

CPU1

U1-1

SDQ0 AC7
SDQ1 AC4
SDQ2 AC8
SDQ3 AB5
SDQ4 AB7
SDQ5 AB8
SDQ6 AB4
SDQ7 AC3
SDQ8 AA1
SDQ9 AC1
SDQ10 Y1
SDQ11 AB2
SDQ12 AC2
SDQ13 W2
SDQ14 AB3
SDQ15 Y2
SDQ16 Y2
SDQ17 N2
SDQ18 U2
SDQ19 P1
SDQ20 T1
SDQ21 U1
SDQ22 N1
SDQ23 M2
SDQ24 J1
SDQ25 L1
SDQ26 H1
SDQ27 K2
SDQ28 L2
SDQ29 G2
SDQ30 M1
SDQ31 H2
CPU-REF << H3
H4
Y5
AAB
AB6
SDQS0 AC5
SDQS1 AB1
SDQS81 AA2
SDQS2 R1
SDQS82 P2
SDQS3 K1
SDQS83 J2
SDQM0 AC6
SDQM1 W1
SDQM2 R2
SDQM3 G1
V2
V1
J3
N3
J3
SCK#
SCK
SCKE
SA0 W4
SA1 R4
SA2 U4
SA3 M4
SA4 Y4
SA5 N4
SA6 V4
SA7 M3
SA8 A4
SA9 P4
SA10 L3
SA11 W3
SA12 P3
SA13 Y3
SA14 R3
SA15 AA4
SBA0 K3
SBA1 L4
SBA2 K4
T3
U3
V3
AA6
AA5
AA7
P8
R8
N8
R1
191R-1%
R0402
GND

U1-2

DRAM-VCC G5
H5
L5
M5
R5
T5
W5
W6
W7
Y6
CPUVDD H11
H12
H13
H14
J12
J13
INTVDD J15
J16
K9
K10
K15
L8
L9
R9
R10
T8
INTVDD M8
N9
P9
VCC-3V3 W14
W13
W12
H8
H9
H15
J8
J9
J14
VCC-PA H10
J10
H19
J19
VCC-3V3 CARD-VCC N19
VCC-CSIO CSIO-VCC F19
VCC-3V3 CSII-VCC E18
VCC-3V3 TVDACVCC W15
W16
W17
DRAM-VCC TVIN-2V5
VCC-3V3 UVCC L16
L15
K16
INTVDD ULVDD C1
104
C0402
GND

FBGA441-A20
FBGA441C80P19X19

VDD25-0-SATA
VDD25-1-SATA
VDD12-0-SATA
VDD12-1-SATA
VCC-HDMI
GND0
GND1
GND2
GND3
GND4
GND5
GND6
GND7
GND8
GND9
GND10
GND11
GND12
GND13
GND14
GND15
GND16
GND17
GND18
GND19
GND20
GND21
GND22
GND23
GND24
GND25
GND26
GND27
GND28
GND29
GND30
GND31
GND32
GND33
GND34
GND35
GND36
GND37
GND38
GND39
GND40
GND41
GND42
GND43
GND44
GND25-TVIN
N15
N16
M15
M16
T13
VCC-3V3
G3
G4
K5
N5
P5
U5
V5
Y7
Y8
M9
N10
P10
J11
K11
K12
K13
L10
L11
L12
M10
M11
M12
M13
N11
N12
N13
P11
P12
R11
R12
T11
T12
W9
W10
W11
K14
L14
M14
N13
N14
R13
P14
P13
Y18
W18
AA18
GND
R14
R16
GND

E23 >> CSIO-CLK
E22 >> CSIO-MCLK
D23 >> CSIO-HSYNC
D22 >> CSIO-VSYNC
C22 >> CSIO-D0
B23 >> CSIO-D1
B22 >> CSIO-D2
A23 >> CSIO-D3
A22 >> CSIO-D4
B21 >> CSIO-D5
A21 >> CSIO-D6
>> CSIO-D7

F20
E21
E20
D21
D20
C21
E19
C20
D19
C19
D18
C18

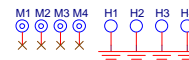
TS0_CLK/CSIO_PCLK/PE0
TS0_ERR/CSIO_MCLK/PE1
TS0_SYNC/CSIO_HSYNC/PE2
TS0_DVLD/CSIO_VSYNC/PE3
TS0_D0/CSIO_D0/PE4
TS0_D1/CSIO_D1/PE5
TS0_D2/CSIO_D2/PE6
TS0_D3/CSIO_D3/PE7
TS0_D4/CSIO_D4/PE8
TS0_D5/CSIO_D5/PE9
TS0_D6/CSIO_D6/PE10
TS0_D7/CSIO_D7/PE11

TS1_CLK/CSII_PCLK/SDC1_CMD/PG0
TS1_ERR/CSII_MCLK/SDC1_CLK/PG1
TS1_SYNC/CSII_HSYNC/SDC1_D0/PG2
TS1_DVLD/CSII_VSYNC/SDC1_D1/PG3
TS1_D0/CSII_D0/SDC1_D2/CSIO_D8/PG4
TS1_D1/CSII_D1/SDC1_D3/CSIO_D9/PG5
TS1_D2/CSII_D2/UART3_TX/CSIO_D10/PG6
TS1_D3/CSII_D3/UART3_RX/CSIO_D11/PG7
TS1_D4/CSII_D4/UART3_RT/CSIO_D12/PG8
TS1_D5/CSII_D5/UART3_CTS/CSIO_D13/PG9
TS1_D6/CSII_D6/UART4_TX/CSIO_D14/PG10
TS1_D7/CSII_D7/UART4_RX/CSIO_D15/PG11

