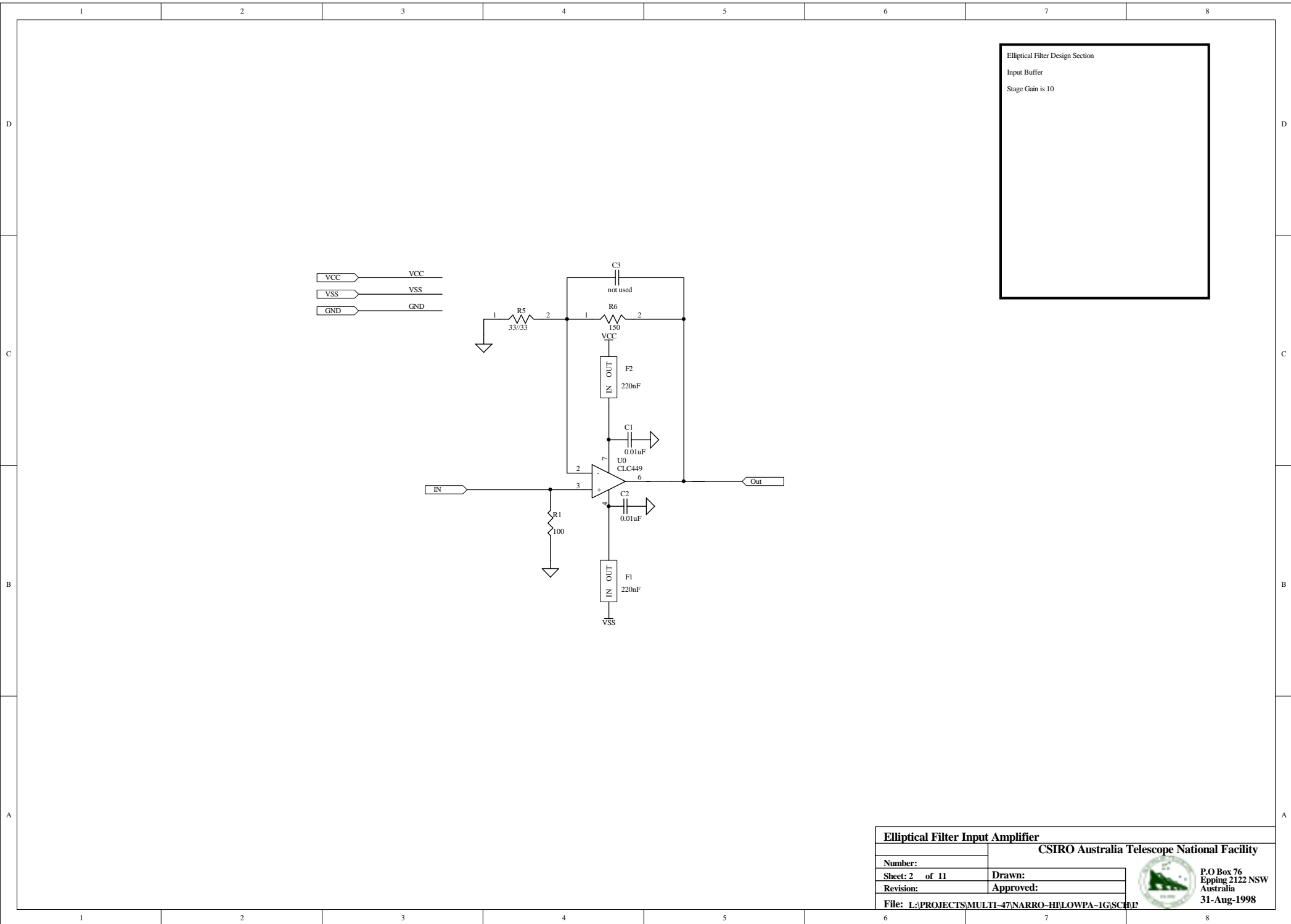


<b>Active Elliptical Low Pass Filter 7 Sections</b>	
<b>CSIRO Australia Telescope National Facility</b>	
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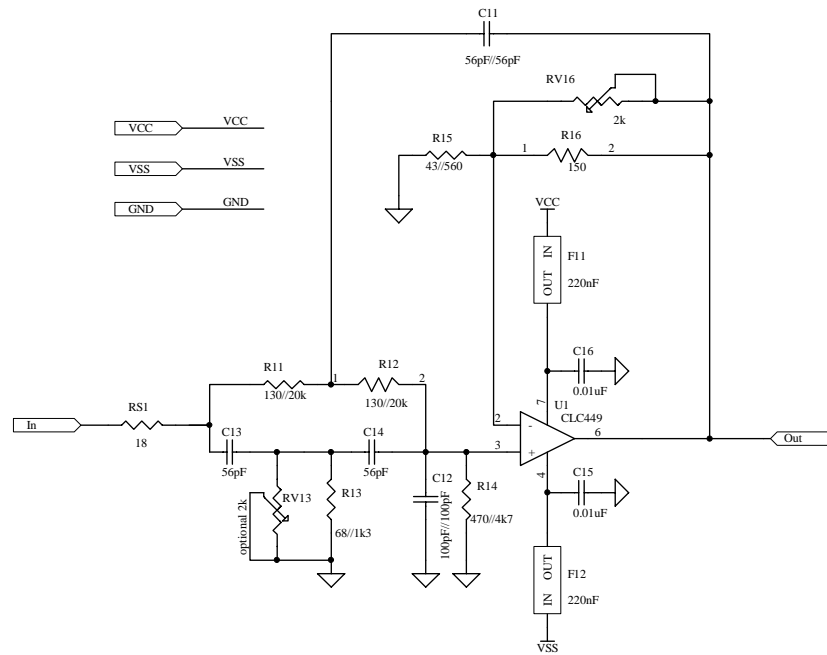


