

Compal Confidential

Diner Braswell M/B LA-D702P Schematics Document

Intel Braswell + ATI R16M-M1-30/70

2015/12/12

Project Code : BDL50

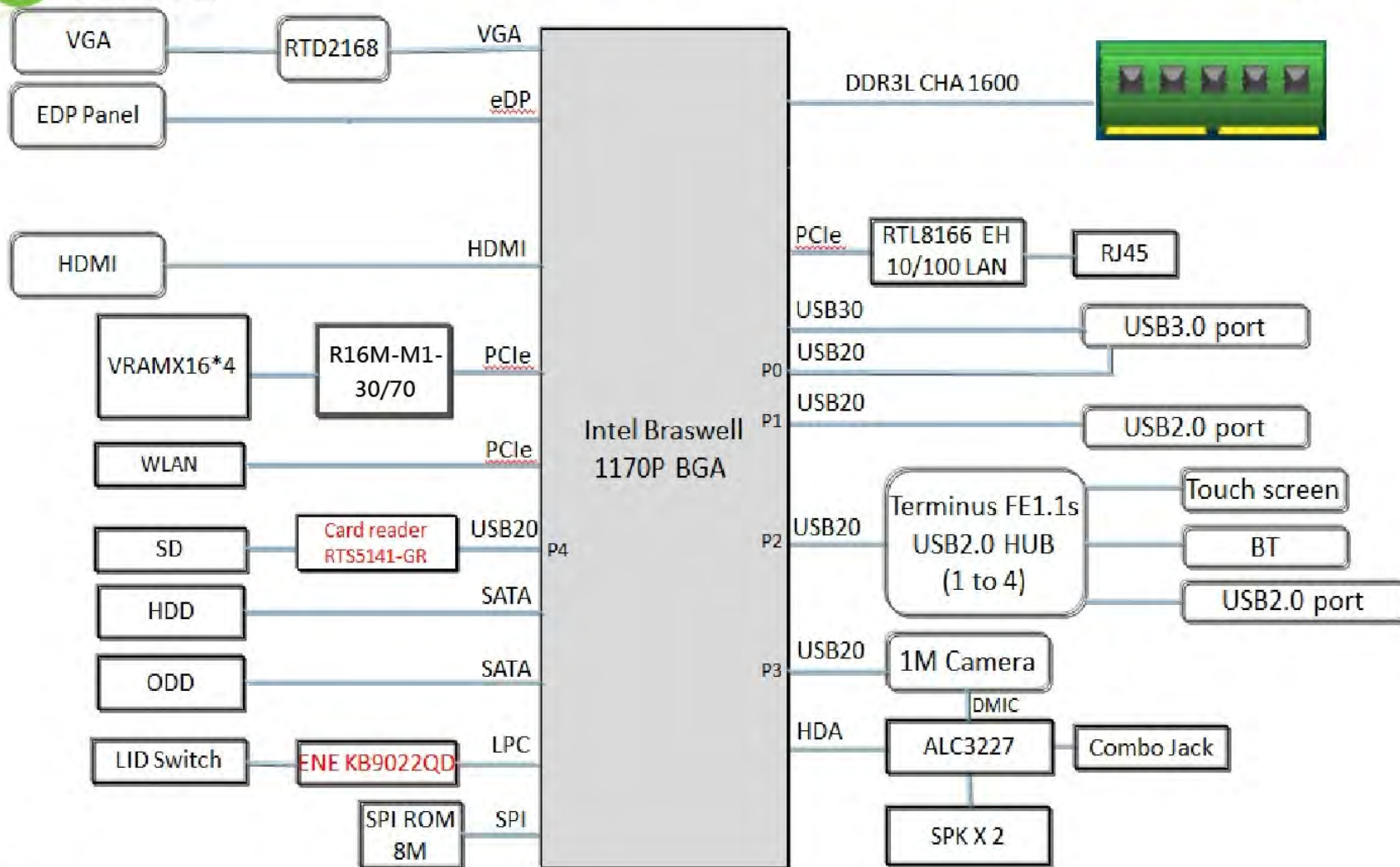
Rev. 0.3 PV

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Intel Braswell 15"

Hardware Block Diagram



Sub-board

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CR+USB/B

page34

PWR BTN/B

page36

TP BTN/B

page24

HDD or SSD/B

page24

ODD/B

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Voltage Rails

Power Plane	Description	S0	S3	S4/S5
VIN	19V Adapter power supply	ON	ON	ON
BATT+	12V Battery power supply	ON	ON	ON
B+	AC or battery power rail for power circuit. (19V/12V)	ON	ON	ON
+VSB	+VSBP to +VSB always on power rail for sequence control	ON	ON	ON
+RTCVCC	RTC Battery Power	ON	ON	ON
+1.0VALW	+1.0v Always power rail	ON	ON	ON
+1.2VALW	+1.2v Always power rail	ON	ON	ON
+1.8VALW	+1.8v Always power rail	ON	ON	ON
+3VALW	+3.3v Always power rail	ON	ON	ON
+5VALW	+5.0v Always power rail	ON	ON	ON
+1.35V	+1.35V power rail for DDR3L	ON	ON	OFF
+SOC_VCC	Core voltage for SOC	ON	OFF	OFF
+SOC_VNN	GFX voltage for SOC	ON	OFF	OFF
+0.675VS	+0.675V power rail for DDR3L Terminator	ON	OFF	OFF
+1.0VS	+1.0v system power rail	ON	OFF	OFF
+1.05VS	+1.05v system power rail	ON	OFF	OFF
+1.35VS	+1.35v system power rail	ON	OFF	OFF
+1.5VS	+1.5v system power rail	ON	OFF	OFF
+1.8VS	+1.8v system power rail	ON	OFF	OFF
+3VS	+3.3v system power rail	ON	OFF	OFF
+5VS	+5.0v system power rail	ON	OFF	OFF
Note : ON* means that this power plane is ON only with AC power available, otherwise it is OFF.				

<PCI-E,SATA,USB3.0>

Lane#	USB3.0	DESTINATION	
		UMA	DIS
0		USB3.0	USB3.0
1			

Lane#	SATA	DESTINATION	
		UMA	DIS
0		HDD	HDD
1		ODD	ODD

Lane#	PCIE	DESTINATION	
		UMA	DIS
0			GPU
1			GPU
2		WLAN	WLAN
3		LAN	LAN

<USB2.0 port>

USB2.0 port	UMA	Dis
0	USB 3.0 (MB)	USB 3.0 (MB)
1	USB 2.0 (MB)	USB 2.0 (MB)
2	Camera	Camera
3	Card Reader	Card Reader
4	USB 2.0 Hub	USB 2.0 Hub

<USB2.0 Hub>

USB2.0 port	UMA	Dis
0	Touch Screen	Touch Screen
1	USB 2.0 (SB)	USB 2.0 (SB)
2	BT	BT
3		
4		

BOM Structure Table

BOM Config	Description
@	Unpop
CONN@	Connector Part Control by ME
EMI@	EMI pop component
@EMI@	EMI unpop component
ESD@	ESD pop component
@ESD@	ESD unpop component
PX@	For Discrete Sku
8166@	10/100 LAN
8151@	Giga LAN
UMA@	For UMA Sku
NAT@	EC Non Auto Load Code
AUTO@	EC Auto Load Code
TPM@	CPU to EC LPC use 3.3V level
NTPM@	CPU to EC LPC use 1.8V level
GCLK@	Pop Green Clock
GCUMA@	Pop Green Clock UMA
GCDIS@	Pop Green Clock DIS
XTAL@	For XTAL
TS@	Pop Touch Screen component
R30@	For R16M-M1-30 GPU
R70@	For R16M-M1-70 GPU
6U@	For 6U@ (Add CRT Component)
IND@	Pop for India Sku

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EC SM Bus1 address

Device	Address	
Charger		
Battery		

EC SM Bus2 address

CPU Thermal Sensor	4C	UC3
ATI GPU EXO Pro		U666

EC SM Bus3 address

GPU Thermal Sensor	4C	UV1
--------------------	----	-----

SOC SM Bus address

Device	Address	
ChannelA	A0	DDR DIMM1
ChannelB	A2	DDR DIMM2
Touch Pad		

DAX

PCB

Part Number = DA6001JC000

PCB LA-C811P REV0 M/B 4

ZZZ1

HDMI

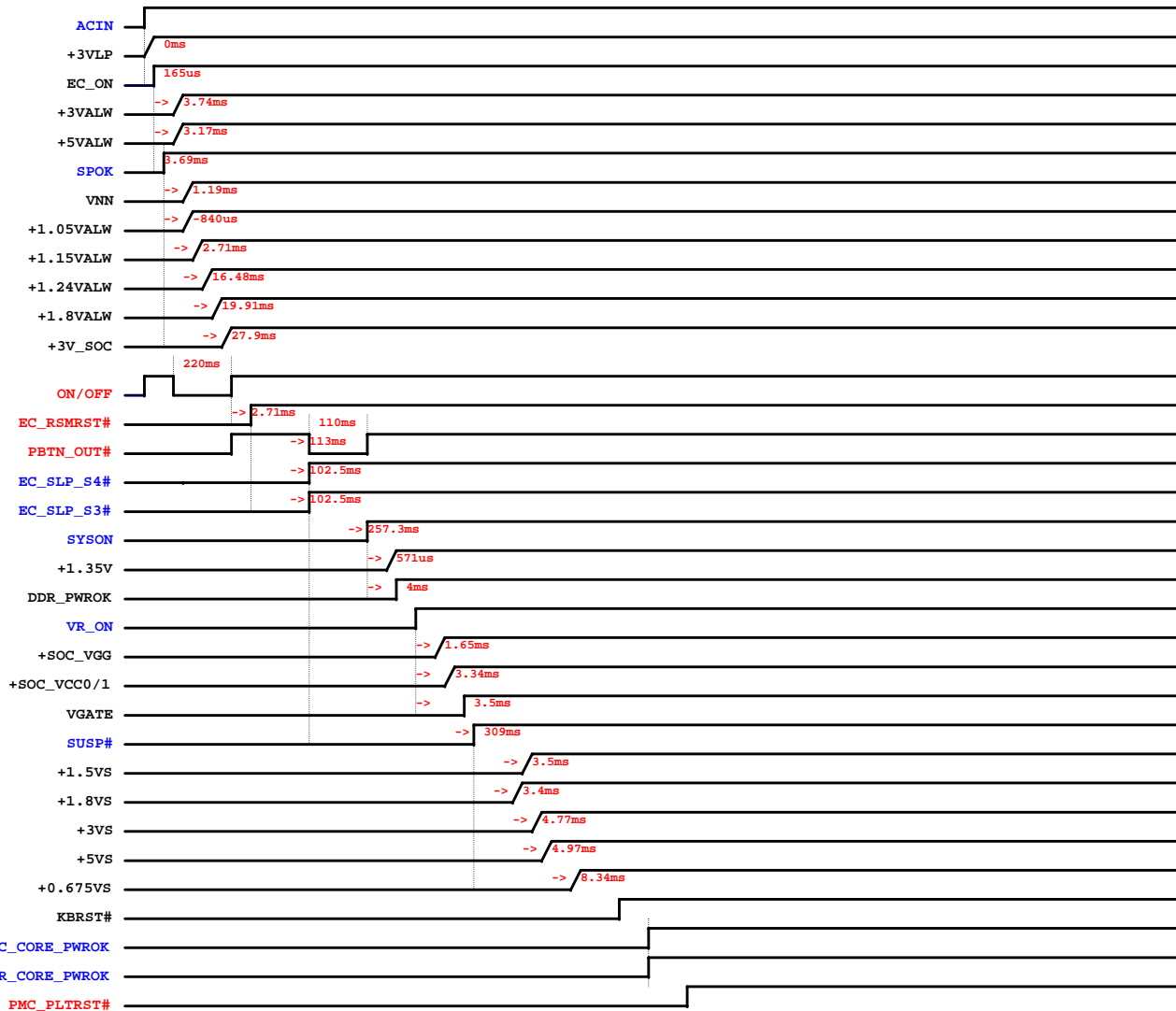
Part Number = RO0000003HM

PCB 102 LA-B151P REV0 M/B 3

45@

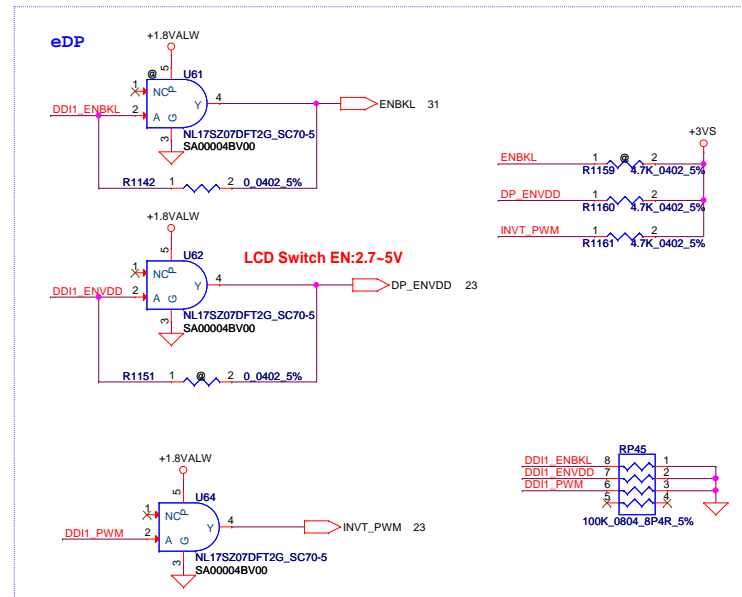
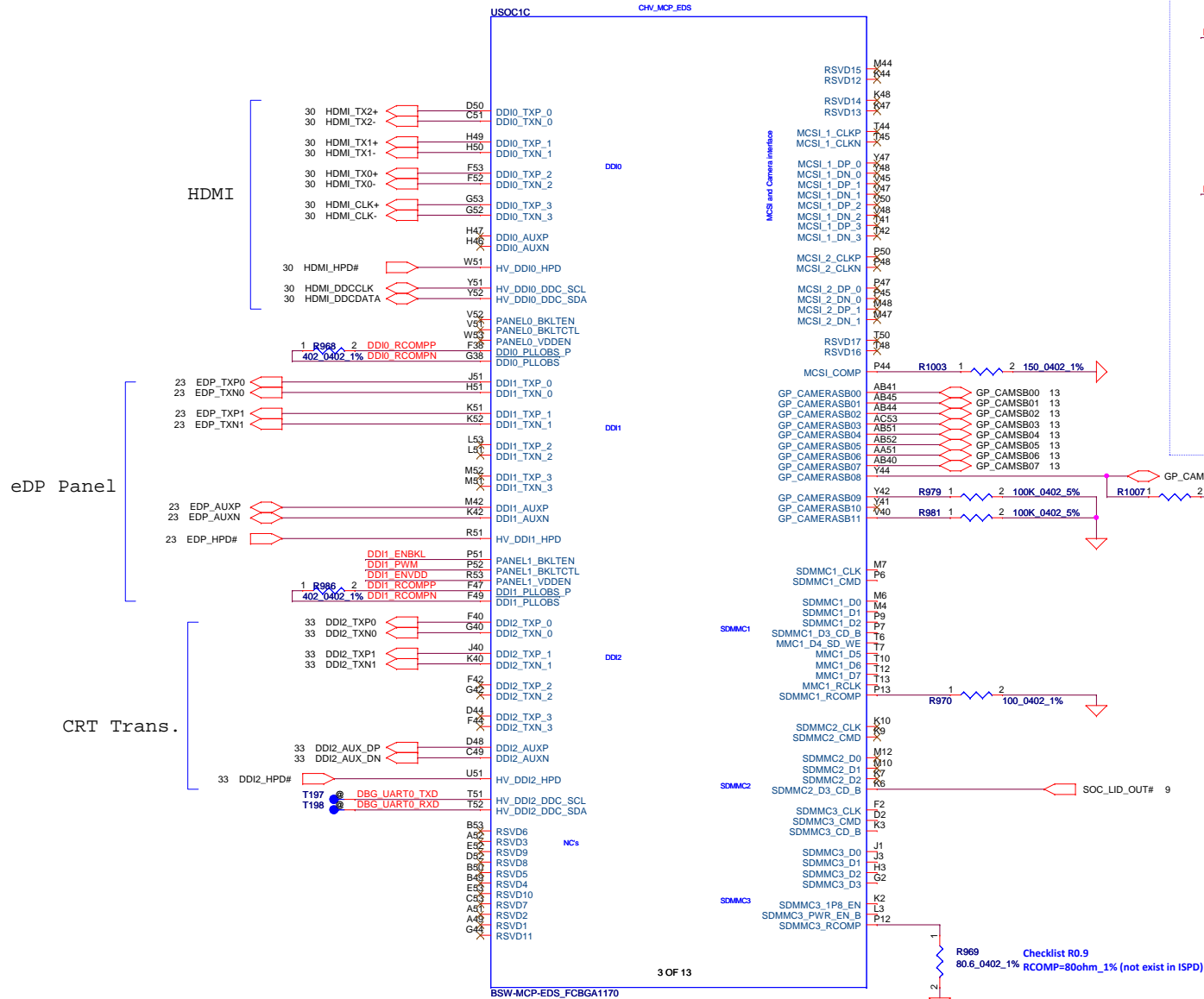
SOC

G3->S0

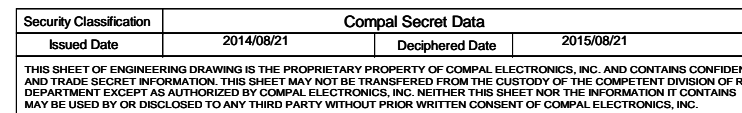
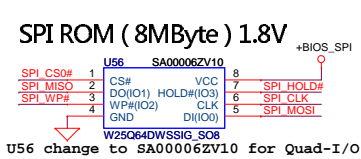
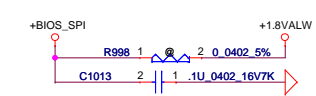
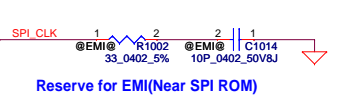
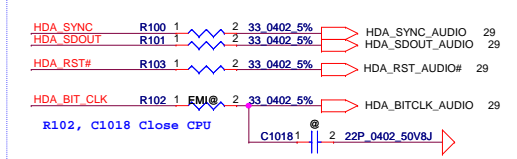


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2014/08/21		2015/08/21		Power Sequence	
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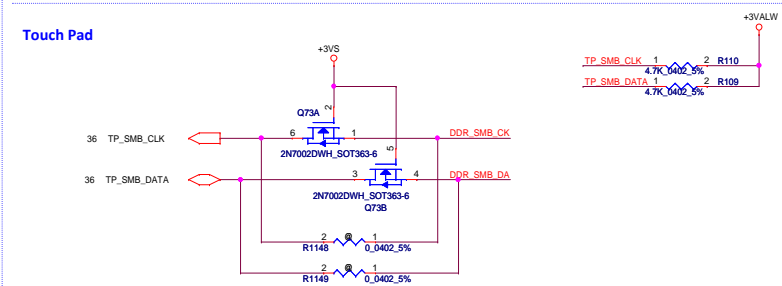
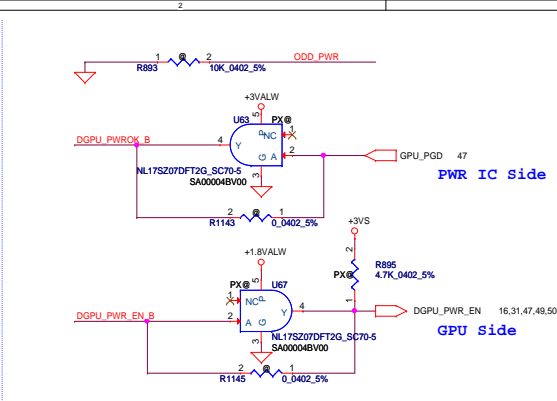


