Table of Contents

CAD Note:

Default component footprint is SMD 0201, X5R, 1% resistors.

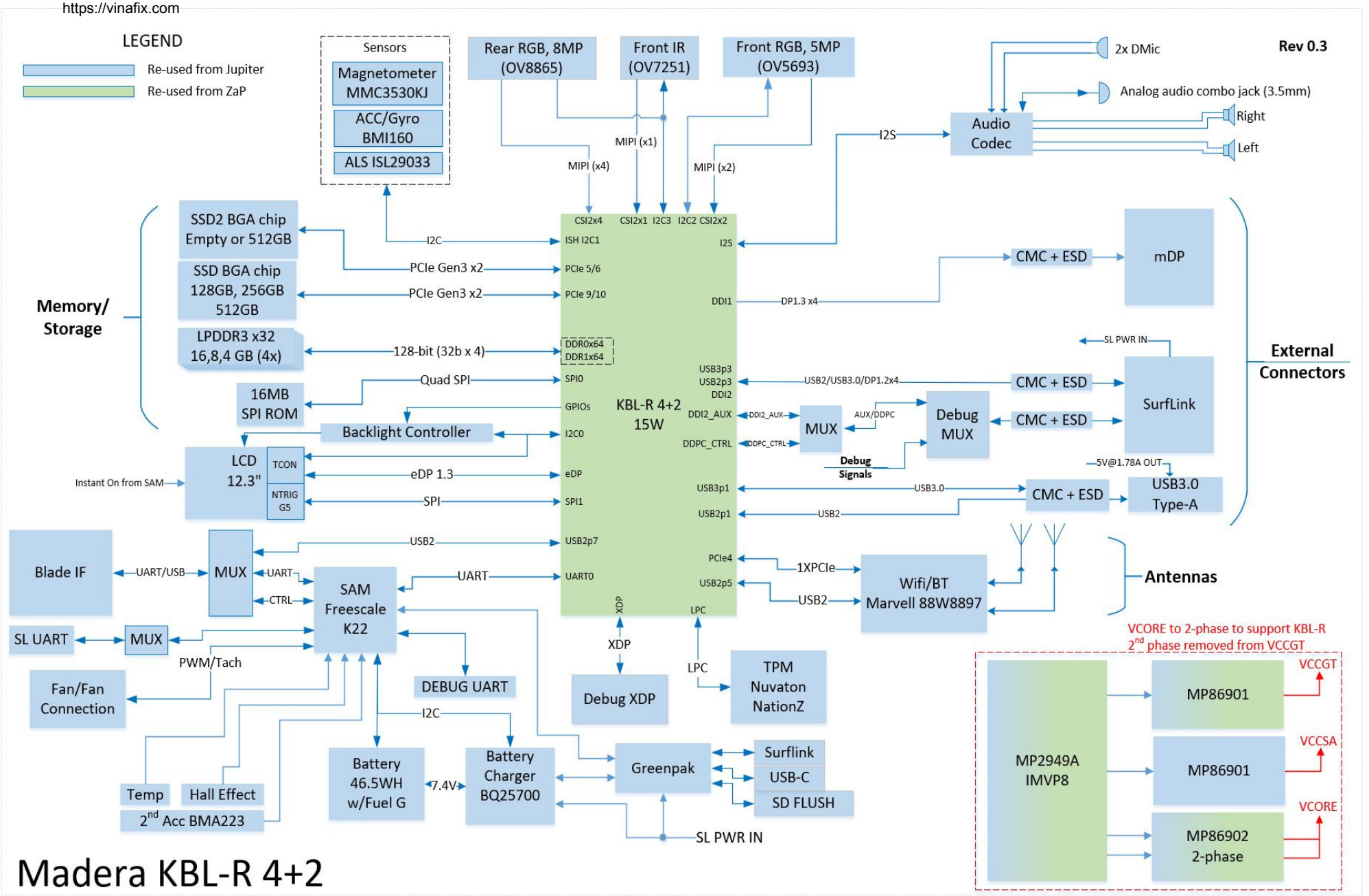
Property: BUILD-OPT
DNP = Do Not Place

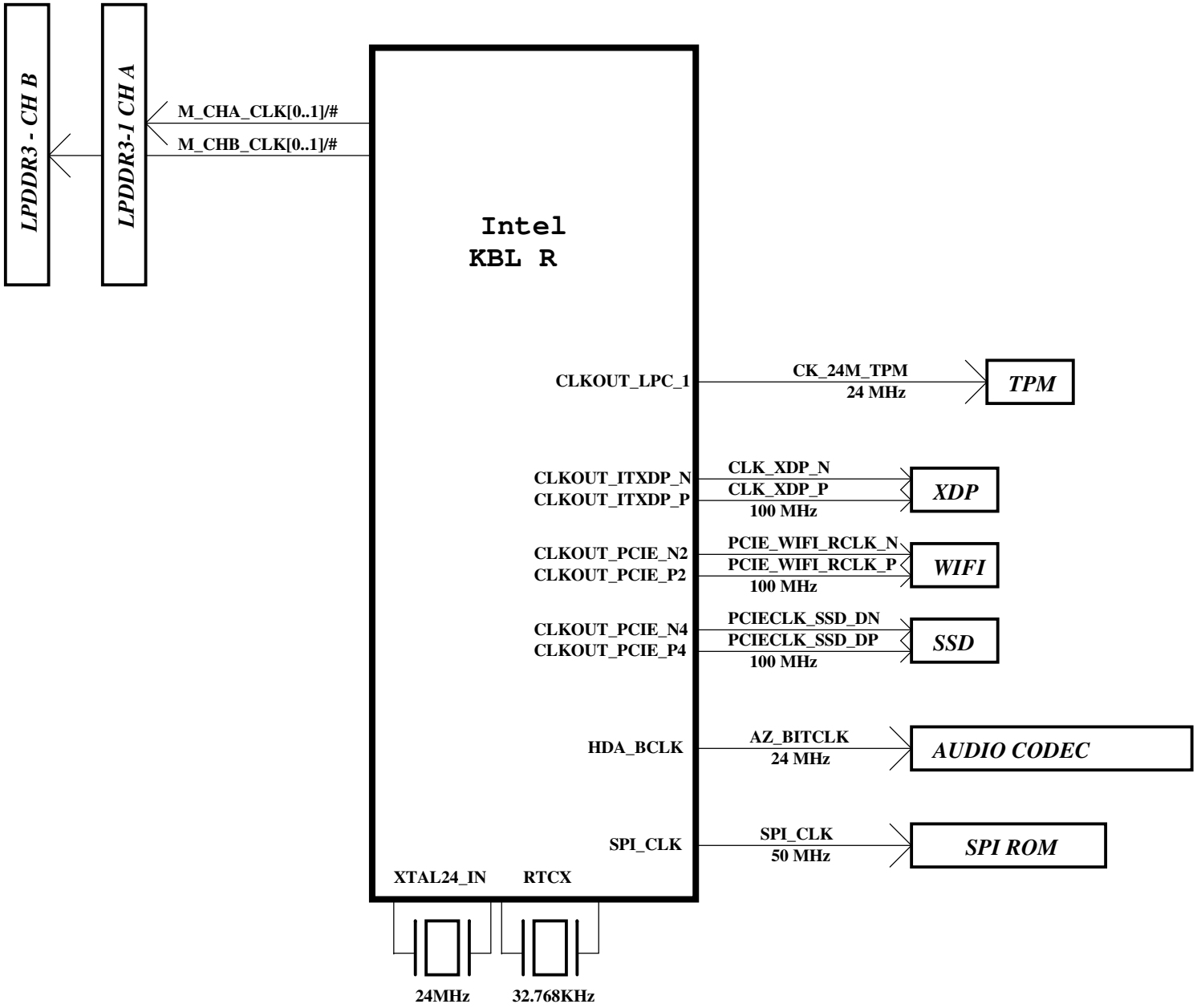
S or DB = Replace after Debug

BUILD-OPT	BOM Assy	Remarks
ALL	Common	DEFAULT - Populated as shown in Core schematic for all variants
DNP	Common	NO-STUFF for all variants
TBL1001	CPU	CPU selection
TBL3602	CPU	Res Jumpers
TBL5001	**CPU**	**SOC dependant WiFi tuning options**
TBL2301	Bd ID	Res Jumpers
TBL3601	BdID	Res Jumpers
TBL1601	Mem	LPDDR3 Memory Assembly Options
TBL3801	TPM	Security Device Options
TBL4301	SSD	SSD Memory part options
SSD1	SSD	Only populated for single SSD configurations.
SSD2	SSD	Only populated for dual SSD configurations.
DBG_D_TBL4301	***SSD***	***Debug Part*** *- Remove from SSD Assy for MP, Install for SSD Debug per TBL4301*
DBG_R_SSD2	***SSD***	***Debug Part -*** *Replace with 0 ohm part for MP for dual SSD cfgs only.*
DBG_S_SSD2	***SSD***	***Debug Part -*** *Remove from SSD Assy for MP for dual SSD cfg. Replaced w/ Board Short.*
S	Debug	Legacy - Originally intended same as DBG_S. please replace with DBG_S, DBG_R, or DBG_D as appropriate.
DBG	*Debug*	*Legacy - Same as DBG_D shown below. Part depopulated for MP.*
DBG_D	Debug	Debug Part - Remove from BOM (Depopulate) for MP
DBG_N	Debug	Non-Debug Part - Installed only in non-debug builds
DBG_R	Debug	Debug Part - Replace with lower cost component for MP (Ex; replace precision shunt with 0-ohm jumper)
DBG_S	Debug	Debug Part - Replace with board short for MP (not commonly used anymore)
DBG_T	Debug	Debug Part - Used for Power Telemetry in MP as needed.
XDP	XDP	Legacy - Same as XDP_D
XDP_D	XDP	Only used as needed for CPU Debug. Depopulated for MP and most EV/DV/PV assemblies.
FAN	FAN	Parts used to support Fan option.
DBG_R_FAN	***FAN***	***Debug Part*** *- Replace part in Fan Assy with 0 ohm jumper for MP cfgs using FAN.*

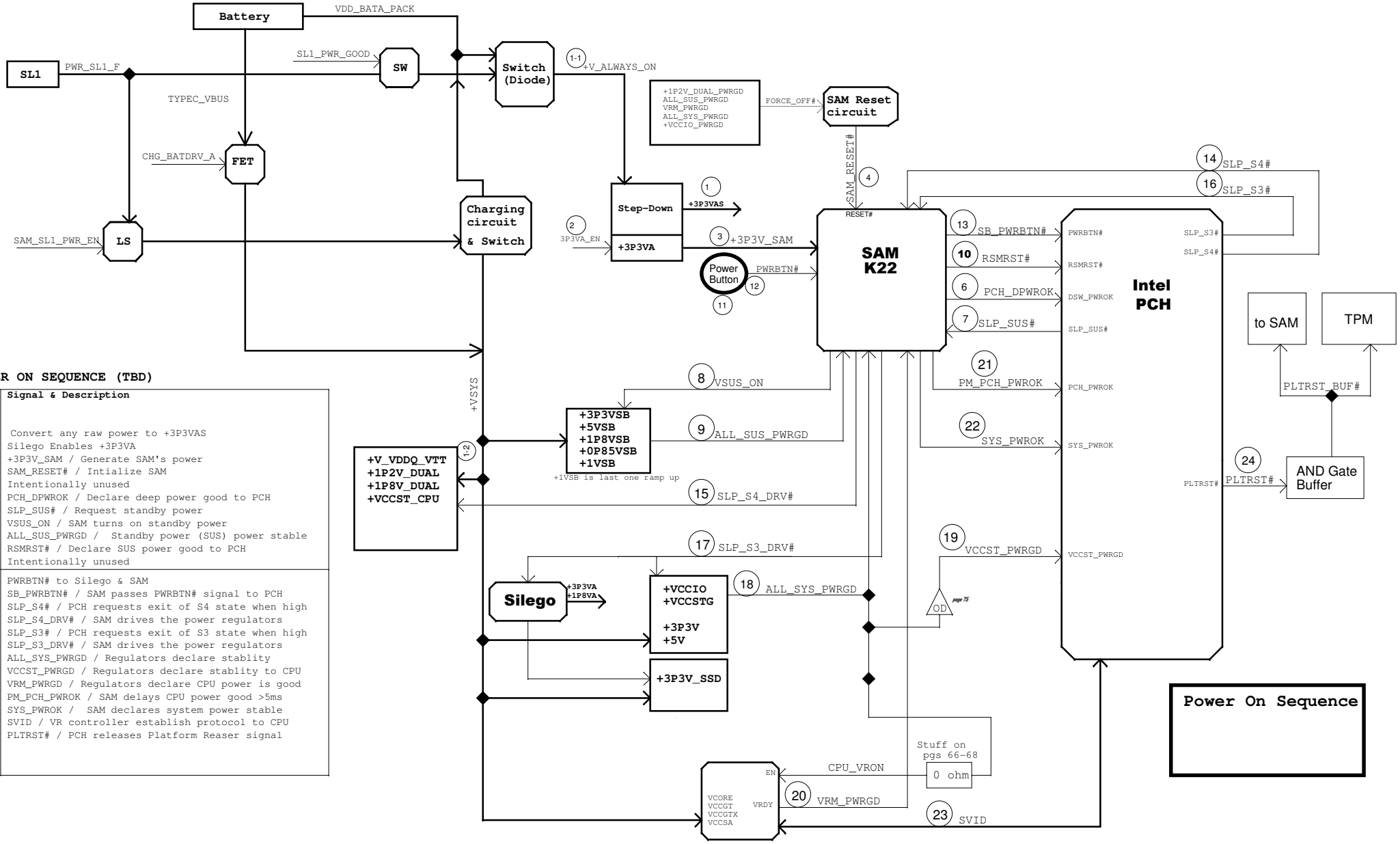
CAD Note:

Defaults: Footprint SMD 0201, Cap tmp Coeff X5R, 1% resistors





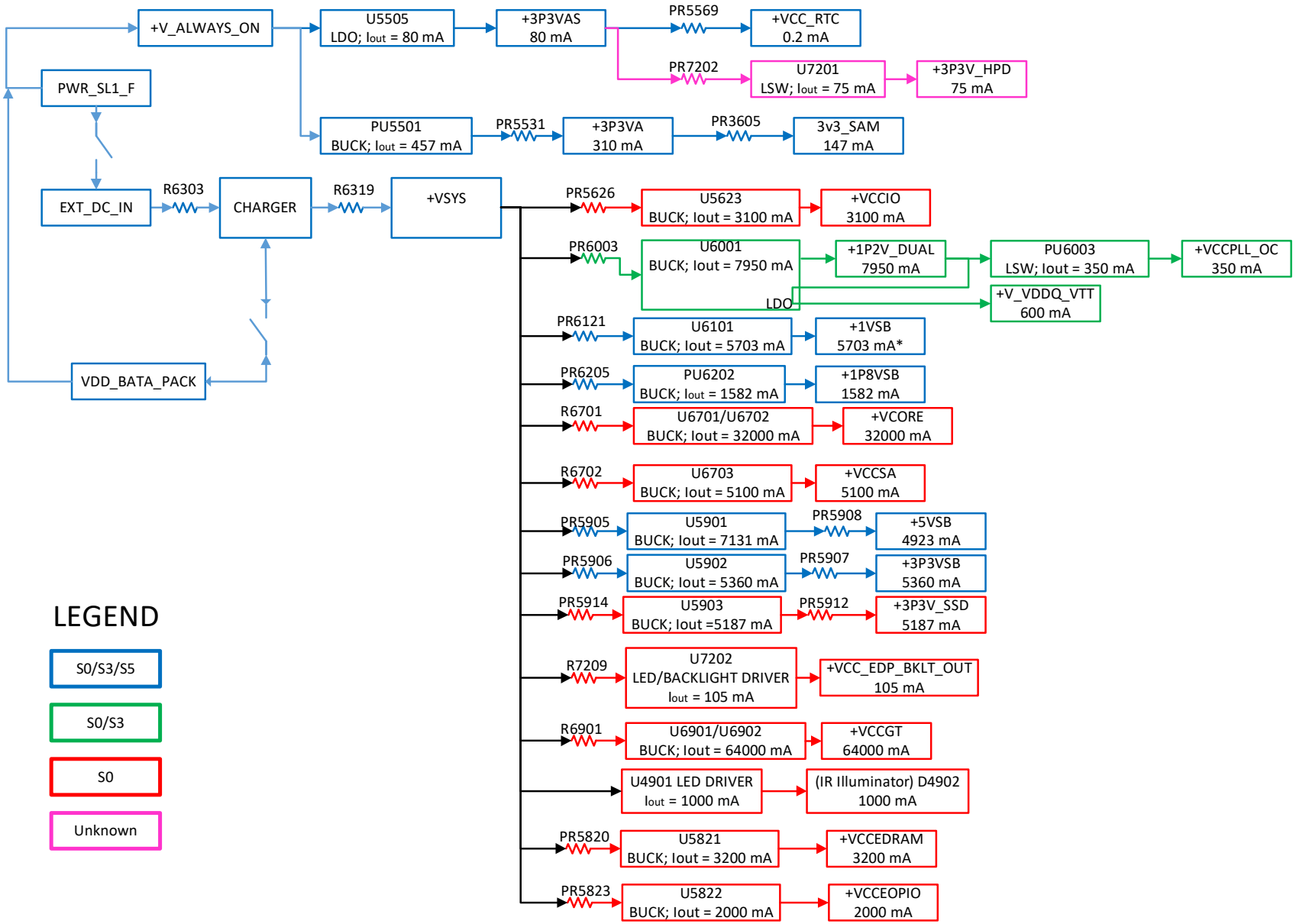
SIGNAL & RESET MAP

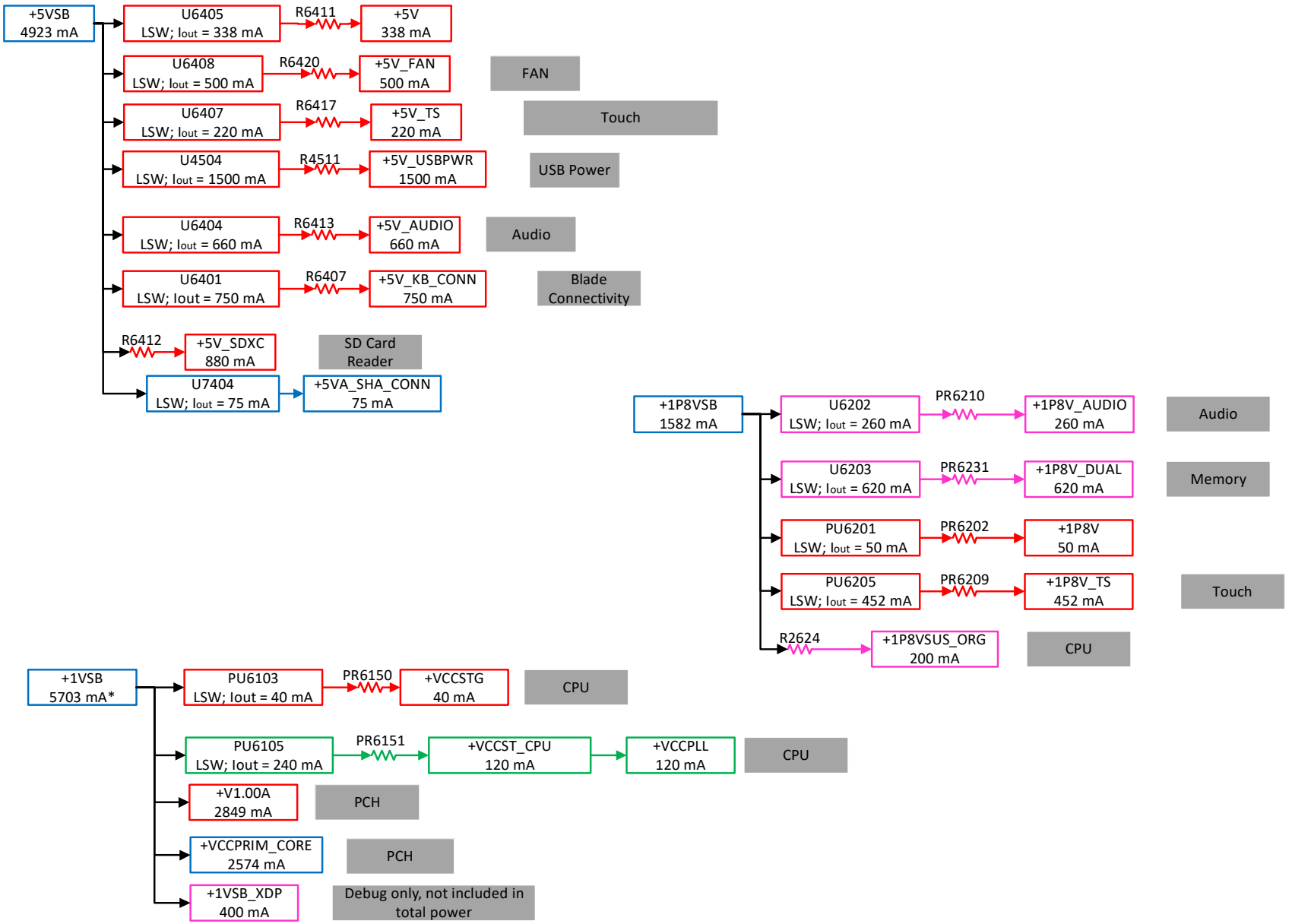


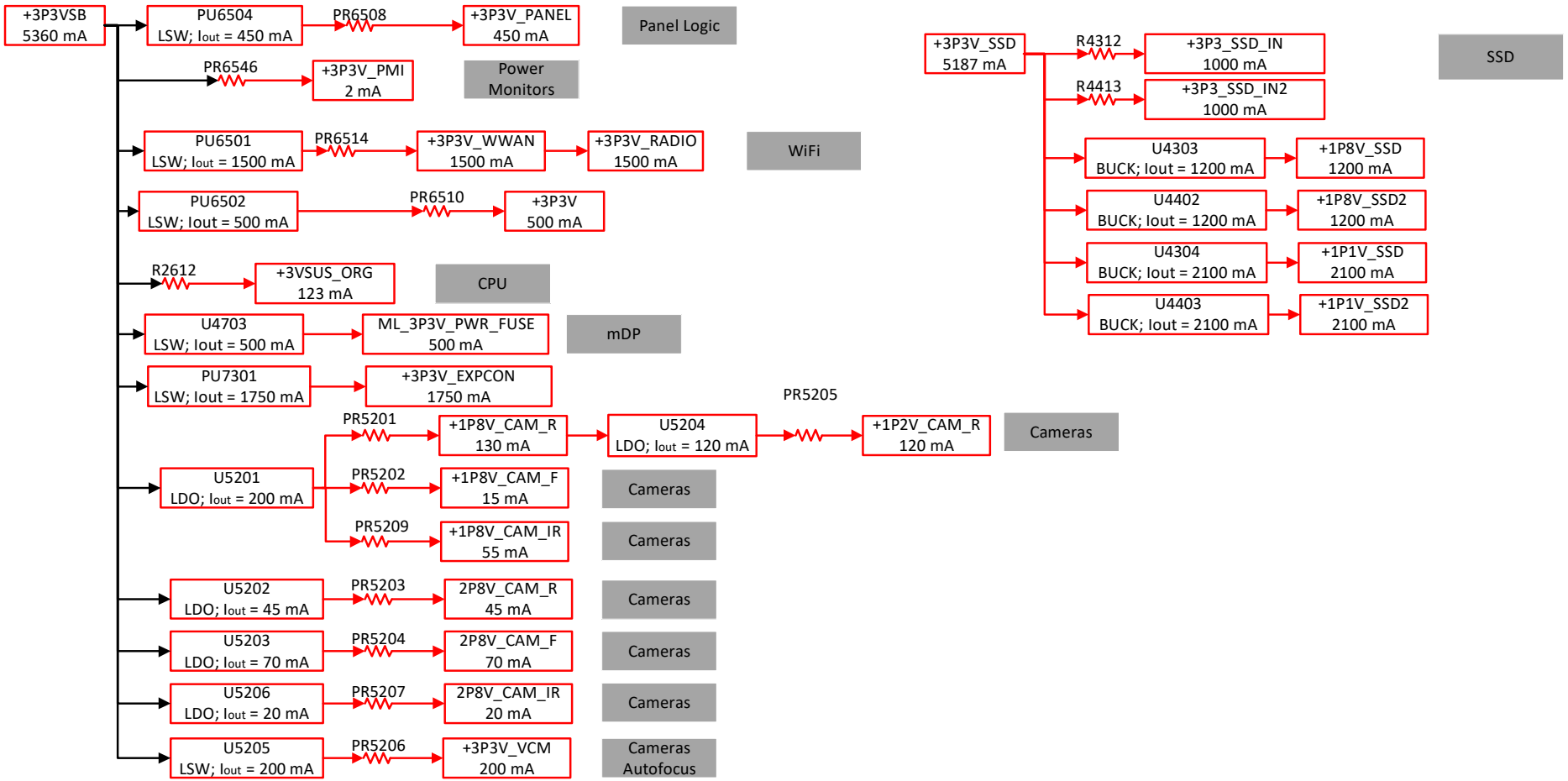
POWER ON SEQUENCE (TBD)

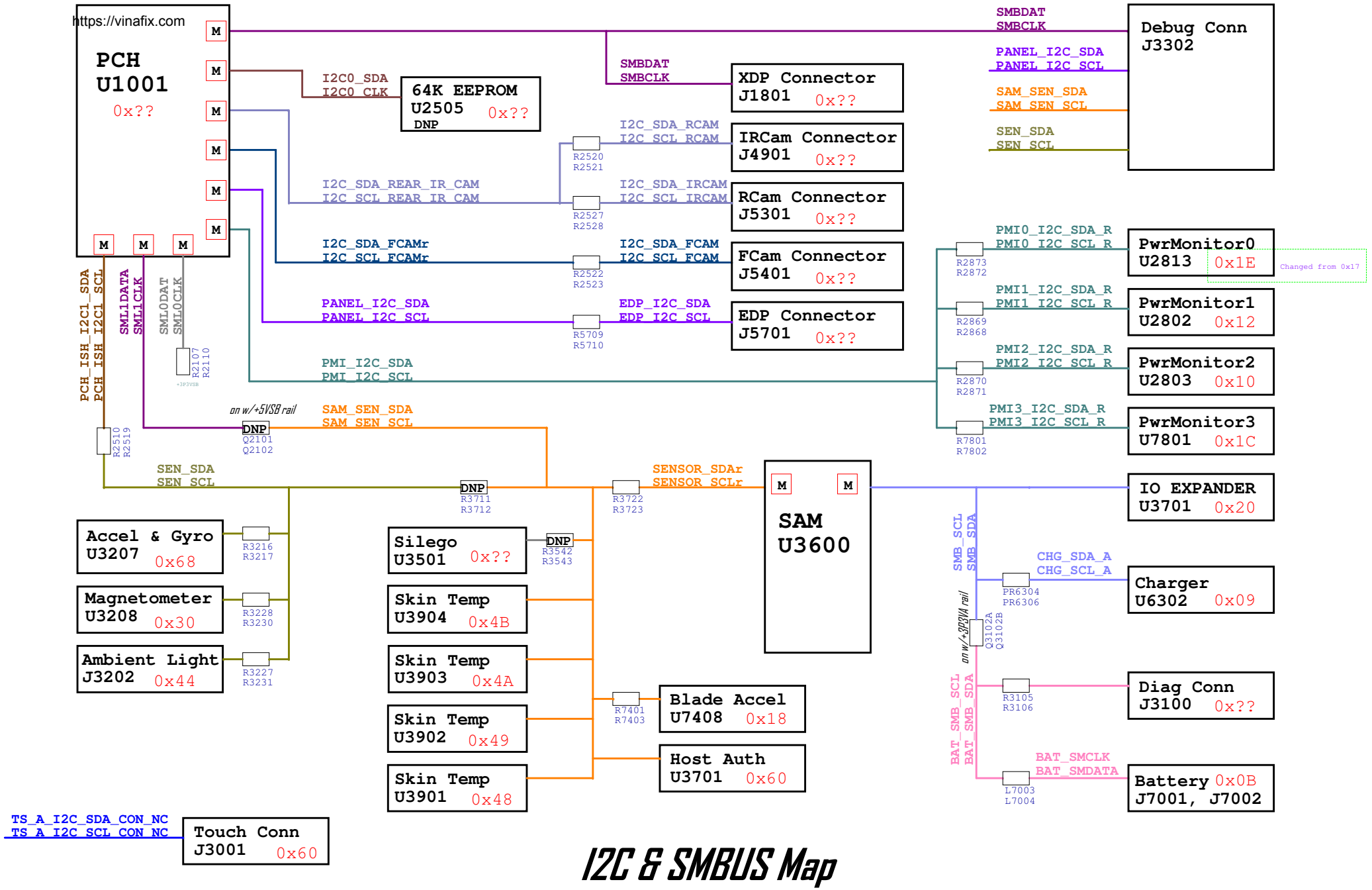
STEP	Signal & Description
1	Convert any raw power to +3P3VAS
2	Silego Enables +3P3VA
3	+3P3V_SAM / Generate SAM's power
4.	SAM_RESET# / Intialize SAM
5.	Intentionally unused
6.	PCH_DPWROK / Declare deep power good to PCH
7.	SLP_SUS# / Request standby power
8.	VSUS_ON / SAM turns on standby power
9.	ALL_SUS_PWRGD / Standby power (SUS) power stable
10.	RSMRST# / Declare SUS power good to PCH
11.	Intentionally unused
12	PWRBTN# to Silego & SAM
13.	SB_PWRBTN# / SAM passes PWRBTN# signal to PCH
14.	SLP_S4# / PCH requests exit of S4 state when high
15.	SLP_S4_DRV# / SAM drives the power regulators
16.	SLP_S3# / PCH requests exit of S3 state when high
17.	SLP_S3_DRV# / SAM drives the power regulators
18.	ALL_SYS_PWRGD / Regulators declare stablity
19.	VCCST_PWRGD / Regulators declare stablity to CPU
20.	VRM_PWRGD / Regulators declare CPU power is good
21.	PM_PCH_PWROK / SAM delays CPU power good >5ms
22.	SYS_PWROK / SAM declares system power stable
23.	SVID / VR controller establish protocol to CPU
24.	PLTRST# / PCH releases Platform Reaser signal

