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CAD Note:

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

Property: BUILD-OPT
DNP = Do Not Place

S or DB = Replace after Debug

Schematics Change History

Rev.	Date	Comments
0p9	28 Oct 2014	1. Starting with G_EV1_1021-1630.DSN 2. Added SL schematic from page 72 ...\T\MB\DV_RELEASED\Schematic\CASTLE2_DV_2014_1021_1100.DSN 3. Added External USB3 schematic from ...\T\MB\DV_RELEASED\Schematic\CASTLE2_DV_2014_1021_1100.DSN 4. Added external DP ...\T\MB\DV_RELEASED\Schematic\CASTLE2_DV_2014_1021_1100.DSN 5. Added IR_CAMERA from Front Camera...put in page 49 6. Removed page 73 PCIe GPU 7. Added Blade from T 8. Removed P72 T2B Pwr Transistors
0p10	3 Nov 2014	1. Changing to NVDC 2. Replaced GTX with GT, kept bypass caps 3. Replaced Charger with BQ24770
0p11	3 Nov 2014	1. Replace SKL-U with SKL-Y
0p12	11 Nov 2014	1. Model DDR connection from Intel SDS
0p13	18 Nov 2014	1. Added FUB information to all components 2. Changed Decretes.. sizing caps
0p14	20 Nov 2014	1. Added +5VA_SHA 2. Added T Cost Down/XCN's 3. Added SL +5V load Switch & Caps 4. Added Blade +5V load Switch & Caps
0p15	26 Nov 2014	1. Removed Boost 2. Re-adjusted usb ports on CPU 3. Removed Audio DSP
0p16	03 Dec 2014	1. changed +1VSB regulator 2. changed IR Camera/added diode 3. added power numbers from 0.91 PDG, Oct14 4. changed BLADE connector 5. cpu decoupling caps changed 6. changed +5V/+3V inductors (place holder)
0p17	05 Dec 2014	1. swapped M_A_CAA with MA_CAB on U1601/U1602 2. added two SAR chips, P32 3. remove tp's from csi lines on (p23) 4. change from 10 ceramic to 3 tantalum-poly on usb3 typeA (p45) 5. remove the RSENSE from output of +VCCIO(p56)/+0p85VSB(p56)/+VCCEDRAM (p58)/+VCCEOPIO (p58)/+1VSB(p61)/+1P8VSB(p62) 6. change RSENSE input to 0402 from 0603 for +VCCIO(p56)/+0p85VSB(p56)/+VCCEDRAM (p58)/+VCCEOPIO (p58)/+1VSB(p61)/+1P8VSB(p62) input regulator 7. change inductor for +VCCIO(p56)/+0p85VSB(p56)/+VCCEDRAM (p58) to HMLE20161B-1R0MDR-01 8. change RSENSE input to 0402 from 0603 for +5V_TS,+5V_SDXC,+5V_AUDIO,+5V, +5V_FAN(p64) 9. change RSENSE input to 0402 from 0603 for +3P3V_PANEL,+3P3V,+3P3V_SENSOR,+1P8V_DMIC (p65) 10. Replacing the SL connector with X908351-001 11. Replace PL5901 and PL5902 with CMLE042T-2R2MS-01 12. Replace 0402 1uf 6.3V with 0201 1uF 6.3V X5R 13. Replace L7201 with TOKO #A919CY-100M 14. Added VSYS -> BLADE FANG supply (p73)
0p18	09 Dec 2014	1. Reduced sizes of parts for Cameras (Resistors/Caps/Regulators)
0p19	12 Dec 2014	1. All 47uF caps become 0805/1mmZ 2. All 10uF caps become 0402...4V/6.3V
0p20	15 Dec 2014	1. changed SAM flash to reduce size to 2x3 from 5x4 2. Shui Changes 3. more Shui Changes
0p21	16 Dec 2014	1. changed SAM flash to reduce size to 2x3 from 5x5 2. changes from EV_schematic_issue_check_1216_JDM1.xlsx 3. changed name of +6_12 to +V_ALWAYS_ON 4. Removed 2 Mikes & Front Mike & added FPC conn 5. Added 2nd BLADE connector
0p22	17 Dec 2014	1. Replaced SD connector with AY531465T 2. changes from EV_schematic_issue_check_viola_1217_JDM1.xlsx
0p23 – current		1. See apexUfixes_revXpXX.xlsx

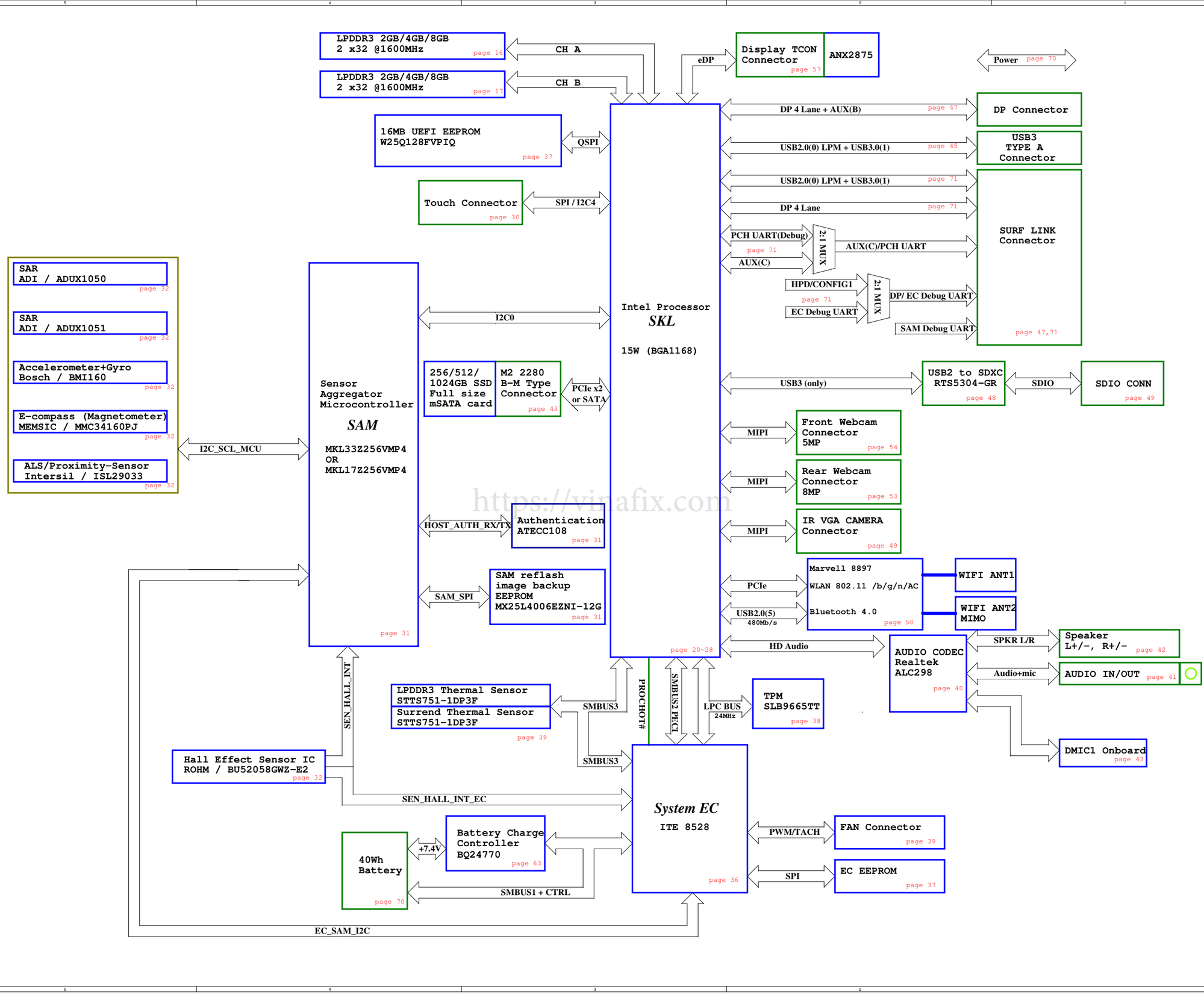
CAD Note:

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

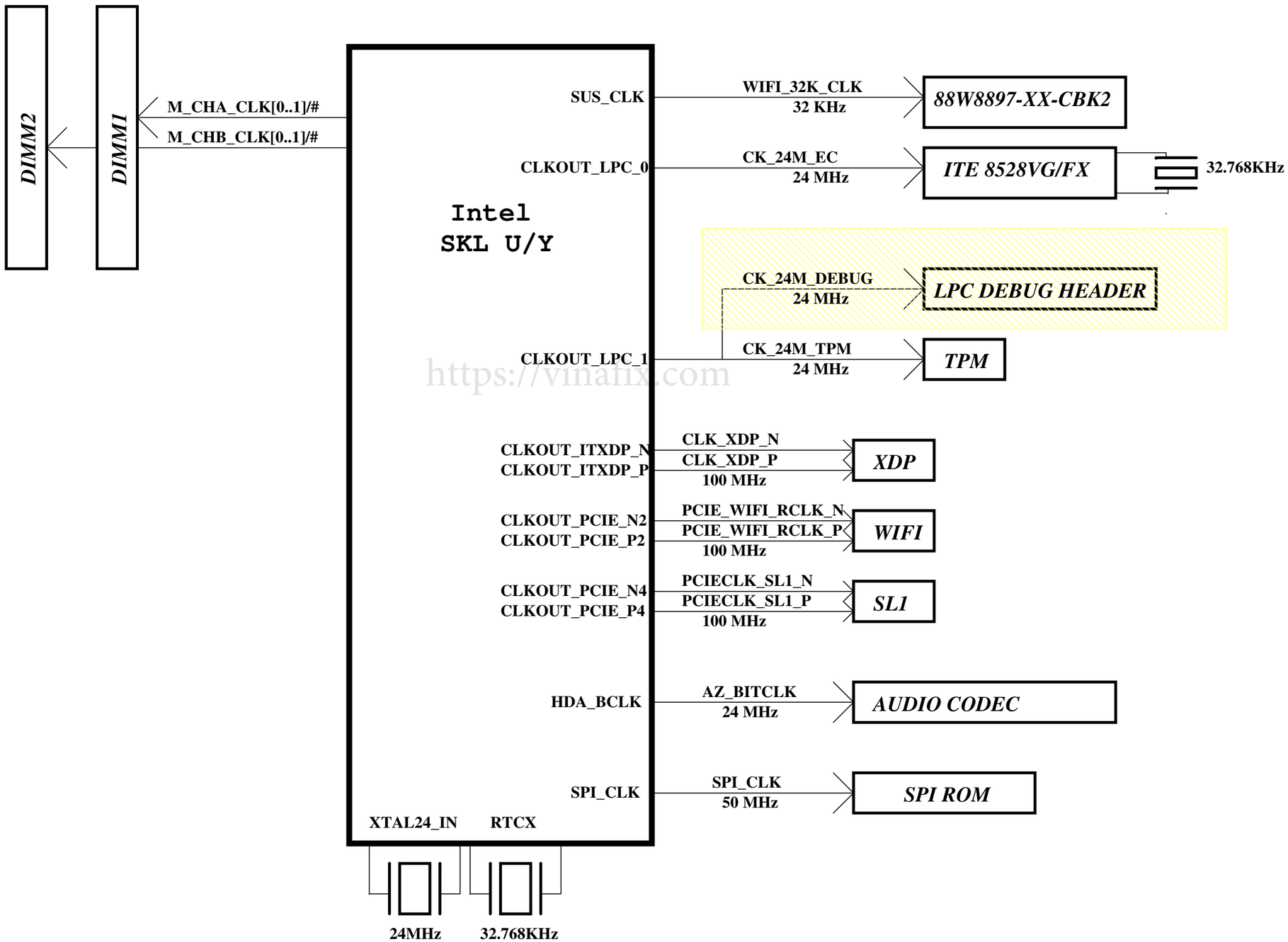
S = Short after design fixed

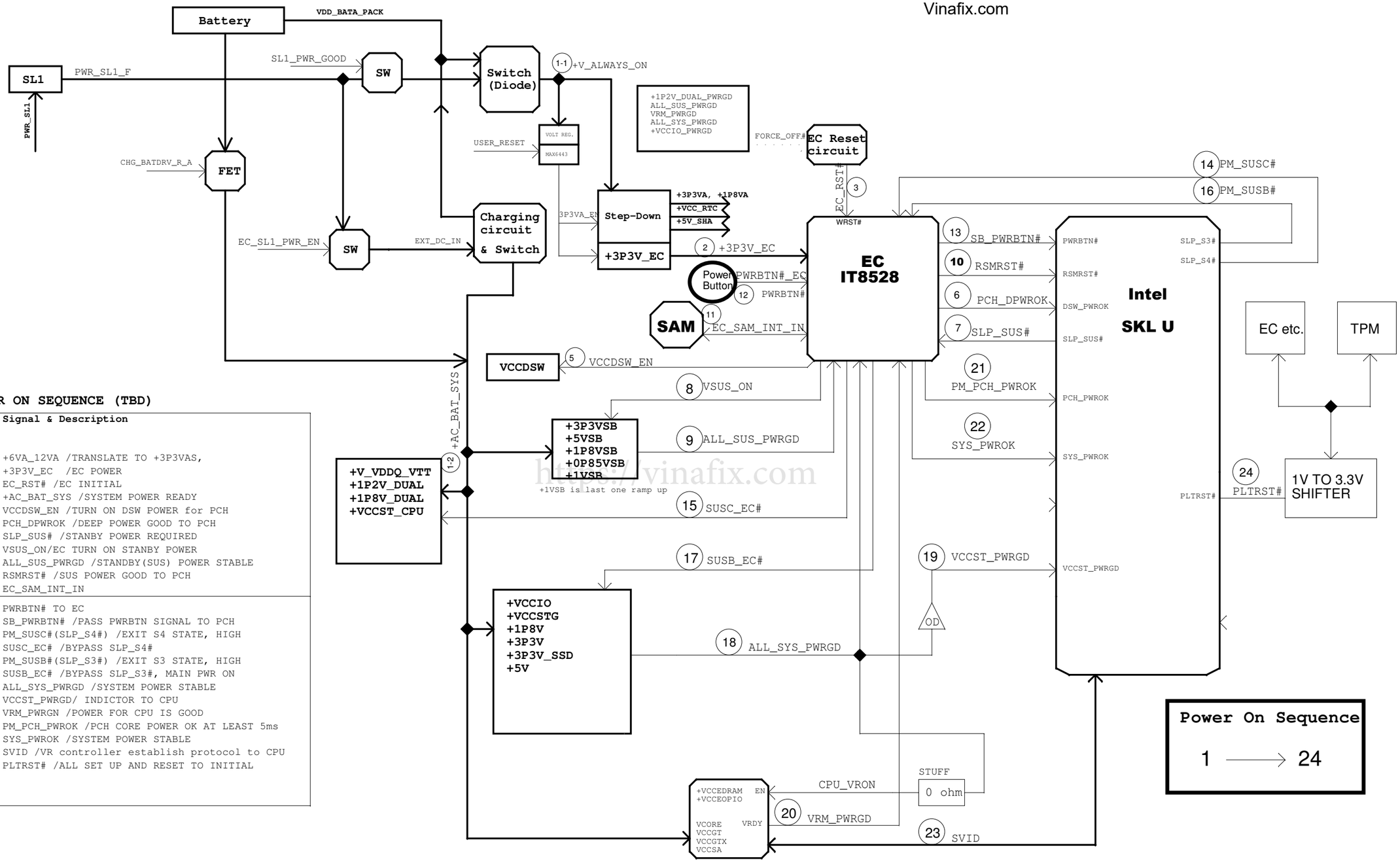
Property: BUILD-OPT

DNP = Not Installed Part.



HSW Buffer Through Mode for Pre-Silicon





POWER ON SEQUENCE (TBD)

STEP	Signal & Description
1	+6VA_12VA /TRANSLATE TO +3P3VAS,
2	+3P3V_EC /EC POWER
3	EC_RST# /EC INITIAL
4.	+AC_BAT_SYS /SYSTEM POWER READY
5.	VCCDSW_EN /TURN ON DSW POWER for PCH
6.	PCH_DPWROK /DEEP POWER GOOD TO PCH
7.	SLP_SUS# /STANBY POWER REQUIRED
8.	VSUS_ON/EC TURN ON STANBY POWER
9.	ALL_SUS_PWRGD /STANDBY(SUS) POWER STABLE
10.	RSMRST# /SUS POWER GOOD TO PCH
11.	EC_SAM_INT_IN
12	PWRBTN# TO EC
13.	SB_PWRBTN# /PASS PWRBTN SIGNAL TO PCH
14.	PM_SUSC#(SLP_S4#) /EXIT S4 STATE, HIGH
15.	SUSC_EC# /BYPASS SLP_S4#
16.	PM_SUSB#(SLP_S3#) /EXIT S3 STATE, HIGH
17.	SUSB_EC# /BYPASS SLP_S3#, MAIN PWR ON
18.	ALL_SYS_PWRGD /SYSTEM POWER STABLE
19.	VCCST_PWRGD/ INDICTOR TO CPU
20.	VRM_PWRGN /POWER FOR CPU IS GOOD
21.	PM_PCH_PWROK /PCH CORE POWER OK AT LEAST 5ms
22.	SYS_PWROK /SYSTEM POWER STABLE
23.	SVID /VR controller establish protocol to CPU
24.	PLTRST# /ALL SET UP AND RESET TO INITIAL

06Dec14 jks : NEEDS UPDATE

CPU Haswell ULT

+VCORE	-> 32A
+1P05V	-> 0.6A
+DDR_V (+1P2V_DUAL)	-> 2.5A
+1P05V	-> 2.81A
+1P05V_MODPHY	-> 1.838A
+1P5V	-> 0.003A
+3P3V	-> 0.200A
+3P3VSB	-> 0.062A
+3P3VA	-> 0.099A

LPDDR3

+1P8V_DUAL	-> 0.717A
+1P2V_DUAL	-> 3.210A
+VTT_DDQ_VTT(0.6V)	-> 1A

mSATA(SSD)

+3P3V	-> 1.2A

EC

+3P3V_EC	-> 0.012A

EC ROM

+3P3V_EC	-> 0.005A
+3P3VA	-> 0.00025A

Temp sensor(STTS751)

+3P3V_EC	-> 0.00025A

Camera

+1P1V_CAM	-> 0.609A
+1P1V_PLLD_CAM	-> 0.0016A
+1P1V_USB_CAM	-> 0.0137A
+1P8V_CAM	-> 0.0882A
+1P8V_VDD_CAM	-> 0.122A
+2P5V_CAM	-> 0.001A
+2P5V_PLL_CAM	-> 0.000168A
+2P5V_MIPI_CAM	-> 0.00368A
+2P8V_CAM	-> 0.14A
+3P3V_CAM	-> 0.006A
+3P3V_USB_CAM	-> 0.0169A

TPM(Infineon SLB9665 ESS2)

+3P3V_TPM (+3P3V)	-> 0.1A

SDXC

+5V_SDXC	-> 0.9A

WiFi&BT

+3P3V_WWAN	-> 1.5A

DMIC

DMIC_+3P3V/+3P3V_AUDIO	-> 0.02A

FAN

+5V_FAN	-> 0.7A

UEFI_SPI_BIOS_ROM

+3P3V	-> 0.04A

Panel

VCC_EDP_BKLT_IN	-> 0.564A
+3P3V_PANEL	-> 0.3A

Authentication IC (ECC108)

+3P3VA	-> 0.005A

Touch Interface

+3P3V_TS	-> 0.0094A
+5V_TS	-> 0.0027A

ALC3264 CODEC

+3P3V_AUDIO	-> 0.005A
+5V_AUDIO	-> 1.05A
+1P8V_AUDIO	-> 0.005A

DSP (ES320)

+3P3V_AUDIO	-> 0.0063A
+1P1V_AUDIO	-> 0.0189A

Sensor uC(ATUC256L3U-Z3UR)

+3P3VA	-> 0.061A

SL1

+3P3V_HPD	->0.075A
+5V_SL1	-> 1.5A

BLADE

+5V_KB_CONN	-> 0.5A

Hall effect sensor(BU52058GWZ-E2)

+3P3VA	->0.0028A

Compass(MMC3416XMA)

+3P3V_SENSOR	->0.0012A

Accelerometer&Gyro(LSM330TR)

+3P3V_SENSOR	-> 0.0061A

ALS(ISL29033IROZ-T7) FPC CON

+3P3V_SENSOR	-> 0.000075A

MUX

+3P3V_MUX	-> 0.033A

mini DP

+3P3V	-> 0.5A

USB 3.0 connector

+5VUSBPWR	-> 0.9A

Transceiver SN74AVCT245

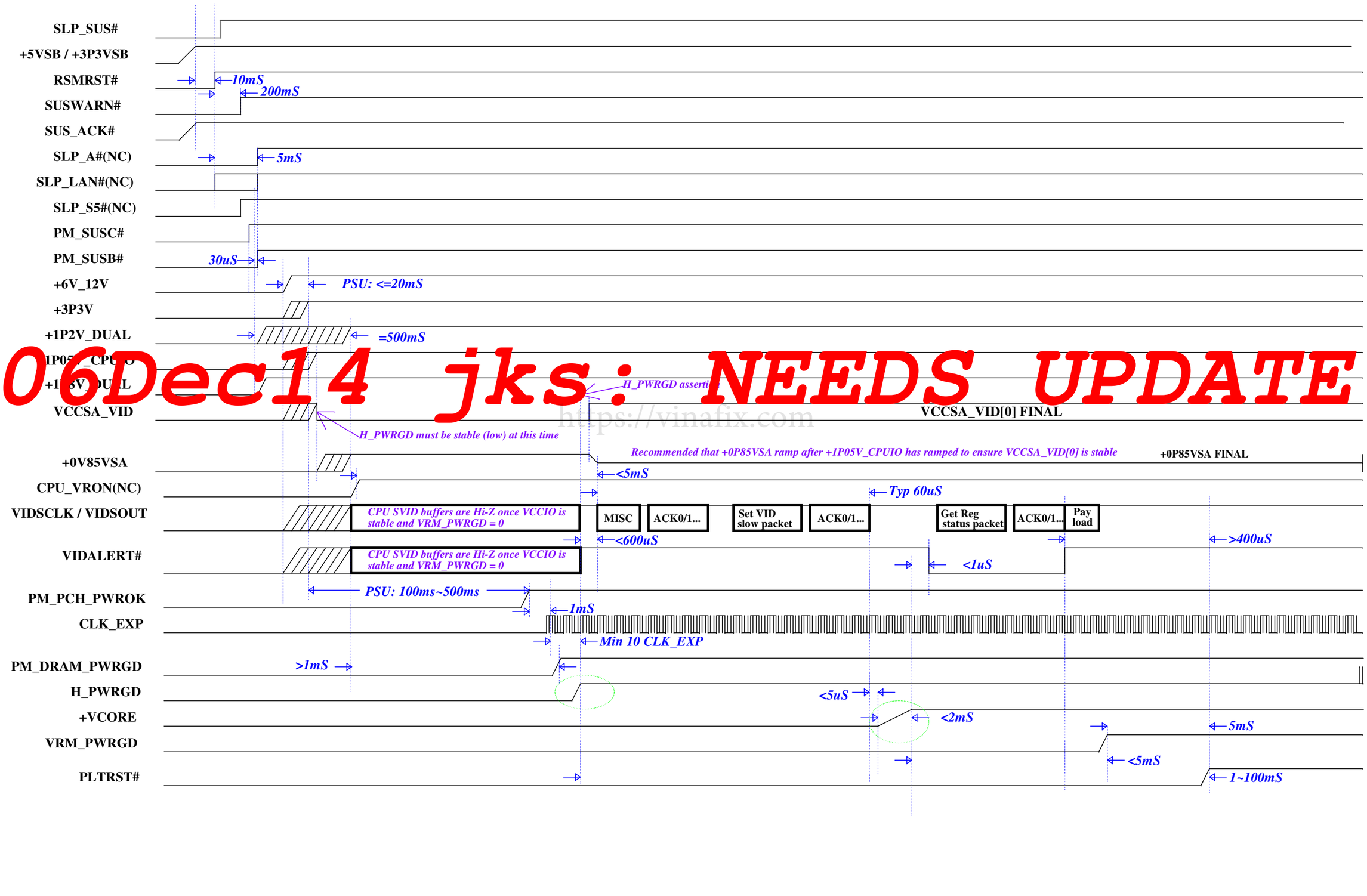
+1P8V_EC	-> 0.11A

Battery Charger BQ24735

+V_ALWAYS_ON	-> 0.003A

06Dec14 jks: NEEDS UPDATE

S5 to S0 Power Sequence



I2C & SMBUS Map

SML1_PCH_DATA
SML1_PCH_CLK

Q3501
Q3504

PCH
U1001

S
M
M 0x4D

PCH_I2C1_SDA_3V3
PCH_I2C1_SCL_3V3

R3001
R3003

TS_A_I2C_SDA_CON
TS_A_I2C_SCL_CON

Touch Connector
CON3001 0x60

Surrend
TEMP Sensor
U3901 0x4B

Skin
TEMP Sensor
U3902 0x3B

Skin
TEMP Sensor
U3903 0x3A

Skin
TEMP Sensor
U3904 0x4A

SML3_EC_DATA
SML3_EC_CLK

SH_I2C_SDA
SH_I2C_SCL

Debug Connector
CON3302

U3501

SML0_EC_DATA
SML0_EC_CLK

M
S
EC
U3601
M 0x4E

S
M
SAM
U3105
0x28

I2C_SDA_MCU_R
I2C_SCL_MCU_R

R3122
R3124

I2C_SDA_MCU
I2C_SCL_MCU

TEMP Sensor
U3211 0x3A

R3229
R3230

R3266
R3267

R3210
R3211

SML1_EC_DATA
SML1_EC_CLK

CHG_SDA_A
CHG_SCL_A

Charger
U6301
0x12

PR6309
PR6310
0 ohm

ADUX1050
U3206 0x2D

ADUX6

R3285
R3287

R3212
R3213

MAG2_X_SDA
MAG2_X_SCL

Accel & Gyro
U3202 0x68

R7032/L7005
R7033/L7006

MAG2_SCL_3V3
MAG2_SDA_3V3

Magnetometer
U3203 0x30

EC_SMCLK_BAT
EC_SMDATA_BAT

Battery
Connector
CON7001 0x16

ADUX1050
U3207 0x2C

ADUX7

R3286
R3288

+VCCST_CPU
DNP,CPU
R1016
NO-STUFF
RES_0201_12mil
2/5: Remove T010
[36] H_PECI_R
+VCCSTG
R1008
1K
RES_0201_12mil
[63,66] H_PROCHOT#
R1002 499 RES_0201_12mil
GND
C1008 NO-STUFF CAP_0201_14mil DNP,CPU
R1037
100
RES_0201_12mil
Q1001
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
H_PROCHOT_PD
[36] EC_PROCHOT
GND
R1021 0 RES_0201_12mil
TP_CATERR#_R
H_PROCHOT#_R
PM_THRMTRIP#
PROC_DETECT#
[18] XDP_BPM0
[18] XDP_BPM1
TPS0P35 XDP_TP1001
[30] TS_IRQ_3V3_N
TPS0P35 XDP_TP1002
R1035 0 RES_0201_12mil
GPP_E3
GPP_E7
[31] SAR_INDICATION_1
[31] SAR_INDICATION_2
+VCCST_CPU
R1020
1K
RES_0201_12mil
[75] H_THERMTRIP#
R1018 0 RES_0201_12mil
PROC_POPIRCOMP
PCH_OPIRCOMP
R1023 49.9 RES_0201_12mil
R1023 49.9 RES_0201_12mil
GND GND

U1001D
SKYLAKE_ULX_EDS/BGA
bga1515_skl_20x16p5mm
SKYLAKE_ULX
CATERR# H49
PECI F49
PROCHOT# J48
THERMTRIP# H47
SKTOCC# B62
BPM#[0] H51
BPM#[1] J50
BPM#[2] F51
BPM#[3] G50
GPP_E3/CPU_GP0 E11
GPP_E7/CPU_GP1 M9
GPP_B3/CPU_GP2 BD8
GPP_B4/CPU_GP3 BC11
PROC_POPIRCOMP BN17
PCH_OPIRCOMP BP16
CPU MISC
4 OF 20
JTAG
PROC_TCK D53
PROC_TDI C54
PROC_TDO G48
PROC_TMS C59
PROC_TRST# F47
PCH_JTAG_TCK B53
PCH_JTAG_TDI C50
PCH_JTAG_TDO B51
PCH_JTAG_TMS A52
PCH_TRST# C52
JTAGX B49
REV = 0.81
Source Package = SKYLAKE_ULX_EDS/BGA_0
Source Part = SKYLAKE_ULX_EDS/BGA_0D.Normal

MTP1012 SP_TP_SMDp58mm
MTP1013 SP_TP_SMDp58mm
MTP1014 SP_TP_SMDp58mm
MTP1015 SP_TP_SMDp58mm
MTP1016 SP_TP_SMDp58mm
XDP_TCK [18]
XDP_TDI [18]
XDP_TDO [18]
XDP_TMS [18]
XDP_TRST#_BUF [18]
R1004 49.9 RES_0201_12mil
DNP,CPU R1005 NO-STUFF RES_0201_12mil
GND GND
+VCCSTG
R1027 49.9 RES_0201_12mil
R1028 49.9 RES_0201_12mil
R1026 49.9 RES_0201_12mil
DNP,CPU R1030 NO-STUFF RES_0201_12mil
MTP1004 SP_TP_SMDp58mm
MTP1001 SP_TP_SMDp58mm
MTP1005 SP_TP_SMDp58mm
MTP1003 SP_TP_SMDp58mm
MTP1000 SP_TP_SMDp58mm
MTP1002 SP_TP_SMDp58mm
PCH_JTAG_TCK [18]
PCH_JTAG_TDI [18]
PCH_JTAG_TDO [18]
PCH_JTAG_TMS [18]
XDP_TRST# [18]
PCH_JTAGX [18]
R1029 49.9 RES_0201_12mil
GND

U1001A
SKYLAKE_ULX_EDS/BGA
bga1515_skl_20x16p5mm
SKYLAKE_ULX
DISPLAY
DDI
eDP
DISPLAY SIDEBANDS
1 OF 20
REV = 0.81
Source Package = SKYLAKE_ULX_EDS/BGA_0
Source Part = SKYLAKE_ULX_EDS/BGA_0A.Normal

DDI Port 1: DP CONNECTOR
[47] DDI1_DATA0_DN A46
[47] DDI1_DATA0_DP C46
[47] DDI1_DATA1_DN C48
[47] DDI1_DATA1_DP A48
[47] DDI1_DATA2_DN B45
[47] DDI1_DATA2_DP D45
[47] DDI1_DATA3_DN B47
[47] DDI1_DATA3_DP D47
DDI1_TXN[0]
DDI1_TXP[0]
DDI1_TXN[1]
DDI1_TXP[1]
DDI1_TXN[2]
DDI1_TXP[2]
DDI1_TXN[3]
DDI1_TXP[3]

DDI Port 2: SL1
[71] DDI2_DATA0_DN A42
[71] DDI2_DATA0_DP C42
[71] DDI2_DATA1_DN A44
[71] DDI2_DATA1_DP C44
[71] DDI2_DATA2_DN B41
[71] DDI2_DATA2_DP D41
[71] DDI2_DATA3_DN B43
[71] DDI2_DATA3_DP D43
DDI2_TXN[0]
DDI2_TXP[0]
DDI2_TXN[1]
DDI2_TXP[1]
DDI2_TXN[2]
DDI2_TXP[2]
DDI2_TXN[3]
DDI2_TXP[3]

+VCCIO
R1006
24.9
RES_0201_12mil
EDP_COMP A50
EDP_RCOMP

[46] DDPB_CTRL_CLK L6
[46] DDPB_CTRL_DATA INT. PD H6
GPP_E18/DDPB_CTRLCLK
GPP_E19/DDPB_CTRLDATA
[46] DDPC_CTRL_CLK H4
[46] DDPC_CTRL_DATA INT. PD F4
GPP_E20/DDPC_CTRLCLK
GPP_E21/DDPC_CTRLDATA
[40] PCH_CODEC_IRQ M5
[64] RTD3_CR_PWREN INT. PD L4
GPP_E22/DDPD_CTRLCLK
GPP_E23/DDPD_CTRLDATA

eDP
EDP_TXN[0] H45
EDP_TXP[0] F45
EDP_TXN[1] J44
EDP_TXP[1] G44
EDP_TXN[2] J46
EDP_TXP[2] G46
EDP_TXN[3] H43
EDP_TXP[3] F43
EDP_TX0_DN [57]
EDP_TX0_DP [57]
EDP_TX1_DN [57]
EDP_TX1_DP [57]
EDP_TX2_DN [57]
EDP_TX2_DP [57]
EDP_TX3_DN [57]
EDP_TX3_DP [57]
eDP x 4
EDP_AUXN J42
EDP_AUXP G42
EDP_AUX_DN [57]
EDP_AUX_DP [57]
EDP_DISP_UTIL A40
DNP,CPU R1019 NO-STUFF RES_0201_12mil GND
DDI1_AUXN H41
DDI1_AUXP F41
DDI2_AUXN J40
DDI2_AUXP G40
DDPB_AUX_DN [46]
DDPB_AUX_DP [46]
DDPC_AUX_DN [46]
DDPC_AUX_DP [46]
GPP_E13/DDPB_HPD0 C11
GPP_E14/DDPC_HPD1 L10
GPP_E15/DDPD_HPD2 M7
GPP_E16/DDPE_HPD3 F6
GPP_E17/EDP_HPD A7
DDPB_DP_HPD [47]
SL1_DP_HPD [71]
EDP_HPD [57]
EDP_BKLEN D4
EDP_BKLCTL B6
EDP_VDDEN D3
L_BKLTEN [72]
L_BKLT_CTRL_IN [57]
EDP_VDD_EN [65]
R1032 100K RES_0201_12mil GND
R1033 1M RES_0201_12mil GND
R1017 100K RES_0201_12mil GND

+3VSUS_ORG
R1039 10K RES_0201_12mil
R1038 10K RES_0201_12mil
EXT_SMI# [36]
EXT_SCI# [36]
SMI and SCI can be set to HIGH in S5 in EC code
and they need to set LOW before go to deep sleep

U1001B
SKYLAKE_ULX_EDS/BGA
bga1515_skl_20x16p5mm

SKYLAKE_ULX

[16] M_A_D[7:0]
M_A_D0 AG61
M_A_D1 AH60
M_A_D2 AK62
M_A_D3 AK60
M_A_D4 AH62
M_A_D5 AG63
M_A_D6 AL61
M_A_D7 AL63
[16] M_A_D[15:8]
M_A_D8 AM60
M_A_D9 AM62
M_A_D10 AT60
M_A_D11 AR61
M_A_D12 AN61
M_A_D13 AN63
M_A_D14 AR63
M_A_D15 AT62
[16] M_A_D[23:16]
M_A_D16 AT56
M_A_D17 AR55
M_A_D18 AN57
M_A_D19 AN55
M_A_D20 AR57
M_A_D21 AT58
M_A_D22 AM58
M_A_D23 AM56
[16] M_A_D[31:24]
M_A_D24 AL55
M_A_D25 AL57
M_A_D26 AH58
M_A_D27 AH56
M_A_D28 AK58
M_A_D29 AK56
M_A_D30 AG55
M_A_D31 AG57
[16] M_A_D[39:32]
M_A_D32 BE55
M_A_D33 BC55
M_A_D34 BG53
M_A_D35 BE53
M_A_D36 BC53
M_A_D37 BG55
M_A_D38 BD52
M_A_D39 BF52
[16] M_A_D[47:40]
M_A_D40 BC51
M_A_D41 BE51
M_A_D42 BC49
M_A_D43 BE49
M_A_D44 BG51
M_A_D45 BG49
M_A_D46 BF48
M_A_D47 BD48
[16] M_A_D[55:48]
M_A_D48 BJ55
M_A_D49 BL55
M_A_D50 BJ53
M_A_D51 BL53
M_A_D52 BN55
M_A_D53 BN53
M_A_D54 BM52
M_A_D55 BK52
[16] M_A_D[63:56]
M_A_D56 BL51
M_A_D57 BJ51
M_A_D58 BL49
M_A_D59 BJ49
M_A_D60 BN49
M_A_D61 BN51
M_A_D62 BK48
M_A_D63 BM48

DDR0_DQ[0]
DDR0_DQ[1]
DDR0_DQ[2]
DDR0_DQ[3]
DDR0_DQ[4]
DDR0_DQ[5]
DDR0_DQ[6]
DDR0_DQ[7]
DDR0_DQ[8]
DDR0_DQ[9]
DDR0_DQ[10]
DDR0_DQ[11]
DDR0_DQ[12]
DDR0_DQ[13]
DDR0_DQ[14]
DDR0_DQ[15]
DDR1_DQ[0]/DDR0_DQ[16]
DDR1_DQ[1]/DDR0_DQ[17]
DDR1_DQ[2]/DDR0_DQ[18]
DDR1_DQ[3]/DDR0_DQ[19]
DDR1_DQ[4]/DDR0_DQ[20]
DDR1_DQ[5]/DDR0_DQ[21]
DDR1_DQ[6]/DDR0_DQ[22]
DDR1_DQ[7]/DDR0_DQ[23]
DDR1_DQ[8]/DDR0_DQ[24]
DDR1_DQ[9]/DDR0_DQ[25]
DDR1_DQ[10]/DDR0_DQ[26]
DDR1_DQ[11]/DDR0_DQ[27]
DDR1_DQ[12]/DDR0_DQ[28]
DDR1_DQ[13]/DDR0_DQ[29]
DDR1_DQ[14]/DDR0_DQ[30]
DDR1_DQ[15]/DDR0_DQ[31]
DDR1_DQ[16]/DDR0_DQ[32]
DDR1_DQ[17]/DDR0_DQ[33]
DDR1_DQ[18]/DDR0_DQ[34]
DDR1_DQ[19]/DDR0_DQ[35]
DDR1_DQ[20]/DDR0_DQ[36]
DDR1_DQ[21]/DDR0_DQ[37]
DDR1_DQ[22]/DDR0_DQ[38]
DDR1_DQ[23]/DDR0_DQ[39]
DDR1_DQ[24]/DDR0_DQ[40]
DDR1_DQ[25]/DDR0_DQ[41]
DDR1_DQ[26]/DDR0_DQ[42]
DDR1_DQ[27]/DDR0_DQ[43]
DDR1_DQ[28]/DDR0_DQ[44]
DDR1_DQ[29]/DDR0_DQ[45]
DDR1_DQ[30]/DDR0_DQ[46]
DDR1_DQ[31]/DDR0_DQ[47]
DDR1_DQ[16]/DDR0_DQ[48]
DDR1_DQ[17]/DDR0_DQ[49]
DDR1_DQ[18]/DDR0_DQ[50]
DDR1_DQ[19]/DDR0_DQ[51]
DDR1_DQ[20]/DDR0_DQ[52]
DDR1_DQ[21]/DDR0_DQ[53]
DDR1_DQ[22]/DDR0_DQ[54]
DDR1_DQ[23]/DDR0_DQ[55]
DDR1_DQ[24]/DDR0_DQ[56]
DDR1_DQ[25]/DDR0_DQ[57]
DDR1_DQ[26]/DDR0_DQ[58]
DDR1_DQ[27]/DDR0_DQ[59]
DDR1_DQ[28]/DDR0_DQ[60]
DDR1_DQ[29]/DDR0_DQ[61]
DDR1_DQ[30]/DDR0_DQ[62]
DDR1_DQ[31]/DDR0_DQ[63]

DDR CH - A

DDR0_CKN[0] BC62
DDR0_CKP[0] BC60
DDR0_CKN[1] BA60
DDR0_CKP[1] BA62
M_A_DIM0_CLK#0 [16]
M_A_DIM0_CLK0 [16]
M_A_DIM0_CLK#1 [16]
M_A_DIM0_CLK1 [16]

DDR0_CKE[0] BB57
DDR0_CKE[1] BC58
DDR0_CKE[2] BE57
DDR0_CKE[3] AW61
M_A_DIM0_CKE0 [16]
M_A_DIM0_CKE1 [16]
M_A_DIM0_CKE2 [16] [17] M_B_D[15:8]
M_A_DIM0_CKE3 [16]

DDR0_CS#[0] AW63
DDR0_CS#[1] BJ57
DDR0_ODT[0] BN61
M_A_DIM0_CS#0 [16]
M_A_DIM0_CS#1 [16]
M_A_DIM0_ODT0 [16]

DDR0_MA[5]/DDR0_CAA[0]/DDR0_MA[5] AW59
DDR0_MA[9]/DDR0_CAA[1]/DDR0_MA[9] AW55
DDR0_MA[6]/DDR0_CAA[2]/DDR0_MA[6] BF62
DDR0_MA[8]/DDR0_CAA[3]/DDR0_MA[8] AV56
DDR0_MA[7]/DDR0_CAA[4]/DDR0_MA[7] AW57
DDR0_BA[2]/DDR0_CAA[5]/DDR0_BG[0] AV58
DDR0_MA[12]/DDR0_CAA[6]/DDR0_MA[12] BA56
DDR0_MA[11]/DDR0_CAA[7]/DDR0_MA[11] BD59
DDR0_MA[15]/DDR0_CAA[8]/DDR0_ACT# BD61
DDR0_MA[14]/DDR0_CAA[9]/DDR0_BG[1] BG61
M_A_CAA0
M_A_CAA1
M_A_CAA2
M_A_CAA3
M_A_CAA4
M_A_CAA5
M_A_CAA6
M_A_CAA7
M_A_CAA8
M_A_CAA9
M_A_CAA[9:0] [16]

DDR0_MA[13]/DDR0_CAB[0]/DDR0_MA[13] BK59
DDR0_CAS#/DDR0_CAB[1]/DDR0_MA[15] BL62
DDR0_WE#/DDR0_CAB[2]/DDR0_MA[14] BJ61
DDR0_RAS#/DDR0_CAB[3]/DDR0_MA[16] AV60
DDR0_BA[0]/DDR0_CAB[4]/DDR0_BA[0] BN62
DDR0_MA[2]/DDR0_CAB[5]/DDR0_MA[2] BB61
DDR0_BA[1]/DDR0_CAB[6]/DDR0_BA[1] BL61
DDR0_MA[10]/DDR0_CAB[7]/DDR0_MA[10] BM59
DDR0_MA[1]/DDR0_CAB[8]/DDR0_MA[1] BN58
DDR0_MA[0]/DDR0_CAB[9]/DDR0_MA[0] AV62
M_A_CAB0
M_A_CAB1
M_A_CAB2
M_A_CAB3
M_A_CAB4
M_A_CAB5
M_A_CAB6
M_A_CAB7
M_A_CAB8
M_A_CAB9
M_A_CAB[9:0] [16]

DDR0_MA[3] BB63
DDR0_MA[4] BL57

DDR0_DQSN[0] AJ61
DDR0_DQSP[0] AJ63
DDR0_DQSN[1] AP62
DDR0_DQSP[1] AP60
DDR1_DQSN[0]/DDR0_DQSN[2] AP56
DDR1_DQSP[0]/DDR0_DQSP[2] AP58
DDR1_DQSN[1]/DDR0_DQSN[3] AJ57
DDR1_DQSP[1]/DDR0_DQSP[3] AJ55
DDR0_DQSN[2]/DDR0_DQSN[4] BD54
DDR0_DQSP[2]/DDR0_DQSP[4] BF54
DDR0_DQSN[3]/DDR0_DQSN[5] BF50
DDR0_DQSP[3]/DDR0_DQSP[5] BD50
DDR1_DQSN[2]/DDR0_DQSN[6] BM54
DDR1_DQSP[2]/DDR0_DQSP[6] BK54
DDR1_DQSN[3]/DDR0_DQSN[7] BK50
DDR1_DQSP[3]/DDR0_DQSP[7] BM50
M_A_DQS#0 [16]
M_A_DQS0 [16]
M_A_DQS#1 [16]
M_A_DQS1 [16]
M_A_DQS#2 [16]
M_A_DQS2 [16]
M_A_DQS#3 [16]
M_A_DQS3 [16]
M_A_DQS#4 [16]
M_A_DQS4 [16]
M_A_DQS#5 [16]
M_A_DQS5 [16]
M_A_DQS#6 [16]
M_A_DQS6 [16]
M_A_DQS#7 [16]
M_A_DQS7 [16]

DDR0_ALERT# BG57
DDR0_PAR BM56
DDR0_ALERT#
R1135 0 RES_0201_12mil
GND

DDR_VREF_CA AR53
DDR0_VREF_DQ AN53
DDR1_VREF_DQ AW53
DIMM_VREF_CA [19]
DIMM0_VREF_DQ [19]
DIMM1_VREF_DQ [19]

DDR_VTT_CNTL BN47

2 OF 20
REV = 0.81

[17] M_B_D[7:0]
M_B_D0 BC41
M_B_D1 BC39
M_B_D2 BG41
M_B_D3 BE39
M_B_D4 BF42
M_B_D5 BD42
M_B_D6 BG39
M_B_D7 BE41
M_B_D8 BC43
M_B_D9 BD46
M_B_D10 BG43
M_B_D11 BG45
M_B_D12 BC45
M_B_D13 BE43
M_B_D14 BE45
M_B_D15 BF46
[17] M_B_D[23:16]
M_B_D16 BM28
M_B_D17 BN27
M_B_D18 BK28
M_B_D19 BL25
M_B_D20 BN25
M_B_D21 BL27
M_B_D22 BJ25
M_B_D23 BJ27
[17] M_B_D[31:24]
M_B_D24 BM24
M_B_D25 BK24
M_B_D26 BN21
M_B_D27 BJ23
M_B_D28 BL23
M_B_D29 BN23
M_B_D30 BJ21
M_B_D31 BL21
[17] M_B_D[39:32]
M_B_D32 BN45
M_B_D33 BM46
M_B_D34 BL43
M_B_D35 BK46
M_B_D36 BN43
M_B_D37 BL45
M_B_D38 BJ45
M_B_D39 BJ43
[17] M_B_D[47:40]
M_B_D40 BM42
M_B_D41 BN41
M_B_D42 BJ41
M_B_D43 BN39
M_B_D44 BK42
M_B_D45 BL41
M_B_D46 BL39
M_B_D47 BJ39
[17] M_B_D[55:48]
M_B_D48 BF28
M_B_D49 BD28
M_B_D50 BG25
M_B_D51 BC27
M_B_D52 BG27
M_B_D53 BE27
M_B_D54 BE25
M_B_D55 BC25
[17] M_B_D[63:56]
M_B_D56 BF24
M_B_D57 BD24
M_B_D58 BG21
M_B_D59 BC23
M_B_D60 BE23
M_B_D61 BG23
M_B_D62 BC21
M_B_D63 BE21

