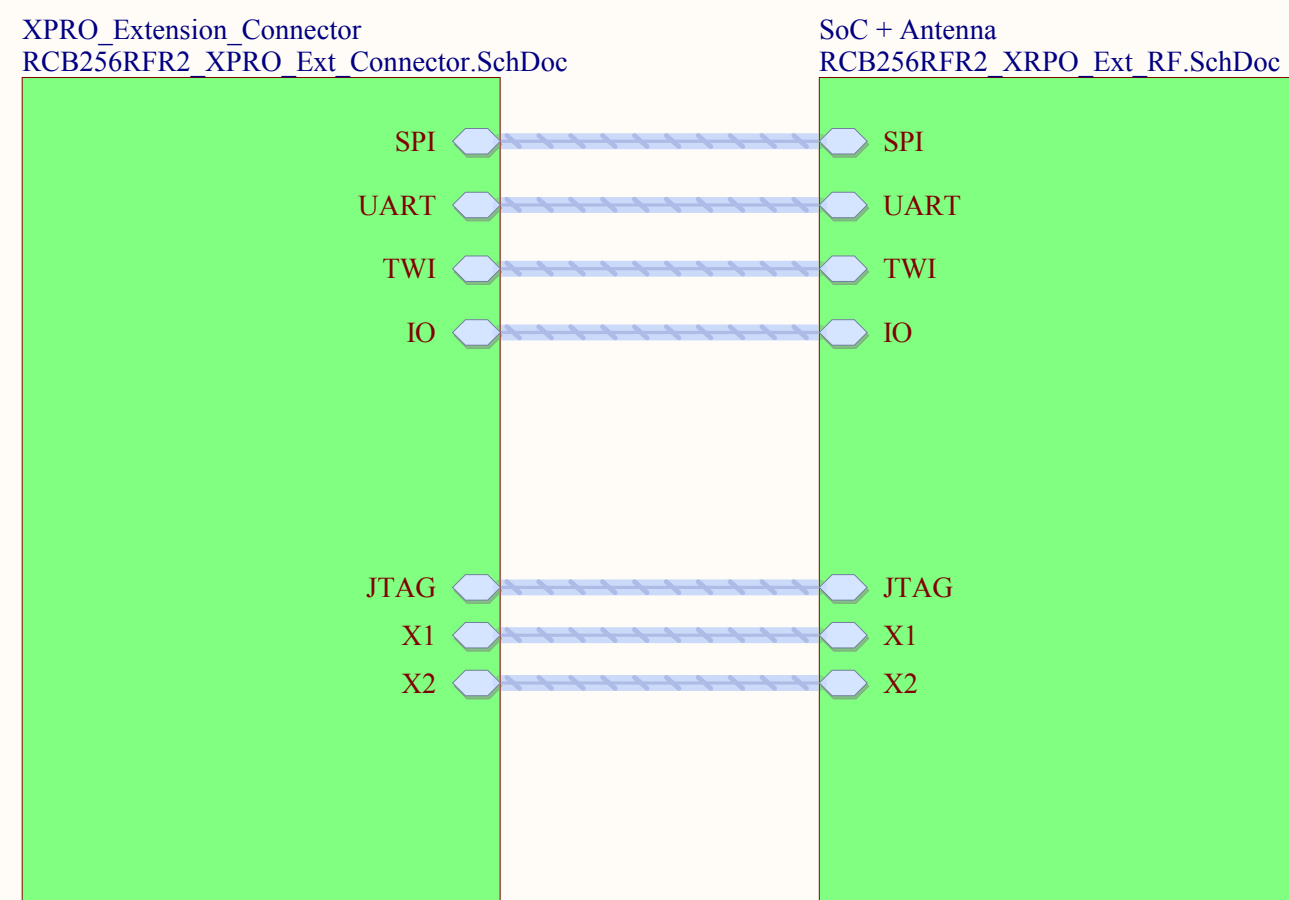


A

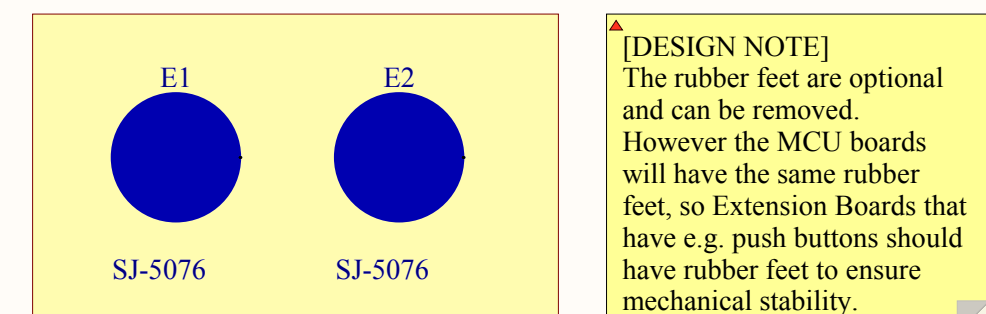
A



B

B

Product Name:	RCB256RFR2 XPRO Extension
Model:	ATRCB256RFR2-XPRO
FCC ID:	VW4A092007



C

C

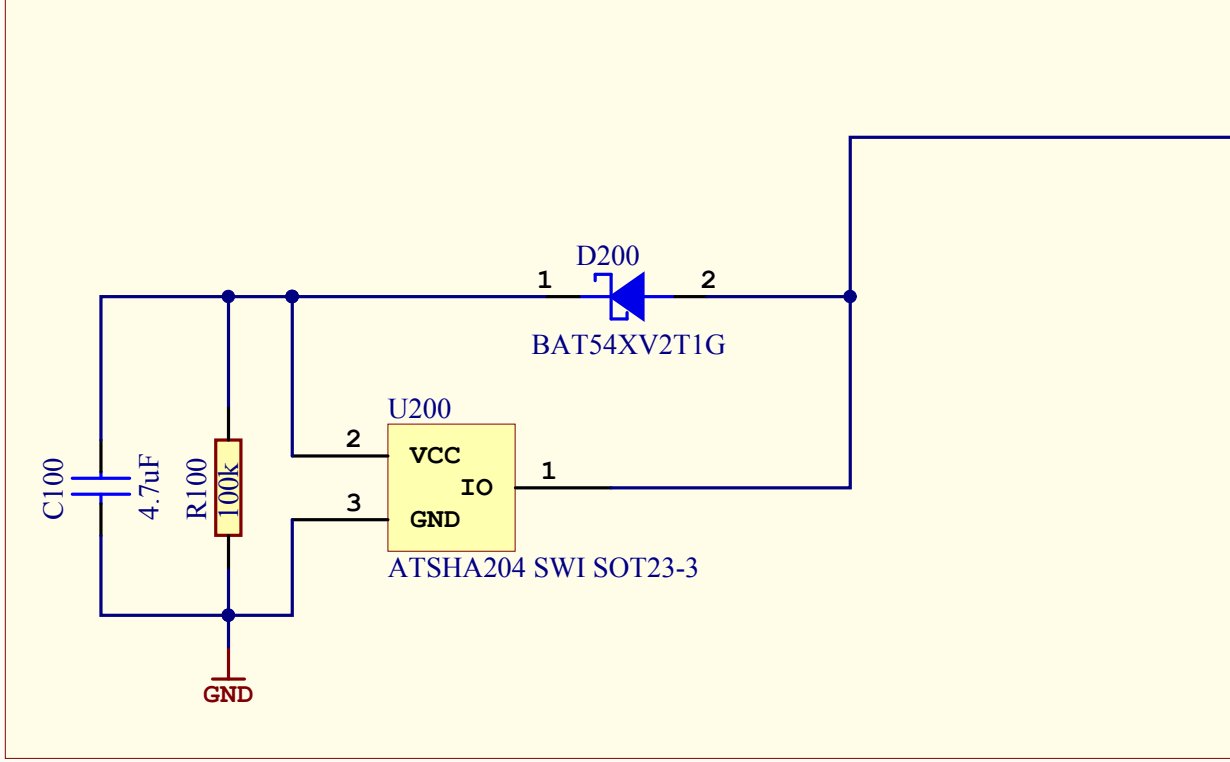
The diagram shows a yellow rectangular area representing a PCB layout. In the top-left corner, there is a white box with a black border containing the text "Product number/revision" and "Serial number" stacked vertically. Below this box, the text "Label PCBA with MAC64 and FCC ID" is written. In the center, there is a green square representing a component, with the label "PCB1" above it and "A08-1824" below it. To the right of the green square, there are two document icons. The first is labeled "PCBADO C1" above it and "A12-0725" below it. The second is labeled "TESTDOC1" above it and "A12-0735" below it. Below the second document icon, there is a black square representing a component, with the label "TEST1" above it and "A11-0225" below it. The black square has a small white label with the text "\$ > _" on it.