Power On Sequence

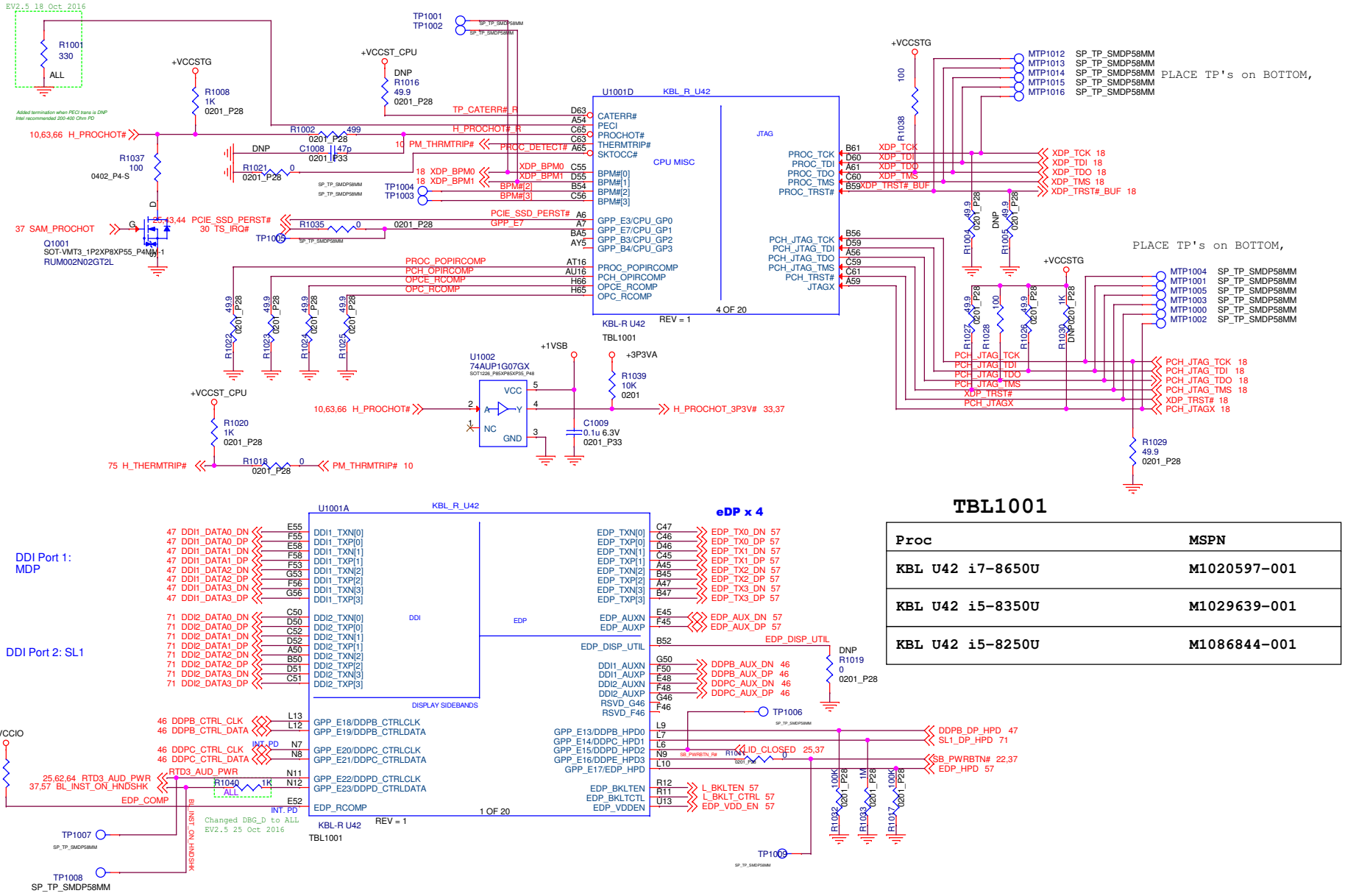






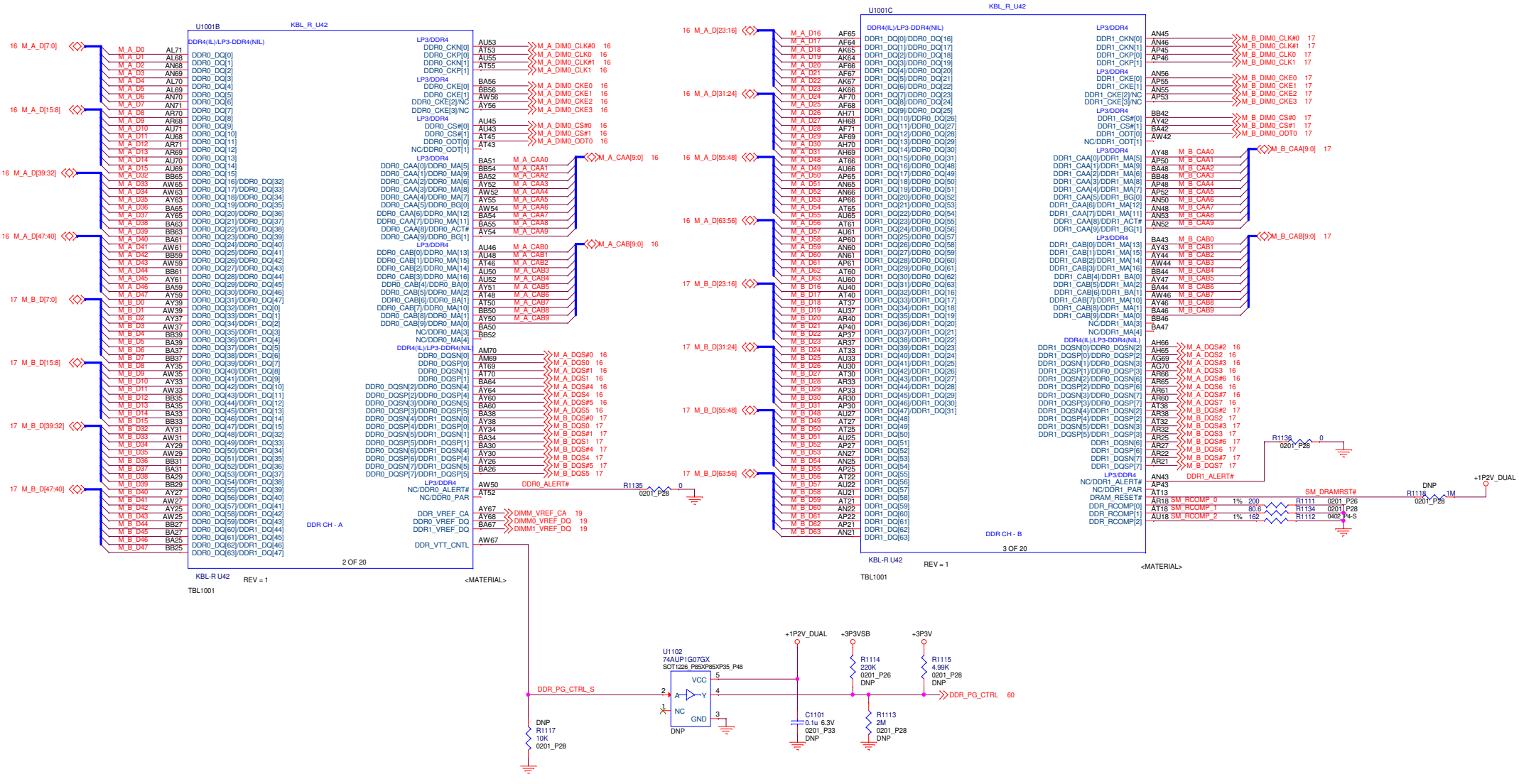


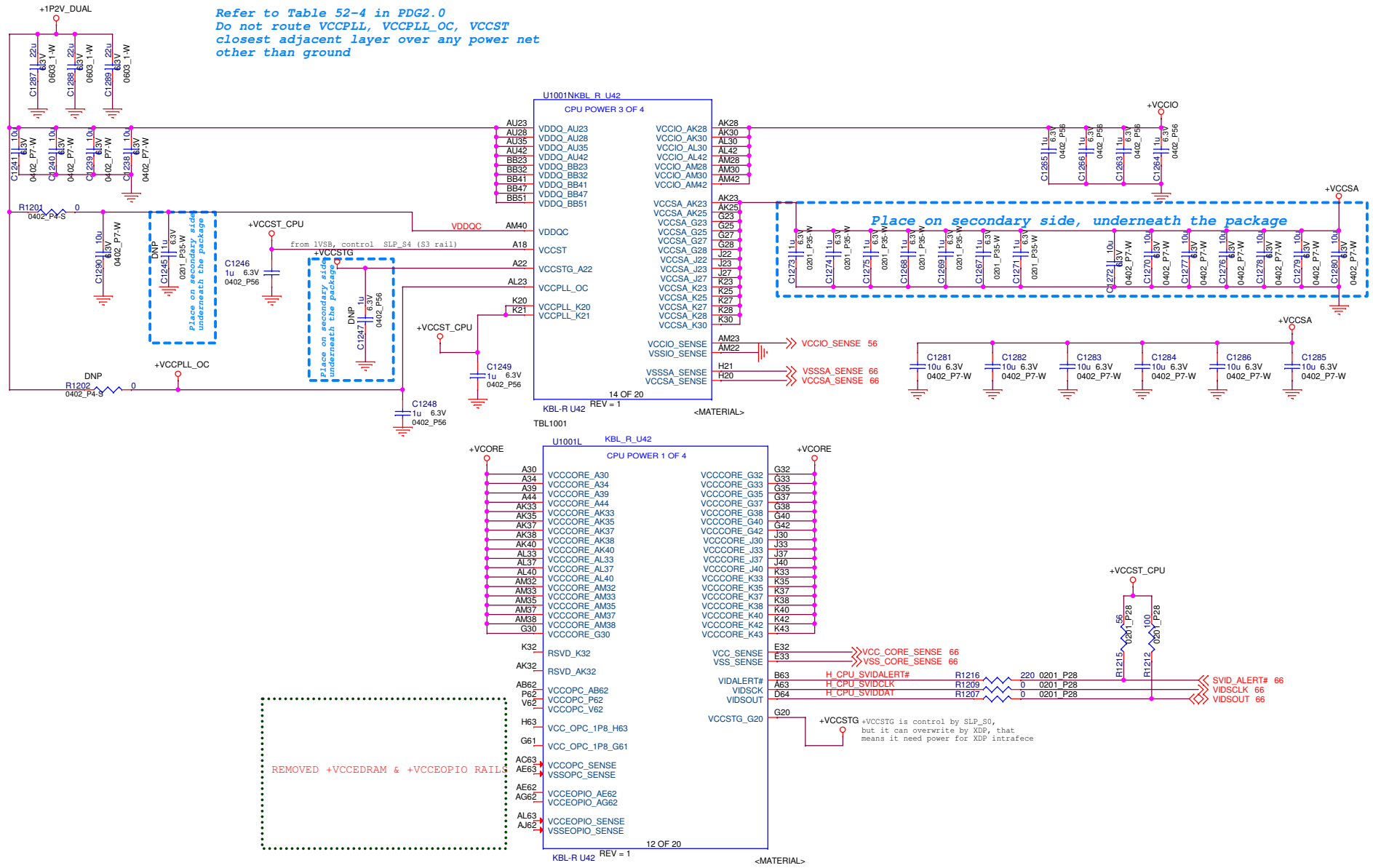
I2C & SMBUS Map

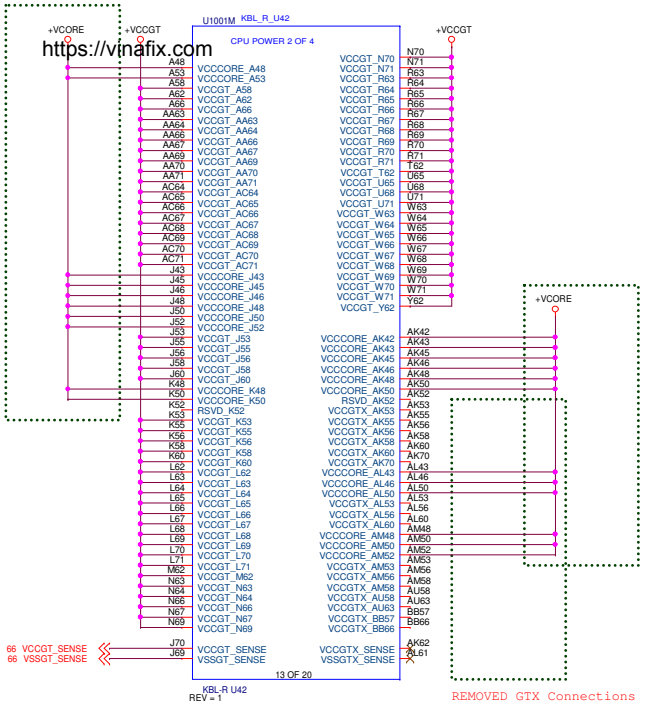


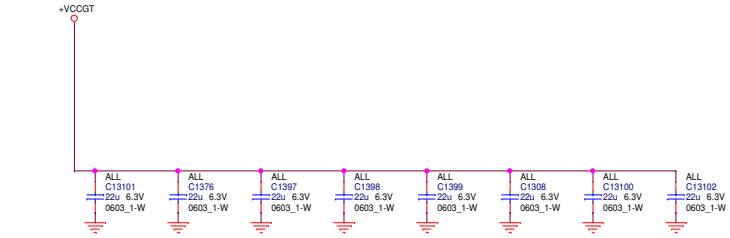
TBL1001

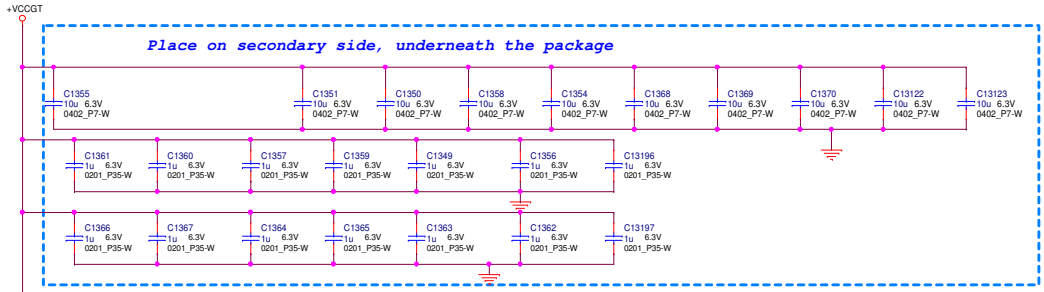
Proc	MSPN
KBL U42 i7-8650U	M1020597-001
KBL U42 i5-8350U	M1029639-001
KBL U42 i5-8250U	M1086844-001



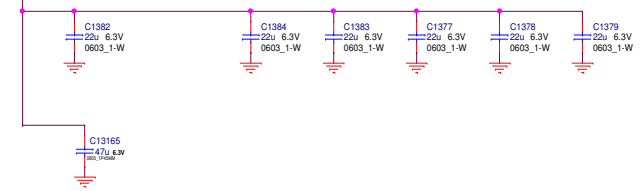


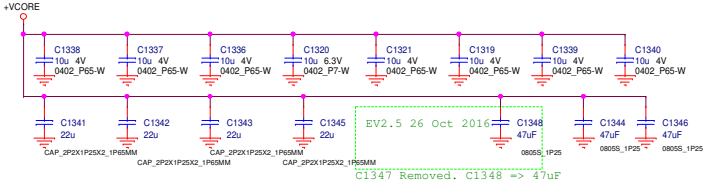


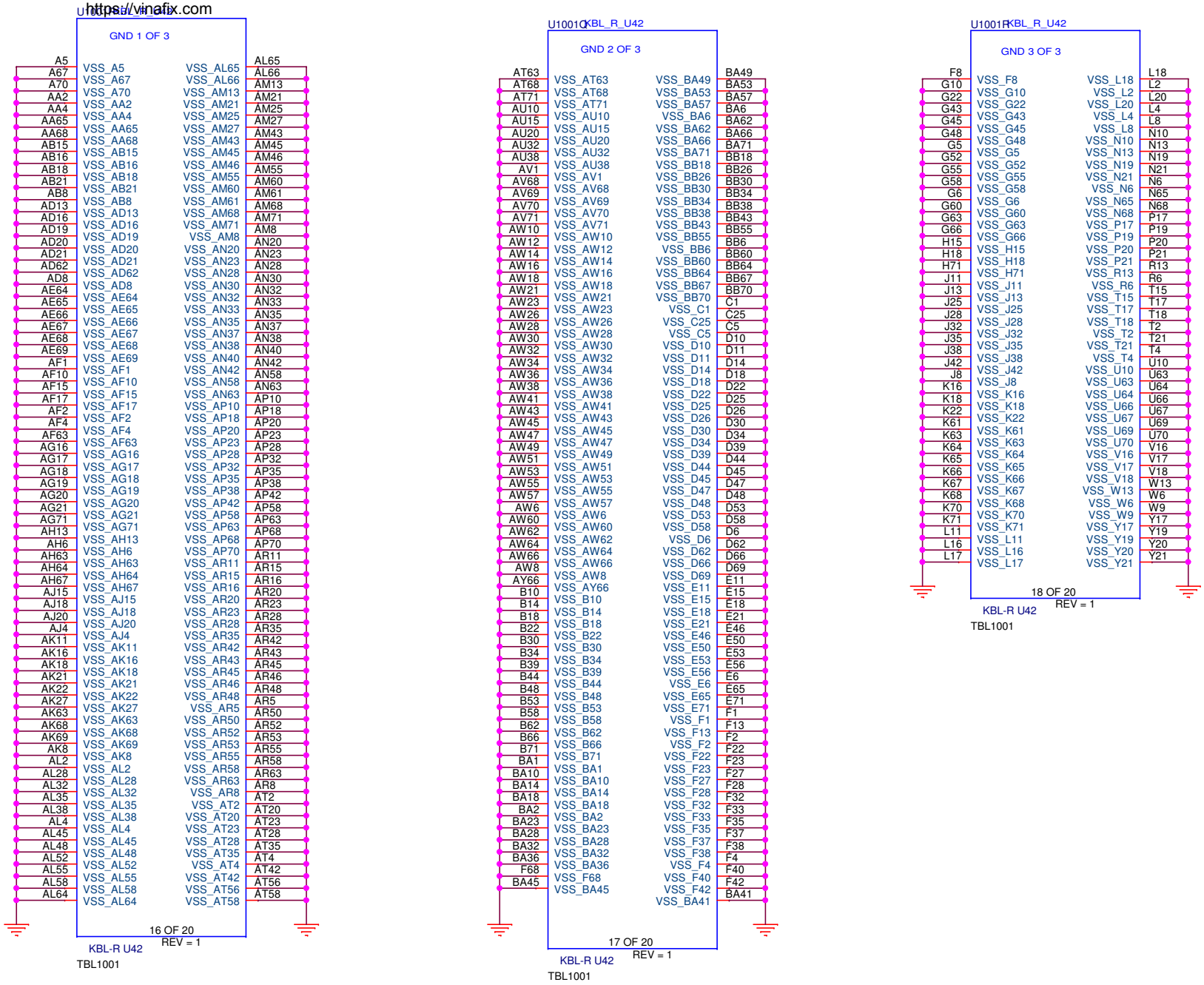


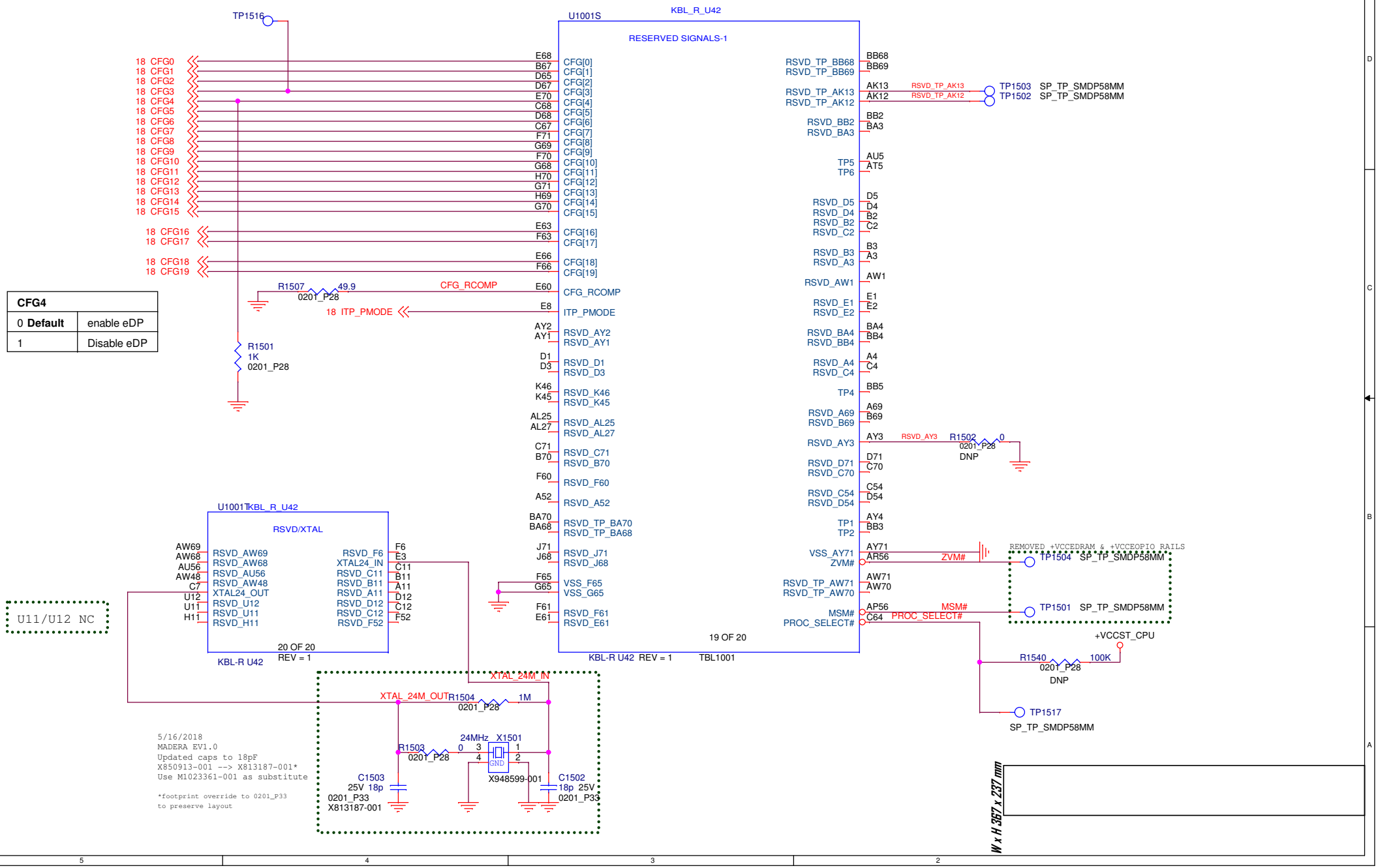


REMOVED 10x 10UF, 6x 22UF, 7x 47UF
FOR U23E VCCGT DECOUPLING

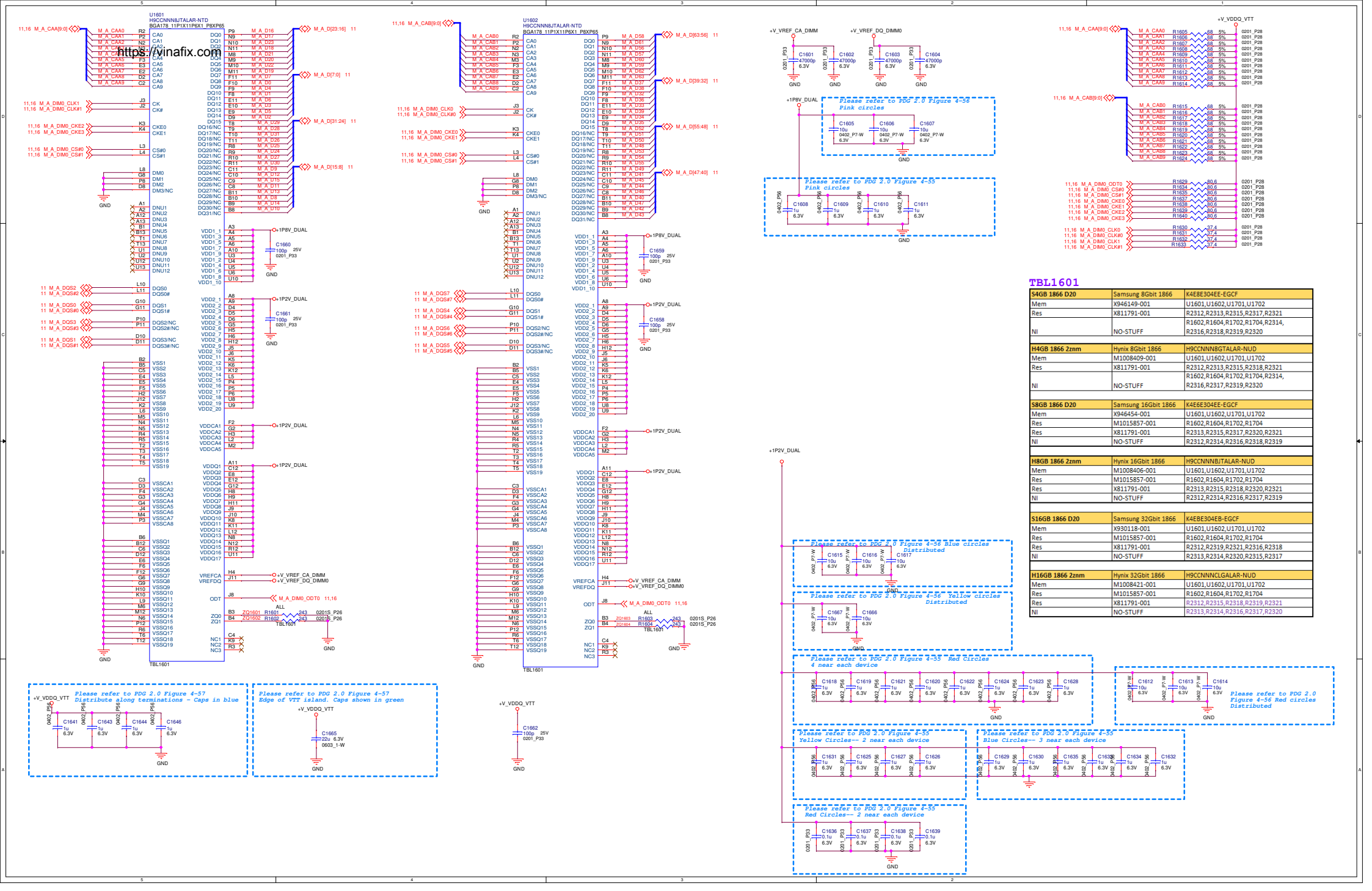








CFG4	
0 **Default**	enable eDP
1	Disable eDP



TBL1601

S4GB 1866 D20	Samsung 8Gbit 1866	K4E8E304EE-EGCF
Mem	X946149-001	U1601,U1602,U1701,U1702
Res	X811791-001	R2312,R2313,R2315,R2317,R2321
NI	NO-STUFF	R1602,R1604,R1702,R1704,R2314, R2316,R2318,R2319,R2320

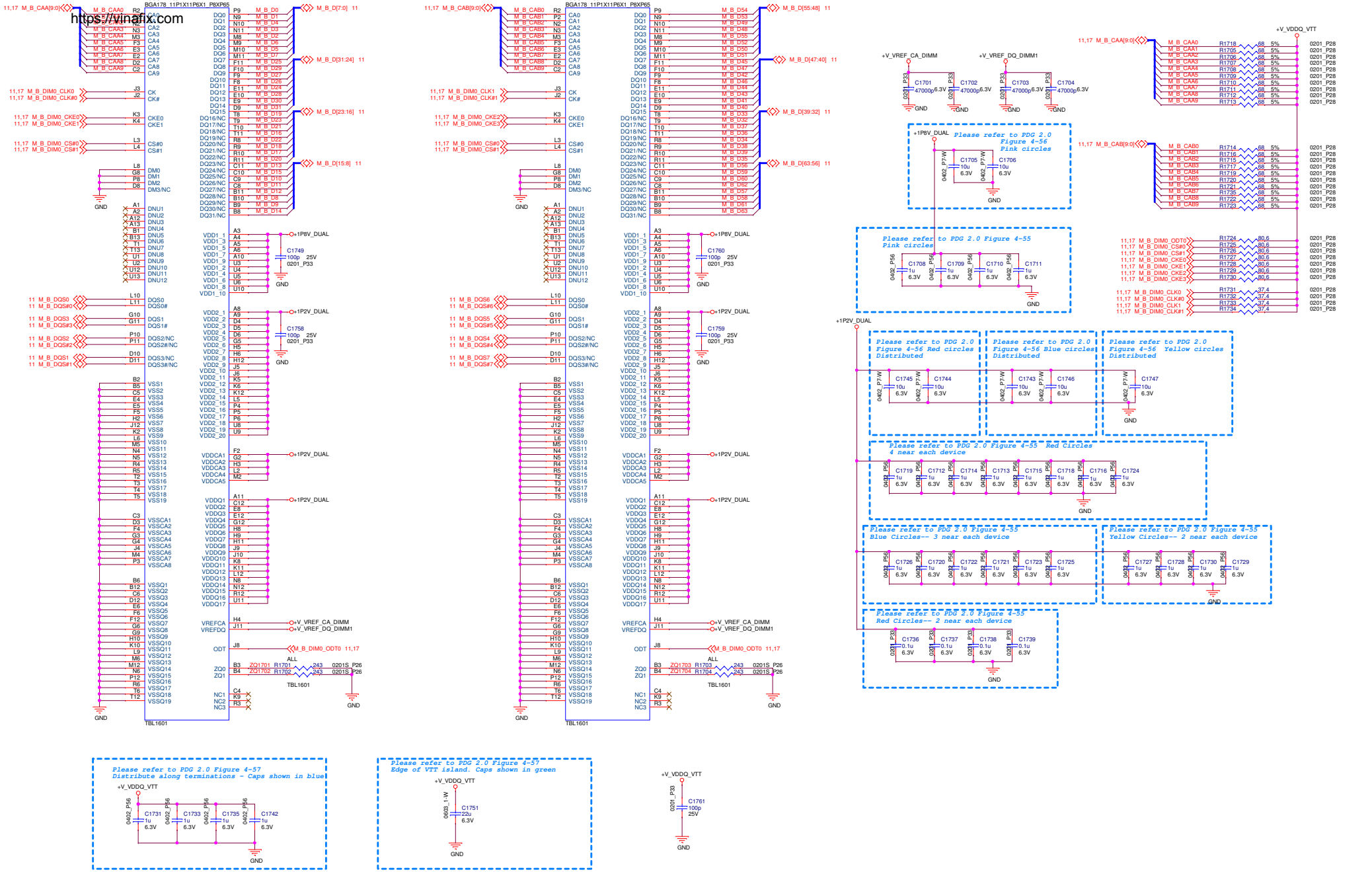
H4GB 1866 2znm	Hynix 8Gbit 1866	H9CCNNN8GTALAR-NUD
Mem	M1008409-001	U1601,U1602,U1701,U1702
Res	X811791-001	R2312,R2313,R2315,R2318,R2321
NI	NO-STUFF	R1602,R1604,R1702,R1704,R2314, R2316,R2317,R2319,R2320

S8GB 1866 D20	Samsung 16Gbit 1866	K4E6E304EE-EGCF
Mem	X946454-001	U1601,U1602,U1701,U1702
Res	M1015857-001	R1602,R1604,R1702,R1704
Res	X811791-001	R2313,R2315,R2317,R2320,R2321
NI	NO-STUFF	R2312,R2314,R2316,R2318,R2319

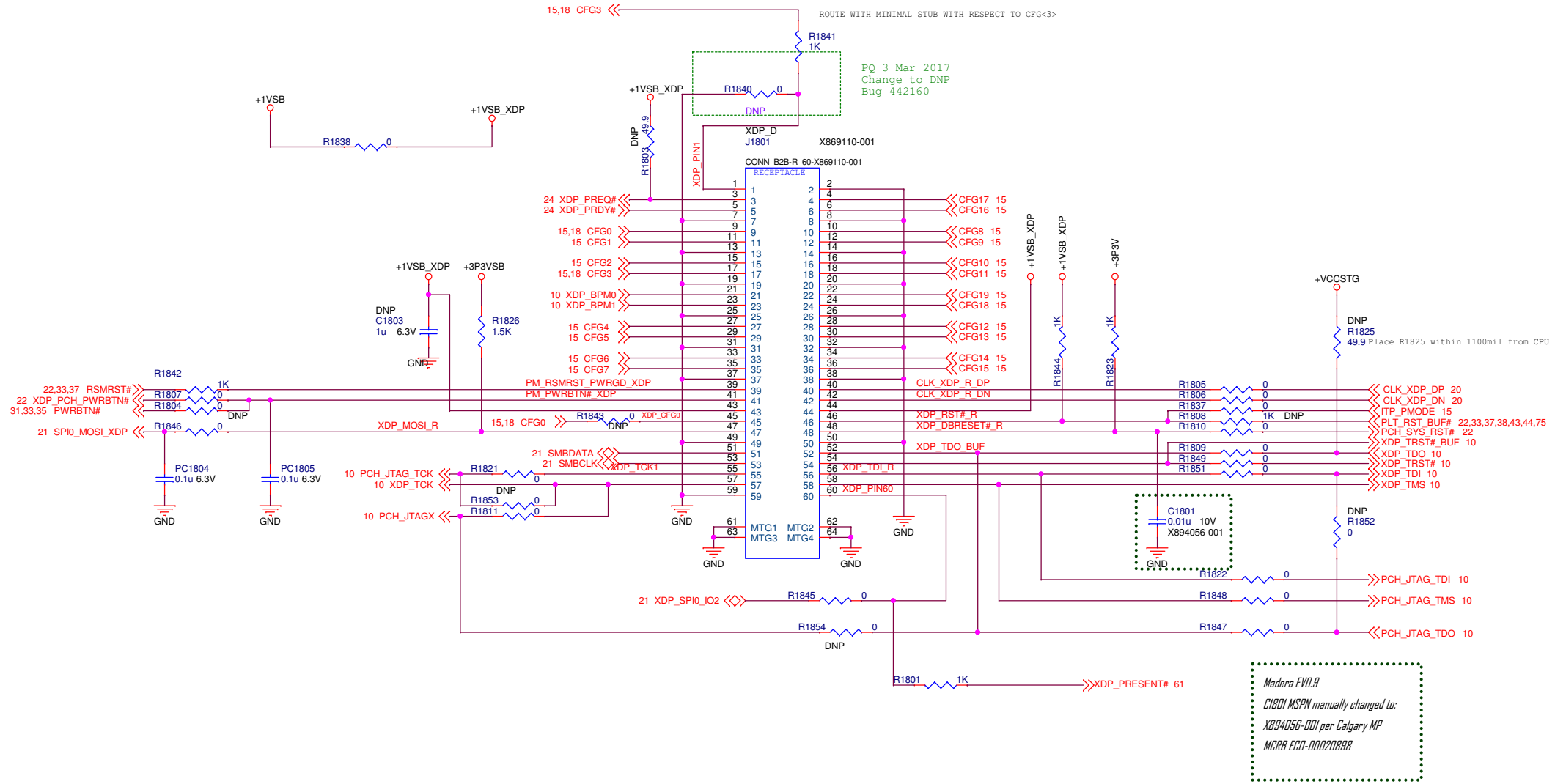
H8GB 1866 2znm	Hynix 16Gbit 1866	H9CCNNNBJTALAR-NUD
Mem	M1008406-001	U1601,U1602,U1701,U1702
Res	M1015857-001	R1602,R1604,R1702,R1704
Res	X811791-001	R2313,R2315,R2318,R2320,R2321
NI	NO-STUFF	R2312,R2314,R2316,R2317,R2319

S16GB 1866 D20	Samsung 32Gbit 1866	K4EBE304EB-EGCF
Mem	X930118-001	U1601,U1602,U1701,U1702
Res	M1015857-001	R1602,R1604,R1702,R1704
Res	X811791-001	R2312,R2319,R2321,R2316,R2318
NI	NO-STUFF	R2313,R2314,R2320,R2315,R2317

H16GB 1866 2znm	Hynix 32Gbit 1866	H9CCNNNCLGALAR-NUD
Mem	M1008421-001	U1601,U1602,U1701,U1702
Res	M1015857-001	R1602,R1604,R1702,R1704
Res	X811791-001	R2312,R2315,R2318,R2319,R2321
NI	NO-STUFF	R2313,R2314,R2316,R2317,R2320



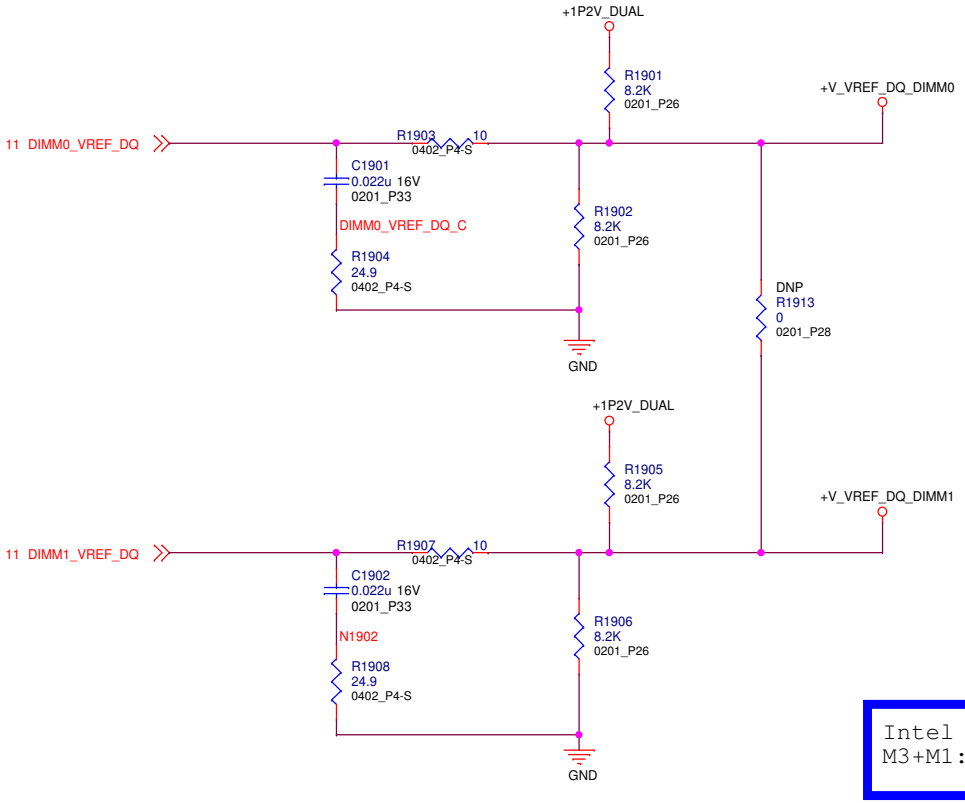
PRIMARY XDP connector

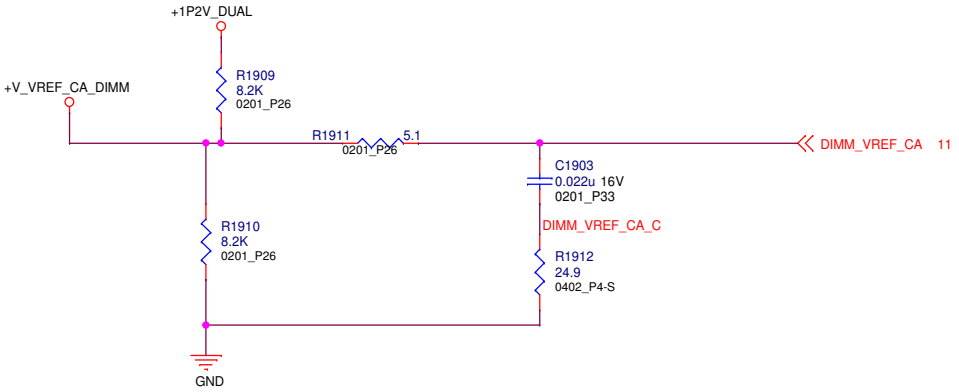


https://vinafix.com

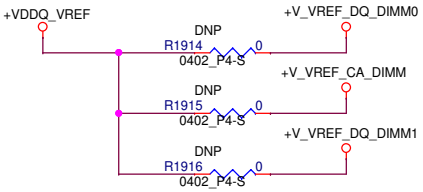
LPDDR3 Vref

M3: CPU driven VREF path is stuffed be default.
M1: VREF_DQ driven by a Voltage Divider Network during Processor power-off