U1001C
SKYLAKE_ULX_EDS/BGA
bga1515_skl_20x16p5mm

SKYLAKE_ULX

DDR0_DQ[32]/DDR1_DQ[0]
DDR0_DQ[33]/DDR1_DQ[1]
DDR0_DQ[34]/DDR1_DQ[2]
DDR0_DQ[35]/DDR1_DQ[3]
DDR0_DQ[36]/DDR1_DQ[4]
DDR0_DQ[37]/DDR1_DQ[5]
DDR0_DQ[38]/DDR1_DQ[6]
DDR0_DQ[39]/DDR1_DQ[7]
DDR0_DQ[40]/DDR1_DQ[8]
DDR0_DQ[41]/DDR1_DQ[9]
DDR0_DQ[42]/DDR1_DQ[10]
DDR0_DQ[43]/DDR1_DQ[11]
DDR0_DQ[44]/DDR1_DQ[12]
DDR0_DQ[45]/DDR1_DQ[13]
DDR0_DQ[46]/DDR1_DQ[14]
DDR0_DQ[47]/DDR1_DQ[15]
DDR0_DQ[32]/DDR1_DQ[16]
DDR0_DQ[33]/DDR1_DQ[17]
DDR0_DQ[34]/DDR1_DQ[18]
DDR0_DQ[35]/DDR1_DQ[19]
DDR0_DQ[36]/DDR1_DQ[20]
DDR0_DQ[37]/DDR1_DQ[21]
DDR0_DQ[38]/DDR1_DQ[22]
DDR0_DQ[39]/DDR1_DQ[23]
DDR0_DQ[40]/DDR1_DQ[24]
DDR0_DQ[41]/DDR1_DQ[25]
DDR0_DQ[42]/DDR1_DQ[26]
DDR0_DQ[43]/DDR1_DQ[27]
DDR0_DQ[44]/DDR1_DQ[28]
DDR0_DQ[45]/DDR1_DQ[29]
DDR0_DQ[46]/DDR1_DQ[30]
DDR0_DQ[47]/DDR1_DQ[31]
DDR0_DQ[48]/DDR1_DQ[32]
DDR0_DQ[49]/DDR1_DQ[33]
DDR0_DQ[50]/DDR1_DQ[34]
DDR0_DQ[51]/DDR1_DQ[35]
DDR0_DQ[52]/DDR1_DQ[36]
DDR0_DQ[53]/DDR1_DQ[37]
DDR0_DQ[54]/DDR1_DQ[38]
DDR0_DQ[55]/DDR1_DQ[39]
DDR0_DQ[56]/DDR1_DQ[40]
DDR0_DQ[57]/DDR1_DQ[41]
DDR0_DQ[58]/DDR1_DQ[42]
DDR0_DQ[59]/DDR1_DQ[43]
DDR0_DQ[60]/DDR1_DQ[44]
DDR0_DQ[61]/DDR1_DQ[45]
DDR0_DQ[62]/DDR1_DQ[46]
DDR0_DQ[63]/DDR1_DQ[47]
DDR1_DQ[48]
DDR1_DQ[49]
DDR1_DQ[50]
DDR1_DQ[51]
DDR1_DQ[52]
DDR1_DQ[53]
DDR1_DQ[54]
DDR1_DQ[55]
DDR1_DQ[56]
DDR1_DQ[57]
DDR1_DQ[58]
DDR1_DQ[59]
DDR1_DQ[60]
DDR1_DQ[61]
DDR1_DQ[62]
DDR1_DQ[63]

DDR CH - B

DDR1_CKN[0] BK36
DDR1_CKP[0] BM36
DDR1_CKN[1] BD32
DDR1_CKP[1] BF32
M_B_DIM0_CLK#0 [17]
M_B_DIM0_CLK0 [17]
M_B_DIM0_CLK#1 [17]
M_B_DIM0_CLK1 [17]

DDR1_CKE[0] BN33
DDR1_CKE[1] BK32
DDR1_CKE[2] BG33
DDR1_CKE[3] BH30
M_B_DIM0_CKE0 [17]
M_B_DIM0_CKE1 [17]
M_B_DIM0_CKE2 [17]
M_B_DIM0_CKE3 [17]

DDR1_CS#[0] BM30
DDR1_CS#[1] BJ33
DDR1_ODT[0] BC35
M_B_DIM0_CS#0 [17]
M_B_DIM0_CS#1 [17]
M_B_DIM0_ODT0 [17]

DDR1_MA[5]/DDR1_CAA[0]/DDR1_MA[5] BK30
DDR1_MA[9]/DDR1_CAA[1]/DDR1_MA[9] BN31
DDR1_MA[6]/DDR1_CAA[2]/DDR1_MA[6] BM32
DDR1_MA[8]/DDR1_CAA[3]/DDR1_MA[8] BL37
DDR1_MA[7]/DDR1_CAA[4]/DDR1_MA[7] BG31
DDR1_BA[2]/DDR1_CAA[5]/DDR1_BG[0] BN37
DDR1_MA[12]/DDR1_CAA[6]/DDR1_MA[12] BJ37
DDR1_MA[11]/DDR1_CAA[7]/DDR1_MA[11] BJ35
DDR1_MA[15]/DDR1_CAA[8]/DDR1_ACT# BM34
DDR1_MA[14]/DDR1_CAA[9]/DDR1_BG[1] BN35
M_B_CAA0
M_B_CAA1
M_B_CAA2
M_B_CAA3
M_B_CAA4
M_B_CAA5
M_B_CAA6
M_B_CAA7
M_B_CAA8
M_B_CAA9
M_B_CAA[9:0] [17]

DDR1_MA[13]/DDR1_CAB[0]/DDR1_MA[13] BG37
DDR1_CAS#/DDR1_CAB[1]/DDR1_MA[15] BE37
DDR1_WE#/DDR1_CAB[2]/DDR1_MA[14] BC37
DDR1_RAS#/DDR1_CAB[3]/DDR1_MA[16] BF34
DDR1_BA[0]/DDR1_CAB[4]/DDR1_BA[4] BC33
DDR1_MA[2]/DDR1_CAB[5]/DDR1_MA[2] BF30
DDR1_BA[1]/DDR1_CAB[6]/DDR1_BA[1] BD36
DDR1_MA[10]/DDR1_CAB[7]/DDR1_MA[10] BG35
DDR1_MA[1]/DDR1_CAB[8]/DDR1_MA[1] BC31
DDR1_MA[0]/DDR1_CAB[9]/DDR1_MA[0] BF36
M_B_CAB0
M_B_CAB1
M_B_CAB2
M_B_CAB3
M_B_CAB4
M_B_CAB5
M_B_CAB6
M_B_CAB7
M_B_CAB8
M_B_CAB9
M_B_CAB[9:0] [17]

DDR1_MA[3] BJ31
DDR1_MA[4] BK34

DDR0_DQSN[4]/DDR1_DQSN[0] BD40
DDR0_DQSP[4]/DDR1_DQSP[0] BF40
DDR0_DQSN[5]/DDR1_DQSN[1] BD44
DDR0_DQSP[5]/DDR1_DQSP[1] BF44
DDR1_DQSN[4]/DDR1_DQSN[2] BK26
DDR1_DQSP[4]/DDR1_DQSP[2] BM26
DDR1_DQSN[5]/DDR1_DQSN[3] BM22
DDR1_DQSP[5]/DDR1_DQSP[3] BK22
DDR0_DQSN[6]/DDR1_DQSN[4] BK44
DDR0_DQSP[6]/DDR1_DQSP[4] BM44
DDR0_DQSN[7]/DDR1_DQSN[5] BM40
DDR0_DQSP[7]/DDR1_DQSP[5] BK40
DDR1_DQSN[6] BD26
DDR1_DQSP[6] BF26
DDR1_DQSN[7] BF22
DDR1_DQSP[7] BD22
M_B_DQS#0 [17]
M_B_DQS0 [17]
M_B_DQS#1 [17]
M_B_DQS1 [17]
M_B_DQS#2 [17]
M_B_DQS2 [17]
M_B_DQS#3 [17]
M_B_DQS3 [17]
M_B_DQS#4 [17]
M_B_DQS4 [17]
M_B_DQS#5 [17]
M_B_DQS5 [17]
M_B_DQS#6 [17]
M_B_DQS6 [17]
M_B_DQS#7 [17]
M_B_DQS7 [17]

DDR1_ALERT# BD34
DDR1_PAR BD30
DRAM_RESET# BP20
DDR1_ALERT#
SM_DRAMRST#
R1118 NO-STUFF RES_0201_12mil
DNP,CPU

DDR_RCOMP[0] BF64
DDR_RCOMP[1] BJ64
DDR_RCOMP[2] BC64
SM_RCOMP_0 1% 200 R1111 RES_0201_12mil
SM_RCOMP_1 80.6 R1134 RES_0201_12MIL
SM_RCOMP_2 1% 162 R1112 RES_0402_16mil

R1136 0 RES_0201_12mil
+1P2V_DUAL
GND

3 OF 20
REV = 0.81

U1102
74AUP1G07GX
sot1226_p8xp8xp35_p48mm
VCC 5
A 4
Y
NC 1
GND 3

DDR_PG_CTRL_S 2
DDR_PG_CTRL [60]

+1P2V_DUAL
+3P3VSB
+3P3V
DNP,CPU R1114 NO-STUFF res_0201_12mil
R1115 4.99K RES_0201_12mil
DNP,CPU R1117 NO-STUFF RES_0201_12mil
DNP,CPU R1113 NO-STUFF RES_0201_12mil
C1101 0.1u cap_0201_14mil
GND

Place on secondary side, underneath the package

+1P2V_DUAL

C7543 C7531 C7533 C7532 C7534 C7535 — 0.1u 6.3V — GND
C7541 C7523 C7524 C7525 C7526 C7536 — 0.1u 6.3V — GND
C7542 C7528 C7527 C7529 C7530 C7537 — 0.1u 6.3V — GND

R1201 0 RES_0402_16mil
C1287 1u 6.3V cap_0201_14mil — GND

U1001N
SKYLAKE_ULX_EDS/BGA

+1P2V_DUAL
AH64 BA27 BA37 BA49 BP32 BP50 AK64 BA29 BA41 BA51 BP34 BP56 AT64 BA31 BA43 BN64 BP40 BP58 AV64 BA33 BA45 BP24 BP42 BP64 BA25 BA35 BA47 BP26 BP48 BA39 — VDDQ
VDDQC

+VCCST_CPU
Vccst <= 0.12A
from 1VSB, control SLP_S4 (S3 rail)
V26 Y26 — VCCST

+VCCSTG Vccstg<=0.16A
R26 T26 — VCCSTG

+VCCPLL_OC Vccpll_oc<=0.35A
AE27 AF27 — VCCPLL_OC

DNP, CPU
R1202 NO-STUFF RES_0402_16mil

C1246 C1247 C1248 — 0.1u 6.3V — GND
Place on secondary side, underneath the package

+VCCST_CPU
C1288 0.1u 6.3V — GND
R27 T27 — VCCPLL

SKYLAKE_ULX
CPU POWER 3 OF 4
14 OF 20
REV = 0.81

+VCCIO Vccio <= 2.39A
BV2.9
was: cap_0603_38mil
was: EX_DIO_0402_24MIL_AA
was:X882617-001

DNP,CPU
C1263 NO-STUFF 6.3V NO-STUFF — cap_0603_p95mil
C1264 1u 6.3V — CAP_0201_14mil — GND

AC23 AF24 AN26 AC24 AF26 AR26 AE23 AH26 AT26 AE24 AK26 AE26 AL26 — VCCIO
AV26 AV36 AV46 AW31 AW41 AW51 AV28 AV38 AV48 AW33 AW43 AV30 AV40 AV50 AW35 AW45 AV32 AW42 AW27 AW37 AW47 AW34 AW44 AW29 AW39 AW49 — VCCIO_DDR

AT24 AR24 — VCCIO_SENSE, VSSIO_SENSE
VCCIO_SENSE [56]

Place on secondary side, underneath the package

C7513 C7515 C7514 C7516 C7517 C7538 — 0.1u 6.3V — GND
C7505 C7506 C7507 C7508 C7518 C7539 — 0.1u 6.3V — GND
C7509 C7510 C7511 C7512 C7519 C7540 — 0.1u 6.3V — GND
C7520 C7521 C7522 C1228 C1229 — 0.1u 6.3V — GND

+VCC_CORE_G0
Place on secondary side, underneath the package

C1208 C1209 C1210 C1211 — 0.1u 6.3V — GND
C1224 C1201 C1202 C1203 — 0.1u 6.3V — GND
C1204 C1205 C1206 C1207 — 0.1u 6.3V — GND

+VCC_CORE_G1
Place on secondary side, underneath the package

C1220 C1222 C1221 C1223 — 0.1u 6.3V — GND
C1212 C1213 C1214 C1215 — 0.1u 6.3V — GND
C1216 C1217 C1218 C1219 — 0.1u 6.3V — GND

+VCC_CORE

U1001L
SKYLAKE_ULX_EDS/BGA

A64 AE32 AE40 AH41 AN32 AT33 AT41 J64 L48 M33 M43 M53 M64 N40 N59 P60 R57 T41 AA32 AE33 AE41 AK32 AN41 AT35 B64 L40 L50 M35 M45 M56 N32 N42 N61 P62 R59 V32 AA41 AE35 AF32 AK41 AR32 AT36 D64 L42 L52 M37 M47 R63 P56 R32 Y32 — VCC
M58 N34 N54 N63 P64 R61 V41 AC41 AE38 AH32 AL41 AT32 AT40 H63 L46 L63 M41 M51 M62 N38 N57 P58 R41 T32 Y41 AC32 AE36 AF41 AL32 AR41 AT38 F64 L44 L54 M39 M49 M60 N36 N55 — VCC

VCC_SENSE L34 — VCC_CORE_SENSE [66]
VSS_SENSE L32 — VSS_CORE_SENSE [66]

VIDALERT# B58 — H_CPU_SVIDALERT# R1216 220 res_0201_12mil — VIDALERT# [66]
VIDSCK A56 — H_CPU_SVIDCLK R1209 0 RES_0201_12mil — VIDSCLK [66]
VIDSOUT A58 — H_CPU_SVIDDAT R1207 0 RES_0201_12mil — VIDSOUT [66]

VCCSTG AA26 AC26 — VCCSTG

SKYLAKE_ULX
CPU POWER 1 OF 4
12 OF 20
REV = 0.81

+VCCSA

C1271 C1272 C1270 C1277 — 22u 6.3V — CAP_0603_40mil — GND
C7544 C1276 C1278 C1279 C1280 — 0.1u 6.3V — cap_0201_14mil — GND
C7545 — 1.0u 6.3V — CAP_0201_14mil — GND
C1282 C1283 C1284 C1286 C1285 — 0.1u 6.3V — cap_0201_14mil — GND

Place on secondary side, underneath the package

+VCCSA
R1203 0 RES_0402_16mil
+VCCSA_DDR
C1225 C1226 — 0.1u 6.3V — cap_0201_14mil — GND
C1227 22u 6.3V — CAP_0603_40mil — GND

U1001O
SKYLAKE_ULX_EDS/BGA

AA29 AF30 AN29 L30 T30 AC29 AH29 AN30 M31 V29 AC30 AK29 AR29 N30 Y29 AE29 AK30 R29 Y30 AF29 AL29 T29 — VCCSA
AT29 AT30 — VCCSA_DDR

M29 N28 — VCCSA_SENSE, VSSSA_SENSE
[66] VCCSA_SENSE
[66] VSSSA_SENSE

SKYLAKE_ULX
CPU POWER 4 OF 4
15 OF 20
REV = 0.81

AA35 R38 Y35 AA38 T35 Y38 AC35 T38 AC38 V35 R35 V38 — VCCG0
AF35 AK38 AR35 AF38 AL35 AR38 AH35 AL38 AH38 AN35 AK35 AN38 — VCCG1

+VCCST_CPU
R1215 49.9 RES_0201_12mil
R1212 100 RES_0201_12mil
+VCCSTG

+VCCSTG is control by SLP_S0, but it can overwrite by XDP, that means it need power for XDP interface

U1001M
SKYLAKE_ULX_EDS/BGA

SKYLAKE_ULX

+VCCGT

AA53	VCCGT	AC53
AB62	VCCGT	AC63
AC47	VCCGT	AD62
AC55	VCCGT	AE59
AD54	VCCGT	AF46
AD64	VCCGT	AG53
AE61	VCCGT	AK47
AF47	VCCGT	AN44
AJ53	VCCGT	AN51
AK49	VCCGT	AT49
AN46	VCCGT	N48
AT43	VCCGT	T44
AT50	VCCGT	T51
N50	VCCGT	U59
T46	VCCGT	V58
T54	VCCGT	W55
U61	VCCGT	Y43
V60	VCCGT	Y50
W57	VCCGT	Y60
Y44	VCCGT	AB56
Y51	VCCGT	AC43
Y62	VCCGT	AC50
AB54	VCCGT	AC59
AB64	VCCGT	AD58
AC49	VCCGT	AE55
AC57	VCCGT	AF43
AD56	VCCGT	AF50
AE53	VCCGT	AK44
AE63	VCCGT	AK51
AF49	VCCGT	AN49
AK43	VCCGT	AT46
AK50	VCCGT	N44
AN47	VCCGT	R53
AT44	VCCGT	T49
AT51	VCCGT	U55
R51	VCCGT	V54
T47	VCCGT	V64
U53	VCCGT	W61
U63	VCCGT	Y47
V62	VCCGT	Y56
W59	VCCGT	AN50
Y46	VCCGT	AT47
Y54	VCCGT	N46
Y64	VCCGT	T43
AB58	VCCGT	T50
AC44	VCCGT	U57
AC51	VCCGT	V56
AC61	VCCGT	W53
AD60	VCCGT	W63
AE57	VCCGT	Y49
AF44	VCCGT	Y58
AF51	VCCGT	AN43
AK46	VCCGT	
AB60	VCCGT	
AC46	VCCGT	
	VCCGT_SENSE	N52
	VSSGT_SENSE	P52

VCCGT_SENSE [66]
VSSGT_SENSE [66]

CPU POWER 2 OF 4
13 OF 20
REV = 0.81

+VCCGT

C7602 0.1u 6.3V
C7601 0.1u 6.3V
C7584 0.1u 6.3V
C7583 0.1u 6.3V
C7586 0.1u 6.3V
C7585 0.1u 6.3V
C7579 0.1u 6.3V
C7581 0.1u 6.3V
C7580 0.1u 6.3V
C7582 0.1u 6.3V
C7587 0.1u 6.3V
C7588 0.1u 6.3V
C7589 0.1u 6.3V
GND

C7603 1u 6.3V
GND
C7551 0.1u 6.3V
C7550 0.1u 6.3V
C7553 0.1u 6.3V
C7552 0.1u 6.3V
C7546 0.1u 6.3V
C7548 0.1u 6.3V
C7547 0.1u 6.3V
C7549 0.1u 6.3V
C7554 0.1u 6.3V
C7555 0.1u 6.3V
C7556 0.1u 6.3V
GND

C1355 10u 4V
C1353 10u 4V
C7562 0.1u 6.3V
C7561 0.1u 6.3V
C7564 0.1u 6.3V
C7563 0.1u 6.3V
C7557 0.1u 6.3V
C7559 0.1u 6.3V
C7558 0.1u 6.3V
C7560 0.1u 6.3V
C7565 0.1u 6.3V
C7566 0.1u 6.3V
C7567 0.1u 6.3V
GND

C7573 0.1u 6.3V
C7571 0.1u 6.3V
C7575 0.1u 6.3V
C7574 0.1u 6.3V
C7568 0.1u 6.3V
C7570 0.1u 6.3V
C7569 0.1u 6.3V
C7572 0.1u 6.3V
C7576 0.1u 6.3V
C7577 0.1u 6.3V
C7578 0.1u 6.3V
GND

C7595 0.1u 6.3V
C7593 0.1u 6.3V
C7597 0.1u 6.3V
C7596 0.1u 6.3V
C7590 0.1u 6.3V
C7592 0.1u 6.3V
C7591 0.1u 6.3V
C7594 0.1u 6.3V
C7598 0.1u 6.3V
C7599 0.1u 6.3V
C7600 0.1u 6.3V
GND

C1382 47u
C1381 47u
C1384 47u
C1383 47u
C1377 47u
C1378 47u
C1379 47u
C1380 47u
C1385 47u
C1386 47u
GND

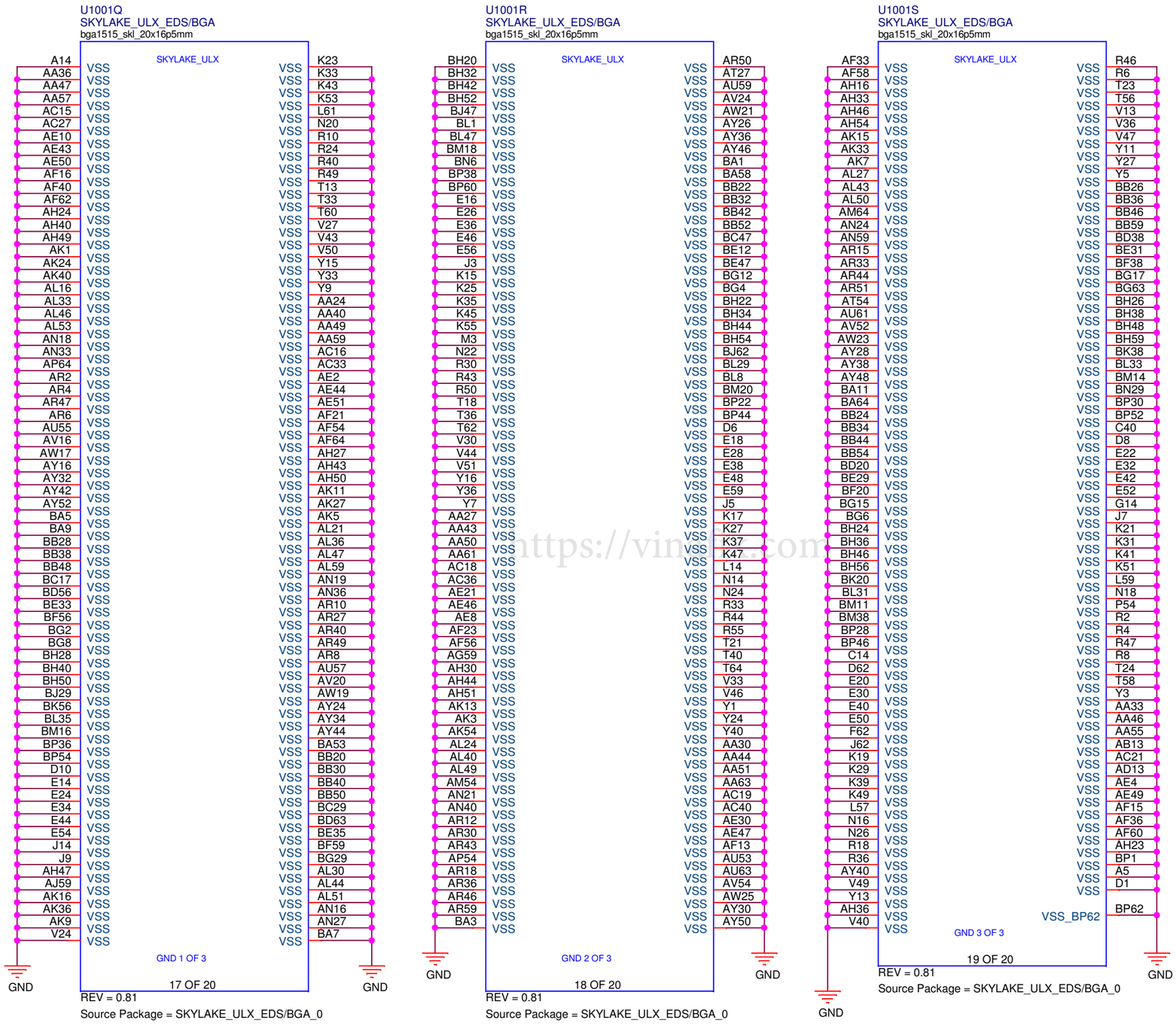
+VCC_CORE

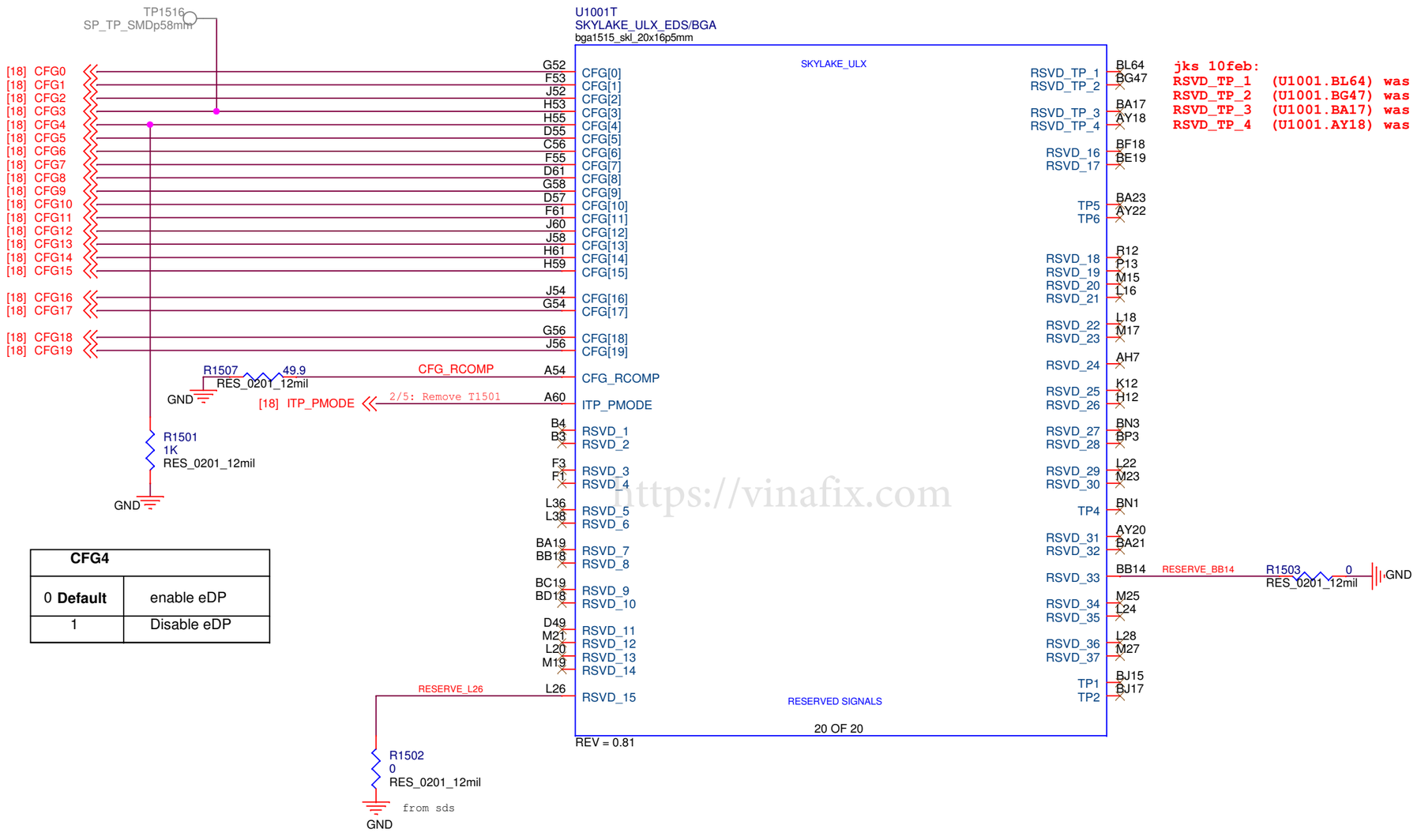
C1390 0.1u 6.3V
C7620 0.1u 6.3V
C7619 0.1u 6.3V
C7616 0.1u 6.3V
C7615 0.1u 6.3V
C7618 0.1u 6.3V
C7617 0.1u 6.3V
C7613 0.1u 6.3V
C7614 0.1u 6.3V
C7636 0.1u 6.3V
C7635 0.1u 6.3V
C7632 0.1u 6.3V
C7631 0.1u 6.3V
C7633 0.1u 6.3V
C7634 0.1u 6.3V
C7629 0.1u 6.3V
C7630 0.1u 6.3V
GND

C7628 0.1u 6.3V
C7627 0.1u 6.3V
C7624 0.1u 6.3V
C7623 0.1u 6.3V
C7626 0.1u 6.3V
C7625 0.1u 6.3V
C7621 0.1u 6.3V
C7622 0.1u 6.3V
C7644 0.1u 6.3V
C7643 0.1u 6.3V
C7641 0.1u 6.3V
C7639 0.1u 6.3V
C7640 0.1u 6.3V
C7642 0.1u 6.3V
C7637 0.1u 6.3V
C7638 0.1u 6.3V
GND

C1315 10u 4V
C1314 10u 4V
C1317 10u 4V
C1316 10u 4V
C1310 10u 4V
C1328 10u 4V
C1327 10u 4V
C1326 10u 4V
C1325 10u 4V
GND

C7610 47u
C7607 47u
C7612 47u
C7609 47u
C7604 47u
C7605 47u
C7606 47u
C7608 47u
C7611 47u
GND



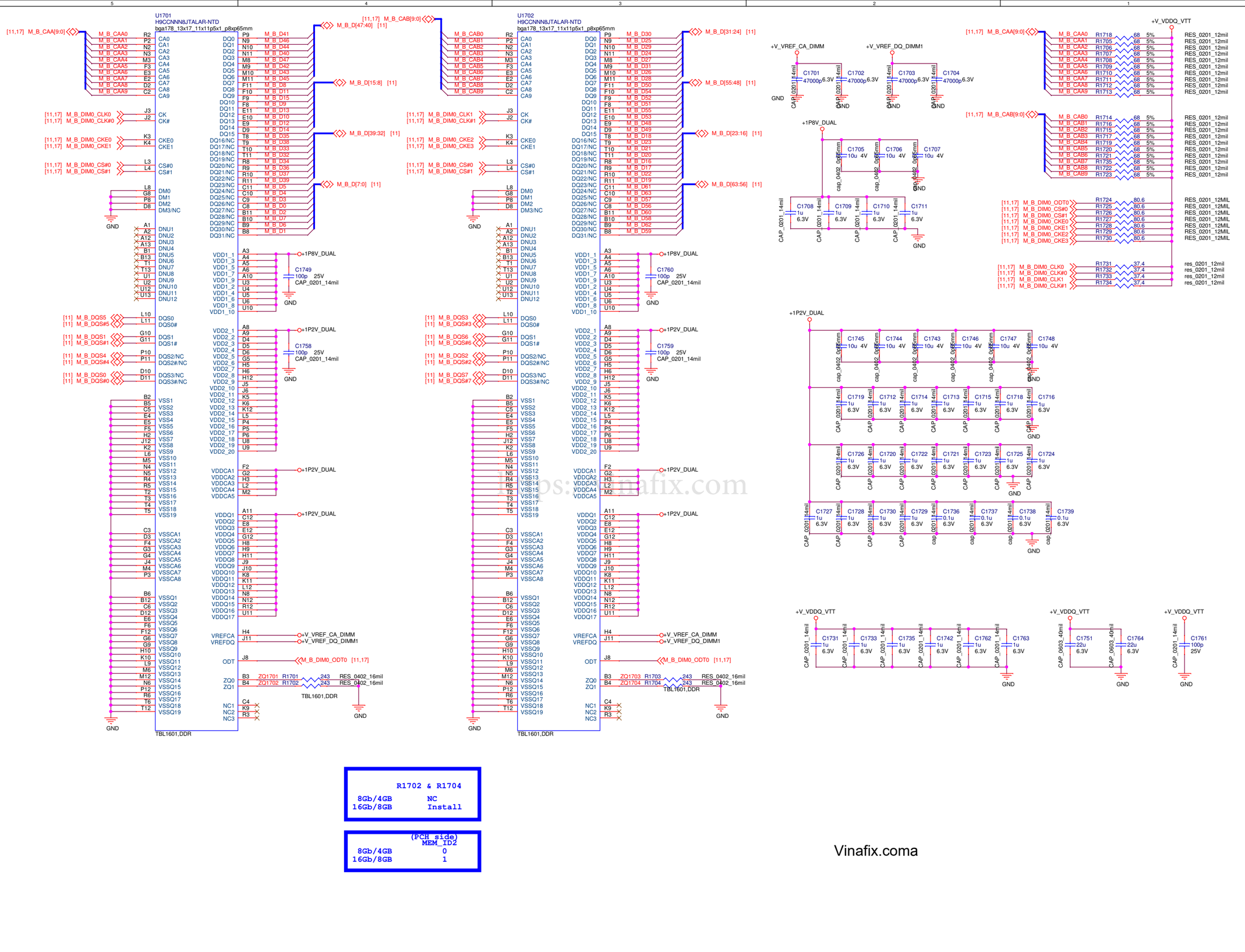


CFG4	
0 **Default**	enable eDP
1	Disable eDP

U1601
H9CCNNN8JTALAR-NTD
bga178_13x17_11x11p5x1_p8xp65mm

U1602
H9CCNNN8JTALAR-NTD
bga178_13x17_11x11p5x1_p8xp65mm

TBL1601,DDR


U1701
H9CCNNN8JTALAR-NTD
bga178_13x17_11x11p5x1_p8xp65mm
U1702
H9CCNNN8JTALAR-NTD
bga178_13x17_11x11p5x1_p8xp65mm
TBL1601,DDR
TBL1601,DDR
+V_VREF_CA_DIMM
+V_VREF_DQ_DIMM1
+V_VDDQ_VTT
+1P8V_DUAL
+1P2V_DUAL
GND
R1702 & R1704
8Gb/4GB NC
16Gb/8GB Install
(PCH side)
MEM_ID2
8Gb/4GB 0
16Gb/8GB 1
Vinafix.coma

PRIMARY XDP connector

[15,18] CFG3
ROUTE WITH MINIMAL STUB WITH RESPECT TO CFG<3>
DB,XDP R1841 1K RES_0201_12mil
DB,XDP R1840 0 RES_0201_12mil
+1VSB_XDP
DNP,XDP R1803 NO-STUFF RES_0201_12mil
+1VSB
DB,XDP R1838 0 RES_0201_12mil
+1VSB_XDP
DB,XDP J1801 X869110-001 B2B 60P
conn_b2b-r_60_4mtg_14p2x2p54xp88_p4mm
RECEPTACLE
XDP_PIN1

[24] XDP_PREQ#
[24] XDP_PRDY#
[15,18] CFG0
[15] CFG1
[15] CFG2
[15,18] CFG3
[10] XDP_BPM0
[10] XDP_BPM1
[15] CFG4
[15] CFG5
[15] CFG6
[15] CFG7

CFG17 [15]
CFG16 [15]
CFG8 [15]
CFG9 [15]
CFG10 [15]
CFG11 [15]
CFG19 [15]
CFG18 [15]
CFG12 [15]
CFG13 [15]
CFG14 [15]
CFG15 [15]

+1VSB_XDP
DNP,XDP C1803 NO-STUFF CAP_0201_14mil
GND
+3P3VSB
DB,XDP R1826 1.5K RES_0201_12mil

PM_RSMRST_PWRGD_XDP
PM_PWRBTN#_XDP
[15,18] CFG0
R1843 DNP,XDP NO-STUFF RES_0201_12mil
XDP_MOSI_R
[21] SMBDATA
[21] SMBCLK
XDP_TCK1
R1821 DB,XDP 0 RES_0201_12mil
R1853 DNP,XDP NO-STUFF RES_0201_12mil
R1811 DB,XDP 0 RES_0201_12mil

CLK_XDP_R_DP
CLK_XDP_R_DN
XDP_RST#_R
XDP_DBRESET#_R
XDP_TDO_BUF
XDP_TDI_R
XDP_PIN60

+1VSB_XDP
DB,XDP R1844 1K RES_0201_12mil
+1VSB_XDP
DB,XDP R1823 1K RES_0201_12mil
+3P3V

+VCCSTG
DNP,XDP R1825 NO-STUFF RES_0201_12mil
Place R1825 within 1100mil from CPU

[22,36] RSMRST#
[22] PCH_PWRBTN#
[30,32,33] PWR_SW_N
R1842 DB,XDP 1K RES_0201_12mil
R1807 DB,XDP 0 RES_0201_12mil
R1804 DNP,XDP NO-STUFF RES_0201_12mil
[21] SPI0_MOSI_XDP
R1846 DB,XDP 0 RES_0201_12mil

DB,XDP PC1804 0.1u 6.3V cap_0201_14mil
DB,XDP PC1805 0.1u 6.3V cap_0201_14mil
GND
GND

[10] PCH_JTAG_TCK
[10] XDP_TCK
[10] PCH_JTAGX
[21] XDP_SPI0_IO2
R1845 DB,XDP 0 RES_0201_12mil
R1854 DNP,XDP NO-STUFF RES_0201_12mil

R1805 DB,XDP 0 RES_0201_12mil
R1806 DB,XDP 0 RES_0201_12mil
R1837 DB,XDP 0 RES_0201_12mil
R1808 DNP,XDP NO-STUFF RES_0201_12mil
R1810 DB,XDP 0 RES_0201_12mil
R1809 DB,XDP 0 RES_0201_12mil
R1849 DB,XDP 0 RES_0201_12mil
R1851 DB,XDP 0 RES_0201_12mil

CLK_XDP_DP [20]
CLK_XDP_DN [20]
ITP_PMODE [15]
PLT_RST#_BUF [22,36,38,43,75]
PCH_SYS_RST# [22]
XDP_TRST#_BUF [10]
XDP_TDO [10]
XDP_TRST# [10]
XDP_TDI [10]
XDP_TMS [10]

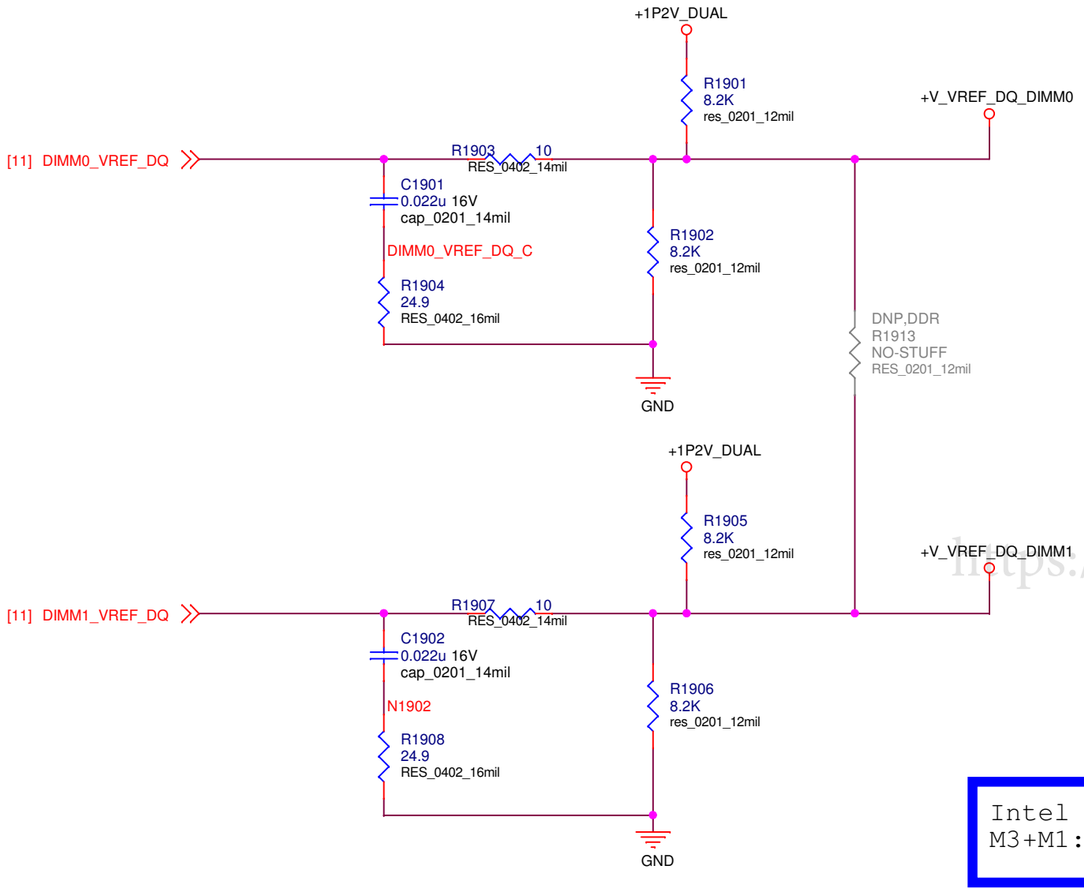
DB,XDP C1801 0.01u 10V CAP_0201_14mil
GND
DNP,XDP R1852 NO-STUFF RES_0201_12mil

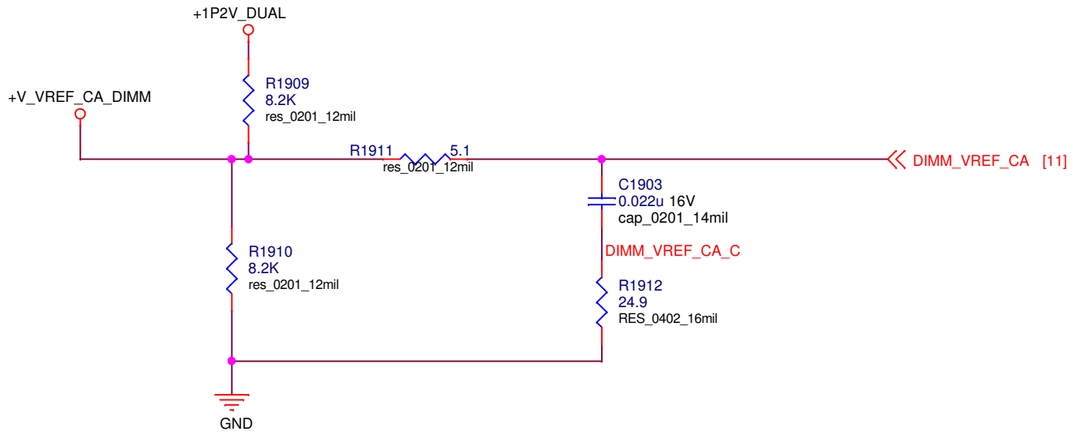
R1822 DB,XDP 0 RES_0201_12mil
R1848 DB,XDP 0 RES_0201_12mil
R1847 DB,XDP 0 RES_0201_12mil
PCH_JTAG_TDI [10]
PCH_JTAG_TMS [10]
PCH_JTAG_TDO [10]

For the signals only go to XDP, the 0R should be close to XDP connector.
For the signals to both XDP and target circuit, the option resistor locaction should follow the target signal routing.

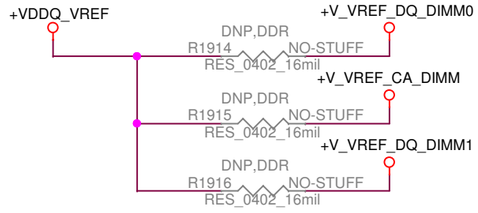
LPDDR3 Vref

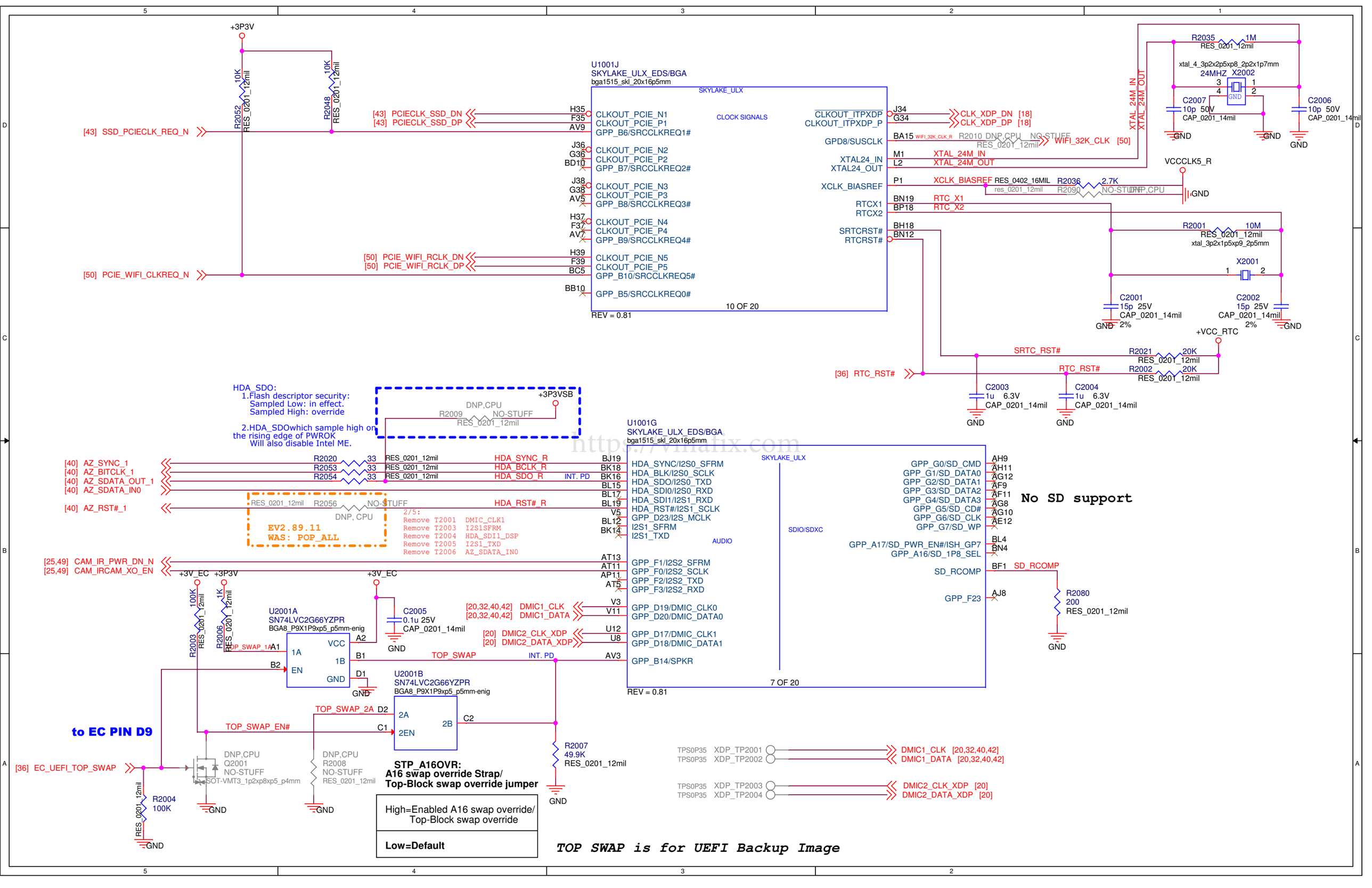
M3: CPU driven VREF path is stuffed be default.
M1: VREF_DQ driven by a Voltage Divider Network during Processor power-off





Intel 0203
M3+M1: Default Recommendation




+3P3V
R2052 10K RES_0201_12mil
R2048 10K RES_0201_12mil
[43] SSD_PCIECLK_REQ_N
[50] PCIE_WIFI_CLKREQ_N
U1001J
SKYLAKE_ULX_EDS/BGA
bga1515_skl_20x16p5mm
SKYLAKE_ULX
CLOCK SIGNALS
[43] PCIECLK_SSD_DN
[43] PCIECLK_SSD_DP
H35 CLKOUT_PCIE_N1
F35 CLKOUT_PCIE_P1
AV9 GPP_B6/SRCCLKREQ1#
J36 CLKOUT_PCIE_N2
G36 CLKOUT_PCIE_P2
BD10 GPP_B7/SRCCLKREQ2#
J38 CLKOUT_PCIE_N3
G38 CLKOUT_PCIE_P3
AV5 GPP_B8/SRCCLKREQ3#
H37 CLKOUT_PCIE_N4
F37 CLKOUT_PCIE_P4
AV7 GPP_B9/SRCCLKREQ4#
[50] PCIE_WIFI_RCLK_DN
[50] PCIE_WIFI_RCLK_DP
H39 CLKOUT_PCIE_N5
F39 CLKOUT_PCIE_P5
BC5 GPP_B10/SRCCLKREQ5#
BB10 GPP_B5/SRCCLKREQ0#
10 OF 20
REV = 0.81
CLKOUT_ITPXDP J34
CLKOUT_ITPXDP_P G34
GPD8/SUSCLK BA15
XTAL24_IN M1
XTAL24_OUT L2
XCLK_BIASREF P1
RTCX1 BN19
RTCX2 BP18
SRTCRST# BH18
RTCRST# BN12
CLK_XDP_DN [18]
CLK_XDP_DP [18]
WIFI_32K_CLK_R
R2010 DNP,CPU NO-STUFF RES_0201_12mil
WIFI_32K_CLK [50]
XTAL_24M_IN
XTAL_24M_OUT
XCLK_BIASREF
RES_0402_16MIL
res_0201_12mil
R2036 2.7K
R2090 NO-STUFF DNP,CPU
VCCCLK5_R
GND
RTC_X1
RTC_X2
R2035 1M RES_0201_12mil
xtal_4_3p2x2p5xp8_2p2x1p7mm
24MHZ_X2002
C2007 10p 50V CAP_0201_14mil
C2006 10p 50V CAP_0201_14mil
R2001 10M RES_0201_12mil
xtal_3p2x1p5xp9_2p5mm
X2001
C2001 15p 25V CAP_0201_14mil 2%
C2002 15p 25V CAP_0201_14mil 2%
+VCC_RTC
SRTC_RST#
RTC_RST#
R2021 20K RES_0201_12mil
R2002 20K RES_0201_12mil
[36] RTC_RST#
C2003 1u 6.3V CAP_0201_14mil
C2004 1u 6.3V CAP_0201_14mil
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.
+3P3VSB
DNP,CPU
R2009 NO-STUFF
RES_0201_12mil
U1001G
SKYLAKE_ULX_EDS/BGA
bga1515_skl_20x16p5mm
SKYLAKE_ULX
[40] AZ_SYNC_1
[40] AZ_BITCLK_1
[40] AZ_SDATA_OUT_1
[40] AZ_SDATA_IN0
[40] AZ_RST#_1
R2020 33 RES_0201_12mil HDA_SYNC_R
R2053 33 RES_0201_12mil HDA_BCLK_R
R2054 33 RES_0201_12mil HDA_SDO_R
HDA_RST#_R
INT. PD
HDA_SYNC/I2S0_SFRM BJ19
HDA_BLK/I2S0_SCLK BK18
HDA_SDO/I2S0_TXD BK16
HDA_SDI0/I2S0_RXD BL15
HDA_SDI1/I2S1_RXD BL17
HDA_RST#/I2S1_SCLK BL19
GPP_D23/I2S_MCLK V5
I2S1_SFRM BL12
I2S1_TXD BK14
AUDIO
SDIO/SDXC
GPP_G0/SD_CMD AH9
GPP_G1/SD_DATA0 AH11
GPP_G2/SD_DATA1 AG12
GPP_G3/SD_DATA2 AF9
GPP_G4/SD_DATA3 AF11
GPP_G5/SD_CD# AG8
GPP_G6/SD_CLK AG10
GPP_G7/SD_WP AE12
GPP_A17/SD_PWR_EN#/ISH_GP7 BL4
GPP_A16/SD_1P8_SEL BN4
SD_RCOMP BF1
GPP_F23 AJ8
No SD support
7 OF 20
REV = 0.81
RES_0201_12mil R2056 NO-STUFF DNP, CPU
EV2.89.11
WAS: POP_ALL
2/5:
Remove T2001 DMIC_CLK1
Remove T2003 I2S1SFRM
Remove T2004 HDA_SDI1_DSP
Remove T2005 I2S1_TXD
Remove T2006 AZ_SDATA_IN0
[25,49] CAM_IR_PWR_DN_N
[25,49] CAM_IRCAM_XO_EN
GPP_F1/I2S2_SFRM AT13
GPP_F0/I2S2_SCLK AT11
GPP_F2/I2S2_TXD AP11
GPP_F3/I2S2_RXD AT5
GPP_D19/DMIC_CLK0 V3
GPP_D20/DMIC_DATA0 V11
GPP_D17/DMIC_CLK1 U12
GPP_D18/DMIC_DATA1 U8
GPP_B14/SPKR AV3
[20,32,40,42] DMIC1_CLK
[20,32,40,42] DMIC1_DATA
[20] DMIC2_CLK_XDP
[20] DMIC2_DATA_XDP
+3V_EC
+3P3V
+3V_EC
R2003 100K RES_0201_12mil
R2006 1K RES_0201_12mil
U2001A
SN74LVC2G66YZPR
BGA8_P9X1P9xp5_p5mm-enig
TOP_SWAP_1A
1A
1B
EN
VCC
GND
A2
B1
A1
B2
D1
C2005 0.1u 25V CAP_0201_14mil
TOP_SWAP
INT. PD
U2001B
SN74LVC2G66YZPR
BGA8_P9X1P9xp5_p5mm-enig
TOP_SWAP_2A
2A
2EN
2B
D2
C1
C2
TOP_SWAP_EN#
to EC PIN D9
[36] EC_UEFI_TOP_SWAP
DNP,CPU
Q2001
NO-STUFF
SOT-VMT3_1p2xp8xp5_p4mm
DNP,CPU
R2008
NO-STUFF
RES_0201_12mil
R2004
100K
RES_0201_12mil
R2007
49.9K
RES_0201_12mil
STP_A16OVR:
A16 swap override Strap/
Top-Block swap override jumper
High=Enabled A16 swap override/ Top-Block swap override
Low=Default
TPS0P35 XDP_TP2001
TPS0P35 XDP_TP2002
TPS0P35 XDP_TP2003
TPS0P35 XDP_TP2004
DMIC1_CLK [20,32,40,42]
DMIC1_DATA [20,32,40,42]
DMIC2_CLK_XDP [20]
DMIC2_DATA_XDP [20]
TOP SWAP is for UEFI Backup Image
https://vinafix.com

Connected to device.
Default : Clock free run. (PD 10K).
Reserver 10K PU for power saving purpose.

