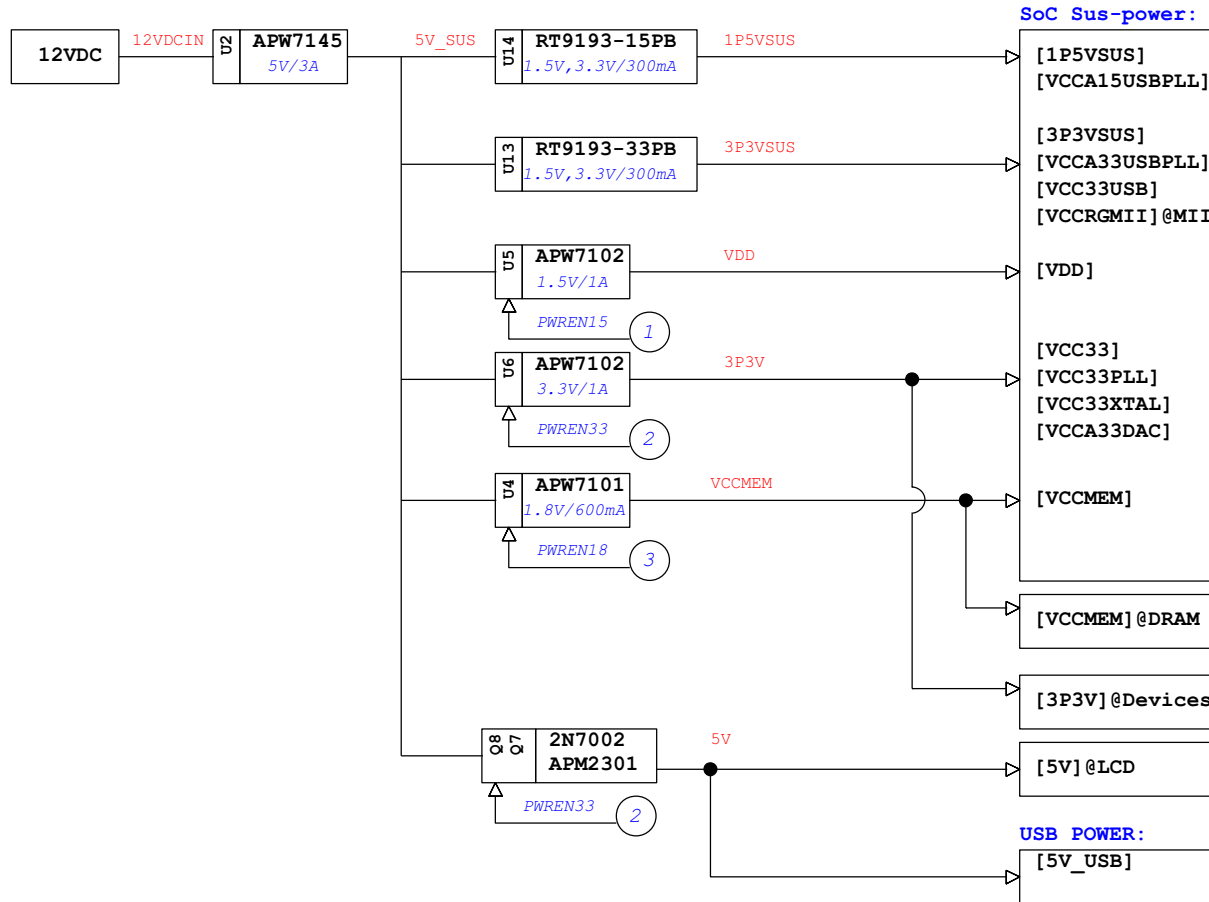


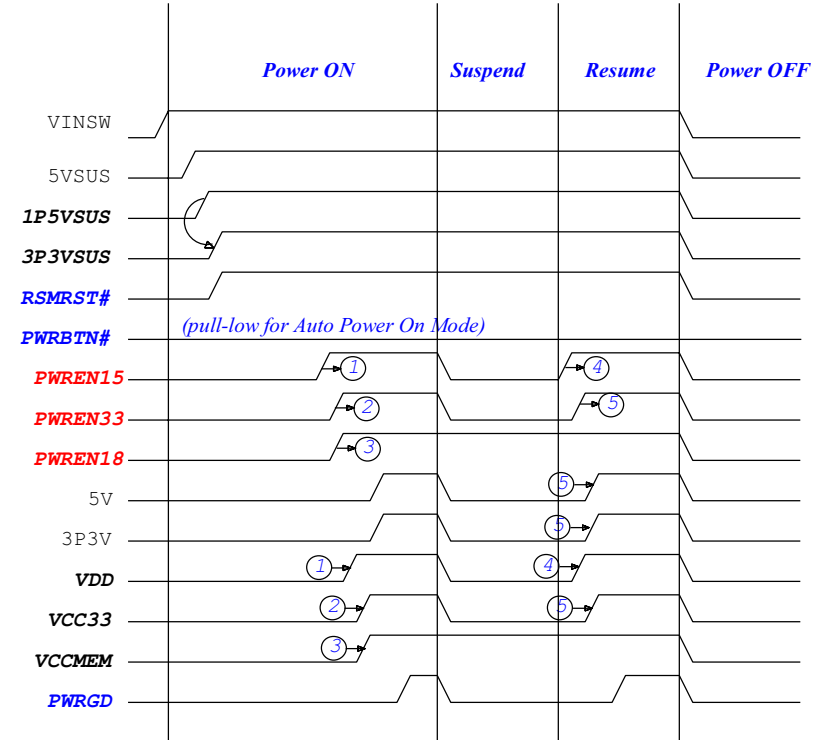
| | | |
|------------------|------------------------------------|------------------|
| Title | | |
| LED BOARD FOR SY | | |
| Size A | Document Number BV07-SY-8505LED | Rev <RevCode> |
| Date: | Tuesday, March 09, 2010 | Sheet 1 of 1 |

Power Tree & Power Sequence

POWER TREE:



POWER SEQUENCE:

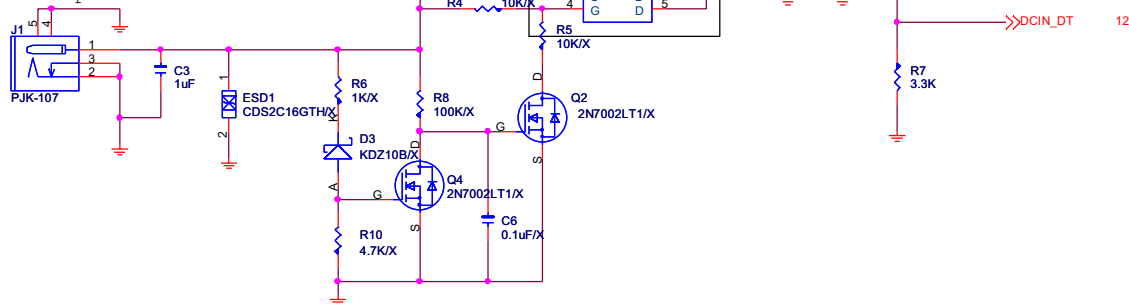


Benign Technologies Co.,Ltd.

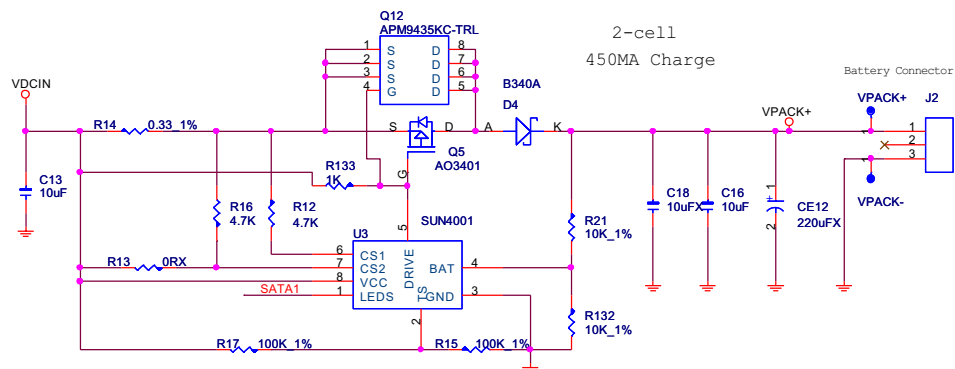
| | | | |
|----------------|------------------------|-------|---------|
| Title | | | |
| Power Sequence | | | |
| Size | Document Number | | Rev |
| Custom | BV07-SY-8505 | | V1.0 |
| Date: | Tuesday, July 27, 2010 | Sheet | 2 of 12 |

