

Content Indexing

01.Index

02.Modify note

03.Block Diagram

04.Power Tree

05.System Power

06.RK3288 USB/HSIC Controler

07.USB HOST Port

08.RK3288 RAM Controler

09.RAM-DDR3-4X16bit

10.Nand FLASH/eMMC/TF Card

11.RK3288 GPIO/POWER

12.HDMI OUT

13.RK3288 LCD/DC/2S Controler

14.RK1000-S-AV OUT

15.S/PDIF OUT

16.RK3288 Ethernet MAC Controler

17.10/100/1000M-PHY

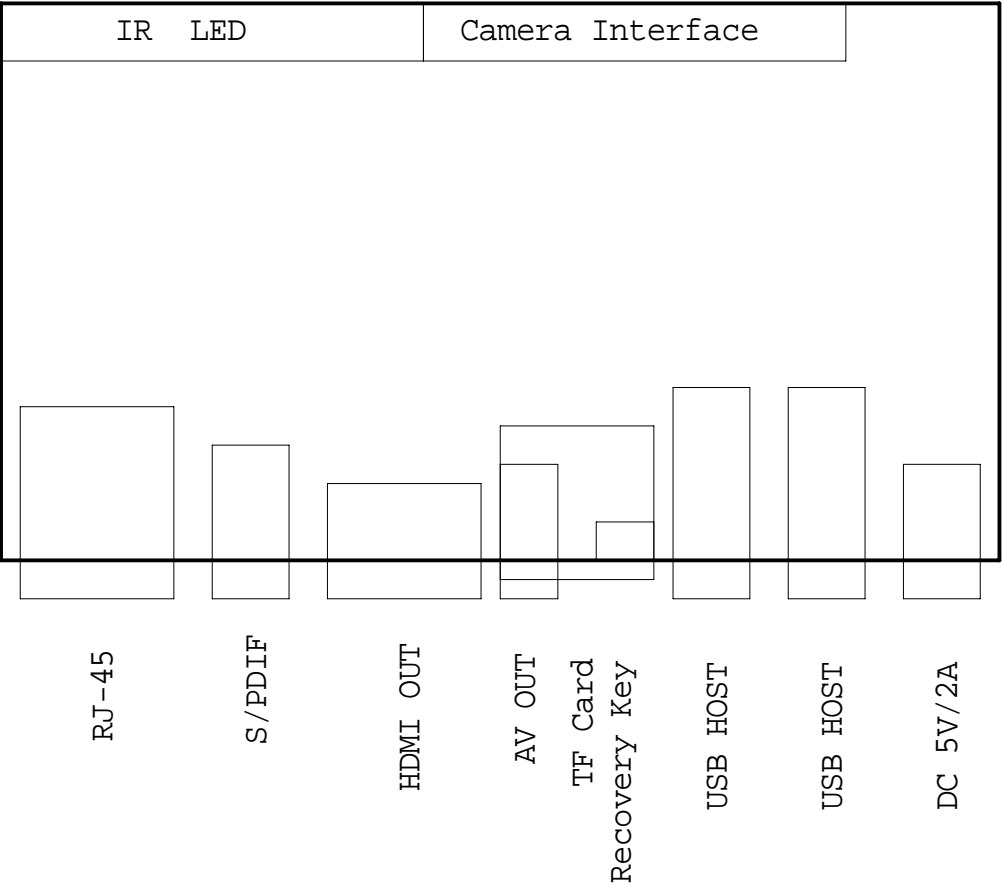
18.RK3288 SDIO Controler

19.AP6XXX-WIFI/BT

20.VGA

21.Camera Interface

22.DTV-(Reserve)



6 LAYERS PCB STACK

TOP(Signal1) FR4,thickness:3.8mil,Dielectric Constant:4.3 Cu,thickness:0.7mil,Plating to 1oz

GND1 FR4,thickness:8mil,Dielectric Constant:4.3 Cu,thickness:1.5mil, 1oz

POWER FR4,thickness:8mil,Dielectric Constant:4.3 Cu,thickness:1.5mil, 1oz

FR4,thickness:adjust thickness according to the thickness of board ,Dielectric Constant:4.3

Signal2 FR4,thickness:8mil,Dielectric Constant:4.3 Cu,thickness:1.5mil, 1oz

GND2 FR4,thickness:3.8mil,Dielectric Constant:4.3 Cu,thickness:1.5mil, 1oz

BOTTOM(Signal3) FR4,thickness:3.8mil,Dielectric Constant:4.3 Cu,thickness:0.7mil,Plating to 1oz

T-Chip

T-Chip

File:

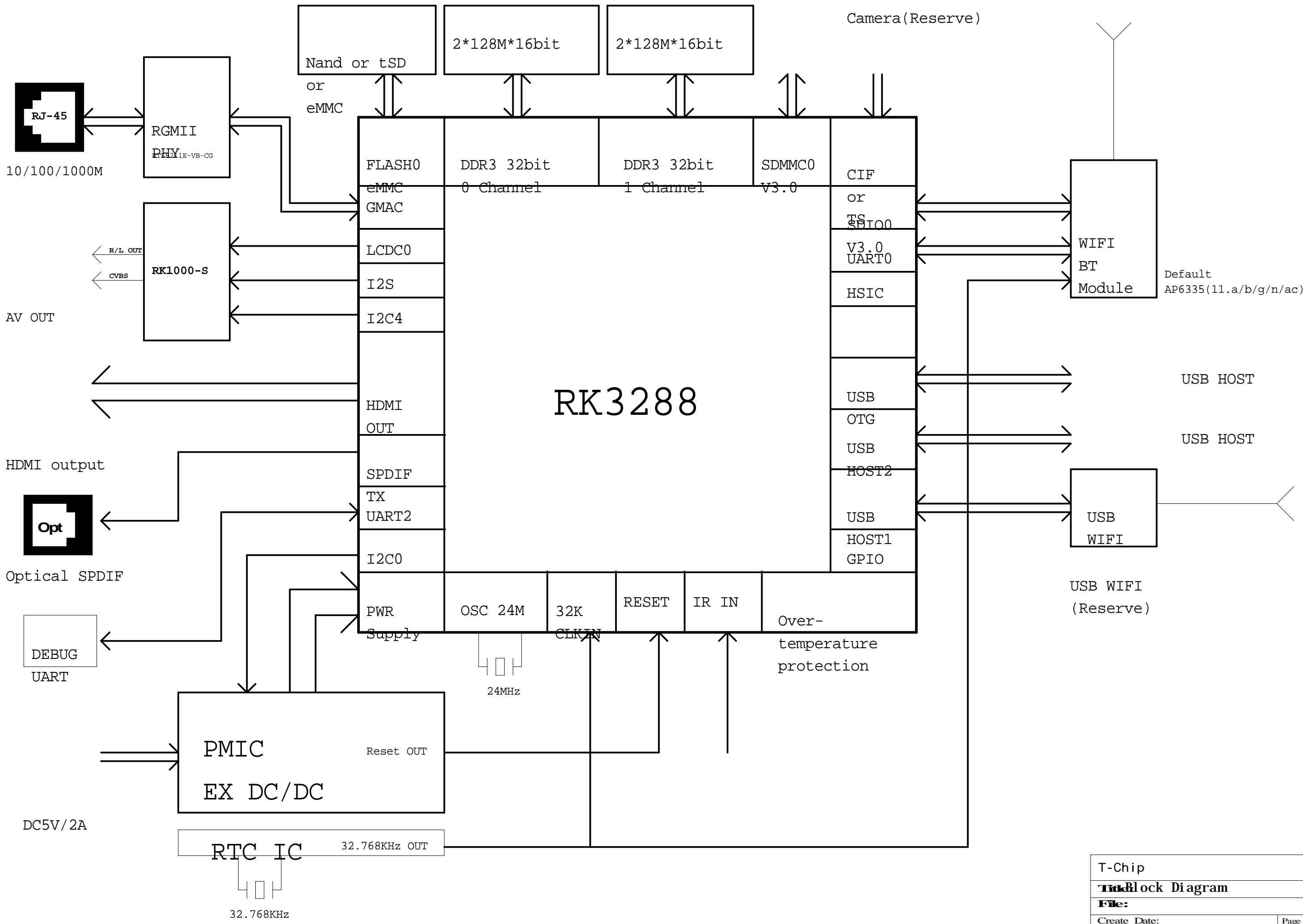
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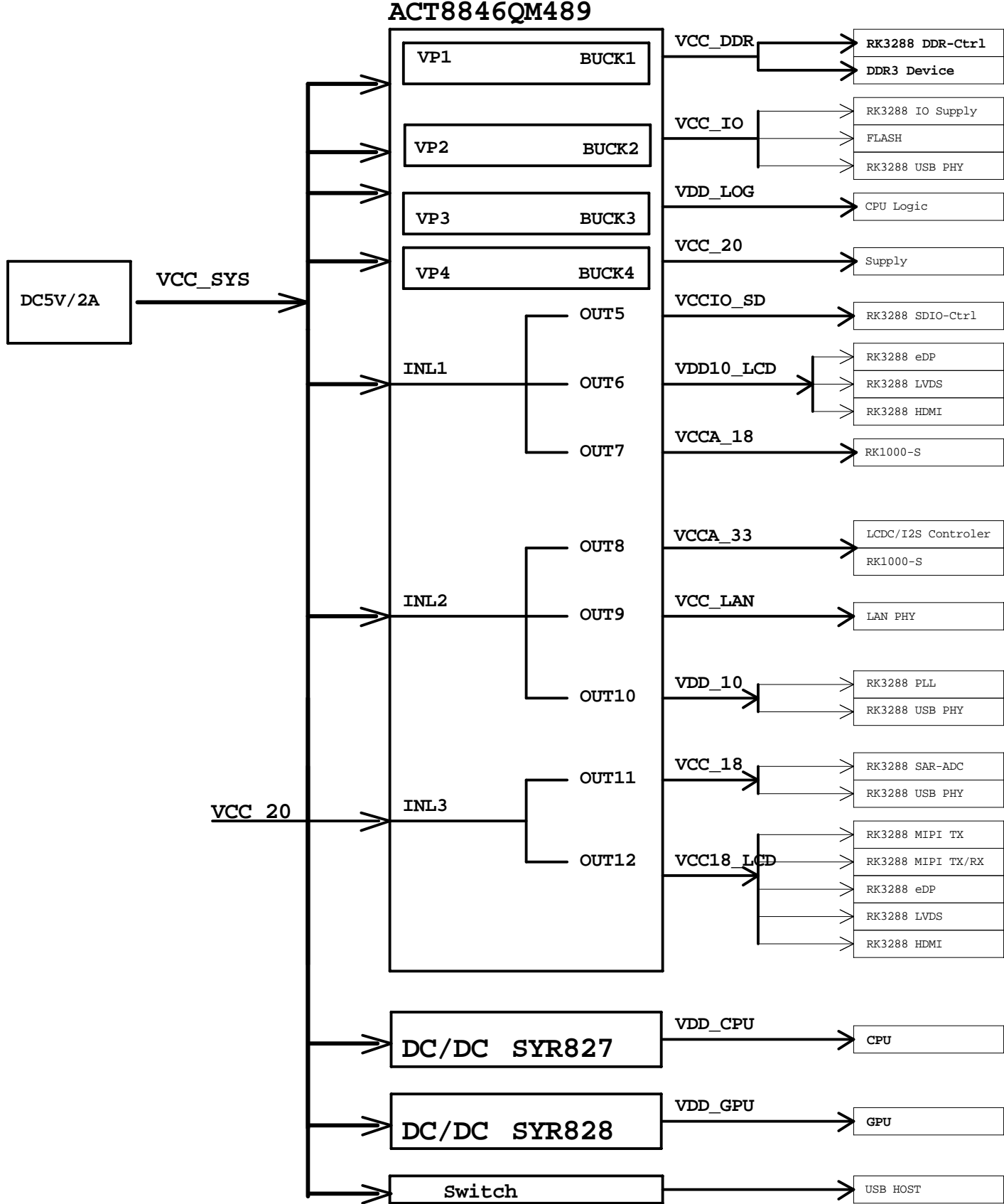
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Modify Date:Wednesday, June 18, 2014

Page Total21

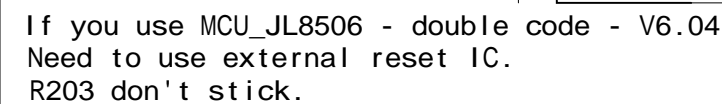
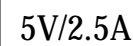


| | |
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| T-Chip | |
| Block Diagram | |
| File: | REV: 23 |
| Create Date: | Page Num: 2 |
| Modify Date: Wednesday, June 18, 2014 | Page Total: 21 |

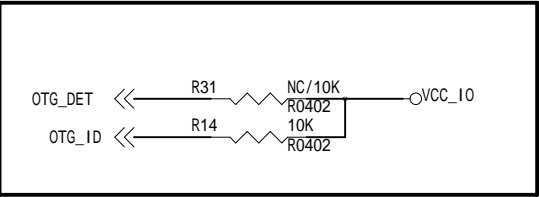
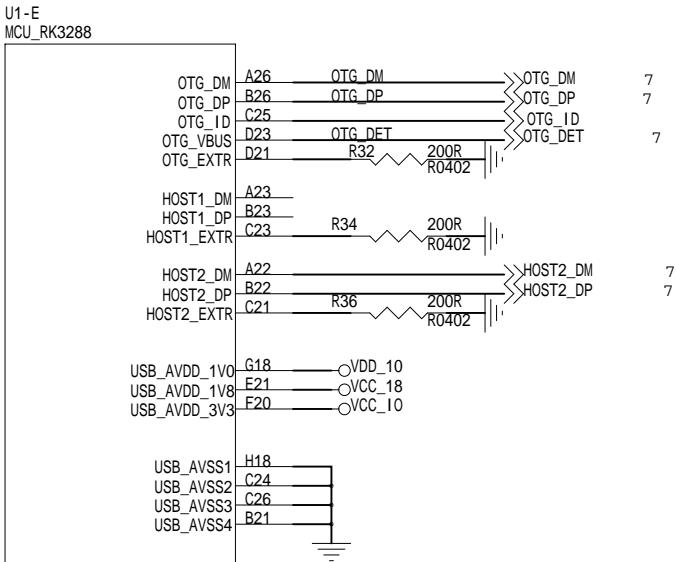


| PowerName | PMIC Channel | timer(2mS) | Default | Working |
|-----------|--------------|------------|--------------|--------------|
| VCC_20 | DCDC4 | Solt:0 | voltage 2.0V | voltage 2.0V |
| VDD_10 | OUT10 | Solt:1 | 1.0V | 1.0V |
| VCC_DDR | DCDC1 | Solt:2 | 1.5V | 1.5V(DDR3) |
| VDD_CPU | EX DCDC | Solt:2A | 1.5V(1.2V) | DVFS |
| VDD_GPU | EX DCDC | Solt:2B | 1.0V | DVFS |
| VDD_LOG | DCDC3 | Solt:3 | 1.1V | DVFS |
| VCC_18 | OUT11 | Solt:4 | 1.8V | 1.8V |
| VCC_LAN | OUT9 | Solt:5 | 3.3V | 3.3V |
| VCC_IO | DCDC2 | Solt:6 | 3.3V | 3.3V |
| VCCIO_SD | OUT5 | Solt:6 | 3.3V | SD2.0:3.3V |
| VCCA_33 | OUT8 | OFF | OFF | SD3.0:1.8V |
| VCCA_18 | OUT7 | OFF | OFF | 1.8V |
| VDD10_LCD | OUT6 | OFF | OFF | 1.0V |
| VCC18_LCD | OUT12 | OFF | OFF | 1.8V |
| | | | | |

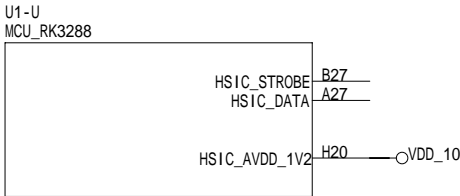
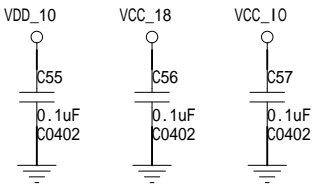
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| TinaPower Tree | |
| File: | REV: 23 |
| Create Date: | Page Num: 3 |
| Modify Date:Wednesday, June 18, 2014 | Page Total21 |



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| Modify Date: Wednesday, June 18, 2014 | Page Total: 21 |