[18] XDP_SPI0_IO2
[18] SPI0_MOSI_XDP

R2133 1K RES_0201_12mil
R2134 1K RES_0201_12mil

Clost to PCH
*SPI_SO @ PROM

[37] SPI_CLK — R2136 15 RES_0201_12mil SPI_CLK_R — AU10
[37] SPI_SO — R2135 15 RES_0201_12mil SPI_SO_R — AU12
[37] SPI_SI — R2139 15 RES_0201_12mil SPI_SI_R — AT3
[37] SPI_WP_IO2 — R2137 15 RES_0201_12mil SPI_WP_IO2_R — AV11
[37] SPI_HOLD#_IO3 — R2138 15 RES_0201_12mil SPI_HOLD#_IO3_R — AV13
[37] SPI_CS#0 — R2141 15 RES_0201_12mil SPI_CS#0_R — AU4

U1001E
SKYLAKE_ULX_EDS/BGA
bga1515_skl_20x16p5mm

SKYLAKE_ULX

SPI0_CLK
SPI0_MISO
SPI0_MOSI
SPI0_IO2
SPI0_IO3
SPI0_CS0#
SPI0_CS1#
SPI0_CS2#
SPI - FLASH

SMBUS, SMLINK

GPP_C0/SMBCLK — AC12
GPP_C1/SMBDATA — W6
GPP_C2/SMBALERT# — W8 INT. PD — SMBALERT#
GPP_C3/SML0CLK — W4 SML0CLK
GPP_C4/SML0DATA — AC10 SML0DAT
GPP_C5/SML0ALERT# — AA6 INT. PD
GPP_C6/SML1CLK — AA4
GPP_C7/SML1DATA — W10
GPP_B23/SML1ALERT#/PCHHOT# — BB6 INT. PD — SMB1ALERT#

[30] TS_SPI_CLK — R2109 15 RES_0201_12mil TS_SPI_CLK_R — P9
[30] TS_SPI_MISO — R2105 15 RES_0201_12mil TS_SPI_MISO_R — N8
[30] TS_SPI_MOSI — R2101 15 RES_0201_12mil TS_SPI_MOSI_R — P3
[25,53,54] CAM_F_PWR_DN_N — R2111 DNP,CPUNO-STUFF RES_0201_12mil GPP_D21 — W12
[25,53,54] CAM_R_PWR_DN_N — R2108 DNP,CPUNO-STUFF RES_0201_12mil GPP_D22 — V7
[30] TS_SPI_CS_N — R2112 15 RES_0201_12mil TS_SPI_CS_N_R — N6

SPI - TOUCH

GPP_D1
GPP_D2
GPP_D3
GPP_D21
GPP_D22
GPP_D0

LPC

GPP_A1/LAD0/ESPI_IO0 — BK11
GPP_A2/LAD1/ESPI_IO1 — BJ8
GPP_A3/LAD2/ESPI_IO2 — BG10
GPP_A4/LAD3/ESPI_IO3 — BP5
GPP_A5/LFRAME#/ESPI_CS# — BP7
GPP_A14/SUS_STAT#/ESPI_RESET# — BJ6
GPP_A9/CLKOUT_LPC0/ESPI_CLK — BJ10
GPP_A10/CLKOUT_LPC1 — BF5
GPP_A8/CLKRUN# — BH11

C LINK

F12 CL_CLK
D12 CL_DATA
B12 CL_RST#

GPP_A0/RCIN# — BL10
GPP_A6/SERIRQ — BN8

5 OF 20
REV = 0.81

[36] RC_IN#
DNP,CPU C2105 NO-STUFF CAP_0201_14mil
GND
+3P3V
R2132 8.2K res_0201_12mil
[36,38] PCH_SERIRQ — Serial Interrupt Request

2/5:
Remove T2110 SPI_CS#1
Remove T2117 SPI_CS#2
Remove T2103 SPI_WP_IO2_R
Remove T2005 ICAM_F_PWR_DN_N
Remove T2006 ICAM_R_PWR_DN_N

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

+3P3VSB

R2102 1K RES_0201_12mil
R2103 1K RES_0201_12mil
R2107 1K RES_0201_12mil
R2110 1K RES_0201_12mil
R2104 1K RES_0201_12mil
R2106 1K RES_0201_12mil

2/5:
Remove T2120 SMBCLK
Remove T2121 SMBDATA
Remove T2122 GND
Remove T2102 SMB1ALERT#

SMBCLK [18]
SMBDATA [18]
TP2101 SP_TP_SMDp58mm
TP2129 SP_TP_SMDp58mm
SD_CD#_PCH [48]
SML1_PCH_CLK [35]
SML1_PCH_DATA [35]

R2140 150K RES_0201_12mil +3P3VSB

LAD0 [36,38]
LAD1 [36,38]
LAD2 [36,38]
LAD3 [36,38]
LFRAME# [36,38]

SUS_STAT#_R — TP2128 SP_TP_SMDp58mm

CK_24M_EC_R R2123 22 RES_0201_12mil — CK_24M_EC [36]
CK_24M_TPM_R R2129 22 RES_0201_12mil — CK_24M_TPM [38]

DNP,CPU C2103 NO-STUFF CAP_0201_14mil
DNP,CPU C2104 NO-STUFF CAP_0201_14mil
GND GND

+3P3V
R2131 8.2K res_0201_12mil
PM_CLKRUN# [36,38]

R2142 49.9 RES_020_12mil LAD0_SKL_TERM
R2143 49.9 RES_020_12mil LAD1_SKL_TERM
R2144 49.9 RES_020_12mil LAD2_SKL_TERM
R2145 49.9 RES_020_12mil LAD3_SKL_TERM

C2106 56p 25V CAP_0201_14mil
C2107 56p 25V CAP_0201_14mil
C2108 56p 25V CAP_0201_14mil
C2109 56p 25V CAP_0201_14mil

GND GND GND GND

+3P3V
[33] PLT_RST#
C2202 0.1u 6.3V cap_0201_14mil
GND
U2202
SN74AUP1G08DRYR
sot886_1p45x1xp6_p5mm
C2204 100p 25V CAP_0201_14mil
GND
NOTE: PLACE C2204 next to U2202.2
[18,36,38,43,75] PLT_RST#_BUF
49.9K RES_0201_12mil
R2224
DNP,CPU
R2223 NO-STUFF RES_0201_12mil
C2203 470p 25V CAP_0201_14mil
U1001K
SKYLAKE_ULX_EDS/BGA
bga1515_skl_20x16p5mm
SKYLAKE_ULX
SYSTEM POWER MANAGEMENT
11 OF 20
REV = 0.81
BB8 GPP_B13/PLTRST#
PCH_SYS_RST# H2 SYS_RESET#
PM_RSMRST_R BJ12 RSMRST#
SP_TP_SMDp58mm TP2211
PROCPWRGD A62
[75] VCCST_PWRGD R2257 60.4 VCCST_PWRGD_R B61
res_0201_12mil
PROCPWRGD
VCCST_PWRGD
SYS_PWROK_R J1 SYS_PWROK
PM_PCH_PWROK_R BP14 PCH_PWROK
PCH_DPWROK_R BN15 DSW_PWROK
SUSWARN# BL6 GPP_A13/SUSWARN#/SUSPWRDNACK
SUSACK# BF9 GPP_A15/SUSACK#
WAKE# BP9 WAKE#
BE15 GPD2/LAN_WAKE#
BC15 GPD11/LANPHYPC
BB16 GPD7/RSVD
GPP_B12/SLP_S0# BC9
GPD4/SLP_S3# AY14
GPD5/SLP_S4# BF16
GPD10/SLP_S5# BH14 SLP_S5#
SLP_SUS# BN10
SLP_LAN# BP11 SLP_LAN#
GPD9/SLP_WLAN# BH16 SLP_WLAN#
GPD6/SLP_A# BE17 SLP_A#
GPD3/PWRBTN# BF14
GPD1/ACPRESENT BD14 AC_PRESENT_R
GPD0/BATLOW# BD16 BATLOW#_R
GPP_A11/PME# BF7 PME#
INTRUDER# BG19 INTRUDER#
GPP_B11/EXT_PWR_GATE# BC7
GPP_B2/VRALERT# BD6 VRALERT#_R
TP2208 SP_TP_SMDp58mm
TP2202 SP_TP_SMDp58mm
SLP_S0# [28,56,60,61]
PM_SUSB# [33,36]
PM_SUSC# [33,36,60]
TP2217 SP_TP_SMDp58mm
SLP_SUS# [36]
TP2219 SP_TP_SMDp58mm
TP2203 SP_TP_SMDp58mm
TP2218 SP_TP_SMDp58mm
R2232 0 RES_0201_12mil
PCH_PWRBTN# [18]
SB_PWRBTN# [33,36]
SP_TP_SMDp58mm
TP2209
R2256 330K RES_0201_12MIL
+VCC_RTC
MPHY_PWREN [61]
+VCCDSW
NO-STUFF
DNP,CPU
R2254 RES_0201_12mil
10K RES_0201_12mil
R2226
R2220
+3P3VSB
R2258 10K RES_0201_12mil
for VR hot indicator (may not be used)
+3P3V
R2225 10K RES_0201_12mil
DNP,CPU
R2218 NO-STUFF RES_0201_12mil
[33,36] EC_RST#
[18] PCH_SYS_RST#
2V2.89.9 was RES_0201_12mil
[18,36] RSMRST#
R2231 49.9 EX_RES_0201_12mil
PCH_DPWROK_R
DNP,CPU
R2239 NO-STUFF RES_0201_12mil
R2251 49.9K RES_0201_12mil
GND
[36] SYS_PWROK
R2228 100 RES_0201_12mil
SYS_PWROK_R
R2252 100K RES_0201_12mil
[36] PM_PCH_PWROK
R2229 0 RES_0201_12mil
PM_PCH_PWROK_R
R2255 100K RES_0201_12mil
[36] PCH_DPWROK
R2235 0 RES_0201_12mil
PCH_DPWROK_R
R2253 100K RES_0201_12mil
+3P3VSB
DNP,CPU
R2203 NO-STUFF RES_0201_12mil
If SUSWARN #/SUS_ACK # handshake is not used, these signals are tied on the board
SUSWARN#
R2241 0 RES_0201_12mil
SUSACK#
+VCCDSW
R2212 10K RES_0201_12mil
WAKE#
+VCCDSW
R2259 20K RES_0201_12mil
LAN_WAKE#
LANPHYPC
TP2216 SP_TP_SMDp58mm

2/5:
Remove T2222 PLT_RST#_BUF
Remove T2221 PCH_SYS_RST#
Remove T2214 RSMRST#
Remove T2204 SYS_PWROK_R
Remove T2210 LAN_WAKE#
Remove T2213 PCH_DPWROK
Remove T2205 PM_PCH_PWROK_R
Remove T2220 SUSWARN#

2/5:
Remove T2207 PM_SUSB#
Remove T2206 PM_SUSC#
Remove T2212 VRALERT#_R
Remove T2201 BATLOW#_R

Rev 4	EC Processor ID		PCH Processor ID	TPM			EC Board Rev	PCH Board ID[3:0]				DRAM Manufacturer		RAM Speed	RAM Size & Calibration		
Signal	EC_ID1	ED_ID0	PCB_ID5	PCB_ID4			R3619	PCB_ID3	PCB_ID2	PCB_ID1	PCB_ID0	MEM_ID1	MEM_ID0	MEM_ID4	MEM_ID3	MEM_ID2	ZQ1
	1 = R3642 0 = R3643	1 = R3640 0 = R3641	1 = R2323 0 = R2324	1 = R2303 0 = R2301	R3813 R3815 R3816	R3814		1 = R2307 0 = R2310	1 = R2305 0 = R2309	1 = R2306 0 = R2308	1 = R2304 0 = R2302	1 = R2315 0 = R2316	1 = R2318 0 = R2317	1 = R2321 0 = R2314	1 = R2319 0 = R2313	1 = R2320 0 = R2312	R1602 R1604 R1702 R1704
	U22 = 0 U23E=1 Y = 0 S = 1	**U22 = 0 U23E=0 Y = 1 S = 1**	U = 0 Y = 1	Infineon = 0 Nation Z = 1	Infineon = DNP NationZ = POP	Infineon = POP NationZ =DNP						**Hynix = 0 Samsung = 0**	**Hynix = 0 Samsung = 1**	1600 LPDDR3 = 0 1866 LPDDR3 = 1	4GB = 0 8GB = 0 16GB = 1	4 GB = 0 8 GB = 1 16 GB = 0	4GB = DNP 8GB = POP 16GB = POP
EV 0.9							80.6 Ω	0	0	0	0						
EV 1.0							169 Ω	0	0	0	1						
EV 1.5							698 Ω	0	0	1	0						
EV 1.9							909 Ω	0	0	1	1						
EV 2.0							1180 Ω	0	1	0	0						
EV 2.1							1500 Ω	0	1	0	1						
EV 2.9							2000 Ω	0	1	1	0						

TBL2301

U1001I
SKYLAKE_ULX_EDS/BGA
bga1515_skl_20x16p5mm

SKYLAKE_ULX

CSI-2
[53] CSI2_R0_DN — H29 CSI2_DN0
[53] CSI2_R0_DP — F29 CSI2_DP0
[53] CSI2_R1_DN — F33 CSI2_DN1
[53] CSI2_R1_DP — H33 CSI2_DP1
[53] CSI2_R2_DN — J30 CSI2_DN2
[53] CSI2_R2_DP — G30 CSI2_DP2
[53] CSI2_R3_DN — J32 CSI2_DN3
[53] CSI2_R3_DP — G32 CSI2_DP3
[54] CSI2_F4_DN — D29 CSI2_DN4
[54] CSI2_F4_DP — B29 CSI2_DP4
[54] CSI2_F5_DN — C32 CSI2_DN5
[54] CSI2_F5_DP — A32 CSI2_DP5
C30 CSI2_DN6
A30 CSI2_DP6
D33 CSI2_DN7
B33 CSI2_DP7
[49] CSI2_IRCAM8_DN — D35 CSI2_DN8
[49] CSI2_IRCAM8_DP — B35 CSI2_DP8
C36 CSI2_DN9
A36 CSI2_DP9
D37 CSI2_DN10
B37 CSI2_DP10
C38 CSI2_DN11
A38 CSI2_DP11

CSI2_CLKN0 H31 — CSI2_R0_CLK_DN [53]
CSI2_CLKP0 F31 — CSI2_R0_CLK_DP [53]
CSI2_CLKN1 D31 — CSI2_F1_CLK_DN [54]
CSI2_CLKP1 B31 — CSI2_F1_CLK_DP [54]
CSI2_CLKN2 C34 — CSI2_CLK2_IRCAM_DN [49]
CSI2_CLKP2 A34 — CSI2_CLK2_IRCAM_DP [49]
CSI2_CLKN3 D39
CSI2_CLKP3 B39
CSI2_COMP A11 — CSI2_COMP — R2322 100 RES_0201_12mil — GND
GPP_D4/FLASHTRIG N4 — MTP2301 SP_TP_SMDp58mm — RTD3_CAM_PWREN [25,52]

eMMC
GPP_F13/EMMC_DATA0 AN12 — MEM_ID0
GPP_F14/EMMC_DATA1 AP9 — MEM_ID1
GPP_F15/EMMC_DATA2 AN10 — MEM_ID2
GPP_F16/EMMC_DATA3 AJ10 — MEM_ID3
GPP_F17/EMMC_DATA4 AM9 — MEM_ID4
GPP_F18/EMMC_DATA5 AL12 — PCB_ID4
GPP_F19/EMMC_DATA6 AJ12 — PCB_ID0
GPP_F20/EMMC_DATA7 AN8 — PCB_ID1
GPP_F21/EMMC_RCLK AL10 — PCB_ID2
GPP_F22/EMMC_CLK AL8 — PCB_ID3
GPP_F12/EMMC_CMD AM11 — PCB_ID5
EMMC_RCOMP BC1 — EMMC_RCOMP_R — R2311 200 1% RES_0201_12mil — GND

9 OF 20
REV = 0.81

+1P8VSB — CPU,TBL1601 10K R2318 RES_0201_12mil — MEM_ID0
+1P8VSB — CPU,TBL1601 10K R2315 RES_0201_12mil — MEM_ID1
+1P8VSB — CPU,TBL1601 10K R2320 RES_0201_12mil — MEM_ID2
+1P8VSB — CPU,TBL1601 10K R2319 RES_0201_12mil — MEM_ID3
+1P8VSB — DNP,CPU NO-STUFF R2321 RES_0201_12mil — MEM_ID4
CPU,TBL1601 10K R2317 RES_0201_12mil — GND
CPU,TBL1601 10K R2316 RES_0201_12mil — GND
CPU,TBL1601 10K R2312 RES_0201_12mil — GND
CPU,TBL1601 10K R2313 RES_0201_12mil — GND
CPU,TBL1601 10K R2314 RES_0201_12mil — GND

5	4	3	2	1	0
CPU,TBL3801 10K R2323	DNP,CPU,TBL2301 NO-STUFF R2303	DNP,CPU,TBL2301 NO-STUFF R2307	CPU,TBL2301 10K R2305	CPU,TBL2301 10K R2306	DNP,CPU,TBL2301 NO-STUFF R2304
DNP,CPU,TBL2301 NO-STUFF R2324	CPU,TBL3801 10K R2301	CPU,TBL2301 10K R2310	DNP,CPU,TBL2301 NO-STUFF R2309	DNP,CPU,TBL2301 NO-STUFF R2308	CPU,TBL2301 10K R2302

EV2.9 WAS3b'101

jks 11nov14: different from G was on PCI11&12...
PCIE7&8 was used by GPU

U1001H
SKYLAKE_ULX_EDS/BGA
bga1515_skl_20x16p5mm

SKYLAKE_ULX

PCIE/USB3/SATA

C20 PCIE1_RXN/USB3_5_RXN
A20 PCIE1_RXP/USB3_5_RXP
G20 PCIE1_TXN/USB3_5_TXN
J20 PCIE1_TXP/USB3_5_TXP

B19 PCIE2_RXN/USB3_6_RXN
D19 PCIE2_RXP/USB3_6_RXP
F19 PCIE2_TXN/USB3_6_TXN
H19 PCIE2_TXP/USB3_6_TXP

C22 PCIE3_RXN
A22 PCIE3_RXP
G22 PCIE3_TXN
J22 PCIE3_TXP

B21 PCIE4_RXN
D21 PCIE4_RXP
F21 PCIE4_TXN
H21 PCIE4_TXP

C24 PCIE5_RXN
A24 PCIE5_RXP
G24 PCIE5_TXN
J24 PCIE5_TXP

B23 PCIE6_RXN
D23 PCIE6_RXP
F23 PCIE6_TXN
H23 PCIE6_TXP

C26 PCIE7_RXN/SATA0_RXN
A26 PCIE7_RXP/SATA0_RXP
G26 PCIE7_TXN/SATA0_TXN
J26 PCIE7_TXP/SATA0_TXP

B25 PCIE8_RXN/SATA1A_RXN
D25 PCIE8_RXP/SATA1A_RXP
F25 PCIE8_TXN/SATA1A_TXN
H25 PCIE8_TXP/SATA1A_TXP

C28 PCIE9_RXN
A28 PCIE9_RXP
G28 PCIE9_TXN
J28 PCIE9_TXP

B27 PCIE10_RXN
D27 PCIE10_RXP
F27 PCIE10_TXN
H27 PCIE10_TXP

A9 PCIE_RCOMPN
B10 PCIE_RCOMPP

D51 PROC_PRDY#
B55 PROC_PREQ#
BF3 GPP_A7/PIRQA#

8 OF 20
REV = 0.81

SSIC / USB3

USB3_1_RXN C16 USB3_CONN_RX_DN [45]
USB3_1_RXP A16 USB3_CONN_RX_DP [45]
USB3_1_TXN G16 USB3_CONN_TX_DN [45]
USB3_1_TXP J16 USB3_CONN_TX_DP [45]
USB3 TYPE A

USB3_2_RXN/SSIC_1_RXN B15 USB3_SL1_RX_DN [71]
USB3_2_RXP/SSIC_1_RXP D15 USB3_SL1_RX_DP [71]
USB3_2_TXN/SSIC_1_TXN F15 USB3_SL1_TX_DN [71]
USB3_2_TXP/SSIC_1_TXP H15 USB3_SL1_TX_DP [71]
USB3 SL1

USB3_3_RXN/SSIC_2_RXN C18
USB3_3_RXP/SSIC_2_RXP A18
USB3_3_TXN/SSIC_2_TXN G18
USB3_3_TXP/SSIC_2_TXP J18

USB3_4_RXN B17 USB3_SDXC_RX_DN [48]
USB3_4_RXP D17 USB3_SDXC_RX_DP [48]
USB3_4_TXN F17 USB3_SDXC_TX_DN [48]
USB3_4_TXP H17 USB3_SDXC_TX_DP [48]
USB3 SDXC

USB2

USB2N_1 AJ6 USB2_CONN_DN [45]
USB2P_1 AJ4 USB2_CONN_DP [45]
USB2 TYPE A

USB2N_5 AH5 USB2_BT_DN [50]
USB2P_5 AH3 USB2_BT_DP [50]
BT

USB2N_7 AF5 USB2_BLADE_DN [74]
USB2P_7 AF3 USB2_BLADE_DP [74]
USB2 BLADE

USB2N_3 AL6
USB2P_3 AL4

USB2N_9 AG6
USB2P_9 AG4

USB2N_2 AM3 USB2_SL1_DN [71]
USB2P_2 AM5 USB2_SL1_DP [71]
USB2 SL1

USB2_COMP N2 USB2_COMP
R2402 113 RES_0402_16mil
GND
USB2_ID AF7
USB2_VBUSSENSE AE6

GPP_E9/USB2_OC0# N12
GPP_E10/USB2_OC1# M11 GPP_E10
GPP_E11/USB2_OC2# F8 GPP_E11
GPP_E12/USB2_OC3# B8 GPP_E12

GPP_E4/DEVSLP0 F10 GPP_E4
GPP_E5/DEVSLP1 H10 GPP_E5
GPP_E6/DEVSLP2 L8 DEVSLP2

GPP_E0/SATAXPCIE0/SATAGP0 G11 GPP_E0
GPP_E1/SATAXPCIE1/SATAGP1 J11 GPP_E1
GPP_E2/SATAXPCIE2/SATAGP2 N10 GPP_E2

GPP_E8/SATALED# H8 GPP_E8

+3VSUS_ORG

RES_0201_12mil R2420 10K
RES_0201_12mil R2421 10K
RES_0201_12mil R2422 10K
RES_0201_12mil R2423 10K

USB_CONN_OC# [45]

R2406 DNP,CPUNO-STUFF 201_12mil XDP_TP2400 TPS0P35
R2405 DNP,CPUNO-STUFF 201_12mil XDP_TP2401 TPS0P35
R2407 DNP,CPUNO-STUFF 201_12mil XDP_TP2402 TPS0P35
R2408 DNP,CPUNO-STUFF 201_12mil XDP_TP2403 TPS0P35

R2415 DNP,CPUNO-STUFF 201_12mil XDP_TP2404 TPS0P35
R2414 DNP,CPUNO-STUFF 201_12mil XDP_TP2405 TPS0P35
R2416 DNP,CPUNO-STUFF 201_12mil XDP_TP2406 TPS0P35

R2410 DNP,CPUNO-STUFF 201_12mil XDP_TP2407 TPS0P35
R2411 DNP,CPUNO-STUFF 201_12mil XDP_TP2408 TPS0P35
R2412 DNP,CPUNO-STUFF 201_12mil XDP_TP2409 TPS0P35

R2413 DNP,CPUNO-STUFF 201_12mil XDP_TP2410 TPS0P35

R2403 0 RES_0201_12mil DEVSLP_SSD [43]
R2409 0 RES_0201_12mil SSD_SATA_PCIE_DET_N [43]

PCIE SSD
[43] PCIE_SSD_RX7_DN
[43] PCIE_SSD_RX7_DP
[43] PCIE_SSD_TX7_DN
[43] PCIE_SSD_TX7_DP
[43] PCIE_SSD_RX8_DN
[43] PCIE_SSD_RX8_DP
[43] PCIE_SSD_TX8_DN
[43] PCIE_SSD_TX8_DP

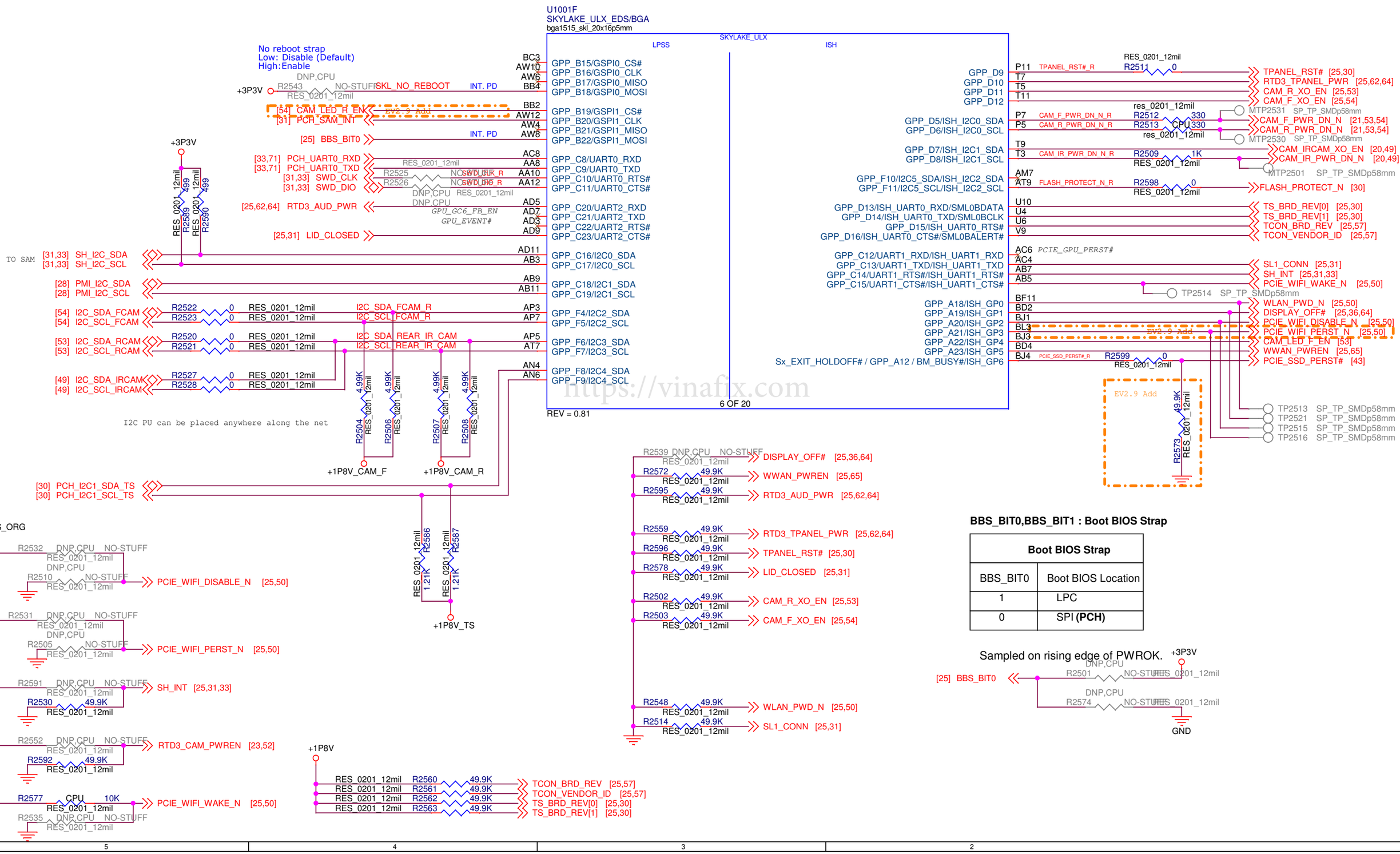
PCIE WIFI
[50] PCIE_WIFI_RX9_DN
[50] PCIE_WIFI_RX9_DP
[50] PCIE_WIFI_TX9_DN
[50] PCIE_WIFI_TX9_DP

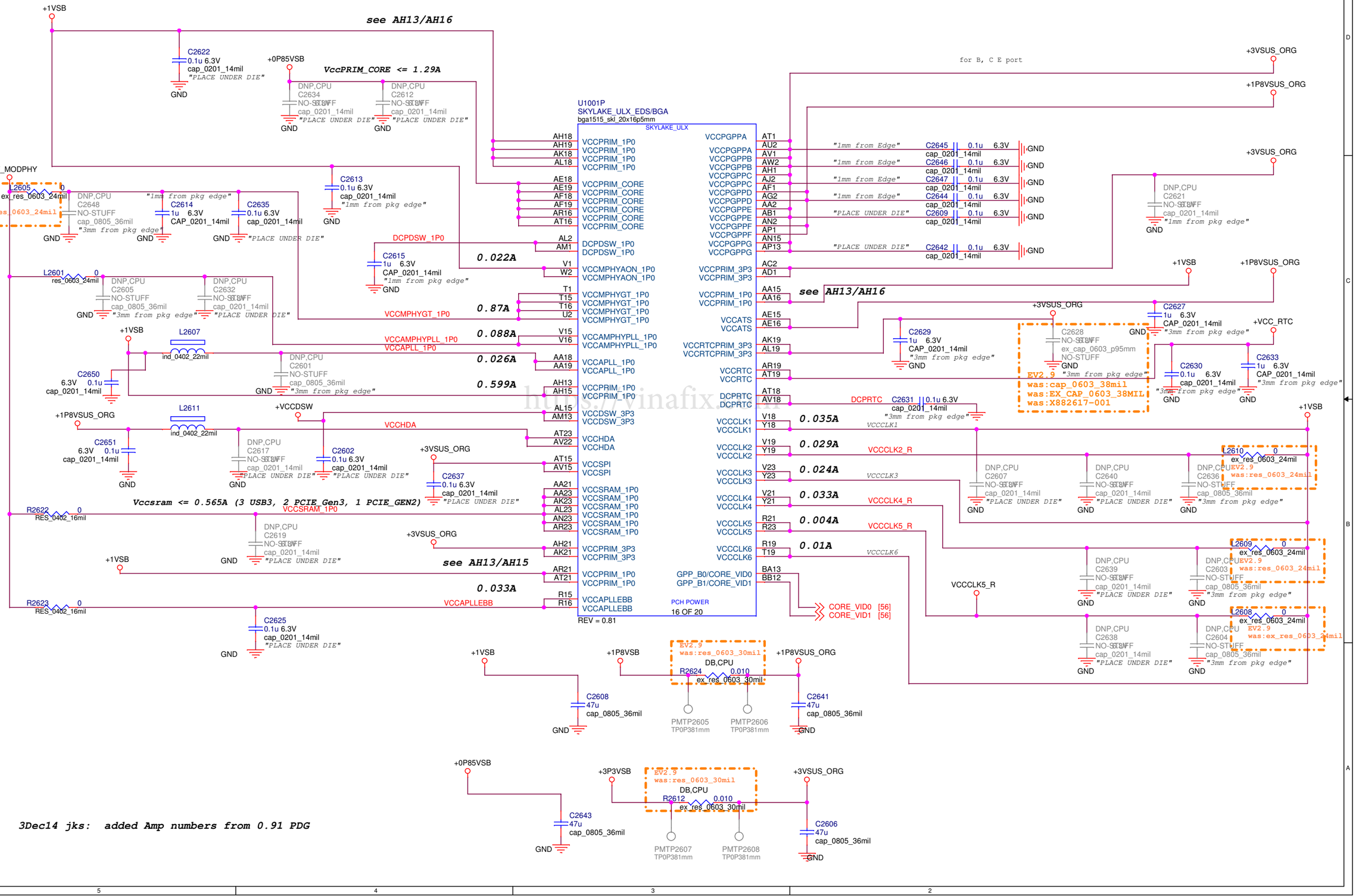
SP_TP_SMDp58mm TP2417
SP_TP_SMDp58mm TP2418

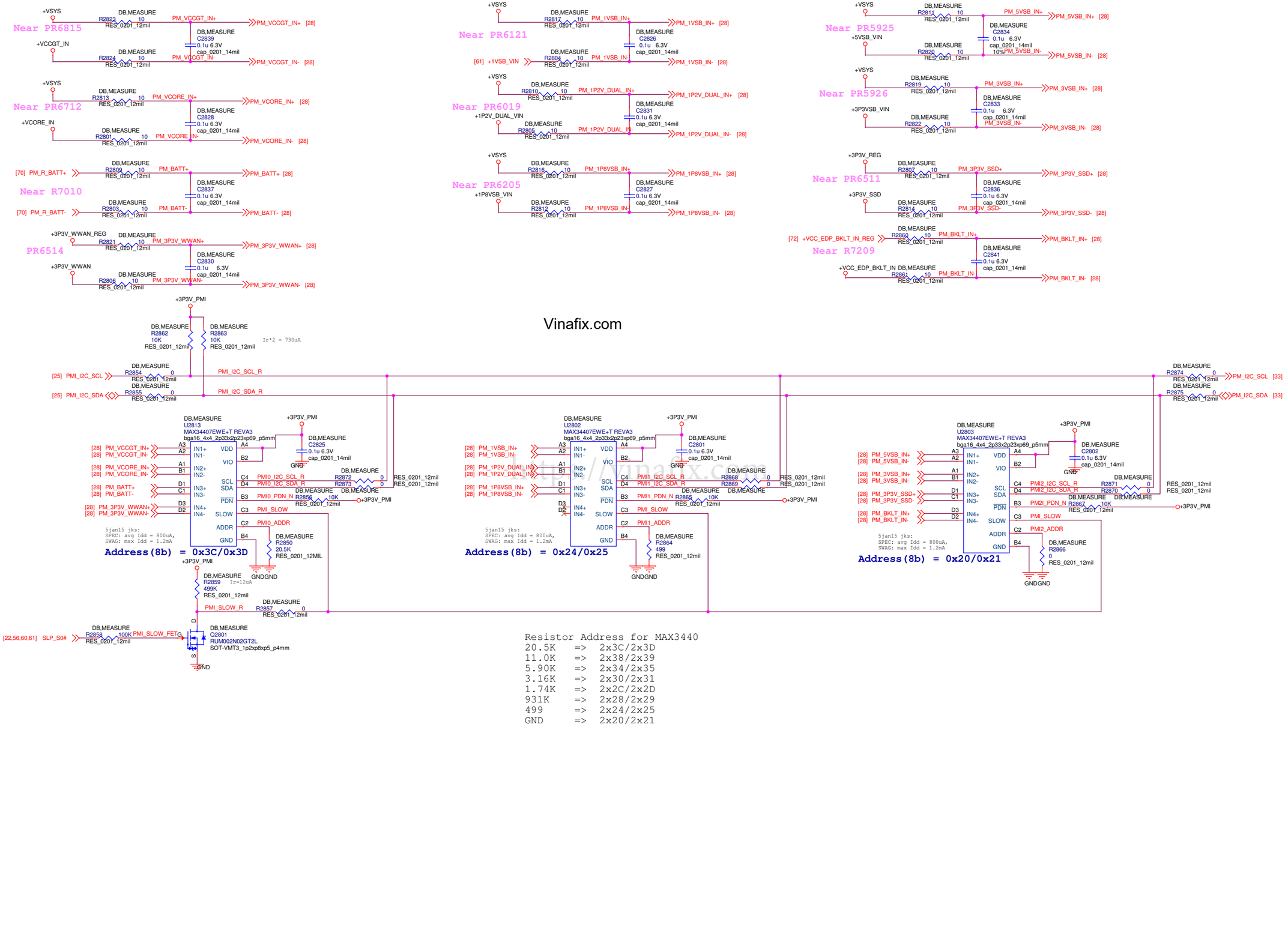
1% R2401 100 RES_0201_12mil

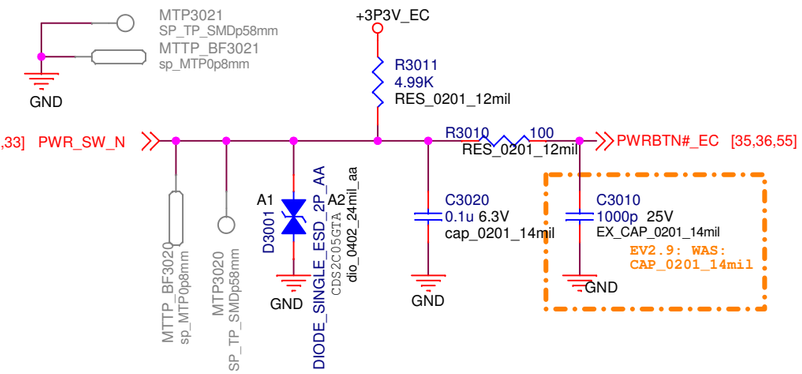
[18] XDP_PRDY#
[18] XDP_PREQ#

TP2419 SP_TP_SMDp58mm PIRQA#

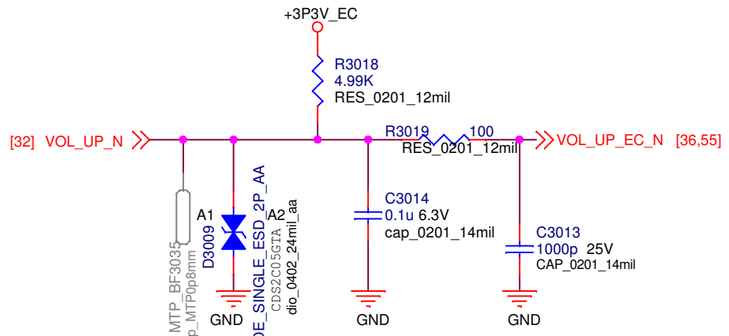



see AH13/AH16
VccPRIM_CORE <= 1.29A
U1001P
SKYLAKE_ULX_EDS/BGA
bga1515_skl_20x16p5mm
SKYLAKE_ULX
for B, C E port
Vccsram <= 0.565A (3 USB3, 2 PCIE Gen3, 1 PCIE_GEN2)
see AH13/AH15
see AH13/AH16
0.022A
0.87A
0.088A
0.026A
0.599A
0.035A
0.029A
0.024A
0.033A
0.004A
0.01A
0.033A
REV = 0.81
PCH POWER
16 OF 20
3Dec14 jks: added Amp numbers from 0.91 PDG

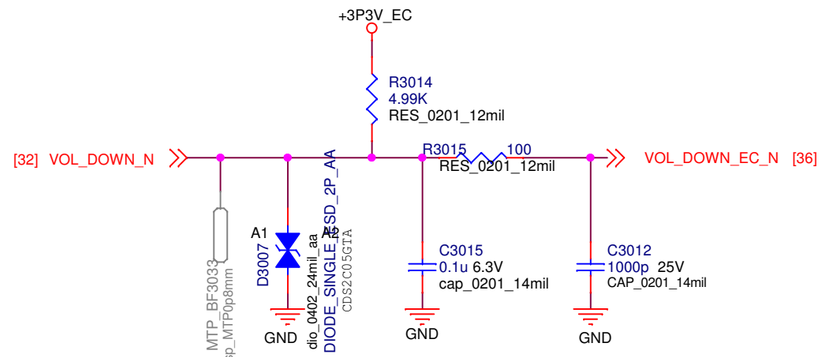

Near PR6815
Near PR6712
Near R7010
PR6514
Near PR6121
Near PR6019
Near PR6205
Near PR5925
Near PR5926
Near PR6511
Near R7209
Vinafix.com
Address(8b) = 0x3C/0x3D
Address(8b) = 0x24/0x25
Address(8b) = 0x20/0x21
http://vinafix.com
Resistor Address for MAX3440
20.5K => 2x3C/2x3D
11.0K => 2x38/2x39
5.90K => 2x34/2x35
3.16K => 2x30/2x31
1.74K => 2x2C/2x2D
931K => 2x28/2x29
499 => 2x24/2x25
GND => 2x20/2x21



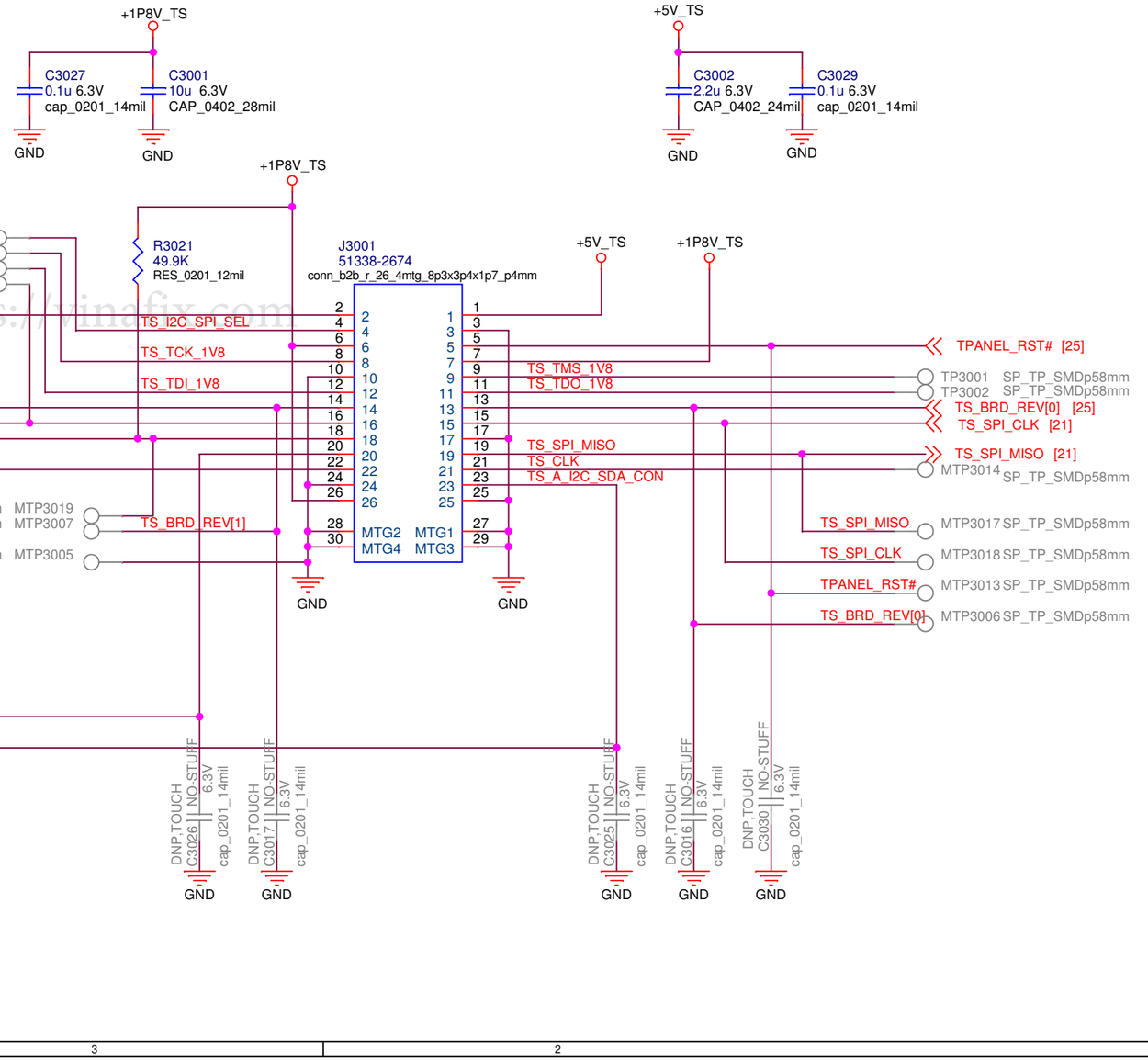
POWER BUTTON



VOL_UP BUTTON



VOL_DOWN BUTTON

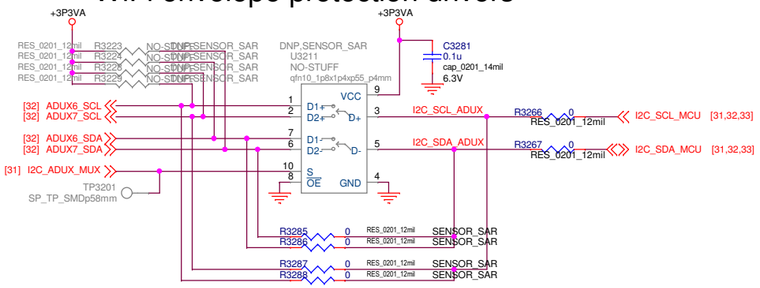


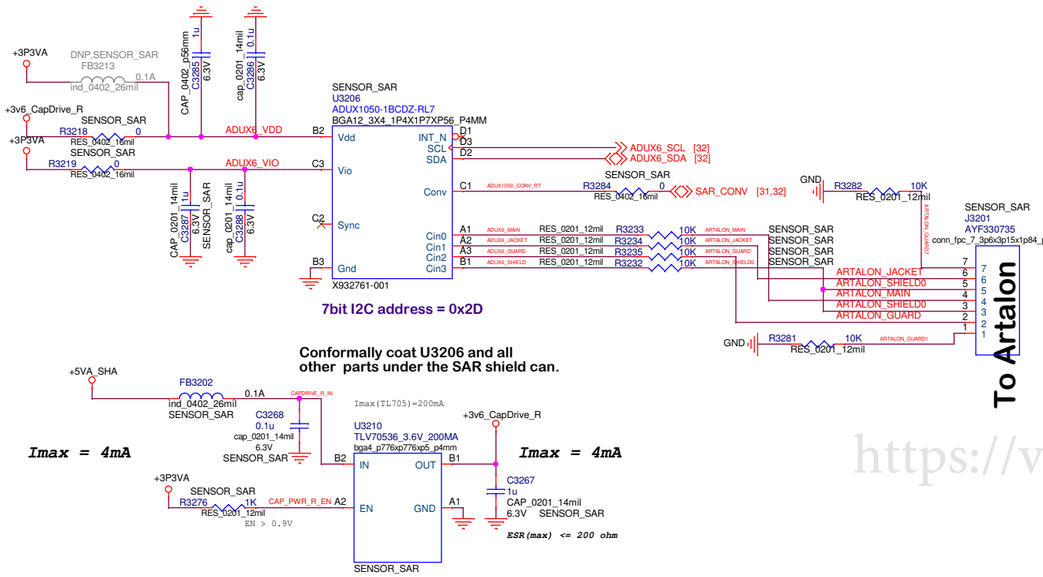
SENSOR MCU

Authentication

Address 0x28

WiFi envelope protection drivers

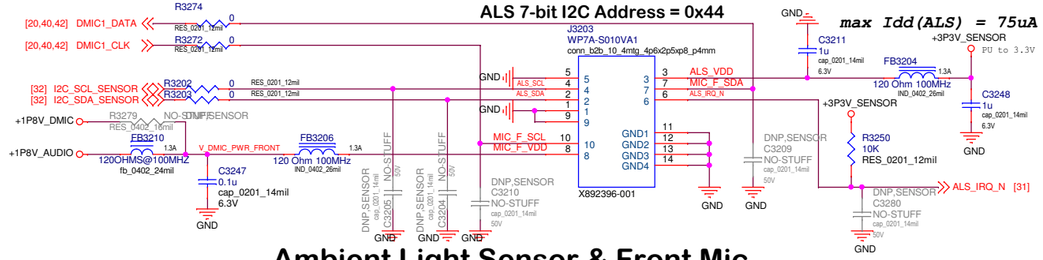




Conformally coat U3206 and all other parts under the SAR shield can.