Elliptical Filter Design Section  
 Input Buffer  
 Stage Gain is 10


<b>Elliptical Filter Input Amplifier</b>	
CSIRO Australia Telescope National Facility	
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Elliptical Filter Design Section  
Pole Location is  $2\pi \times fo \times (-0.331247 + j0.695989)$   
fo is 12.1MHz  
Pole Frequency: 9.33MHz  
Pole Q = 1.2  
Zero Location is  $2\pi \times fo \times (0 + j1.818547)$   
Zero Frequency : 22.00403MHz  
fo is 12.1MHz  
Stage Gain K is 4.32

<b>Elliptical Filter Section 1</b>		<b>CSIRO Australia Telescope National Facility</b>	
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Elliptical Filter Design Section

Pole Location is  $2\pi \times fo \times (-0.111941 + j0.949337)$

fo is 12.1MHz

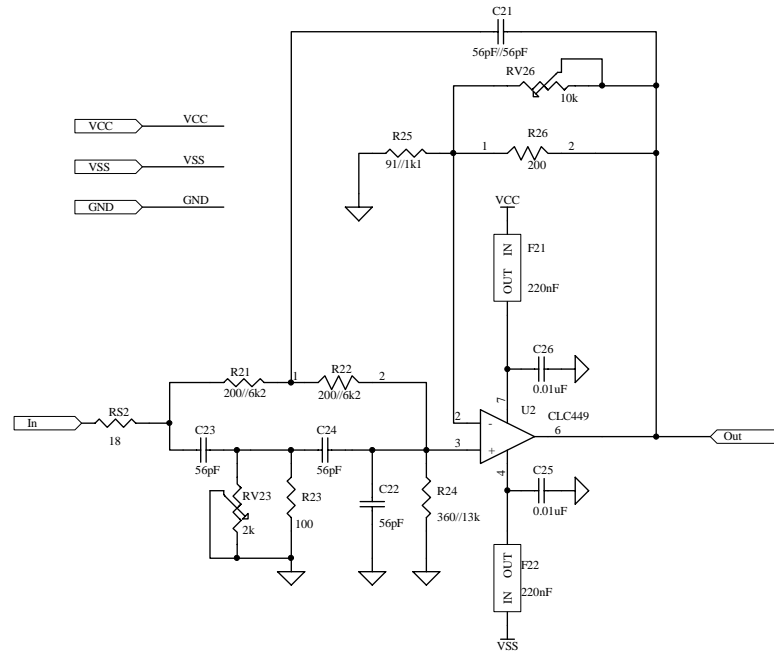
Pole Frequency: 11.57MHz

Pole Q = 4.3

Zero Location is  $2\pi \times fo \times (0 + j1.210984)$

Zero Frequency : 14.653MHz


Stage Gain K is 3.16



VCC → VCC

VSS → VSS

GND → GND

<b>Elliptical Filter Section 2</b>		<b>CSIRO Australia Telescope National Facility</b>	
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Elliptical Filter Design Section

