

Notes Unless Otherwise Stated

Scheme Spec :

FLASH: MLC, 3V
 DRAM: DDR3, 1.5V
 Key: Vol+,Vol-
 Power: DCIN, 5V, 2A; BAT, 4.2V
 USB0: OTG
 USB2: WIFI
 WIFI: USB WIFI&SDIO WIFI+BT
 Card: TFcard
 Other: Headphone, MIC, G-Sensor, Camera

Power Supply :

Name	Vout	I _{max}	Use
AXP209 DCDC2	1.25V	1600mA	CPU
AXP209 DCDC3	1.2V	1200mA	CORE
AXP209 LDO1	1.3V	30mA	RTC
AXP209 LDO2	3V	200mA	AVCC
AXP209 LDO3	2.8V	400mA	CSI0-IO
AXP209 LDO4	2.8V	200mA	CSI1-IO
AP2125 LDO	1.8V	300mA	CSI-DVDD
AP3410 DCDC	1.5V	1200mA	DRAM
AP3410 DCDC	3V	1200mA	VCC/LCD/NAND//WIFI
SY7208	5V	1000mA	HDMI/USB
AP2125 LDO	3.3V	300mA	WIFI
AP3032 DCDC		1400mA	LCD
AP3032 DCDC		1400mA	LCD
AP3032 DCDC		1400mA	LCD MIPI

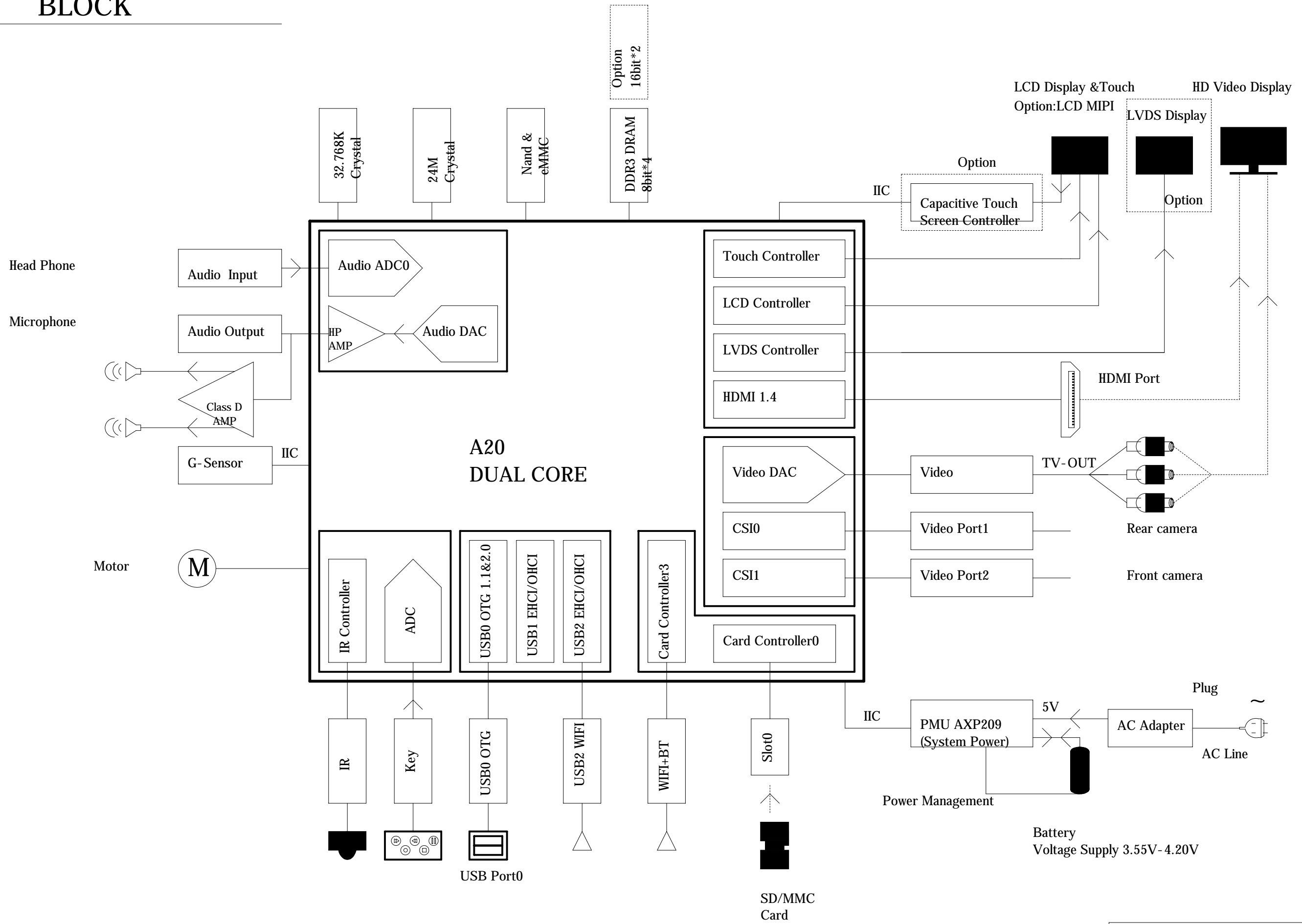
Schematics Index

- P01: COVER
- P02: BLOCK
- P03: PIO ASSIGNMENT
- P04: POWER TREE
- P05: CPU1
- P06: CPU2
- P07: DDR3 8bit x 4pcs
- P08: DDR3 16bit x 2pcs
- P09: BESIDE CPU
- P10: POWER1
- P11: POWER2
- P12: NAND&eMMC
- P13: HDMI-CSI
- P14: KEY-IR-TVOUT-MT
- P15: CARD-DEBUG-GS
- P16: LCD
- P17: WIFI+BT
- P18: USB
- P19: HP-MIC-SPK
- P20: CTP

Rev	Description	Date	Drawn	Checked	Approved
RF_A1_MAIBOARD_V1.0		2013-06-19	DGH		

Title		
Banana Pi		
Size	Document Number	Rev
A3	COVER	1.1
Date:	Thursday, August 22, 2013	Sheet 1 of 18

BLOCK



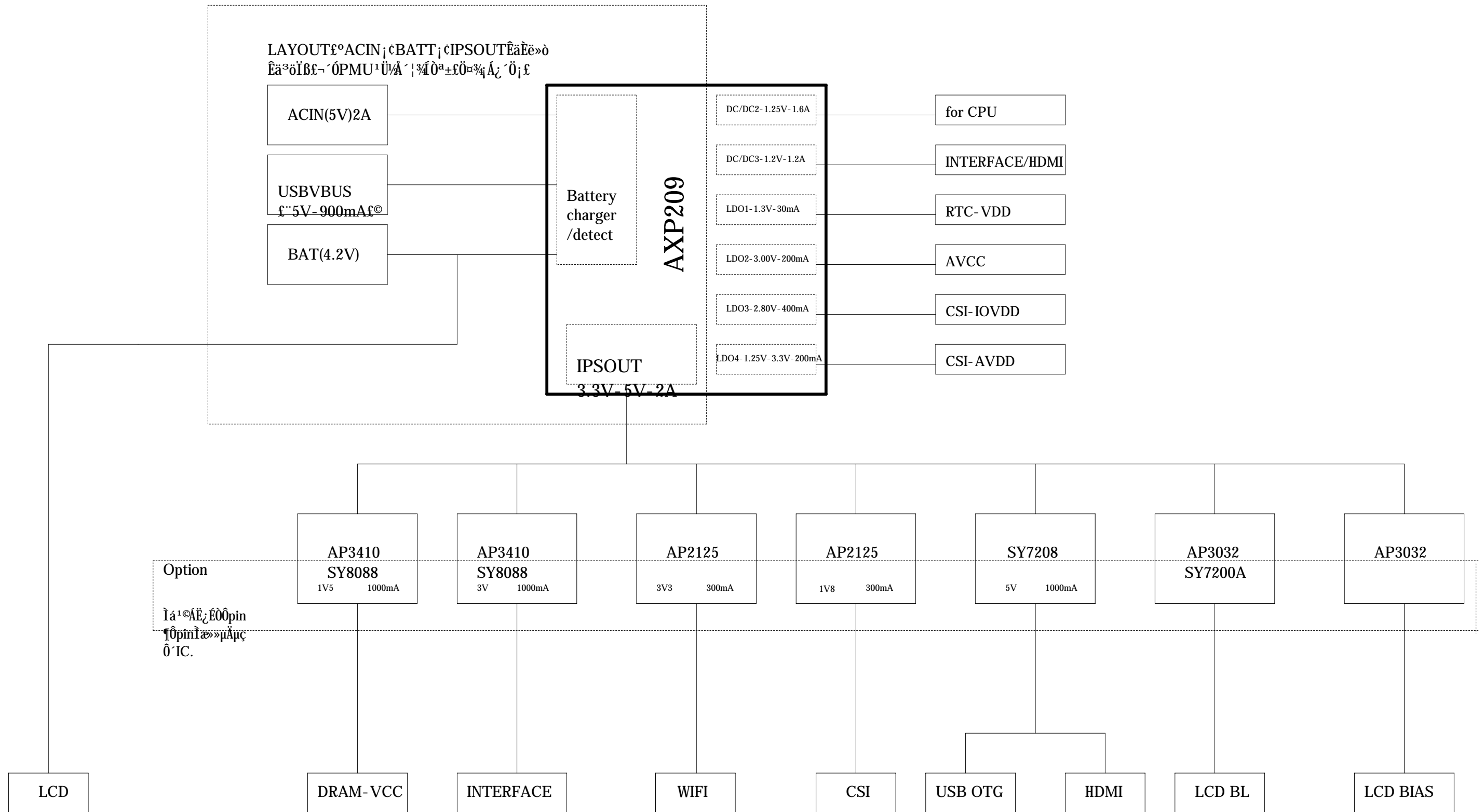
Title		
Banana Pi		
Size	Document Number	Rev
A3	BLOCK	1.1
Date:	Thursday, August 22, 2013	Sheet 2 of 18