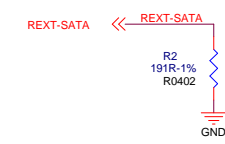
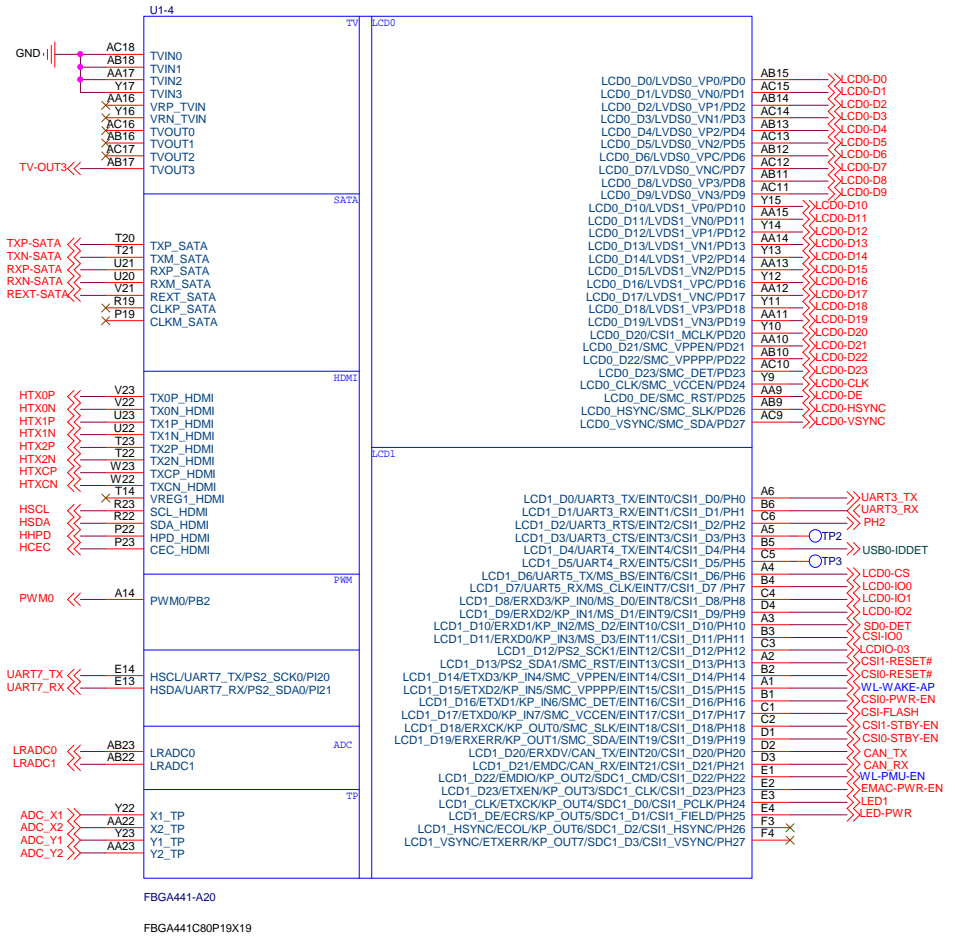
TS0/CSIO
TS1/CSII1

FBGA441C80P19X19

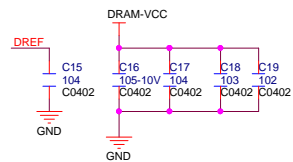
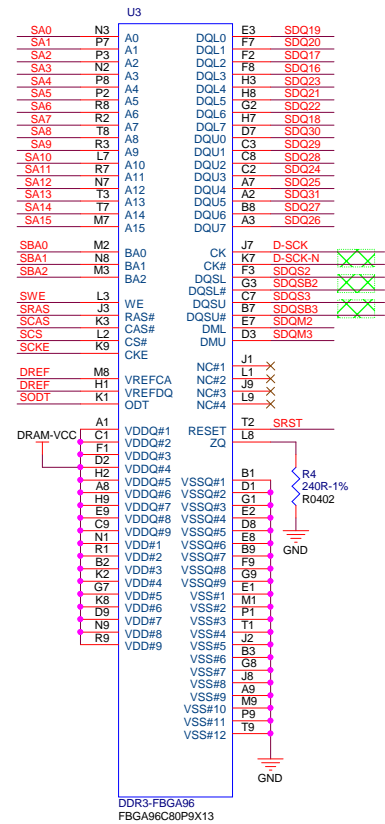
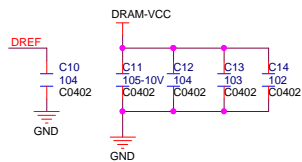
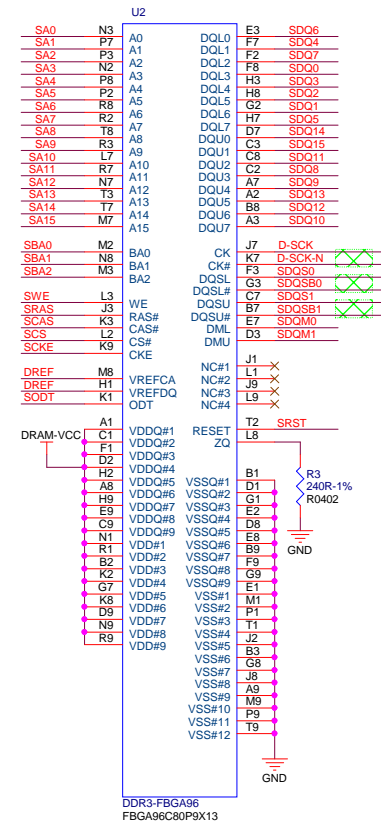
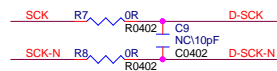
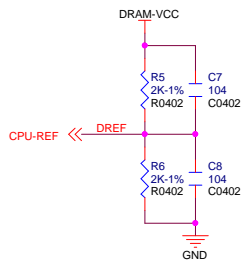
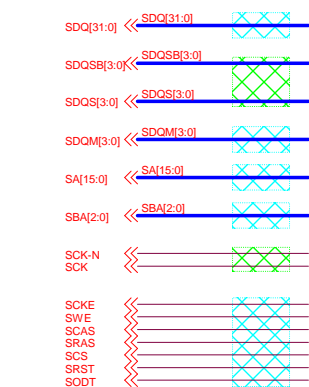
Design Name
BPI-M1+
Size
A3
Page Name
CPU1
Date
Monday, February 02, 2015
Sheet
1
of
14
Rev
1.0



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BPI-M1+			
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	CPU1		
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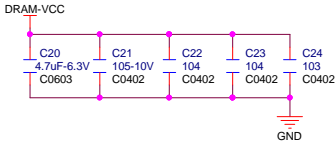
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DDR3-16BITX2

