

Quick Start Guide

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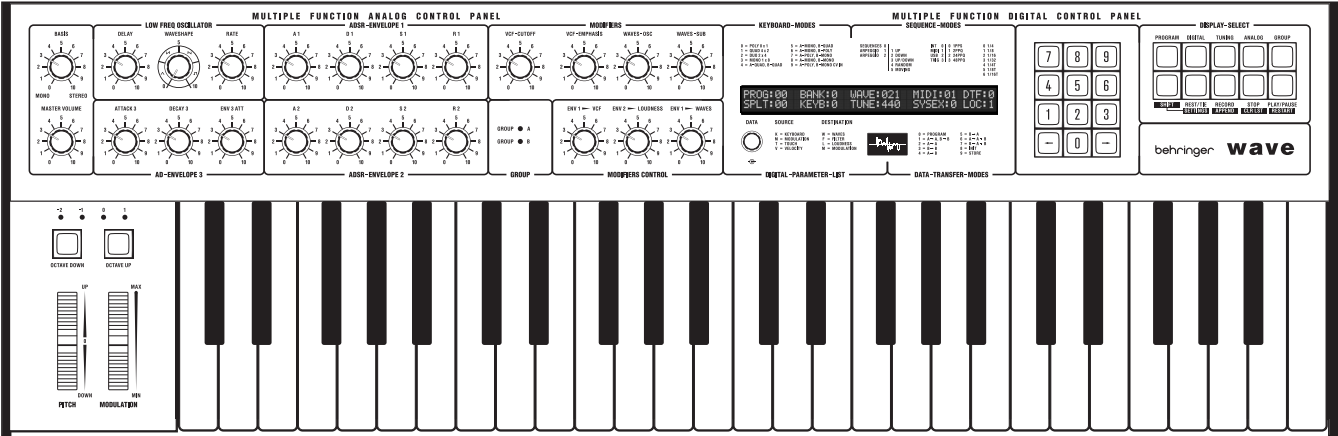
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WAVE

Legendary 8-Voice Multi-Timbral Hybrid Synthesizer with
Wavetable Generators and Analog VCF and VCA, LFO, 3 Envelopes,
Arpeggiator and Sequencer

EN

EN

Important Safety Instructions

ES



Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock.

Use only high-quality professional speaker cables with ¼" TS or twist-locking plugs pre-installed. All other installation or modification should be performed only by qualified personnel.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

**Caution**

To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.

**Caution**

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.

**Caution**

These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

**Warning**

Please refer to the information on the exterior of bottom enclosure for electrical and safety information before installing or operating the device.

1. Please read and follow all instructions and warnings.
2. Keep the apparatus away from water (except for outdoor products).
3. Clean only with dry cloth.
4. Do not block ventilation openings. Do not install in a confined space. Install only according to manufacturer's instructions.
5. Protect the power cord from damage, particularly at plugs and appliance socket.
6. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.

7. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other (only for USA and Canada). A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

8. Use only attachments and accessories recommended by the manufacturer.



9. Use only specified carts, stands, tripods, brackets, or tables. Use caution to prevent tip-over when moving the cart/apparatus combination.

10. Unplug during storms, or if not in use for

a long period.

11. Only use qualified personnel for servicing, especially after damage.

12. The apparatus with protective earthing terminal shall be connected to a MAINS socket outlet with a protective earthing connection.

13. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

14. Avoid installing in confined spaces like bookcases.

15. Do not place naked flame sources, such as lighted candles, on the apparatus.

16. Operating temperature range 5° to 45°C (41° to 113°F).

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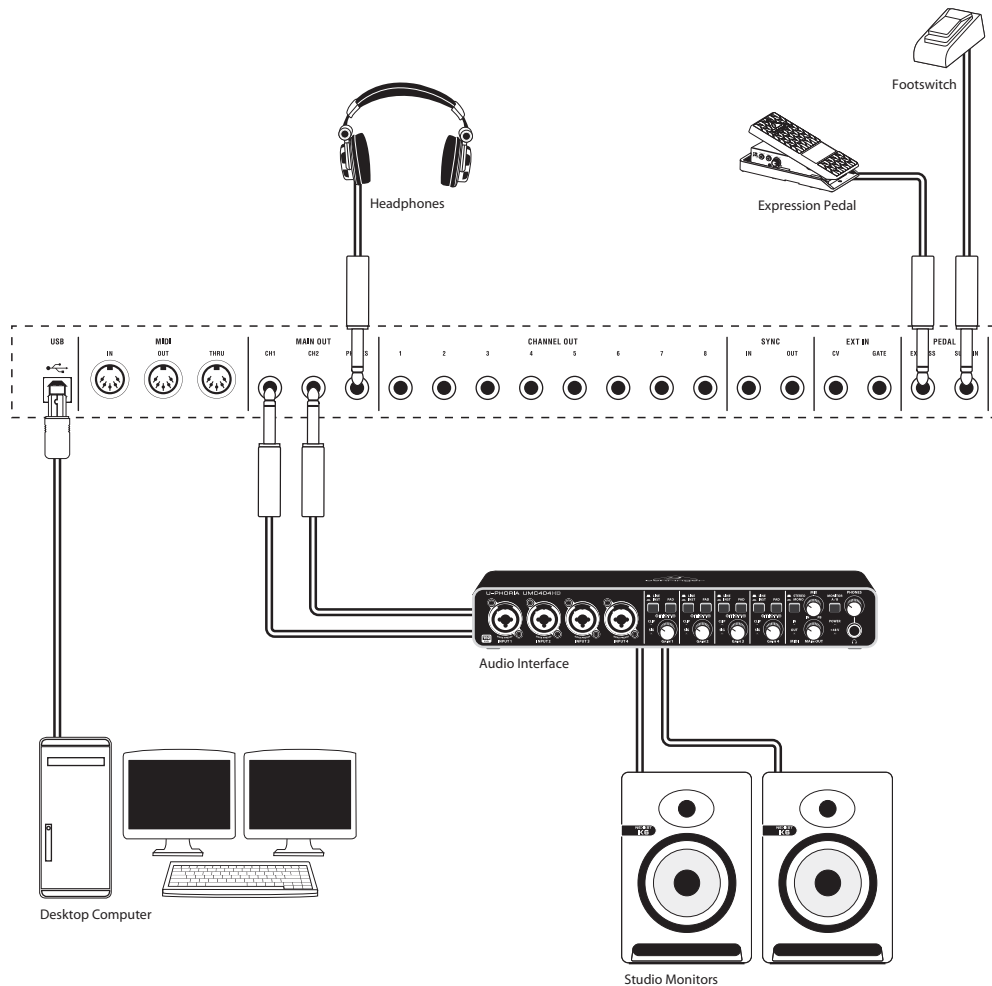
LIMITED WARRANTY