Pole Location is  $2\pi \times fo \times (-0.023928 + j1.011921)$

fo is 12.1MHz

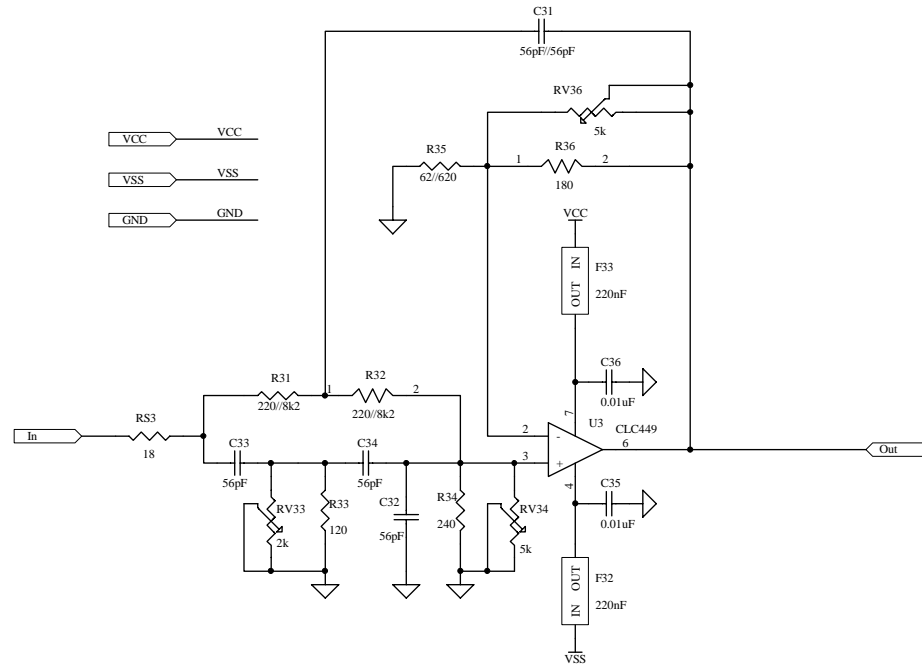
Pole Frequency: 12.25MHz


Pole Q = 21.2

Zero Location is  $2\pi \times fo \times (0 + j1.0963462)$

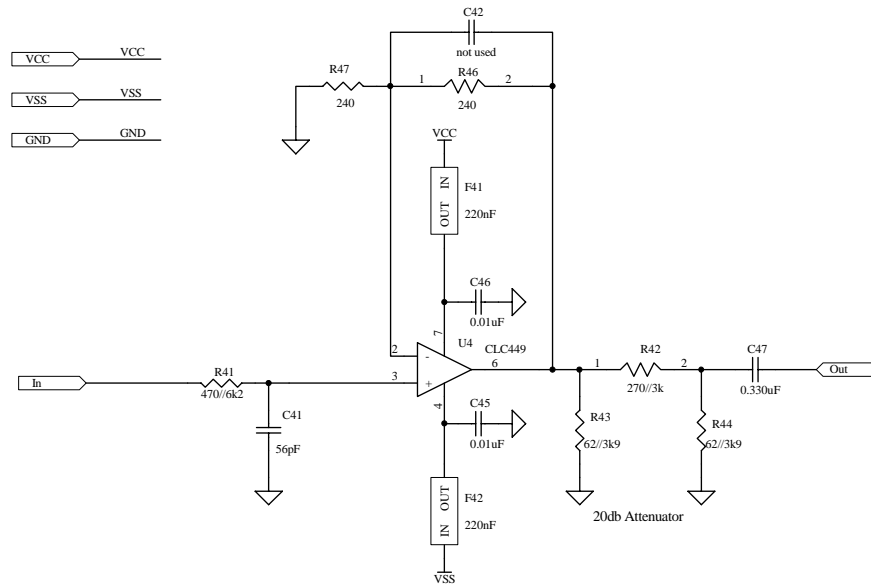
Zero Frequency :13.2658MHz


Stage Gain K is 3.71



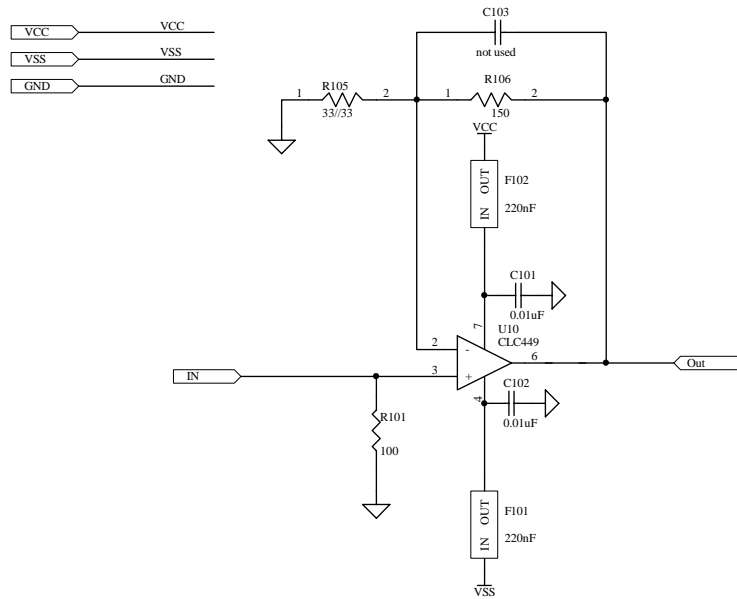
<b>Elliptical Filter Section 3</b>		<b>CSIRO Australia Telescope National Facility</b>	
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Elliptical Filter Design Section  
 Pole Location is  $2\pi j\omega_p(-0.53778459)$   
 $\omega_p$  is 16.2MHz  
 Pole Frequency: 6.507MHz  
 Stage Gain is 2

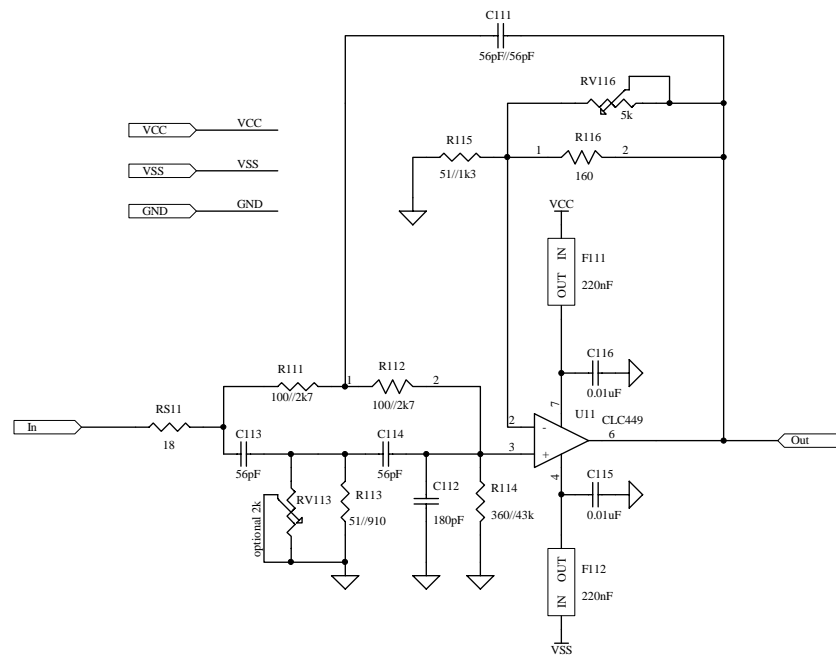


<b>Elliptical Filter Output Section</b>		 <b>CSIRO Australia Telescope National Facility</b> P.O Box 76 Epping 2122 NSW Australia 31-Aug-1998	
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Elliptical Filter Design Section  
 Input Buffer  
 Stage Gain is 10



<b>Elliptical Filter Input Amplifier</b>		<b>CSIRO Australia Telescope National Facility</b>	
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Elliptical Filter Design Section