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Compal Electronics, Inc.			
Title VLV-M SOC SATA/PCI-E/HDA			
Form 826	Document Number	Rev	
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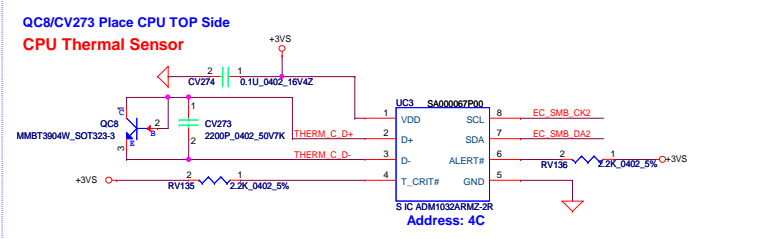
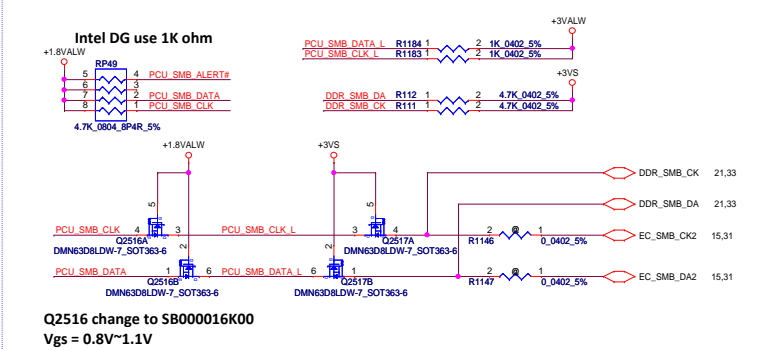
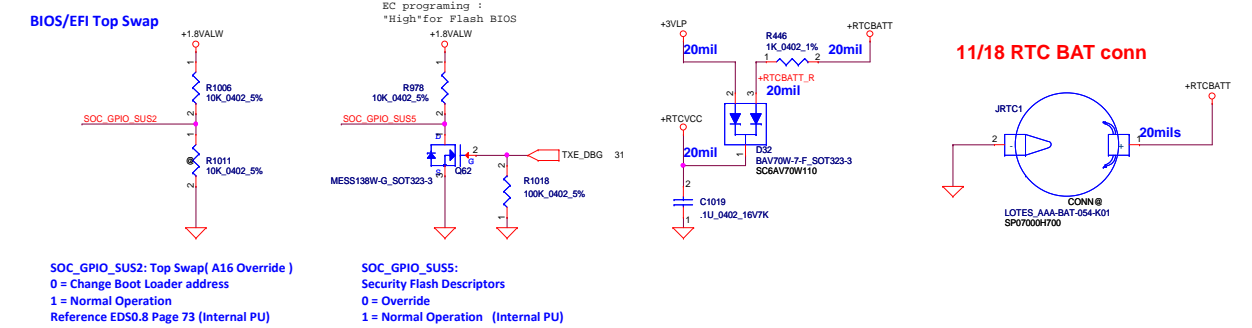
SOC_GPIO_SUS4:
BIOS Boot Selection
0 = LPC
1 = SPI (internal PU)

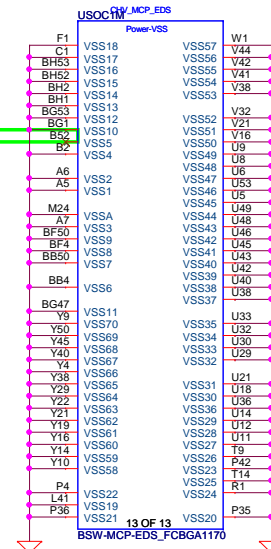
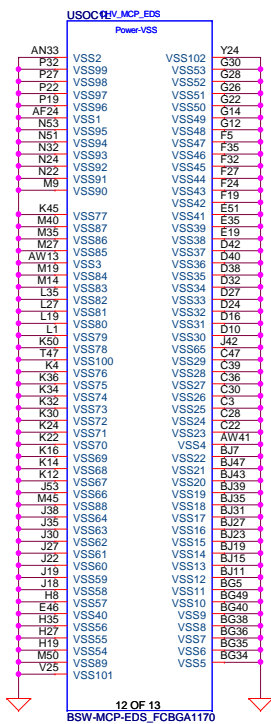
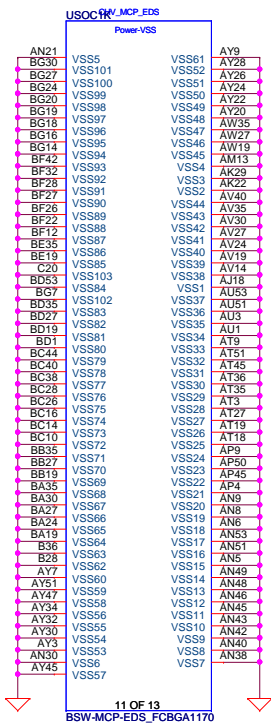
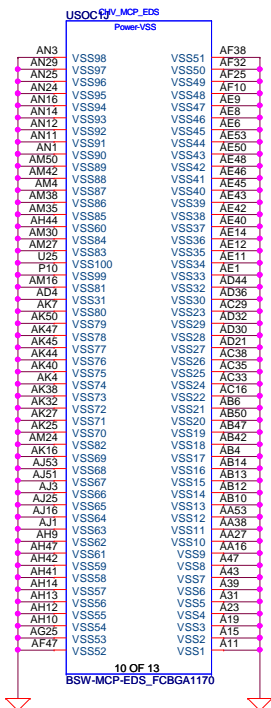
+1.8V_{ALV}

R977 1 2 100K 0402 5% SOC_GPIO_SUS4
R1009 1 2 100K 0402 5% SOC_GPIO_SUS11
R1008 1 2 100K 0402 5% DGPU_PWR_EN_B
R1015 1 2 100K 0402 5% SERR#

+1.8V_{ALV}

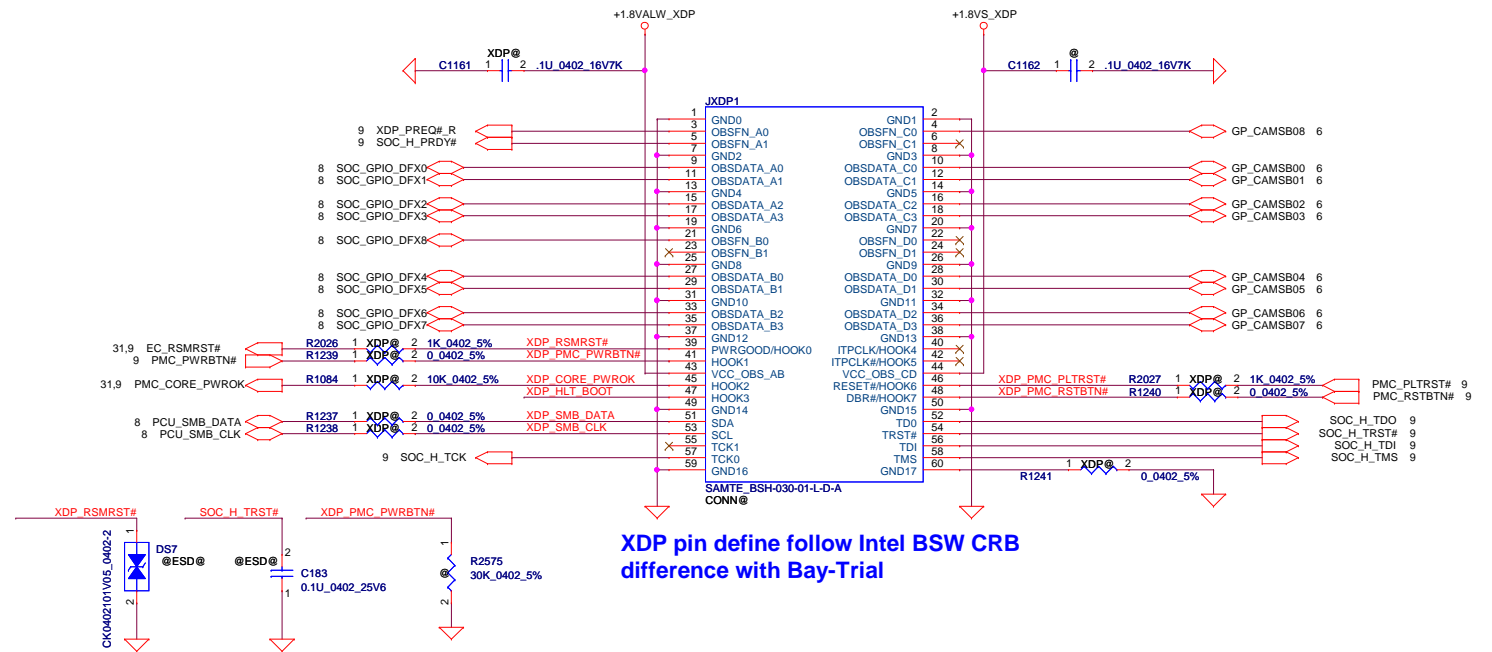
R992 1 2 10K 0402 5% DGPU_PWROK_B
R1022 1 2 4.7K 0402 5% SOC_GPIO_SUS8
R1005 1 2 1K 0402 5% PXS_RST#
R1010 1 2 4.7K 0402 5%





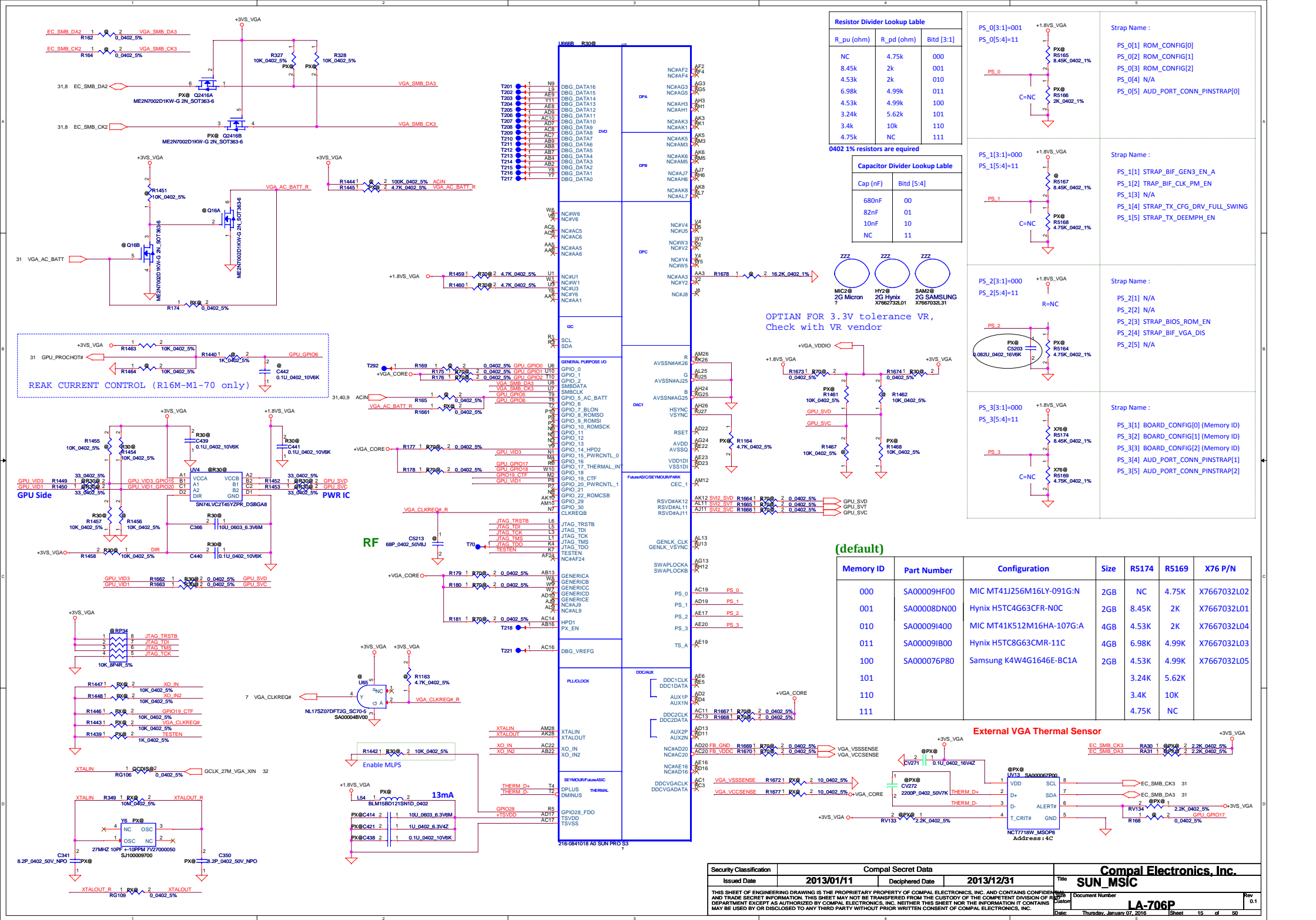
APS CONN

XDP CONN



Intel schematic review : Add R2575

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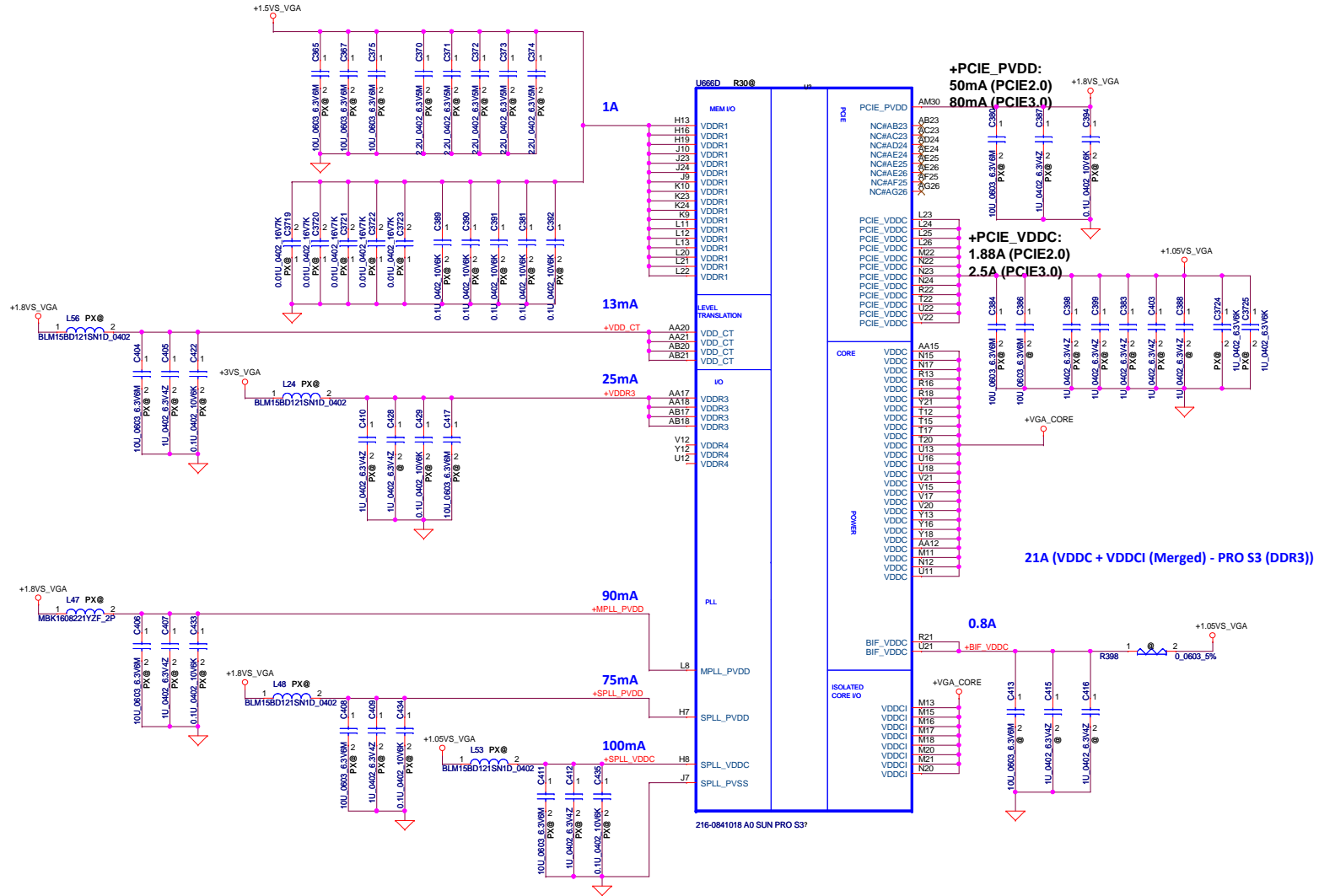
+VGA_CORE	10uF	1uF	0.1uF
VDDC	TBD	5 (1@)	10 (2@)
VDDCI	3.5A	1	3

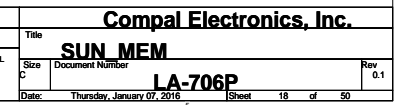
+0.95VS_VGA	10uF	1uF	0.1uF
PCIE_VDDC	2.5A	2 (1@)	5 (1@)
BIF_VDDC	1.4A	0	0
SPLL_VDDC	100mA	1	1

+1.5VS_VGA	10uF	1uF	0.1uF
VDDR1	1.5A	3	5

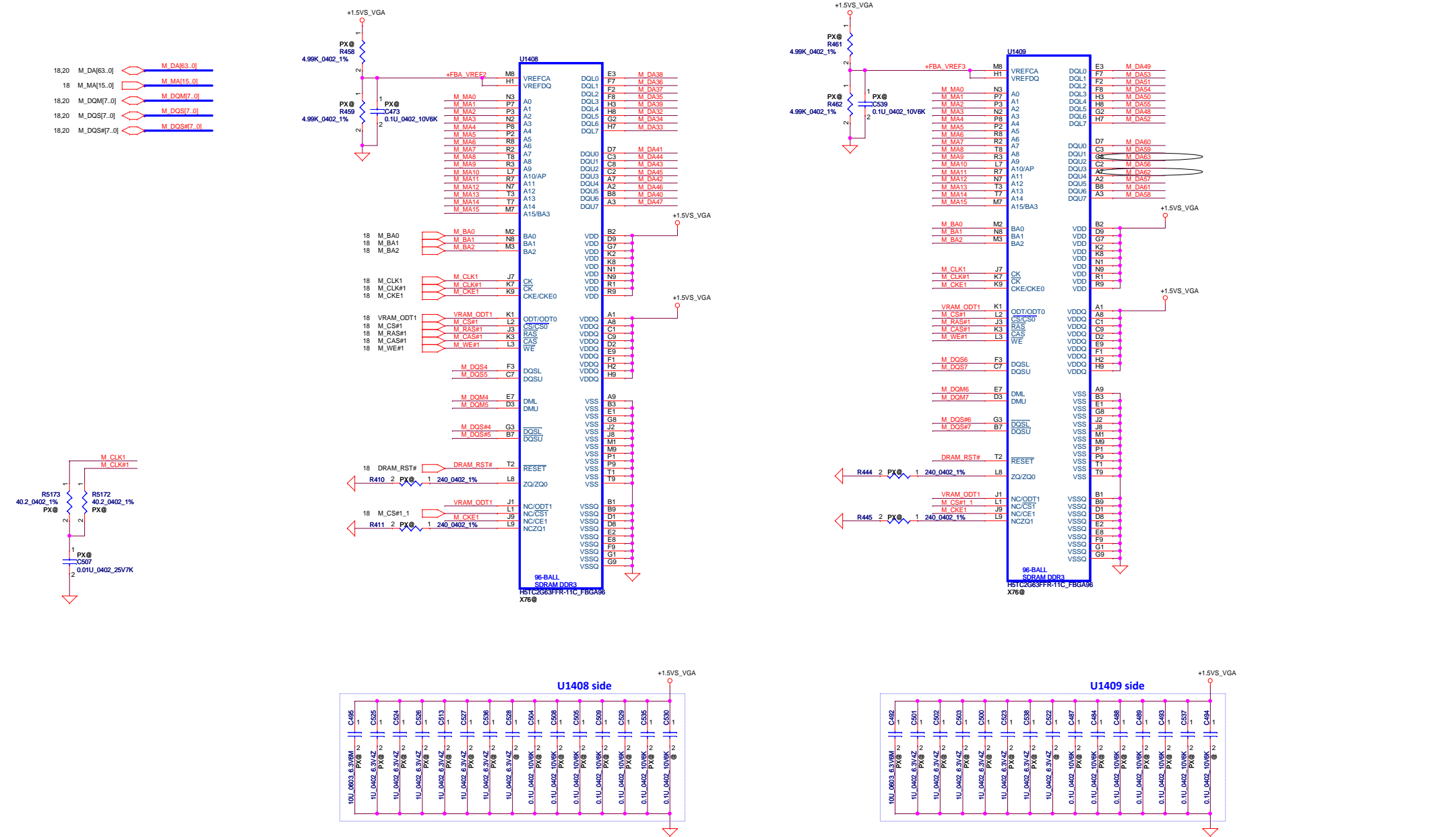
+1.8VS_VGA	10uF	1uF	0.1uF
PCIE_PVDD	100mA	1	1
MPLL_PVDD	130mA	1	1
SPLL_PVDD	75mA	1	1
VDDR4	(300mA)	0	0
VDD_CT	13mA	1	1
+TSVDD	13mA	1	1
+DP_VDDR	0	0	0
+DP_VDDC	0	0	0

