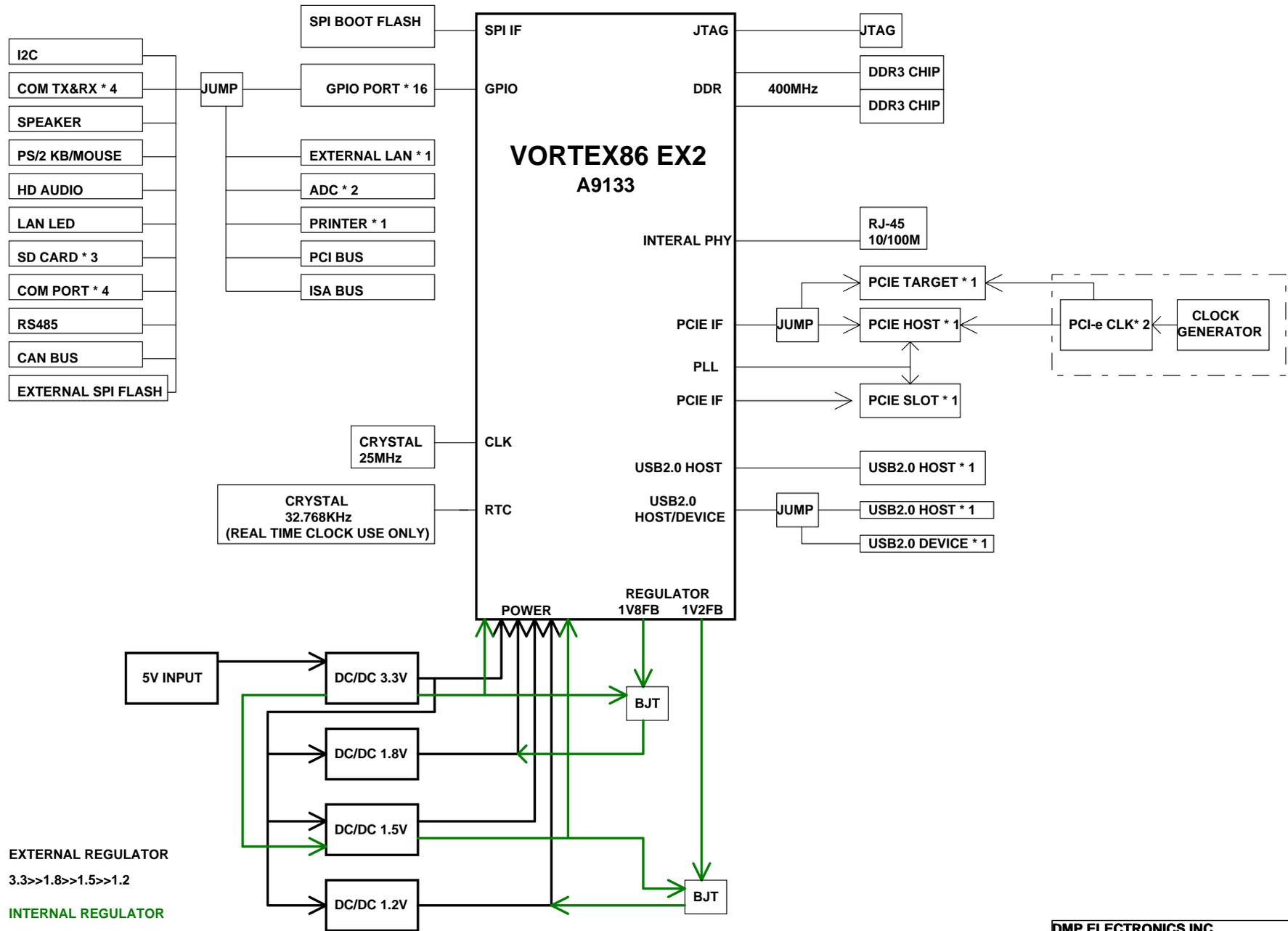


# BLOCK DIAGRAM



EX2 EVB Crossbar Configuration

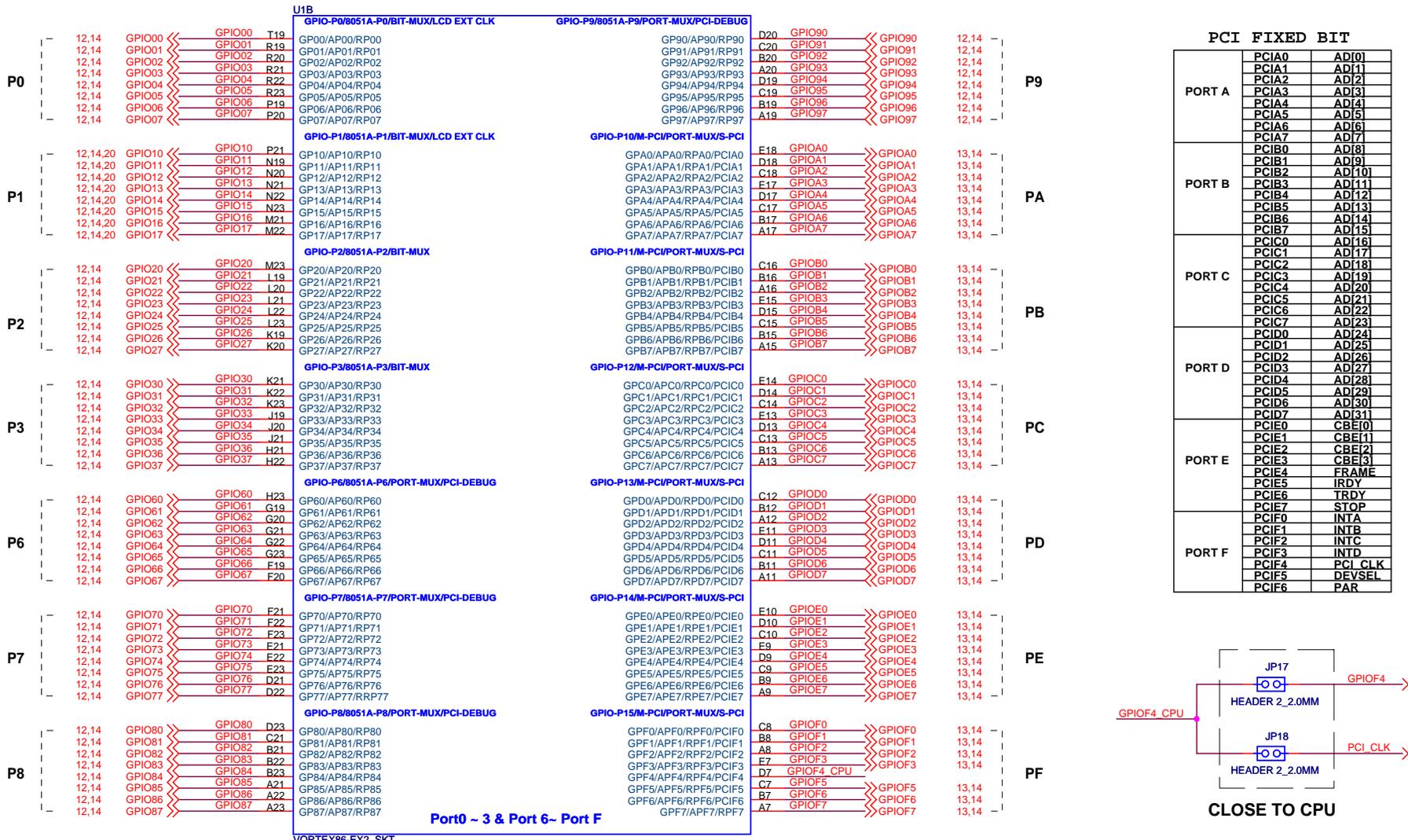
	FUNCTION A	FUNCTION B	FUNCTION C	
PORT 0 BIT-RICH IO	LAN LINK/DUP / SPEAKER/TXDEN5 PS2 KB/MOUSE			GPIO
PORT 1 BIT-RICH IO	COM5-TX&RX COM6-TX&RX COM7-TX&RX COM8-TX&RX	SD/EMMC 0		GPIO
PORT 2 BIT-RICH IO	SD/EMMC 1			GPIO
PORT 3 BIT-RICH IO	SD/EMMC 2			GPIO
PORT 4 BIT-RICH IO	HD AUDIO/ CAN_BUS		PCI_BIT P0 (REQ 0-2 / GEN 0-2)	GPIO ADC
PORT 5 BIT-RICH IO	I2C/SPI/ P 1/17 error	ISA_BIT P3 (DRQ 3-7 / DACK 3-7)		GPIO ADC
PORT 6	COM1	ISA_BIT P2 (IRQ 14,15 / DRQ 0-2 / DACK 0-2)		GPIO
PORT 7	COM2	ISA_BIT P1 (IRQ4-12)		GPIO
PORT 8	PRINT_P0	ISA_P6 (LA17-23 SYSCLK)		GPIO
PORT 9	PRINT_P1	ISA_P1 (SD8-15)		GPIO
PORT A	COM3	ISA_P4 (SA16-19/AEN/ IOCHRDY/SBHE/ BALE)	PCI_P0 (AD 0-7)	GPIO
PORT B	COM4	ISA_P3 (SA8-15)	PCI_P1 (AD 8-15)	GPIO
PORT C		ISA_P2 (SA0-7)	PCI_P2 (AD 16-23)	GPIO
PORT D		ISA_P5 (IORW / MEMRW SMEMR\ WIOCS16 MEMCS16)	PCI_P3 (AD 24-31)	GPIO
PORT E	MAC 1 MII P0	ISA_P0 (SD0-7)	PCI_P4 (CBE 0-3 / FRAME / IRDY/ TRDY / STOP)	GPIO
PORT F	MAC 1 MII P1	ISA_BIT P0 (GPCS0.1 / IOCHCK / TC/OSC/NOWS)	PCI_P5 (INT A.B.C.D / PCICLK / PAR/ DEVSEL)	GPIO

