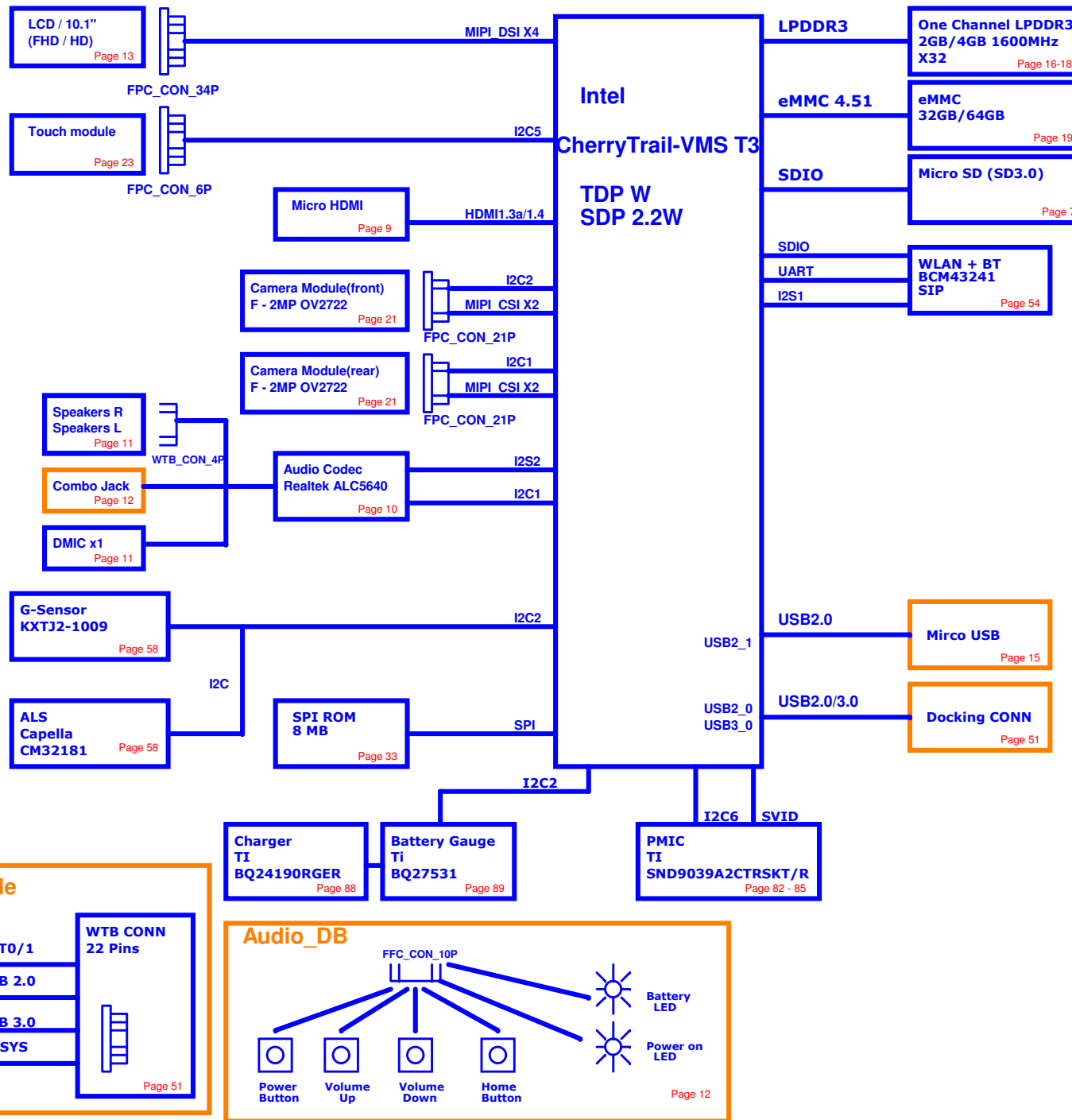


Block Diagram



PAGE	PDF PAGE	TITLE
01	01	BLOCK DIAGRAM
02	02	REF PAGE
03	03	Port Assignment
04	04	Power Tree

07	05	Micro SD

09	06	HDMI
10	07	Audio Codec
11	08	Audio SPK/DMIC
12	09	FFC CONN
13	10	MIPI Panel

15	11	Micro USB
16	12	LPDDR3L
18	13	LPDDR3L Vref
	14	***
19	14	eMMC

21	15	Camera 2M/2M

23	16	Touch Screen CONN
24	17	CPU 1/7 MEMORY
25	18	CPU 2/7 DISPLAY, STORAGE, AUD
26	19	CPU 3/7 USB, I2C, CLK, DB, MISC
27	20	CPU 4/7 GPIO, URT, MISC, CLK
28	21	CPU 5/7 Core Power
29	22	CPU 6/7 PWR(2) DDR & IO
30	23	CPU 6/7 GND

33	24	BIOS ROM

38	25	INTEL DEBUG CONN

42		***
43		***
44		***
45		***

PAGE	PDF PAGE	TITLE
51	26	POGO Docking/U3 redriver
52	27	Micro USB
54	28	WIFI/BT Foxconn T77H462.03
58	30	Sensor
59	31	***
79	29	ME parts & TP
80	30	BATT CONN & MB ID
81	31	DCDC POWER
82	32	PMIC-1
83	33	PMIC-2
84	34	PMIC-4
88	35	Charger IC
89	36	Gas Gauge

PAGE	PDF PAGE	TITLE
93	37	Audio FFC CONN
94	38	Audio Combo Jack
95	39	Button
96		***
97	40	LID Switch
98	41	LED

03 Port Assignment

I2C Table

I2C Port	Device	7-bit Addr	Power Rail	Pull High
NFC_I2C	TP			
I2C_1	Rear CAM (2M)	0x6C for write 0x6D for read	+V1P8A	PU +V1P8A
	Debug Port		+V1P8A	PU +V1P8A
	Audio Codec	38H	+V1P8A	PU +V1P8A
I2C_2	Front CAM (2M)	0x6C for write 0x6D for read	+V1P8A	PU +V1P8A
	Gas Gauge TI BQ27531	55H	+V1P8A	PU +V1P8A
I2C_4	HDMI		+V1P8A	PU +V1P8A
I2C_5	Touch Screen	0x21 for read 0x20 for write	+V1P8A	PU +V1P8A
I2C_6	PMIC	0x5E	+V1P8A	PU +V1P8A

ISH Table

ISH Port	Device	7-bit Addr	Power Rail	Pull High
ISH_I2C_1	Gsensor	0x0F	+V1P8A	PU +V1P8A
	Light sensor	0x48	+V1P8A	PU +V1P8A

DDI Table

Gen	Module
DDI0	NC
DDI2	HDMI

MIPI DSI Table

Gen	Module
MDSI_A	MIPI Panel

MIPI CSI Table

Gen	Module
MCSI_1	Rear Camera
MCSI_2	Front Camera

HSUART Table

Gen	Module
UART_1	WIFI/BT

I2S Table

I2S Port	Module
I2S_0	Audio Codec
I2S_1	WLAN

eMMC Table

Gen	Module
MMC1	eMMC

SDIO Table

Gen	Module
SD2	WIFI/BT
SD3	Micro SD Card

USB 2.0 Table

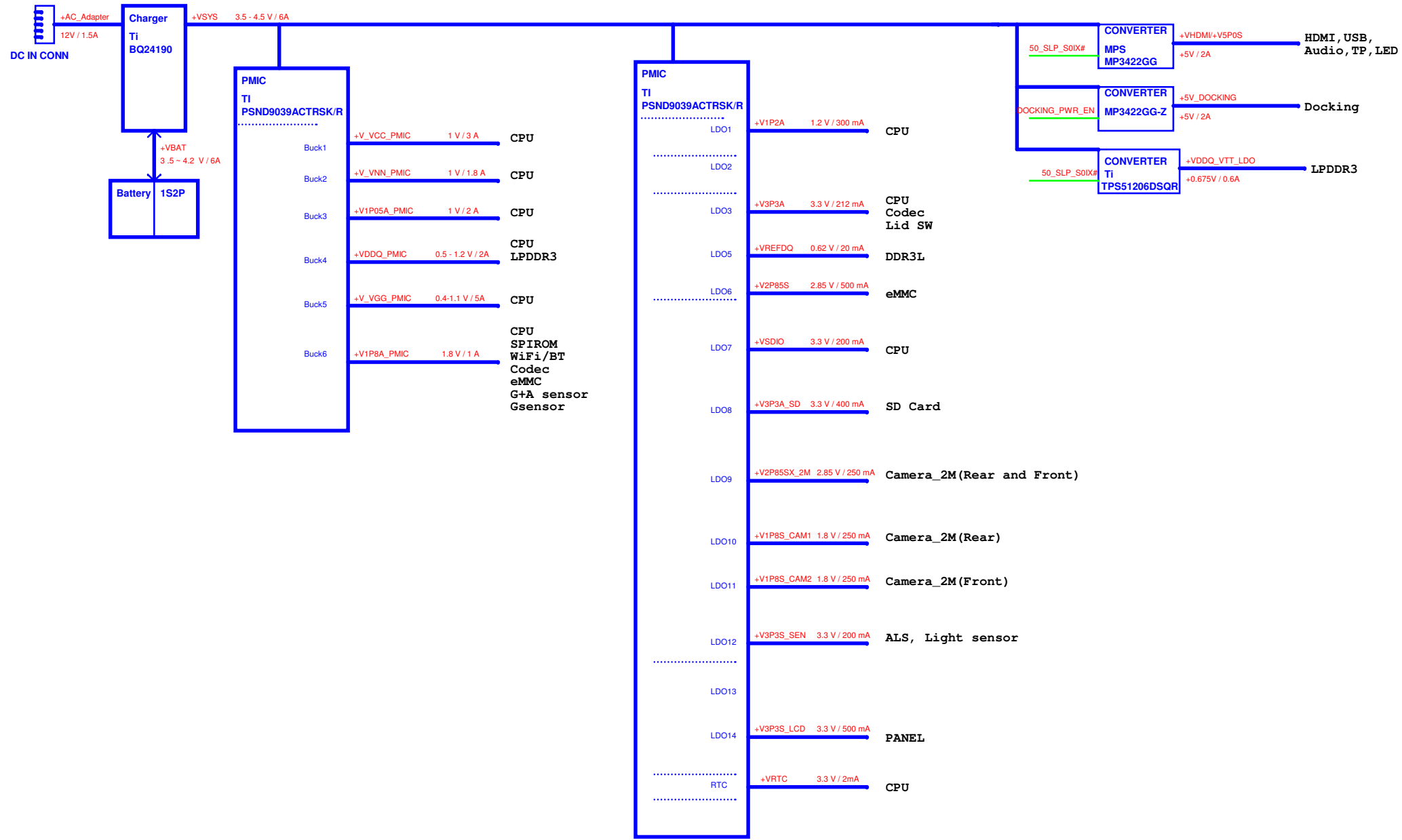
Gen	Module
USB_0	USB Docking
USB_1	Micro USB

USB 3.0 Table

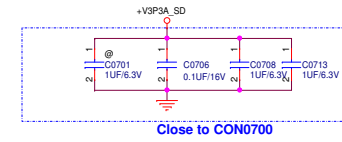
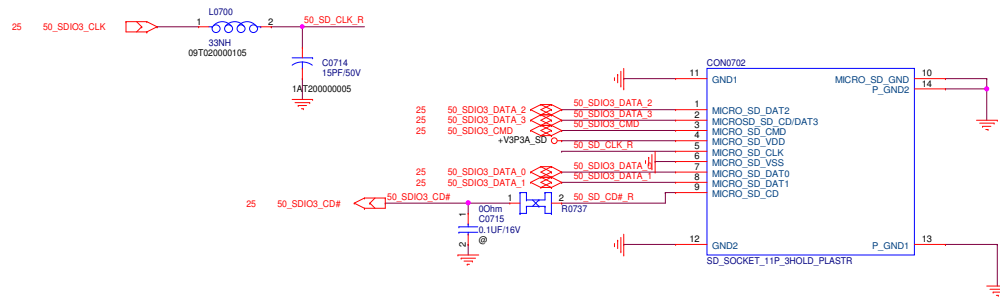
Gen	Module
USB3_0	USB Docking

Power Tree

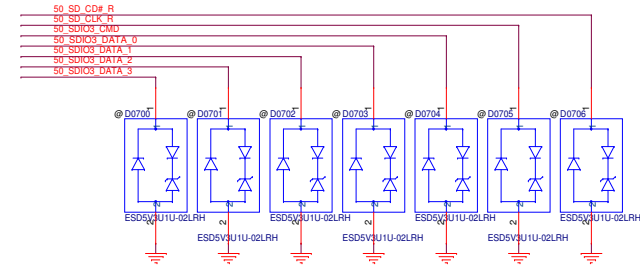
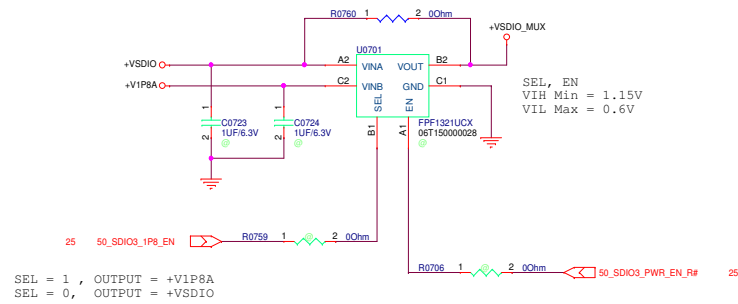
20141216_1