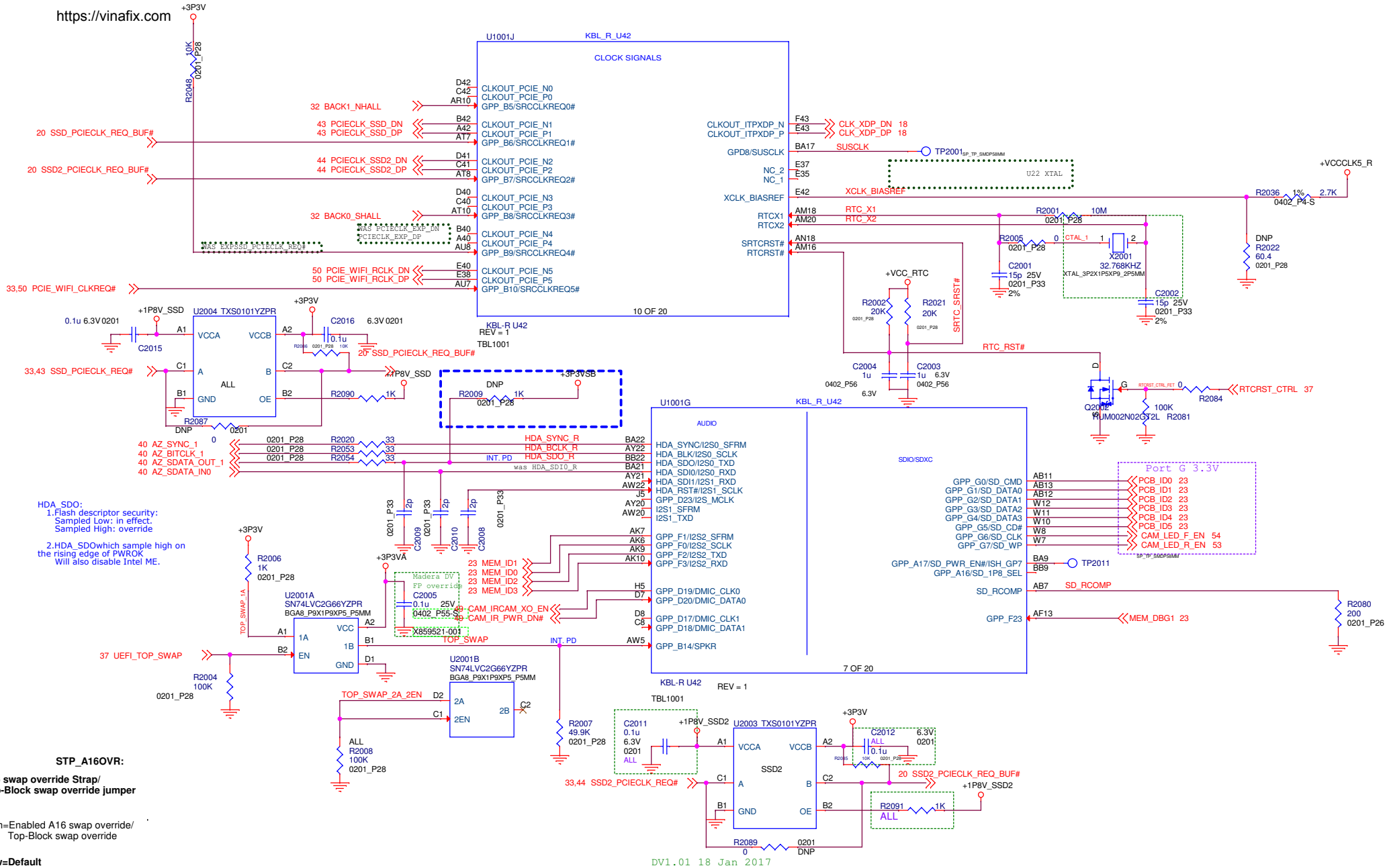


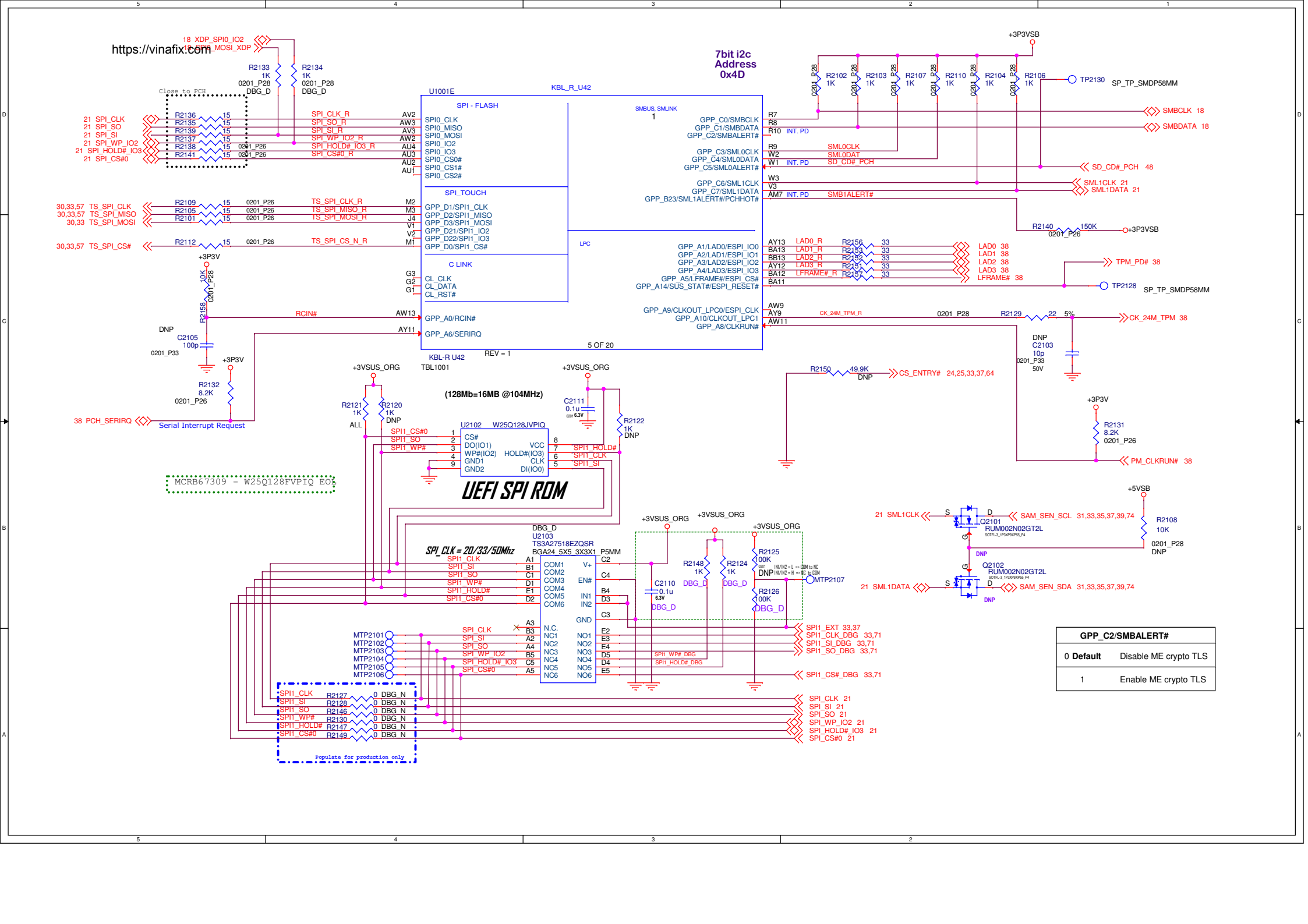


Intel 0203
M3+M1: Default Recommendation

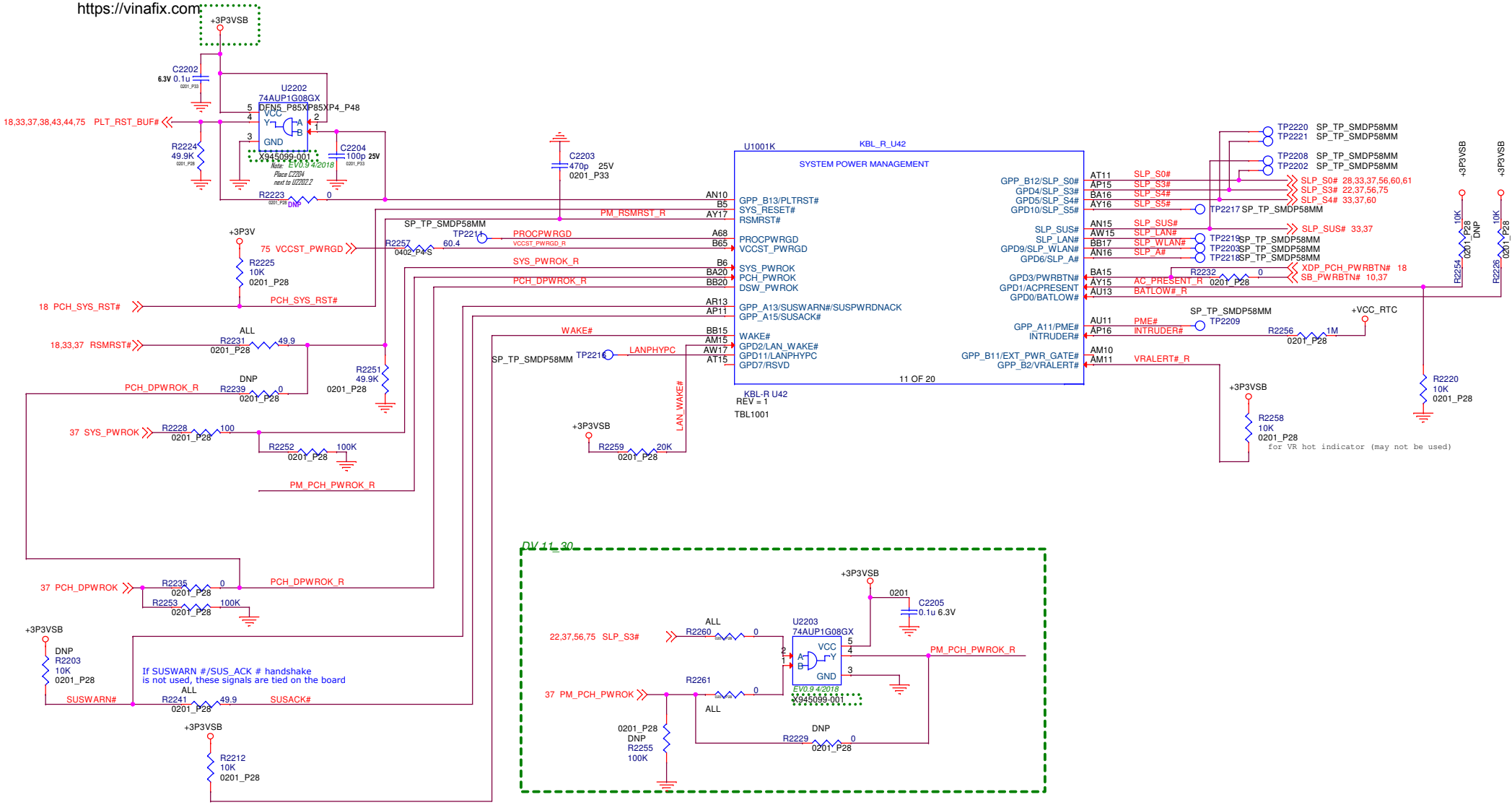


W x H 372 x 241 mm


https://vinafix.com
U1001J
KBL_R_U42
CLOCK SIGNALS
10 OF 20
KBL-R U42
REV = 1
TBL1001
U1001G
AUDIO
SDIO/SDXC
7 OF 20
U2004 TXS0101YZPR
U2001A SN74LVC2G66YZPR
U2001B SN74LVC2G66YZPR
U2003 TXS0101YZPR
U22 XTAL
X2001 32.768KHZ
Q2002 RUM002N02GT2L
Port G 3.3V
HDA_SDO:
1.Flash descriptor security:
Sampled Low: in effect.
Sampled High: override
2.HDA_SDOwhich sample high on the rising edge of PWROK
Will also disable Intel ME.
STP_A16OVR:
A16 swap override Strap/
Top-Block swap override jumper
High=Enabled A16 swap override/
Top-Block swap override
Low=Default
DV1.01 18 Jan 2017
Changed BUILD-OPT to ALL 3 PLACES



GPP_C2/SMBALERT#	
0 **Default**	Disable ME crypto TLS
1	Enable ME crypto TLS



https://vinafix.com

TBL2301

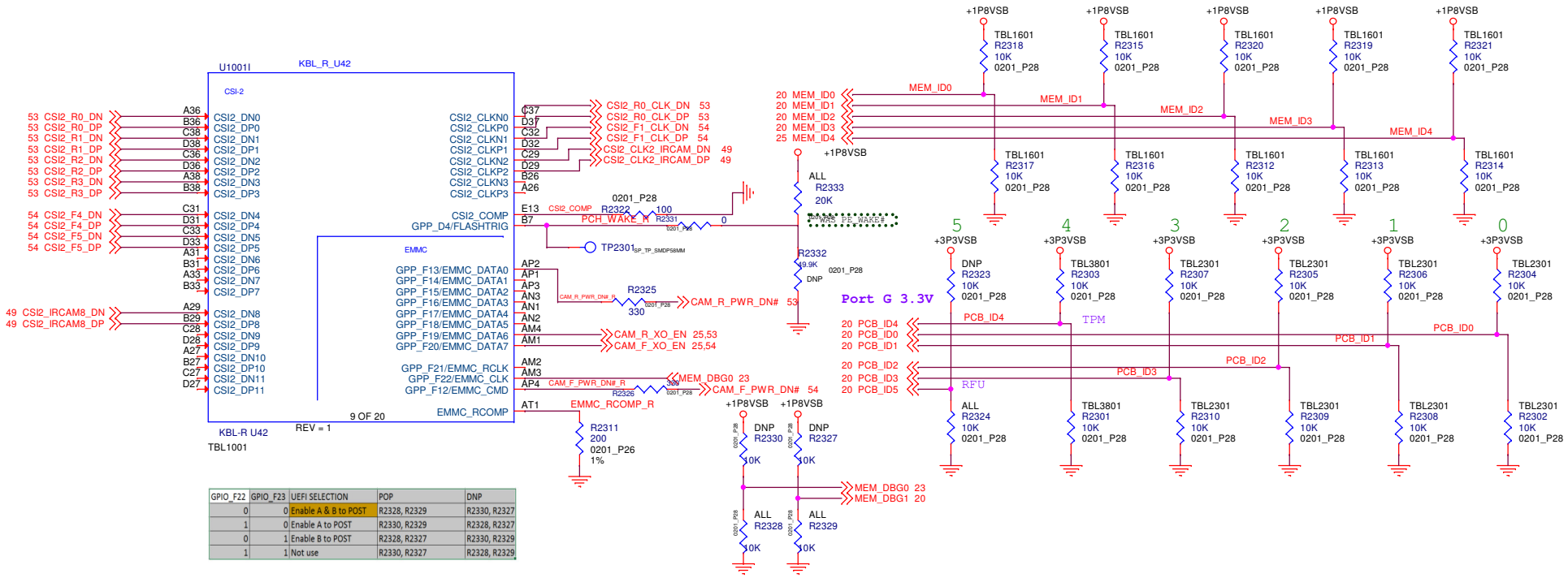
Build	X861217-001 Qty (10K 0201)	PCH_Value	PCH_10K	PCH_NOSTUFF
EV0.9	*4*	*0000*	*R2302,R2308,R2309,R2310*	*R2304,R2305,R2306,R2307*
EV1.0	*4*	*0001*	*R2304,R2308,R2309,R2310*	*R2302,R2305,R2306,R2307*
DV-DBG	*4*	*0010*	*R2302,R2306,R2309,R2310*	*R2304,R2305,R2307,R2308*
DV-RETAIL	*4*	*0011*	*R2304,R2306,R2309,R2310*	*R2302,R2305,R2307,R2308*
	4	*0100*	*R2302,R2305,R2308,R2310*	*R2304,R2306,R2307,R2309*
	4	*0101*	*R2304,R2305,R2308,R2310*	*R2302,R2306,R2307,R2309*
RSVD Calgary MP	4	~~0110~~	~~R2302,R2305,R2306,R2310~~	~~R2304,R2307,R2308,R2309~~
	4	~~0111~~	~~R2304,R2305,R2306,R2310~~	~~R2302,R2307,R2308,R2309~~
	4	~~1000~~	~~R2302,R2307,R2308,R2309~~	~~R2304,R2305,R2306,R2310~~
	4	~~1001~~	~~R2304,R2307,R2308,R2309~~	~~R2302,R2305,R2306,R2310~~
	4	~~1010~~	~~R2302,R2306,R2307,R2309~~	~~R2304,R2305,R2308,R2310~~

TBL2302

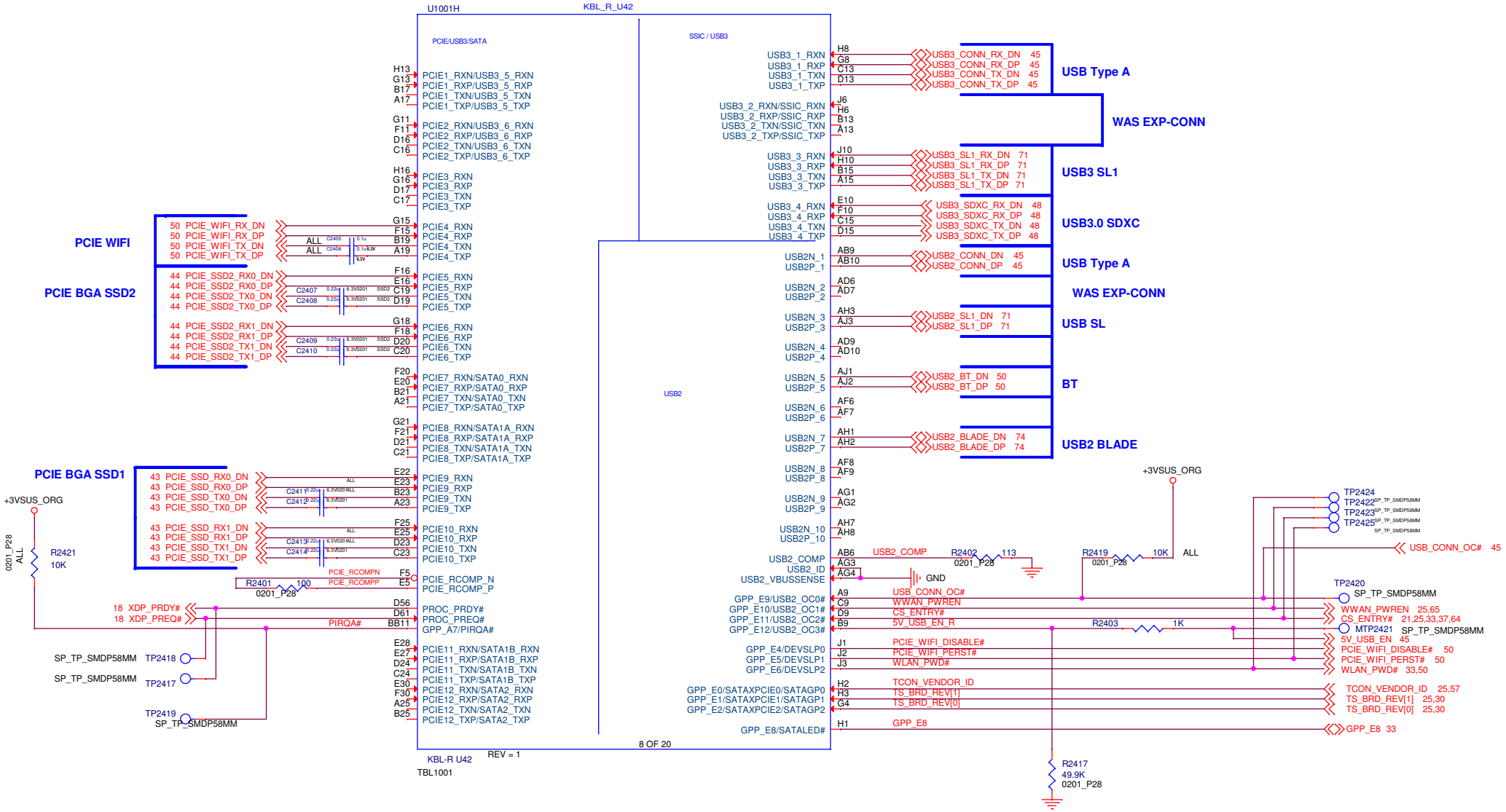
Reference Info Only. For Build Options used for LPDDR3, see TBL1601 on Sheet 16.

RAM Speed		RAM Size & Cal					DRAM Mfr			
MEM_ID4		MEM_ID3		MEM_ID2			MEM_ID1		MEM_ID0	
ID4_H	R2321	ID3_H	R2319	ID2_H	R2320	ZQ1	ID1_H	R2315	ID0_H	R2318
ID4_L	R2314	ID3_L	R2313	ID2_L	R2312	R1602,R1604, R1702,R1704	ID1_L	R2316	ID0_L	R2317
1600MHz	0	0x00		4GB		X887566-001 for Mem > 4 GB	0x00		Hyn 2ynm	
1866MHz	1	0x01		8GB			0x01*		Sam D23*	
		0x02		16GB			0x02*		Sam D20*	
		0x03		RFU			0x03		Hyn 2znm	

Note: For Samsung 16GB, MEM ID is Ox01 for D20 parts (No Sam D23)



GPIO_F22	GPIO_F23	UEFI SELECTION	POP	DNP
0	0	Enable A & B to POST	R2328, R2329	R2330, R2327
1	0	Enable A to POST	R2330, R2329	R2328, R2327
0	1	Enable B to POST	R2328, R2327	R2330, R2329
1	1	Not use	R2330, R2327	R2328, R2329



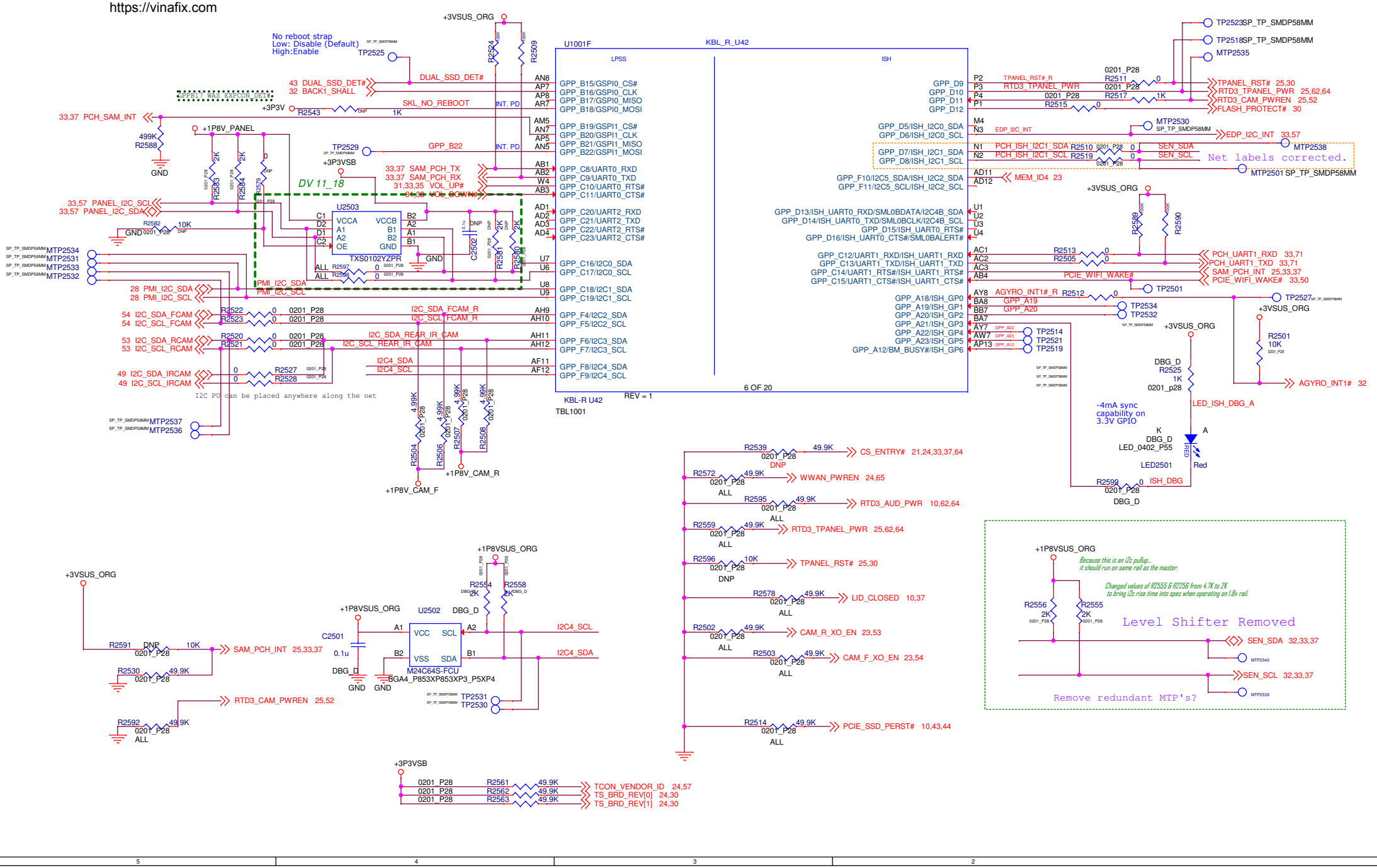
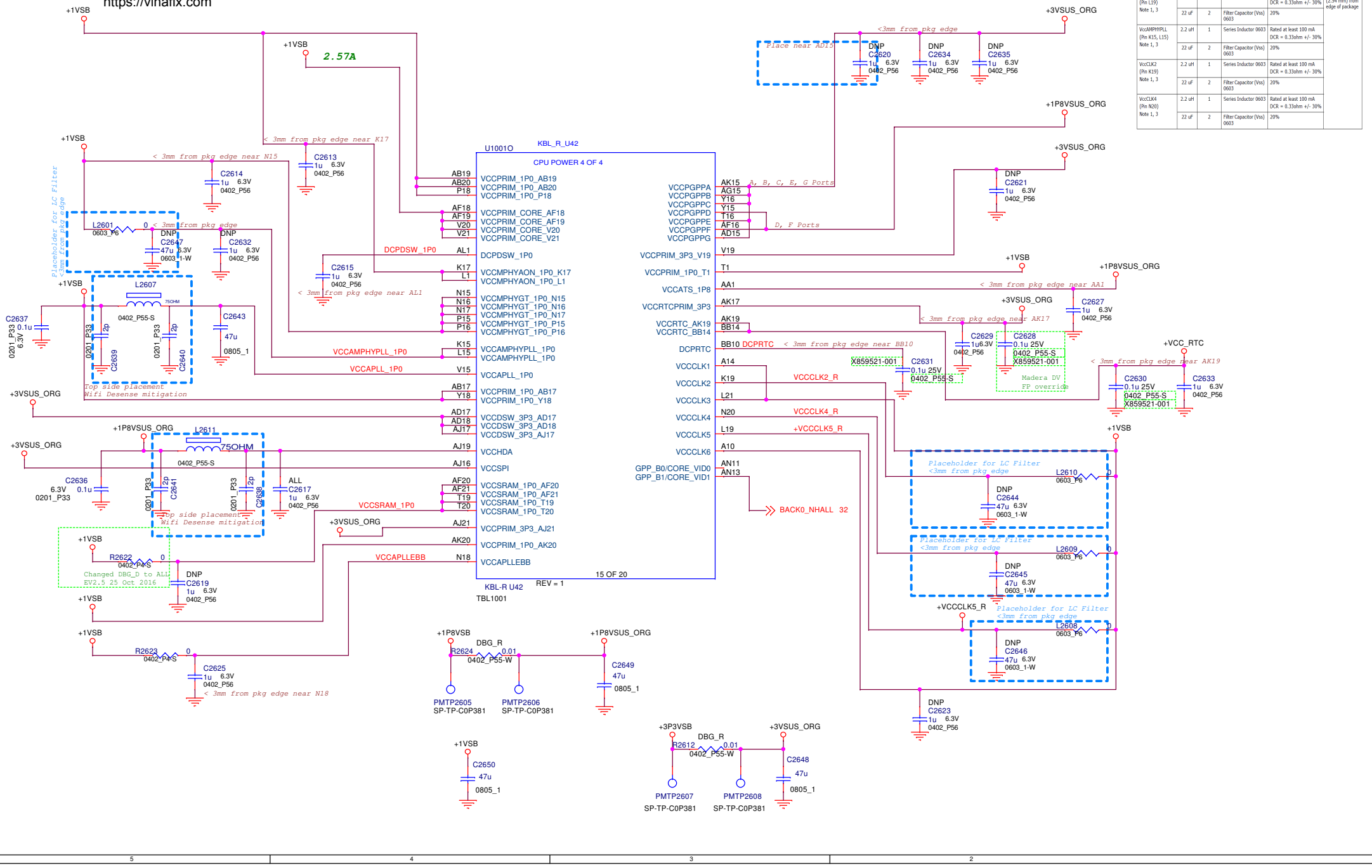


Table 52-10. Filter Requirements for SKL U PCH (Sheet 1 of 2)

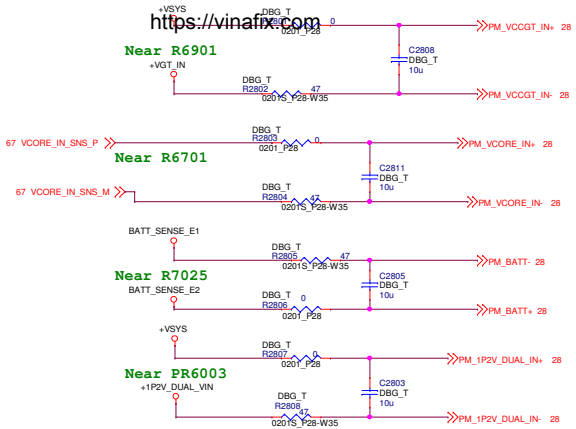
Supply	Value	Quantity	Type (Pin Type)	Notes	Placement
VccCLK5 (Pin L19) Note 1, 3	2.2 uH	1	Series Inductor 0603	Rated at least 100 mA DCR = 0.33ohm +/- 30%	<100 mils (2.54 mm) from edge of package
	22 uF	2	Filter Capacitor (Vss) 0603	20%	
VccAMPHYPLL (Pin K15, L15) Note 1, 3	2.2 uH	1	Series Inductor 0603	Rated at least 100 mA DCR = 0.33ohm +/- 30%	
	22 uF	2	Filter Capacitor (Vss) 0603	20%	
VccCLK2 (Pin K19) Note 1, 3	2.2 uH	1	Series Inductor 0603	Rated at least 100 mA DCR = 0.33ohm +/- 30%	
	22 uF	2	Filter Capacitor (Vss) 0603	20%	
VccCLK4 (Pin N20) Note 1, 3	2.2 uH	1	Series Inductor 0603	Rated at least 100 mA DCR = 0.33ohm +/- 30%	
	22 uF	2	Filter Capacitor (Vss) 0603	20%	

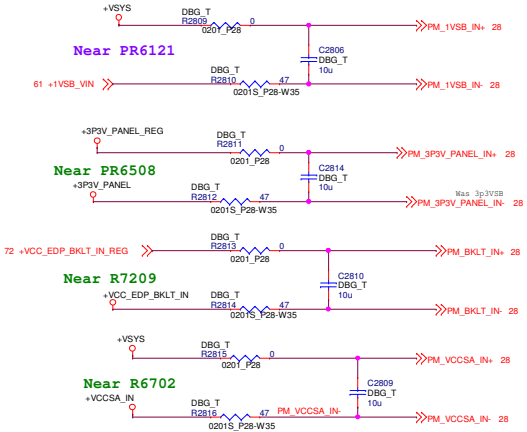


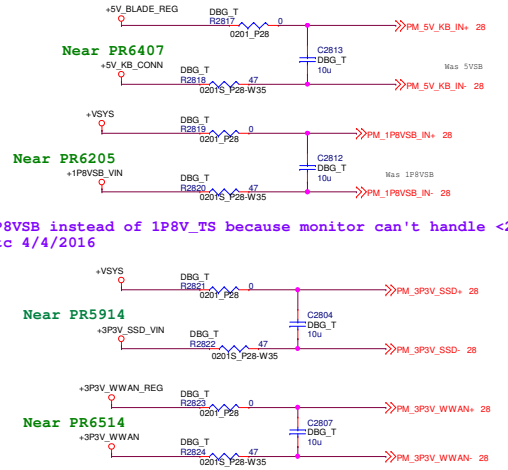
https://vinafix.com

W x H 377 x 244 mm

2018/04/18
Changed LS signal to 47 OHM; added 10uF Filter Caps







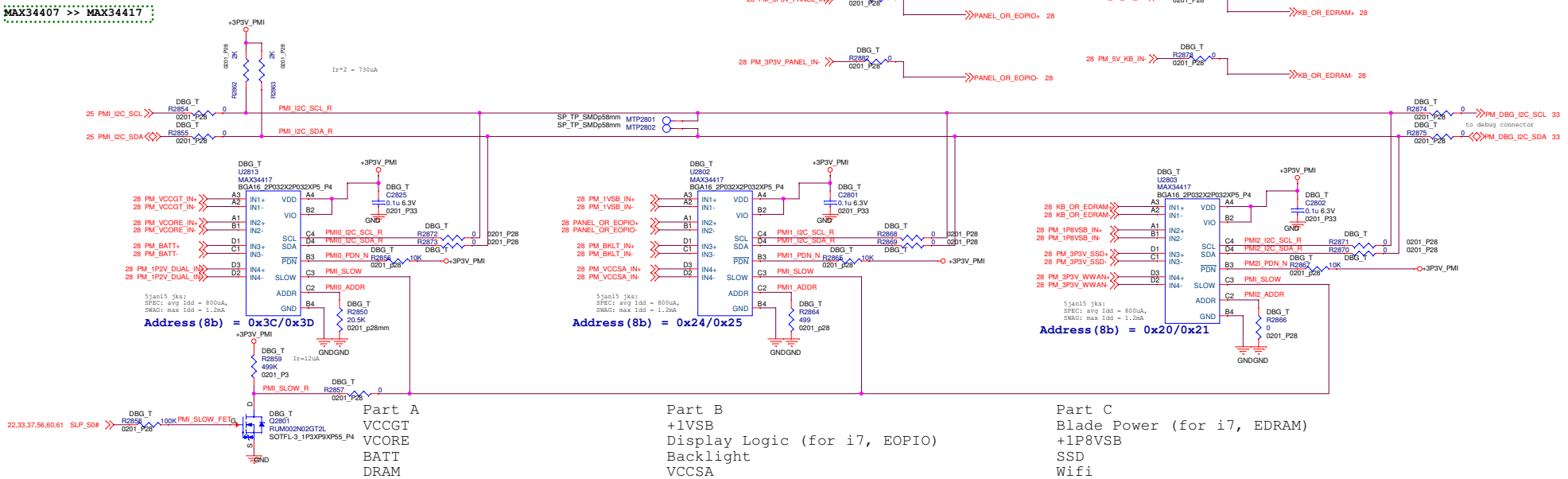
1P8VSB instead of 1P8V_TS because monitor can't handle <2.5V
ktc 4/4/2016

Resistor Address for MAX3440
20.5K => 2x3C/2x3D
11.0K => 2x38/2x39
5.90K => 2x34/2x35
3.16K => 2x30/2x31
1.74K => 2x2C/2x2D
931K => 2x28/2x29
499 => 2x24/2x25
GND => 2x20/2x21

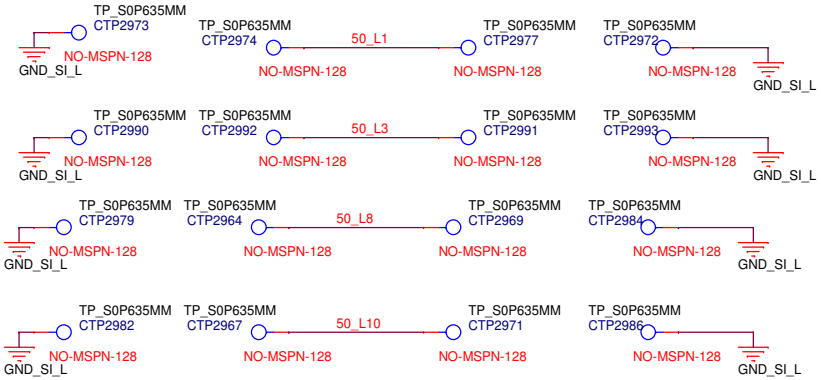
i7/2+3e SKU ONLY

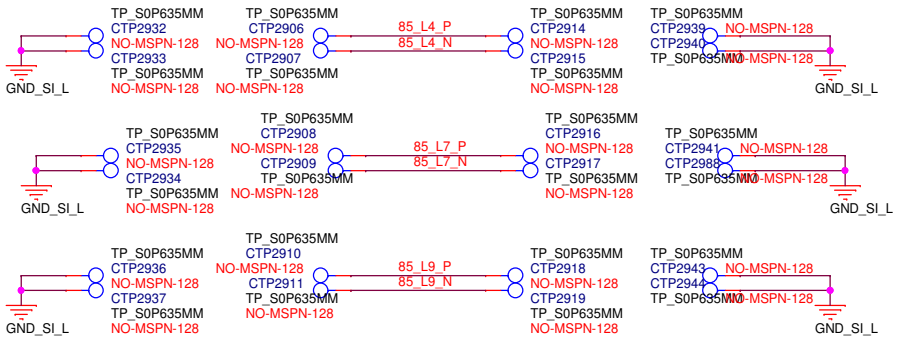
REMOVED EDRAM RAIL SENSE

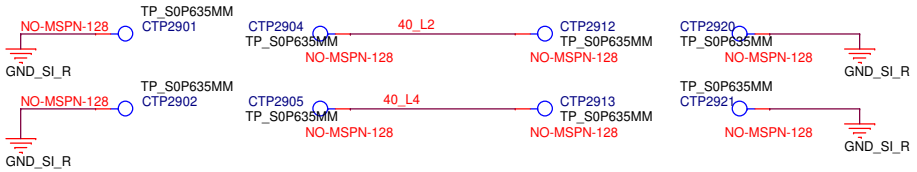
MAX34407 >> MAX34417

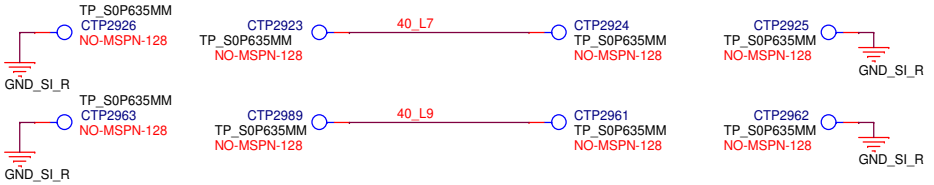


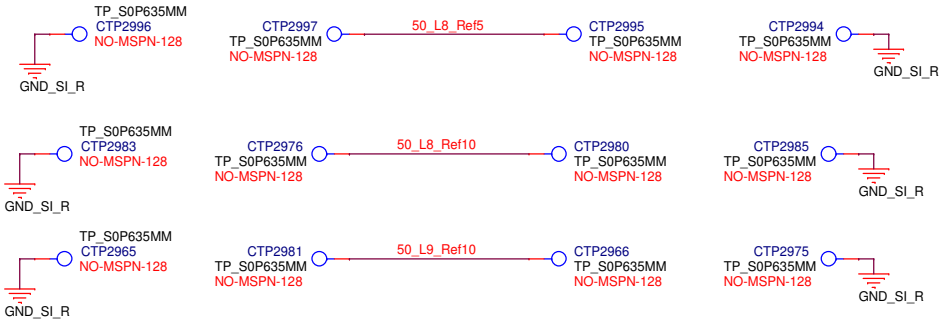
Part A	Part B	Part C
VCCGT	+1VSB	Blade Power (for i7, EDRAM)
VCORE	Display Logic (for i7, EOPIO)	+1P8VSB
BATT	Backlight	SSD
DRAM	VCCSA	Wifi