	GPIO PIN	FUNCTION A	FUNCTION B	FUNCTION C	
P0	GP00	KB DAT			
	GP01	KB CLK			
	GP02	MS DAT			
	GP03	MS CLK			
	GP04	LAN LINK			
	GP05	LAN DUP			
	GP06	SPEAKER			
P1	GP07	TXDEN5			
	GP10	COM5 TXD	SD0_DATA[2]		
	GP11	COM5 RXD	SD0_DATA[3]		
	GP12	COM6 TXD	SD0_CMD		
	GP13	COM6 RXD	SD0_CLK		
	GP14	COM7 TXD	SD0_DATA[0]		
	GP15	COM7 RXD	SD0_DATA[1]		
P2	GP16	COM8 TXD	SD0_CD		
	GP17	COM8 RXD	SD0_WP		
	GP20	SD1_DATA[2]			
	GP21	SD1_DATA[3]			
	GP22	SD1_CMD			
	GP23	SD1_CLK			
	GP24	SD1_DATA[0]			
P3	GP25	SD1_DATA[1]			
	GP26	SD1_CD			
	GP27	SD1_WP			
	GP30	SD2_DATA[2]			
	GP31	SD2_DATA[3]			
	GP32	SD2_CMD			
	GP33	SD2_CLK			
P4	GP34	SD2_DATA[0]			
	GP35	SD2_DATA[1]			
	GP36	SD2_CD			
	GP37	SD2_WP			
	GP40	H_BCLK			
	GP41	H_SYNC			
	GP42	H_SDO		REQ0	
P5	GP43	H_SDI		GNT0	
	GP44	H_RST#		REQ1	
	GP45	CAN0_TXD		GNT1	
	GP46	CAN0_RXD		REQ2	
	GP47			GNT2	
	GP50	P_1/17-PErrror	DRQ[3]		
	GP51	I2C0_SDA	DACK#[3]		
P6	GP52	I2C0_SCL	DRQ[5]		
	GP53	SPI0_CS1	DACK#[5]		
	GP54	SPI0_CS2	DRQ[6]		
	GP55	SPI0_CLK	DACK#[6]		
	GP56	SPI0_DO	DRQ[7]		
	GP57	SPI0_DI	DACK#[7]		
	GP60	DCD1\	IRQ[14]		
P7	GP61	TXD1\	IRQ[15]		
	GP62	RTS1\	DRQ[0]		
	GP63	RI1\	DACK#[0]		
	GP64	RXD1\	DRQ[1]		
	GP65	DTR1\	DACK#[1]		
	GP66	DSR1\	DRQ[2]		
	GP67	CTS1\	DACK#[2]		
P8	GP70	DCD2\	IRQ[4]		
	GP71	TXD2\	IRQ[5]		
	GP72	RTS2\	IRQ[6]		
	GP73	RI2\	IRQ[7]		
	GP74	RXD2\	IRQ[8]		
	GP75	DTR2\	IRQ[9]		
	GP76	DSR2\	IRQ[10]		
P9	GP77	CTS2\	IRQ[11]		
	GP80	SLCT	LA[17]		
	PA	GP81	PE	LA[18]	
		GP82	BUSY	LA[19]	
		GP83	ACK#	LA[20]	
		GP84	SLCIN	LA[21]	
		GP85	INIT#	LA[22]	
GP86		STB#	LA[23]		
GP87		AFD#	SYSCLK		
PB	GP90	PD[0]	SD[8]		
	GP91	PD[1]	SD[9]		
	GP92	PD[2]	SD[10]		
	GP93	PD[3]	SD[11]		
	GP94	PD[4]	SD[12]		
	GP95	PD[5]	SD[13]		
	GP96	PD[6]	SD[14]		
PC	GP97	PD[7]	SD[15]		
	GPA0	DCD3\	SA[16]	AD[0]	
	GPA1	TXD3\	SA[17]	AD[1]	
	GPA2	RTS3\	SA[18]	AD[2]	
	GPA3	RI3\	SA[19]	AD[3]	
	GPA4	RXD3\	AEN	AD[4]	
	GPA5	DTR3\	IOCHRDY	AD[5]	
PD	GPA6	DSR3\	SBHE#	AD[6]	
	GPA7	CTS3\	BALE	AD[7]	
	GPB0	DCD4\	SA[8]	AD[8]	
	GPB1	TXD4\	SA[9]	AD[9]	
	GPB2	RTS4\	SA[10]	AD[10]	
	GPB3	RI4\	SA[11]	AD[11]	
	GPB4	RXD4\	SA[12]	AD[12]	
PE	GPB5	DTR4\	SA[13]	AD[13]	
	GPB6	DSR4\	SA[14]	AD[14]	
	GPB7	CTS4\	SA[15]	AD[15]	
	GPC0		SA[0]	AD[16]	
	GPC1		SA[1]	AD[17]	
	GPC2		SA[2]	AD[18]	
	GPC3		SA[3]	AD[19]	
PF	GPC4		SA[4]	AD[20]	
	GPC5		SA[5]	AD[21]	
	GPC6		SA[6]	AD[22]	
	GPC7		SA[7]	AD[23]	
	GPD0		IOW#	AD[24]	
	GPD1		IOR#	AD[25]	
	GPD2		MEMR#	AD[26]	
PG	GPD3		MEMW#	AD[27]	
	GPD4		SMEMR#	AD[28]	
	GPD5		SMEMW#	AD[29]	
	GPD6		IOCS16#	AD[30]	
	GPD7		MEMCS16#	AD[31]	
	GPE0	MAC1_TXD[0]	SD[0]	CBE[0]	
	GPE1	MAC1_TXD[1]	SD[1]	CBE[1]	
PH	GPE2	MAC1_TXD[2]	SD[2]	CBE[2]	
	GPE3	MAC1_TXD[3]	SD[3]	CBE[3]	
	GPE4	MAC1_TXEN	SD[4]	FRAME	
	GPE5	MAC1_TXC	SD[5]	IRDY	
	GPE6	MAC1_MDC	SD[6]	TRDY	
	GPE7	MAC1_MDIO	SD[7]	STOP	
	GPF0	MAC1_RXD[0]	GPCS0#	INTA	
GPF1	MAC1_RXD[1]	GPCS1#	INTB		
GPF2	MAC1_RXD[2]	IOCHCK#	INTC		
GPF3	MAC1_RXD[3]	TC	INTD		
GPF4	MAC1_RXC	REFRESH#	PCI_CLK		
GPF5	MAC1_RXDV	OSC	DEVSEL		
GPF6	MAC1_COL	NOWS#	PAR		
GPF7		IRQ[3]			

PCB NO. DM352B  
VORTEX86 EX2 EVB  
VER. 1.2

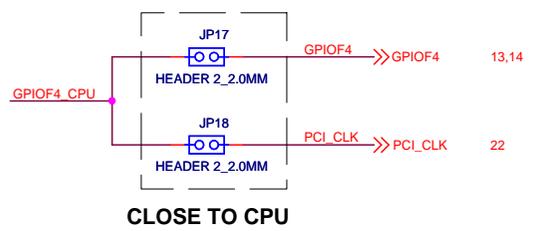
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Size	Document Number	Rev
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Date:	Friday, October 26, 2018	Sheet 2 of 24

