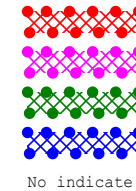


# CONTENT INDEXING

- 01. INDEX
- 02. Change List
- 03. Block Diagram
- 04. Power Tree-RK818
- 05. RK3128 Power
- 06. RK3128 DDR Controler
- 07. RK3128 Flash/SD Controler
- 08. RK3128 MISC&USB
- 09. RK3128 DISPLAY/GMAC Controler
- 10. RK3128 CAMERA/HDMI Controler
- 11. RK3128 CODEC/VDAC
- 12. RK3128 GPIO
- 13. RAM-LPDDR2
- 14. Memory-Nand Flash
- 15. Power-RK818
- 16. Connector


## PCB POWER WIRE WIDTH INDICATE



above 80 miles  
 above 50 miles  
 above 30 miles  
 above 16 miles  
 Under needs

## 6 LAYERS PCB STACK


TOP		Hoz(18um) + plating copper(18um) 1080(68) 3.2mil
GND		0.3mm 1/1oz
S1		2116(53) 4.2mil
POWER		0.3mm 1/1oz
S2		1080(68) 3.2mil
BOTTOM		Hoz(18um) + plating copper(18um)

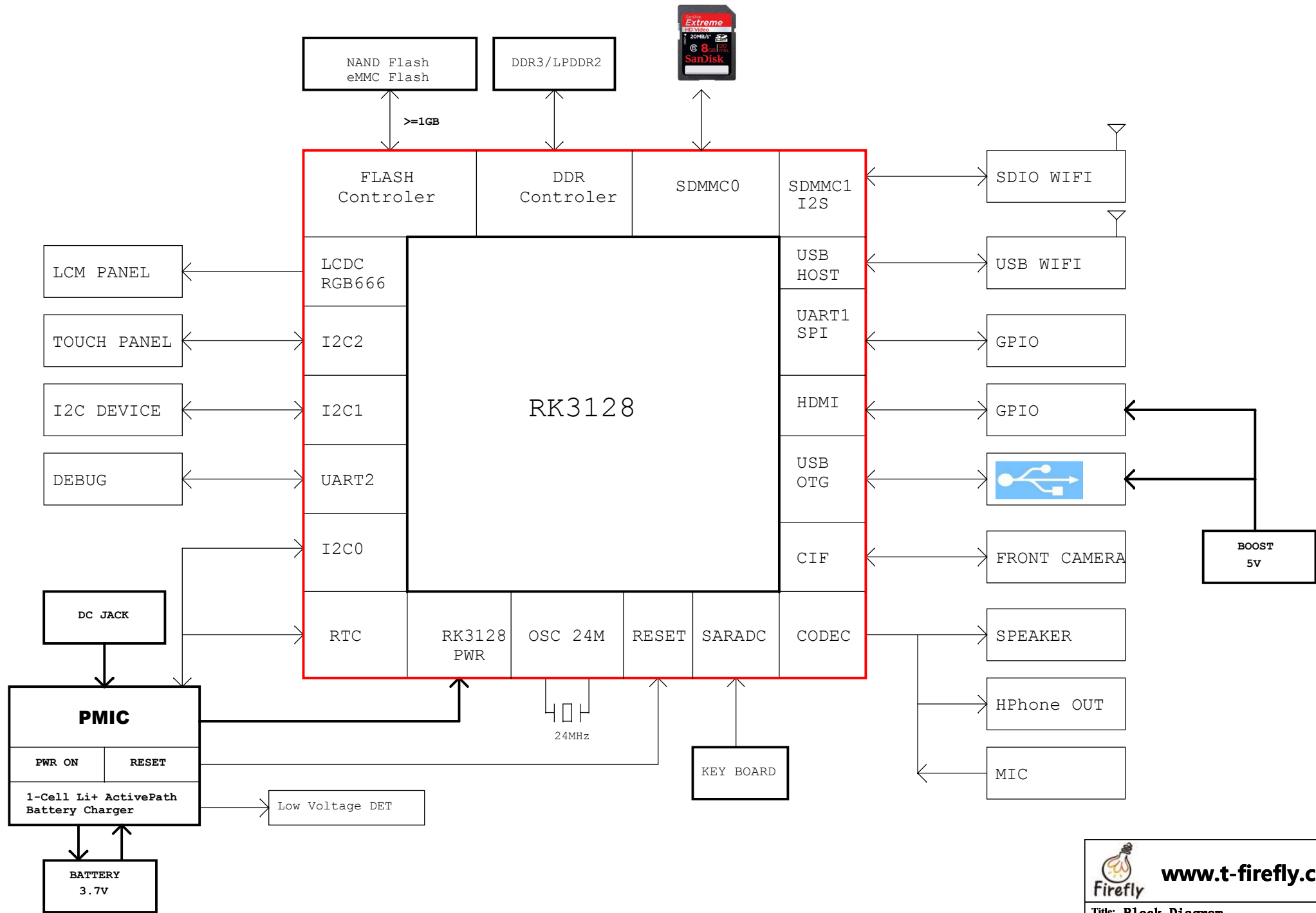


**www.t-firefly.com**

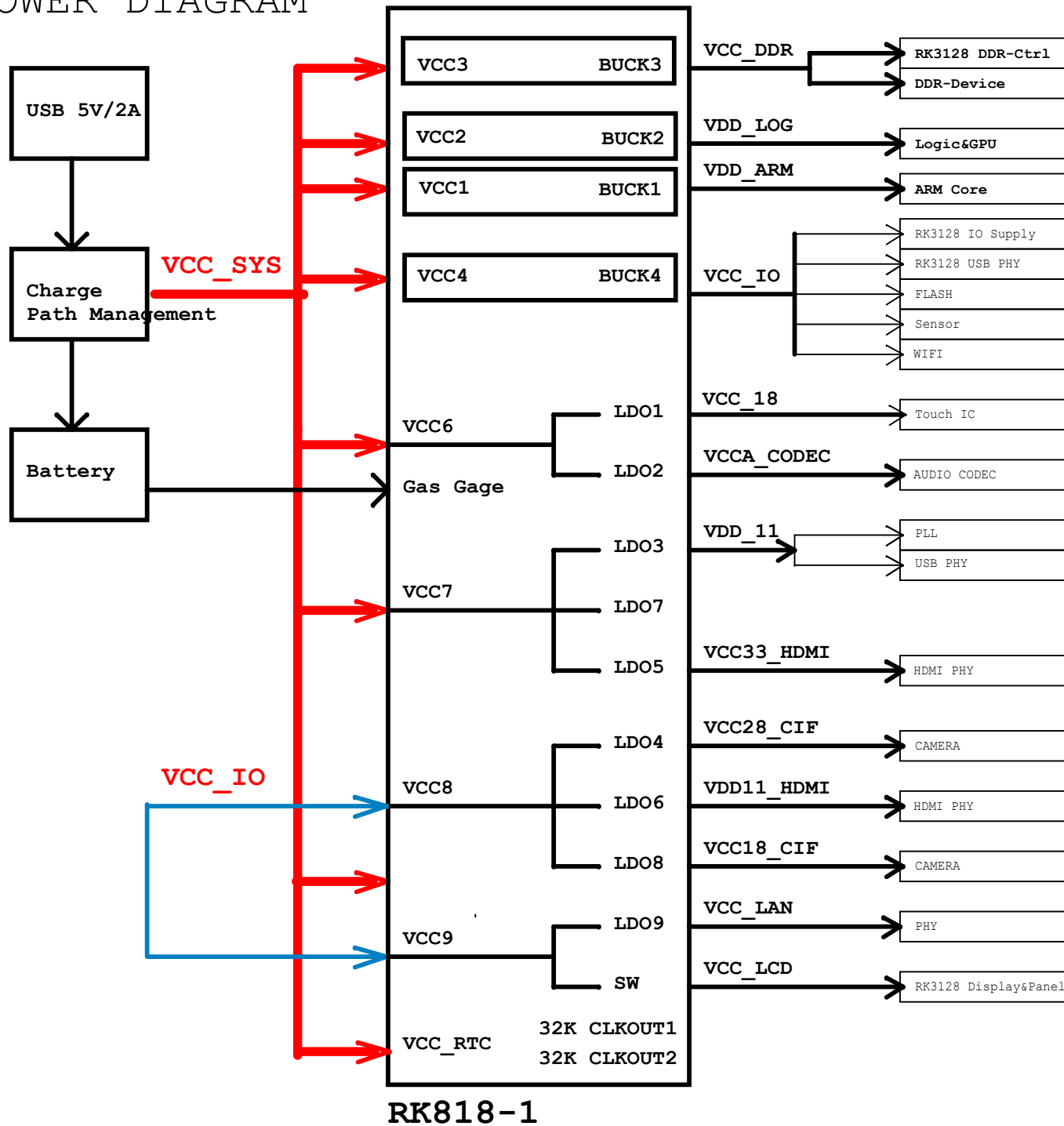
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<b>File: FirePrime</b>	REV: V10
Create Date: Monday, June 01, 2015	Page Num: 1
Modify Date: Wednesday, June 10, 2015	Page Total: 16