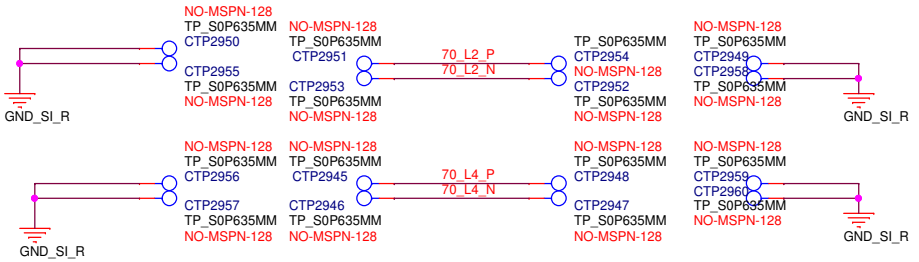




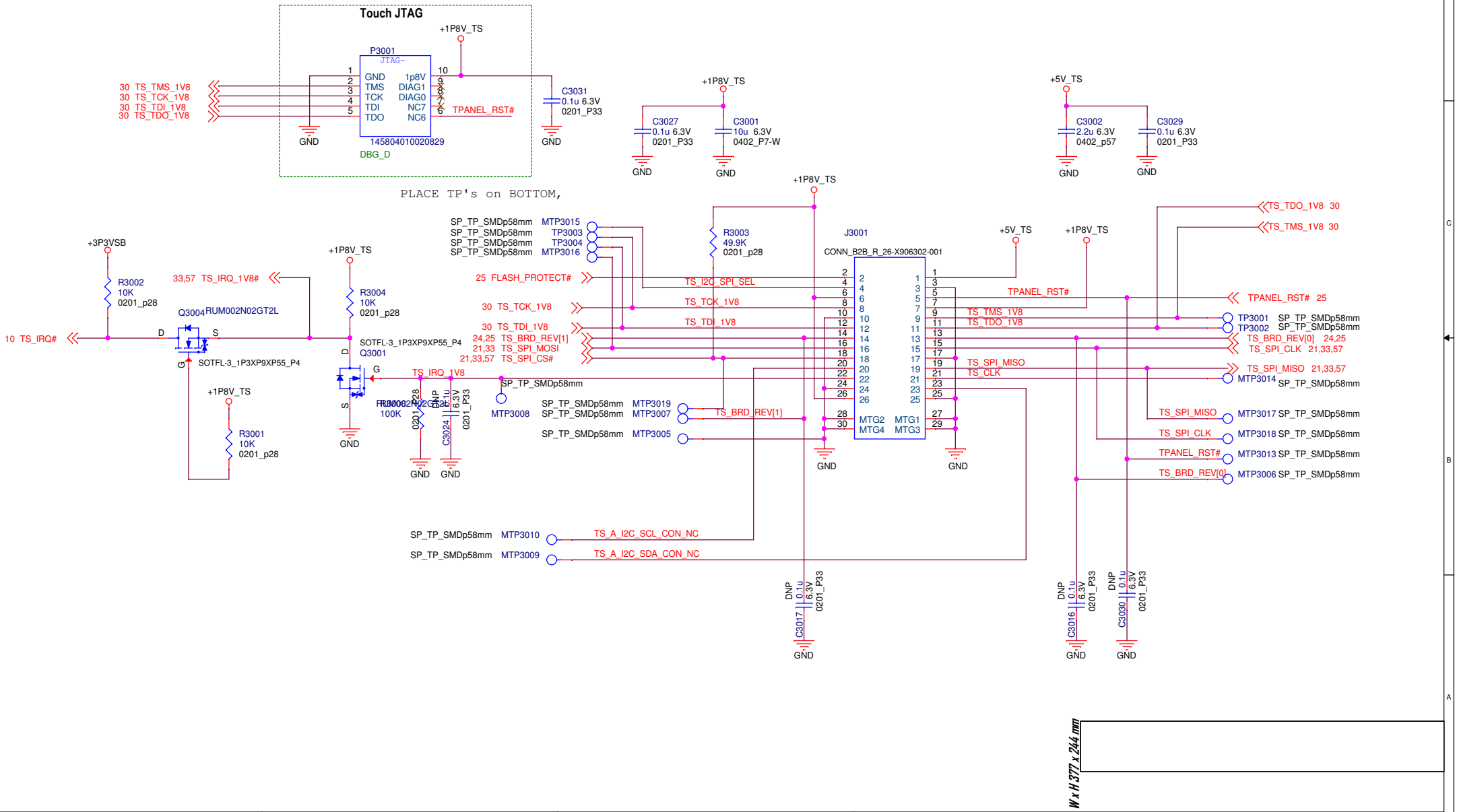


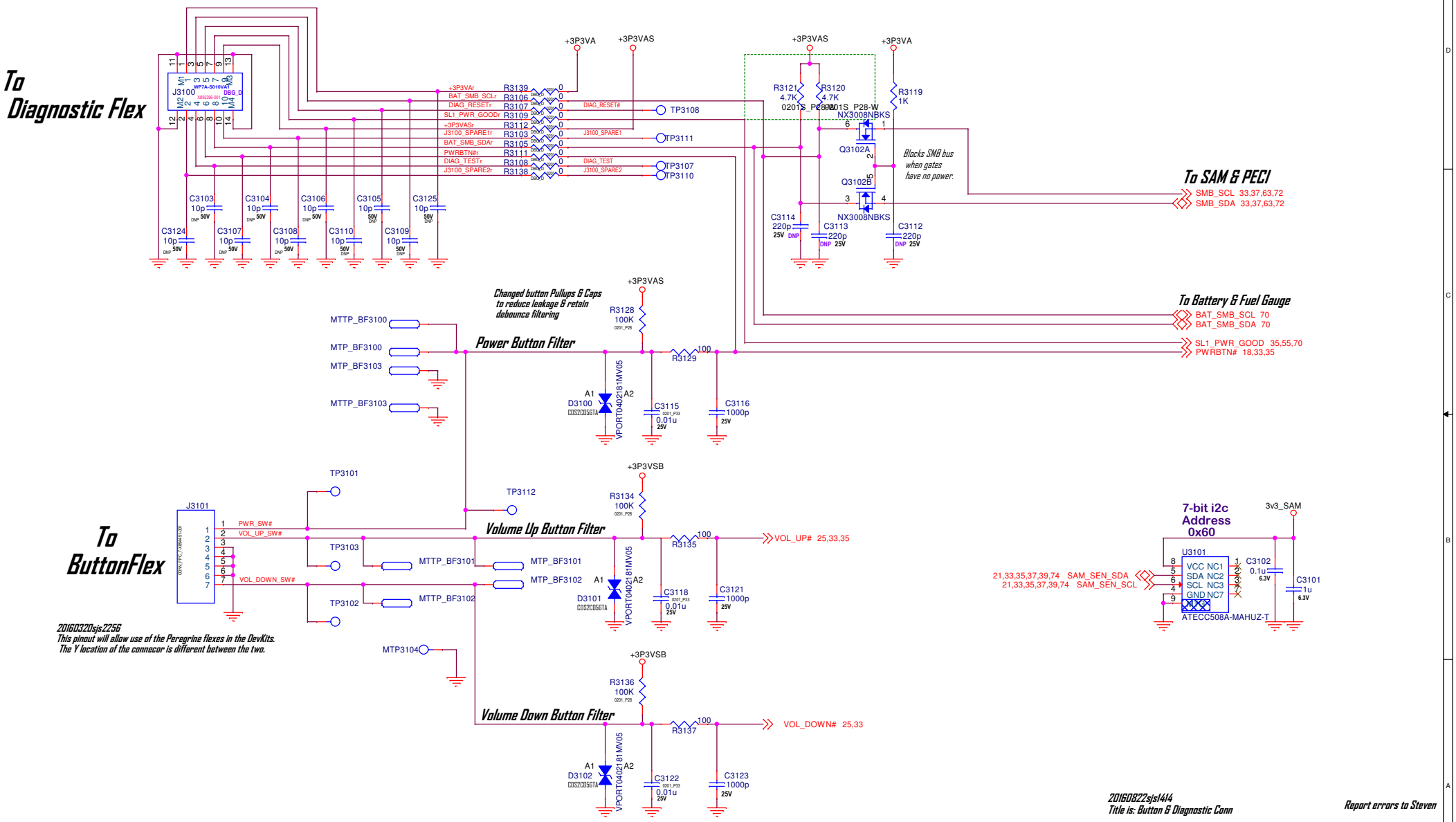




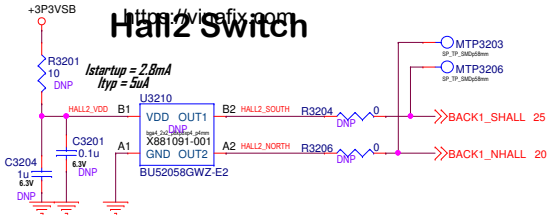


W x H 377 x 244 mm

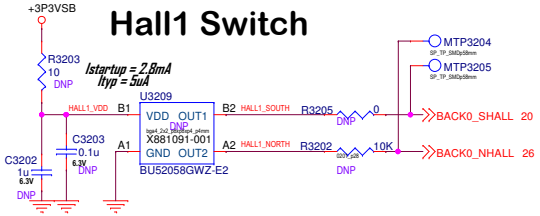




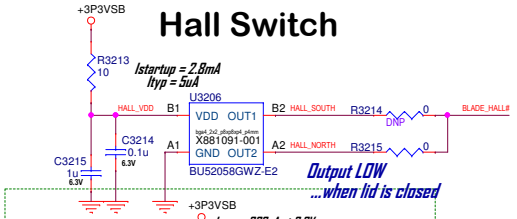
Hall2 Switch



Hall1 Switch

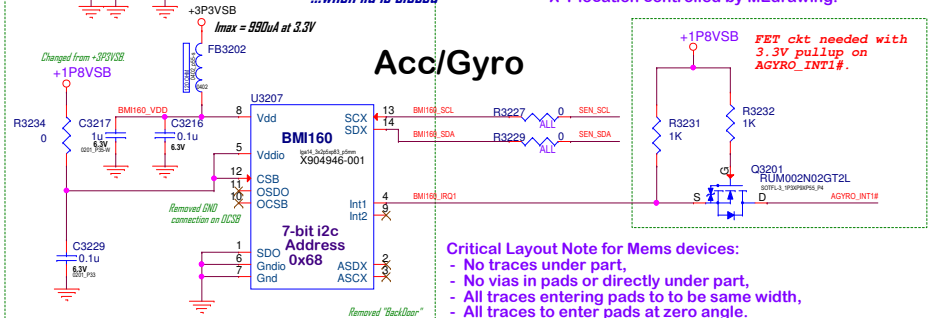


Hall Switch



Critical Layout Note:
Sensitive to ferrous materials
Do not mount under a steel shield can
If mounted on Glass side of board,
Trigger may occur
as early as 30Gauss North B-field
or as late as 50Gauss North B-field
Be careful not to mount within 15mm
of speaker autofocus camera or other magnet.
X-Y location controlled by MEdrawing.

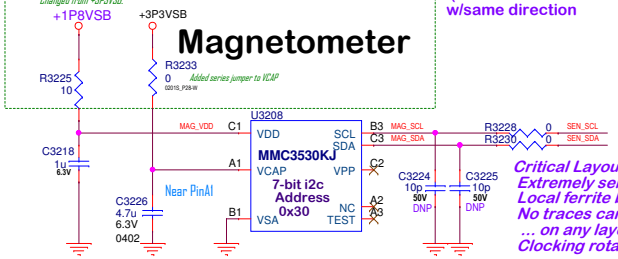
Acc/Gyro



Critical Layout Note for Mems devices:
- No traces under part,
- No vias in pads or directly under part,
- All traces entering pads to to be same width,
- All traces to enter pads at zero angle.
- All pads to have a trace, even if it is a stub

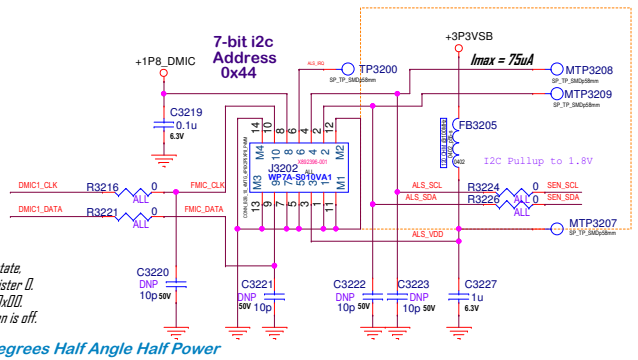
Clocking rotation controlled by MEdrawing.
(+X Device & +X Surface vectors must be parallel w/same direction

Magnetometer



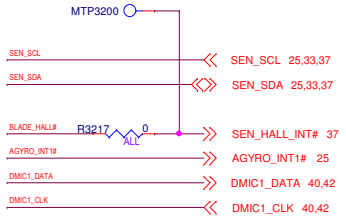
Critical Layout Note:
Extremely sensitive to ferrous materials:
Local ferrite bead to be >8mm remote
No traces carrying >8mA within 10mm
... on any layer.
Clocking rotation controlled by MEdrawing.

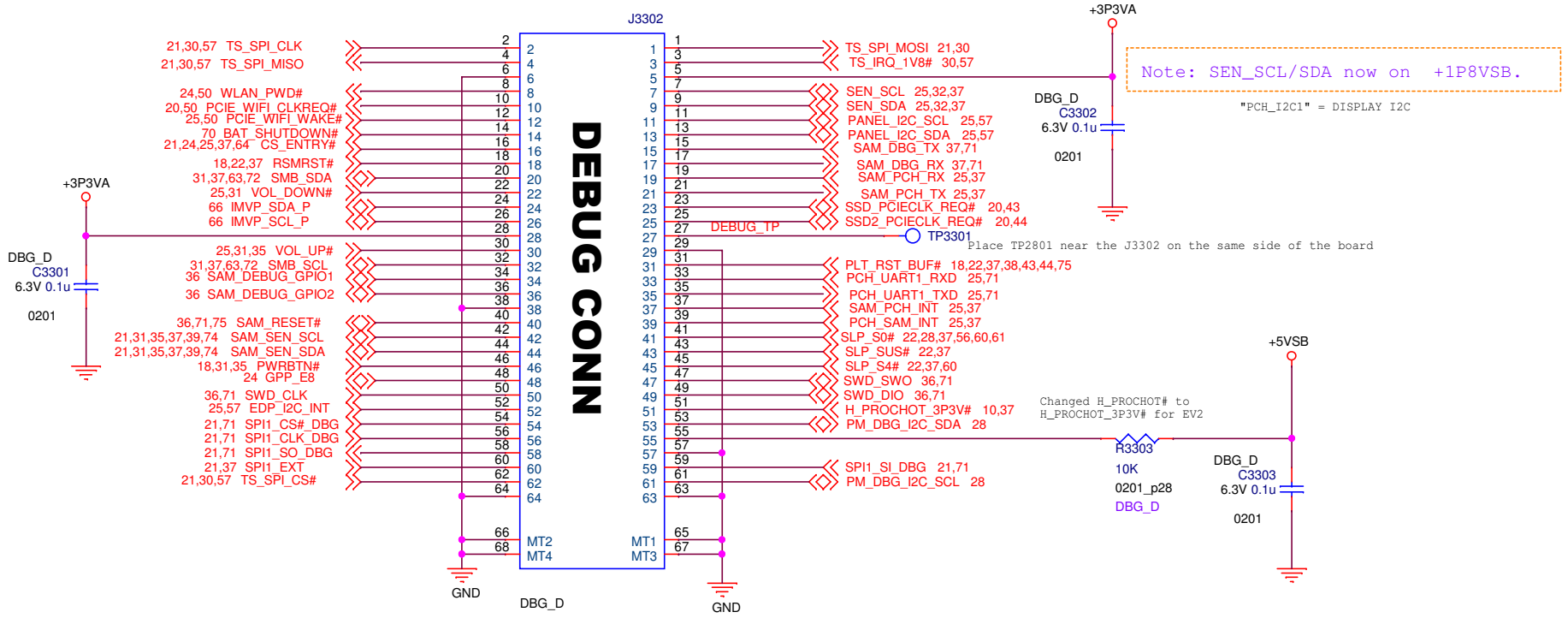
Ambient Light Sensor & Front Mic

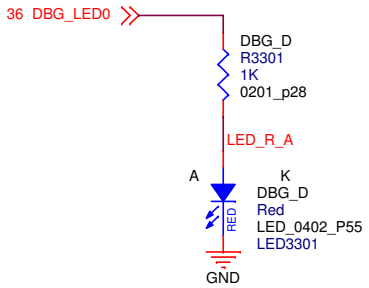


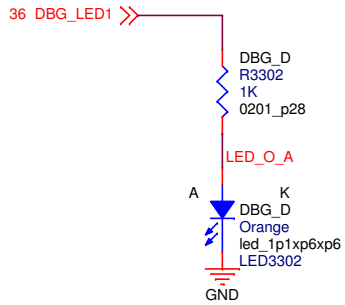
Power-Down
To put the ISL29033 into a power-down state,
the user can set [7 to 5] bits to 0 in Register 0.
Or more simply, set all of Register 0 to 0x00.
This should be the default when the screen is off.

ALS field of view to be >55 degrees Half Angle Half Power
To acheive this FOV
- assuming a 48+/-6um uhole array on 150um centers contained in 4.3mm aperture,
- the top of the ALS chip should reside 1100um below the glass.
This should provide transmisivity [6% >%T(lambda) > 10.5% for [390nm < lambda <1000nm].
It would be prudent to control the uhole array using 30 random samples of 5 uholes measured by CMM/OMM



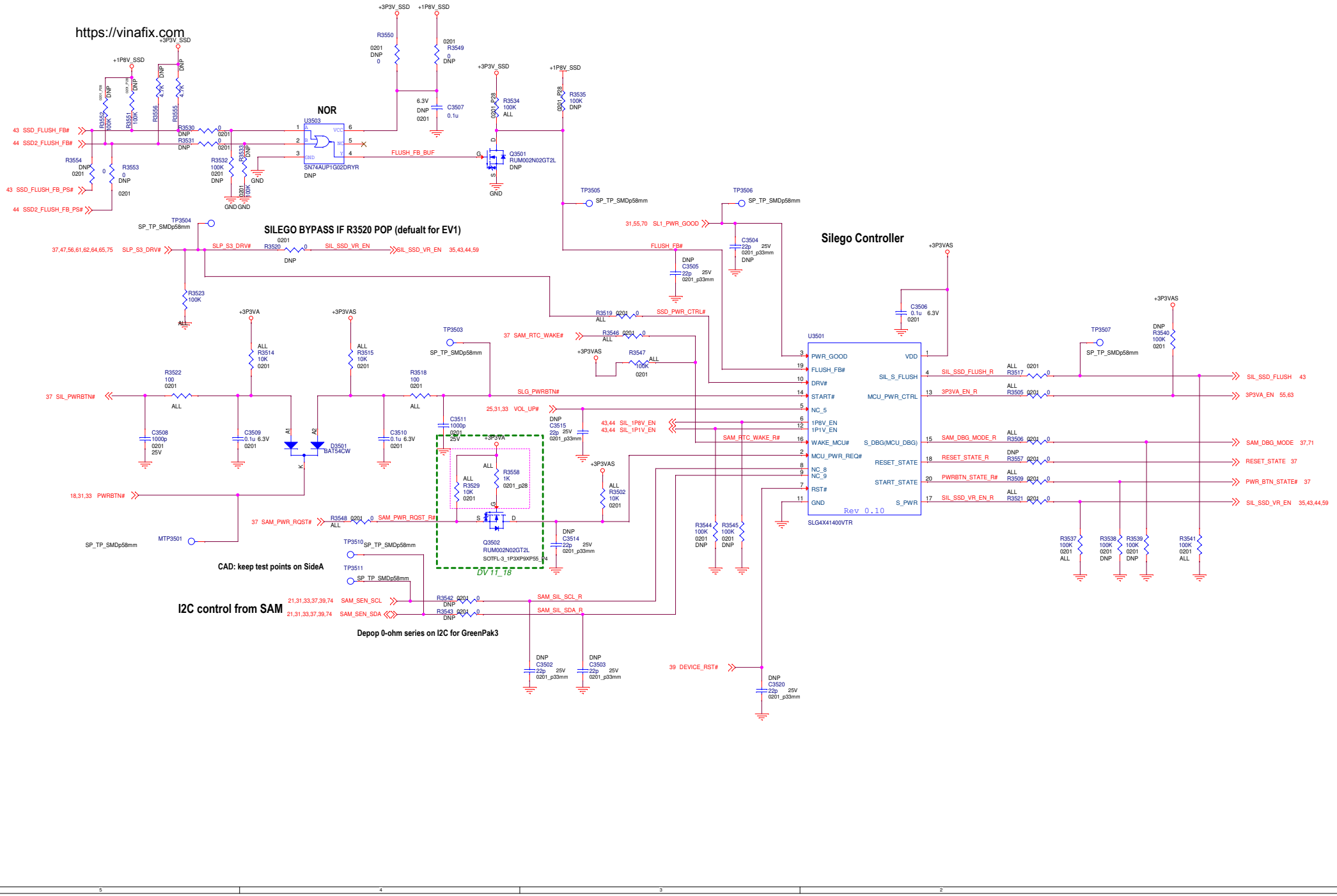


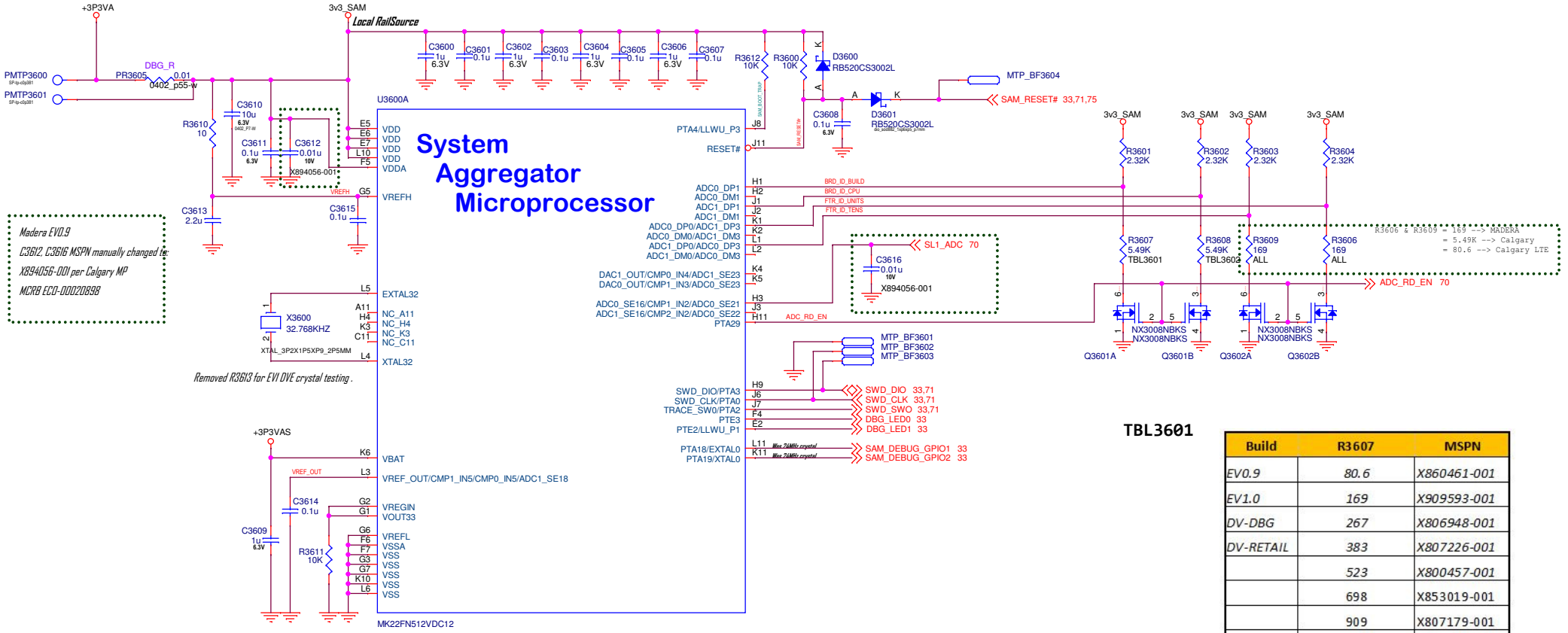




Place LEDs outside shield can
for visibility outside of bucket
ktc - 02/22/2016

REMOVED PECI





TBL3601

Build	R3607	MSPN
EV0.9	80.6	X860461-001
EV1.0	169	X909593-001
DV-DBG	267	X806948-001
DV-RETAIL	383	X807226-001
	523	X800457-001
	698	X853019-001
	909	X807179-001
	1180	X804207-001
	1500	X806696-001
	2000	X800427-001

TBL3602

Proc Type	R3608	MSPN
i5-8250U	80.6	X860461-001
i5-8350U	169	X909593-001
i7-8650U	267	X806948-001

U3600B

System Aggregator Microprocessor

MK22FN512VDC12

USB0_DP
USB0_DM

3v3_SAM
R3700 2.2K DNP
R3701 2.2K DNP
3v3_SAM
R3704 4.7K
R3705 4.7K

PTB2/I2C0_SCL
PTB3/I2C0_SDA
PWR_SMB_SCL
PWR_SMB_SDA
R3718 10
R3719 10
SMB_SCL 31,33,63,72
SMB_SDA 31,33,63,72
SMB to Charger & Battery

PTC10/I2C1_SCL
PTC11/I2C1_SDA
SENSOR_SCL
SENSOR_SDA
R3722 10
R3723 10
SAM_SEN_SCL
SAM_SEN_SDA
SAM_SEN_SCL 21,31,33,35,39,74
SAM_SEN_SDA 21,31,33,35,39,74
I2C to TempSensors,Blade Accel, & HostAuth

PTD6/UART0_RX
PTD7/UART0_TX
SAM_PCH_RX
SAM_PCH_TX
R3724 10
R3725 10
SAM_PCH_RX 25,33
SAM_PCH_TX 25,33
Uart to PCH

PTD8/LPUART0_RX
PTD9/LPUART0_TX
BLADE_RX
BLADE_TX
R3726 10
R3727 10
BLADE_RX 74
BLADE_TX 74
Uart to Blade

PTE1/LLWU_P0/UART1_RX
PTE0/UART1_TX
SAM_DBG_RX
SAM_DBG_TX
R3706 10
R3707 10
SAM_DBG_RX 33,71
SAM_DBG_TX 33,71
Debug Uart

PTD2/LLWU_P13/UART2_RX
PTD3/UART2_TX
SAM_SL1_RX
SAM_SL1_TX
R3708 10
R3709 10
SAM_SL1_RX 70
SAM_SL1_TX 70
Uart to Surflink

PTC3/LLWU_P7
R3713 0

Blade Interface

PTB17
PTD15
PTE25
PTB1
PTC16
PTC5/LLWU_P9
Kbi2_PTC16
R3703 1K
BLADE_ACCEL# 74
BLADE_AUTH_PWR_EN 74
BLADE_AUTH_EN 74
BLADE_5V_PWR_EN 64
BLADE_MUX_UART_USB# 74
SEN_HALL_INT# 32
Blade Interface

Silego Interface

PTA5
PTD4/LLWU_P14
PTE24
PTC7
PTE4/LLWU_P2
PTA1
RTC_WAKE_UP#
SAM_SSD_FLUSH 43
SSD_FLUSH_SENSE 43
SAM_PWR_RQST# 35
SAM_DBG_MODE 35,71
SIL_PWRBTN# 35
PWR_BTN_STATE# 35
SAM_RTC_WAKE# 35
Silego Interface

Power Sequence Group

PTB22
PTB8
PTB19
PTB7
PTB18
PTC2
PTD13
PTC15
PTB20
PTC8
PTB21
PTC9
PTB23
PTD12
PTB6
PTA13/LLWU_P4
SLP_SUS#
SAM_PTD13
SLP_S4_DRV#
BAT_DET# 70
PCH_DPWROK 22
VSUS_ON 59,61,62
ALL_SUS_PWRGD 61,75
RSMRST# 18,22,33
SB_PWRBTN# 10,22
SLP_S3# 22,56,75
SLP_S3_DRV# 35,47,56,61,62,64,65,75
SLP_S4# 22,33,60
VRM_PWRGD 66,75
PM_PCH_PWROK 22
SYS_PWROK 22
SLP_S0# 22,28,33,56,60,61
TP3700
BLADE_UART_MUX_EN# 74
Battery detect
Power feedback
PCH feedback
Power interface
Power feedback
PCH interface
PCH interface
PCH feedback
Power interface
PCH feedback
Power interface
Power interface
PCH interface
Power interface
PCH feedback

PCH Interface

PTC13
PTC4/LLWU_P8
PTA14
PTE6
PTB9
PTC12
PTD1
PTC18
PTC6/LLWU_P10
PTC0
SPI1_EXT 21,33
PCH_SAM_INT 25,33
SAM_PCH_INT 25,33
LID_CLOSED 10,25
RTCRST_CTRL 20
PLT_RST_BUF# 18,22,33,38,43,44,75
UEFI_TOP_SWAP 20
SAM_PROCHOT 10
H_PROCHOT_3P3V# 10,33
CS_ENTRY# 21,24,25,33,64
PCH interface
PCH interface
PCH interface
PCH interface
PCH interface
PCH outputs Platform Reset ...PLT_RST_BUF# should have a pull down (for time when KZZ has high Z IO at boot)
Power Interface during a field upgrade to page the memory for 2nd image
SAM forces SOC to throttle itself
PCH interface forces SOC to throttle itself to prevent brown out
PCH command... Enter Connected Standby!

Fan Interface

PTA12
PTC1/LLWU_P6
FAN1_PWM 39
FAN1_TACH 39
Fan speed drive
Fan speed feedback

SLI Interface

SLI Mux Control

PTB0/LLWU_P5
PTE5
PTD0/LLWU_P12
PTA16
PTA17
PTA10
PTB16
PTE26
PTC19
PTD14
R3702 1K
SAM_SL1_PWR_EN 63
CHRG_OK 63
SL1_PSU_DET 70
SL1_RX_SEL# 70
SL1_TX_SEL# 70
SL1_HPD2_EN# 72
SL1_DBG_EN 71
SL1_DBG_SWD_UEFI_SEL 71
PCH_DBG_EN 71
SL1_DBG_SMB_UEFI_SEL 71
Surflink declares that a PSU is attached
Command Surflink to turn on the 5v
Surflink declares that its power is in bounds
Surflink Interface
Surflink Interface
HPD2 ENABLE
Surflink Debug Mux Control 0
Surflink Debug Mux Control 1
Surflink Debug Mux Control 2
Surflink Debug Mux Control 3

Logo Control

PTD11
PTC17
PTA11
PTA15
PTD5
BL_INST_ON_HNDSHK 10,57
PANEL_LOGO_EDP_VDD_EN 57
PANEL_LOGO_PWM 57
PANEL_LOGO_BKLT_EN 57
PANEL_LOGO 57
Enable the display panel power
Control Backlight brightness
Enable the Backlight Drive ???

Uncommited Pins

PTD10
NC_B11
PTB10
PTB11
PTC14
SL1_5V_PWR_EN 64,70
RESET_STATE 35
SAM_SYS_PWR_EN 63
VCCRTC_RST 55
Spare
Spare
TP3712
TP3702
TP3709
TP3710
TP3711

Madera DV -- Updated Symbol (PTB12 --> NC_B11)

SEN_SCL/SDA bus is now native to the ISH... pullups are connected on that end

SAM_SEN_SCL R3712 0 DNP SEN_SCL 25,32,33
SAM_SEN_SDA R3711 0 DNP SEN_SDA 25,32,33

Note: SEN_SCL/SDA now on +1P8VSB and cannot directly connect to SAM_SEN_SCL/SDA. Jumpers should be removed.

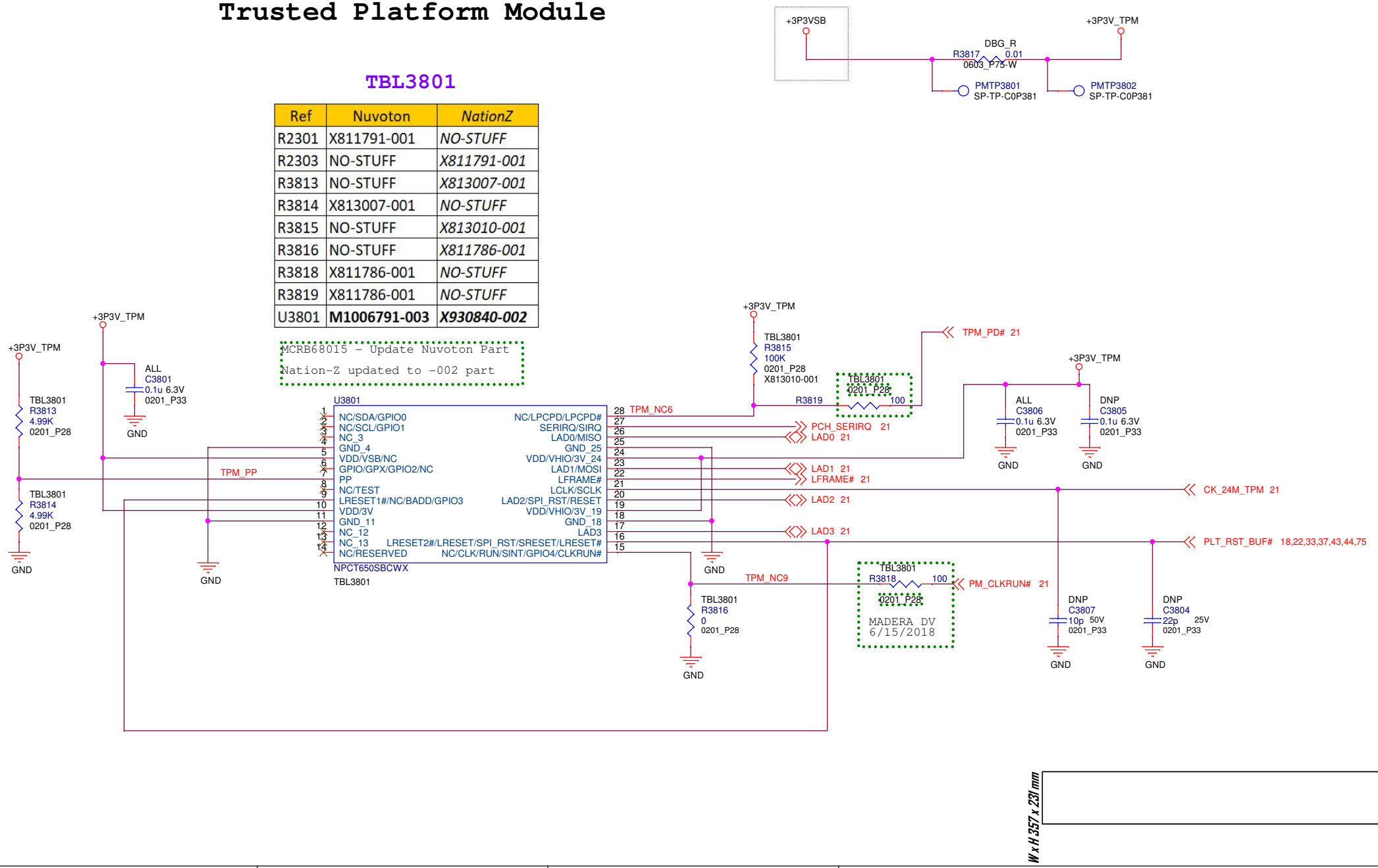
SLP_SUS# R3717 33 SLP_SUS# 22,33
C3701 25V 100p 0201_P33
Please place C3701 relatively close to U3600. R3717 should reside just before any net branch. Preferably the remainder of the net may be routed as a daisy chan rather than a star. These efforts will squelch observed glitches on this signal.

SLP_S4_DRV# 45,60,61,62
R3710 100K

Trusted Platform Module

TBL3801

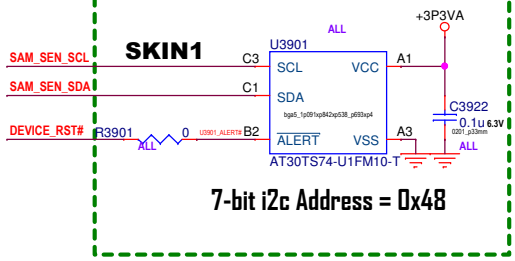
Ref	Nuvoton	NationZ
R2301	X811791-001	*NO-STUFF*
R2303	NO-STUFF	*X811791-001*
R3813	NO-STUFF	*X813007-001*
R3814	X813007-001	*NO-STUFF*
R3815	NO-STUFF	*X813010-001*
R3816	NO-STUFF	*X811786-001*
R3818	X811786-001	*NO-STUFF*
R3819	X811786-001	*NO-STUFF*
U3801	**M1006791-003**	***X930840-002***



W x H 357 x 231 mm

Make Common/ALL 6/15/18

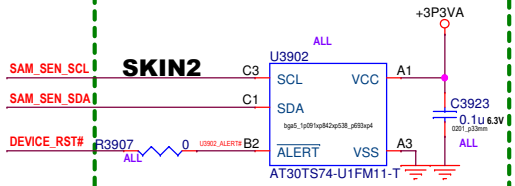
SKIN1



7-bit i2c Address = 0x48

MADERA DV -- Make Common/ALL

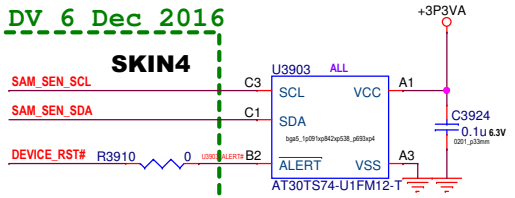
SKIN2



7-bit i2c Address = 0x49

DV 6 Dec 2016

SKIN4

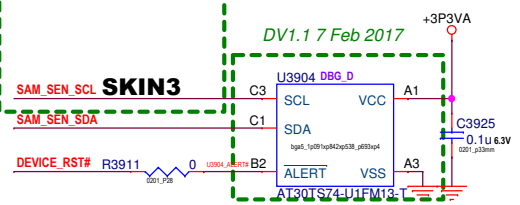


7-bit i2c Address = 0x4A

DV1.1 17 Feb 2017
SKIN3 & SKIN4 Swapped.