PIO ASSIGNMENT

Pin Group	Pin Name	Define	Function	Pin Group	Pin Name	Define	Function	Pin Group	Pin Name	Define	Function	Pin Group	Pin Name	Define	Function	
PA(18)	PA0	GPIO-OUT		PC(25)	PC0	NWE#	NAND	PD(28)	PD18	LCD0_D18	LCD	PH(28)	PH0	EINT0	USB-ICTRL	
	PA1	GPIO-OUT			PC1	NALE			PD19	LCD0_D19			PH1	GPIO_IN	SD0-DET	
	PA2	GPIO-OUT			PC2	NCLE			PD20	LCD0_D20			PH2	GPIO_IN		
	PA3	GPIO-OUT			PC3	NCE1			PD21	LCD0_D21			PH3	GPIO_OUT	USB2-DRV	
	PA4	ETXD3			PC4	NCE0			PD22	LCD0_D22			PH4	GPIO_IN	USB0-IDDET	
	PA5	ETXD2			PC5	NRE#			PD23	LCD0_D23			PH5	GPIO_IN	USB0-VBUSDET	
	PA6	ETXD1			PC6	NRB0			PD24	LCD0_CLK			PH6	GPIO_OUT	USB1-DRV	
	PA7	ETXD0			PC7	NRB1			PD25	LCD0_DE			PH7	GPIO_OUT	LCD-BL-EN	
	PA8	ERXCK			PC8	NDQ0			PD26	LCD0_HSYNC			PH8	GPIO_OUT	LCD-PWR	
	PA9	ERXERR			PC9	NDQ1			PD27	LCD0_VSYNC			PH9	GPIO_OUT	WIFI-SHDN	
	PA10	ERXDV			PC10	NDQ2			PE(12)	CSIO			PH10	GPIO_IN	WIFI-HOST-WAKE	
	PA11	EMDC			PC11	NDQ3		PE0			CSIO_PCLK		PH11	GPIO_OUT		
	PA12	EMDIO			PC12	NDQ4		PE1			CSIO_MCLK		PH12	GPIO_OUT	CTP-RESET#	
	PA13	ETXEN			PC13	NDQ5		PE2			CSIO_HSYNC		PH13	GPIO_OUT	CAM-R-RESET#	
	PA14	ETXCK			PC14	NDQ6		PE3			CSIO_VSYNC		PH14	GPIO_OUT	CAM-F-RESET#	
	PA15	ECRS			PC15	NDQ7		PE4			CSIO_D0		PH15	GPIO_OUT	PA-SHDN#	
	PA16	ECOL			PC16	NWP		PE5			CSIO_D1		PH16	GPIO_OUT	CAM-PWR-EN	
	PA17	GPIO_OUT			PC17	NCE2		PE6			CSIO_D2		PH17	GPIO_OUT	CAM-F-PWR-EN	
PB(24)	PB0	TWI0_SCK	PMU		PC18	NCE3		PF(6)			SDC0		PH18	EINT18	CAM-R-STBY-EN	
	PB1	TWI0_SDA			PC19	GPIO_OUT							PF0	SDC0_D1	PH19	EINT19
	PB2	PWM0	PWM		PC20	GPIO_OUT							PF1	SDC0_D0	PH20	EINT20
	PB3	GPIO_OUT	MT-C		PC21	GPIO_OUT			PF2	SDC0_CLK			PH21	EINT21	TP-INT	
	PB4	IR0_RX	IR		PC22	GPIO_OUT			PF3	SDC0_CMD			PH22	SDC1_CMD		
	PB5	GPIO_OUT	BT-RST		PC23	GPIO_OUT			PF4	SDC0_D3			PH23	SDC1_CLK		
	PB6	I2S_BCLK	BT-PCM-CLK		PC24	NDQS		PF5	SDC0_D2	PH24	SDC1_D0					
	PB7	I2S_LRCK	BT-PCM-SYNC	PD(28)	LCD	PG(12)	CSI1	PH25	SDC1_D1							
	PB8	I2S_DO0	BT-PCM-OUT					PD0	LCD0_D0	PG0	CSI1_PCLK		PH26	SDC1_D2		
	PB9	GPIO_OUT	USB0-DRV					PD1	LCD0_D1	PG1	CSI1_MCLK		PH27	SDC1_D3		
	PB10	GPIO_OUT						PD2	LCD0_D2	PG2	CSI1_HSYNC	Pi0	GPIO			
	PB11	GPIO_OUT						PD3	LCD0_D3	PG3	CSI1_VSYNC	Pi1	GPIO			
	PB12	I2S_DI	BT-PCM-IN					PD4	LCD0_D4	PG4	CSI1_D0	Pi2	GPIO			
	PB13	GPIO_OUT	TP-WAKEUP					PD5	LCD0_D5	PG5	CSI1_D1	Pi3	PWM1			
	PB14	JTAG_MS0	JTAG					PD6	LCD0_D6	PG6	CSI1_D2	Pi4	SDC3_CMD			
	PB15	JTAG_CK0						PD7	LCD0_D7	PG7	CSI1_D3	Pi5	SDC3_CLK			
	PB16	JTAG_DO0						PD8	LCD0_D8	PG8	CSI1_D4	Pi6	SDC3_D0			
	PB17	JTAG_DIO						PD9	LCD0_D9	PG9	CSI1_D5	Pi7	SDC3_D1			
	PB18	TWI1_SCK	TWI1					PD10	LCD0_D10	PG10	CSI1_D6	Pi8	SDC3_D2			
	PB19	TWI1_SDA				PD11	LCD0_D11	PG11	CSI1_D7	Pi9	SDC3_D3					
	PB20	TWI2_SCK	TWI2	PD12	LCD0_D12			Pi10	SPI0_CS0							
	PB21	TWI2_SDA		PD13	LCD0_D13			Pi11	GPIO_OUT							
	PB22	UART0_TX	UART (DBUG)	PD14	LCD0_D14			Pi12	SPI0_MOSI	CLK-32K						
	PB23	UART0_RX		PD15	LCD0_D15			Pi13	SPI0_MISO							
			PD16	LCD0_D16			Pi14	GPIO_OUT								
			PD17	LCD0_D17												

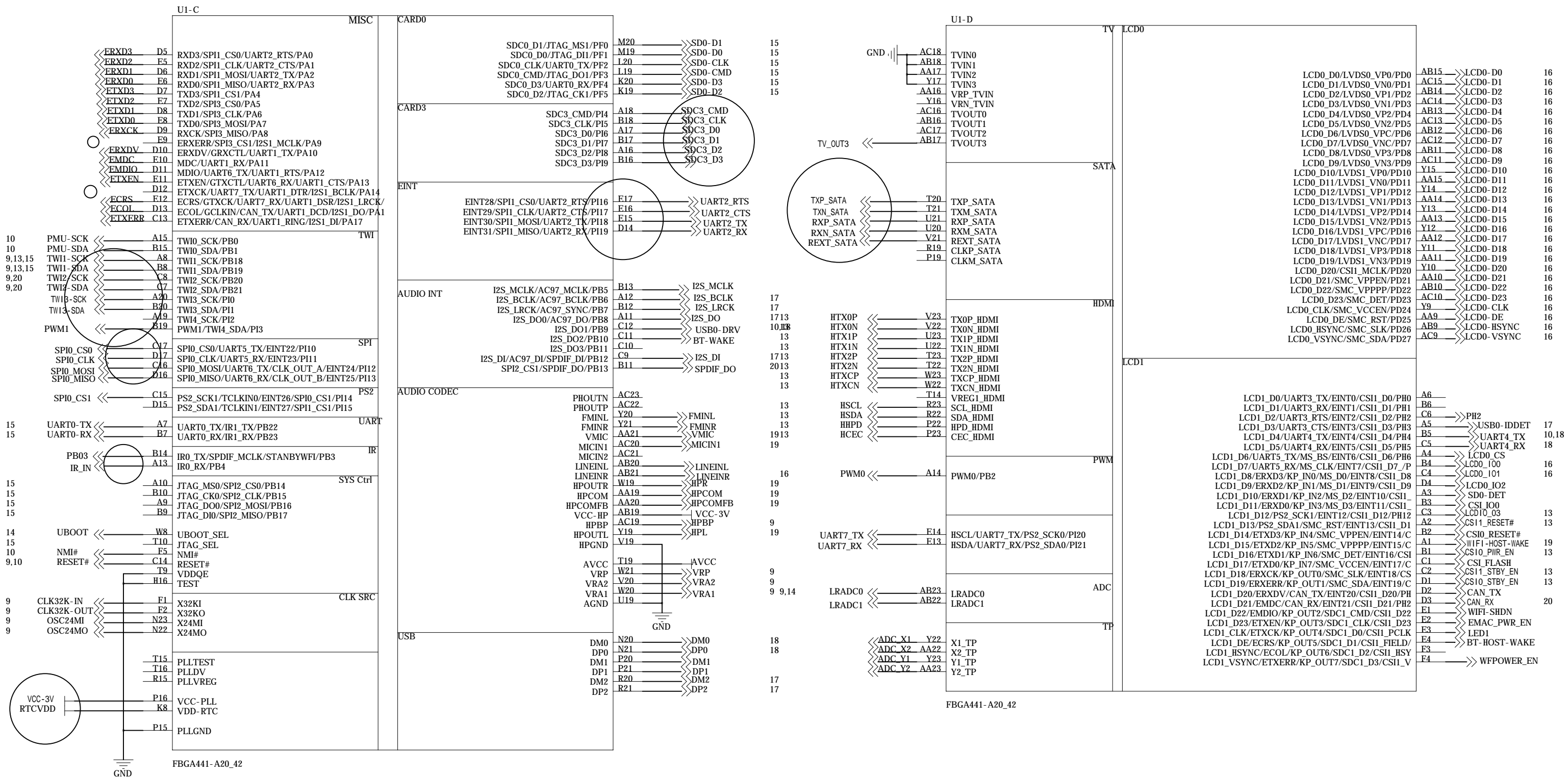
Title			Banana Pi		
Size	Document Number	Rev			
A3	PIO ASSIGNMENT	1.1			
Date:	Thursday, August 22, 2013	Sheet	3	of	18

POWER TREE



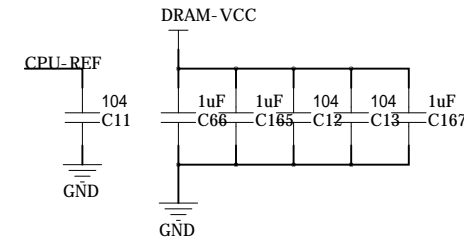
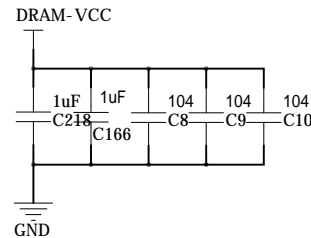
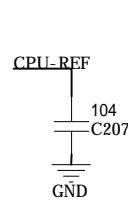
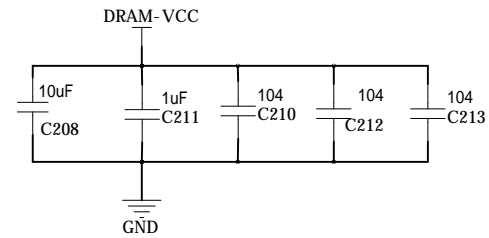
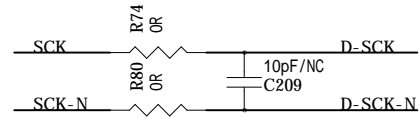
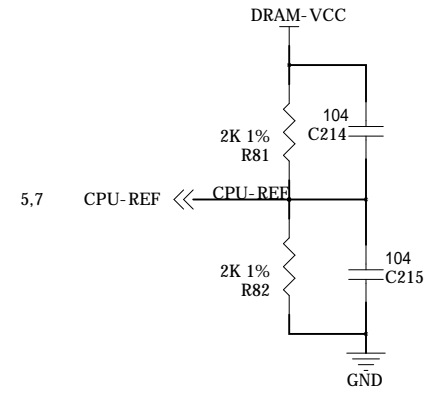
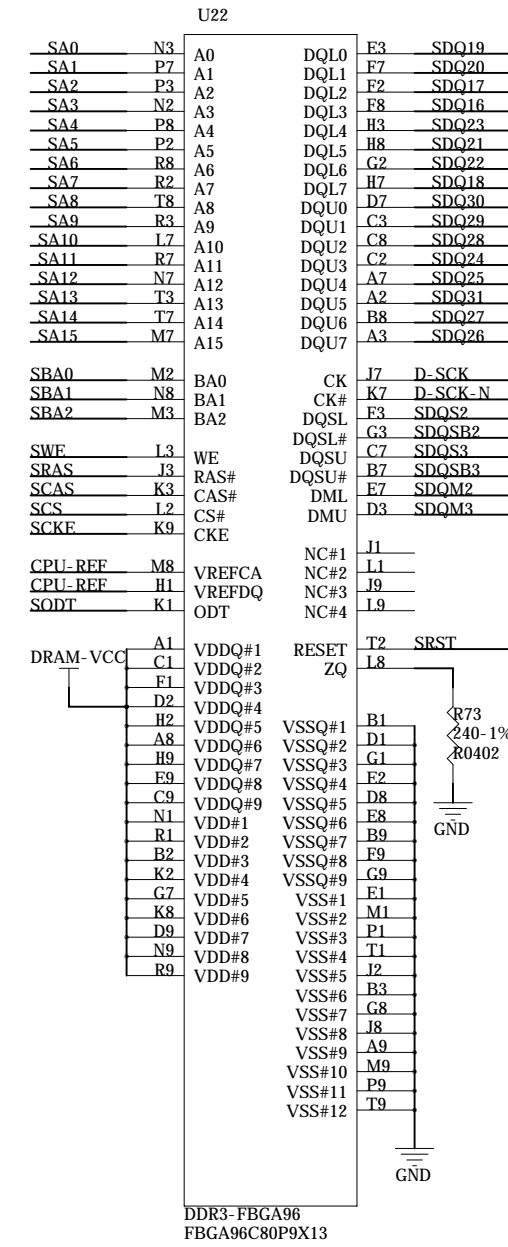
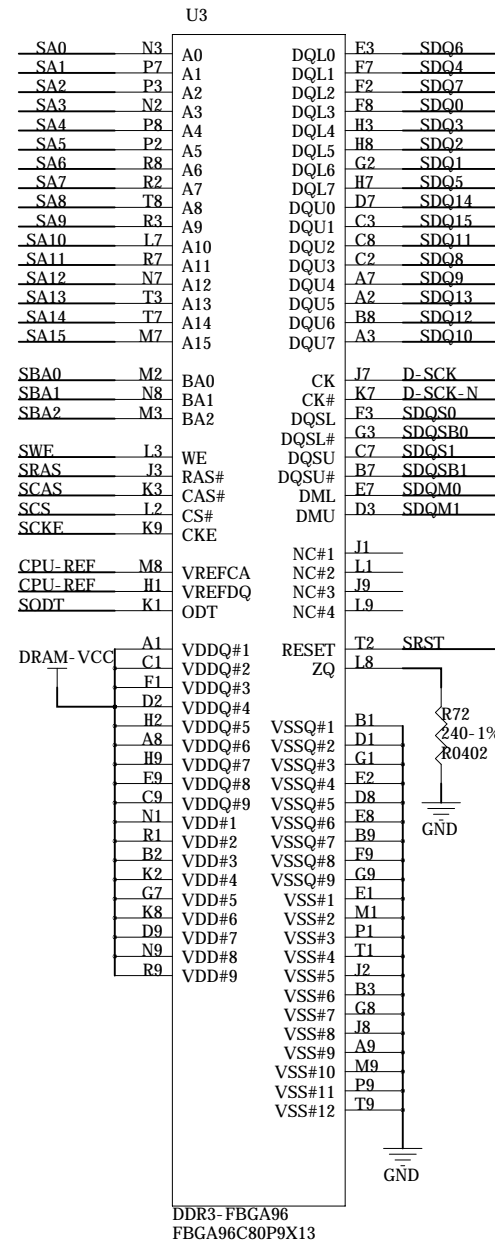
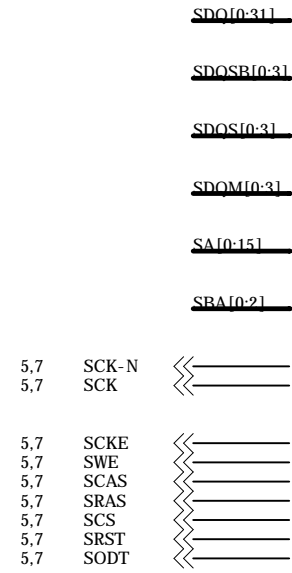
Title		
Banana Pi		
Size	Document Number	Rev
A3	POWER TREE	1.1
Date:	Thursday, August 22, 2013	Sheet 4 of 18