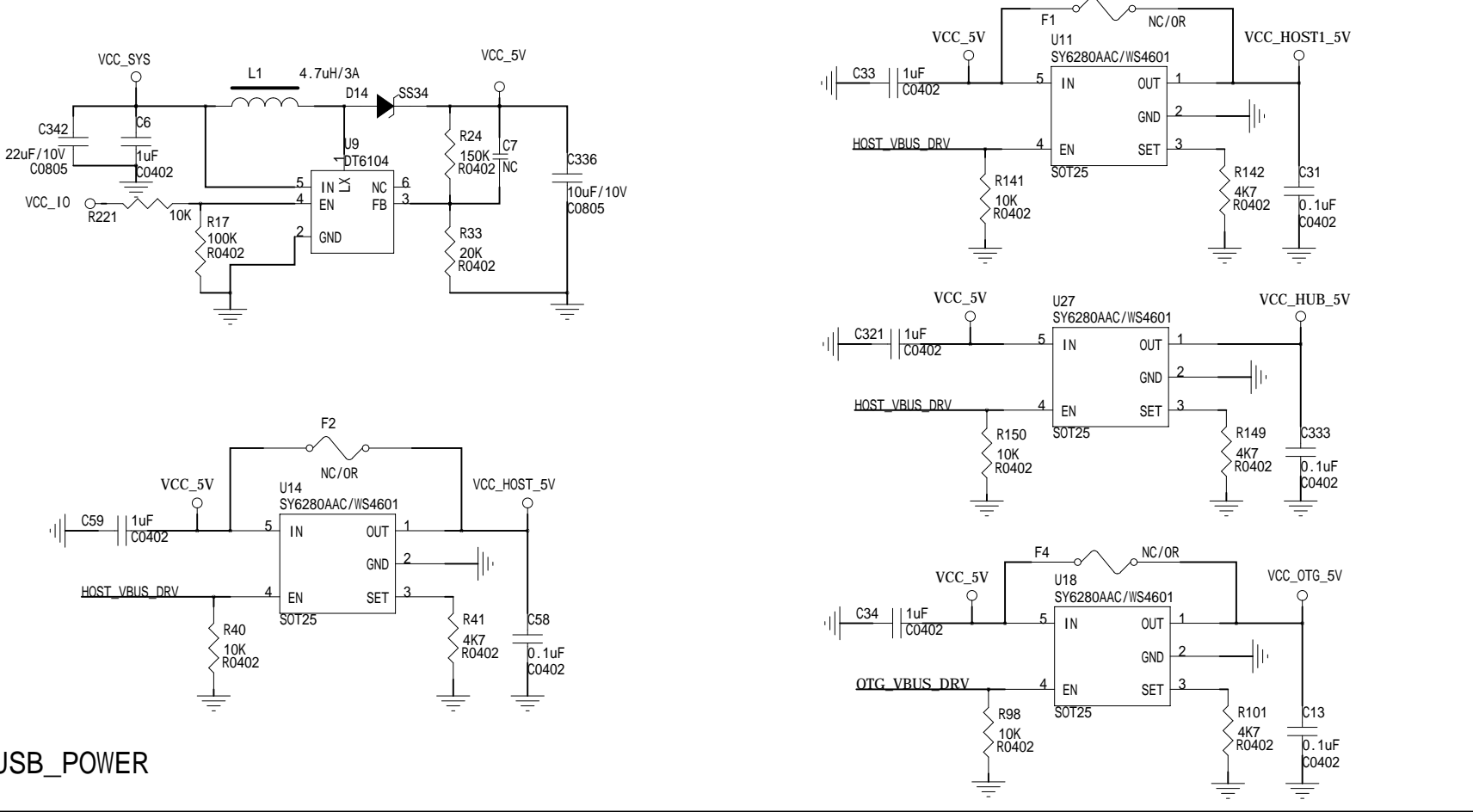


RK3288_E

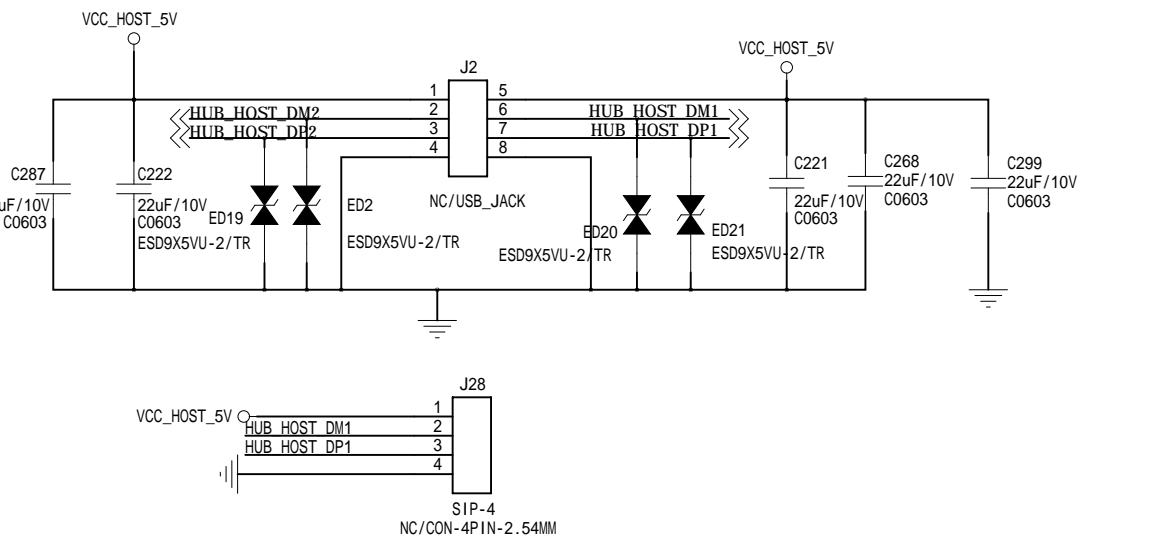
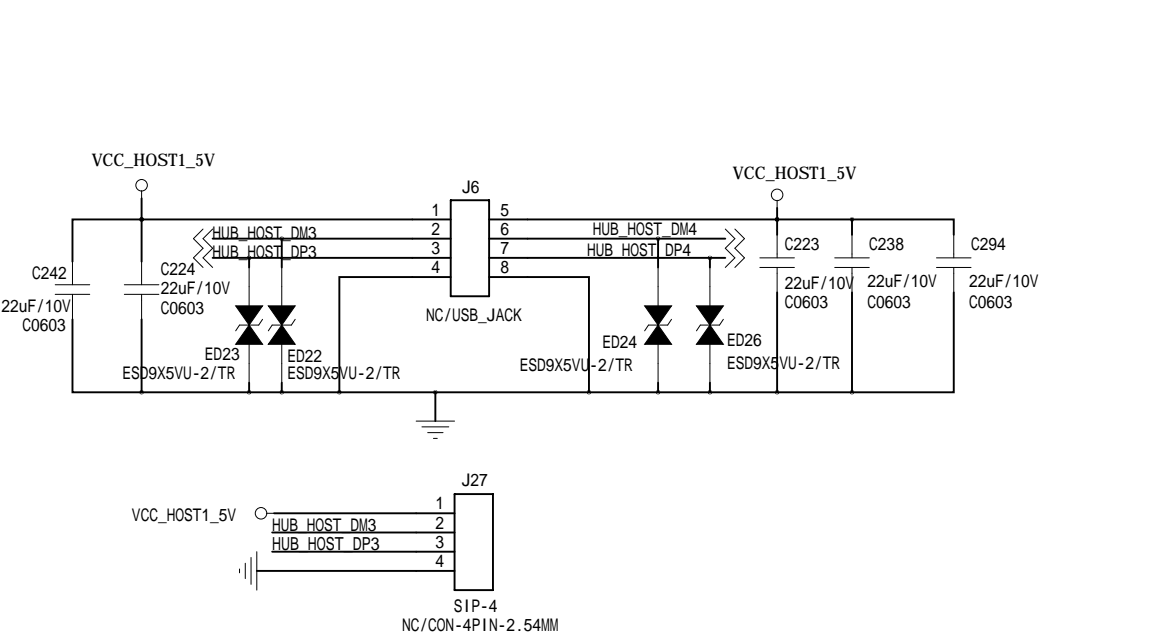


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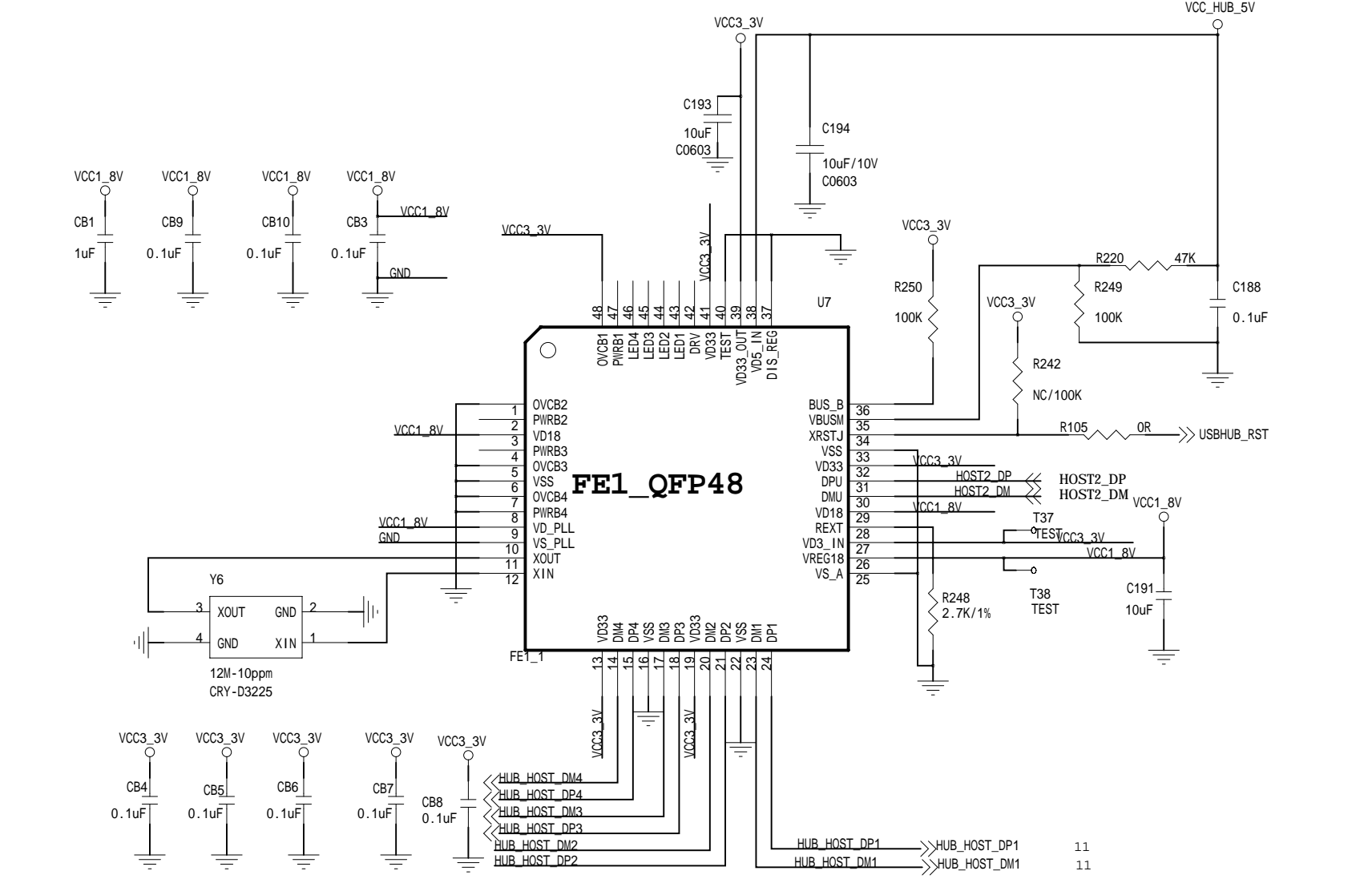
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| Create Date: | Page Num: 5 | |
| Modify Date:Wednesday, June 18, 2014 | Page Total21 | |