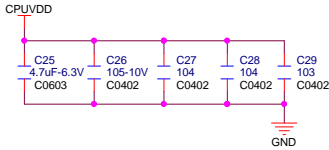


BESIDE CPU

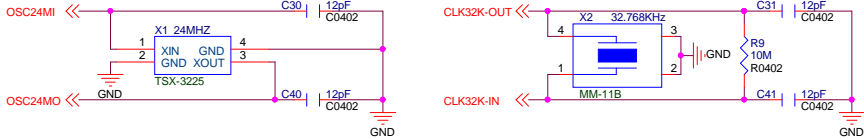
DRAM



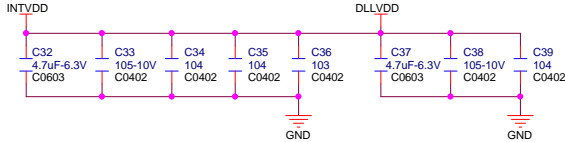
CPU



Crystal

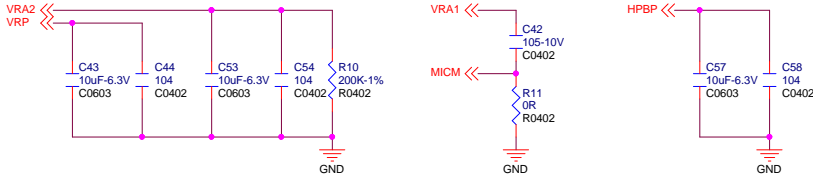


CORE

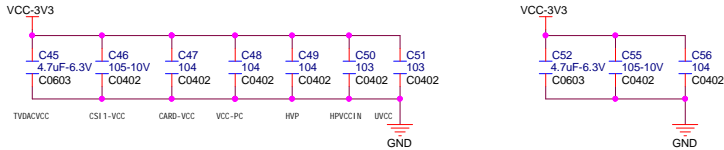


AUDIO&SYS

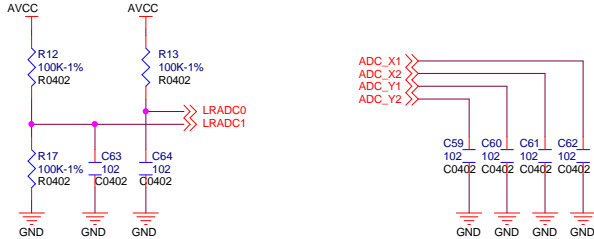
AUDIO



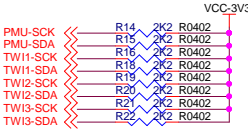
PIO-INTFACE



ADC



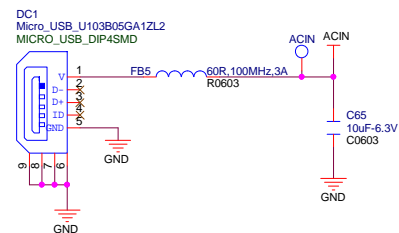
TWI-PULLUP



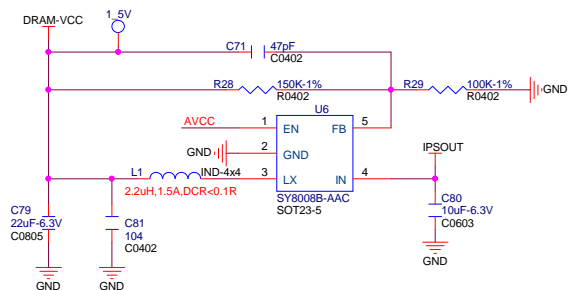
Design Name			BPI-M1+	
Size	Page Name	BESIDE CPU		Rev
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Date:	Monday, February 02, 2015	Sheet	4	of 14

Power

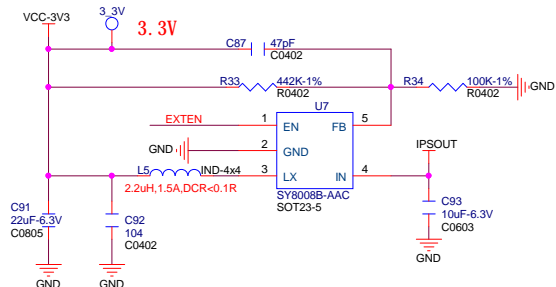
DC-IN



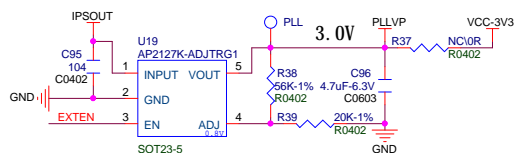
DRAM-VCC



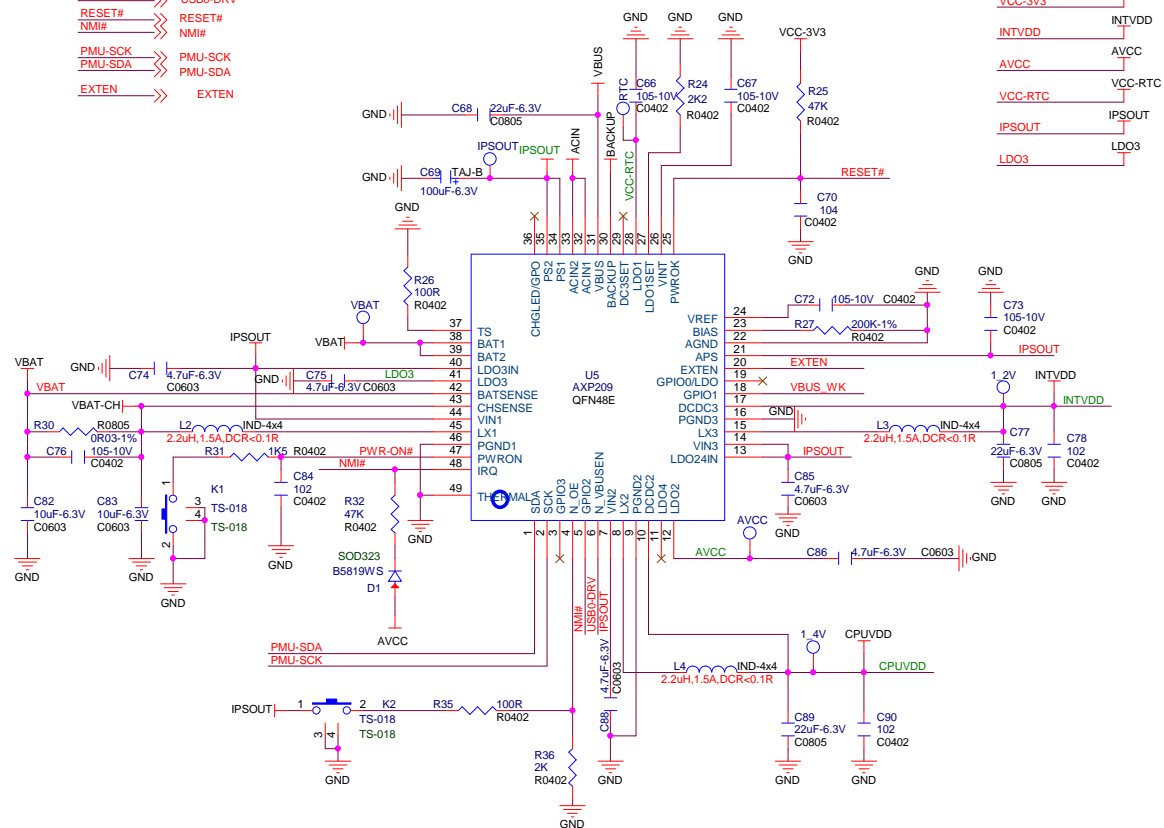
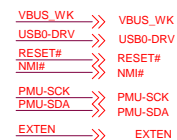
VCC-3V3