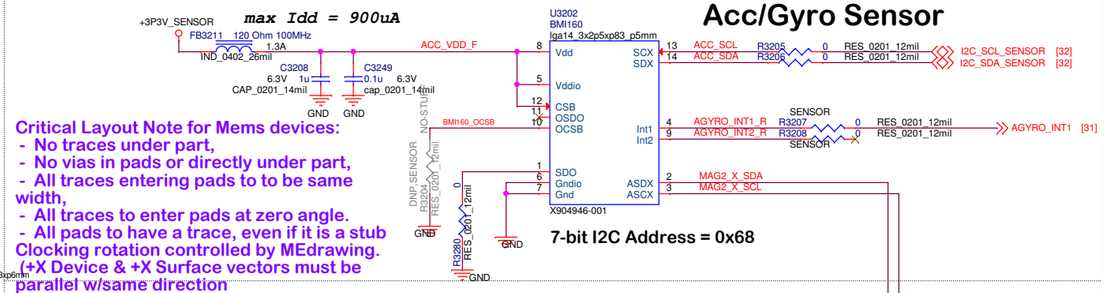
Conformally coat U3207 and all other parts under the SAR shield can.

ALS 7-bit I2C Address = 0x44



Ambient Light Sensor & Front Mic

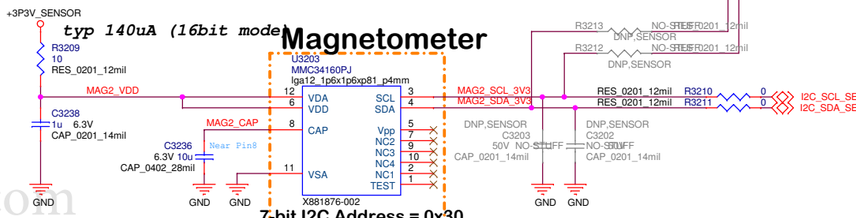
Acc/Gyro Sensor



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

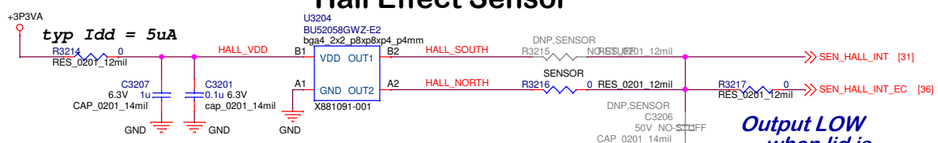
Magnetometer



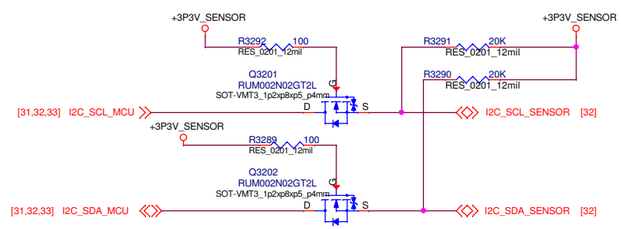
Critical Layout Note:
Extremely sensitive to ferrous materials:
Local ferrite bead to be >8mm remote
No traces carrying >8mA within 10mm
... on any layer.
Clocking rotation controlled by MEdrawing.

This change, putting the MAG behind the AGyro allows us to take advantage of the time-stamped FIFO in the AGyro to reduce power consumption and address load on the I2C bus -- in addition to improving jitter filtering in post processing. Eventually this will enable IR range camera frame syncing.

Hall Effect Sensor



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.



DB,CONN
J3302
B2B 60P
X869110-001
conn_b2b-r_60_4mtg_14p2x2p54xp88_p4mm
RECEPTACLE

DEBUG CONN

[31,70] SL1_UART_RX
[31] SAM_SPI_MISO
[31] SAM_SPI_MOSI
[37] SPI1_CS#_DBG
[37] SPI1_CLK_DBG
[25,71] PCH_UART0_RXD
[37] SPI1_EXT
[35,36,63,70] SML1_EC_DATA
[35,36,63,70] SML1_EC_CLK
[37] SPI1_SO_DBG
[22,36] SB_PWRBTN#
[36] EC_GPC0
[35,36,39] SML3_EC_CLK
[35,36,39] SML3_EC_DATA
[25,31] SWD_CLK
[35,36] SML0_EC_DATA
[35,36] SML0_EC_CLK
[25,71] PCH_UART0_TXD
[31] SEN_MCU_NRST
[36,70] EC_SL1_PWR_EN
[36,73] EC_BLADE_PWR_EN
+5V_KB_CONN

SL1_UART_TX [31,70]
OT_RX_SEN_MCU_DEBUG [74]
PWR_SW_N [18,30,32]
EC_RST# [22,36]
SEN_MCU_UART_TXD [31,71]
SEN_MCU_UART_RXD [31,71]
OT_TX_SEN_MCU_DEBUG [74]
SPI1_SI_DBG [37]
PM_SUSC# [22,36,60]
SAM_EC_INT [31,36]
OT_SHA_DATA_TX [74]
EC_DBG_RxD [36,71]
EC_DBG_TxD [36,71]
SH_INT [25,31]
EC_SAM_INT [31,36]
OT_SHA_PWR_RX [74]
PM_SUSB# [22,36]
SAM_SPI_SPCK [31]
PLT_RST# [22]
SWD_DIO [25,31]
SH_I2C_SCL [25,31]
SH_I2C_SDA [25,31]
I2C_SCL_MCU [31,32]
I2C_SDA_MCU [31,32]

MTG1 MTG2 MTG3 MTG4

+3P3V_EC
DB,CONN
C3307
0.1u 6.3V
cap_0201_14mil
GND

+3P3V_WWAN
DB,CONN
C3360
0.1u 6.3V
cap_0201_14mil
GND

+3P3VA
DB,CONN
C3306
6.3V 0.1u
cap_0201_14mil
GND

EV2.89.11
WAS: POP_ALL

DNP,CONN
J3303
NO-STUFF
conn_fpc_26_4mtg_16x3p7x1p76_p5mm

Keyboard Connector(debug)
Power Monitor Conn.

[36] KSO0
[36] KSO1
[36] KSO2
[36] KSO3
[36] KSO4
[36] KSO5
[36] KSO6
[36] KSO7
[36] KSO8
[36] KSO9
[36] KSO10
[50] WIFI_TCK
[28] PM_I2C_SDA
[28] PM_I2C_SCL
[50] WIFI_TDI
[50] WIFI_TDO
[50] WIFI_TMS
[36] KSI0
[36] KSI1
[36] KSI2
[36] KSI3
[36] KSI4
[36] KSI5
MTG[2]
MTG[1]
NC26
NC27

+3P3V_PMI
GND

+3P3VA
DB,CONN
R3303
499
RES_0201_12mil
LED_G_A
DB,CONN
LED3303
Green
LED_0402_10mil
LED_G_K
DB,CONN
Q3303
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
DBG_LED0 [31]
GND

[DBG_LED0]
Toggled whenever
SAM¡¦s software scheduler
is running

TOP

[EC DBG_LED]

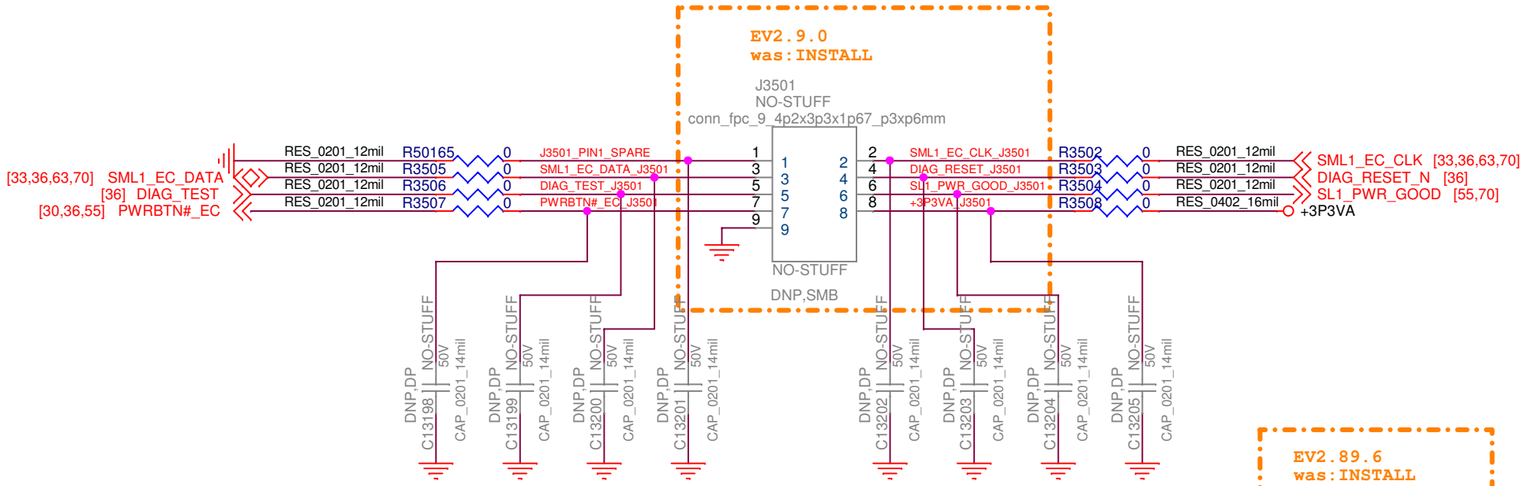
+3P3V_EC
DB,CONN
R3301
1K
RES_0201_12mil
LED_R_A
DB,CONN
Red
led_2x1p2x1mm
LED3301
LED_R_K
DB,CONN
Q3301
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
EC_HRTBT [36]
GND

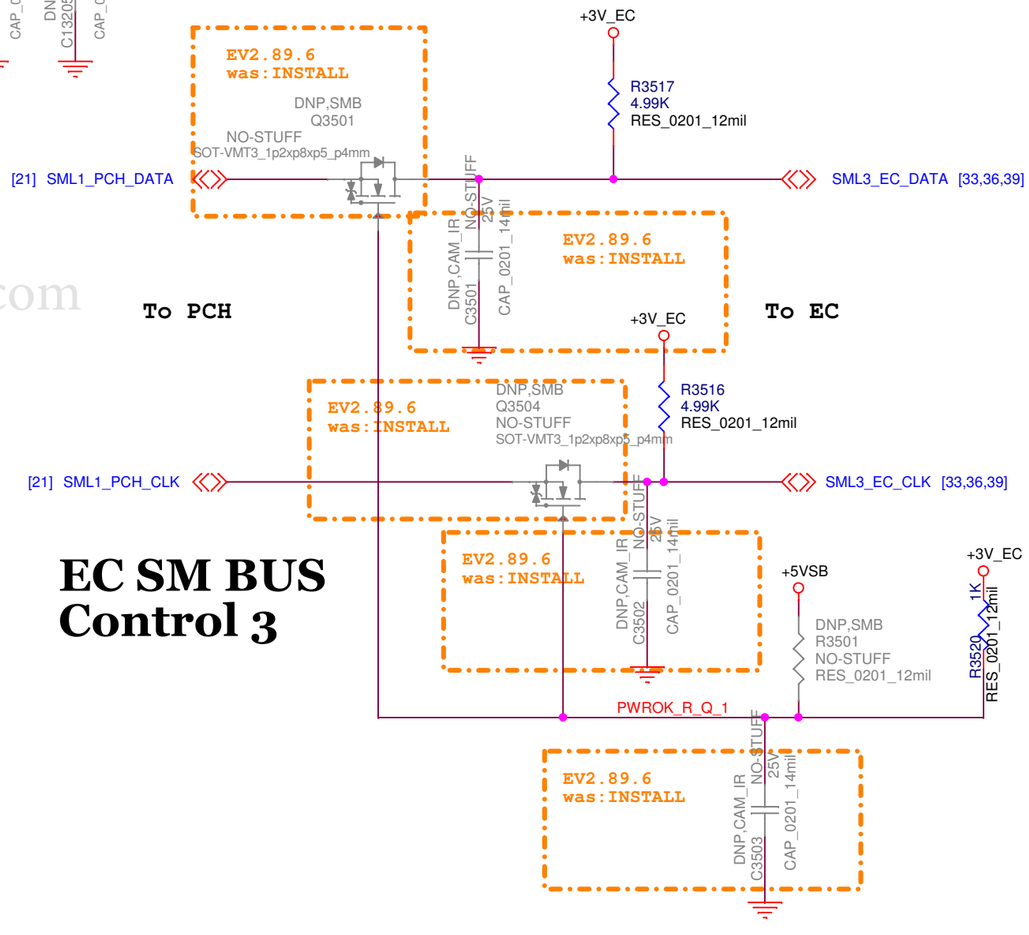
[EC DBG_LED]

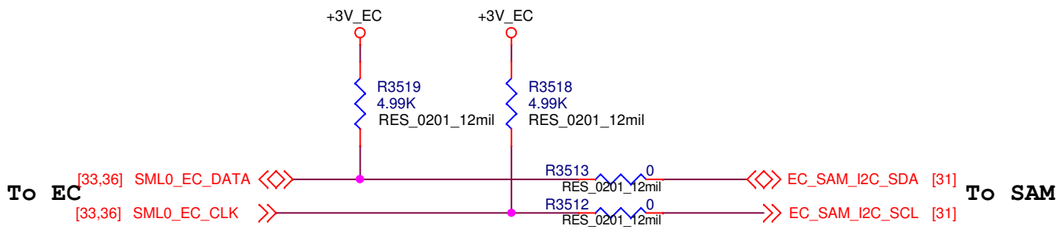
+3P3V_EC
DB,CONN
R3302
1K
RES_0201_12mil
LED_O_A
DB,CONN
Orange
led_0805_32mil
LED3302
LED_O_K
DB,CONN
Q3302
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
EC_CODE [36]
GND

Y EV2p9 Schematic

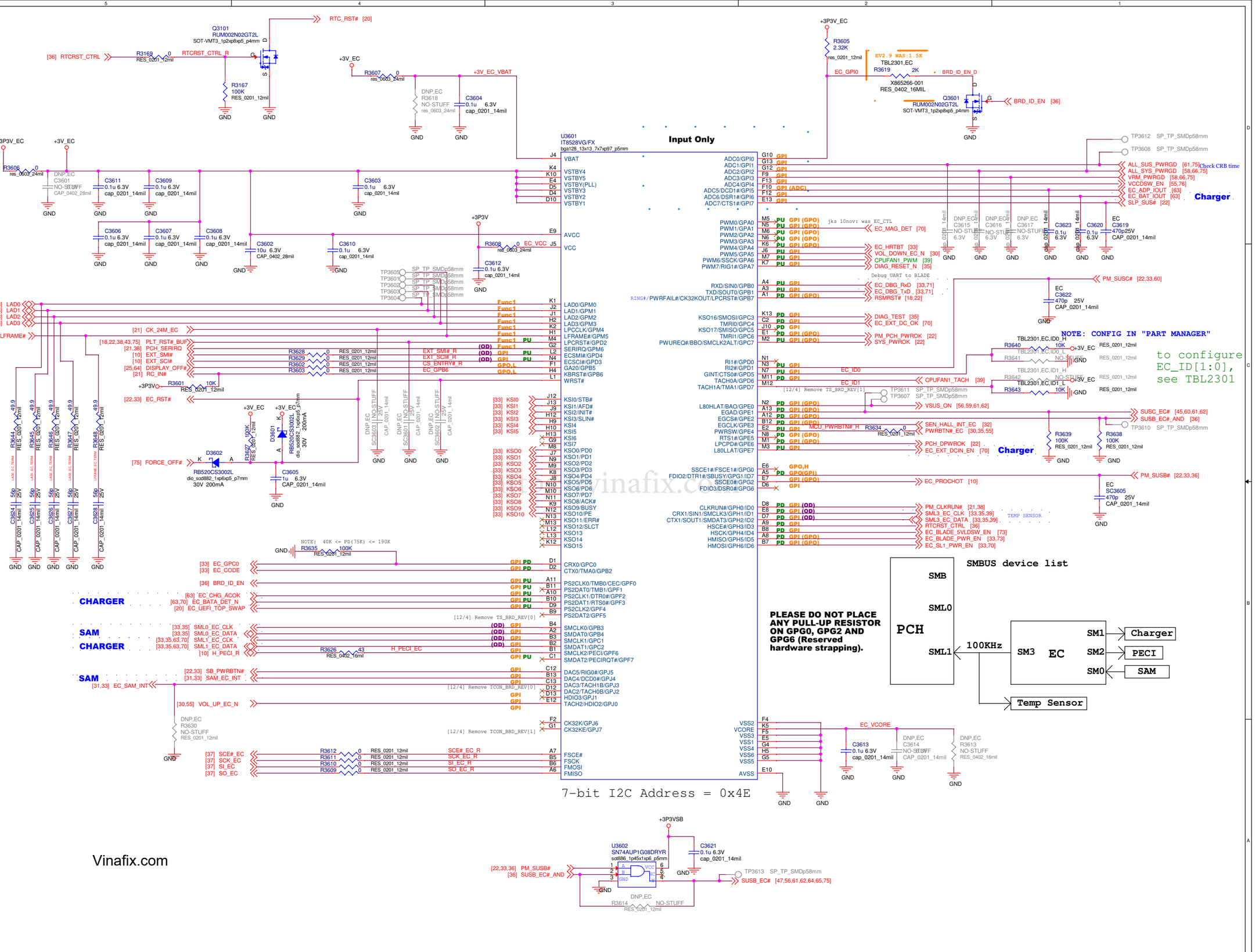
DIAGNOSTIC CONNECTOR





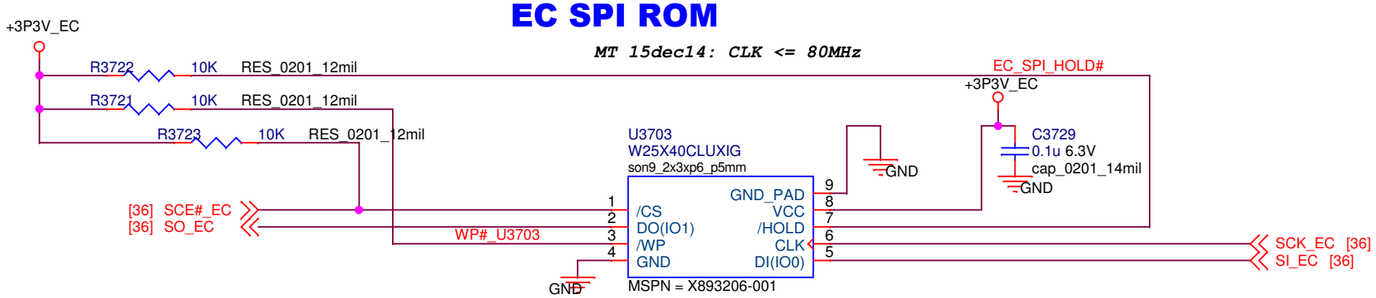


EC SM BUS Control 3

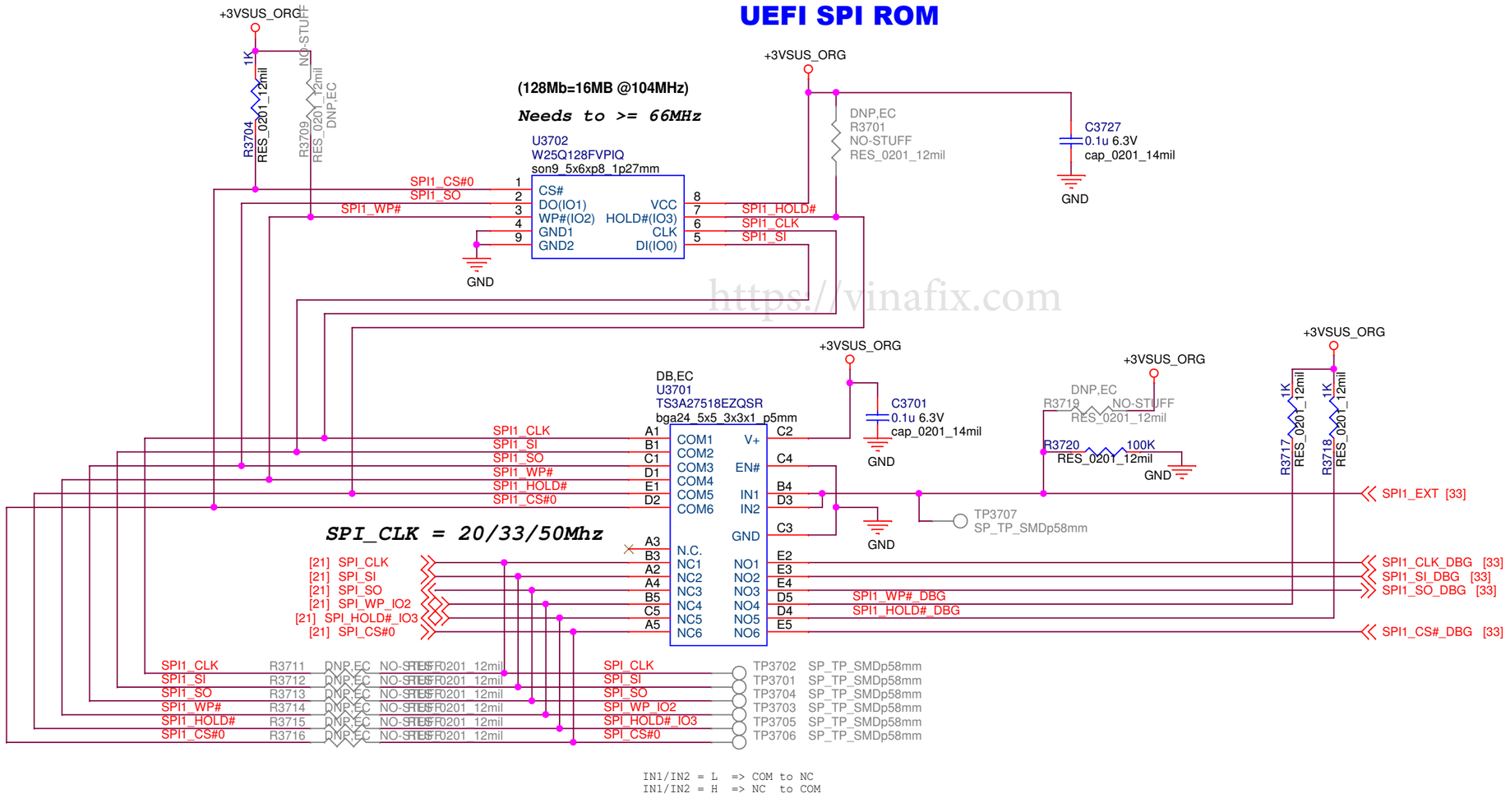

Q3101
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
RTC_RST# [20]
[36] RTCRST_CTRL
R3169 0 RES_0201_12mil
RTCRST_CTRL_R
R3167 100K RES_0201_12mil
GND
+3V_EC
R3607 0 res_0603_24mil
+3V_EC_VBAT
DNP,EC R3618 NO-STUFF res_0603_24mil
C3604 0.1u 6.3V cap_0201_14mil
+3P3V_EC
R3605 2.32K res_0201_12mil
EC_GPI0
EV2_9 WAS 1.5K
TBL2301,EC
R3619 2K
BRD_ID_EN_D
X865266-001
RES_0402_16MIL
Q3601
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
BRD_ID_EN [36]
U3601
IT8528VG/FX
bga128_13x13_7x7xp97_p5mm
Input Only
R3606 0 res_0603_24mil
DNP,EC C3601 NO-STUFF CAP_0402_28mil
C3611 0.1u 6.3V cap_0201_14mil
C3609 0.1u 6.3V cap_0201_14mil
C3603 0.1u 6.3V cap_0201_14mil
C3606 0.1u 6.3V cap_0201_14mil
C3607 0.1u 6.3V cap_0201_14mil
C3608 0.1u 6.3V cap_0201_14mil
C3602 10u 6.3V CAP_0402_28mil
C3610 0.1u 6.3V cap_0201_14mil
+3P3V
R3608 0 EC_VCC
res_0603_24mil
C3612 0.1u 6.3V cap_0201_14mil
TP3605 SP_TP_SMDp58mm
TP3601 SP_TP_SMDp58mm
TP3602 SP_TP_SMDp58mm
TP3603 SP_TP_SMDp58mm
TP3604 SP_TP_SMDp58mm
VBAT
VSTBY4
VSTBY5
VSTBY(PLL)
VSTBY3
VSTBY2
VSTBY1
AVCC
VCC
LAD0/GPM0
LAD1/GPM1
LAD2/GPM2
LAD3/GPM3
LPCCLK/GPM4
LFRAME#/GPM5
LPCRST#/GPD2
SERIRQ/GPM6
ECSMI#/GPD4
ECSCI#/GPD3
GA20/GPB5
KBRST#/GPB6
WRST#
KSI0/STB#
KSI1/AFD#
KSI2/INIT#
KSI3/SLIN#
KSI4
KSI5
KSI6
KSI7
KSO0/PD0
KSO1/PD1
KSO2/PD2
KSO3/PD3
KSO4/PD4
KSO5/PD5
KSO6/PD6
KSO7/PD7
KSO8/ACK#
KSO9/BUSY
KSO10/PE
KSO11/ERR#
KSO12/SLCT
KSO13
KSO14
KSO15
CRX0/GPC0
CTX0/TMA0/GPB2
PS2CLK0/TMB0/CEC/GPF0
PS2DAT0/TMB1/GPF1
PS2CLK1/DTR0#/GPF2
PS2DAT1/RTS0#/GPF3
PS2CLK2/GPF4
PS2DAT2/GPF5
SMCLK0/GPB3
SMDAT0/GPB4
SMCLK1/GPC1
SMDAT1/GPC2
SMCLK2/PECI/GPF6
SMDAT2/PECIRQT#/GPF7
DAC5/RIG0#/GPJ5
DAC4/DCD0#/GPJ4
DAC3/TACH1B/GPJ3
DAC2/TACH0B/GPJ2
HDIO3/GPJ1
TACH2/HDIO2/GPJ0
CK32K/GPJ6
CK32KE/GPJ7
FSCE#
FSCK
FMOSI
FMISO
ADC0/GPI0
ADC1/GPI1
ADC2/GPI2
ADC3/GPI3
ADC4/GPI4
ADC5/DCD1#/GPI5
ADC6/DSR1#/GPI6
ADC7/CTS1#/GPI7
PWM0/GPA0
PWM1/GPA1
PWM2/GPA2
PWM3/GPA3
PWM4/GPA4
PWM5/GPA5
PWM6/SSCK/GPA6
PWM7/RIG1#/GPA7
RXD/SIN0/GPB0
TXD/SOUT0/GPB1
RING#/PWRFAIL#/CK32KOUT/LPCRST#/GPB7
KSO16/SMOSI/GPC3
TMRI0/GPC4
KSO17/SMISO/GPC5
TMRI1/GPC6
PWUREQ#/BBO/SMCLK2ALT/GPC7
RI1#/GPD0
RI2#/GPD1
GINT/CTS0#/GPD5
TACH0A/GPD6
TACH1A/TMA1/GPD7
L80HLAT/BAO/GPE0
EGAD/GPE1
EGCS#/GPE2
EGCLK/GPE3
PWRSW/GPE4
RTS1#/GPE5
LPCPD#/GPE6
L80LLAT/GPE7
SSCE1#/FSCE1#/GPG0
FDIO2/DTR1#/SBUSY/GPG1/ID7
SSCE0#/GPG2
FDIO3/DSR0#/GPG6
CLKRUN#/GPH0/ID0
CRX1/SIN1/SMCLK3/GPH1/ID1
CTX1/SOUT1/SMDAT3/GPH2/ID2
HSCE#/GPH3/ID3
HSCK/GPH4/ID4
HMISO/GPH5/ID5
HMOSI/GPH6/ID6
VSS2
VCORE
VSS3
VSS1
VSS4
VSS6
VSS5
AVSS
[21,38] LAD0
[21,38] LAD1
[21,38] LAD2
[21,38] LAD3
[21,38] LFRAME#
[21] CK_24M_EC
[18,22,28,43,75] PLT_RST#_BUF
[21,38] PCH_SERIRQ
[10] EXT_SMI#
[10] EXT_SCI#
[25,64] DISPLAY_OFF#
[21] RC_IN#
R3628 0 RES_0201_12mil EXT_SMI#_R
R3629 0 RES_0201_12mil EXT_SCI#_R
R3602 0 RES_0201_12mil CS_ENTRY#_R
R3603 0 RES_0201_12mil EC_GPB6
+3P3VO
R3601 10K RES_0201_12mil
[22,33] EC_RST#
[75] FORCE_OFF#
D3602 RB520CS3002L dio_sod882_1up6xp5_p7mm 30V 200mA
+3V_EC
R3627 100K RES_0201_12mil
+3V_EC
D3601 RB520CS30202L dio_sod882_1up6xp5_p7mm 30V 200mA
C3605 1u 6.3V CAP_0201_14mil
DNP,EC SC3603 NO-STUFF 25V CAP_0201_14mil
DNP,EC SC3601 NO-STUFF 25V CAP_0201_14mil
DNP,EC SC3602 NO-STUFF 25V CAP_0201_14mil
R3644 49.9 RES_0201_12mil
R3645 49.9 RES_0201_12mil
R3646 49.9 RES_0201_12mil
R3647 49.9 RES_0201_12mil
R3648 49.9 RES_0201_12mil
C3624 56p 25V CAP_0201_14mil
C3625 56p 25V CAP_0201_14mil
C3626 56p 25V CAP_0201_14mil
C3627 56p 25V CAP_0201_14mil
C3628 56p 25V CAP_0201_14mil
[33] KSI0
[33] KSI1
[33] KSI2
[33] KSI3
[33] KSI4
[33] KSI5
[33] KSO0
[33] KSO1
[33] KSO2
[33] KSO3
[33] KSO4
[33] KSO5
[33] KSO6
[33] KSO7
[33] KSO8
[33] KSO9
[33] KSO10
NOTE: 40K <= PD(75K) <= 190K
R3635 100K RES_0201_12mil
[33] EC_GPC0
[33] EC_CODE
[36] BRD_ID_EN
CHARGER
[63] EC_CHG_ACOK
[63,70] EC_BATA_DET_N
[20] EC_UEFI_TOP_SWAP
SAM
[33,35] SML0_EC_CLK
[33,35] SML0_EC_DATA
CHARGER
[33,35,63,70] SML1_EC_CLK
[33,35,63,70] SML1_EC_DATA
[10] H_PECI_R
R3626 43 RES_0402_16mil
H_PECI_EC
SAM
[22,33] SB_PWRBTN#
[31,33] SAM_EC_INT
[31,33] EC_SAM_INT
[30,55] VOL_UP_EC_N
DNP,EC R3630 NO-STUFF RES_0201_12mil
[37] SCE#_EC
[37] SCK_EC
[37] SI_EC
[37] SO_EC
R3612 0 RES_0201_12mil SCE#_EC_R
R3611 0 RES_0201_12mil SCK_EC_R
R3610 0 RES_0201_12mil SI_EC_R
R3609 0 RES_0201_12mil SO_EC_R
[12/4] Remove TS_BRD_REV[0]
[12/4] Remove TCON_BRD_REV[0]
[12/4] Remove TCON_BRD_REV[1]
ALL_SUS_PWRGD [61,75]
ALL_SYS_PWRGD [58,66,75]
VRM_PWRGD [58,66,75]
VCCDSW_EN [55,76]
EC_ADP_IOUT [63]
EC_BAT_IOUT [63]
SLP_SUS# [22]
Check CRB time
Charger
TP3612 SP_TP_SMDp58mm
TP3608 SP_TP_SMDp58mm
DNP,EC C3615 NO-STUFF 6.3V
DNP,EC C3616 NO-STUFF 6.3V
DNP,EC C3617 NO-STUFF 6.3V
C3623 0.1u 6.3V
C3620 0.1u 6.3V
EC C3619 470p25V CAP_0201_14mil
EC_MAG_DET [70]
EC_HRTBT [33]
VOL_DOWN_EC_N [30]
CPUFAN1_PWM [39]
DIAG_RESET_N [35]
Debug UART to BLADE
EC_DBG_RxD [33,71]
EC_DBG_TxD [33,71]
RSMRST# [18,22]
PM_SUSC# [22,33,60]
EC C3622 470p 25V CAP_0201_14mil
DIAG_TEST [35]
EC_EXT_DC_OK [70]
PM_PCH_PWROK [22]
SYS_PWROK [22]
NOTE: CONFIG IN "PART MANAGER"
TBL2301,EC,ID0_H
R3640 10K +3V_EC RES_0201_12mil
TBL2301,EC,ID0_L
R3641 NO-STUFF GND RES_0201_12mil
TBL2301,EC,ID1_H
R3642 NO-STUFF +3V_EC RES_0201_12mil
TBL2301,EC,ID1_L
R3643 10K GND RES_0201_12mil
to configure EC_ID[1:0], see TBL2301
EC_ID0
EC_ID1
CPUFAN1_TACH [39]
TP3611 SP_TP_SMDp58mm
TP3607 SP_TP_SMDp58mm
VSUS_ON [56,59,61,62]
SUSC_EC# [45,60,61,62]
SUSB_EC#_AND [36]
TP3610 SP_TP_SMDp58mm
SEN_HALL_INT_EC [32]
MCU_PWRBTN#_R R3634 0 RES_0201_12mil
PWRBTN# EC [30,35,55]
PCH_DPWROK [22]
EC_EXT_DCIN_EN [70]
Charger
R3639 100K RES_0201_12mil
R3638 100K RES_0201_12mil
EC_PROCHOT [10]
PM_SUSB# [22,33,36]
EC SC3605 470p 25V CAP_0201_14mil
PM_CLKRUN# [21,38]
SML3_EC_CLK [33,35,39]
SML3_EC_DATA [33,35,39]
TEMP_SENSOR
RTCRST_CTRL [36]
EC_BLADE_5VLDSW_EN [73]
EC_BLADE_PWR_EN [33,73]
EC_SL1_PWR_EN [33,70]
SMBUS device list
PLEASE DO NOT PLACE ANY PULL-UP RESISTOR ON GPG0, GPG2 AND GPG6 (Reserved hardware strapping).
PCH
SMB
SML0
SML1
100KHz
EC
SM3
SM1
SM2
SM0
Charger
PECI
SAM
Temp Sensor
EC_VCORE
C3613 0.1u 6.3V cap_0201_14mil
DNP,EC C3614 NO-STUFF CAP_0201_14mil
DNP,EC R3613 NO-STUFF RES_0402_16mil
7-bit I2C Address = 0x4E
U3602
SN74AUP1G08DRYR
sot886_1p45x1xp6_p5mm
+3P3VSB
C3621 0.1u 6.3V cap_0201_14mil
[22,33,36] PM_SUSB#
[36] SUSB_EC#_AND
TP3613 SP_TP_SMDp58mm
SUSB_EC# [47,56,61,62,64,65,75]
DNP,EC R3614 NO-STUFF RES_0201_12mil
Vinafix.com

EC SPI ROM

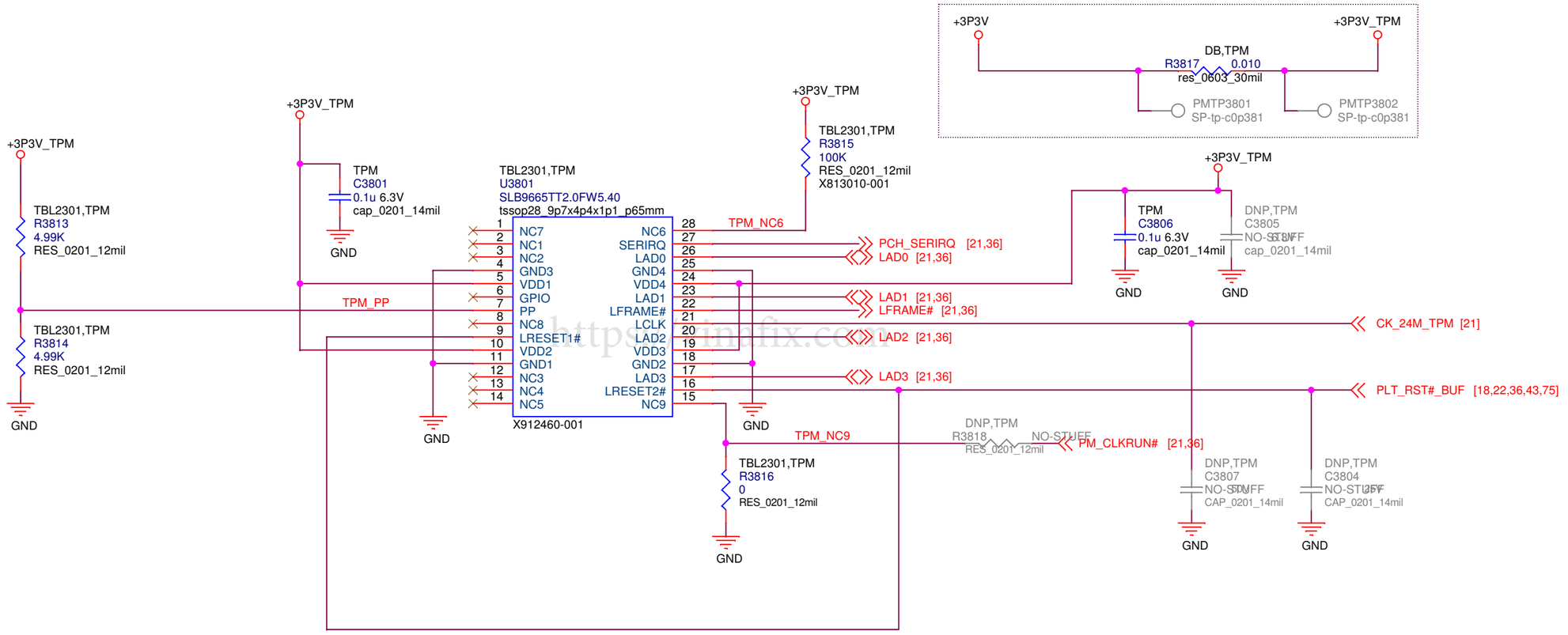
MT 15dec14: CLK <= 80MHz



UEFI SPI ROM

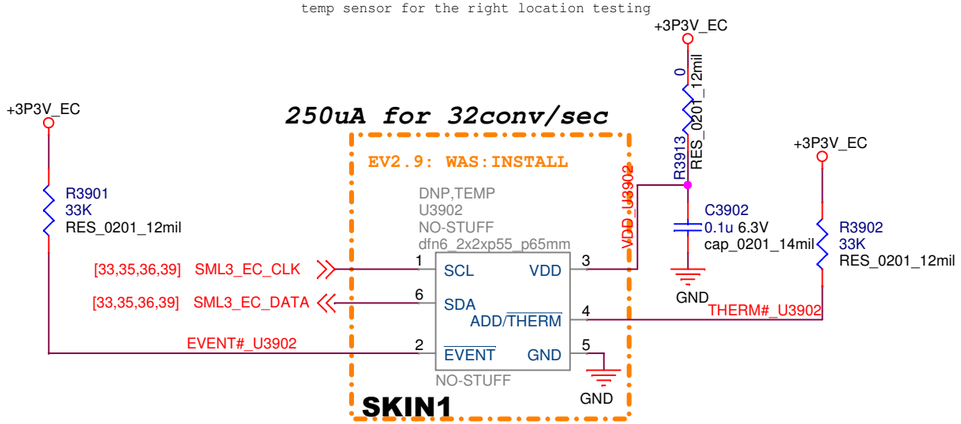


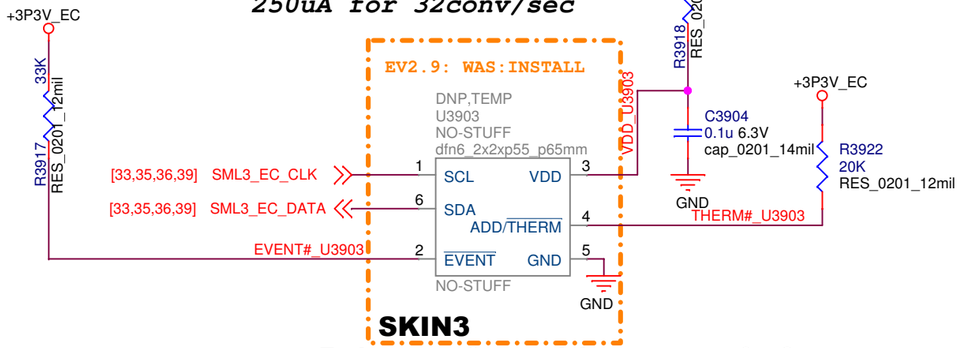
Trusted Platform Module

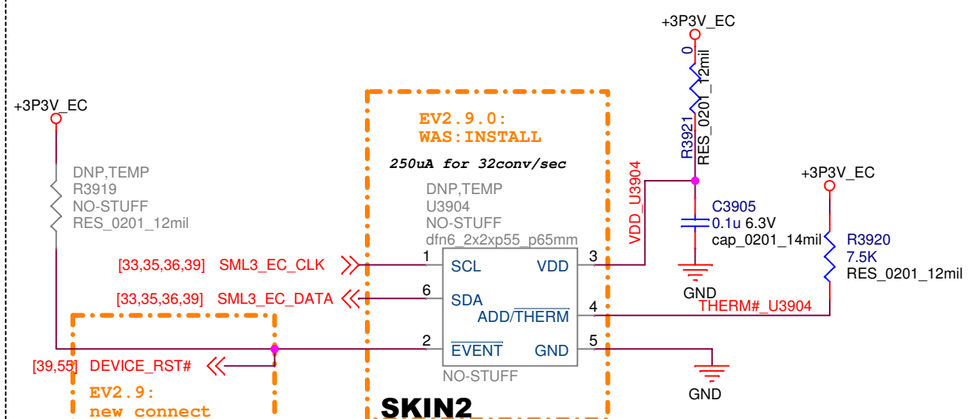


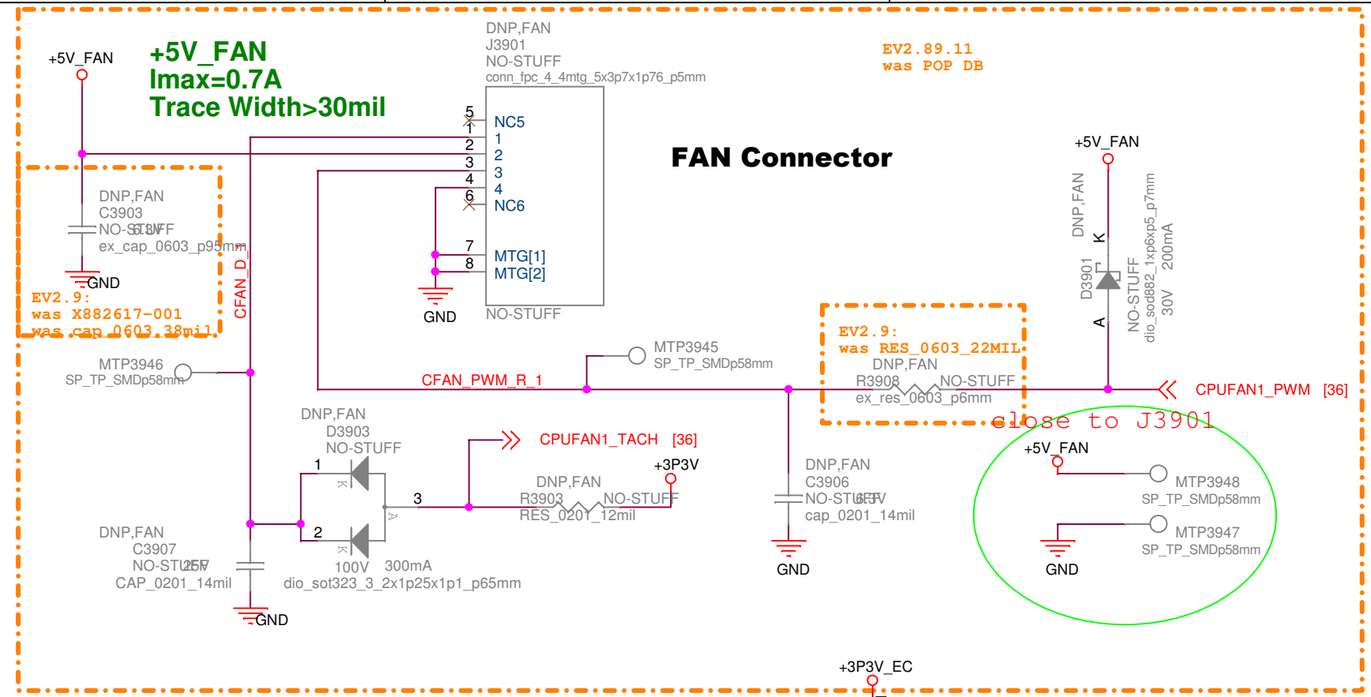
jks 6dec14: Only one sensor will be used for final product

