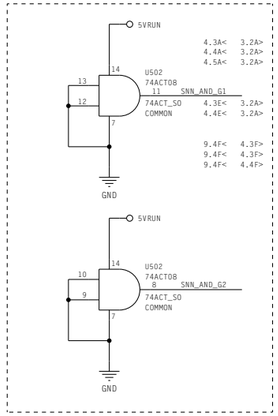
4. VGA / TV



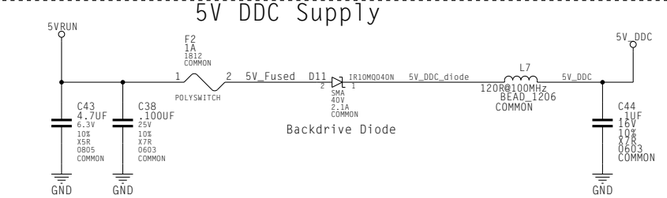
UNUSED Gates



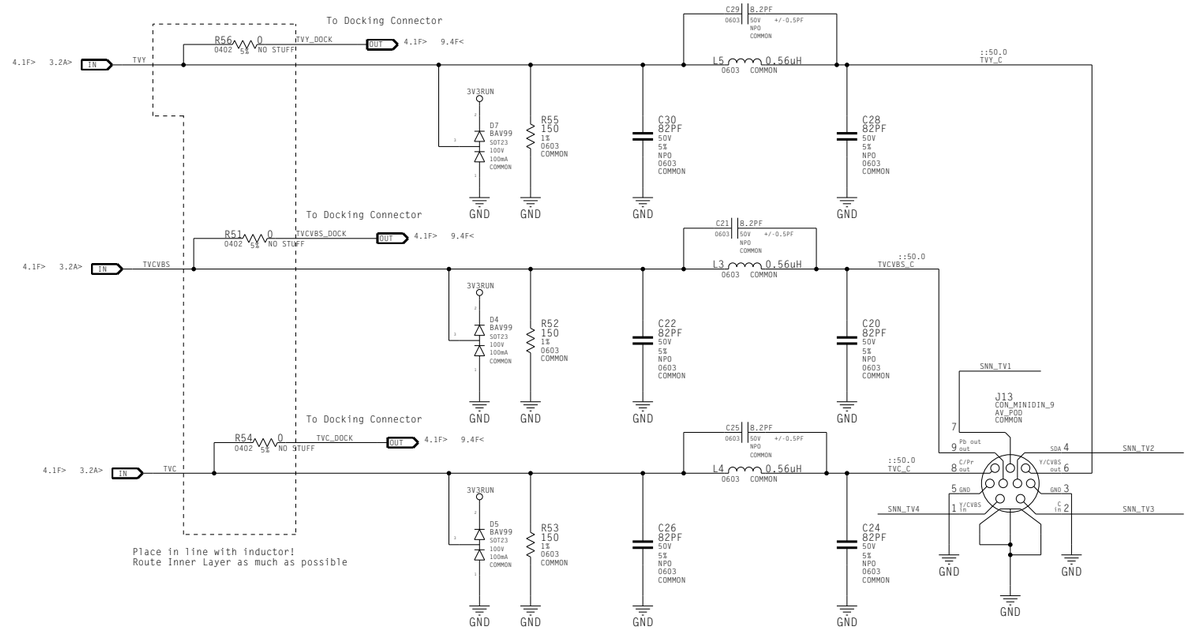
NET SPACING RULE

NET	IMPEDANCE_RULE	NET_SPACING_TYPE
DACA_RED	::50.0:2.0	20MIL_G2G_30MIL
DACA_GREEN	::50.0:2.0	20MIL_G2G_30MIL
DACA_BLUE	::50.0:2.0	20MIL_G2G_30MIL
TVY	::50.0:2.0	20MIL_G2G_30MIL
TVCVBS	::50.0:2.0	20MIL_G2G_30MIL
TVC	::50.0:2.0	20MIL_G2G_30MIL
TVY_DOCK	::50.0:2.0	20MIL_G2G_30MIL
TVCVBS_DOCK	::50.0:2.0	20MIL_G2G_30MIL
TVC_DOCK	::50.0:2.0	20MIL_G2G_30MIL

