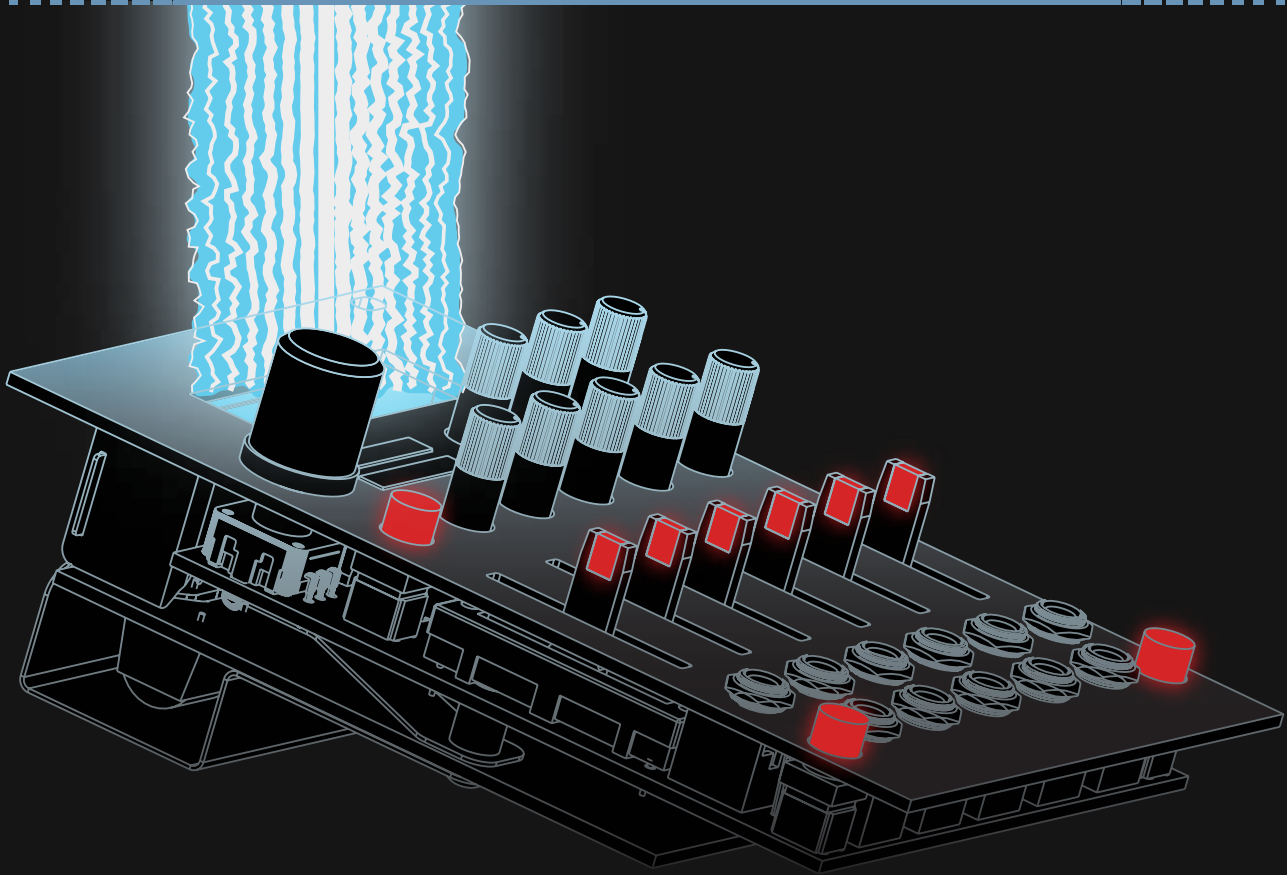


# PLASMA VOICE USER MANUAL



The PLASMA Voice is a monophonic Eurorack synthesizer module that produces sounds by controlling high-voltage electrical discharges between two electrodes in a custom xenon-filled gas tube. These discharges are converted to analog audio signal using a specially designed rectifier circuit. The result is a diverse range of electrifying tones that vividly capture the character and intensity of a vibrant blue electrical arc.

The electric discharges are driven by a proprietary ultrasound pulse-width oscillator. This oscillator is modulated by predefined samples and envelope shapes (or SOUNDS for simplicity's sake) that you can select, trigger, waveshape and modulate with sliders and CV inputs. This in turn puts you in full control of the electrical discharges and the resulting sounds.

