

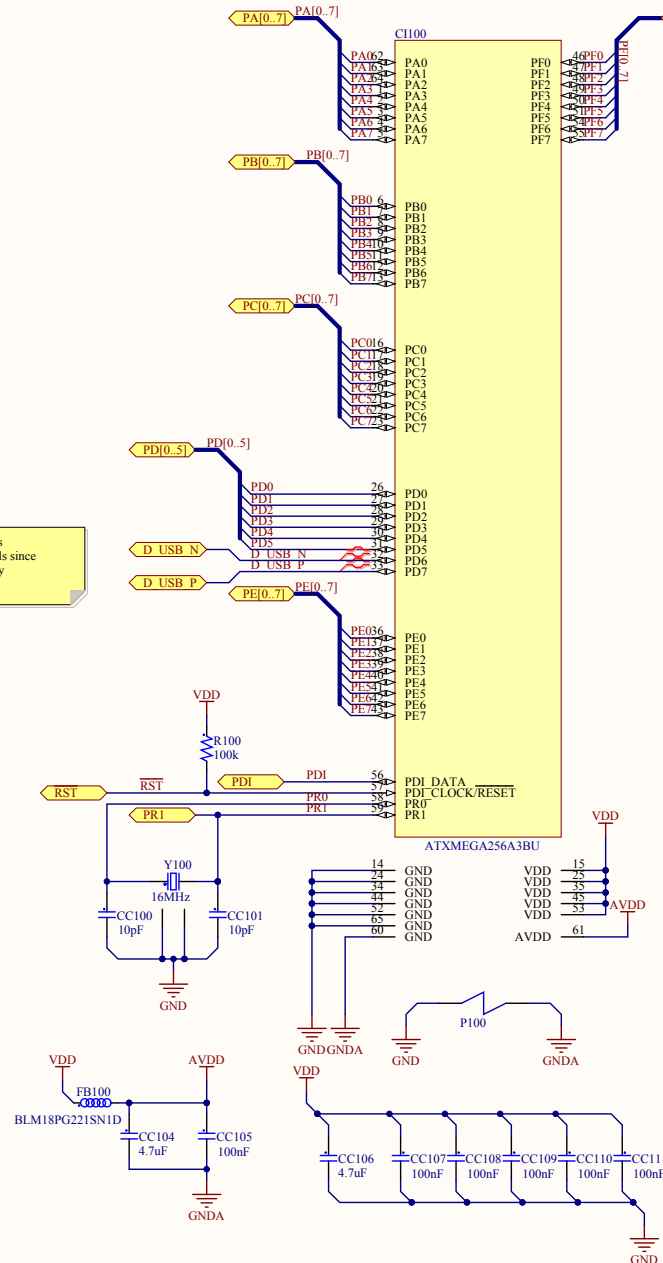
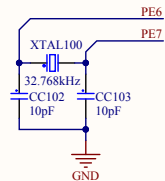
## Battery Backup System

**Battery CR1220:**  
 Nominal capacity 35mAh  
 Nominal voltage 3V  
 Backup system:  
 Low power mode of oscillator -> backup system current typ 500nA  
 High power mode of oscillator -> backup system current typ 680nA  
 Theoretical battery lifetime when main power is absent the whole time:  
 Low power mode -> 35mAh/500nA = 70000 h = 8 years  
 High power mode -> 35mAh/680nA = 51500 h = 5.9 years  
 The actual lifetime might be lower due to self-discharge of the battery.

No external termination is needed on the USB signals since this is calibrated internally