Version	Date	Author	Change Note	Note
V00	20150130	HWQ	The first edit	
V01	20150312	HWQ	Increase pull-up resistor for adcin1.	
V10	20150611	HWQ	L5 and L6's package was changed.	


		<a href="http://www.t-firefly.com">www.t-firefly.com</a>	
<b>Title: Change List</b>			
<b>File: FirePrime</b>			REV: V10
<b>Create Date:</b> Monday, June 01, 2015		<b>Page Num:</b> 2	
<b>Modify Date:</b> Monday, June 15, 2015		<b>Page Total:</b> 16	



# POWER DIAGRAM



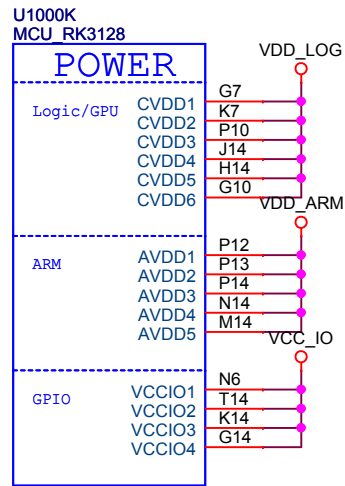
PowerName	PMU Channel	TIMER (2mS)	default ON/OFF	default voltage	sleep ON/OFF
VDD_ARM	DCDC1	solt:3	ON	1.1V	ON
VDD_LOG	DCDC2	solt:1	ON	1.1V	ON
VCC_DDR	DCDC3	solt:4	ON	DDR3 1.5V DDR3L 1.35V LPDDR 1.2V	ON
VCC_IO	DCDC4	solt:1	ON	3.0V	ON
VCC_18	VLD01	X	OFF	3.3V	OFF
VCCA_CODEC	VLD02	X	OFF	3.0V	OFF
VDD_11	VLD03	solt:1	ON	1.1V	ON
VCC28_CIF	VLD04	solt:2	ON	2.5V	OFF
VCC33_HDMI	VLD05	solt:1	ON	3.0V	ON
VDD11_HDMI	VLD06	X	OFF	1.2V	OFF
VCCi8_CIF	VLD07	solt:2	ON	1.8V	OFF
VCC_LAN	VLD08	X	OFF	1.8V	OFF
VCC_LCD	VLD09	solt:4	ON	3.0V	OFF
VCC_LCD	VSWOUT1	X	OFF	X	OFF



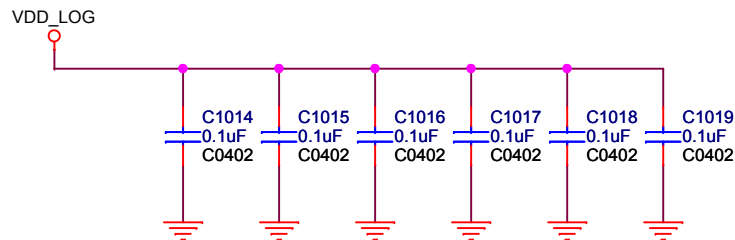
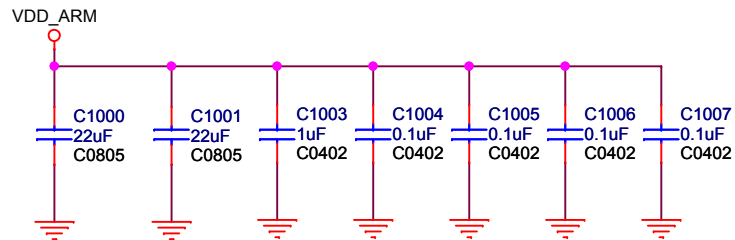
**www.t-firefly.com**

<b>Title: Power Tree-RK818</b>	
<b>File: FirePrime</b>	REV: V10
Create Date: Monday, June 01, 2015	Page Num: 4
Modify Date: Wednesday, June 10, 2015	Page Total: 16

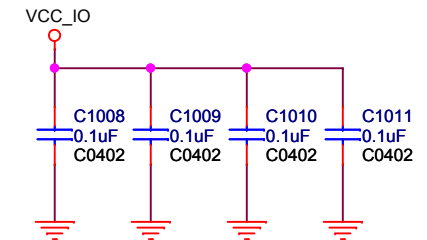
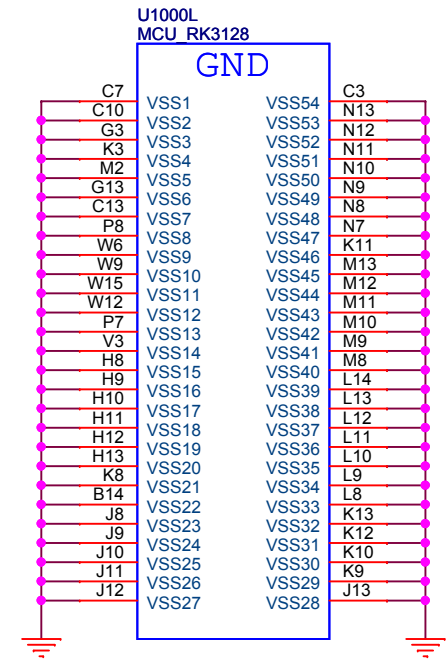

# RK3128-K



Note:  
Place these filter capacitors under CPU.