1 9V Adapter Power In

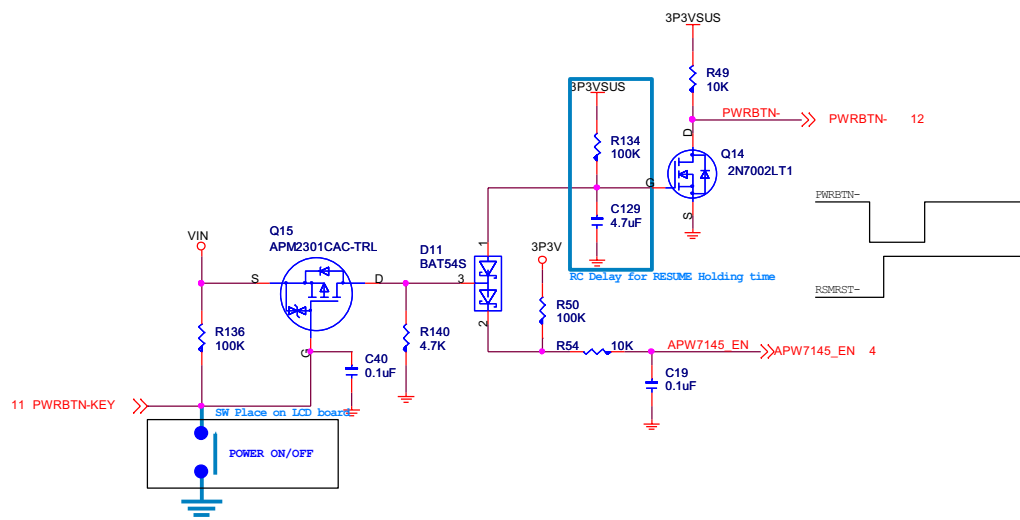
9V Input 2A



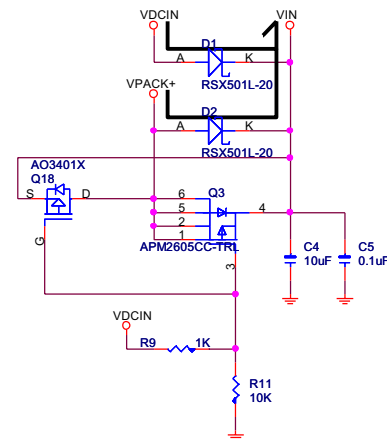
2-cell
450MA Charge



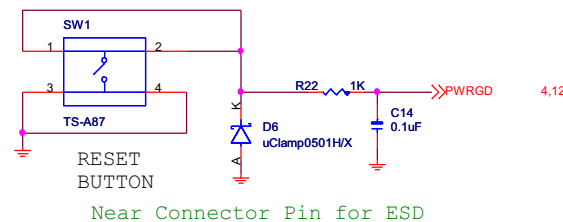
Modify Power ON/OFF circuit



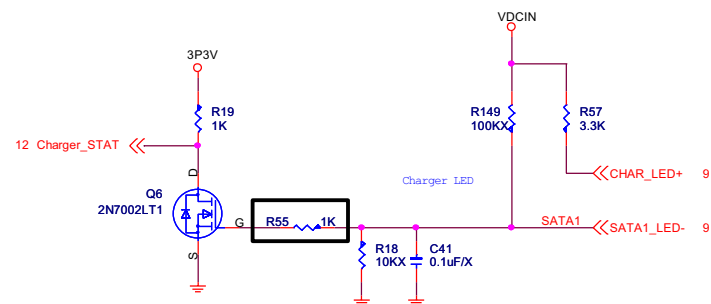
1.5A Rating



Buttons



Near Connector Pin for ESD



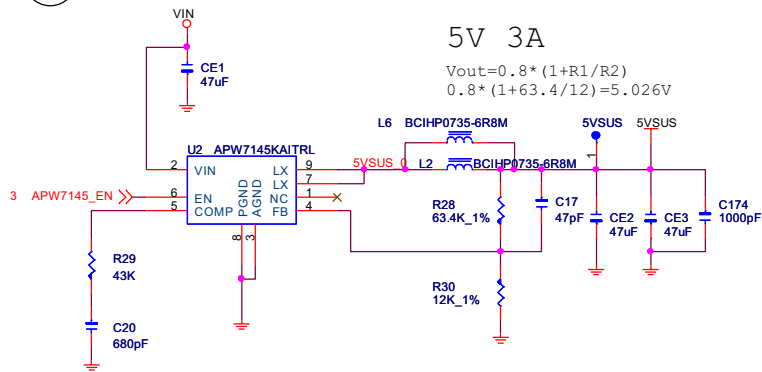
Benign Technologies Co.,Ltd.

| | |
|--------|------------------------|
| Title | Power |
| Size | Document Number |
| Custom | BV07-SY-8505 |
| Date: | Tuesday, July 27, 2010 |
| Sheet | 3 of 12 |
| Rev | V1.0 |

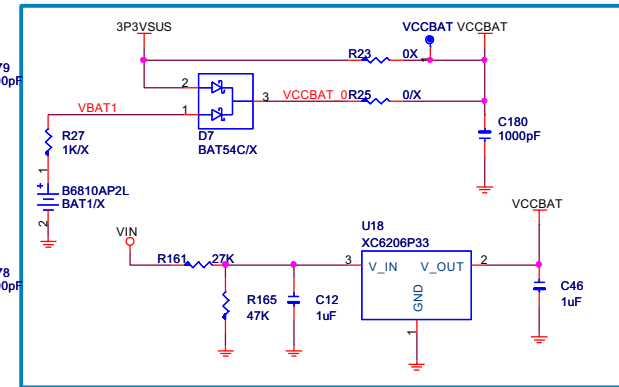
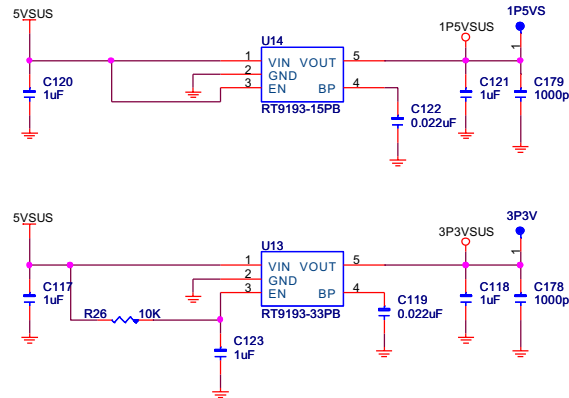
Voltage Regulators

RTC POWER:

2 12V -> 5VSUS (SoC Power, USB VBUS Power)



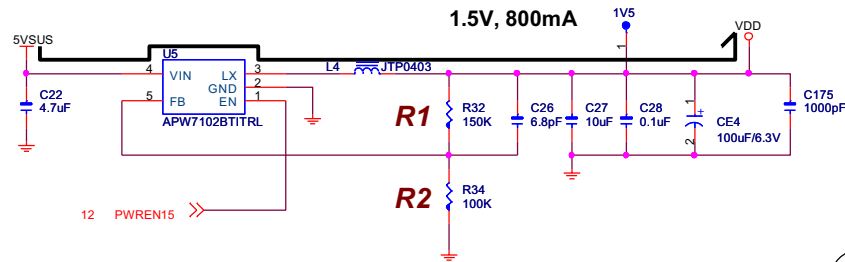
3/4 5VSUS -> 1P5VSUS/3P3VSUS (300mA each)



5 5VSUS -> VDD

$$V_{out} = 0.6 * (1 + R1/R2)$$

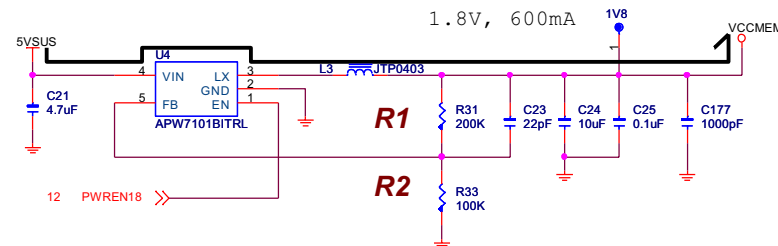
$$0.6 * (1 + 300/200) = 1.5V @ 1A$$



7 5VSUS -> VCCMEM (SoC+DDR2 Chip Power)

$$V_{out} = 0.6 * (1 + R1/R2)$$

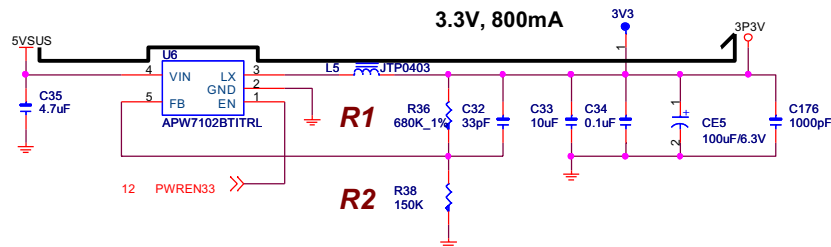
$$0.6 * (1 + 400/200) = 1.8V @ 1A$$



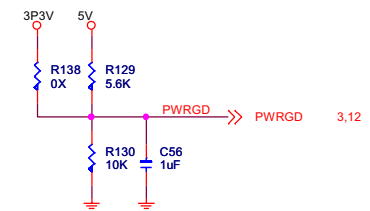
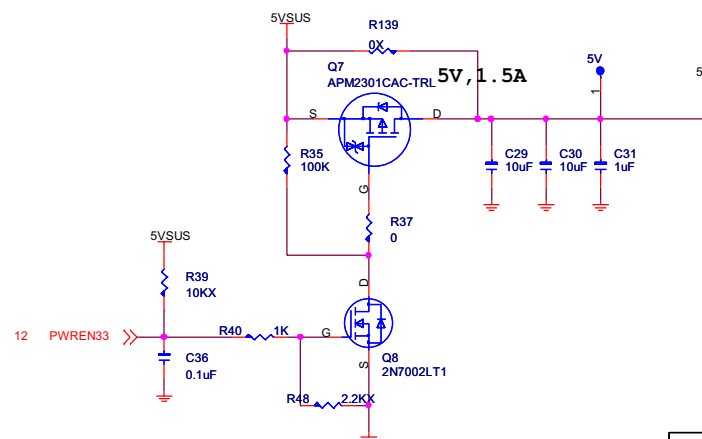
6 5VSUS -> 3P3V