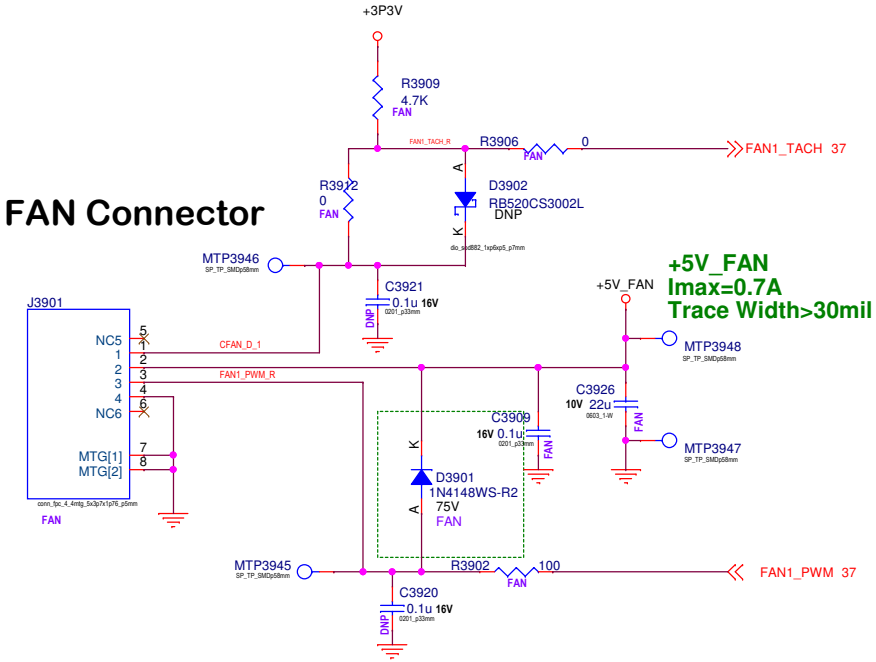
DV1.1 7 Feb 2017

SKIN3

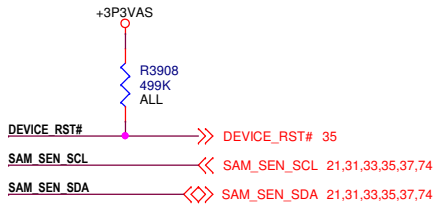


7-bit i2c Address = 0x4B

FAN Connector

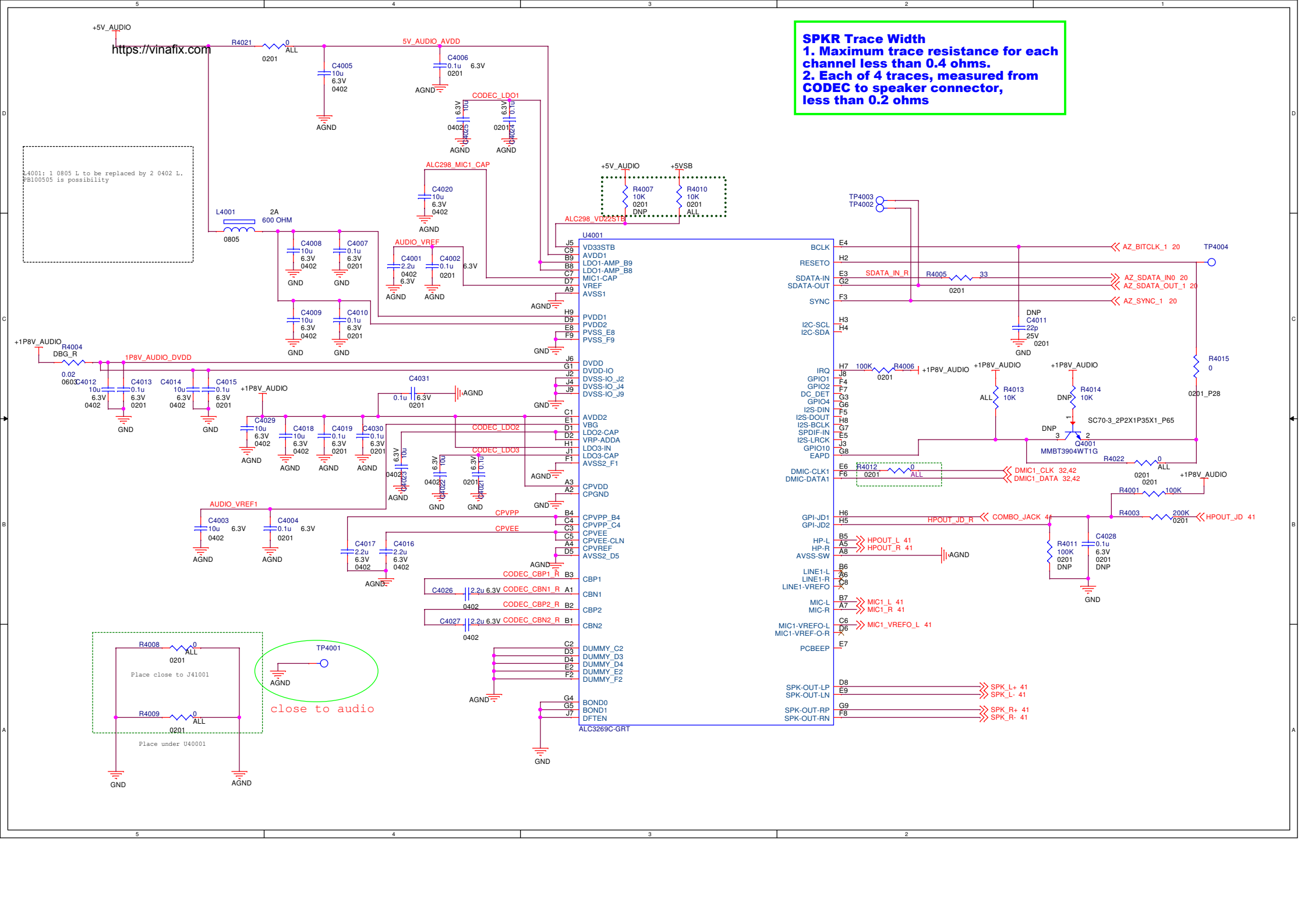


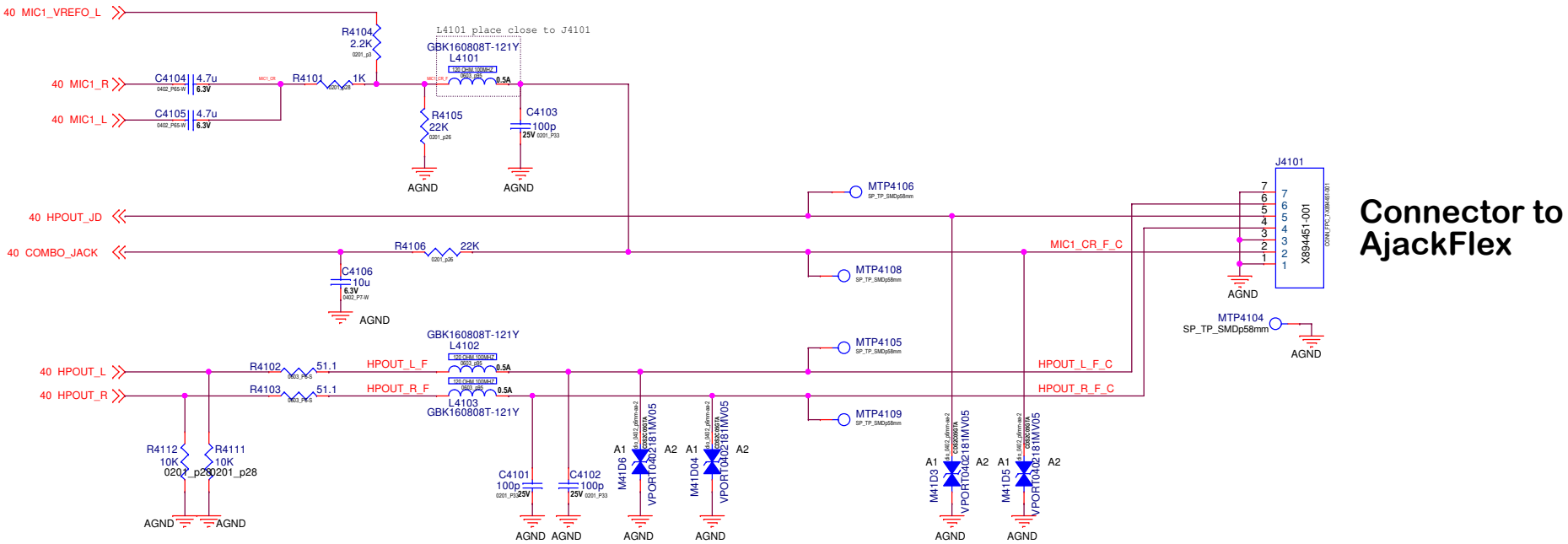
+5V_FAN
Imax=0.7A
Trace Width>30mil



20160827sjs0527: Temp Sensor/System Fan *Report errors to Steven*

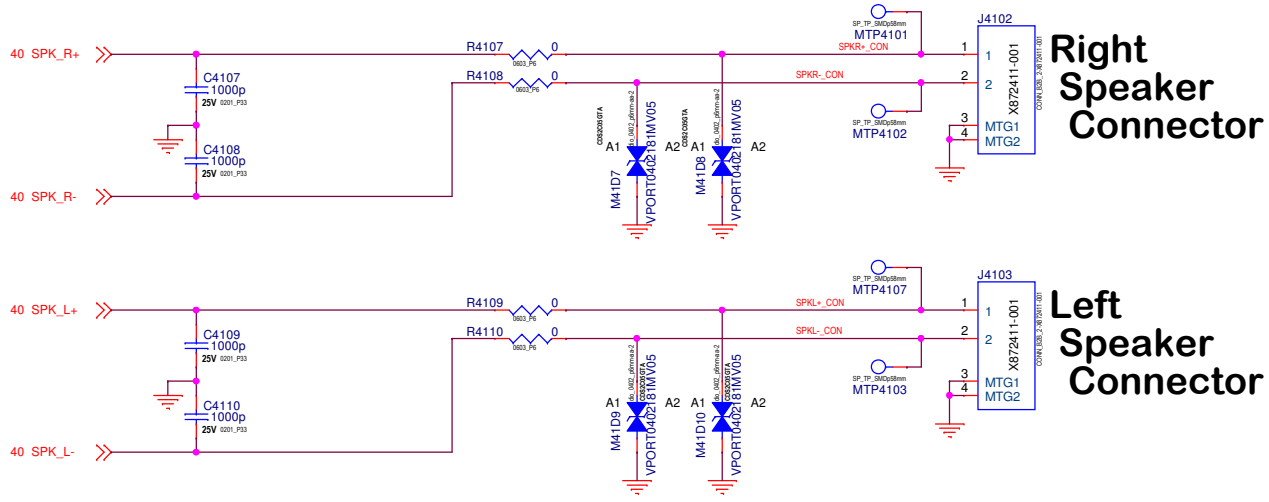
W x H 387 x 250 mm


SPKR Trace Width
1. Maximum trace resistance for each channel less than 0.4 ohms.
2. Each of 4 traces, measured from CODEC to speaker connector, less than 0.2 ohms
https://vinafix.com
+5V_AUDIO
5V_AUDIO_AVDD
CODEC_LDO1
ALC298_MIC1_CAP
AUDIO_VREF
+5VSB
ALC298_VD22S1B
U4001
ALC3269C-GRT
+1P8V_AUDIO
1P8V_AUDIO_DVDD
AUDIO_VREF1
CODEC_LDO2
CODEC_LDO3
CPVPP
CPVEE
CODEC_CBP1_R
CODEC_CBN1_R
CODEC_CBP2_R
CODEC_CBN2_R
L4001: 1 0805 L to be replaced by 2 0402 L.
PB100505 is possibility
Place close to J41001
Place under U40001
close to audio
TP4001
TP4002
TP4003
TP4004
SDATA_IN_R
DMIC1_CLK 32,42
DMIC1_DATA 32,42
HPOUT_JD_R
COMBO_JACK 41
HPOUT_L 41
HPOUT_R 41
MIC1_L 41
MIC1_R 41
MIC1_VREFO_L 41
SPK_L+ 41
SPK_L- 41
SPK_R+ 41
SPK_R- 41
AZ_BITCLK_1 20
AZ_SDATA_IN0 20
AZ_SDATA_OUT_1 20
AZ_SYNC_1 20
0201_P28
SC70-3_2P2X1P35X1_P65
MMBT3904WT1G
GND
AGND



SK 0314: VPORT0402181MV05 diodes to be replaced

Connector to AjackFlex

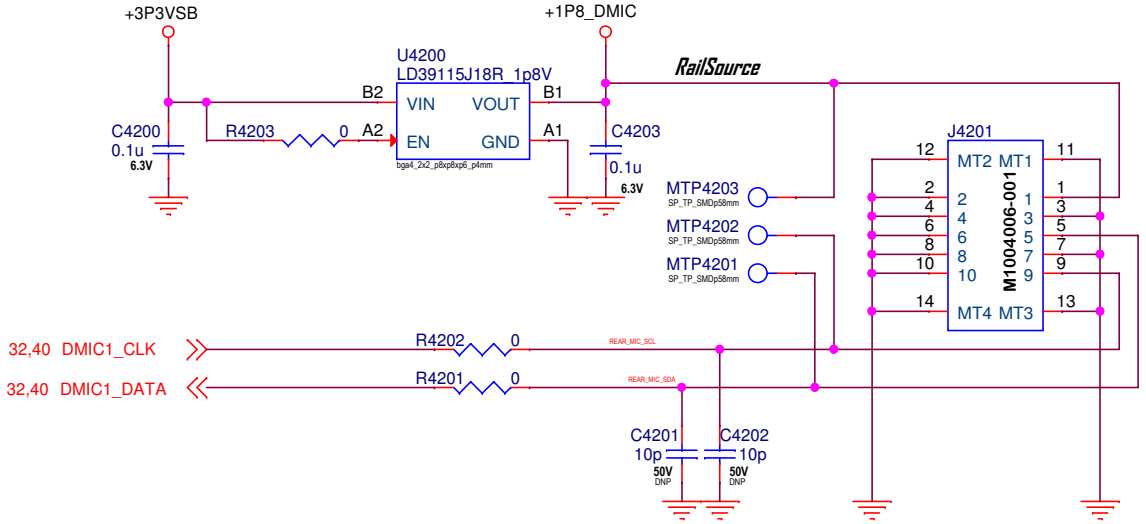


Right Speaker Connector

Left Speaker Connector

W×H 400x258.82mm

https://vinafix.com



To RearMicFlex

TBL4301

RefDes	1x128GB_Tsh	1x256GB_Tsh	1x512GB_Tsh	1x128GB_Hynix	1x256GB_Hynix	1x512GB_Hynix	2x512GB_Hynix	Domain
R4304	X859661-001	X859661-001	X859661-001	X859829-001	X859829-001	X859829-001	X859829-001	Core Voltage
U4301	M1075799-001 (KBG30ZPZ128G)	M1075816-001 (KBG30ZPZ256G)	M1075819-001 (KBG30ZPZ512G)	M1080816-001 (HFB1M8MQ331A0MR)	M1080841-001 (HFB1M8MO331A0MR)	M1080842-001 (HFB1M8MH331A0MR)	M1080842-001 (HFB1M8MH331A0MR)	SSD1

Detail - SSD Debug Assembly

RefDes	1x128GB_Tsh	1x256GB_Tsh	1x512GB_Tsh	1x128GB_Hynix	1x256GB_Hynix	1x512GB_Hynix	2x512GB_Hynix	Domain
P4301	X946298-001	X946298-001	X946298-001	X946298-001	X946298-001	X946298-001	X946298-001	Debug - JTAG connector
R4341	X813010-001	X813010-001	X813010-001	X813010-001	X813010-001	X813010-001	X813010-001	DEBUG - JTAG Pull up
R4317	X800967-001	X800967-001	X800967-001	X800967-001	X800967-001	X800967-001	NO-STUFF	SSD1 JTAG TDO
R4318	NO-STUFF	NO-STUFF	NO-STUFF	NO-STUFF	NO-STUFF	NO-STUFF	X800967-001	SSD2 JTAG TDO

Single SSD
Load R4317 and DNP R4318 for U4301 loaded and U4404 DNP

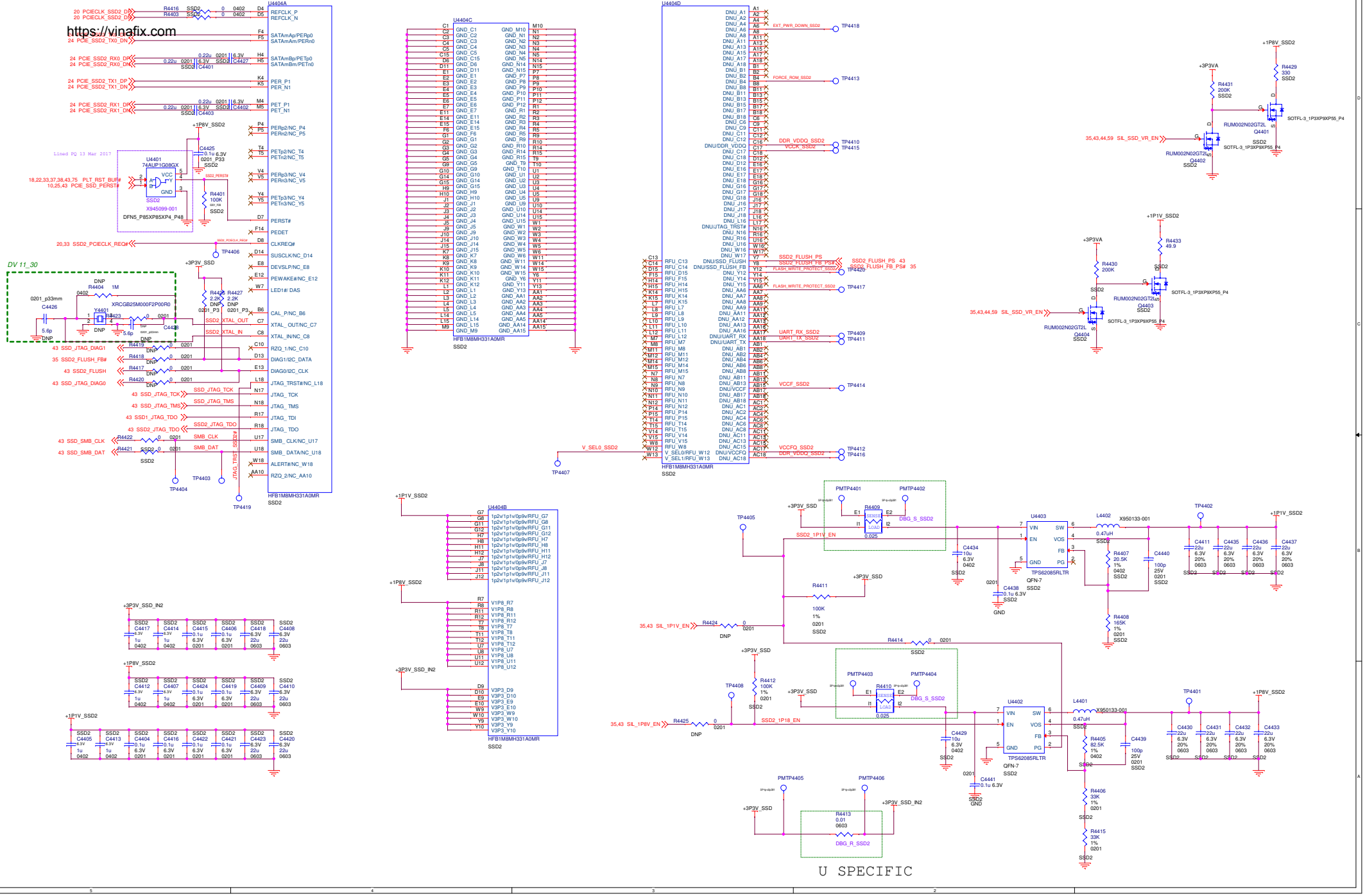
Dual SSD
DNP R4317 and Load R4318 for both U4301 and U4404 loaded.

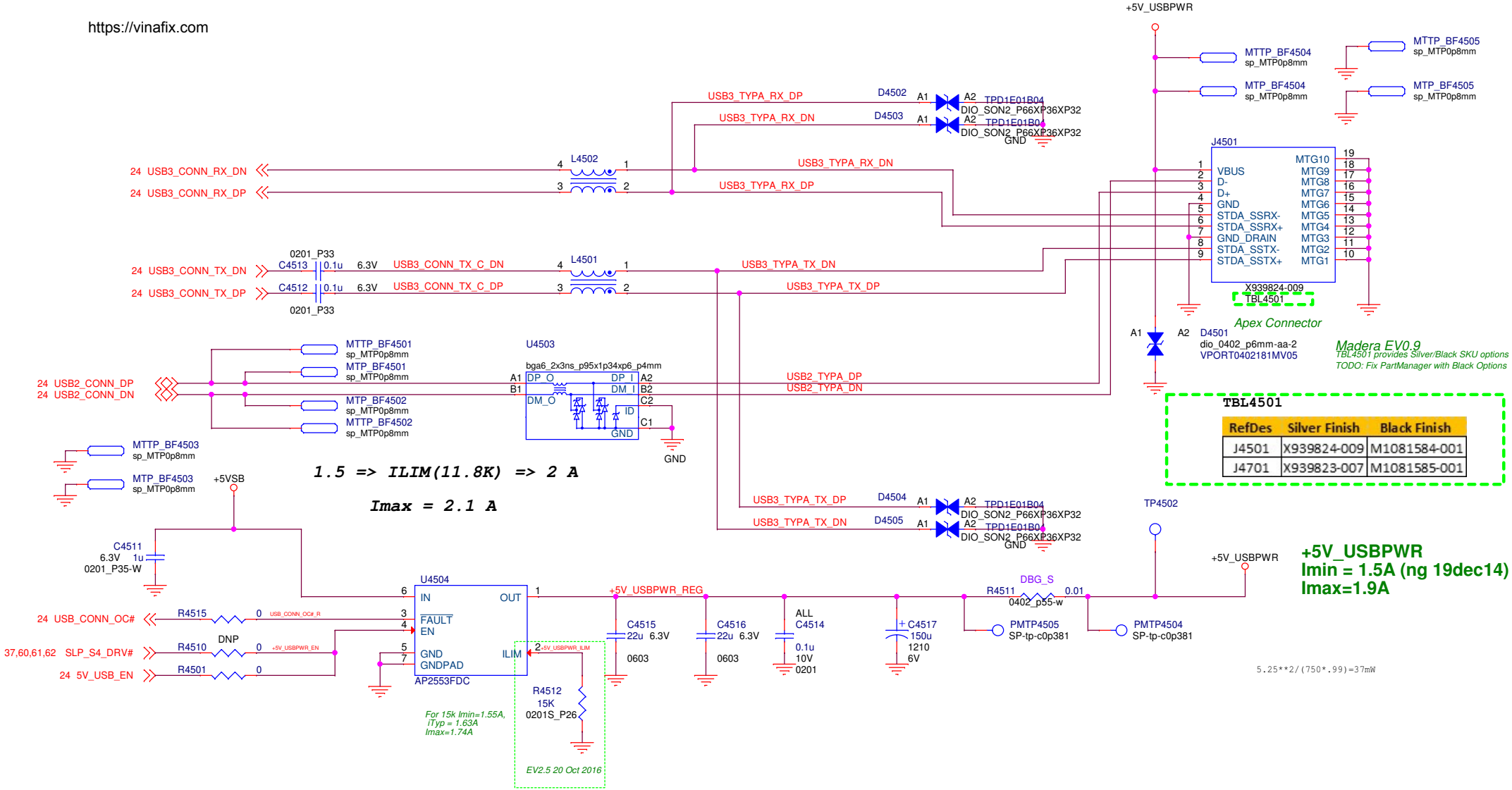
Imax = 1.6A, 1.2V per SSD
Imax = 2.1A, 1.1V per SSD

Imax = 1.2A FOR ONE SSDs

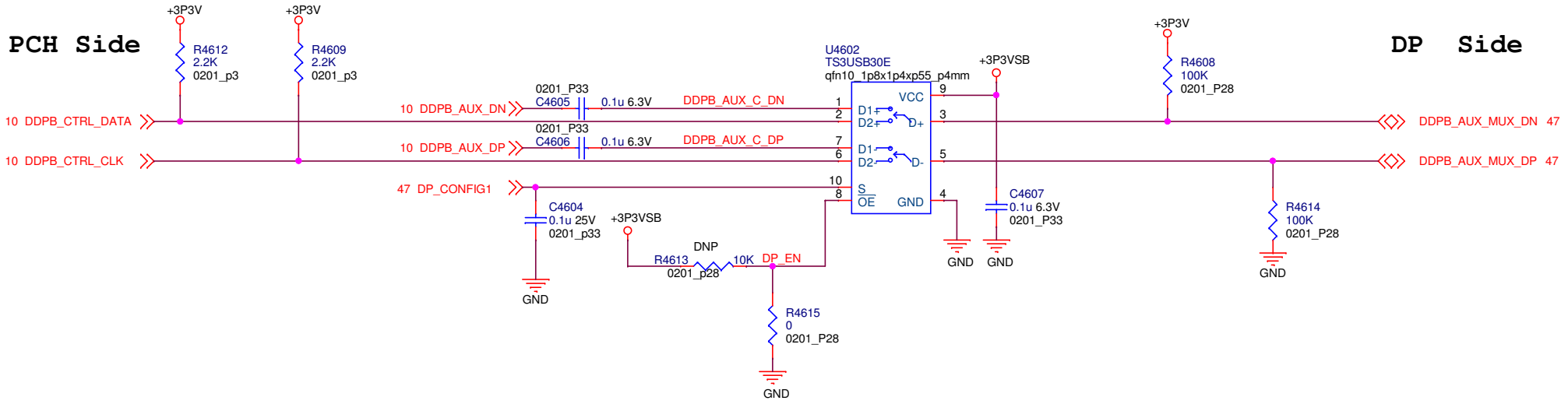
+3P3V_SSD
Imax=1A for SSDs

For common BGA SSDs

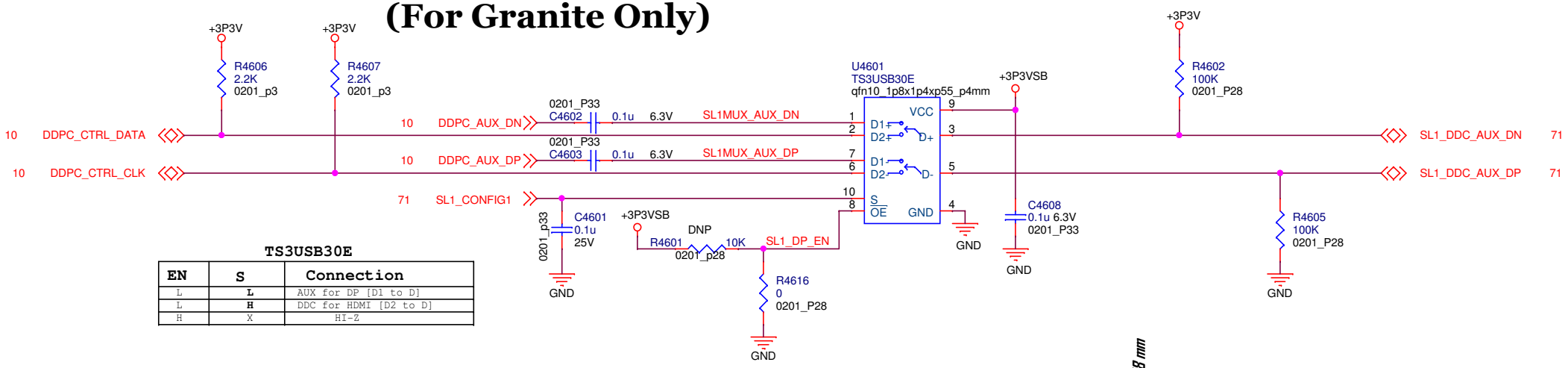



https://vinafix.com
+5V_USBPWR
MTTP_BF4504
sp_MTP0p8mm
MTP_BF4504
sp_MTP0p8mm
MTTP_BF4505
sp_MTP0p8mm
MTP_BF4505
sp_MTP0p8mm
USB3_TYPA_RX_DP
USB3_TYPA_RX_DN
D4502
D4503
TPD1E01B04
DIO_SON2_P66XP36XP32
GND
24 USB3_CONN_RX_DN
24 USB3_CONN_RX_DP
L4502
J4501
VBUS
D-
D+
GND
STDA_SSRX-
STDA_SSRX+
GND_DRAIN
STDA_SSTX-
STDA_SSTX+
MTG10
MTG9
MTG8
MTG7
MTG6
MTG5
MTG4
MTG3
MTG2
MTG1
X939824-009
TBL4501
Apex Connector
24 USB3_CONN_TX_DN
24 USB3_CONN_TX_DP
0201_P33
C4513 0.1u 6.3V USB3_CONN_TX_C_DN
C4512 0.1u 6.3V USB3_CONN_TX_C_DP
L4501
USB3_TYPA_TX_DN
USB3_TYPA_TX_DP
D4501
dio_0402_p6mm-aa-2
VPORT0402181MV05
Madera EV0.9
TBL4501 provides Silver/Black SKU options
TODO: Fix PartManager with Black Options
24 USB2_CONN_DP
24 USB2_CONN_DN
MTTP_BF4501
MTP_BF4501
MTP_BF4502
MTTP_BF4502
MTTP_BF4503
MTP_BF4503
U4503
bga6_2x3ns_p95x1p34xp6_p4mm
DP_O
DM_O
DP_I
DM_I
ID
GND
USB2_TYPA_DP
USB2_TYPA_DN
TBL4501
RefDes | Silver Finish | Black Finish
J4501 | X939824-009 | M1081584-001
J4701 | X939823-007 | M1081585-001
1.5 => ILIM(11.8K) => 2 A
Imax = 2.1 A
+5VSB
C4511
6.3V 1u
0201_P35-W
USB3_TYPA_TX_DP
USB3_TYPA_TX_DN
D4504
D4505
TP4502
+5V_USBPWR
+5V_USBPWR
Imin = 1.5A (ng 19dec14)
Imax=1.9A
U4504
IN
OUT
FAULT
EN
GND
GNDPAD
ILIM
AP2553FDC
+5V_USBPWR_REG
DBG_S
R4511 0.01
0402_p55-w
PMTP4505
SP-tp-c0p381
PMTP4504
SP-tp-c0p381
24 USB_CONN_OC#
37,60,61,62 SLP_S4_DRV#
24 5V_USB_EN
R4515 0
R4510 0
DNP
R4501 0
USB_CONN_OC#_R
+5V_USBPWR_EN
+5V_USBPWR_ILIM
C4515 22u 6.3V 0603
C4516 22u 6.3V 0603
ALL
C4514 0.1u 10V 0201
C4517 150u 1210 6V
R4512 15K 0201S_P26
For 15k Imin=1.55A, iTyp = 1.63A Imax=1.74A
EV2.5 20 Oct 2016
5.25**2/(750*.99)=37mW

mDP mux to HDMI/DVI Dongle control



SL1 DP mux to HDMI/DVI Dongle control (For Granite Only)

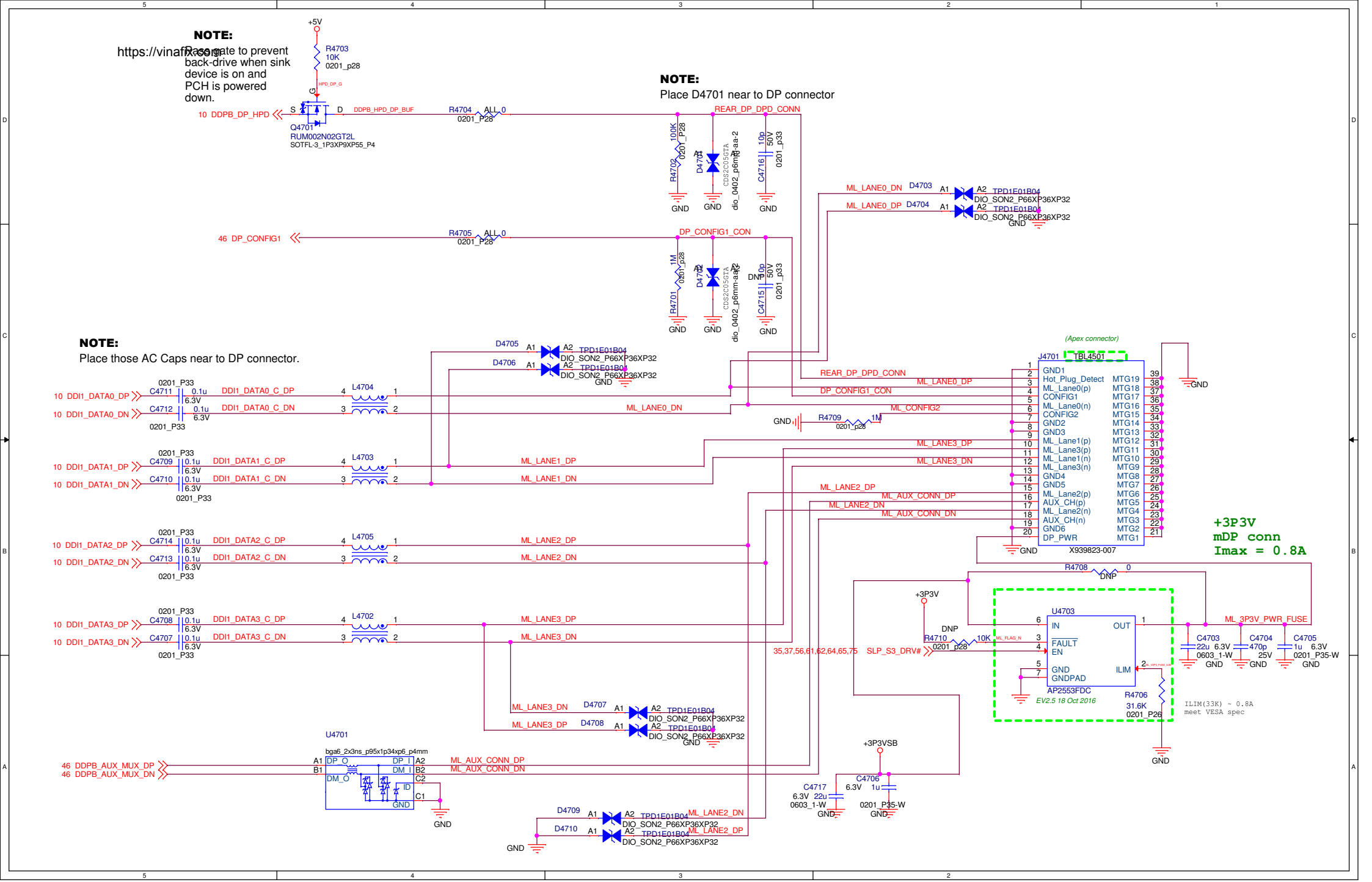


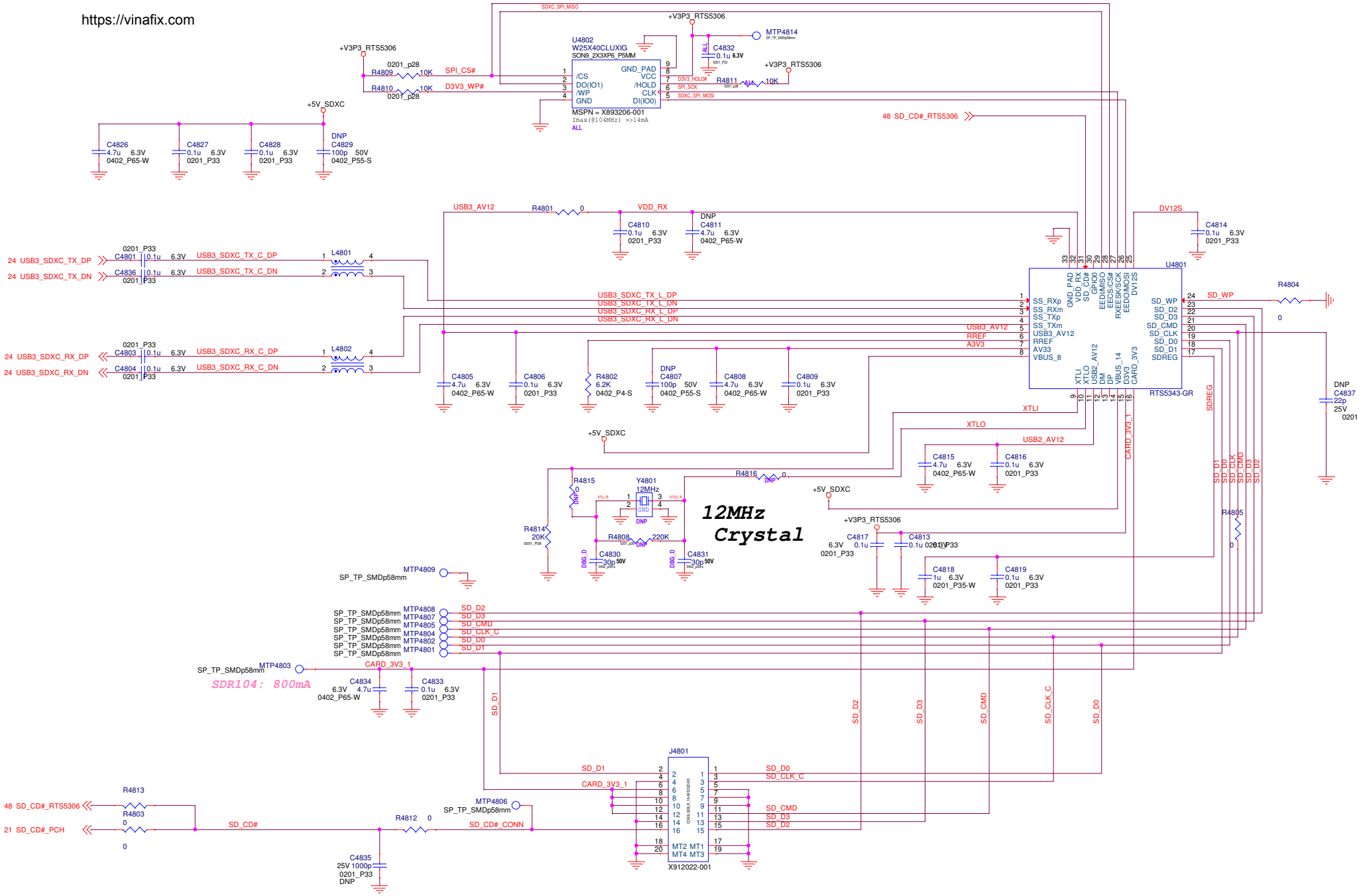
TS3USB30E

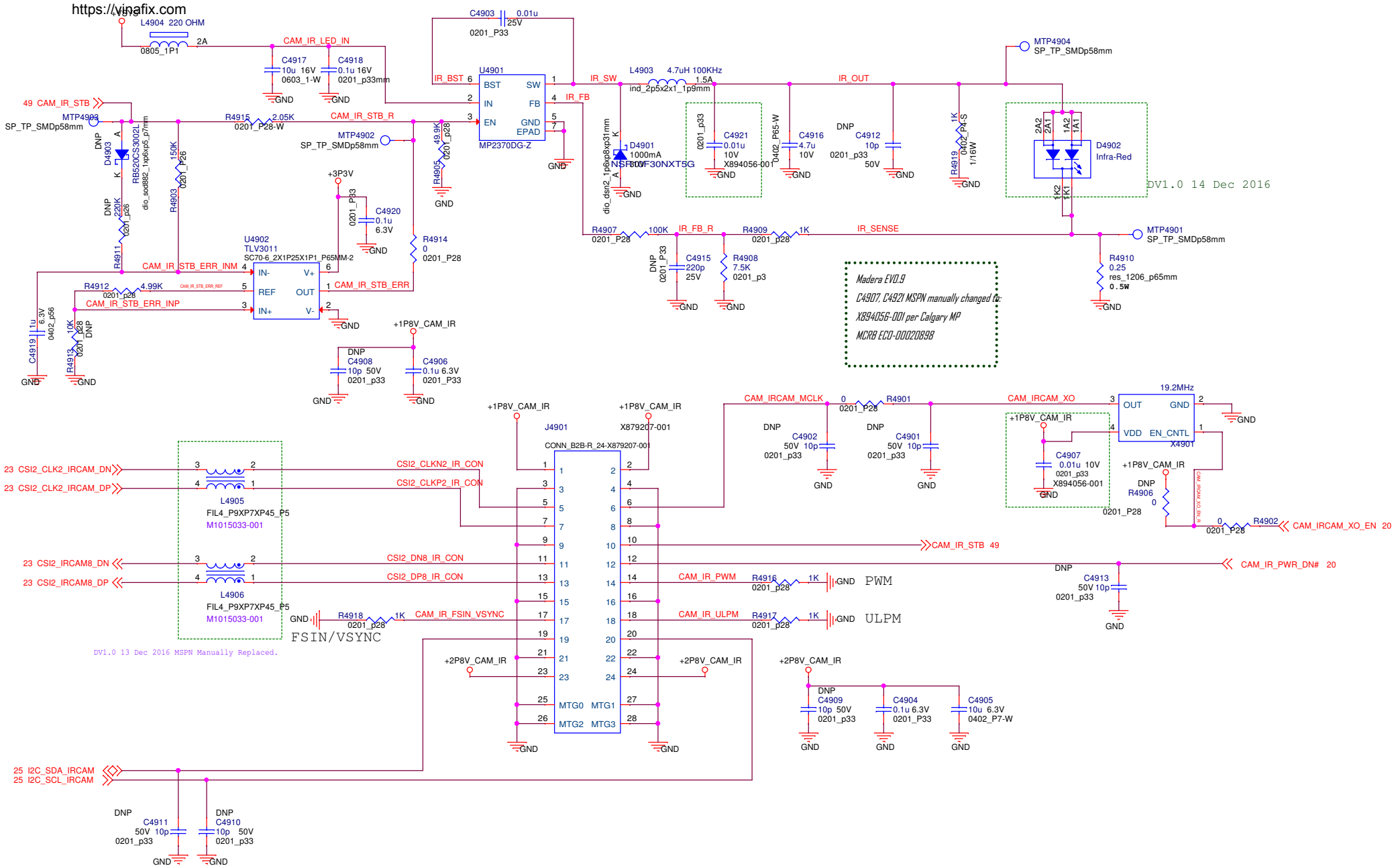
EN	S	Connection
L	L	AUX for DP [D1 to D]
L	H	DDC for HDMI [D2 to D]
H	X	HI-Z

