

REVISION HISTORY

REV	DATA	NOTE
A	2012.04	ORIGINAL RELEASED

TABLE OF CONTENTS

PAGE	DESCRIPTION
1	Block Diagram
2	Reference guide
3	Microcontroller
4	NAND Flash, RS232, RS485, MCI, JTAG
5	LCD, Touch items
6	Audio, AD/DA, Power
7	IO Expansion, USB, ZigBEE, LED, Button

PIO MUXING

PIOA	USAGE	PIOA	USAGE	PIOB	USAGE	PIOC	USAGE	PIOC	USAGE
PA0	TSLIDR_SL_SNS	PA16	TSC_IRQ/ZB_IRQ0	PB0	MIC INPUT	PC0	D0	PC16	NAND_ALE
PA1	TSLIDR_SL_SNSK	PA17	TSC_BUSY/ZB_IRQ1	PB1	ANA INPUT	PC1	D1	PC17	NAND_CLE
PA2	TSLIDR_SM_SNS	PA18	ZB_RSTN	PB2	ZB_NPCS2	PC2	D2	PC18	NAND_RDYBSY
PA3	TSLIDR_SM_SNSK	PA19	LED_BLUE	PB3	USER_PB1	PC3	D3	PC19	REGSEL_LCD
PA4	TSLIDR_SR_SNS	PA20	LED_GREEN	PB4	JTAG	PC4	D4	PC20	LED_RED(POWER)
PA5	TSLIDR_SR_SNSK	PA21	RXD1	PB5	JTAG	PC5	D5	PC21	USB_CNX
PA6	MCI_CD	PA22	TXD1	PB6	JTAG	PC6	D6	PC22	TVALID_SNS
PA7	CLK_32K	PA23	COM1EN	PB7	JTAG	PC7	D7	PC23	TVALID_SNSK
PA8	CLK_32K	PA24	RTS1	PB8	CLK_12M	PC8	WR_LCD	PC24	TUP_SNS
PA9	RX_UART0	PA25	CTS1	PB9	CLK_12M	PC9	NAND_OE	PC25	TUP_SNSK
PA10	TX_UART0	PA26	MCI	PB10	USB_DDM	PC10	NAND_WE	PC26	TDWN_SNS
PA11	TSC_CS	PA27	MCI	PB11	USB_DDP	PC11	RD_LCD	PC27	TDWN_SNSK
PA12	MISO	PA28	MCI	PB12	ERASE	PC12	USER_PB2	PC28	TLEFT_SNS
PA13	MOSI	PA29	MCI	PB13	AUDIO OUT R	PC13	EN_LCD	PC29	TLEFT_SNSK
PA14	SPCK	PA30	MCI	PB14	AUDIO OUT L	PC14	NAND_NCS0	PC30	TRIGHT_SNS
PA15	ZB_SLPTR	PA31	MCI			PC15	NSC1_LCD	PC31	TRIGHT_SNSK

SCHEMATICS CONVENTIONS

(1) Resistance Unit: "K" is "Kohm", "R" is "Ohm",
(2) "DNP" means the component is not populated by default

TEST POINT


PAGE	REFERENCE	FUNCTION
3	TP1, TP2, TP3, TP4	GND
4	TP5 TP6	UART TXD UART RXD
5	TP7 TP8, TP9	LCD backlight driver anode Aux ADC input for TSC
6	TP12	Optional audio PA input

JUMPER and SOLDERDROP

PAGE	REFERENCE	DEFAULT	FUNCTION
3	JP1 JP2 JP3 JP4 JP5, JP6, JP7, JP8	OPEN 1-2 OPEN OPEN CLOSE	Close to select JTAG boundary scan Analog reference voltage selection between 3.3V and 3.0V Close to reinitialize the Flash contents and some of its NVM bits Close for manufacturing test or fast programming mode Access for current measurement on each power rail
4	JP9 JP11 JP10, JP12 JP28 JP31	CLOSE CLOSE OPEN OPEN 1-2	Nand Flash chip select enable RS485 bus termination enable RS485 pull resistor selectors Option for software test RS232 USART and RS485 selection
5	JP13 JP32	CLOSE CLOSE	LCD chip select enable TOUCH SCREEN chip select enable
6	JP14, JP15 JP17, JP19 JP16, JP21 JP18 JP20 JP29 JP30	OPEN OPEN OPEN 1-2 OPEN 2-3 1-2	Sync close to degrade gain stage on microphone input Close to mux RIN/LIN into MONO-IN path within audio PA Close for impedance matching on AD/DA BNC port ADC input selection between BNC port and potentiometer Close to fix in mono speaker mode, no matter stereo plug state AUDIO Amplifier power select between VCC33 and +5V DAC output between AUDIO left channel and BNC connector
7	JP22, JP23, JP24 JP25 JP26 JP27	1-2 CLOSE CLOSE CLOSE	DC voltage selection between 3.3V and 5V on PIO expansion ports Button BP2 disable Button BP3 disable Power consumption measure for ZigBEE module