The PLASMA Voice's selection of built-in SOUNDS is organized into BANKS dedicated to specific musical parts. However you can transform each one of them far beyond their intended use by adjusting the parameter sliders that offer deep control over the PLASMA engine. We invite you to explore the sonic possibilities both wonderful and strange.

### LED ROWS & ENCODER

Two 7:7 LED indicator rows controlled by the ENCODER. Push to switch rows, turn to select values 1-7.

Top row: BANK select 1-7  
Bottom row: SOUND select 1-7

ALT top row: octave 1-7  
ALT bottom row: master CV input attenuation 1 (full) - 7 (none)

The ENCODER and LED rows are also used to browse SETTINGS.

### ALT BUTTON

Hold ALT for the ENCODER and SLIDER alternative functions.

### PITCH SLIDER

Center indented pitch control, +/- 1 octave

0V pitch CV at center indent produces note C (adjustable in SETTINGS).

ALT: Fine tune, +/- 1 semitone

### TIME SLIDER

Each SOUND has a unique envelope shape. The TIME slider time-stretches it. Center indent produces the optimal time based on the selected SOUND.

The TIME slider also affects the FILTER decay envelope time.

The envelope behavior is dependent on the selected TRIGGER and ACCENT modes.

ALT: ACCENT envelope time

### 1V/OCT PITCH CV INPUT +/- 10V

### TRIG INPUT & TRIGGER BUTTON

Main trigger / gate input  
Rising edge detection & min 2V

Multiple TRIGGER & GATE modes:

1 TRIGGER, 2 GATE, 3 LOOP, 4 OSCILLATE, 5 ON/OFF

### ACC INPUT

ACCENT trigger / gate input  
Rising edge detection & min 2V

Multiple ACCENT modes are available:

1 ACCENT, 2 DUCK, 3 STARVE, 4 CVFREEZE, 5 JUMP, 6 REVERSE, 7 BURST

ACCENT is also controlled by ALT+ACC TIME, ALT+ACC LVL & ALT+ACC SHAPE sliders.

### MULTICV INPUT

Assignable CV input, +/- 5V  
Default assignment to BANK & SOUND selection

Alternatively, MULTICV can be assigned as an additional CV input to any of the 6 SLIDERS.

ALT+MULTICV slider works as an attenuverter

The PLASMA tube's driver is controlled by a sophisticated digital engine. This engine consists of multiple one-shot and looping samples, as well as several envelopes that modulate both the samples and the tube driver itself. Each SOUND defines these internal modulation paths to achieve the desired musical effect.

The SOUNDS are organized in BANKS:

1 BASS 2 LEAD 3 PLUCK 4 DRUM 5 METAL 6 STATIC 7 SPARK

The SLIDERS allow you to modify each SOUND, often transforming it beyond the intended use defined by the BANK.



### DRIVE & EQ KNOBS

Soft-clipping and tilt EQ section between the TUBE and FILTER.

DRIVE: max CCW for unity gain.

BASS & TREB: cut/boost, center indent for flat response.

### CV ATTENUVERTERS

Each one corresponds to the CV input below the SLIDER.

Center: complete attenuation  
Max CW: no attenuation  
Max CCW: inverted

### FILTER SLIDER

FILTER cutoff frequency and FILTER envelope control.

Center indent: fully open FILTER  
Down: close the FILTER  
Up: close the FILTER and add decay envelope based on the TIME slider setting.

See SETTINGS to switch between low pass / high pass.  
ALT: RESONANCE amount 0-1

### MOD, HARM & FLUX SLIDERS

The digital engine that controls the TUBE driver consists of complex modulation paths.

For each SOUND the three most useful modulations are assigned to the MOD, HARM & FLUX sliders based on the musical effect.

The center indented position for the suggested starting sound.

MOD slider:  
pitch-mod type effect depth  
ALT: ACCENT LEVEL 0 - 2x

HARM slider:  
harmonic content effect depth  
ALT: ACCENT SHAPE

FLUX slider:  
chaos artifact effect depth  
ALT: MULTICV ATTENUVERTER +/- 1

CV INPUTS FOR TIME, MOD, HARM, FLUX & FILTER  
+/- 5V from center indent

### MIDI INPUT

Full MIDI control:  
Notes, velocity, CC, PC, SysEx.  
CH10 percussion key map.  
Included DIN5 / 3.5mm adapter.