CPU2



Title		
Banana Pi		
Size	Document Number	Rev
A3	CPU2	1.1
Date:	Thursday, August 22, 2013	Sheet 6 of 18

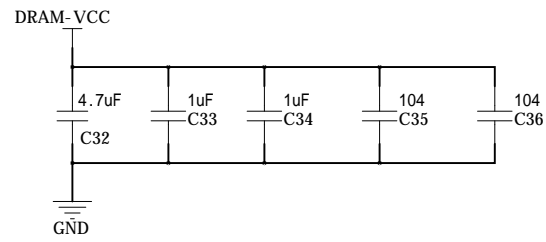
DDR3-16BITX2



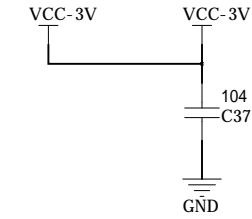
Title		
Banana Pi		
Size	Document Number	Rev
A3	DDR3 16bit x 2pcs	1.1
Date:	Thursday, August 22, 2013	Sheet 7 of 18

BESIDE CPU

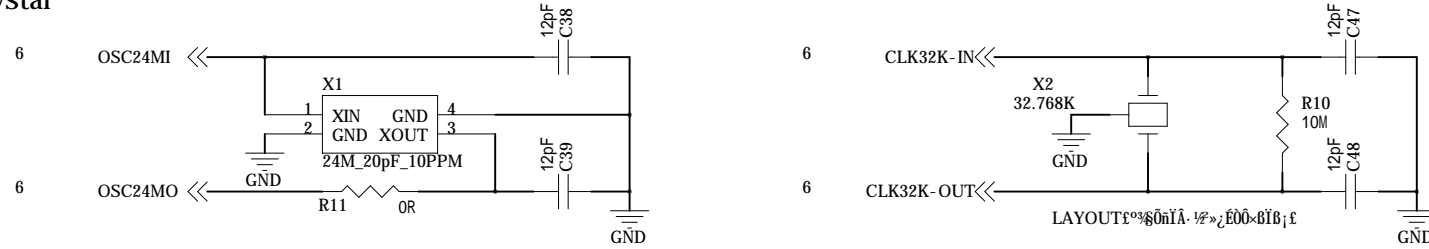
DRAM



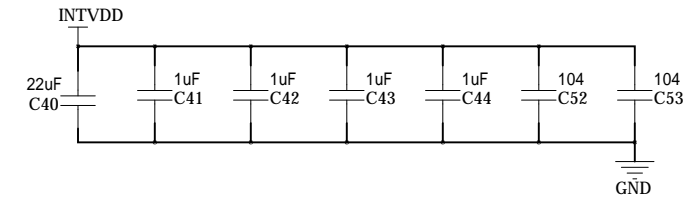
PLL



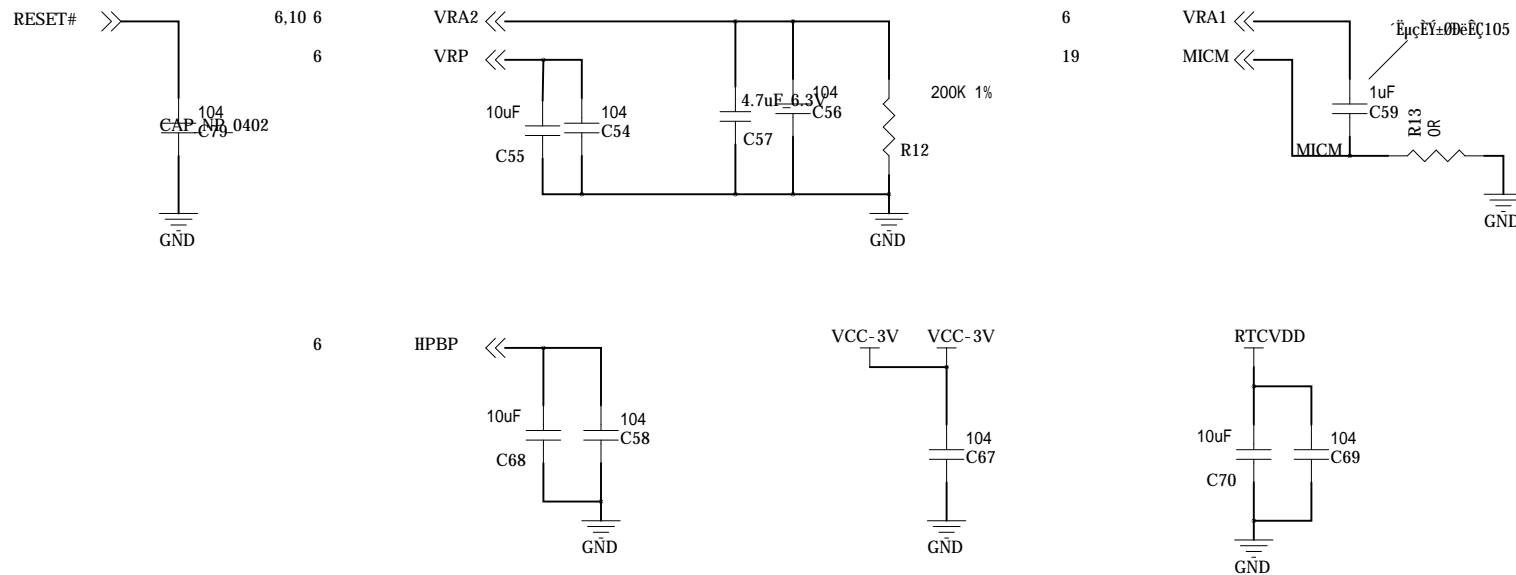
Crystal



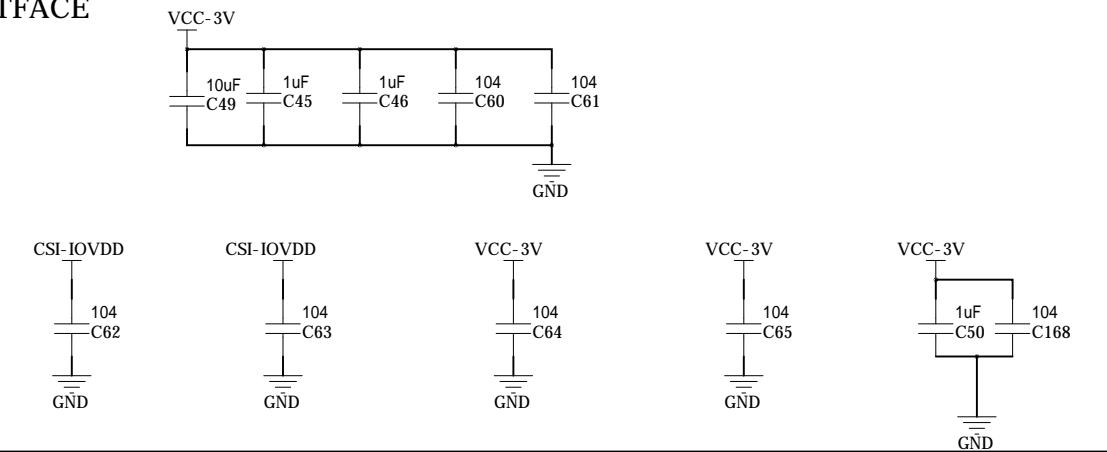
CORE



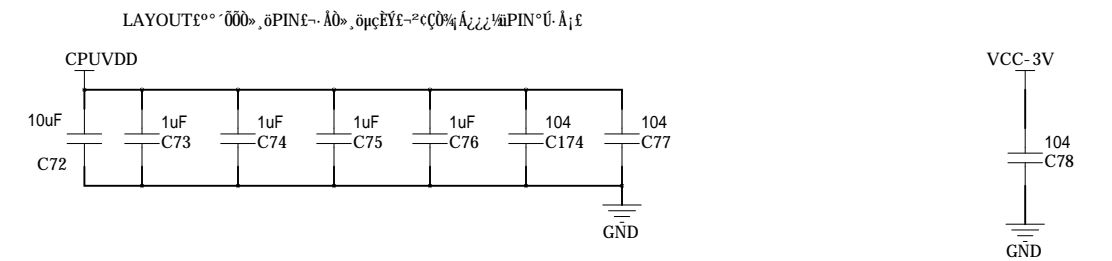
AUDIO&SYS&TP



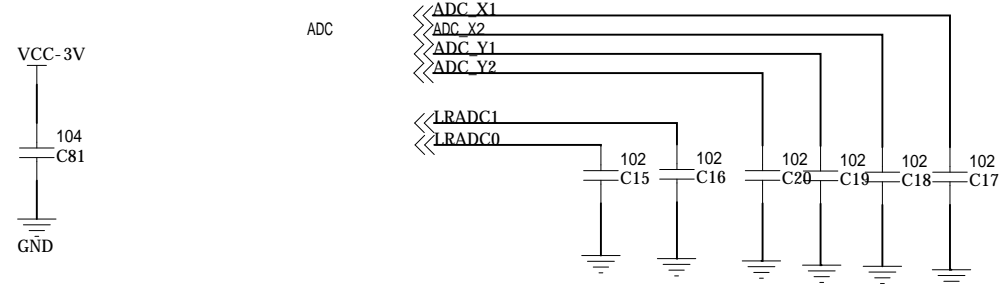
PIO-INTFACE



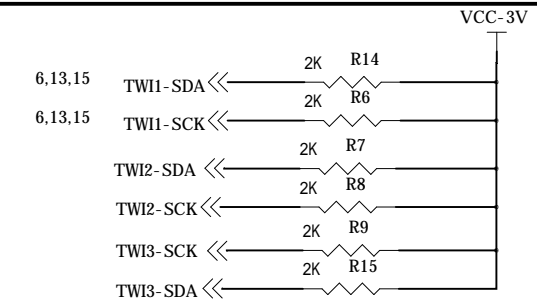
CPU&TV



USB



TWI-PULLUP



SATA

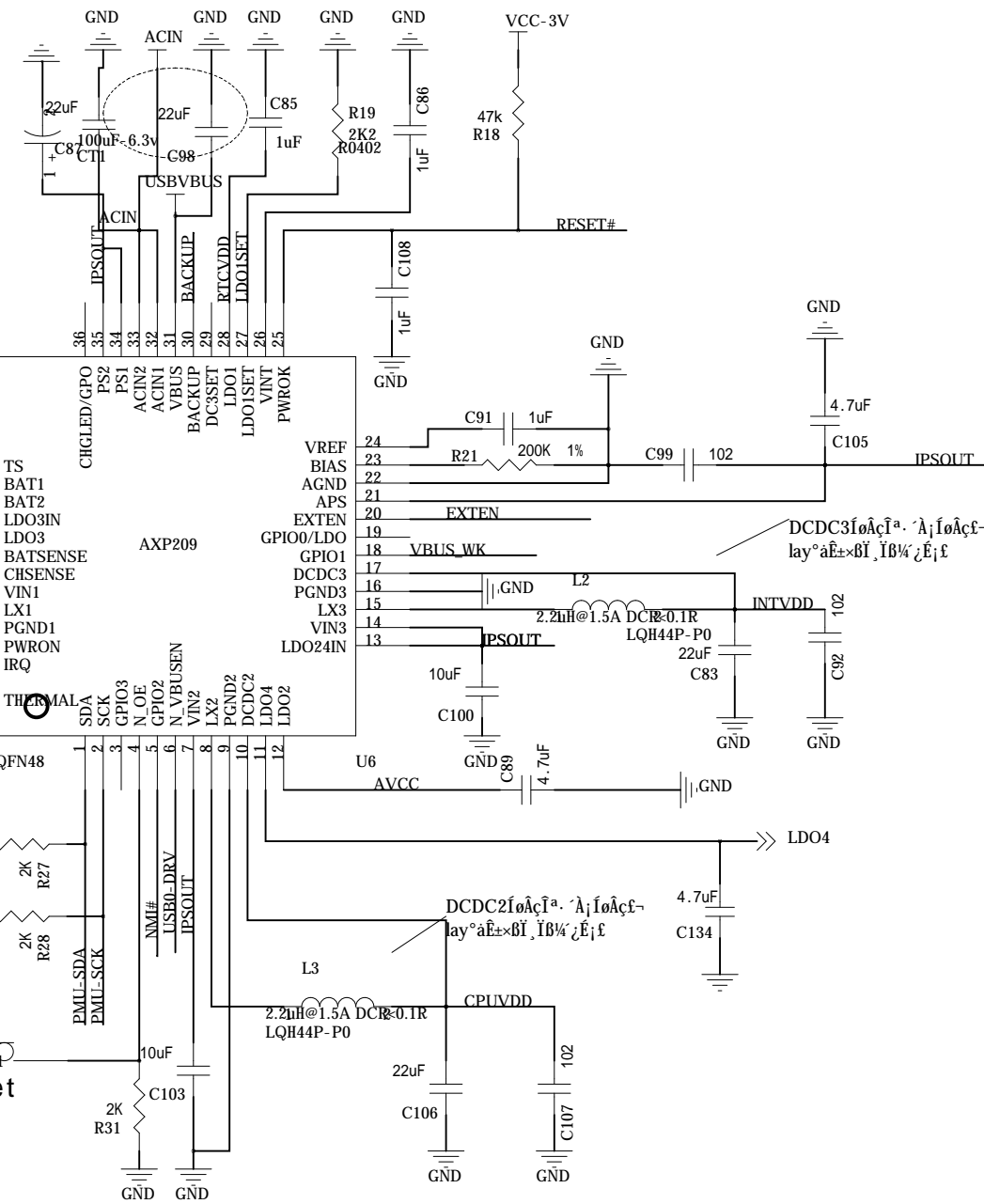


Title		
Banana Pi		
Size	Document Number	Rev
A3	BESIDE CPU	1.1
Date:	Thursday, August 22, 2013	Sheet 8 of 18