MADERA EV1.0
ADD BACK IN DP++ MUX

W x H 337 x 218 mm


NOTE:
Place gate to prevent back-drive when sink device is on and PCH is powered down.
NOTE:
Place D4701 near to DP connector
NOTE:
Place those AC Caps near to DP connector.
(Apex connector)
+3P3V
mDP conn
Imax = 0.8A
ILIM(33K) ~ 0.8A
meet VESA spec
EV2.5 18 Oct 2016




https://vinafix.com
L4904 220 OHM
0805_1P1
2A
CAM_IR_LED_IN
C4917 10u 16V 0603_1-W
C4918 0.1u 16V 0201_p33mm
C4903 0.01u 25V 0201_P33
U4901
MP2370DG-Z
BST
SW
IN
FB
EN
GND
EPAD
IR_BST
IR_SW
IR_FB
L4903 4.7uH 100KHz 1.5A ind_2p5x2x1_1p9mm
IR_OUT
MTP4904 SP_TP_SMDp58mm
49 CAM_IR_STB
MTP4903 SP_TP_SMDp58mm
R4915 2.05K 0201_P28-W
CAM_IR_STB_R
MTP4902 SP_TP_SMDp58mm
R4905 49.9K 0201_p28
D4903 RB520CS3002L dio_sod882_1x6x5_p7mm
150K 0201_p26
220K 0201_p26
R4903
R4911
+3P3V
C4920 0.1u 6.3V
R4914 0 0201_P28
U4902 TLV3011 SC70-6_2X1P25X1P1_P65MM-2
IN-
V+
REF
OUT
IN+
V-
CAM_IR_STB_ERR_INM
CAM_IR_STB_ERR
R4912 4.99K
CAM_IR_STB_ERR_INP
C4919 1u 6.3V 0402_p56
R4913 10K 0201_p28
D4901 1000mA NSR80F30NXT5G dio_dsn2_1p6x0p8x0p31mm
C4921 0.01u 10V X894056-001
C4916 4.7u 10V
C4912 10p 50V 0201_p33
R4919 1K 0402_P4-S 1/16W
D4902 Infra-Red
DV1.0 14 Dec 2016
R4907 100K 0201_P28
IR_FB_R
R4909 1K 0201_p28
IR_SENSE
C4915 220p 25V
R4908 7.5K 0201_p3
MTP4901 SP_TP_SMDp58mm
R4910 0.25 res_1206_p65mm 0.5W
Madera EVO.9
C4907, C4921 MSPN manually changed to X894056-001 per Calgary MP
MCR8 ECO-00020898
+1P8V_CAM_IR
C4908 10p 50V 0201_p33
C4906 0.1u 6.3V 0201_P33
CAM_IRCAM_MCLK
R4901 0 0201_P28
CAM_IRCAM_XO
19.2MHz
OUT
GND
VDD
EN_CNTL
X4901
C4902 50V 10p 0201_p33
C4901 50V 10p 0201_p33
C4907 0.01u 10V 0201_p33 X894056-001
R4906 DNP 0 0201_P28
R4902 0 0201_P28
CAM_IRCAM_XO_EN 20
23 CSI2_CLK2_IRCAM_DN
23 CSI2_CLK2_IRCAM_DP
L4905 FIL4_P9XP7XP45_P5 M1015033-001
CSI2_CLKN2_IR_CON
CSI2_CLKP2_IR_CON
J4901
CONN_B2B-R_24-X879207-001
X879207-001
CAM_IR_STB 49
23 CSI2_IRCAM8_DN
23 CSI2_IRCAM8_DP
L4906 FIL4_P9XP7XP45_P5 M1015033-001
CSI2_DN8_IR_CON
CSI2_DP8_IR_CON
CAM_IR_PWM
R4916 1K 0201_p28
PWM
CAM_IR_ULPM
R4917 1K 0201_p28
ULPM
CAM_IR_PWR_DN# 20
C4913 50V 10p 0201_p33
R4918 1K 0201_p28
CAM_IR_FSIN_VSYNC
FSIN/VSYNC
DV1.0 13 Dec 2016 MSPN Manually Replaced.
+2P8V_CAM_IR
MTG0
MTG1
MTG2
MTG3
C4909 10p 50V 0201_p33
C4904 0.1u 6.3V 0201_P33
C4905 10u 6.3V 0402_P7-W
25 I2C_SDA_IRCAM
25 I2C_SCL_IRCAM
C4911 50V 10p 0201_p33
C4910 10p 50V 0201_p33
DNP
GND

TBL5001

Ref Des U42 i7 Value	U42 i7 MSPN	U42 i5 Value	U42 i5 MSPN
C5062 1.9nH	M1018428-001	1.9nH	M1018428-001
L5004 0.5pF	M1018348-001	0.5pF	M1018348-001
L5003 0.4pF	M1018346-001	0.45pF	M1025396-001

OPTION HOST VIO

PLACE TP's on BOTTOM,

mpai 3/3: Removed 4 0201 DNp's

WIFI > PCIe3

BT -> USB2.0(5)

EEPROM

Antenna spring x5

Antenna spring

Isolation Element

DV1.0 6 Dec 2017

DV1.0 6 Dec 2017

Linked PQ 10 Mar 2017

DV1.0 6 Dec 2018

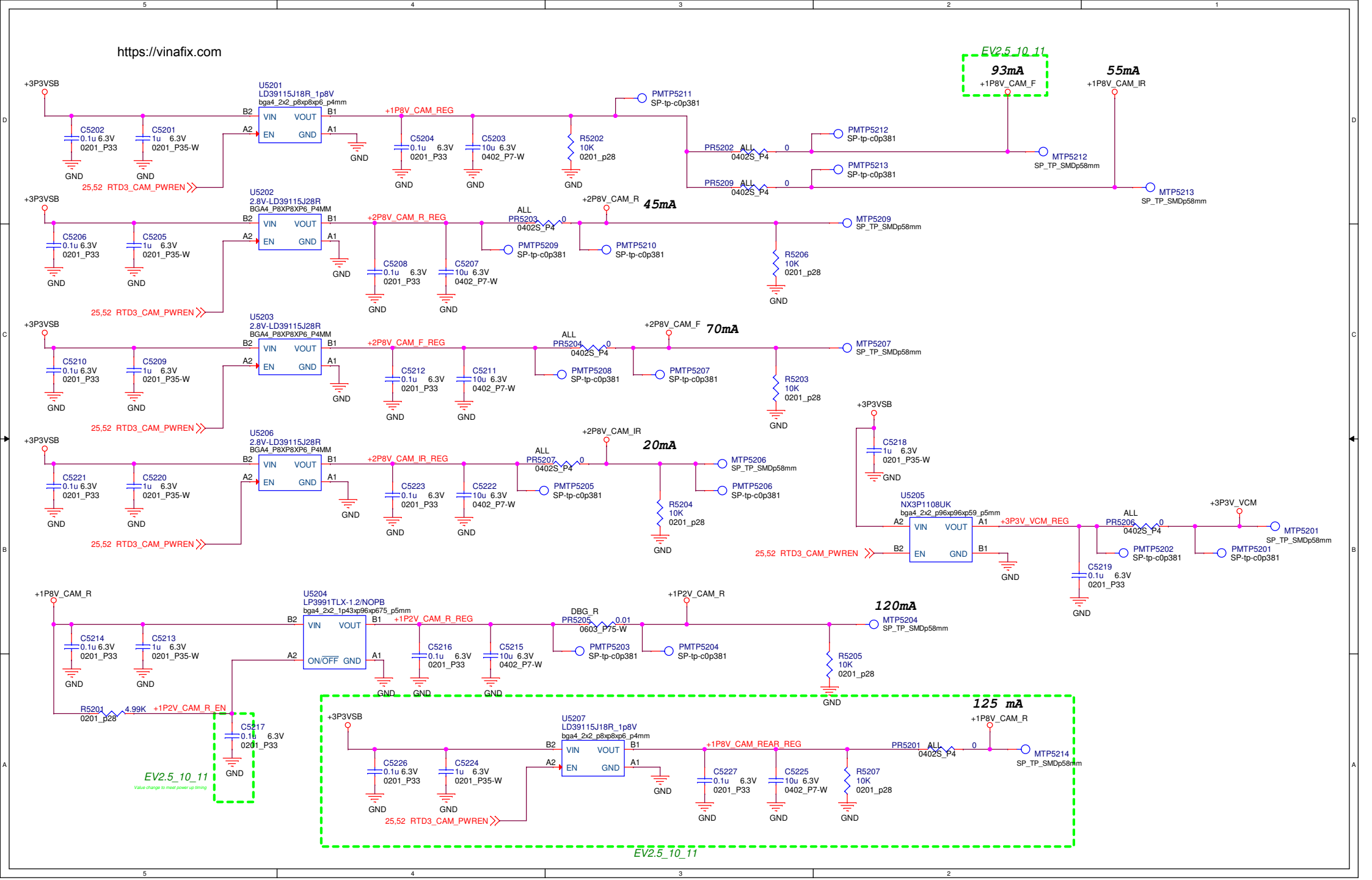
Madera EV0.9

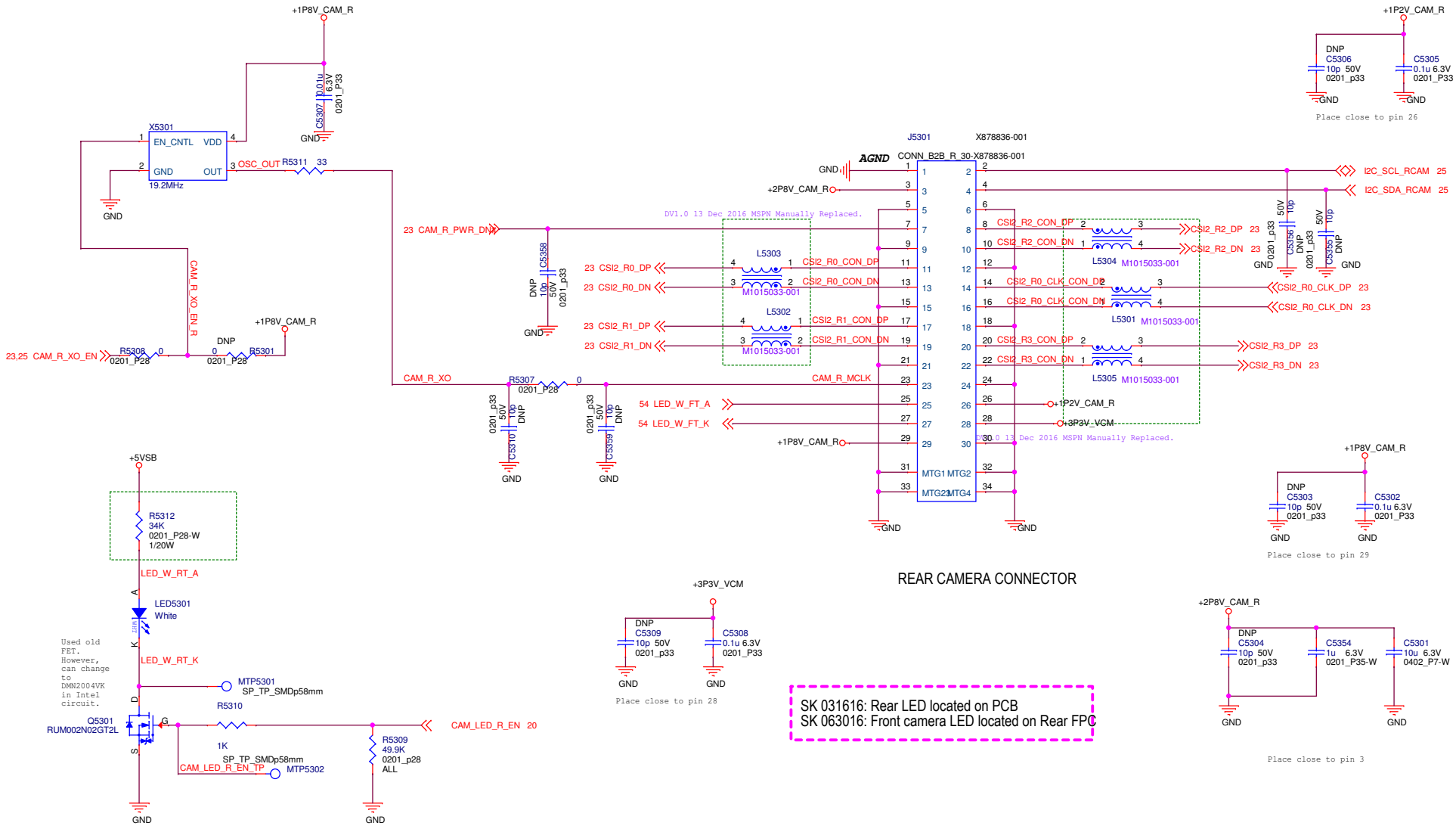
R5085 was R2548 (EV1.2)

R5079 was originally R2577 (EV1.2)
R5079 was originally R2052 (EV1.2)
Place these inside Wifi can

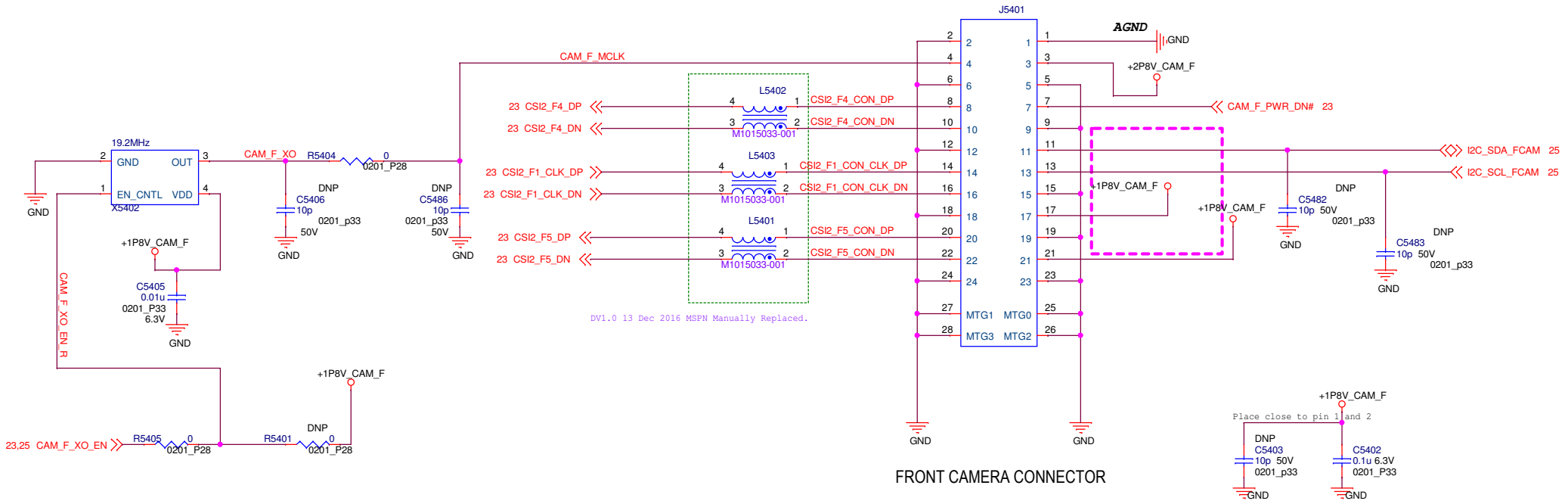
R5080 was originally R2535 (EV1.2)
R5082 was originally R2573 (EV1.2)
R5084 was originally R2567 (EV1.2)

https://vinafix.com

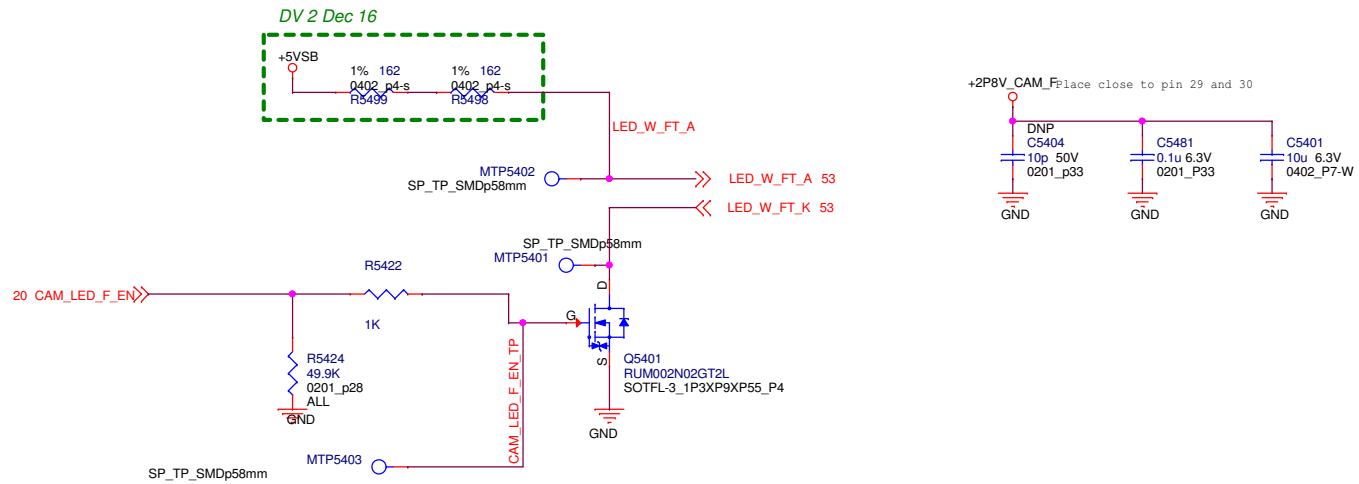

https://vinafix.com
EV2.5_10_11
93mA
+1P8V_CAM_F
55mA
+1P8V_CAM_IR
+3P3VSB
U5201
LD39115J18R_1p8V
bga4_2x2_p8xp8xp6_p4mm
B2
A2
VIN
VOUT
EN
GND
B1
A1
+1P8V_CAM_REG
C5202
0.1u 6.3V
0201_P33
C5201
1u 6.3V
0201_P35-W
C5204
0.1u 6.3V
0201_P33
C5203
10u 6.3V
0402_P7-W
R5202
10K
0201_p28
PMTP5211
SP-tp-c0p381
PR5202 ALL
0402S_P4
0
PMTP5212
SP-tp-c0p381
PR5209 ALL
0402S_P4
0
PMTP5213
SP-tp-c0p381
MTP5212
SP_TP_SMDp58mm
MTP5213
SP_TP_SMDp58mm
25,52 RTD3_CAM_PWREN
U5202
2.8V-LD39115J28R
BGA4_P8XP8XP6_P4MM
+2P8V_CAM_R_REG
+2P8V_CAM_R
45mA
ALL
PR5203
0402S_P4
PMTP5209
SP-tp-c0p381
PMTP5210
SP-tp-c0p381
C5206
0.1u 6.3V
0201_P33
C5205
1u 6.3V
0201_P35-W
C5208
0.1u 6.3V
0201_P33
C5207
10u 6.3V
0402_P7-W
R5206
10K
0201_p28
MTP5209
SP_TP_SMDp58mm
U5203
2.8V-LD39115J28R
BGA4_P8XP8XP6_P4MM
+2P8V_CAM_F_REG
+2P8V_CAM_F
70mA
ALL
PR5204
0402S_P4
PMTP5208
SP-tp-c0p381
PMTP5207
SP-tp-c0p381
C5210
0.1u 6.3V
0201_P33
C5209
1u 6.3V
0201_P35-W
C5212
0.1u 6.3V
0201_P33
C5211
10u 6.3V
0402_P7-W
R5203
10K
0201_p28
MTP5207
SP_TP_SMDp58mm
U5206
2.8V-LD39115J28R
BGA4_P8XP8XP6_P4MM
+2P8V_CAM_IR_REG
+2P8V_CAM_IR
20mA
ALL
PR5207
0402S_P4
PMTP5205
SP-tp-c0p381
PMTP5206
SP-tp-c0p381
C5221
0.1u 6.3V
0201_P33
C5220
1u 6.3V
0201_P35-W
C5223
0.1u 6.3V
0201_P33
C5222
10u 6.3V
0402_P7-W
R5204
10K
0201_p28
MTP5206
SP_TP_SMDp58mm
C5218
1u 6.3V
0201_P35-W
U5205
NX3P1108UK
bga4_2x2_p96xp96xp59_p5mm
+3P3V_VCM_REG
+3P3V_VCM
ALL
PR5206
0402S_P4
0
PMTP5202
SP-tp-c0p381
PMTP5201
SP-tp-c0p381
MTP5201
SP_TP_SMDp58mm
C5219
0.1u 6.3V
0201_P33
+1P8V_CAM_R
U5204
LP3991TLX-1.2/NOPB
bga4_2x2_1p43xp96xp675_p5mm
ON/OFF
+1P2V_CAM_R_REG
+1P2V_CAM_R
DBG_R
PR5205
0603_P75-W
0.01
120mA
PMTP5203
SP-tp-c0p381
PMTP5204
SP-tp-c0p381
MTP5204
SP_TP_SMDp58mm
C5214
0.1u 6.3V
0201_P33
C5213
1u 6.3V
0201_P35-W
C5216
0.1u 6.3V
0201_P33
C5215
10u 6.3V
0402_P7-W
R5205
10K
0201_p28
R5201
4.99K
0201_p28
+1P2V_CAM_R_EN
C5217
0.1u 6.3V
0201_P33
EV2.5_10_11
Value change to meet power up timing
U5207
LD39115J18R_1p8V
bga4_2x2_p8xp8xp6_p4mm
+1P8V_CAM_REAR_REG
+1P8V_CAM_R
125 mA
PR5201 ALL
0402S_P4
0
MTP5214
SP_TP_SMDp58mm
C5226
0.1u 6.3V
0201_P33
C5224
1u 6.3V
0201_P35-W
C5227
0.1u 6.3V
0201_P33
C5225
10u 6.3V
0402_P7-W
R5207
10K
0201_p28
EV2.5_10_11

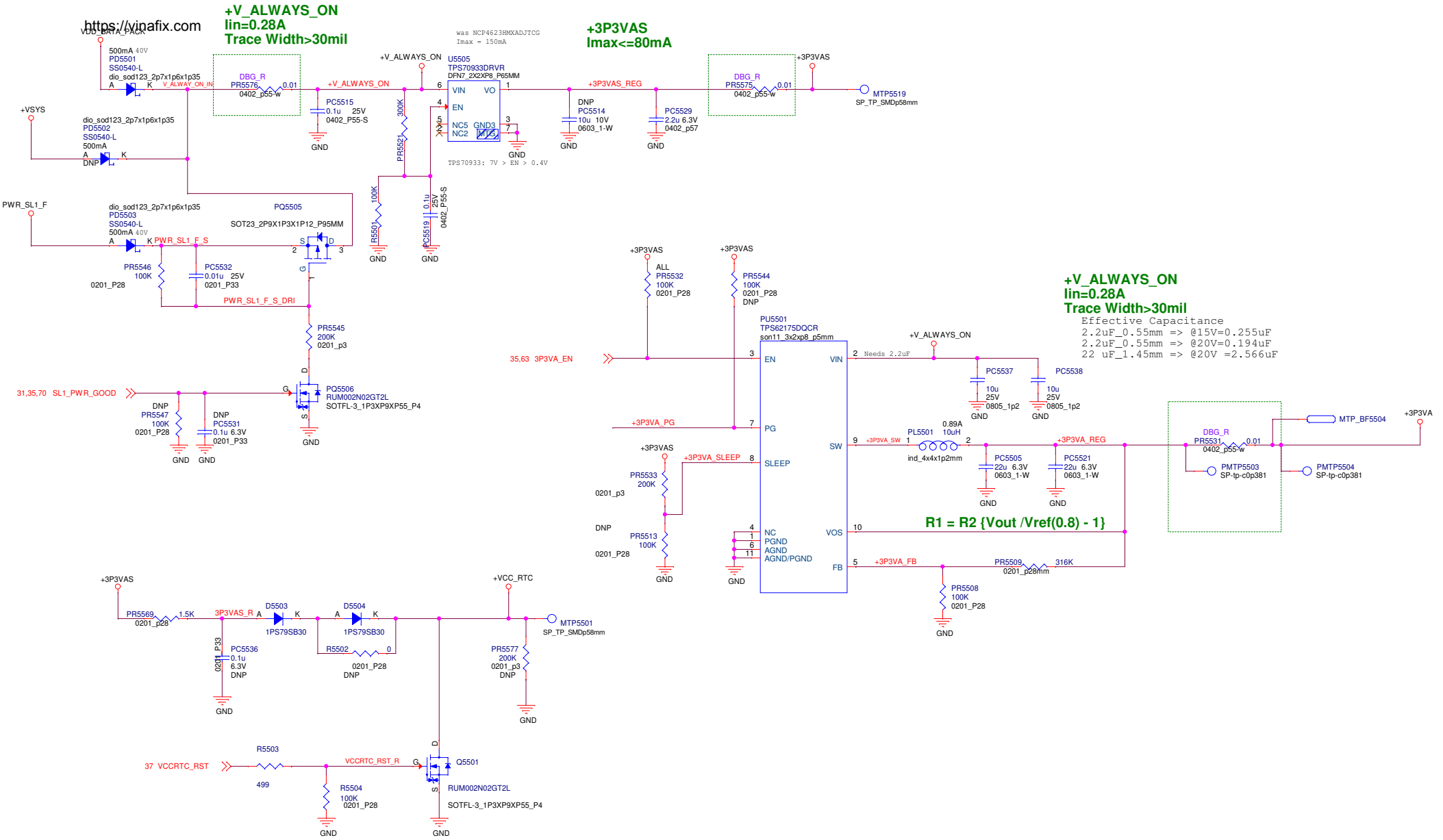


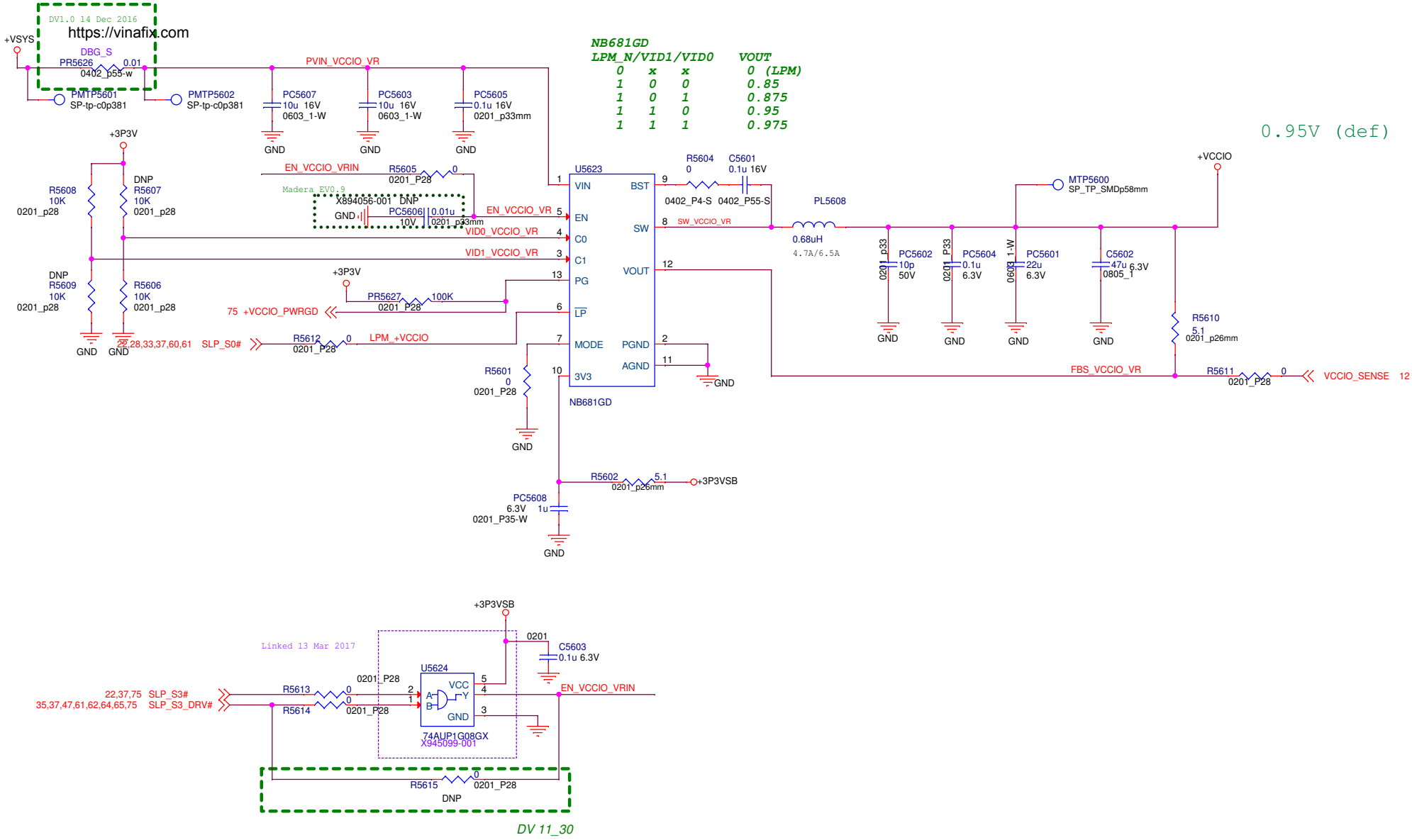
https://vinafix.com

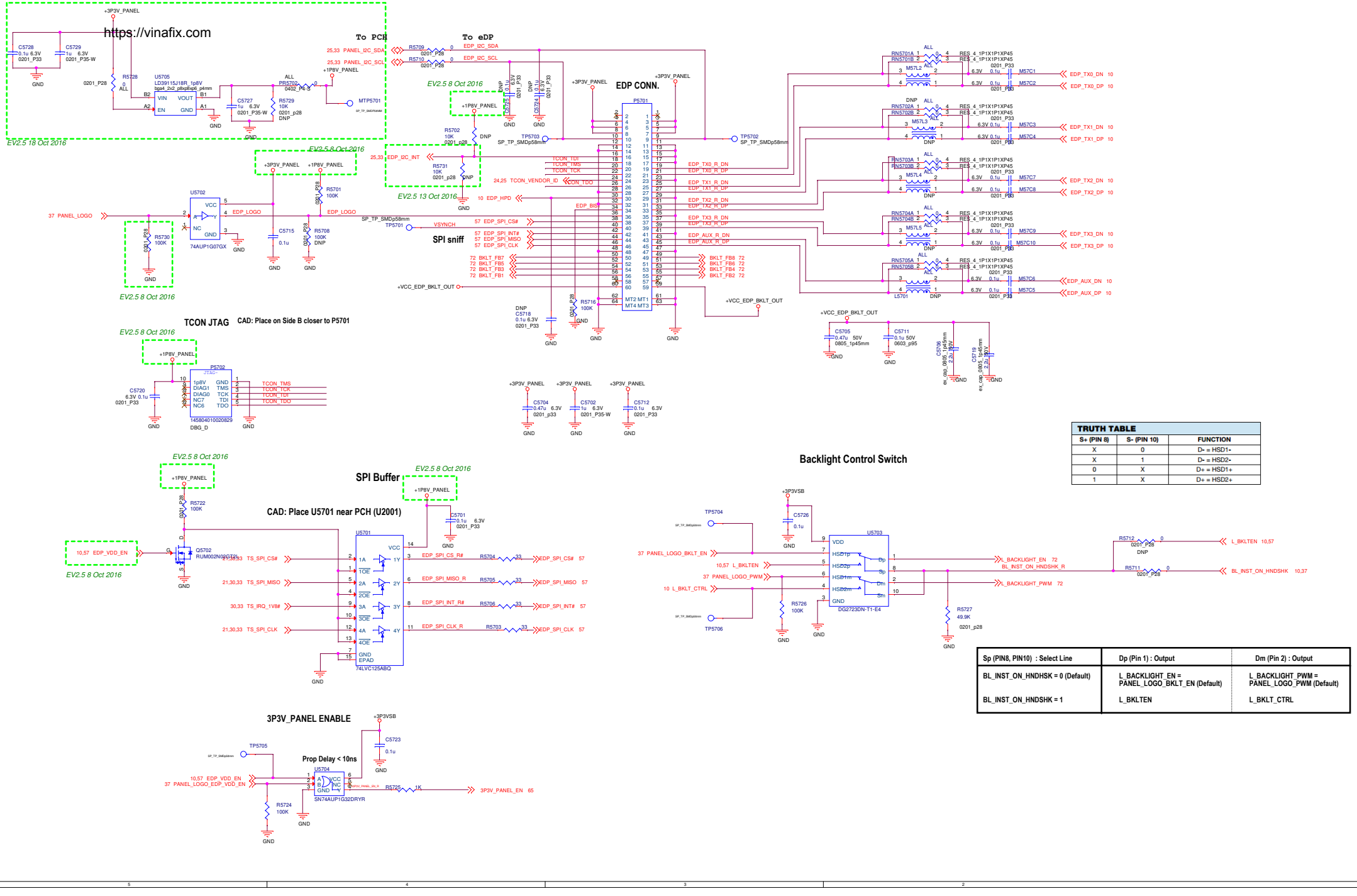


FRONT CAMERA CONNECTOR




https://vinafix.com
+V_ALWAYS_ON
Iin=0.28A
Trace Width>30mil
+3P3VAS
Imax<=80mA
was NCP4623HMXADJTCG
Imax = 150mA
VDD_BATT_PACK
500mA 40V
PD5501
SS0540-L
dio_sod123_2p7x1p6x1p35
V_ALWAY_ON_IN
DBG_R
PR5576 0.01
0402_p55-w
PC5515
0.1u 25V
0402_P55-S
U5505
TPS70933DRVR
DFN7_2X2XP8_P65MM
VIN
VO
EN
NC5
NC2
GND3
MT5
+3P3VAS_REG
DNP
PC5514
10u 10V
0603_1-W
PC5529
2.2u 6.3V
0402_p57
PR5575 0.01
MTP5519
SP_TP_SMDp58mm
TPS70933: 7V > EN > 0.4V
+VSYS
PD5502
500mA
DNP
PR5521
300K
PR5501
100K
PC5519
0.1u 25V
0402_P55-S
PWR_SL1_F
PD5503
PQ5505
SOT23_2P9X1P3X1P12_P95MM
PWR_SL1_F_S
PR5546
100K
0201_P28
PC5532
0.01u 25V
0201_P33
PWR_SL1_F_S_DRI
PR5545
200K
0201_p3
PQ5506
RUM002N02GT2L
SOTFL-3_1P3XP9XP55_P4
31,35,70 SL1_PWR_GOOD
PR5547
100K
PC5531
0.1u 6.3V
+3P3VAS
ALL
PR5532
100K
PR5544
100K
DNP
35,63 3P3VA_EN
PU5501
TPS62175DQCR
son11_3x2xp8_p5mm
EN
VIN
PG
SW
SLEEP
NC
PGND
AGND
AGND/PGND
VOS
FB
+3P3VA_PG
+3P3VA_SLEEP
PR5533
200K
PR5513
100K
+V_ALWAYS_ON
Needs 2.2uF
PC5537
10u 25V
0805_1p2
PC5538
10u 25V
0805_1p2
+3P3VA_SW
PL5501
0.89A 10uH
ind_4x4x1p2mm
PC5505
22u 6.3V
0603_1-W
PC5521
22u 6.3V
0603_1-W
+3P3VA_REG
R1 = R2 {Vout /Vref(0.8) - 1}
+3P3VA_FB
PR5509
316K
0201_p28mm
PR5508
100K
0201_P28
Effective Capacitance
2.2uF_0.55mm => @15V=0.255uF
2.2uF_0.55mm => @20V=0.194uF
22 uF_1.45mm => @20V =2.566uF
DBG_R
PR5531 0.01
0402_p55-w
MTP_BF5504
PMTP5503
SP-tp-c0p381
PMTP5504
SP-tp-c0p381
+3P3VA
+3P3VAS
PR5569
1.5K
0201_p28
3P3VAS_R
D5503
1PS79SB30
D5504
1PS79SB30
R5502
0
0201_P28
DNP
PC5536
0.1u 6.3V
0201_P33
+VCC_RTC
PR5577
200K
0201_p3
MTP5501
SP_TP_SMDp58mm
37 VCCRTC_RST
R5503
499
VCCRTC_RST_R
Q5501
RUM002N02GT2L
SOTFL-3_1P3XP9XP55_P4
R5504
100K
0201_P28
GND


DV1.0 14 Dec 2016
https://vinafix.com
NB681GD
LPM_N/VID1/VID0 VOUT
0 x x 0 (LPM)
1 0 0 0.85
1 0 1 0.875
1 1 0 0.95
1 1 1 0.975
0.95V (def)
+VSYS
DBG_S
PR5626 0.01
0402_p55-w
PMTP5601
SP-tp-c0p381
PMTP5602
SP-tp-c0p381
PVIN_VCCIO_VR
PC5607 10u 16V 0603_1-W
PC5603 10u 16V 0603_1-W
PC5605 0.1u 16V 0201_p33mm
GND
+3P3V
R5608 10K 0201_p28
DNP R5607 10K 0201_p28
DNP R5609 10K 0201_p28
R5606 10K 0201_p28
EN_VCCIO_VRIN
R5605 0 0201_P28
Madera_EV0.9
X894056-001 DNP
PC5606 0.01u 10V 0201_p33mm
EN_VCCIO_VR
VID0_VCCIO_VR
VID1_VCCIO_VR
U5623
VIN
EN
C0
C1
PG
LP
MODE
3V3
BST
SW
VOUT
PGND
AGND
NB681GD
R5604 0 0402_P4-S
C5601 0.1u 16V 0402_P55-S
PL5608
0.68uH
4.7A/6.5A
SW_VCCIO_VR
+VCCIO
MTP5600
SP_TP_SMDp58mm
PC5602 10p 50V
PC5604 0.1u 6.3V
PC5601 22u 6.3V
C5602 47u 6.3V 0805_1
R5610 5.1 0201_p26mm
FBS_VCCIO_VR
R5611 0 0201_P28
VCCIO_SENSE 12
PR5627 100K 0201_P28
75 +VCCIO_PWRGD
22,28,33,37,60,61 SLP_S0#
R5612 0 0201_P28
LPM_+VCCIO
R5601 0 0201_P28
R5602 5.1 0201_p26mm
+3P3VSB
PC5608 6.3V 1u 0201_P35-W
Linked 13 Mar 2017
U5624
74AUP1G08GX
X945099-001
C5603 0.1u 6.3V
22,37,75 SLP_S3#
35,37,47,61,62,64,65,75 SLP_S3_DRV#
R5613 0
R5614 0
R5615 0 DNP
DV 11_30