D

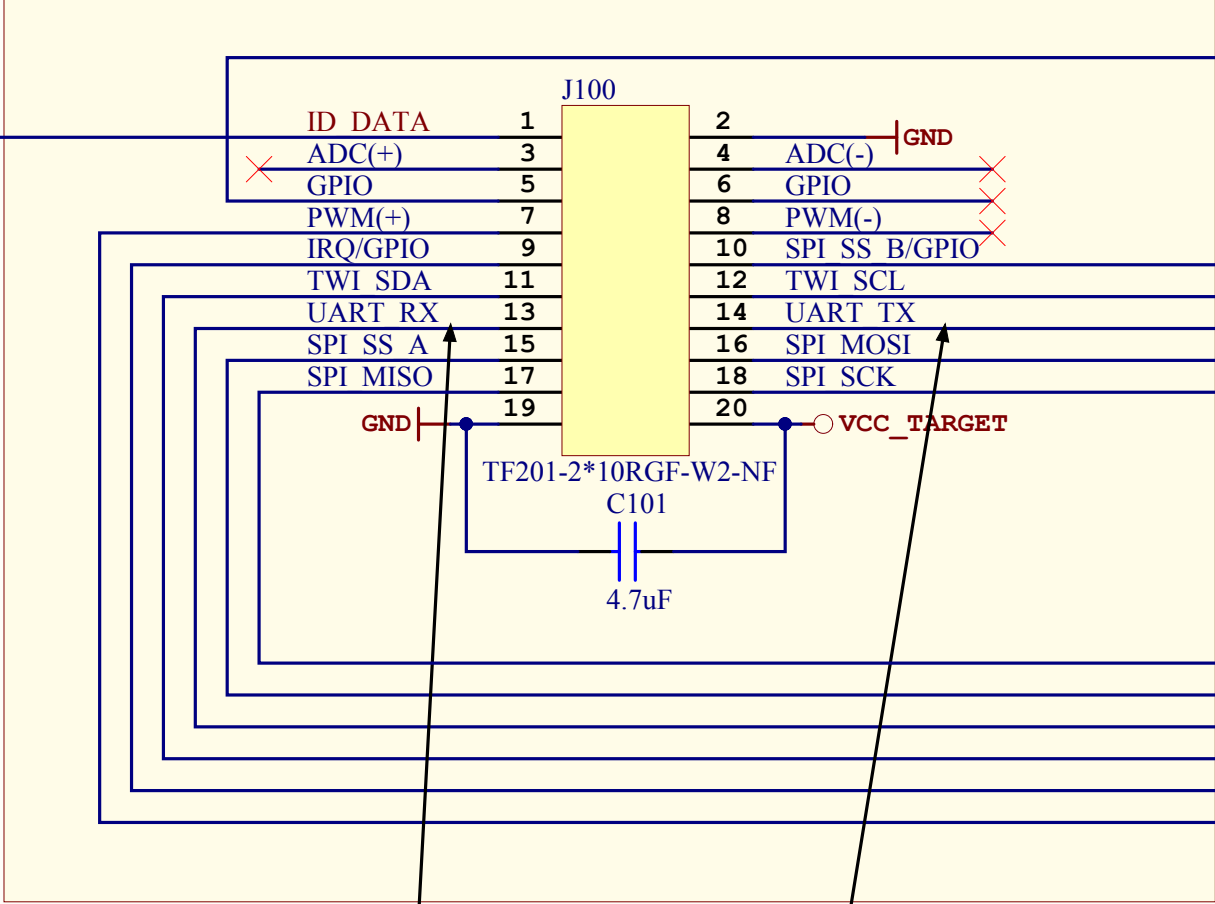
D

Atmel R&D India	KB		 Enabling Unlimited Possibilities	
	KN			
	*			
Date:	6/20/2013	7:25:40 PM	PAGE:	1 of 3
Document number:	*		Revision	1
TITLE: RCB256RFR2_XPRO_Extension_TopLevel				
RCB256RFR2_XPRO_Ext_TopLevel.SchDoc				