POWER-PMU

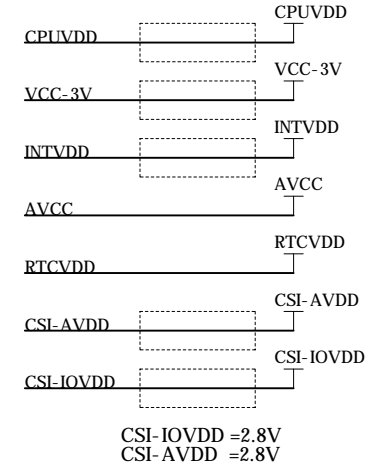
6	NMI#	← NMI#
6	PMU-SDA	← PMU-SDA
6	PMU-SCK	← PMU-SCK
6,18	USB0-DRV	← USB0-DRV
11	EXTEN	← EXTEN
6,9	RESET#	← RESET#
18	USBVBUS	← USBVBUS

1: ACIN μC ± 1.0A ± 1.0A, LCD μC ± 1.0A
 2: 0 ACIN; VBUS E I; PMU 10uF μC ± 1.0A

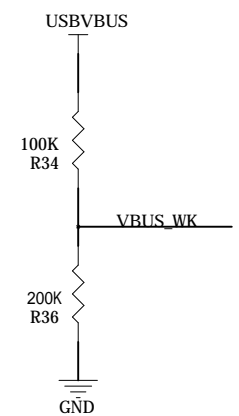
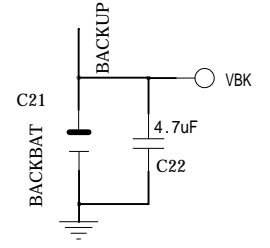
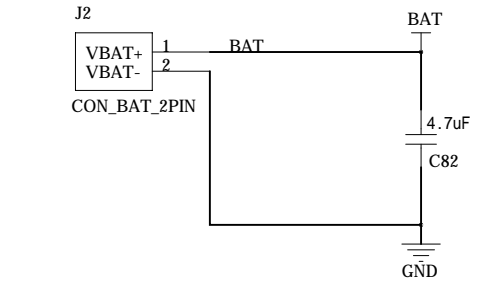
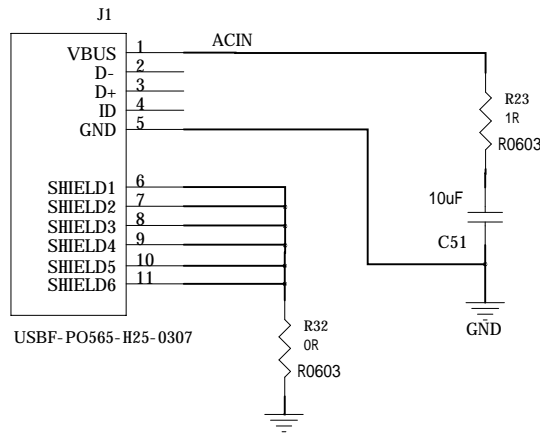


POWER LINE: Width >= 80mil

POWER LINE: Width >= 40mil



POWER INPUT

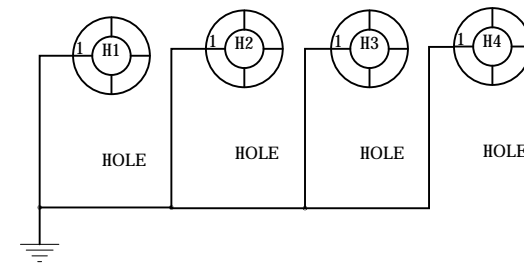
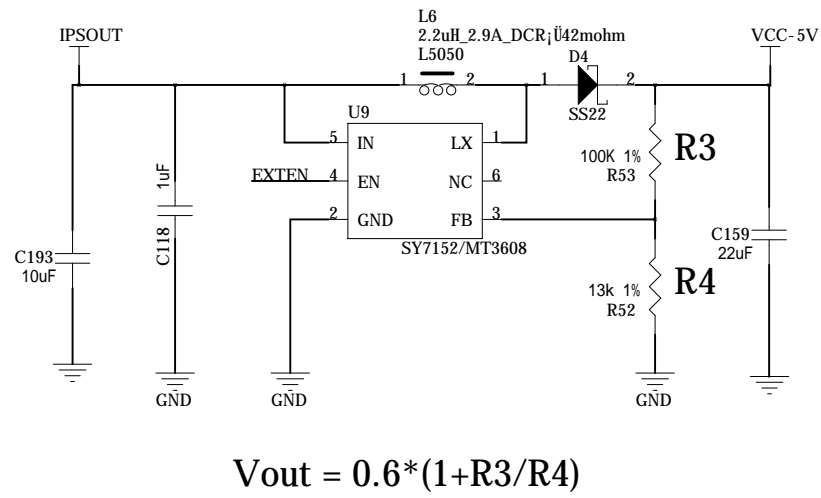
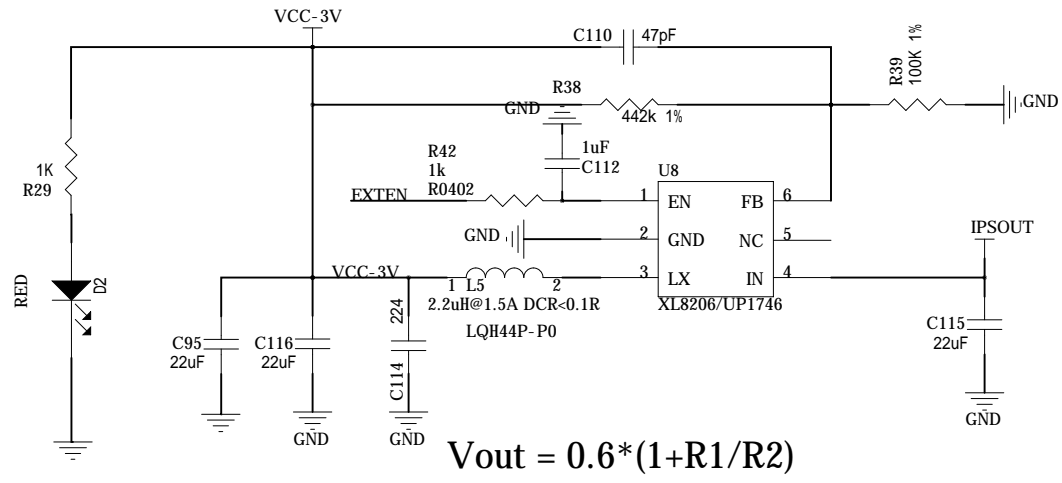
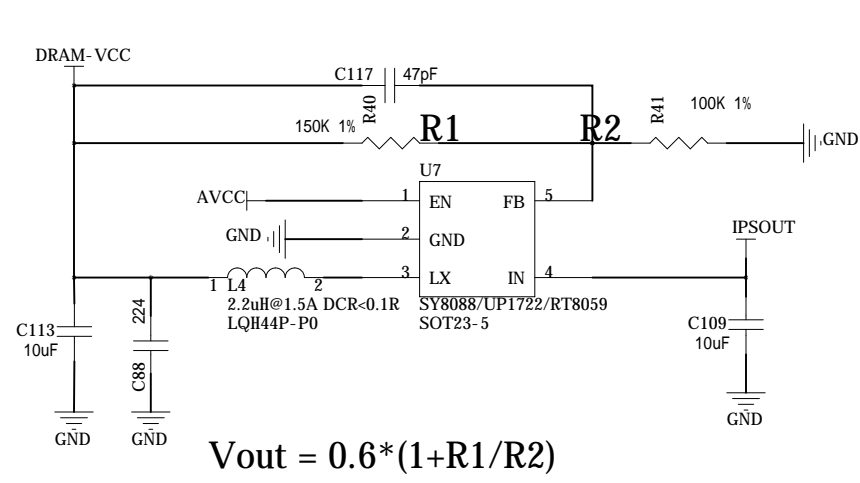


±, × Cf°
 1000 μC, D³B' çÓDÇá±; 0ªÇóμÄÉ-ÍÆ/óÊ¹ÓÁÇ-ÁμÄ
 PSE250201B-2R2MS, ÁáÍá»ÝÍª2.6x2.1Æ½ ½ÁÁ×É-
 ±¥ºÍμCÁ-Íª1.8A, 0±Á±×è; 1ª85ºÁÁ· jÉ