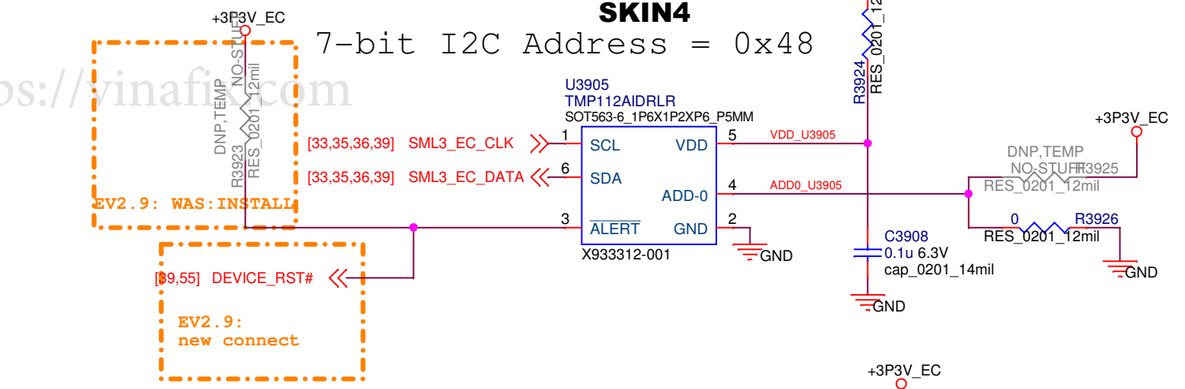
temp sensor for the right location testing

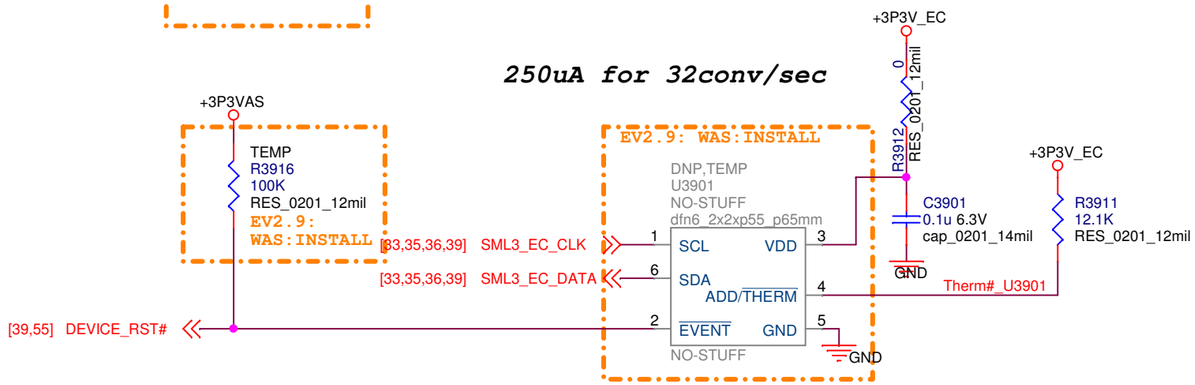


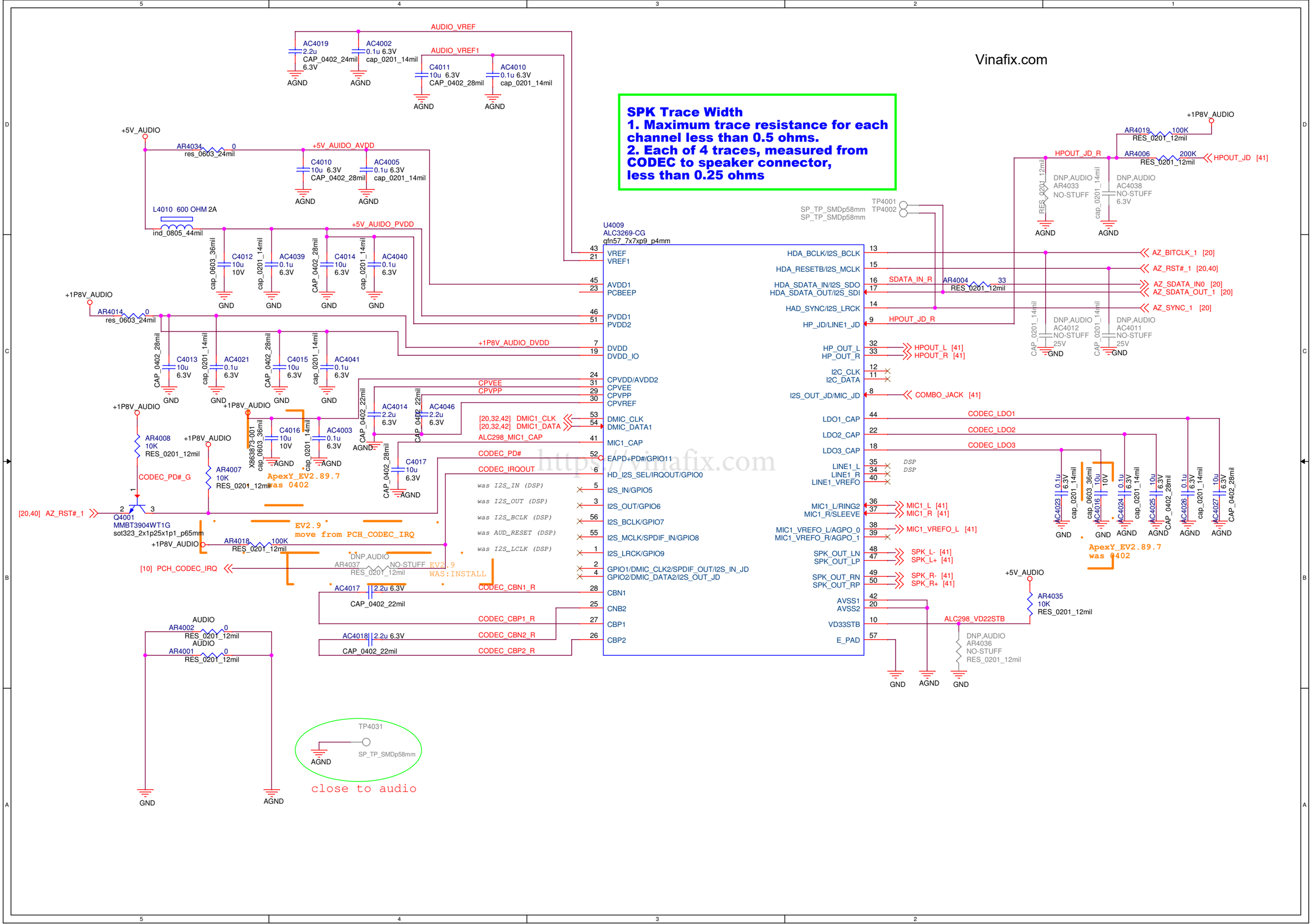











Vinafix.com
SPK Trace Width
1. Maximum trace resistance for each channel less than 0.5 ohms.
2. Each of 4 traces, measured from CODEC to speaker connector, less than 0.25 ohms
U4009
ALC3269-CG
qfn57_7x7xp9_p4mm
ApexY_EV2.89.7 was 0402
EV2.9 move from PCH_CODEC_IRQ
EV2.9 WAS:INSTALL
close to audio
https://vinafix.com

Audio Jack/MIC1 Combo Jack

[40] MIC1_VREFO_L
[40] MIC1_R
[40] MIC1_L
C4104 4.7u 6.3V cap_0402_26mil
C4105 4.7u 6.3V cap_0402_26mil
MIC1_CR
R4101 1K RES_0201_12mil
MIC1_CR_F
R4104 2.2K RES_0201_12mil
L4101 place close to J4101
L4101 0.5A GBK160808T-121Y 120 OHM,100MHZ ind_0603_38mil
R4105 22K RES_0201_12mil
C4103 100p 25V CAP_0201_14mil
AGND
AGND

[40] COMBO_JACK
R4106 22K RES_0201_12mil
C4106 10u 6.3V CAP_0402_28mil
AGND
MIC1_CR_F_C
MTP4108 SP_TP_SMDp58mm

[40] HPOUT_L
[40] HPOUT_R
R4102 51.1 res_0603_24mil
R4103 51.1 res_0603_24mil
HPOUT_L_F
HPOUT_R_F
L4102 GBK160808T-121Y ind_0603_38mil 120 OHM,100MHZ 0.5A
L4103 GBK160808T-121Y ind_0603_38mil 120 OHM,100MHZ 0.5A
HPOUT_L_F_C
HPOUT_R_F_C
MTP4105 SP_TP_SMDp58mm
MTP4109 SP_TP_SMDp58mm
AUDIO R4112 10K RES_0201_12mil
AUDIO R4111 10K RES_0201_12mil
AGND
AGND
C4101 100p 25V CAP_0201_14mil
C4102 100p 25V CAP_0201_14mil
AGND
AGND
M41D6 DIODE_SINGLE_ESD_2P_AA CDS2C05GTA dio_0402_24mil_aa
M41D4 DIODE_SINGLE_ESD_2P_AA CDS2C05GTA dio_0402_24mil_aa
AGND
AGND
M41D5 DIODE_SINGLE_ESD_2P_AA CDS2C05GTA dio_0402_24mil_aa
AGND

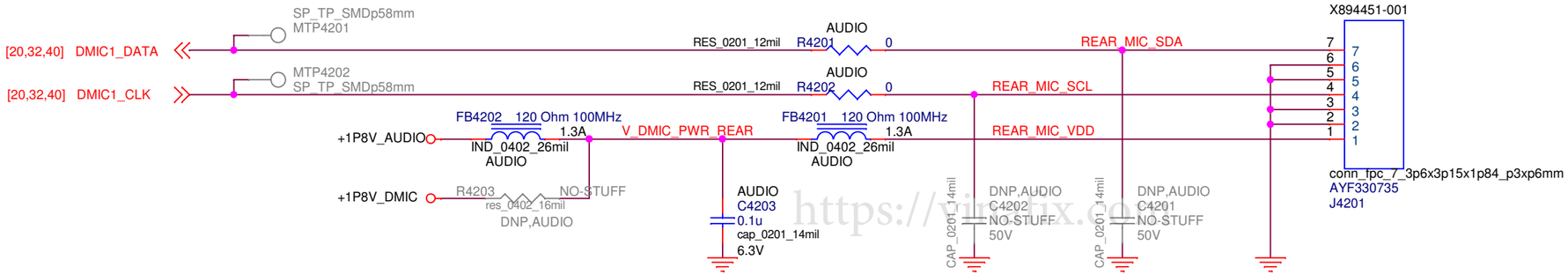
[40] HPOUT_JD
MTP4106 SP_TP_SMDp58mm
M41D3 DIODE_SINGLE_ESD_2P_AA CDS2C05GTA dio_0402_24mil_aa
AGND
4dec14 jks: IS: X894451-001 WAS: X907467-001
J4101 X894451-001
AYF330735
conn_fpc_7_3p6x3p15x1p84_p3xp6mm
1 2 3 4 5 6 7
AGND
MTP4104 SP_TP_SMDp58mm
AGND

SPKR

[40] SPK_R+
[40] SPK_R-
C4107 1000p 25V CAP_0201_14mil
C4108 25V 1000p CAP_0201_14mil
GND
R4107 0 res_0603_24mil
R4108 0 res_0603_24mil
SPKR+_CON
SPKR-_CON
M41D7 DIODE_SINGLE_ESD_2P_AA CDS2C05GTA dio_0402_24mil_aa
M41D8 DIODE_SINGLE_ESD_2P_AA CDS2C05GTA dio_0402_24mil_aa
GND
GND
MTP4101 SP_TP_SMDp58mm
MTP4102 SP_TP_SMDp58mm
J4102 X872411-001
78171-0002
conn_b2b_2_2mtg_4p2x4p5x1p82_1p2mm
1 2 3 4 MTG1 MTG2
GND

[40] SPK_L+
[40] SPK_L-
C4109 1000p 25V CAP_0201_14mil
C4110 25V 1000p CAP_0201_14mil
GND
R4109 0 res_0603_24mil
R4110 0 res_0603_24mil
SPKL+_CON
SPKL-_CON
M41D9 DIODE_SINGLE_ESD_2P_AA CDS2C05GTA dio_0402_24mil_aa
M41D10 DIODE_SINGLE_ESD_2P_AA CDS2C05GTA dio_0402_24mil_aa
GND
GND
MTP4107 SP_TP_SMDp58mm
MTP4103 SP_TP_SMDp58mm
J4103 X872411-001
78171-0002
conn_b2b_2_2mtg_4p2x4p5x1p82_1p2mm
1 2 3 4 MTG1 MTG2
GND

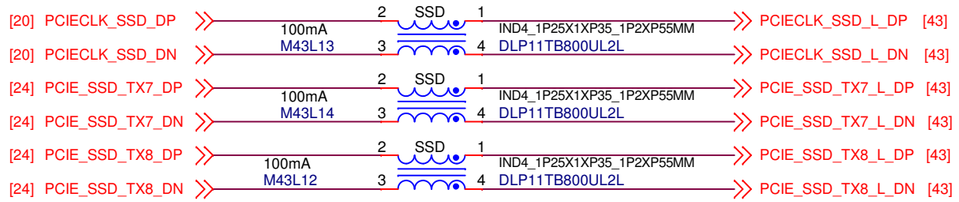
RearMicFlex

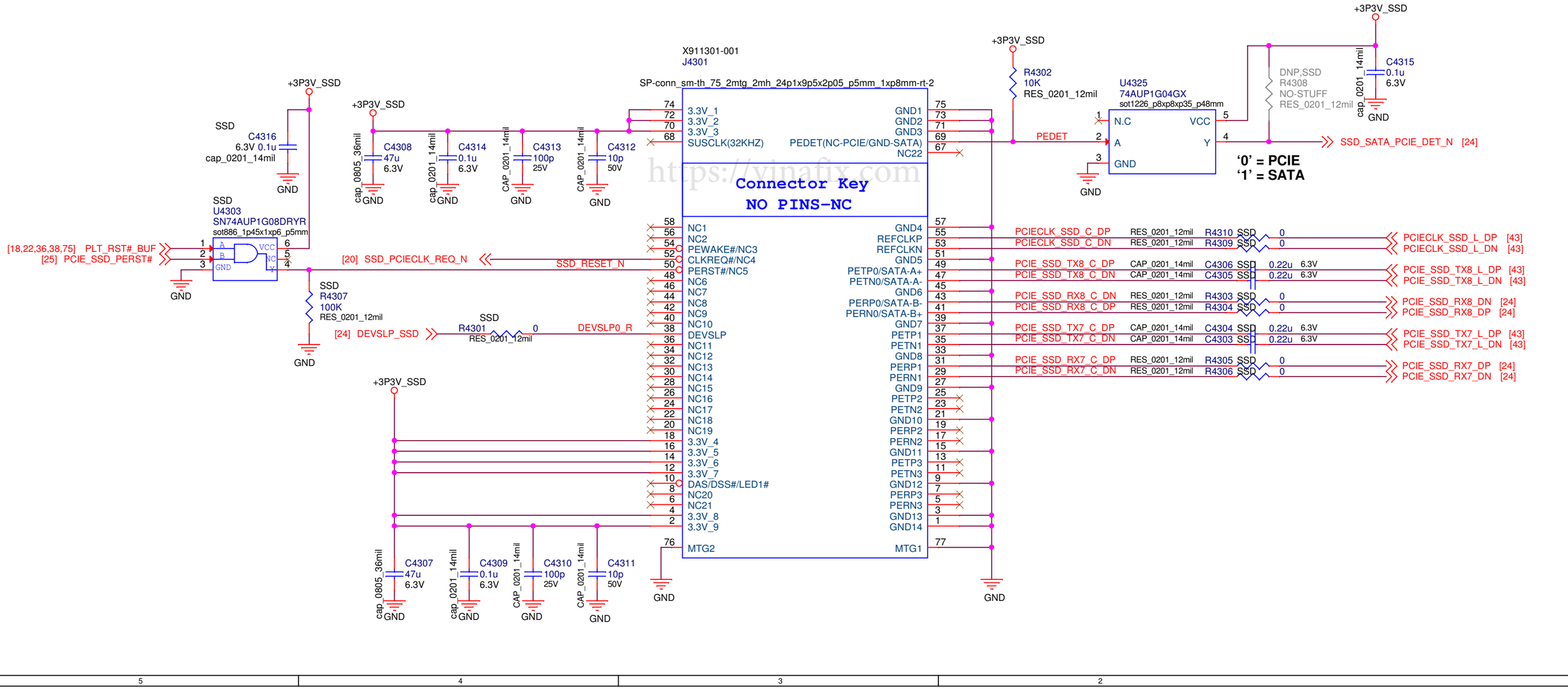


Condition	PCI Express* Gen 2 Only	PCI Express* Gen 3 Only	SATA Only	PCI Express* Gen2/SATA	PCI Express* Gen3/SATA
Processor Tx	100 nF	220 nF	10 nF	100 nF	220 nF
Processor Rx	None	None	10 nF [2]	None	None [3]

2. Design Constraint: For SATA only application, both Tx and Rx channels need to have 10 nF capacitors on the motherboard. This option supports all SATA devices. However, the 10 nF capacitor on Rx can be removed if DC coupled ODDs / devices are NOT used.

3. Design Constraint: For PCIe* Gen 2/ SATA multiplexed configuration, motherboard Tx requires a 100 nF AC capacitor and NO AC capacitor is required for motherboard Rx channel. This option DOES NOT support DC coupled ODDs / Devices.





Vinafix.com

UU4501
DF5G7M2N
dfn5_1p3xp8xp4_p45mm

USB3_TYPA_TX_DN 1 IO1
USB3_TYPA_RX_DP 3 IO2
USB3_TYPA_RX_DN 4 IO3
USB3_TYPA_TX_DP 5 IO5
GND 2
GND

[24] USB3_CONN_RX_DN
[24] USB3_CONN_RX_DP
L4502 3 USB 4
2 1
DLP11TB800UL2L
IND4_1P25X1XP35_1P2XP55MM
USB3_TYPA_RX_DN
USB3_TYPA_RX_DP

cap_0201_14mil
[24] USB3_CONN_TX_DN
C4513 0.1u 6.3V USB3_CONN_TX_C_DN
100mA
[24] USB3_CONN_TX_DP
C4512 0.1u 6.3V USB3_CONN_TX_C_DP
cap_0201_14mil
L4501 3 USB 4
2 1
IND4_1P25X1XP35_1P2XP55MM
DLP11TB800UL2L
USB3_TYPA_TX_DN
USB3_TYPA_TX_DP

MTP4501
SP_TP_SMDp58mm
MTTP_BF4501
sp_MTP0p8mm
MTTP_BF4502
sp_MTP0p8mm
MTP4502
SP_TP_SMDp58mm

U4503
IP3319CX6
bga6_2x3ns_p95x1p34xp6_p4mm
[24] USB2_CONN_DP
[24] USB2_CONN_DN
A1 DP_O DP_I A2
B1 DM_O DM_I B2
C2
ID
C1
GND
GND
USB2_TYPA_DP
USB2_TYPA_DN

MTP4503
SP_TP_SMDp58mm
GND
MTTP_BF4503
sp_MTP0p8mm
GND

EV2.89.6
Added
MTTP_BF4505
sp_MTP0p8mm
GND

EV2.9
was:X910059-004
NOTE: VALUE is old

+5V_USBPWR
J4501
MSPN = X939824-008
SP-conn_usb3_9_10MTG_2MH_17p1x15p5x4p44_2p5mm

1	VBUS	MTG10	19
2	D-	MTG9	18
3	D+	MTG8	17
4	GND	MTG7	16
5	STDA_SSRX-	MTG6	15
6	STDA_SSRX+	MTG5	14
7	GND_DRAIN	MTG4	13
8	STDA_SSTX-	MTG3	12
9	STDA_SSTX+	MTG2	11
		MTG1	10

A1 A2 D4501
dio_0402_24mil_aa
DIODE_SINGLE_ESD_2P_AA

MTTP_BF4504
sp_MTP0p8mm
MTP4504
SP_TP_SMDp58mm

1.5 => ILIM(11.8K) => 2 A
Imax = 2.1 A

+5VSB
C4511
1u 6.3V
CAP_0201_14mil

U4504
NCP380HMUAJAATBG
dfn7_2x2xp55_p65mm
[24] USB_CONN_OC#
[36,60,61,62] SUSC_EC#
RES_0201_12mil R4515 0
RES_0201_12mil R4510 0
USB_CONN_OC#_R
FLAG# IN 6
EN
GND1 OUT 1 +5V_USBPWR_REG
GND2 ILIM 2 +5V_USBPWR_ILIM
+5V_USBPWR_EN
R4512
11.8K
res_0201_12mil

jks 6dec14: chg from ceramic to tant for space saving

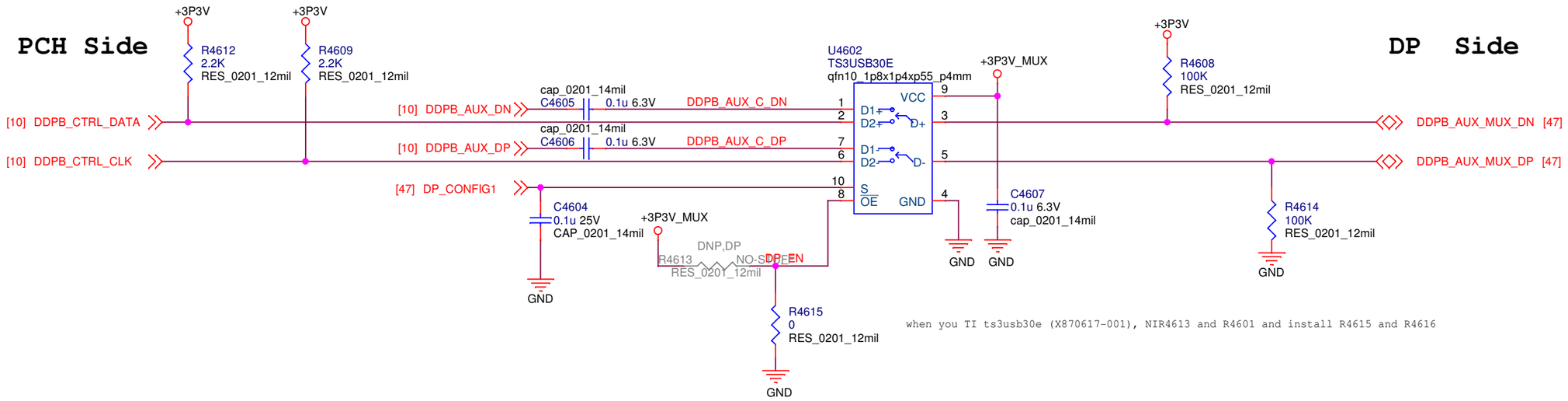
C7648 47u 16V cap_3p5x2p8x1p2mm
C7649 47u 16V cap_3p5x2p8x1p2mm
C7647 47u 16V cap_3p5x2p8x1p2mm

DB,USB
R4511 0.01
res_0402_22mil
PMTP4505
SP-tp-c0p381
PMTP4504
SP-tp-c0p381
+5V_USBPWR
R4514
750
RES_0402_16mil
5.25**2/(750*.99)=37mW

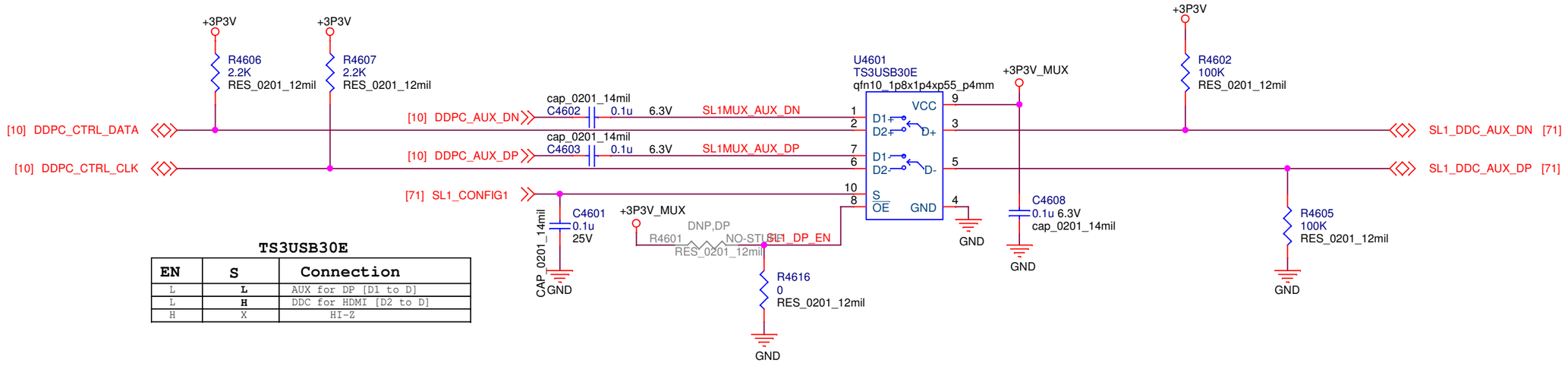
+5V_USBPWR
Imin = 1.5A (ng 19dec14)
Imax=1.9A

+3P3VSB
R4513
499K
RES_0201_12mil
+5V_USBPWR_DISC_CTRL
+5V_USBPWR_disc
Q4501A
NX3008NBKS
sot363_6_2x1p25x1p1_p65mm
Q4501B
NX3008NBKS
sot363_6_2x1p25x1p1_p65mm

mDP mux to HDMI/DVI Dongle control



SL1 DP mux to HDMI/DVI Dongle control



TS3USB30E

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

NOTE:

Pass gate to prevent back-drive when sink device is on and PCH is powered down.

NOTE:

Place D4701 near to DP connector

NOTE:

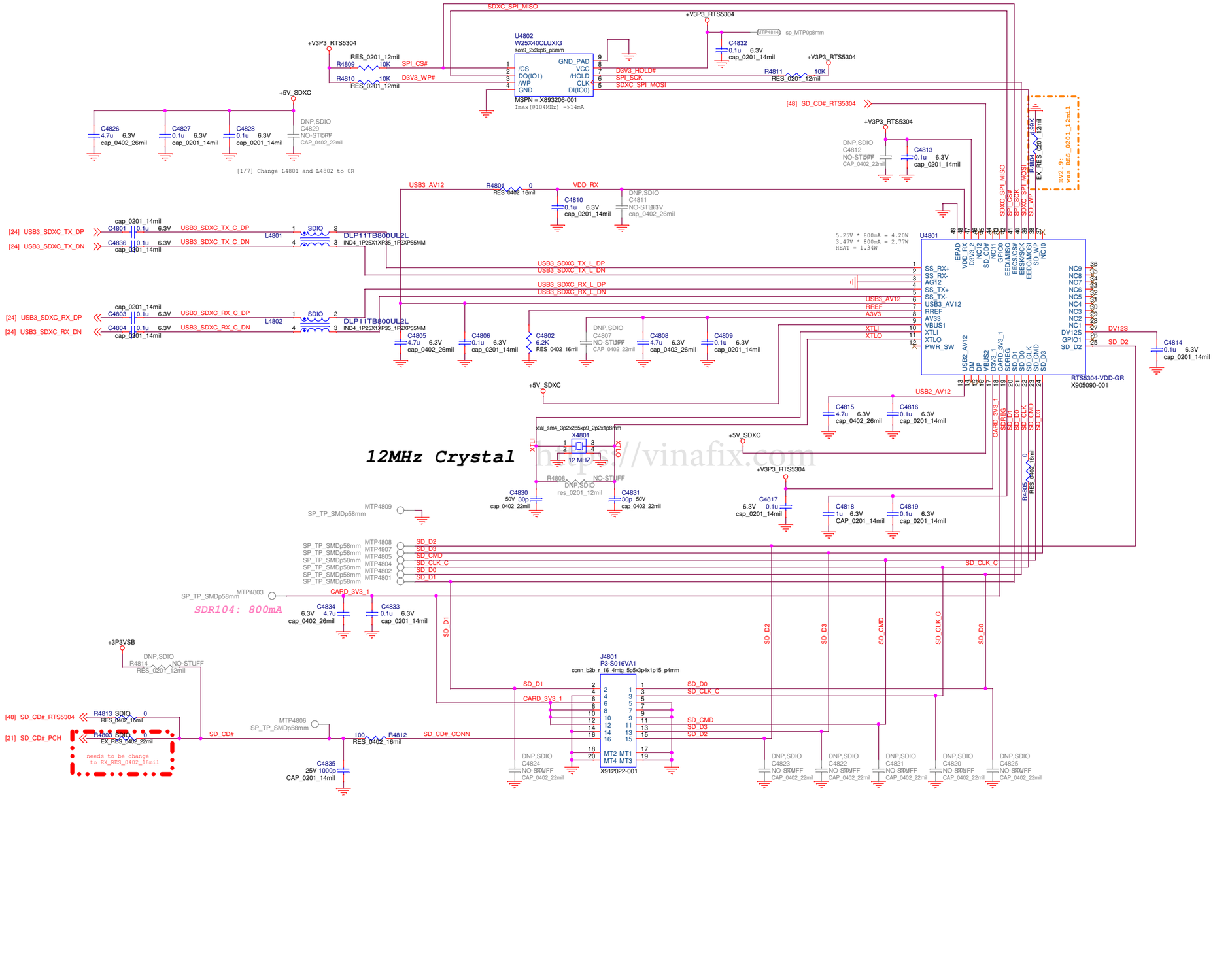
Place those AC Caps near to DP connector.

EV2.9.10: WAS:X909561-004
NOTE: VALUE IS X909561-004 not new MSPN

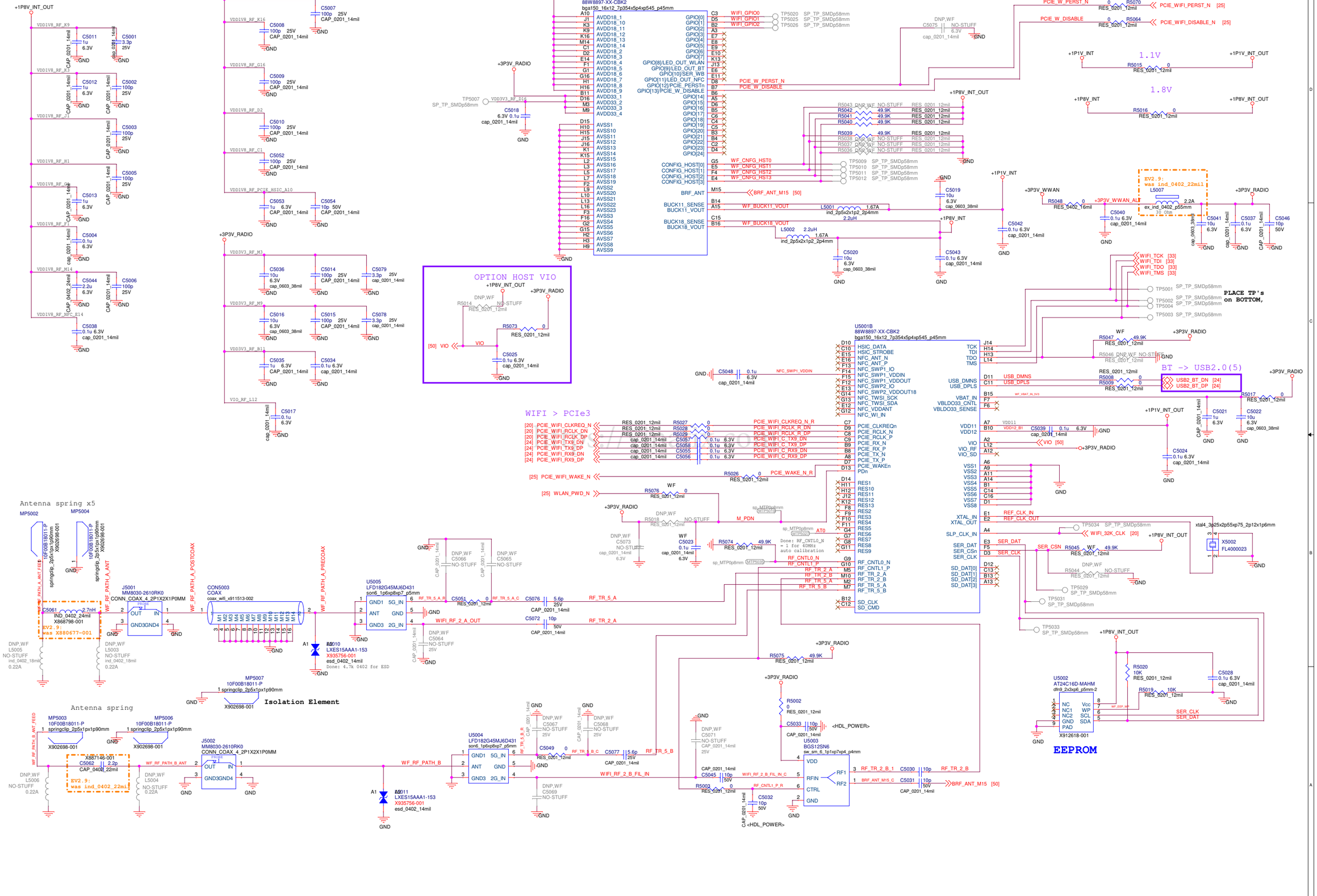
+3P3V
mDP conn
Imax = 0.5A

ILIM(33K) ~ 0.8A
meet VESA spec

EV2.9
was:X882617-001

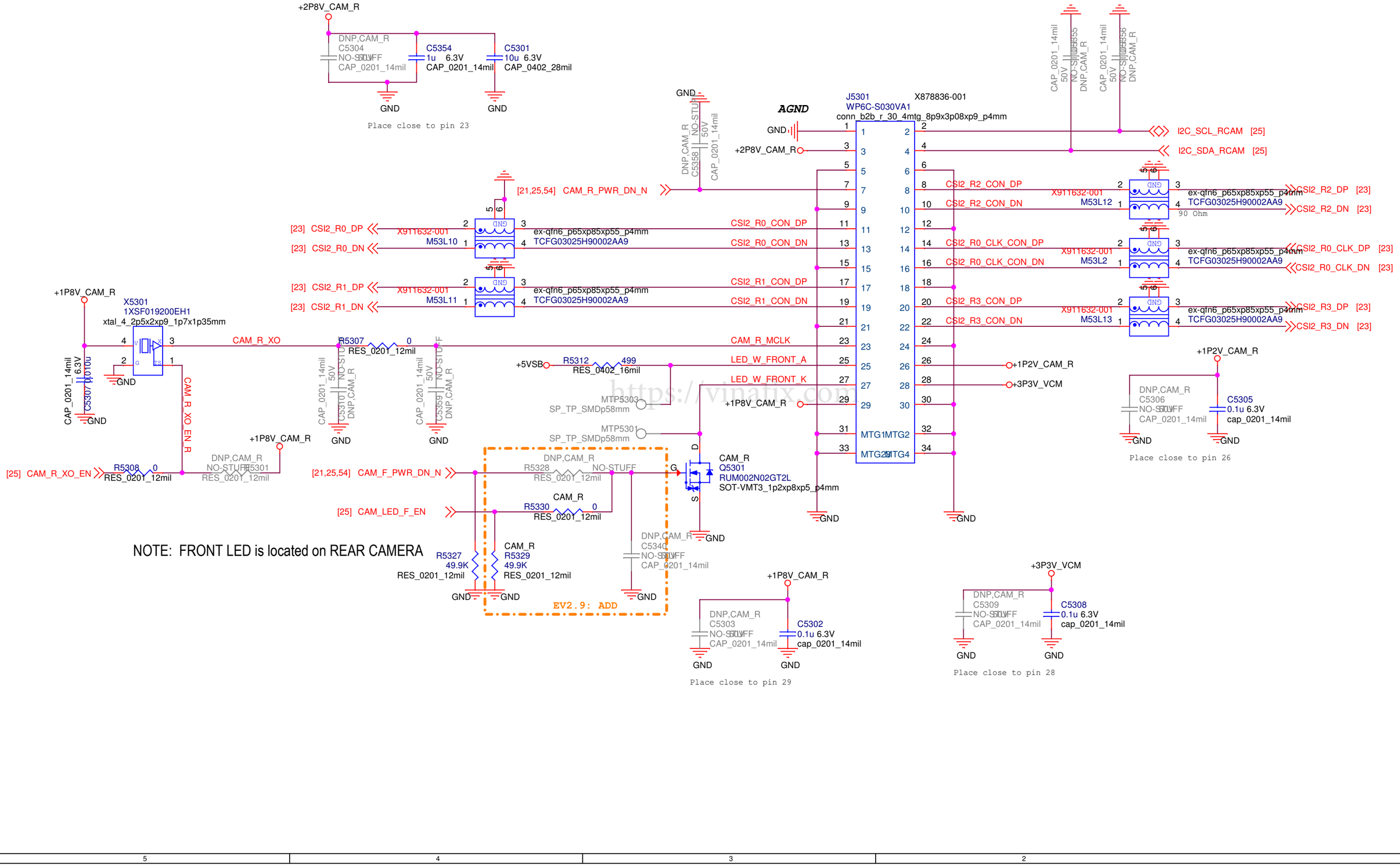

12MHz Crystal
SDR104: 800mA
needs to be change to EX_RES_0402_16mil
EV2_9 was RES_0201_12mil
[1/7] Change L4801 and L4802 to 0R
5.25V * 800mA = 4.20W
3.47V * 800mA = 2.77W
HEAT = 1.34W
RTS5304-VDD-GR
X905090-001
X912022-001
MSPN = X893206-001
Imax(@104MHz) =>14mA
[24] USB3_SDXC_TX_DP
[24] USB3_SDXC_TX_DN
[24] USB3_SDXC_RX_DP
[24] USB3_SDXC_RX_DN
[48] SD_CD#_RTS5304
[21] SD_CD#_PCH
SDXC_SPI_MISO
SDXC_SPI_MOSI
SPI_CS#
SPI_SCK
D3V3_WP#
D3V3_HOLD#
USB3_AV12
VDD_RX
SD_CD#
SD_CD#_CONN
CARD_3V3_1
USB2_AV12
RREF
A3V3
XTLI
XTLO
SD_D0
SD_D1
SD_D2
SD_D3
SD_CMD
SD_CLK_C
DV12S
+V3P3_RTS5304
+5V_SDXC
+3P3VSB
DNP,SDIO
NO-STUFF
https://vinafix.com

+VSYS
L4904 220 OHM
2A
ind_0805_42mil
CAM_IR_LED_IN
C4917 10u 10V
C4918 0.1u 10V
C4903 0.01u 25V
cap_0201_14mil
U4901
MP2370DJ
sot23-6_2p9x1p6x1_p95mm
IR_BST
BST
SW
IN
FB
EN
GND
IR_SW
IR_FB
L4903 4.7uH 100KHz 1.5A
ind_2p5x2x1_1p9mm
IR_OUT
[49] CAM_IR_STB
TP4904
tp_c0p75_1p70fm-nsp
R4915 2.05K res_0201_12mil
CAM_IR_STB_R
MTP4902
SP_TP_SMDp58mm
R4905 49.9K RES_0201_12mil
DNP,CAM_IR D4903
NO-STUFF
dio_sod882_1xp6xp5_p7mm
R4903 150K RES_0201_12mil
+3P3V
C4920 0.1u 6.3V
cap_0201_14mil
R4914 0 RES_0201_12mil
U4902
TLV3011
sc70-6_2x1p25x1p1_p65mm-2
CAM_IR_STB_ERR_INM
CAM_IR_STB_ERR_INP
CAM_IR_STB_ERR_REF
CAM_IR_STB_ERR
IN-
V+
REF
OUT
IN+
V-
R4912 4.99K RES_0201_12mil
C4919 1u 6.3V CAP_0402_22mil
R4913 NO-STUFF RES_0201_12mil DNP,CAM_IR
+1P8V_CAM_IR
DNP,CAM_IR C4908 NO-STUFF CAP_0201_14mil
C4906 0.1u 6.3V cap_0201_14mil
D4901 1A 30V
dio_dsn2_1p6xp8xp31mm
EV2.9: footprint updated
C4921 0.01u 10V
C4916 4.7u 10V
cap_0402_0p65mm
DNP,CAM_IR C4912 NO-STUFF CAP_0201_14mil 50V
R4919 1K RES_0402_6mil 1/16W
Note (15jan15): 300sq mm of top side copper is needed.
Vias (#'s?) to connect to bottom side copper
and a silicon thermal pad to bucket boss
D4902
Infra-Red
LED_3_3P85X3P85X1P63_1P12MM
X913457-001
R4907 100K RES_0201_12mil
IR_FB_R
R4909 1K RES_0201_12mil
IR_SENSE
DNP,CAM_IR C4915 NO-STUFF CAP_0201_14mil 25V
R4908 7.5K RES_0201_12mil
MTP4901
SP_TP_SMDp58mm
R4910 0.25 res_1206_p65mm 0.5W
J4901
WP6C-S024VA1
conn_b2b-r_24_4mtg_7p9x3p28xp9_p4mm
X879207-001
[23] CSI2_CLK2_IRCAM_DN
[23] CSI2_CLK2_IRCAM_DP
L4902 X911632-001
TCFG03025H90002AA9
ex-qfn6_p65xp85xp55_p4mm
CSI2_CLKN2_IR_CON
CSI2_CLKP2_IR_CON
[23] CSI2_IRCAM8_DN
[23] CSI2_IRCAM8_DP
L4901 X911632-001
CSI2_DN8_IR_CON
CSI2_DP8_IR_CON
R4918 1K RES_0201_12mil
CAM_IR_FSIN_VSYNC
FSIN/VSYNC
CAM_IR_STB [49]
CAM_IR_PWM
R4916 1K RES_0201_12mil
PWM
CAM_IR_ULPM
R4917 1K RES_0201_12mil
ULPM
DNP,CAM_IR C4913 50V NO-STUFF CAP_0201_14mil
CAM_IR_PWR_DN_N [20,25]
+2P8V_CAM_IR
MTG0 MTG1 MTG2 MTG3
DNP,CAM_IR C4909 NO-STUFF CAP_0201_14mil
C4904 0.1u 6.3V cap_0201_14mil
C4905 10u 6.3V CAP_0402_28mil
[25] I2C_SDA_IRCAM
[25] I2C_SCL_IRCAM
DNP,CAM_IR C4911 50V NO-STUFF CAP_0201_14mil
DNP,CAM_IR C4910 NO-STUFF CAP_0201_14mil
CAM_IRCAM_MCLK
0 R4901 RES_0201_12mil
DNP,CAM_IR C4902 50V NO-STUFF CAP_0201_14mil
DNP,CAM_IR C4901 50V NO-STUFF CAP_0201_14mil
X4901
1XSF019200EH1
xtal_4_2p5x2xp9_1p7x1p35mm
CAM_IRCAM_XO
C4907 0.01u 10V CAP_0201_14mil
DNP,CAM_IR R4906 NO-STUFF RES_0201_12mil
CAM_IRCAM_XO_EN_R
0 R4902 RES_0201_12mil
CAM_IRCAM_XO_EN [20,25]