Micro SD

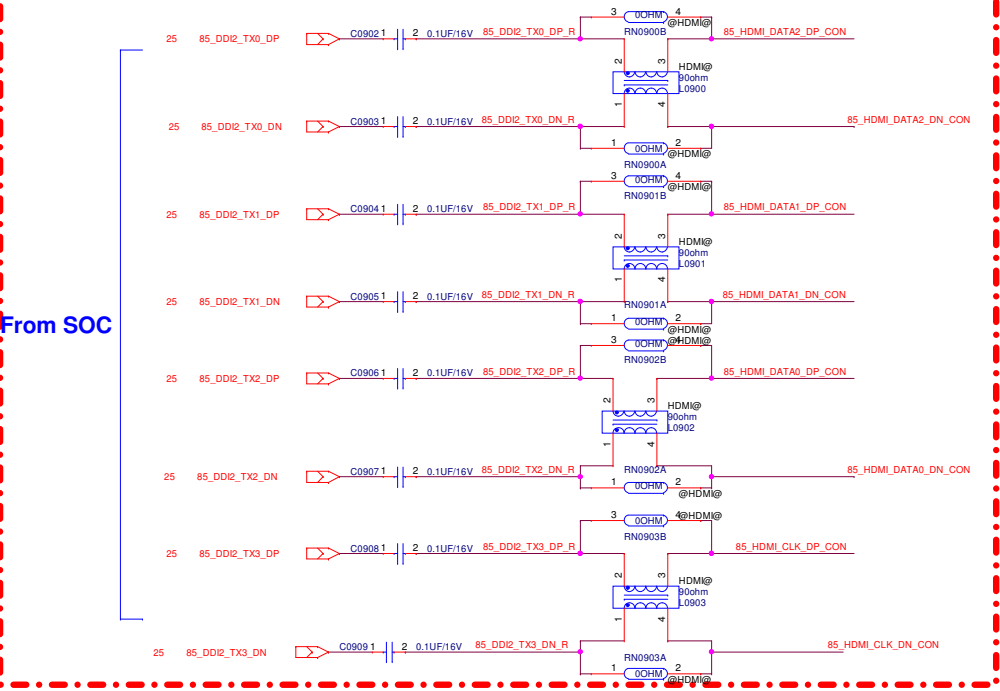


MUX



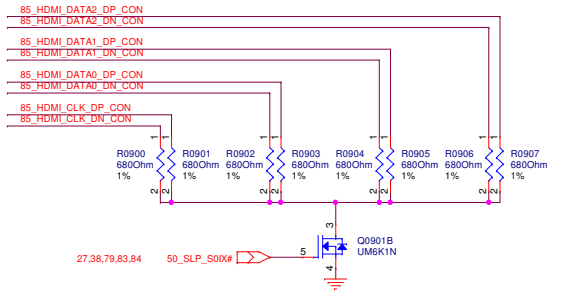
HDMI DATA

CO-LAY

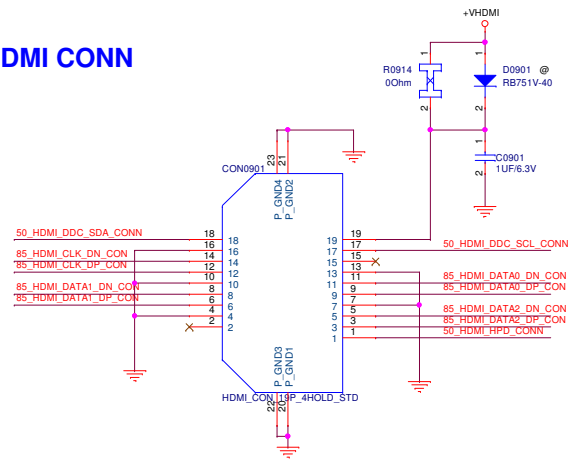


From SOC

Level Shift



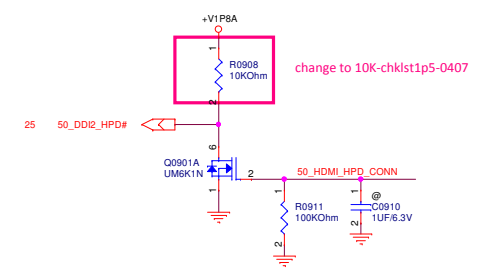
HDMI CONN



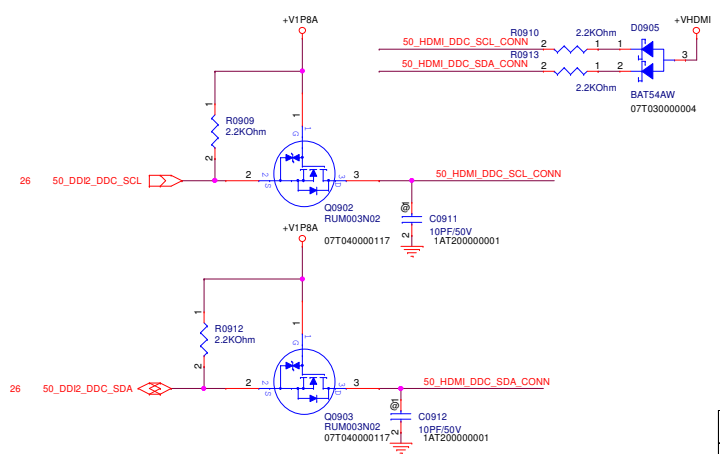
Micro HDMI CONN
Pin Definition
Type-D

- 1 : Hot Plug Detect
- 2 : Utility(NC)
- 3 : TMDS Data2+
- 4 : TMDS Data2- Shield
- 5 : TMDS Data2-
- 6 : TMDS Data1+
- 7 : TMDS Data1- Shield
- 8 : TMDS Data1-
- 9 : TMDS Data0+
- 10 : TMDS Data0- Shield
- 11 : TMDS Data0-
- 12 : TMDS Clock+
- 13 : TMDS Clock- Shield
- 14 : TMDS Clock-
- 15 : CEC(NC)
- 16 : DDC/CEC Ground
- 17 : SCL
- 18 : SDA
- 19 : +5V Power

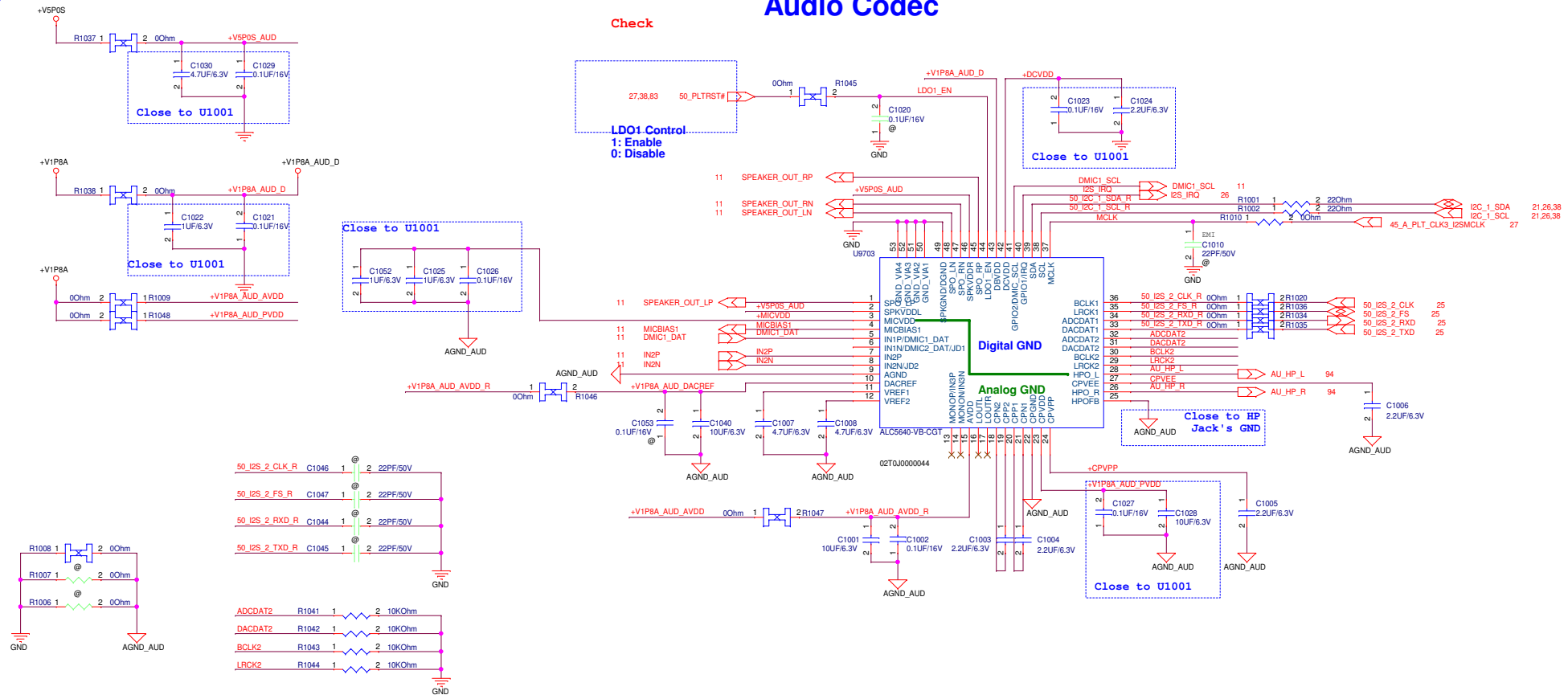
HDMI HPD



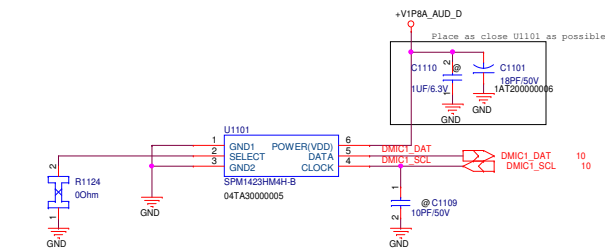
HDMI DDC



Audio Codec

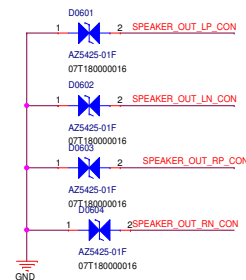


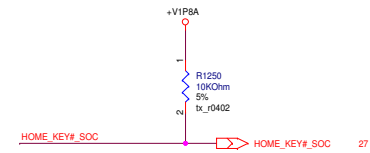
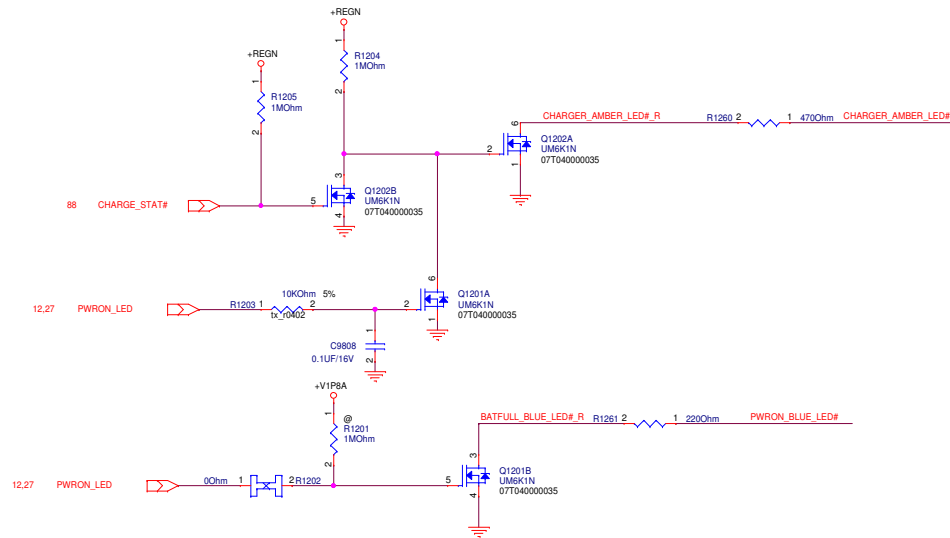
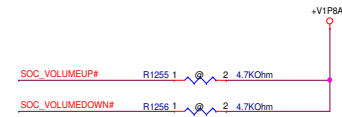
D-MIC



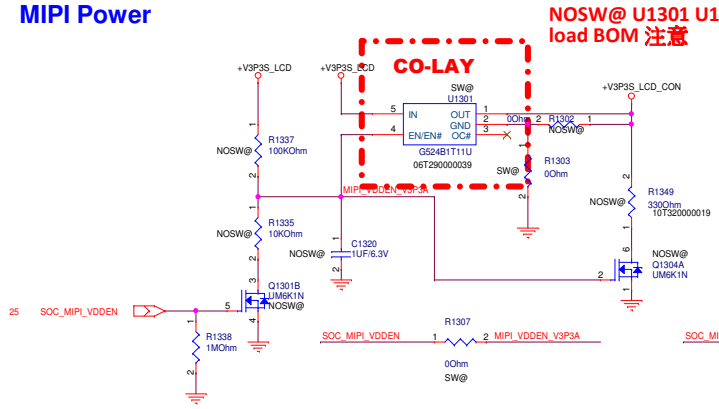
SPK CONN

Speaker Spec.	P=1*2'R	OD 通常用50mΩ來計算耐壓	<table border="1"> <thead> <tr> <th>Line</th><th>用功率</th></tr> </thead> <tbody> <tr> <td>0805</td><td>1.74W 0.115W</td></tr> <tr> <td>0803</td><td>1.12W 0.1W</td></tr> <tr> <td>0402</td><td>1.16W 0.0625W</td></tr> <tr> <td>0301</td><td>1.20W 0.05W</td></tr> </tbody> </table>	Line	用功率	0805	1.74W 0.115W	0803	1.12W 0.1W	0402	1.16W 0.0625W	0301	1.20W 0.05W
Line	用功率												
0805	1.74W 0.115W												
0803	1.12W 0.1W												
0402	1.16W 0.0625W												
0301	1.20W 0.05W												
P=1W R=8Ω	1=1*2'8	P=lp*2'R											
	lrms=0.354A	P=0.7515*0.7515*0.05											
	lp=0.354*1.414	=0.028W											
	=0.501A												
Vendor 建議電流估1.5倍	lp=0.501*1.5												
	=0.7515A												