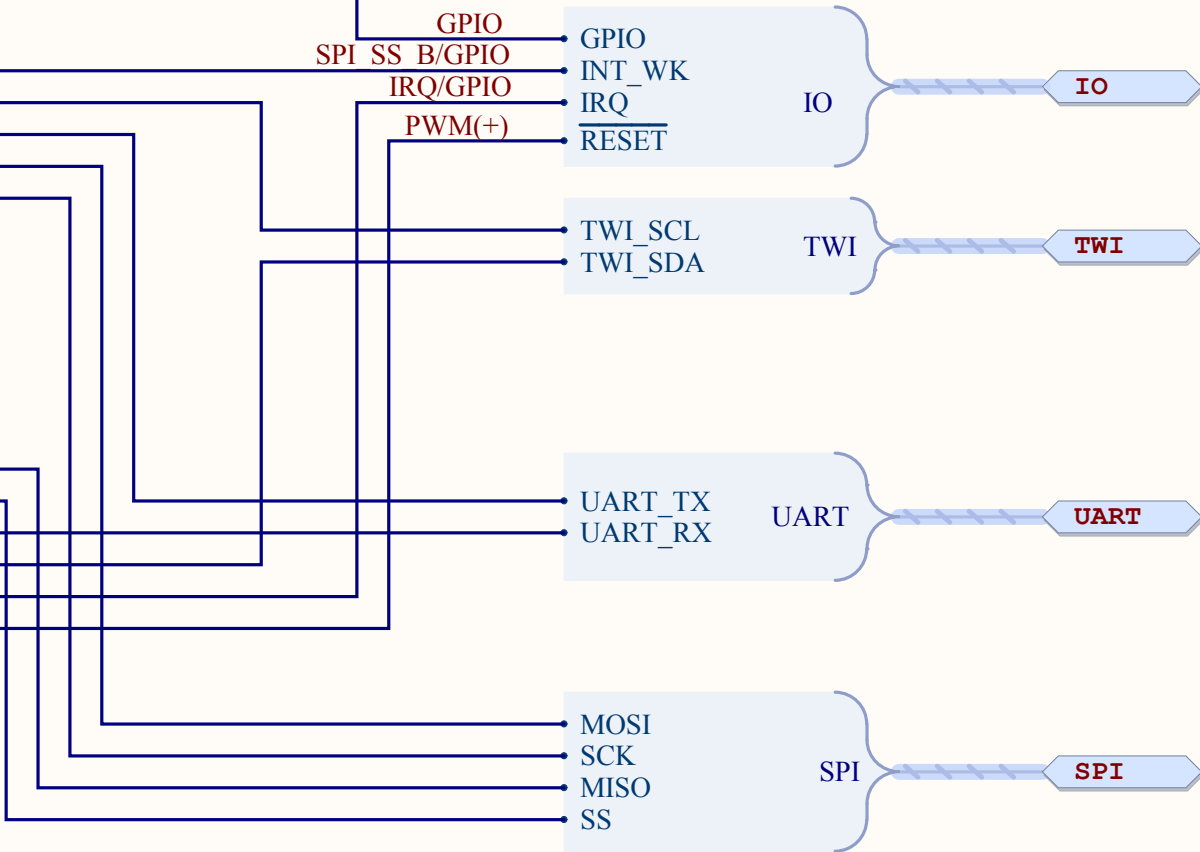
Extension Identification



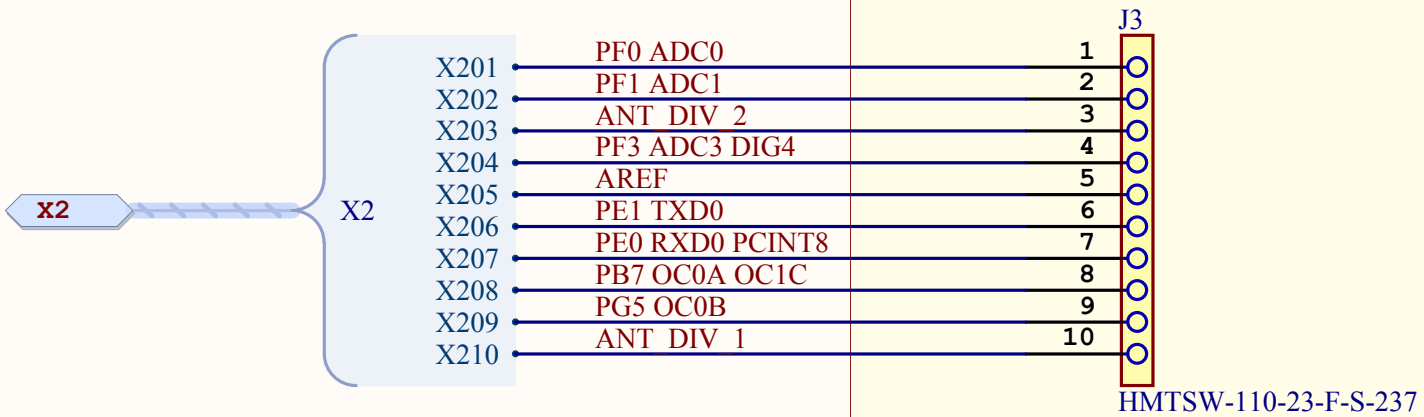
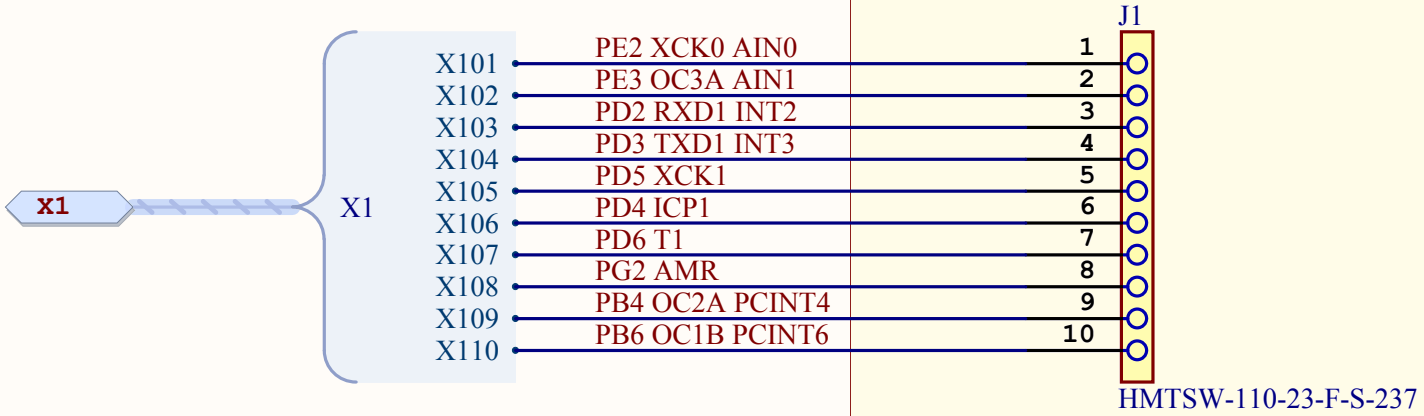
Standard Extension Header (Female)



[DESIGN NOTE]
IMPORTANT NOTICE:
UART_RX and UART_TX refer to RX (input) and TX (output) at the target device side. Connect UART_RX to TX of the UART device on the extension board and UART_TX to RX of the UART device on the extension board.

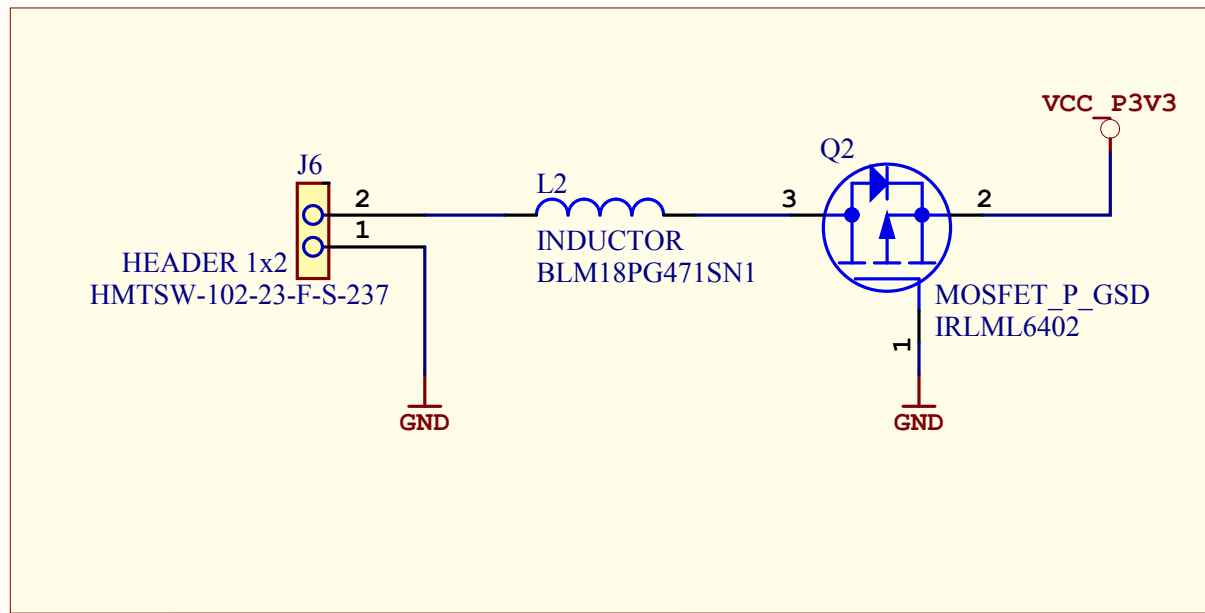
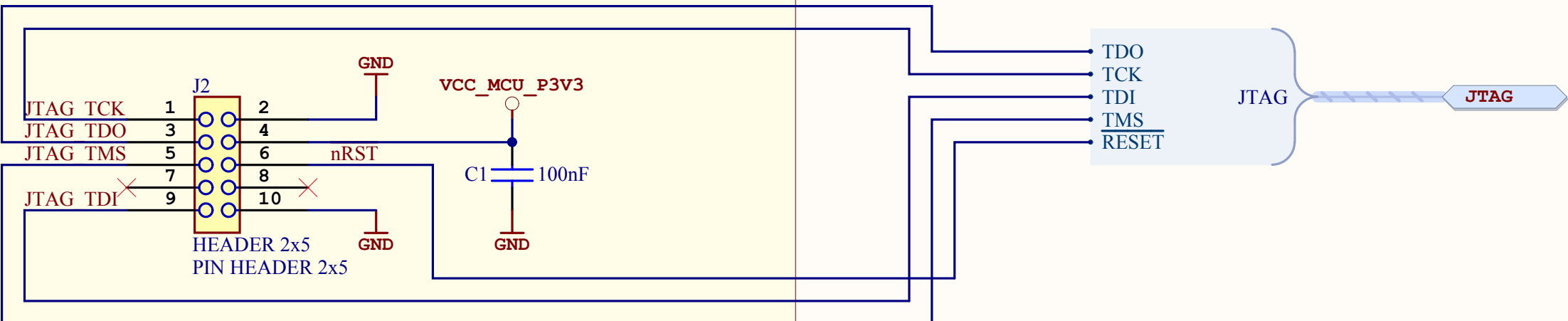


