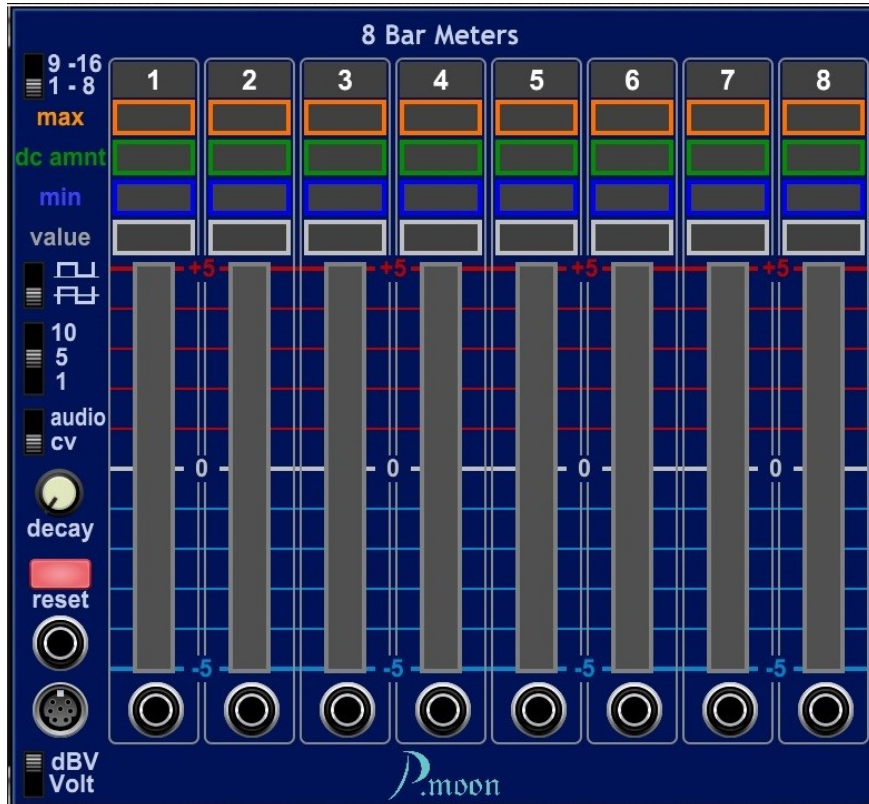# P.moon Bar Meters Bundle

Version 2024-03-28

P.moon Bar Meters Bundle is a set of four modules with two, four, eight and sixteen bar meter channels. Control panel on left side sets common parameters for all channels of a module. Each channel offers identical functions:

- Editable channel label
- Digital displays for maximum, minimum, average (dc amount), momentary value
- Display ranges 1, 5 and 10 volts
- Linear and logarithmic scaling (Volt or dBV)
- Bar display modes bipolar and absolute (unipolar)
- Adjustable decay speed
- Catching and display of maximum and minimum peaks
- Peak reset manually or by CV trigger pulse
- Poly input jack (at **8 Bar Meters** and **16 Bar Meters** only)

Modules come with three select able skins: Aluminum, Dark, PM Style.

Control panel

Group selector switch (on **8 Bar Meters** only) lets you select lower or upper 8 voices, when a cable is connected to the *poly input jack*.

With *polarity switch* visualizing modes can be selected:

- *Unipolar* (upper position): Zero line will be on the bottom of the bar meters.

- *Bipolar* (lower position): Zero line will be in the bar meter's center.

Range switch sets the divider, all input signals will be divided by before they get processed.

Audio mode switch should be set according to kind of input signals. It's influence depends also on *polarity switch* position.

- In *audio mode* input values will be visualized as <u>solid bars</u>.

 + *Unipolar* signals are visualized as absolute value (= "rectified") above zero line.

 + *Bipolar* signals are visualized as they are.

- In *CV mode* signals are shown as a <u>thick line</u>, because a small line would be invisible at maximum, minimum or zero. Visualization <u>does not</u> depend on *polarity switch*. That means, negative signals are not visible in *unipolar* mode. (see examples later)

With decay knob you can set speed, a meter bar will go to zero with when signal voltage jumps to a lower value.

 - Range is from 1 to 1000 milliseconds per volt.

 - Default is 500 milliseconds.

A reset resets all maximum, minimum and average displays to zero and starts a recalculation. Such a reset can be initiated

     - by left clicking on the red button,

     - by a trigger pulse higher than 2.5 volt.

This switch changes from linear (*"Volt"*) to a logarithmic (*"dBV"*) visualization. That is only possible, when <u>both</u> *polarity switch* and *audio mode switch* are <u>at upper position</u>.

In logarithmic mode measurement is based on the relation of a signal to a 1 volt reference. So at an amplitude of 1 volt displayed level is 0 dBV. Every reduction by a factor of 1/10 results in -10 dBV less.

Connectors

For each channel there is a mono input jack.

     - When a cable is connected, it's voltage will be processed at each sample scan. Calculation of the average (DC amount) runs continously.

     - When the cable gets disconnected, the channel "falls asleep". So CPU load is saved.
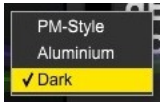
On **8 Bar Meters** and **16 Bar Meters** an additional poly input jack is available on left bottom corner.

     - When a poly cable is connected, all mono inputs are ignored.