+3VS_VGA	10uF	1uF	0.1uF
VDDR3	25mA	0	2 (1@)

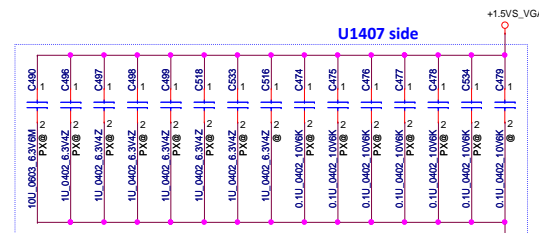
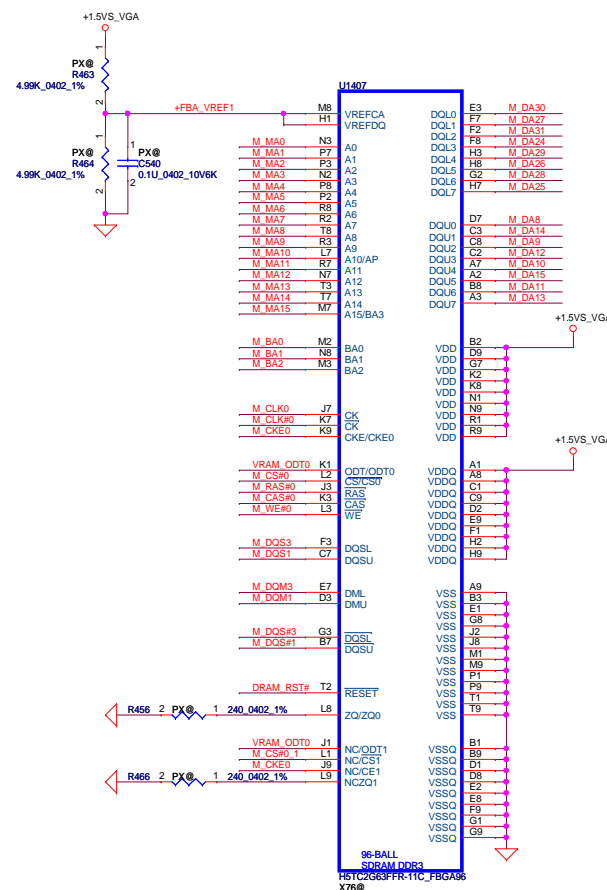
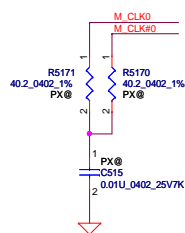
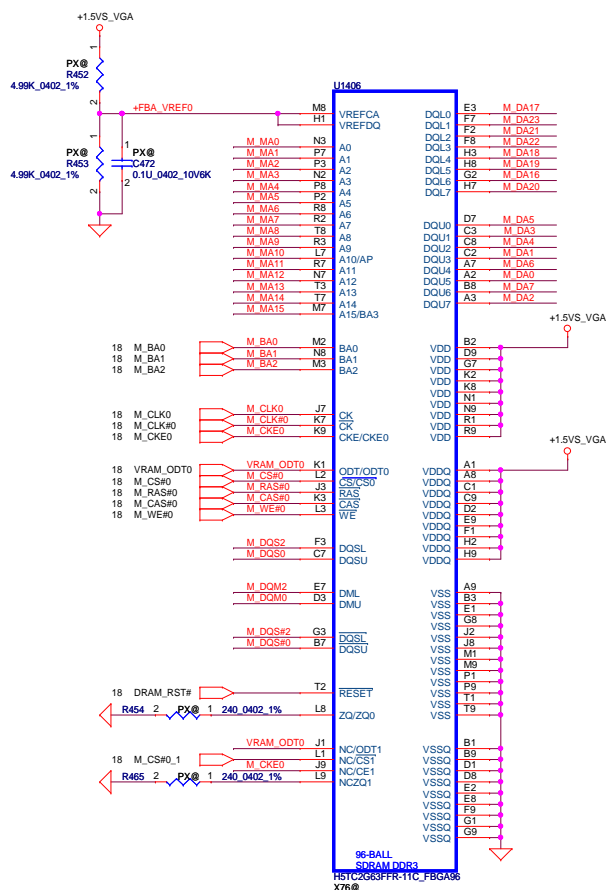




Memory Partition A - Upper 32 bits

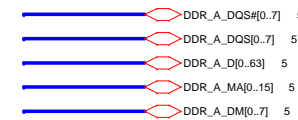
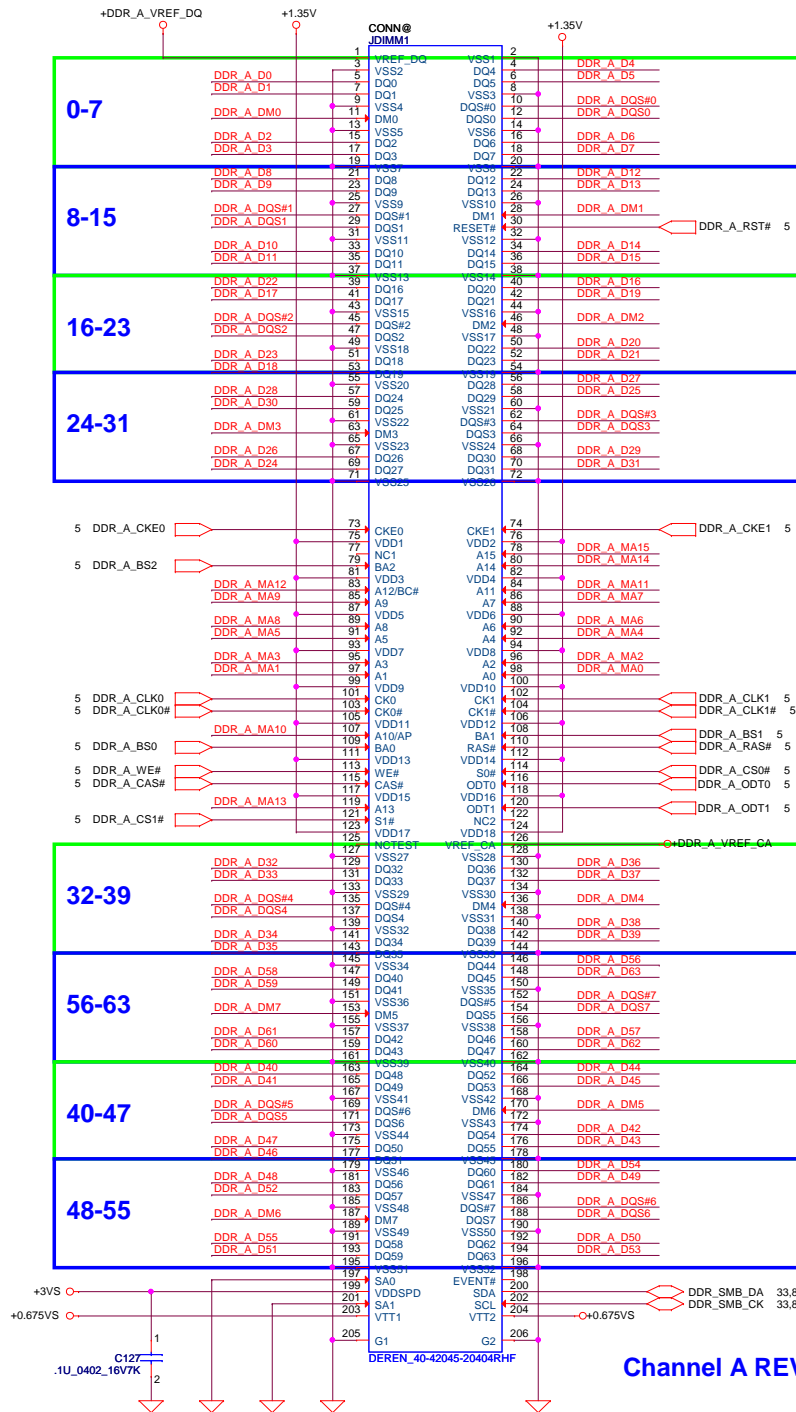


Memory Partition A - Lower 32 bits

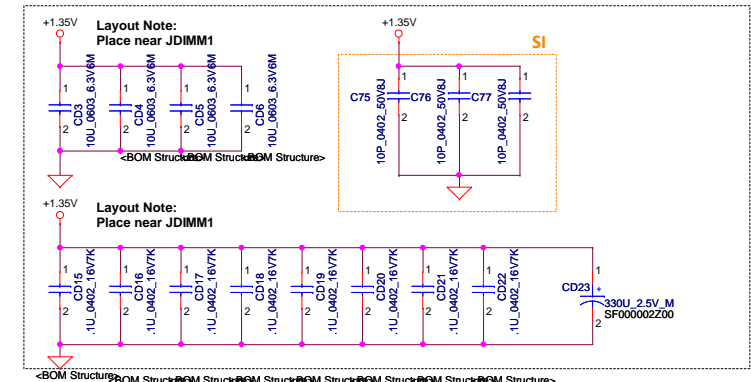
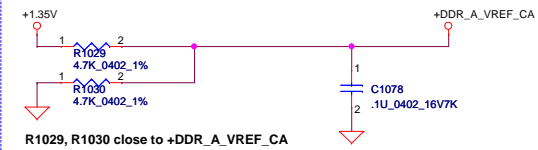
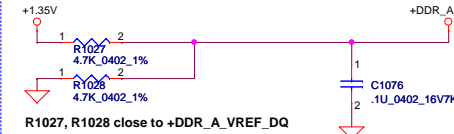


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All VREF traces should have 10 mil trace width



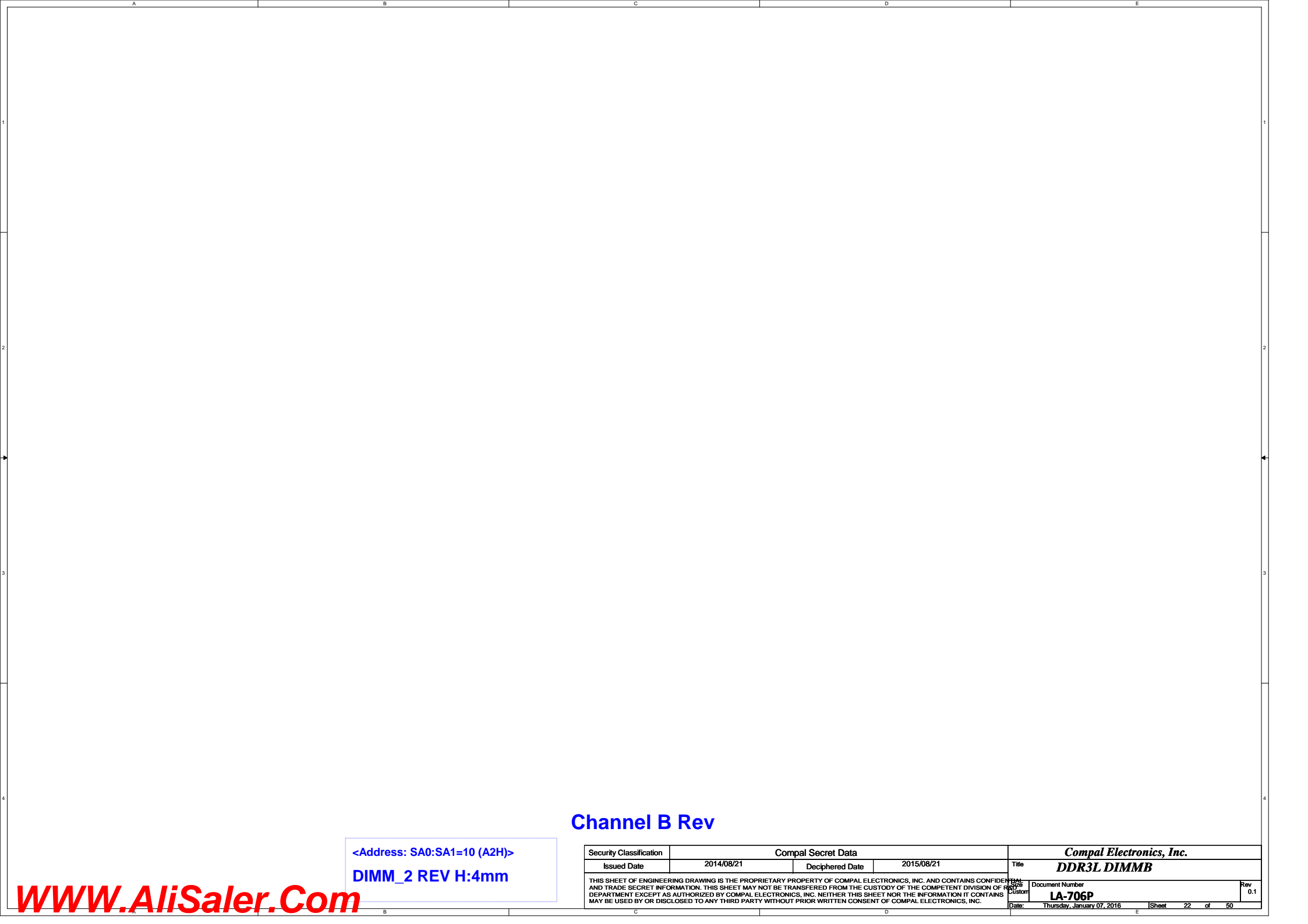
Signal voltage level = 0.675 V
PLACE TWO 4.7K RESISTORS CLOSE TO
DIMMS ON DIMM_VREF_CA / DIMM_VREF_DQ
Decoupling caps are needed; one 0.1 µF placed close to VREF pins of each DDR3 SODIMM.



SA1: SA0 = 00
Address: A0h/10100000b

Channel A REV

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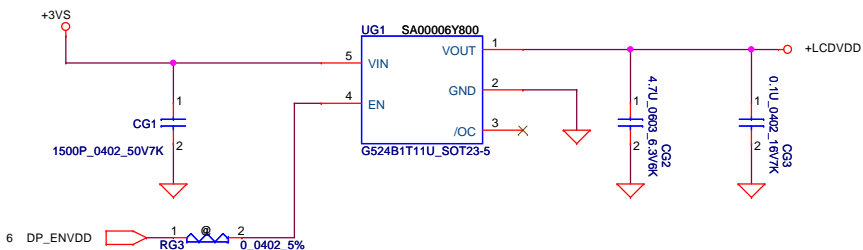
Channel B Rev

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DIMM_2 REV H:4mm

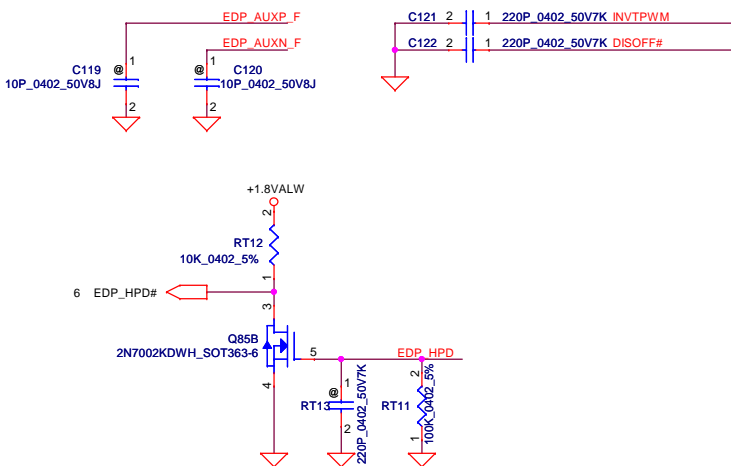
WWW.AliSaler.Com

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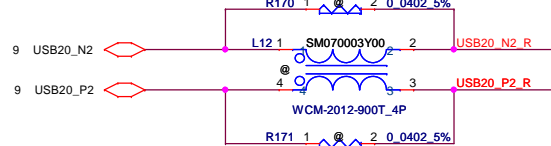
LCD Power Switch



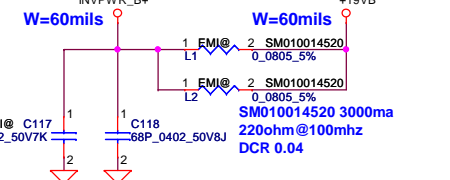
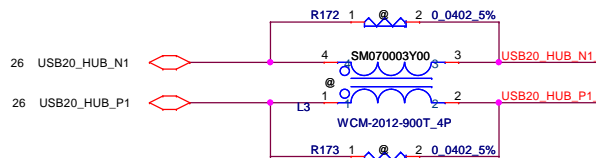
CC119/110 close JLVDS1



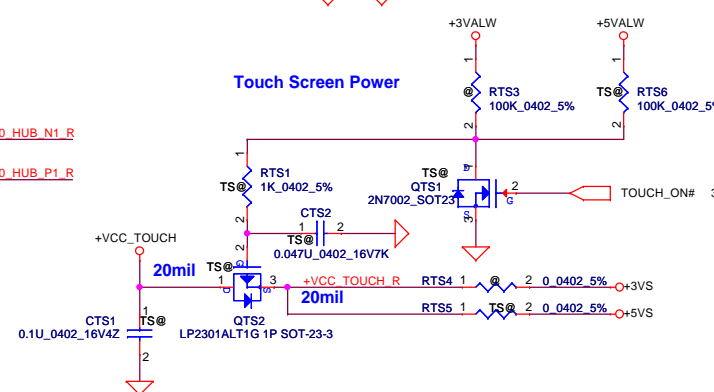
Camera



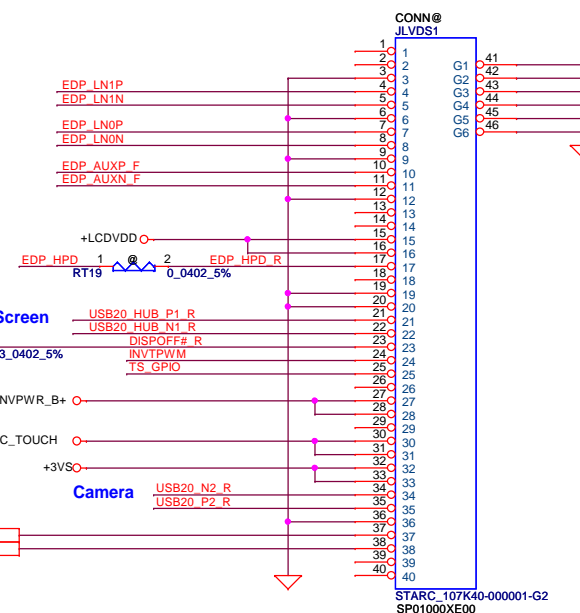
Touch Screen



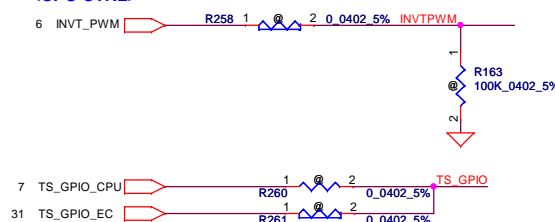
Touch Screen Power



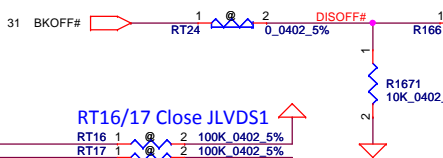
LCD PANEL Conn.