### CLUTCH BUTTON

The CLUTCH button acts as a temporary parameter editing buffer for creating timed and sharp parameter transitions, including BANK & SOUND selection, SLIDERS, ATTENUVERTERS, ALT and SETTINGS functions.

Press and hold CLUTCH to delay all real-time parameter changes and apply them by releasing CLUTCH

### SPECS

Width: 16HP  
Depth: 35mm  
+12V: 220 mA  
-12V: 35 mA  
+5V: 0

Output: +/- 8V max

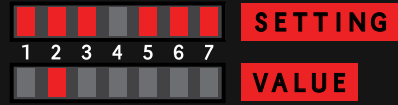
# SETTINGS

Press TRIGGER and CLUTCH at the same time to enter the SETTINGS mode (indicated by blinking ALT button and LED rows).



To exit press ALT.

Use the ENCODER to navigate the SETTINGS menu as indicated by the LED rows. Push the ENCODER to switch rows and turn the ENCODER to select values 1-7. The top row indicates the selected parameter and the bottom row indicates the parameter value.



## 1 TRIGGER INPUT MODES

There are 5 different main TRIG button and input functionality options. 2 of them have different responses to trigger and gate signals.

	TRIGGER RESPONSE	GATE RESPONSE	GATE	ENVELOPE
<b>1:1 TRIG</b>  	Triggers samples and envelopes on rising edge			
<b>1:2 GATE</b>  	Triggers samples and envelopes on rising edge	Gate on: triggers samples and envelopes and holds in sustain point Gate off: starts release		
<b>1:3 LOOP</b>  	Triggers samples and envelopes on rising edge	Loops samples and envelopes. Loop length dependent on TIME slider		
<b>1:4 OSC</b>  	Always ON mode. Envelopes hold in sustain point Re-trigger samples and envelopes on rising edge			
<b>1:5 ON/OFF</b>  	Rising edge toggles between ON/OFF modes While ON envelopes are latched in sustain			

## 2 ACCENT MODES

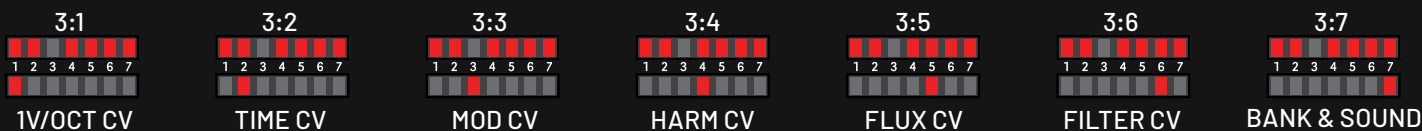
There are 7 different ACCENT input functionality modes. Each of them has different parameters mapped to the ALT SLIDER functions and almost all of them have different responses to trigger and gate signals

	TRIGGER RESPONSE	GATE RESPONSE	ACC TIME SLIDER	ACC LVL SLIDER	ACC SHAPE SLIDER
<b>2:1 ACCENT</b>  	Sample and envelope ALT parameters.		Envelope time modifier 0.25x - 2x	Envelope depth modifier 0 - 1x	Envelope shape modifier -1 = log +1 = exp
<b>2:2 DUCK</b>  	Triggers output and tube driver ducking envelope	Gate on: ducks and holds Gate off: starts ducking release	Ducking release time	Ducking depth	Ducking release shape -1 = log +1 = exp
<b>2:3 STARVE</b>  	Triggers plasma tube driver ducking envelope	Gate on: ducks and holds Gate off: starts ducking release	Starve release time	Starve depth	Starve release stutter
<b>2:4 CVFREEZE</b>  	Samples all CV inputs and releases (slews)	Gate on: samples and holds all CV inputs Gate off: releases (slews)	Release time	Sample scale 0x - 1x	Release slope Min-hold w/o release -1 = log +1 = exp
<b>2:5 JUMP</b>  	Triggers pitch modulation envelope	Gate on: Triggers and holds pitch jump Gate off: starts release	Release time	Interval MAX = oct up MIN = oct down	Pitch jump shape -1 = log +1 = exp
<b>2:6 REVERSE</b>  	Reverses and triggers samples and envelopes	Gate on: reverses and triggers envelopes and holds in sustain point. Gate off: starts release	Reverse sample and envelope time	Tube driver envelope start position	Output envelope start position
<b>2:7 BURST</b>  	Triggers repeating trigger burst	Gate on: continuous repeated triggers Gate off: trigger burst decay	Time between triggers repeats	Output level decay during burst	Repeat count