Pole Location is  $2\pi \times 16.2 \times 10^6 \times (-0.331247 + j0.695989)$

fo is 16.2MHz


Pole Frequency: 12.487MHz

Pole Q = 1.2

Zero Location is  $2\pi \times 29.4599 \times 10^6 \times (0 + j1.818515)$

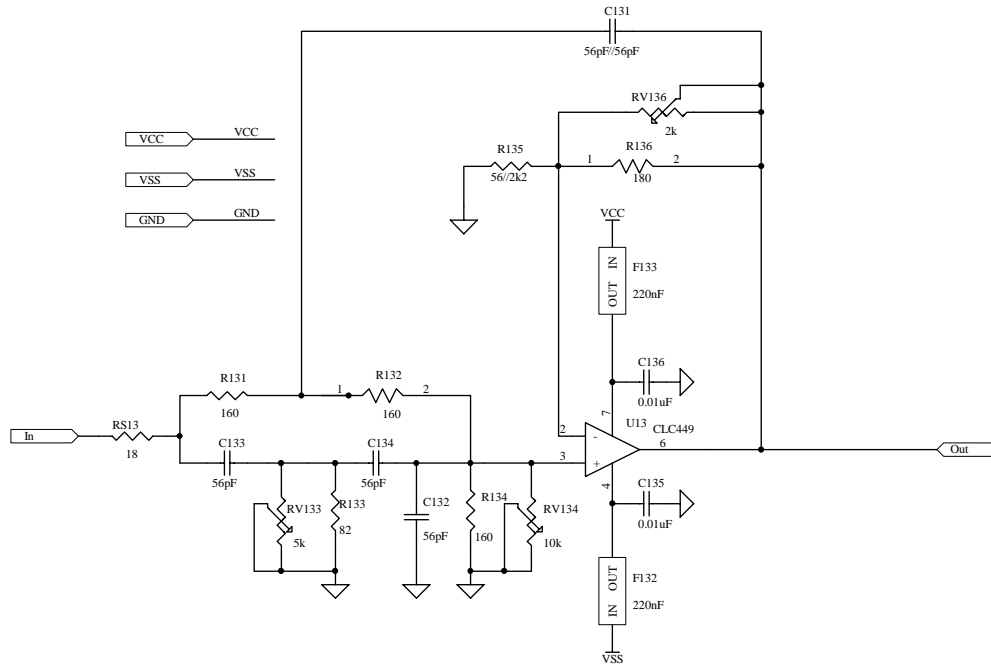
Zero Frequency : 29.4599MHz

Stage Gain K is 4.03

<b>Elliptical Filter Section 1</b>		<b>CSIRO Australia Telescope National Facility</b>	
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Elliptical Filter Design Section  
 Pole Location is  $2\pi \times (-0.023928 + j1.011921)$   
 fo is 16.2MHz  
 Pole Frequency: 16.3977MHz  
 Pole Q = 21.2  
 Zero Location is  $2\pi \times (0 + j1.096346)$   
 Zero Frequency : 17.7608MHz  
 Stage Gain K is 3.71