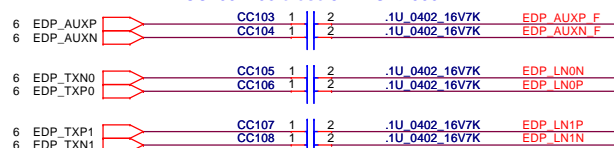
<CPU CTRL>



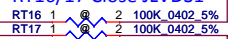
<EC CTRL>



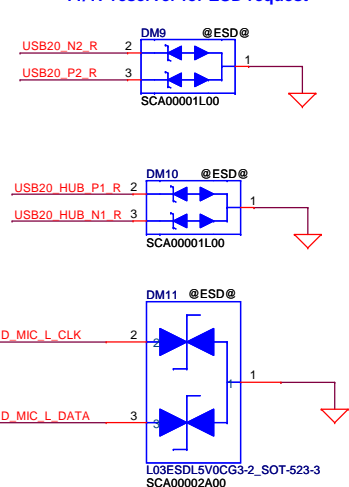
CC103~108 close JLVDS <1000mil



RT16/17 Close JLVDS1

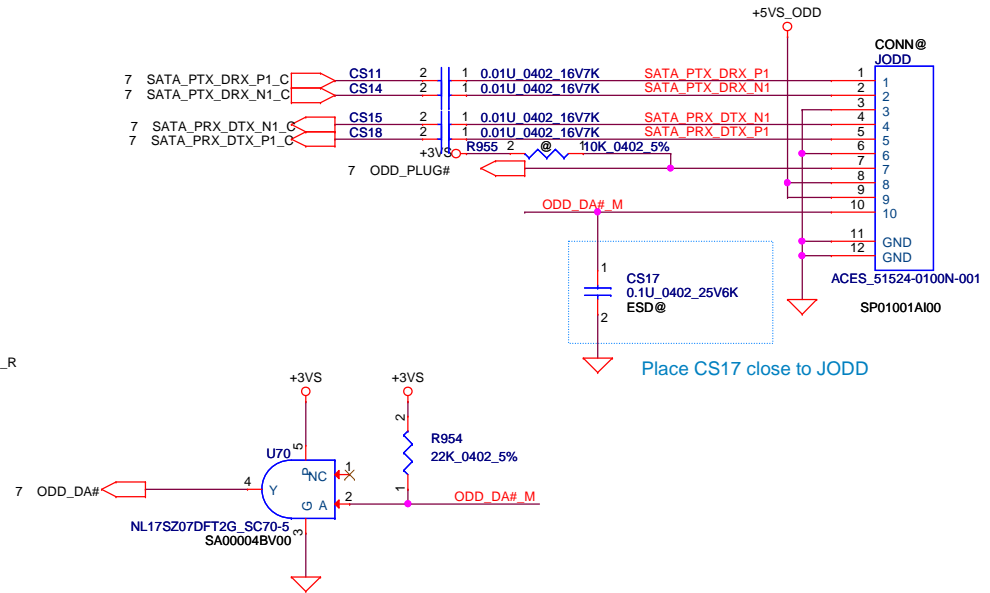
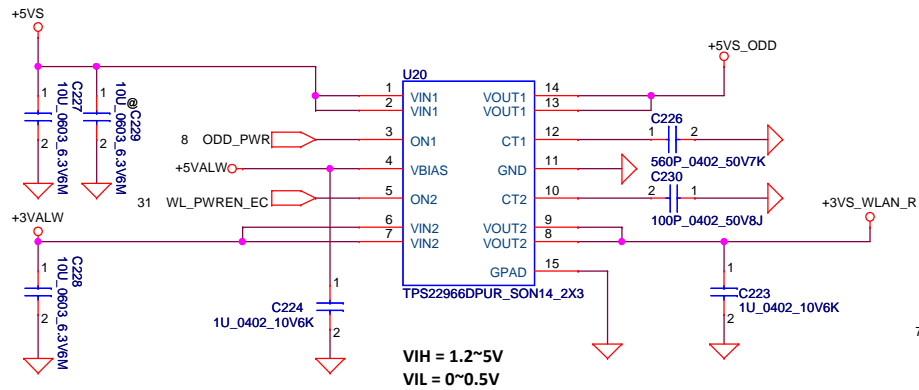
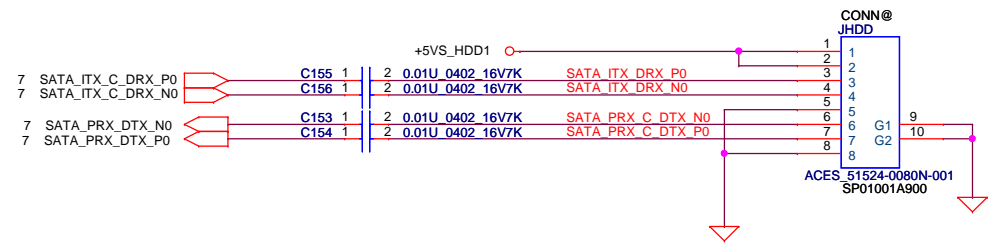
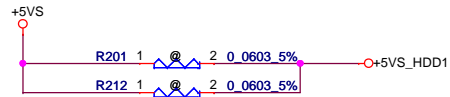


11/17 reserver for ESD request

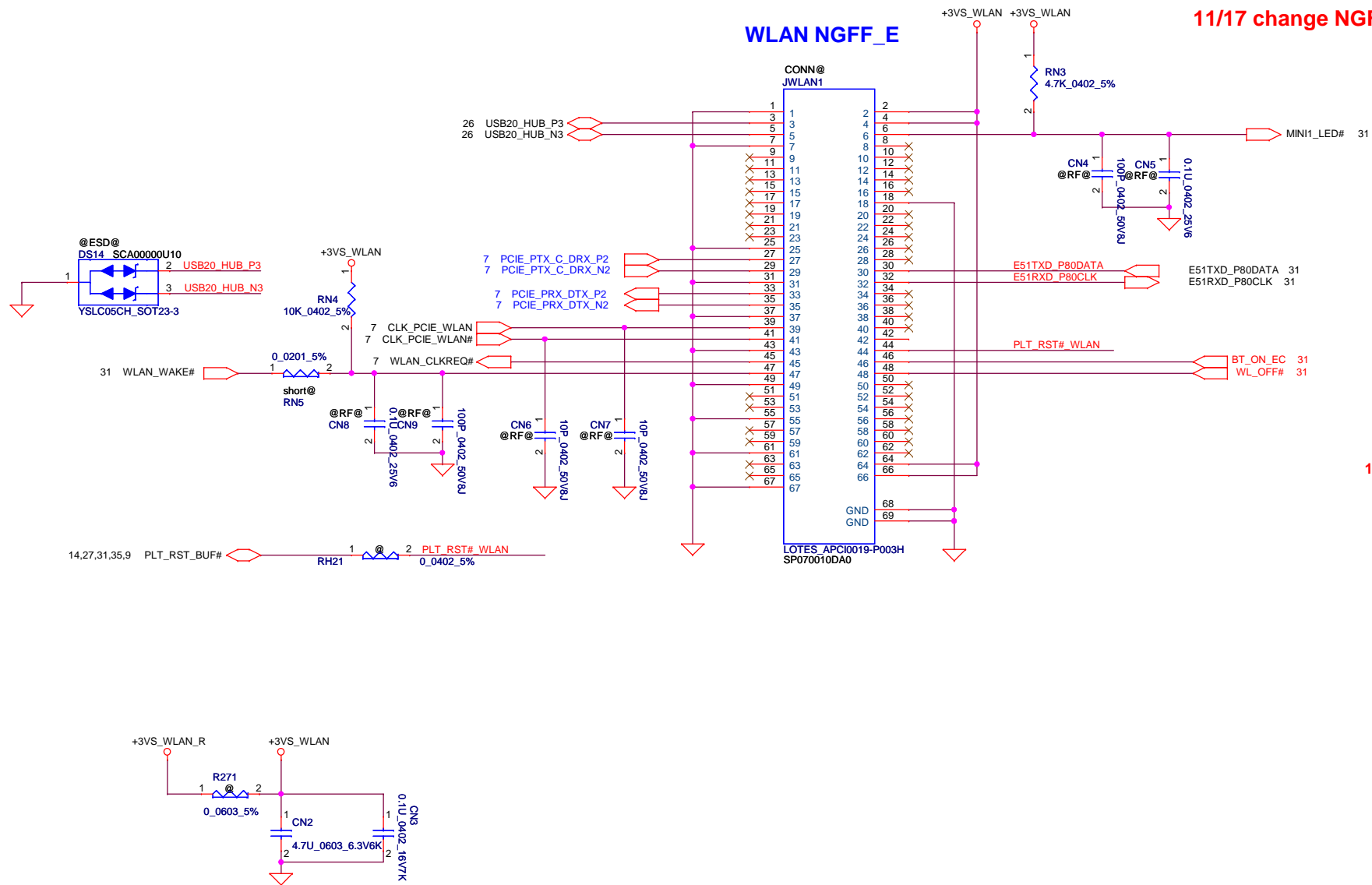


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Thursday, January 07, 2016		Sheet		0.1	
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2.5" SATA HDD connector



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				Rev	0.1
				Date:	Thursday, January 07, 2016
				Sheet	24 of 51

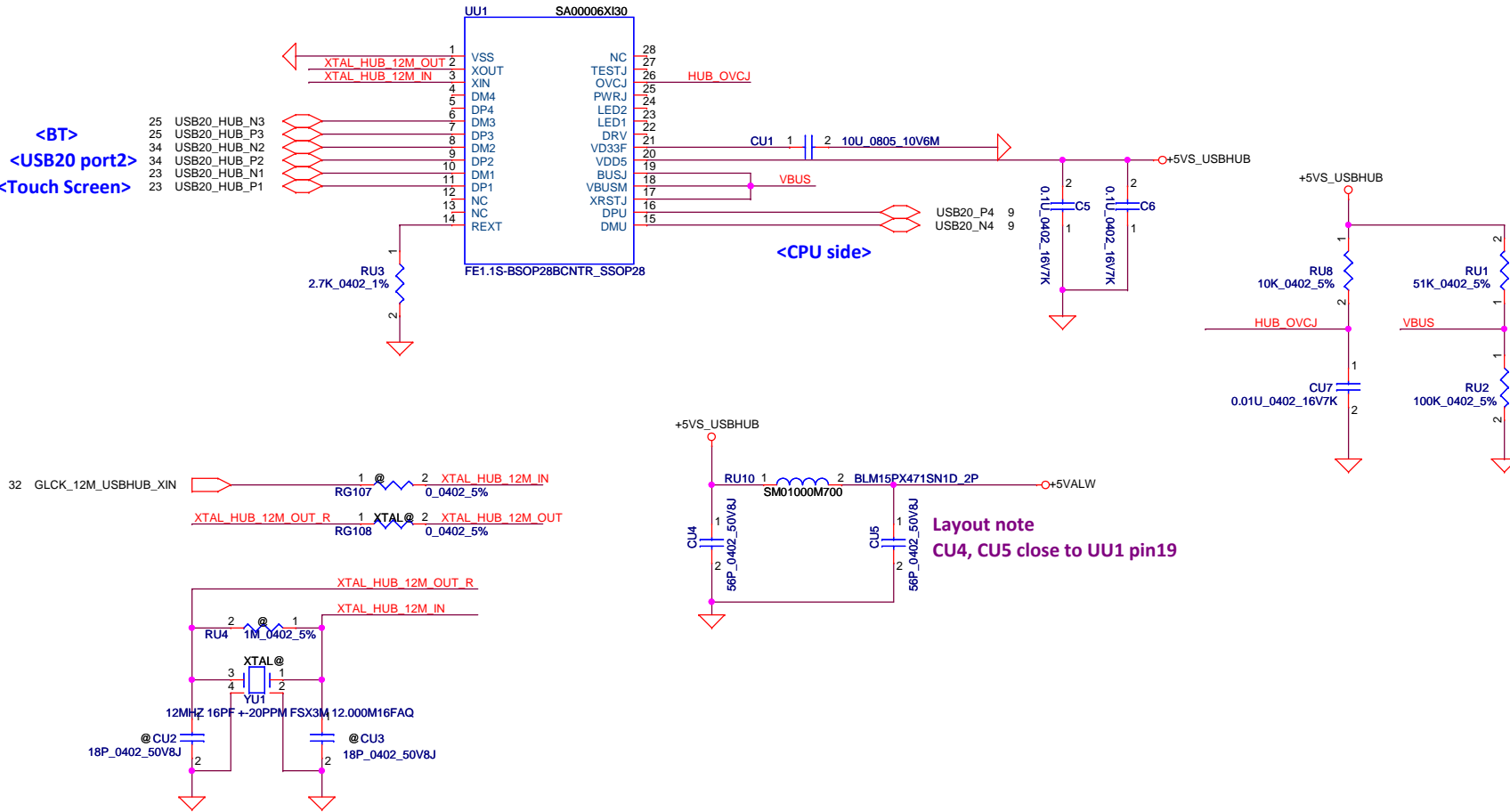


11/17 change NGFF CONN

11/23 add CAP. for RF request

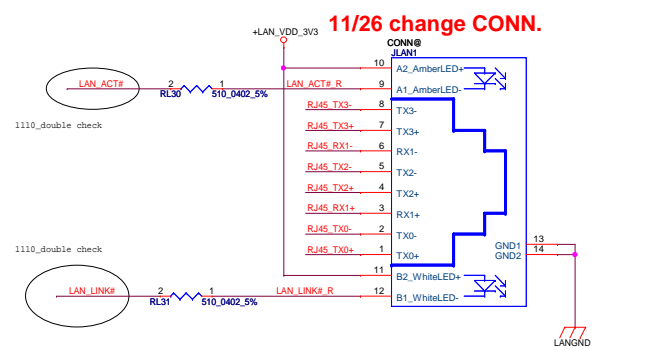
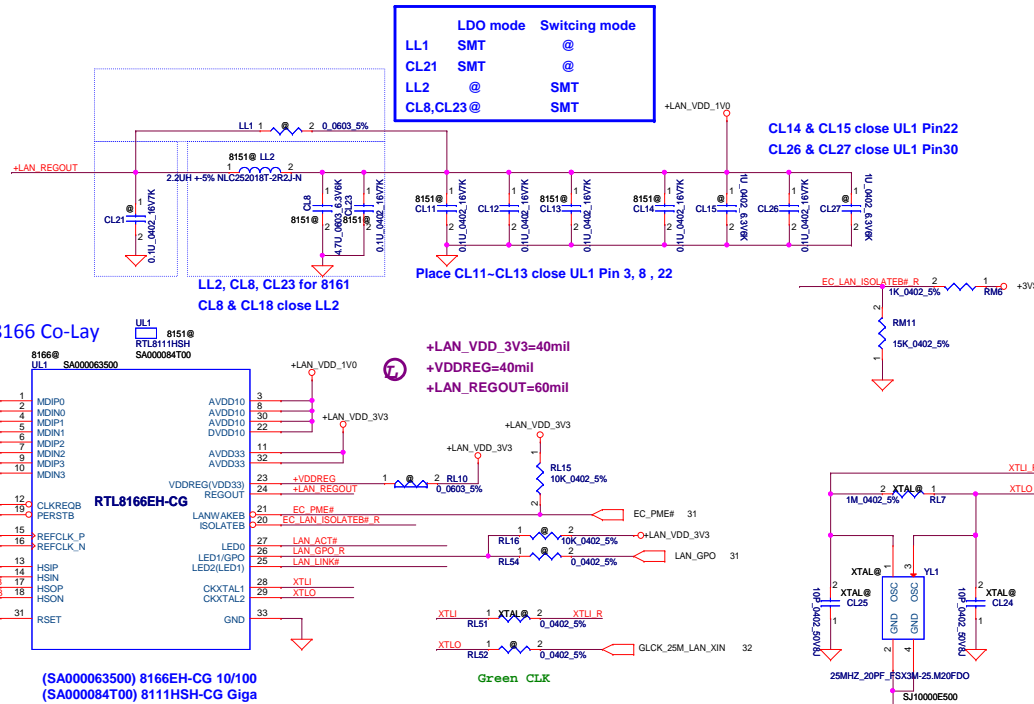
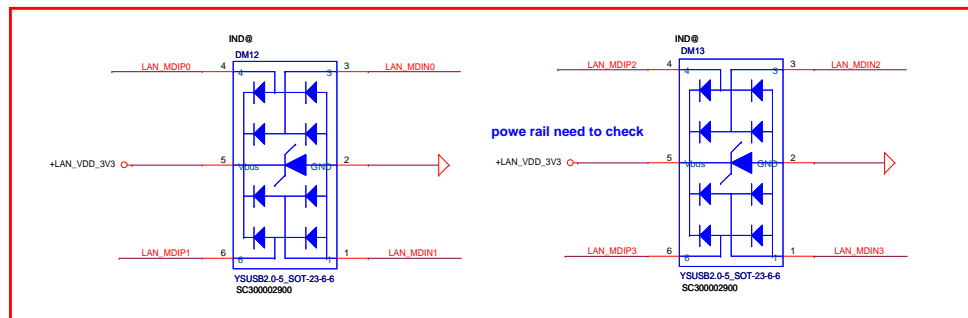
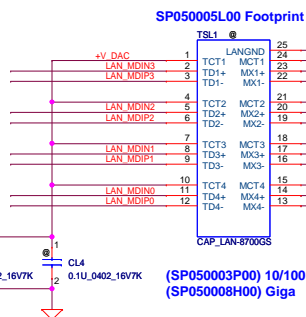
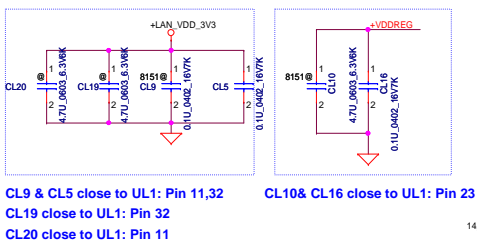
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2013/02/26	Deciphered Date	2015/07/08	Title	WLAN
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				Date: Thursday, January 07, 2016	Sheet 25 of 51

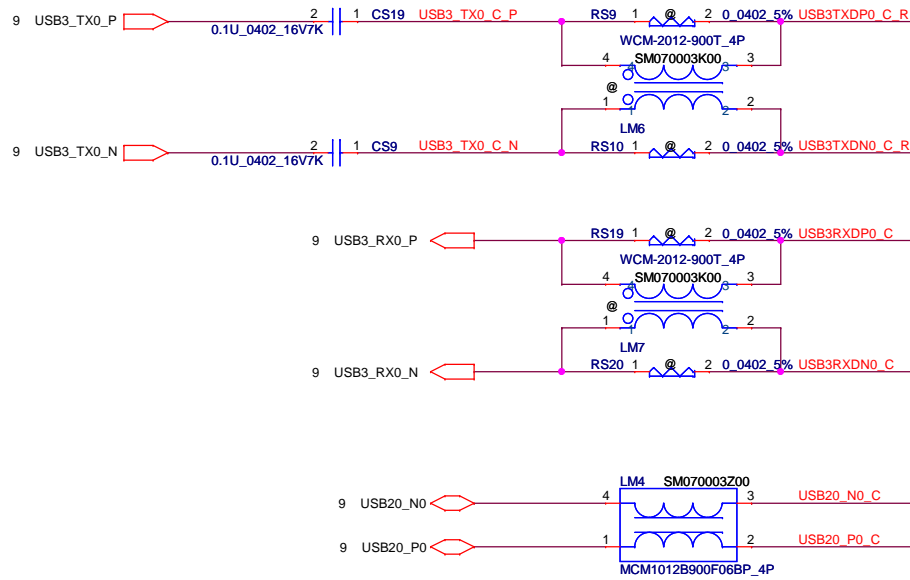
<BT>
<USB20 port2>
<Touch Screen>



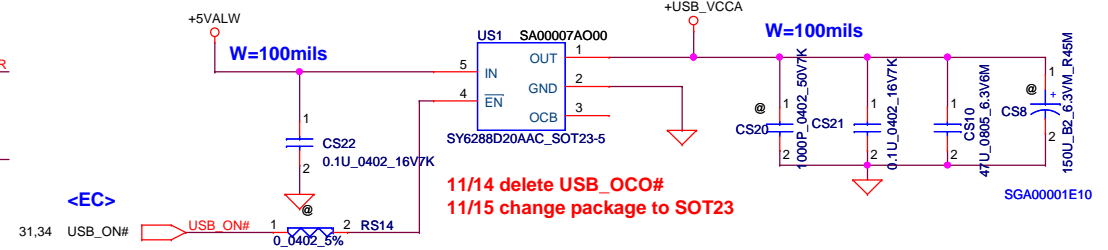
Vender review:CU2, CU3 cap no install

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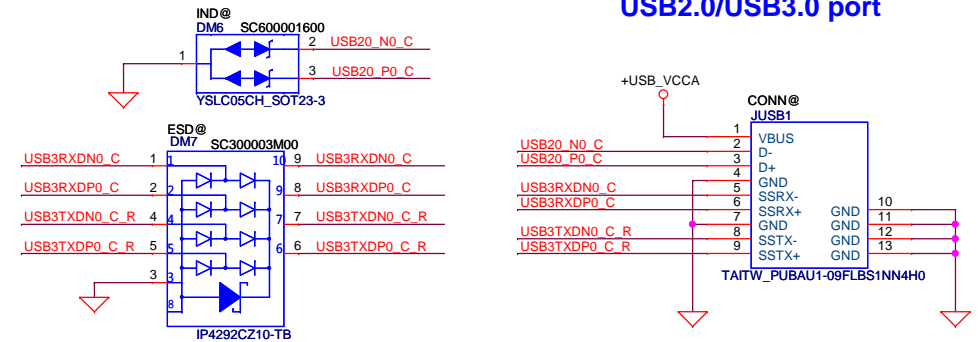