     - Number of active channels depends on number of actual active voices (1 to 16).

     - Channels of inactive voices "fall asleep".

Skin control

When mouse cursor moves on bottom area around P.moon logo, a red frame appears.

A right click on this area opens the skin menu. The actual skin name is marked with a hook. If you click on another skin name with left mouse button, that skin will be loaded for this module and for all other P.moon modules on your computer, which allow a skin change. A left click to anywhere else closes the menu without changing the skin.

Channel displays

1

In initial state *channel label* shows channel number. After a double click on it, another short text can be input.

| max | 4.364 |
dc amnt	0.000
min	-4.364
value	3.936

Below channel label each channel has four digital meters with colored borders.

- orange: maximum peak voltage, it can also be negative

- green: average value, at an audio signal this is the DC amount, it should be zero

max	4.364
dc amnt	0.000
min	-4.364
level	5 dB

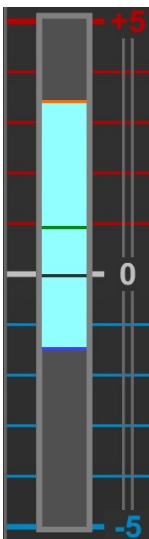- blue: minimum peak voltage, it can also be positive

- grey: actual (CV) or averaged (audio) amplitude of the signal; in logarithmic mode it is the signal level in dBV
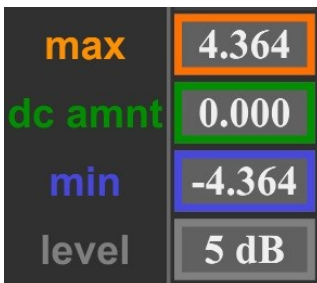
Channel visualization

Graphical elements

Here you will see some examples which differ in signal and settings. First let's have a look at the graphical elements.

- Grid lines are red and blue, because *polarity switch* is on *bipolar*.

- Meter shows a solid light blue bar. That means that module is in *audio* mode and we have an alternating signal.
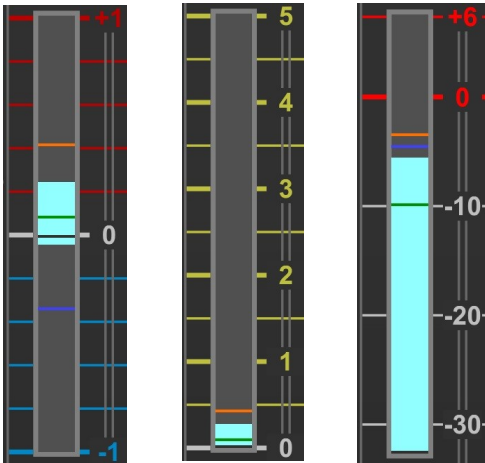
- Orange line on top of the bar is the actual *maximum* peak at about 4.3 volt.

- Green line signalizes a *DC amount* of +0.5 volt.

- Black line is at *zero*.

- Blue line on the bottom of the bar is actual *minimum* peak at about -1.5 volt.

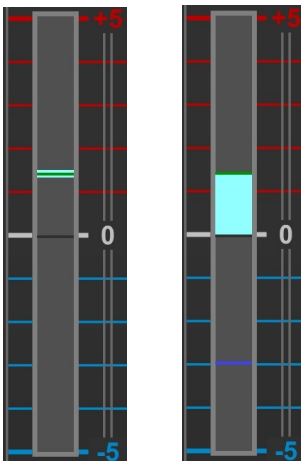## Display variants with sine signal in audio mode

Now we have a 0.5 v audio signal which contains a +0.1 v DC amount.

- left: polarity *bipolar*, range 1 v

- middle: polarity *unipolar*, range 5 v

- right: *unipolar*, 5 v range, *dBV;*

Please note: Because of *audio mode* the signal is rectified. That means, that <u>blue line</u> signalizes the <u>negative peak</u> as *minimum value*!
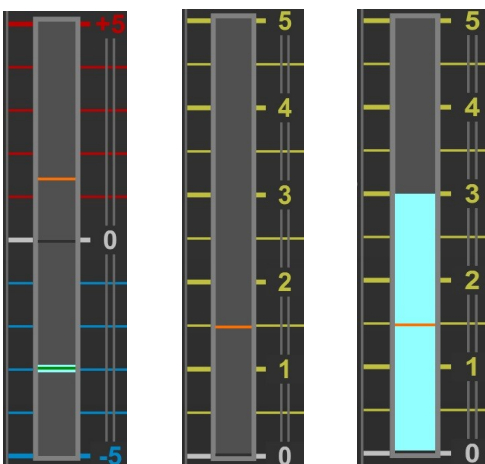
Display variants with positive CV

There is a +1.5 v CV at the input.

- left: In *CV mode* with *bipolar* there is only a thick light blue line at +1.5 v. Of course DC amount (green line) is at same level.

- right: In *audio mode* same signal is displayed as solid bar with green line on the top.

Display variants with negative CV

Now there is a -3.0 v CV at the input.

- left: In *CV mode* with *bipolar* there is only a thick light blue line at -3 v grid line instead of a solid bar. Former maximum peak is almost at +1.5 v.

- middle: In *CV mode* with *unipolar* we will see only positive signals, so our -3.0 signal is out of visible range.

- right: In *audio mode* the signal gets rectified, so it becomes visible as solid bar.