$$V_{out} = 0.6 * (1 + R1/R2)$$

$$0.6 * (1 + 180K/39K) = 3.37V @ 1A$$



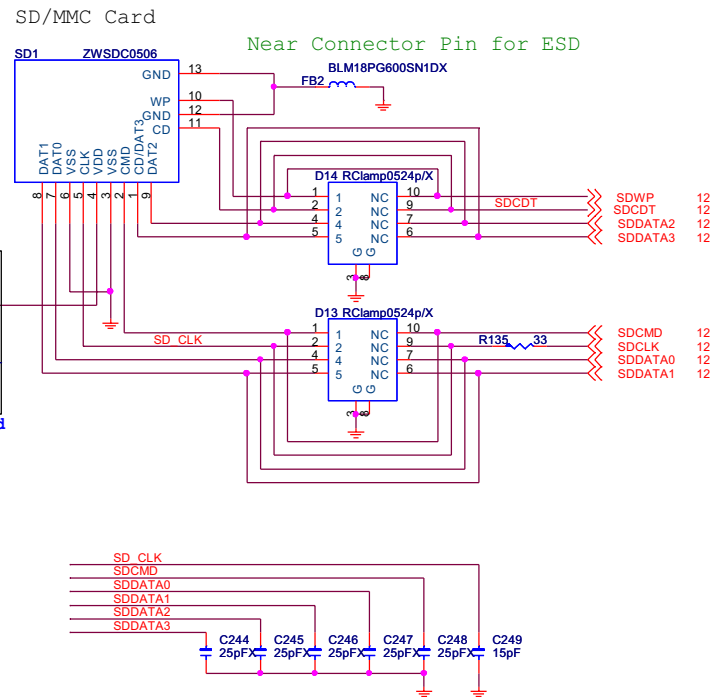
8 5VSUS -> 5V (Device Power) (LCD,I2S,UART)



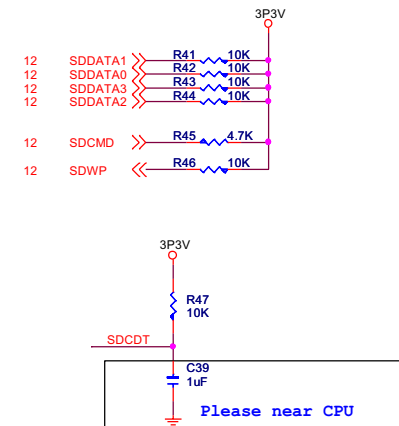
Power Enable:

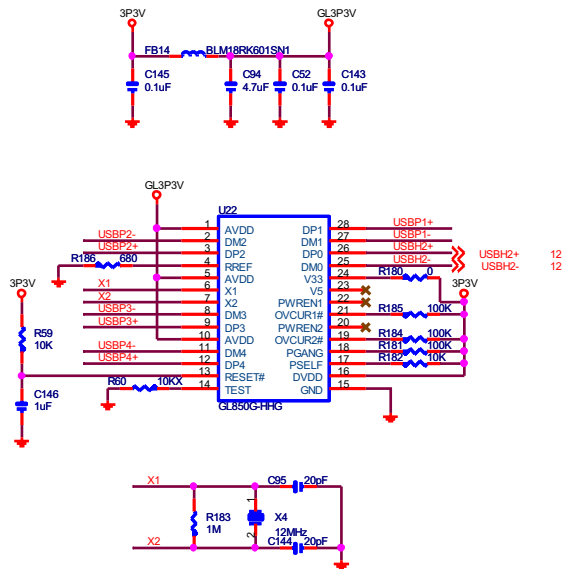
PWREN15 12
 PWREN18 12
 PWREN33 12

SD Socket (SD/MMC only)



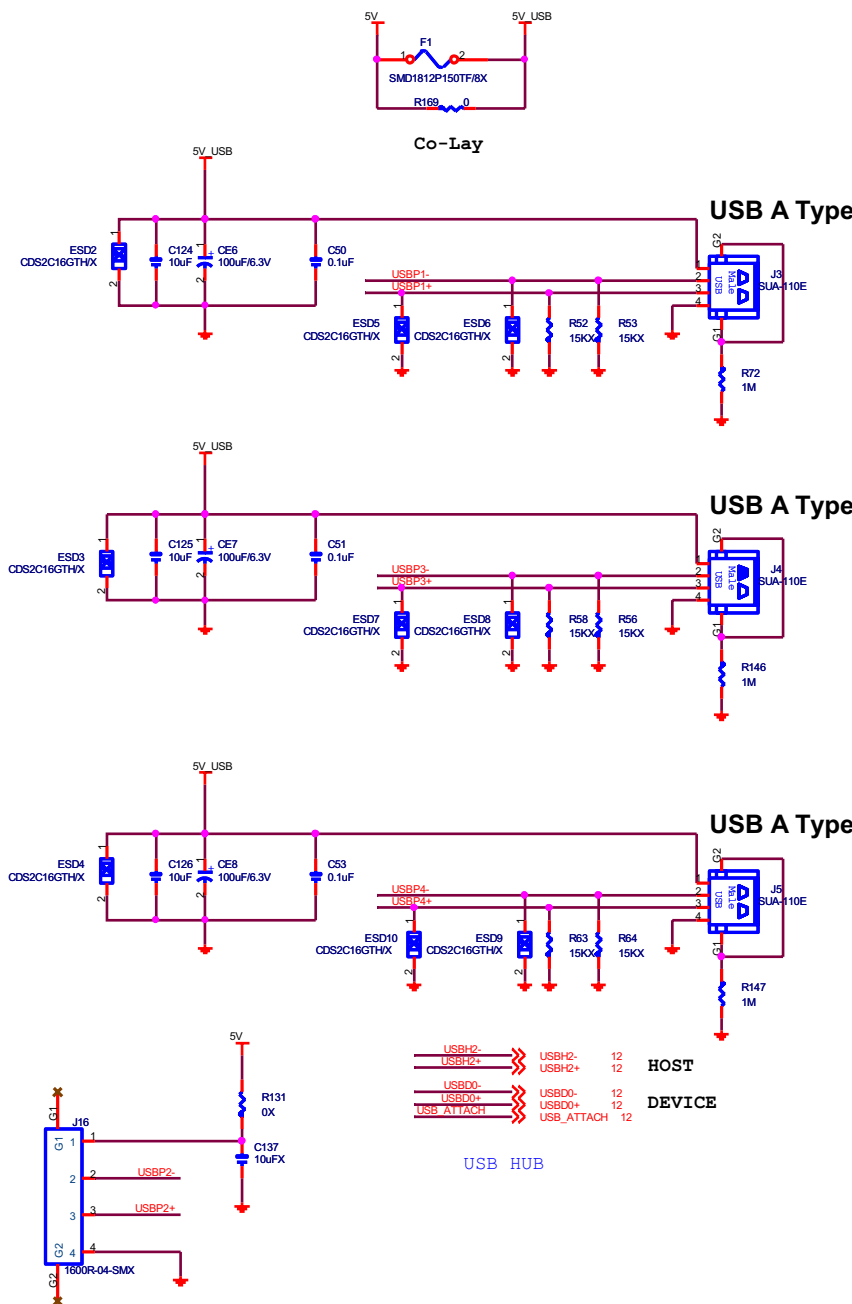
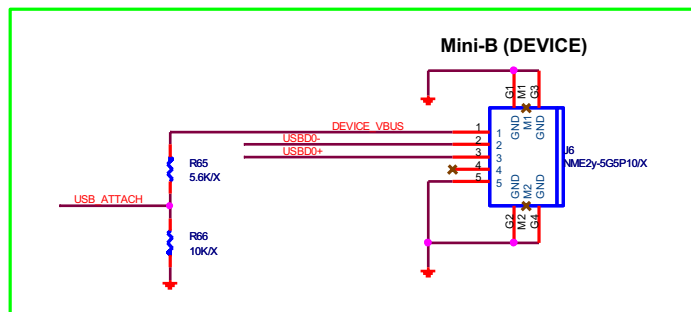
PU Resistors:



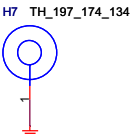
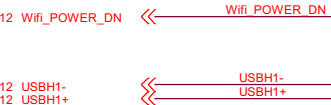
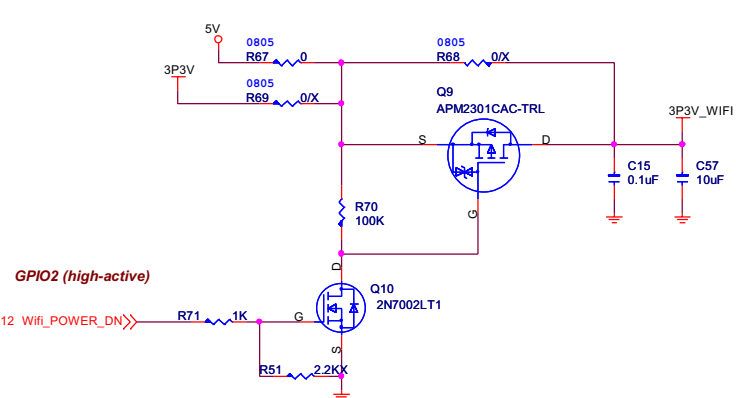


GL850G-SSOP28 chip version and schematic option

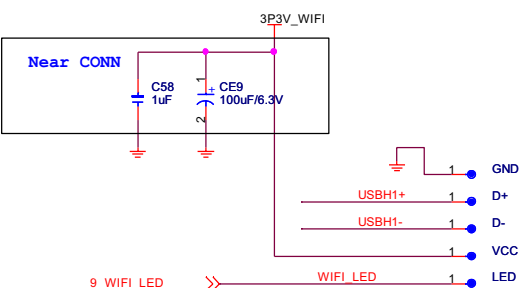
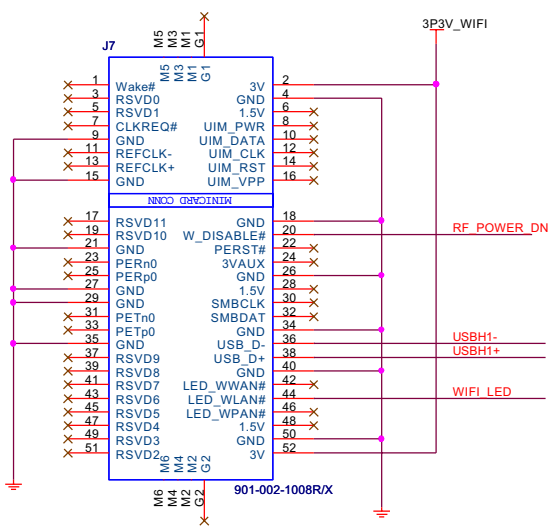
| | Down Port LED | Power Switch | 24C02 |
|-----------|---------------|-----------------|-------|
| GL850G-21 | | V | |
| GL850G-22 | V | | V |
| GL850G-11 | | V 2Port only | |
| GL850G-13 | | V 2Port only | V |



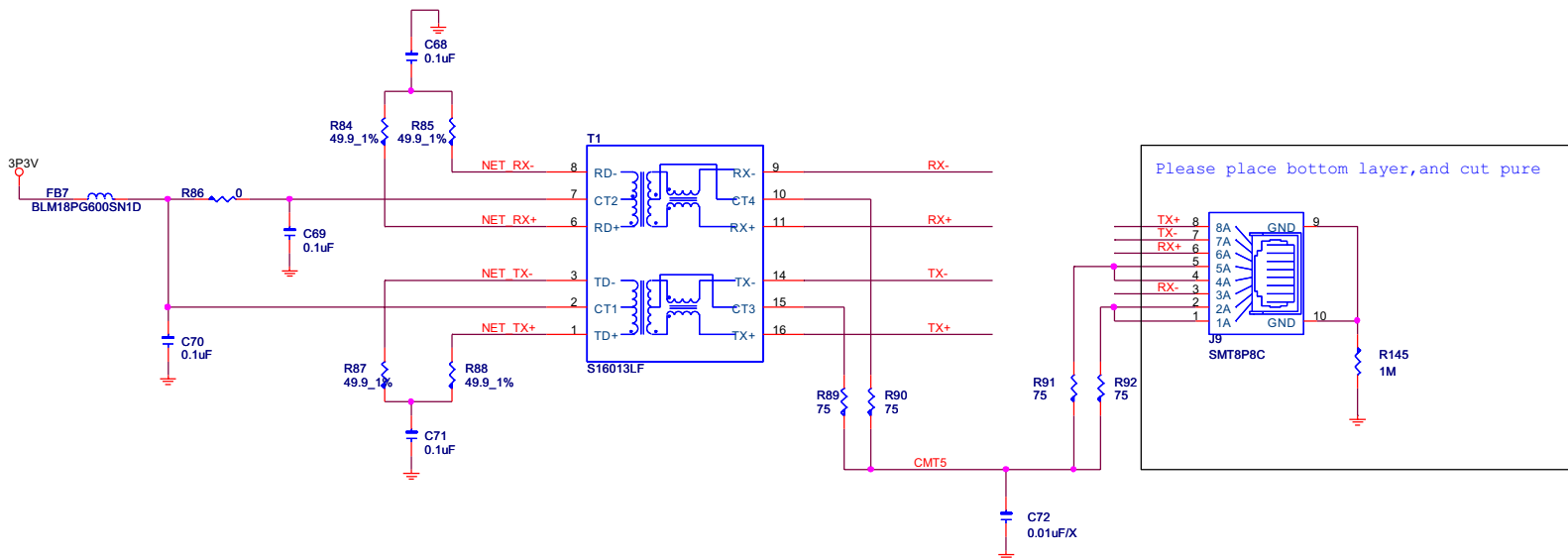
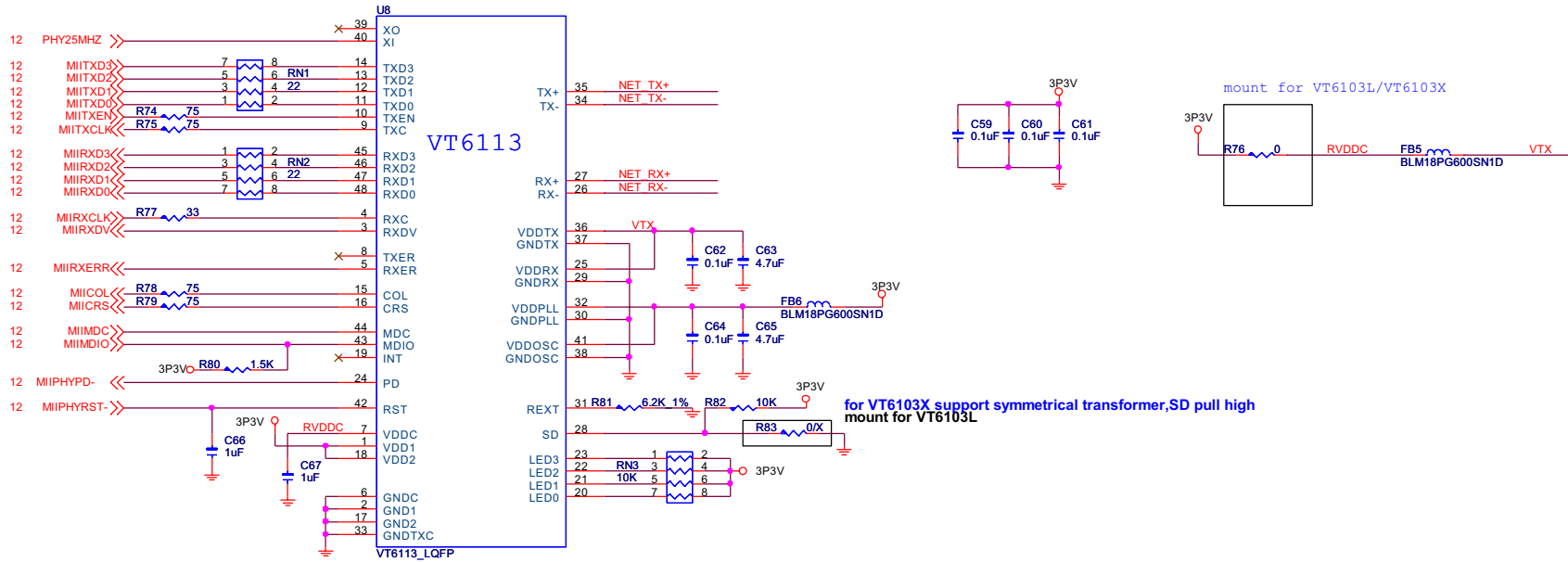
3.3V WiFi POWER:



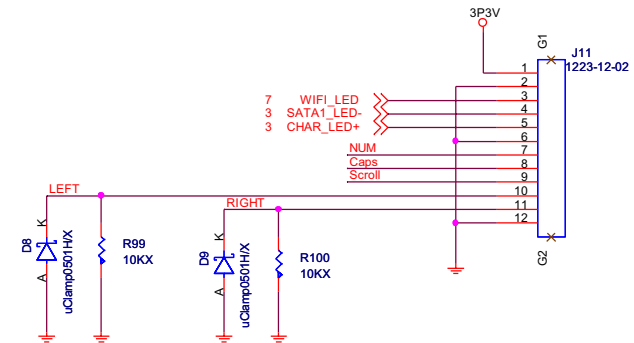
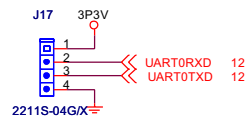
WiFi Mini-Card Connector (ref to standard PCIE-minicard)