# RK3128-L

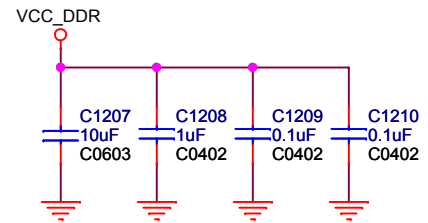
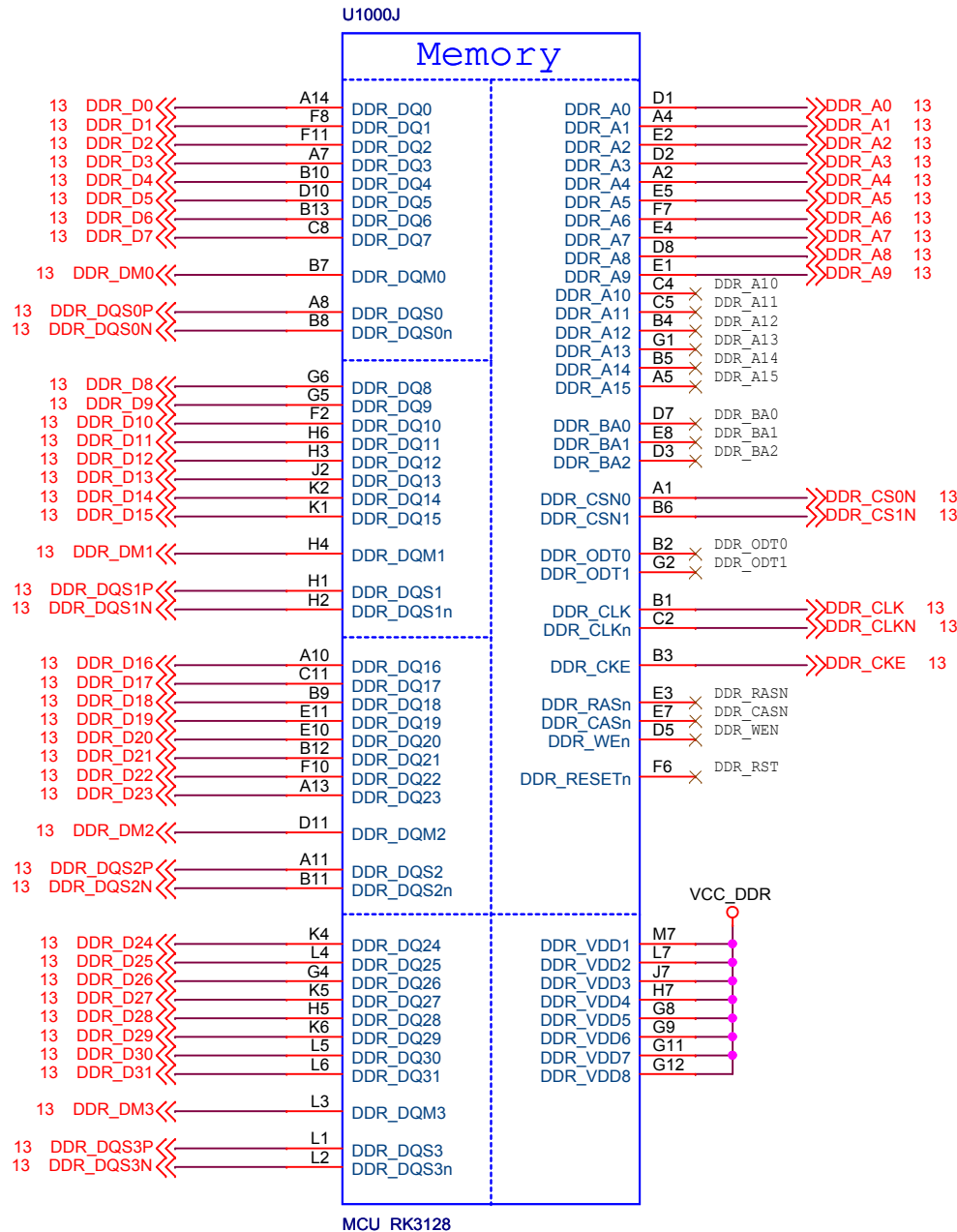
**www.t-firefly.com**

**Title: RK3128 Power**

**File: FirePrime** REV: V10

Create Date: Monday, June 01, 2015 Page Num: 5

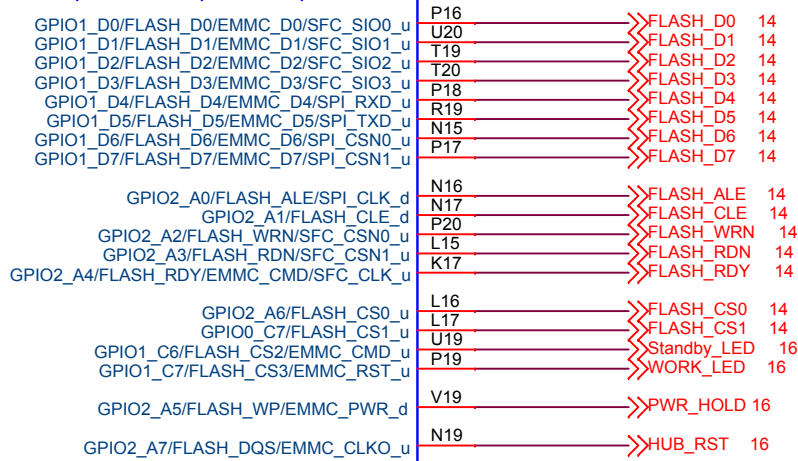
Modify Date: Wednesday, June 10, 2015 Page Total: 16