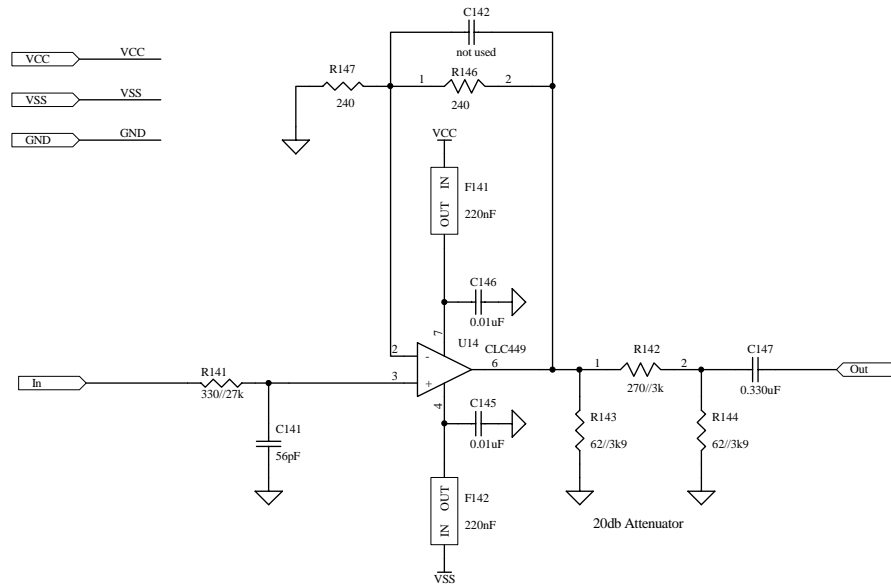
**Elliptical Filter Section 3**


**CSIRO Australia Telescope National Facility**

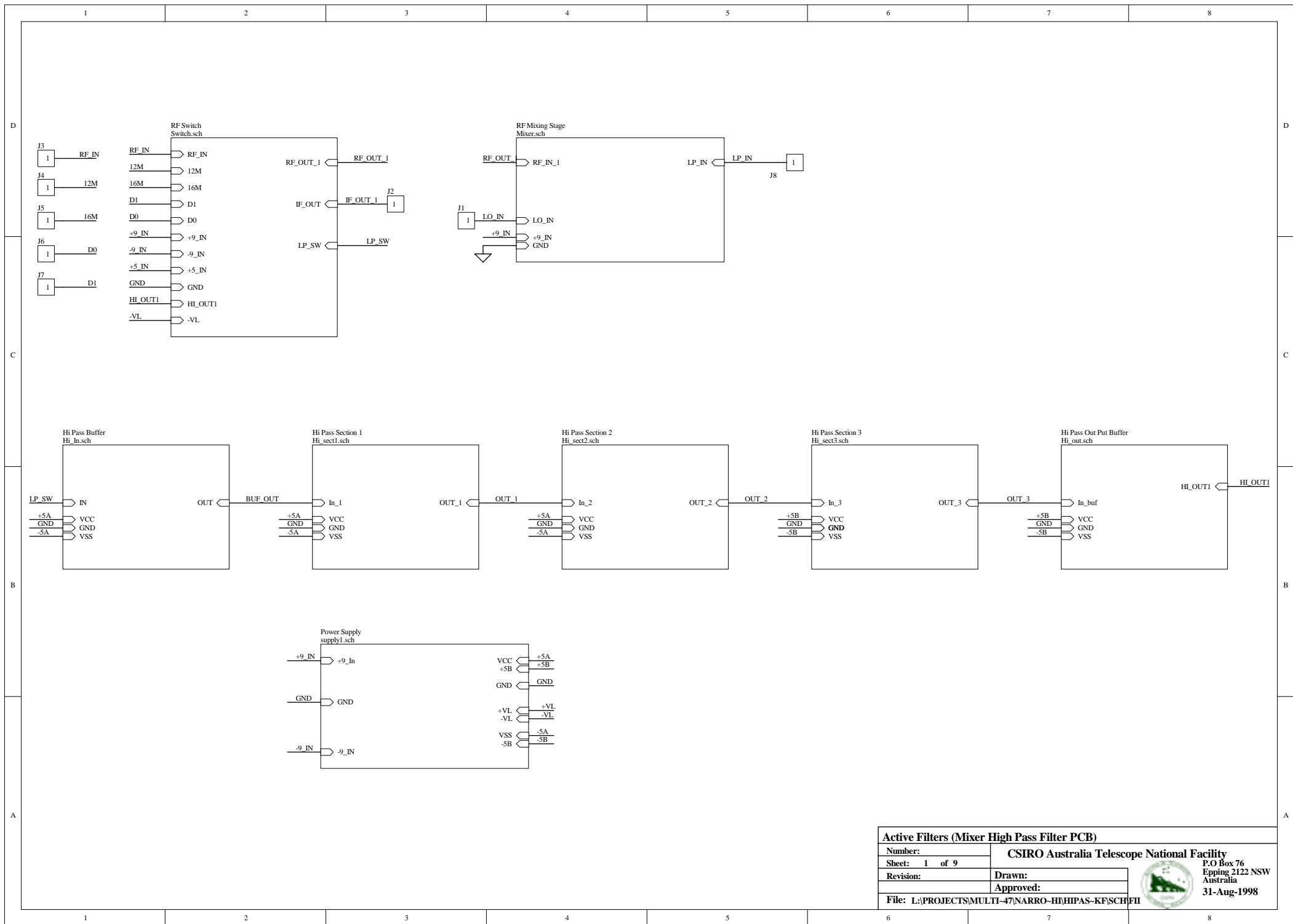
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Elliptical Filter Design Section  
 Pole Location is  $2\pi \cdot fo \cdot (-0.537785)$   
 fo is 16.2MHz  
 Pole Frequency: 8.7121MHz  
 Stage Gain is 2



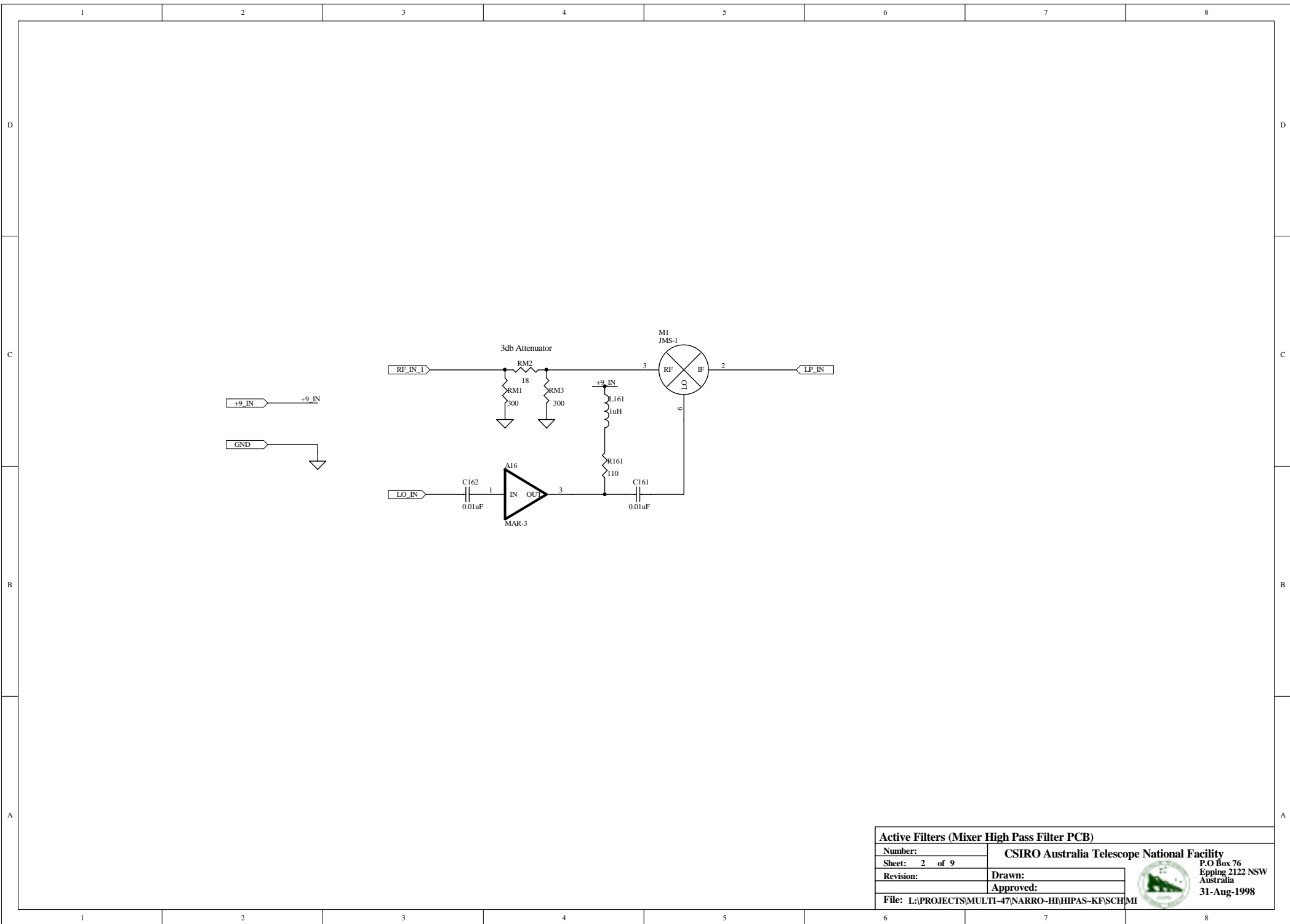
<b>Elliptical Filter Output Section</b>		 <b>CSIRO Australia Telescope National Facility</b> P.O Box 76 Epping 2122 NSW Australia 31-Aug-1998	
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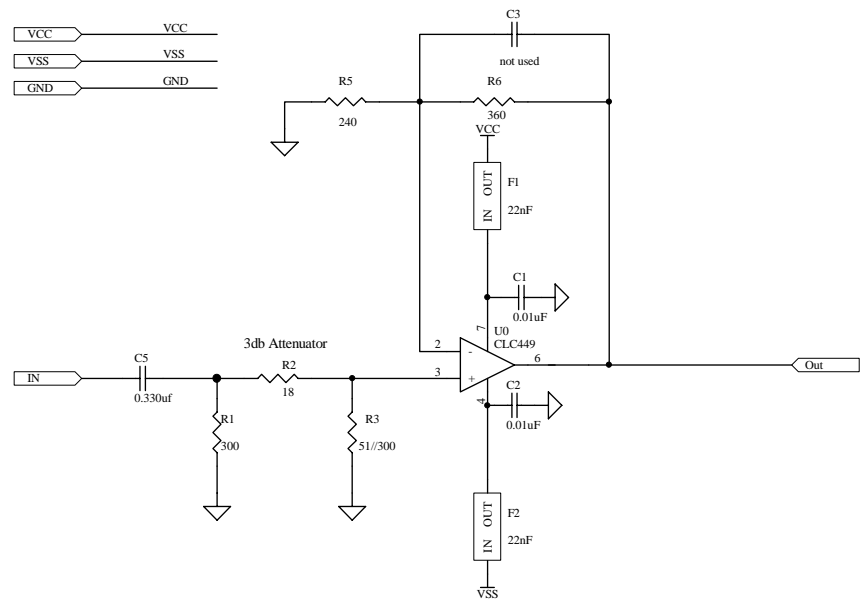