### 3 MULTICV INPUT ASSIGN

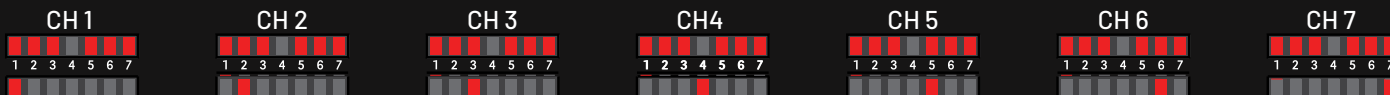
The MULTICV input can be assigned to any of the SLIDERS as an additional summed CV input or to SOUND / BANK selection. In case of SOUND/BANK selection incoming CV scans through SOUNDS spanning all BANKS. SOUND selection is quantized to the major scale - each white key corresponds to one SOUND, 1V input corresponds to 1 BANK.

ALT + FLUX / MULTICV SLIDER is used as an attenuverter for MULTICV.



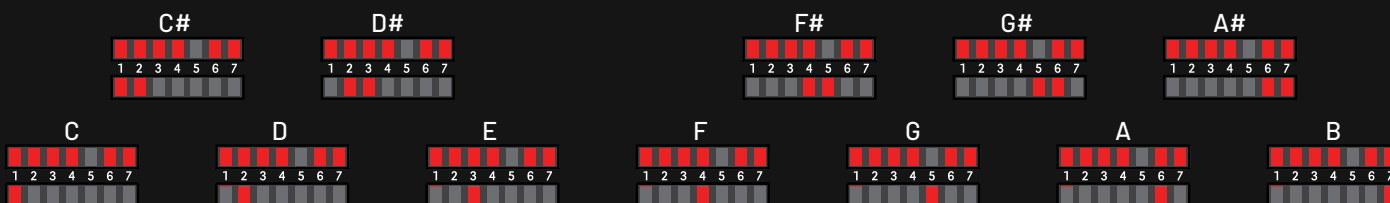
### 4 MIDI INPUT CHANNEL SELECT

Selectable MIDI channel for receiving notes, velocity, pitch & mod wheels, PC, CC and SysEx. Regardless of the selected MIDI CHANNEL the module accepts General Percussion Key Map on Channel 10.



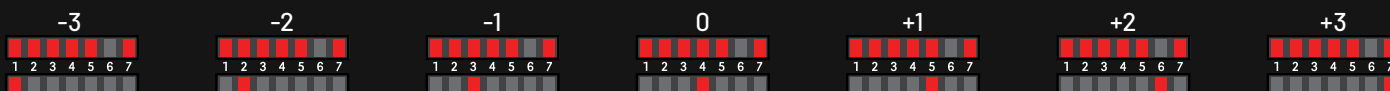
### 5 CENTER NOTE TUNE

Selectable note for 0V PITCH CV input and TUNE slider in center indent position. Primarily used for aligning with the base pitch of chosen CV sequencer / controller. Note: 12 values instead of the usual 7.



### 6 MASTER OCTAVE OFFSET

Selectable octave offset summed with the regular OCTAVE setting, PITCH SLIDER and PITCH CV.



### 7 FILTER MODE SELECT

Selectable master FILTER mode and FILTER SLIDER behavior. This parameter overrides the FILTER type built in each SOUND.

	FILTER TYPE	SLIDER center indent	SLIDER downward	SLIDER upward
<b>7:1 DEFAULT</b> 	Defined by the selected SOUND			
<b>7:2 LP</b> 	Low pass	Open FILTER (Max cutoff frequency)	Close FILTER (Reduce cutoff frequency)	Close FILTER and add Decay envelope modulation
<b>7:3 HP</b> 	High pass	Open FILTER (Min cutoff frequency)	Close FILTER (Increase cutoff frequency)	Close FILTER and add Decay envelope modulation
<b>7:4 LP / HP</b> 	Low pass / high pass (DJ style)	Open FILTER (Max low pass and min high pass cutoff frequencies)	Close high pass FILTER	Close low pass FILTER

# MIDI

PLASMA Voice is fully MIDI controllable. See SETTINGS for channel selection. Use the included 3.5mm to DIN5 adapter.