DEFAULT NO POPULATE PARTS

PAGE	REFERENCE	FUNCTION
3	J1, R1 Y1, R3, R7 R6, R8 R9, R10 JP1, JP4 C13 J2	External clock resource input Backup 12MHz crystal Isolation between 12MHz clock source and GPIO line Isolation between 32KHz clock source and GPIO line JTAGESEL and TEST selector Coupling capacitor LQFP100 Socket
4	R22 R24, R30 JP28	Optional write protection on NAND flash Differential impedance matching for RS485 cable Option for software test
5	D1 R61, R63, RA2, RA3	Optional ESD protection for LCD touch panel Optional databus termination for LCD controller
7	R122, R123	Optional TWI



A

INIT EDIT

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SCALE

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SAM4S-EK2

Board Configuration

PP

DES.

30-APR-12

DATE

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DATE

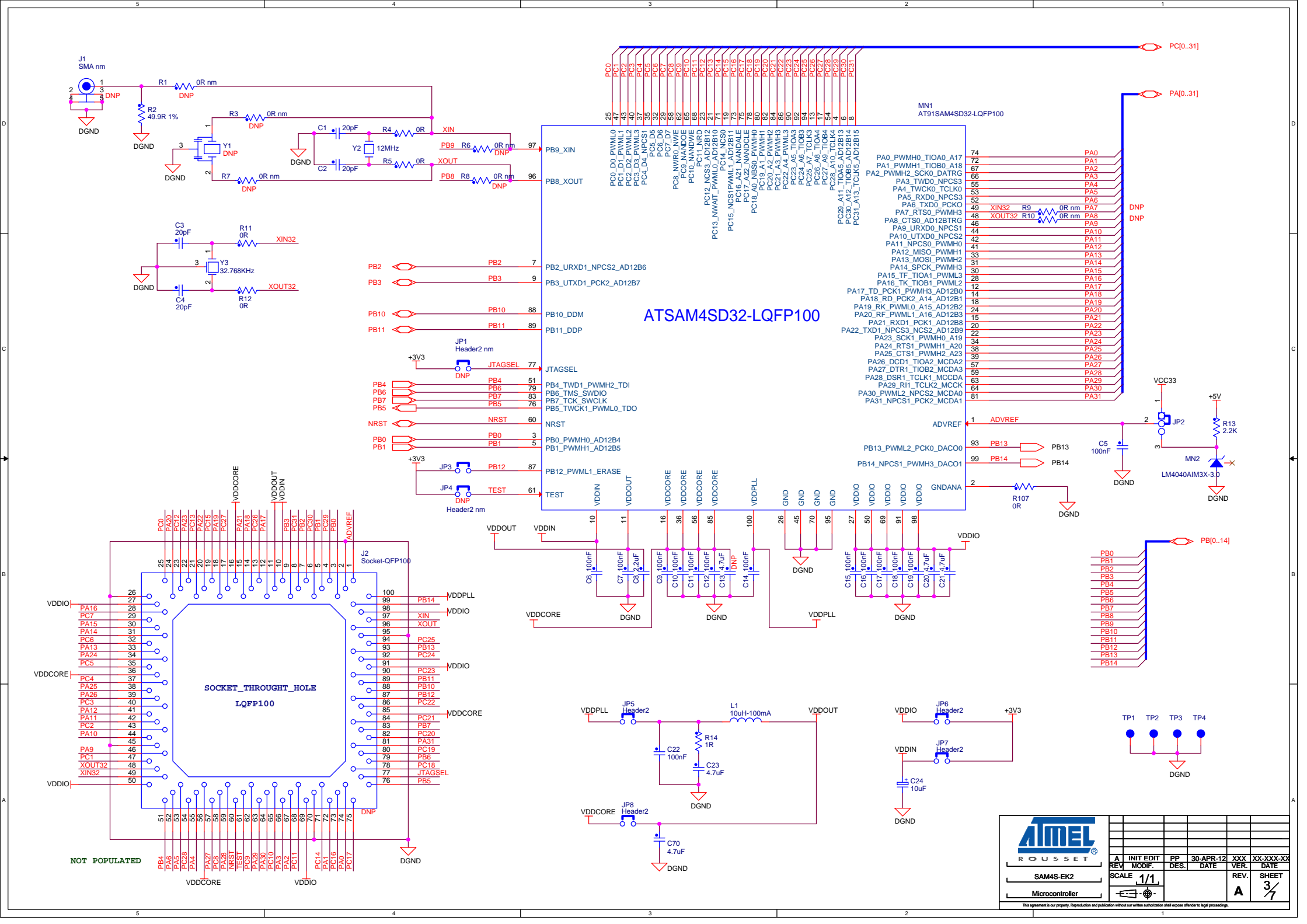
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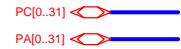
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
SHEET