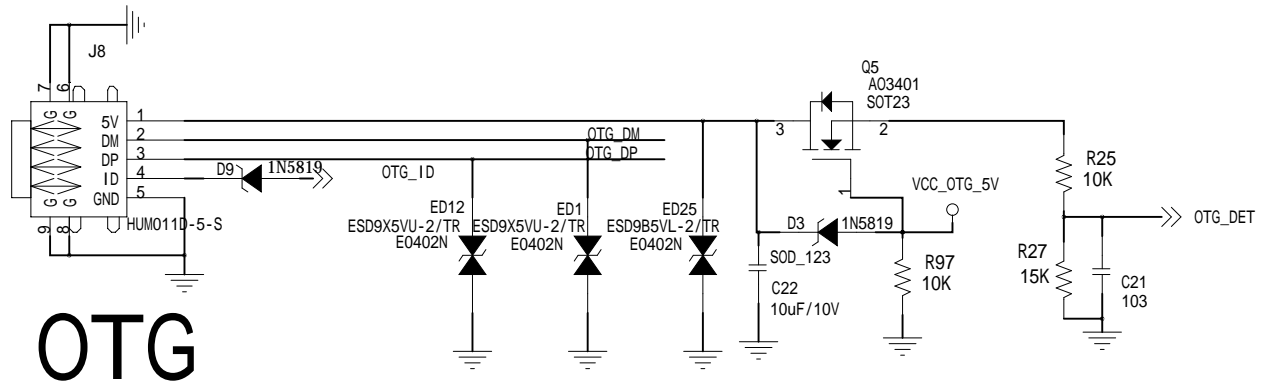
USB_POWER



HOST

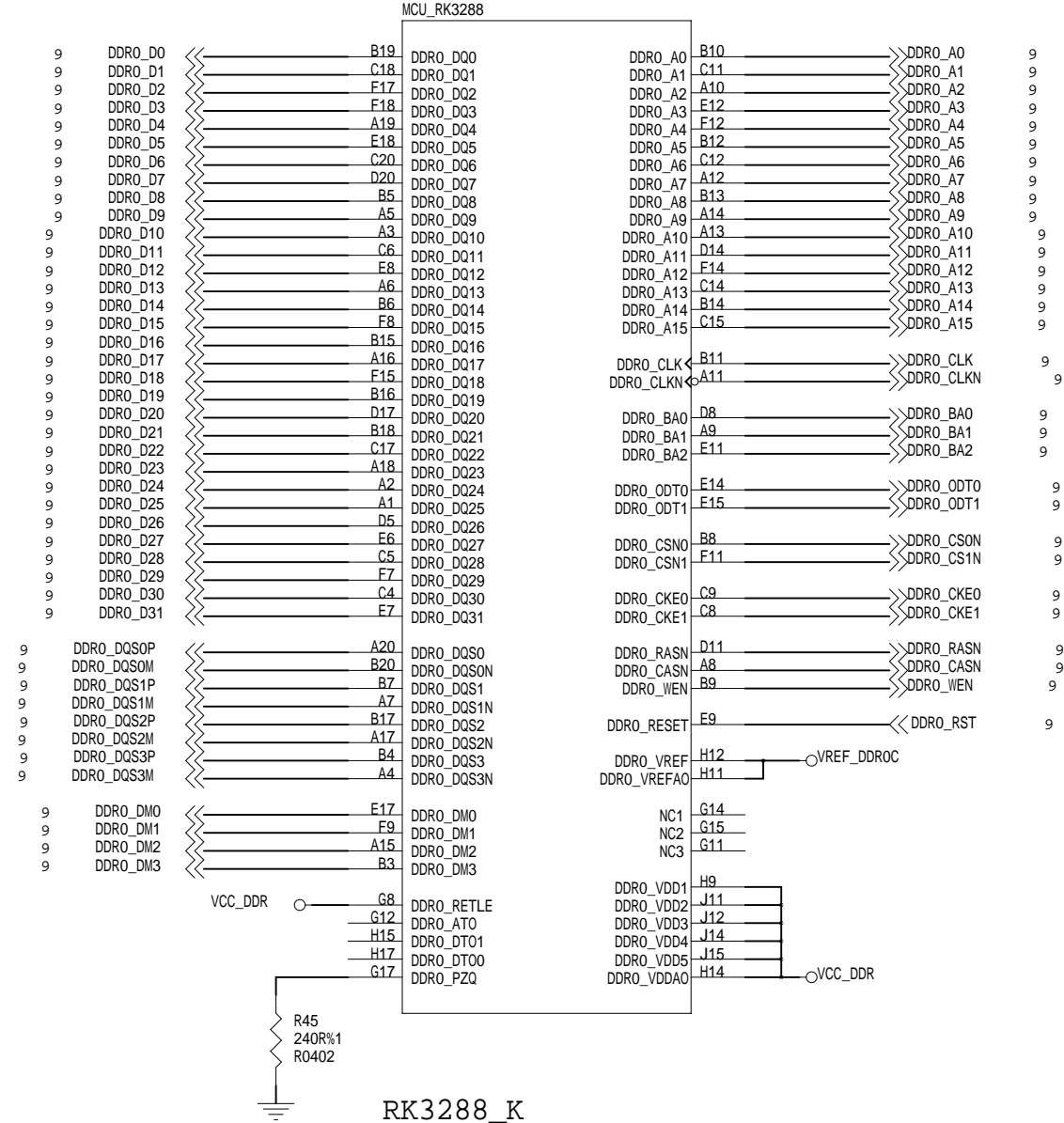


HUB CHIP

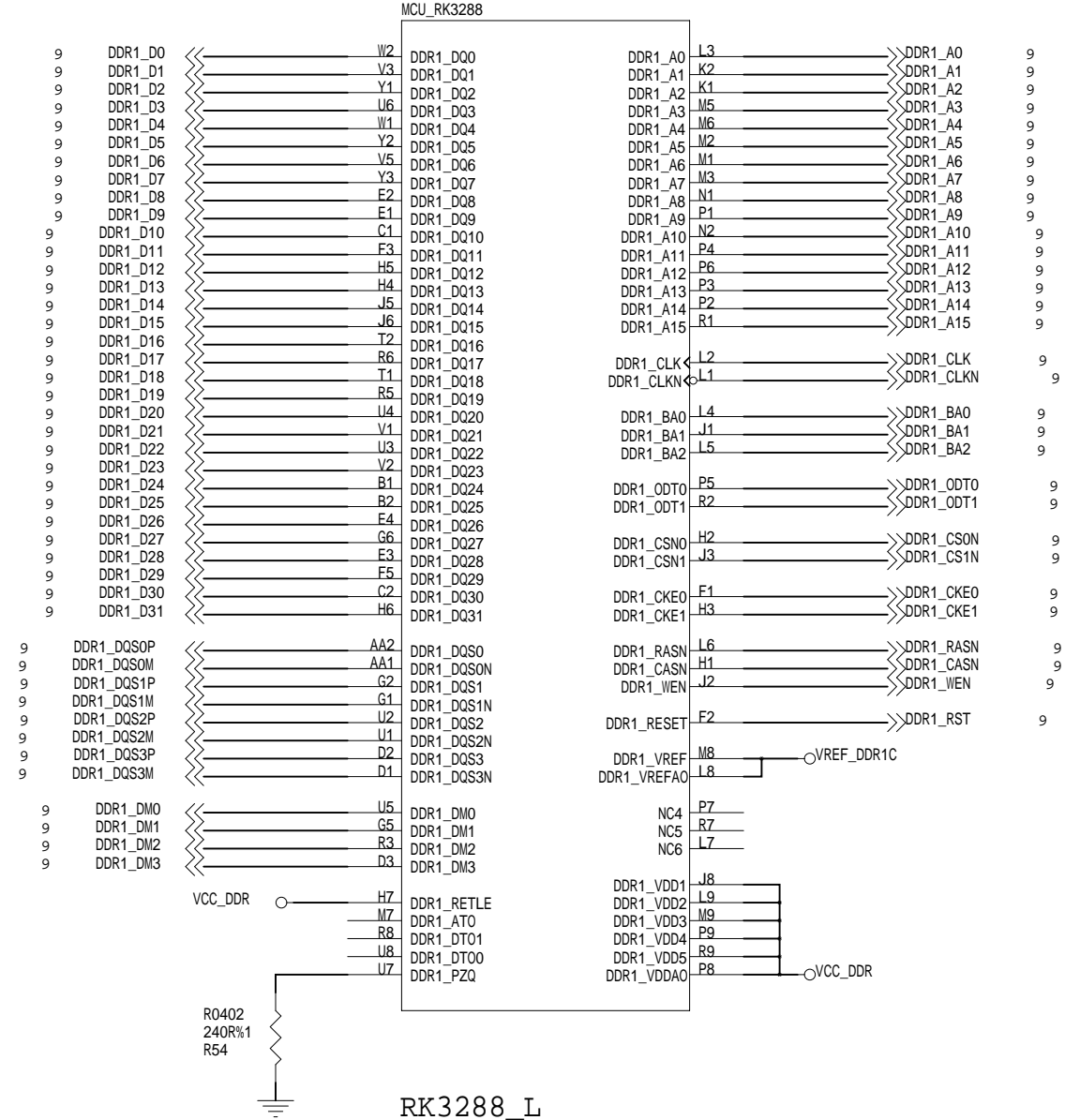


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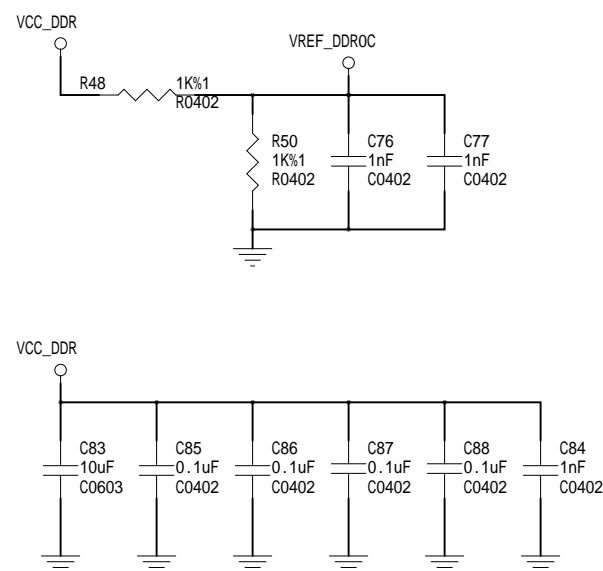
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| Modify Date: Wednesday, June 18, 2014 | Page Total 21 |



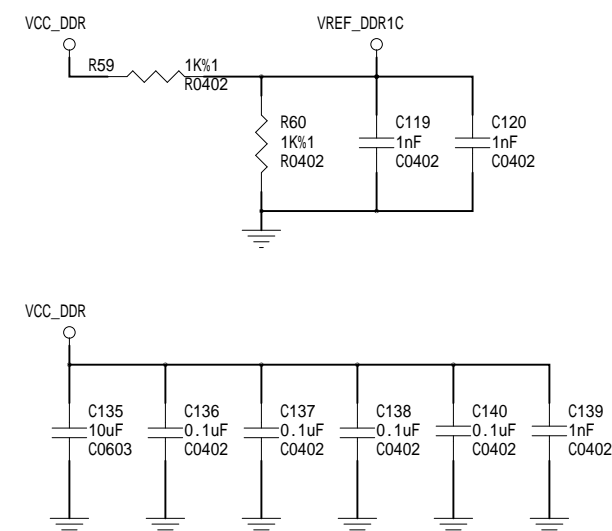
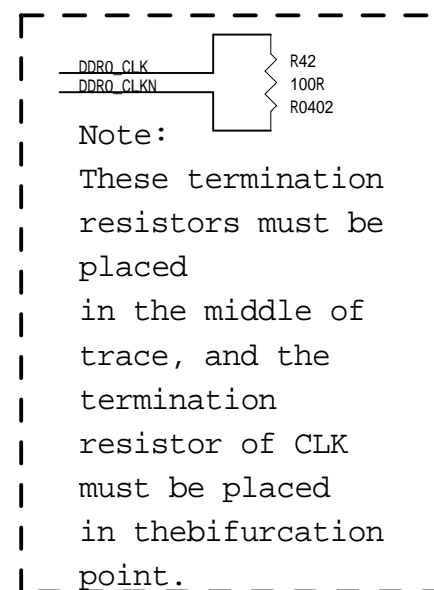
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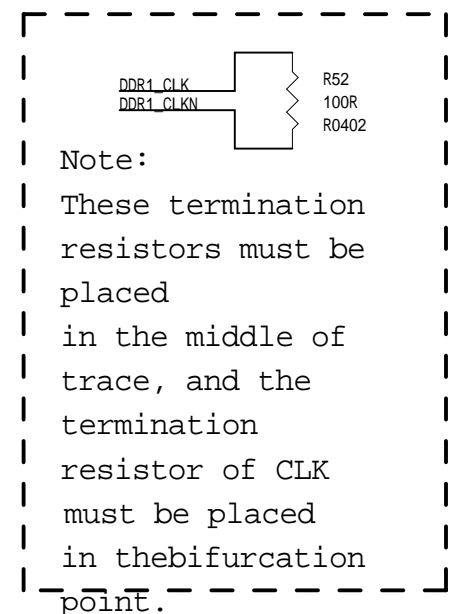
Channel 1



DDR0 FILTER



DDR1 FILTER



T-Chip

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|------------------------------------|
| Title: RK3288 RAM Controler |
|------------------------------------|

File:

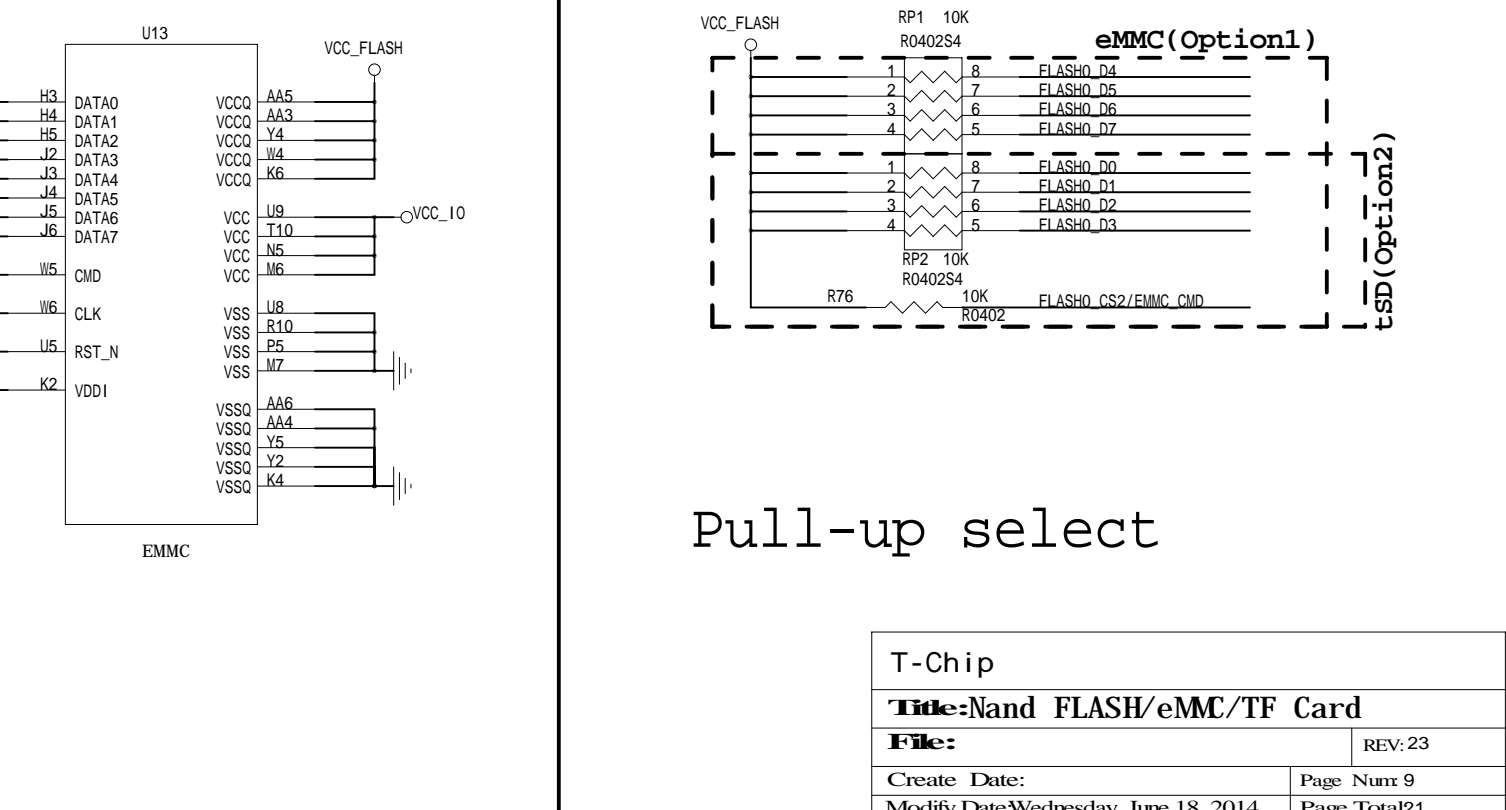
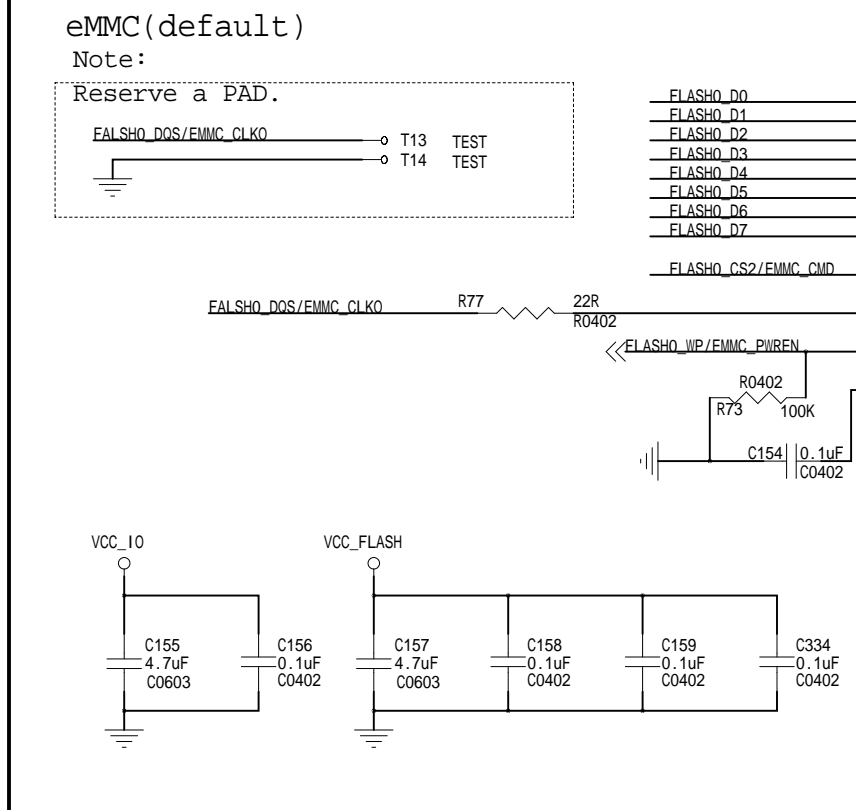
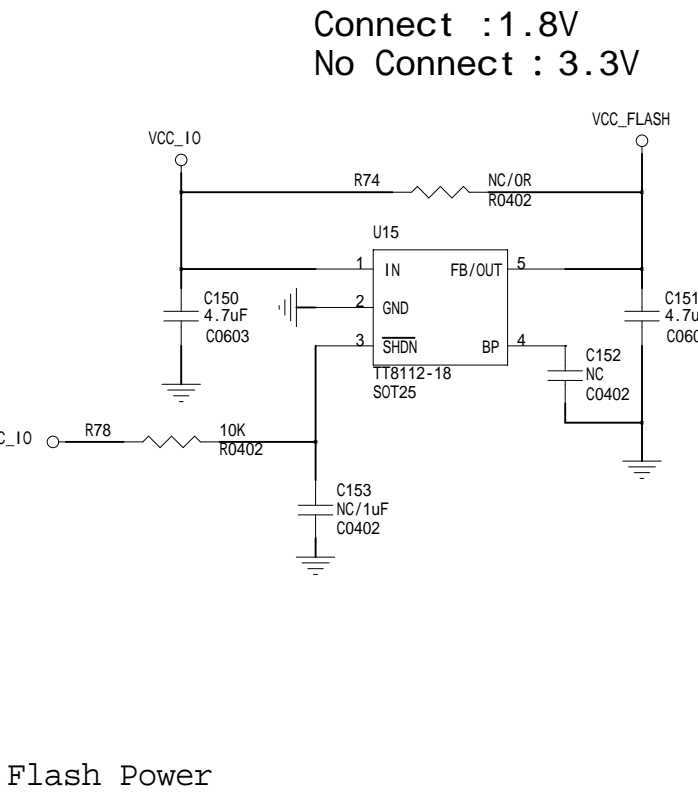
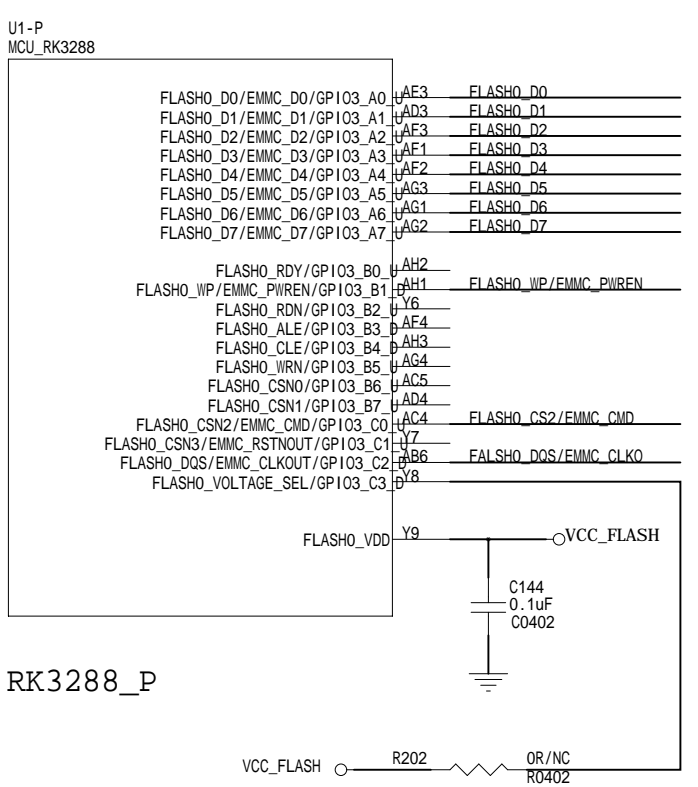
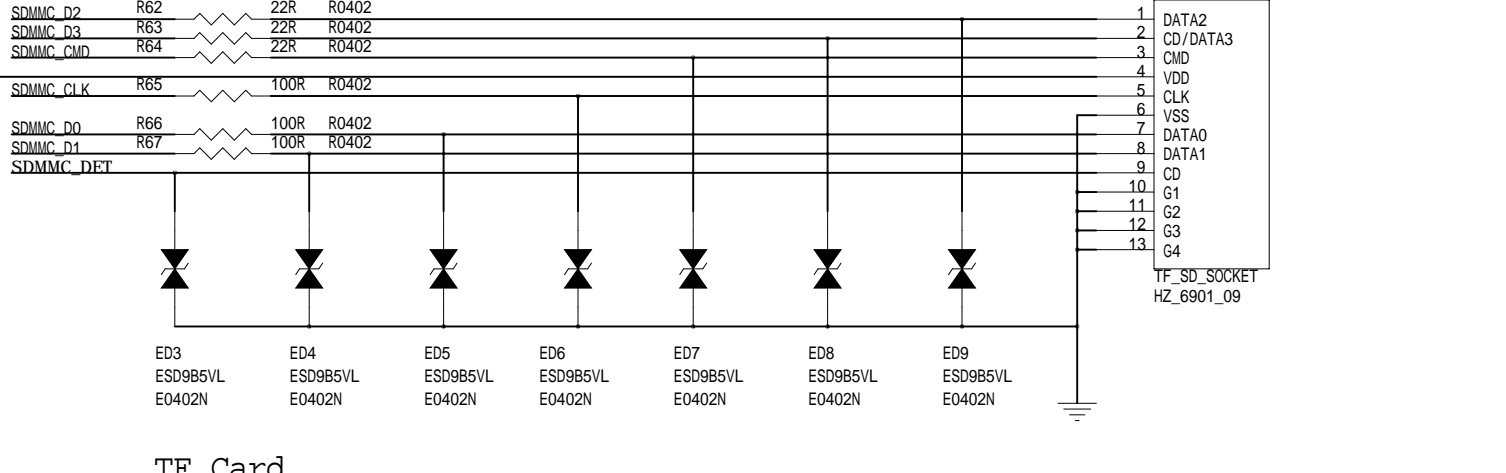
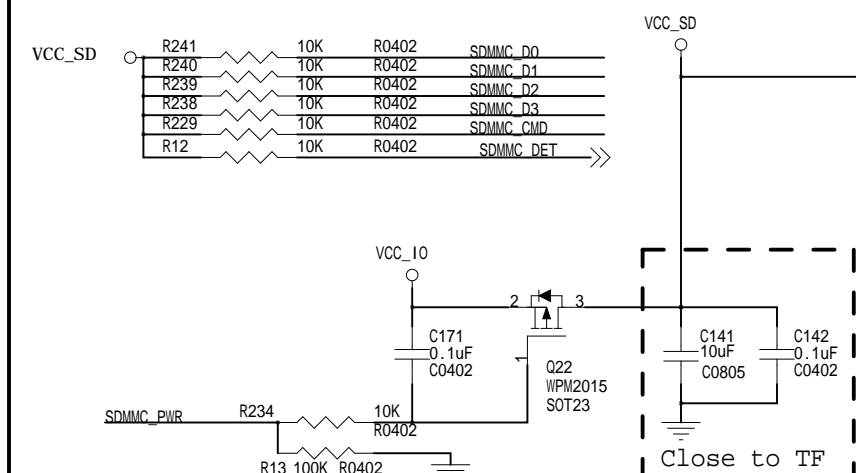
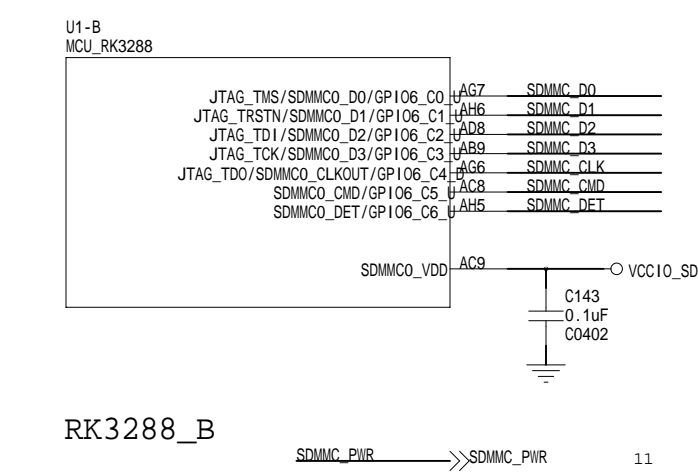
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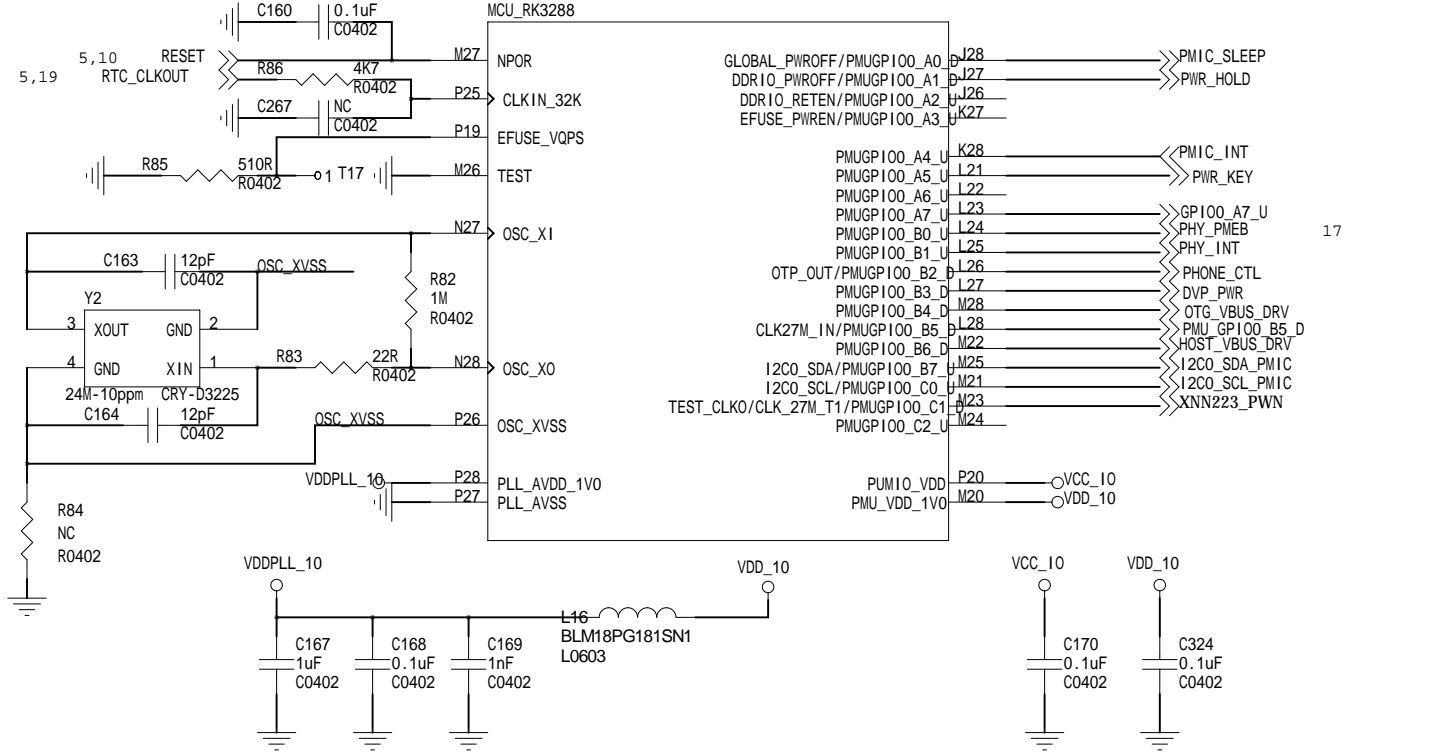
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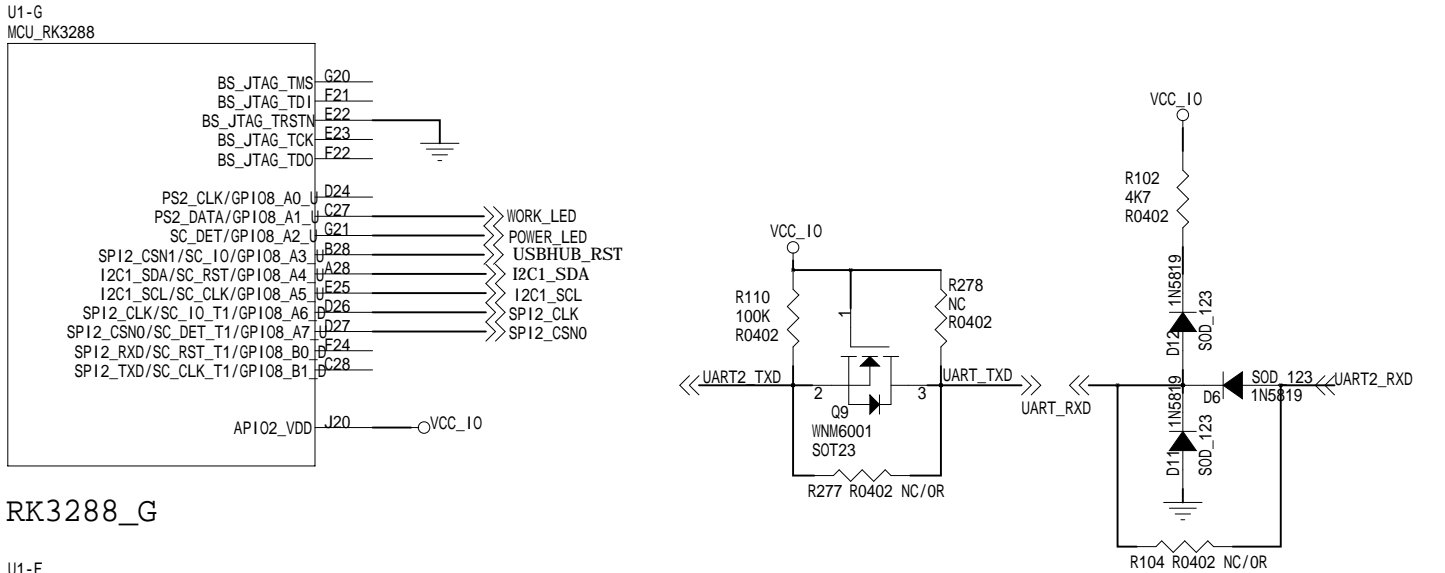
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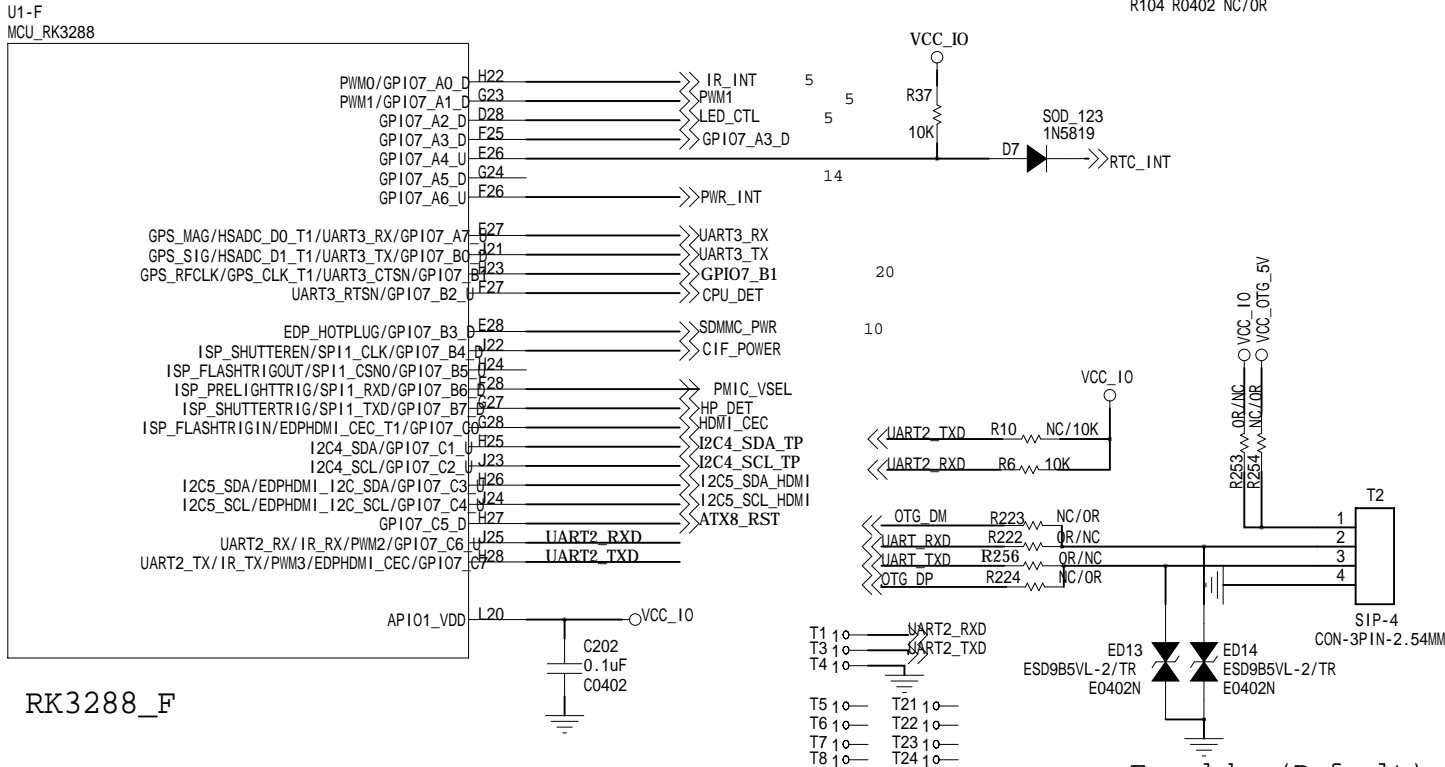