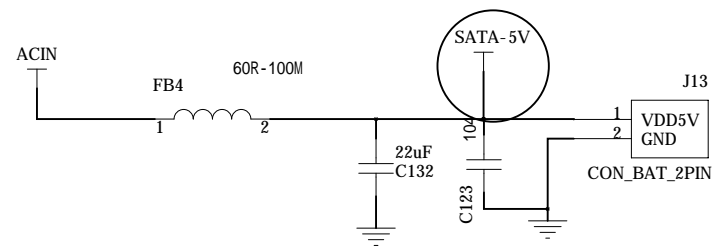
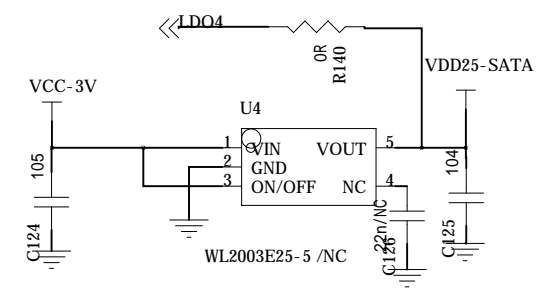
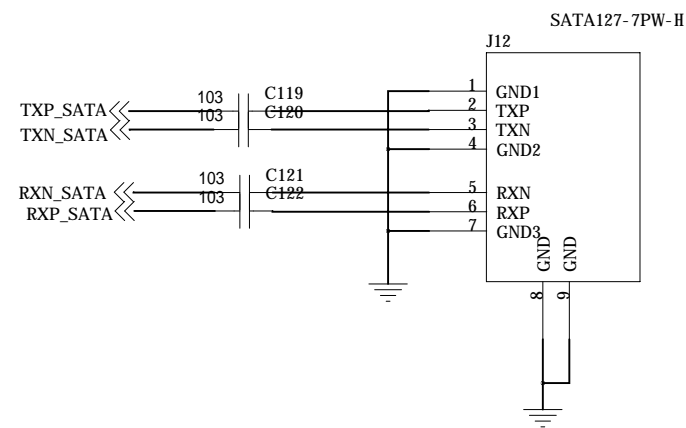
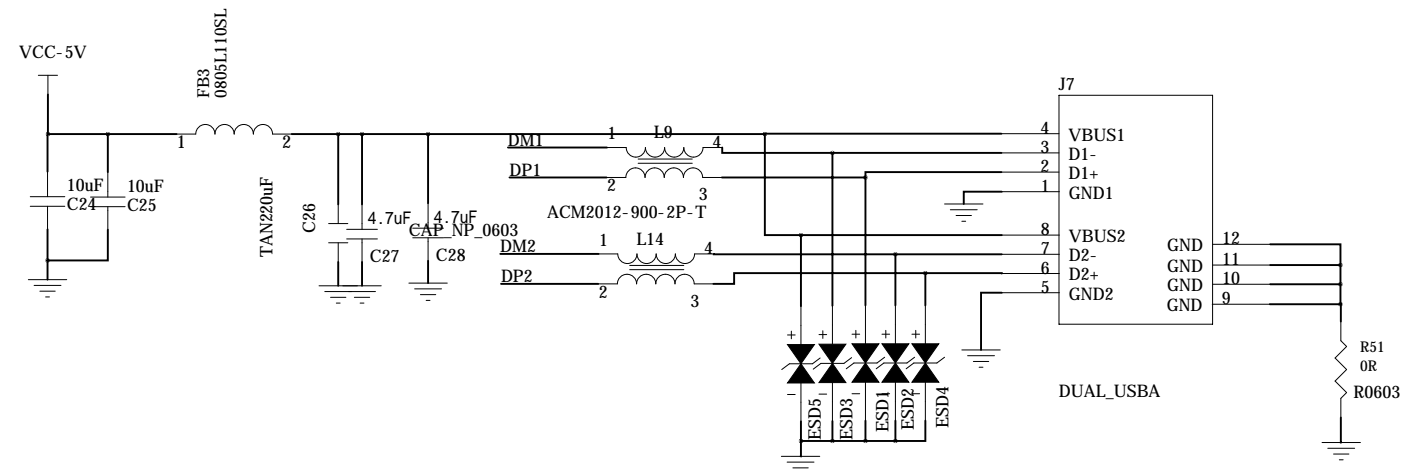
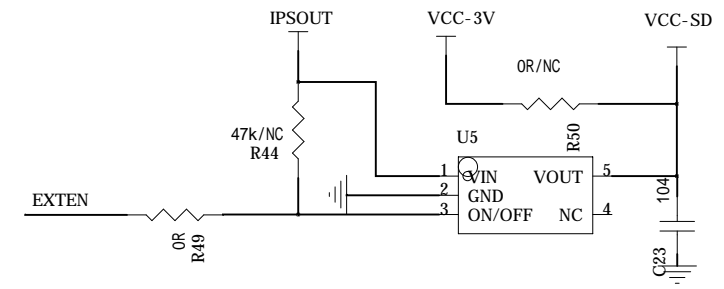
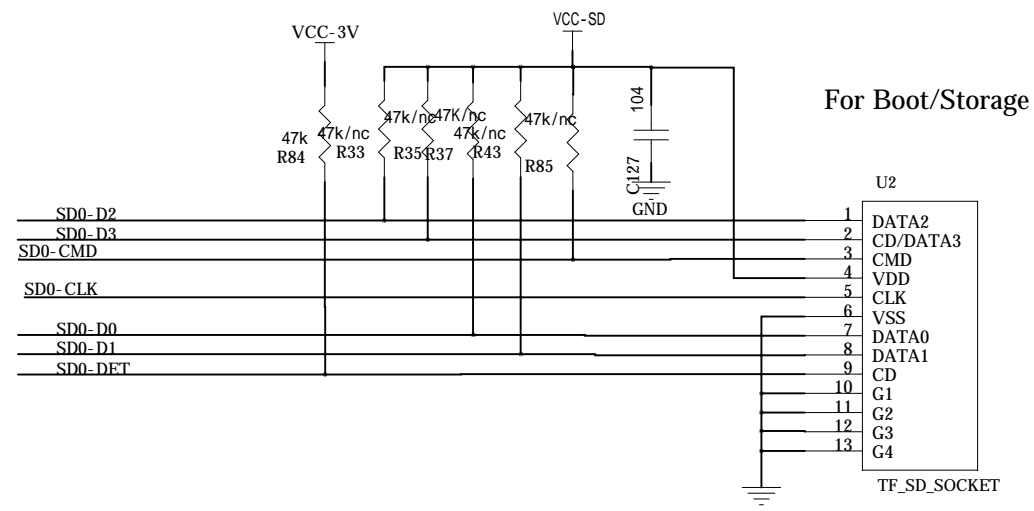
Title		
Banana Pi		
Size	Document Number	Rev
A3	POWER1	1.1
Date:	Thursday, August 22, 2013	Sheet 9 of 18

POWER- DC/DC

EXTEN >> EXTEN 10

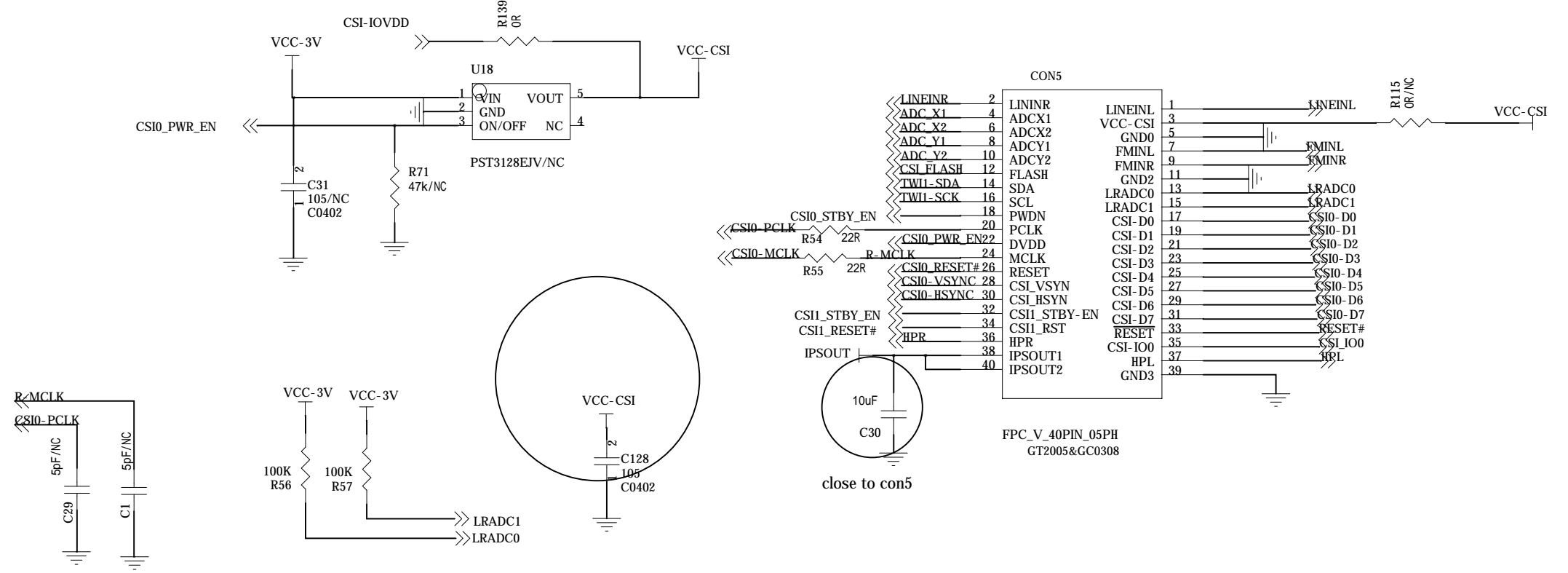
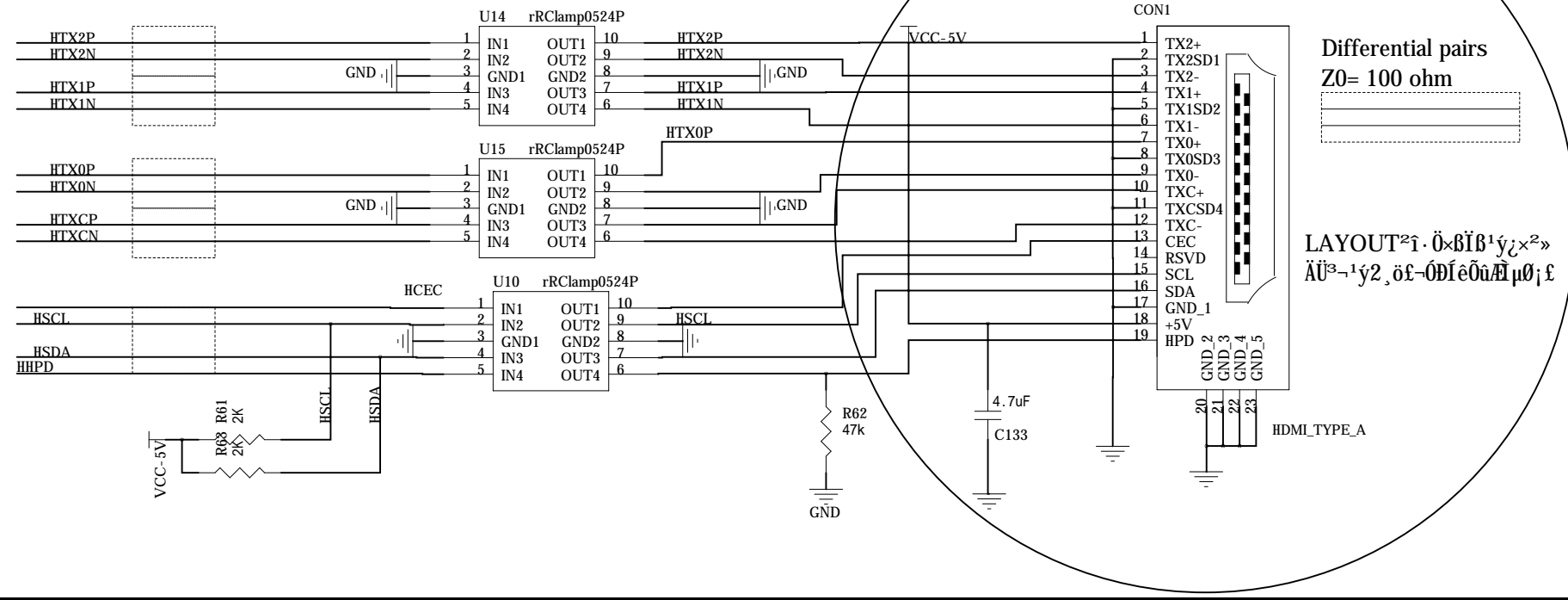
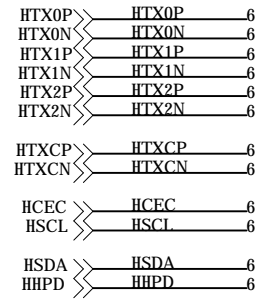


Title		
Banana Pi		
Size A3	Document Number POWER2	Rev 1.1
Date: Thursday, August 22, 2013	Sheet 10	of 18

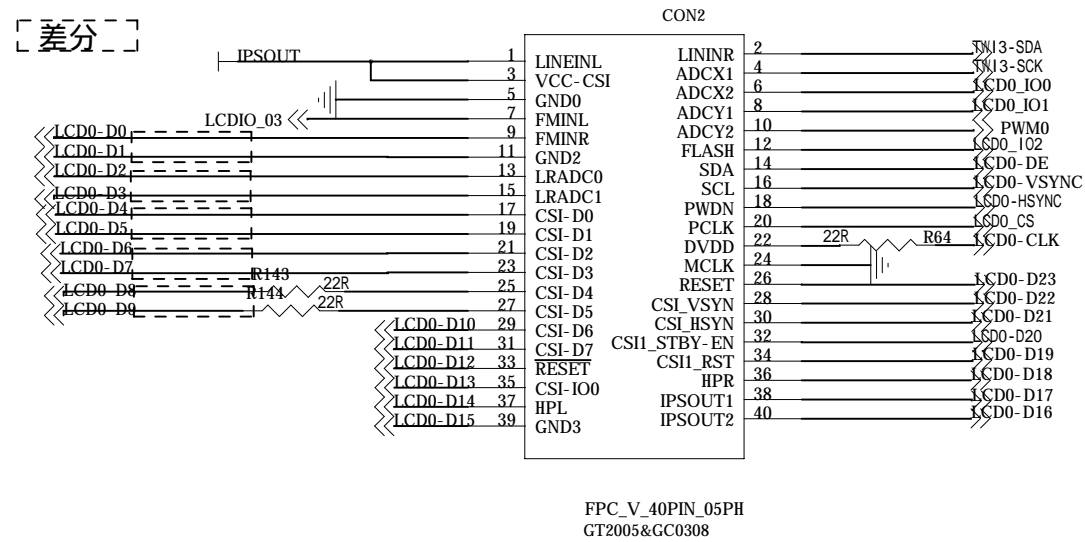
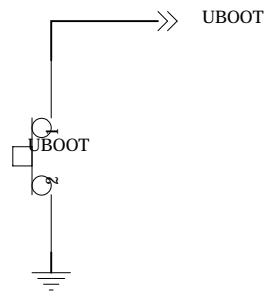
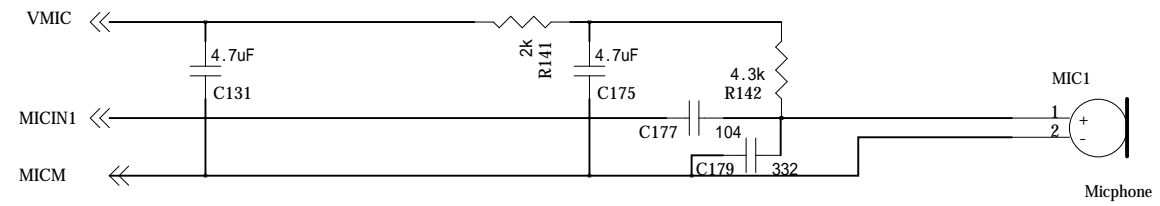
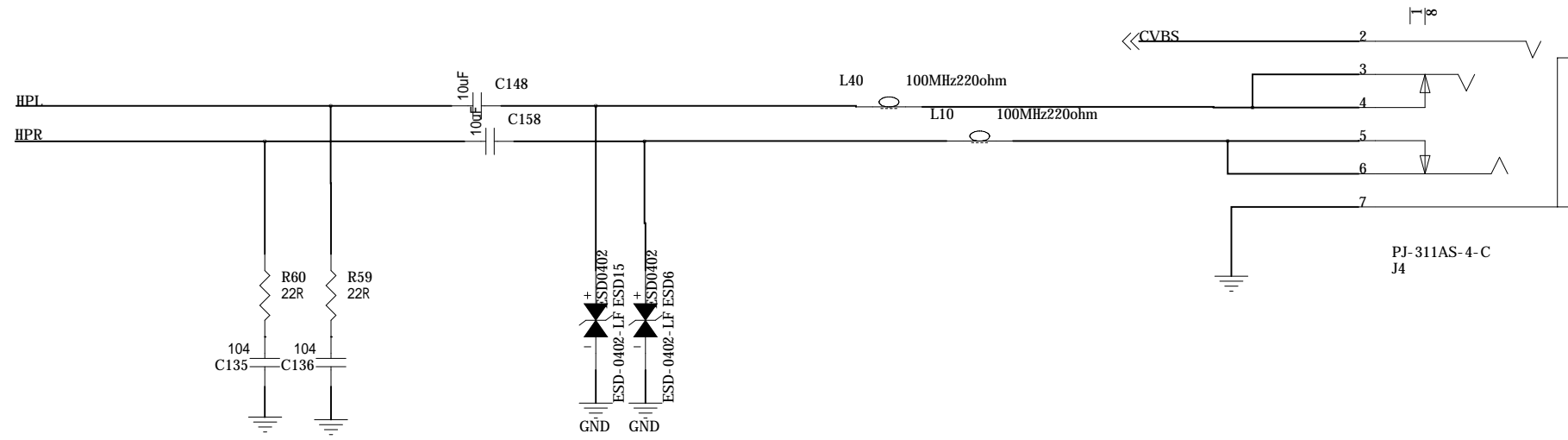