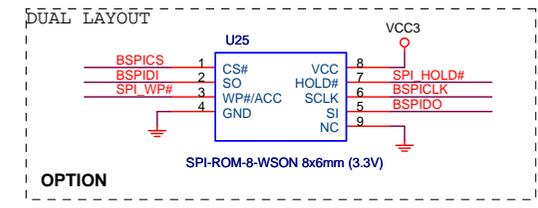
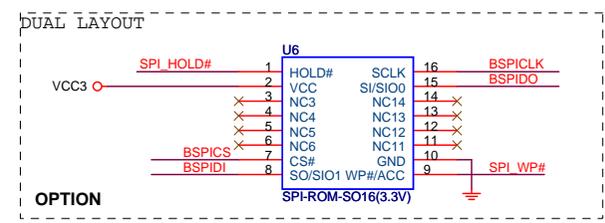
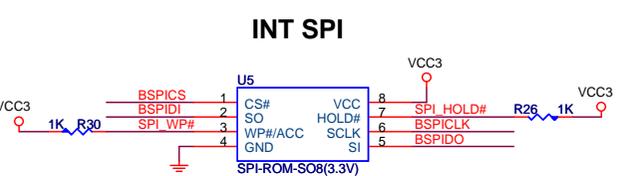
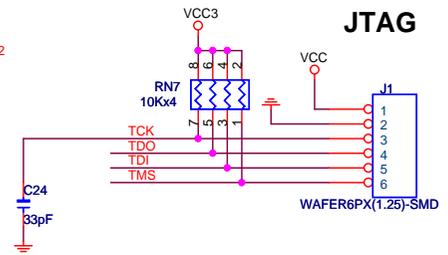
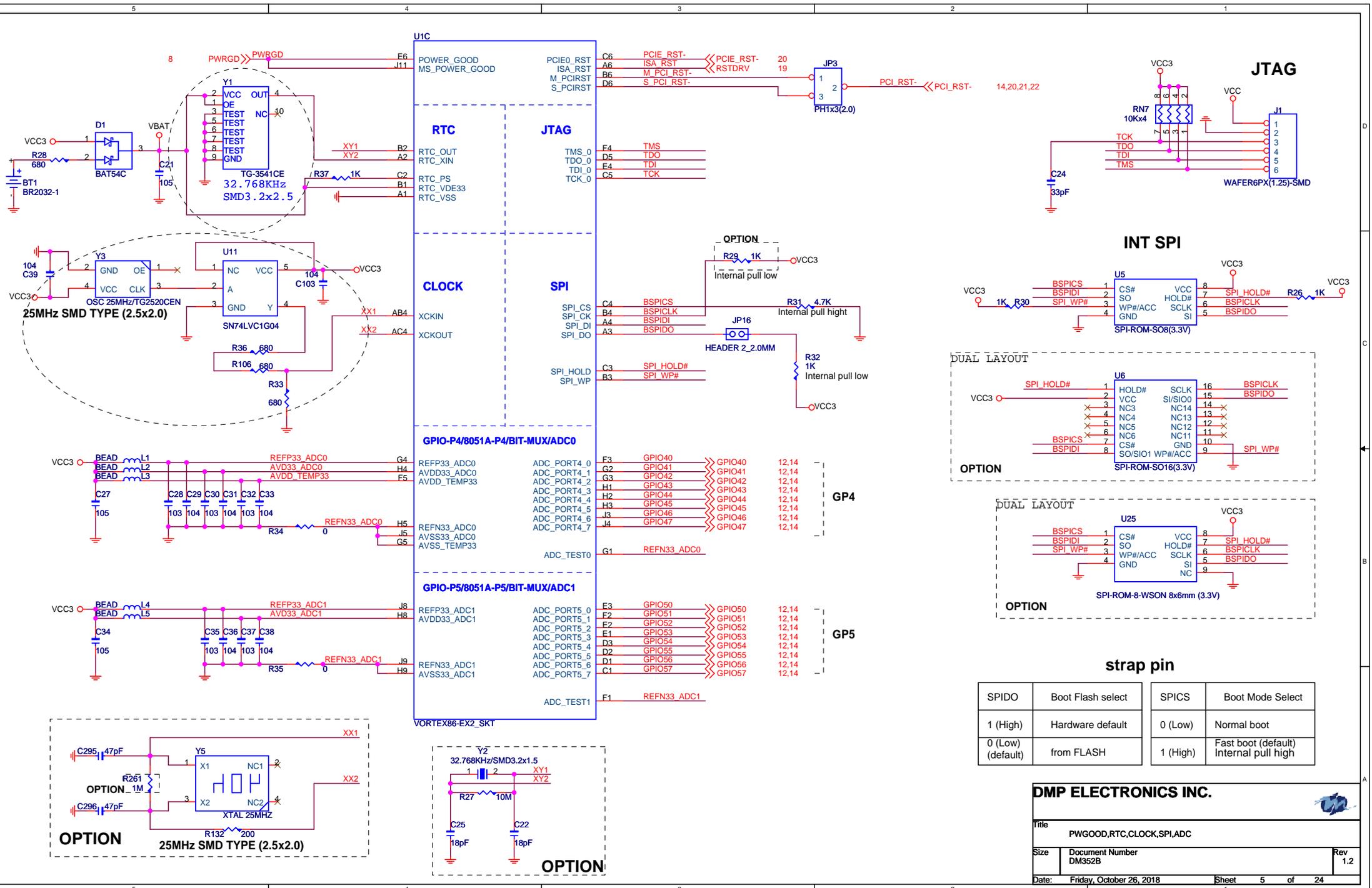


**PCI FIXED BIT**

Port	Signal	Function
PORT A	PCIA0	AD[0]
	PCIA1	AD[1]
	PCIA2	AD[2]
	PCIA3	AD[3]
	PCIA4	AD[4]
	PCIA5	AD[5]
	PCIA6	AD[6]
PORT B	PCIB0	AD[8]
	PCIB1	AD[9]
	PCIB2	AD[10]
	PCIB3	AD[11]
	PCIB4	AD[12]
	PCIB5	AD[13]
	PCIB6	AD[14]
PORT C	PCIC0	AD[15]
	PCIC1	AD[16]
	PCIC2	AD[17]
	PCIC3	AD[18]
	PCIC4	AD[20]
	PCIC5	AD[21]
	PCIC6	AD[22]
PORT D	PCID0	AD[23]
	PCID1	AD[24]
	PCID2	AD[25]
	PCID3	AD[26]
	PCID4	AD[27]
	PCID5	AD[29]
	PCID6	AD[30]
PORT E	PCIE0	CBE[10]
	PCIE1	CBE[11]
	PCIE2	CBE[12]
	PCIE3	CBE[13]
	PCIE4	FRAME
	PCIE5	IRDY
	PCIE6	TRDY
PORT F	PCIF7	STOP
	PCIF0	INTA
	PCIF1	INTB
	PCIF2	INTC
	PCIF3	INTD
	PCIF4	PCI_CLK
	PCIF5	DEVSEL
PCIF6	PAR	







**strap pin**

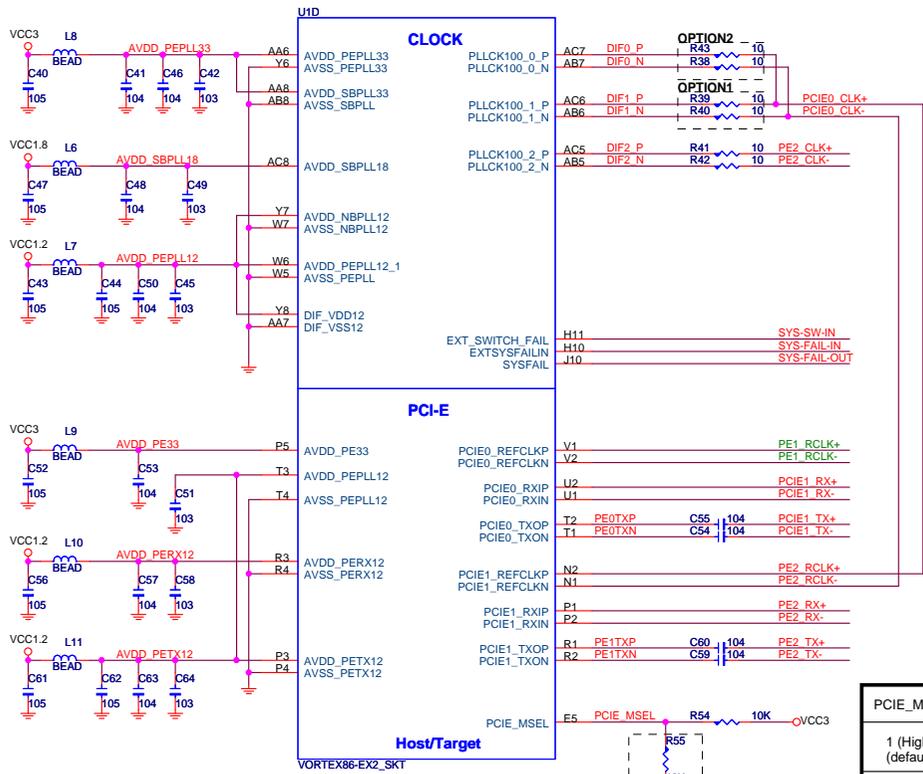
SPIDO	Boot Flash select	SPICS	Boot Mode Select
1 (High)	Hardware default	0 (Low)	Normal boot
0 (Low) (default)	from FLASH	1 (High)	Fast boot (default) Internal pull high

**DMP ELECTRONICS INC.**

Title: PWGOOD,RTC,CLOCK,SPI,ADC

Size: Document Number DM352B Rev 1.2

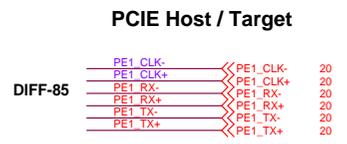
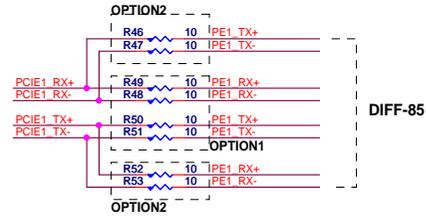
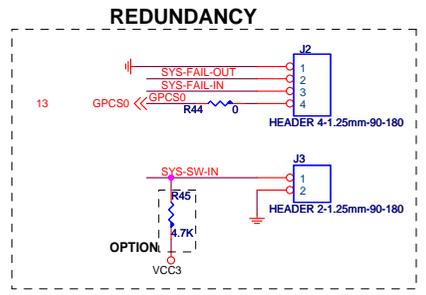
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DIFF-85

DIFF-85

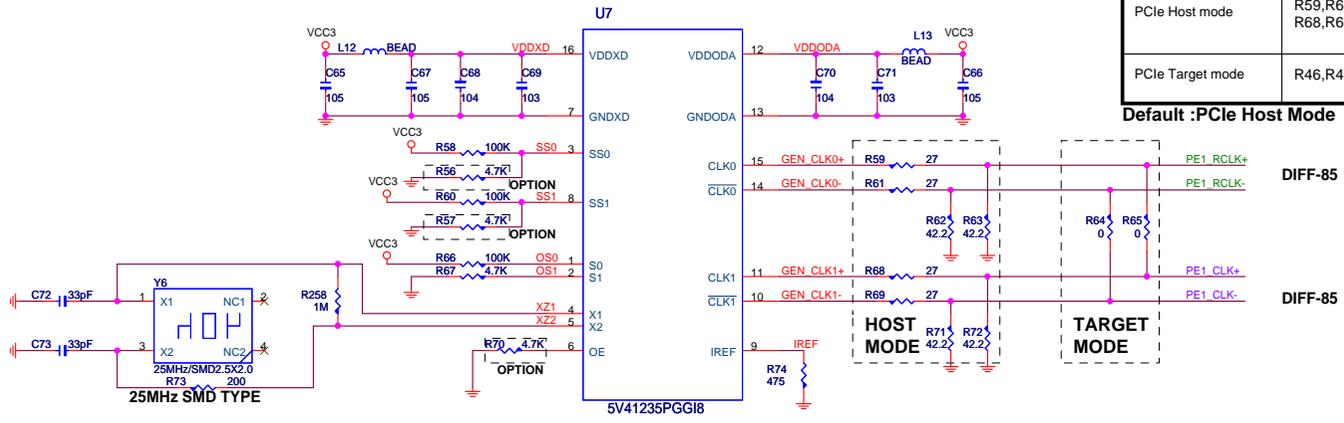
PCI_E_MSEL	PCIe0 select
1 (High) (default)	PCIe0 Host
0 (Low)	PCIe0 Target