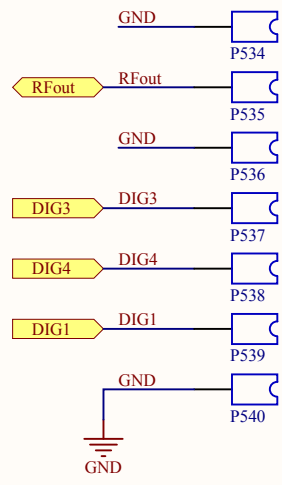
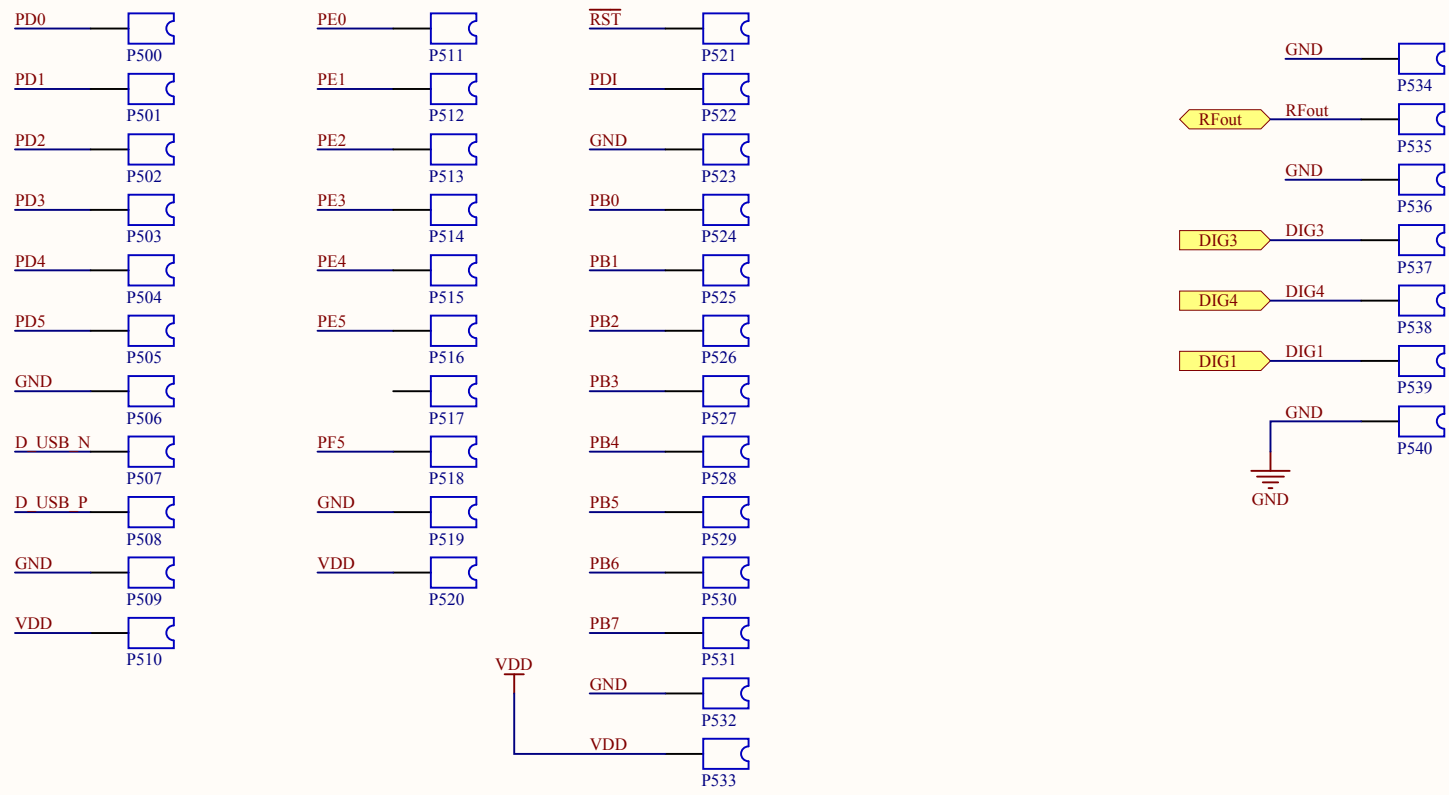
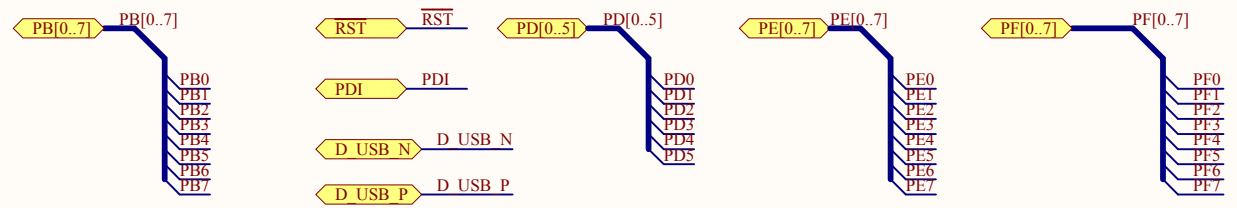
## 32 kHz Crystal

Crystal datasheet:  
 CL = 7pF  
 max ESR = 60kOhm  
 ATXmega256A3B datasheet:  
 Ci = not available in datasheet yet  
 IBIS file not available for A3BU yet  
 Assume an internal capacity of 2pF  
 Maximum load and ESR:  
 6.5pF with 60kOhm  
 9pF with 35kOhm  
 $C = 2 (CL - Ci) = 2(7pF - 2pF)$   
 $C = 10pF$   
 Selected in design  
 $C = 10pF$