**Active Filters (Mixer High Pass Filter PCB)**

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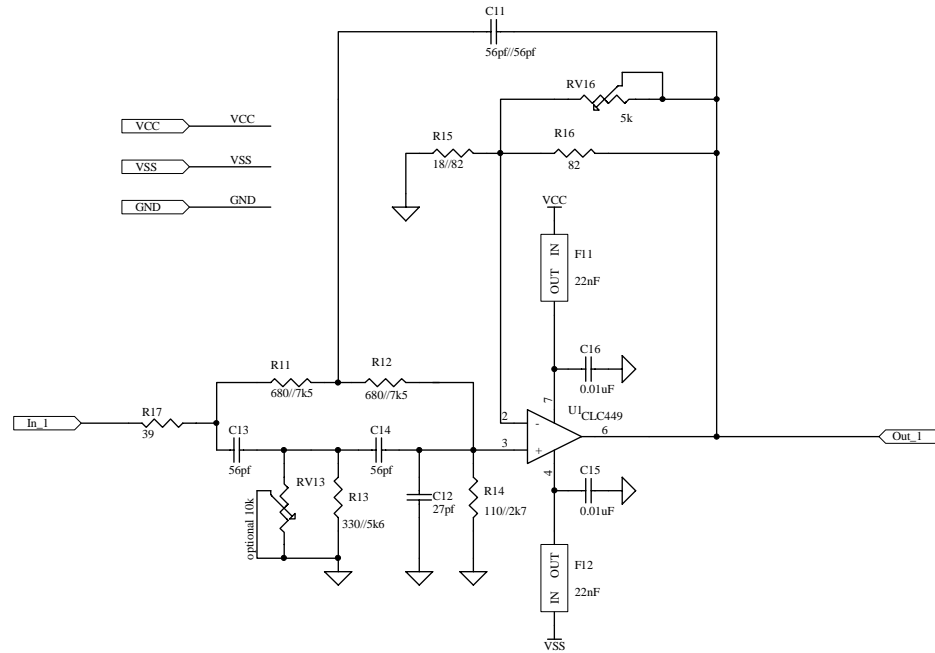


**Active Filters (Mixer High Pass Filter PCB)**

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Elliptical Filter Design Section  
Pole Location is  $2\pi \times fo \times (-0.5575362 + j1.1714506)$   
 $fo = 8.3 \text{ MHz}$   
Pole Frequency = 10.77MHz  
Pole Q = 1  
Zero Location is  $2\pi \times fo \times (0 + j0.5499)$   
Zero Frequency = 4.56MHz  
Stage Gain K = 5.46



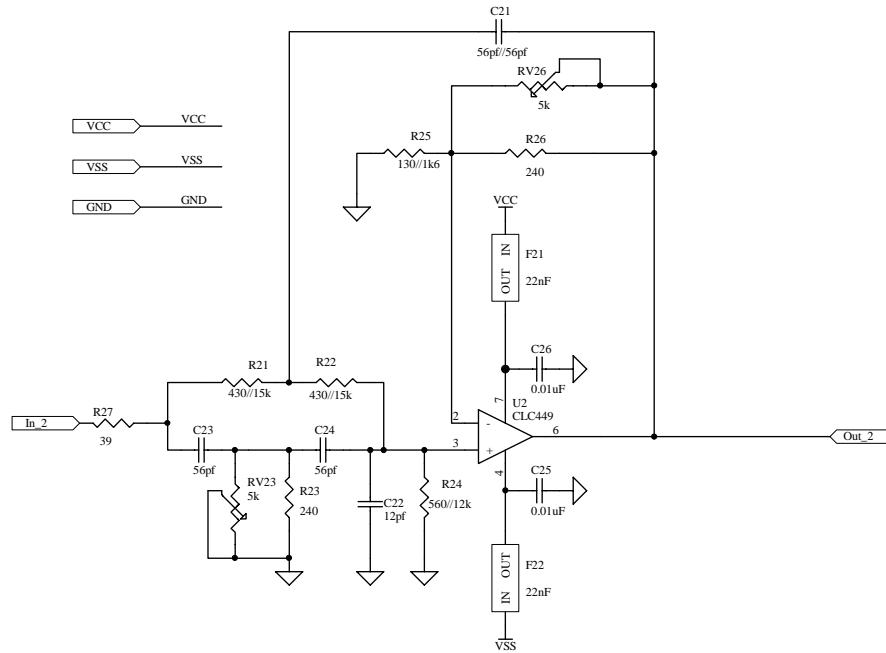
**Active Filters (Mixer High Pass Filter PCB)**