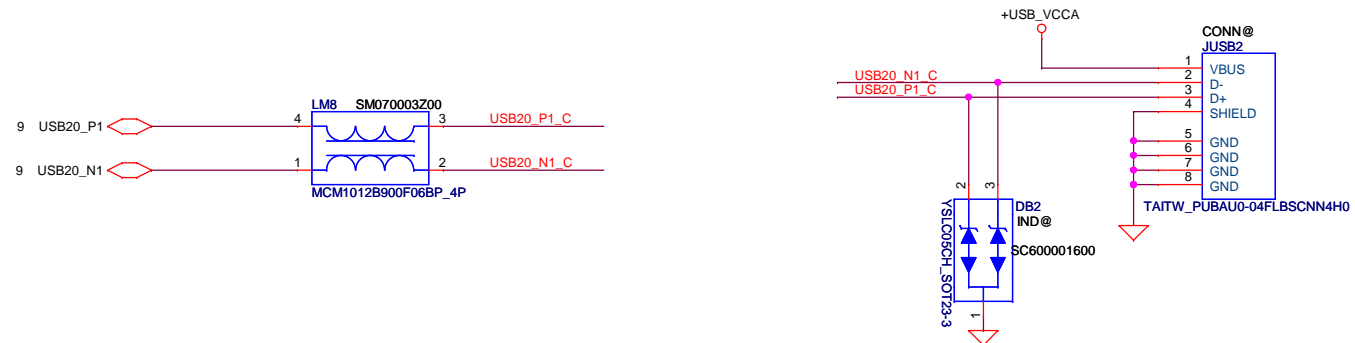
USB3.0 need support 2.5A
change USB PWR SW SA00007AO00
low active



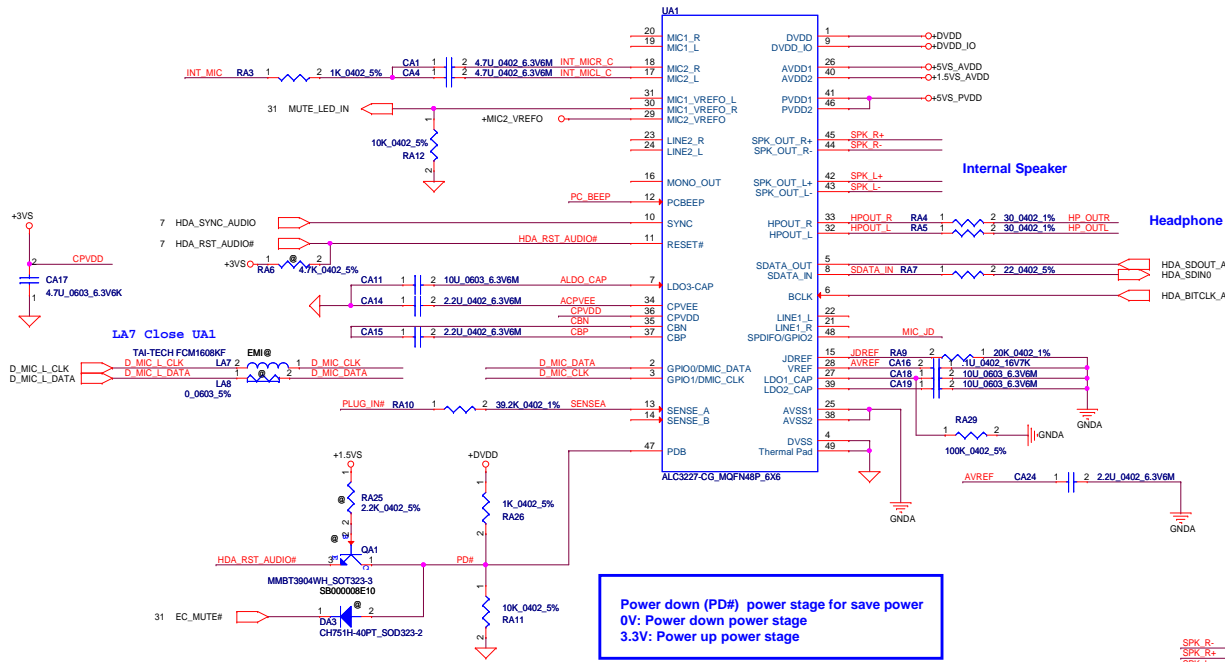
USB2.0/USB3.0 port



USB2.0 Port



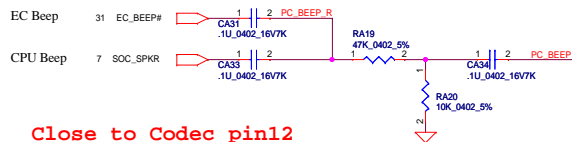
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2013/02/26	Deciphered Date	2015/07/08	Title	USB 3.0/2.0 conn
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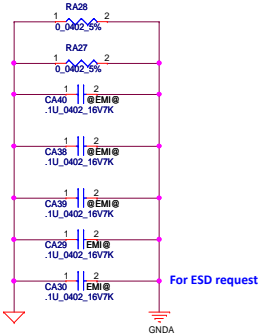
Power down (PD#) power stage for save power
0V: Power down power stage
3.3V: Power up power stage

Reserve for ESD request.

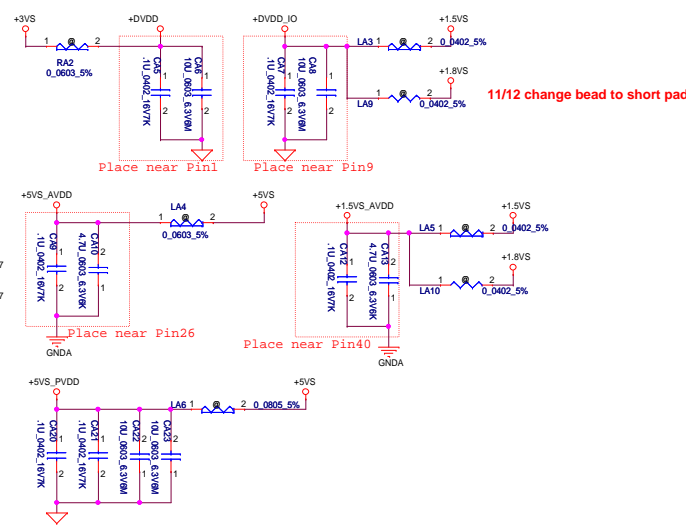
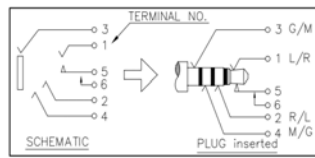
PC Beep



Close to Codec pin12



For ESD request



11/12 change bead to short pad

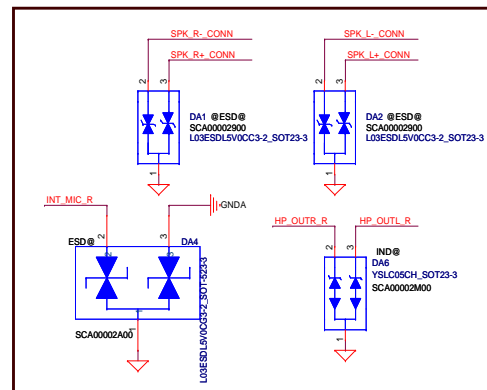
Internal SPK

8/20 change conn check pin def

<DB>Relace RA13/RA14/RA15/RA16 close to UA1

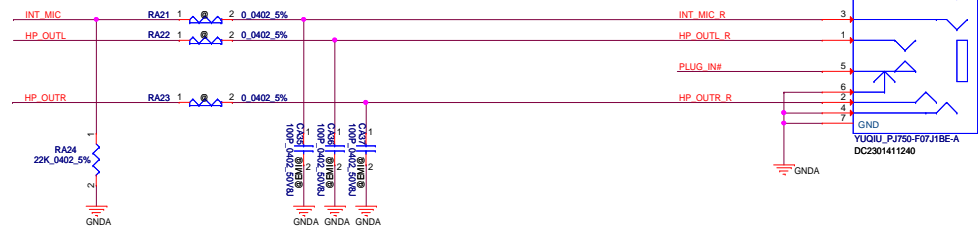


wide 40 MIL



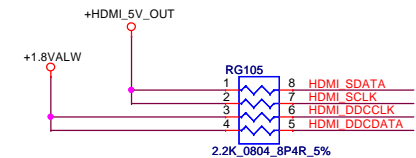
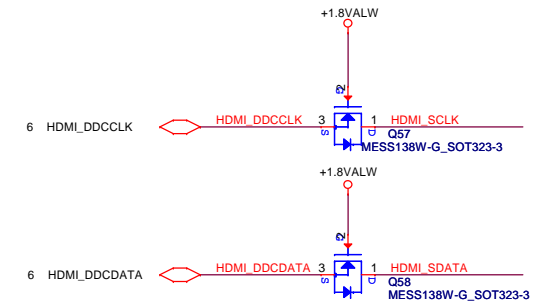
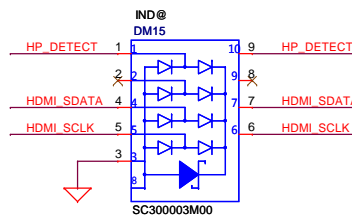
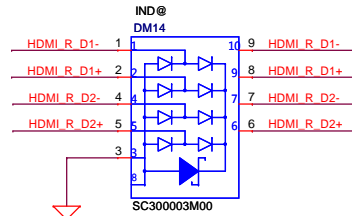
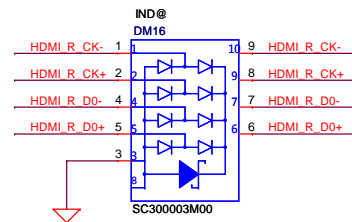
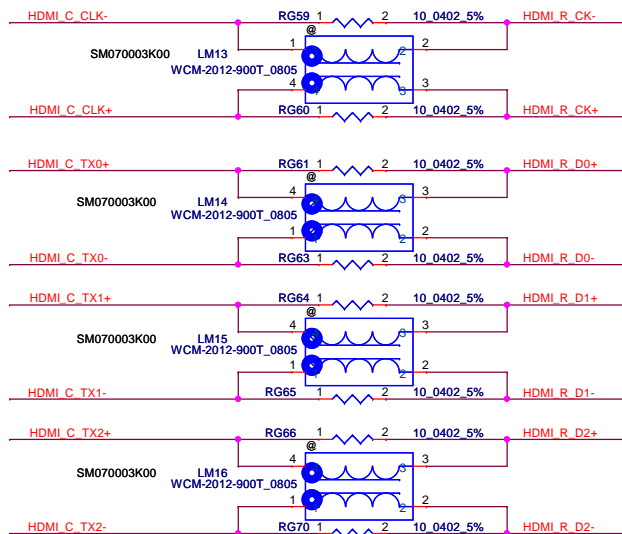
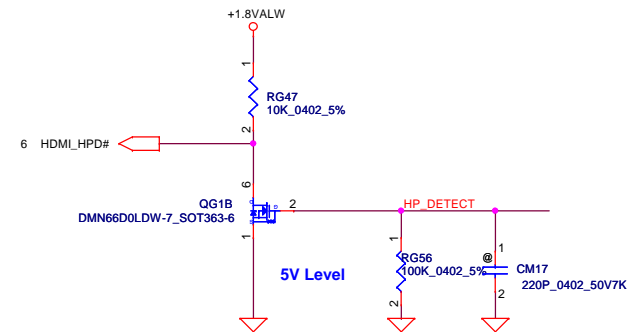
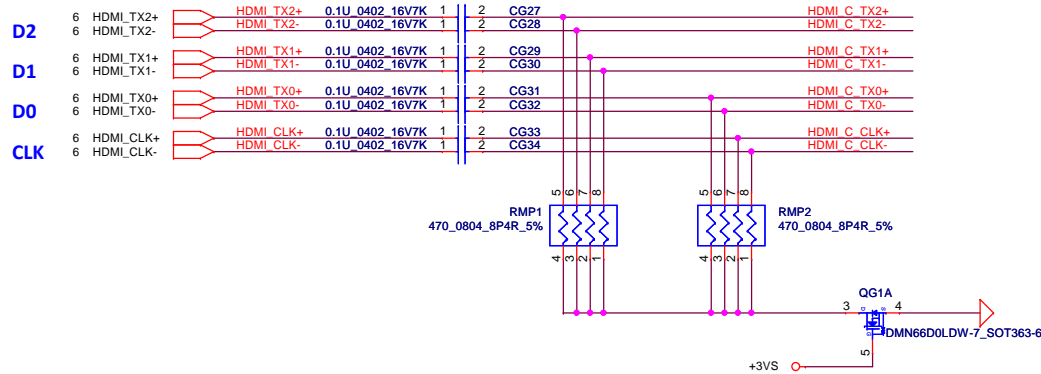
COMBO AUDIO JACK

HPR, HPL, 15mil Keep 30mil

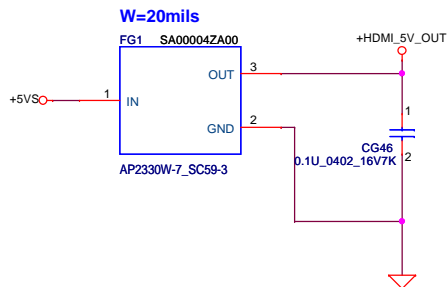
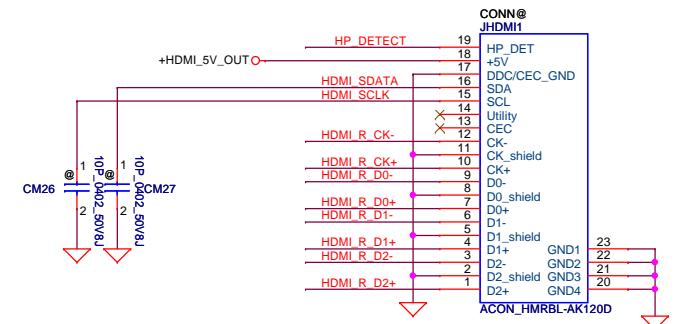


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Deciphered Date		2015/01/04		LA-706P	
Title		Document Number		Rev 0.1	
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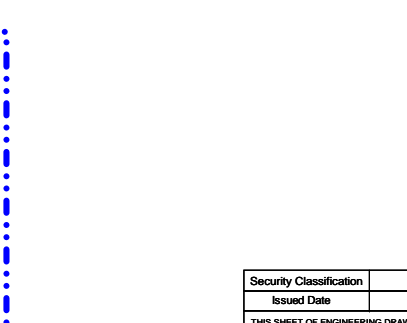
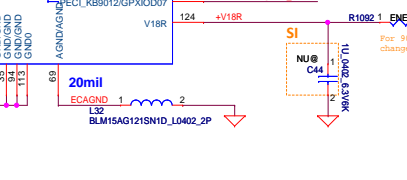
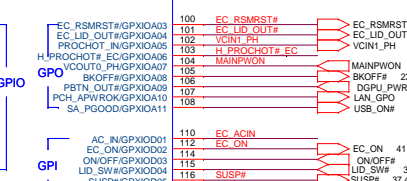
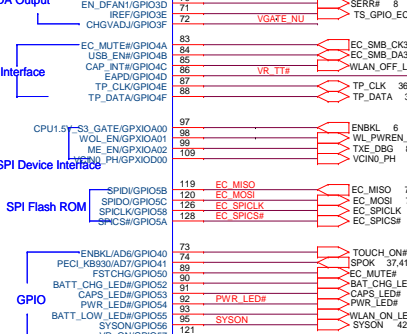
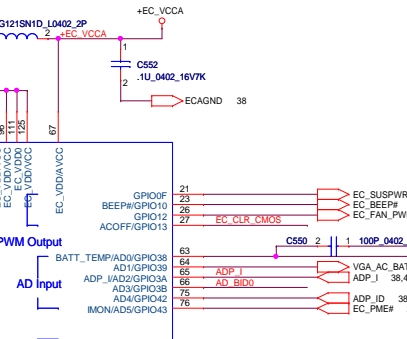
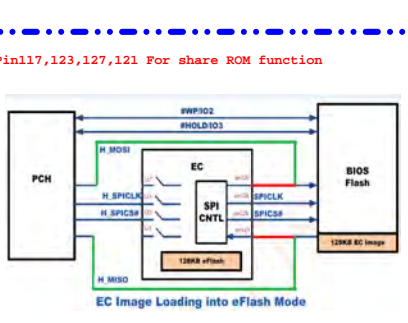
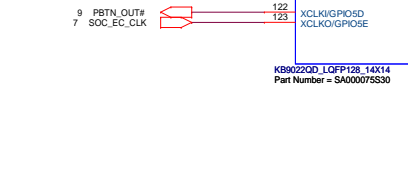
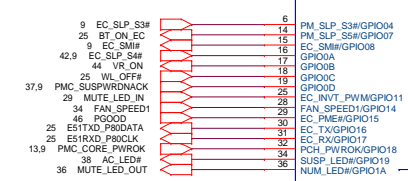
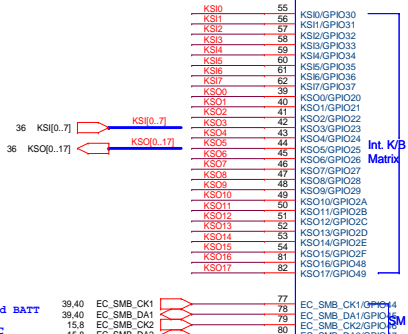
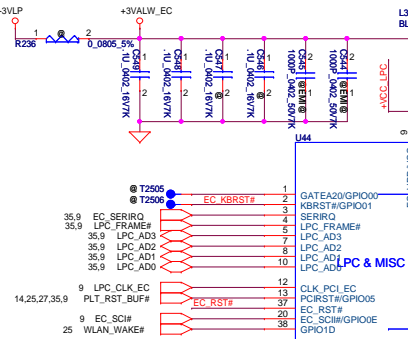
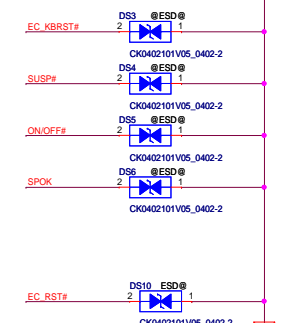
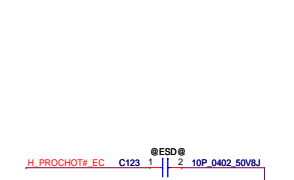
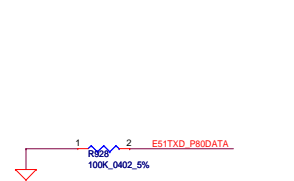
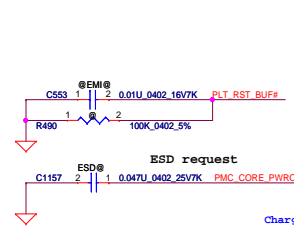
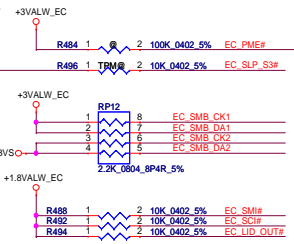
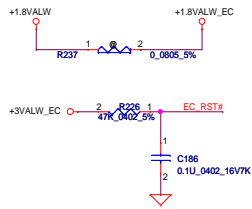
<CPU>



HDMI Conn.