## MIDI NOTES

MIDI CH	Note ID	Function
Selected CH 1-7	7 - 137 (G-2 - G8)	Plays note at MIDI note pitch, responds to velocity. PITCH SLIDER, PITCH CV, OCTAVE and MASTER OCTAVE all offset the MIDI note
Selected CH 1-7 & CH 10	0 - 6 (C-2 - F#-2)	Temporarily changes ACCENT mode (1 - 7) and triggers ACCENT
CH 10	35 - 83 (B0 - B4)	General MIDI Percussion SOUNDS 1 - 49 mapped to notes 35 - 83. Responds to velocity

## MIDI PC MAP

PC Messages are received on the selected CH 1 - 7 and CH 10

PC Message	Function
1 - 49	Select SOUNDS 1 - 49
61 - 65	Select TRIGGER mode 1 - 5
71 - 77	Select ACCENT mode 1 - 7
81 - 87	Select MULTICV assignment 1 - 7
91 - 102	Select CENTER NOTE C - B
111 - 117	Select MASTER OCTAVE OFFSET +/-3
121 - 124	Select FILTER mode 1 - 4

## MIDI CC MAP

CC messages received on the selected CH 1 - 7 and CH 10. The listed CC messages are MSB. LSB messages are

CC	PARAMETER	MSB VALUES	
1	MODWHEEL	0-127 = MIN - MAX	
8	PITCH slider	0-64 MIN - CENTER	
9	TIME slider		
10	MOD slider		
11	HARM slider		
12	FLUX slider		
13	FILTER slider		65 - 127 CENTER - MAX
14	TIME CV Attenuverter		
15	MOD CV Attenuverter		
16	HARM CV Attenuverter		
17	FLUX CV Attenuverter		
18	FILTER CV Attenuverter		
19	FINE TUNE cents		0-127 = MIN - MAX
20	ACCENT TIME		
21	ACCENT LEVEL		
22	ACCENT SHAPE		
23	MULTICV Attenuverter		
24	FILTER RESONANCE		

### FOR EUROPE:

This product complies with the requirements of Electromagnetic Compatibility Directive 2014 / 30 / EU.

### FOR CANADA:

NOTICE: This class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

AVIS: cet appareil numérique de la classe B respecte tout les exigences du règlement sur le matériel brouilleur du Canada.

### MANUFACTURER ADDRESS:

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## WARNING!

NEVER operate the PLASMA VOICE near water or on outdoor stages in rainy conditions. DO NOT play your PLASMA VOICE in the shower!

The XENON Tube contained within the PLASMA VOICE will run an estimated 10 000 hours - In case of a broken tube or a faulty unit, please contact your PLASMA VOICE dealer or info@gamechangeraudio.com. For all other inquiries, please reach out to Gamechanger Audio.

Gamechanger Audio will not be liable for any injury, material damage, or any other loss, caused by the incorrect operation of PLASMA VOICE, or breach of the warnings and instructions laid out in this manual.

## WARRANTY & RETURNS

You have a 30 day return period when you may return the product and receive a full refund. You will only be responsible for return shipping charges.

Each PLASMA Voice manufactured by Gamechanger Audio is warranted to be free from defects in materials and workmanship for one year from the date of shipping or longer if required by the relevant legislation. This warranty shall not apply to any unit which in the opinion of the manufacturer has been used improperly or has been mechanically or otherwise damaged by accident, misuse or negligence or has been altered or repaired in such a way to impair performance, nor shall it apply to cosmetic defects (considered normal wear and tear).

Other parts, such as knobs, rubbers, cable connectors, are non replaceable. The manufacturer reserves the right to make changes in design or construction of this equipment without obligation to install similar changes in equipment already sold.

### FOR THE US:

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with these instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- connect equipment into an outlet or a circuit different from that to which the receiver is connected.
- consult the dealer or an experienced radio / TV technician for help.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Unauthorized changes or modifications to the system can void the user's Authority to operate this equipment. This equipment requires shielded interface cables in order to meet FCC Class B limit.