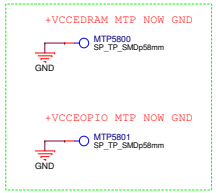


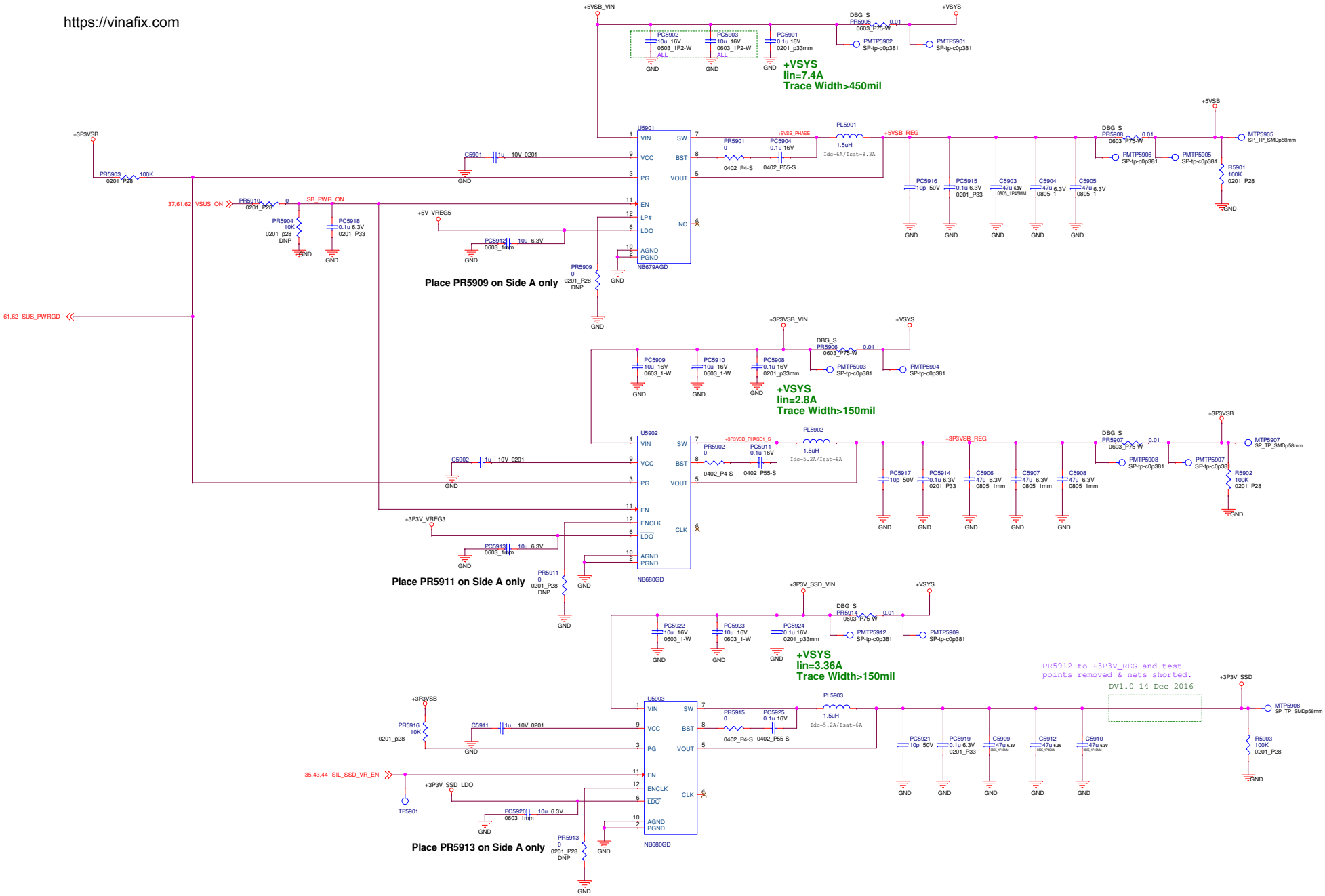
TRUTH TABLE		
S+ (PIN 8)	S- (PIN 10)	FUNCTION
X	0	D- = HSD1-
X	1	D- = HSD2-
0	X	D+ = HSD1+
1	X	D+ = HSD2+

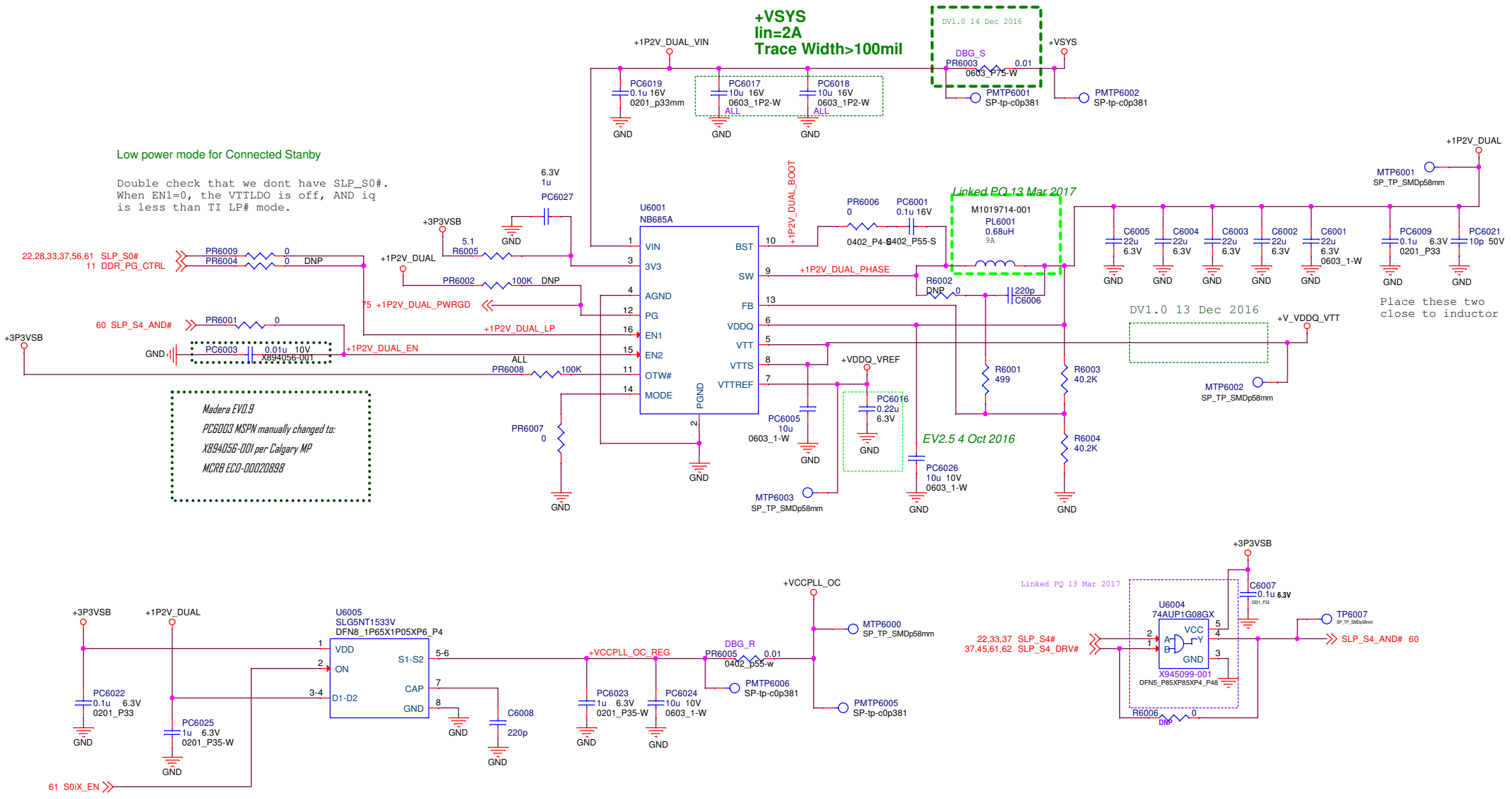
Sp (PIN8, PIN10) : Select Line	Dp (Pin 1) : Output	Dm (Pin 2) : Output
BL_INST_ON_HNDHSK = 0 (Default)	L_BACKLIGHT_EN = PANEL_LOGO_BKLT_EN (Default)	L_BACKLIGHT_PWM = PANEL_LOGO_PWM (Default)
BL_INST_ON_HNDSHK = 1	L_BKLTEN	L_BKLT_CTRL

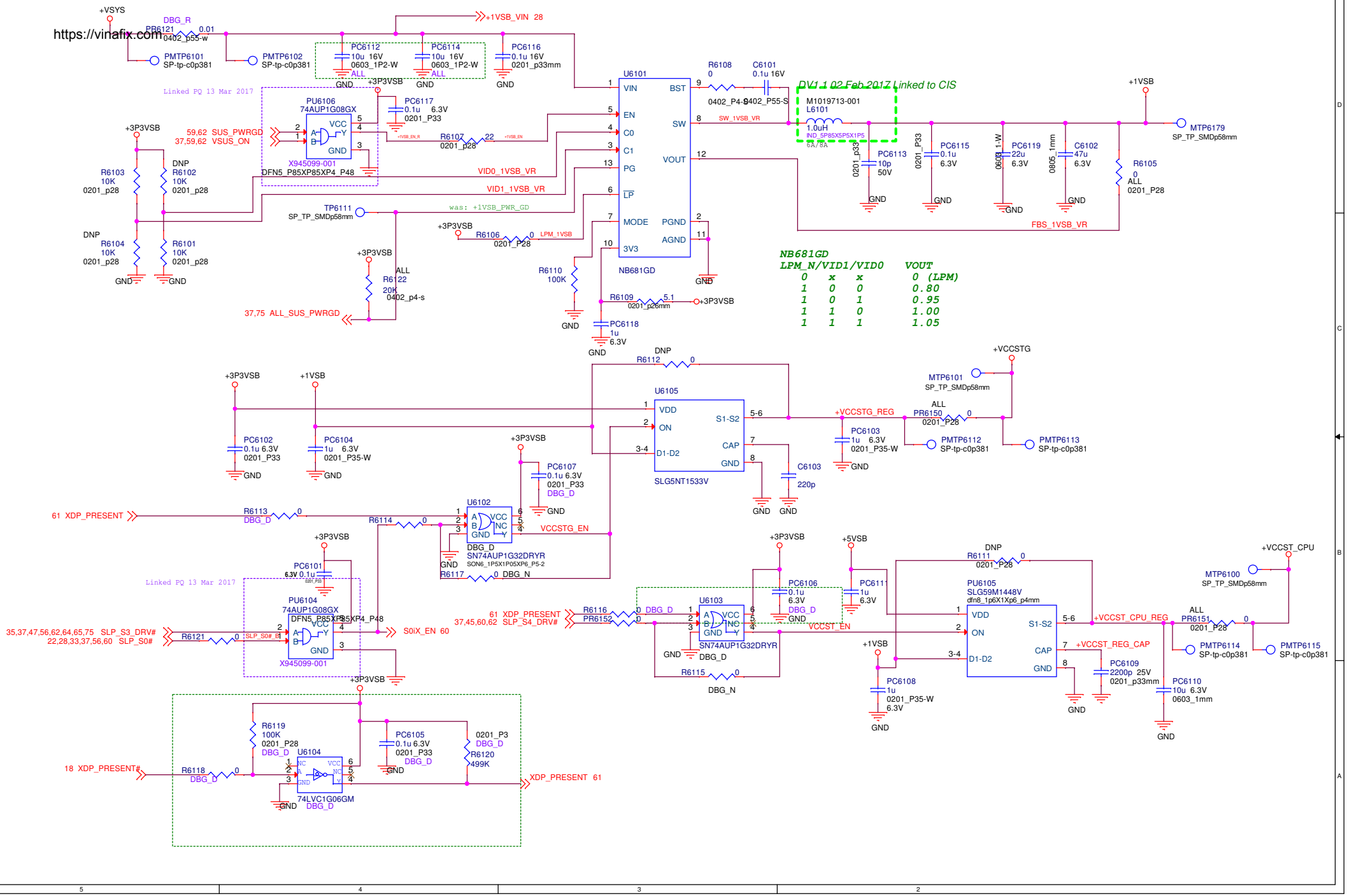
https://vinafix.com

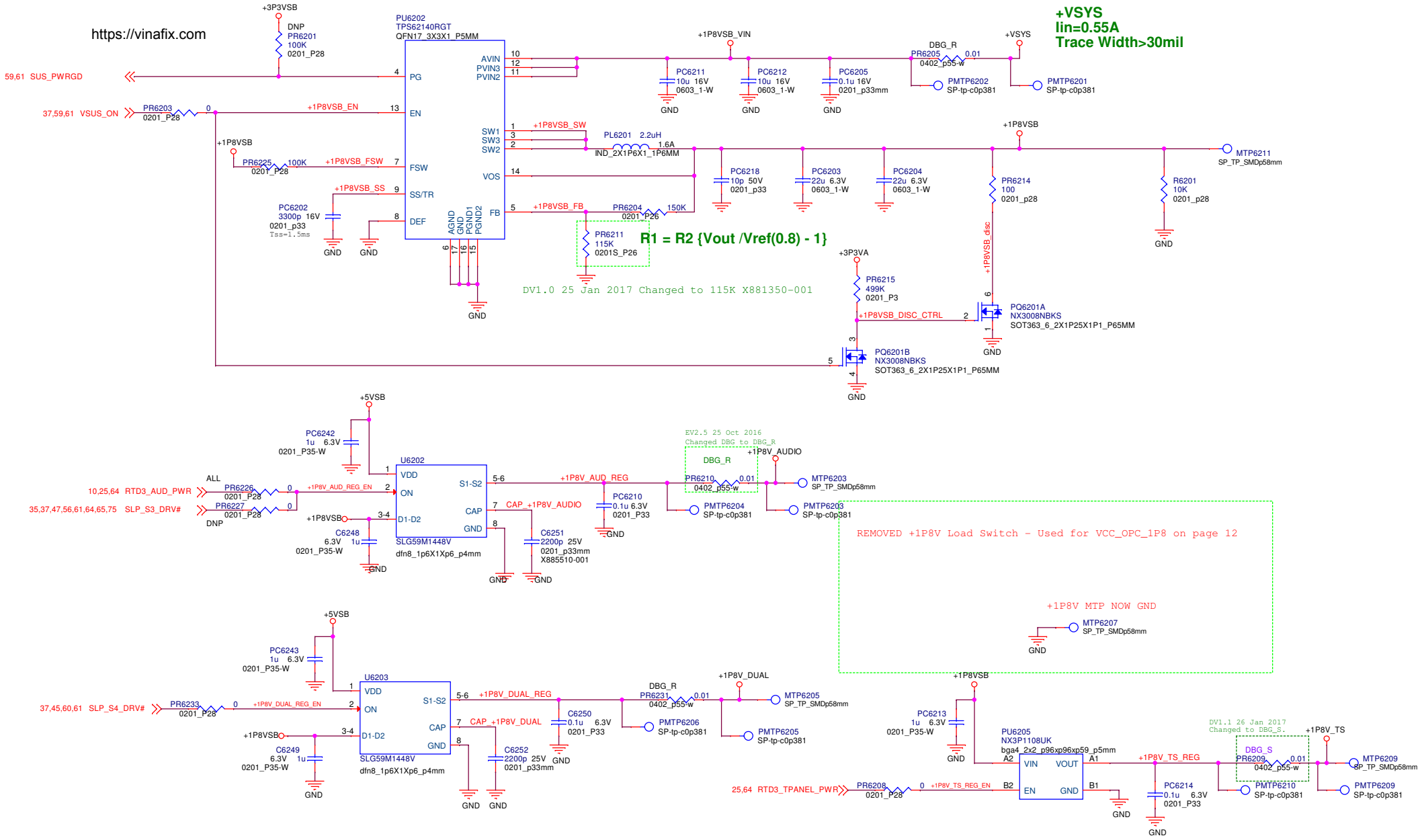
REMOVED +VCCEDRAM & +VCCEOPIO RAILS

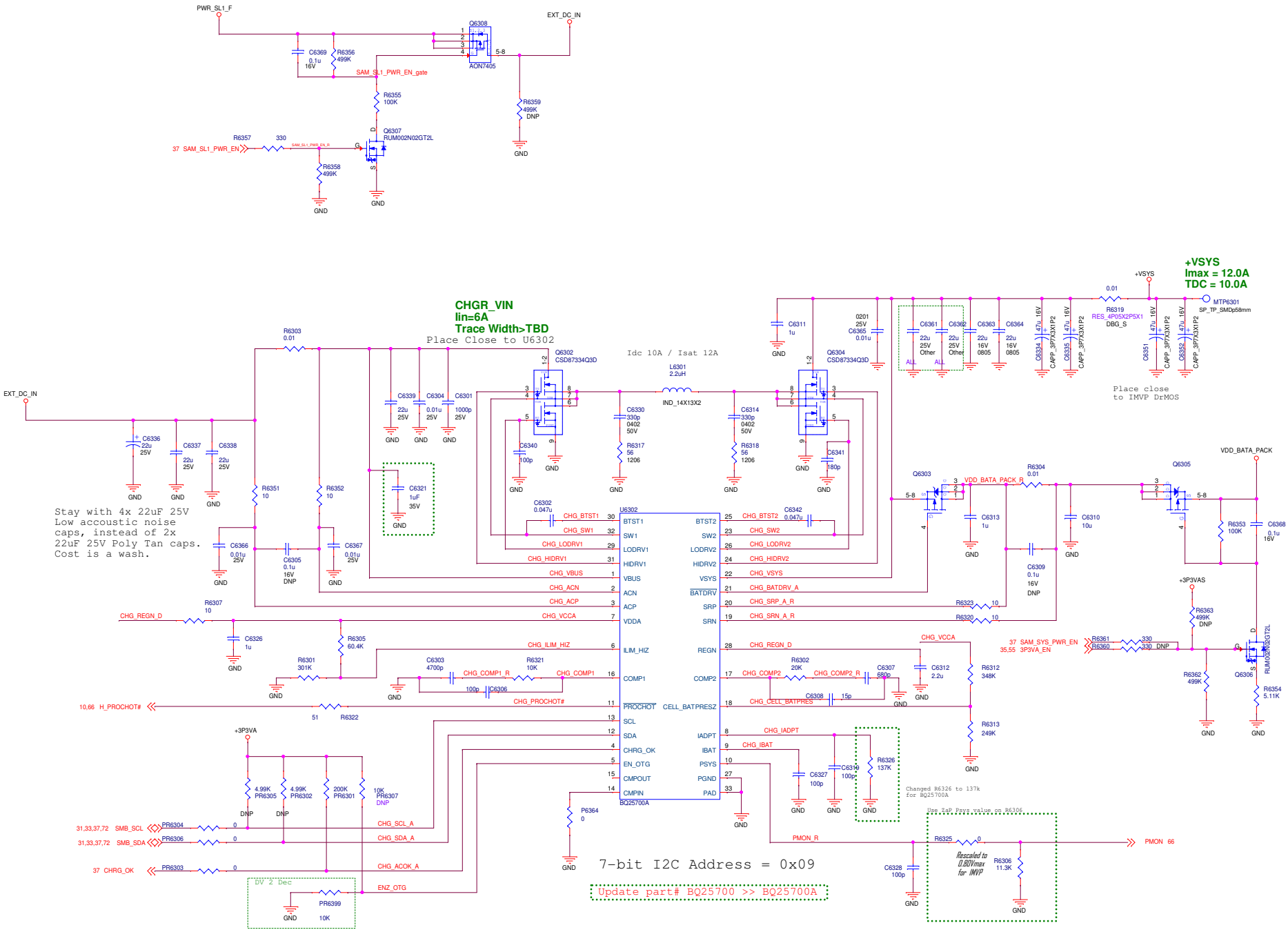


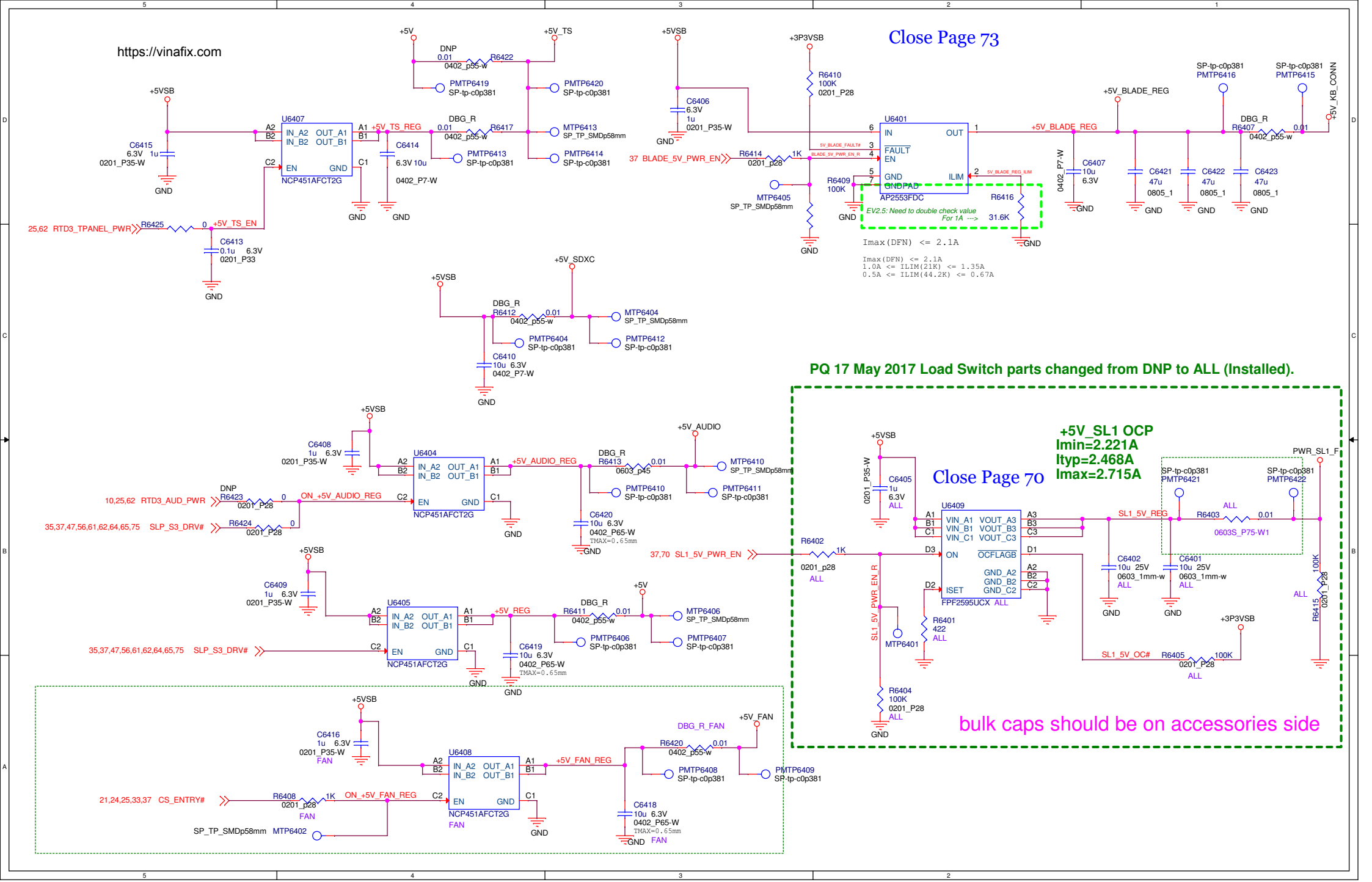




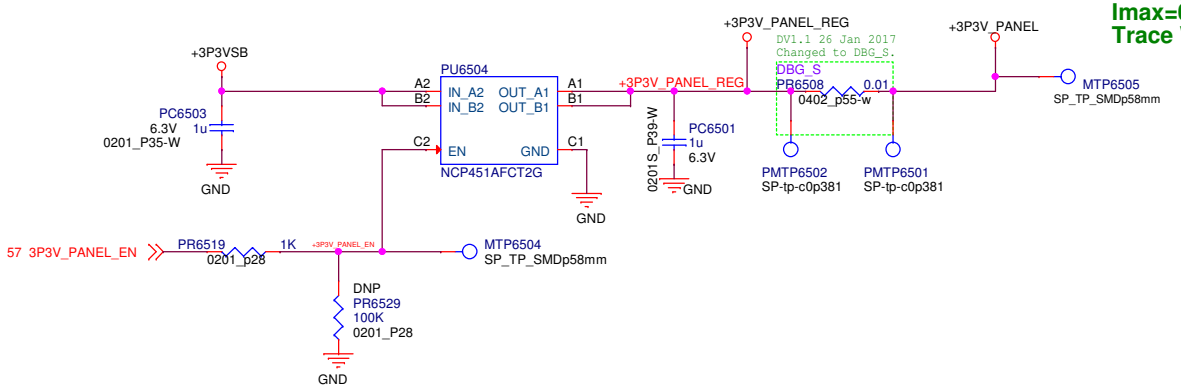



https://vinafix.com
+VSYS
Iin=0.55A
Trace Width>30mil
+3P3VSB
DNP
PR6201
100K
0201_P28
PU6202
TPS62140RGT
QFN17_3X3X1_P5MM
59,61 SUS_PWRGD
37,59,61 VSUS_ON
PR6203
0201_P28
+1P8VSB_EN
+1P8VSB
PR6225
100K
0201_P28
+1P8VSB_FSW
+1P8VSB_SS
PC6202
3300p 16V
0201_p33
Tss=1.5ms
AVIN
PVIN3
PVIN2
PG
EN
FSW
SS/TR
DEF
VOS
FB
SW1
SW3
SW2
AGND
GND
PGND1
PGND2
+1P8VSB_VIN
PC6211
10u 16V
0603_1-W
PC6212
10u 16V
0603_1-W
PC6205
0.1u 16V
0201_p33mm
DBG_R
PR6205
0.01
0402_p55-w
PMTP6202
SP-tp-c0p381
PMTP6201
SP-tp-c0p381
+1P8VSB_SW
PL6201 2.2uH
1.6A
IND_2X1P6X1_1P6MM
PC6218
10p 50V
0201_p33
PC6203
22u 6.3V
0603_1-W
PC6204
22u 6.3V
0603_1-W
PR6214
100
0201_p28
MTP6211
SP_TP_SMDp58mm
R6201
10K
0201_p28
+1P8VSB_FB
PR6204
150K
0201_P26
PR6211
115K
0201S_P26
R1 = R2 {Vout /Vref(0.8) - 1}
DV1.0 25 Jan 2017 Changed to 115K X881350-001
+1P8VSB_disc
+3P3VA
PR6215
499K
0201_P3
+1P8VSB_DISC_CTRL
PQ6201A
NX3008NBKS
SOT363_6_2X1P25X1P1_P65MM
PQ6201B
NX3008NBKS
SOT363_6_2X1P25X1P1_P65MM
+5VSB
PC6242
1u 6.3V
0201_P35-W
U6202
VDD
ON
D1-D2
S1-S2
CAP
GND
SLG59M1448V
dfn8_1p6X1Xp6_p4mm
ALL
10,25,64 RTD3_AUD_PWR
35,37,47,56,61,64,65,75 SLP_S3_DRV#
PR6226
PR6227
0201_P28
DNP
+1P8V_AUD_REG_EN
+1P8VSB
C6248
6.3V 1u
0201_P35-W
CAP_+1P8V_AUDIO
C6251
2200p 25V
0201_p33mm
X885510-001
+1P8V_AUD_REG
PC6210
0.1u 6.3V
0201_P33
EV2.5 25 Oct 2016
Changed DBG to DBG_R
DBG_R
PR6210
0.01
0402_p55-w
+1P8V_AUDIO
PMTP6204
SP-tp-c0p381
MTP6203
SP_TP_SMDp58mm
PMTP6203
SP-tp-c0p381
REMOVED +1P8V Load Switch - Used for VCC_OPC_1P8 on page 12
+1P8V MTP NOW GND
MTP6207
SP_TP_SMDp58mm
+5VSB
PC6243
1u 6.3V
0201_P35-W
U6203
VDD
ON
D1-D2
S1-S2
CAP
GND
SLG59M1448V
dfn8_1p6X1Xp6_p4mm
37,45,60,61 SLP_S4_DRV#
PR6233
0201_P28
+1P8V_DUAL_REG_EN
+1P8VSB
C6249
6.3V 1u
0201_P35-W
CAP_+1P8V_DUAL
C6252
2200p 25V
0201_p33mm
+1P8V_DUAL_REG
C6250
0.1u 6.3V
0201_P33
DBG_R
PR6231
0.01
0402_p55-w
+1P8V_DUAL
PMTP6206
SP-tp-c0p381
MTP6205
SP_TP_SMDp58mm
PMTP6205
SP-tp-c0p381
+1P8VSB
PC6213
1u 6.3V
0201_P35-W
PU6205
NX3P1108UK
bga4_2x2_p96xp96xp59_p5mm
VIN
VOUT
EN
GND
A2
A1
B2
B1
25,64 RTD3_TPANEL_PWR
PR6208
0201_P28
+1P8V_TS_REG_EN
+1P8V_TS_REG
PC6214
0.1u 6.3V
0201_P33
DV1.1 26 Jan 2017
Changed to DBG_S
DBG_S
PR6209
0.01
0402_p55-w
+1P8V_TS
PMTP6210
SP-tp-c0p381
MTP6209
SP_TP_SMDp58mm
PMTP6209
SP-tp-c0p381
GND

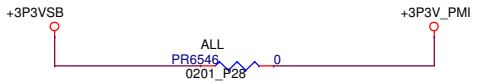



https://vinafix.com
Close Page 73
Close Page 70
PQ 17 May 2017 Load Switch parts changed from DNP to ALL (Installed).
+5V_SL1 OCP
Imin=2.221A
Ityp=2.468A
Imax=2.715A
bulk caps should be on accessories side
Imax(DFN) <= 2.1A
1.0A <= ILIM(21K) <= 1.35A
0.5A <= ILIM(44.2K) <= 0.67A
EV2.5: Need to double check value
For 1A ---> 31.6K
U6407
NCP451AFCT2G
U6401
AP2553FDC
U6404
NCP451AFCT2G
U6405
NCP451AFCT2G
U6408
NCP451AFCT2G
U6409
FPF2595UCX
+5V_TS_REG
+5V_AUDIO_REG
+5V_REG
+5V_FAN_REG
ON_+5V_AUDIO_REG
ON_+5V_FAN_REG
+5V_BLADE_REG
SL1_5V_REG
SL1_5V_PWR_EN_R
SL1_5V_OC#
+5V_TS_EN
+5V_KB_CONN
PWR_SL1_F
DBG_R
DBG_R_FAN
DNP
ALL
FAN
GND
+5VSB
+5V
+5V_TS
+5V_SDXC
+5V_AUDIO
+5V_FAN
+3P3VSB

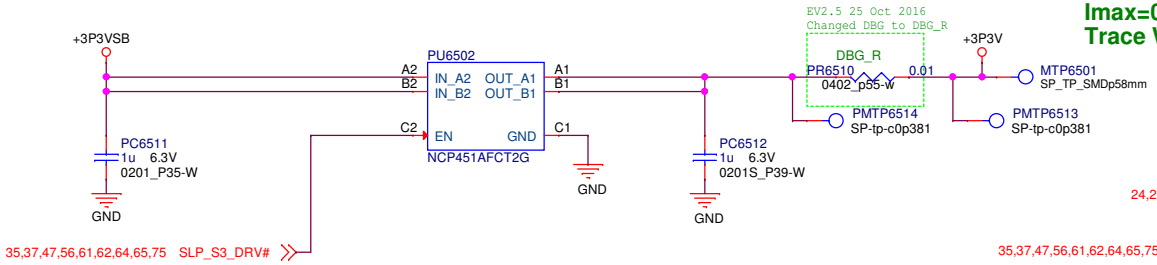
https://vinafix.com



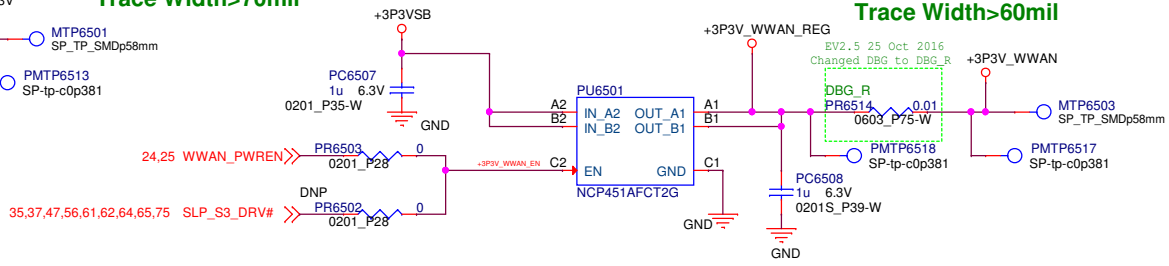
+3P3V_PANEL
Imax=0.451A (06dec14 sc)
Trace Width>50mil



