12CH Module ECO # 4

- Modification to restrict the range of Bias Voltage settings.

<table>
<thead>
<tr>
<th></th>
<th>Current DAC Settings</th>
<th>Current Output</th>
<th>&quot;New&quot; DAC Settings</th>
<th>&quot;New&quot; Output</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low(V)</td>
<td>High(V)</td>
<td>Gain</td>
<td>Low(V)</td>
</tr>
<tr>
<td>Vsub</td>
<td>-2.5</td>
<td>10</td>
<td>x4</td>
<td>-10</td>
</tr>
<tr>
<td>Vog</td>
<td>-2.5</td>
<td>5</td>
<td>x1</td>
<td>-2.5</td>
</tr>
<tr>
<td>Vdd</td>
<td>-10</td>
<td>2.5</td>
<td>x2.5</td>
<td>-25</td>
</tr>
<tr>
<td>Vr</td>
<td>-10</td>
<td>2.5</td>
<td>x1.5</td>
<td>-15</td>
</tr>
</tbody>
</table>

*limited by output amp power supply

- We can further restrict possible settings with firmware if needed!

- Also, we have eliminated a control bit which could be used to set all DACs to low or mid range – firmware change.
Change Vr DAC reference

- Remove
  - R295
  - R537
- Remove C292 and short
- Remove C493 and replace with 3.01K resistor
Change Vsub DAC reference

- Remove
  - R306
  - R525
- Remove C314 and short
- Remove C490 and replace with 3.01K resistor
Change Vog and Vdd DAC reference

- **Remove**
  - R539, R297
  - R555, R298
- **Remove** C310 and C312 and short
- **Remove** C502 and replace with 3.01K resistor
- **Remove** C503 and replace with 3.01K resistor