5V DDC Supply



NET	MIN_LINE_WIDTH	VOLTAGE
5V_Fused	12 MIL	5V
5V_DDC	12 MIL	5V
5V_DDC_diode	12 MIL	5V



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	VGA & TV

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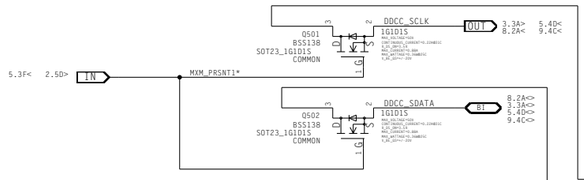
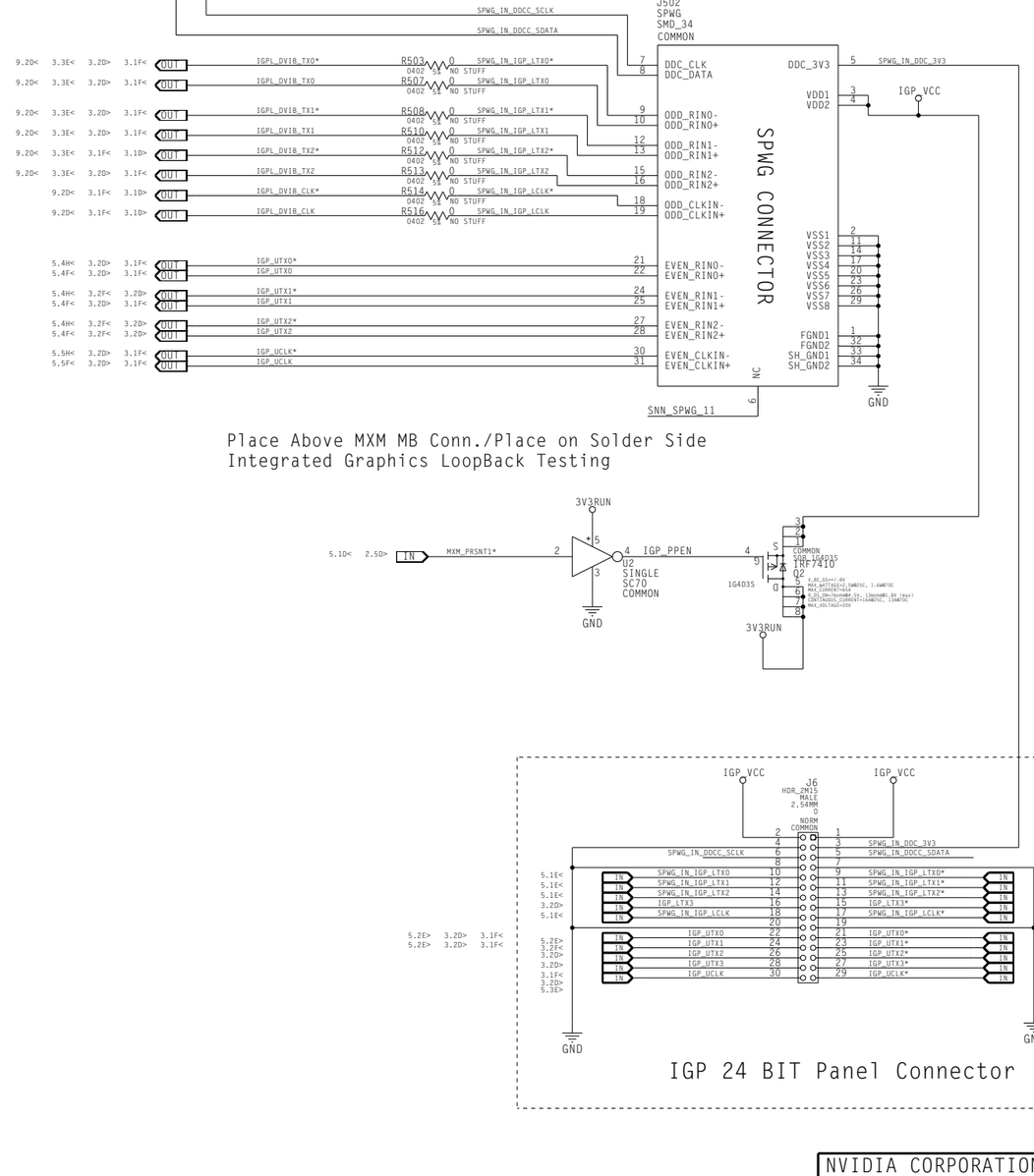
5. Panel Power and SPWG Panel I/O

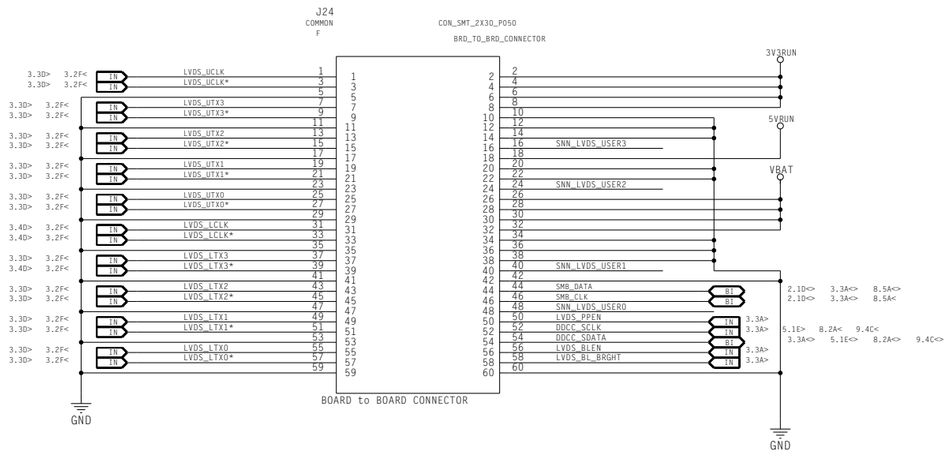


Net Name	MIN_LINE_WIDTH	Diffpair	NET_SPACING_RULE
SPWG_IN_IGP_LTX0	3.5MIL	SPWG_IN_IGP_LTX0	20MIL_GND_30MIL
SPWG_IN_IGP_LTX0*	3.5MIL	SPWG_IN_IGP_LTX0	20MIL_GND_30MIL
SPWG_IN_IGP_LTX1	3.5MIL	SPWG_IN_IGP_LTX1	20MIL_GND_30MIL
SPWG_IN_IGP_LTX1*	3.5MIL	SPWG_IN_IGP_LTX1	20MIL_GND_30MIL
SPWG_IN_IGP_LTX2	3.5MIL	SPWG_IN_IGP_LTX2	20MIL_GND_30MIL
SPWG_IN_IGP_LTX2*	3.5MIL	SPWG_IN_IGP_LTX2	20MIL_GND_30MIL
SPWG_IN_IGP_LCLK	3.5MIL	SPWG_IN_IGP_LCLK	20MIL_GND_30MIL
SPWG_IN_IGP_LCLK*	3.5MIL	SPWG_IN_IGP_LCLK	20MIL_GND_30MIL

SPWG Input Connector



Place Above MXM MB Conn./Place on Solder Side
Integrated Graphics LoopBack Testing