**PCIe\_model set function**

PCIe Mode	Risister
PCIe Host mode	R48,R49,R50,R51 R59,R61,R62,R63 R68,R69,R71,R72
PCIe Target mode	R46,R47,R52,,R53,R64,R65

Default :PCIe Host Mode

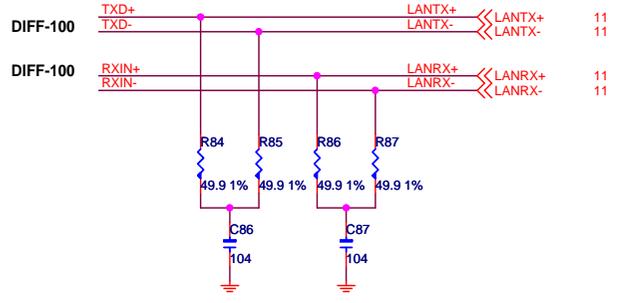
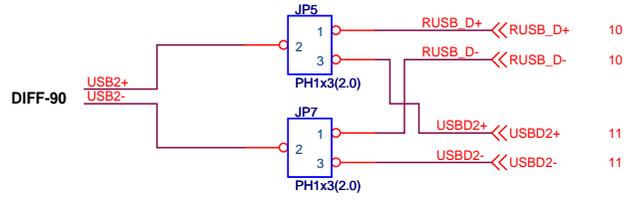
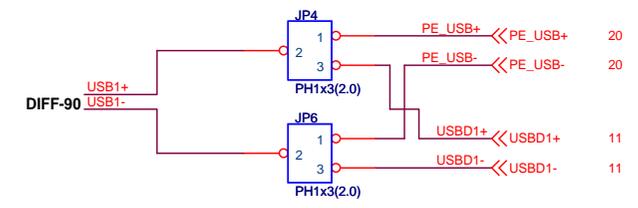
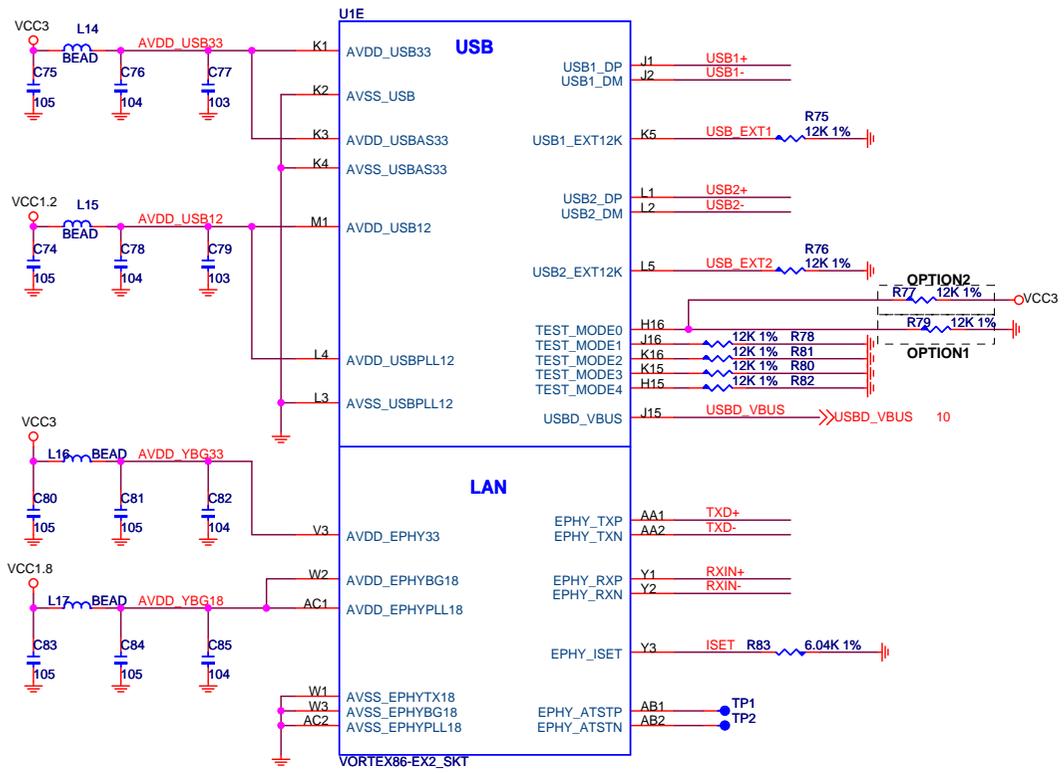


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DIFF-85



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Size: Document Number	DM352B	Rev: 1.2
Date: Friday, October 26, 2018	Sheet: 6	of 24

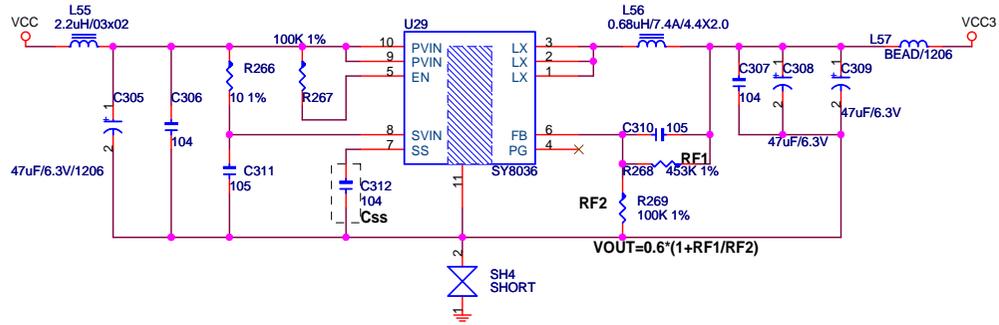




## VCC 3.3V

SY8036 ->3.3V RF1=453K RF2=100K

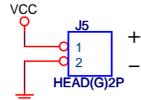
VCC3 = 3.3V @ 6A, 1MHz



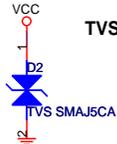
### OPTION 1



### POWER CONNECTOR

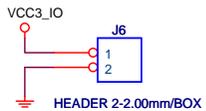


### TVS



5V/600W/Vbr=6.4-7.23V/Vc=9.2V

### 3.3V CONNECTOR

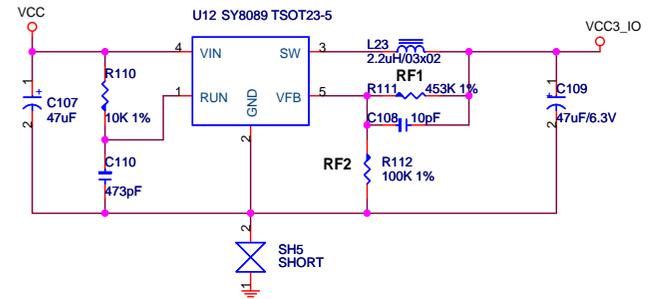


### OPTION 2

#### VCC 3.3V\_IO

VOUT=0.6\*(1+RF1/RF2) 2A

U12 SY8089 TSOT23-5



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Title  
RESET , VCC3\_IO

Size Document Number  
DM352B

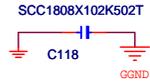
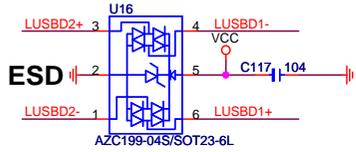
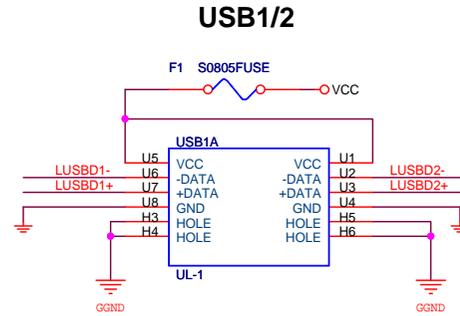
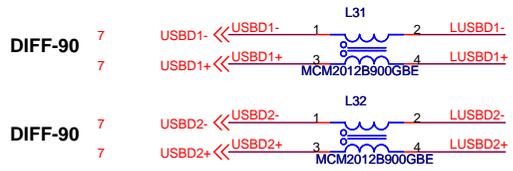
Rev  
1.2

