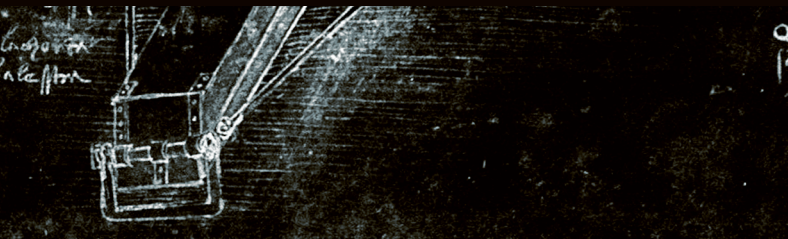


...m. apric. nel la sua braccia
...a. la porta 1.4.2.
...grosso fango la marmitta
...a. nel pannello 2.8.8
...a. bit. il suo tempo
...a. lungo 40 cm
...a. nella camera



Shakmat Ballista Blast

● 12HP Eurorack Module ● Built & designed in E.U. ● www.shakmat.com



Introduction

The Ballista Blast is a compact hybrid synthesizer voice built to hit hard, move fast, and cover a serious amount of ground in just 12hp. It blends digital sound engines with a proper analog processing chain, so you can go from squelchy basslines to glassy textures, from smooth harmonic tones to wild, chaotic mayhem, without being stuck with a single ammunition type.

To keep things alive, the Ballista Blast includes a built-in envelope, an assignable random source, and a velocity input, all routable to nearly any parameter, so even the simplest patch can feel animated and performance-ready.

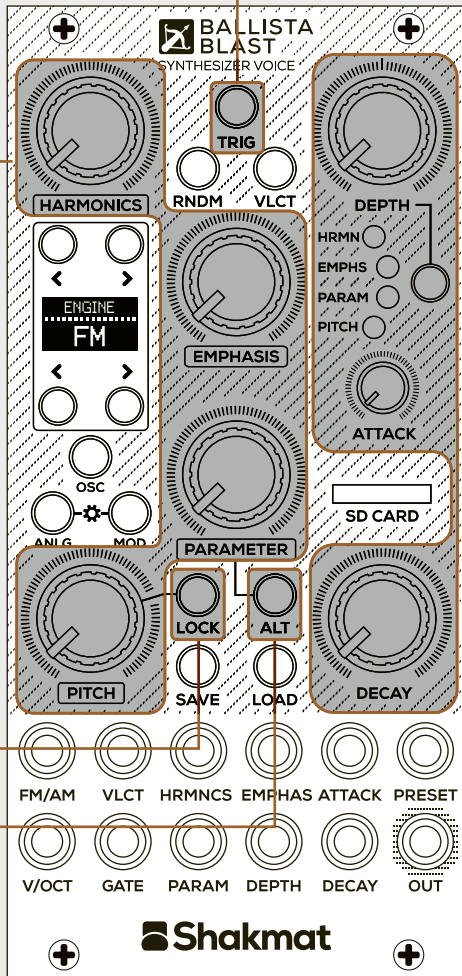
Because good shots deserve a save, Ballista Blast stores 256 presets, with Select Bus support for fast recall across your modular rig.



This quick start guide only describes the basic features and functionalities of the Ballista Blast. For the complete user manual, please check our website at www.shakmat.com/support

Specifications

Size 12 HP	VCO range 13 Hz to 10 kHz	Gate & Velocity input 0 to 5v
Depth 29 mm	VCO output 16 bits 48 kHz	CV input -5 to +5v
Current Draw 135 mA @ +12v 45 mA @ -12v		V/Oct input -3 to +7v



Trig button

Allows for manual triggering and shows the activity of the VCA.

Main parameters

These four potentiometers control the main synthesis parameters: **HARMONICS, EMPHASIS, PARAMETER & PITCH.**

Lock button

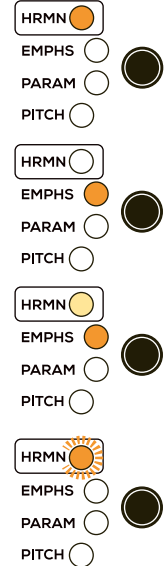
This button allows you to lock the pitch and make the knob work as an octave switcher.

Alt button

This button sets an alternative behaviour for the **PARAMETER** control.

Integrated envelope

This part contains the onboard envelope parameters (depth, attack and decay/release) plus the destination controls. Scroll the envelope destinations thanks to the destination button and LEDs while using the depth potentiometer to set the envelope impact on any of the four main destinations.



Selected

When a destination is selected, the corresponding destination LED is on.

Not selected and inactive

When a destination is not selected and inactive (the depth value is zero), the LED is off.

Not selected but assigned

When a destination is not selected but is active, the LED is dimmed. In the example, emphasis is selected and harmonics isn't, but is assigned.

Selected but the DEPTH potentiometer position does not match the current depth value

When cycling through the destinations, if the DEPTH potentiometer position is different from the stored depth value, the destination LED will blink until the value is caught by the potentiometer.



Holding the destination button for two seconds clears the depth for all the destinations. The DEPTH potentiometer works as an attenuator by default but can be set to attenuverter using the Global Options menu.

Menu screen and navigation

The menu screen is divided in two parts: the page title on top and the current setting on the bottom.