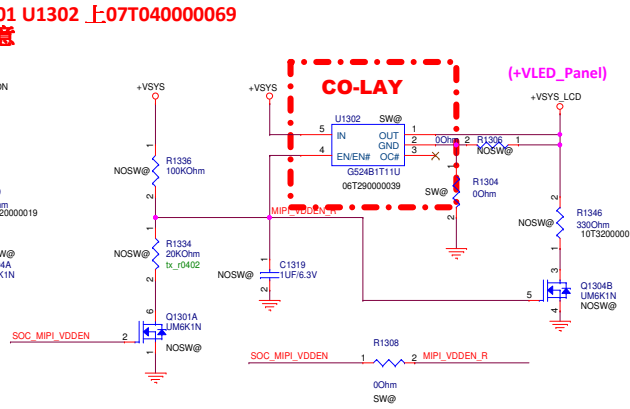


MIPI Power

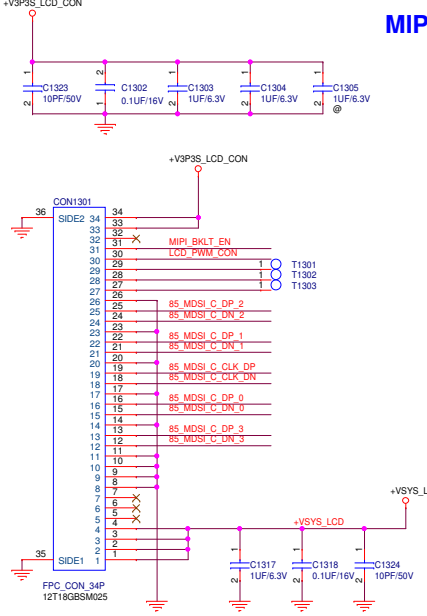


Number	Package type	Note
SY6288CAAC	SOT23-5	2A/Active High

MIPI LCD CONN



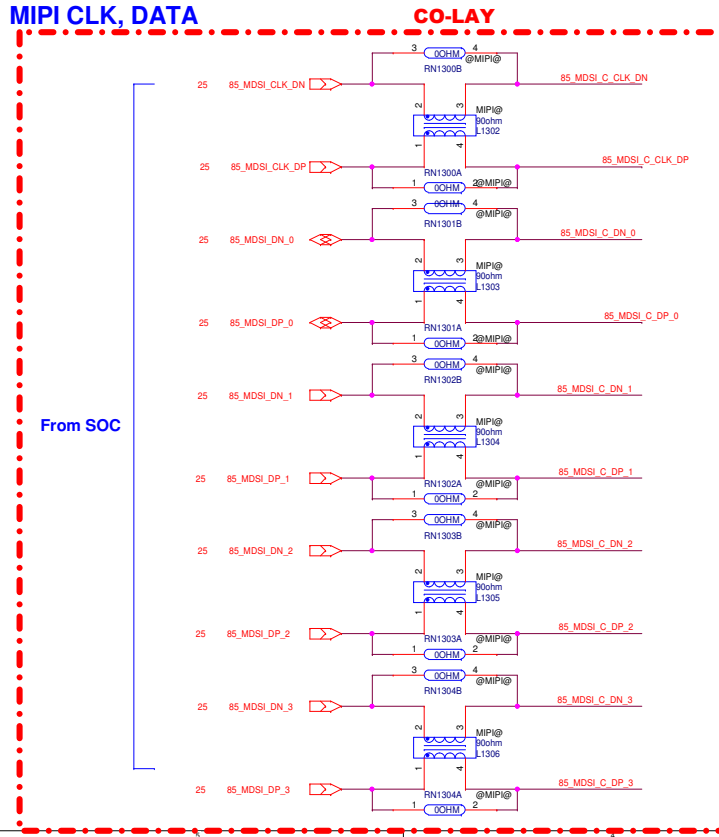
MIPI CONN



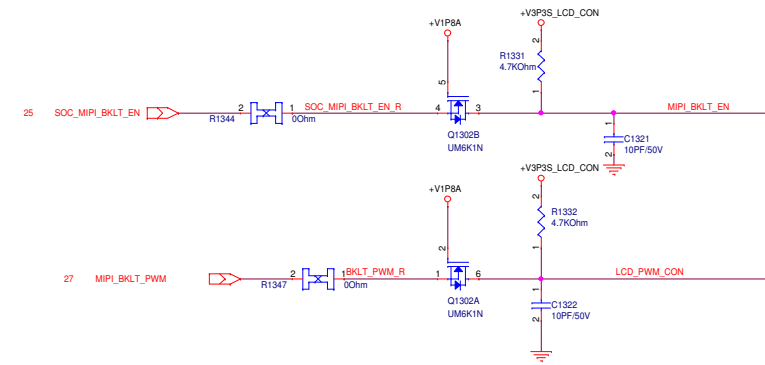
MIPI CONN Pin Definition

- 34. VDD(3.3V)
- 33. VDD(3.3V)
- 32. NC
- 31. LED_EN(1.8V)
- 30. LED_PWM
- 29. EDID_SDA
- 28. EDID_SCL
- 27. BID_FHD#
- 26. GND
- 25. MIPI_DSI_D2P
- 24. MIPI_DSI_D2N
- 23. GND
- 22. MIPI_DSI_D1P
- 21. MIPI_DSI_D1N
- 20. GND
- 19. MIPI_DSI_CLKP
- 18. MIPI_DSI_CLKN
- 17. GND
- 16. MIPI_DSI_D0P
- 15. MIPI_DSI_D0N
- 14. GND
- 13. MIPI_DSI_D3P
- 12. MIPI_DSI_D3N
- 11. GND
- 10. GND
- 09. GND
- 08. GND
- 07. NC
- 06. Aging mode power(AUO only)
- 05. NC
- 04. LED+
- 03. LED+
- 02. LED+
- 01. LED+

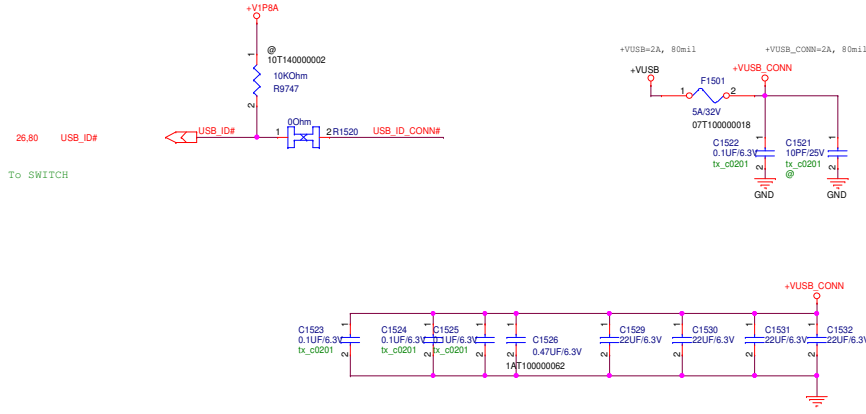
MIPI CLK, DATA



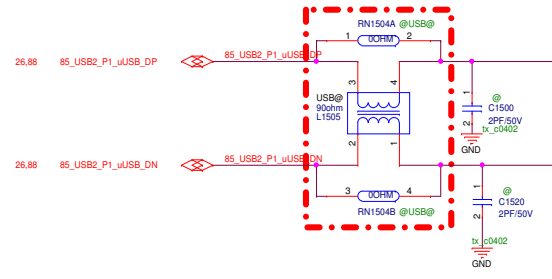
MIPI PWM



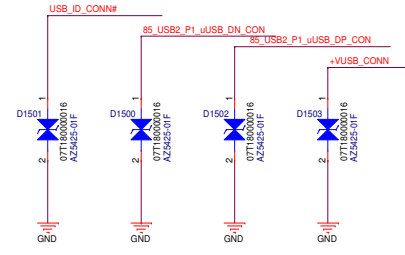
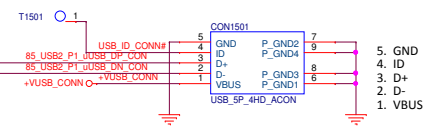
Micro USB

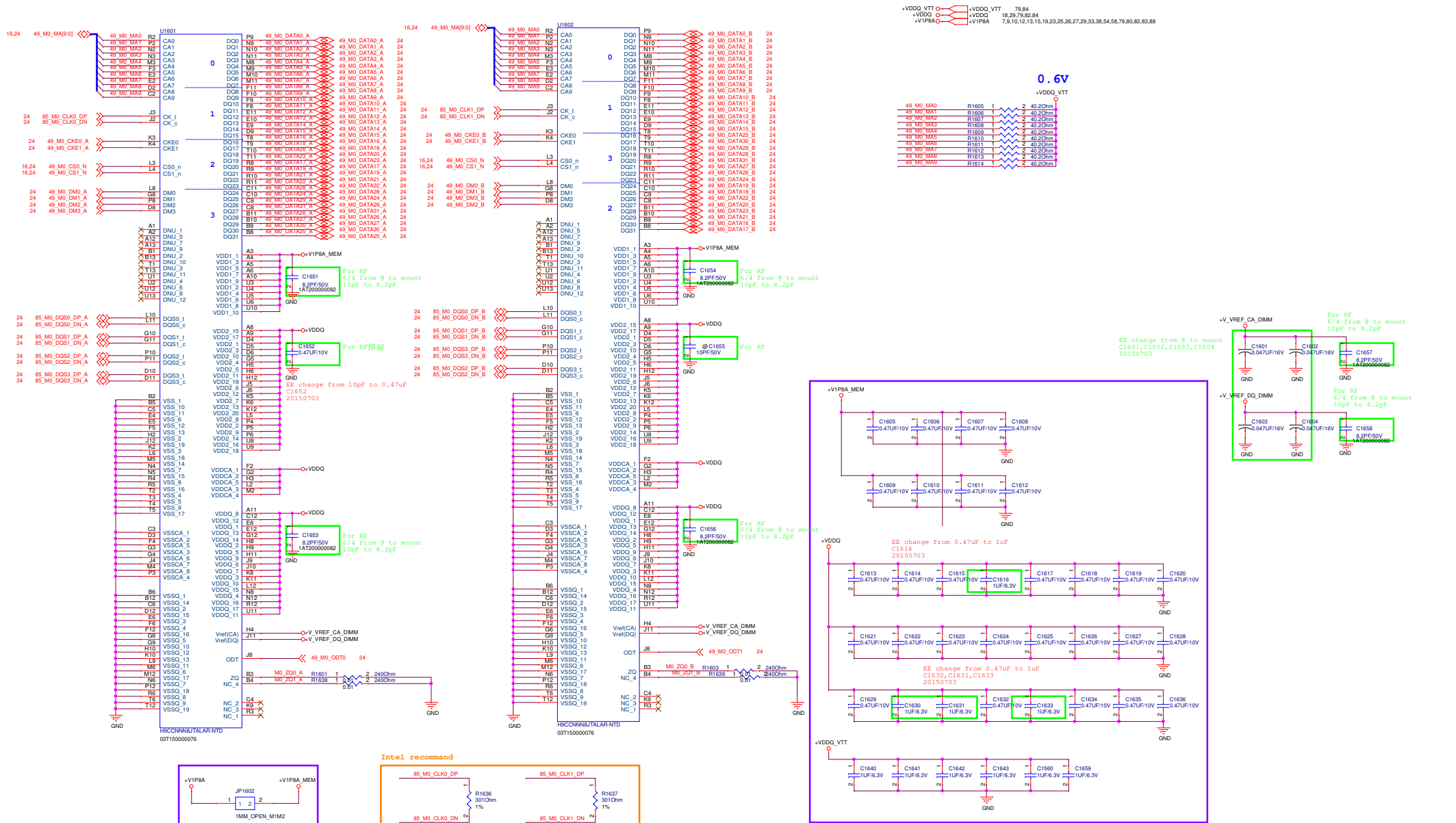


Co-Lay

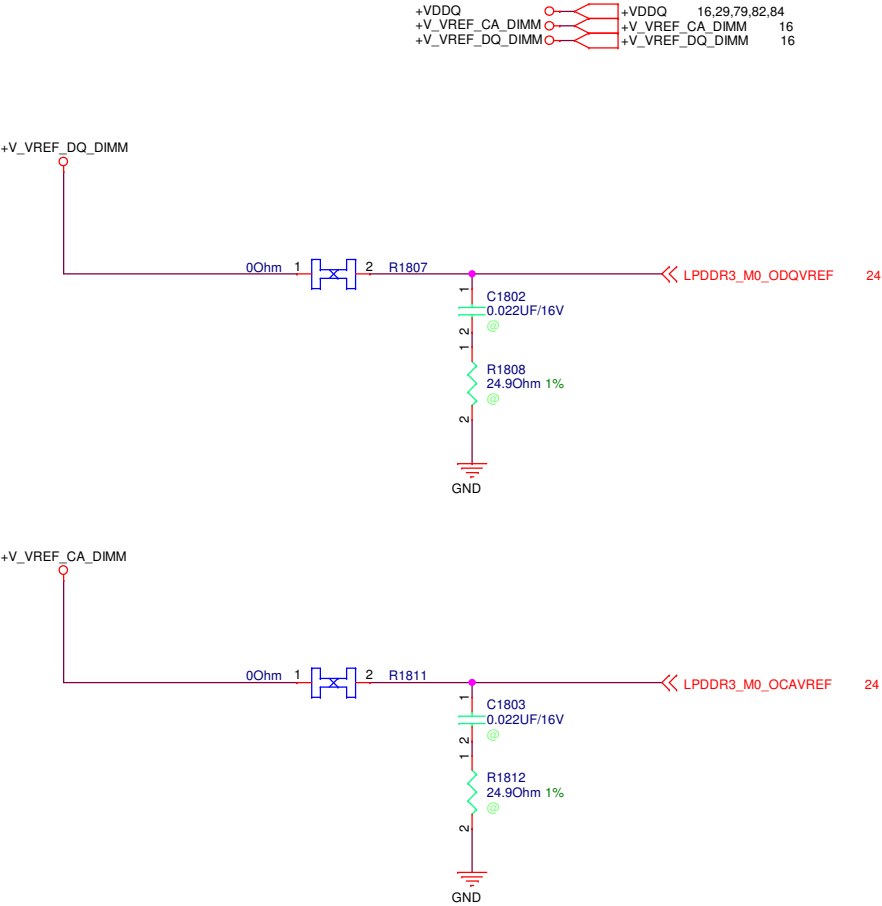


Micro USB CONN





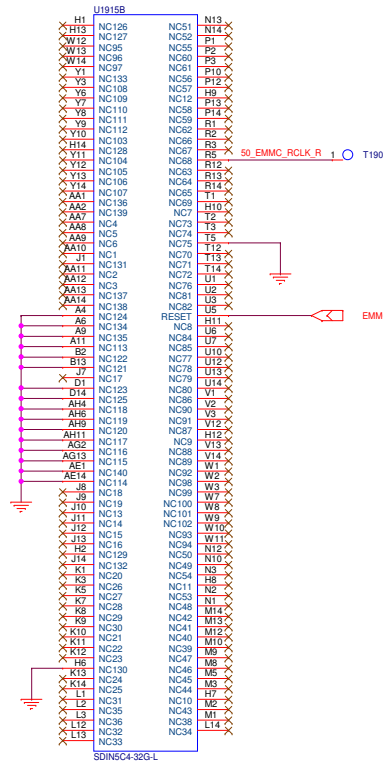
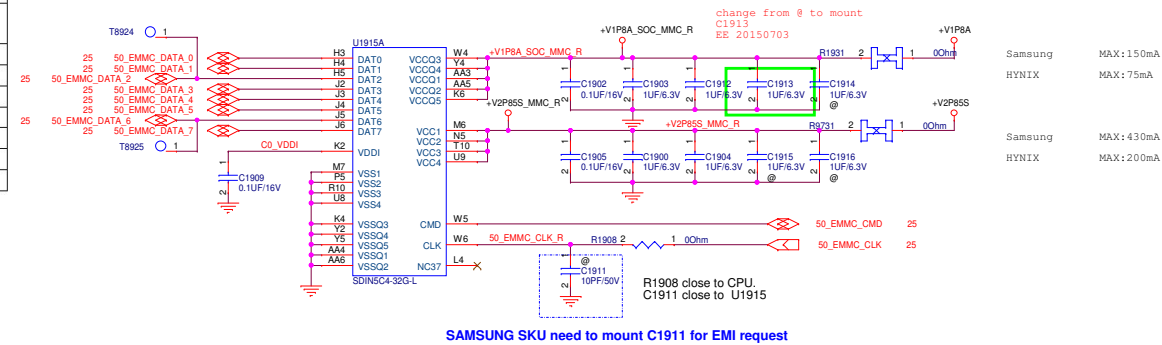
LPDDR3 Vref