VCC-PLL

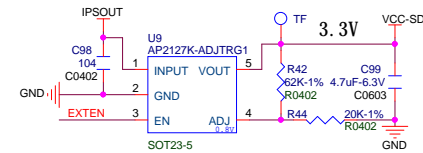
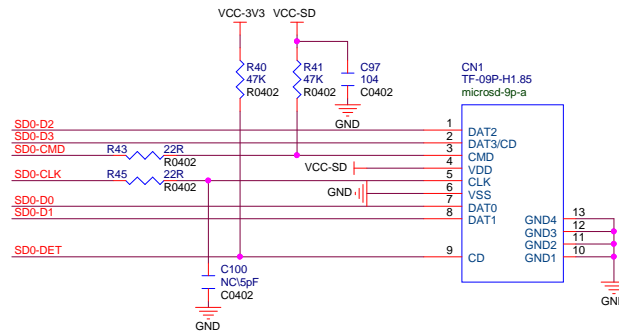


PMU-AXP209

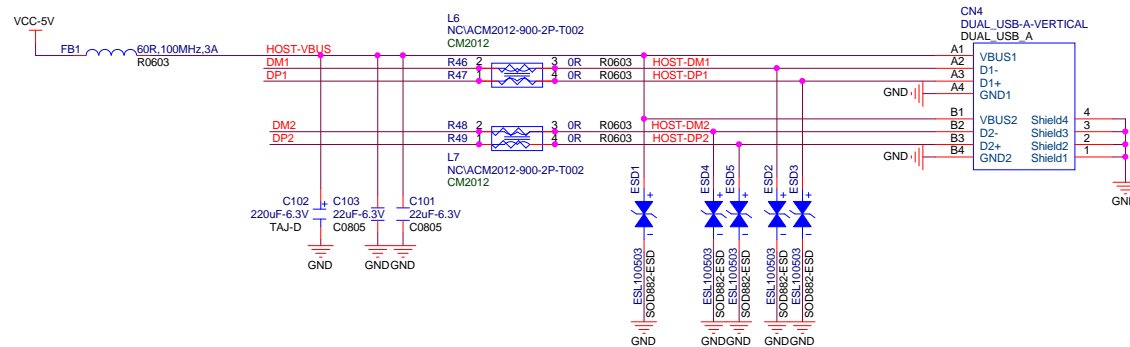
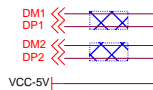


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Size A3	Page Name	Rev	
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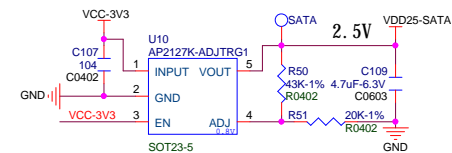
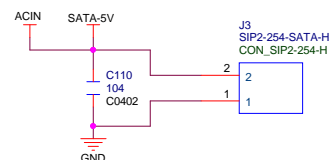
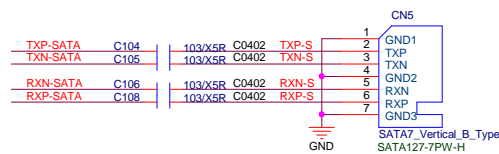
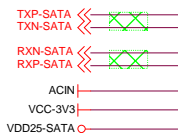
TF-USB-SATA



USB HOST



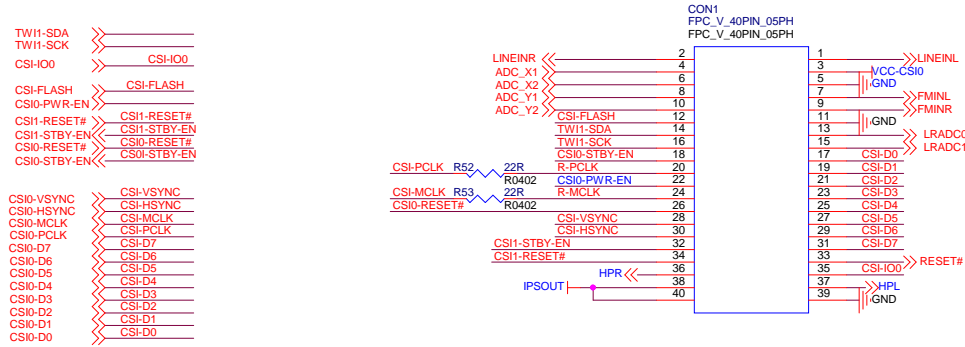
SATA



Design Name			
BPI-M1+			
Size	Page Name	Rev	
A3	TF-USB-SATA	1.0	
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CSI-HDMI