+1P8V_INT_OUT
VDD1V8_RF_K9
C5011 1u 6.3V
C5001 3.3p 25V
VDD1V8_RF_K3
C5012 1u 6.3V
C5002 100p 25V
VDD1V8_RF_J1
C5003 100p 25V
VDD1V8_RF_H1
C5005 100p 25V
VDD1V8_RF_G9
C5013 1u 6.3V
VDD1V8_RF_F1
C5004 0.1u 6.3V
VDD1V8_RF_M14
C5044 2.2u 6.3V
C5006 100p 25V
VDD1V8_RF_NFC_E14
C5038 0.1u 6.3V cap_0201_14mil
GND
+1P8V_INT_OUT
VDD1V8_RF_H16
C5007 100p 25V CAP_0201_14mil
VDD1V8_RF_K16
C5008 100p 25V CAP_0201_14mil
VDD1V8_RF_G16
C5009 100p 25V CAP_0201_14mil
VDD1V8_RF_D2
C5010 100p 25V CAP_0201_14mil
VDD1V8_RF_C1
C5052 100p 25V CAP_0201_14mil
VDD1V8_RF_PCIE_HSIC_A10
C5053 1u 6.3V CAP_0201_14mil
C5054 10p 50V CAP_0201_14mil
+3P3V_RADIO
VDD3V3_RF_M3
C5036 10u 6.3V cap_0603_38mil
C5014 100p 25V CAP_0201_14mil
C5079 3.3p 25V cap_0201_14mil
VDD3V3_RF_M9
C5016 10u 6.3V cap_0603_38mil
C5015 100p 25V CAP_0201_14mil
C5078 3.3p 25V cap_0201_14mil
VDD3V3_RF_B13
C5035 1u 6.3V CAP_0201_14mil
C5034 0.1u 6.3V cap_0201_14mil
VIO_RF_L12
C5017 0.1u 6.3V cap_0201_14mil
U5001A
88W8897-XX-CBK2
bga150_16x12_7p354x5p4xp545_p45mm
AVDD18_1
AVDD18_10
AVDD18_11
AVDD18_12
AVDD18_13
AVDD18_14
AVDD18_2
AVDD18_3
AVDD18_4
AVDD18_5
AVDD18_6
AVDD18_7
AVDD18_8
AVDD18_9
AVDD33_1
AVDD33_2
AVDD33_3
AVDD33_4
AVSS1
AVSS10
AVSS11
AVSS12
AVSS13
AVSS14
AVSS15
AVSS16
AVSS17
AVSS18
AVSS19
AVSS2
AVSS20
AVSS21
AVSS22
AVSS23
AVSS3
AVSS4
AVSS5
AVSS6
AVSS7
AVSS8
AVSS9
GPIO[0]
GPIO[1]
GPIO[2]
GPIO[3]
GPIO[4]
GPIO[5]
GPIO[6]
GPIO[7]
GPIO[8]/LED_OUT_WLAN
GPIO[9]/LED_OUT_BT
GPIO[10]/SER_WB
GPIO[11]/LED_OUT_NFC
GPIO[12]/PCIE_PERSTn
GPIO[13]/PCIE_W_DISABLE
GPIO[14]
GPIO[15]
GPIO[16]
GPIO[17]
GPIO[18]
GPIO[19]
GPIO[20]
GPIO[21]
GPIO[22]
GPIO[23]
GPIO[24]
CONFIG_HOST[0]
CONFIG_HOST[1]
CONFIG_HOST[2]
CONFIG_HOST[3]
BRF_ANT
BUCK11_SENSE
BUCK11_VOUT
BUCK18_SENSE
BUCK18_VOUT
WIFI_GPIO0
WIFI_GPIO1
WIFI_GPIO2
TP5020 SP_TP_SMDp58mm
TP5025 SP_TP_SMDp58mm
TP5026 SP_TP_SMDp58mm
PCIE_W_PERST_N
PCIE_W_DISABLE
WF_CNFG_HST0
WF_CNFG_HST1
WF_CNFG_HST2
WF_CNFG_HST3
TP5009 SP_TP_SMDp58mm
TP5010 SP_TP_SMDp58mm
TP5011 SP_TP_SMDp58mm
TP5012 SP_TP_SMDp58mm
BRF_ANT_M15 [50]
WF_BUCK11_VOUT
L5001 1.67A ind_2p5x2x1p2_2p4mm 2.2uH
WF_BUCK18_VOUT
L5002 2.2uH 1.67A ind_2p5x2x1p2_2p4mm
C5020 10u 6.3V cap_0603_38mil
C5019 10u 6.3V cap_0603_38mil
C5043 0.1u 6.3V cap_0201_14mil
C5042 0.1u 6.3V cap_0201_14mil
TP5007 SP_TP_SMDp58mm
VDD3V3_RF_D16
C5018 6.3V 0.1u cap_0201_14mil
DNP,WF C5075 NO-STUFF 6.3V cap_0201_14mil
R5043 DNP,WF NO-STUFF RES_0201_12mil
R5042 49.9K RES_0201_12mil
R5041 49.9K RES_0201_12mil
R5040 49.9K RES_0201_12mil
R5039 49.9K RES_0201_12mil
R5038 DNP,WF NO-STUFF RES_0201_12mil
R5037 DNP,WF NO-STUFF RES_0201_12mil
R5036 DNP,WF NO-STUFF RES_0201_12mil
PCIE_W_PERST_N 0 RES_0201_12mil R5070 PCIE_WIFI_PERST_N [25]
PCIE_W_DISABLE 0 RES_0201_12mil R5064 PCIE_WIFI_DISABLE_N [25]
+1P1V_INT
1.1V
R5015 0 RES_0201_12mil
+1P1V_INT_OUT
+1P8V_INT
1.8V
R5016 0 RES_0201_12mil
+1P8V_INT_OUT
+3P3V_WWAN
R5048 0 RES_0402_16mil
+3P3V_WWAN_ALT
EV2.9: was ind_0402_22mil
L5007 2.2A ex_ind_0402_p55mm 30 Ohm
C5040 0.1u 6.3V cap_0201_14mil
C5041 10u 6.3V cap_0603_38mil
C5037 0.1u 6.3V cap_0201_14mil
C5046 10p 50V CAP_0201_14mil
+3P3V_RADIO
OPTION HOST VIO
+1P8V_INT_OUT
+3P3V_RADIO
DNP,WF R5014 NO-STUFF RES_0201_12mil
R5073 0 RES_0201_12mil
[50] VIO
VIO
C5025 0.1u 6.3V cap_0201_14mil
WIFI_TCK [33]
WIFI_TDI [33]
WIFI_TDO [33]
WIFI_TMS [33]
TP5001 SP_TP_SMDp58mm
TP5002 SP_TP_SMDp58mm
TP5004 SP_TP_SMDp58mm
TP5003 SP_TP_SMDp58mm
PLACE TP's on BOTTOM,
U5001B
88W8897-XX-CBK2
bga150_16x12_7p354x5p4xp545_p45mm
HSIC_DATA
HSIC_STROBE
NFC_ANT_N
NFC_ANT_P
NFC_SWP1_IO
NFC_SWP1_VDDIN
NFC_SWP1_VDDOUT
NFC_SWP2_IO
NFC_SWP2_VDDOUT18
NFC_TWSI_SCK
NFC_TWSI_SDA
NFC_VDDANT
NFC_WI_IN
C5048 0.1u 6.3V cap_0201_14mil NFC_SWP1_VDDIN
TCK
TDI
TDO
TMS
WF R5047 49.9K RES_0201_12mil
R5046 DNP,WF NO-STUFF RES_0201_12mil
USB_DMNS
USB_DPLS
BT -> USB2.0(5)
USB2_BT_DN [24]
USB2_BT_DP [24]
R5008 0 RES_0201_12mil
R5009 0 RES_0201_12mil
R5017 0 RES_0201_12mil
WF_VBAT_IN_3V3
VBAT_IN
VBLDO33_CNTL
VBLDO33_SENSE
VDD11
VDD12
VDD12_B1
C5039 0.1u 6.3V cap_0201_14mil
C5021 1u 6.3V CAP_0201_14mil
C5022 10u 6.3V cap_0603_38mil
C5024 0.1u 6.3V cap_0201_14mil
VIO_RF
VIO_SD
VIO [50]
+3P3V_RADIO
VSS1
VSS2
VSS3
VSS4
VSS5
VSS6
VSS7
VSS8
WIFI > PCIe3
[20] PCIE_WIFI_CLKREQ_N
[20] PCIE_WIFI_RCLK_DN
[20] PCIE_WIFI_RCLK_DP
[24] PCIE_WIFI_TX9_DN
[24] PCIE_WIFI_TX9_DP
[24] PCIE_WIFI_RX9_DN
[24] PCIE_WIFI_RX9_DP
R5027 0 PCIE_WIFI_CLKREQ_N_R
R5028 0 PCIE_WIFI_RCLK_R_DN
R5029 0 PCIE_WIFI_RCLK_R_DP
C5057 0.1u 6.3V PCIE_WIFI_C_TX9_DN
C5058 0.1u 6.3V PCIE_WIFI_C_TX9_DP
C5055 0.1u 6.3V PCIE_WIFI_C_RX9_DN
C5056 0.1u 6.3V PCIE_WIFI_C_RX9_DP
[25] PCIE_WIFI_WAKE_N
R5026 0 PCIE_WAKE_N_R
[25] WLAN_PWD_N
R5076 0
PCIE_CLKREQn
PCIE_RCLK_N
PCIE_RCLK_P
PCIE_RX_N
PCIE_RX_P
PCIE_TX_N
PCIE_TX_P
PCIE_WAKEn
PDn
RES1
RES10
RES11
RES12
RES13
RES2
RES3
RES4
RES5
RES6
RES7
RES8
RES9
REF_CLK_IN
REF_CLK_OUT
TP5034 SP_TP_SMDp58mm
WIFI_32K_CLK [20]
SLP_CLK_IN
SER_DAT
SER_CSn
SER_CLK
SD_DAT[0]
SD_DAT[1]
SD_DAT[2]
SD_DAT[3]
SD_CLK
SD_CMD
xtal4_3p25x2p55xp75_2p12x1p6mm
X5002 FL4000023
R5045 49.9K RES_0201_12mil
R5044 DNP,WF NO-STUFF RES_0201_12mil
TP5029 SP_TP_SMDp58mm
TP5031 SP_TP_SMDp58mm
TP5033 SP_TP_SMDp58mm
U5002
AT24C16D-MAHM
dfn9_2x3xp6_p5mm-2
NC
NC1
NC2
GND
PAD
Vcc
WP
SCL
SDA
R5020 10K RES_0201_12mil
R5019 10K RES_0201_12mil
C5028 0.1u 6.3V cap_0201_14mil
WF_EEP_WP
SER_CLK
SER_DAT
X912618-001
EEPROM
Antenna spring x5
MP5002
MP5004
10F00B18011-P
springclip_2p5x1p1x90mm
X902698-001
WF_RF_PATH_A_ANT_FEED
WF_RF_PATH_A_ANT
C5061 2.7nH IND_0402_24mil X868798-001
EV2.9: was X880677-001
J5001 MM8030-2610RK0 CONN_COAX_4_2P1X2X1P0MM
OUT
IN
GND3GND4
WF_RF_PATH_A_POSTCOAX
CON5003 COAX coax_wifi_x911513-002
WF_RF_PATH_A_PRECOAX
U5005 LFD182G45MJ6D431 son6_1p6xp8xp7_p5mm
GND1 5G_IN
ANT GND
GND3 2G_IN
RF_TR_5_A_P
RF_TR_5_A_C
C5051 0 RES_0201_12mil
C5076 5.6p 25V CAP_0201_14mil
RF_TR_5_A
WIFI_RF_2_A_OUT
C5072 10p 50V CAP_0201_14mil
RF_TR_2_A
A1
A5010 LXES15AAA1-153 X935756-001 esd_0402_14mil
Done: 4.7k 0402 for ESD
DNP,WF L5005 NO-STUFF ind_0402_18mil 0.22A
DNP,WF L5003 NO-STUFF ind_0402_18mil 0.22A
MP5007
10F00B18011-P
1 springclip_2p5x1px1p90mm
X902698-001
Isolation Element
Antenna spring
MP5003
MP5006
WF_RF_PATH_B_ANT_FEED
WF_RF_PATH_B_ANT
X887146-001
C5062 2.2p CAP_0402_22mil
EV2.9: was ind_0402_22mil
DNP,WF L5006 NO-STUFF 0.22A
DNP,WF L5004 NO-STUFF 0.22A
J5002 MM8030-2610RK0 CONN_COAX_4_2P1X2X1P0MM
WF_RF_PATH_B
U5004 LFD182G45MJ6D431 son6_1p6xp8xp7_p5mm
RF_TR_5_B_P
RF_TR_5_B_C
C5049 0 RES_0201_12mil
C5077 5.6p 25V CAP_0201_14mil
RF_TR_5_B
WIFI_RF_2_B_FIL_IN
A5011 LXES15AAA1-153 X935756-001 esd_0402_14mil
DNP,WF C5067 NO-STUFF 25V
DNP,WF C5068 NO-STUFF 25V
DNP,WF C5069 NO-STUFF
DNP,WF C5071 NO-STUFF CAP_0201_14mil 25V
C5045 10p 50V CAP_0201_14mil
WIFI_RF_2_B_FIL_IN_C
R5003 0 RES_0201_12mil
RF_CNTL1_P_R
C5032 10p 50V <HDL_POWER>
R5002 0 RES_0201_12mil
C5033 10p 50V CAP_0201_14mil <HDL_POWER>
U5003 BGS12SN6 sw_sm_6_1p1xp7xp4_p4mm
VDD
RFIN
CTRL
GND
RF1
RF2
RF_TR_2_B_1
BRF_ANT_M15_C
C5030 10p
C5031 10p
RF_TR_2_B
BRF_ANT_M15 [50]
R5075 49.9K RES_0201_12mil
+3P3V_RADIO
+1P8V_INT_OUT
PCIE_WIFI_CLKREQ_N_R
PCIE_WIFI_RCLK_R_DN
PCIE_WIFI_RCLK_R_DP
PCIE_WIFI_C_TX9_DN
PCIE_WIFI_C_TX9_DP
PCIE_WIFI_C_RX9_DN
PCIE_WIFI_C_RX9_DP
PCIE_WAKE_N_R
RF_CNTL1_P_R
RF_TR_2_A
RF_TR_2_B
RF_TR_5_A
RF_TR_5_B
RF_TR_2_B_1
WF_RF_PATH_B
WF_RF_PATH_A_POSTCOAX
WF_RF_PATH_A_PRECOAX
WF_RF_PATH_A_ANT
WF_RF_PATH_B_ANT
WF_RF_PATH_A_ANT_FEED
WF_RF_PATH_B_ANT_FEED
RF_TR_5_A_C
RF_TR_5_B_C
WIFI_RF_2_B_FIL_IN_C
RF_CNTL1_P_R
RF_TR_2_B_1
BRF_ANT_M15_C
WF_VBAT_IN_3V3
WF_EEP_WP
M_PDN
RF_CNTL0_N
RF_CNTL1_P
RF_TR_2_A
RF_TR_2_B
RF_TR_5_A
RF_TR_5_B
BRF_ANT_M15 [50]
RES_0201_12mil
CAP_0201_14mil
GND

EMPTY

10mA
15mA
55mA
+1P8V_CAM_R
+1P8V_CAM_F
+1P8V_CAM_IR
+3P3VSB
U5201
LD39115J18R_1p8V
bga4_2x2_p8xp8xp6_p4mm
B2 VIN VOUT B1
A2 EN GND A1
+1P8V_CAM_REG
PC5202 0.1u 6.3V cap_0201_14mil
PC5201 1u 6.3V CAP_0201_14mil
PC5204 0.1u 6.3V cap_0201_14mil
PC5203 10u 6.3V CAP_0402_28mil
R5202 10K RES_0201_12mil
ApexY_EV2.89.0 Added
PMTP5211 SP-tp-c0p381
PR5201 CAM_PWR 0 res_0402_16mil
PR5202 CAM_PWR 0 res_0402_16mil
PR5209 CAM_PWR 0 res_0402_16mil
PMTP5214 SP-tp-c0p381
PMTP5212 SP-tp-c0p381
PMTP5213 SP-tp-c0p381
MTP5214 SP_TP_SMDp58mm
MTP5212 SP_TP_SMDp58mm
MTP5213 SP_TP_SMDp58mm
[23,25,52] RTD3_CAM_PWREN
GND
U5202
2.8V-LD39115J28R
bga4_p8xp8xp6_p4mm
+2P8V_CAM_R_REG
+2P8V_CAM_R
45mA
CAM_PWR PR5203 0 res_0402_16mil
PC5206 0.1u 6.3V cap_0201_14mil
PC5205 1u 6.3V CAP_0201_14mil
PC5208 0.1u 6.3V cap_0201_14mil
PC5207 10u 6.3V CAP_0402_28mil
PMTP5209 SP-tp-c0p381
PMTP5210 SP-tp-c0p381
MTP5209 SP_TP_SMDp58mm
R5206 10K RES_0201_12mil
ApexY_EV2.89.0 Added
U5203
2.8V-LD39115J28R
bga4_p8xp8xp6_p4mm
+2P8V_CAM_F_REG
+2P8V_CAM_F
70mA
CAM_PWR PR5204 0 res_0402_16mil
PC5210 0.1u 6.3V cap_0201_14mil
PC5209 1u 6.3V CAP_0201_14mil
PC5212 0.1u 6.3V cap_0201_14mil
PC5211 10u 6.3V CAP_0402_28mil
PMTP5208 SP-tp-c0p381
PMTP5207 SP-tp-c0p381
MTP5207 SP_TP_SMDp58mm
R5203 10K RES_0201_12mil
ApexY_EV2.89.0 Added
U5206
2.8V-LD39115J28R
bga4_p8xp8xp6_p4mm
+2P8V_CAM_IR_REG
+2P8V_CAM_IR
20mA
CAM_PWR PR5207 0 res_0402_16mil
PC5221 0.1u 6.3V cap_0201_14mil
PC5220 1u 6.3V CAP_0201_14mil
PC5223 0.1u 6.3V cap_0201_14mil
PC5222 10u 6.3V CAP_0402_28mil
PMTP5205 SP-tp-c0p381
PMTP5206 SP-tp-c0p381
MTP5206 SP_TP_SMDp58mm
R5204 10K RES_0201_12mil
ApexY_EV2.89.0 Added
PC5218 1u 6.3V CAP_0201_14mil
U5205
NX3P1108UK
bga4_2x2_p96xp96xp59_p5mm
A2 VIN VOUT A1
B2 EN GND B1
+3P3V_VCM_REG
CAM_PWR PR5206 0 res_0402_16mil
PC5219 0.1u 6.3V cap_0201_14mil
PMTP5202 SP-tp-c0p381
PMTP5201 SP-tp-c0p381
MTP5201 SP_TP_SMDp58mm
LED???
+3P3V_VCM
+1P8V_CAM_R
U5204
LP3991TLX-1.2/NOPB
bga4_2x2_1p43xp96xp675_p5mm
B2 VIN VOUT B1
A2 ON/OFF GND A1
+1P2V_CAM_R_REG
+1P2V_CAM_R
120mA
DB,CAM_PWR PR5205 0.010 res_0603_30mil
PC5214 0.1u 6.3V cap_0201_14mil
PC5213 1u 6.3V CAP_0201_14mil
PC5216 0.1u 6.3V cap_0201_14mil
PC5215 10u 6.3V CAP_0402_28mil
PMTP5203 SP-tp-c0p381
PMTP5204 SP-tp-c0p381
MTP5204 SP_TP_SMDp58mm
R5205 10K RES_0201_12mil
ApexY_EV2.89.0 Added
R5201 4.99K RES_0201_12mil
+1P2V_CAM_R_EN
PC5217 10u 6.3V CAP_0402_28mil
[23,25,52] RTD3_CAM_PWREN


+2P8V_CAM_R
DNP,CAM_R
C5304
NO-STUFF
CAP_0201_14mil
C5354
1u 6.3V
CAP_0201_14mil
C5301
10u 6.3V
CAP_0402_28mil
GND
Place close to pin 23
J5301
WP6C-S030VA1
X878836-001
conn_b2b_r_30_4mtg_8p9x3p08xp9_p4mm
AGND
+2P8V_CAM_R
[21,25,54] CAM_R_PWR_DN_N
I2C_SCL_RCAM [25]
I2C_SDA_RCAM [25]
[23] CSI2_R0_DP
[23] CSI2_R0_DN
[23] CSI2_R1_DP
[23] CSI2_R1_DN
X911632-001
M53L10
M53L11
ex-qfn6_p65xp85xp55_p4mm
TCFG03025H90002AA9
CSI2_R0_CON_DP
CSI2_R0_CON_DN
CSI2_R1_CON_DP
CSI2_R1_CON_DN
CSI2_R2_CON_DP
CSI2_R2_CON_DN
CSI2_R0_CLK_CON_DP
CSI2_R0_CLK_CON_DN
CSI2_R3_CON_DP
CSI2_R3_CON_DN
M53L12
M53L2
M53L13
CSI2_R2_DP [23]
CSI2_R2_DN [23]
CSI2_R0_CLK_DP [23]
CSI2_R0_CLK_DN [23]
CSI2_R3_DP [23]
CSI2_R3_DN [23]
90 Ohm
+1P8V_CAM_R
X5301
1XSF019200EH1
xtal_4_2p5x2xp9_1p7x1p35mm
CAM_R_XO
R5307
0
RES_0201_12mil
CAM_R_MCLK
+5VSB
R5312
499
RES_0402_16mil
LED_W_FRONT_A
LED_W_FRONT_K
MTP5303
MTP5301
SP_TP_SMDp58mm
+1P2V_CAM_R
+3P3V_VCM
C5307
0.01u
C5305
0.1u 6.3V
cap_0201_14mil
DNP,CAM_R
C5306
Place close to pin 26
[25] CAM_R_XO_EN
R5308
0
R5301
[21,25,54] CAM_F_PWR_DN_N
R5328
[25] CAM_LED_F_EN
R5330
CAM_R
Q5301
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
R5327
49.9K
R5329
49.9K
C5340
NOTE: FRONT LED is located on REAR CAMERA
EV2.9: ADD
C5303
C5302
Place close to pin 29
C5309
C5308
Place close to pin 28
C5310
C5359
C5358
C5356
C5355
https://vinafix.com

NOTE: REAR LED is located on FRONT CAMERA

+5VSB
R5418
10K
RES_0201_12mil
1/20W
LED_W_REAR_A
MTP5402
SP_TP_SMDp58mm

EV2.9:
was CAP_0201_14mil
Place close to pin 1 and 2
+1P8V_CAM_F
DNP,CAM_F
C5403
NO-STUFF
EX_CAP_0201_14MIL
C5402
0.1u 6.3V
cap_0201_14mil
GND
GND

+1P8V_CAM_F
+1P8V_CAM_F

J5401
WP6C-S030VA1
conn_b2b_r_30_4mtg_8p9x3p08xp9_p4mm

SP_TP_SMDp58mm
MTP5401
LED_W_REAR_K

[25] CAM_LED_R_EN
[21,25,53] CAM_R_PWR_DN_N

DNP,CAM_F
NO-STUFF R5422
RES_0201_12mil
0
R5423
RES_0201_12mil

R50166
49.9K
RES_0201_12mil
R5424
NO-STUFF
RES_0201_12mil
DNP,CAM_F
DNP,CAM_F
C5407
NO-STUFF
CAP_0201_14mil
Q5401
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
GND
GND
EV2.9: ADD
GND
GND

ex-qfn6_p65xp85xp55_p4mm
TCFG03025H90002AA9
M54L14
CSI2_F5_DN [23]
CSI2_F5_DP [23]
X911632-001
CSI2_F5_CON_DN
CSI2_F5_CON_DP

ex-qfn6_p65xp85xp55_p4mm
TCFG03025H90002AA9
M54L2
CSI2_F1_CLK_DN [23]
CSI2_F1_CLK_DP [23]
X911632-001
CSI2_F1_CON_CLK_DN
CSI2_F1_CON_CLK_DP

CSI2_F4_CON_DN
CSI2_F4_CON_DP

ex-qfn6_p65xp85xp55_p4mm
TCFG03025H90002AA9
M54L15
CSI2_F4_DN [23]
CSI2_F4_DP [23]
X911632-001

[21,25,53] CAM_F_PWR_DN_N
[25] I2C_SCL_FCAM
[25] I2C_SDA_FCAM
I2C_SCL_FCAM
I2C_SDA_FCAM
CAM_F_MCLK

DNP,CAM_F
C5483
50V NO-STUFF
CAP_0201_14mil
DNP,CAM_F
C5482
50V NO-STUFF
CAP_0201_14mil
GND
GND

AGND
AGND
+2P8V_CAM_F
+2P8V_CAM_F
MTG1
MTG2
MTG3
MTG4
GND
GND

X5401
1XSF019200EH1
xtal_4_2p5x2xp9_1p7x1p35mm
+1P8V_CAM_F
0
R5404
RES_0201_12mil
CAM_F_XO
DNP,CAM_F
C5486
NO-STUFF
CAP_0201_14mil
50V
DNP,CAM_F
C5406
NO-STUFF
CAP_0201_14mil
50V
C5405
0.010u
CAP_0201_14mil
6.3V
GND
GND
GND
GND
CAM_F_XO_EN_R

+2P8V_CAM_F
Place close to pin 29 and 30
DNP,CAM_F
C5404
NO-STUFF
CAP_0201_14mil
C5481
0.1u 6.3V
cap_0201_14mil
C5401
10u 6.3V
CAP_0402_28mil
GND
GND
GND

+1P8V_CAM_F
DNP,CAM_F
R5401
NO-STUFF
RES_0201_12mil
0
R5405
RES_0201_12mil
CAM_F_XO_EN [25]

+V_ALWAYS_ON
lin=0.28A
Trace Width>30mil

VDD_BATA_PACK
0.5A 40V
PD5501
SS0540-L
dio_sod123_2p7x1p6x1p35
A K
V_ALWAY_ON_IN
PWR_3P3VAS
PR5576 0.01
res_0402_22mil
+V_ALWAYS_ON
PC5515 0.1u 25V
CAP_0402_22mil
GND

FANG_PWR_F
0.5A 40V
PD5506
SS0540-L
dio_sod123_2p7x1p6x1p35
A K

PWR_SL1_F
dio_sod123_2p7x1p6x1p35
PD5503
SS0540-L
0.5A 40V
A K
PWR_SL1_F_S
PC5505
IRLML6402
SOT23_2p9X1P3X1P12_P95MM
S D G
PC5532 0.01u 25V
ex_cap_0201_14mil
PWR_SL1_F_S_DRI
EV2.9: WAS: CAP_0201_14mil
PR5546 100K
RES_0201_12mil
PR5545 200K
RES_0201_12mil
SL1_PWR_GOOD#
[35,70] SL1_PWR_GOOD
PQ5506
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
PR5547 100K
RES_0201_12mil
DNP,PWR_3P3VAS
PC5531
NO-STUFF
cap_0201_14mil

+V_ALWAYS_ON
was NCP4623HMXADJTCG
Imax = 150mA
U5505
TPS70933DRVR
dfn7_2x2xp8_p65mm
VIN VO
EN
NC5 GND3
NC2
PR5522 100K RES_0201_12mil
PR5521 33K RES_0201_12mil
+3P3VAS_EN
PC5519 0.1u 25V CAP_0402_22mil
TPS70933: 7V > EN > 0.4V

+3P3VAS
Imax<=80mA

+3P3VAS_REG
DNP,PWR_3P3VAS
PC5514
NO-STUFF
cap_0603_36mil
PC5529 2.2u 6.3V
CAP_0402_24mil
DB,PWR_3P3VAS
PR5575 0.01
res_0402_22mil
+3P3VAS
MTP5519
SP_TP_SMDp58mm

+3P3VA
PR5573 100K RES_0201_12mil
+V_ALWAYS_ON
PC7515 0.1u 25V CAP_0402_22mil
U5506
TPS70950DRVR
son7_2x2xp8_p65mm-4
VIN VO
EN
NC5 GND3
NC2
+5VA_EN
+5VA_SHA_REG
PC7514 2.2u 6.3V CAP_0402_24mil
DB,PWR_5V_SHA
PR5571 0
res_0402_16mil
+5VA_SHA

+5V_SHA
Imax<=80mA

5.25^2/(.99*750) = 0.037W
R50139
750
RES_0402_16mil
+5VA_DISCONNECT
Q7403A
NX3008NBKS
sot363_6_2x1p25x1p1_p65mm
+5VA_DISC_DRI
PR5572 499K
RES_0201_12mil
Q7403B
NX3008NBKS
sot363_6_2x1p25x1p1_p65mm

+3P3VAS
PR5569 1.5K
RES_0201_12mil
3P3VAS_R
dio_sod882_1xp6xp5_p7mm
RB520CS3002L
PD5505
A K
200mA 30V
+VCC_RTC
TP5501
SP_TP_SMDp58mm
PWR_RTC
PR5514 49.9K
RES_0201_12mil

+3P3VAS
PR5501 1K
I=3.5mA
P=12mW
RES_0201_12mil
PWR/VOL+ Hold Time = 13 secs
Reset Duration = 0.921 sec.
PC5520 1u 6.3V
CAP_0201_14mil
RESET_VCC
[39] DEVICE_RST#
PR5560 0
RES_0201_12mil
DNP,PWR_3P3VA
PR5574 NO-STUFF
RES_0201_12mil
PU5504
MAX16125WTDP29+T
bga6_2x3_p865x1p27xp69_p4mm
VCC RESET
MR SRESET
SEL
GND
SYS_HW_RST_D#
DNP,PWR_3P3VA
PR5505
NO-STUFF
RES_0201_12mil

+3P3VAS
PR5533 200K
RES_0201_12mil
DNP,PWR_3P3VA
PR5513
NO-STUFF
RES_0201_12mil
+3P3VA_SLEEP

+3P3VA
PR5532 10K
RES_0201_12mil
3P3VA_EN
[70] +3P3VA_PG

+3P3VAS
PR5544 100K
RES_0201_12mil

PU5501
TPS62175DQCR
son11_3x2xp8_p5mm
EN VIN
SW
VOS
FB
NC
PGND
AGND
AGND/PGND
+3P3VA_SW
+3P3VA_SLEEP
+3P3VA_FB
PR5509 316K
res_0201_12mil
PR5508 100K
RES_0201_12mil

+V_ALWAYS_ON
EV2.9
was:cap_2p2x1p25x2_1p63mm
Needs 2.2uF
PC5509 22uF25V
cap_2p2x1p25x2_1p65mm
EV2.9
was:X882617-001
PL5501 0.89A 10uH
ind_4x4x1p2mm
PC5505 22u 6.3V
cap_0603_38mil
PC5521 22u 6.3V
cap_0603_38mil
+3P3VA_REG
R1 = R2 {Vout /Vref(0.8) - 1}

Effective Capacitance
2.2uF_0.55mm => @15V=0.255uF
2.2uF_0.55mm => @20V=0.194uF
22 uF_1.45mm => @20V =2.566uF

MTP_BF5504
sp_MTP0p8mm
DB,PWR_3P3VA
PR5531 0.01
res_0402_22mil
PMTP5503
SP-tp-c0p381
PMTP5504
SP-tp-c0p381
+3P3VA

+3P3VA
Imax=0.4575A

DB,PWR_3P3VA
PR5570 0.01
res_0402_22mil
PMTP5507
SP-tp-c0p381
PMTP5508
SP-tp-c0p381
MTP5508
SP_TP_SMDp58mm
+3P3V_EC

+3P3V_EC
Imax=0.0375A

U5501
ADP151ACBZ-1.8-R7
bga4_2x2_p76xp76xp66_p4mm
EN VIN
GND VOUT
PC7525 1u 6.3V CAP_0201_14mil
C7653 680p 25V CAP_0201_14mil
+1P8V_EC
PC7524 1u 6.3V CAP_0201_14mil
C7652 680p 25V CAP_0201_14mil

+1P8V_EC
Imax=8uA

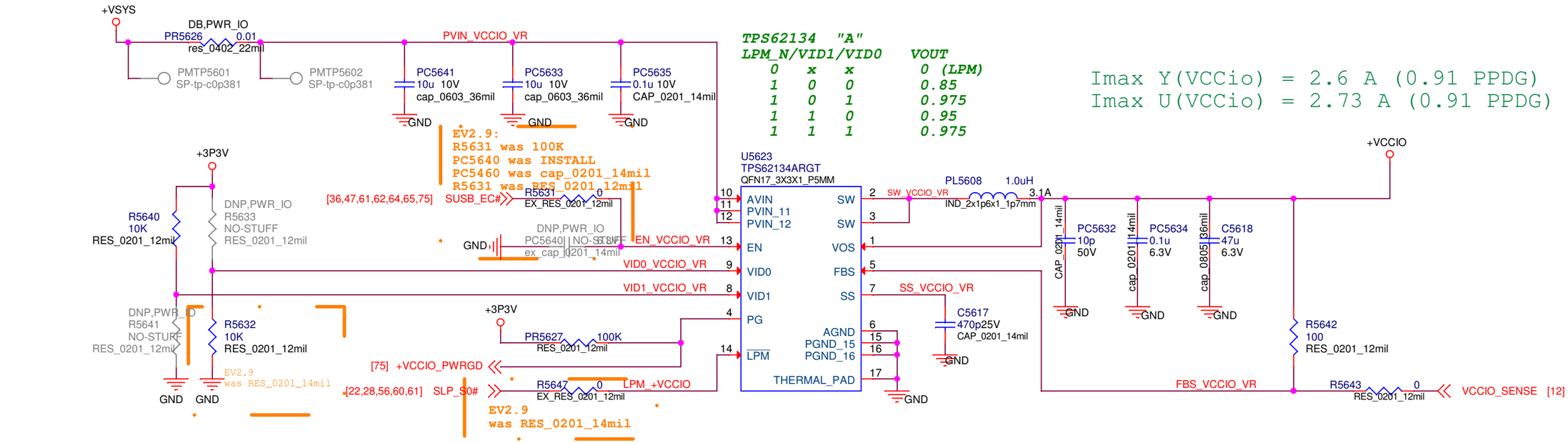
PU5503
SN74AUP1G02DRYR
son6_1p45x1xp6_p5mm
[30,36] VOL_UP_EC_N
[30,35,36] PWRBTN#_EC
USER_RESET
PR5536 100K
RES_0201_12mil
MR1# DRI
PQ5504
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
PC5501 1u 6.3V
CAP_0201_14mil

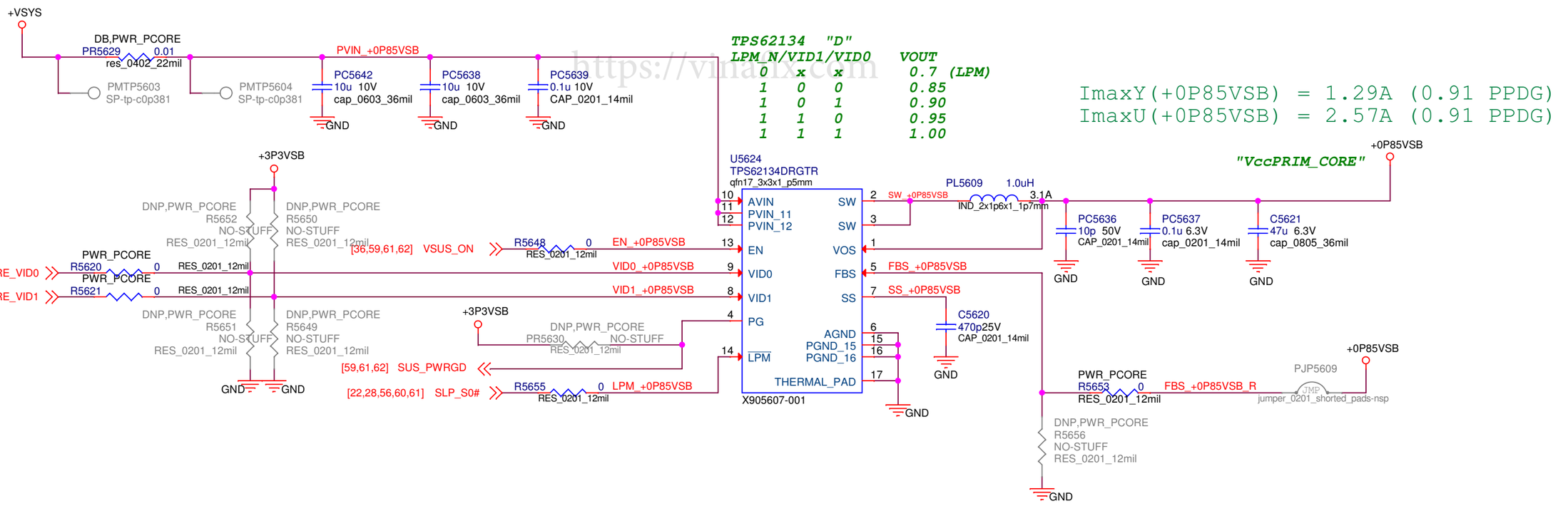
+3P3VAS
PU5509
NX3P1108UK
bga4_2x2_p96xp96xp59_p5mm
VIN VOUT
EN GND
[36,76] VCCDSW_EN
VCCDSW_OUT
PR5541 316K
res_0201_12mil
PC5526 1u 6.3V
CAP_0201_14mil
PC5527 0.1u 6.3V
cap_0201_14mil
DB,PWR_DSW
PR5539 0.01
res_0402_22mil
PMTP5505
SP-tp-c0p381
+VCCDSW
MTP5506
SP_TP_SMDp58mm

+VCCDSW
Imax=0.15A

+3P3VA
PR5548 0
RES_0201_12mil
+1P8VA_EN
PU5505
ADP151ACBZ-1.8-R7
bga4_2x2_p76xp76xp66_p4mm
EN VIN
GND VOUT
Imax = 200mA
PC5502 680p 25V
CAP_0201_14mil
PC5503 1u 6.3V
CAP_0201_14mil
+1P8VA_REG
PC5522 680p 25V
CAP_0201_14mil
PC5504 1u 6.3V
CAP_0201_14mil
DB,PWR_1P8VA
PR5528 0.01
res_0402_22mil
PMTP5501
SP-tp-c0p381
sp_MTP0p8mm
MTP_BF5502
PMTP5502
SP-tp-c0p381
+1P8VA
used for EC VREFH (ADC)
DNP,PWR_1P8VA
PR5540
NO-STUFF
RES_0201_12mil

+1P8VA
Imax=1.7mA





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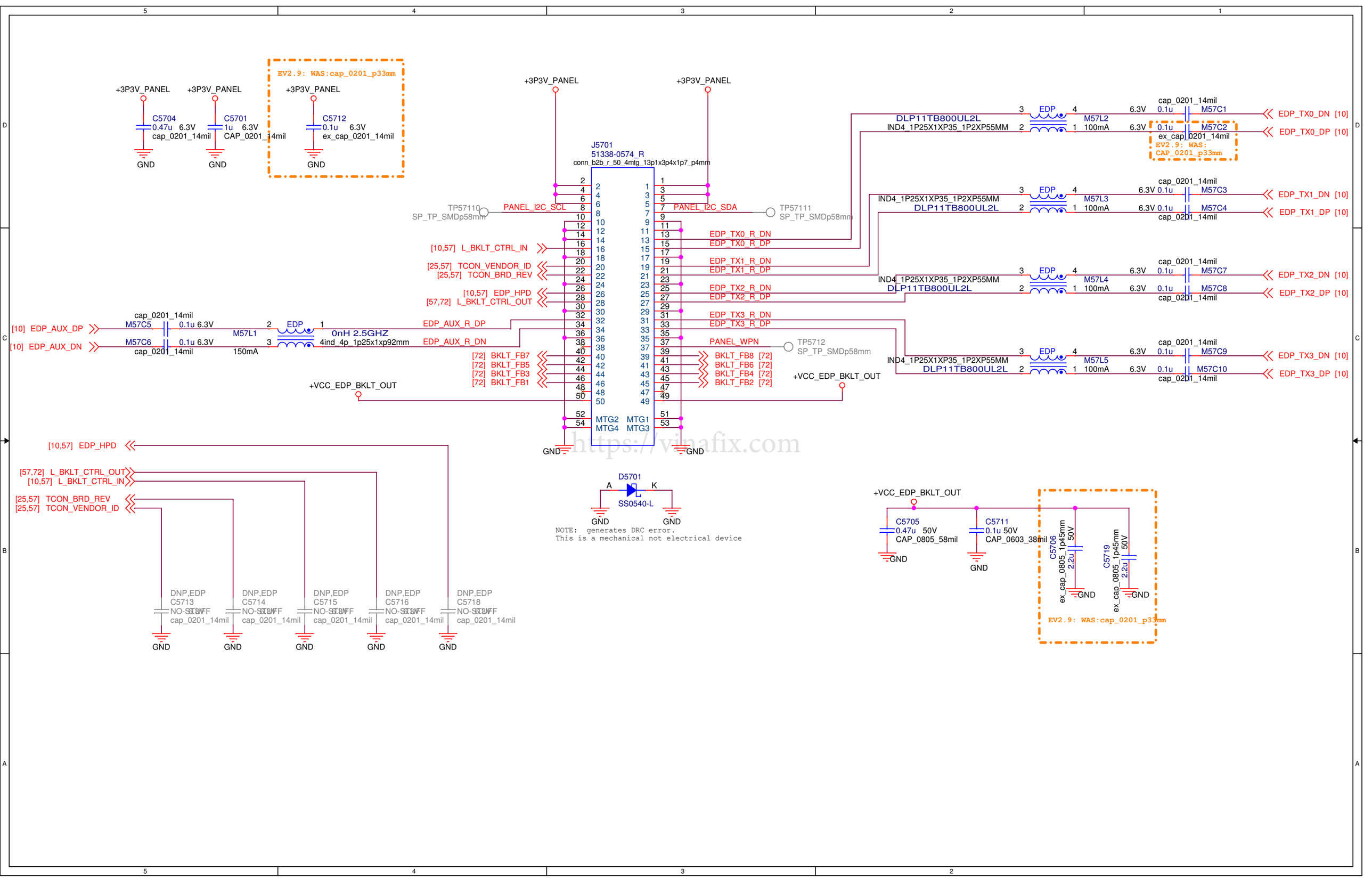


Parts only installed for 23e SKU

TPS62134 "C"

LPM_N	VID1	VID0	VOUT
0	x	x	0 (LPM)
1	0	0	0.80
1	0	1	0.95
1	1	0	1.00
1	1	1	1.05

Imax(1V)=3A
Efficiency=80%@2.8A
Theta(JA)=44.2

Icc(max)=3.2A (22apr15)

+VSYS
U23E,DB,PWR_EDRAM
PR5820 0.01
res_0402_22mil
PMTP5801 SP-tp-c0p381
PMTP5802 SP-tp-c0p381
PVIN_EDRAM_VR
U23E,PWR_EDRAM PC5832 NO-STUFF cap_0603_36mil
U23E,PWR_EDRAM PC5824 NO-STUFF cap_0603_36mil
U23E,PWR_EDRAM PC5827 NO-STUFF CAP_0201_14mil
GND
+3P3V
U23E,PWR_EDRAM R5877 NO-STUFF RES_0201_12mil
DNP,U23E,PWR_EDRAM R5876 NO-STUFF RES_0201_12mil
DNP,U23E,PWR_EDRAM R5878 NO-STUFF RES_0201_12mil
U23E,PWR_EDRAM R5875 NO-STUFF RES_0201_12mil
GNDGND
[36,58,66,75] ALL_SYS_PWRGD
U23E,PWR_EDRAM R5874 NO-STUFF RES_0201_12mil
EN_EDRAM_VR
VID0_EDRAM_VR
VID1_EDRAM_VR
[36,58,66,75] VRM_PWRGD
U23E,PWR_EDRAM PR5821 NO-STUFF RES_0201_12mil
PG_EDRAM_PWRGD
U23E,PWR_EDRAM
U5821
NO-STUFF
QFN17_3X3X1_P5MM
10 AVIN
11 PVIN_11
12 PVIN_12
13 EN
9 VID0
8 VID1
4 PG
14 LPM
2 SW
3 SW
1 VOS
5 FBS
7 SS
6 AGND
15 PGND_15
16 PGND_16
17 THERMAL_PAD
SW_EDRAM_VR
U23E,PWR_EDRAM PL5806 NO-STUFF 5.3A
PCB Footprint = ind_2ppx2x1p2_2mm
FBS_EDRAM_VR
SS_EDRAM_VR
U23E,PWR_EDRAM C5811 NO-STUFF CAP_0201_14mil
GND
+VCCEDRAM
U23E,PWR_EDRAM PC5822 NO-STUFF CAP_0201_14mil
U23E,PWR_EDRAM PC5823 NO-STUFF cap_0201_14mil
U23E,PWR_EDRAM C5812 NO-STUFF cap_0805_36mil
GND
U23E,PWR_EDRAM R5879 NO-STUFF RES_0201_12mil
U23E,PWR_EDRAM R5880 NO-STUFF RES_0201_12mil
VCCOPC_SENSE
+3P3V
DNP,U23E,PWR_EDRAM R5887 NO-STUFF RES_0201_12mil
U23E,PWR_EDRAM R5884 NO-STUFF RES_0201_12mil
LPM_EDRAM_VR
ZVM#
R5886 NO-STUFF RES_0201_12mil
VR_LPM_C
U23E,PWR_EDRAM R5883 NO-STUFF RES_0201_12mil
LPM_EOPIO_VR

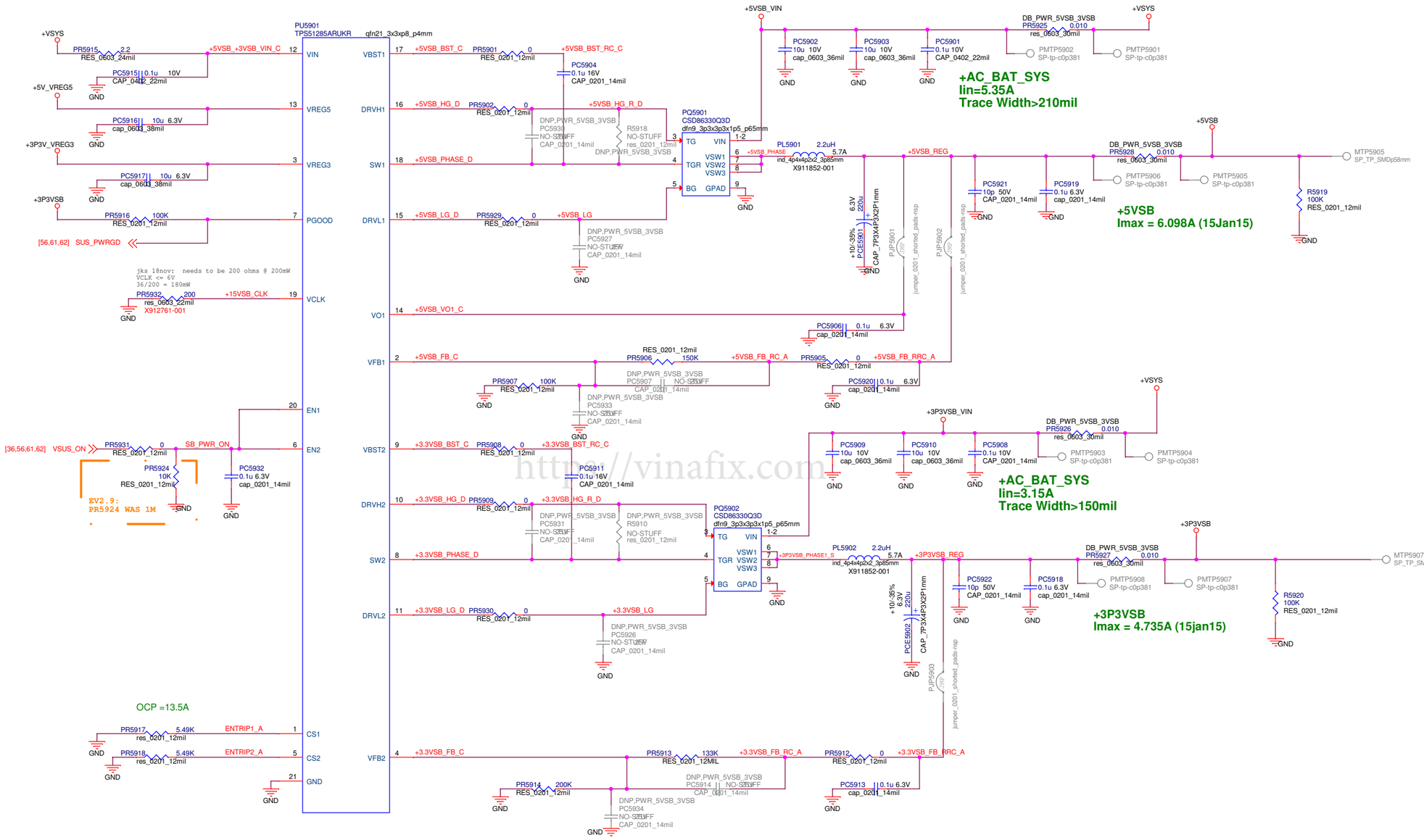
TPS62134 "C"

LPM_N	VID1	VID0	VOUT
0	x	x	0 (LPM)
1	0	0	0.80
1	0	1	0.95
1	1	0	1.00
1	1	1	1.06

Imax(1V)=3A
Efficiency=80%@2.8A
Theta(JA)=44.2

Icc(max)=2.0A

+VSYS
U23E,DB,PWR_EOPIO
PR5823 0.01
res_0402_22mil
PMTP5803 SP-tp-c0p381
PMTP5804 SP-tp-c0p381
PVIN_EOPIO_VR
U23E,PWR_EOPIO PC5833 NO-STUFF cap_0603_36mil
U23E,PWR_EOPIO PC5830 NO-STUFF cap_0603_36mil
U23E,PWR_EOPIO PC5831 NO-STUFF CAP_0201_14mil
GND
MSM#
U23E,PWR_EOPIO R5892 NO-STUFF RES_0201_12mil
DNP,U23E,PWR_EOPIO R5890 NO-STUFF RES_0201_12mil
DNP,U23E,PWR_EOPIO R5891 NO-STUFF RES_0201_12mil
U23E,PWR_EOPIO R5889 NO-STUFF RES_0201_12mil
GND GND
[36,58,66,75] ALL_SYS_PWRGD
U23E,PWR_EOPIO R5888 NO-STUFF RES_0201_12mil
EN_EOPIO_VR
VID0_EOPIO_VR
VID1_EOPIO_VR
[36,58,66,75] VRM_PWRGD
U23E,PWR_EOPIO PR5824 NO-STUFF RES_0201_12mil
EOPIO_PWRGD
LPM_EOPIO_VR
U23E,PWR_EOPIO
U5822
NO-STUFF
QFN17_3X3X1_P5MM
10 AVIN
11 PVIN_11
12 PVIN_12
13 EN
9 VID0
8 VID1
4 PG
14 LPM
2 SW
3 SW
1 VOS
5 FBS
7 SS
6 AGND
15 PGND_15
16 PGND_16
17 THERMAL_PAD
SW_EOPIO_VR
U23E,PWR_EOPIO PL5807 NO-STUFF 3.1A
IND_2x1p6x1_1p7mm
FBS_EOPIO_VR
SS_EOPIO_VR
U23E,PWR_EOPIO C5814 NO-STUFF CAP_0201_14mil
GND
+VCCEOPIO
U23E,PWR_EOPIO PC5828 NO-STUFF CAP_0201_14mil
U23E,PWR_EOPIO PC5829 NO-STUFF cap_0201_14mil
U23E,PWR_EOPIO C5815 NO-STUFF cap_0805_36mil
GND
U23E,PWR_EOPIO R5893 NO-STUFF RES_0201_12mil
U23E,PWR_EOPIO R5895 NO-STUFF RES_0201_12mil
VCCOPIO_SENSE