T1901 ☐ 1 50_EMMC_DATA_0
T1902 ☐ 1 EMMC_RESET#
T1903 ☐ 1 50_EMMC_CMD

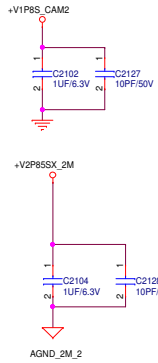
Table 16. Storage Control Cluster (eMMC, SDIO, SD) Interface Signals (Sheet 1 of 2)

Signal Name	Dir	Term	Plat. Power	Default Buffer State			
				S4/S5	Reset	Enter S0	S0ix
MMC1_D[7:0]†	I/O	20k(H)	V1P8S	Off	Pull-up	Pull-up	
MMC1_CMD†	I/O	20k(H)	V1P8S	Off	Pull-up	Pull-up	
MMC1_CLK†	I/O	20k(L)	V1P8S	Off	Pull-down	Pull-down	
MMC1_RST#†	I/O	20k(L)	V1P8S	Off	Pull-down	Pull-down	
MMC1_RCOMP	-	-	V1P8S				
SD2_D[3:0]†	I/O	20k(H)	V1P8S	Off	Pull-up	Pull-up	
SD2_CMD†	I/O	20k(H)	V1P8S	Off	Pull-up	Pull-up	



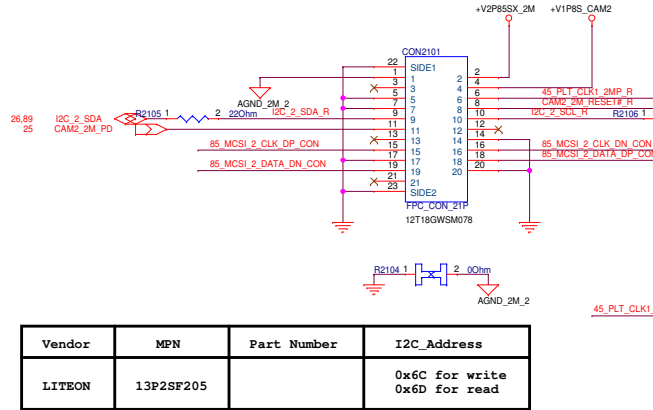
153 BALL / 169 BALL

eMMC Table			
Priority	eMMC Description	Part Number	TX Part Number
Main Source	SANDISK / FLASH EMMC 32GB FBGA-153	0500-01L10DE	*****
Second Source	HYNIX / FLASH EMMC 32GB FBGA-153	0500-01K500S	*****
Second Source	SAMSUNG / FLASH EMMC 32GB FBGA-153	0500-01L20DE	*****



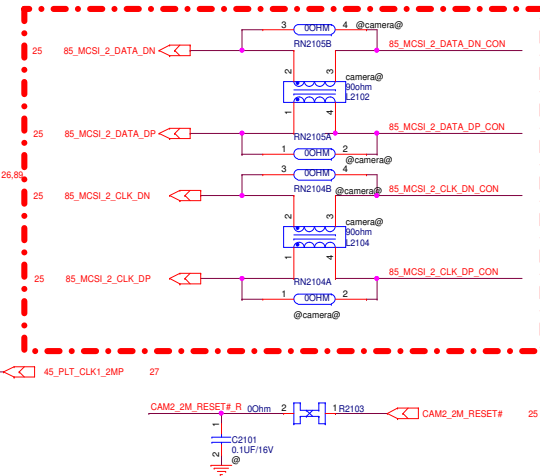
2M CAM Pin Define	
Pin1	AGND
Pin2	AVDD28
Pin3	NC
Pin4	DOVDD18
Pin5	DGND
Pin6	XVCLK
Pin7	DGND
Pin8	RESET#
Pin9	SIO_D
Pin10	SIO_C
Pin11	PWDN
Pin12	LED+ (NC)
Pin13	LED+ (NC)
Pin14	DGND
Pin15	MIPI_CSI_CLKP
Pin16	MIPI_CSI_CLKN
Pin17	DGND
Pin18	MIPI_CSI_D1P
Pin19	MIPI_CSI_D1N
Pin20	DGND
Pin21	NC

2M Camera (Front)

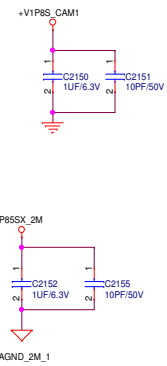


Vendor	MPN	Part Number	I2C_Address
LITEON	13P2SF205		0x6C for write 0x6D for read

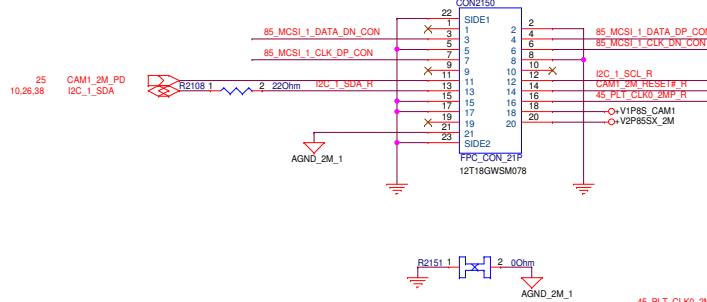
CO-LAY



2M Camera (Rear)

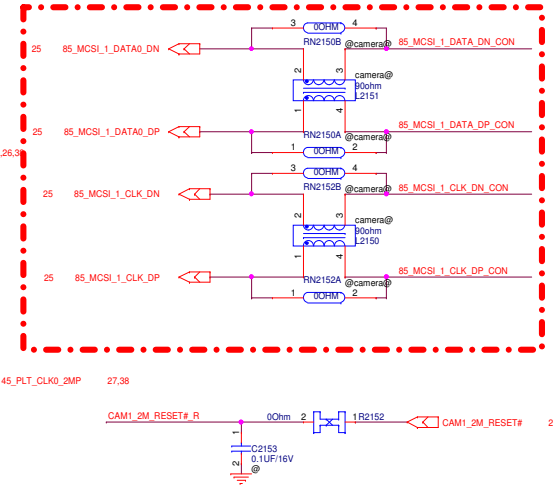


2M CAM Pin Define	
Pin1	AGND
Pin2	AVDD28
Pin3	NC
Pin4	DOVDD18
Pin5	DGND
Pin6	XVCLK
Pin7	DGND
Pin8	RESET#
Pin9	SIO_D
Pin10	SIO_C
Pin11	PWDN
Pin12	LED+ (NC)
Pin13	LED+ (NC)
Pin14	DGND
Pin15	MIPI_CSI_CLKP
Pin16	MIPI_CSI_CLKN
Pin17	DGND
Pin18	MIPI_CSI_D1P
Pin19	MIPI_CSI_D1N
Pin20	DGND
Pin21	NC



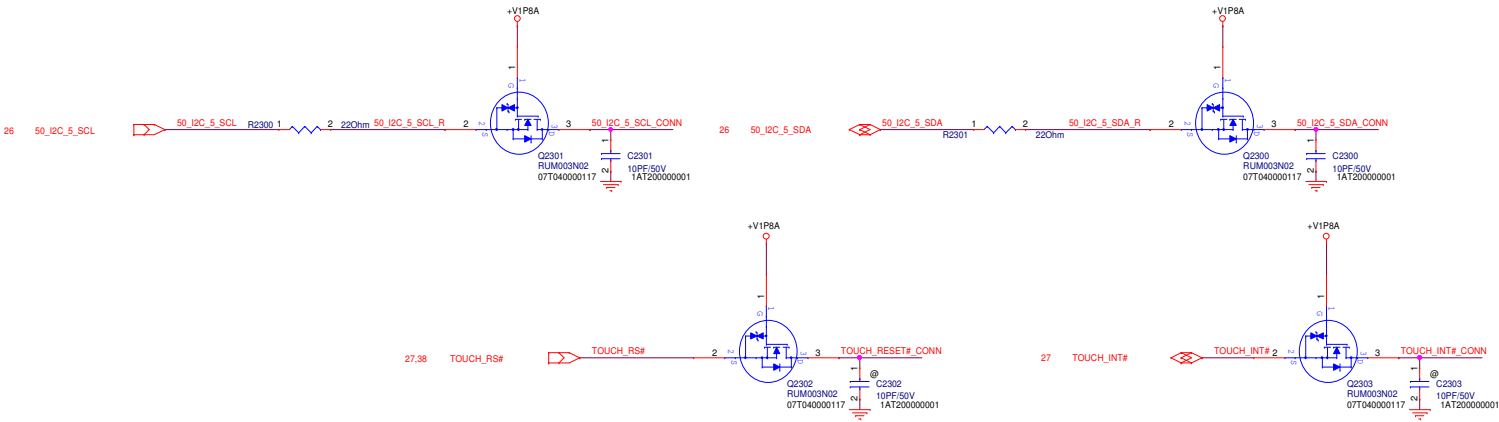
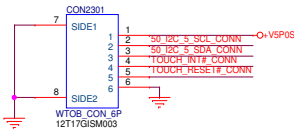
Vendor	MPN	Part Number	I2C_Address
LITEON	13P2SF205		0x6C for write 0x6D for read