Ethernet PHY

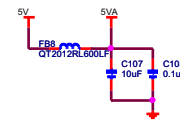
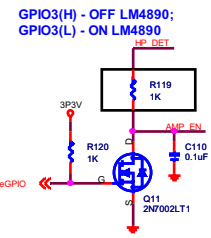
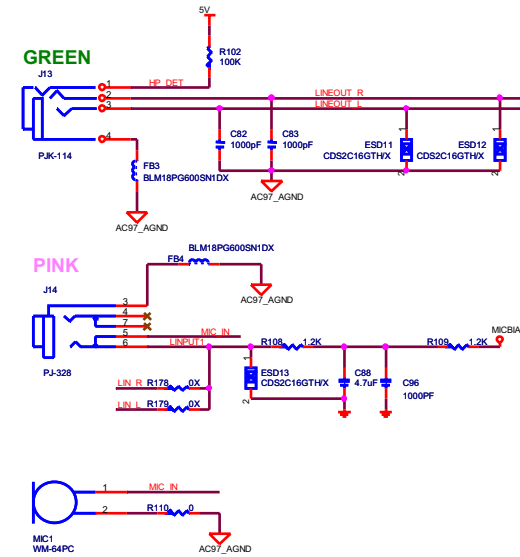
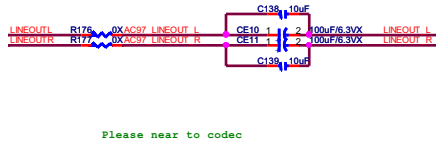
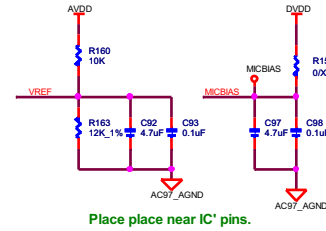
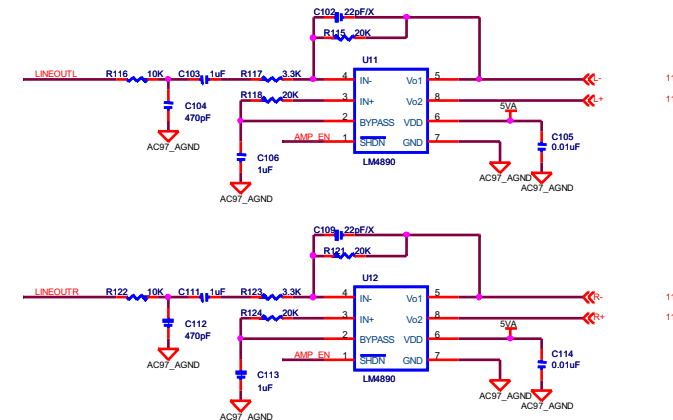
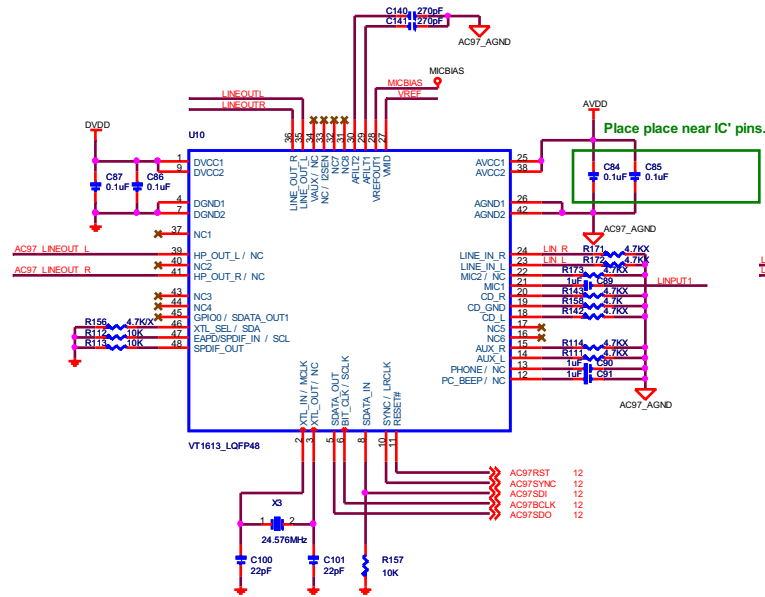
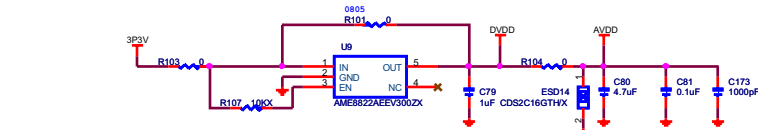


Reversed for debug

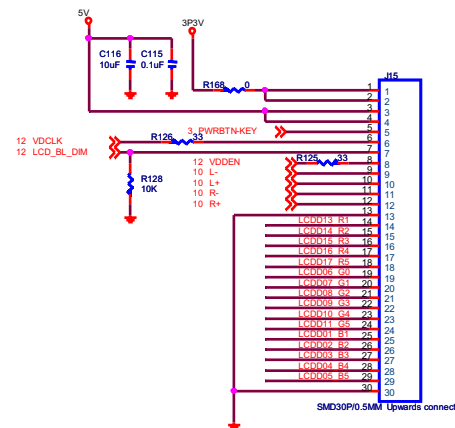


| 5 | 4 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
|---|---|---|---|---|---|---|---|---|---|
|---|---|---|---|---|---|---|---|---|---|

AC97 CODEC

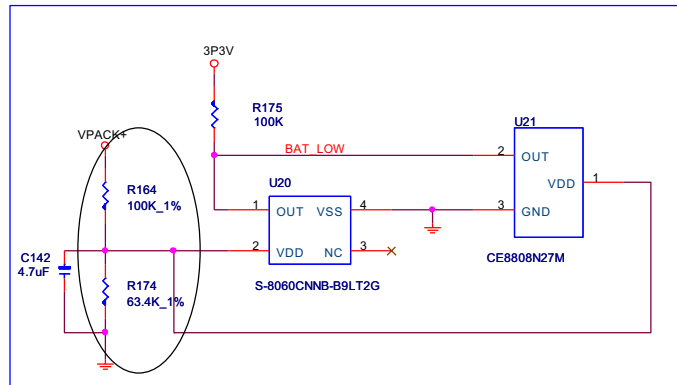
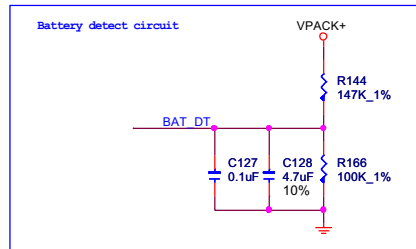


| | | | | | | | |
|---------|----|--------|--------|----------|---|---|-----------|
| Red 1 | 12 | LCD_R1 | LCD_R1 | VDDOUT17 | 8 | 7 | LCDD13_R1 |
| Red 2 | 12 | LCD_R2 | LCD_R2 | VDDOUT18 | 6 | 6 | LCDD14_R2 |
| Red 3 | 12 | LCD_R3 | LCD_R3 | VDDOUT19 | 4 | 3 | LCDD15_R3 |
| Red 4 | 12 | LCD_R4 | LCD_R4 | VDDOUT20 | 2 | 1 | LCDD16_R4 |
| RN7 100 | | | | | | | |
| Red 5 | 12 | LCD_R5 | LCD_R5 | VDDOUT21 | 8 | 7 | LCDD17_R5 |
| Green 0 | 12 | LCD_G0 | LCD_G0 | VDDOUT08 | 8 | 8 | LCDD08_G0 |
| Green 1 | 12 | LCD_G1 | LCD_G1 | VDDOUT09 | 4 | 3 | LCDD09_G1 |
| Green 2 | 12 | LCD_G2 | LCD_G2 | VDDOUT10 | 2 | 1 | LCDD08_G2 |
| RN5 100 | | | | | | | |
| Green 3 | 12 | LCD_G3 | LCD_G3 | VDDOUT11 | 8 | 7 | LCDD09_G3 |
| Green 4 | 12 | LCD_G4 | LCD_G4 | VDDOUT12 | 6 | 6 | LCDD10_G4 |
| Green 5 | 12 | LCD_G5 | LCD_G5 | VDDOUT13 | 4 | 3 | LCDD11_G5 |
| Blue 1 | 12 | LCD_B1 | LCD_B1 | VDDOUT01 | 2 | 1 | LCDD01_B1 |
| RN4 100 | | | | | | | |
| Blue 2 | 12 | LCD_B2 | LCD_B2 | VDDOUT02 | 8 | 7 | LCDD02_B2 |
| Blue 3 | 12 | LCD_B3 | LCD_B3 | VDDOUT03 | 6 | 6 | LCDD03_B3 |
| Blue 4 | 12 | LCD_B4 | LCD_B4 | VDDOUT04 | 4 | 3 | LCDD04_B4 |
| Blue 5 | 12 | LCD_B5 | LCD_B5 | VDDOUT05 | 2 | 1 | LCDD05_B5 |