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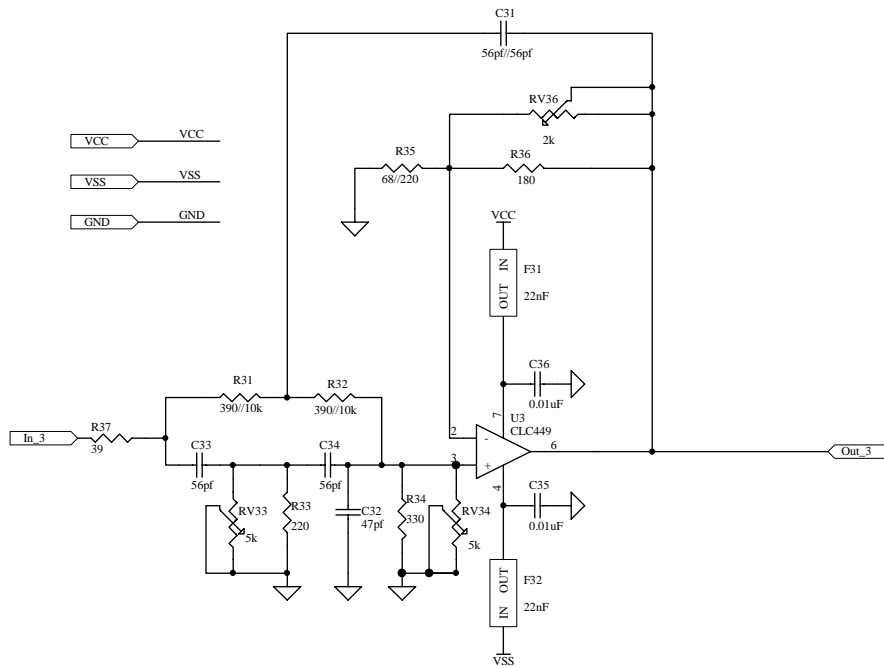
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Australia  
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Elliptical Filter Design Section  
Pole Location is  $2\pi \cdot fo \cdot (-0.1225047 + j1.0389216)$   
 $fo = 8.3\text{MHz}$   
Pole Frequency = 8.68MHz  
Pole Q = 4  
Zero Location is  $2\pi \cdot fo \cdot (0 + j0.8258)$   
Zero Frequency = 6.85MHz  
Stage Gain K = 2.65



<b>Active Filters (Mixer High Pass Filter PCB)</b>		<b>CSIRO Australia Telescope National Facility</b>	
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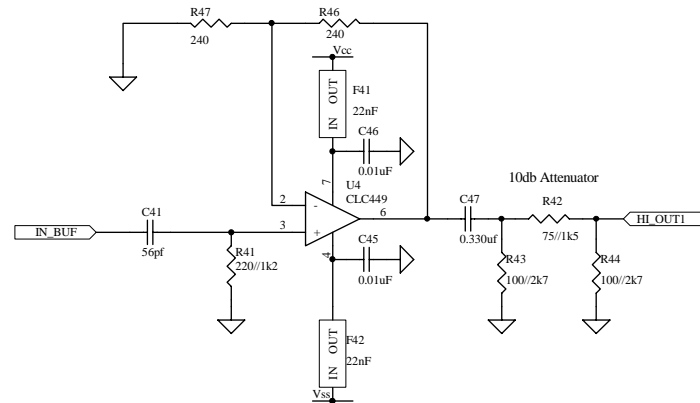
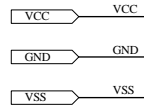


Elliptical Filter Design Section  
 Pole Location is  $2\pi j\omega^*( -0.0233549 + j0.9876675 )$   
 $f_o = 8.3\text{MHz}$   
 Pole Frequency = 8.2MHz  
 Pole Q = 21  
 Zero Location is  $2\pi j\omega^*( 0 + j0.9121 )$   
 Zero Frequency 7.57MHz  
 Stage Gain K = 3.84

<b>Active Filters (Mixer High Pass Filter PCB)</b>	
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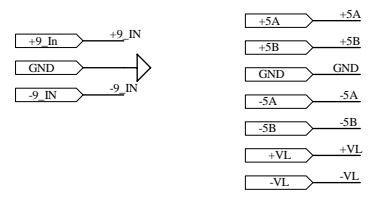
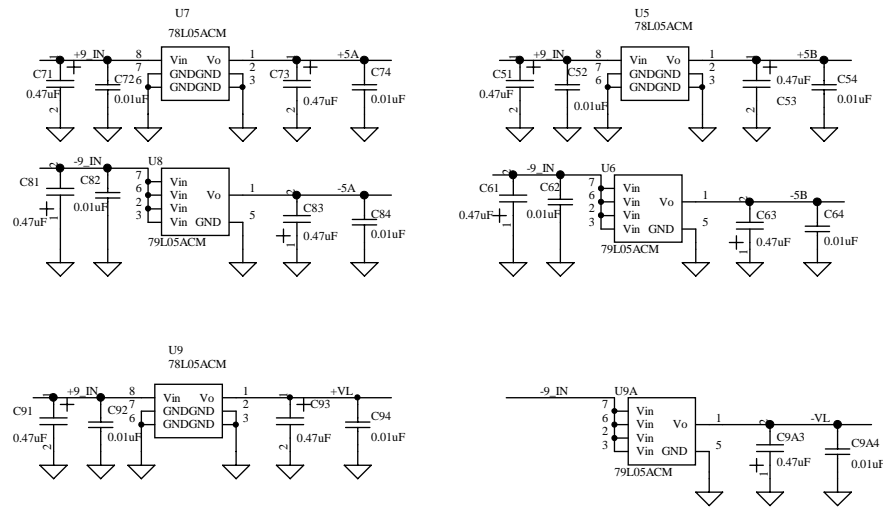