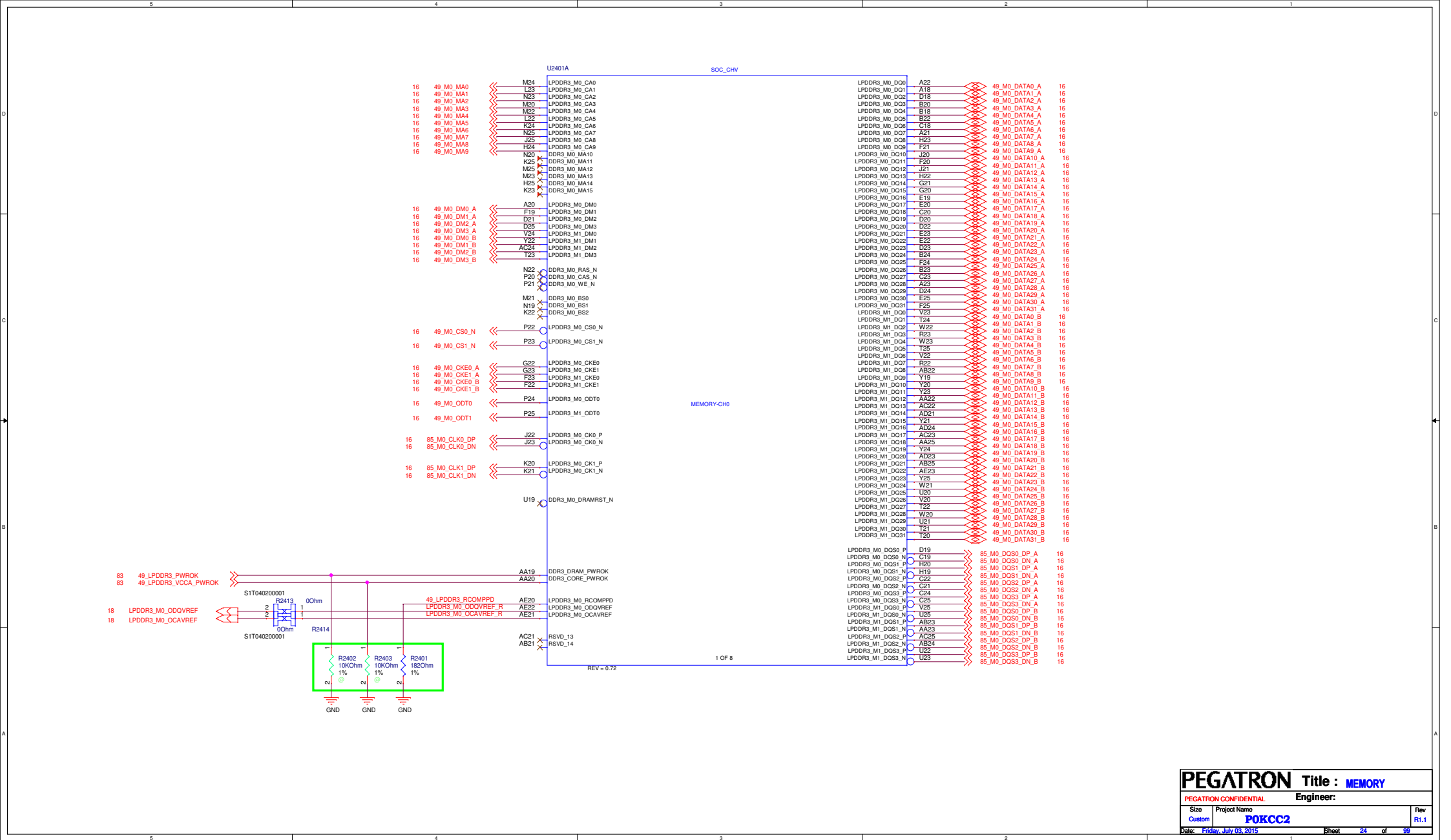
CO-LAY

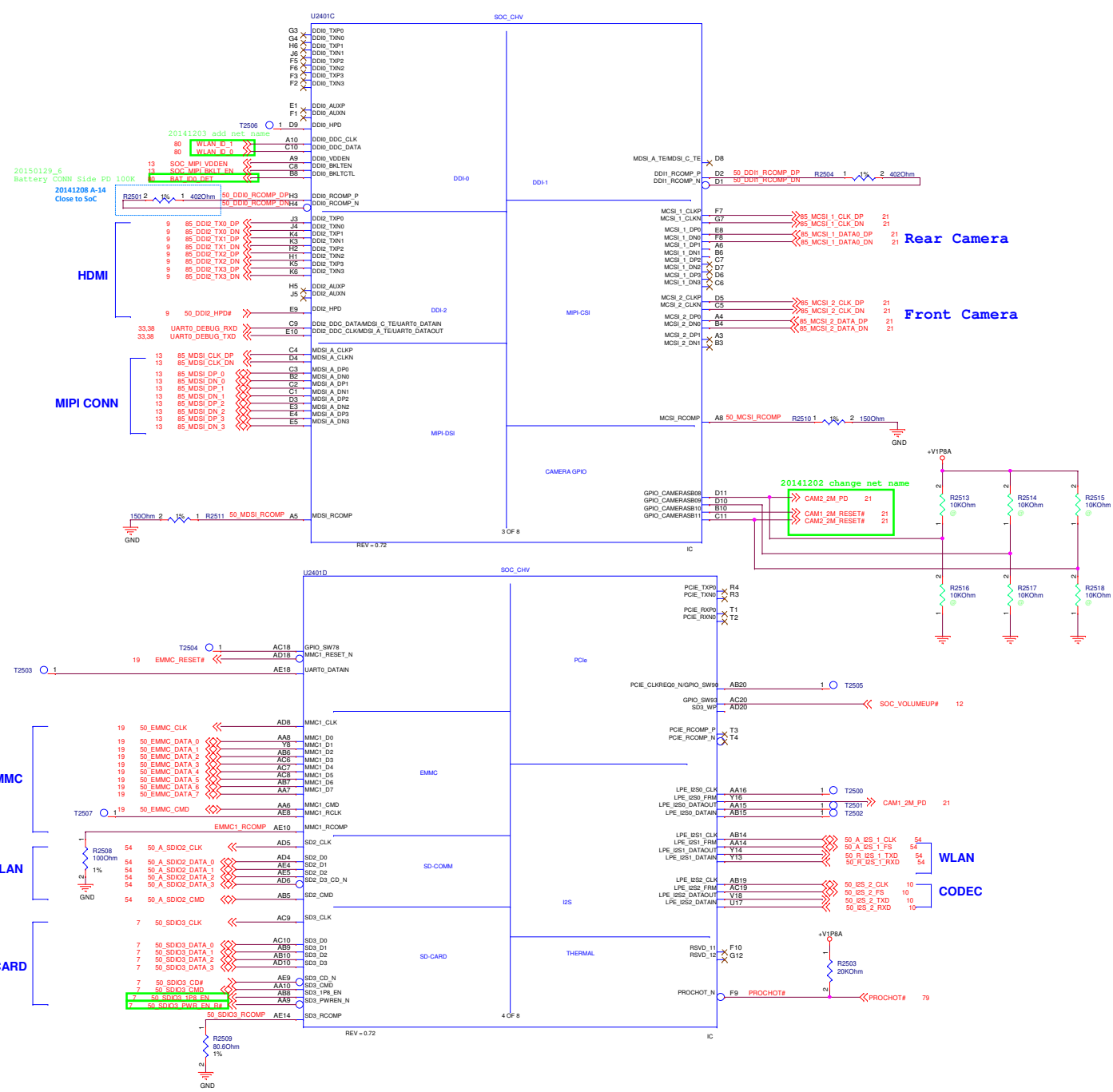


Touch board pin define

- PIN6 GND
- PIN5 RESET
- PIN4 INT
- PIN3 I2C_SDA
- PIN2 I2C_SCL
- PIN1 +V5P0S







D

C

A

B

A

D

C

B

A

USB Docking

51 85_USB2_REVERSE_DP

51 85_USB2_REVERSE_DN

uUSB

15,88 85_USB2_P1_uUSB_DP

15,88 85_USB2_P1_uUSB_DN

INTEL Debug

38 85_USB2_P1_XDP_DP

38 85_USB2_P1_XDP_DN

15,26,80 USB_ID#

SOC_VBUSSNS

00hm 2 1 R2662

+V1P8A R2602 2 1 10KOhm

1130hm 2 1% 1 R2617 50_USB_RCOMP

GND

45,30hm 1 1% 2 R2606 50_USB_HSIC_RCOMP

+V1P8A

R2610 10KOhm

BT_HOST_WAKE#

89 GASG_SOC_INT

+V1P8A

R2612 100KOhm

LID_SW#

REV = 0.72

5 OF 8

IC

NFC_I2C_DATA

NFC_I2C_CLK

AD16 50_I2C_PMIC_SDA

AE16 50_I2C_PMIC_SCL

AC15 T2602 TPC22T

AC16 T2603 TPC22T

50_I2C_PMIC_SDA

50_I2C_PMIC_SCL

+V1P8A

R2613 2.2KOHM

R2614 2.2KOHM

INTEL CHECK LIST 1.5

20150212_1

20150127_5

ISH_I2C_1_SDA_R

R2689 1 2 00hm

ISH_I2C_1_SCL_R

R2691 1 2 00hm

I2C_2_SDA

R2690 1 2 00hm

I2C_2_SCL

R2692 1 2 00hm

R2689,R2690 Pin2 co-layer

R2691,R2692 Pin2 co-layer

FENDI2_CHT_CR

PEGATRON Title :VLV SOC-LPC,I2C,USB,ULPI

Size Project Name

Custom POKCC2

Date: Friday, July 03, 2015

Sheet 26 of 99

U2401E

SOC_CHV

USB 3.0

USB 2.0

USB-HSIC

I2C

IC

USB3_TXP0 P1

USB3_TXN0 P2

USB3_RXP0 N5

USB3_RXN0 P5

USB3_RCOMP_P P3

USB3_RCOMP_N P4

ISH_I2C1_DATA/ISH_SPI_MOSI/I2S5_DATAOUT

ISH_I2C1_CLK/ISH_SPI_CLK/I2S5_DATAIN

ISH_GPIO0/I2S3_CLK

ISH_GPIO1/I2S3_FS

ISH_GPIO2/I2S3_DATAOUT

ISH_GPIO3/I2S3_DATAIN

ISH_GPIO4/I2S4_CLK

ISH_GPIO7/I2S4_DATAIN

ISH_GPIO9/ISH_SPI_MISO/I2S5_FS

I2C0_DATA Y18

I2C0_CLK Y17

I2C1_DATA W15

I2C1_CLK W16

I2C2_DATA AC17

I2C2_CLK AA17

I2C4_DATA/DDI2_DDC_DATA AB18

I2C4_CLK/DDI2_DDC_CLK AB17

I2C5_DATA AE17

I2C5_CLK AB16

I2C6_DATA/SD3_WP AD16

I2C6_CLK/NMI_N AE16

NFC_I2C_DATA AC15

NFC_I2C_CLK AC16

50_I2C_PMIC_SDA

50_I2C_PMIC_SCL

50_I2C_PMIC_SDA

50_I2C_PMIC_SCL

+V1P8A

R2613 2.2KOHM

R2614 2.2KOHM

INTEL CHECK LIST 1.5

20150212_1

20150127_5

ISH_I2C_1_SDA_R

R2689 1 2 00hm

ISH_I2C_1_SCL_R

R2691 1 2 00hm

I2C_2_SDA

R2690 1 2 00hm

I2C_2_SCL

R2692 1 2 00hm

R2689,R2690 Pin2 co-layer

R2691,R2692 Pin2 co-layer

FENDI2_CHT_CR

PEGATRON Title :VLV SOC-LPC,I2C,USB,ULPI

Size Project Name

Custom POKCC2

Date: Friday, July 03, 2015

Sheet 26 of 99

USB Docking

G sensor, ALS

Audio Codec,Rear Camera, XDP Debug Port

Fuel Gauge, Front Camera Touch Screen

PMIC

20150212_1
20150127_5

FENDI2_CHT_CR

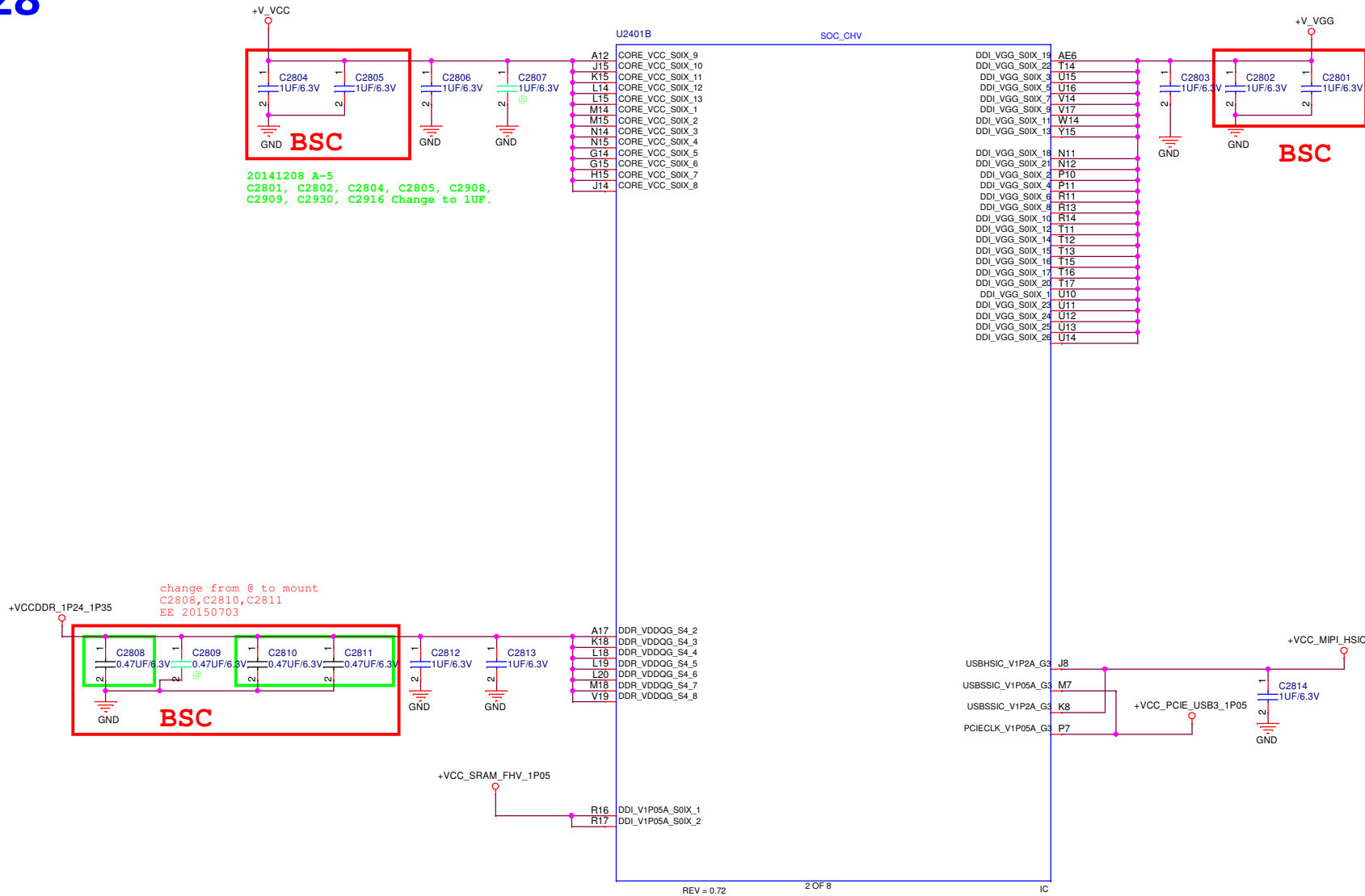
PEGATRON Title :VLV SOC-LPC,I2C,USB,ULPI

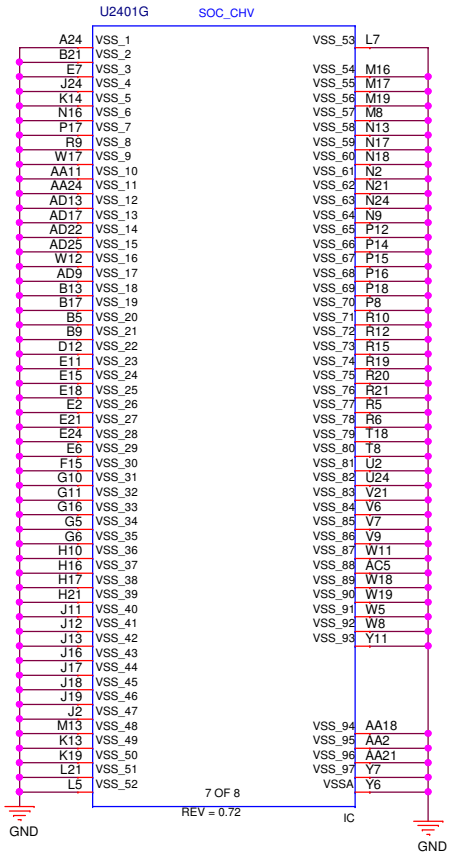
Size Project Name

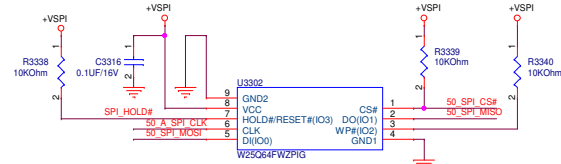
Custom POKCC2

Date: Friday, July 03, 2015

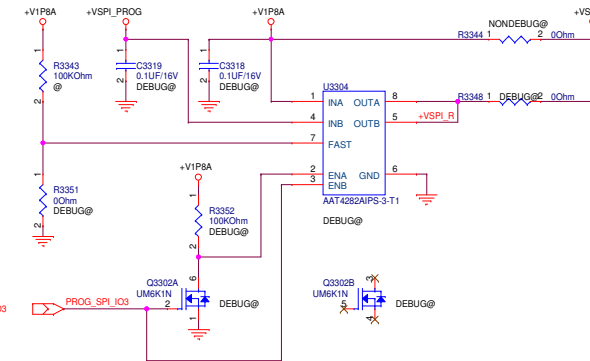
Sheet 26 of 99





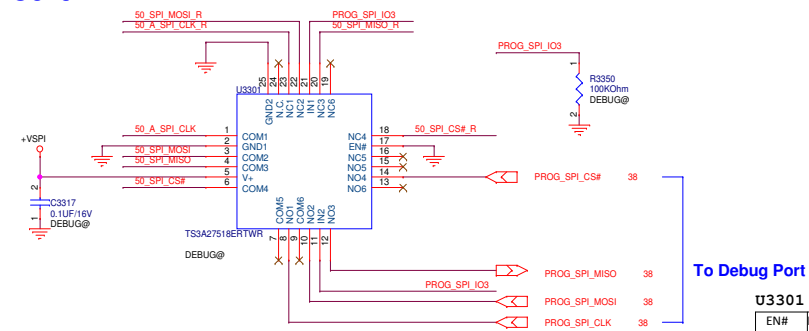
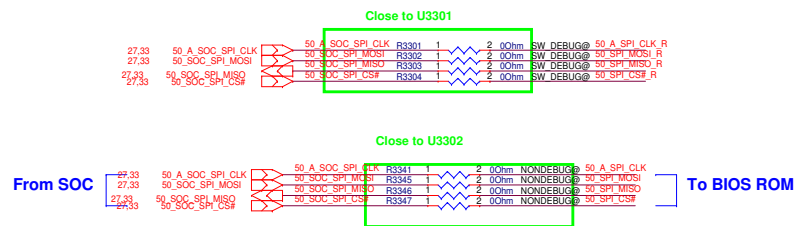