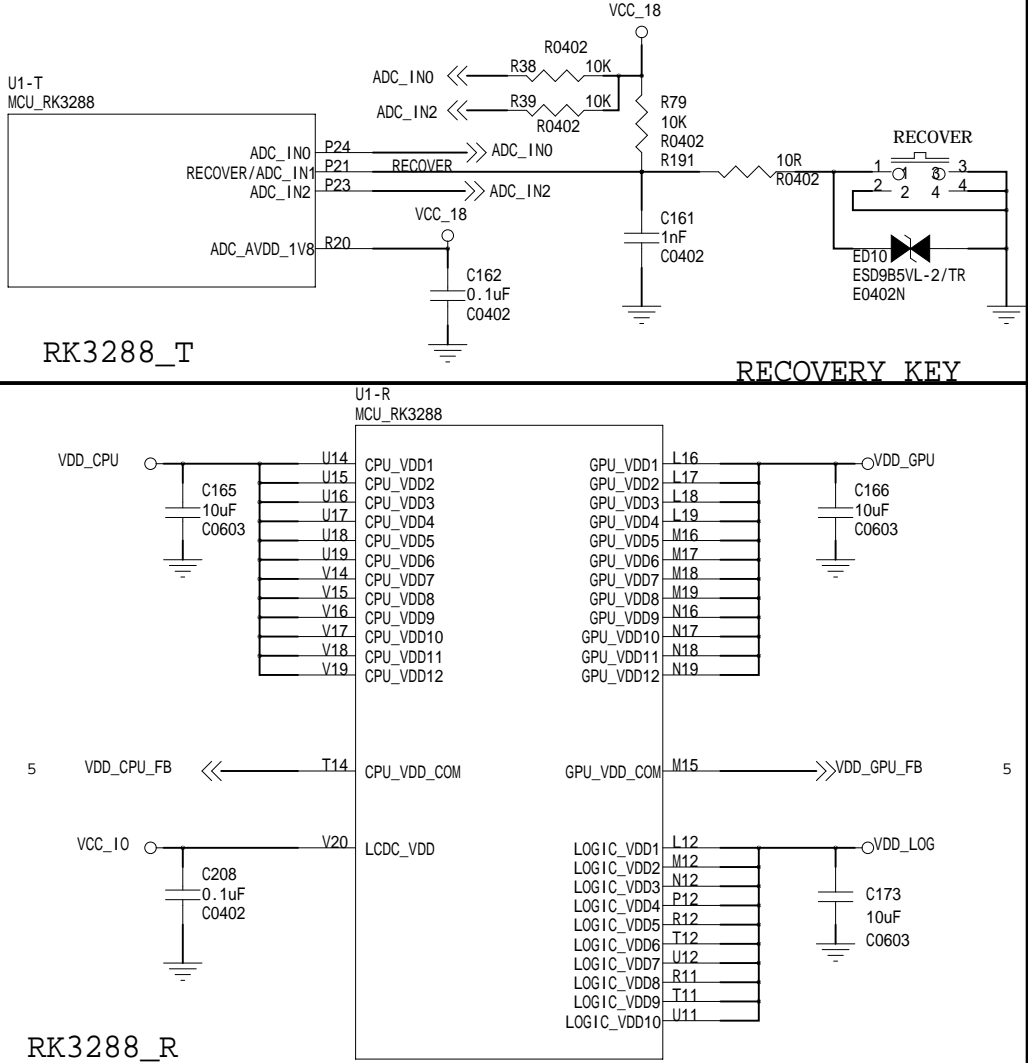
RK3288_D



RK3288_G

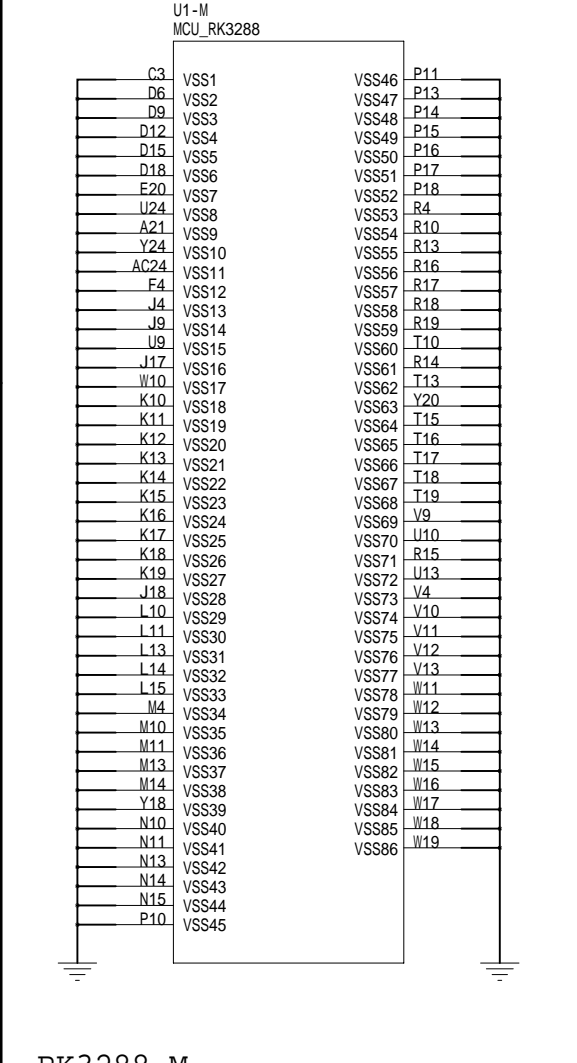


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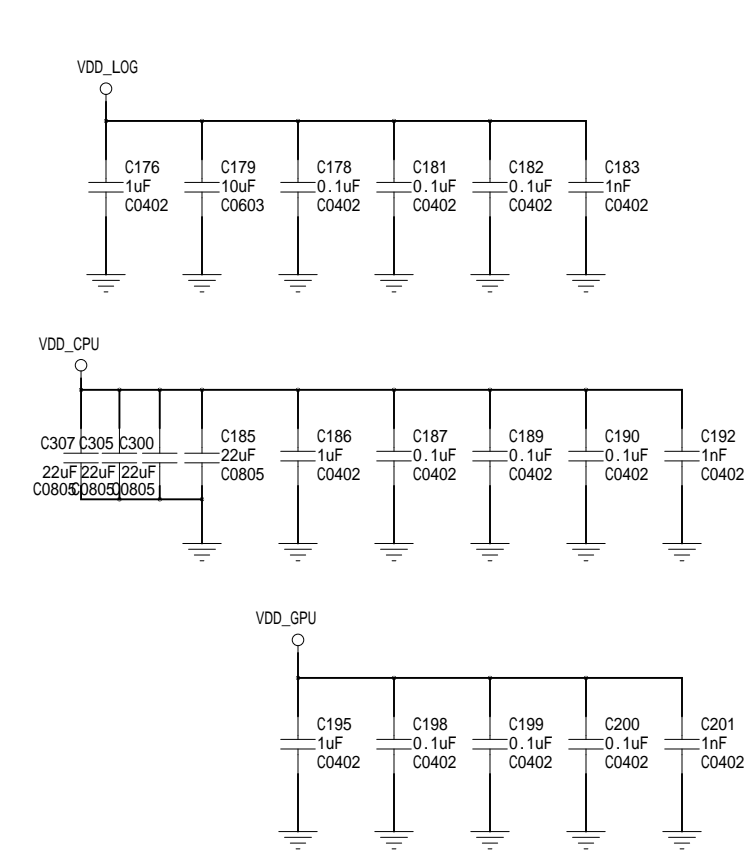
RK3288_T

RK3288_R

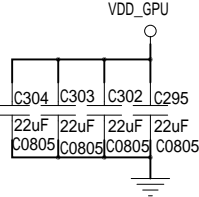


RK3288_M

RK3288 FILTER

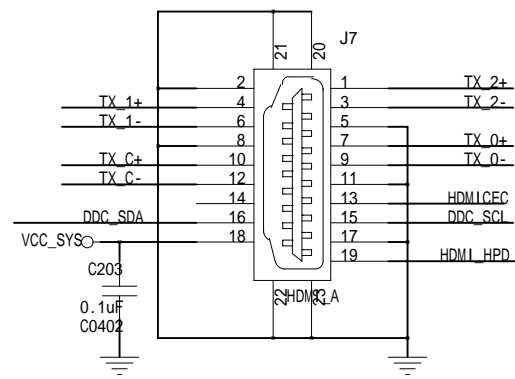


Place the Component
if need to write eFUSE

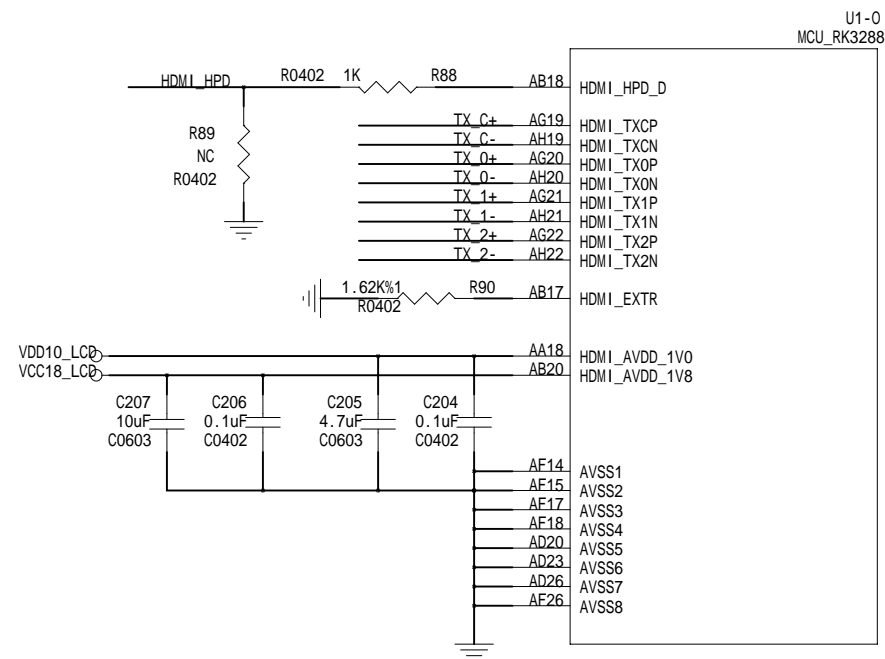
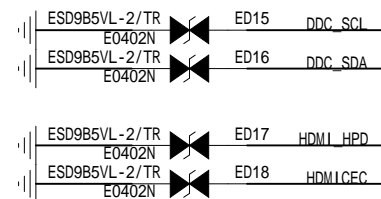
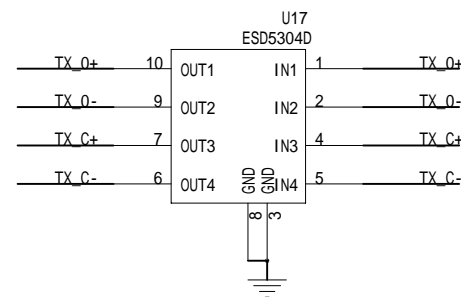
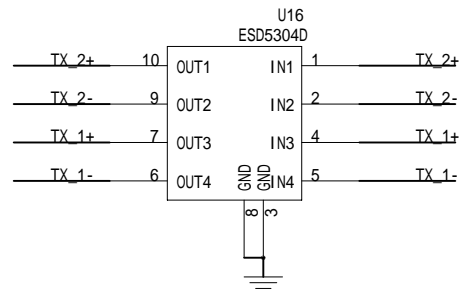


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| File: | REV: 23 |
| Create Date: | Page Num: 10 |
| Modify Date: Wednesday, June 18, 2014 | Page Total: 21 |

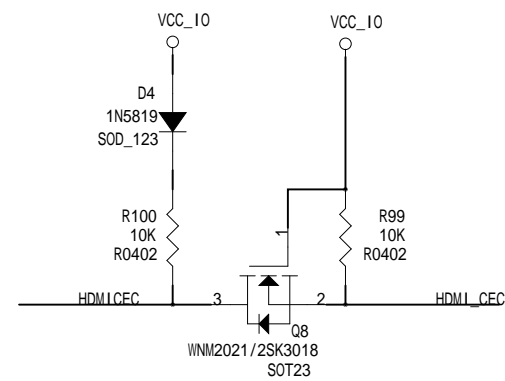
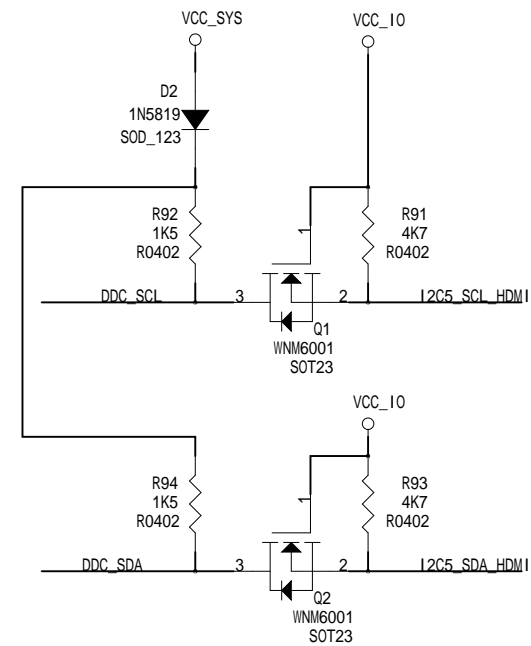
For debug (Default)



HDMI OUT

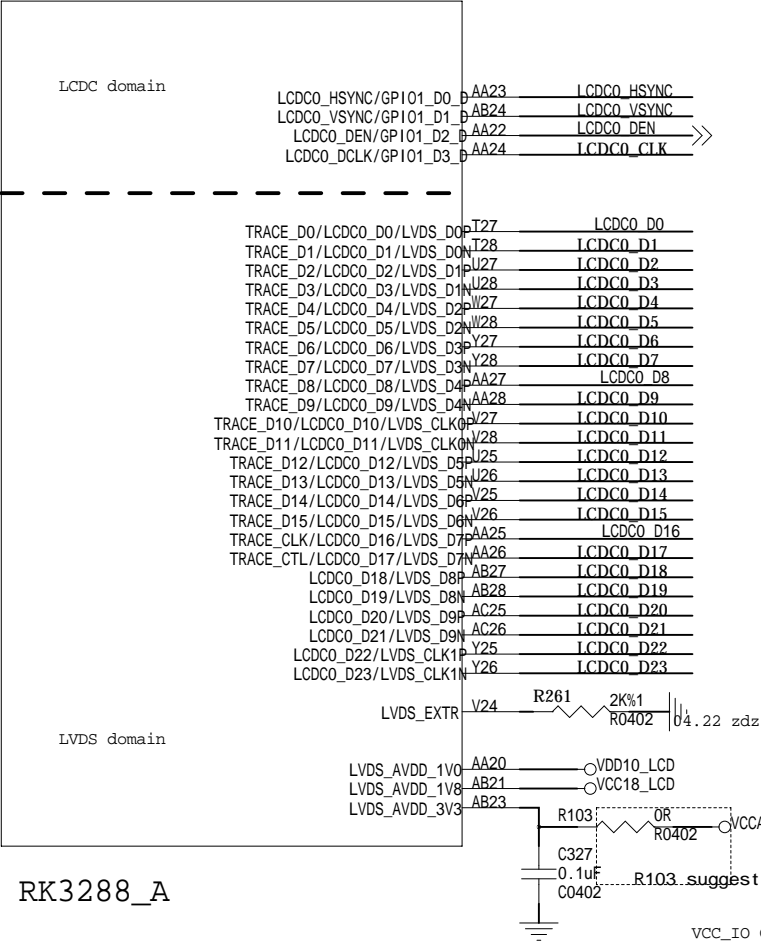


RK3288_O



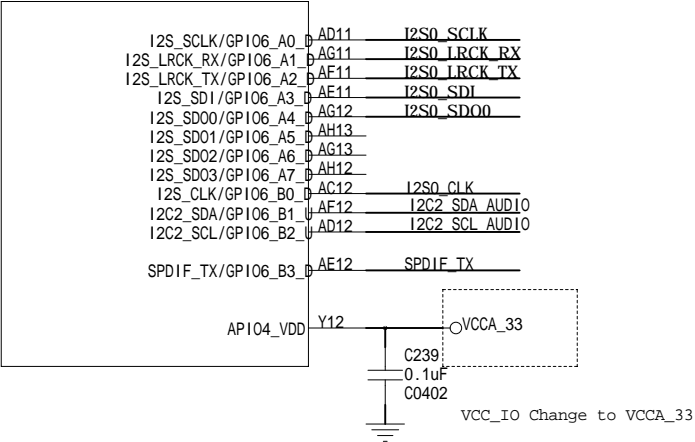
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| Create Date: | Page Num 11 |
| Modify Date: Wednesday, June 18, 2014 | Page Total 21 |