IGP 24 BIT Panel Connector

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	LVDS Panel Interface

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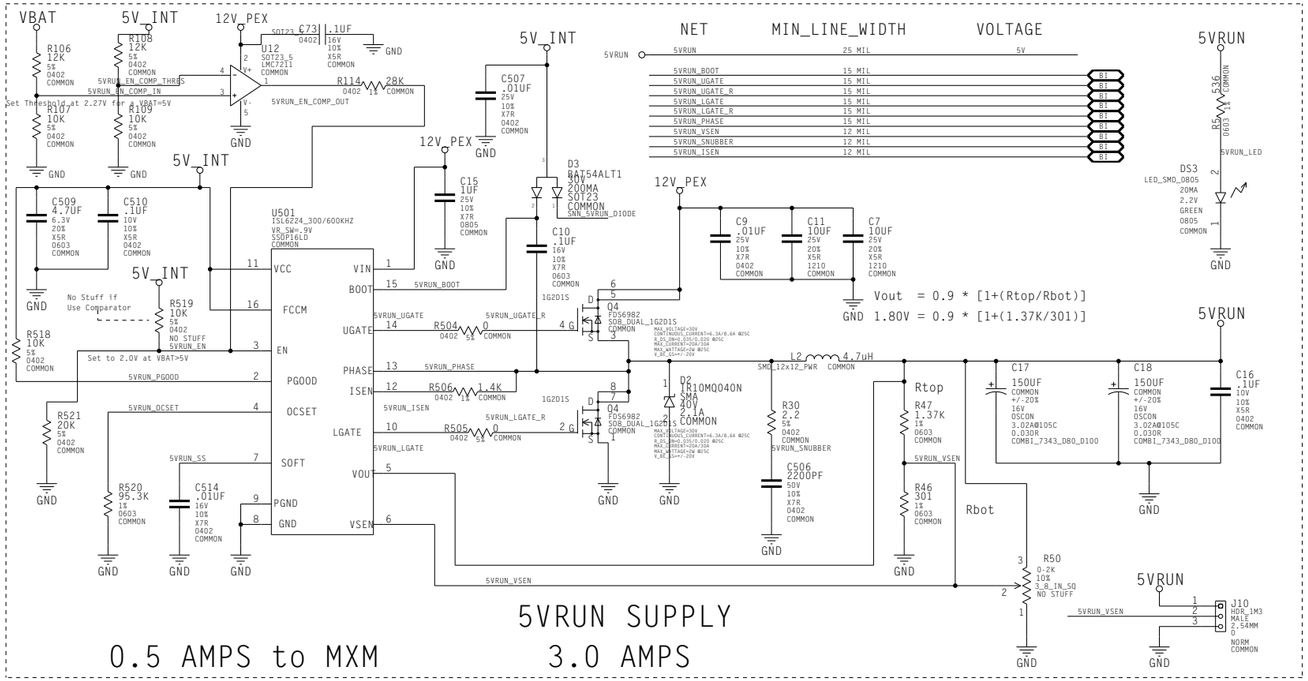
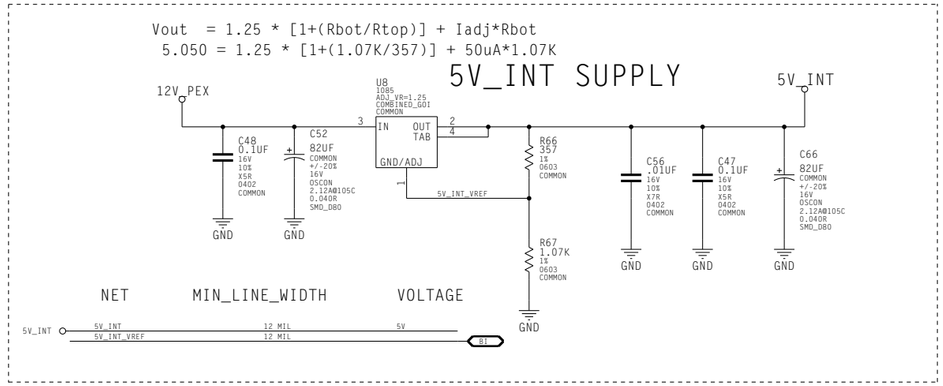
6. Power Supply I: EXT/VBAT 1V8RUN/5VRUN