RK3128-E

U1000E  
MCU\_RK3128

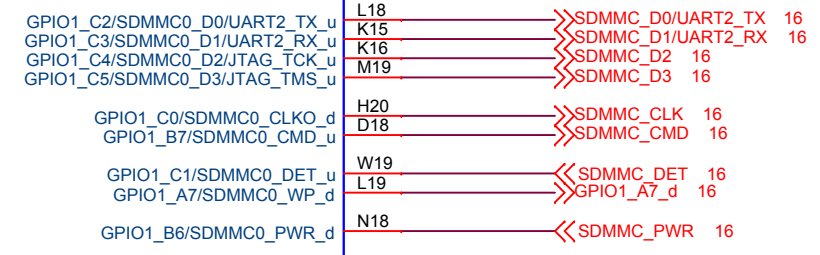

Nand Flash/eMMC/SFC/SPI



RK3128-D

U1000D  
MCU\_RK3128

SDMMC0

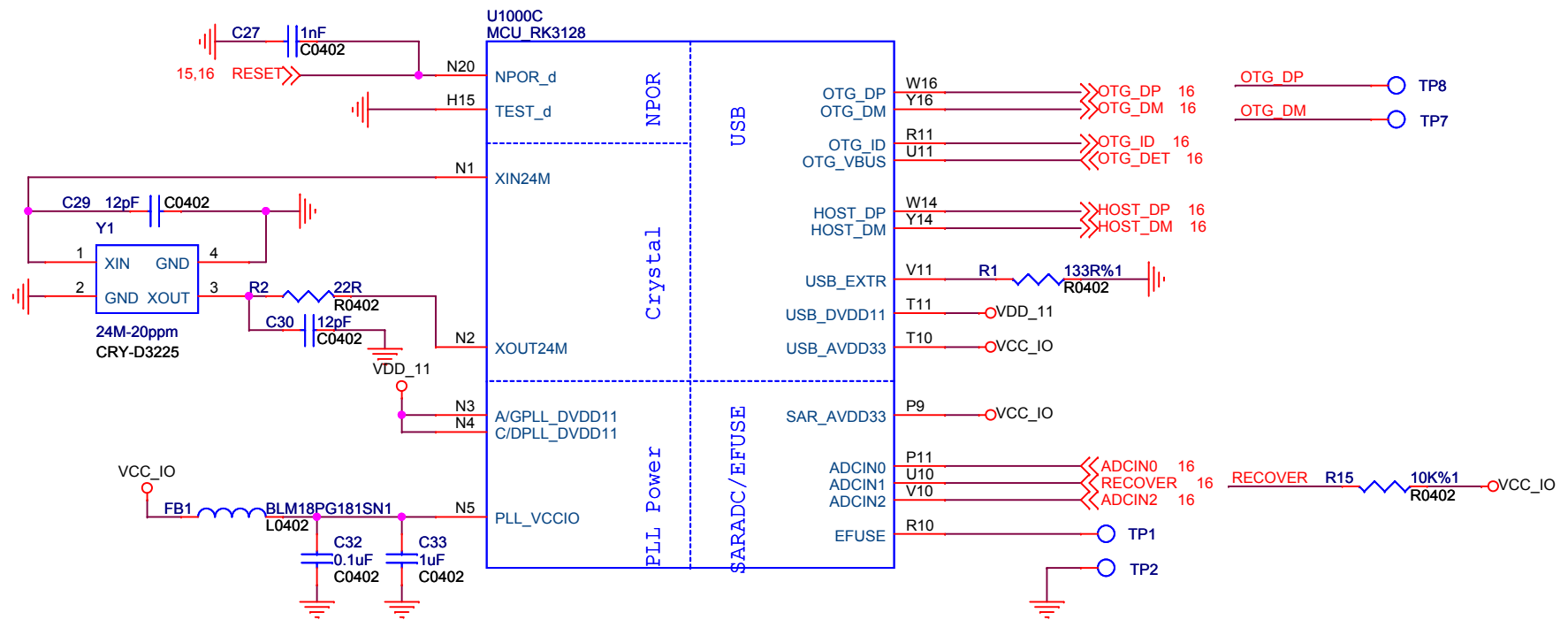
[www.t-firefly.com](http://www.t-firefly.com)

**Title: RK3128 Flash/SD Controller**

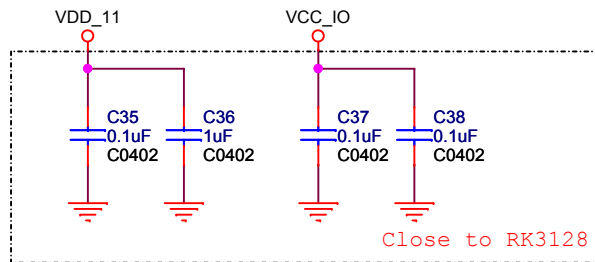
**File: FirePrime** REV: V10


Create Date: Monday, June 01, 2015	Page Num: 7
Modify Date: Wednesday, June 10, 2015	Page Total: 16

# RK3128-C



Note: All the capacitor should be place close to the power pin of RK3128.





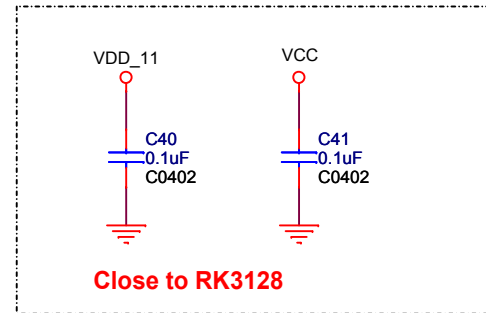
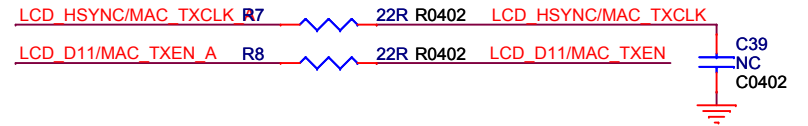
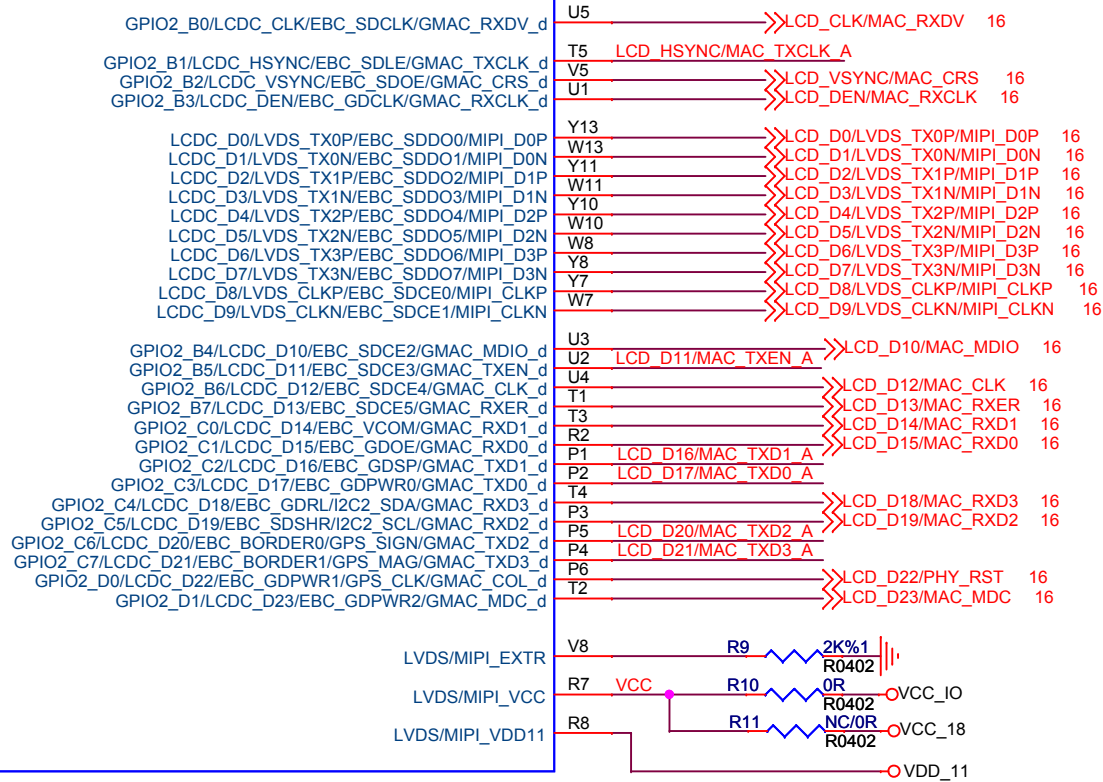
**www.t-firefly.com**

<b>Title: RK3128 MISC&amp;USB</b>	
<b>File: FirePrime</b>	REV: V10
<b>Create Date: Monday, June 01, 2015</b>	<b>Page Num: 8</b>
<b>Modify Date: Wednesday, June 10, 2015</b>	<b>Page Total: 16</b>