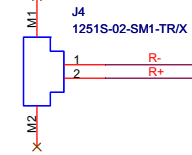
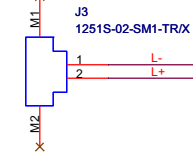
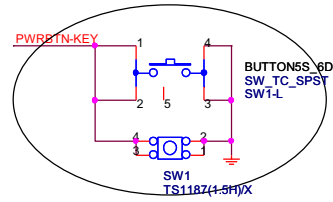
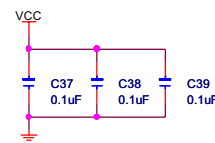
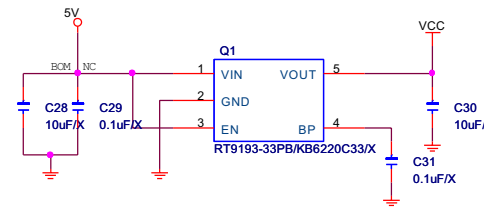
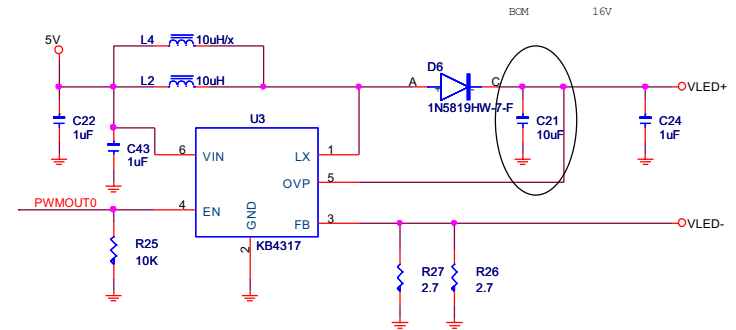
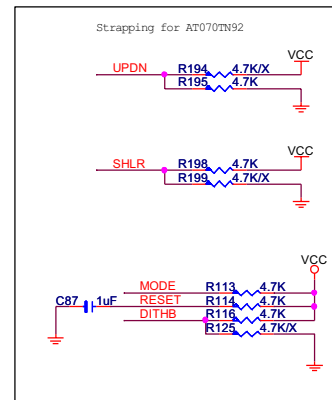
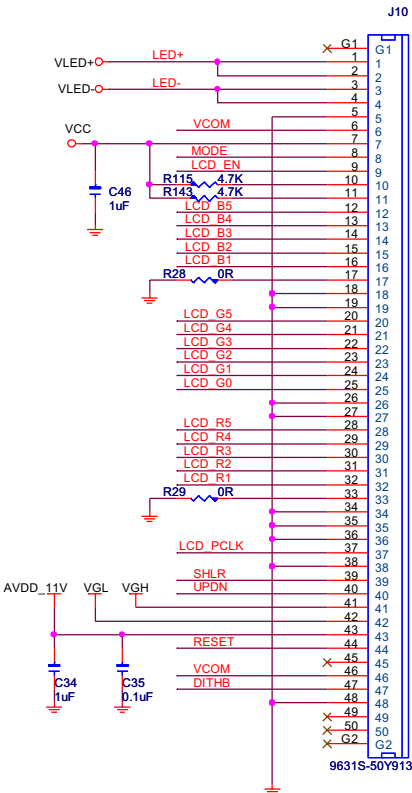
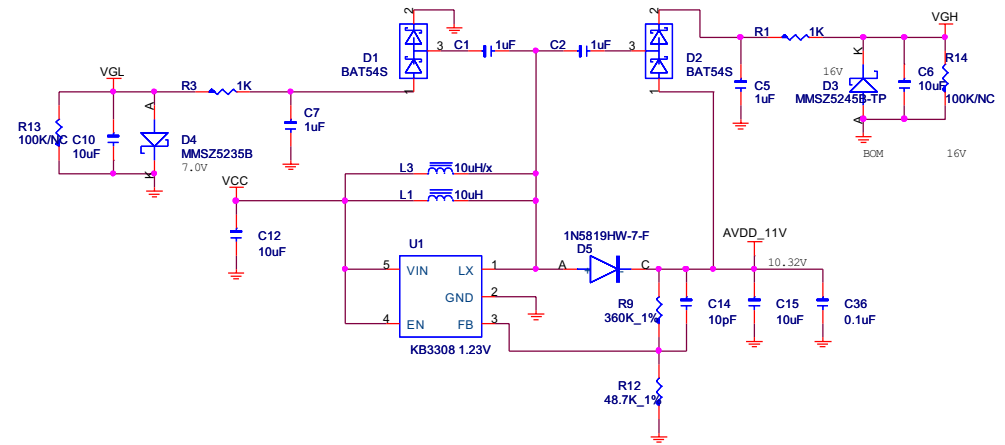
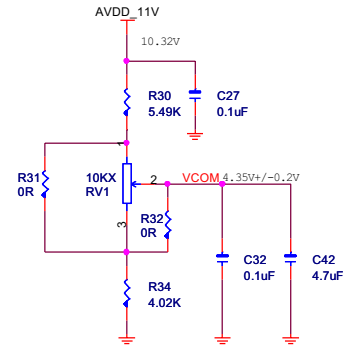
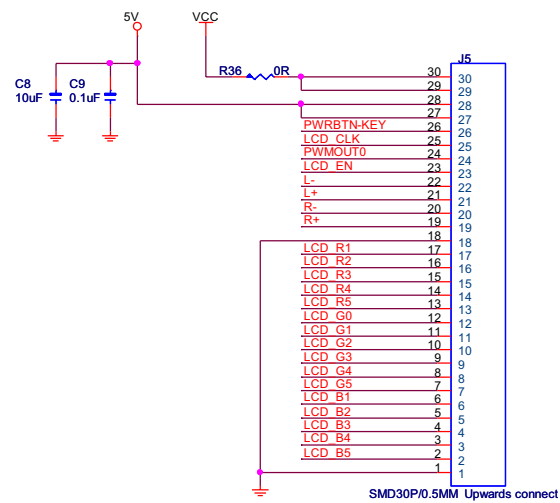


WIFI
HOST
DEVICE

VT8505_IOB



| Benign Technologies Co.,Ltd. | | | |
|------------------------------|------------------------|-------|----------|
| Title | | | |
| MAIN BOARD MODULE | | | |
| Size | Document Number | | Rev |
| Custom | BV07-SY-8505 | | V1.0 |
| Date: | Tuesday, July 27, 2010 | Sheet | 12 of 12 |