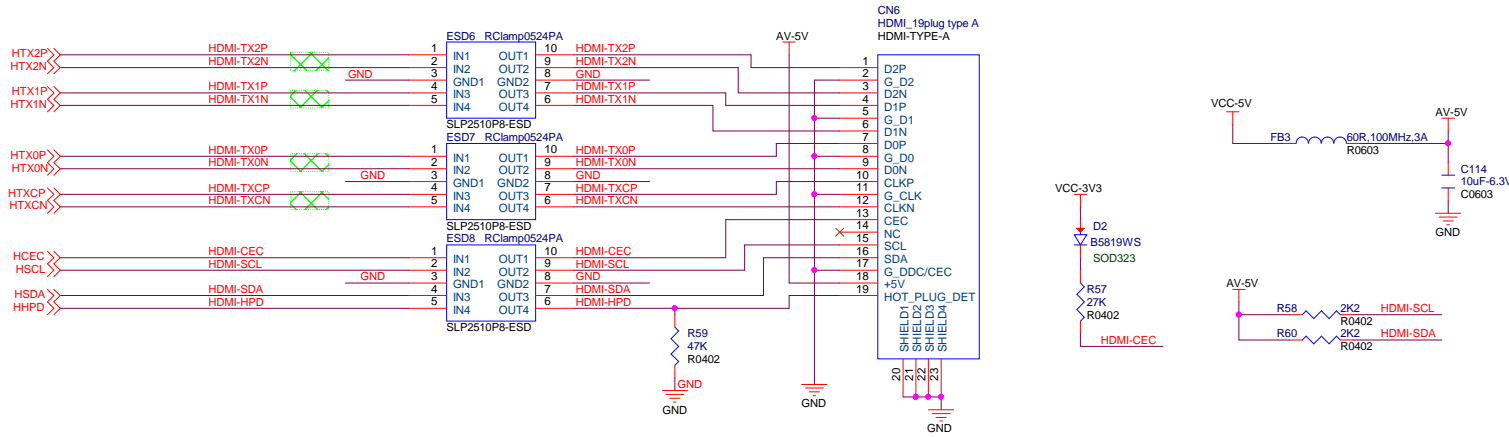
CSI



VCC-CSIO为电源输入脚，给A20的PIN: F19供电
需与摄像头的IO 供电电压保持一致



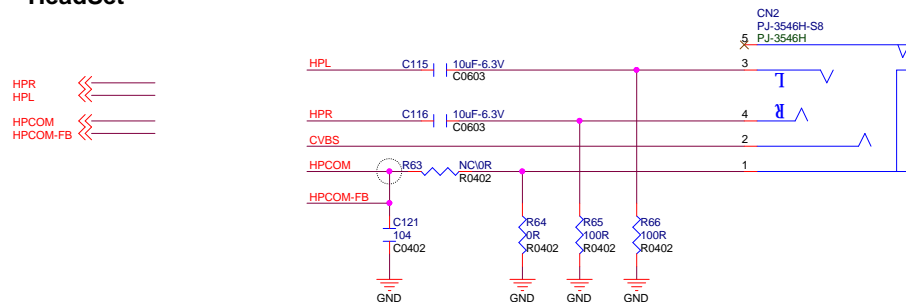
HDMI



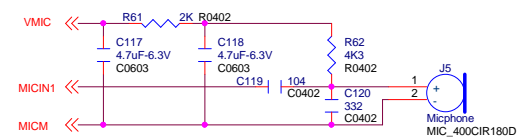
Design Name			BPI-M1+	
Size	A3	Page Name	CSI-HDMI	Rev 1.0
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AUDIO-LCD

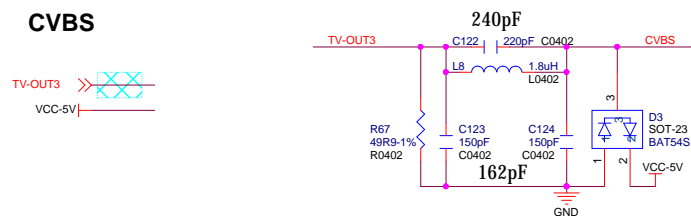
HeadSet



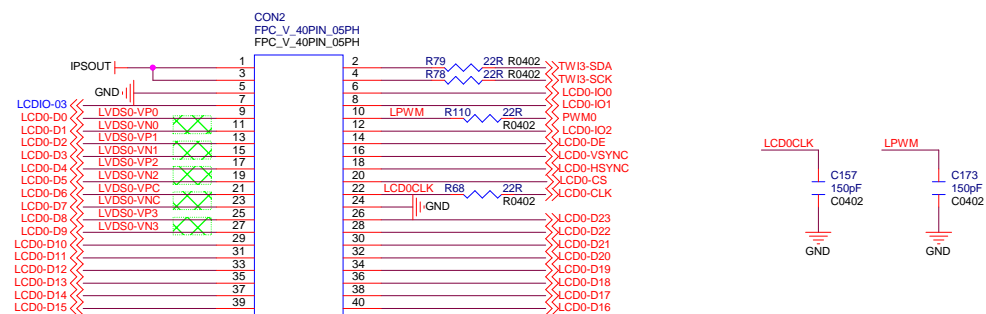
Microphone



CVBS



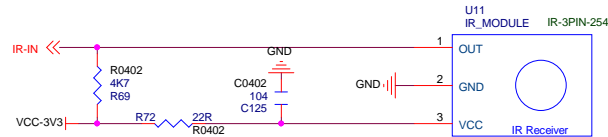
LCD



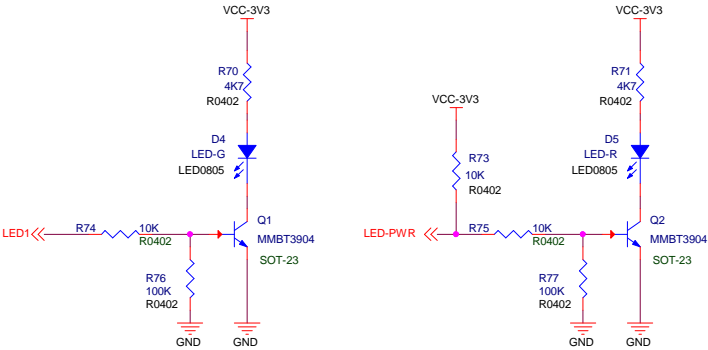
Design Name				
BPI-M1+				
Size A3	Page Name			Rev 1.0
AUDIO-CVBS-LCD				
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IR-CVBS-ExtPort

