

## CV 1 to 1.2V/oct

The CV 1 to 1.2V/oct scales CV from the 1V/oct standard to the 1.2V/oct Buchla standard. An optional switchable offset turns bipolar -5V/+5V CV into positive 0V/+12V for Buchla 200e modules as these don't accept negative or bipolar CV.

The circuit works with +/-12V or +/-15V.

When powered in +/-12V, a rail-to-rail opamp such as the LM6132 should be used to have a stable output up to +12V.

The board can be soldered directly to a Cliff minijack socket and installed to a boat or panel or mounted with a screw (3.2mm mounting hole).

The output can be wired either directly to a module's CV input (typically the 208) or to a banana socket.

Ignore the 10k resistor spot to the back present on the early boards.

### Scale

Adjust the 100 ohms multiturn trimmer playing octaves in order to get the right output voltages (a few mV drift is ok).

input	output
1V	1.2V
2V	2.4V
3V	3.6V
4V	4.8V
5V	6V
6V	7.2V
etc	

### Offset

To enable the offset, connect a switch to the 2 offset pads or bridge them for permanent operation.

Adjust the 1k multiturn trimmer in order to offset the output voltages by +6V.

input	output
-5V	0V
-4V	1.2V
-3V	2.4V
-2V	3.6V
-1V	4.8V
0V	6V
1V	7.2V
2V	8.4V
3V	9.6V
4V	10.8V
5V	12V

Thank you and happy building !

**Disclaimer**

*This circuit is tested and safe as long as built and used as it should. I assume no liability for issues, damages, accidents... Double check the output before connecting it to a module for the first time. Build and installation is at your own risk and should only be done by people experienced in electronics who know what they're doing. If in doubt, don't do it.*

**BOM**

Part	Quantity	Supplier suggestion
	If the offset is not needed, the related parts marked (offset) can be omitted	The parts are also available from other suppliers
<b>Resistors</b>		<a href="#">Tayda</a>
330	1 (offset)	
1k	1 (offset)	
1k8	1 (offset)	
6k8	1	
10k	3	
12k4	1	
<b>3296W multiturn trimmers</b>		
100 ohms	1	<a href="#">Tayda</a>
1k	1 (offset)	<a href="#">Tayda</a>
<b>Capacitors</b>		
100nF multilayer ceramic	2 (1 offset)	<a href="#">Tayda</a>
330nF film	1 (offset)	<a href="#">Tayda</a>
79L05 -5V regulator	1 (offset)	<a href="#">TME</a>
LM358 or TL072	1 (+/-15V supply)	<a href="#">Tayda</a> or <a href="#">Tayda</a>
LM6132 or other rail-to-rail dual opamp	1 (+/-12V supply)	<a href="#">Mouser</a>
DIP8 IC socket	1	<a href="#">Tayda</a>
Cliff CL1384 mono jack socket PC mount	1 (optional)	<a href="#">TME</a>

The parts marked with a red dot can be omitted if the offset is not needed.