External Connector Headers



[DESIGN NOTE]
IMPORTANT NOTICE:
Connectors are not mounted in the PCB

JTAG Header

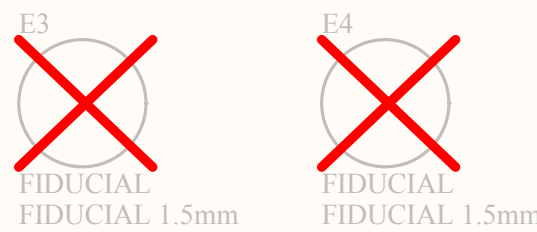
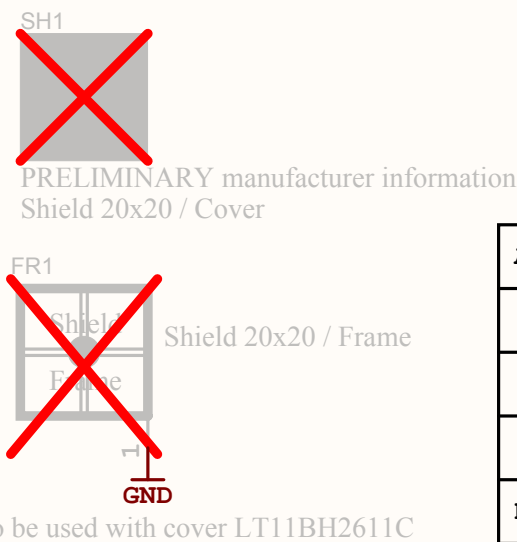
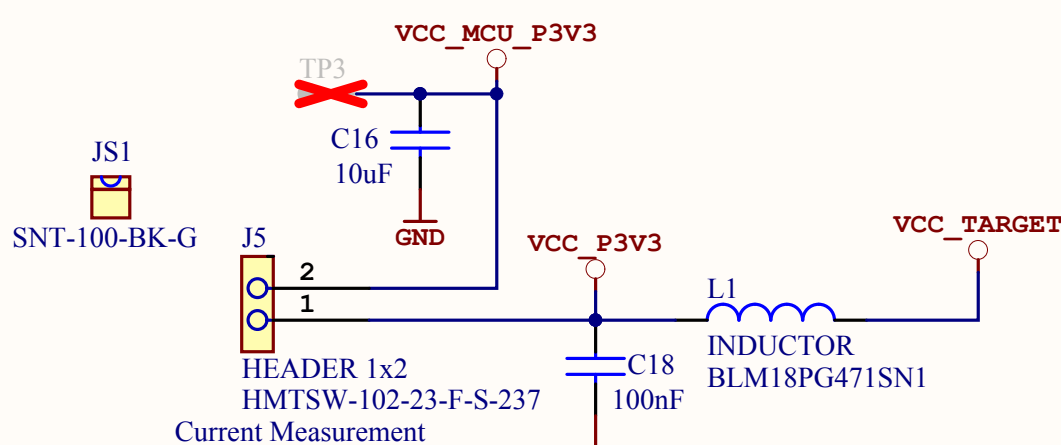
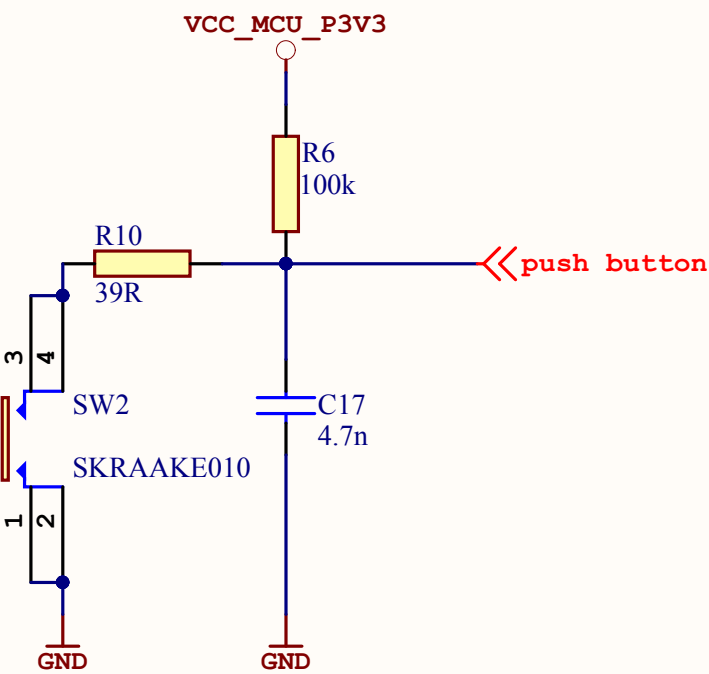