U1000A  
MCU RK3128

LCDC/LVDS/MIPI/GMAC/EMAC



www.t-firefly.com

Title: RK3128DISPLAY/GMAC Controller

File: FirePrime REV: V10

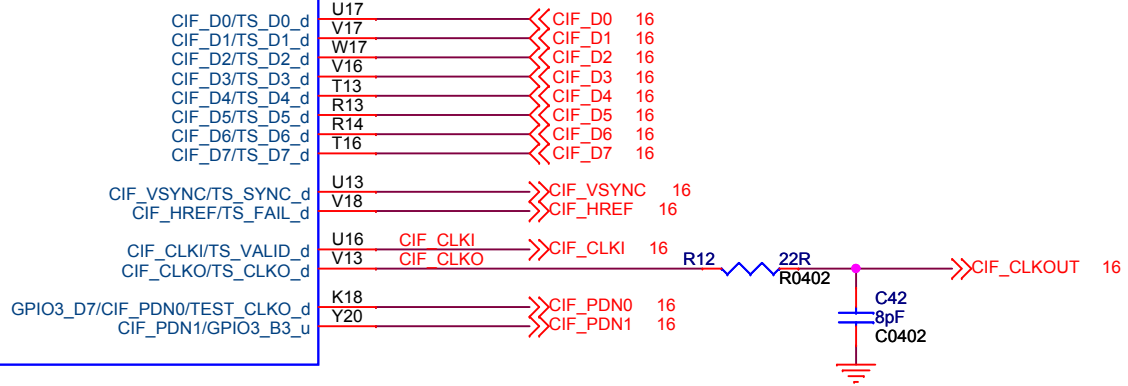
Create Date: Monday, June 01, 2015 Page Num: 9

Modify Date: Wednesday, June 10, 2015 Page Total: 16

# RK3128-B

U1000B  
MCU\_RK3128

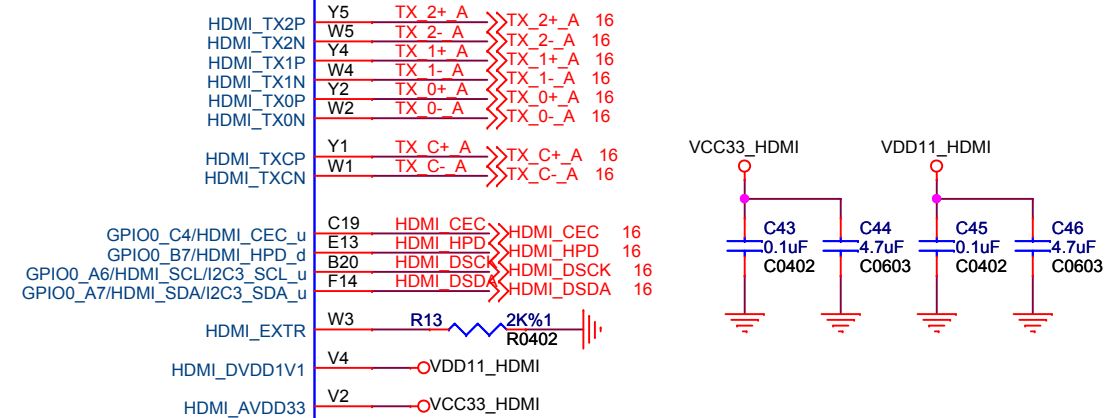
## CIF/TS




# RK3128-H

U1000H

## HDMI TX



MCU\_RK3128



**www.t-firefly.com**

**Title: RK3128 CAMERA/HDMI Controller**

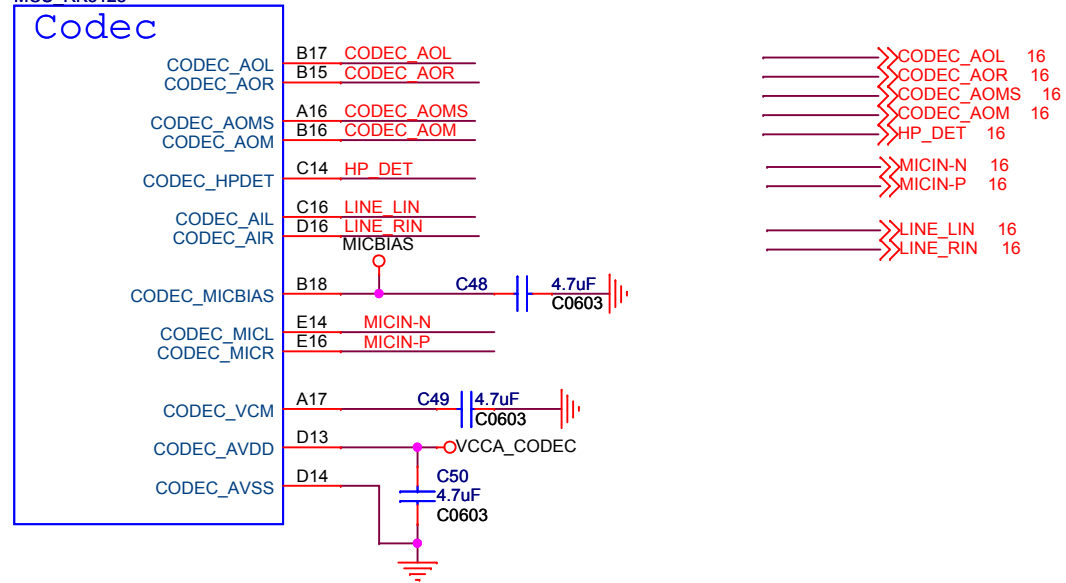
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Create Date: Monday, June 01, 2015 Page Num: 10