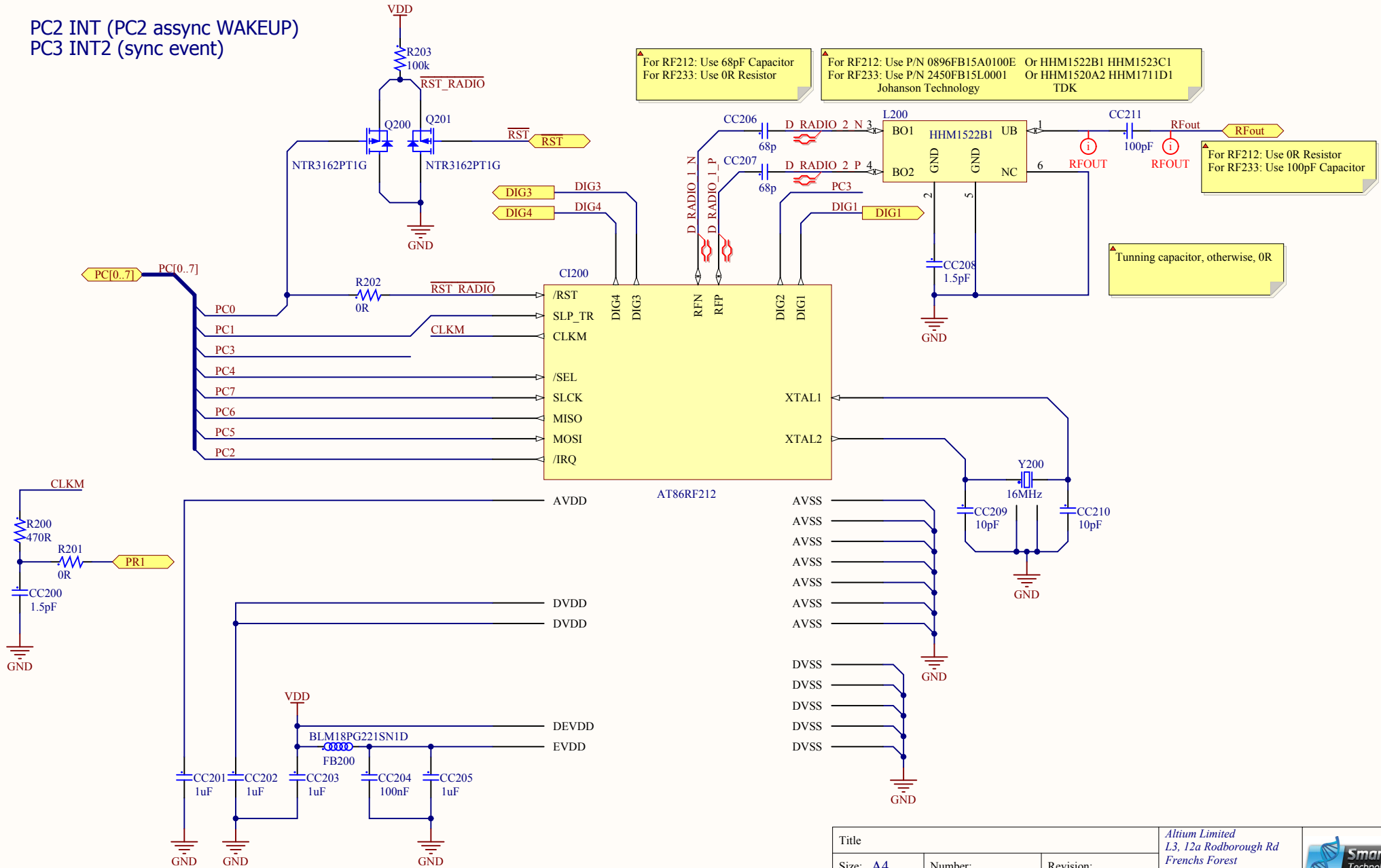
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Size: A3	Number: 2	Revision:	Australia 2086
Date: 15/10/2012	Time: 21:32:33	Sheet2 of 7	
File: F:\Projetos\SmartDNA Tech\WM-200\Micro Controlador.SchDoc			





Title <b>I/O</b>			SmartDNA Technology svr. Santissima Trindade n. 10, ap. 101, Trindade Florianópolis/SC Brasil	
Size: A4	Number:	Revision: 1.0		
Date: 15/10/2012	Time: 21:32:23	Sheet 3 of 8		
File: F:\Projetos\SmartDNA Tech\WM-200\Connector.SchDoc				