BIOS ROM Power



From Debug Port

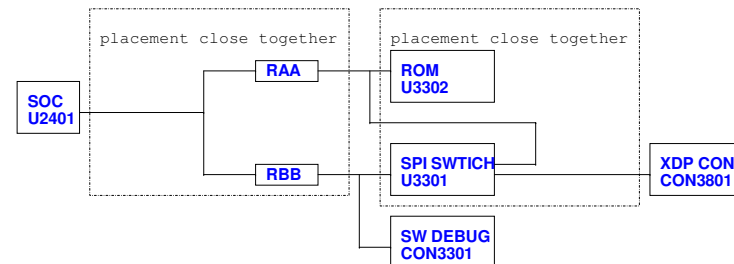
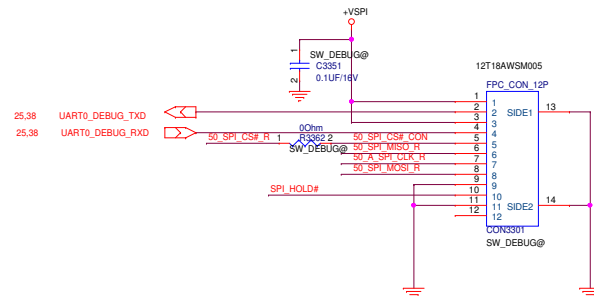
SPI Debug Circuit



U3301 BW=240MHz

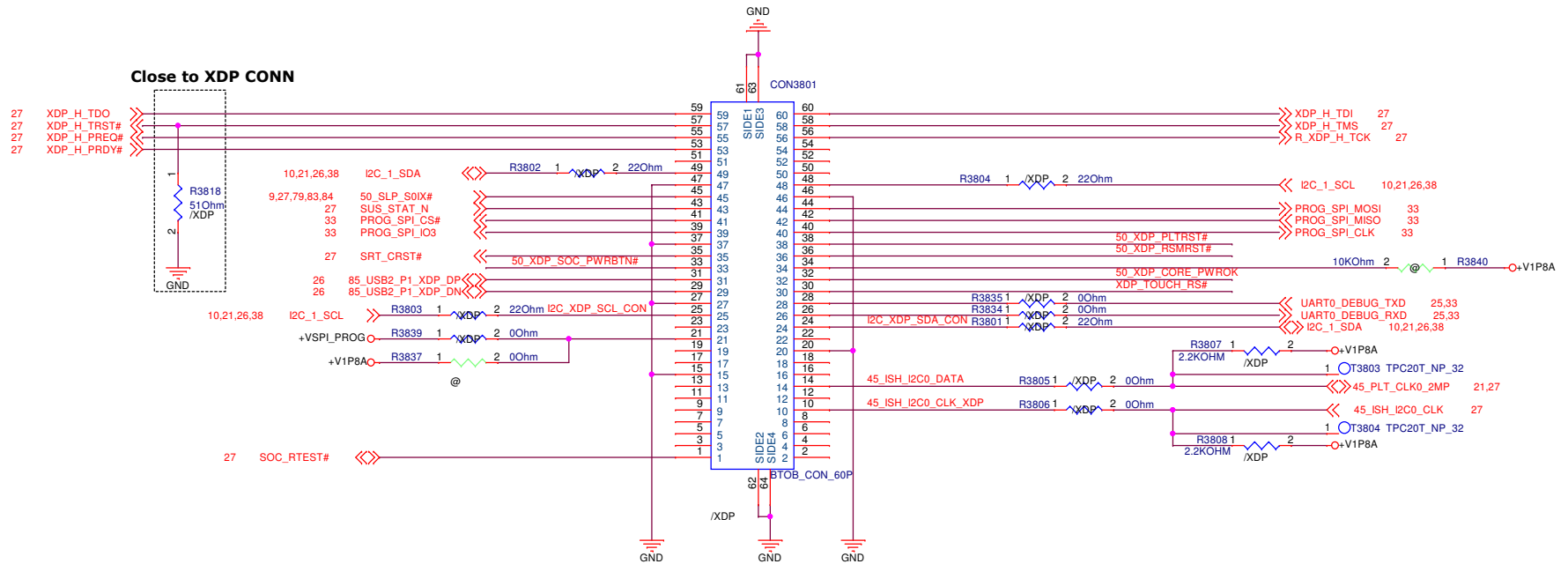
EN#	IN1/IN2	FUNCTION
L	L	COM to NC
L	H	COM to NO
H	X	Disconnect

CONNECTION OF SPI DEBUG CIRCUIT



For Cherry Trail Debug board

Pegatron Cherry Trail Debug Cable is different from Intel
(TBC 2013/11/18)



Mother Board side:

1216-0110000

BtoB 60P 0.5mm F 3.05H ST SMT

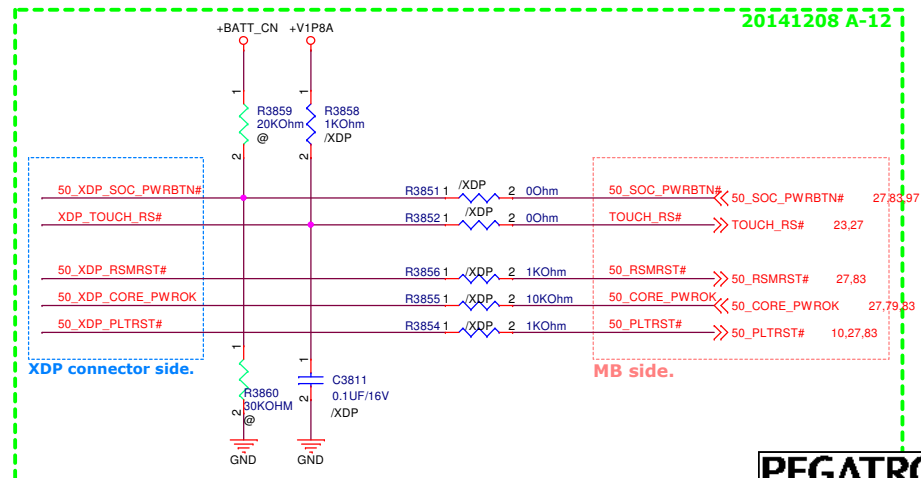
PANASONIC/AXK5S60047YG (SOCKET)

Debug Cable side:

1216-0112000

BtoB 60P 0.5mm M 3.3H SMT

PANASONIC/AXK6S60447YG (HEADER)



PEGATRON Title : Intel Debug Circuit

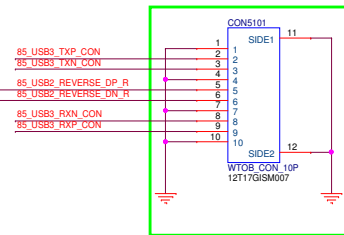
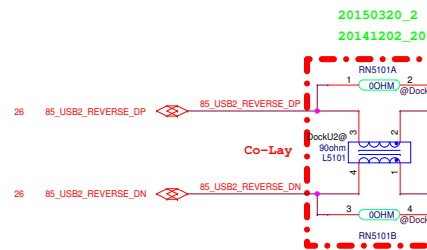
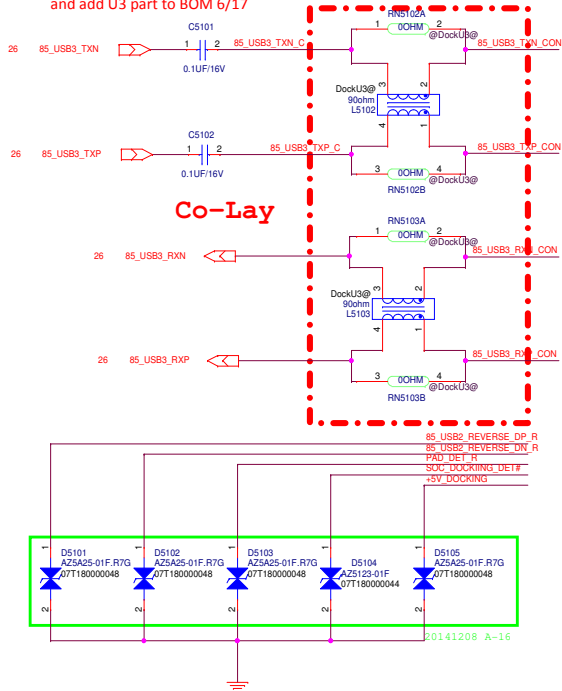
PEGATRON CONFIDENTIAL Engineer:

Size A3 Project Name POKCC2 Rev R1.1

Date: Friday, July 03, 2015 Sheet 38 of 99

Mode	PAD Side		Dock Side
	DET0	DET1	DET2
Tablet only	1	0	no function
Notebook	0	0	0
Tablet w/Dock	0	1	1

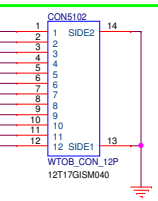
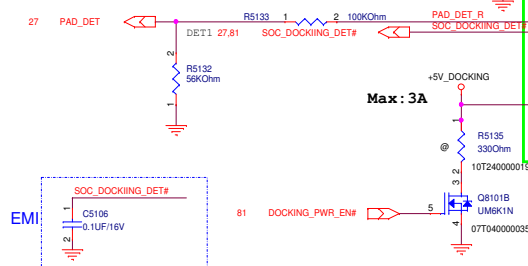
Reserve USB3.0 function
and add U3 part to BOM 6/17



20141202_1

MB to POGO Pin Definition

1. GND
2. TX+
3. TX-
4. GND
5. USB2_REVERSE_DP_R
6. USB2_REVERSE_DN_R
7. GND
8. RX-
9. RX+
10. GND



1. GND
2. GND
3. GND
4. PAD_DET_R
5. SOC_DOCKING_DET#
6. +VSYS_DOCKING
7. +VSYS_DOCKING
8. +VSYS_DOCKING
9. +VSYS_DOCKING
10. +VSYS_DOCKING
11. +VSYS_DOCKING
12. +VSYS_DOCKING

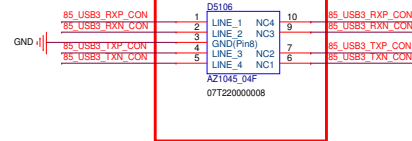
1217-00N5000 20141212_2

20150327_3
先預留放1%,之後會再換5%

20150320_1

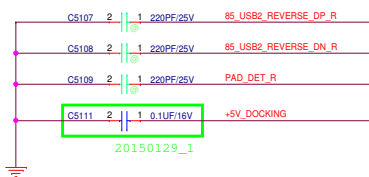
PR: 2014/11/24

D0601 option -> /USB3



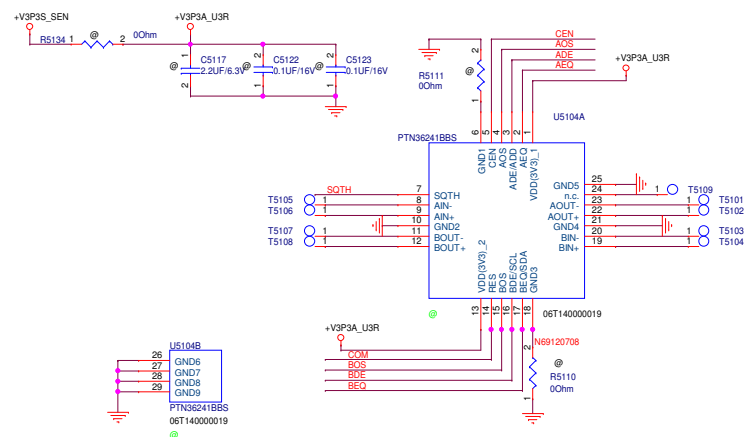
Reserve USB3.0 function
and add U3 part to BOM 6/17

20150327_2

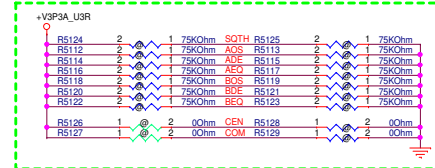


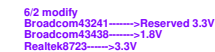
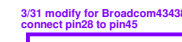
20150129_1

USB3.0 Redriver 20150312_4

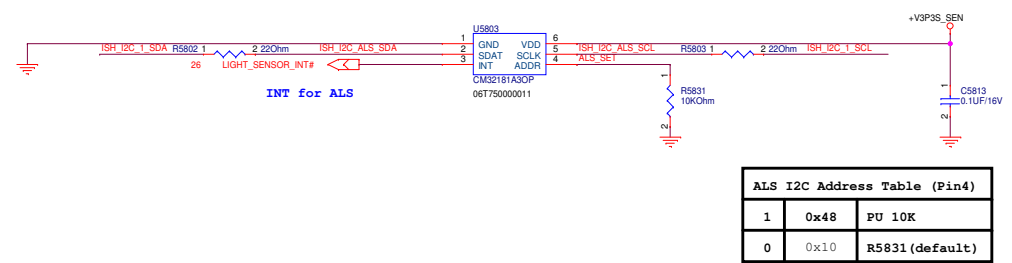


Configuration and control signals

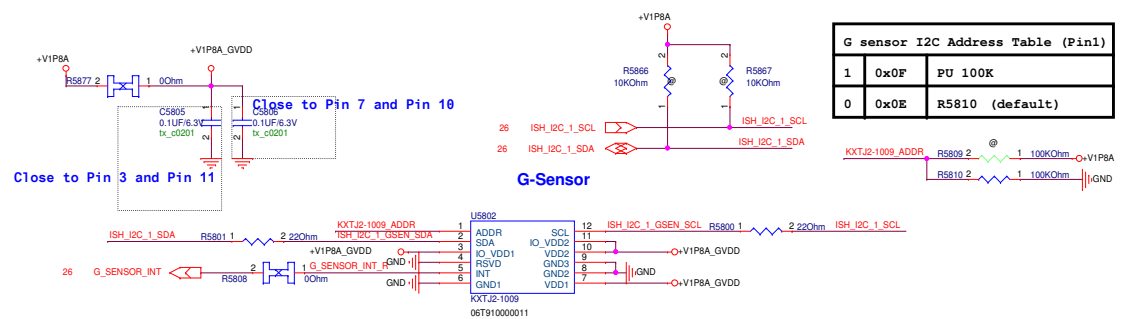




Light Sensor



G-Sensor



Test Point

POWER

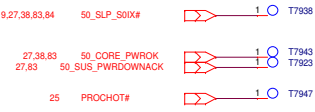
測點全部放TOP面



Memory POWER

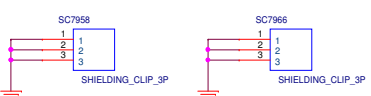
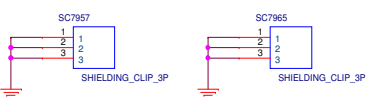
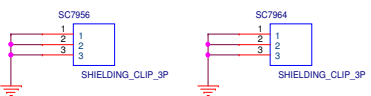
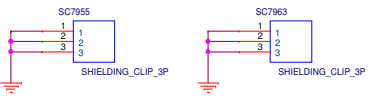
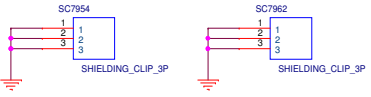
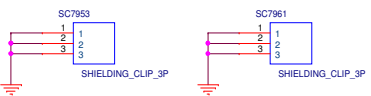
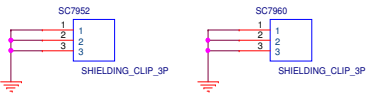
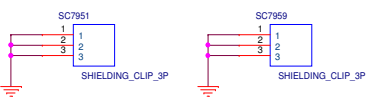