HDMI-CSI

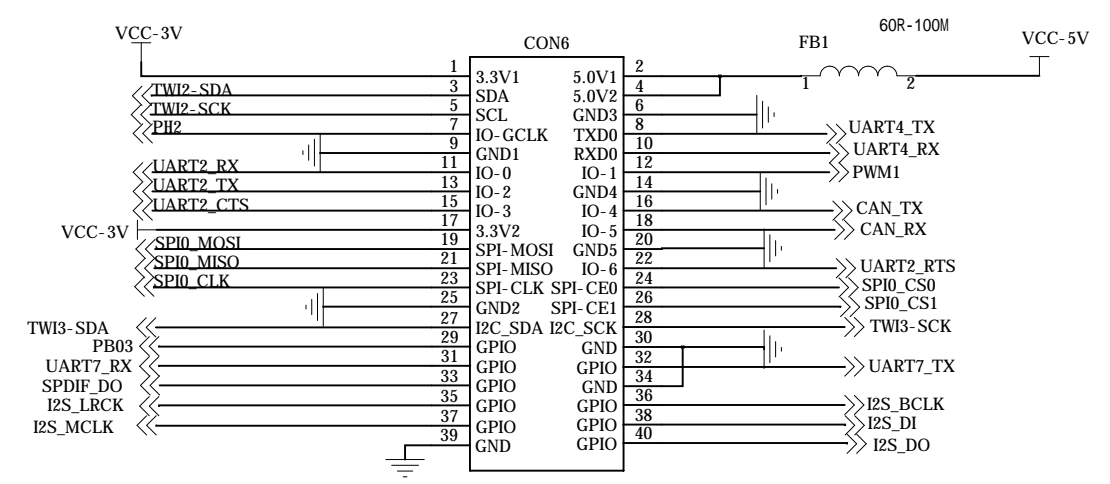
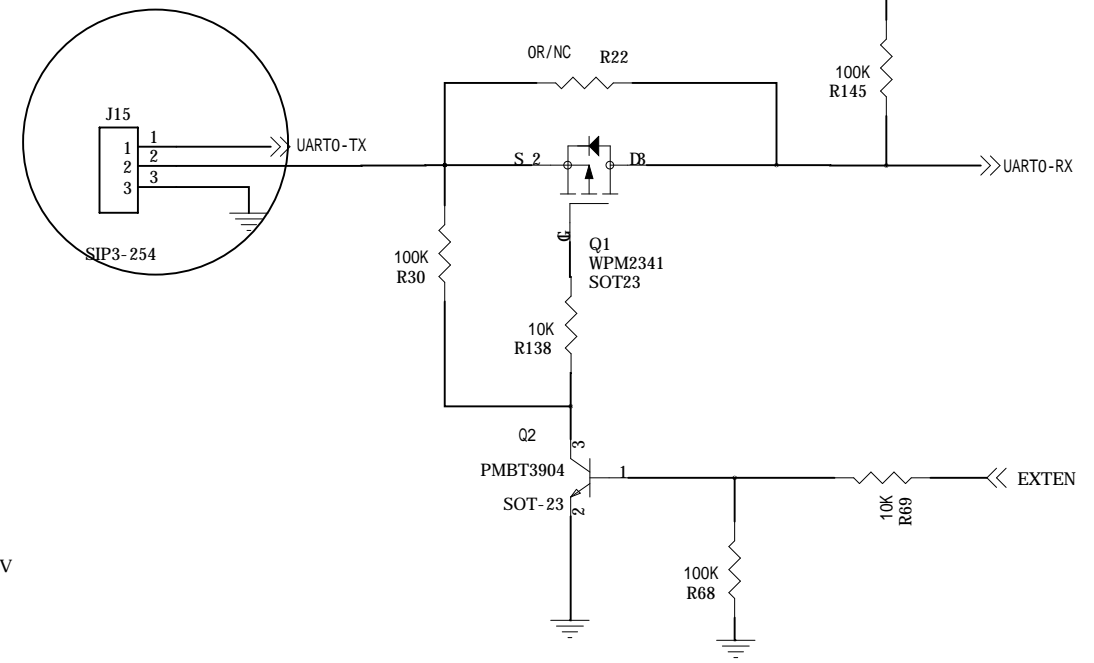
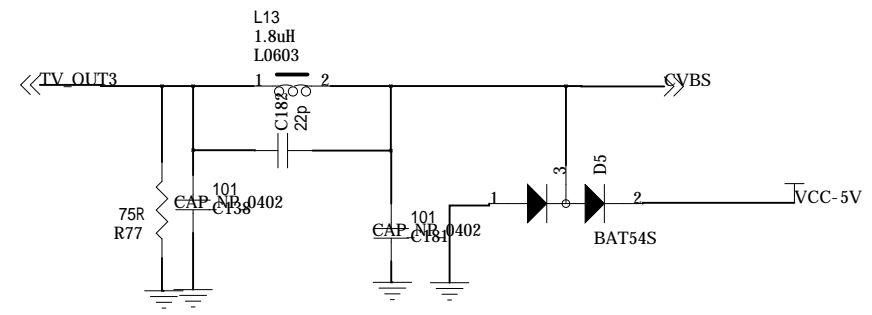
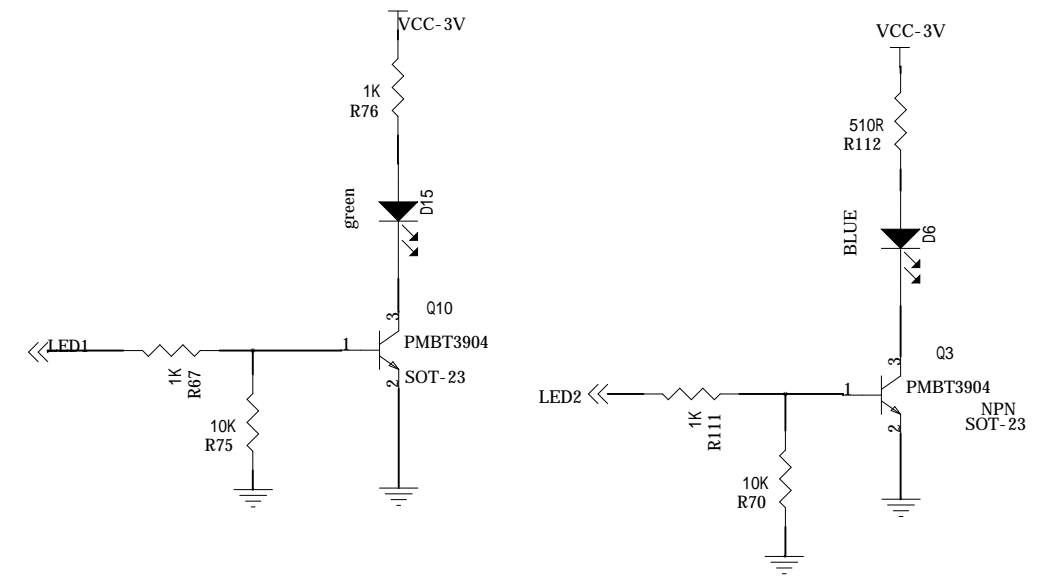
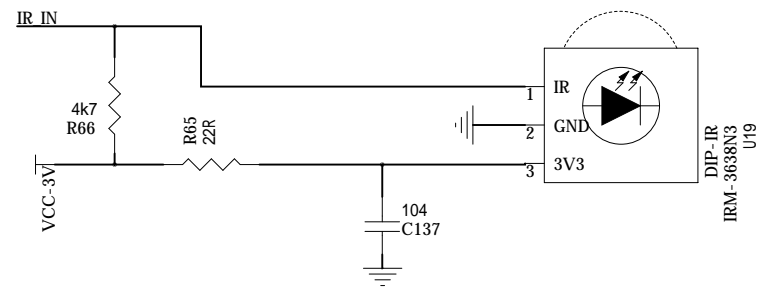
HDMI