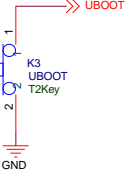
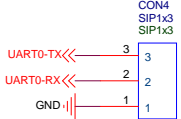
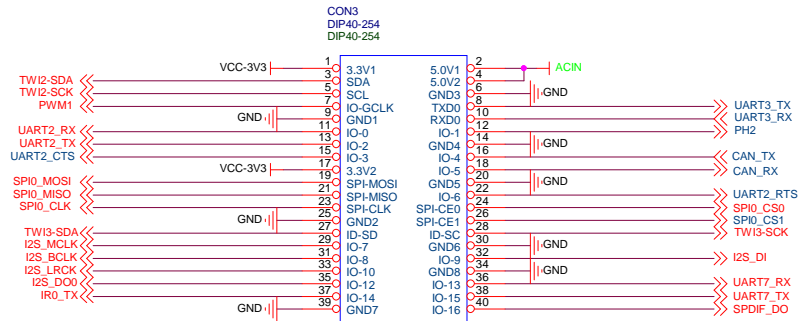
IR MODULE



LEDs



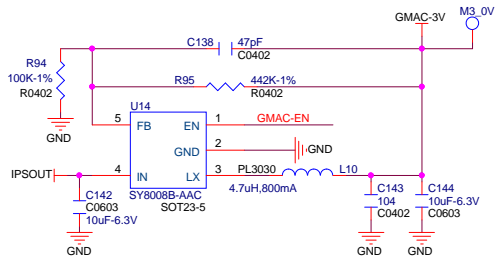
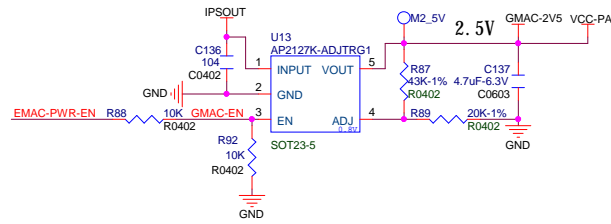
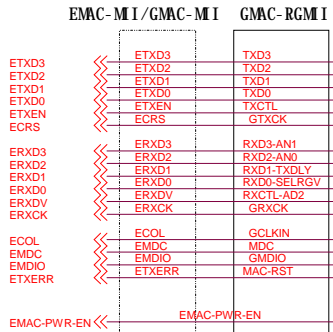
Ext Port



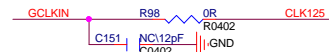
Design Name			BPI-M1+	
Size	A3	Page Name	IR-ExtPort	
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GMAC

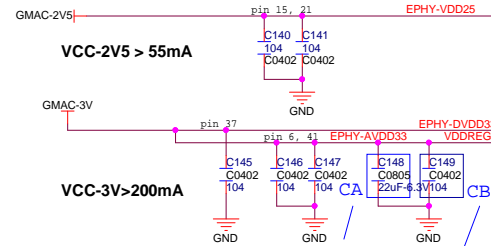
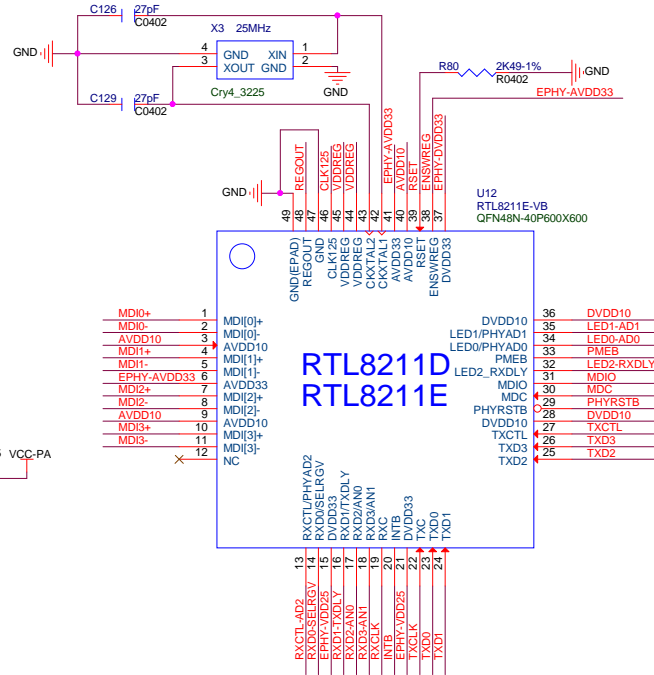
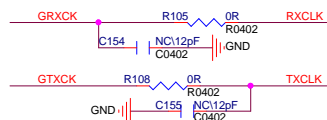
10/100/1000 RGMII Ethernet PHY



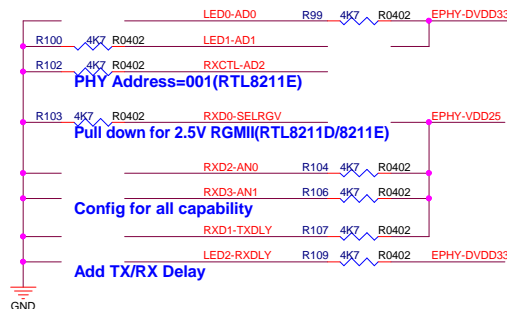
Place filter network close to CLK125.
Reserved for EMI



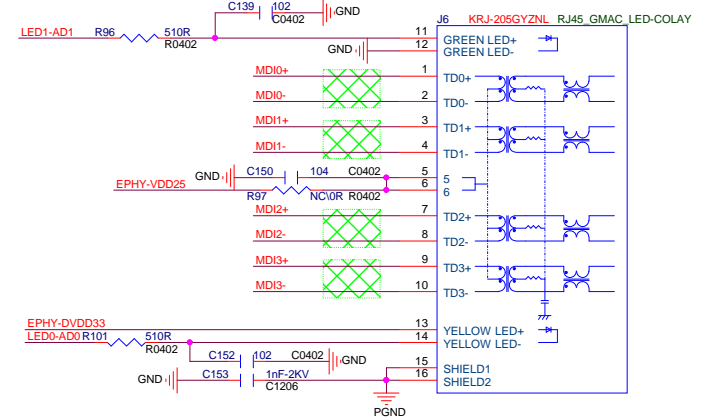
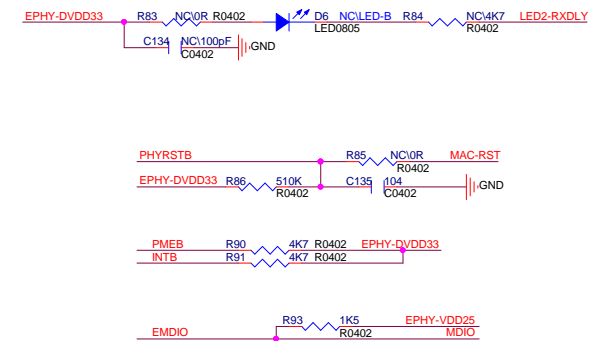
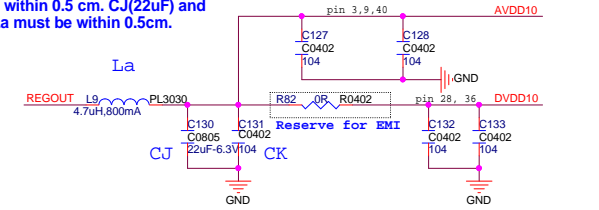
Place filter network close to RX_CLK.
Reserved for EMI



Note 2: The Trace length from CA(22uF),CB(0.1uF) to Pin 44,45(VDDREG) must bewithin 0.5 cm. The trace width from AVDD33 to Pin 44,45 should>40mils.