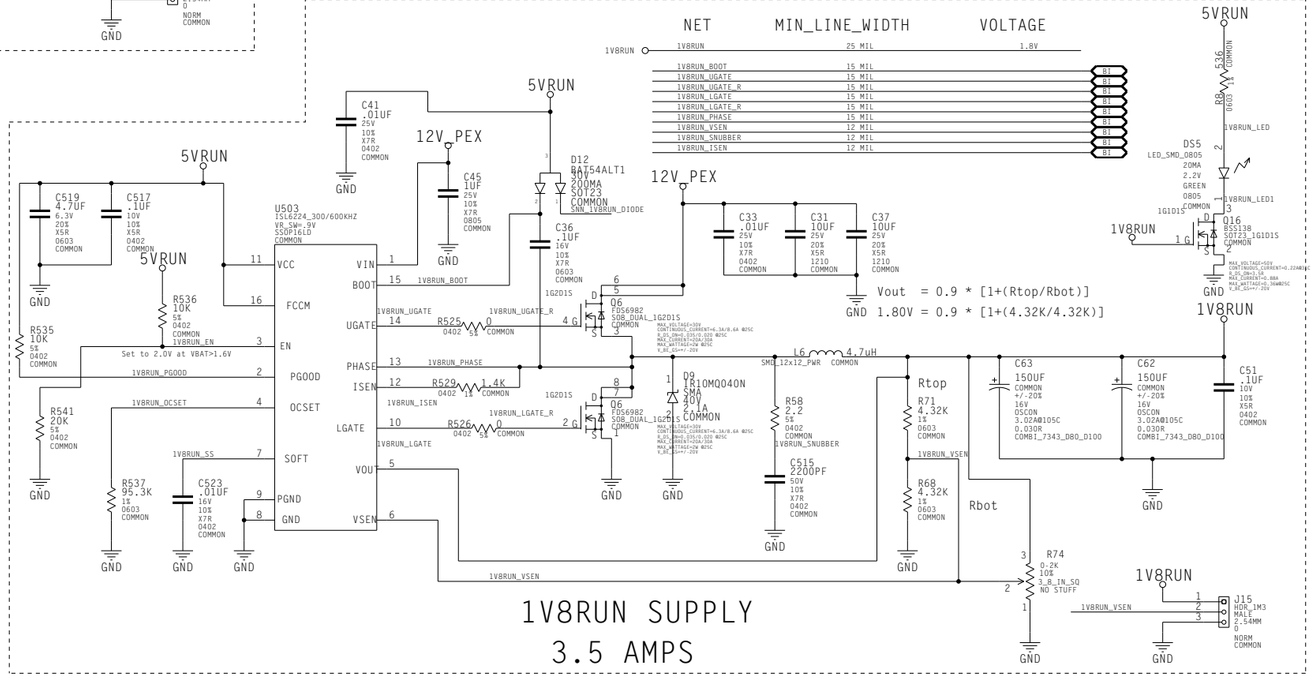
5.0 Volt RUN Power Supply



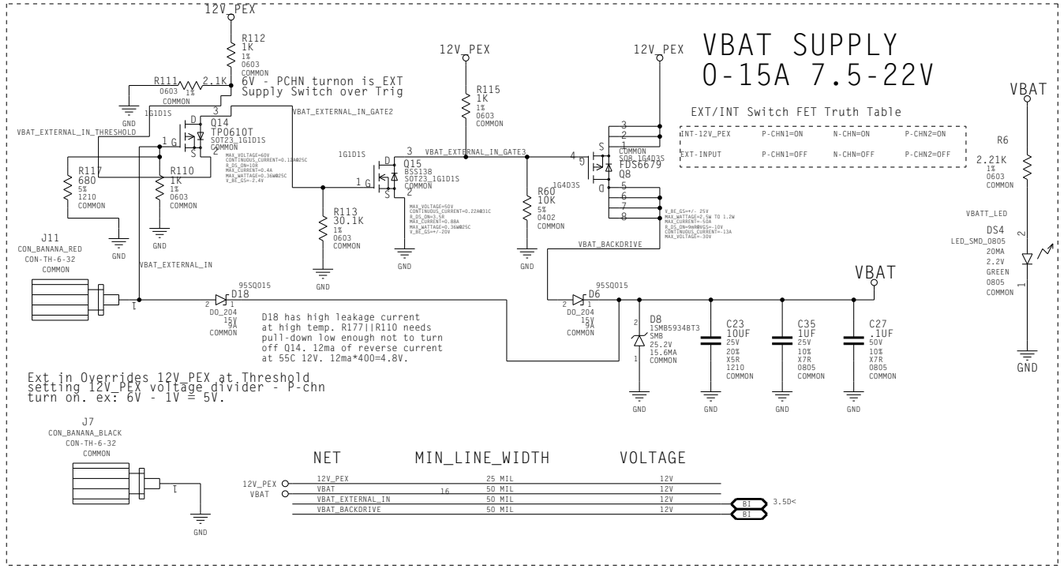
5.0 Internal for 5VRUN Power Supply



1.8 Volt RUN Power Supply



EXTERNAL POWER CONNECTORS + VBAT Power Supply



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS I: Ext/VBAT/1V8&5RUN

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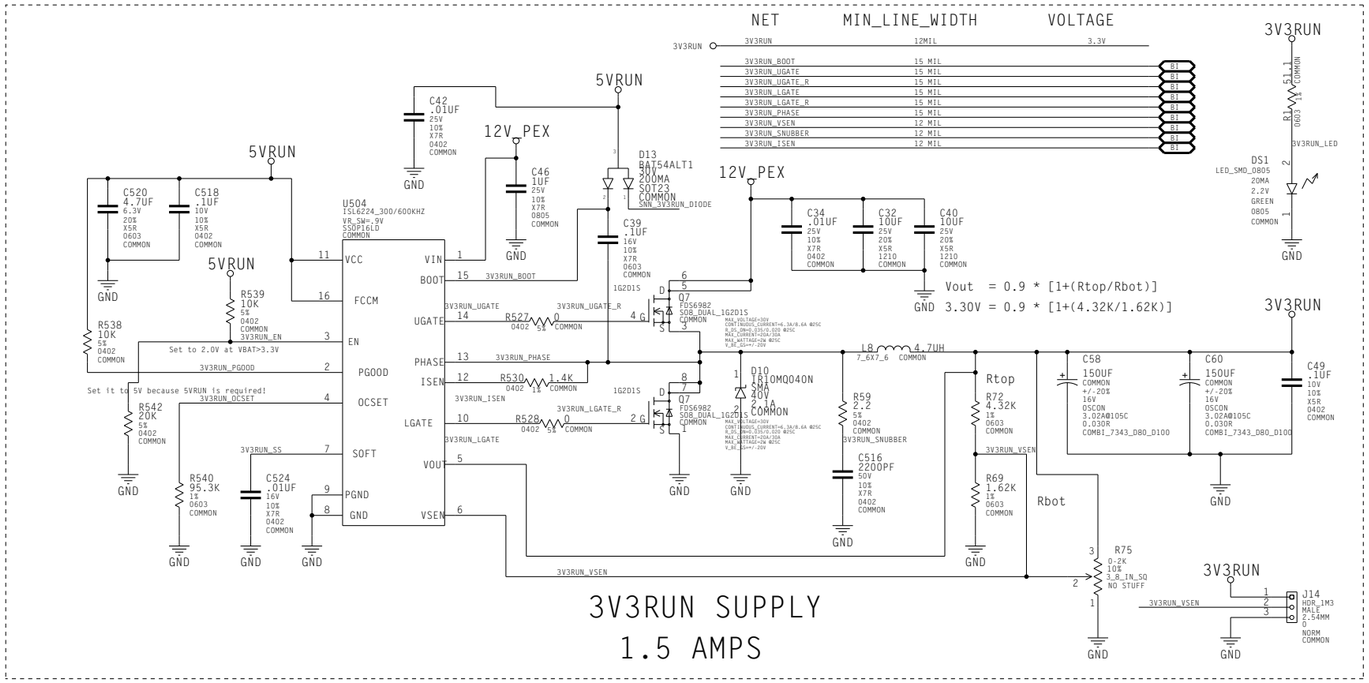
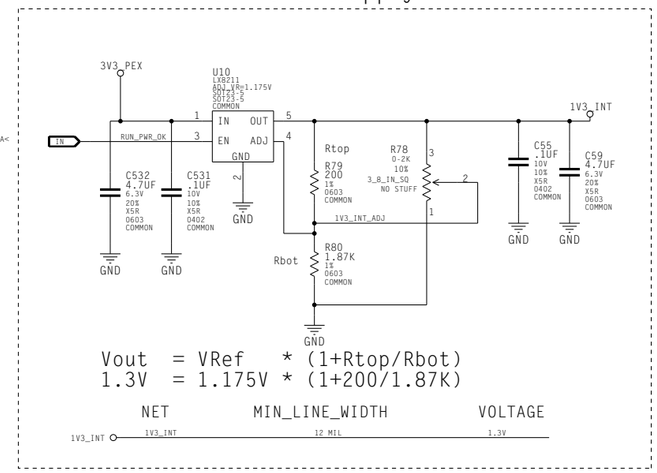
7. Power Supply II: 3V3RUN 2V5RUN/1V3_INT