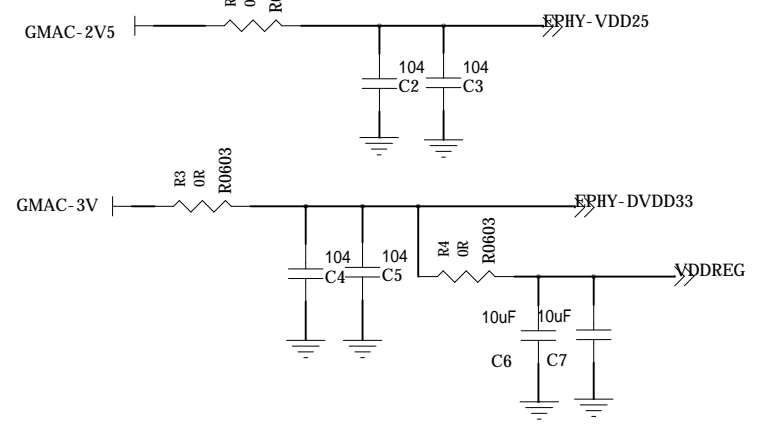
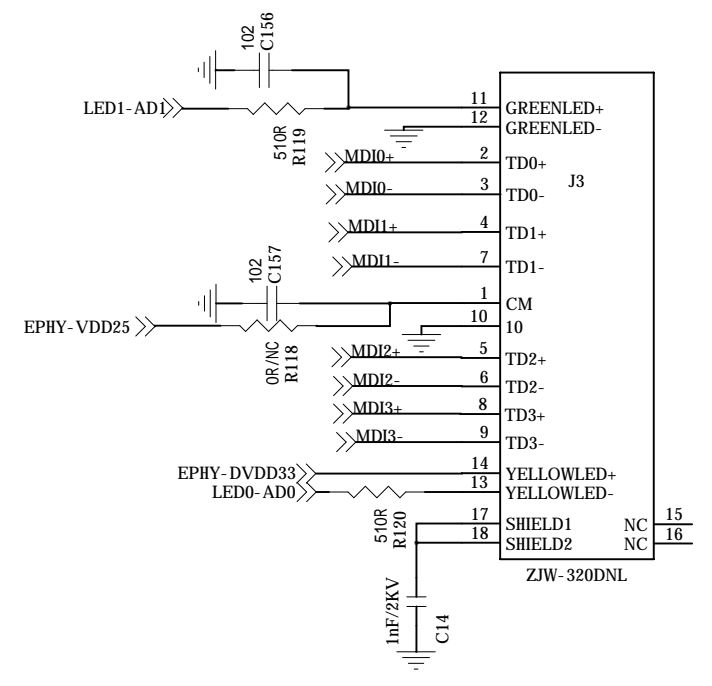
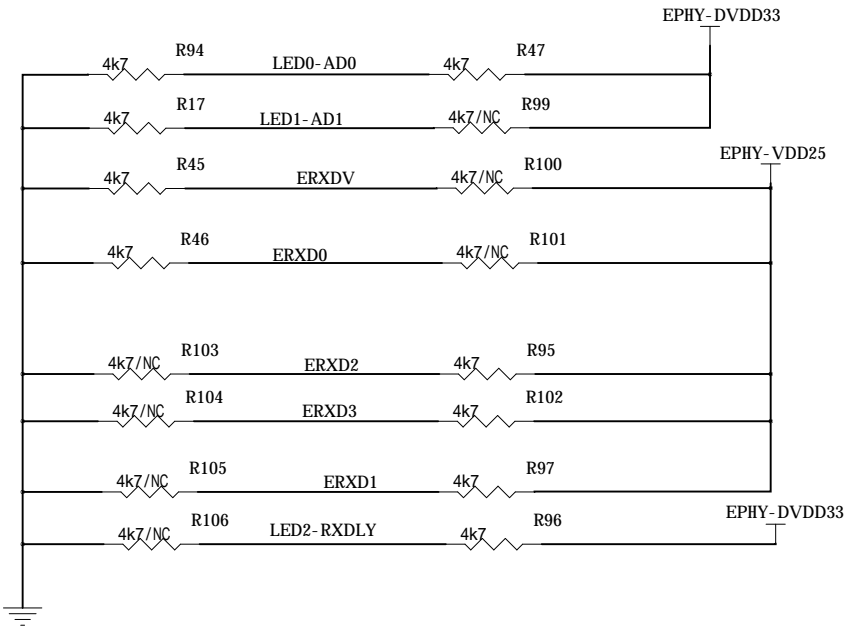
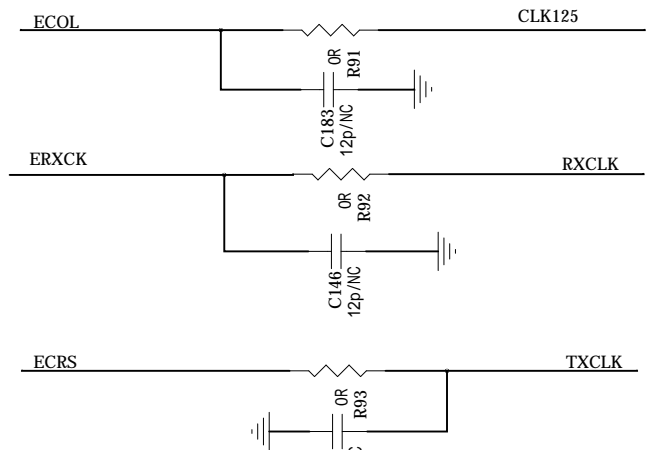
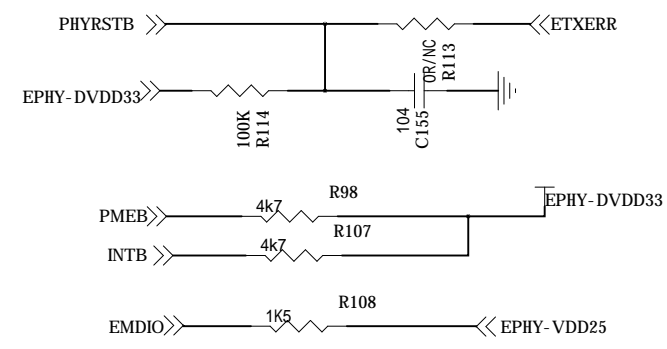
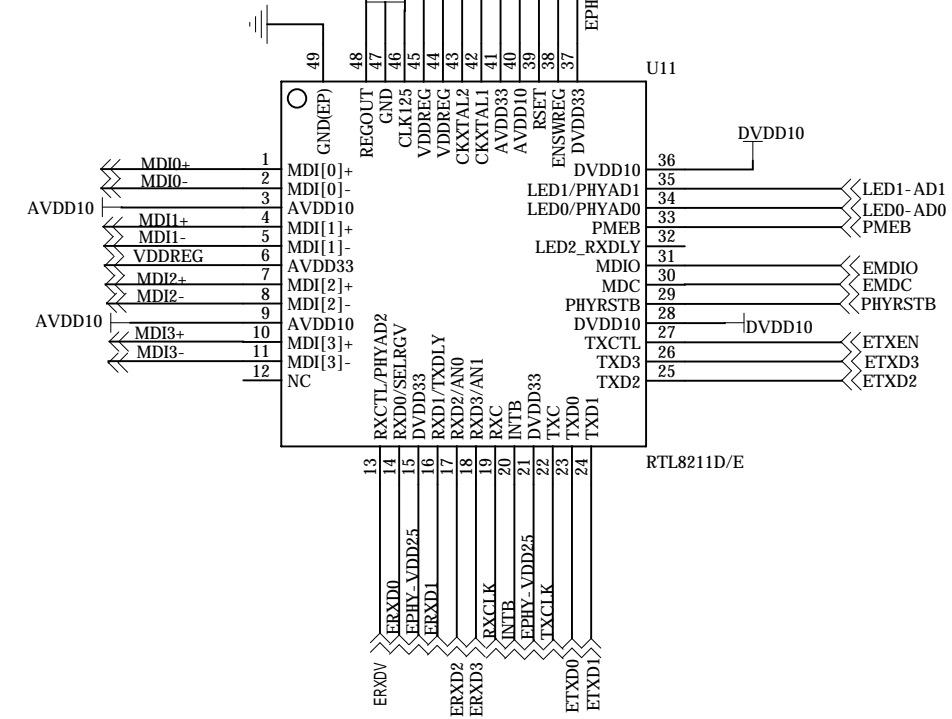
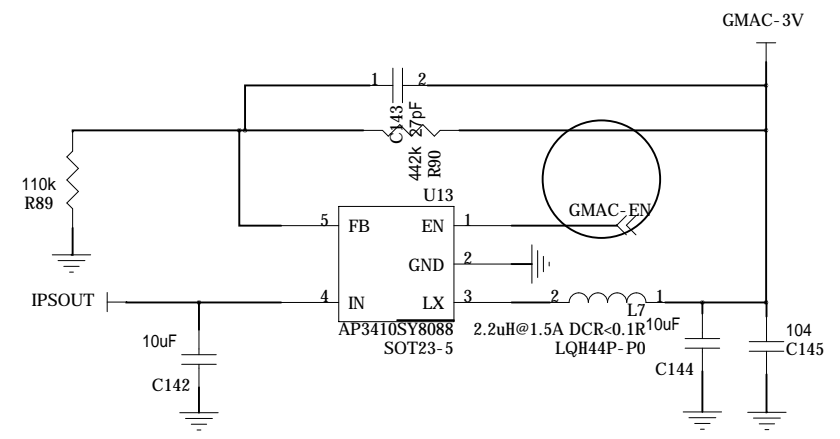
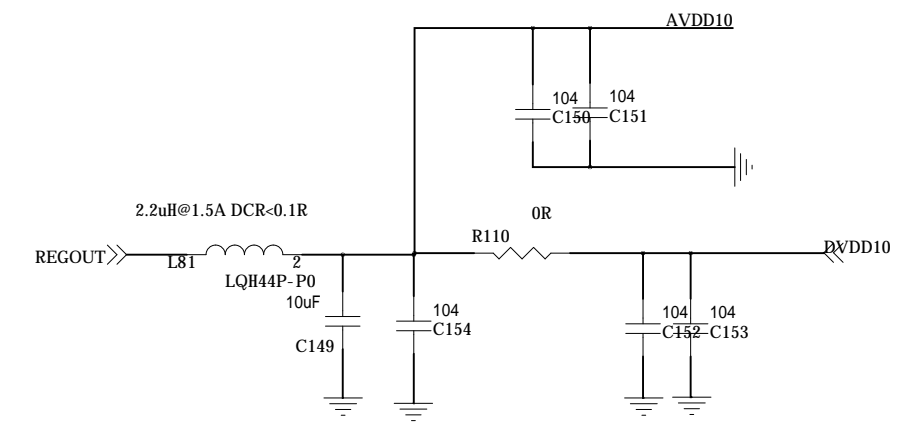
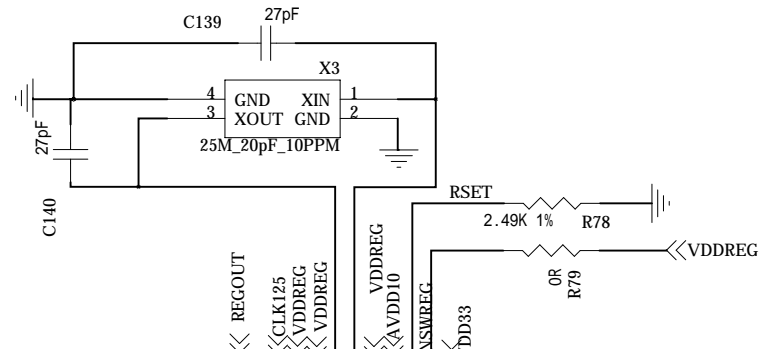
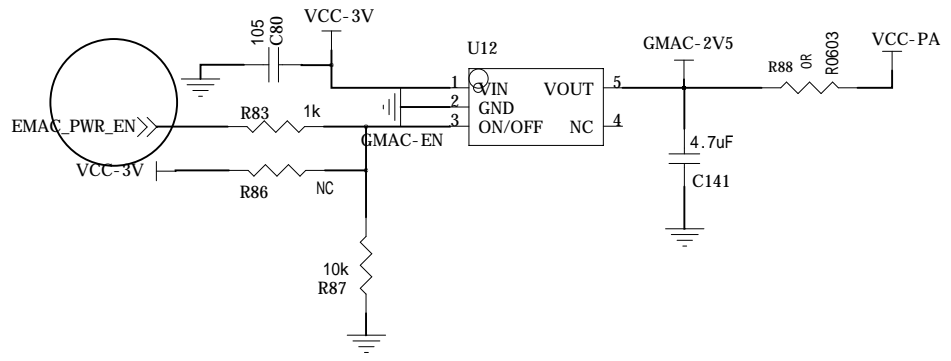
Title		
Banana Pi		
Size	Document Number	Rev
A3	HDMI-CSI	1.1
Date:	Thursday, August 22, 2013	Sheet 12 of 18



Title		
Banana Pi		
Size	Document Number	Rev
A3	KEY-IR-TVOUT-MT	1.1
Date:	Thursday, August 22, 2013	Sheet 13 of 18

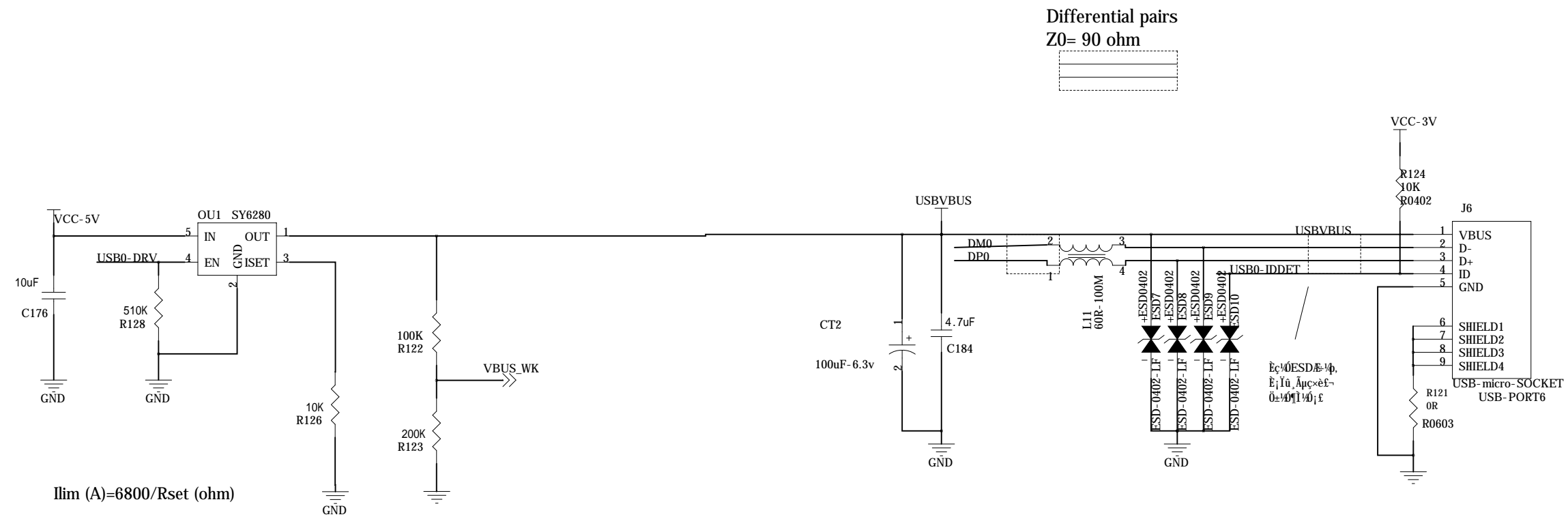


Title		
Banana Pi		
Size	Document Number	Rev
A3	CARD-DEBUG-GS	1.1
Date:	Thursday, August 22, 2013	Sheet 14 of 18