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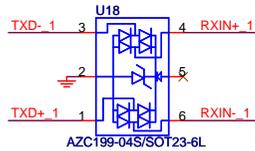
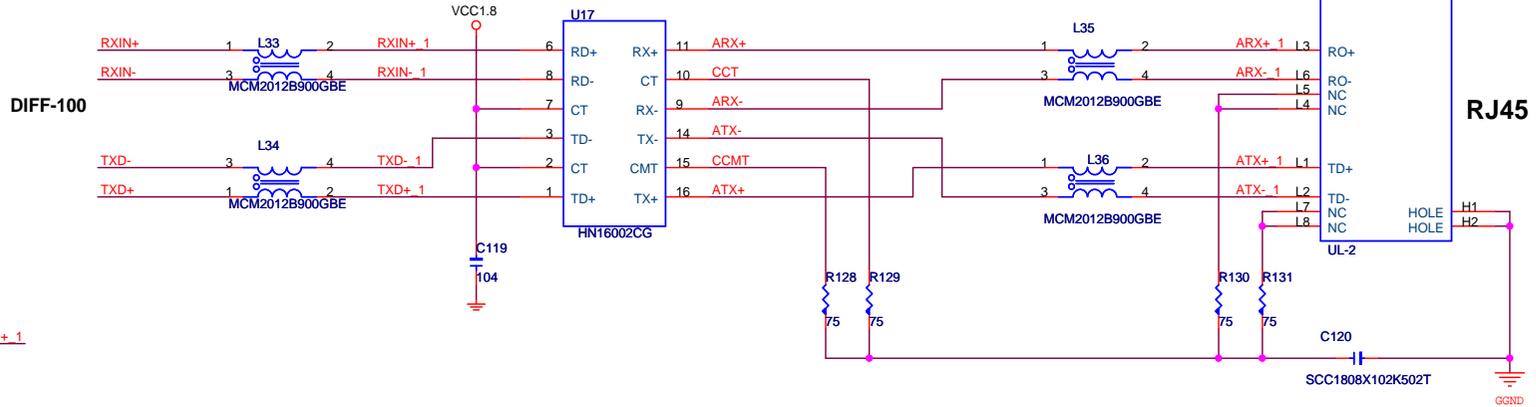
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# USB 1, USB 2



# R6040\_LAN

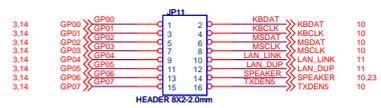


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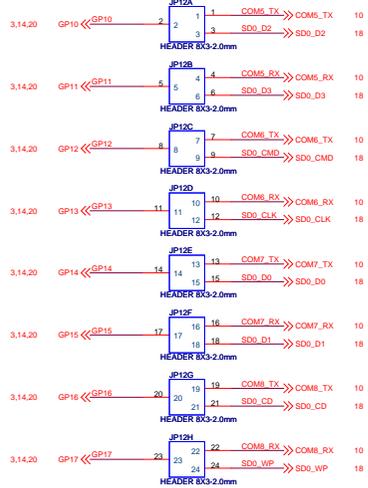
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Size	Document Number	Rev
	DM352B	1.2
Date:	Friday, October 26, 2018	Sheet 11 of 24

# P0 - P9 Pin Header

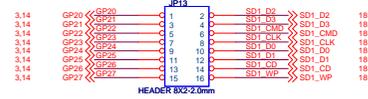
PORT 0



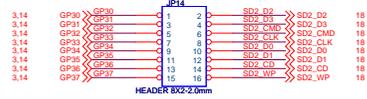
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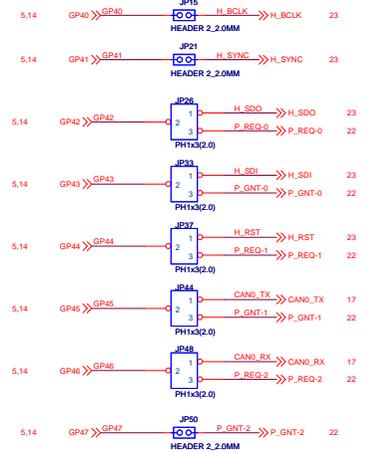
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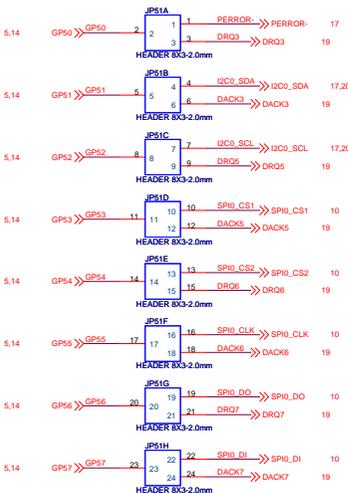
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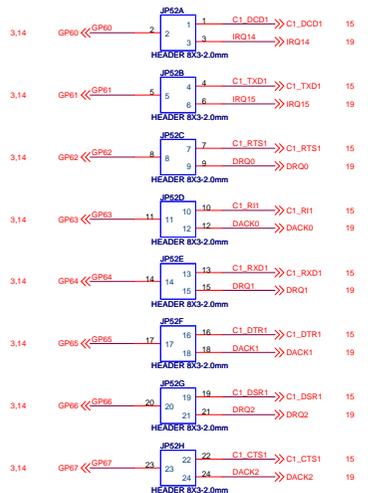
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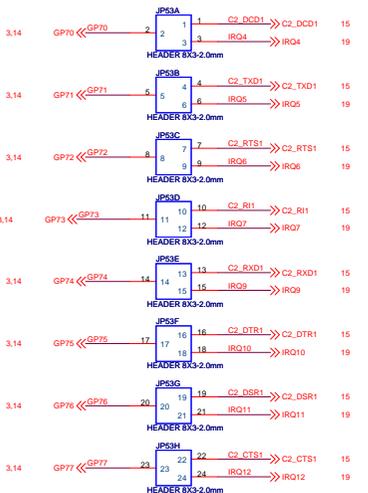
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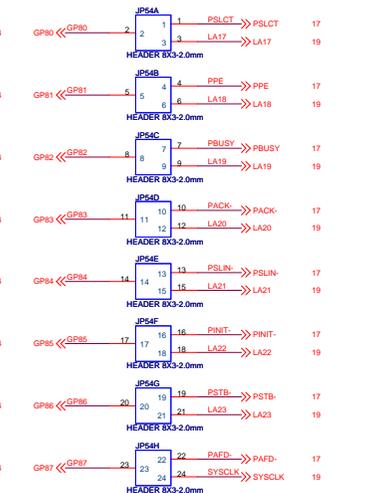
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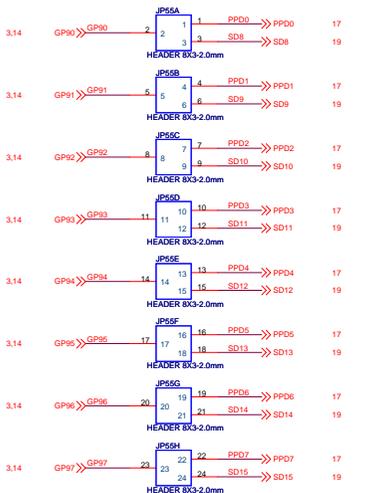
PORT 7



PORT 8



PORT 9



DMP ELECTRONICS INC.

<OrigAddr>

File P0-P9 IO SELECTION

Size Document Number DM352B

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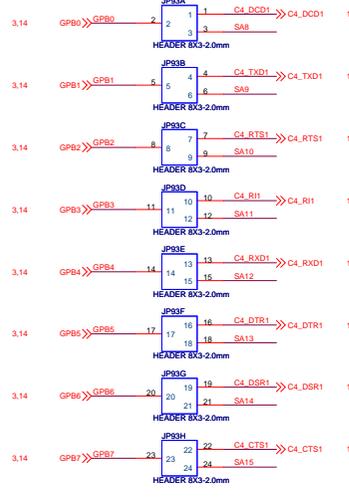
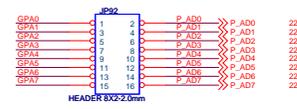
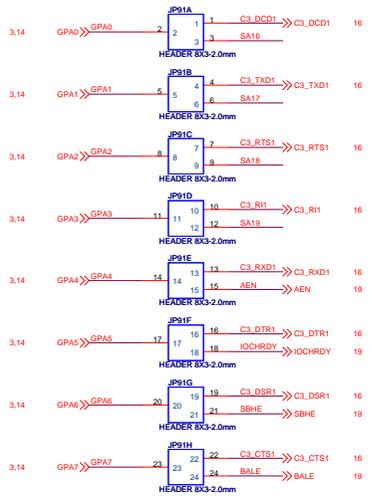
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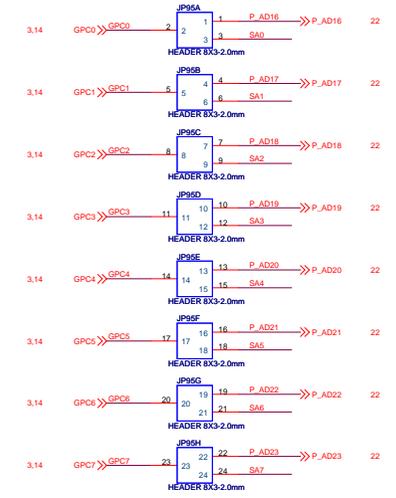
Rev 1.2