PU6002
TPS51367RVER
qfn29_4p5x3p5x1_p4mm

+VSYS
Iin=1.7A
Trace Width>80mil

+5VSB
PR6003 4.7 RES_0603_24mil
+1P2V_DUAL_V5
GND
PC6002 2.2u 6.3V CAP_0402_24mil

EV2.9: Change
[60] SUSC_EC#_AND
PR6005 0 RES_0201_12mil
+1P2V_DUAL_EN
GND
PC6003 0.01u 10V CAP_0201_14mil

+1P2V_DUAL
DNP,PWR_1P2V_DUAL
PR6016 NO-STUFF RES_0201_12mil

[75] +1P2V_DUAL_PWRGD

Low power mode for Connected Stanby

GND
PC6015 2700p CAP_0402_22mil
+1P2V_DUAL_SL

[11,60] DDR_PG_CTRL
[22,28,56,61] SLP_S0#
DNP,PWR_1P2V_DUAL
PR6024 NO-STUFF RES_0201_12mil
PR6025 0 RES_0201_12mil
PR6011 NO-STUFF RES_0201_12mil
GND
+1P2V_DUAL_LP

+5VSB
PR6007 10K RES_0201_12mil
+1P2V_DUAL_OC

OCP =12A
DNP,PWR_1P2V_DUAL
PR6008 NO-STUFF RES_0201_12mil
GND

Fsw =800kHz
DNP,PWR_1P2V_DUAL
PR6009 NO-STUFF RES_0201_12mil
GND
+1P2V_DUAL_MD

+1P2V_DUAL_VREF
cap_0201_14mil
PC6010 0.1u 6.3V
DNP,PWR_1P2V_DUAL
PR6010 NO-STUFF res_0201_12mil
DNP,PWR_1P2V_DUAL
PR6001 NO-STUFF RES_0201_12mil
+1P2V_DUAL_REFIN

REFIN = FLOAT (1.2V)

DNP,PWR_1P2V_DUAL
PC6014 NO-STUFF cap_0201_14mil
GND

PJP6001
+1P2V_DUAL
JMP jumper_0201_shorted_pads-nsp
+1P2V_DUAL_VSNS_C
PR6013 0 RES_0201_12mil
+1P2V_DUAL_VSNS

Near DDR

PC6013 1000p 25V CAP_0201_14mil

PJP6002
GND
JMP jumper_0201_shorted_pads-nsp
+1P2V_DUAL_VGNS_C
PR6014 0 RES_0201_12mil
+1P2V_DUAL_VGNS

DNP,PWR_1P2V_DUAL
PC6012 NO-STUFF cap_0201_14mil
GND

18	V5		
28	EN		
1	PGOOD		
21	SLEW		
2	LP#		
20	TRIP		
3	MODE		
26	VREF		
25	REFIN		
22	VSNS		
23	GSNS		
4, 27, 24, 19, 29	NC, RA, REFIN2, GND1, GND2	10, 11, 12, 13, 14	PGND1, PGND2, PGND3, PGND4, PGND5

+1P2V_DUAL_VIN
15 16 17 VIN1 VIN2 VIN3
PC6019 0.1u 10V CAP_0201_14mil
PC6017 10u 10V cap_0603_36mil
PC6018 10u 10V cap_0603_36mil
GND

DB,PWR_1P2V_DUAL
PR6019 0.010 res_0603_30mil
+VSYS
PMTP6001 SP-tp-c0p381
PMTP6002 SP-tp-c0p381

25nov jks: REMOVE 0ohm 0805 from +1P2V_DUAL_BOOT

5 BST +1P2V_DUAL_BOOT
PC6001 0.1u 6.3V cap_0201_14mil

6 7 8 9 SW1 SW2 SW3 SW4 +1P2V_DUAL_PHASE
PL6001 0.33uH 12A ind_4p4x4p2x1p2_3p85mm

PCE6001 470u 2V 20% cap_7p3x4p3x2p1mm
PC6009 0.1u 6.3V cap_0201_14mil
PC6021 10p 50V CAP_0201_14mil
+1P2V_DUAL
GND

Imax Y(+1P2V_DUAL) = 4.5/3.5 A (0.91 PPDG)
Imax U(+1P2V_DUAL) = 4.5/3.5 A (0.91 PPDG)

+1P2V_DUAL
Imax = 7.950A (15Jan15)
TDC = 3.5A

Imax Y(+V_VDDQ_VTT) = 0.6 A (0.91 PPDG)
Imax U(+V_VDDQ_VTT) = 0.6 A (0.91 PPDG)

+V_VDDQ_VTT
Imax=1A
Trace Width>40mil

+5VSB
PR6018 2.2 RES_0201_12mil
+5V
DNP,PWR_VTT
PR6017 NO-STUFF RES_0201_12mil
+V_VDDQ_VTT_VDD
GND
PC6006 0.1u 6.3V cap_0201_14mil

PU6001
TPS51206DSQR
son11_2x2xp8_p4mm

10	VDD		
	VLDOIN	1	VDDQSNS
		2	
7	S3		
9	S5		
	VTT	3	
	VTTSNS	5	
6	VTTREF		
8, 11	GND1, GND2		
	PGND	4	

1 VDDQSNS_VDDQ_VTT_REG PR6023 0.010 res_0603_30mil
DB,PWR_VTT
+1P2V_DUAL
PMTP6003 SP-tp-c0p381
PMTP6004 SP-tp-c0p381
PC6005 10u 10V cap_0603_36mil
GND

[11,60] DDR_PG_CTRL
PR6026 0 RES_0201_12mil S3_VDDQ_VTT_REG

[36,45,60,61,62] SUSC_EC#
PR6027 0 RES_0201_12mil S5_VDDQ_VTT_REG

+V_VDDQ_VTT
3 VTT
5 VTTSNS VTTSNS_VDDQ_VTT_REG PR6022 0 RES_0201_12mil
DNP,PWR_VTT
PC6020 NO-STUFF CAP_0201_14mil
PC6007 10u 10V cap_0603_36mil
GND

+VDDQ_VREF
PC6016 0.22u 6.3V CAP_0201_14mil
GND

+V_VDDQ_VTT
Imax = 0.600A (15Jan15)

PU6003
SLG5NT1477VTR
dfn9_1p5x2xp8_p4mm

+3P3VSB
+1P2V_DUAL
PC6022 0.1u 6.3V cap_0201_14mil
PC6025 1u 6.3V CAP_0201_14mil
GND

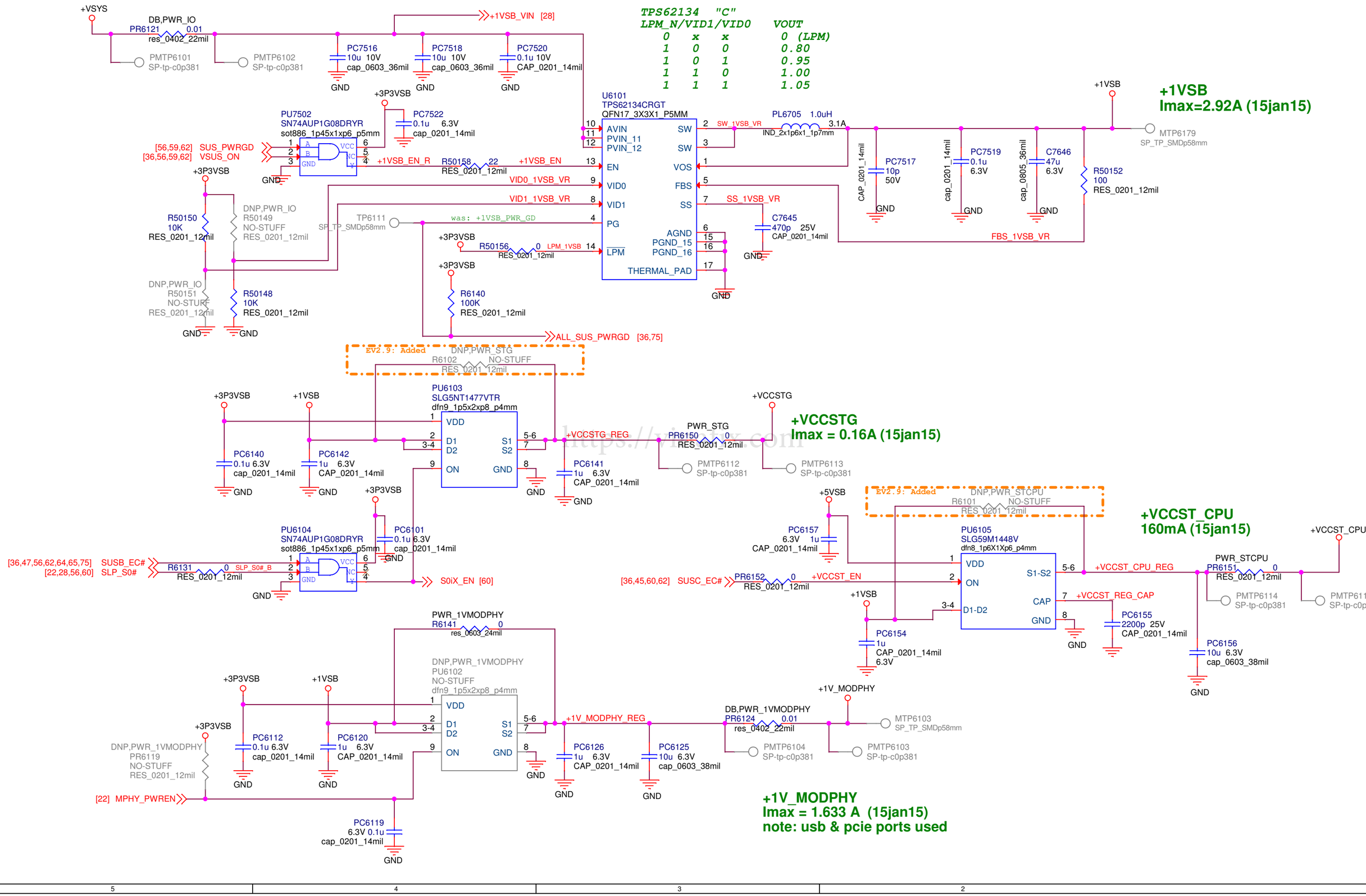
1	VDD		
2	D1	5-6	S1
3-4	D2	7	S2
9	ON	8	GND

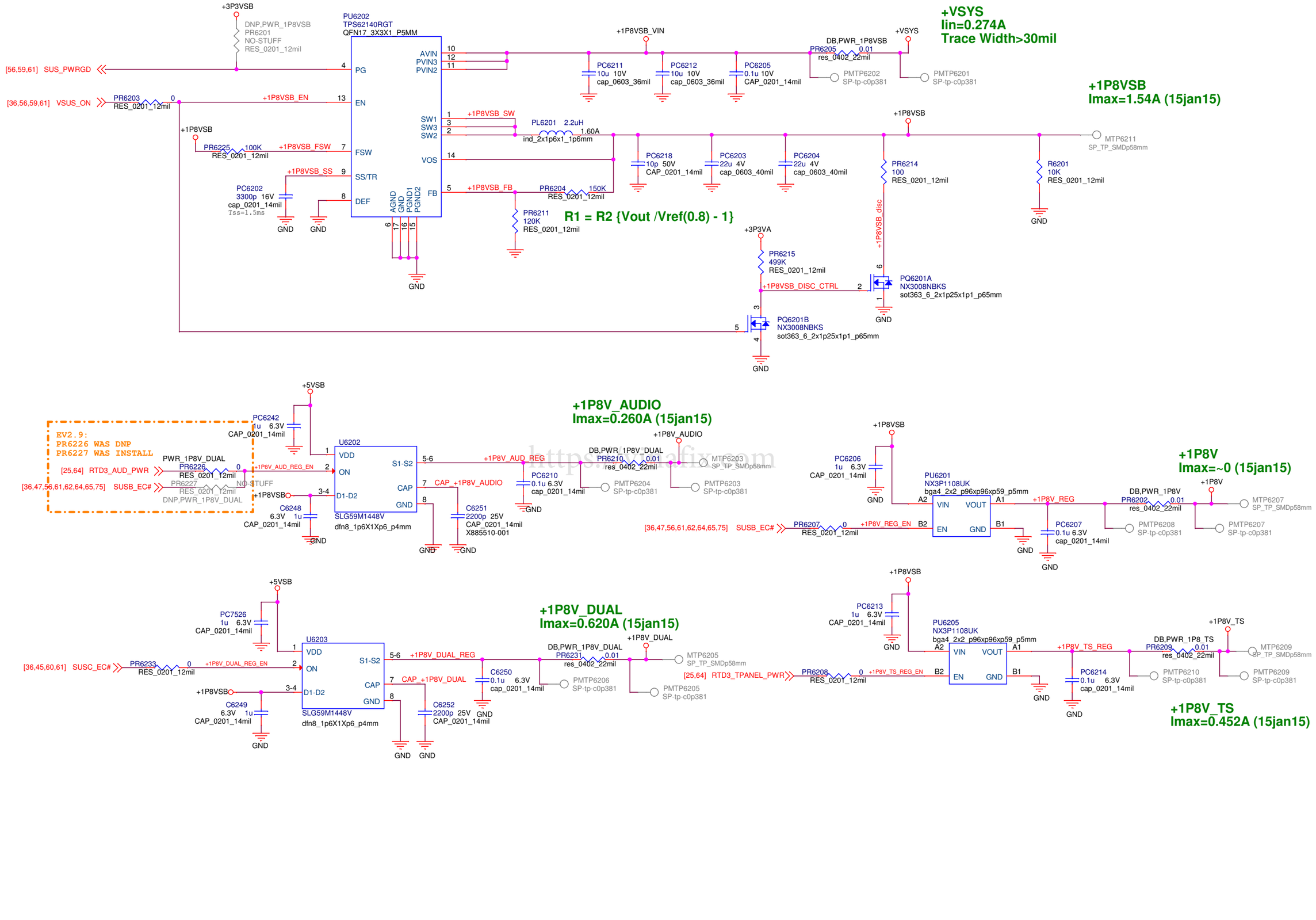
[61] S0iX_EN
+VCCPLL_OC_REG
PC6023 1u 6.3V CAP_0201_14mil
PC6024 10u 10V cap_0603_36mil
GND

+VCCPLL_OC
DB,PWR_PLL
PR6028 0.01 res_0402_22mil
PMTP6006 SP-tp-c0p381
PMTP6005 SP-tp-c0p381

+VCCPLL_OC
Imax = 0.350A (15Jan15)

EV2.9: ADD
+3P3VSB
U6004
SN74AUP1G08DRYR
sot886_1p45x1xp6_p5mm
1 A
2 B
3 GND
VCC 6
NC 5
Y 4
C6026 0.1u 6.3V cap_0201_p33mm
GND
TP6007 SP_TP_SMDp58mm
SUSC_EC#_AND [60]
[22,33,36] PM_SUSC#
[36,45,60,61,62] SUSC_EC#
DNP,EC
R6028 NO-STUFF RES_0201_12mil


TPS62134 "C"
LPM_N/VID1/VID0 VOUT
0 x x 0 (LPM)
1 0 0 0.80
1 0 1 0.95
1 1 0 1.00
1 1 1 1.05
+1VSB
Imax=2.92A (15jan15)
+VCCSTG
Imax = 0.16A (15jan15)
+VCCST_CPU
160mA (15jan15)
+1V_MODPHY
Imax = 1.633 A (15jan15)
note: usb & pcie ports used
U6101
TPS62134CRGT
QFN17_3X3X1_P5MM
PU6103
SLG5NT1477VTR
dfn9_1p5x2xp8_p4mm
PU6104
SN74AUP1G08DRYR
sot886_1p45x1xp6_p5mm
PU7502
SN74AUP1G08DRYR
sot886_1p45x1xp6_p5mm
PU6105
SLG59M1448V
dfn8_1p6X1Xp6_p4mm
DNP,PWR_1VMODPHY
PU6102
NO-STUFF
dfn9_1p5x2xp8_p4mm
PL6705 1.0uH
IND_2x1p6x1_1p7mm
DB,PWR_IO
PR6121 0.01
res_0402_22mil
PR6150 0
PR6151 0
PR6152 0
PR6124 0.01
R6141 0
res_0603_24mil
R6131 0
R50156 0
R50158 22
R50148 10K
R50149 NO-STUFF
R50150 10K
R50151 NO-STUFF
R6140 100K
R50152 100
R6102 NO-STUFF
R6101 NO-STUFF
PR6119 NO-STUFF
PC7516 10u 10V
PC7518 10u 10V
PC7520 0.1u 10V
PC7522 0.1u 6.3V
PC7517 10p 50V
PC7519 0.1u 6.3V
C7646 47u 6.3V
C7645 470p 25V
PC6101 0.1u 6.3V
PC6140 0.1u 6.3V
PC6142 1u 6.3V
PC6141 1u 6.3V
PC6157 6.3V 1u
PC6154 1u
PC6155 2200p 25V
PC6156 10u 6.3V
PC6112 0.1u 6.3V
PC6120 1u 6.3V
PC6126 1u 6.3V
PC6125 10u 6.3V
PC6119 6.3V 0.1u
RES_0201_12mil
CAP_0201_14mil
cap_0603_36mil
cap_0201_14mil
cap_0805_36mil
cap_0603_38mil
RES_0402_22mil
res_0603_24mil
PMTP6101 SP-tp-c0p381
PMTP6102 SP-tp-c0p381
PMTP6112 SP-tp-c0p381
PMTP6113 SP-tp-c0p381
PMTP6114 SP-tp-c0p381
PMTP6115 SP-tp-c0p381
PMTP6104 SP-tp-c0p381
PMTP6103 SP-tp-c0p381
MTP6179 SP_TP_SMDp58mm
MTP6103 SP_TP_SMDp58mm
TP6111 SP_TP_SMDp58mm
+VSYS
+1VSB_VIN [28]
+3P3VSB
+1VSB
+5VSB
+VCCSTG
GND
[56,59,62] SUS_PWRGD
[36,56,59,62] VSUS_ON
+1VSB_EN_R
+1VSB_EN
VID0_1VSB_VR
VID1_1VSB_VR
was: +1VSB_PWR_GD
LPM_1VSB
SW_1VSB_VR
SS_1VSB_VR
FBS_1VSB_VR
ALL_SUS_PWRGD [36,75]
EV2.9: Added
DNP,PWR_STG
DNP,PWR_STCPU
[36,47,56,62,64,65,75] SUSB_EC#
[22,28,56,60] SLP_S0#
S0iX_EN [60]
[36,45,60,62] SUSC_EC#
+VCCSTG_REG
+VCCST_CPU_REG
+VCCST_EN
+VCCST_REG_CAP
+1V_MODPHY_REG
PWR_STG
PWR_STCPU
PWR_1VMODPHY
DB,PWR_1VMODPHY
[22] MPHY_PWREN
AVIN
PVIN_11
PVIN_12
SW
VOS
FBS
SS
PG
LPM
AGND
PGND_15
PGND_16
THERMAL_PAD
VDD
ON
D1
D2
S1
S2
GND
CAP
D1-D2
S1-S2
VCC
NC
Y
A
B
https://vinafix.com


+VSYS
Iin=0.274A
Trace Width>30mil
+1P8VSB
Imax=1.54A (15jan15)
R1 = R2 {Vout /Vref(0.8) - 1}
+1P8V_AUDIO
Imax=0.260A (15jan15)
+1P8V
Imax=~0 (15jan15)
+1P8V_DUAL
Imax=0.620A (15jan15)
+1P8V_TS
Imax=0.452A (15jan15)
EV2.9:
PR6226 WAS DNP
PR6227 WAS INSTALL
PU6202
TPS62140RGT
QFN17_3X3X1_P5MM
U6202
SLG59M1448V
dfn8_1p6X1Xp6_p4mm
U6203
SLG59M1448V
dfn8_1p6X1Xp6_p4mm
PU6201
NX3P1108UK
bga4_2x2_p96xp96xp59_p5mm
PU6205
NX3P1108UK
bga4_2x2_p96xp96xp59_p5mm
PQ6201A
NX3008NBKS
sot363_6_2x1p25x1p1_p65mm
PQ6201B
NX3008NBKS
sot363_6_2x1p25x1p1_p65mm
PL6201 2.2uH
ind_2x1p6x1_1p6mm
1.60A
X885510-001
DNP,PWR_1P8VSB
PR6201
NO-STUFF
RES_0201_12mil
DB,PWR_1P8VSB
PR6205 0.01
res_0402_22mil
DNP,PWR_1P8V_DUAL
PR6226 0
RES_0201_12mil
PR6227
RES_0201_12mil
DB,PWR_1P8V_DUAL
PR6210 0.01
res_0402_22mil
DB,PWR_1P8V
PR6202 0.01
res_0402_22mil
DB,PWR_1P8_TS
PR6209 0.01
res_0402_22mil
[56,59,61] SUS_PWRGD
[36,56,59,61] VSUS_ON
[36,47,56,61,62,64,65,75] SUSB_EC#
[25,64] RTD3_AUD_PWR
[36,45,60,61] SUSC_EC#
[25,64] RTD3_TPANEL_PWR
PR6203 0 RES_0201_12mil
PR6225 100K RES_0201_12mil
PR6211 120K RES_0201_12mil
PR6204 150K RES_0201_12mil
PR6214 100 RES_0201_12mil
PR6215 499K RES_0201_12mil
R6201 10K RES_0201_12mil
PR6233 0 RES_0201_12mil
PR6207 0 RES_0201_12mil
PR6208 0 RES_0201_12mil
PC6202 3300p 16V cap_0201_14mil Tss=1.5ms
PC6211 10u 10V cap_0603_36mil
PC6212 10u 10V cap_0603_36mil
PC6205 0.1u 10V CAP_0201_14mil
PC6218 10p 50V CAP_0201_14mil
PC6203 22u 4V cap_0603_40mil
PC6204 22u 4V cap_0603_40mil
PC6242 1u 6.3V CAP_0201_14mil
C6248 6.3V 1u CAP_0201_14mil
C6251 2200p 25V CAP_0201_14mil
PC6210 0.1u 6.3V cap_0201_14mil
PC6206 1u 6.3V CAP_0201_14mil
PC6207 0.1u 6.3V cap_0201_14mil
PC7526 1u 6.3V CAP_0201_14mil
C6249 6.3V 1u CAP_0201_14mil
C6252 2200p 25V CAP_0201_14mil
C6250 0.1u 6.3V cap_0201_14mil
PC6213 1u 6.3V CAP_0201_14mil
PC6214 0.1u 6.3V cap_0201_14mil
PMTP6202 SP-tp-c0p381
PMTP6201 SP-tp-c0p381
PMTP6204 SP-tp-c0p381
PMTP6203 SP-tp-c0p381
PMTP6208 SP-tp-c0p381
PMTP6207 SP-tp-c0p381
PMTP6210 SP-tp-c0p381
PMTP6209 SP-tp-c0p381
PMTP6206 SP-tp-c0p381
PMTP6205 SP-tp-c0p381
MTP6211 SP_TP_SMDp58mm
MTP6203 SP_TP_SMDp58mm
MTP6207 SP_TP_SMDp58mm
MTP6209 SP_TP_SMDp58mm
MTP6205 SP_TP_SMDp58mm
+1P8VSB_EN
+1P8VSB_SW
+1P8VSB_FSW
+1P8VSB_SS
+1P8VSB_FB
+1P8VSB_DISC_CTRL
+1P8V_AUD_REG_EN
+1P8V_AUD_REG
CAP_+1P8V_AUDIO
+1P8V_REG_EN
+1P8V_REG
+1P8V_DUAL_REG_EN
+1P8V_DUAL_REG
CAP_+1P8V_DUAL
+1P8V_TS_REG_EN
+1P8V_TS_REG
+1P8VSB_disc
+3P3VSB
+3P3VA
+5VSB
+1P8V_AUDIO
+1P8V_DUAL
+1P8V_TS
+VSYS
+1P8VSB_VIN
GND
AGND
PGND1
PGND2
VDD
ON
D1-D2
CAP
S1-S2
VIN
VOUT
EN
SW1
SW2
SW3
VOS
FB
SS/TR
DEF
PG
FSW
AVIN
PVIN3
PVIN2

CHGR_VIN
Iin=9.731A
Trace Width>389mil

+SYS
Iin=8A
Trace Width>320mil

+SYS
Imax = 12.0A
TDC = 10.0A

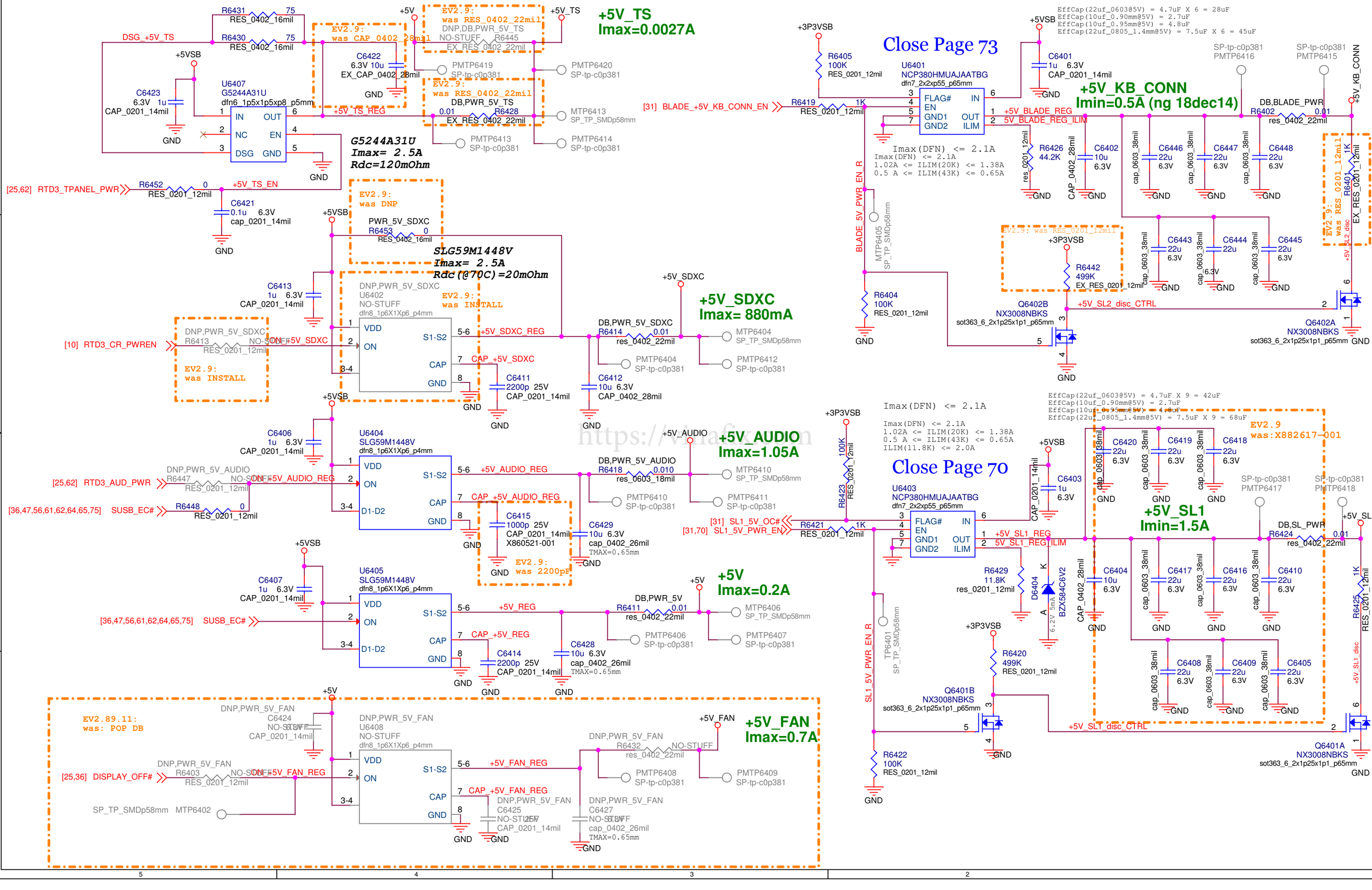
CHGR needs 200uF for loop stability
{2*f*pi = 1/sqrt(L*C)}

EffCap@20V=3.22uF*3=9.66uF

Cgs>=40*Cgd
Cgs*.9 >= 40*Cgd*1.1
Cgs >= (1.1/0.9)*40*1nF
Cgs >= 49nF

I(ripple)=Vin*DutyCycle*(1-DutyCycle)/(FreqSwitch*L)
I(ripple)= 20%~40% I(charge)
Vin(12.6V+/-10%) => I(ripple)@2.2uH => 1.93A, 40.5%
Vin(12.6V+/-10%) => I(ripple)@3.3uH => 1.29A, 27.0%
assuming 60W, DutyCycle=0.5, Freq=1020KHz

7-bit I2C Address = 0x12



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

+3P3VSB
PC6503 6.3V 1u CAP_0201_14mil
GND
PU6504 TPS22920YZPR BGA8_2x4_P9X1P9xp5_p5mm
A2 B2 C2 D2 | VIN1 VIN2 VIN3 ON | VOUT1 VOUT2 VOUT3 GND | A1 B1 C1 D1
+3P3V_PANEL_REG
PC6501 0.1u 6.3V cap_0201_14mil
DB,PWR_3P3_PANEL PR6508 0.01 res_0402_22mil
PMTP6502 SP-tp-c0p381
PMTP6501 SP-tp-c0p381
+3P3V_PANEL
MTP6585 SP_TP_SMDp58mm
PR6544 75 RES_0603_24mil
PR6515 75 RES_0603_24mil
DSG_+3P3V_PANEL
[10] EDP_VDD_EN
PR6519 1K RES_0201_12mil
+3P3V_PANEL_EN
MTP6519 SP_TP_SMDp58mm
DNP,PWR_3P3_PANEL PR6529 NO-STUFF RES_0201_12mil
+3P3VSB
R6504 499K
+3P3V_PANEL_DISC_CTRL
Q6501B NX3008NBKS
Q6501A NX3008NBKS sot363_6_2x1p25x1p1_p65mm
+3P3V_PANEL_EN
GND

+3P3V_MUX
Imax=0.0033A

+3P3VSB
PR6524 0 RES_0201_12mil
+3P3V_MUX

+3P3V_PMI
Imax = 2mA

+3P3VSB
PWR_3P3 PR6546 0 RES_0201_12mil
+3P3V_PMI

+1P8V_DMIC
Imax=0.02A
Trace Width>20mil

+5V_AUDIO
DNP,PWR_1P8_DMIC PC6523 6.3V NO-STUFF CAP_0201_14mil
DNP,PWR_1P8_DMIC PR6532 NO-STUFF RES_0201_12mil
DNP,PWR_1P8_DMIC PU6509 NO-STUFF BGA4_2x2_p8xp8xp5_p4mm
B2 A2 | VIN EN | VOUT GND | B1 A1
DMIC_1P8V_REG
DNP,PWR_1P8_DMIC PC6522 NO-STUFF CAP_0402_24mil
DNP,PWR_1P8_DMIC PR6533 NO-STUFF res_0402_22mil
PMTP6509 SP-tp-c0p381
PMTP6510 SP-tp-c0p381
+1P8V_DMIC

+3P3V_SSD
Imax=1.2A
Trace Width>50mil

+3P3V_REG
DB,PWR_3P3V PR6511 0.010 res_0603_30mil
PMTP6512 SP-tp-c0p381
PMTP6511 SP-tp-c0p381
+3P3V_SSD
MTP6511 SP_TP_SMDp58mm

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

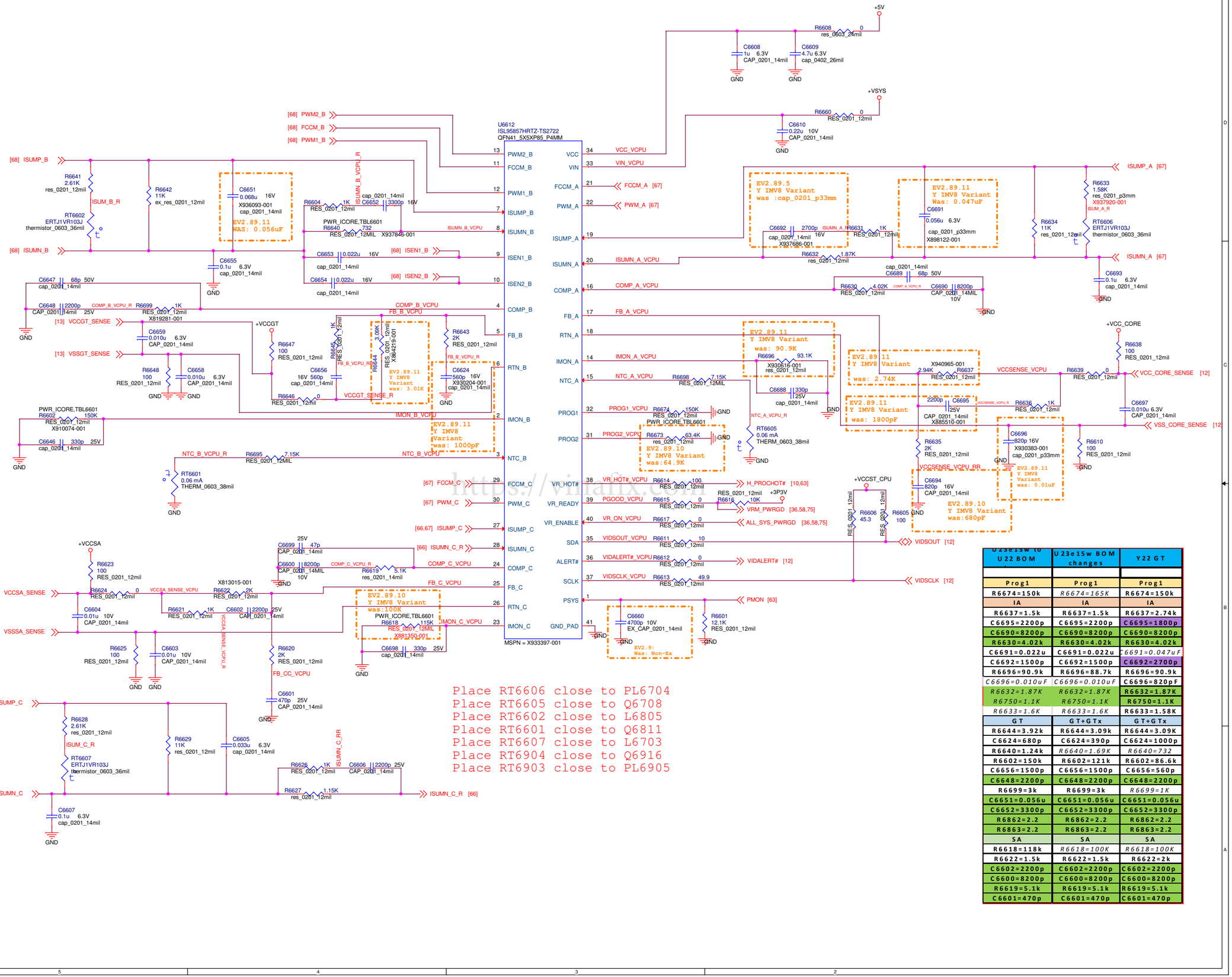
+3P3VSB
PU6502 TPS22920YZPR BGA8_2x4_P9X1P9xp5_p5mm
A2 B2 C2 D2 | VIN1 VIN2 VIN3 ON | VOUT1 VOUT2 VOUT3 GND | A1 B1 C1 D1
[36,47,56,61,62,64,65,75] SUSB_EC#
PC6511 1u 6.3V CAP_0201_14mil
PC6512 0.1u 6.3V cap_0201_14mil
DB,PWR_3P3V PR6510 0.01 res_0402_22mil
PMTP6514 SP-tp-c0p381
PMTP6513 SP-tp-c0p381
+3P3V
MTP76102 SP_TP_SMDp58mm
GND

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

+3P3VSB
PC6507 1u 6.3V CAP_0201_14mil
PU6501 TPS22920YZPR BGA8_2x4_P9X1P9xp5_p5mm
A2 B2 C2 D2 | VIN1 VIN2 VIN3 ON | VOUT1 VOUT2 VOUT3 GND | A1 B1 C1 D1
+3P3V_WWAN_REG
[25] WWAN_PWREN
PR6503 0 RES_0201_12mil
+3P3V_WWAN_EN
DNP,PWR_3P3_WWAN PR6502 NO-STUFF RES_0201_12mil
[36,47,56,61,62,64,65,75] SUSB_EC#
PC6508 0.1u 6.3V cap_0201_14mil
DB,PWR_3P3_WWAN PR6514 0.010 res_0603_30mil
PMTP6518 SP-tp-c0p381
PMTP6517 SP-tp-c0p381
+3P3V_WWAN
MTP6517 SP_TP_SMDp58mm
GND

+3P3V_SENSOR
Imax=0.021175A
Trace Width>20mil

+3P3VSB
PC6509 1u 6.3V CAP_0201_14mil
PU6506 NX3P1108UK bga4_2x2_p96xp96xp59_p5mm
A2 | VIN EN | VOUT GND | A1 B1
[31] SENSORS_PWR_EN
DNP,PWR_3P3V_SENSOR PR6547 NO-STUFF RES_0201_12mil
+3P3V_SENSOR_REG
PC6510 0.1u 6.3V cap_0201_14mil
DB,PWR_3P3V_SENSOR PR6505 0.01 res_0402_22mil
PMTP6516 SP-tp-c0p381
PMTP6515 SP-tp-c0p381
+3P3V_SENSOR
MTP6515 SP_TP_SMDp58mm
GND



U23e15w to U22 BOM changes	U23e15w BOM changes	Y22 GT
Prog1	Prog1	Prog1
R6674=150k	R6674=165K	R6674=150k
IA	IA	IA
R6637=1.5k	R6637=1.5k	R6637=2.74k
C6695=2200p	C6695=2200p	C6695=1800p
C6690=8200p	C6690=8200p	C6690=8200p
R6630=4.02k	R6630=4.02k	R6630=4.02k
C6691=0.022u	C6691=0.022u	C6691=0.047uF
C6692=1500p	C6692=1500p	C6692=2700p
R6696=90.9k	R6696=88.7k	R6696=90.9k
C6696=0.010uF	C6696=0.010uF	C6696=820pF
R6632=1.87K	R6632=1.87K	R6632=1.87K
R6750=1.1K	R6750=1.1K	R6750=1.1K
R6633=1.6K	R6633=1.6K	R6633=1.58K
GT	GT+GTx	GT+GTx
R6644=3.92k	R6644=3.09k	R6644=3.09K
C6624=680p	C6624=390p	C6624=1000p
R6640=1.24k	R6640=1.69K	R6640=732
R6602=150k	R6602=121k	R6602=86.6k
C6656=1500p	C6656=1500p	C6656=560p
C6648=2200p	C6648=2200p	C6648=2200p
R6699=3k	R6699=3k	R6699=1K
C6651=0.056u	C6651=0.056u	C6651=0.056u
C6652=3300p	C6652=3300p	C6652=3300p
R6862=2.2	R6862=2.2	R6862=2.2
R6863=2.2	R6863=2.2	R6863=2.2
SA	SA	SA
R6618=118k	R6618=100K	R6618=100K
R6622=1.5k	R6622=1.5k	R6622=2k
C6602=2200p	C6602=2200p	C6602=2200p
C6600=8200p	C6600=8200p	C6600=8200p
R6619=5.1k	R6619=5.1k	R6619=5.1k
C6601=470p	C6601=470p	C6601=470p

9V to 12V

+VSYS

+VCORE_IN

DB,PWR_CORE
PR6712 0.010
res_0603_30mil

PMTP6702
SP-tp-c0p381

PMTP6701
SP-tp-c0p381

+5V

C6761
4.7u 10V
cap_0402_0p65mm

GND

U6713
ISL95808HRZ
dfn9_2x2x1_p5mm-2

VCC
FCCM
PWM
UGATE
PHASE
BOOT
LGATE
GND
MTG

[66] FCCM_A

[66] PWM_A

UGATE_VCORE

PHASE_VCORE

LGATE_VCORE

Q6710
BSZ065N03LS
mosfet8_3p3x3p3x1p1_p65mm

5-8
4
1-3

CAP_0201_14mil
PC6714
1000p 25V

cap_0603_36mil
PC6715
10u 10V

PCE6743 22u 25V
20
CAP_3P5X2P8X2P1MM

+VCC_CORE

Icc(max) <= 29A
TDC[A] <= 21A

PL6704 0.15UH, 20A
18A
ind_7p05x6p6x1p8_6p05mm

R6750
1.1K
RES_0402_16mil

ISUMP_A [66]

R6751
0
RES_0402_16mil

[66] ISUMN_A

cap_3_7p3x4p3x1_6p1mm
C6762
220u 2V

cap_3_7p3x4p3x1_6p1mm
C6763
220u 2V

BOOT_VCORE

R6749 0
res_0603_24mil

PHASE_R_VCORE

C6760 0.22u 25V
cap_0603_36mil

Q6708
BSZ019N03LS
mosfet8_3p3x3p3x1p1_p65mm

+5V

C6765
4.7u 10V
cap_0402_0p65mm

GND

U6714
ISL95808HRZ
dfn9_2x2x1_p5mm-2

VCC
FCCM
PWM
UGATE
PHASE
BOOT
LGATE
GND
MTG

[66] FCCM_C

[66] PWM_C

UGATE_VCCSA

PHASE_VCCSA

LGATE_VCCSA

Q6706
SIZ340DT
mosfet10_3x3xp8_p65mm
X904437-001

S1
D1
S1D2
S2
D2

+VCCSA_IN

PC6716
1000p 25V
CAP_0201_14mil

PC6717
10u 10V
cap_0603_36mil

PC6718
10u 10V
cap_0603_36mil

DB,PWR_SA
PR6714 0.010
res_0603_30mil

PMTP6704
SP-tp-c0p381

PMTP6703
SP-tp-c0p381

+VSYS

+VCCSA

Icc(max) <= 5.1A
TDC[A] <= 4.5A

X905644-001
L6703 0.56uH
6.5A
ind_4x15x4x2_3p7mm

R6753
3.65K
res_0402_22mil

ISUMP_C [66]