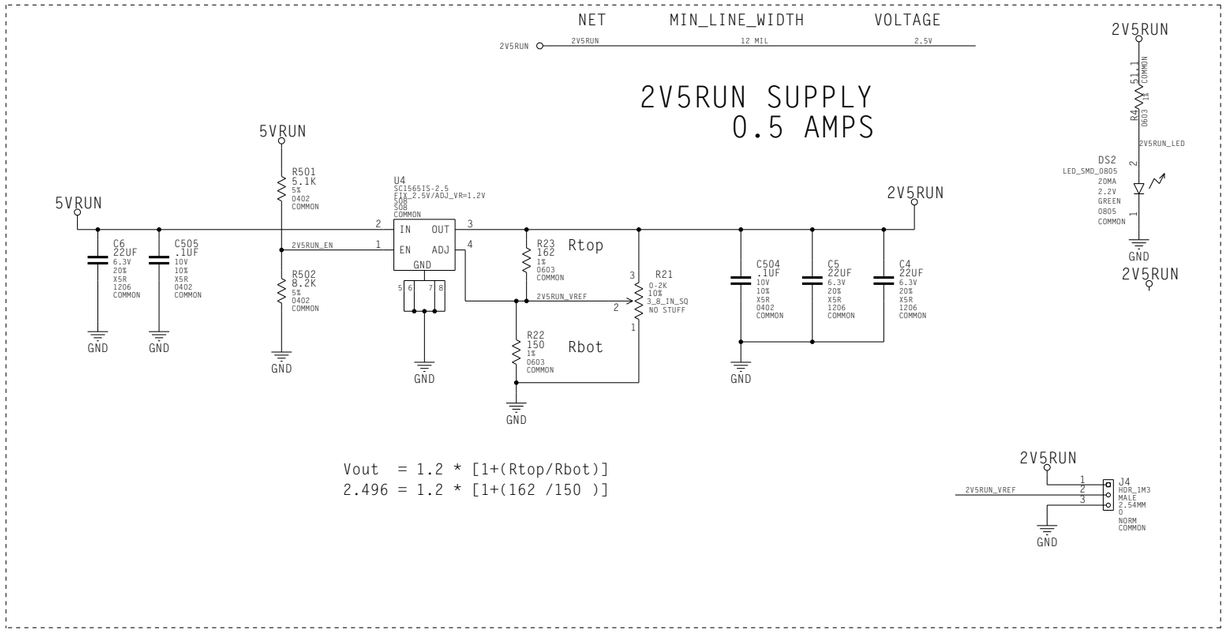
3.3 Volt RUN Power Supply



1.3 Volt Internal Power Supply



2.5 Volt RUN Power Supply



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	3V3RUN/2V5RUN/1_3PEX

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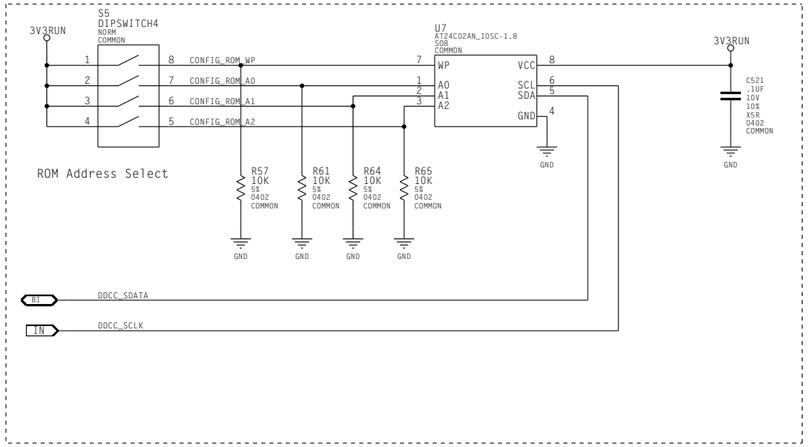
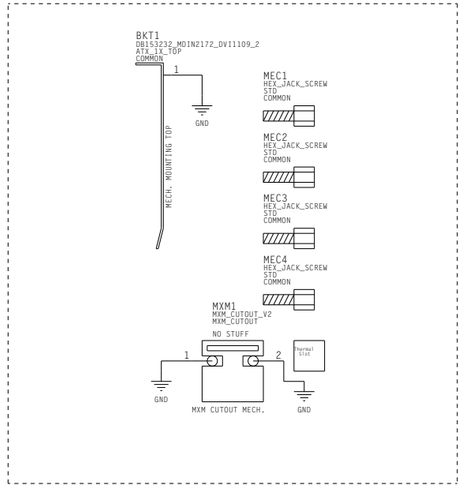
8. Fan Control / DDC-C ROM / Mechanical