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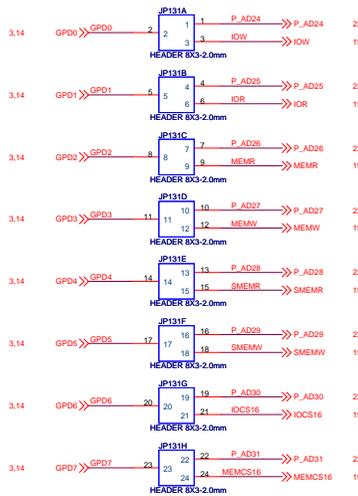
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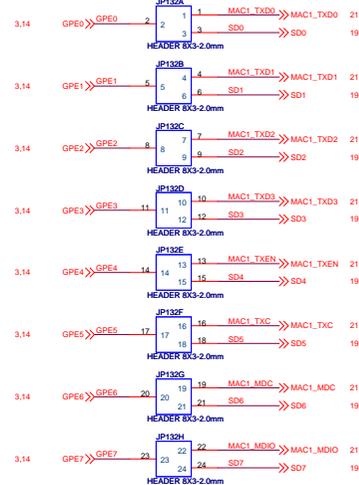
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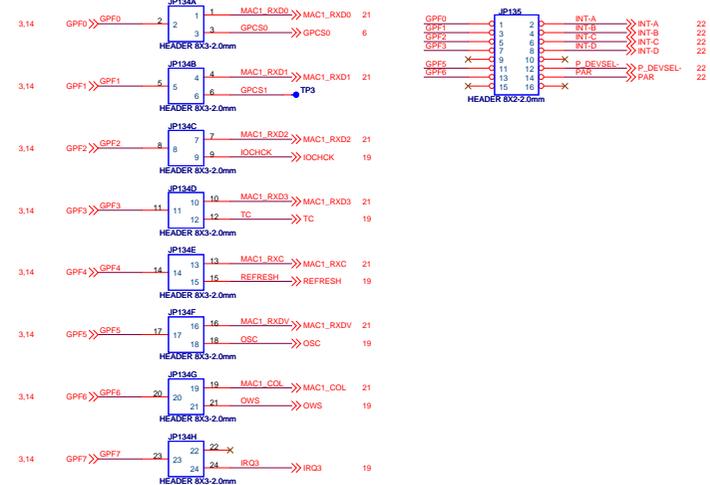
## PORT D



## PORT E



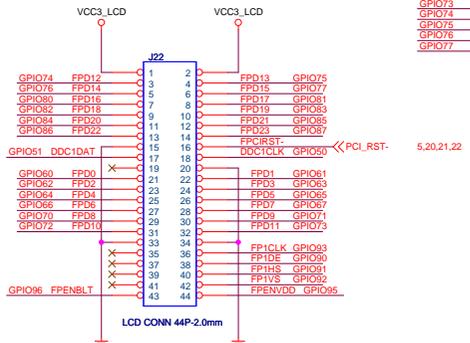
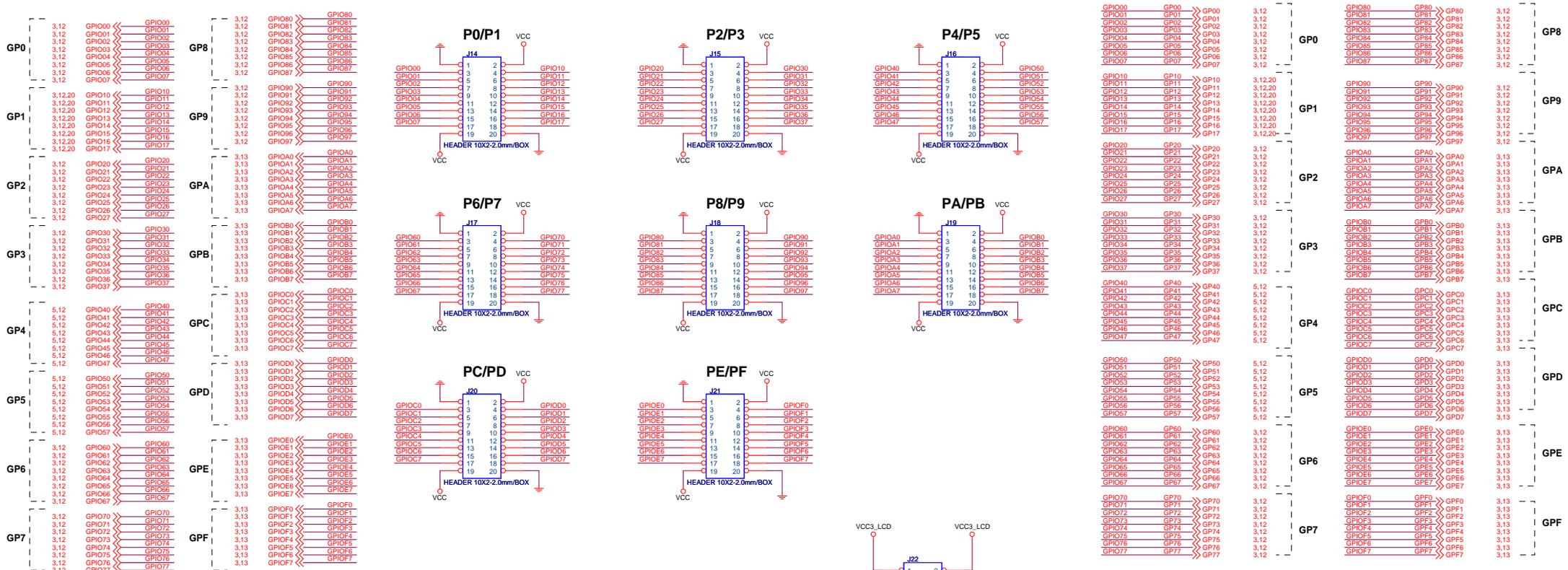
## PORT F



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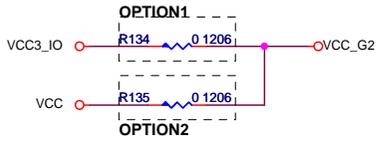
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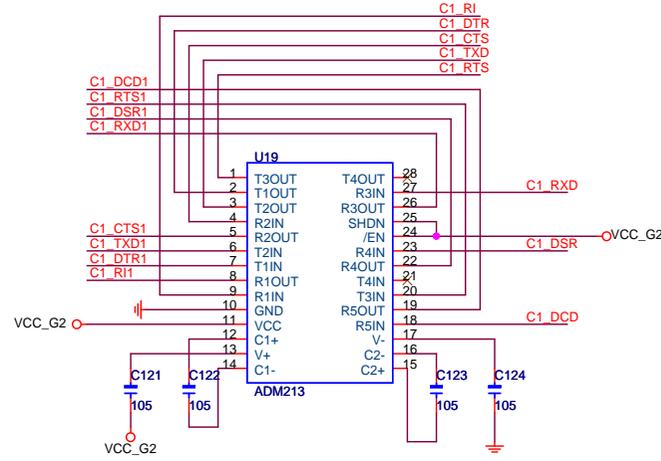
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### COM1

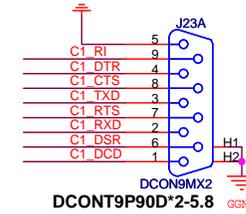
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12	C1_TXD1	C1_TXD1
12	C1_RTS1	C1_RTS1
12	C1_RI1	C1_RI1
12	C1_RXD1	C1_RXD1
12	C1_DTR1	C1_DTR1
12	C1_DSR1	C1_DSR1
12	C1_CTS1	C1_CTS1



### RS232

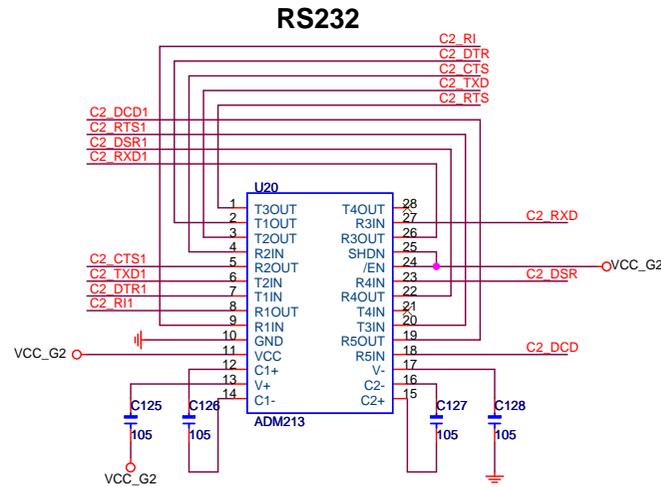


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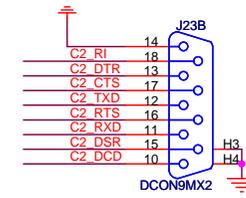


### COM2

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12	C2_RTS1	C2_RTS1
12	C2_RI1	C2_RI1
12	C2_RXD1	C2_RXD1
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12	C2_DSR1	C2_DSR1
12	C2_CTS1	C2_CTS1



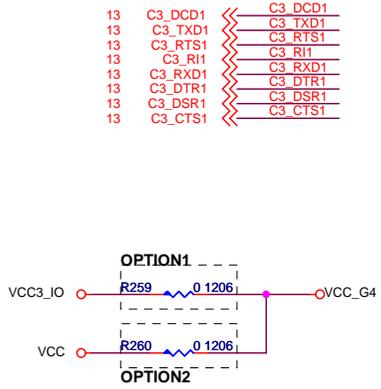
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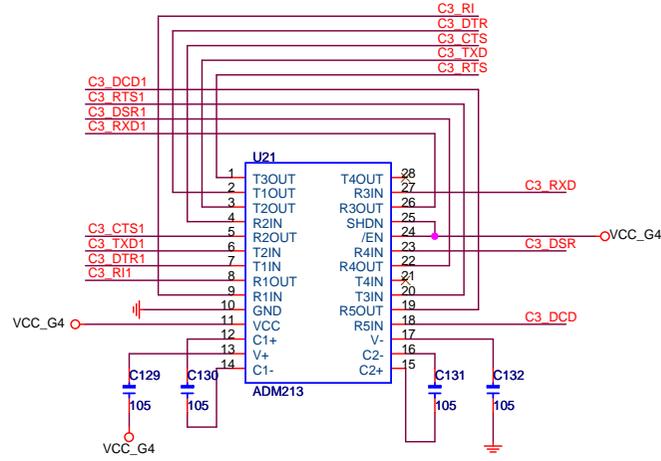
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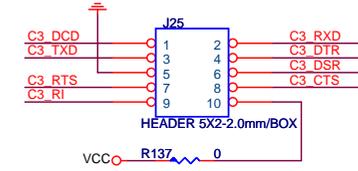
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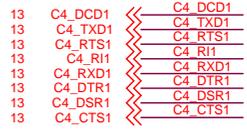
### RS232



