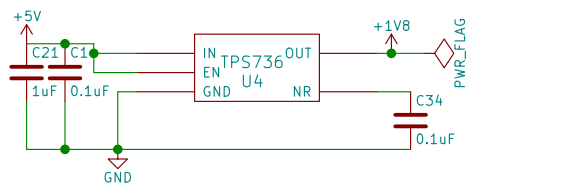


### 1V8 Power Regulator

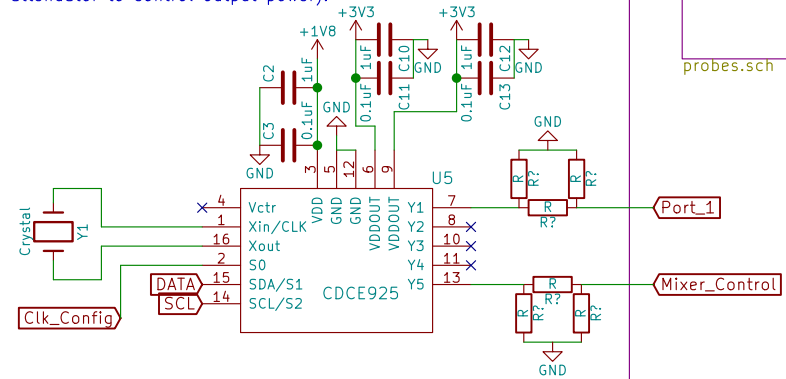
Used to serve as a 1V8 power source for some of the devices



1V8\_power.sch

## System Clock and Crystals

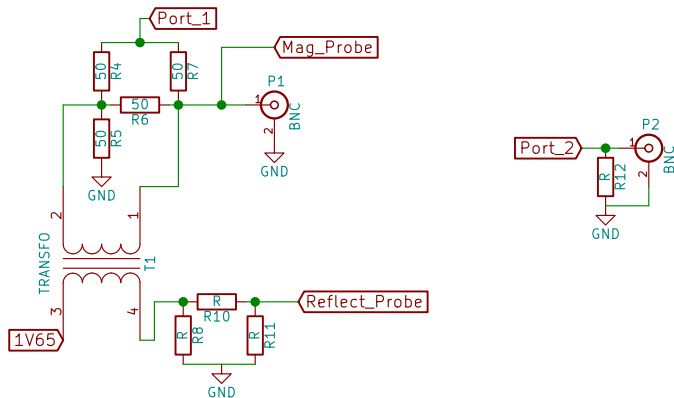
Used to generate two clock signals with a frequency offset between them (with unlabeled attenuator to control output power).



system\_clock.sch

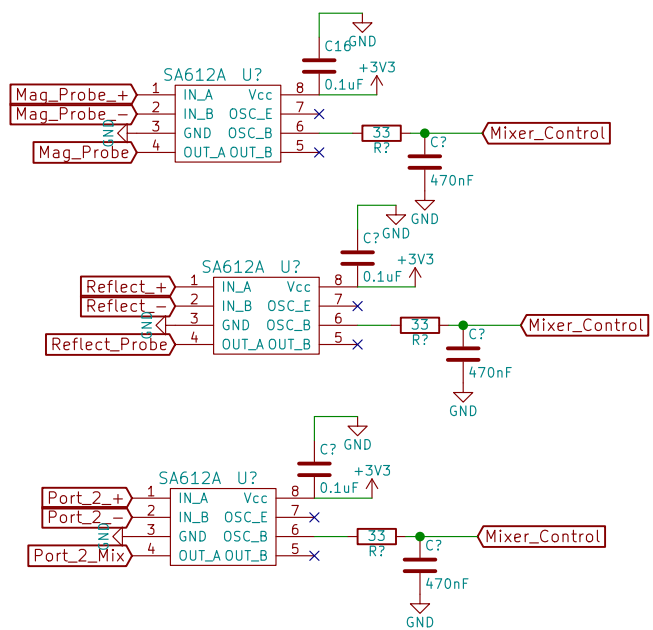
## Probes for measurements

Sensor probes, used to measure the reflection coefficients.