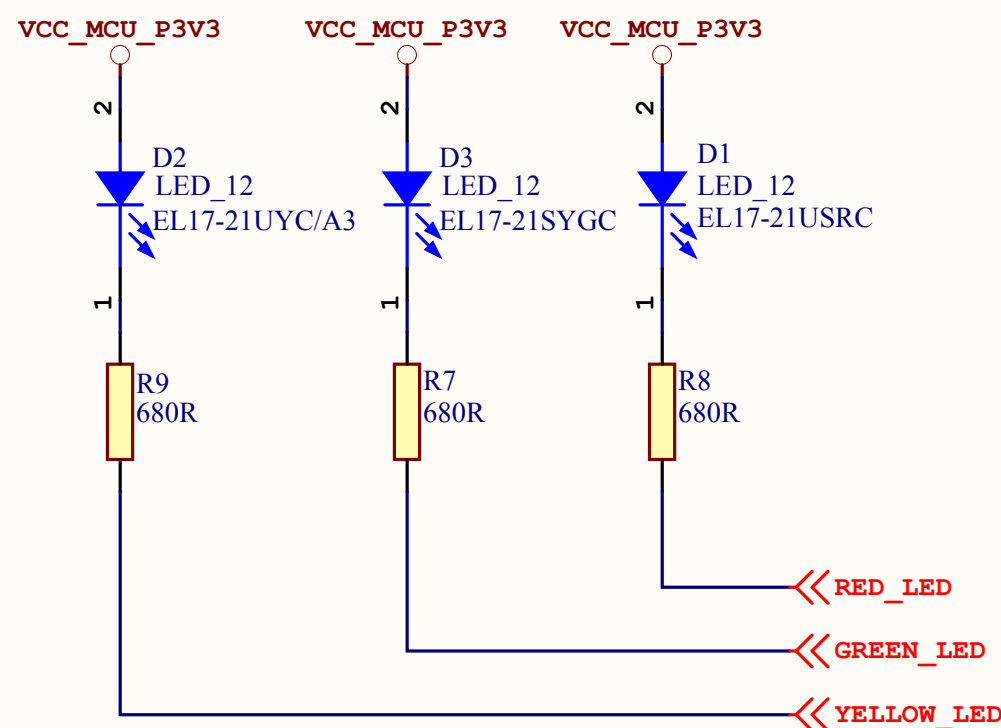
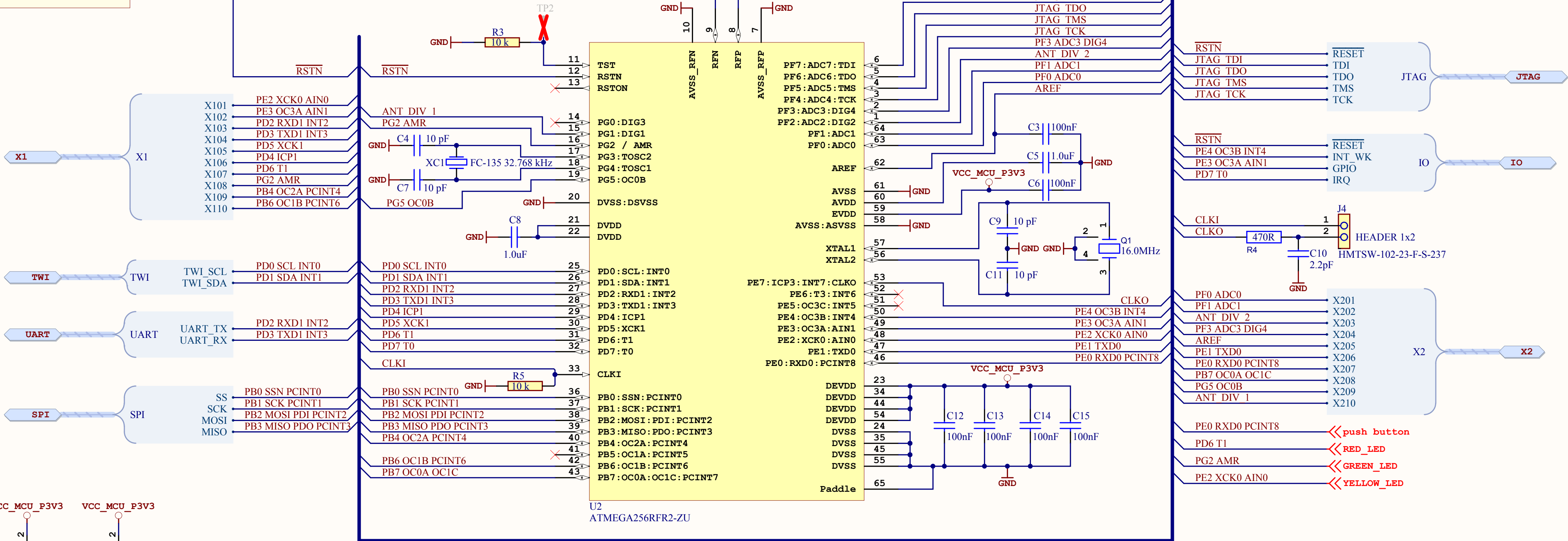
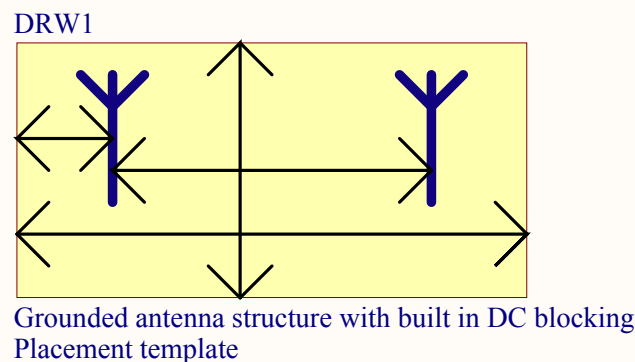
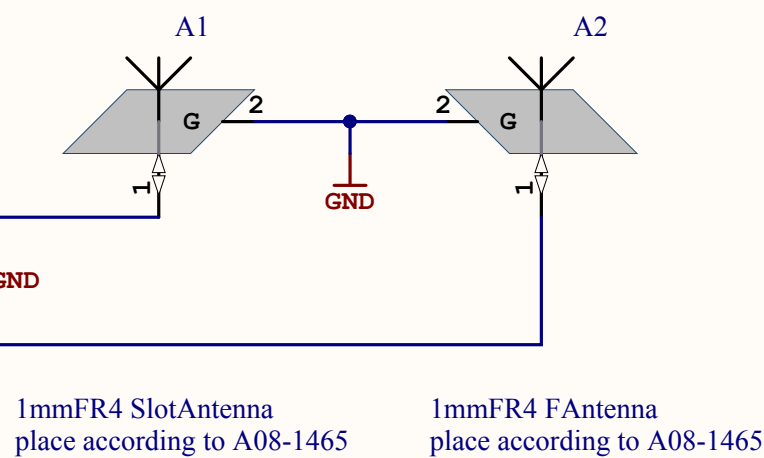
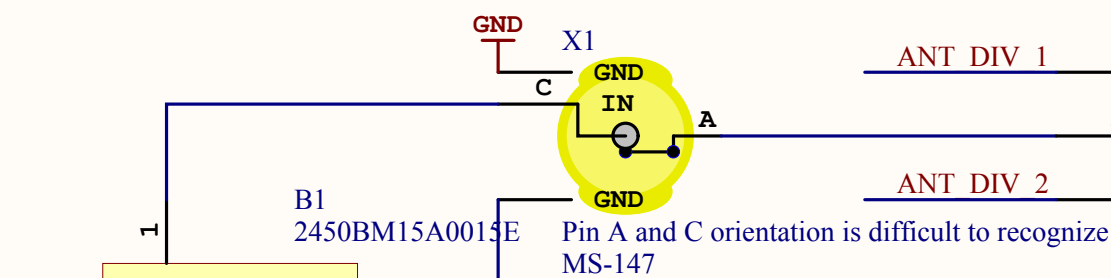
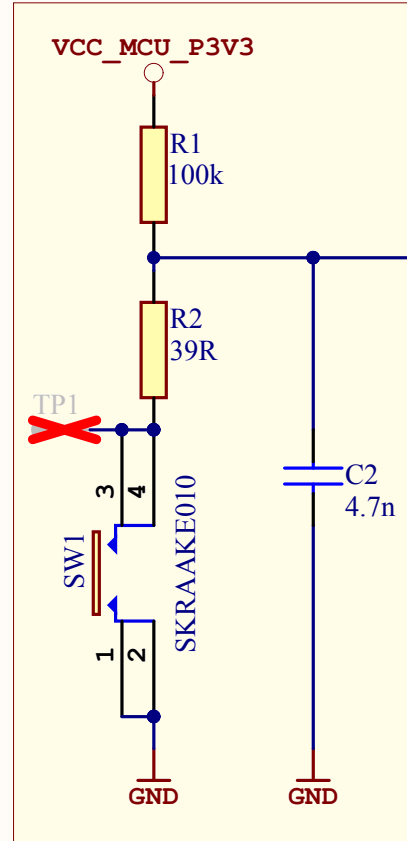