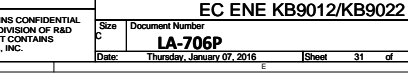
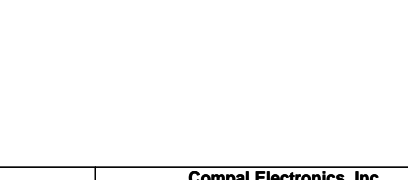
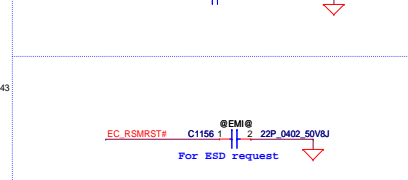
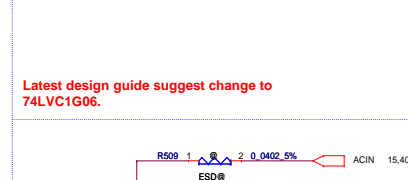
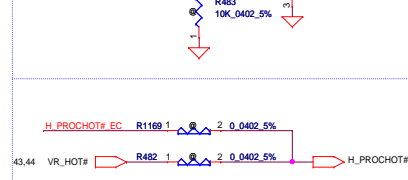
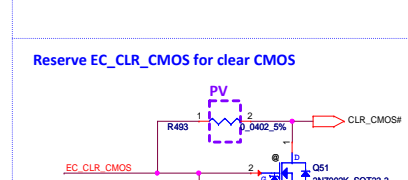
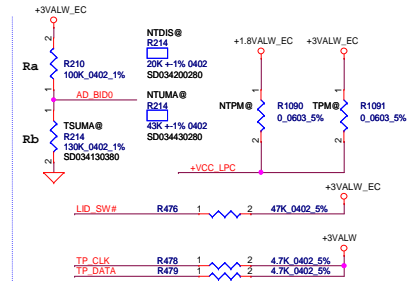


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Issued Date	2011/06/29	Deciphered Date	2011/06/29	HDMI Conn/Level shift	
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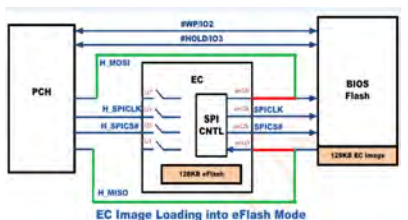


NonTS	DB	SI	PV	MV
UMA	0 ohm	15k ohm	27K ohm	43K ohm
R214	12k ohm	20k ohm	33k ohm	56k ohm
DIS				
R214				

TS	DB	SI	PV	MV
UMA	75k ohm	130K ohm	200K ohm	270K ohm
R214	100k ohm	160k ohm	240k ohm	330k ohm
DIS				
R214				



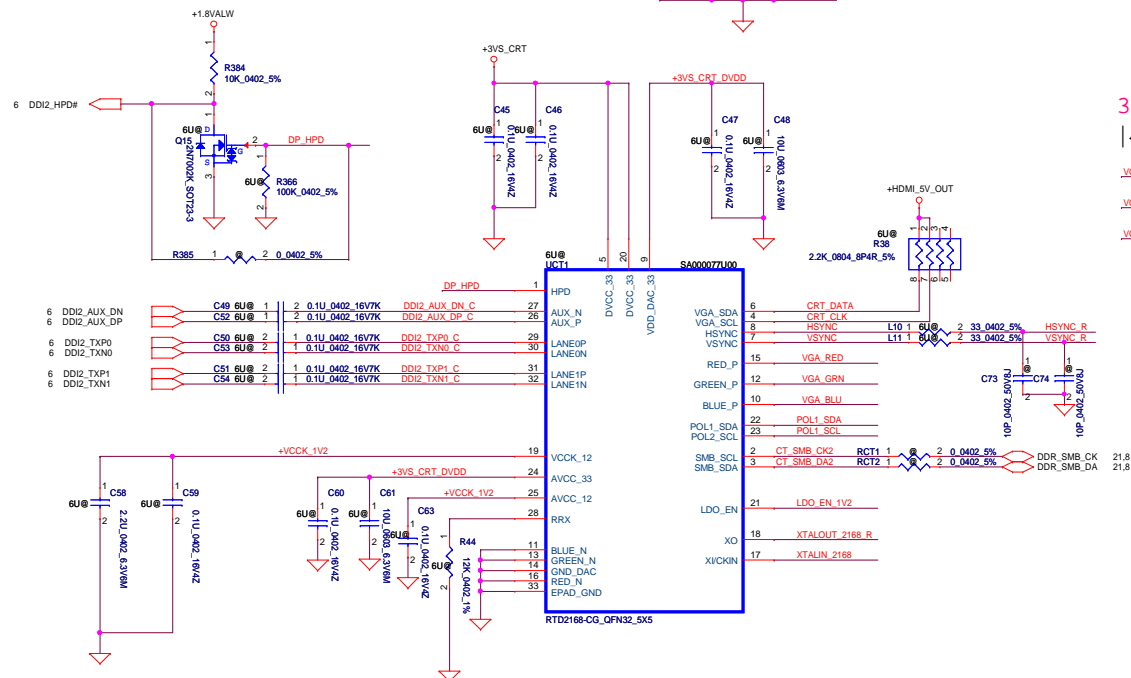
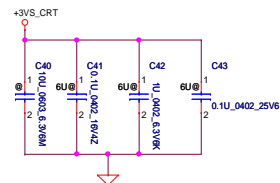
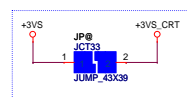
Pin117,123,127,121 For share ROM function



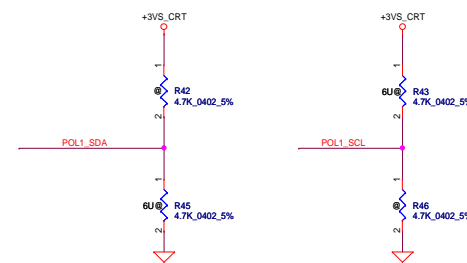
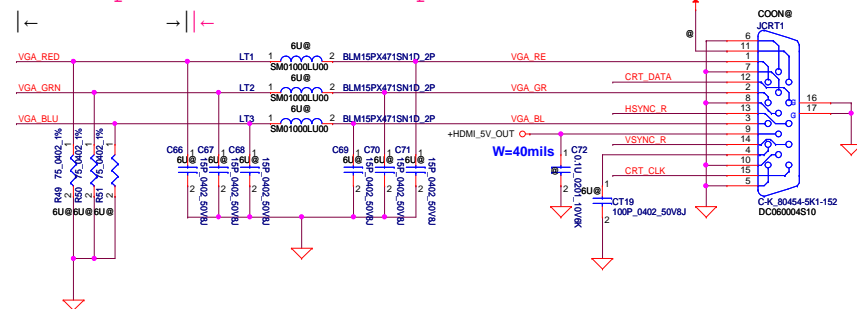
Security Classification	Compal Secret Data	Document Number	EC ENE KB9012/KB9022
Issued Date	2014/08/21	Deciphered Date	2015/08/21
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DP to CRT converter

For Power consumption Measurement



CRT Connector



Mode Configure Table(Power On Latch)

		POL1_SDA(PIN22)	
		0	1
POL2_SCL(PIN23)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

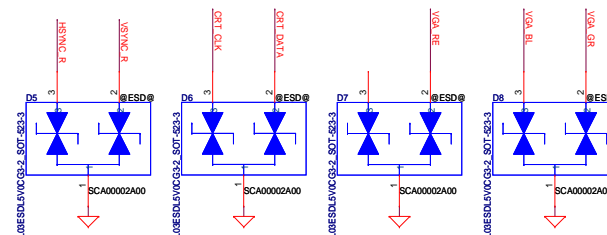
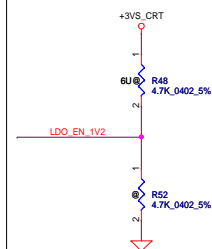
RTD2168 Supports three operation mode for system design.
Reserve 4.7K resistor pull high/low for mode selection

ROM ONLY Mode : PIN22 pull low, PIN23 pull high
EP Mode : PIN22 pull high, PIN23 pull low
EEPROM Mode : PIN22 pull high, PIN23 pull high

Embedded LDO

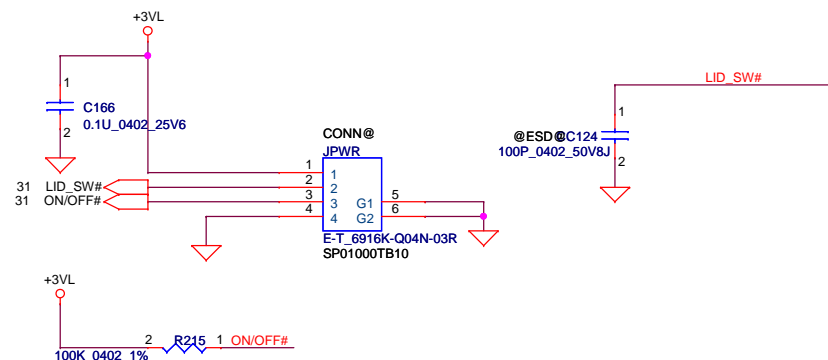
Select VCKK_V12 source from external 1.2V or embedded LDO

LDO_EN(PIN21)	
0	1
VCCK_V12 from External 1.2V	VCCK_V12 from Embedded LDO

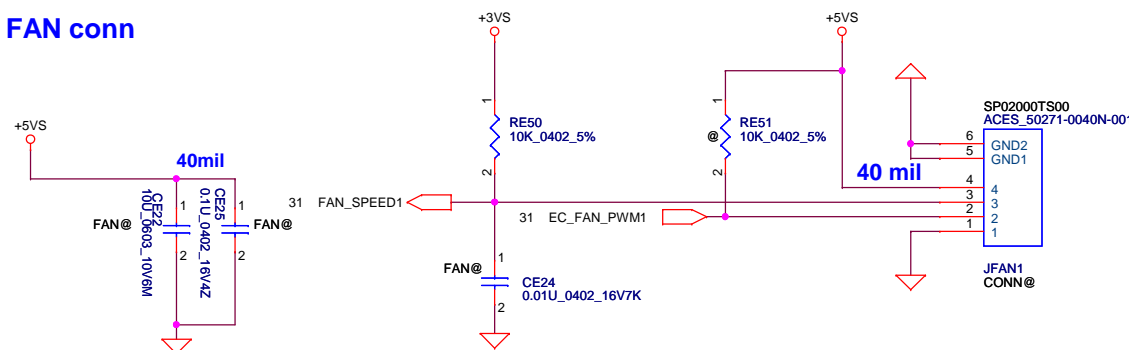


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				DP to CRT RTD2136		
				Size C	Document Number LA-706P	
Date:				Thursday, January 07, 2016		Sheet 33 of 51

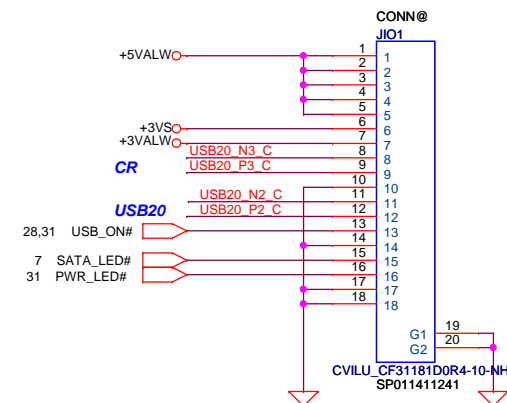
Power Button Connector



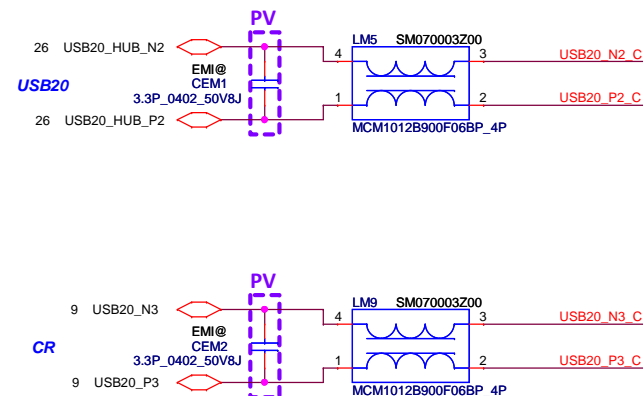
FAN conn



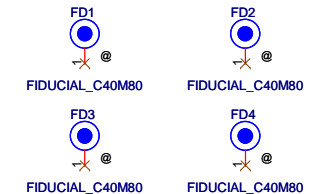
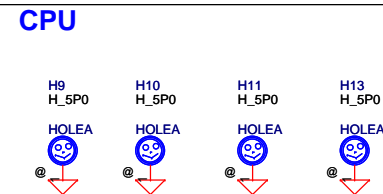
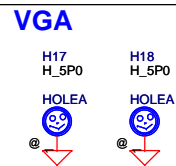
JIO S/B



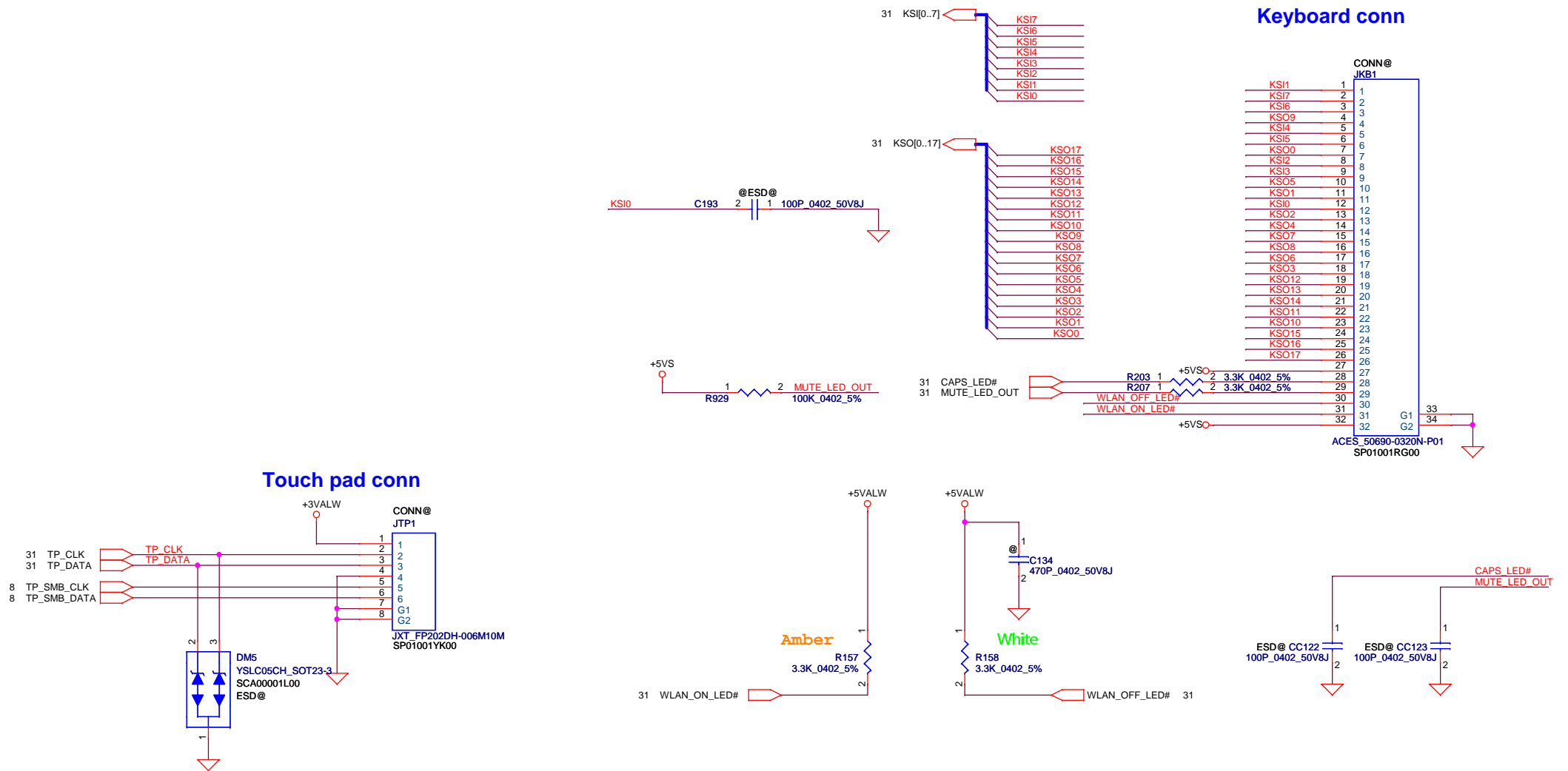
CEM1,2 Close LM5/LM9



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Issued Date	2013/02/26	Deciphered Date	2015/07/08	Title	PWRBTN/FAN		
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					B	LA-706P	0.1
					Date:	Thursday, January 07, 2016	Sheet 34 of 51

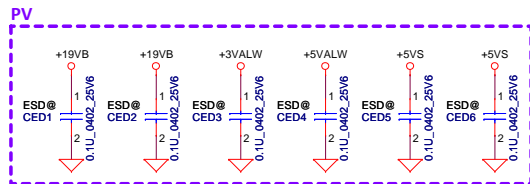
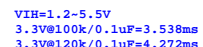
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Issued Date	2013/02/26	Deciphered Date	2015/07/08	Title	LED/Screw hole	
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					LA-706P	0.1
				Date:	Thursday, January 07, 2016	Sheet 35 of 51

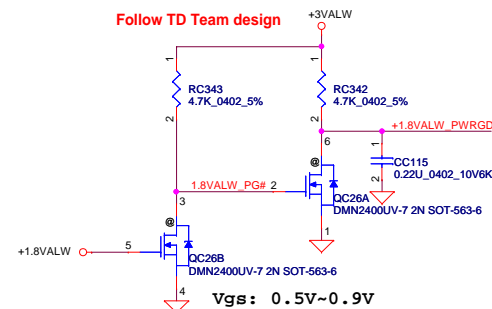


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2013/02/26	Deciphered Date	2015/07/08	Title	KB/TP
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				Date:	Thursday, January 07, 2016
		Sheet		36	of 51
				Rev	0.1

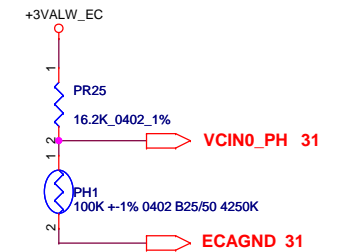
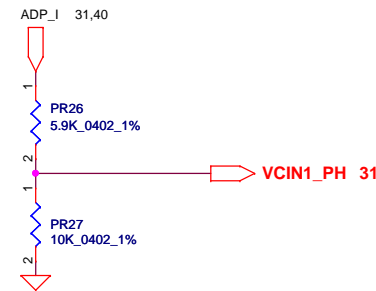
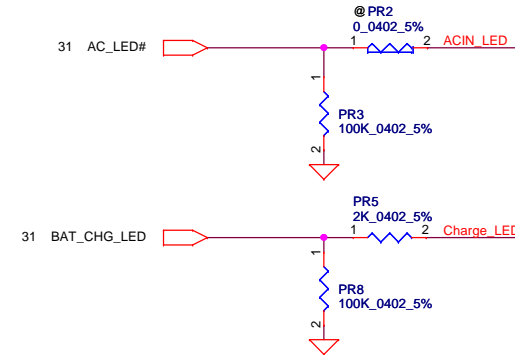
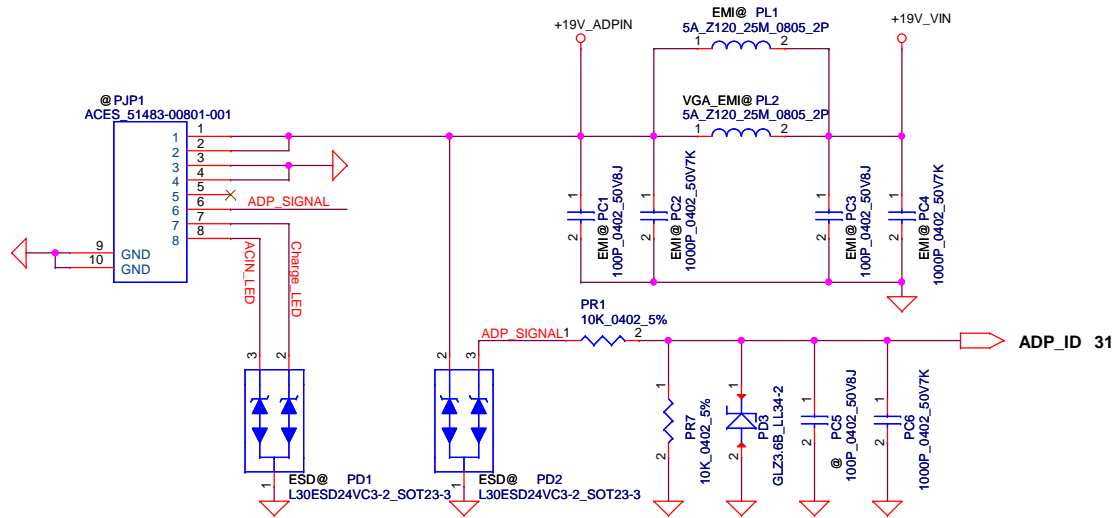
SPOK **2** **1** **+3V_SOC_ON**
R1061 **47K_0402_5%**