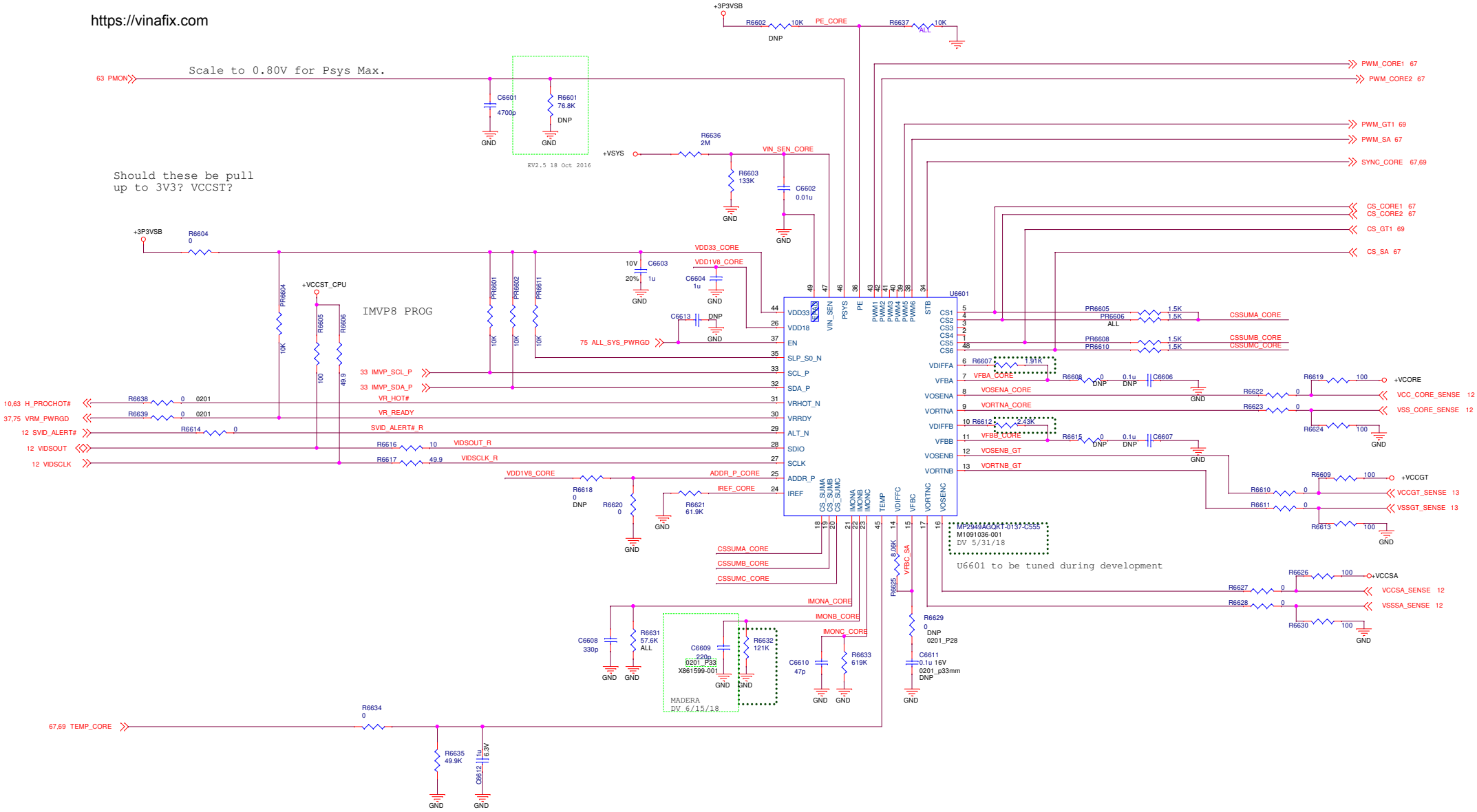
+3P3V_PMI
Imax = 2mA

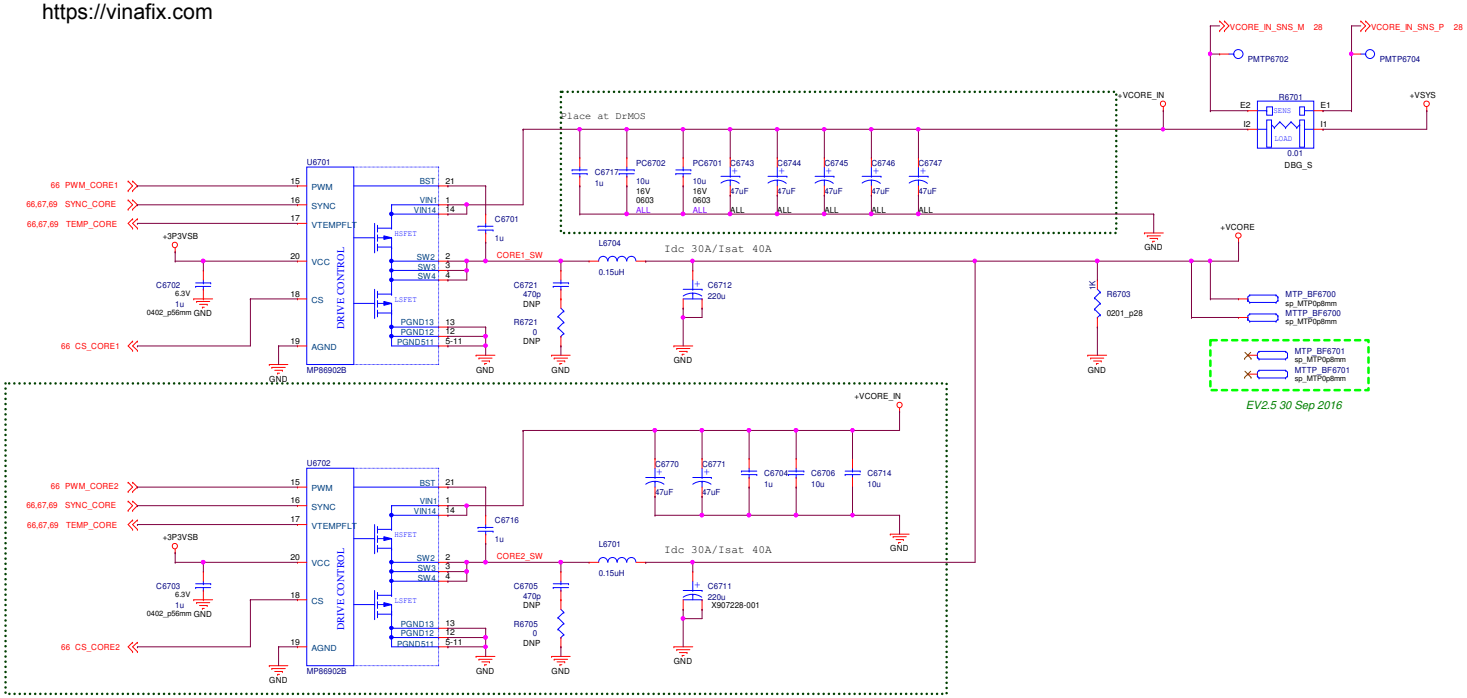


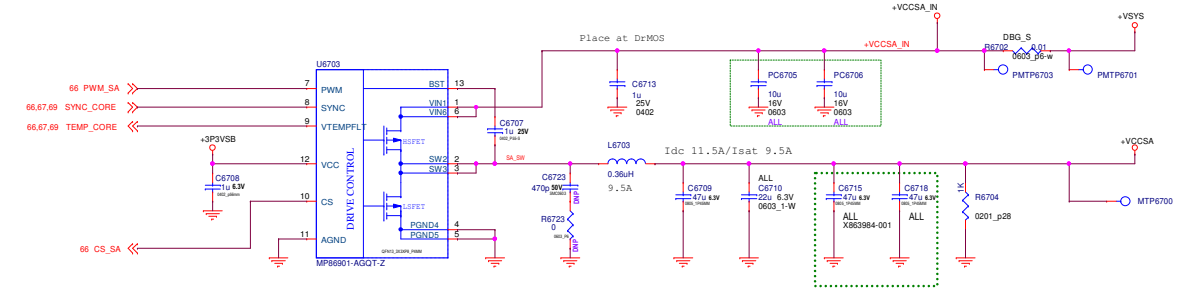
+3P3V
Imax=0.41A
Trace Width>70mil

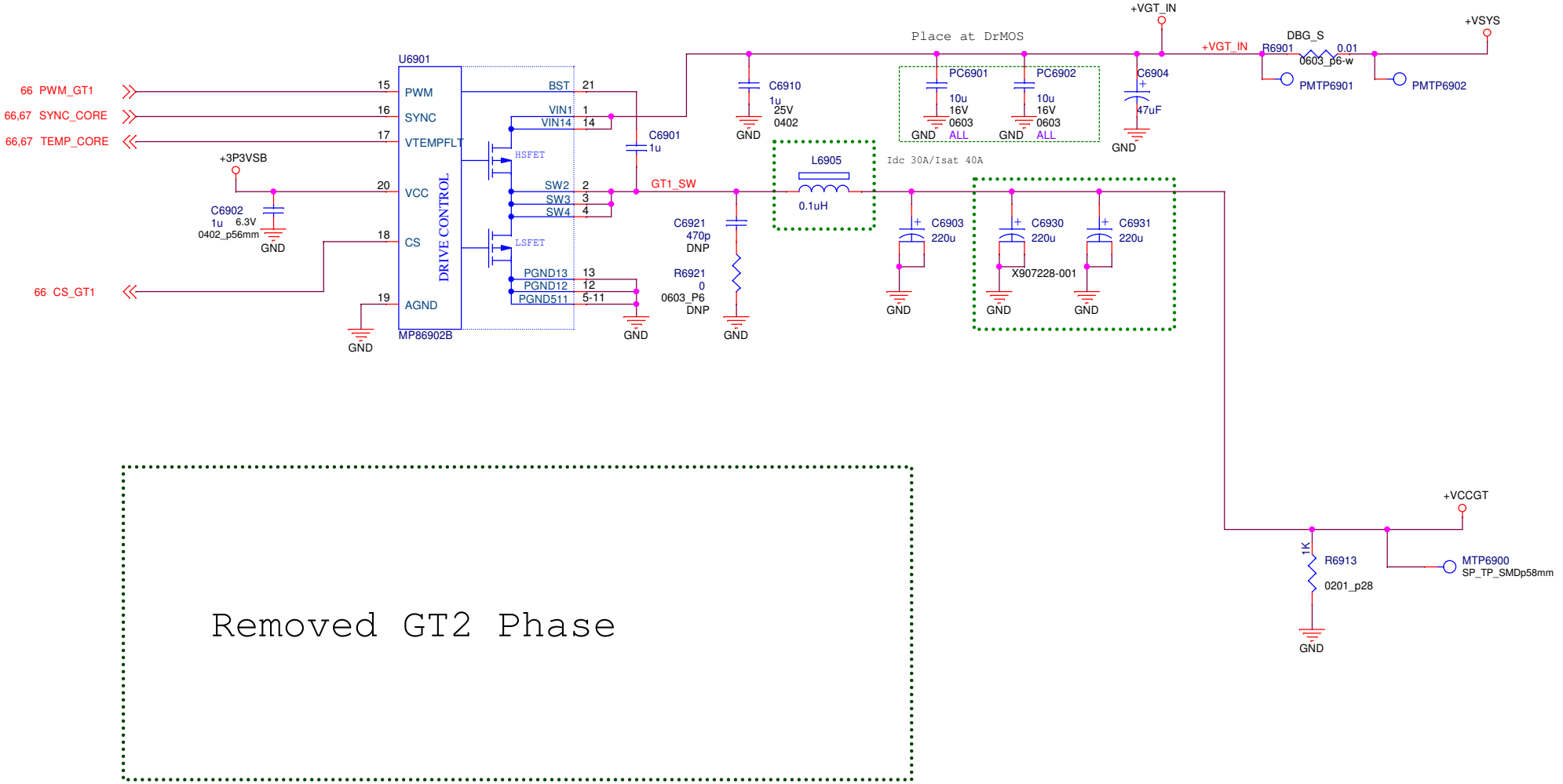


+3P3V_WWAN
Imax=1.5A
Trace Width>60mil



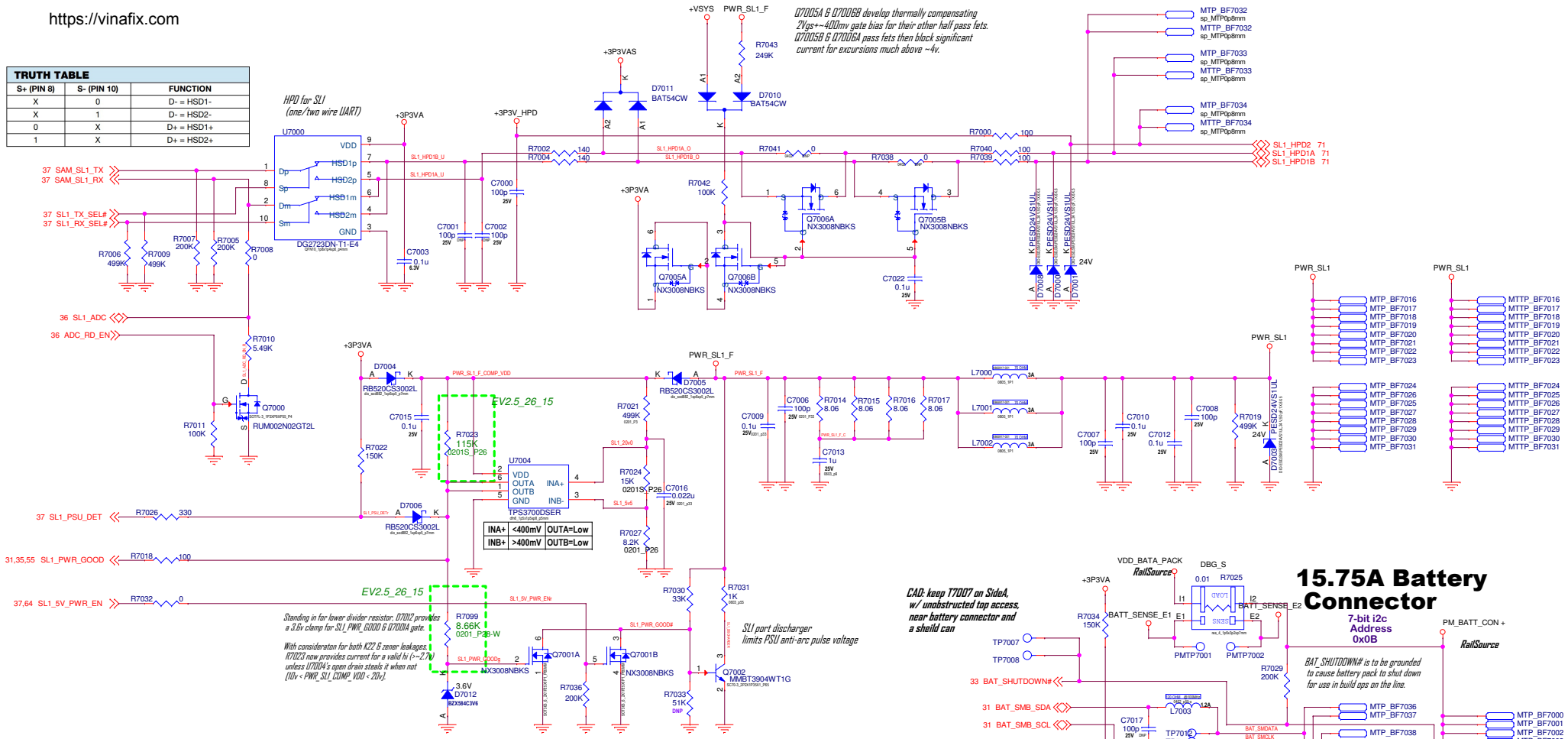






Removed GT2 Phase

TRUTH TABLE		
S+ (PIN 8)	S- (PIN 10)	FUNCTION
X	0	D- = HSD1-
X	1	D- = HSD2-
0	X	D+ = HSD1+
1	X	D+ = HSD2+

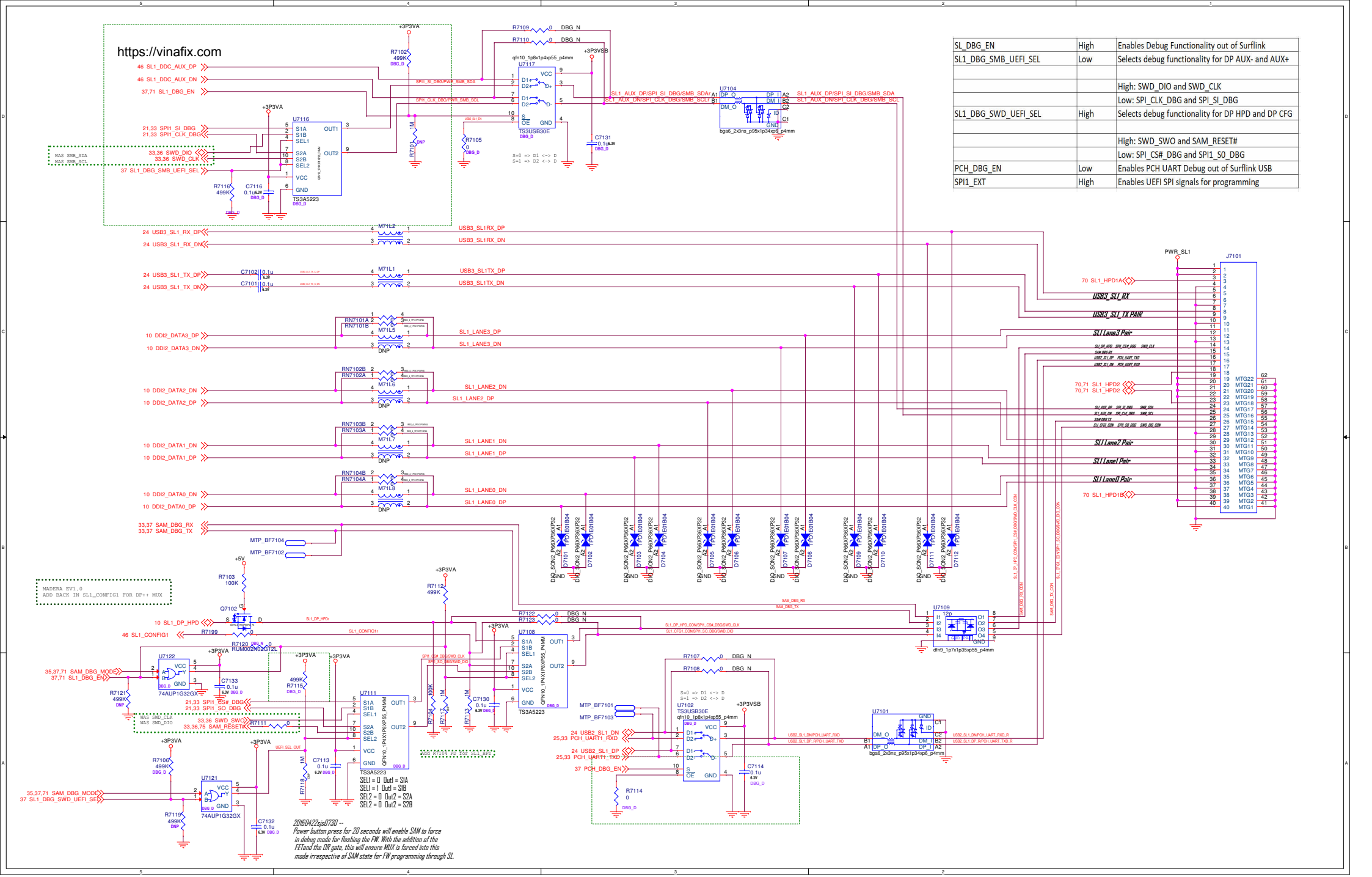


Present State			Trigger	Output		
SL1_UART_TX	SL1_UART_RX	1W/2W Detect	Initial A/D read	SL1_UART_TX_SEL_N	SL1_UART_RX_SEL_N	SL Polarity
Low	Low	Detach	n/a	Low	Low	Detach
Low	High	1W	n/a	High	Low	Straight up
High	Low	1W	n/a	Low	High	Reversed
High	High	2W	Valid	Low	Low	Straight up
High	High	2W	Invalid	High	High	Reversed

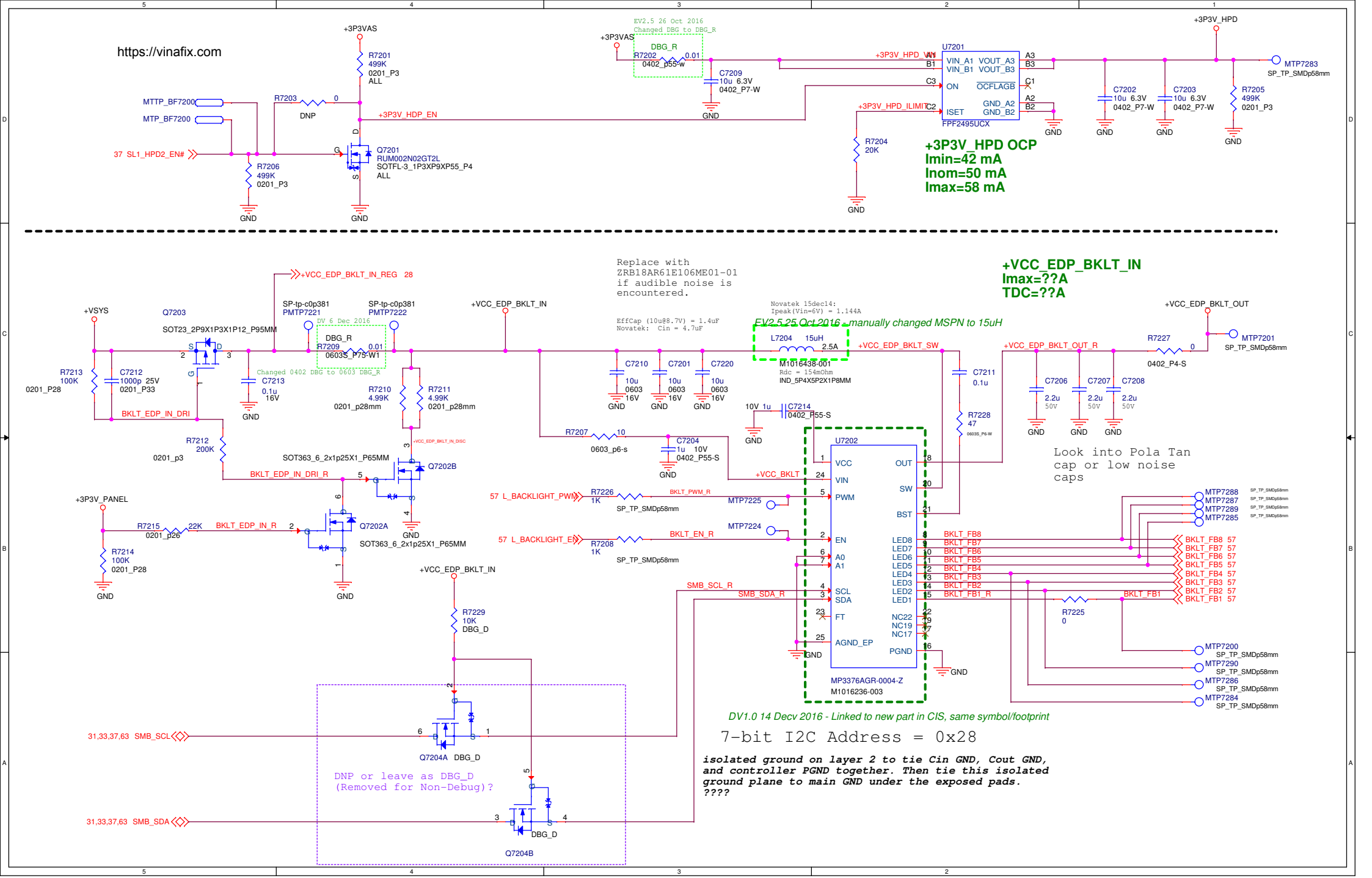
20160401sjs0800 -- DVE:
Correct the state table for SL1 ADC readings
- for 2W devices, we removed the ID Resistors and instead communicate with the device to determine polarity

Table 13 – Standard SBS Commands

Name	SBS Command	Format	Value	Unit	Notes
Temperature	0x08	UINT16	variable	0.1K	---
Voltage	0x09	UINT16	variable	mV	---
Current	0x0a	INT16	variable	mA	---
Average Current	0x0b	INT16	variable	mA	---
Max Error	0x0c	UINT8	variable	%	---
Relative SOC	0x0d	UINT8	variable	%	---
Remaining Capacity	0x0f	UINT16	variable	mAh	---
Full Capacity	0x10	UINT16	fixed	mAh	---
Charging Current	0x14	UINT16	fixed	mA	---
Charging Voltage	0x15	UINT16	fixed	mV	---
Battery Status	0x16	UINT16	variable	--	---
Cycle Count	0x17	UINT16	variable	Count	Shipped as 0 from manufacturer
Design Capacity	0x18	UINT16	fixed	mAh	---
Design Voltage	0x19	UINT16	fixed	mV	---

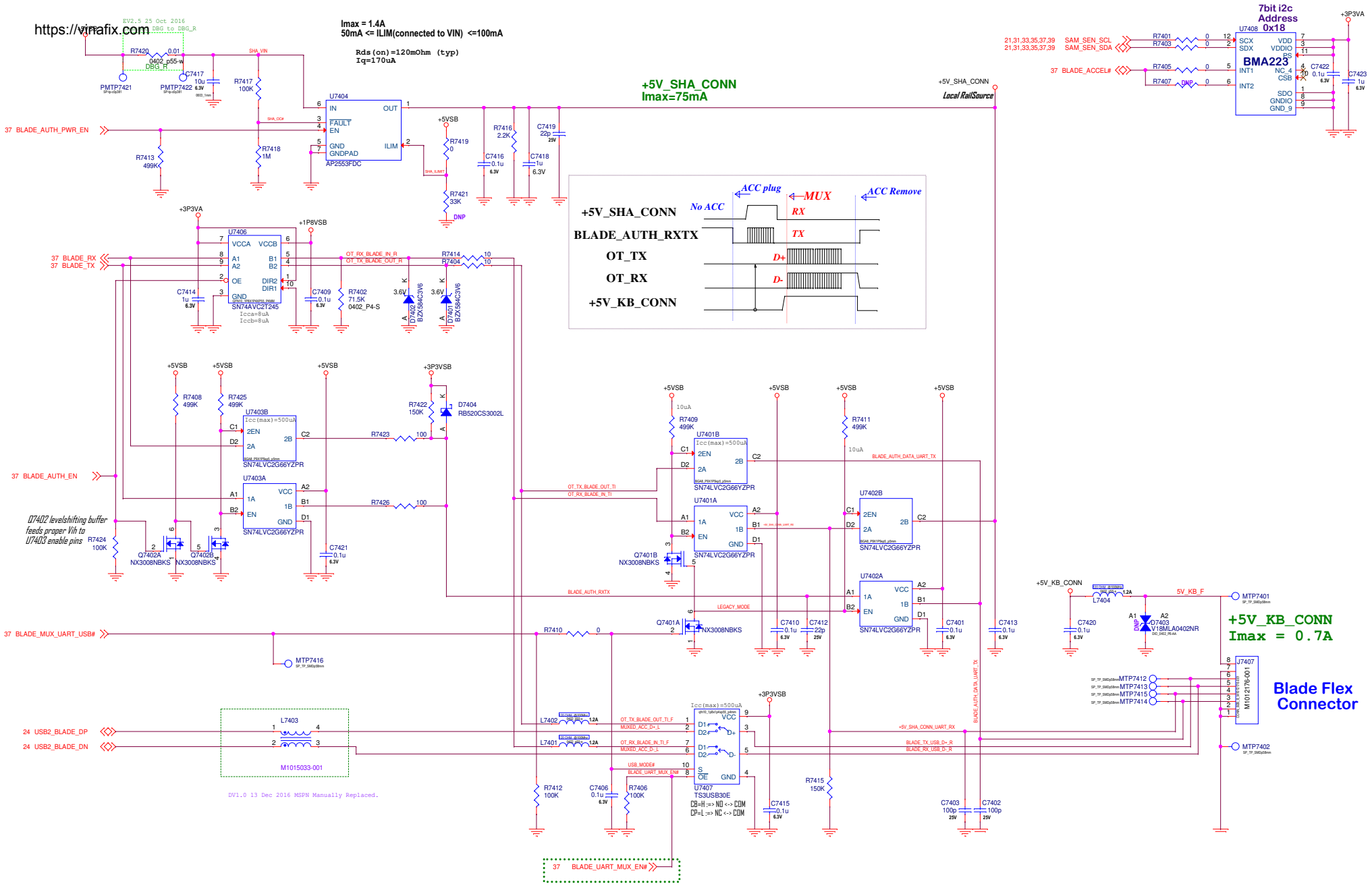


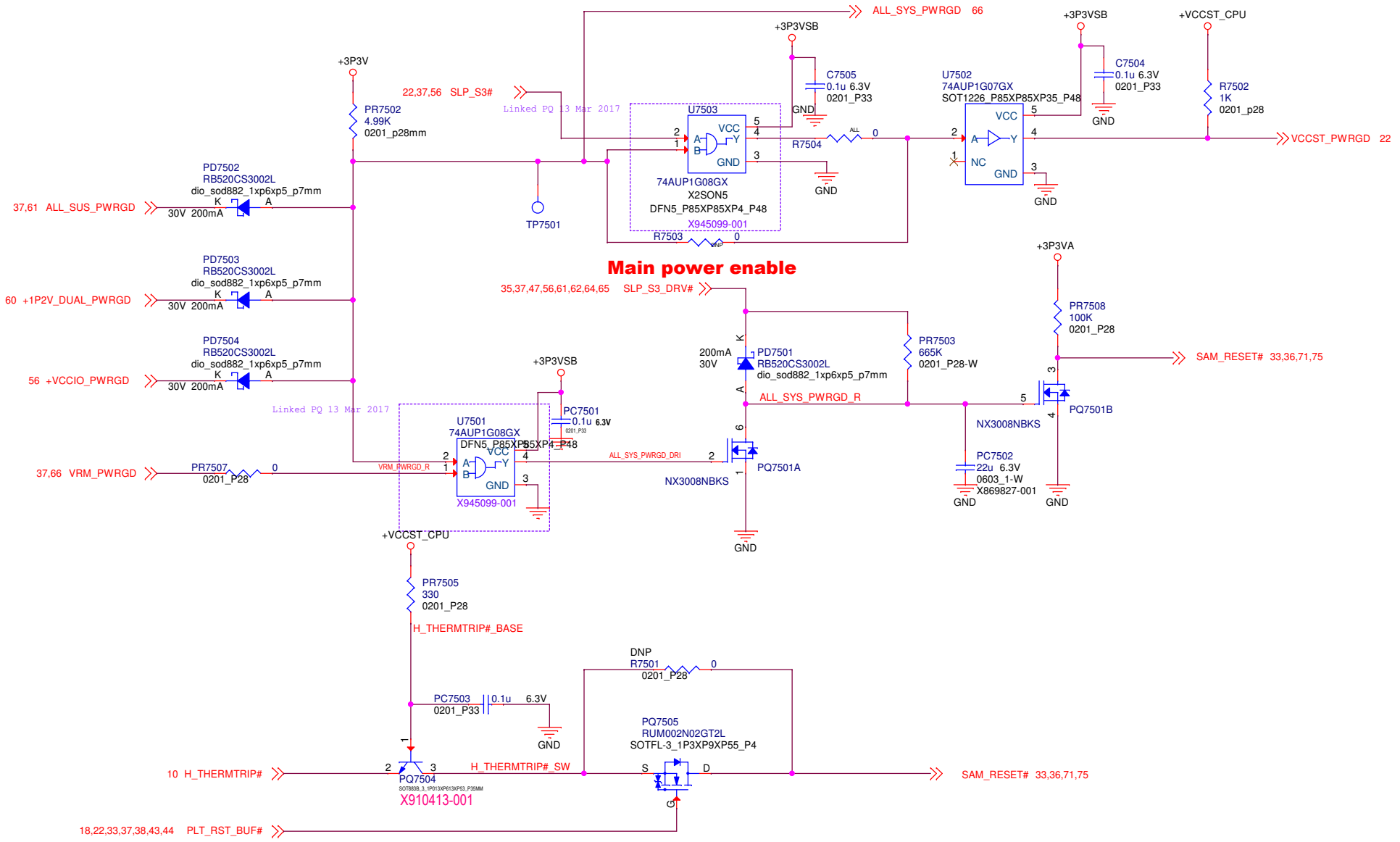
SL_DBG_EN	High	Enables Debug Functionality out of Surflink
SL1_DBG_SMB_UEFI_SEL	Low	Selects debug functionality for DP AUX- and AUX+
		High: SWD_DIO and SWD_CLK
		Low: SPI_CLK_DBG and SPI_SI_DBG
SL1_DBG_SWD_UEFI_SEL	High	Selects debug functionality for DP HPD and DP CFG
		High: SWD_SWO and SAM_RESET#
		Low: SPI_CS#_DBG and SPI1_S0_DBG
PCH_DBG_EN	Low	Enables PCH UART Debug out of Surflink USB
SPI1_EXT	High	Enables UEFI SPI signals for programming

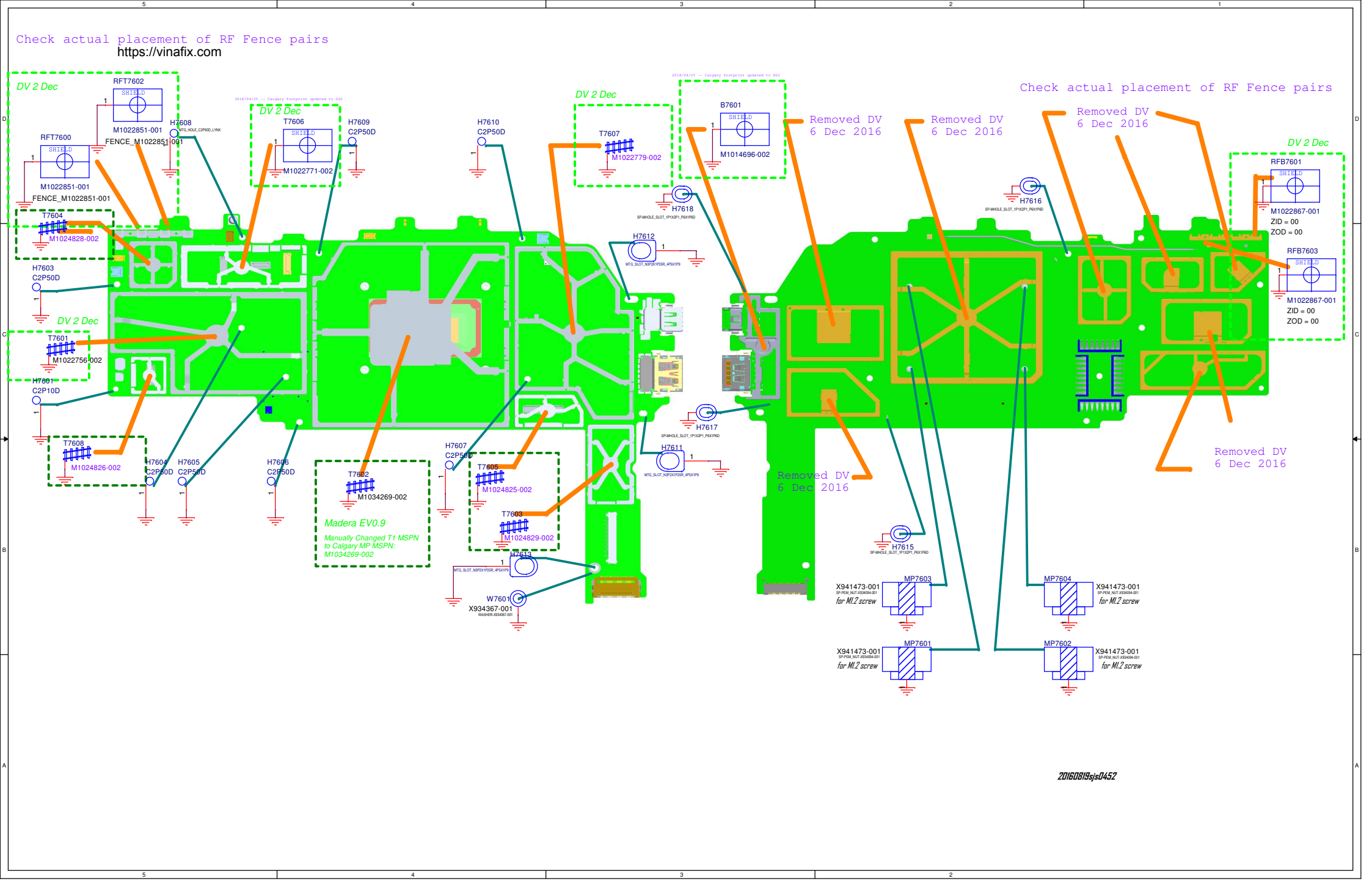

https://vinafix.com
+3P3VAS
R7201
499K
0201_P3
ALL
MTTP_BF7200
MTP_BF7200
R7203
0
DNP
+3P3V_HDP_EN
37 SL1_HPD2_EN#
R7206
499K
0201_P3
Q7201
RUM002N02GT2L
SOTFL-3_1P3XP9XP55_P4
ALL
GND
EV2.5 26 Oct 2016
Changed DBG to DBG_R
DBG_R
R7202
0.01
0402_p55-w
C7209
10u 6.3V
0402_P7-W
+3P3V_HPD_VIN
+3P3V_HPD_ILIMIT
U7201
VIN_A1 VOUT_A3
VIN_B1 VOUT_B3
ON
OCFLAGB
GND_A2
GND_B2
ISET
FPF2495UCX
R7204
20K
+3P3V_HPD
MTP7283
SP_TP_SMDp58mm
C7202
10u 6.3V
0402_P7-W
C7203
10u 6.3V
0402_P7-W
R7205
499K
0201_P3
+3P3V_HPD OCP
Imin=42 mA
Inom=50 mA
Imax=58 mA
Replace with
ZRB18AR61E106ME01-01
if audible noise is
encountered.
+VCC_EDP_BKLT_IN
Imax=??A
TDC=??A
+VCC_EDP_BKLT_IN_REG 28
+VSYS
Q7203
SOT23_2P9X1P3X1P12_P95MM
SP-tp-c0p381
PMTP7221
SP-tp-c0p381
PMTP7222
DV 6 Dec 2016
DBG_R
R7209
0.01
0603S_P75-W1
Changed 0402 DBG to 0603 DBG_R
+VCC_EDP_BKLT_IN
EffCap (10u@8.7V) = 1.4uF
Novatek: Cin = 4.7uF
Novatek 15dec14:
Ipeak(Vin=6V) = 1.144A
EV2.5 25 Oct 2016 - manually changed MSPN to 15uH
L7204
15uH
2.5A
M1016438-001
Rdc = 154mOhm
IND_5P4X5P2X1P8MM
+VCC_EDP_BKLT_SW
+VCC_EDP_BKLT_OUT
+VCC_EDP_BKLT_OUT_R
R7227
0
0402_P4-S
MTP7201
SP_TP_SMDp58mm
R7213
100K
0201_P28
C7212
1000p 25V
0201_P33
C7213
0.1u
16V
BKLT_EDP_IN_DRI
R7212
200K
0201_p3
R7210
4.99K
0201_p28mm
R7211
4.99K
0201_p28mm
C7210
10u
0603
16V
C7201
10u
0603
16V
C7220
10u
0603
16V
C7211
0.1u
R7228
47
0603S_P6-W
C7206
2.2u
50V
C7207
2.2u
50V
C7208
2.2u
50V
Look into Pola Tan
cap or low noise
caps
10V 1u
C7214
0402_P55-S
R7207
10
0603_p6-s
C7204
1u 10V
0402_P55-S
+VCC_BKLT
U7202
VCC
VIN
PWM
EN
A0
A1
SCL
SDA
FT
AGND_EP
OUT
SW
BST
LED8
LED7
LED6
LED5
LED4
LED3
LED2
LED1
NC22
NC19
NC17
PGND
MP3376AGR-0004-Z
M1016236-003
57 L_BACKLIGHT_PWM
R7226
1K
BKLT_PWM_R
MTP7225
57 L_BACKLIGHT_EN
R7208
1K
BKLT_EN_R
MTP7224
BKLT_FB8
BKLT_FB7
BKLT_FB6
BKLT_FB5
BKLT_FB4
BKLT_FB3
BKLT_FB2
BKLT_FB1_R
R7225
0
BKLT_FB1
MTP7288
MTP7287
MTP7289
MTP7285
MTP7200
MTP7290
MTP7286
MTP7284
SP_TP_SMDp58mm
+3P3V_PANEL
R7215
22K
0201_p26
BKLT_EDP_IN_R
R7214
100K
0201_P28
Q7202A
Q7202B
SOT363_6_2x1p25X1_P65MM
BKLT_EDP_IN_DRI_R
+VCC_EDP_BKLT_IN_DISC
SMB_SCL_R
SMB_SDA_R
R7229
10K
DBG_D
31,33,37,63 SMB_SCL
31,33,37,63 SMB_SDA
Q7204A DBG_D
Q7204B
DNP or leave as DBG_D
(Removed for Non-Debug)?
DV1.0 14 Decv 2016 - Linked to new part in CIS, same symbol/footprint
7-bit I2C Address = 0x28
isolated ground on layer 2 to tie Cin GND, Cout GND,
and controller PGND together. Then tie this isolated
ground plane to main GND under the exposed pads.
????

PCIe/USB Debug Expansion Connector

REMOVED EXPANSION CONNECTOR






Check actual placement of RF Fence pairs
https://vinafix.com
DV 2 Dec
RFT7602
SHIELD
M1022851-001
FENCE_M1022851-001
H7608
RFT7600
SHIELD
M1022851-001
FENCE_M1022851-001
T7604
M1024828-002
H7603
C2P50D
DV 2 Dec
T7601
M1022756-002
H7601
C2P10D
T7608
M1024826-002
H7604
C2P50D
H7605
C2P50D
H7606
C2P50D
DV 2 Dec
T7606
SHIELD
M1022771-002
H7609
C2P50D
T7602
M1034269-002
Madera EV0.9
Manually Changed T1 MSPN
to Calgary MP MSPN:
M1034269-002
H7610
C2P50D
H7607
C2P50D
T7605
M1024825-002
T7603
M1024829-002
H7613
W7601
X934367-001
DV 2 Dec
T7607
M1022779-002
B7601
SHIELD
M1014696-002
H7618
H7612
H7617
H7611
Removed DV
6 Dec 2016
Removed DV
6 Dec 2016
Removed DV
6 Dec 2016
Removed DV
6 Dec 2016
Removed DV
6 Dec 2016
Check actual placement of RF Fence pairs
H7616
DV 2 Dec
RFB7601
SHIELD
M1022867-001
ZID = 00
ZOD = 00
RFB7603
SHIELD
M1022867-001
ZID = 00
ZOD = 00
H7615
MP7603
X941473-001
for M1.2 screw
MP7604
X941473-001
for M1.2 screw
MP7601
X941473-001
for M1.2 screw
MP7602
X941473-001
for M1.2 screw
20160819sjs0452