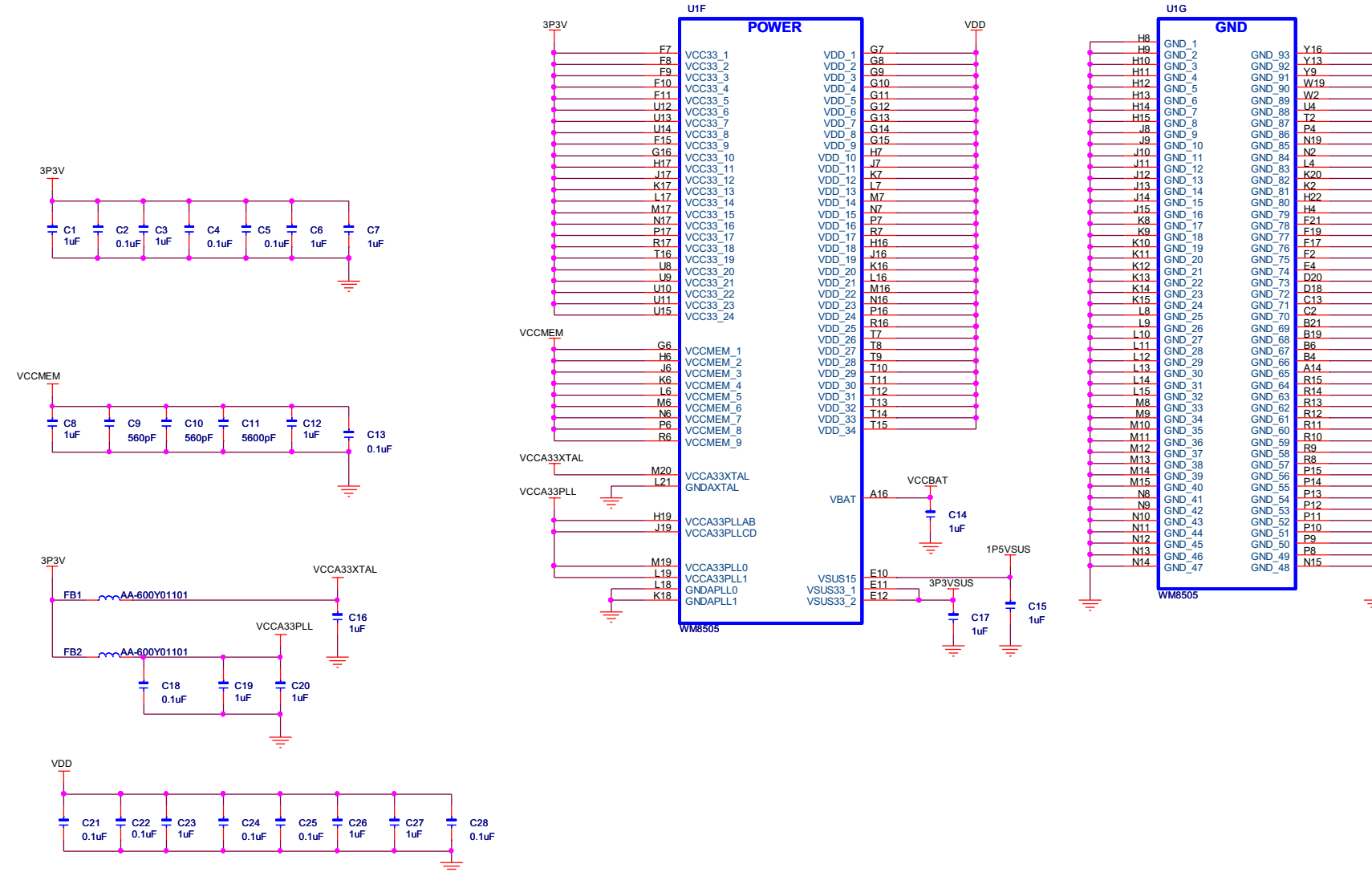


| | | |
|-----------------------|------------------------|--------------|
| VIA TECHNOLOGIES INC. | | |
| Title | LCD | |
| Size | Document Number | Rev |
| Custom | BV07-SY-8505-LCD | 1.0 |
| Date: | Tuesday, July 27, 2010 | Sheet 1 of 1 |

| TITLE | PAGE |
|--------------------------|------|
| COVER PAGE | 01 |
| POWER TREE | 02 |
| POWER REGULATOR | 03 |
| WM8505 VCC/GND | 04 |
| WM8505 CLOCK/RESET | 05 |
| WM8505 DDR2/DRAM | 06 |
| WM8505 NAND/SF/SPI/PWM | 07 |
| WM8505 SD/MMC Connector | 08 |
| WM8505 I2S (Speaker+MIC) | 09 |
| WM8505 USB+WiFi | 10 |
| WM8505 LCD I/F | 11 |
| LCD POWER | 12 |
| WM8505 I2C/KEYPAD | 13 |
| WM8505 STRAPPING+GPIO | 14 |
| WM8505 MII/JTAG/UART/CIR | 15 |
| Revision History | 16 |

WM8505: Power / Ground

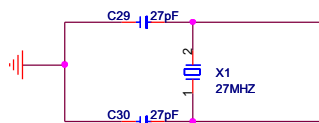
PART: F+G



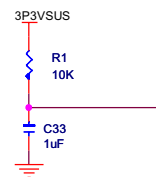
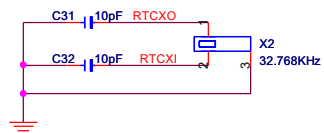
CLOCK + RESET + PMC

PART:B

Main CLK:



RTC CLK:



RSMRST R/C delay ~ 20ms

U1B

CLOCKS / RESET

27MXI M22
27MXO M21
RTCXI A15
RTCXO B15
RSMRST# B10
PWRBTN# A11
PWRGD A12

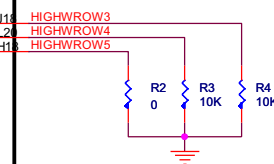
TEST/KEYPAD(3/3)

24MHZXI K19
TESTMODE AA19

WM8505

PWREN15 A10
PWREN18 A9
PWREN33 A8

KEYPAD



For KEYPAD direct input, need PD 10K

Power Enable:

PWREN15 13
PWREN18 13
PWREN33 13
PWRBTN- PWRGD 13
PWRGD 13

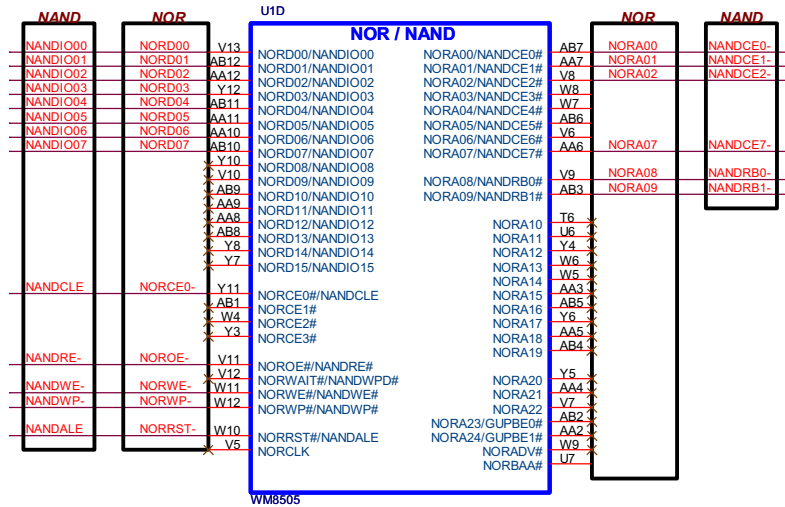


WonderMedia Technologies, Inc.

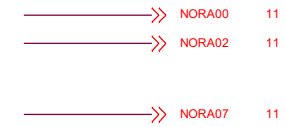
CLOCK/RESET/PMC

| | | |
|---------------------------------|-------------------------------------|------------|
| Size Custom | Document Number WMS8060A1 | Rev 1.0 |
| Date: Monday, November 02, 2009 | Sheet 3 of 13 | |

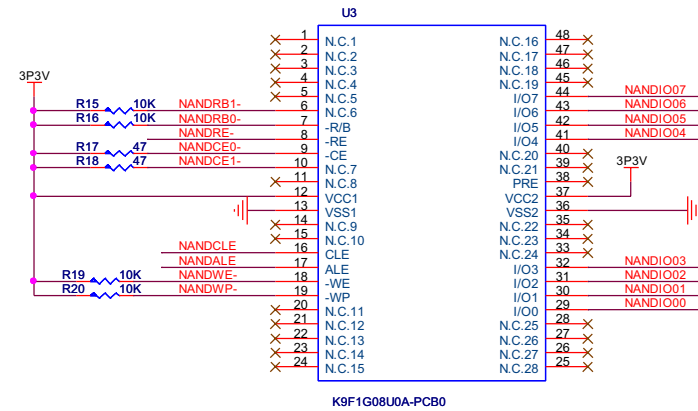
WM8505: NAND FLASH



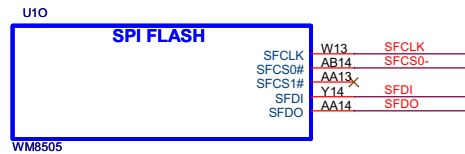
STRAPPING:



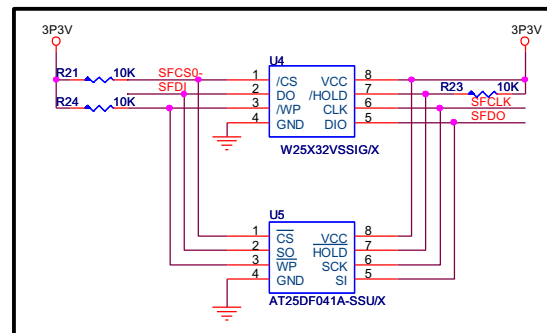
NAND FLASH:



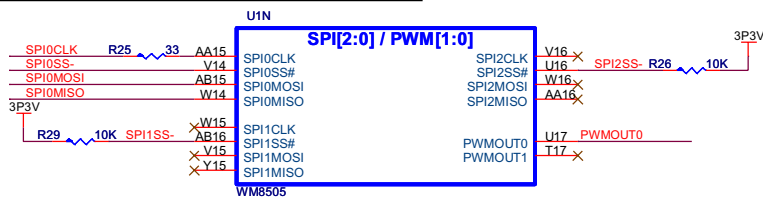
WM8505: SPI FLASH



(optional) 8 pins package (co-lay)



WM8505: SPI + PWM



LCD Backlight Control:



LCD 3-wire I2C Control:



WonderMedia Technologies, Inc.