Modify Date: Wednesday, June 10, 2015 Page Total: 16

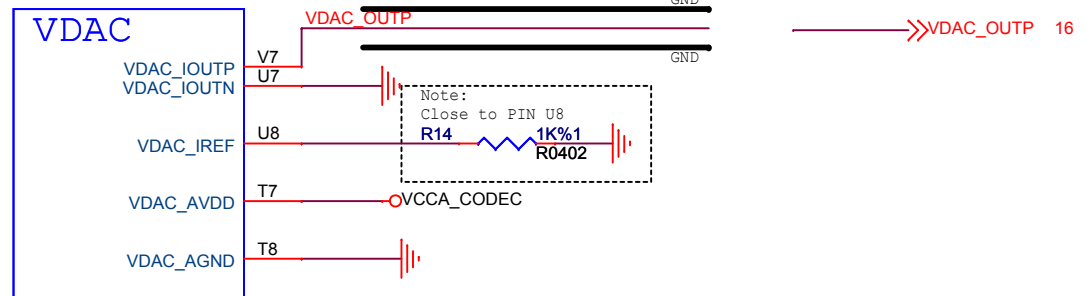
# RK3128-F

U1000F  
MCU\_RK3128



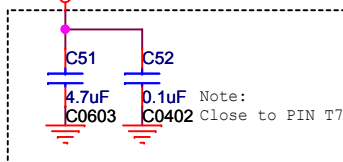

# RK3128-G

U1000G



MCU\_RK3128

VCCA\_CODEC

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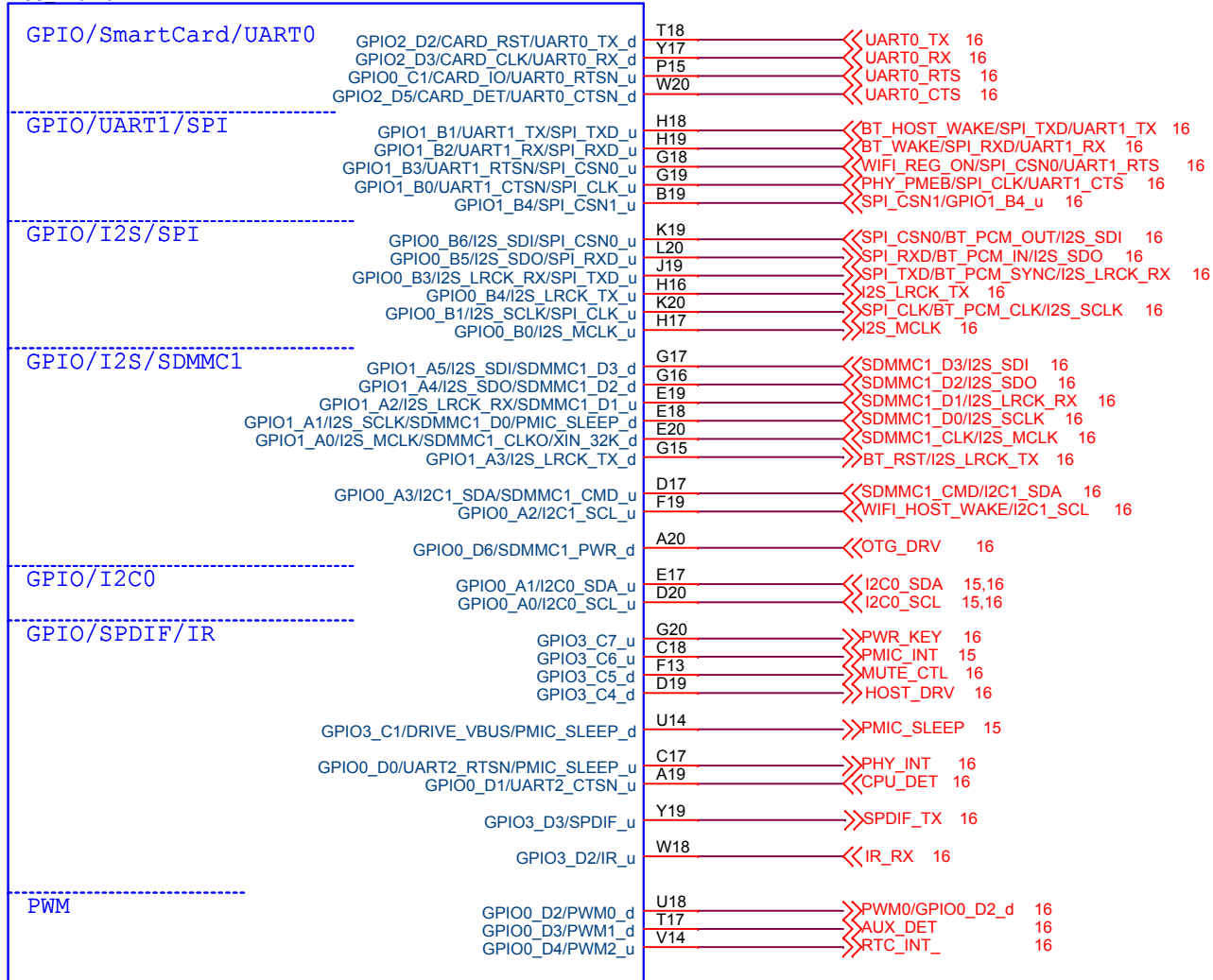
**Title: RK3128 CODEC/VDAC**