U1-A
MCU_RK3288



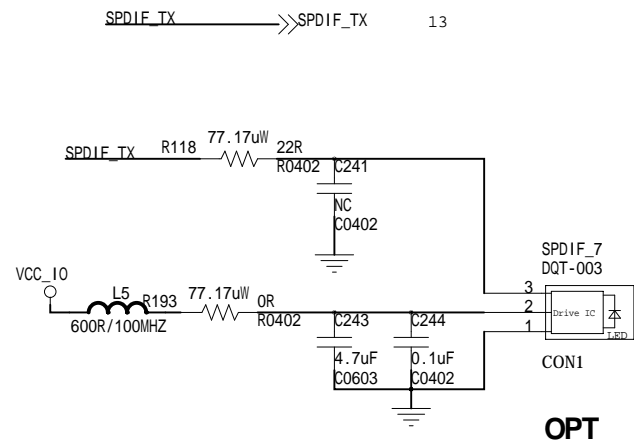
RK3288_A

U1-I
MCU_RK3288

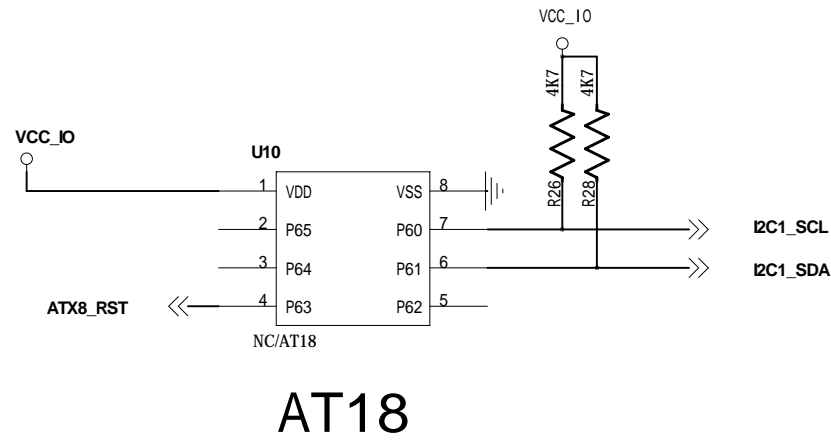


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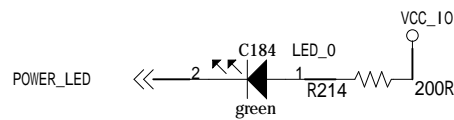
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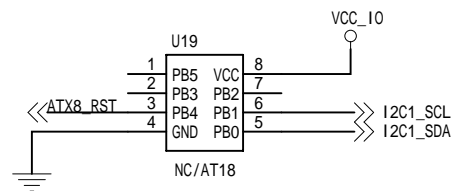
Optical S/PDIF OUT



AT18

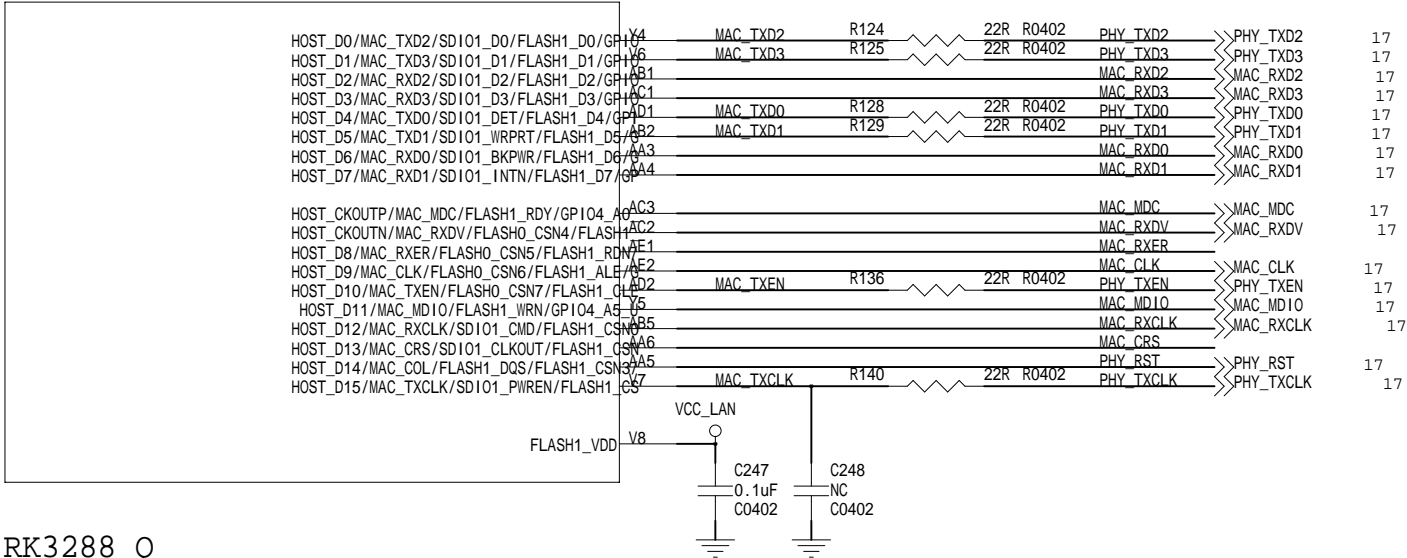


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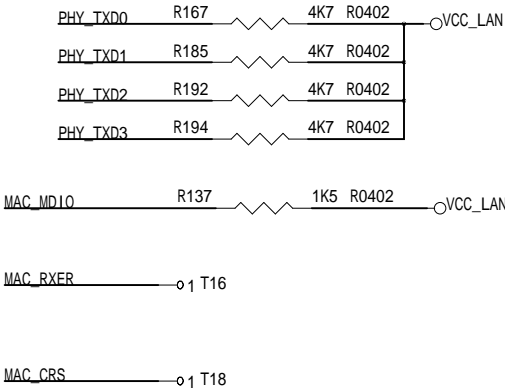


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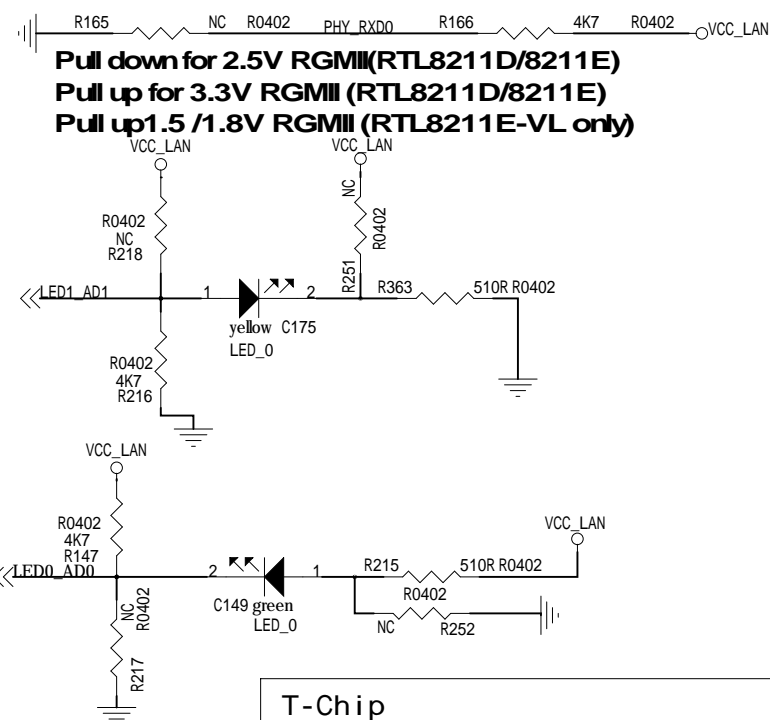
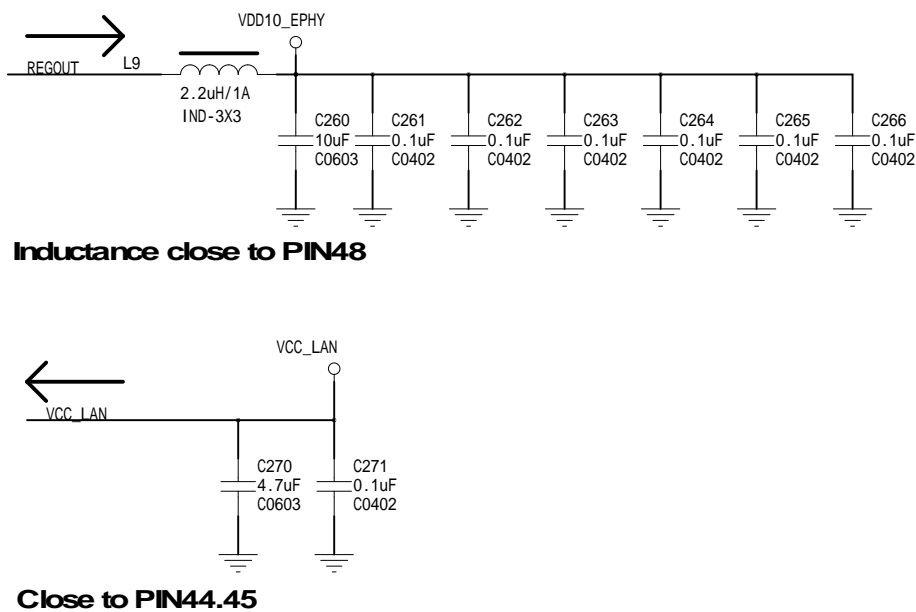
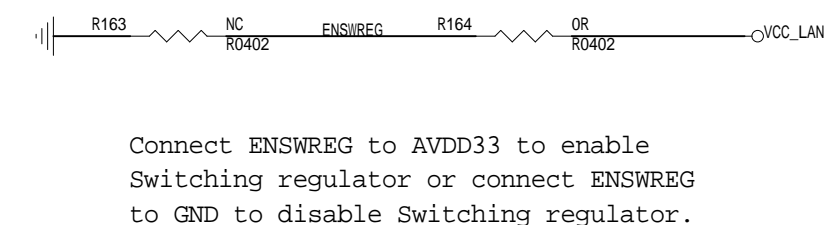
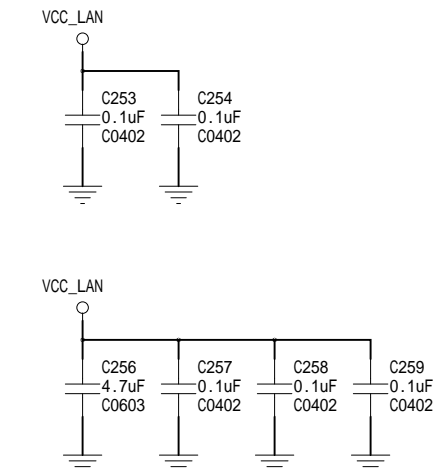
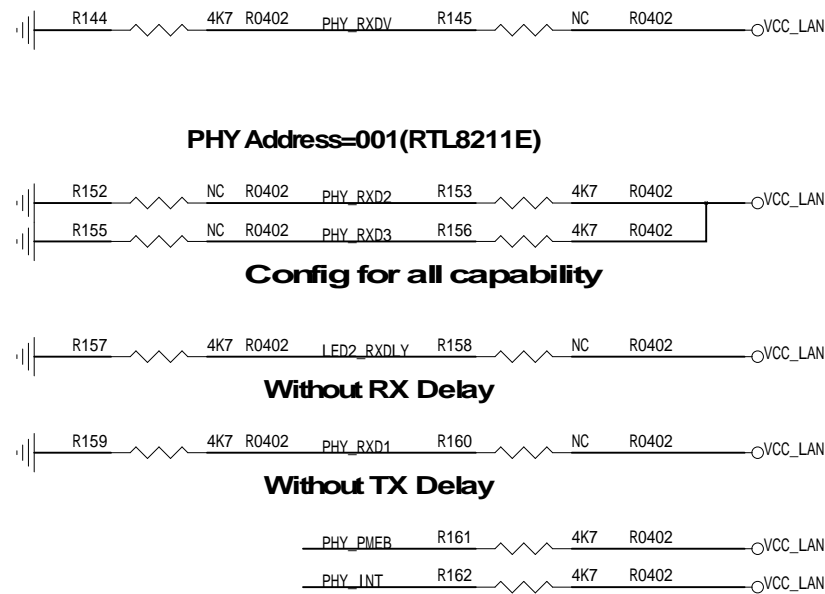
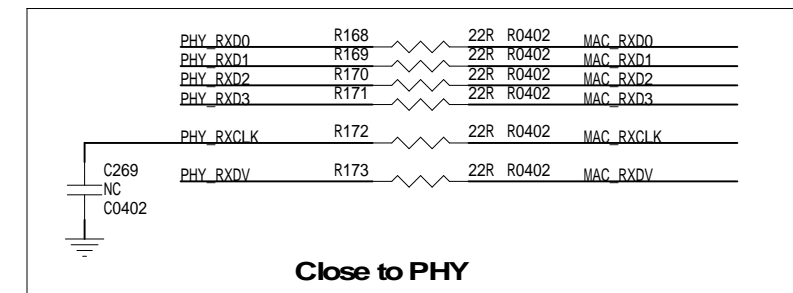
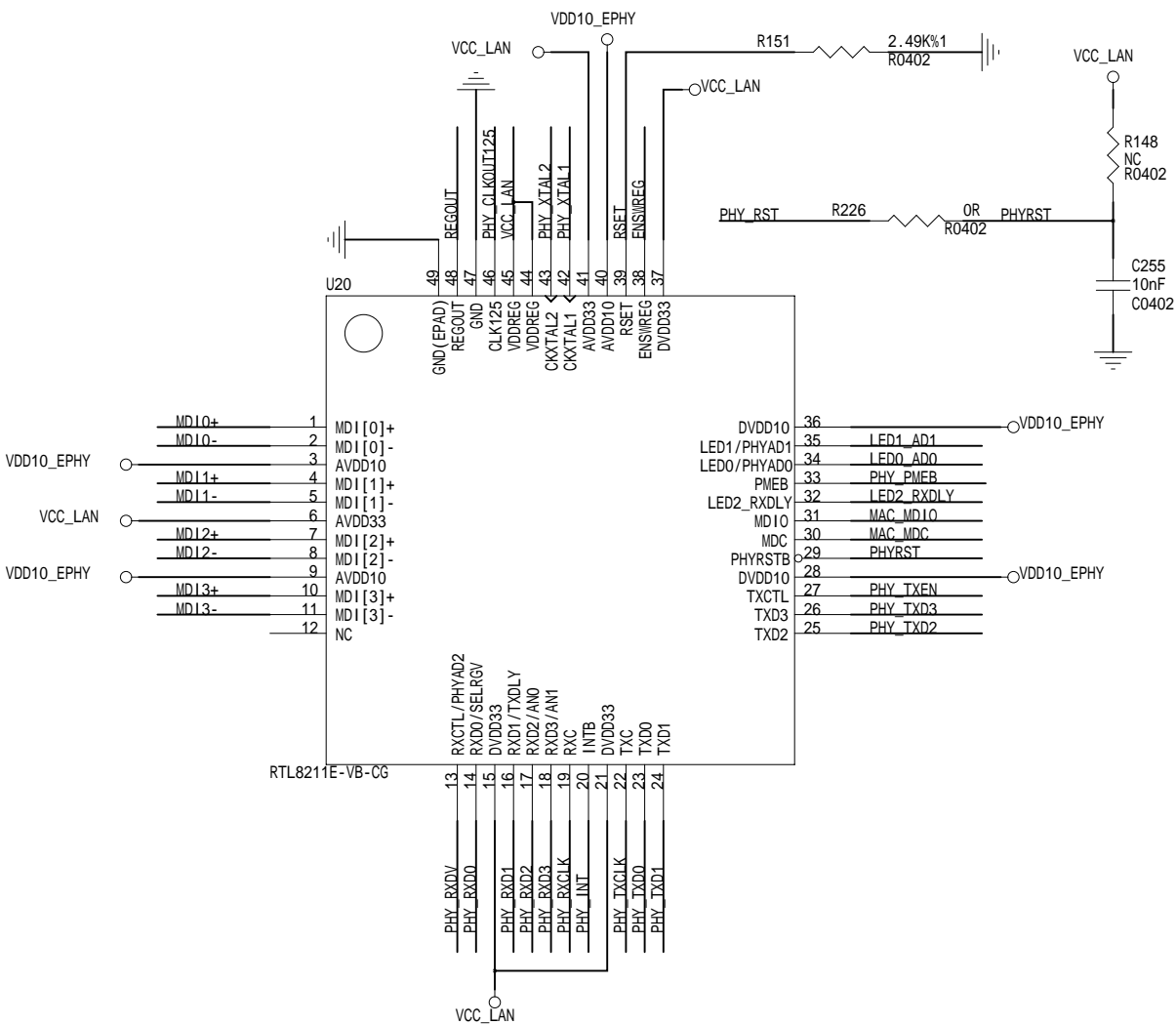
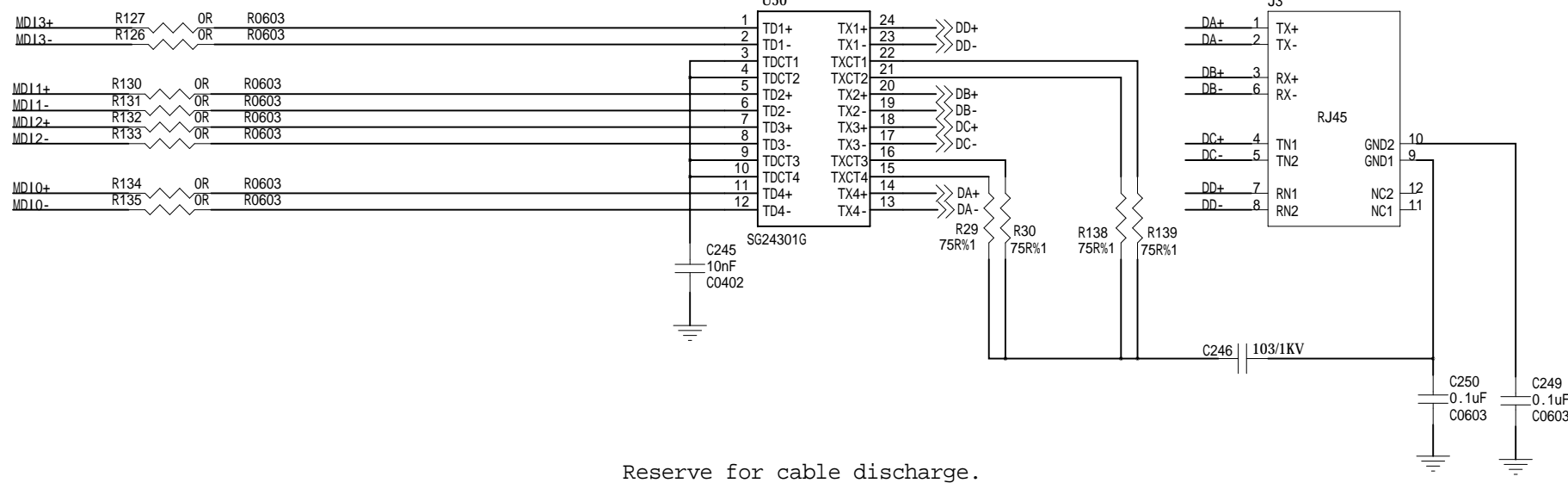
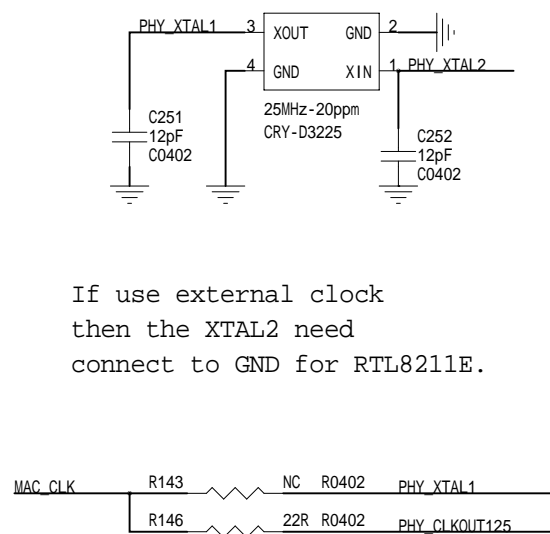
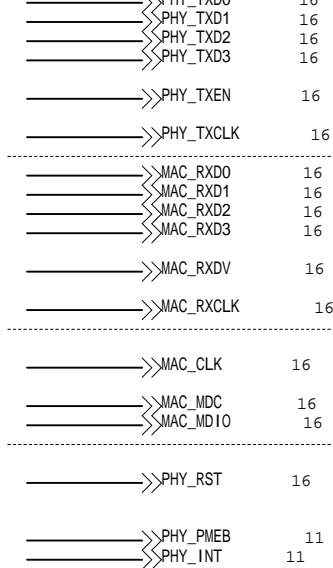
U1-Q
MCU_RK3288