[DESIGN NOTE]
Battery Connector with reverse protection

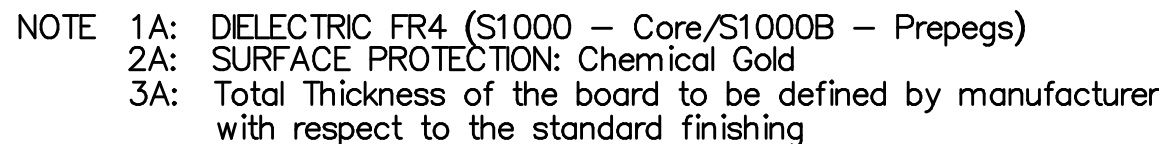
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	KN				
	*				
Date:	6/20/2013	7:25:40 PM	PAGE:	2 of 3	
Document number:	*		Revision	1	
TITLE: RCB256RFR2_XPRO_Extension_Connector					
RCB256RFR2_XPRO_Ext_Connector.SchDoc					

Antenna elements are grounded for ESD protection and come with 22pF DC blocking built in.

RESET Circuit

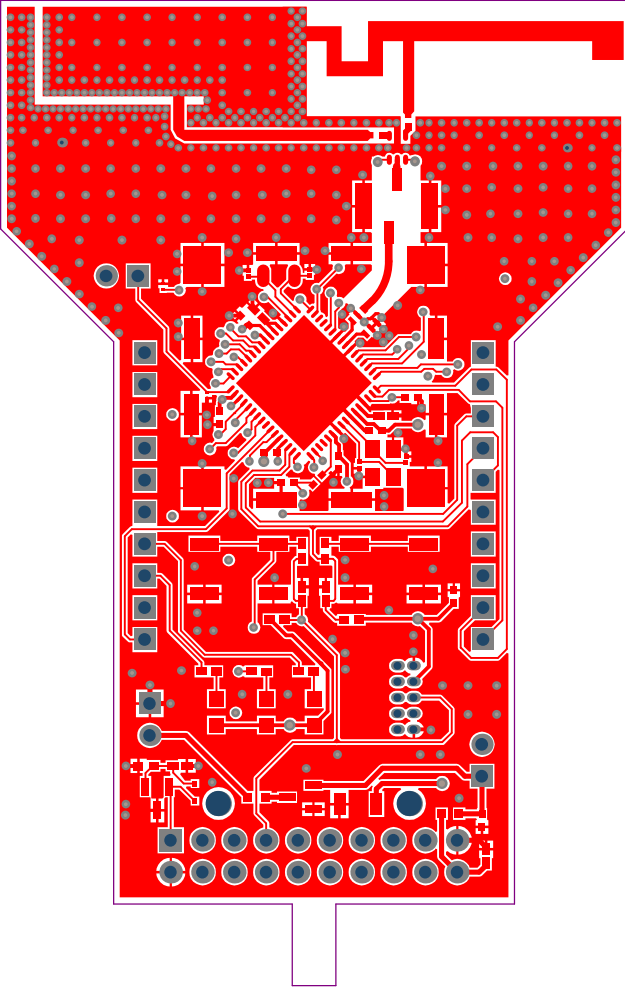


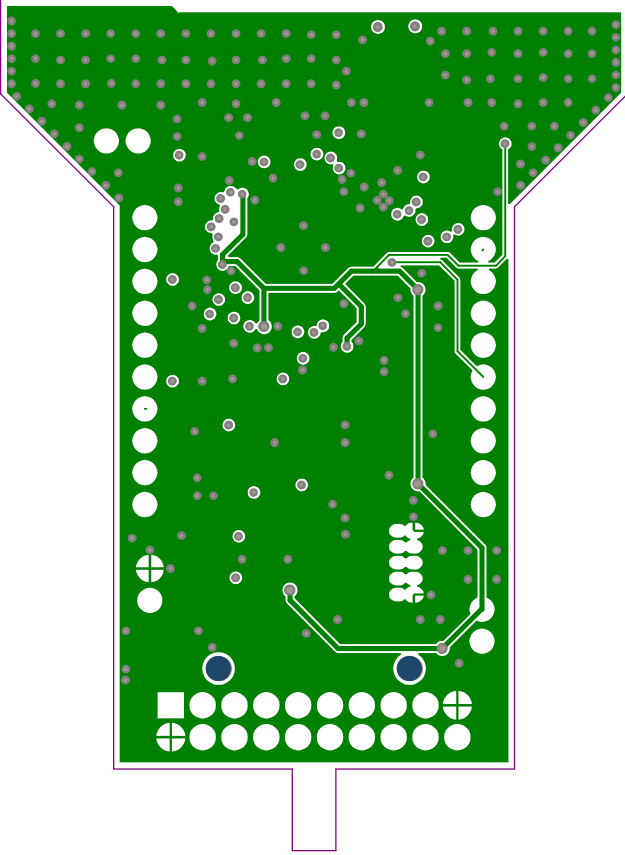
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RCB256RFR2 XRPO Ext RF.SchDoc					

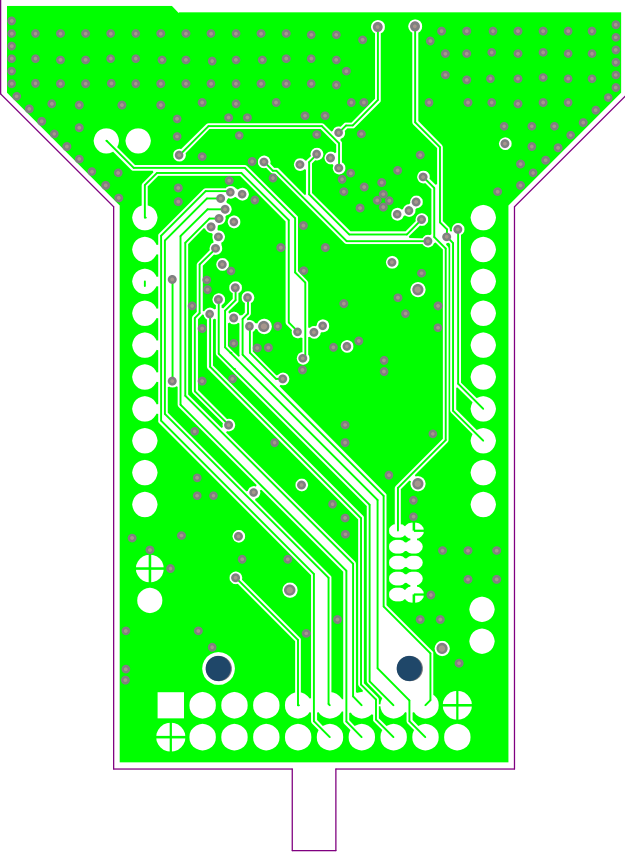
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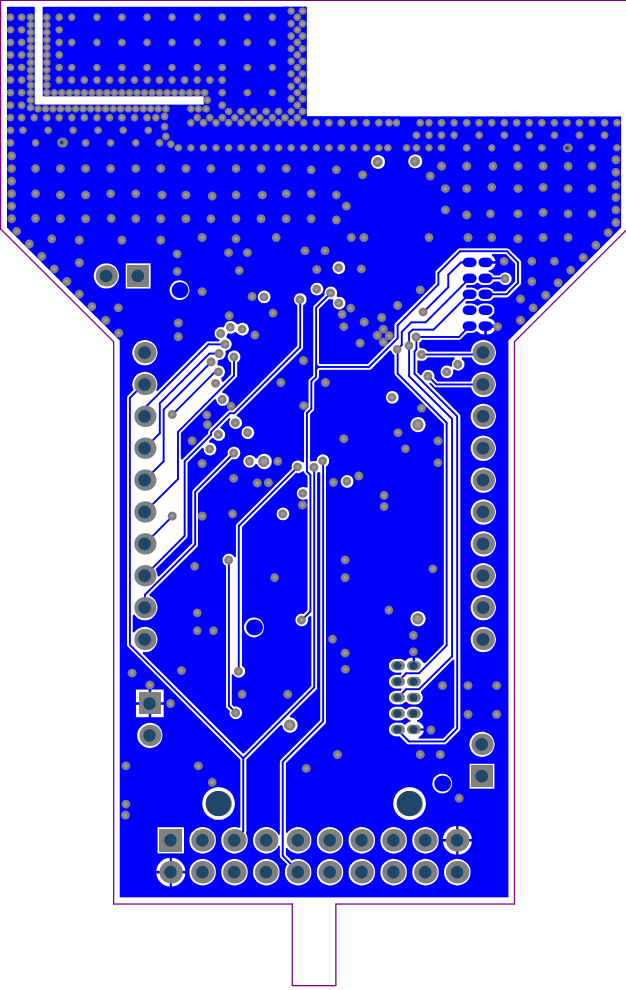
DETAIL A (CROSS-SECTION)