To browse through the pages, use the left and right buttons above the screen.

To edit the setting, use the left and right buttons under the screen.

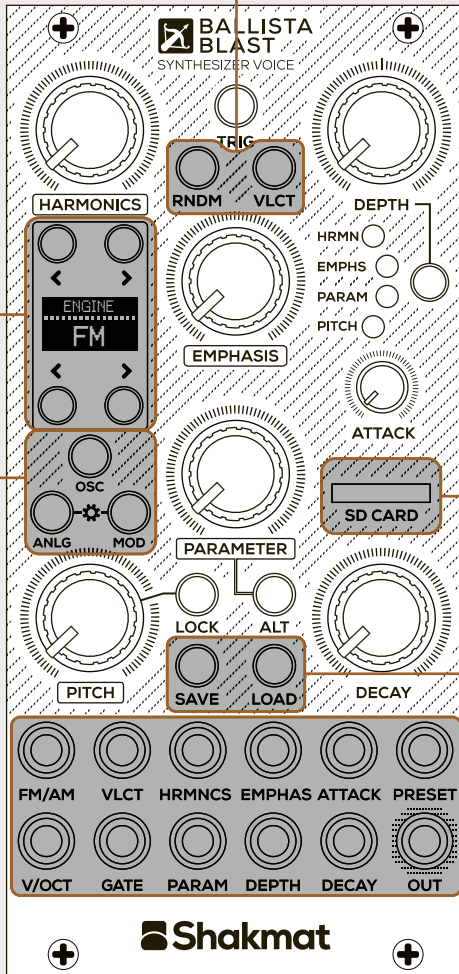
Synthesis menus

These three buttons open the three main synthesis menus:

The **OSC** menu lets you select the synth engine and adjust the VCO parameters.

The **ANLG** menu provides access to the VCFs, distortion, and VCA settings.

The **MOD** menu controls the modulation sources, including the integrated envelope and any connected expanders.



Randomizer & Velocity

These two buttons open the Randomizer and Velocity menus. These menus let you assign the randomizer or the velocity input to any parameter of the module, each with independent depth. As with the envelope, you can clear all destinations depth by holding the **RNDM** or **VLCT** button for two seconds.

Micro SD Card reader

The micro SD card slot is used for firmware upgrade, importing wavetables and preset management. The Ballista Blast does not rely on the SD Card for functioning.

Memory

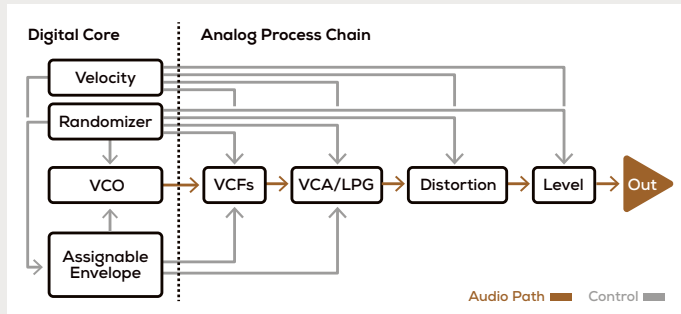
With the help of the menu screen and navigation, the **SAVE** and **LOAD** buttons allow you to recall and save up to 256 internal presets organised in 16 banks of 16 presets.

Inputs & Output

The **FM/AM** and **V/OCT** inputs control the VCO tuning. The velocity, harmonics, emphasis and parameters values each have their dedicated CV input. **DEPTH**, **ATTACK** and **DECAY** inputs control the integrated envelope while the **PRESET** input addresses the 16 presets of the active bank. **OUT** is the audio output.

Architecture

The Ballista Blast has a mixed hybrid architecture with a digital core and an analog process chain. The digital core is providing VCO, modulations and control over the analog chain which includes several filters, a VCA/LPG and a distortion.



Engines

The key concept behind the Ballista Blast is the engine. The selected engine determines the type of synthesis used and defines how the oscillator operates. The oscillator can be tuned using the **PITCH** potentiometer and the **V/OCT** input. It also features a dedicated **PARAMETER** control, which modifies the waveform produced by the oscillator in various ways.

The engines also influence the analog signal path. Some engines, such as Classic and Wavetable, make use of the filter section. In these cases, the **HARMONICS** and **EMPHASIS** controls adjust the filter's cut-off frequency and resonance, respectively.

By contrast, the FM engine does not use the filter section. Instead, the **HARMONICS** and **EMPHASIS** controls function as additional macro that directly shape the oscillator's behavior.

And more...

Select Bus: The modules support the Select Bus protocol, which enables digital communication through the ribbon power cable. Ballista Blast operates as a receiver, allowing presets to be loaded and saved from a Select Bus transmitter module such as the Harlequin's Context.

Expanders: Ballista Blast can be expanded with up to two Ballista Blast Expanders. Each expander adds a flexible, assignable modulation source that can function as an additional envelope, LFO, random generator, and more.

Global Options menu: The Ballista Blast includes a Global Options menu where you can adjust settings such as potentiometer recall mode, depth knob behavior, and expander activation.

SD Card: Refer to the user manual for detailed information about the SD card file structure and procedures for firmware updates, user wavetable import, and preset management.