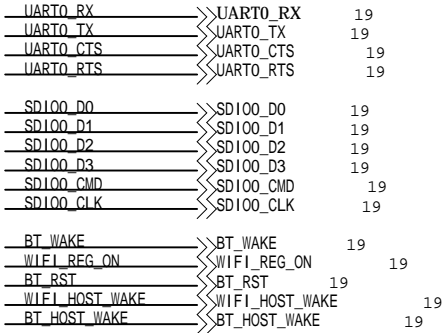
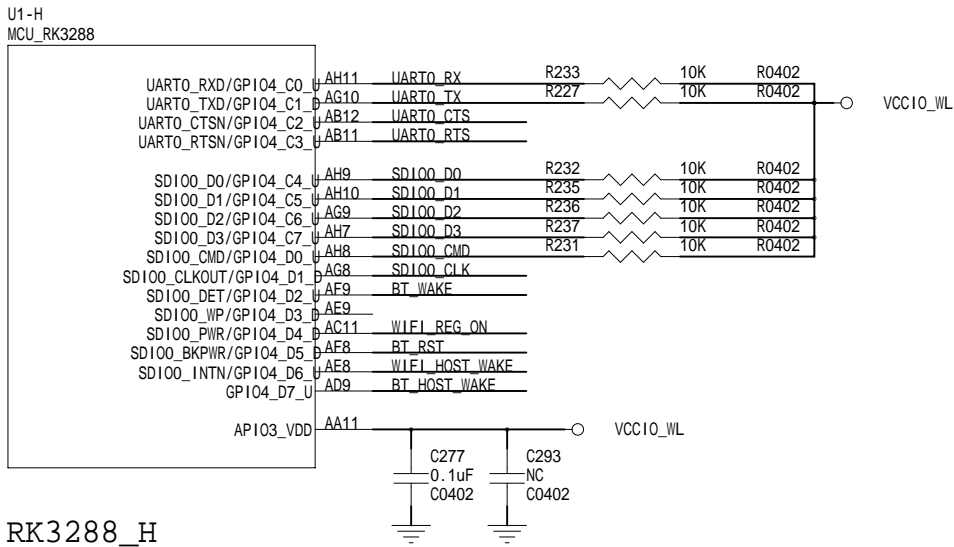
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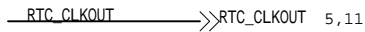
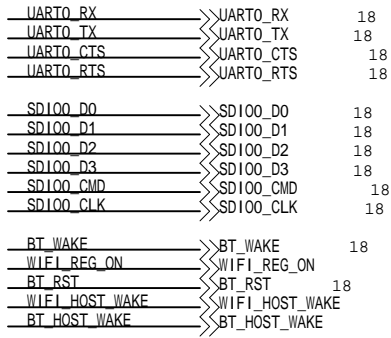


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| T-Chip | |
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| Modify Date: Wednesday, June 18, 2014 | Page Total: 21 |

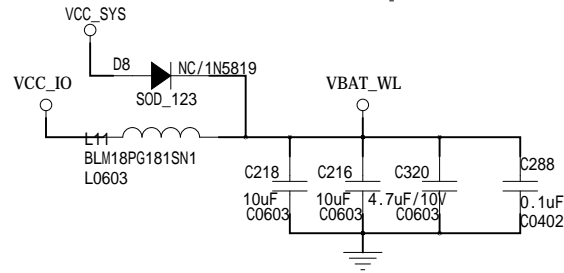
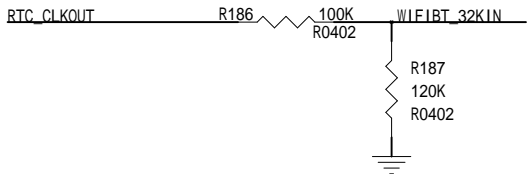
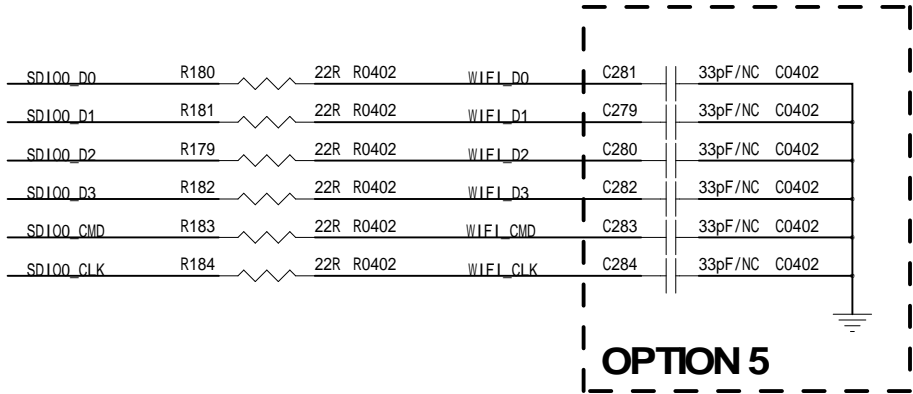


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| Modify Date:Wednesday, June 18, 2014 | Page Total21 |

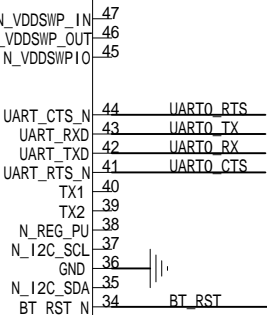
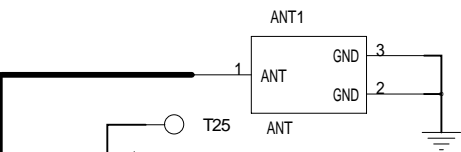
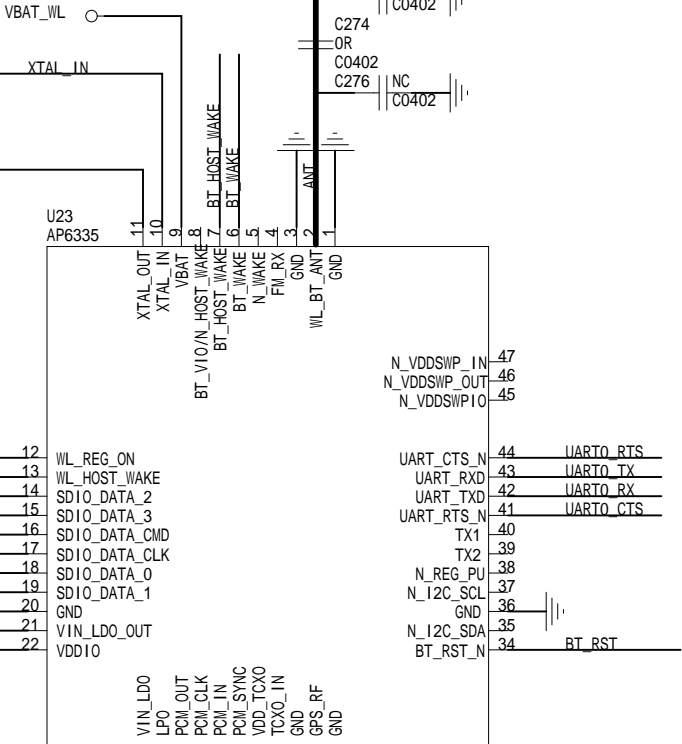
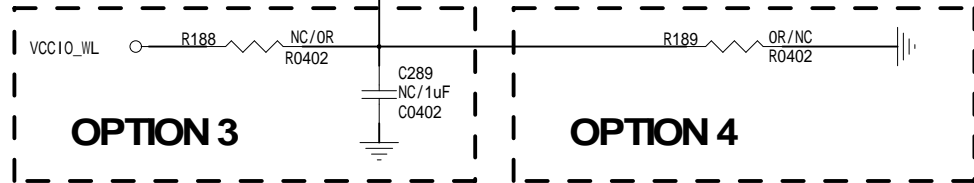
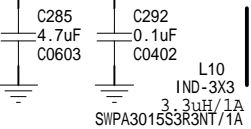
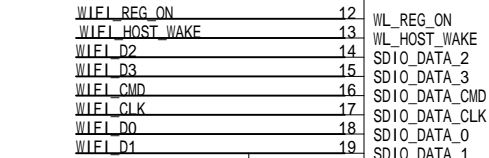
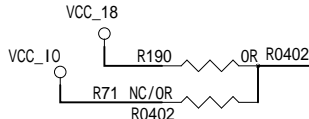
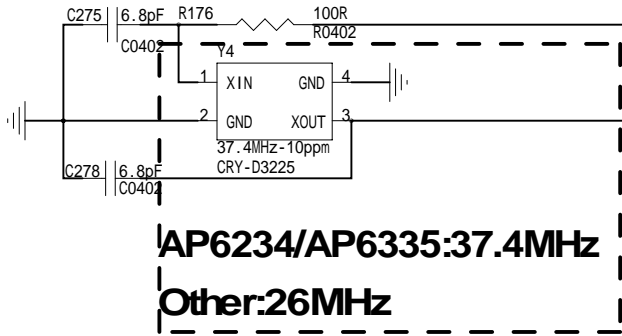
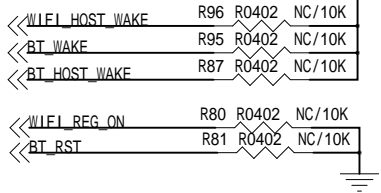




Note:
Adjusted the load capacitance
according to the crystal specification.