R6754
0
RES_0402_16mil

[66] ISUMN_C

PC6766
47u 6.3V
cap_0805_36mil

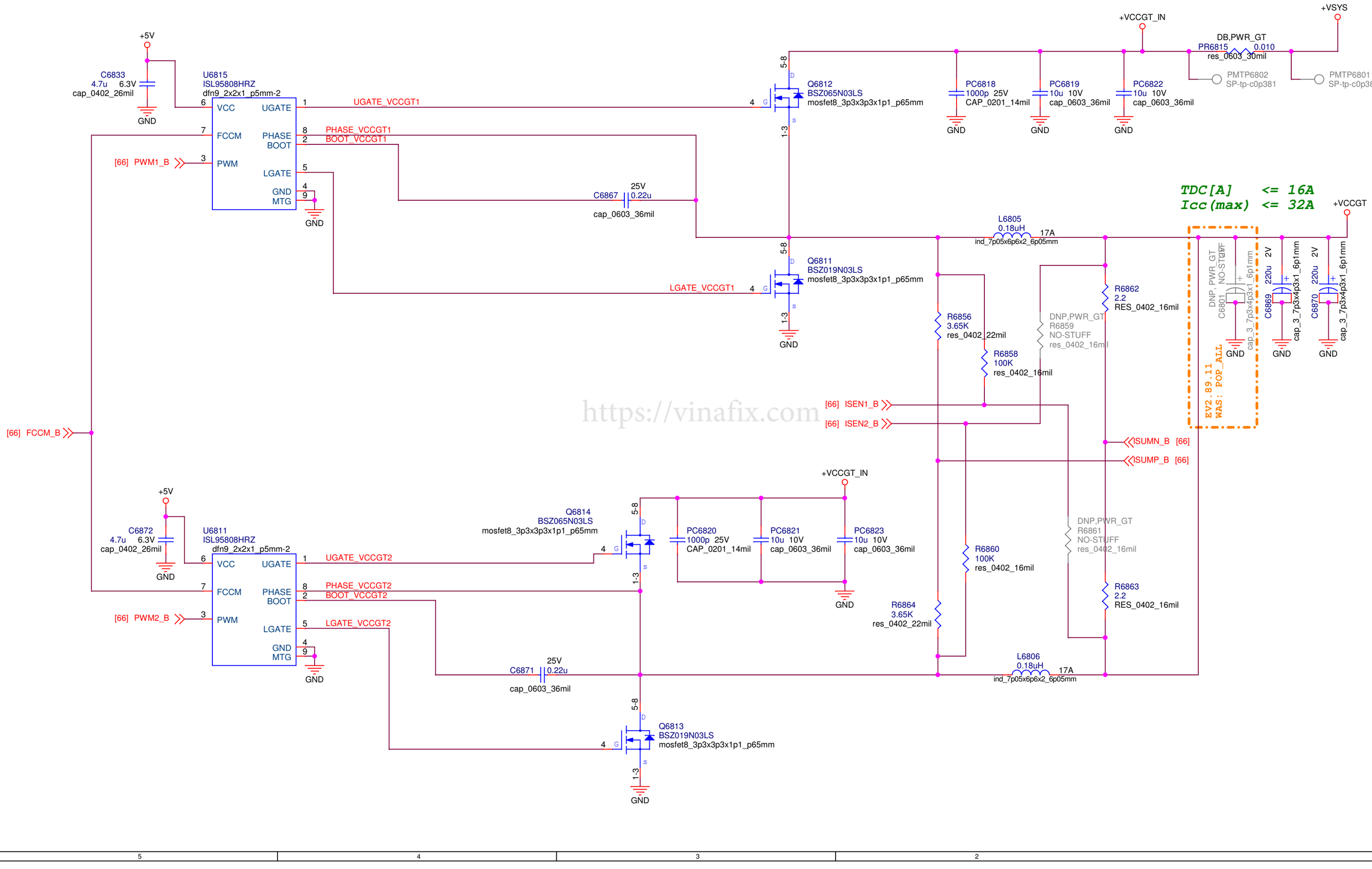
PC6719
47u 6.3V
cap_0805_36mil

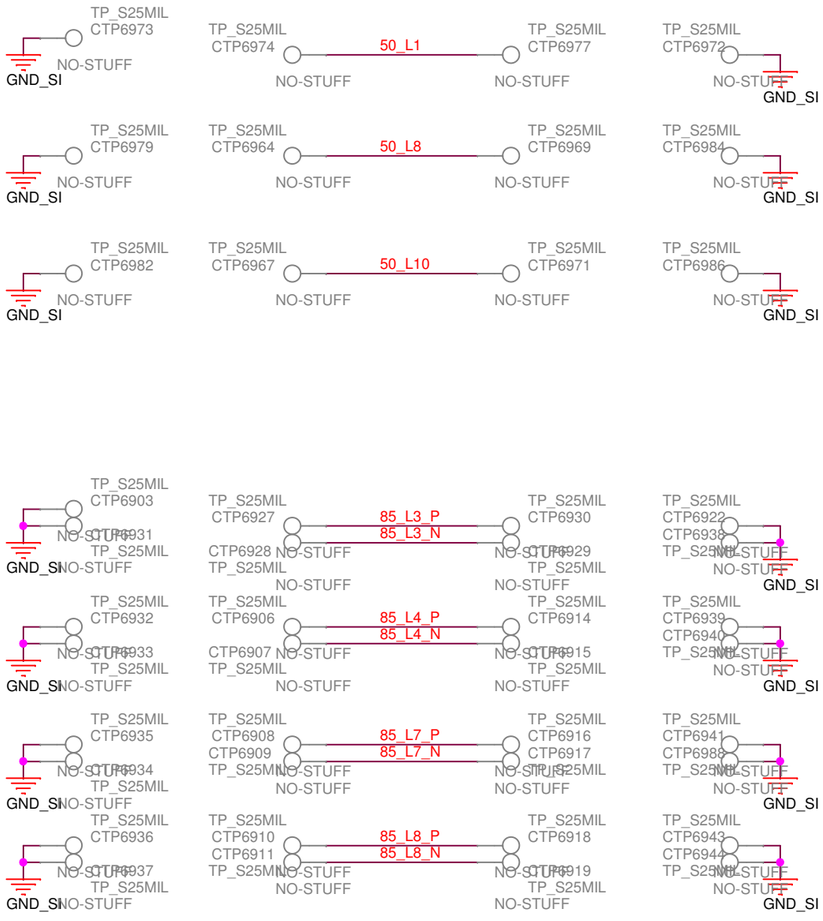
BOOT_VCCSA

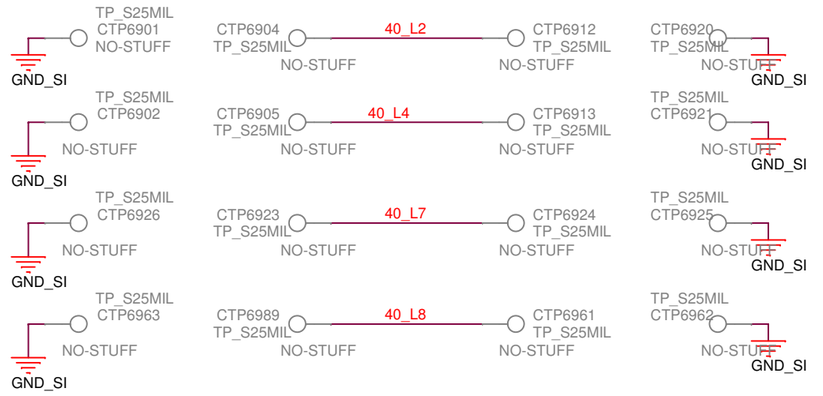
R6752 0
res_0603_24mil

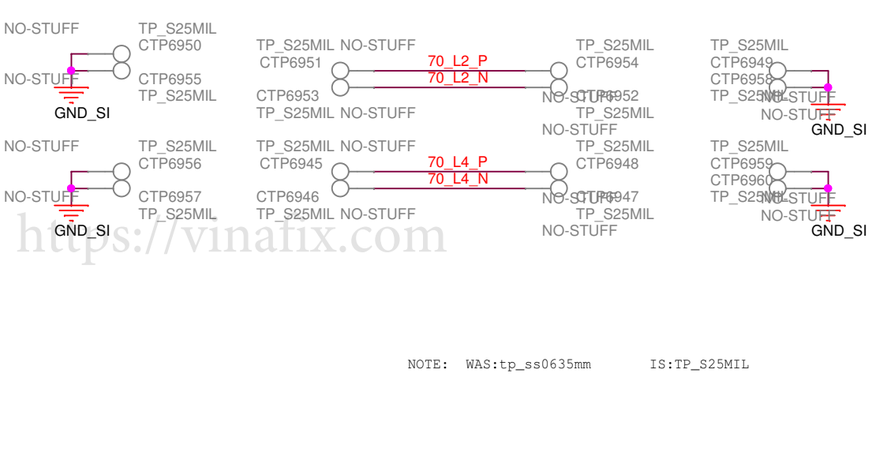
PHASE_R_VCCSA

C6764 0.22u 25V
cap_0603_36mil



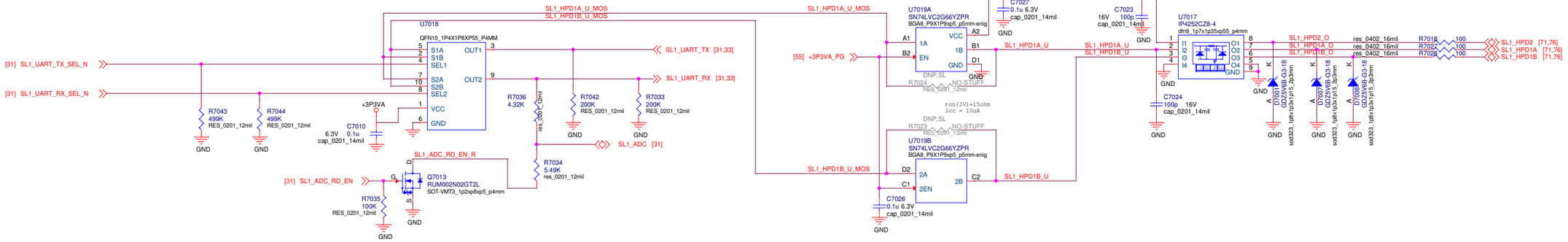




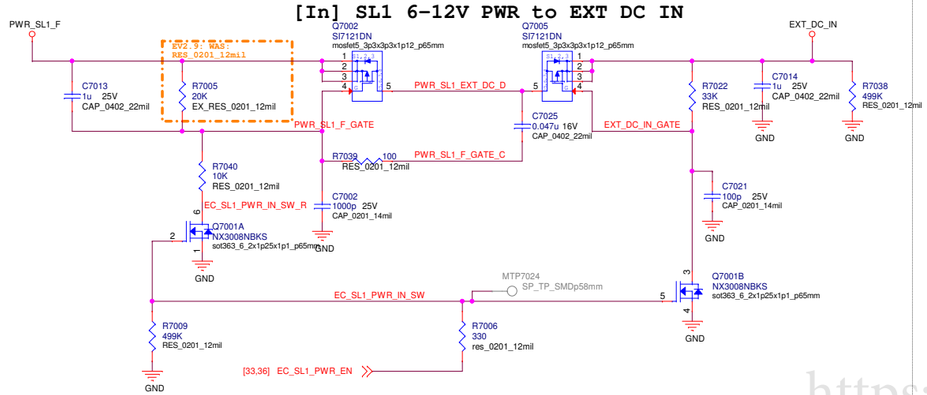


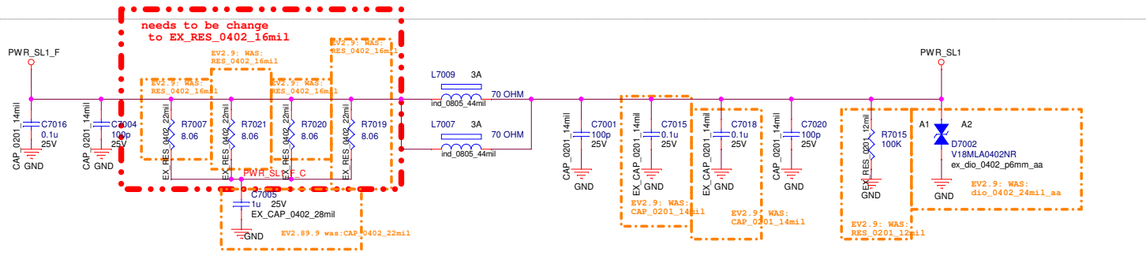
NOTE: WAS:tp_ss0635mm IS:TP_S25MIL

HPD FOR SL1 (ONE/TWO WIRE UART)

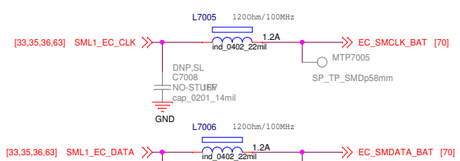


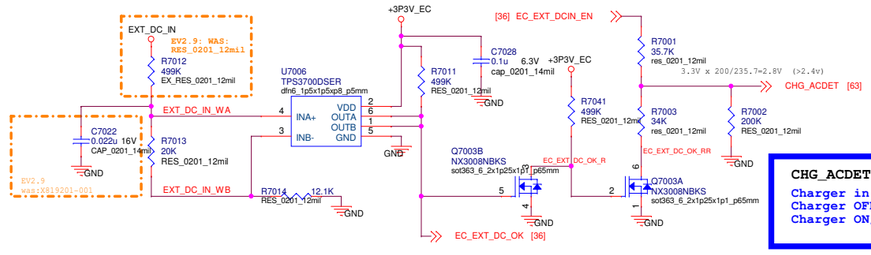
[In] SL1 6-12V PWR to EXT DC IN





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

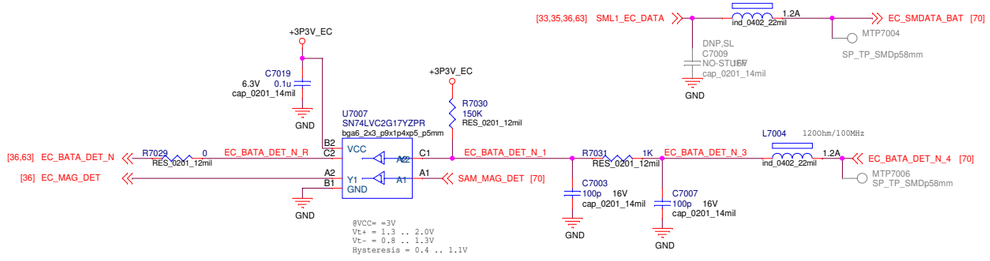


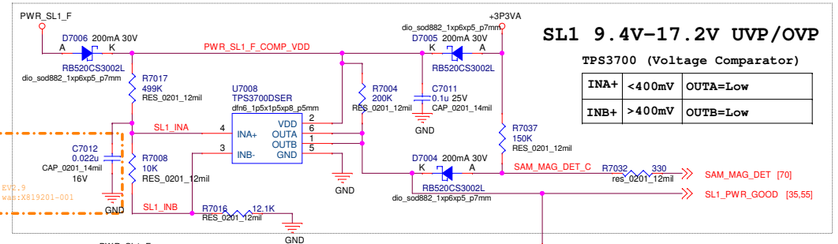


TPS3700 (Voltage Comparator)

INA+	<400mV	OUTA=Low
INB+	>400mV	OUTB=Low

CHG_ACDET	EC_EXT_DCIN_EN	EXT_DC_IN >9V
Charger in RESET	0	X
Charger OFF/ SMBUS EN	1	No
Charger ON/ SMBUS EN	1	YES

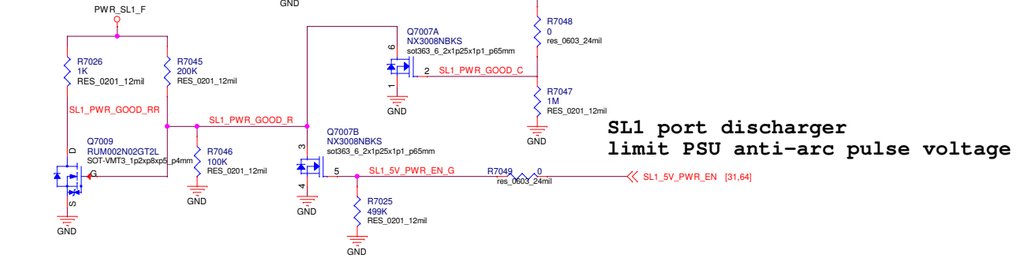




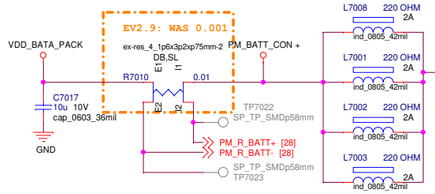
SL1 9.4V-17.2V UVP/OVP

TPS3700 (Voltage Comparator)

INA+	<400mV	OUTA=Low
INB+	>400mV	OUTB=Low

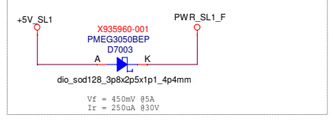


SL1 port discharger limit PSU anti-arc pulse voltage



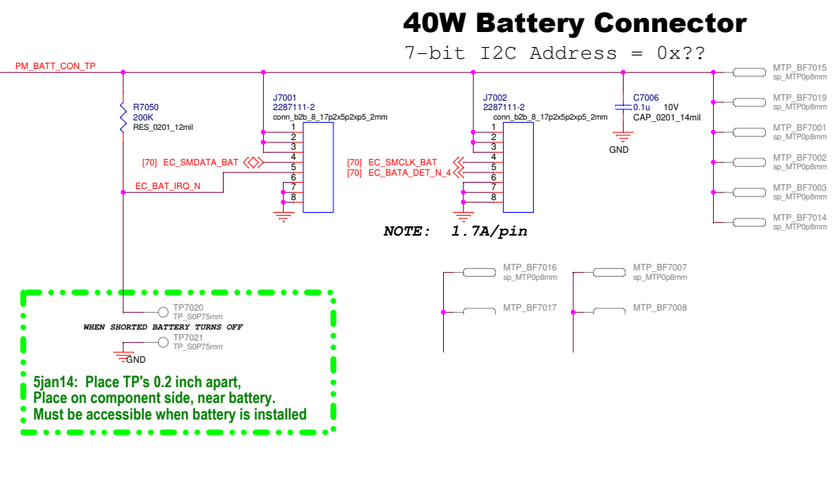
Tablet2SL = 1.5/2A

[Out] SYS +5V PWR to SL1



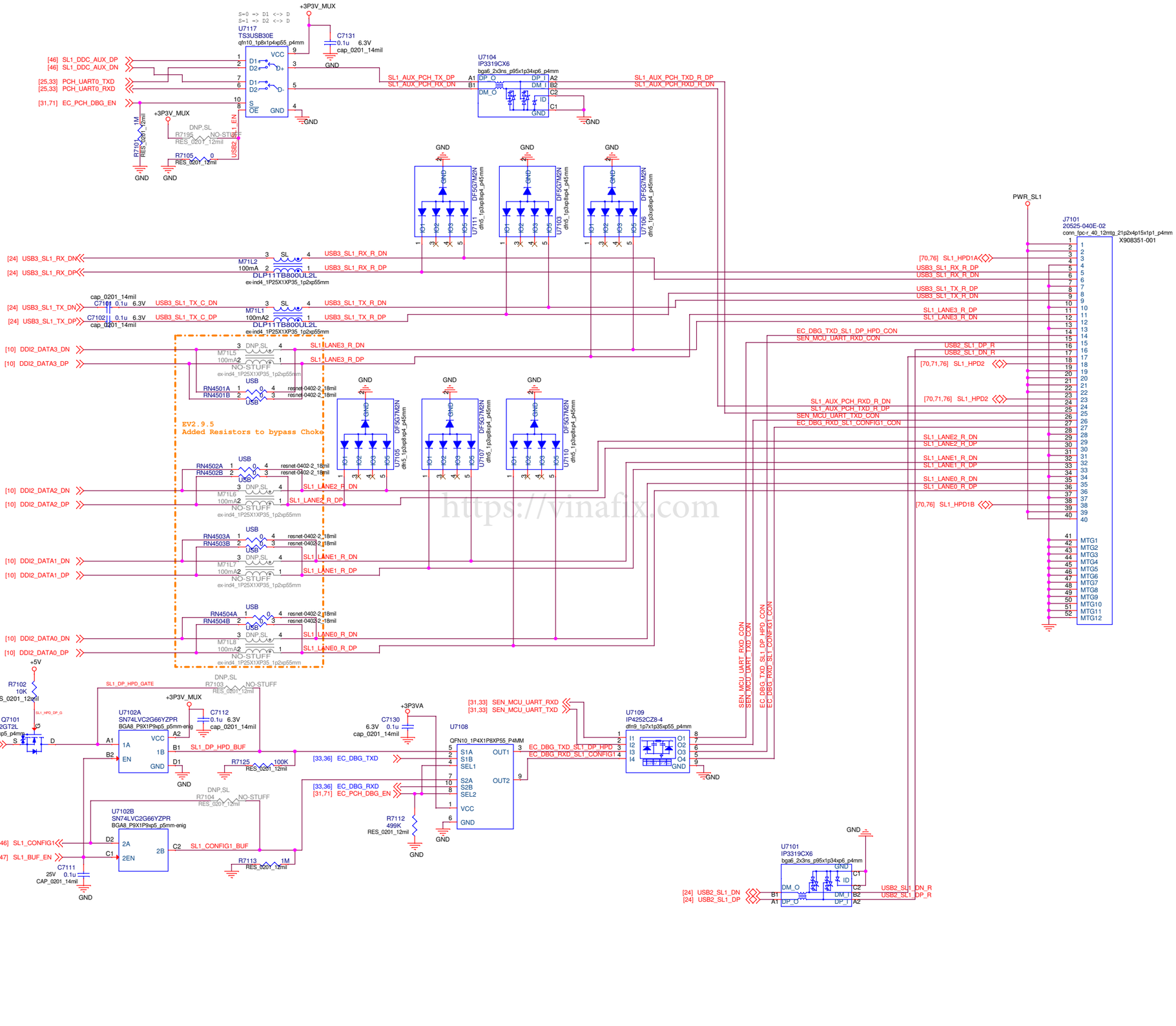
40W Battery Connector

7-bit I2C Address = 0x??



NOTE: 1.7A/pin

5jan14: Place TP's 0.2 inch apart, Place on component side, near battery. Must be accessible when battery is installed



+3P3VAS
R7201
499K
RES_0201_12mil
+3P3V_HDP_EN
[31] SL1_3P3V_DIS
R7206
499K
RES_0201_12mil
GND
Q7201
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
GND
U7201
RT9728AHZQW
dfn7_2x2xp8_p65mm-2
+3P3V_HDP_EN
+3P3VAS
DB,PWR_3P3V_HPD
R7202 0.01
res_0402_22mil
C7209
10u 6.3V
CAP_0402_28mil
GND
+3P3V_HPD_VIN
R7203 0
RES_0201_12mil
+3P3V_HPD_ILIMIT
DNP,PWR_3P3V_HPD
R7204
NO-STUFF
RES_0201_12mil
GND
EN/EN#
FAULT#
VIN
ILIM
VOUT
GND1
GND2
+3P3V_HPD
Imax=75mA
+3P3V_HPD
MTP7283
SP_TP_SMDp58mm
C7202
10u 6.3V
CAP_0402_28mil
GND
C7203
10u 6.3V
CAP_0402_28mil
GND
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.
+VCC_EDP_BKLT_IN_REG [28]
SP-tp-c0p381
PMTP7221
SP-tp-c0p381
PMTP7222
DB,PWR_BKLT
R7209 0.01
res_0402_22mil
+VSYS
Q7203
IRLML6402
SOT23_2p9X1P3X1P12_P95MM
R7213
100K
RES_0201_12mil
C7224
1000p 25V
CAP_0201_14mil
BKLT_EDP_IN_DRI
DNP,PWR_BKLT
C7225
NO-STUFF
CAP_0201_14mil
GND
R7212
200K
RES_0201_12mil
BKLT_EDP_IN_DRI_R
R7210
4.99K
RES_0201_12mil
R7211
4.99K
RES_0201_12mil
+VCC_EDP_BKLT_IN_DISC
Q7202B
SSM6N15AFU
SOT363_6_2x1p25X1_P65MM
GND
jks 15dec14:
EffCap (10u@8.7V) = 1.4uF
EffCap (22u@8.7V) = 3.6uF
Novatek: Cin = 4.7uF
+VCC_EDP_BKLT_IN
C7210
22u 10V
cap_0603_40mil
C7201
10u 10V
cap_0603_36mil
GND
+VCC_EDP_BKLT_IN
Imax=??A
TDC=??A
Novatek 15dec14: Ipeak(Vin=6V) = 1.144A
L7204 10uH 2.5A
ind_5p4x5p2x1p8mm
X911507-001
Rdc = 154mOhm
BKLT_LX
X913828-001
PMEG6030EVP
D7201
dio_sod128_3p8x2p5x1p1_4p4mm
+VCC_EDP_BKLT_OUT_R
jks 15dec14:
EffCap (10u@28V) = 1.5uF
EffCap (4.7u@28V) = 0.8uF
Novatek: Cout = 4.7uF
+VCC_EDP_BKLT_OUT
R7333 0
RES_0402_16mil
MTP7201
SP_TP_SMDp58mm
R7230
681K
res_0201_12mil
C7206
10u
50V
cap_1206_72mil
GND
C7207
NO-STUFF
50V
cap_1206_72mil
DNP,PWR_BKLT
GND
C7208
NO-STUFF
50V
cap_1206_72mil
DNP,PWR_BKLT
GND
R7231
20K
RES_0201_12mil
GND
R7207 10
res_0603_22mil
+VCC_BKLT
C7204
1u 10V
CAP_0402_22mil
GND
U7202
MP3388SGR
qfn25_4x4xp9_p5mm
VIN
EN
OSC
PWMI
ISET
PWMO
COMP
PGND2
PGND1
AGND1
AGND2
VCC
SW2
SW1
OVP
LED8
LED7
LED6
LED5
LED4
LED3
LED2
LED1
FPWM
VFAULT
C7255
1u 10V
CAP_0402_22mil
GND
+3P3V_PANEL
R7215 22K
RES_0201_12mil
BKLT_EDP_IN_R
R7214
100K
RES_0201_12mil
DNP,PWR_BKLT
C7253
NO-STUFF
cap_0201_14mil
GND
Q7202A
SSM6N15AFU
SOT363_6_2x1p25X1_P65MM
GND
[10] L_BKLTEN
R7208 1K
RES_0201_12mil
BKLT_EN
SP_TP_SMDp58mm
SP_TP_SMDp58mm
MTP7224
MTP7225
R7228 10K
RES_0201_12mil
BKLKT_OSC
[57] L_BKLT_CTRL_OUT
R7226 1K
RES_0201_12mil
BKLT_PWM_R
R7227 X936061-001 90.9K
res_0201_12mil
BKLT_ISET
R7232 0.068u
cap_0201_14mil
BKLKT_MIX
C7211 0.47u
cap_0201_14mil
BKLT_COMP_R
R7229 X933171-001 270
res_0201_12mil
BKLT_COMP
BKLT_OVS
BKLT_FB8_R
BKLT_FB7_R
BKLT_FB6_R
BKLT_FB5_R
BKLT_FB4_R
BKLT_FB3_R
BKLT_FB2_R
BKLT_FB8_1
R7218 0
R7219 0
R7220 0
R7221 0
R7222 0
R7223 0
R7224 0
R7225 0
BKLT_FB8 [57,72]
BKLT_FB7 [57,72]
BKLT_FB6 [57,72]
BKLT_FB5 [57,72]
BKLT_FB4 [57,72]
BKLT_FB3 [57,72]
BKLT_FB2 [57,72]
BKLT_FB1 [57,72]
BKLT_SC1
BKLT_NG2
DNP,PWR_BKLT
R7239
NO-STUFF
RES_0201_12mil
GND
PWR_BKLT
C7254
330p 25V
cap_0201_14mil
GND
EV2.9.0
was: 150pF
LED PWM = 10kHz
min luminance = 12.3 nits
MTP7202 SP_TP_SMDp58mm BKLT_FB1 [57,72]
MTP7203 SP_TP_SMDp58mm BKLT_FB2 [57,72]
MTP7206 SP_TP_SMDp58mm BKLT_FB3 [57,72]
MTP7210 SP_TP_SMDp58mm BKLT_FB4 [57,72]
MTP7204 SP_TP_SMDp58mm BKLT_FB5 [57,72]
MTP7205 SP_TP_SMDp58mm BKLT_FB6 [57,72]
MTP7207 SP_TP_SMDp58mm BKLT_FB7 [57,72]
MTP7208 SP_TP_SMDp58mm BKLT_FB8 [57,72]

BLADE Connector

+5V_KB_CONN
Imax = 0.5A

SP_TP_SMDp58mm MTP7314
SP_TP_SMDp58mm MTP7315
SP_TP_SMDp58mm MTP7316
SP_TP_SMDp58mm MTP7317
[74] BLADE_TX_USB_D+
[74] BLADE_RX_USB_D-
[74] +5V_SHA_CONN_UART_RX_CONN
[74] BLADE_AUTH_DATA_UART_TX_CONN

J7302
2287111-2
conn_b2b_8_17p2x5p2xp5_2mm
X904496-001

MTP_BF7305 sp_MTP0p8mm
MTP_BF7306 sp_MTP0p8mm
MTP_BF7313 sp_MTP0p8mm
MTP_BF7314 sp_MTP0p8mm
MTP_BF7309 sp_MTP0p8mm
MTP_BF7310 sp_MTP0p8mm
MTP_BF7311 sp_MTP0p8mm
MTP_BF7312 sp_MTP0p8mm

FANG_PWR
D7301 A1 A2 V18MLA0402NR dio_0402_24mil_aa
R7301 100K RES_0201_12mil
C7301 0.1u 25V CAP_0402_22mil
L7301 220 OHM 2A ind_0805_42mil
FANG_PWR_F

+5V_KB_CONN
L7304 120Ohm/100MHz ind_0402_22mil 1.2A
+5V_KB
C7302 0.1u 6.3V cap_0201_14mil
D7302 A1 A2 V18MLA0402NR dio_0402_24mil_aa

SP_TP_SMDp58mm MTP7319
SP_TP_SMDp58mm MTP7318

J7303
2287111-2
conn_b2b_8_17p2x5p2xp5_2mm
X904496-001

eFang power = 3.5A max
using +1 rule

[In] BLADE 6-12V PWR to EXT DC IN

Imax=4.5A

EXT_DC_IN
Q7303 SI7121DN mosfet5_3p3x3p3x1p12_p65mm
Q7301 SI7121DN mosfet5_3p3x3p3x1p12_p65mm
R7302 33K RES_0201_12mil
EXT_DC_IN_FET_GATE
FANG_DRAIN_FET_PWR
DNP,BLADE C7310 NO-STUFF CAP_0201_14mil
DNP,BLADE C7303 25V NO-STUFF CAP_0402_22mil
DNP,BLADE R7318 NO-STUFF RES_0201_12mil
C7304 1u 25V CAP_0402_22mil
FANG_PWR_FET_GATE
R7304 20K RES_0201_12mil
DNP,BLADE C7309 25V NO-STUFF CAP_0201_14mil
Q7302A NX3008NBKS sot363_6_2x1p25x1p1_p65mm
R7310 10K RES_0201_12mil
Q7302B NX3008NBKS sot363_6_2x1p25x1p1_p65mm
EC_BLADE_PWR_IN_SW
MTP7301 SP_TP_SMDp58mm
R7308 499K RES_0201_12mil
R7303 330 RES_0402_16mil
[33,36] EC_BLADE_PWR_EN

[31] BLADE_AUTH_PWR_EN
R7311 1M RES_0201_12mil

Rds(on)=120mOhm (typ)
Iq=170uA

U7301
RT9728AHZQW
dfn7_2x2xp8_p65mm-2
EN/EN# FAULT# VIN ILIM VOUT GND1 GND2

+5V_SHA_CONN
Imax=75mA

+5VA_SHA
R7307 100K RES_0201_12mil
SHA_OC#
SHA_VIN
SHA_ILIMIT
DB,BLADE R7314 0.01 res_0402_22mil
BLADE R7313 0 RES_0402_16mil
PMTP7321 SP-tp-c0p381
PMTP7322 SP-tp-c0p381
C7306 10u 6.3V cap_0603_38mil
DNP,BLADE R7319 NO-STUFF RES_0201_12mil
C7305 0.1u 6.3V cap_0201_14mil
R7305 2.2K RES_0201_12mil
C7307 1u 6.3V CAP_0201_14mil
C7308 22p 25V CAP_0201_14mil

Imax = 1.4A
50mA <= ILIM(connected to VIN) <=100mA

+VSYS
L7313 30OHMS @100MHZ IND_0402_24mil 1.7A
L7312 30OHMS @100MHZ IND_0402_24mil 1.7A
FANG_PWR_IN
C7312 2.2u CAP_0603_38mil 25V
C7313 0.1u CAP_0201_14mil 25V

V(operating) = 4.5 to 13.8 Max

U7302
TPS2592ZADRCR
son11_3x3x1_p5mm
VIN3 VIN2 VIN1 OUT1 OUT2 OUT3 BFET EN/UVLO dV/dT ILIM GND_PAD

current = 3A

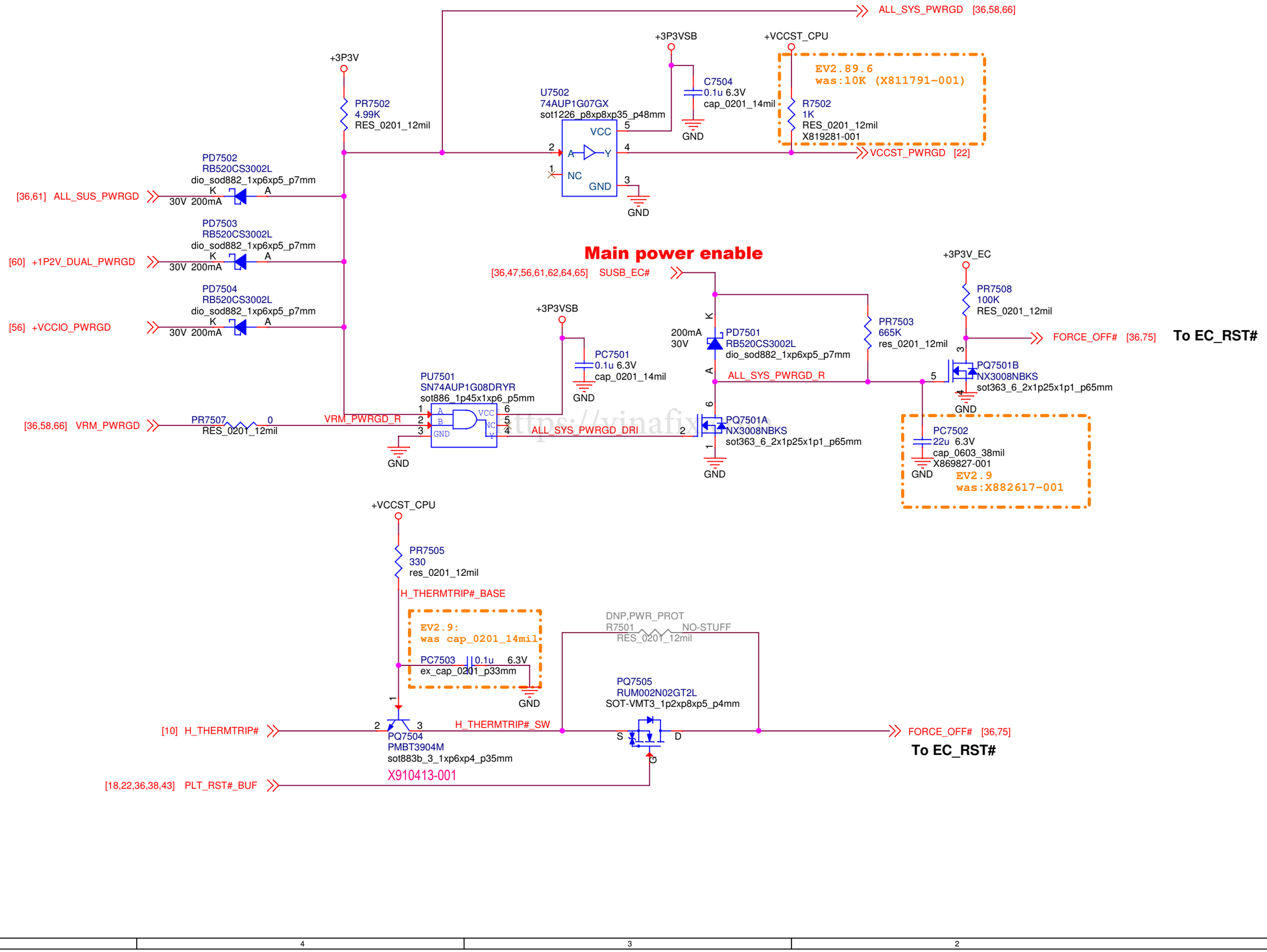
X935960-001
PMEG3050BEP
D7303
dio_sod128_3p8x2p5x1p1_4p4mm
Vf = 450mV @5A
Ir = 250uA @30V

FANG_PWR_OUT
C7316 0.1u CAP_0201_14mil 25V
C7317 2.2u CAP_0603_38mil 25V
FANG_PWR_F
C7315 2.2u CAP_0603_38mil 25V

LTE eFANG PWR = 2.10A(min)
2.47A(nom)
2.84A(max)

[36] EC_BLADE_5VLDSW_EN
R7309 0 RES_0201_12mil
R7315 100K RES_0201_12mil
C7314 1000p CAP_0201_14mil 25V 10%
C7311 1000p CAP_0201_14mil 25V 10%
FANG_REG_ILIM
R7316 59K RES_0201_12mil
MTP7320 SP_TP_SMDp58mm

+5VA_SHA
10uA
R7411
499K
RES_0201_12mil
LEGACY_MODE
[74] USB_MODE
Q7401A
NX3008NBKS
sot363_6_2x1p25x1p1_p65mm
GND
+5VA_SHA
10uA
R7409
499K
RES_0201_12mil
USB_MODE_R
Q7401B
NX3008NBKS
sot363_6_2x1p25x1p1_p65mm
GND
One Wire UART from SAM (HPD_DET_SL2)
[31] BLADE_AUTH_DATA
C7412
22p 25V
CAP_0201_14mil
Icc(max)=500uA
+5VA_SHA
U7402A
SN74LVC2G66YZPR
BGA8_P9X1P9xp5_p5mm
VCC
1A
1B
EN
GND
A1
B2
A2
B1
D1
C7401
0.1u 6.3V
cap_0201_14mil
GND
+5V_SHA_CONN
C7413
0.1u 6.3V
cap_0201_14mil
GND
C1
D2
2EN
2A
2B
C2
U7402B
Icc(max)=500uA
+5VA_SHA
U7401A
SN74LVC2G66YZPR
BGA8_P9X1P9xp5_p5mm
C7410
0.1u 6.3V
cap_0201_14mil
GND
R7415
150K
RES_0201_12mil
GND
+5V_SHA_CONN_UART_RX
U7401B
SN74LVC2G66YZPR
BGA8_P9X1P9xp5_p5mm
R7403 DNP,BLADE NO-STUFF
RES_0402_16mil
OT_SHA_PWR_RX [33]
R7404 DNP,BLADE NO-STUFF
RES_0402_16mil
OT_SHA_DATA_TX [33]
[33] OT_RX_SEN_MCU_DEBUG
R7401 DNP,BLADE NO-STUFF
RES_0402_16mil
[33] OT_TX_SEN_MCU_DEBUG
R7413 DNP,BLADE NO-STUFF
RES_0402_16mil
+3P3V_EC
C7414
1u 6.3V
CAP_0201_14mil
GND
U7406
SN74AVC2T245
QFN10_1p8x1p4xp55_p4mm
VCCB VCCA
B1 A1
B2 A2
OE DIR1
DIR2
GND
+1P8V_EC
C7409
0.1u 6.3V
cap_0201_14mil
GND
[31] BLADE_UART_RX
[31] BLADE_UART_TX
OT_RX_SEN_MCU_IN_R
OT_TX_SEN_MCU_OUT_R
R7408
0
RES_0201_12mil
GND
Icca=8uA
Iccb=8uA
R7402
71.5K
res_0402_16mil
GND
GND
+1P8V_EC
DNP,BLADE
R7405
NO-STUFF
RES_0201_12mil
R7414 33 RES_0402_16mil
R7407 33 RES_0402_16mil
OT_RX_SEN_MCU_IN_TI
OT_TX_SEN_MCU_OUT_TI
BLADE_AUTH_DATA_UART_TX
U7405
IP4252CZ8-4
dfn9_1p7x1p35xp55_p4mm
I1 I2 I3 I4
O1 O2 O3 O4
GND
+5V_SHA_CONN_UART_RX_CONN [73]
BLADE_AUTH_DATA_UART_TX_CONN [73]
C7402
100p 25V
CAP_0201_14mil
C7403
100p 25V
CAP_0201_14mil
GND
GND
GND
BZX584C3V6
dio_sod523_1p2xp8xp65_1p1mm
D7402
D7401
GND
DNP,BLADE
C7407
NO-STUFF
CAP_0402_22mil
C7416
DNP,BLADE
C7408
NO-STUFF
CAP_0402_22mil
C7411
DNP,BLADE
1.2A
120Ohm/100MHz
ind_0402_22mil
L7401
L7402
GND
[24] USB2_BLADE_DP
[24] USB2_BLADE_DN
L7403
TCFG03025H90002AA9
qfn6_p65xp85xp55_p4mm
MUXED_ACC_D+_L
MUXED_ACC_D-_L
GND
GND
ACC plug
MUX
ACC Remove
No ACC
RX
TX
D+
D-
+5V_SHA_CONN
BLADE_AUTH_DATA
OT_TX
OT_RX
+5V_KB_CONN
CB=H :=> NO <-> COM
CP=L :=> NC <-> COM
+3P3VA
U7504
TS3USB30E
qfn10_1p8x1p4xp55_p4mm
VCC
D1+
D2+
D+
D1-
D2-
D-
S
OE
GND
C7415
0.1u
6.3V
cap_0201_14mil
GND
OT_TX_SEN_MCU_OUT_TI_F
OT_RX_SEN_MCU_IN_TI_F
U7404
IP4292CZ10-TBR
DIO_ARRAY_10_ESD_1X2P5XP55_P5MM
BLADE_TX_USB_D+ [73]
BLADE_RX_USB_D- [73]
DNP,BLADE
C7404
50V NO-STUFF
CAP_0402_22mil
DNP,BLADE
C7405
NO-STUFF
CAP_0402_22mil
GND
GND
[31] BLADE_UART_USB_N
R7410
0 USB_MODE
RES_0201_12mil
R7412
100K
RES_0201_12mil
GND
C7406
0.1u
6.3V
cap_0201_14mil
GND
BLADE_UART_MUX_EN
R7406
100K
RES_0201_12mil
GND
USB_MODE
[74]


ALL_SYS_PWRGD [36,58,66]
+3P3V
+3P3VSB
+VCCST_CPU
PR7502
4.99K
RES_0201_12mil
U7502
74AUP1G07GX
sot1226_p8xp8xp35_p48mm
VCC
A
Y
NC
GND
C7504
0.1u 6.3V
cap_0201_14mil
EV2.89.6
was:10K (X811791-001)
R7502
1K
RES_0201_12mil
X819281-001
VCCST_PWRGD [22]
PD7502
RB520CS3002L
dio_sod882_1xp6xp5_p7mm
[36,61] ALL_SUS_PWRGD
30V 200mA
PD7503
[60] +1P2V_DUAL_PWRGD
PD7504
[56] +VCCIO_PWRGD
Main power enable
[36,47,56,61,62,64,65] SUSB_EC#
+3P3V_EC
PR7508
100K
RES_0201_12mil
FORCE_OFF# [36,75]
To EC_RST#
PC7501
0.1u 6.3V
cap_0201_14mil
PU7501
SN74AUP1G08DRYR
sot886_1p45x1xp6_p5mm
[36,58,66] VRM_PWRGD
PR7507
0
RES_0201_12mil
VRM_PWRGD_R
ALL_SYS_PWRGD_DRI
200mA
30V
PD7501
RB520CS3002L
dio_sod882_1xp6xp5_p7mm
PR7503
665K
res_0201_12mil
ALL_SYS_PWRGD_R
PQ7501B
NX3008NBKS
sot363_6_2x1p25x1p1_p65mm
PQ7501A
NX3008NBKS
sot363_6_2x1p25x1p1_p65mm
PC7502
22u 6.3V
cap_0603_38mil
X869827-001
EV2.9
was:X882617-001
+VCCST_CPU
PR7505
330
res_0201_12mil
H_THERMTRIP#_BASE
EV2.9:
was cap_0201_14mil
PC7503
0.1u 6.3V
ex_cap_0201_p33mm
DNP,PWR_PROT
R7501
NO-STUFF
RES_0201_12mil
PQ7505
RUM002N02GT2L
SOT-VMT3_1p2xp8xp5_p4mm
[10] H_THERMTRIP#
H_THERMTRIP#_SW
PQ7504
PMBT3904M
sot883b_3_1xp6xp4_p35mm
X910413-001
[18,22,36,38,43] PLT_RST#_BUF
FORCE_OFF# [36,75]
To EC_RST#

SFT1 SHIELD EV2.9
MSPN = X939683-001
SHIELD, FRAME, T1, V1
PCB Footprint = shield-X933943-001

SFT2 SHIELD
MSPN = X939684-001
SHIELD, FRAME, T2, V1
PCB Footprint = shield-X933944-001

SFT3 SHIELD
MSPN = X939685-001
SHIELD, FRAME, T3, V1
PCB Footprint = shield-X933945-001

SFT4 SHIELD
MSPN = X939686-001
SHIELD, FRAME, T4, V1
PCB Footprint = shield-X933946-001

SFT5 SHIELD
MSPN = X939687-001
SHIELD, FRAME, T5, V1
PCB Footprint = shield-X933947-001

SFT6 SHIELD
MSPN = X939688-001
SHIELD, FRAME, T6, V1
PCB Footprint = shield-X933948-001

SFT7 SHIELD
MSPN = X939689-001
SHIELD, FRAME, T7, V1
PCB Footprint = shield-X933949-001

GND

SFT8 SHIELD EV2.9
MSPN = X939690-001
SHIELD, FRAME, T8, V1
PCB Footprint = shield-X933950-001

SFT9 SHIELD EV2.9
MSPN = X939691-001
SHIELD, FRAME, T9, V1
PCB Footprint = shield-X933951-001

SFT10 SHIELD
MSPN = X939692-001
SHIELD, FRAME, T10, V1
PCB Footprint = shield-X933952-001

SFT11 SHIELD
MSPN = X939693-001
SHIELD, FRAME, T11, V1
PCB Footprint = shield-X933953-001

SFT12 SHIELD
MSPN = X939694-001
SHIELD, FRAME, T12, V1
PCB Footprint = shield-X933954-001

GND

EV2.9

EV2.9
SFB1-SFB5,SFB7,SFB8
DELETED

SFB9 MECH_SHIELD SHIELD EV2.9
MSPN = X939709-001
SHIELD, FRAME, B9, V1
PCB Footprint = shield-X933976-001

SFB10 MECH_SHIELD SHIELD
MSPN = X939709-001
SHIELD, FRAME, B9, V1
PCB Footprint = shield-X933976-001

GND

SFB6 MECH_SHIELD SHIELD EV2.9
MSPN = X939707-001
SHIELD, FRAME, B6, V1
PCB Footprint = shield-X933973-001

GND

H7601
Value = X934367-001
washer-X934367-001
GND

H7602
Value = X934367-001
washer-X934367-001
GND

J7601
25SMT-4442-01
gndfoam_3p6x1p7x1p6
X876415-001
GND

J7602
25SMT-4442-01
gndfoam_3p6x1p7x1p6
X876415-001
GND

J7603
25SMT-4442-01
gndfoam_3p6x1p7x1p6
X876415-001
GND

J7604
25SMT-4442-01
gndfoam_3p6x1p7x1p6
X876415-001
GND

PWR_SL1
MTTP_BF7670 sp_MTP0p8mm
MTTP_BF7653 sp_MTP0p8mm
MTTP_BF7654 sp_MTP0p8mm
MTTP_BF7655 sp_MTP0p8mm
MTTP_BF76105 sp_MTP0p8mm
MTTP_BF76103 sp_MTP0p8mm

PWR_SL1
MTP_BF7670 sp_MTP0p8mm
MTP_BF7653 sp_MTP0p8mm
MTP_BF7654 sp_MTP0p8mm
MTP_BF7655 sp_MTP0p8mm
MTP_BF76105 sp_MTP0p8mm
MTP_BF76103 sp_MTP0p8mm

MTP_BF7656 sp_MTP0p8mm GND
MTP_BF7671 sp_MTP0p8mm GND
MTP_BF7672 sp_MTP0p8mm GND
MTP_BF7673 sp_MTP0p8mm GND
MTP_BF76104 sp_MTP0p8mm GND
MTP_BF76102 sp_MTP0p8mm GND

MTTP_BF7656 sp_MTP0p8mm GND
MTTP_BF7671 sp_MTP0p8mm GND
MTTP_BF7672 sp_MTP0p8mm GND
MTTP_BF7673 sp_MTP0p8mm GND
MTTP_BF76104 sp_MTP0p8mm GND
MTTP_BF76102 sp_MTP0p8mm GND

EV2.9.0
was: X935458-001
aka M2 (mech team)
MP7605
X940036-001
sp-pem_nut-x935458-001-1
GND
gold plating option provided
for both top and bottom layers

[36,55] VCCDSW_EN MTP7669 SP_TP_SMDp58mm
[70,71] SL1_HPD2 MTP7681 SP_TP_SMDp58mm
[70,71] SL1_HPD1B MTP7682 SP_TP_SMDp58mm
[70,71] SL1_HPD1A MTP7684 SP_TP_SMDp58mm

EV2.9.0
was: X934094-001
MP7601 X939859-001 SP-PEM_NUT-X934094-001_3p60x2p45d GND
aka M1.2 (mech team)
MP7602 X939859-001 SP-PEM_NUT-X934094-001_3p60x2p45d GND
MP7603 X939859-001 SP-PEM_NUT-X934094-001_3p60x2p45d GND
MP7604 X939859-001 SP-PEM_NUT-X934094-001_3p60x2p45d GND

+0P85VSB MTP7686 SP_TP_SMDp58mm
+VCCGT MTP7652 SP_TP_SMDp58mm
+VCCSA MTP7657 SP_TP_SMDp58mm
+VCCIO MTP7662 SP_TP_SMDp58mm
+VCCST_CPU MTP7661 SP_TP_SMDp58mm
+VCCSTG MTP7659 SP_TP_SMDp58mm
+VCCEDRAM MTP7658 SP_TP_SMDp58mm
+VCCEOPIO MTP7660 SP_TP_SMDp58mm
+1P2V_DUAL MTP7611 SP_TP_SMDp58mm
+V_VDDQ_VTT MTP7612 SP_TP_SMDp58mm
+VCC_CORE MTP7613 SP_TP_SMDp58mm
+VDDQ_VREF TP7614 SP_TP_SMDp58mm

PTH18 NO-STUFF mtg_hole_3p10x2p50d
PTH1 NO-STUFF mtg_pin_c1p35x0p75d
PTH2 NO-STUFF mtg_pin_c1p35x0p75d
PTH3 NO-STUFF mtg_pin_c1p35x0p75d
GND

PTH19 MSPN = NO-STUFF MTG_pin_slot-3p00x3p50_2p50X3p00d GND

PTH11 NO-STUFF mtg_hole_3p10x2p50d
PTH12 NO-STUFF mtg_hole_3p10x2p50d
PTH13 NO-STUFF mtg_hole_3p10x2p50d
PTH14 NO-STUFF mtg_hole_3p10x2p50d
PTH15 NO-STUFF mtg_hole_3p10x2p50d
PTH16 NO-STUFF mtg_hole_3p10x2p50d
PTH17 NO-STUFF mtg_hole_3p10x2p50d
GND