PWR STATE

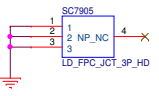


SHIELDING FRAME

CPU_AND_POWER_SHIELDING CHIP



SUPPORT MATEL

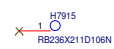
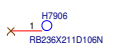


ME Screw

Screw A

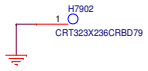
Screw F

Screw F1



Screw B

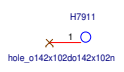
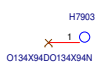
Screw G



Screw C

Screw C1

Screw H



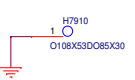
Screw D



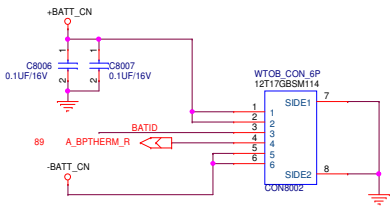
Screw E

Screw J

Screw J1

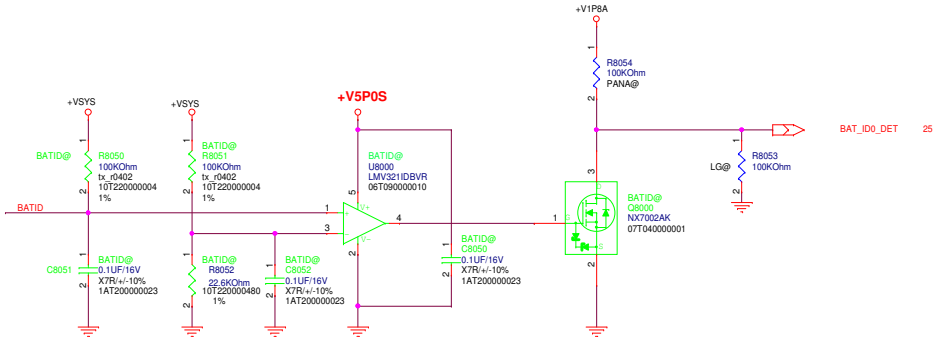
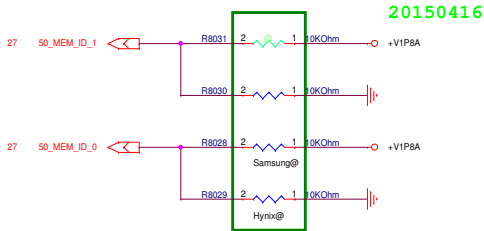


PIN NO.	PIN NAME	
1	BAT+	16.9K-PANASONIC
2	BAT+	
3	ID	
4	NTC	
5	GND	
6	GND	



Memory ID

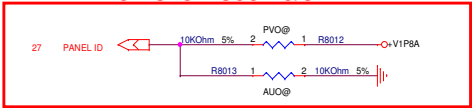
Function	Memory ID	
GPIO(Pin#)	GPIO [SW17]	GPIO [SW22]
Net name	MEM_ID_1	MEM_ID_0
Hynix (H9CCNNN8JTALAR-NTD)	0	0
Samsung (K4E8E304EE-EGCE)	0	1



BATTERY	BATT_ID	ID PULL DOWN
PANASONIC	1	17K
LG	0	28K

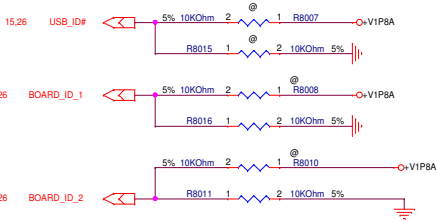
PANEL ID
BOM control

H/W control PANEL ID
remove D8001 6/5

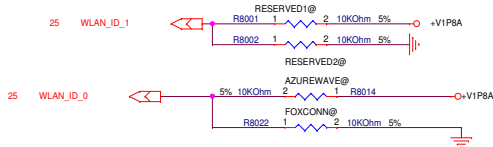


Function	PANEL
GPIO(Pin#)	UART2_RTS_N
Net name	PANEL_ID
AUO	0
PVO	1

RESERVED-NO USE



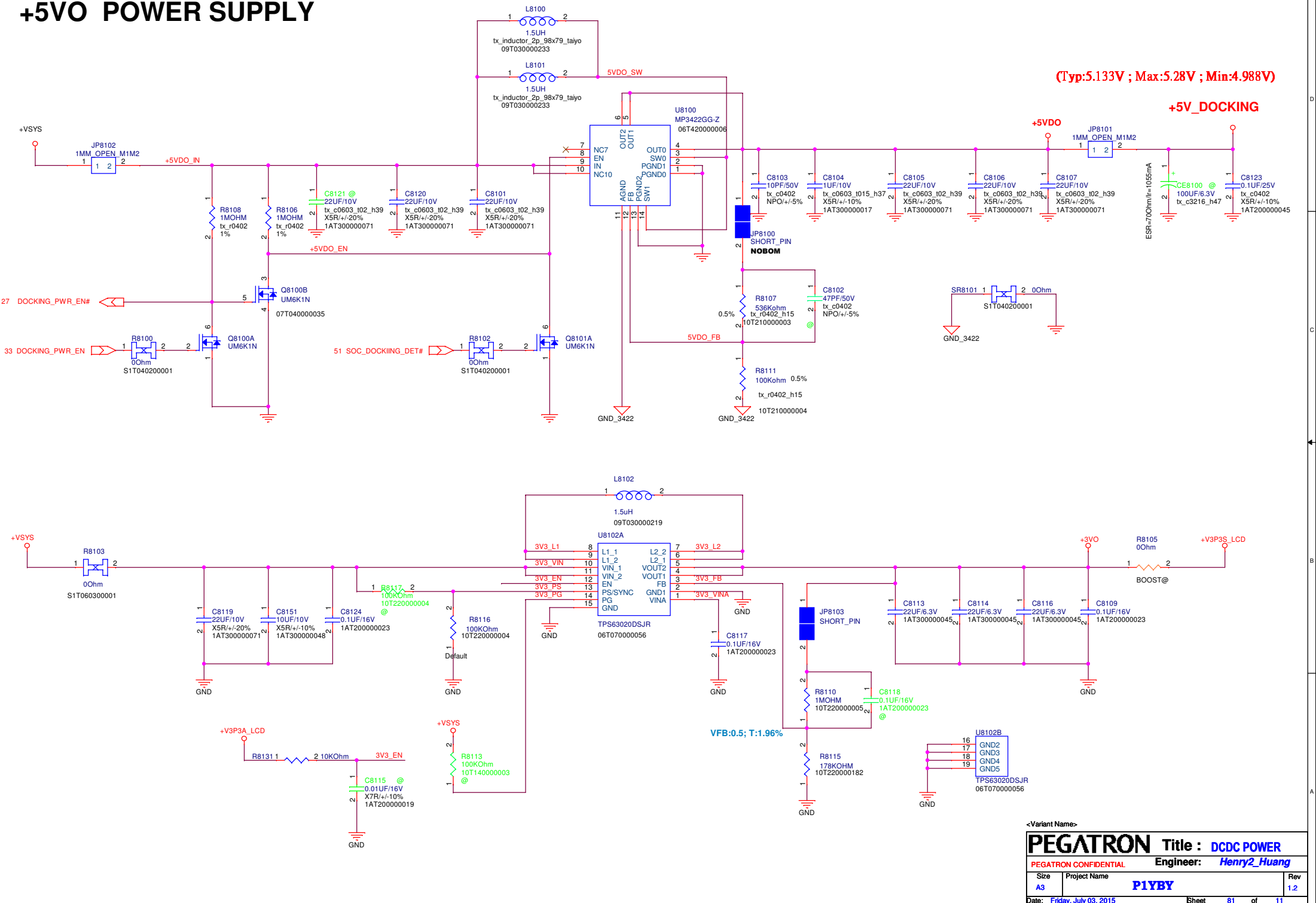
WLAN Module

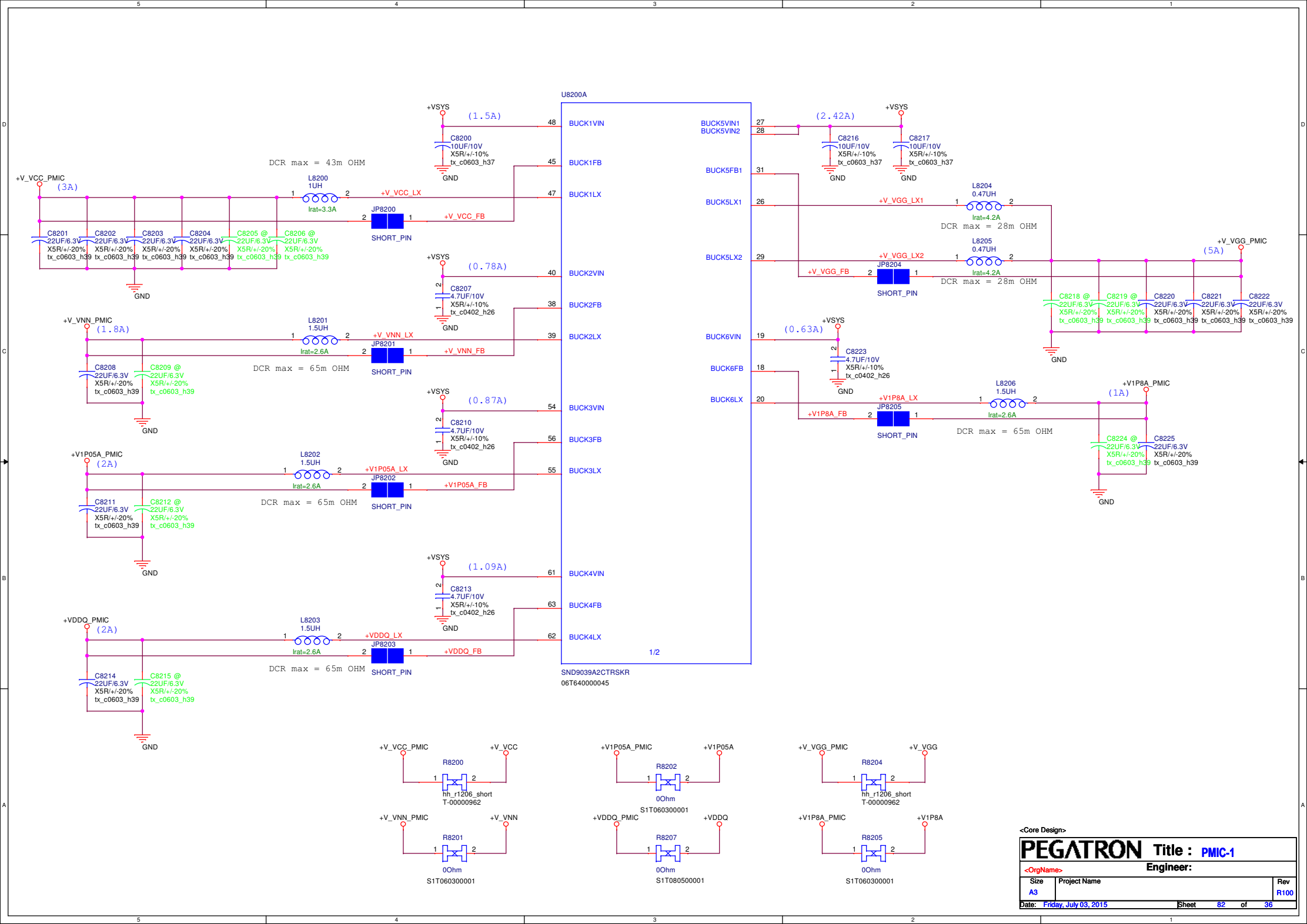


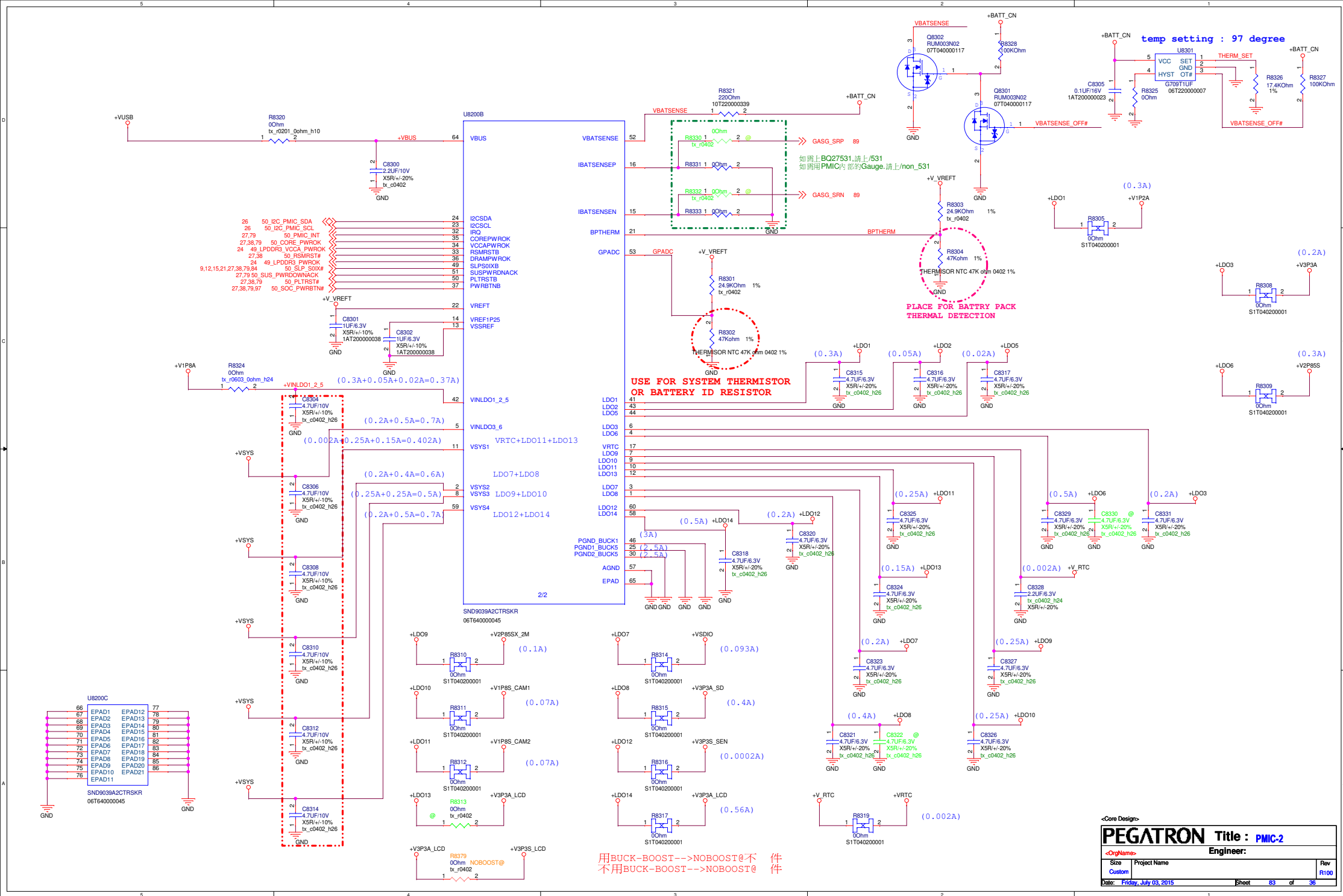
WLAN Board ID

	WLAN_ID_0	WLAN_ID_1
GPIO(Pin#)	GPIO_S0_NC[25]	GPIO_S5[29]
Broadcom 43241	0	0
Realtek	1	0
Broadcom 43438	0	1
RESERVED	1	1