3.0V-4.8V
At least 400 ma power supply current



| OPTION | WIFI | | | | BT4.0 | Crystals | VDDIO |
|---------------------|------|-------|-----|------|-------|----------|------------|
| | a | b/g/n | ac | 5GHz | | | |
| AP6181 | | Yes | | | | 26MHz | 1.71-3.6V |
| AP6212 | | Yes | | | Yes | 26MHz | 1.71-3.6V |
| AP6234 | Yes | Yes | | Yes | Yes | 37.4MHz | 1.6-3.4V |
| AP6330 | Yes | Yes | | Yes | Yes | 26MHz | 1.2-2.9V |
| AP6335 (Default) | Yes | Yes | Yes | Yes | Yes | 37.4MHz | 1.71-3.63V |

| OPTION | | | 3 | 4 | 5 |
|---------------------|--|--|----|-----|-----|
| AP6181 | | | No | No | No |
| AP6212 | | | No | No | No |
| AP6234 | | | No | No | No |
| AP6330 | | | No | No | No |
| AP6335 (Default) | | | No | Yes | Yes |

Note:
Yes:Inside the box to
No:The box is not posted

T-Chip

Title: AP6XXX- WFI /BT

File:

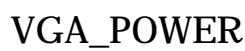
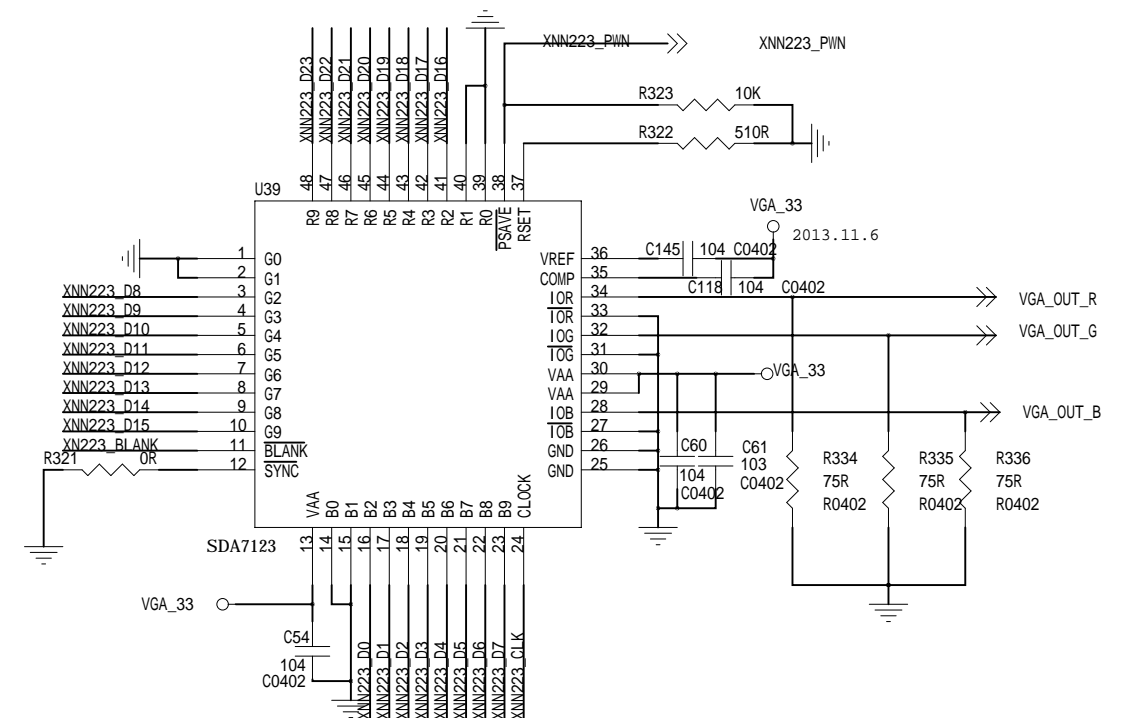
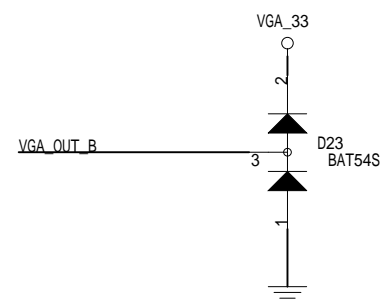
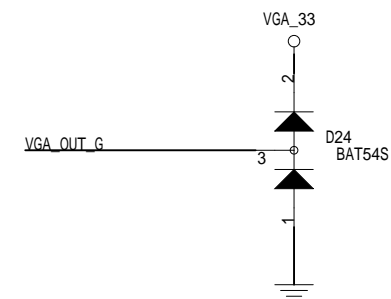
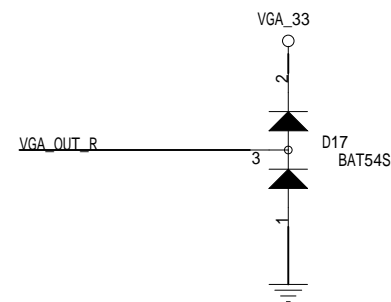
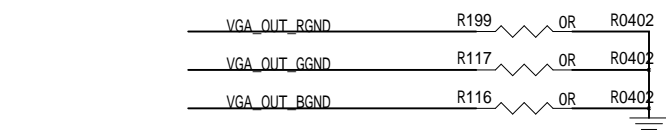
REV: 23

Create Date:

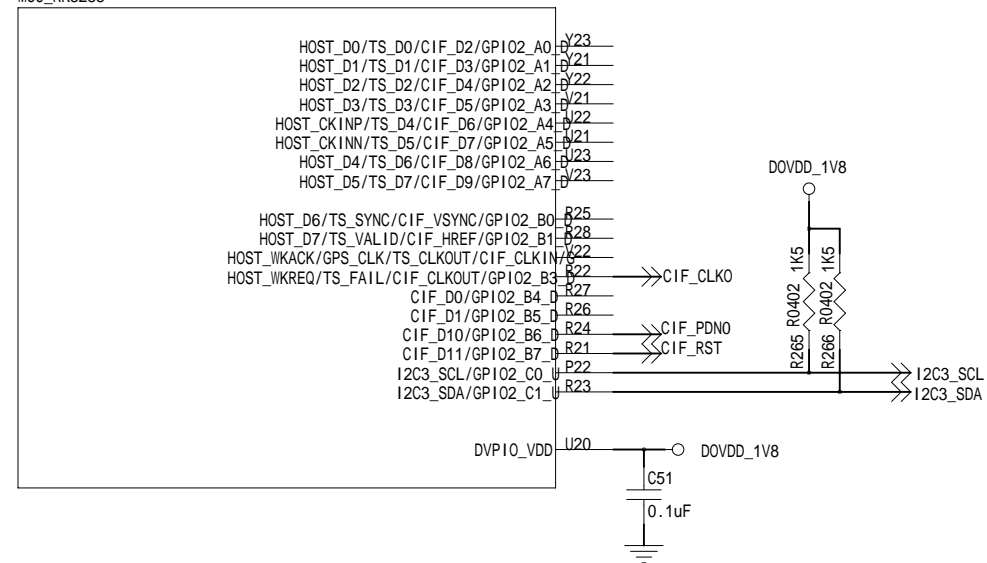
Page Num: 18

Modify Date:Wednesday, June 18, 2014

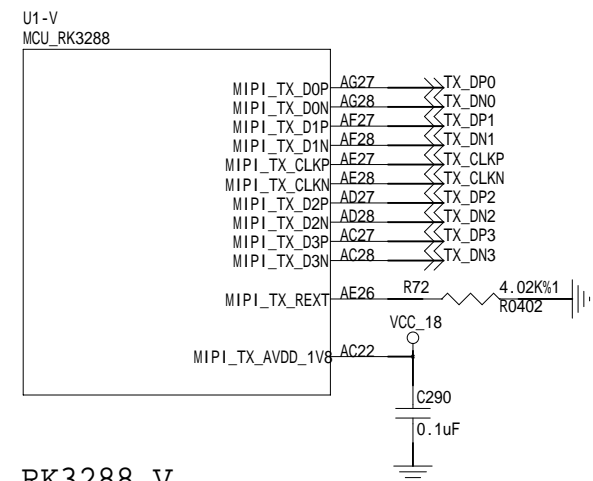
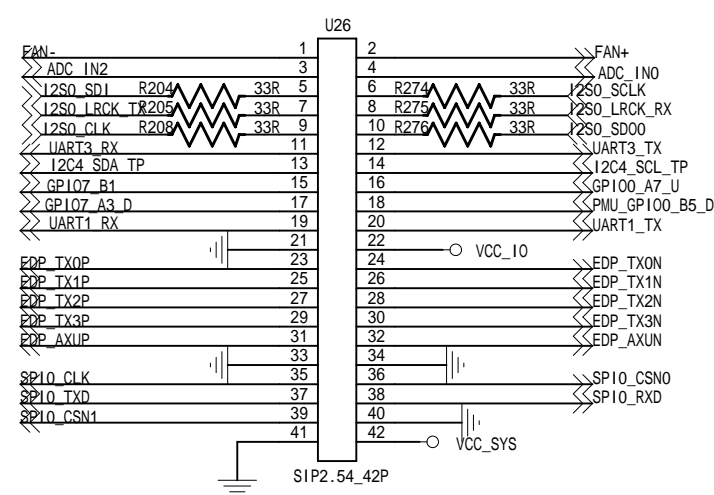
Page Total:21



| | |
|---------------------------------------|----------------|
| T-Chip | |
| Title: | |
| File: | REV: 23 |
| Create Date: | Page Num: 19 |
| Modify Date: Wednesday, June 18, 2014 | Page Total: 21 |



| U24 | | | |
|------------|----|----|-----------|
| >TX_DP0 | 1 | 2 | TX_DN0 |
| >TX_DP1 | 3 | 4 | TX_DN1 |
| >TX_CLKP | 5 | 6 | TX_CLKN |
| >TX_DP2 | 7 | 8 | TX_DN2 |
| >TX_DP3 | 9 | 10 | TX_DN3 |
| >LCDCO_D23 | 11 | 12 | LCDCO_D22 |
| >LCDCO_D21 | 13 | 14 | LCDCO_D20 |
| >LCDCO_D19 | 15 | 16 | LCDCO_D18 |
| >LCDCO_D17 | 17 | 18 | LCDCO_D16 |
| >LCDCO_D15 | 19 | 20 | LCDCO_D14 |
| >LCDCO_D13 | 21 | 22 | LCDCO_D12 |
| >LCDCO_D11 | 23 | 24 | LCDCO_D10 |
| >LCDCO_D9 | 25 | 26 | LCDCO_D8 |
| >LCDCO_D7 | 27 | 28 | LCDCO_D6 |
| >LCDCO_D5 | 29 | 30 | LCDCO_D4 |
| >LCDCO_D3 | 31 | 32 | LCDCO_D2 |
| >LCDCO_D1 | 33 | 34 | LCDCO_D0 |
| PWM1 | 35 | 36 | VCC_10 |
| SP12_CSNO | 37 | 38 | SP12_CLK |
| SP12_SDA | 39 | 40 | I2C1_SCL |
| | 41 | 42 | VCC_SYS |



| | |
|------------------|------|
| U1-W | |
| MCU_RK3288 | |
| MIPI_RX_D0P | AH23 |
| MIPI_RX_D0N | AH23 |
| MIPI_RX_D1P | AH24 |
| MIPI_RX_D1N | AH24 |
| MIPI_RX_CLKP | AH25 |
| MIPI_RX_CLKN | AH25 |
| MIPI_RX_D2P | AH26 |
| MIPI_RX_D2N | AH26 |
| MIPI_RX_D3P | AH28 |
| MIPI_RX_D3N | AH27 |
| MIPI_RX_REXT | AD21 |
| MIPI_RX_AVDD_1V8 | AC20 |

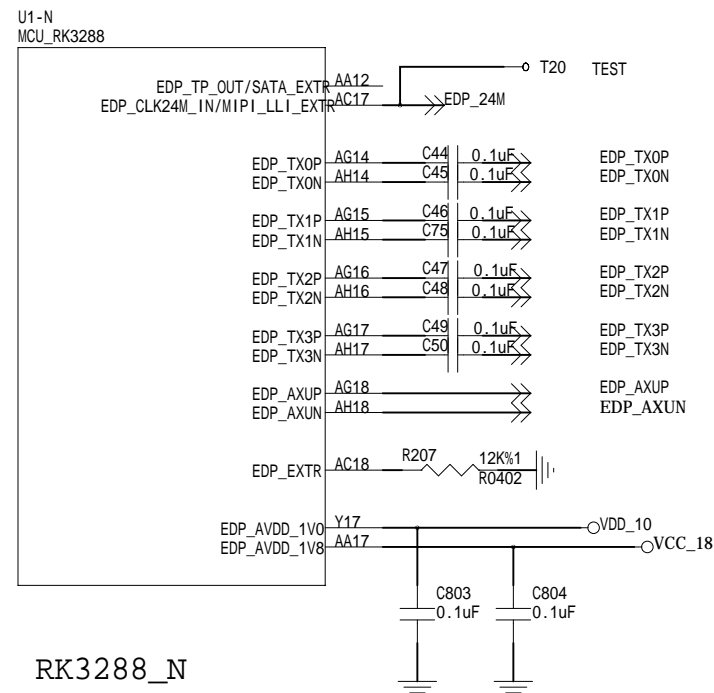
U1-X
MCU_RK3288

MIPI_TX/RX_D0P AE20 DP0
MIPI_TX/RX_D0N AF20 DN0
MIPI_TX/RX_D1P AE21 DP1
MIPI_TX/RX_D1N AF21 DN1
MIPI_TX/RX_CLKP AE23 CLKP
MIPI_TX/RX_CLKN AF23 CLKN
MIPI_TX/RX_D2P AE24 DP2
MIPI_TX/RX_D2N AF24 DN2
MIPI_TX/RX_D3P AE25 DP3
MIPI_TX/RX_D3N AF25 DN3

MIPI_TX/RX_REXT AD22 R206 4.02K 1V8 DOVDD_1V8 R0402
MIPI_TX/RX_AVDD_1V8 AC21 C609 0.1uF

RK3288_X

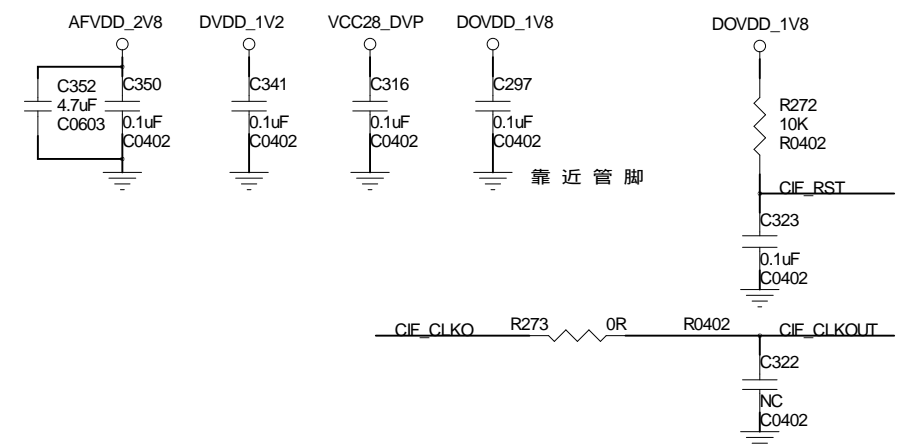
The schematic diagram illustrates the power management section of the T1020 camera module. It shows the connection of DVP_PWR, VCC_IO, and CIF_POWER to various regulators and capacitors. Key components include U91 (TT8142), U25 (TT8112-12), and various capacitors (C325, C402, C318, C314, C341, C315, C313, C296, C291, C298, C351).



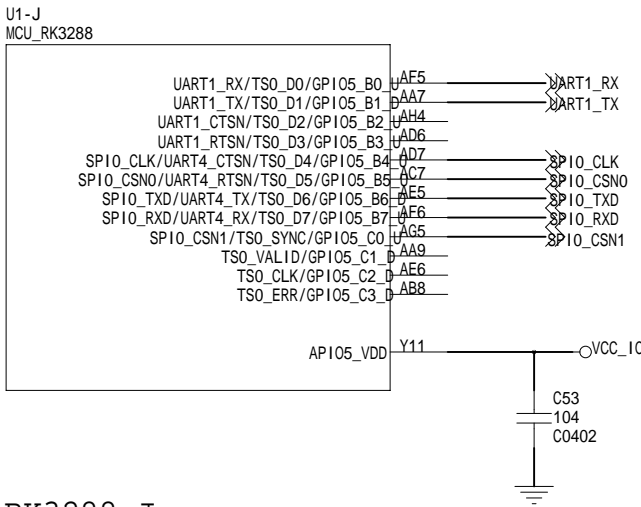
Pinout diagram for OV13850 CAMERA module:

| Pin | Signal |
|-----|------------|
| 1 | AFVDD_2V8 |
| 2 | DVDD_1V2 |
| 3 | DOVDD_1V8 |
| 4 | VCC28_DVP |
| 5 | AVDD_GND |
| 6 | AVDD28 |
| 7 | DGND |
| 8 | I2C3_SDA |
| 9 | I2C3_SCL |
| 10 | CIF_RST |
| 11 | CIF_PDNO |
| 12 | RST |
| 13 | PWDN1 |
| 14 | CIF_CLKOUT |
| 15 | GND |
| 16 | MCLK |
| 17 | GND |
| 18 | DP3 |
| 19 | DN3 |
| 20 | GND |
| 21 | DP2 |
| 22 | DN2 |
| 23 | GND |
| 24 | DP1 |
| 25 | DN1 |
| 26 | GND |
| 27 | CLKP |
| 28 | CLKN |
| 29 | GND |
| 30 | DP0 |
| 31 | DN0 |
| 32 | GND |

OV13850
CAMERA



| | |
|---------------------------------------|----------------|
| T-Chip | |
| Title: Camera Interface | |
| File: | REV: 23 |
| Create Date: | Page Num: 20 |
| Modify Date: Wednesday, June 18, 2014 | Page Total: 21 |



RK3288_J

| | | |
|---------------------------------------|------------|--------|
| T-Chip | | |
| Title: DTV- (Reserve) | | |
| File: | REV: 23 | |
| Create Date: | Page | Num 21 |
| Modify Date: Wednesday, June 18, 2014 | Page Total | 21 |