**Active Filters (Mixer High Pass Filter PCB)**

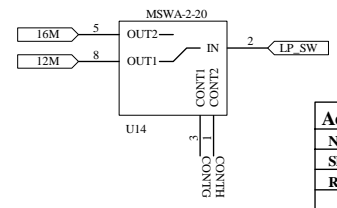
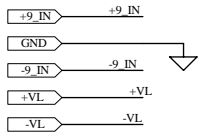
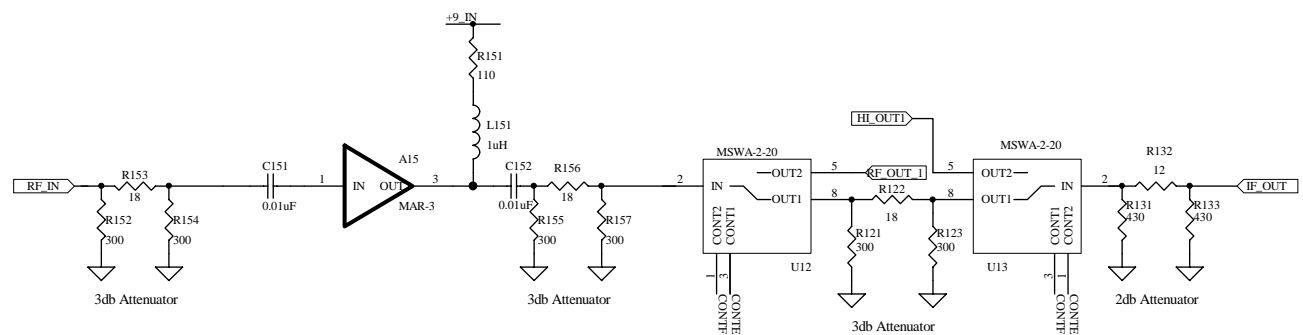
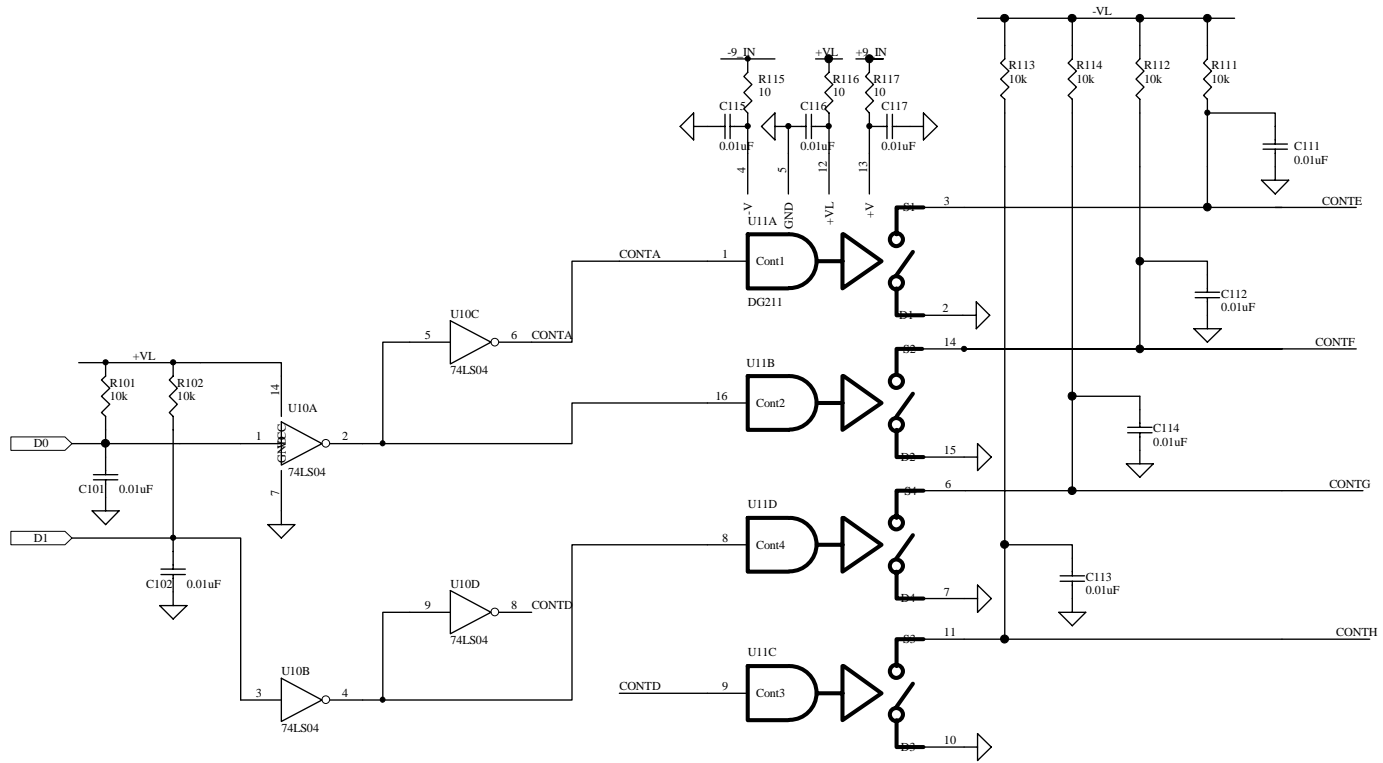
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**Active Filters ( Mixer High Pass Filter PCB )**

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