PC2 INT (PC2 async WAKEUP)  
PC3 INT2 (sync event)



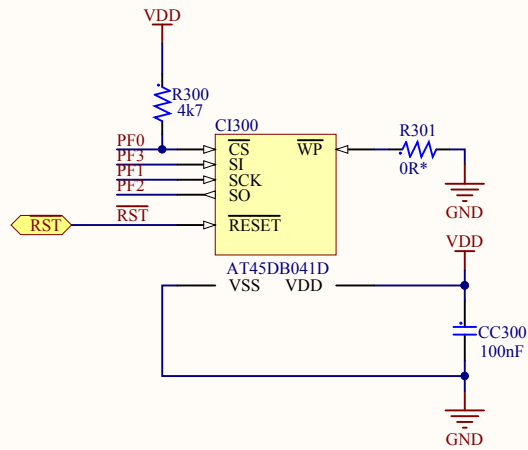
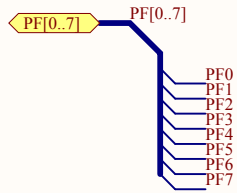
▲ For RF212: Use 68pF Capacitor  
For RF233: Use 0R Resistor

▲ For RF212: Use P/N 0896FB15A0100E Or HHM1522B1 HHM1523C1  
For RF233: Use P/N 2450FB15L0001 Or HHM1520A2 HHM1711D1  
Johanson Technology TDK

▲ For RF212: Use 0R Resistor  
For RF233: Use 100pF Capacitor

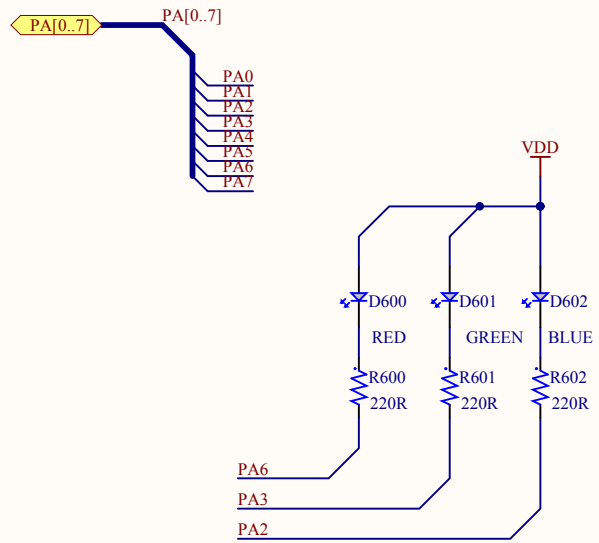
▲ Tuning capacitor, otherwise, 0R


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Size: A4	Number:	Revision:		
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Title <b>Memory</b>			SmartDNA Technology svr. Santissima Trindade n. 10, ap. 101, Trindade Florianópolis/SC Brasil	
Size: A4	Number:	Revision: 1.0		
Date: 15/10/2012	Time: 21:32:23	Sheet 7 of 8		
File: F:\Projetos\SmartDNA Tech\WM-200\Memory.SchDoc				