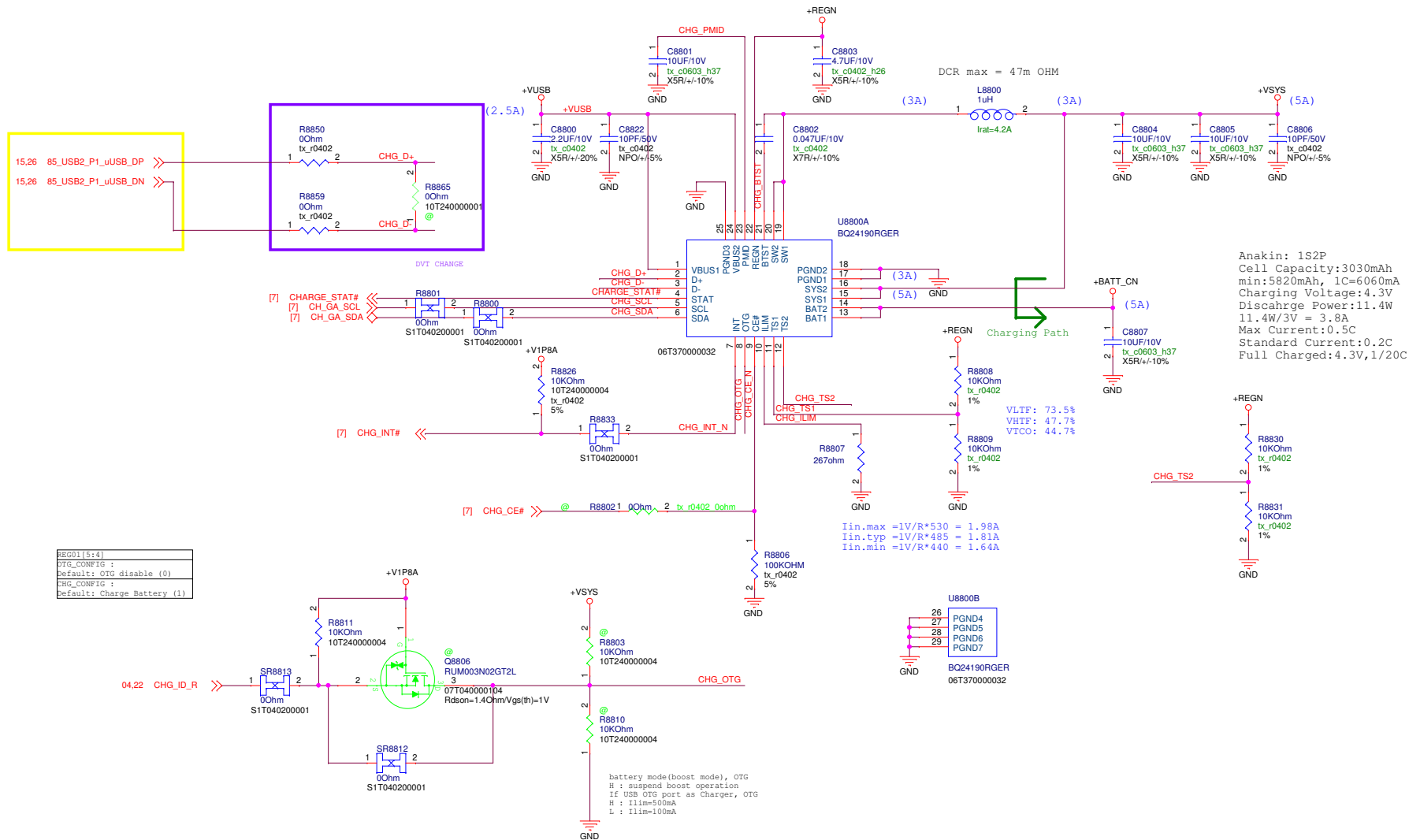
+5VO POWER SUPPLY







Charging IC



	PSEL	OTG/USB	Input current limit(Default)
USB Host	High	Low	100mA
USB Host	High	High	500mA
Adaptor	Low		3000mA

Actual input current limit
is the lower of I2C and ILIM

<Core Design>

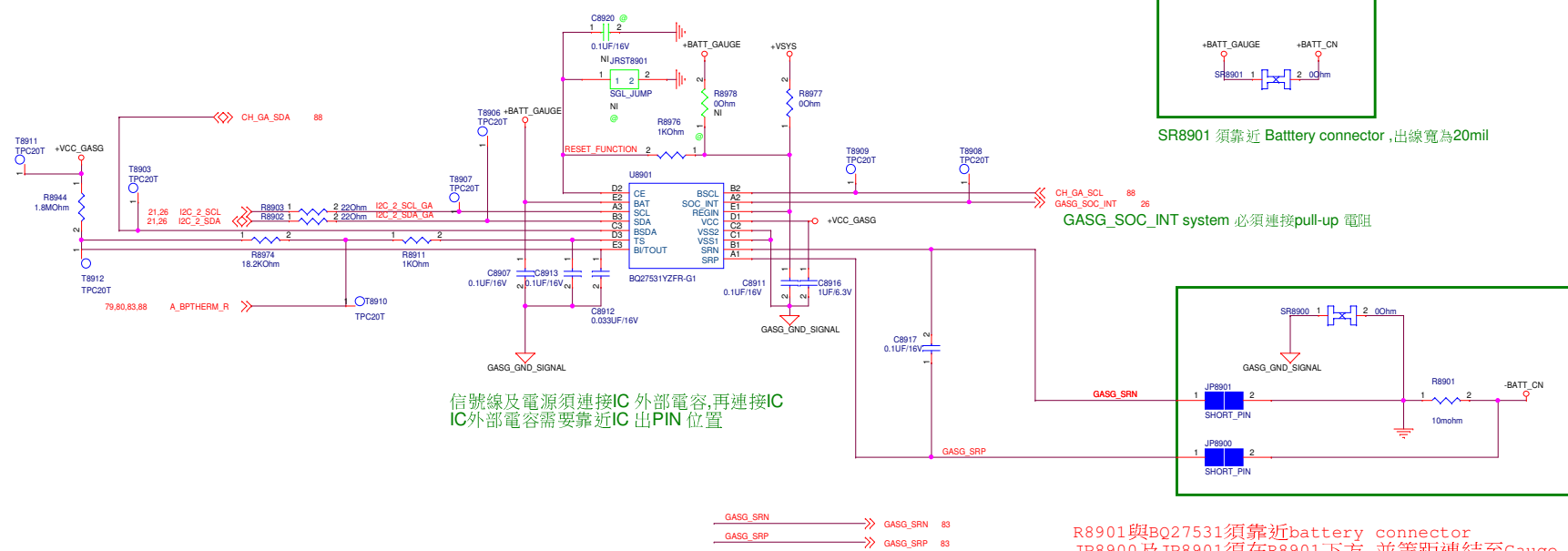
PEGATRON Title : **PMIC-3**

<OrgName>
Engineer:

Size	Project Name	Rev
Custom		R100

Date: Friday, July 03, 2015
Sheet 88 of 36

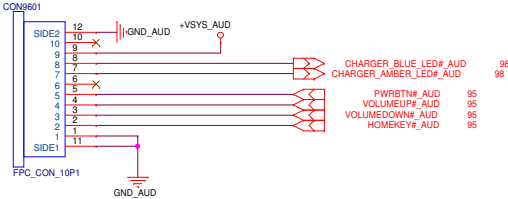
89 Gas Gauge



FFC CONN

FFC CONN Pin Definition

- 10.
- 9.+VSYS_AUD
- 8.CHARGER_BLUE_LED#_AUD
- 7.CHARGER_AMBER_LED#_AUD
- 6.
- 5.PWRBTN#_AUD
- 4.VOLUMEUP#_AUD
- 3.VOLUMEDOWN#_AUD
- 2.HOMEKEY#_AUD
- 1.GND_AUD



Tooling hole

Screw A



Screw B



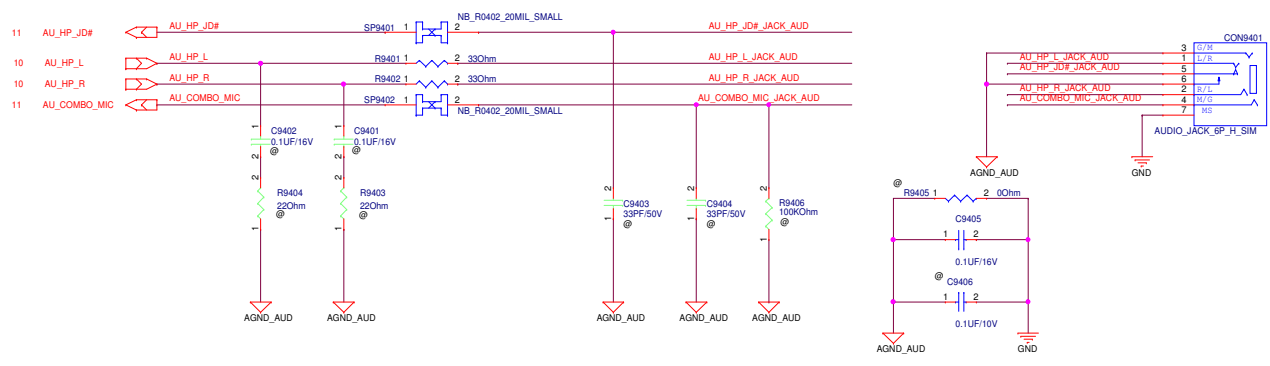
Screw C



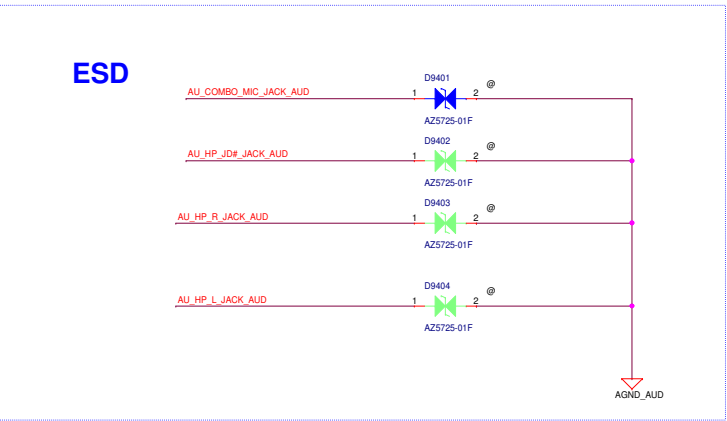
Screw C1



Audio Combo Jack

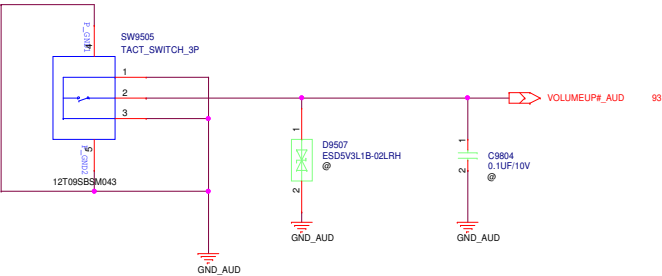


ESD

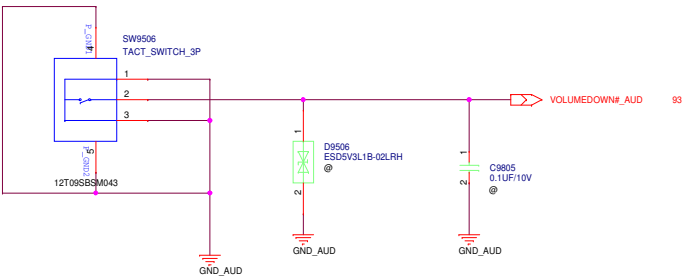


Button

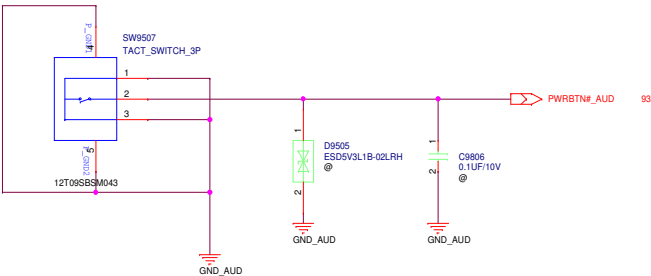
Volume Up



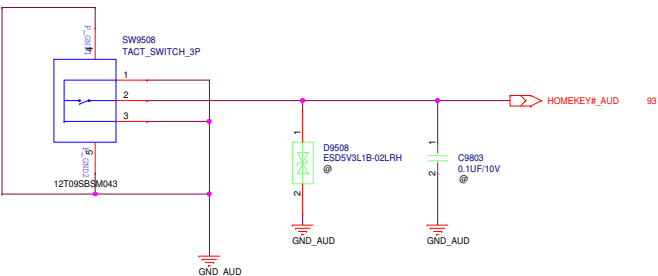
Volume Down

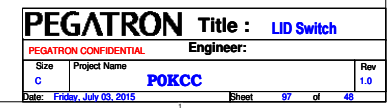


Power Key



HOME KEY





LED