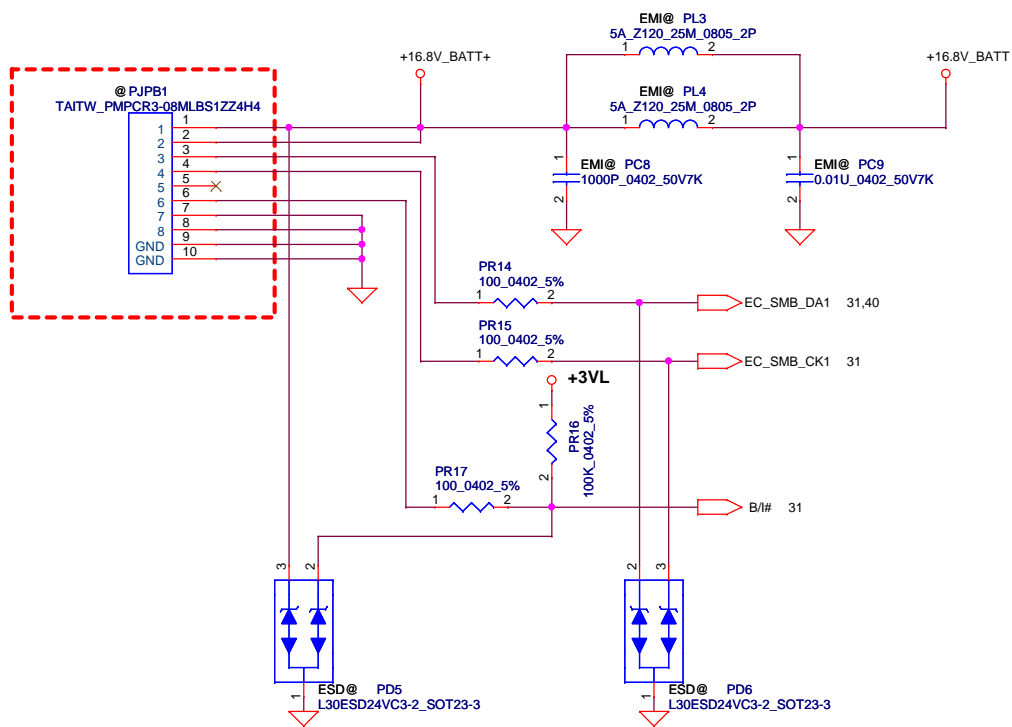
Q2509,Q2510,Q2511
Change to SB00000I200
Vgs = 0.49V~1V



Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2014/07/07	Deciphered Date	2015/07/07	Title	DC Interface	
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				Thursday, January 07, 2016	Sheet	37 of 51



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2015/10/08	Deciphered Date	2014/10/28	Title	DC Conn
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				LA-C706P	0.1
Date:		Thursday, January 07, 2016		Sheet	38 of 52



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2015/10/08	Deciphered Date	2016/08/06	Title	BATT Conn
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				Date:	Thursday, January 07, 2016
				Sheet	39 of 52
				Rev	0.1

Module model information

BQ24725A_V1.mdd
BQ24725A_V2.mdd

Design Notes

#For 65 /90W system, 3S1P/3S2P battery
Maximum Charging current 3.5A
Maximum Battery discharge power 55W.
#Register Setting
1. 0x12 bit8 set 0 (default 1) to disable IFAULT HI if add ISN choke
#Circuit Design
1. ACOK, ILIM pull high voltage need base on 3/5V enable control
2. Use 10X10 choke and 3X3 H/L Side MOSFET
Charge current 3.5A
Power loss : 1.82W
Power density : 0.81 (15X15)
3. If use 4S per cell 4.35V battery, need additional circuit for ACDET (PR218/PR220/PR222 change to 0.1%, parallel resistors with PR222 for ACDET setting)
4. PC223 0.22u can't be changed. (Wrong adapter concern)
5. For the design, need double confirm PQ202, PQ203, PQ204 rating
#Protect function
1. ACOVP : ACDET voltage > 3.14V
2. Charger timeout : No communication within 175s (default)
3. ACOC : 3.33 X Input current DAC setting (default)
4. CHGOC : 3/4.5/6A based on current current setting
5. BATOV : 103-106%
6. BATLOW : 2.5V

	Vin Dectector		
	Min.	Typ	Max.
L-->H	17.16V	17.63V	18.12V
H-->L	16.76V	17.22V	17.70V

$VILIM = 20 * ILIM * Rsr$
 $ILIM = 3.3 * 100 / (100 + 107) / 20 / 0.02$
 $= 3.986 A$

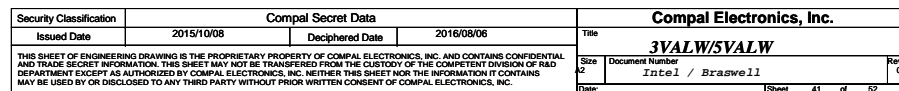
- ```

Design Notes
#For 65 /90W system, 3S1P/3S2P battery
Maximum Charging current 3.5A
Maximum Battery discharge power 55W.

#Register Setting
1. 0X12 bit8 set 0 (default 1) to disable IFAULT HI if add ISN choke
#Circuit Design
1. ACOK,ILIM pull high voltage need base on 3/5V enable control
2. Use 10X10 choke and 3X3 H/L Side MOSFET
 Charge current 3.5A
 Power loss : 1.82W
 Power density : 0.81 (15X15)
3. If use 4S per cell 4.35V battery, need additional circuit
for ACDET(PR218/PR220/PR222 change to 0.1%, parallel resistors
with PR222 for ACDET setting)
4. PC223 0.22uF can't be changed. (Wrong adapter concern)
5. For the design, need double confirm PQ202,PQ203,PQ204 rating
#Protect function
1. ACOVP : ACDET voltage > 3.14V
2. Charger timeout : No communication within 175s(default)
3. ACOC : 3.33 X Input current DAC setting(default)
4. CHGOCP : 3/4.5/6A based on current current setting
5. BATOVP : 103-106%
6. BATLOWV : 2.5V
7. TSHUT : 155C
8. IFAULT HI : 750mV (default)
9. IFAULT LOW : 150mV (default)

```

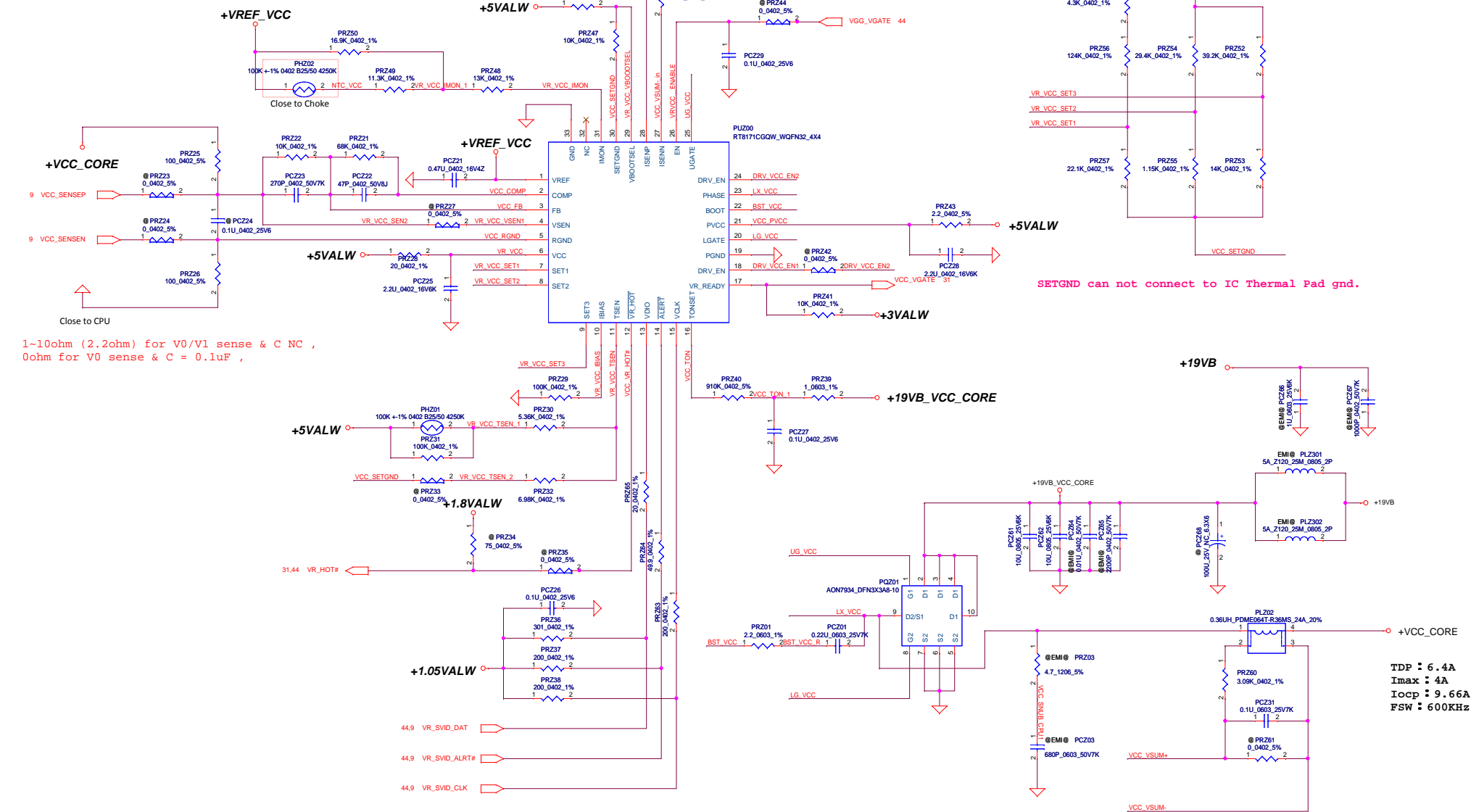
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |                 | <div>Compal Electronics, Inc.</div> <div>CHARGER</div> |  |       |                            |       |                |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2015/10/08         | Deciphered Date |                                                        |  |       | 2012/07/02                 | Title |                |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |                 |                                                        |  |       | Intel / Braswell           |       | 6.1            |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |                 |                                                        |  | Date: | Thursday, January 07, 2016 |       | Sheet 40 of 52 |  |





## Function Field :

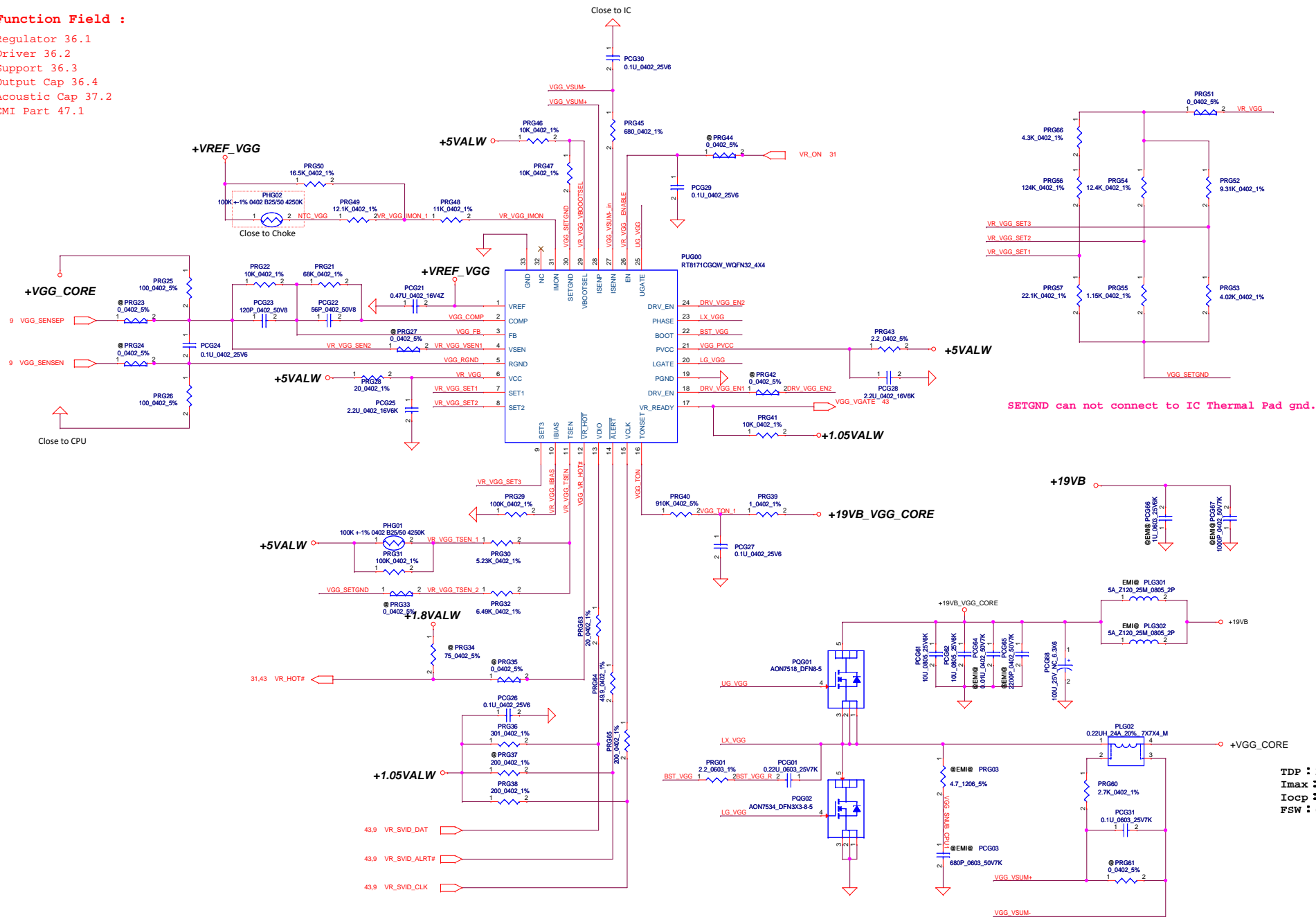
Regulator 36.1  
Driver 36.2  
Support 36.3  
Output Cap 36.4  
Acoustic Cap 37.2  
EMI Part 47.1



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |                  |          |    |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|------------------|----------|----|-----|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |                  |          |    |     |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2015/10/08         |  | Deciphered Date |  | 2013/07/10               |                  | Title    |    |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |                  | VCC_Core |    |     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          | Intel / Braswell |          |    | 0.1 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Date:                    |                  | Sheet    | 43 | of  |

# Function Field :

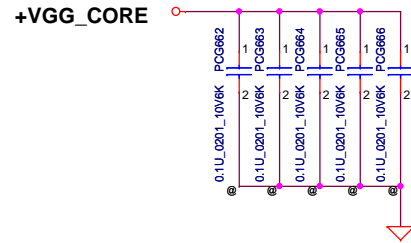
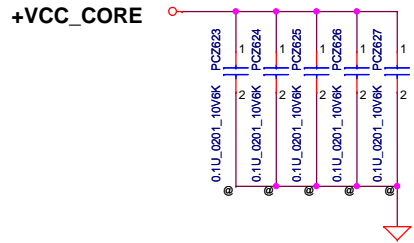
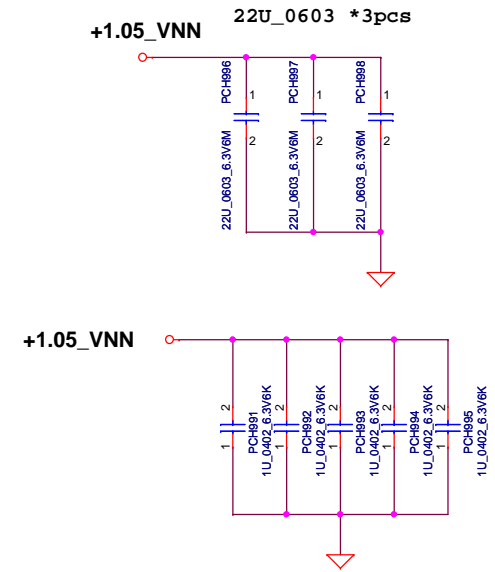
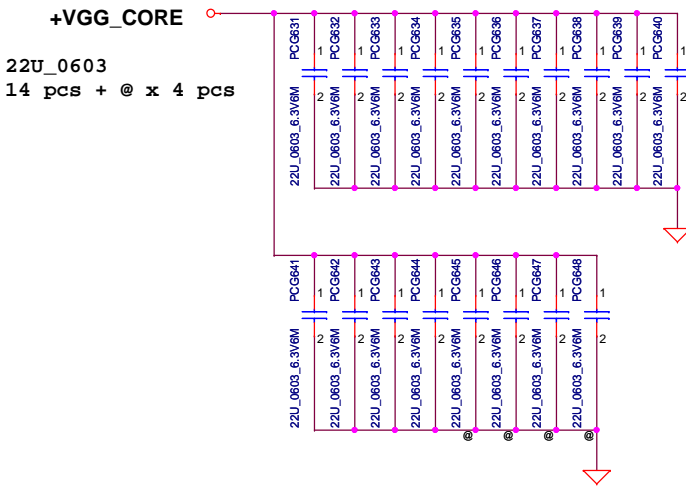
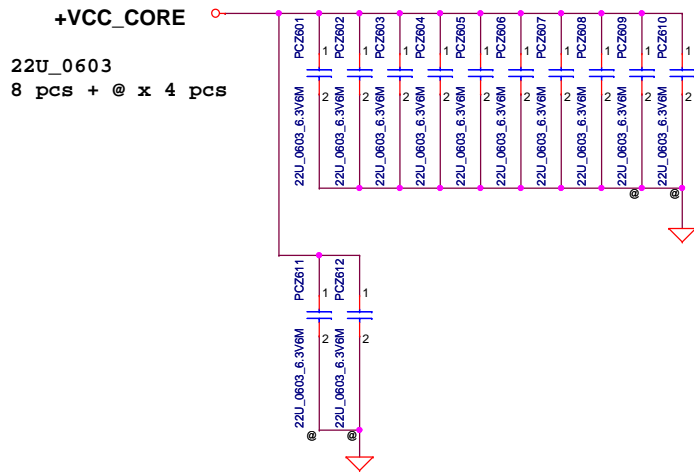
Regulator 36.1  
Driver 36.2  
Support 36.3  
Output Cap 36.4  
Acoustic Cap 37.2  
EMI Part 47.1



TDP : 11A  
Imax : 8.5A  
Iocp : 15.18A  
FSW : 600KHz

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |                  | Compal Electronics, Inc. |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------------|--------------------------|-----|
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| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          | C          | Document Number    | Intel / Braswell | Rev                      | 0.1 |
| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                    |                  |                          |     |