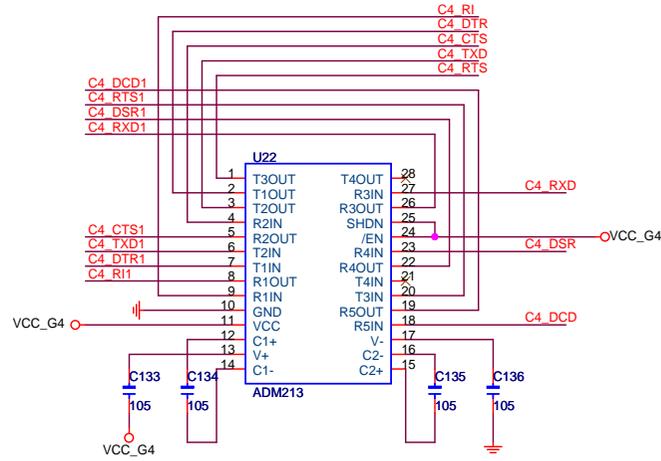
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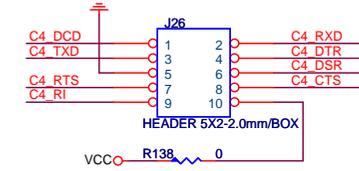
### COM4



### RS232



### COM4 RS232

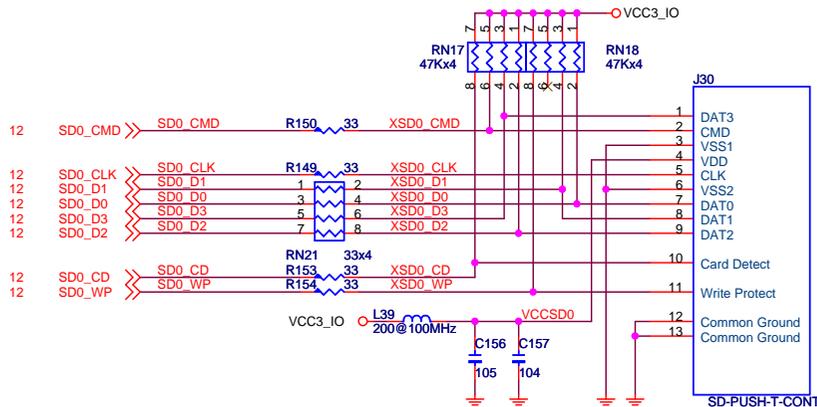


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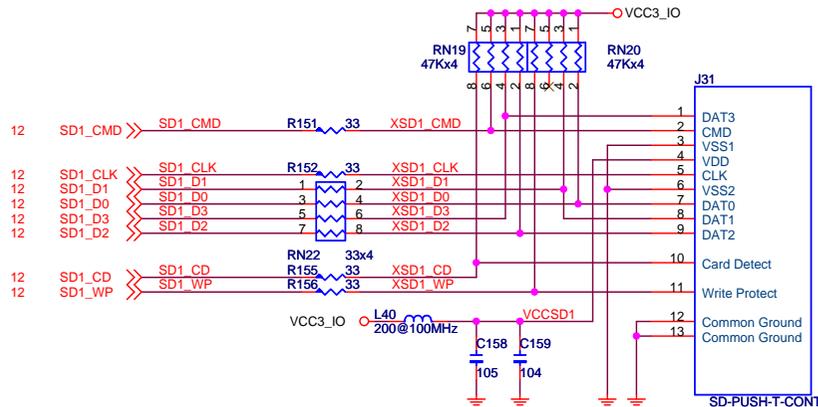
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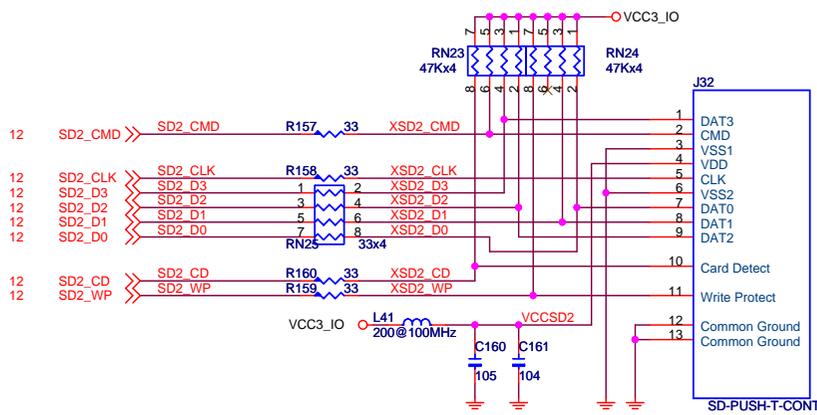
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### SD CARD 1



### SD CARD 2

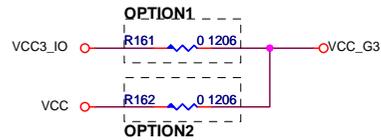


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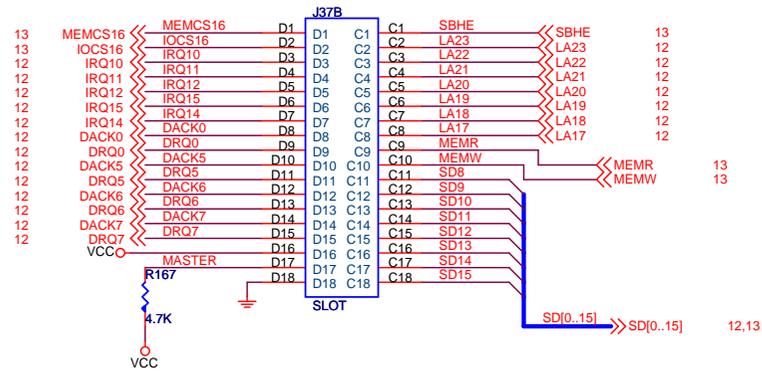
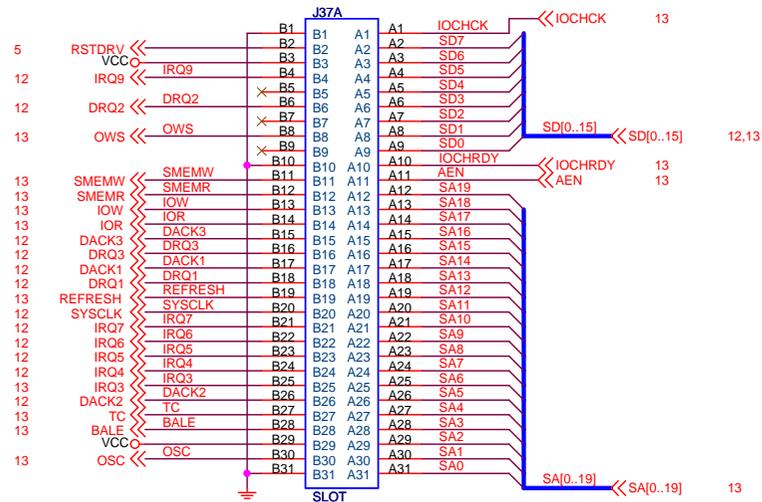
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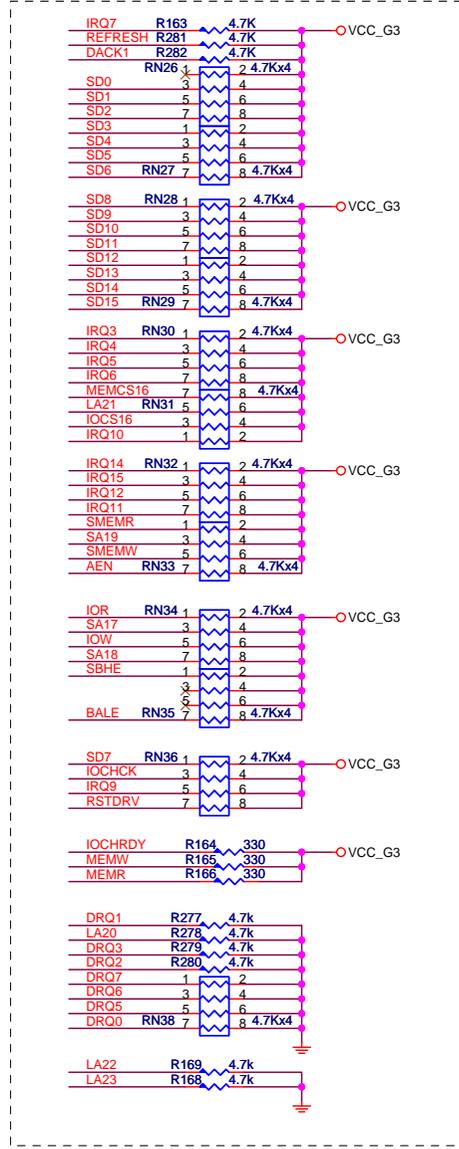
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### ISA 8/16 BIT SLOT