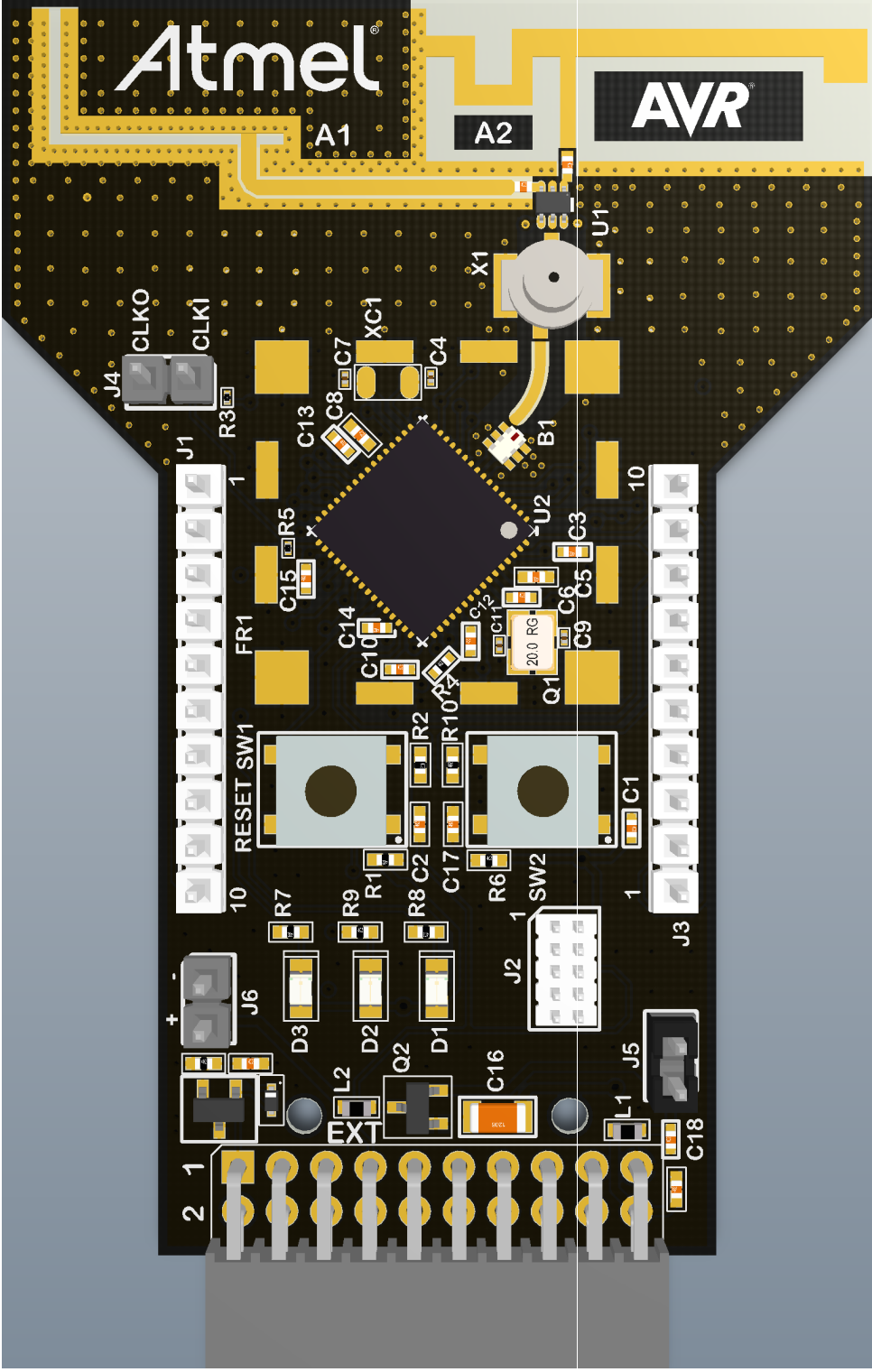
SCALE = NONE











TP2
TST

WIRELESS X PLAINED PRO
RCB256RFR2 - XPRO

TP1
RESET



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PCBA LABEL
A08-1824 Rev 1



VCC_MCU_P3V3

TP3

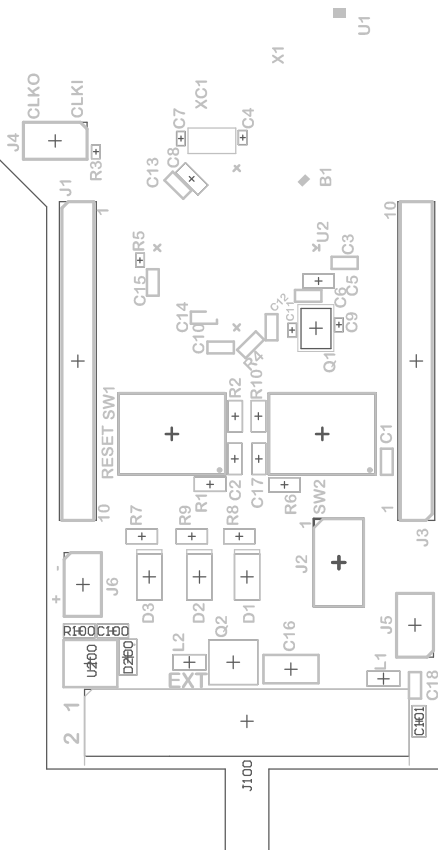
TCK TDO TMS TDI
GND VCC RST GND

Atmel®

A1

A2

AVR®





TST



WIRELESS X PLAINED
RCB256RFR2 - XPRO

RESET

Atmel Corp © 2013



TCK
TDO
TMS
TDI

GND
VCC
RST
GND

PCBA LABEL
A08-1824 Rev 1



VCC_MCU_P3V3



Fitted	Designator	Quantity	MPN	Manufacturer	Value	Description	Comment
Fitted	A1	1	1CM05CG220J50AH	Kyocera-elco	1mmFR4 SlotAntenna	vertical polarized diversity element	place according to A08-1465
Fitted	A2	1	1CM05CG220J50AH	Kyocera-elco	1mmFR4 FAntenna	horizontal diversity element with DC block	place according to A08-1465
Fitted	B1	1	124508M15A0015E	Johanson Technology	24508M15A0015E	resistor closest to match AT86RF232/233	new part development in cooperation ATMELJTI
Fitted	C1, C3, C6, C12, C13, C15, C18	8	GRM155R71C104K48D	Murata	100nF	Ceramic capacitor, SMD 0402, X7R, 16V, +/-10% (de19761)	CAP-NONPOL
Fitted	C2, C17	2			4.7n	Ceramic capacitor, SMD 0402, X7R, 25V, +/-10% (de35287)	CAP-NONPOL
Fitted	C4, C7, C9, C11	4	GRM0335C1E100JA04D	Murata	10 pF	Ceramic capacitor, SMD 0201, C0G, 25V, +0.25pF	replacement for A01-0315
Fitted	C5, C8	2	GRM155R60J105KE11D	Murata	1.0uF	Ceramic capacitor, SMD0402, X5R, 6.3V, 10% (de26942)	CAP-NONPOL
Fitted	C10	1	GRM1555C1H2R2CZ01D	Murata	2.2pF	Ceramic capacitor, SMD 0402, NP0, 50V, +/-0.25p (de23847)	CAP-NONPOL
Fitted	C16	1	GRM319R60J106KE11D	Murata	10uF	Ceramic capacitor, SMD 1206, X5R, 6.3V, +/-10%	CAP-NONPOL
Fitted	C100, C101	2	GRM155R60J475ME8D	Murata	4.7uF	Ceramic capacitor, SMD 0402, X5R, 6.3V, +/-20% (de33687)	Recommended by Esatec. No datasheet available yet.
Fitted	D1	1	EL17-21USRC	Everlight	EL17-21USRC	LED, Red, Wave length=639nm, SMD 0805 +/-70°	LED_12
Fitted	D2	1	EL17-21UYC/SS30-1A3TR8	Everlight	EL17-21UYC/A3	LED, Yellow, Wave length=591nm, SMD 0805 +/-70°	LED_12
Fitted	D3	1	EL17-21SYGC	Everlight	EL17-21SYGC	LED, Green, Wave length=575nm, SMD 0805 +/-70°	LED_12
Fitted	D200	1	BAT54XV2T1G	ON Semiconductor	BAT54XV2T1G	Schottky diode, If:200mA, Vt:0.35V, Vrrm:30V, SOD-523	Farnell# 1615809
Fitted	E1, E2	2	SJ-5076	3M	SJ-5076	2.8mm adhesive feet,diam 6.0mm	
Fitted	J1, J3	2	HMT1SW-110-23F-S-237	SAMTEC	HMTSW-110-23-F-S-237	1x10 pin header, 2.54mm pitch, Pin-in-Paste THM	J?
Fitted	J2	1	STL21-0730 G TT-100	Garry	PIN HEADER 2x5	2x5 pin header, 1.27mm pitch, THM	HEADER 2x5
Fitted	J4, J5, J6	2	HMT1SW-102-23F-S-237	SAMTEC	HMTSW-102-23-F-S-237	1x2 pin header, 2.54mm pitch, Pin-in-Paste THM	HEADER 1x2