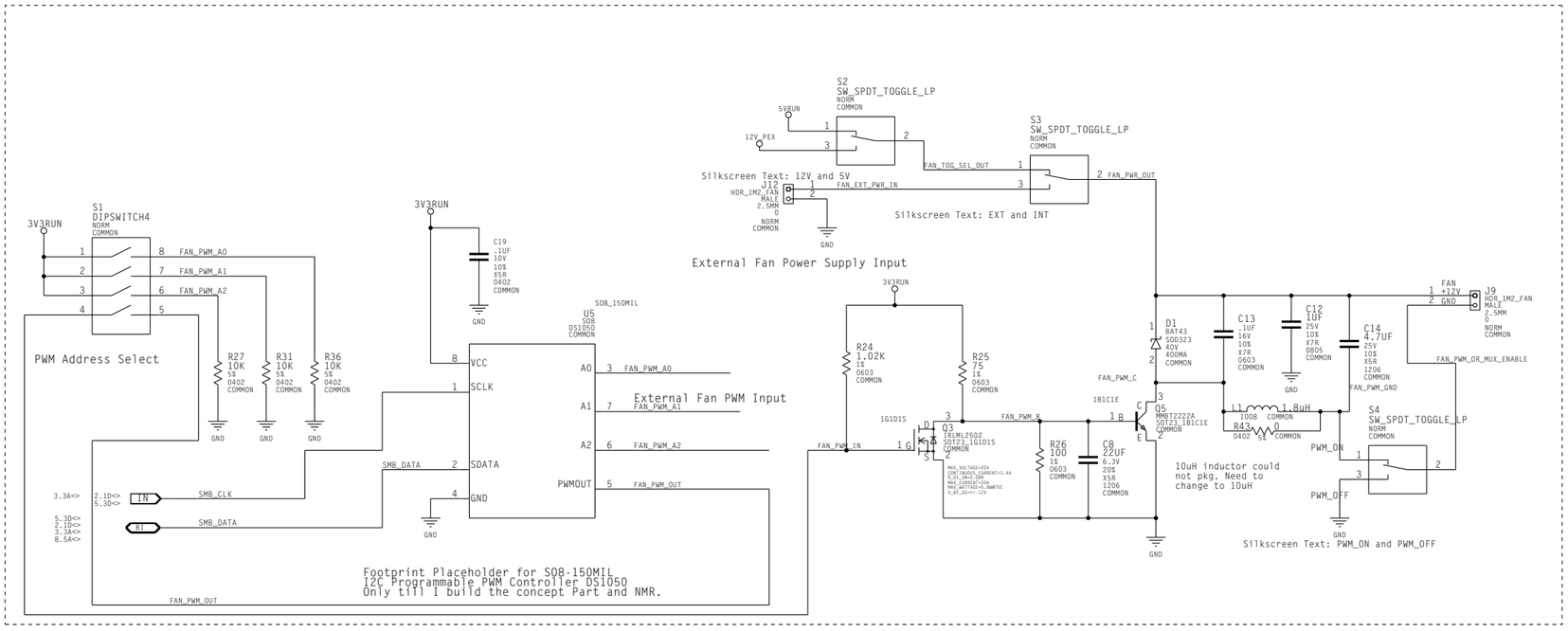
LVDS MXM Config ROM



Mechanical HW



FAN CONTROL



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	FAN 1/DDC-C ROM/ Mech.

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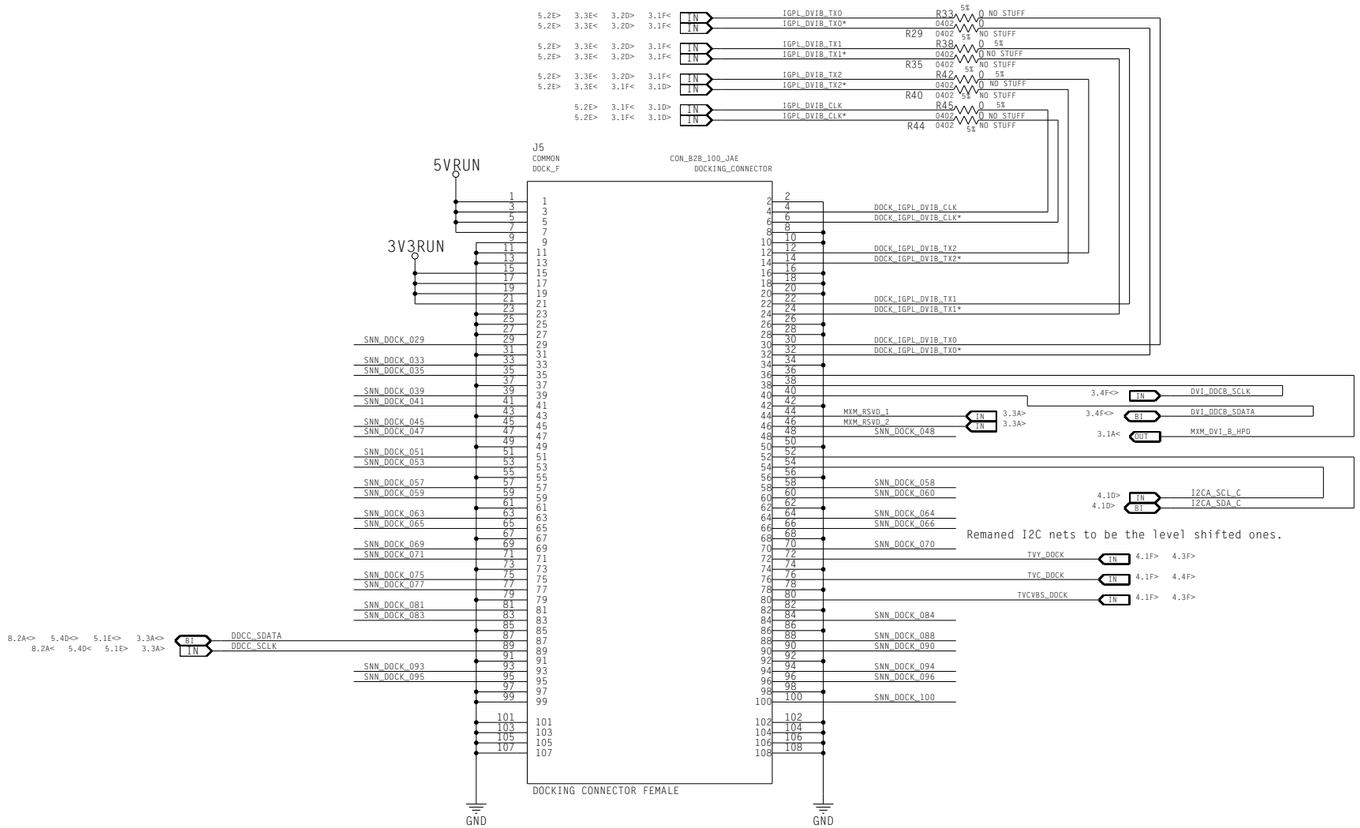
9. Docking Station Connector