**File: FirePrime** REV: V10

Create Date: Monday, June 01, 2015 Page Num: 11

Modify Date: Wednesday, June 10, 2015 Page Total: 16

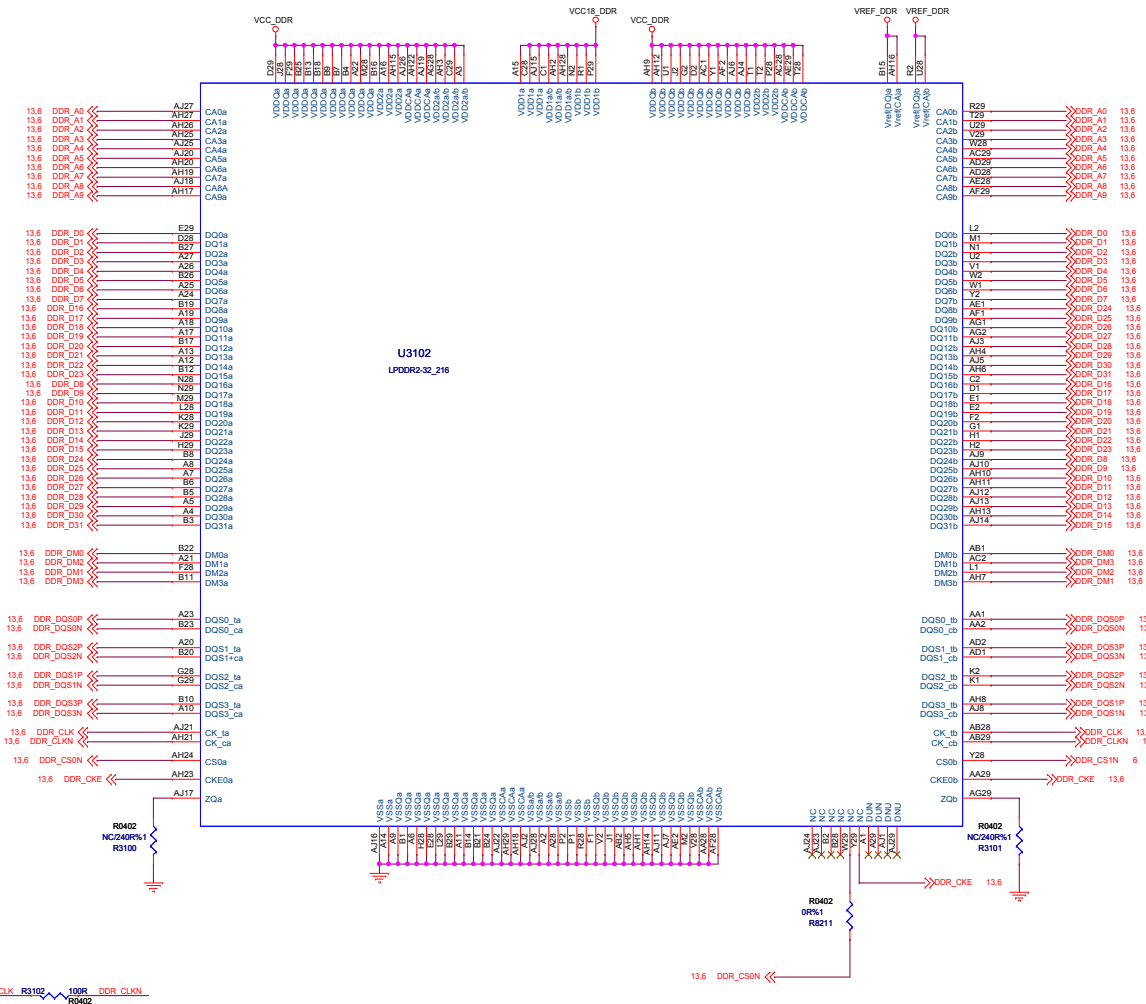
U10001  
MCU\_RK3128



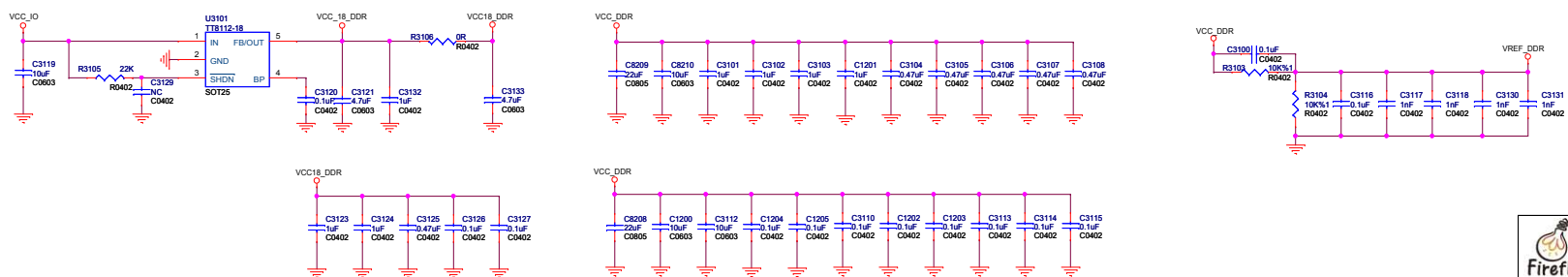
www.t-firefly.com


<b>Title: RK3128 GPIO</b>	
<b>File: FirePrime</b>	REV: V10
<b>Create Date: Monday, June 01, 2015</b>	<b>Page Num: 12</b>
<b>Modify Date: Wednesday, June 10, 2015</b>	<b>Page Total: 16</b>

# LPDDR2



# LPDDR2 Power Filter

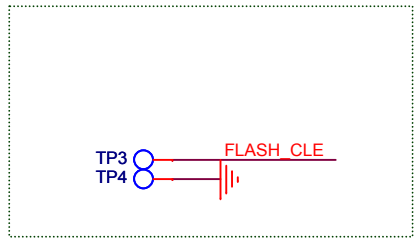
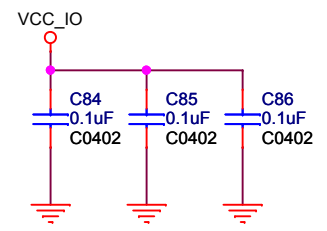
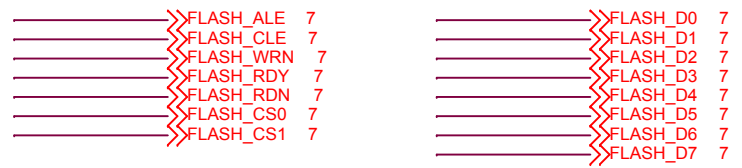
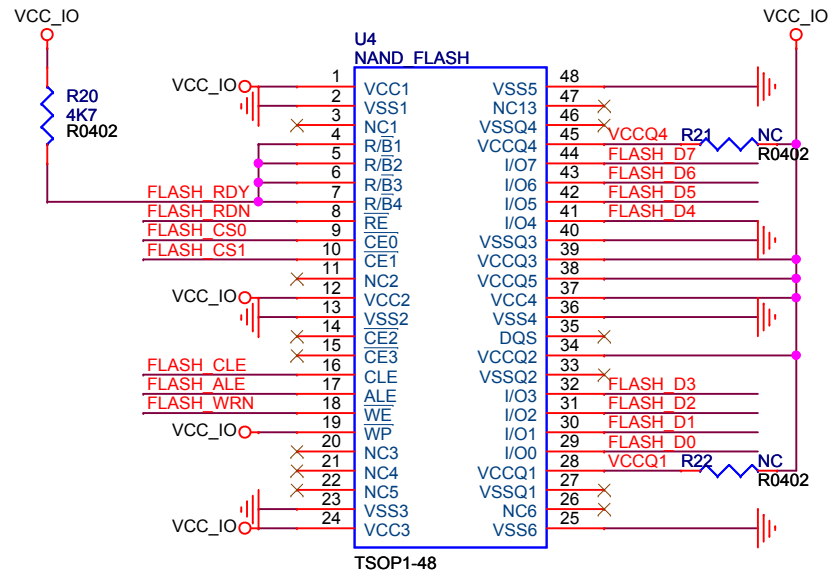




[www.t-firefly.com](http://www.t-firefly.com)

**Title:** RAM-LPDDR2  
**File:** Firefly  
**Client Date:** Monday, June 01, 2015  
**Modify Date:** Wednesday, June 10, 2015

**REV:** V10  
**Page Num:** 13  
**Page Total:** 16

# NAND FLASH



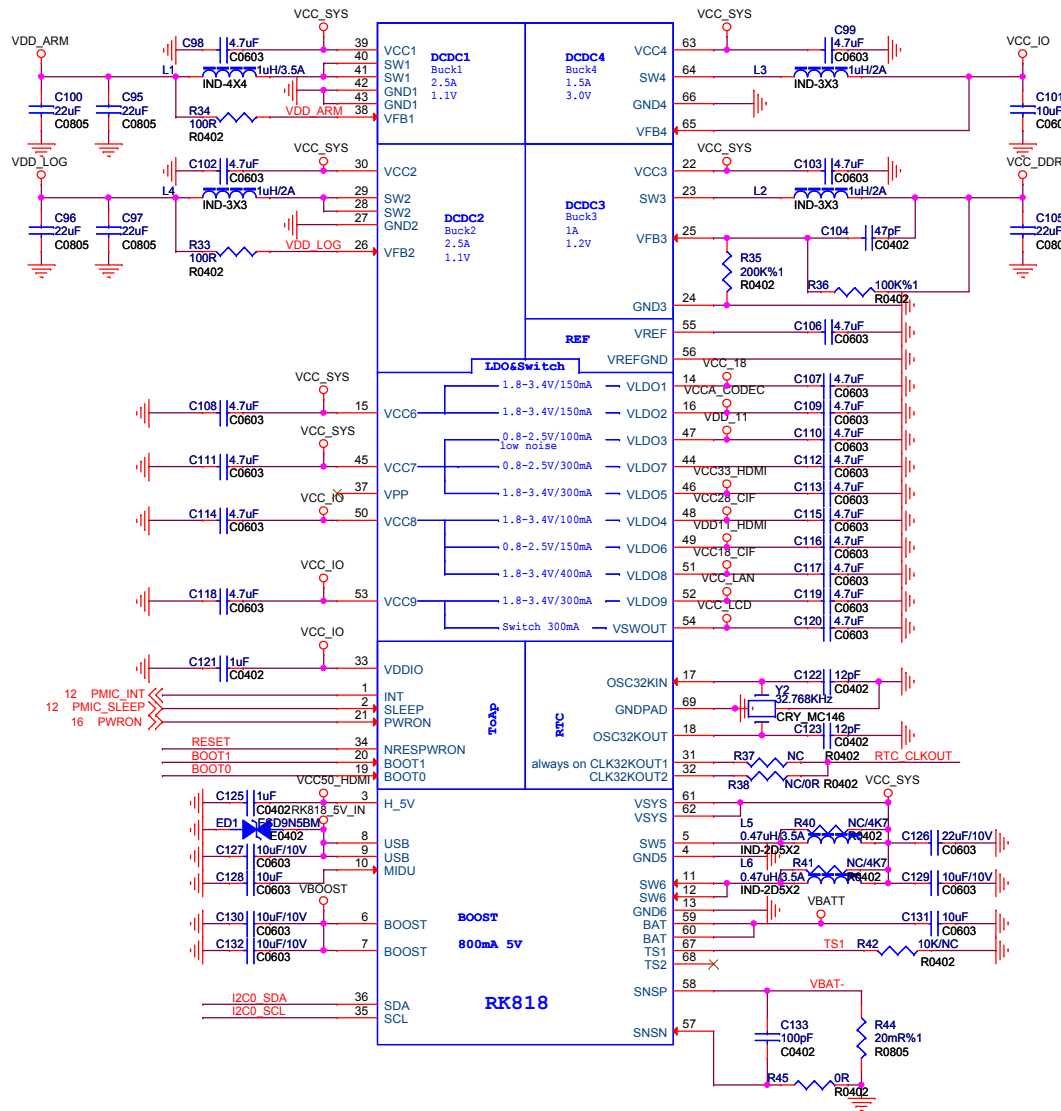


**www.t-firefly.com**

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**Title: Memory-Nand Flash**