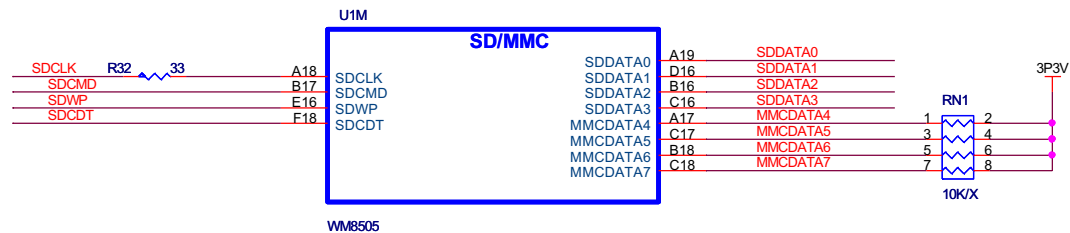
WM805: NAND FLASH

Size: Custom Document Number: WMS8060A1 Rev: 1.0

Date: Monday, November 02, 2009 Sheet: 5 of 13

WM8505: SD / MMC

PART: M



| | | | |
|---------|-----|---------|----|
| SDCLK | >>> | SDCLK | 13 |
| SDCMD | >>> | SDCMD | 13 |
| SDWP | >>> | SDWP | 13 |
| SDCDT | >>> | SDCDT | 13 |
| SDDATA0 | >>> | SDDATA0 | 13 |
| SDDATA1 | >>> | SDDATA1 | 13 |
| SDDATA2 | >>> | SDDATA2 | 13 |
| SDDATA3 | >>> | SDDATA3 | 13 |

U11

AC97/ I2S

AC97BCLK/I2SDACBCLK
AC97RST#/I2SDACMCLK
AC97SYNC/I2SDACLRC
AC97SDI/I2SADCDAT
AC97SDO/I2SDACDAT
RESETOUT#/I2SADCLRC

W22 R33 33 AC97BCLK
U19 AC97RST
V22 AC97SYNC
V20 AC97SDI
V21 AC97SDO
Y19 X

WM8505

WM8505: I2S

PART: I

(Mike)

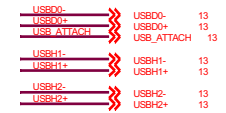
| | | | |
|----------|-----|----------|----|
| AC97BCLK | >>> | AC97BCLK | 13 |
| AC97RST | >>> | AC97RST | 13 |
| AC97SYNC | >>> | AC97SYNC | 13 |
| AC97SDI | >>> | AC97SDI | 13 |
| AC97SDO | >>> | AC97SDO | 13 |



WonderMedia Technologies, Inc.

| | | | | | |
|--------|---------------------------|-------|---|-----------------------------|----|
| Title | | | | WM8505: I2S (VT1602 w/ AMP) | |
| Size | Document Number | | | Rev | |
| Custom | WMS8060A1 | | | 1.0 | |
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PART: K



DEVIC

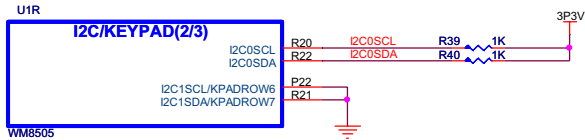
WM8505: I2C / KEYPAD

PART: R

I2C ADDRESS TABLE:

| BUS | DEVICE | FUNCTION | ADDRESS |
|------|--------|-----------|---------|
| I2C0 | VT1602 | I2S Codec | 0x34 |


VGA EDID:



WM8505: VDIN / CMOS / KEYPAD

PART: J



**WonderMedia Technologies, Inc.**

Title
WM8505: I2C+KEYPAD

Size
Custom

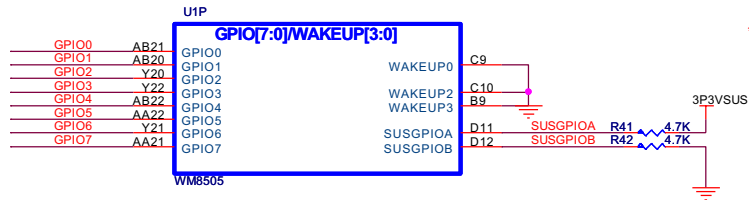
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WM8505: GPIO+STRAPPING+WAKEUP

PART: P



*** IMPORTANT: If IO board not use GPIO, please connect GND;**

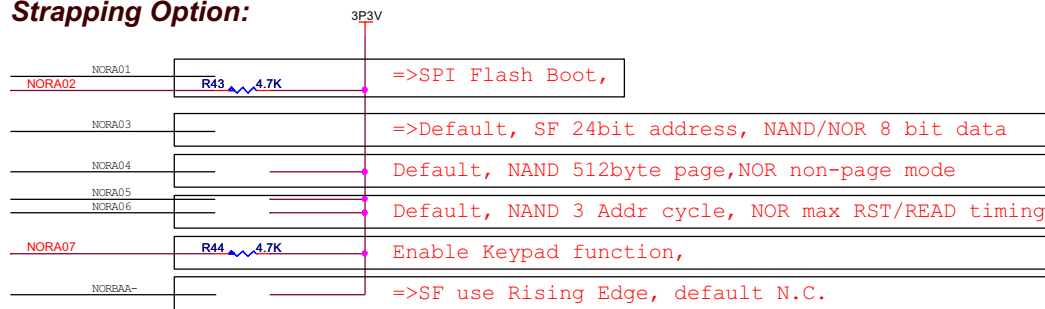
GPIO Pins:

Function:

| | | |
|-------|---------------|----------------------------------|
| GPIO0 | DCIN | DCIN Detect |
| GPIO1 | CHARGE | CHARGE STATE |
| GPIO2 | Wifi_POWER_DN | Wifi_POWER_DN |
| GPIO3 | MuteGPIO | AC97/I2S Amp ShutDown/Mute GPIO: |
| GPIO4 | RF_POWER_DN | RF_PWRDN |
| GPIO5 | GPIO5 | Light_INT |
| GPIO6 | GPIO6 | To MP1530 LCD Power ENABLE |
| GPIO7 | GPIO7 | SD Card Power |

Ethernet MII Mode:

Strapping Option:



*** IMPORTANT: Need PD in normal use.**



STRAPPING TABLE:

| PIN_NAME | RS | ON/OFF | Internal | DESCRIPTIONS |
|--------------|------------|---------|----------|--|
| NORA0 | R98 | ON | PD | Debug Mode, default PD ext. |
| NORA[2:1] | R221, R109 | | PD, PD | NOR Boot |
| NORA3 | R220, | ON-OFF | | =>SPI Flash Boot, |
| NORA4 | R224 | OFF | PD | =>Default, SF 24bit address, NAND/NOR 8 bit data PU ext. SF 32bit address, NAND/NOR 16 bit data |
| NORA[6:5] | R223, R110 | OFF-OFF | PD, PD | Default, NAND 512byte page, NOR non-page mode PU ext. NAND 2K page, NOR page mode |
| NORA7 | R118 | | PD | Default, NAND 3 Addr cycle, NOR max RST/READ timing PD, PU= NAND 4 Addr cycle |
| NORBAA- | R222 | ON | PD | Disable Keypad function, default N.C. |
| SUSGPIO[A:B] | R204, R58 | OFF | PD, PD | Enable Keypad function, =>SF use Rising Edge, default N.C. SF use Falling Edge, need PU ext. |
| | | ON-OFF | | RGPII Mode. =>MII MODE |

WARMING:

ALL others strappings not listed above recommend to use internal settings as default. Otherwise un-expected results may encounter.
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STRAPPING:

| | | | |
|-------|---|--------|---|
| GPIO0 | » | NORA00 | 5 |
| GPIO1 | » | NORA02 | 5 |
| GPIO2 | » | NORA07 | 5 |

USB2 to WiFi Module:

| | | | |
|-------|---|---------------|----|
| GPIO4 | » | RF_POWER_DN | 13 |
| GPIO2 | » | Wifi_POWER_DN | 13 |

Mute GPIO:

| | | | |
|-------|---|----------|----|
| GPIO3 | » | MuteGPIO | 13 |
|-------|---|----------|----|

Detect DCIN

| | | | |
|-------|---|------|----|
| GPIO0 | » | DCIN | 13 |
|-------|---|------|----|

LCD CONTROL:

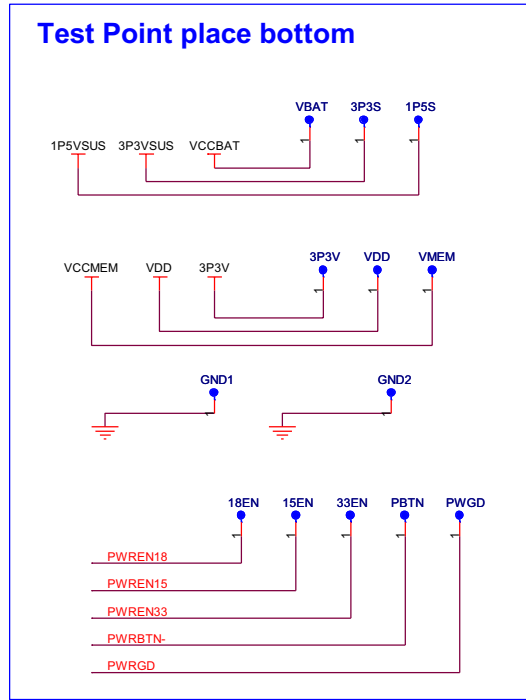
| | | | |
|-------|---|-------|----|
| GPIO1 | » | TPINT | 13 |
| GPIO5 | » | GPIO5 | 13 |
| GPIO6 | » | GPIO6 | 13 |
| GPIO7 | » | GPIO7 | 13 |

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Title: **WM8505: STRAPPING + GPIO**

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