Net Name	MIN_LINE_WIDTH	Diffpair	NET_SPACING_RULE
DOCK_IGPL_DVIB_TX0	3.5MIL	DOCK_IGPL_DVIB_TX0	20MIL_G2G_30MIL
DOCK_IGPL_DVIB_TX0*	3.5MIL	DOCK_IGPL_DVIB_TX0	20MIL_G2G_30MIL
DOCK_IGPL_DVIB_TX1	3.5MIL	DOCK_IGPL_DVIB_TX1	20MIL_G2G_30MIL
DOCK_IGPL_DVIB_TX1*	3.5MIL	DOCK_IGPL_DVIB_TX1	20MIL_G2G_30MIL
DOCK_IGPL_DVIB_TX2	3.5MIL	DOCK_IGPL_DVIB_TX2	20MIL_G2G_30MIL
DOCK_IGPL_DVIB_TX2*	3.5MIL	DOCK_IGPL_DVIB_TX2	20MIL_G2G_30MIL
DOCK_IGPL_DVIB_CLK	3.5MIL	DOCK_IGPL_DVIB_CLK	20MIL_G2G_30MIL
DOCK_IGPL_DVIB_CLK*	3.5MIL	DOCK_IGPL_DVIB_CLK	20MIL_G2G_30MIL



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Docking Station Connector

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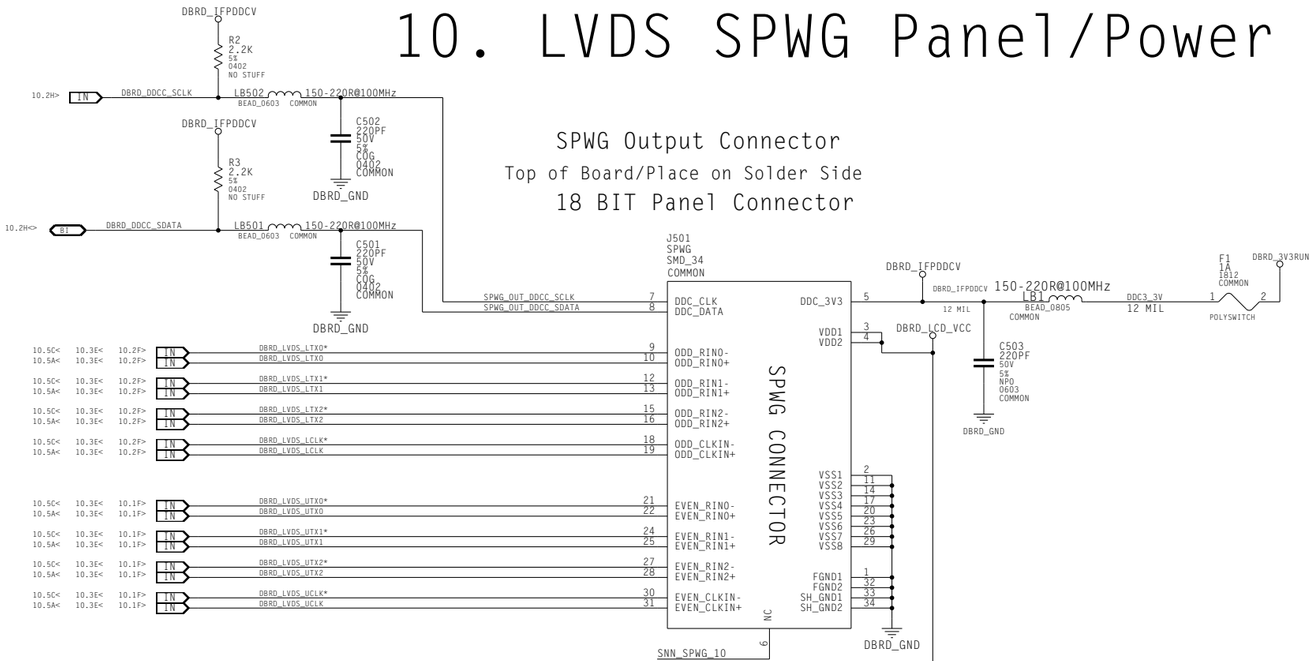
10. LVDS SPWG Panel/Power Board