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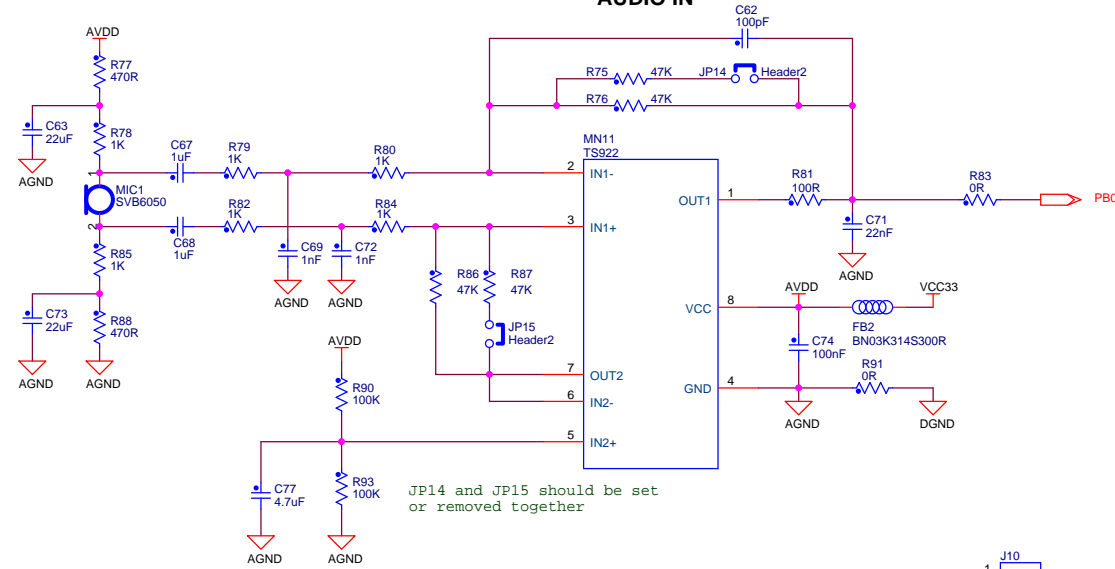
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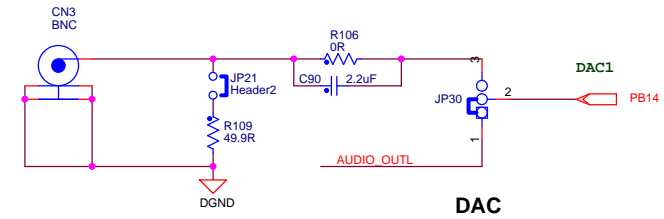
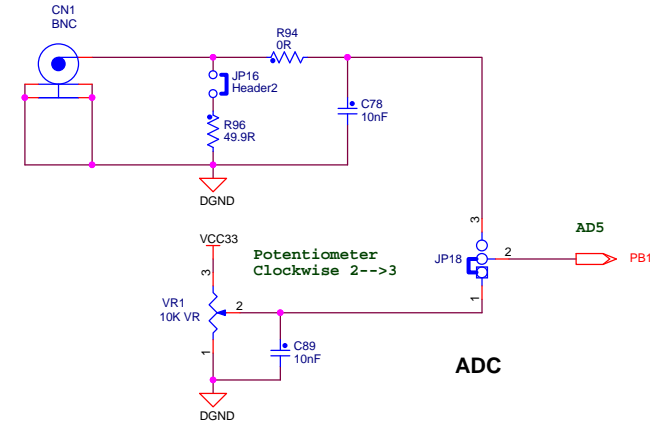
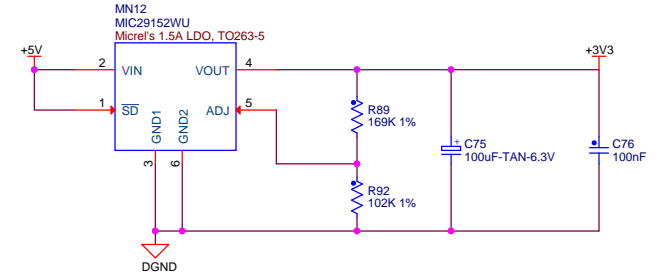
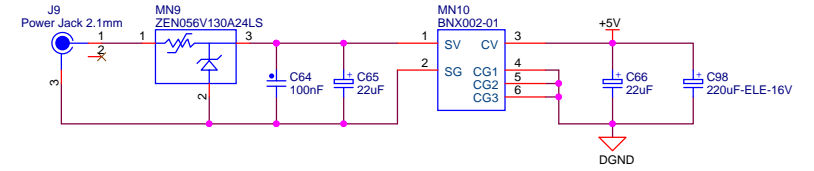
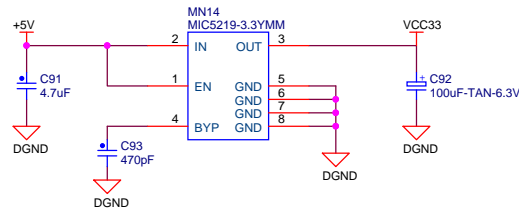
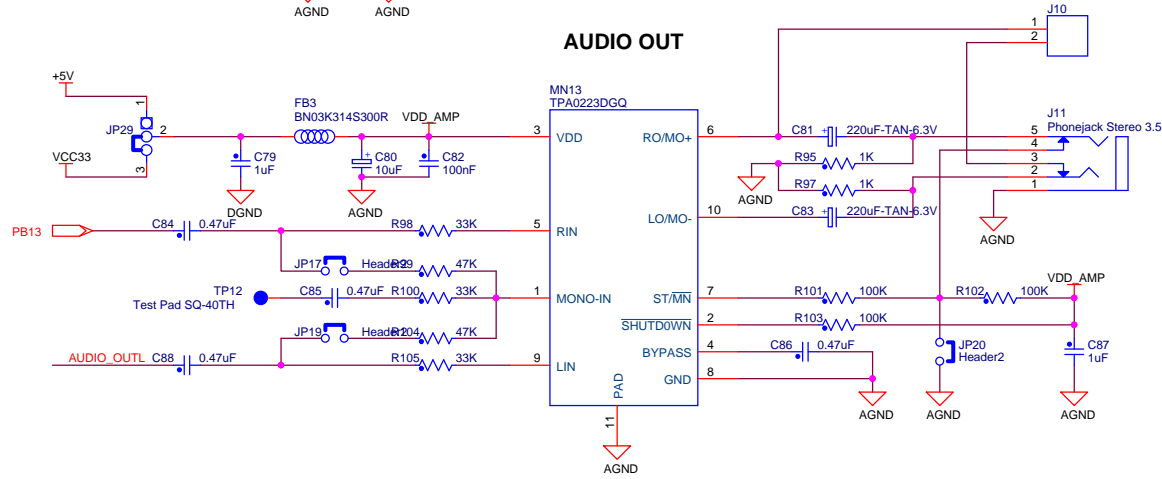