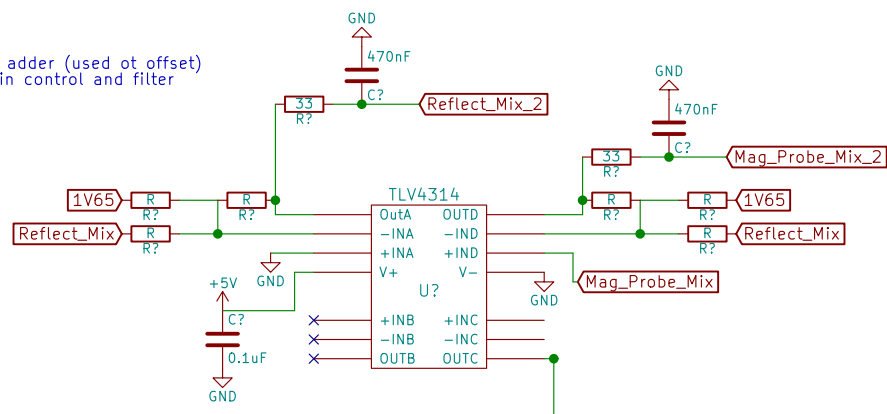
probes.sch

Using SA612 for differential input mixer and to power filter

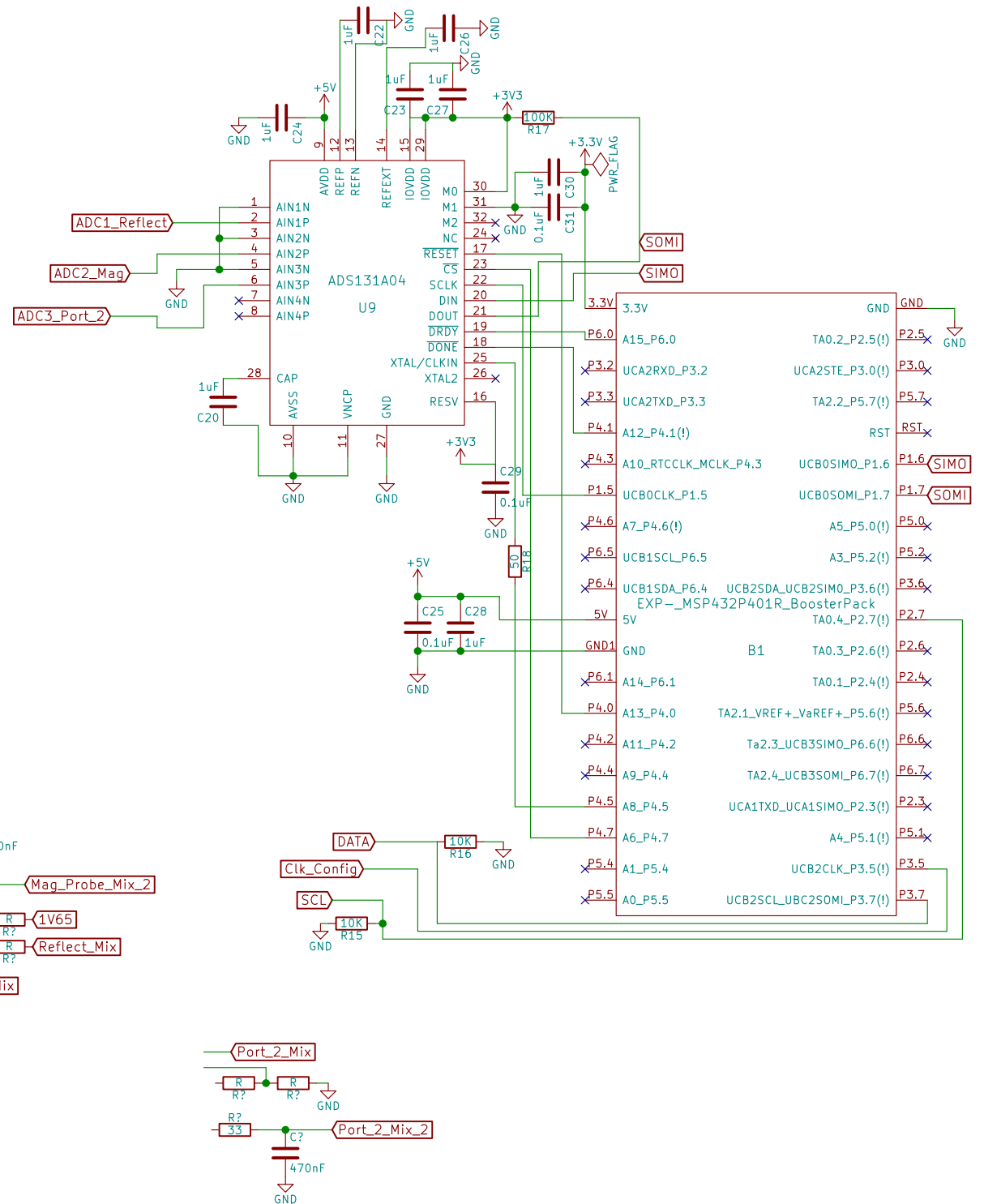
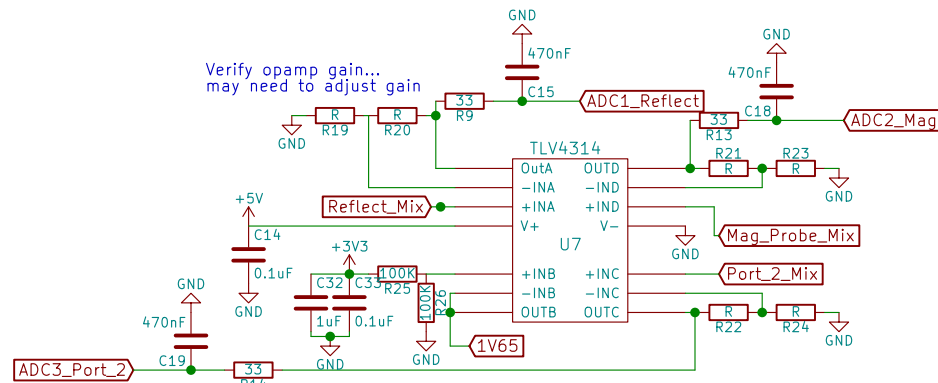