### PULL UP/DOWN



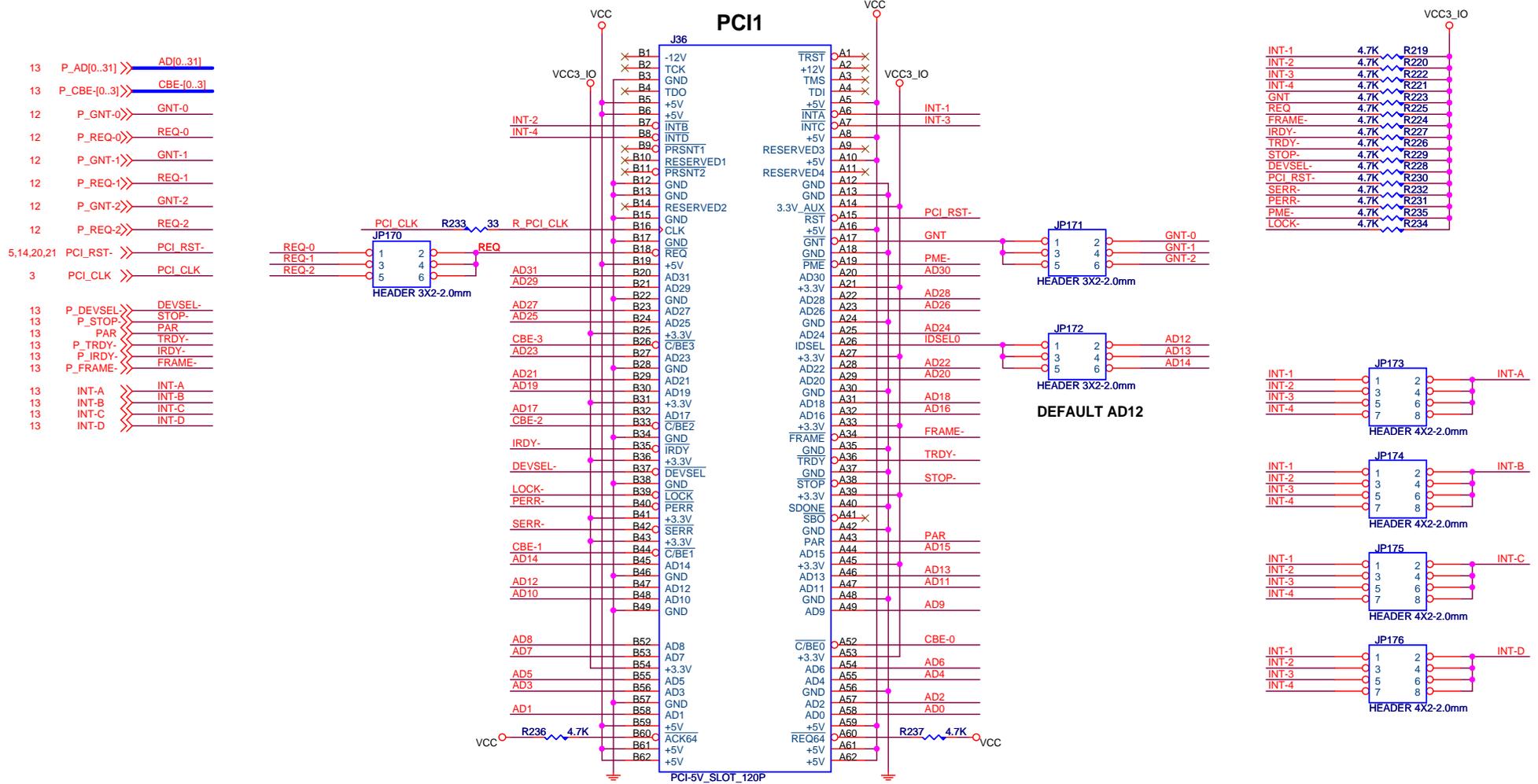
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# PCI\_SLOT

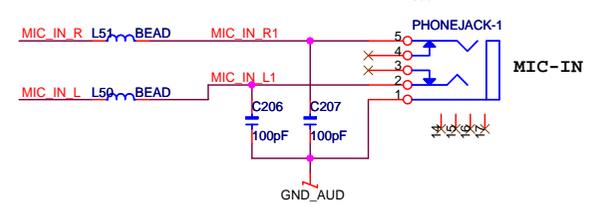
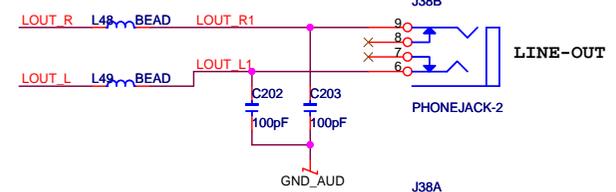
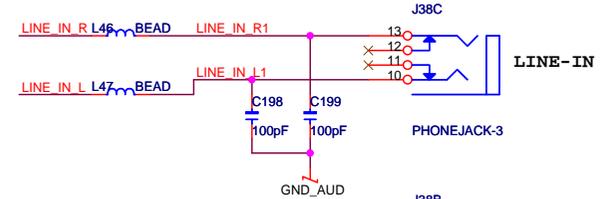
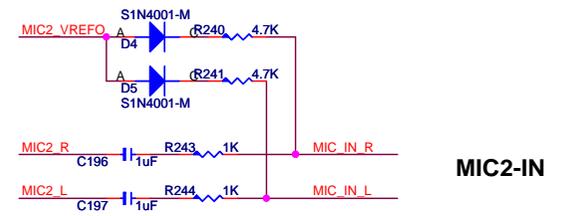
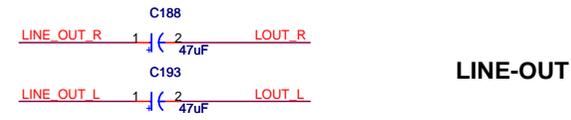
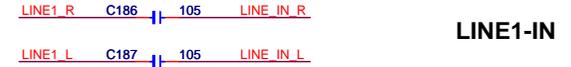
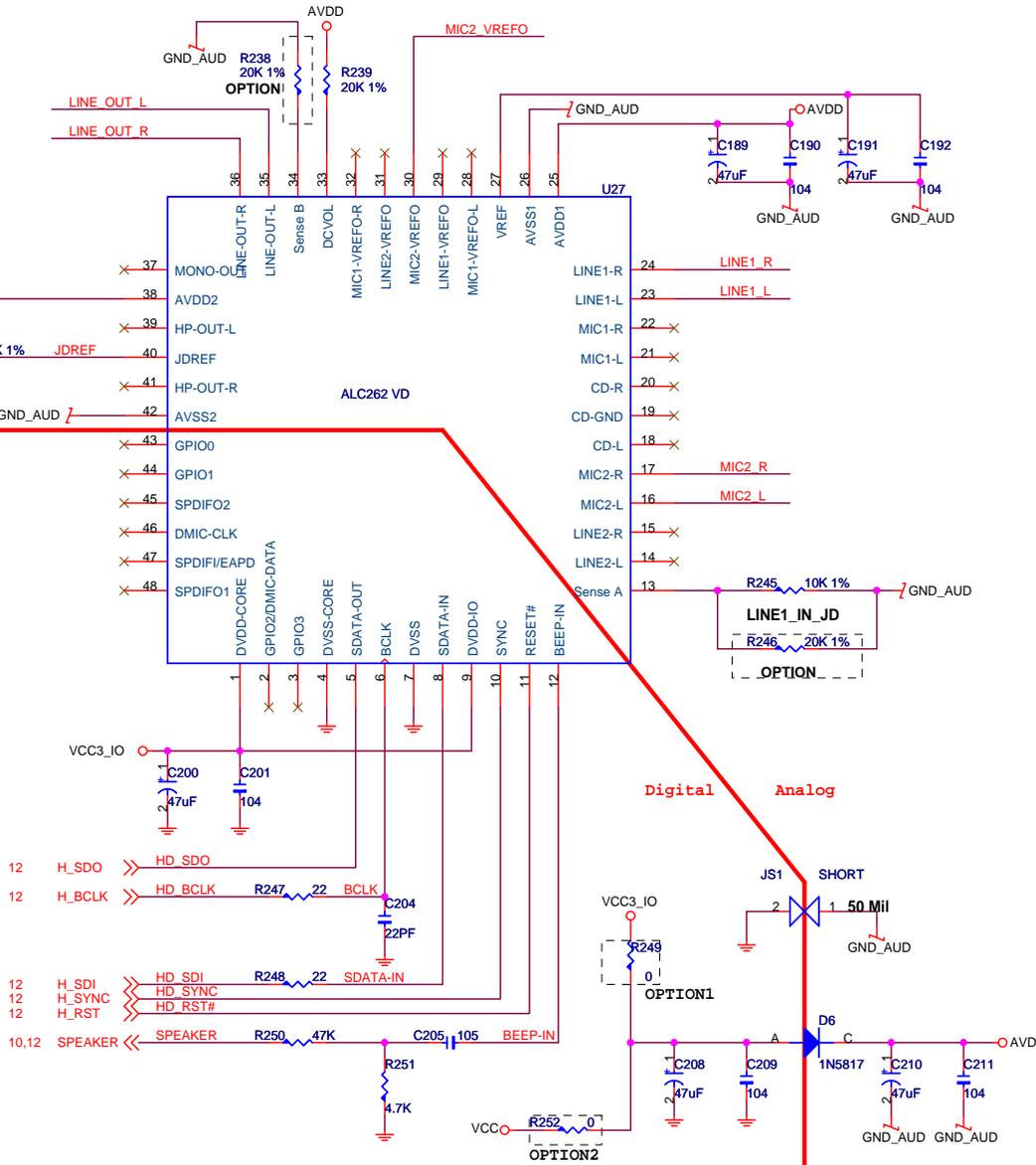


AD-19/20/21/22  
 GNT-0/1/2  
 REQ-0/1/2  
 INT-A/B/C/D

**DMP ELECTRONICS INC.**

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# HD AUDIO



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