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SCALE	1/1			REV.	SHEET
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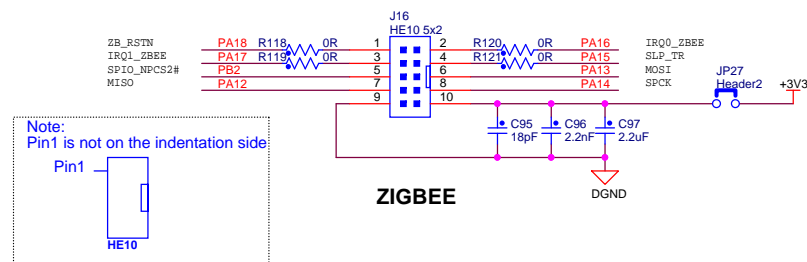
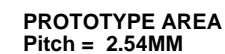
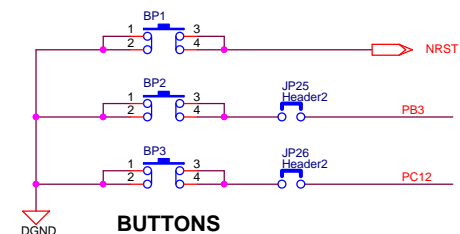
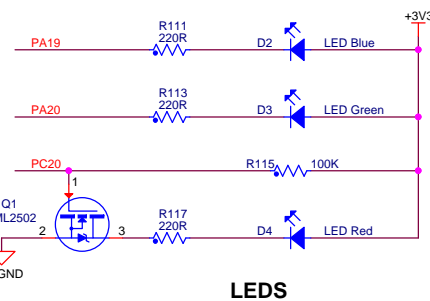
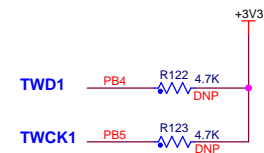
AUDIO IN





AUDIO OUT



		A		INIT	EDIT	PP	30-APR-12	XXX	XX-XXX-XX
		REV	MODIF.	DES.	DATE	VER.	DATE	REV.	DATE
SAMS-EK2		SCALE 1/1		REV. A		SHEET 6/7			
Audio & Power supply									



 R O U S S E Y [®] SAM5S-EK2 User IF & ZigBee							
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SCALE 1/1					REV. A	SHEET 7/7	
							
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