Note 1: The Trace length between La and PHY's Pin48 must be within 0.5 cm. CJ(22uF) and CK(0.1uF) to La must be within 0.5cm.



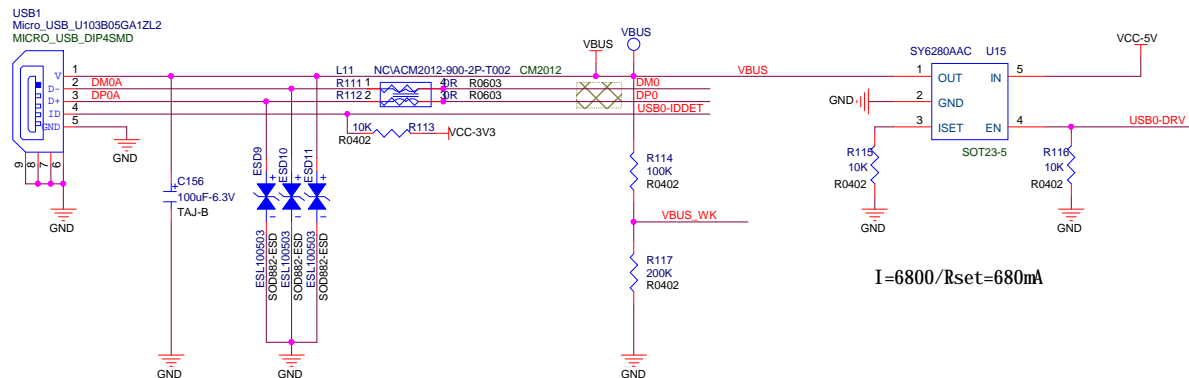
LED0:Blinking=Transmitting or Receiving.
LED1:Link Up/Down

Design Name		BPI-M1+	
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USB_OTG

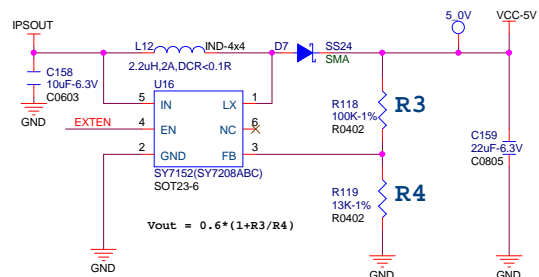
USB-OTG

DM0
DP0
USB0-IDDET
VBUS_WK
USB0-DRV



VCC-5V

EXTEN
IPSOULT
VCC-5V

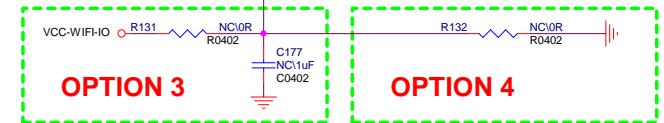
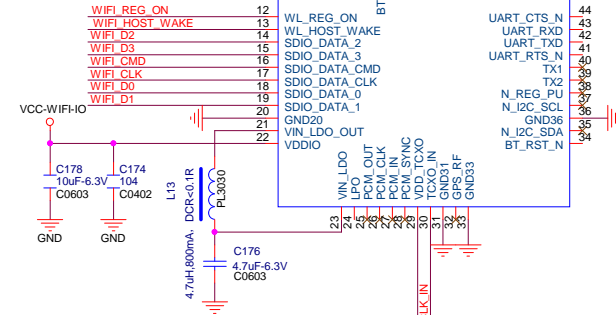
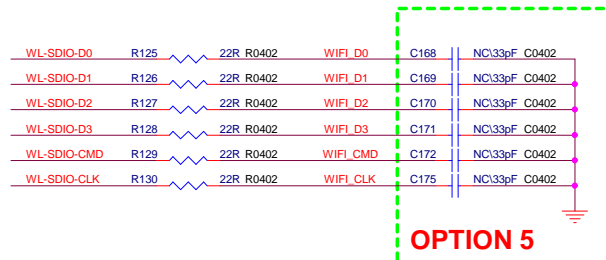
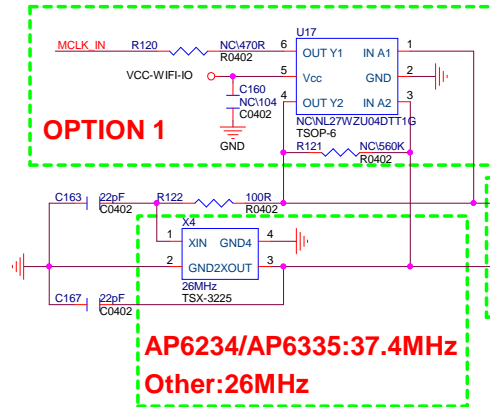
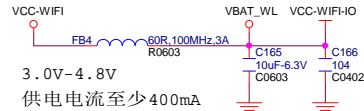


Design Name		
BPI-M1+		
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WiFi

WIFI&BT

WL-SDIO-D0 << WL-SDIO-D0
WL-SDIO-D1 << WL-SDIO-D1
WL-SDIO-D2 << WL-SDIO-D2
WL-SDIO-D3 << WL-SDIO-D3
WL-SDIO-CMD << WL-SDIO-CMD
WL-SDIO-CLK << WL-SDIO-CLK
WL-PMU-EN << WIFI_REG_ON
WL-WAKE-AP << WIFI_HOST_WAKE
VCC-3V3 << VCC-WIFI