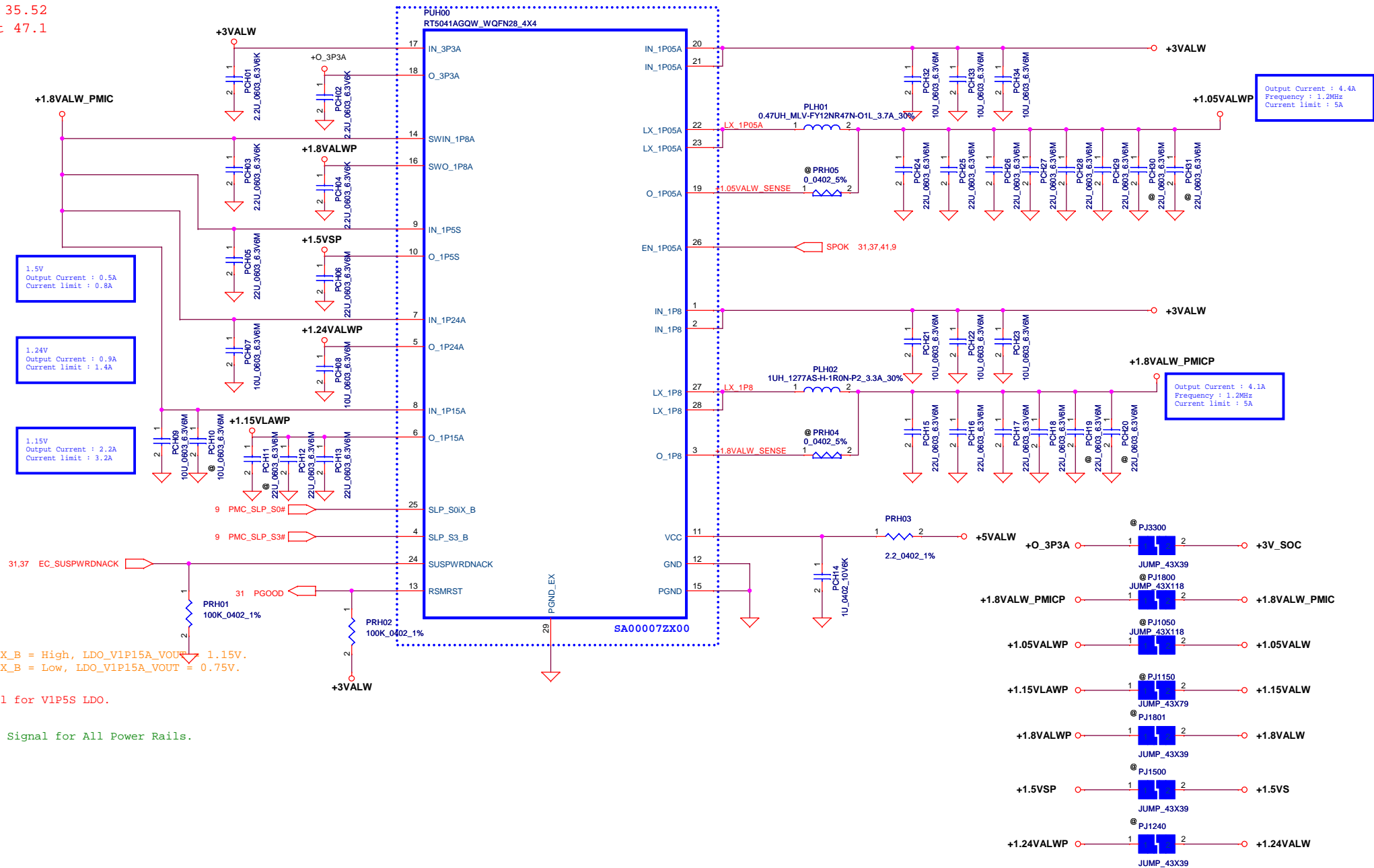
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc.            |                                    |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2015/10/08 | Deciphered Date    | 2015/07/08 | Title                               | PWR-PROCESSOR DECOUPLING           |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev<br>0.1                          |                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:<br>Thursday, January 07, 2016 | Sheet<br>45 of 52                  |

## Function Field :

Regulator 35.51

Support 35.52

EMI Part 47.1

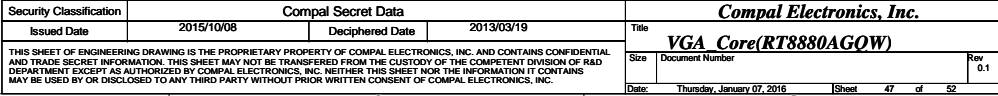


SLP\_S0iX\_B  
When SLP\_S0iX\_B = High, LDO\_V1P15A\_VOUT = 1.15V.  
When SLP\_S0iX\_B = Low, LDO\_V1P15A\_VOUT = 0.75V.

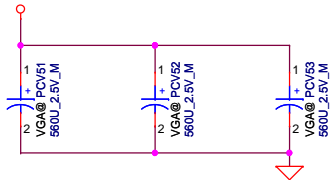
SLP\_S3\_B  
Enable Signal for V1P5S LDO.

SUSPWRDNACK  
HIGH:Disable Signal for All Power Rails.

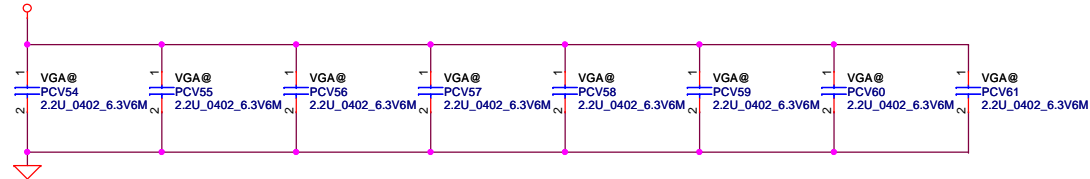
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc.            |                             |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|-------------------------------------|-----------------------------|------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2015/10/08 | Deciphered Date    | 2013/09/17 | Title<br>PWR-MOIC SYSTEM            |                             |            |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:<br>Thursday, January 07, 2016 | Sheet<br>46                 | of<br>52   |



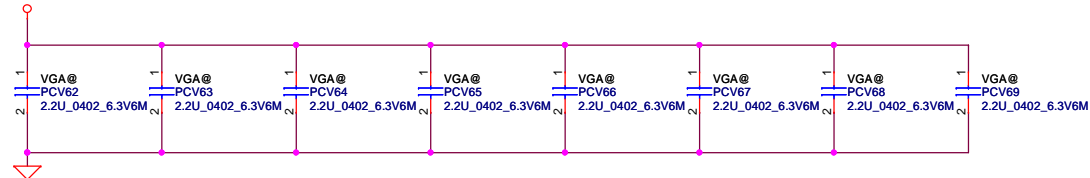
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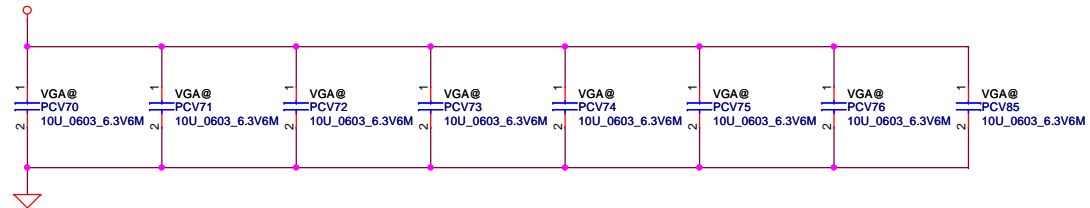
+VGA\_CORE



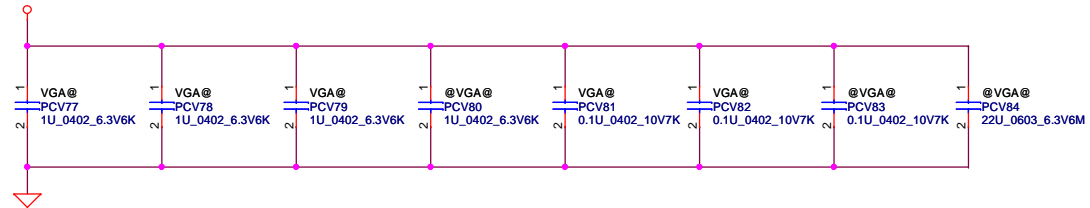
+VGA\_CORE



+VGA\_CORE



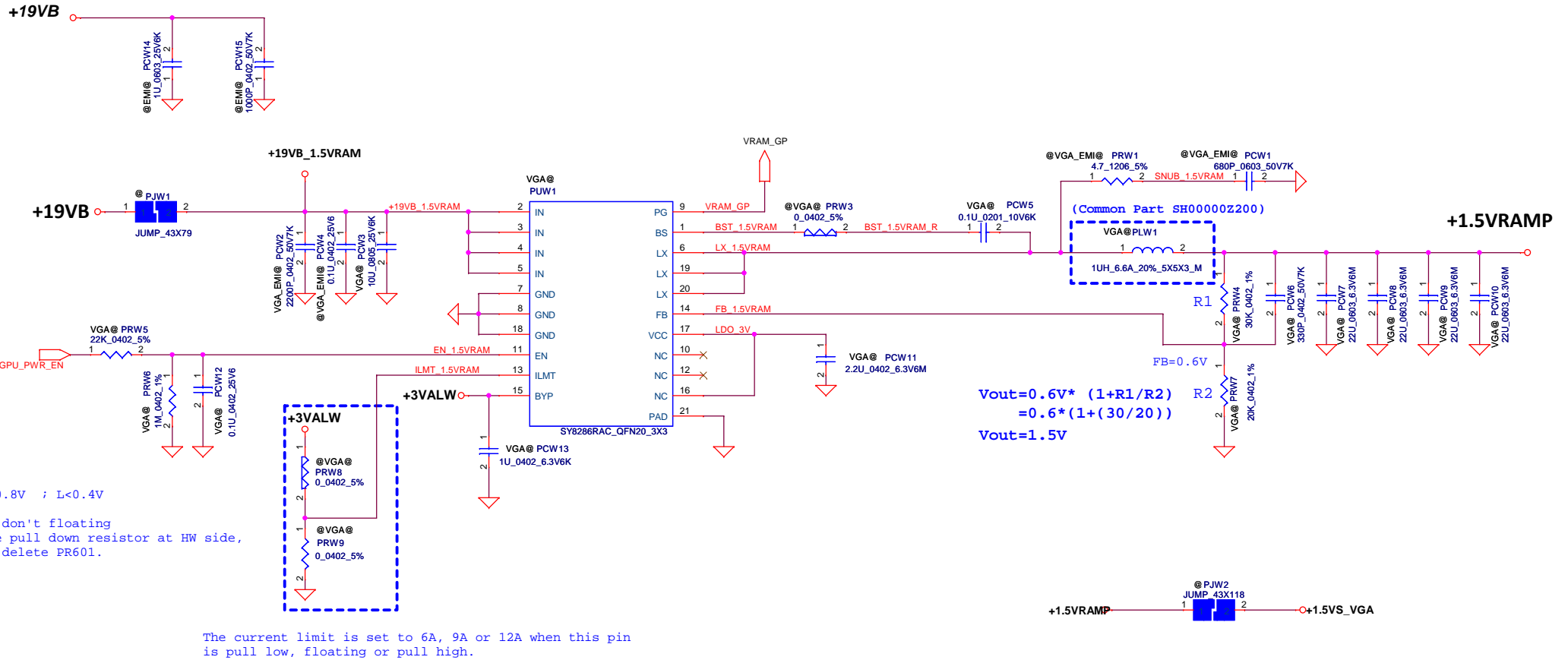
+VGA\_CORE



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                              |                             |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|------------------------------|-----------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc.     |                             |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2015/10/08         | Deciphered Date | 2016/09/30 | Title<br>VGA CHIP DECOUPLING |                             |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                        | Thursday, January 07, 2016  | Sheet 48 of 52 |

## Module model information

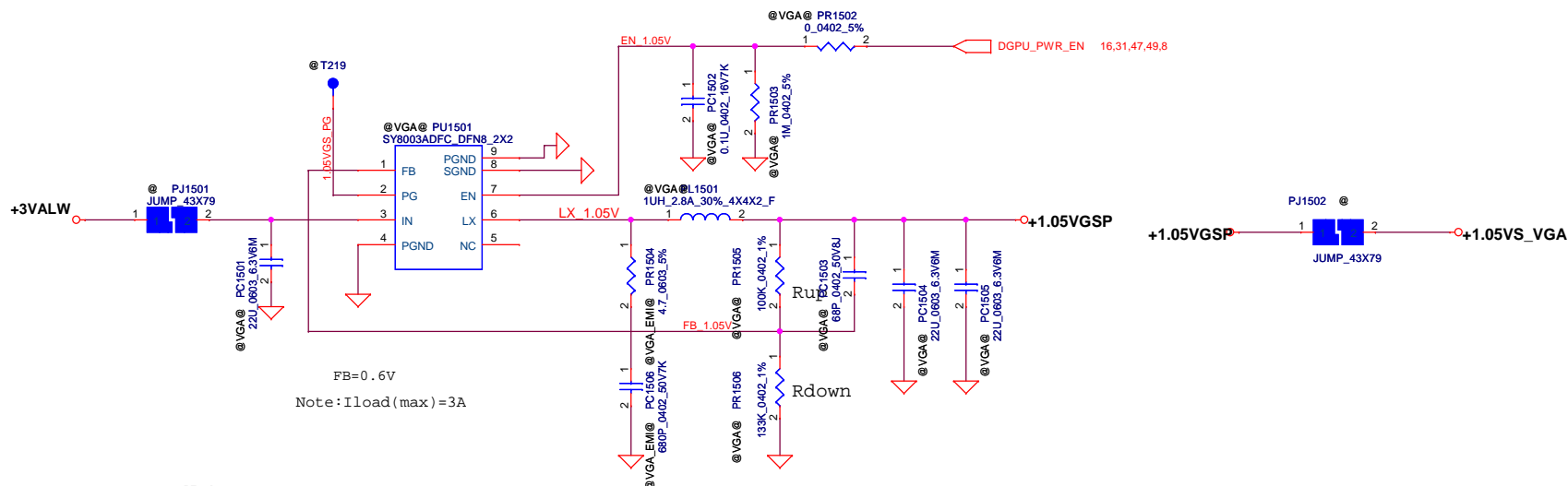
SY8286\_V1\_single.mdd  
SY8286\_V1\_dual.mdd



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                                   |                             |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|-----------------------------------|-----------------------------|---------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | APS55    Compal Electronics, Inc. |                             |         |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2015/10/08         | Deciphered Date | 2014/05/26 | Title<br>VRAM_1V5_GPU             |                             |         |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date: Thursday, January 07, 2016  | Sheet 49 of 52              |         |

# Module model information

SY8003\_V2.mdd



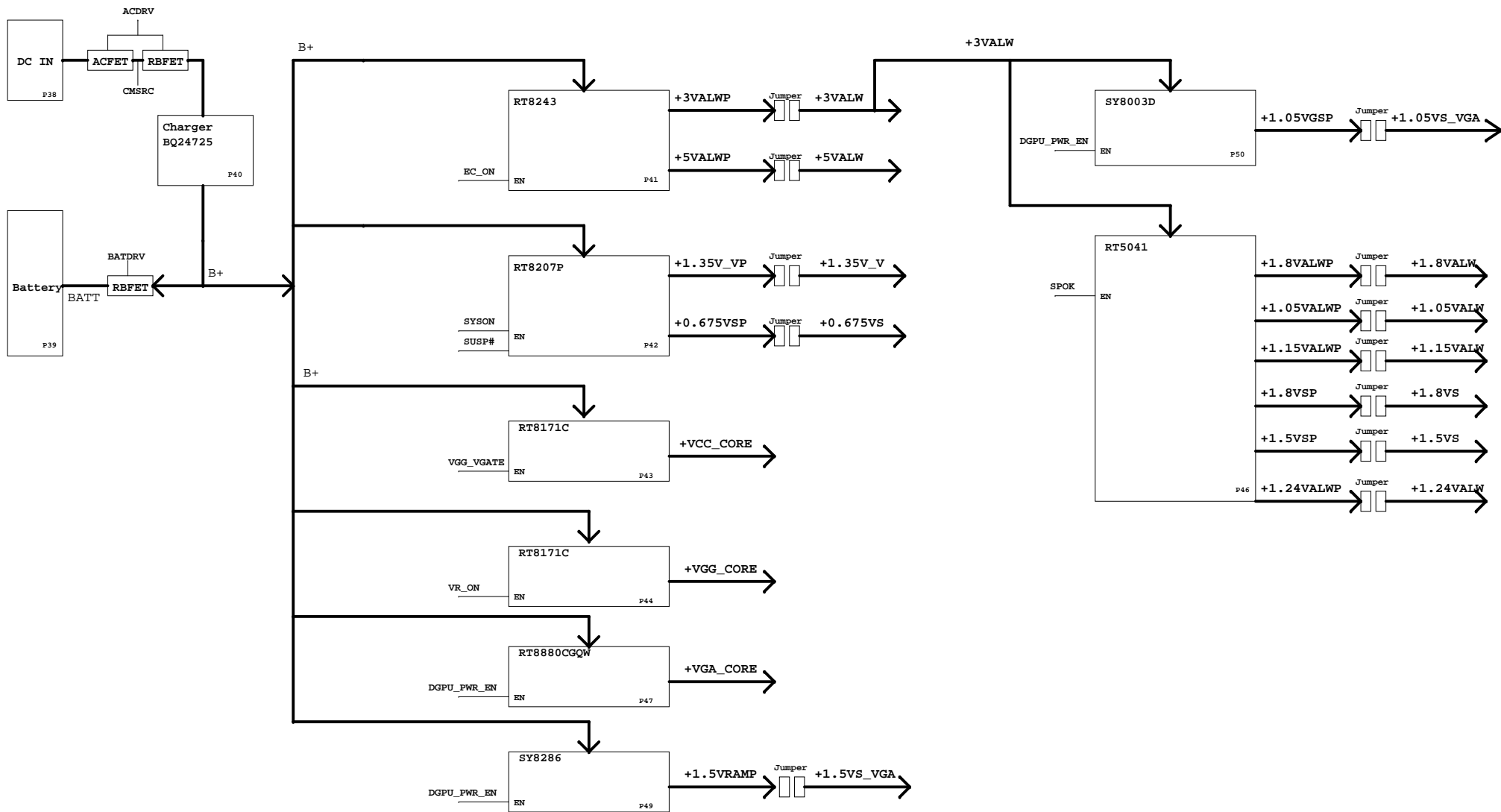
## Note:

When design Vin=5V, please stuff snubber to prevent Vin damage

$$V_{out} = 0.6V * (1 + R_{up}/R_{down})$$

Note: Use VCCSA\_SEL to switch High & Low Level for VID[1] (ie. VCCSA\_SEL) due to the VID[0] is don't care for this setting.

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Title                            |                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|----------------------------------|----------------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2015/10/08 | Deciphered Date    | 2012/06/13 | 1.05V(SY8003)                    |                                  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | 0.1                         |

Version change list (P.I.R. List)

| Item | Date  | Page          | Reason for change              | Modify List                                                     | Phase |
|------|-------|---------------|--------------------------------|-----------------------------------------------------------------|-------|
| 1    | 11/16 | P47           | EE request for VGA power debug | Change PRV61 to stuff & PRV1/PCV102 to Unpop                    | SI    |
| 2    | 11/16 | P47           | EE request for VGA power debug | Add PRV2 for EE debug sequence issue                            | SI    |
| 3    | 11/24 | P44           | EMI request for debug          | remove PJG1 & add PLG301/PLG302                                 | SI    |
| 4    | 11/24 | P52           | EE request for VGA power debug | Change PRW5 0 ohm --> 22K & PCW12 0.1U to stuff                 | SI    |
| 5    | 11/24 | P43           | EMI request for debug          | remove PJZ1 & add PLZ301/PLZ302                                 | SI    |
| 6    | 12/29 | P47           | Modify OCP value               | Change PRV73 1K-->11K, PRV71 124K-->64.9K<br>PRV75 2.8K-->8.66K | PV    |
| 7    | 12/29 | P40,P42       | Diner cost down item           | Change PCB17, PCM4 0603 to 0402, PCM5 0805 to 0603              | PV    |
| 8    | 12/30 | P43, P44, P47 | Change 0 ohm to short pad      | PRZ51, PRG51, PRV28, PRV29, PRV45, PRV48, PRV50, PRV2           | PV    |
| 9    | 1/7   | P49           | Change 0 ohm to short pad      | PRW8                                                            | PV    |
| 10   |       |               |                                |                                                                 |       |
| 11   |       |               |                                |                                                                 |       |
| 12   |       |               |                                |                                                                 |       |
| 13   |       |               |                                |                                                                 |       |
| 14   |       |               |                                |                                                                 |       |
| 15   |       |               |                                |                                                                 |       |
| 16   |       |               |                                |                                                                 |       |
| 17   |       |               |                                |                                                                 |       |
| 18   |       |               |                                |                                                                 |       |
| 19   |       |               |                                |                                                                 |       |
| 20   |       |               |                                |                                                                 |       |
| 21   |       |               |                                |                                                                 |       |

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| Date:                   | Thursday, January 07, 2016 | Sheet              | 52 | of                       | 52 |