# LEDs e Switch



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2

3

4

A

A

B

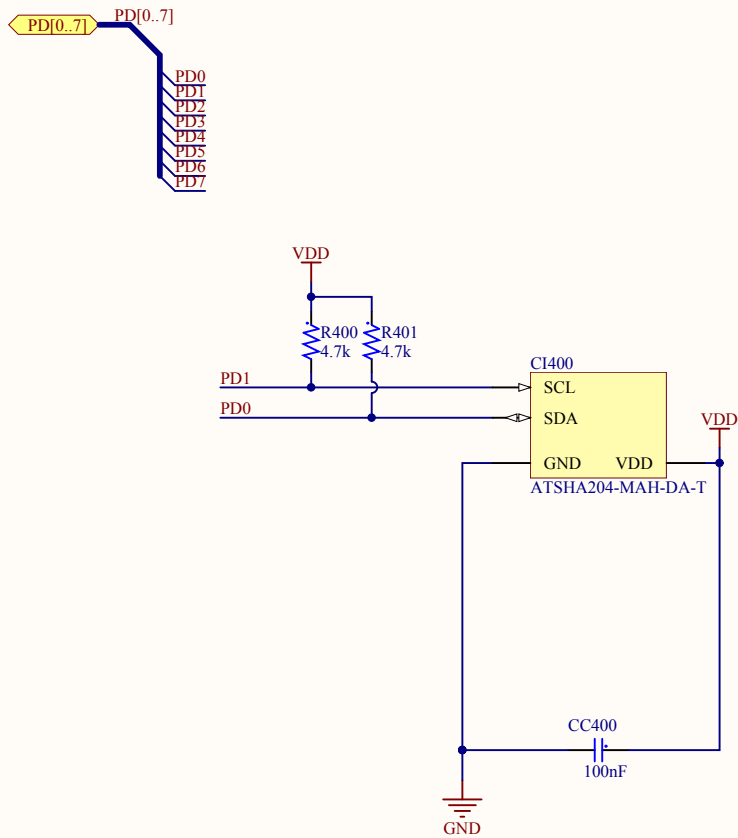
B


C

C

D

D



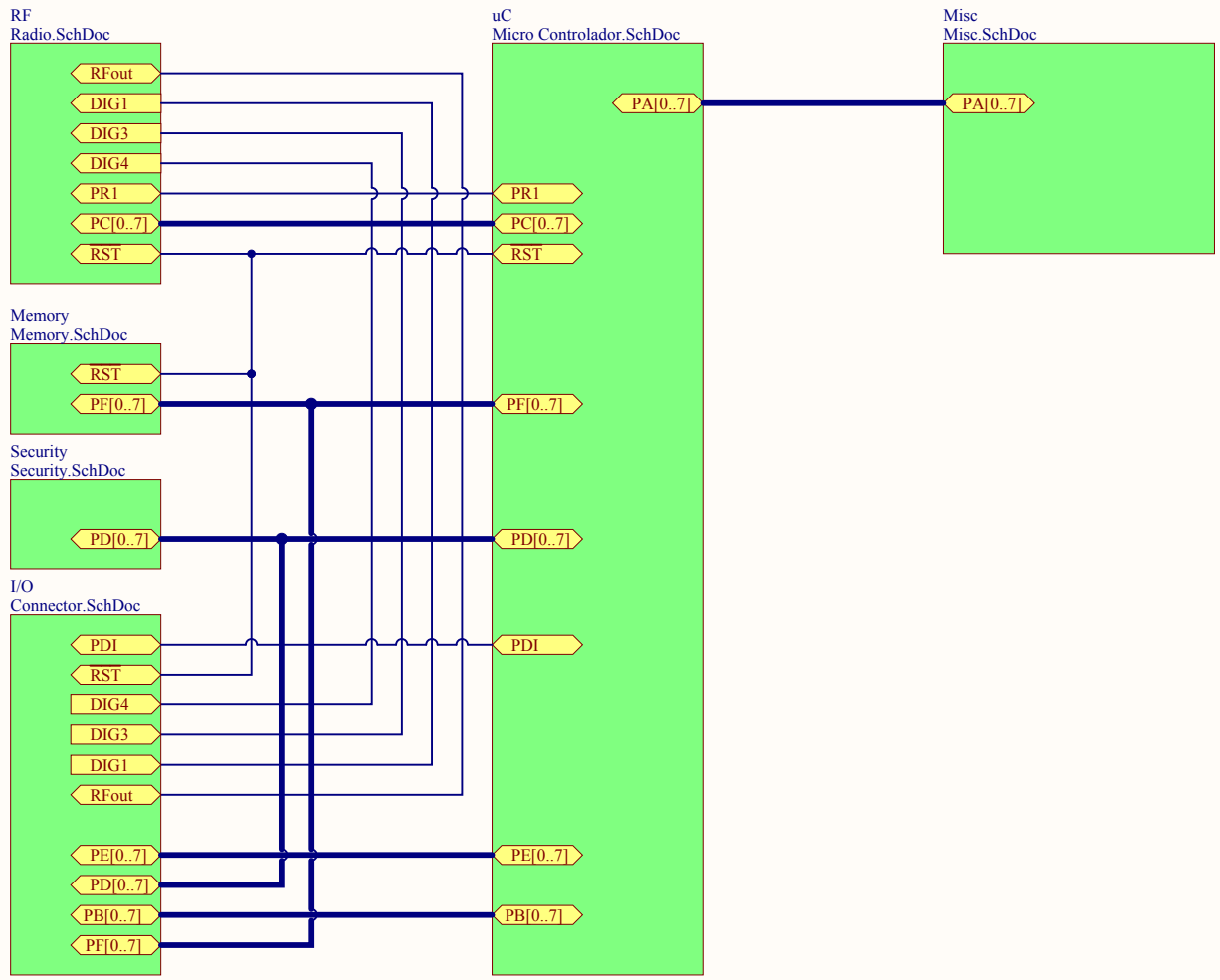
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2

3

4



Title *			* * * *	
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