OPTION	WIFI				BT4.0	Crystals	VCC-WIFI-IO
	a	b/g/n	ac	5GHz			
AP6181		Yes				26MHz	1.71-3.6V
AP6210		Yes			Yes	26MHz	1.71-3.6V
AP6234	Yes	Yes		Yes	Yes	37.4MHz	1.6-3.4V
AP6335 (Default)	Yes	Yes	Yes	Yes	Yes	37.4MHz	1.71-3.63V

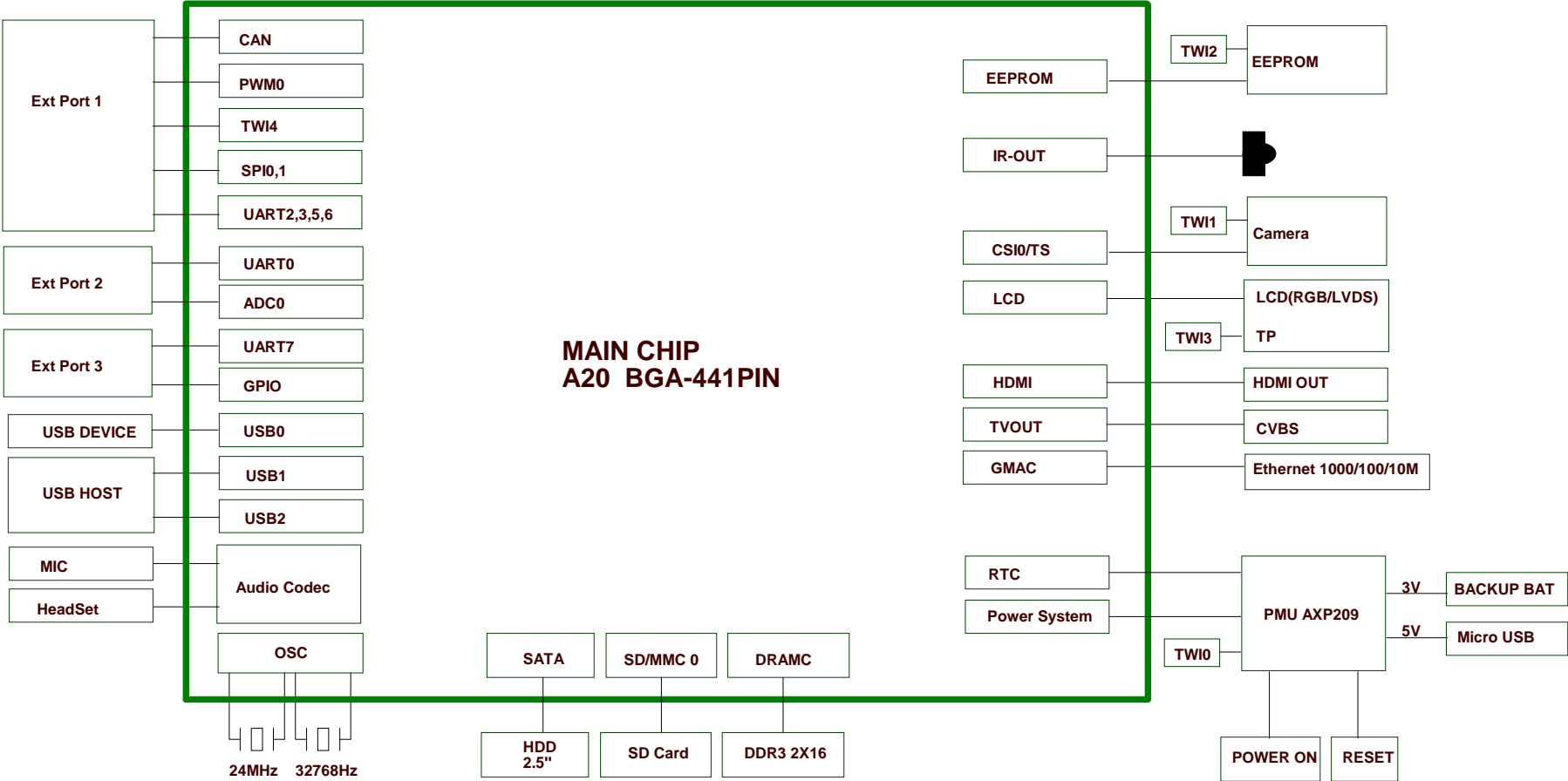
OPTION	1	2	3	4	5
AP6181	No	Yes	No	No	No
AP6210	Yes	No	Yes	No	No
AP6234	No	Yes	No	No	No
AP6335	No	Yes	No	Yes	Yes

Default

Note:
Yes: 框内要贴
No: 框内不贴

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BLOCK




Differential pairs
Z0= 100ohm +/-5 ohm



Differential pairs
Z0= 90 ohm +/-5 ohm



Z0= 50ohm +/-5 ohm



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V1.00

1. BPI Ml 和 BPI Ml+ 软件识别: LRADC1电压

要求电压	R2	R1	实际电压
3.3V	20K-1%	62K-1%	3.28V
3.0V	20K-1%	56K-1%	3.04V
2.8V	20K-1%	51K-1%	2.84V
2.5V	20K-1%	43K-1%	2.52V
1.8V	20K-1%	24K-1%	1.76V
1.5V	20K-1%	18K-1%	1.52V
1.2V	20K-1%	10K-1%	1.20V

A20	PIN	使用	不使用
HDMI	T13	VCC-3V3	VCC-3V3
SATA 2.5V	N15, N16	2.5V	DRAM-VCC(1.5V)
CSIO	F19 (VCC-PE)	VCC-2.8	VCC-2.8
CSI1	E18 (VCC-PG)	VCC-2.8	VCC-3V3
TVIN 2.5V	W17	2.5V	DRAM-VCC(1.5V)
TVIN 3.3V	W16	VCC-3V3	VCC-3V3
TVOUT 3.3V	W15	VCC-3V3	VCC-3V3
LVDS IO	W12, W13, W14	VCC-3V3	VCC-3V3
EMAC IO	J10, H10 (VCC-PA)	3.0V/2.5V	VCC-3V3
NAND IO	J19, H19 (VCC-PC)	VCC-3V3	VCC-3V3
SD IO	N19 (VCC-PF)	VCC-3V3	VCC-3V3
USB VDD	K16	INTVDD(1.2V)	VCC-3V3
USB VCC	L15, L16	VCC-3V3	VCC-3V3



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