Current setup does not have the components in the  
seperate schematic files

Voltage adder (used ot offset)  
with gain control and filter



Verify opamp gain...  
may need to adjust gain



Covrig Wang Solutions

Sheet: /  
File: revised\_engr\_357.sch

**Title: Superheterodyne VNA**

Size: A3	Date: 2016-05-01
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Rev:

1	2	3	4	5	6
A					A
B					B
C					C
D					D
1	2	3	4	5	6

Sheet: /1V8 Power Regulator/ File: 1V8_power.sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. kicad 4.0.1-stable		Id: 2/7

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A					A
B					B
C					C
D					D
1	2	3	4	5	6

Sheet: /System Clock and Crystal/ File: system_clock.sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. kicad 4.0.1-stable		Id: 3/7

1	2	3	4	5	6
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B					B
C					C
D					D
1	2	3	4	5	6

Sheet: /Input Signal Mixers/ File: input_mixers.sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. kicad 4.0.1-stable		Id: 4/7

123456

A

B

C

D

Sheet: /Buffer and voltage regulator/  
File: opamp\_and\_filter.sch

Title:

Size: A4Date:

KiCad E.D.A. kicad 4.0.1–stable

Rev:

Id: 5/7

6

	1	2	3	4	5	6
A						
B						
C						
D						
	1	2	3	4	5	6

Sheet: /Differential OP–Amp and filter/ File: diff_amp_and_filter.sch		
<b>Title:</b>		
Size: A4	Date:	<b>Rev:</b>
KiCad E.D.A. kicad 4.0.1–stable		Id: 6/7

	1	2	3	4	5	6
A						
B						
C						
D						
	1	2	3	4	5	6

Sheet: /Probes for measurements/ File: probes.sch		
<b>Title:</b>		
Size: A4	Date:	<b>Rev:</b>
KiCad E.D.A. kicad 4.0.1—stable		Id: 7/7