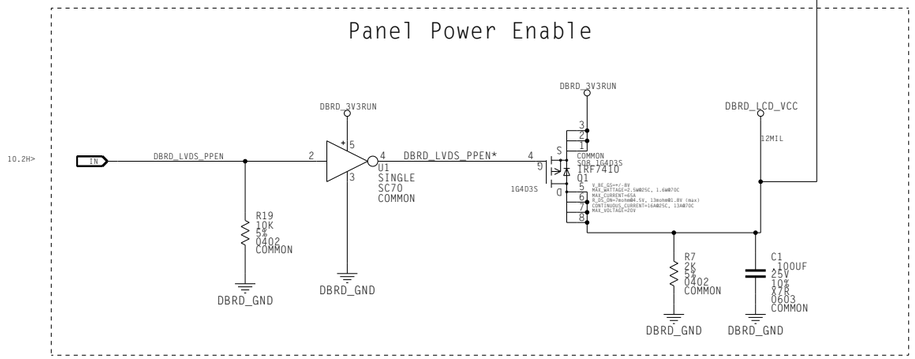
SPWG Output Connector

Top of Board/Place on Solder Side

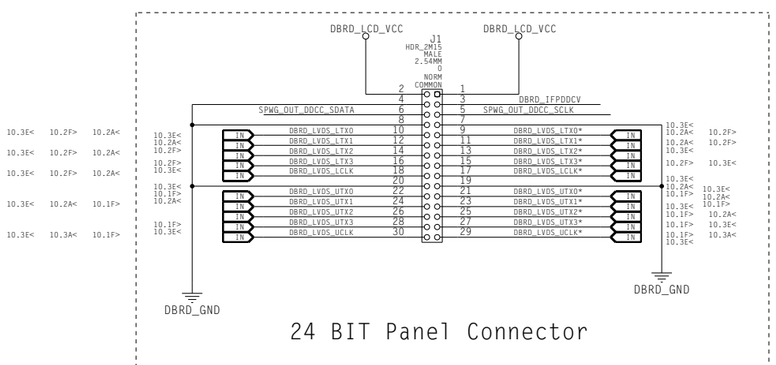
18 BIT Panel Connector



Panel Power Enable

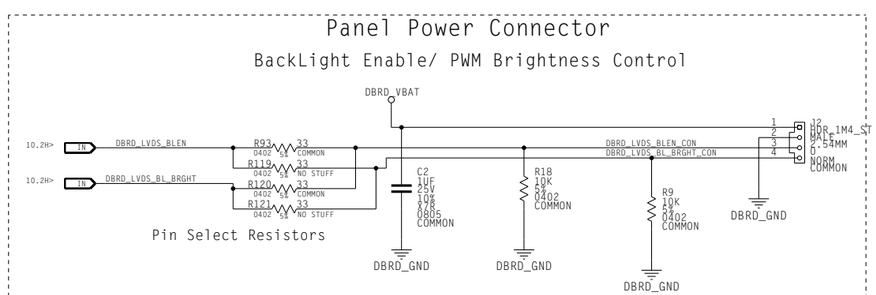


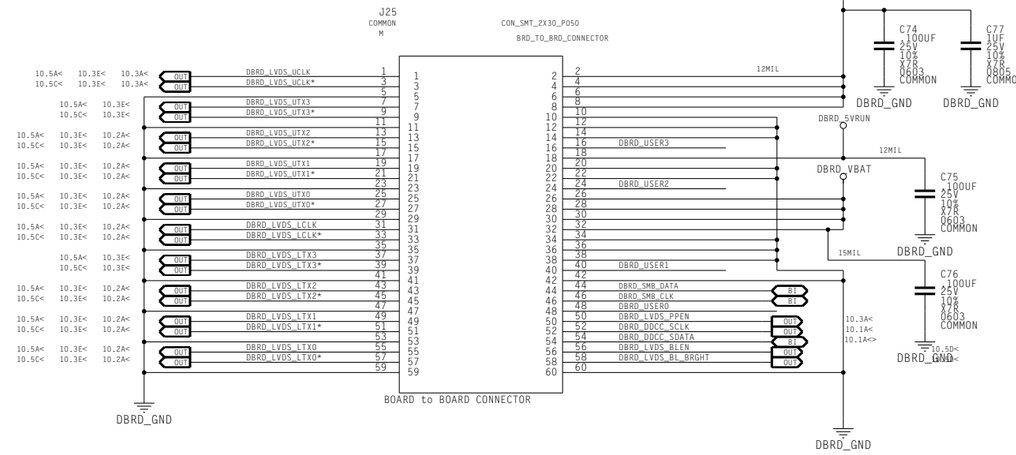
24 BIT Panel Connector



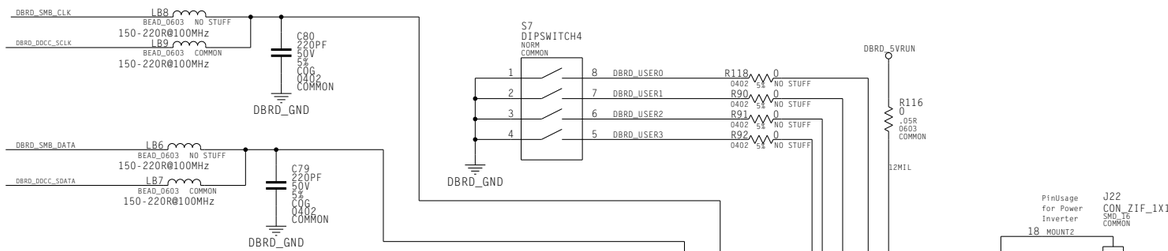
Panel Power Connector

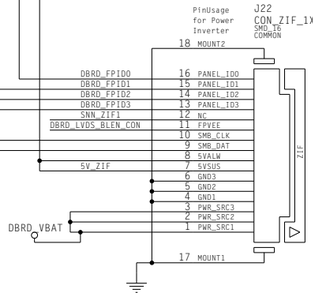
BackLight Enable/ PWM Brightness Control





Net Name	MIN_LINE_WIDTH	Diffpair	NET_SPACING_RULE
DBRD_LVDS_UTXO	3.5MIL	DBRD_LVDS_UTXO	20MIL_G2G_30MIL
DBRD_LVDS_UTXO*	3.5MIL	DBRD_LVDS_UTXO	20MIL_G2G_30MIL
DBRD_LVDS_UTX1	3.5MIL	DBRD_LVDS_UTX1	20MIL_G2G_30MIL
DBRD_LVDS_UTX1*	3.5MIL	DBRD_LVDS_UTX1	20MIL_G2G_30MIL
DBRD_LVDS_UTX2	3.5MIL	DBRD_LVDS_UTX2	20MIL_G2G_30MIL
DBRD_LVDS_UTX2*	3.5MIL	DBRD_LVDS_UTX2	20MIL_G2G_30MIL
DBRD_LVDS_UTX3	3.5MIL	DBRD_LVDS_UTX3	20MIL_G2G_30MIL
DBRD_LVDS_UTX3*	3.5MIL	DBRD_LVDS_UTX3	20MIL_G2G_30MIL
DBRD_LVDS_UCLK	3.5MIL	DBRD_LVDS_UCLK	20MIL_G2G_30MIL
DBRD_LVDS_UCLK*	3.5MIL	DBRD_LVDS_UCLK	20MIL_G2G_30MIL
DBRD_LVDS_LTXO	3.5MIL	DBRD_LVDS_LTXO	20MIL_G2G_30MIL
DBRD_LVDS_LTXO*	3.5MIL	DBRD_LVDS_LTXO	20MIL_G2G_30MIL
DBRD_LVDS_LTX1	3.5MIL	DBRD_LVDS_LTX1	20MIL_G2G_30MIL
DBRD_LVDS_LTX1*	3.5MIL	DBRD_LVDS_LTX1	20MIL_G2G_30MIL
DBRD_LVDS_LTX2	3.5MIL	DBRD_LVDS_LTX2	20MIL_G2G_30MIL
DBRD_LVDS_LTX2*	3.5MIL	DBRD_LVDS_LTX2	20MIL_G2G_30MIL
DBRD_LVDS_LTX3	3.5MIL	DBRD_LVDS_LTX3	20MIL_G2G_30MIL
DBRD_LVDS_LTX3*	3.5MIL	DBRD_LVDS_LTX3	20MIL_G2G_30MIL
DBRD_LVDS_LCLK	3.5MIL	DBRD_LVDS_LCLK	20MIL_G2G_30MIL
DBRD_LVDS_LCLK*	3.5MIL	DBRD_LVDS_LCLK	20MIL_G2G_30MIL





ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	LVDS SPWG Board

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