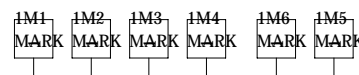
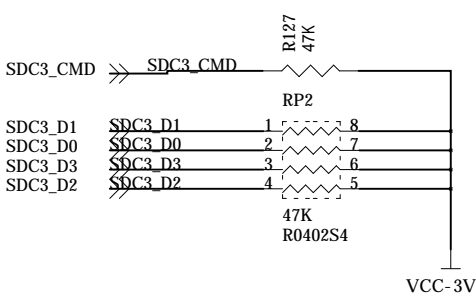
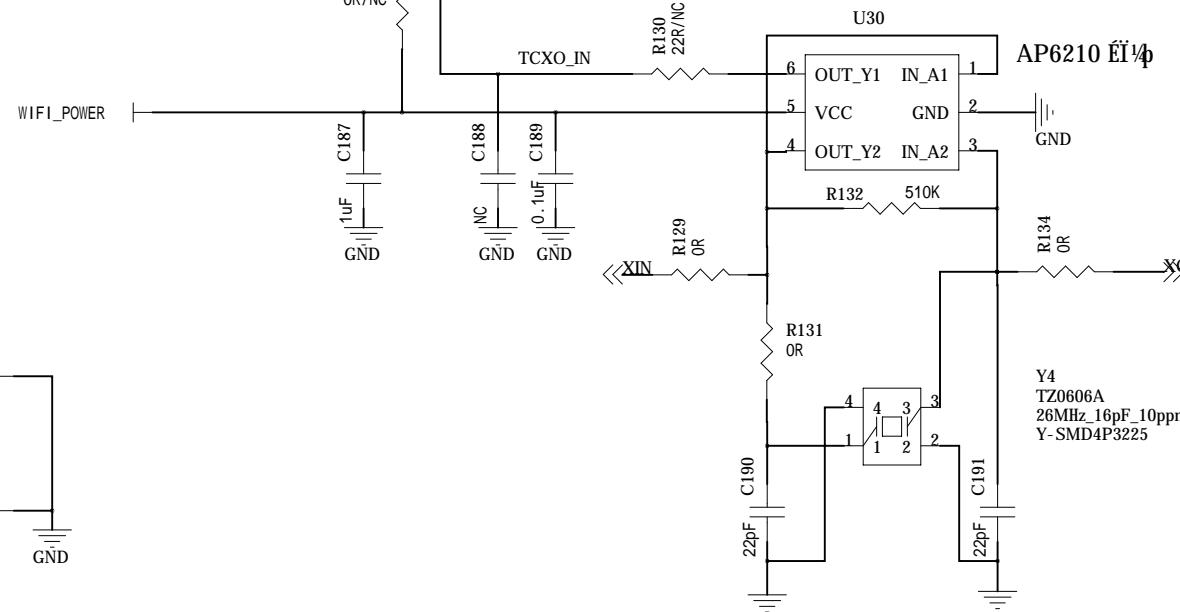
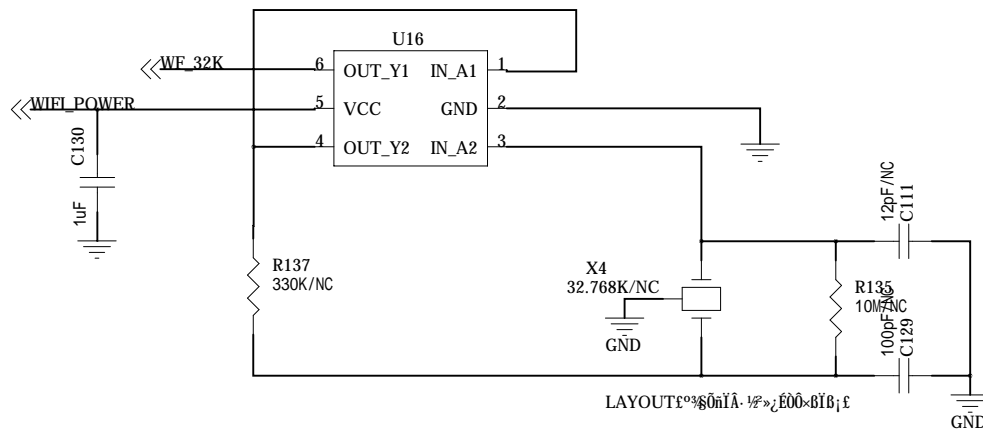
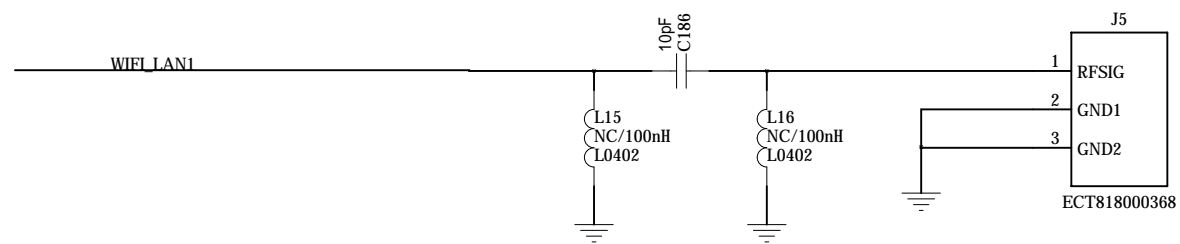
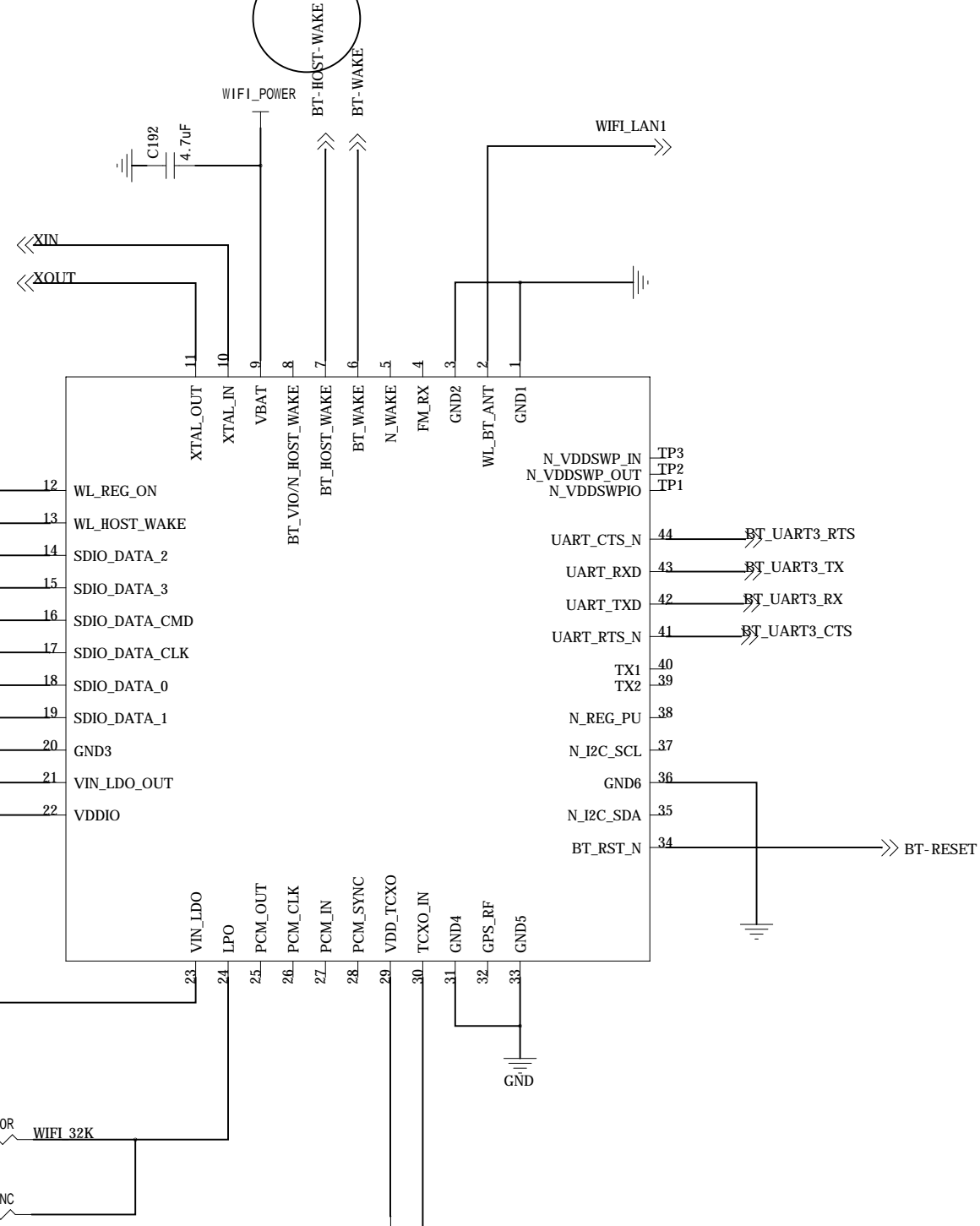
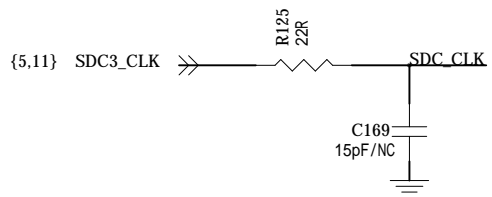
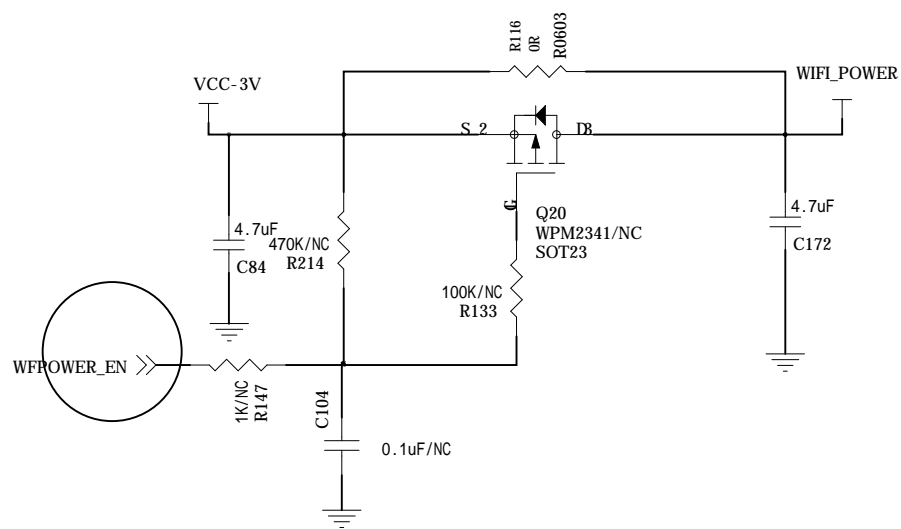


Title			Banana Pi		
Size	Document Number				Rev
A3	LCD				1.1
Date:	Thursday, August 22, 2013	Sheet	15	of	18

USB-USB OTG



Title		
Banana Pro		
Size A3	Document Number WIFI	Rev 1.1
Date:	Thursday, August 22, 2013	Sheet 16 of 18



20140916:change Version to V1.1

20140916: change HDMI to Type A

20140916: Add a GND pin to J15

20140917: change RP2 to 47K R127 to 47K change wifi SDIO to SDC3

20140917: change C1,C29 to NC

20140917: change R83 to 1K U12 power supply changed to VCC-3V

20140917: change CON26 PIN29 to PB03 D4 changed to SS22

20140917: change U8 to XL8206 2ADDC

20141013: Change version to 1.2

20141013: add Q1 Q2 R30 R68 R69

20141013:change FB3 from 60R@100MHz to KAB3202132 29010 1.25A fuse

20141013:change R111 frpm 0R to 1K;R112 from 510R to 1K add R70 10K add Q3

20141013: add C30

20141013: add R71 R115 U18 C31

20141014: add C80 C84 R116

20141014: change C115 C116 C159 to 22uF, add c95

20141014:Change J4 add C104

20141014:Del E3,U16 R22;Add J5

20141014:Del ESP8089 SDIO wifi

20141014:change J1 to USBF-PO565-H25-0307

20141022: Add 32KHz signal circuit for broadcom wifi

20141024: change BT uart from uart4 to uart3(with flow control)

20141024: change BT uart from uart4 to uart3(with flow control)

20141028: Add C132 C133 change C128 to 105

20141028: Add R139 C134 R140

20141030: Add FB1 change L 6 to 5*5

20150212: change version to V15

20150212: Del R5, R58,C180,ESD14,L12

20150212: Add C148,C158

20141022: Add 32KHz signal circuit for broadcom wifi