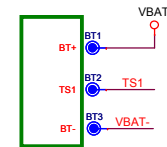
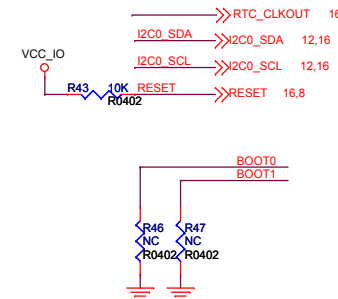
<b>File: FirePrime</b>	REV: V10
Create Date: Monday, June 01, 2015	Page Num: 14
Modify Date: Wednesday, June 10, 2015	Page Total: 16



### PCB POWER WIRE WIDTH INDICATE

	above 80 miles
	above 50 miles
	above 30 miles
	above 12 miles
	Under needs

PowerName	PMU Channel	TIMER (2ms)	Default ON/OFF	default voltage	sleep ON/OFF
VDD_ARM	DCDC1	soltt:3	ON	1.1V	ON
VDD_LOG	DCDC2	soltt:1	ON	1.1V	ON
VCC_DDR	DCDC3	soltt:4	ON	DDR3 1.5V LPDDR 1.2V	ON
VCC_IO	DCDC4	soltt:1	ON	3.0V	ON
VCC_18	VLD01	X	OFF	3.3V	OFF
VCC8_CODEC	VLD02	X	OFF	3.0V	OFF
VDD_11	VLD03	soltt:1	ON	1.1V	ON
VCC28_CIF	VLD04	soltt:2	ON	2.5V	OFF
VCC33_HDMI	VLD05	soltt:1	ON	3.0V	ON
VDD11_HDMI	VLD06	X	OFF	1.2V	OFF
VCC18_CIF	VLD07	soltt:2	ON	1.8V	OFF
VCC18_CIF	VLD08	X	OFF	1.8V	OFF
VCC_LAN	VLD09	soltt:4	ON	3.0V	OFF
VCC_LCD	VSR00F1	X	OFF	X	OFF

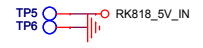
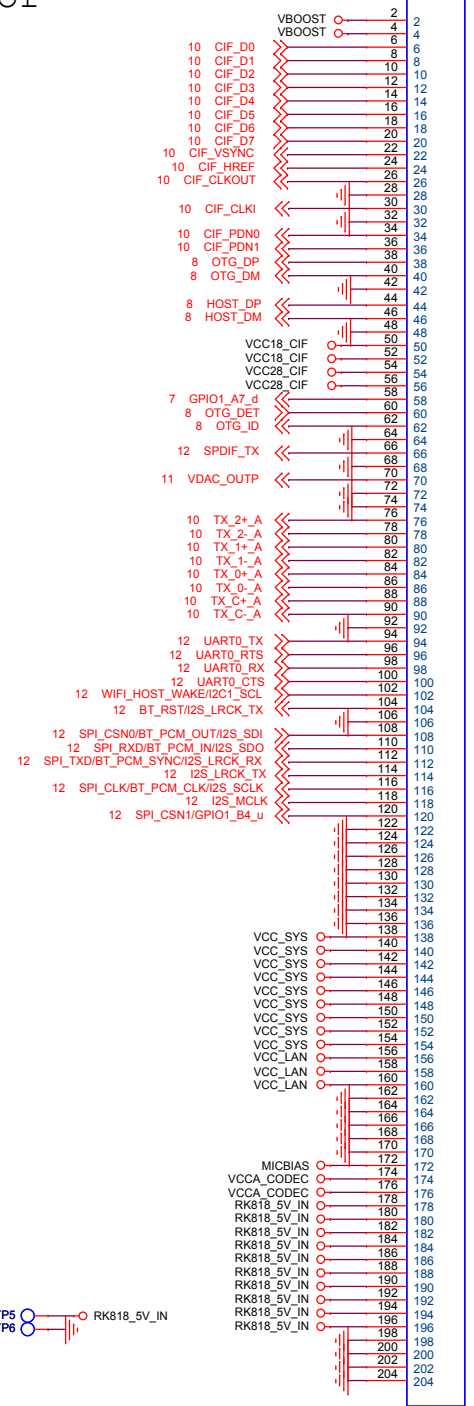


**www.t-firefly.com**

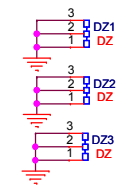
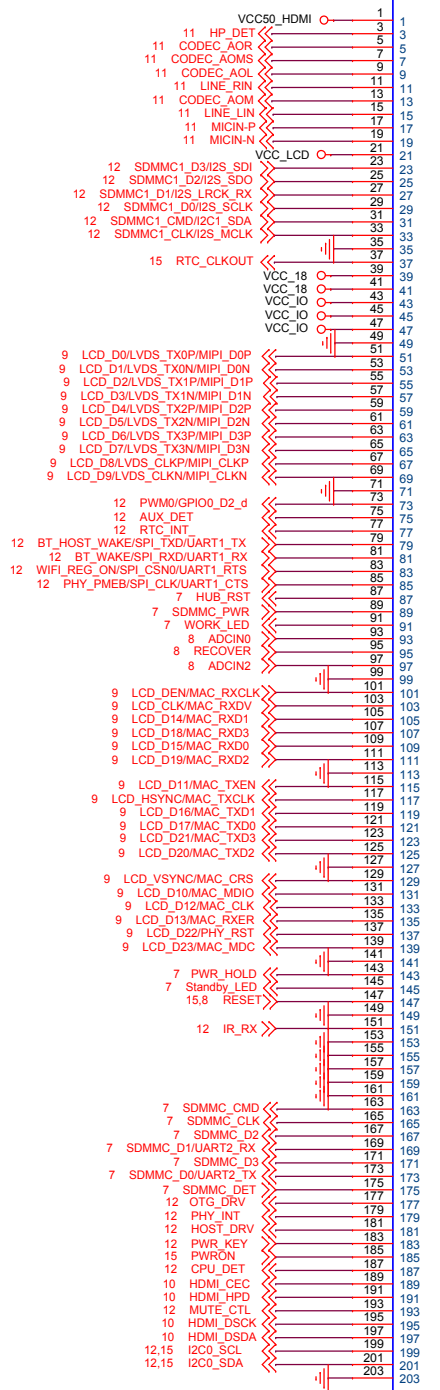
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Create Date: <b>Monday, June 01, 2015</b>	Page Num: 15
Modify Date: <b>Wednesday, June 10, 2015</b>	Page Total: 16

# Connector

J15  
2013311-2



J16  
2013311-1



- ✗ MASK1
- ✗ MASK2
- ✗ MASK3
- ✗ MASK8
- ✗ MASK9
- ✗ MASK10

U50  
Firefly  
T-CHIP\_LOGO



Title: Connector		REV: V10
File: FirePrime		
Create Date: Monday, June 01, 2015	Page Num: 16	
Modify Date: Wednesday, June 10, 2015	Page Total: 16	