Fitted	J100	1	TF201-2*10RGF-V2-NF	Pro-data International Corp	TF201-2*10RGF-V2-NF	2x10, female pin header receptable, right-angled, 2.54mm pitch, THM, Pin in Paste	
Fitted	JS1	1	SNT-100-BK-G	SAMTEC	SNT-100-BK-G	Jumper cap for 2.54mm pinheader	To be used by request from ESCATEC
Fitted	L1, L2	2	BLM18PG4715N1	Murata	BLM18PG4715N1	SMD RF inductor 0805 Z=470Ohm (@100MHz), Max R(dc)=0.650hm, Max current=1A	INDUCTOR
Fitted	LABEL1	1	505462	ACT Logimark AS		Label PCB with MAC64 and FCC ID	PCBA_LABEL
Fitted	PCB1	1				RCB256RFR2-XP-PRO PCB Gerber	PCB
Fitted	PCBADOC1	1		ESCATTEC		RCB256RFR2-XP-PRO Extension PCB documentation	PCBADOC
Fitted	Q1	1	TSX-3225	Epson Toyocom	16.0MHz	16MHz ukital, 3.2 x 2.5 mm SMD, CL=9pF, 15PPM, ESR=80ohm(Max.	TSX-3225
Fitted	Q2	1	IRLML6402PBF	International Rectifier	IRLML6402	P-ch. MOSFET -30V, -3.7 continuous RDS(ON)=0.05 Ohm@VGS=-4.5V, RDS(ON)=0.08Ohm@VGS=-2.5V	MOSFET_P_GSD
Fitted	R1, R6, R100	3			100k	Thick film resistor, SMD 0402, 1/16W, 1%	R2
Fitted	R2, R10	2			39R	Thick film resistor, SMD 0402, 1/16W, 1%	R2
Fitted	R3, R5	2	MCR006Y2P1103+	ROHM	10 k	Thick film resistor, SMD 0201, 1/20W, 5%	Copy of A02-0535
Fitted	R4	1	RC1005F 4700CS	Samsung	470R	Thick film resistor, SMD 0402, 1/16W, 1% (de1970)	RES
Fitted	R7, R8, R9	3			680R	Thick film resistor, SMD 0402, 1/16W, 1%	R2
Fitted	SW1, SW2	2	SKRAAKE010	ALPS	SKRAAKE010	6.2x6.2 mm SMD tact switch, same as A08-099 but less force is needed	Can be ordered in low volumes from Mouser
Fitted	TEST1	1				RCB256RFR2-XP-PRO Test Software	TEST
Fitted	TESTDOC1	1				RCB256RFR2-XP-PRO Test Instructions	TESTDOC
Fitted	U1	1	AS222-92	SKYWOKS SOLUTIONS	AS222-92	PREMI SPDT Analog SWITCH, 0.1-3 GHz (de23859)	AS222-92
Fitted	U2	1	ATMEGA256RFR2-ZU	ATMEL	ATMEGA256RFR2-ZU	AVR Microcontroller with Low Power 2.4GHz Transceiver for IEEE 802.15.4 (de35289)	ATmega256RFR2
Fitted	U200	1	ATSHA204-TSU-T	ATMEL	ATSHA204 SWI SOT23-3	ATSHA204 with 1-wire interface and SOT23-3 package	
Fitted	X1	1	CL358-150-S-06	HIROSE	MS-147	Interface RF Connector w/ switch	Pin A and C orientation is difficult to recognize
Fitted	XC1	1	FC-135 32.768 kHz	Epson Toyocom	FC-135 32.768 kHz	FC-135 32.768 kHz 20ppm 12.5pF Load Cap	Alternate part for A07-0041
Not Fitted	E3, E4	0			FIDUCIAL 1.5mm	fiducial point for PCB coordinates 1.5mm pad at 3mm hole in mask	
Not Fitted	FR1	0	LT11BH2611F	Laird Technologies	Shield 20x20 / Frame	SMT frame for metal shield 20x20 mm*2 (de34031)	
Not Fitted	SH1	0	LT11BH2611C	Laird Technologies	Shield 20x20 / Cover	SNAP fit cover for metal shield 20x20 mm*2 (de34032)	
Not Fitted	TP1, TP2, TP3	0			TESTPAD	Single SMD testpad	