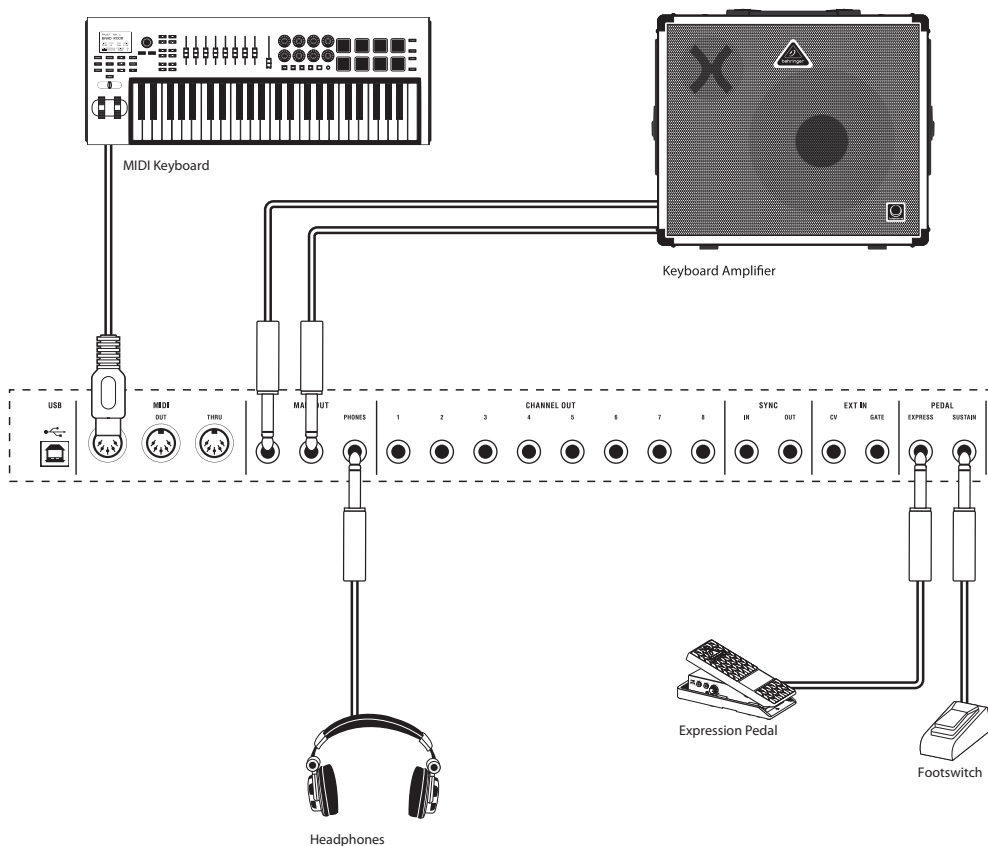
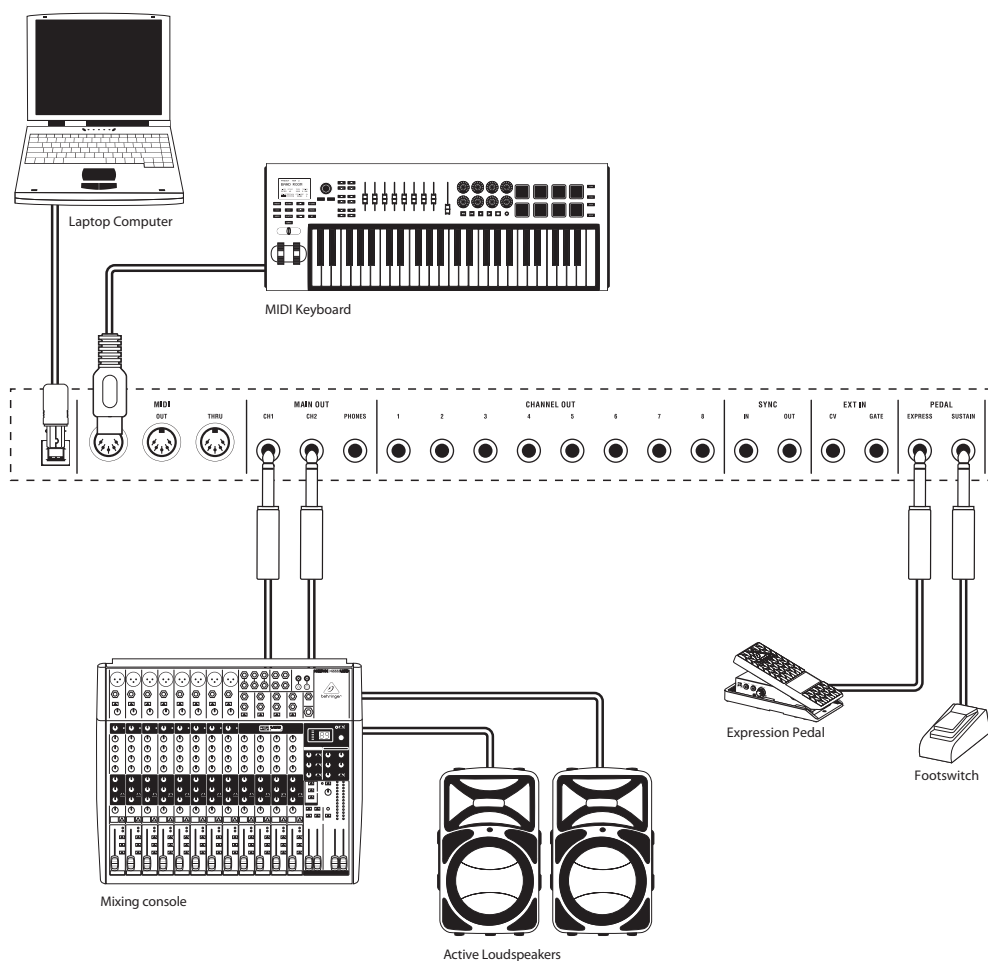
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WAVE Hook-up

- [EN] Step 1: Hook-Up**
- [ES] Paso 1: Conexión**
- [FR] Etape 1 : Connexions**
- [DE] Schritt 1: Verkabelung**
- [PT] Passo 1: Conexões**
- [IT] Passo 1: Allacciare**
- [NL] Stap 1: Aansluiten**
- [SE] Steg 1: Anslutning**
- [PL] Krok 1: Podłączeni**
- [JP] ステップ 1: フックアップ**
- [CN] 第一步: 连接应用**

Studio System
Sistema para estudio de grabación
Système de studio
Studio-System
Sistema de Estudió
Studio System
Studio-system
Studio-systemet
Studio System
スタジオシステム
录音室系统





Live System

Sistema para actuación en directo

Système pour représentation

Live-System

Sistema Ao Vivo

Sistema live

Live-systeem

Live-system

System na żywo

ライブシステム

现场表演系统

Band / Practice System

Sistema para un grupo/ensayos

Système pour répétition

Band/Proberaum-System

Sistema Banda/Prática

Sistema band / pratica

Band / oefensysteem

Band / övningsystem

Zespół / system ćwiczeń

バンド / 練習システム

乐队练习系统

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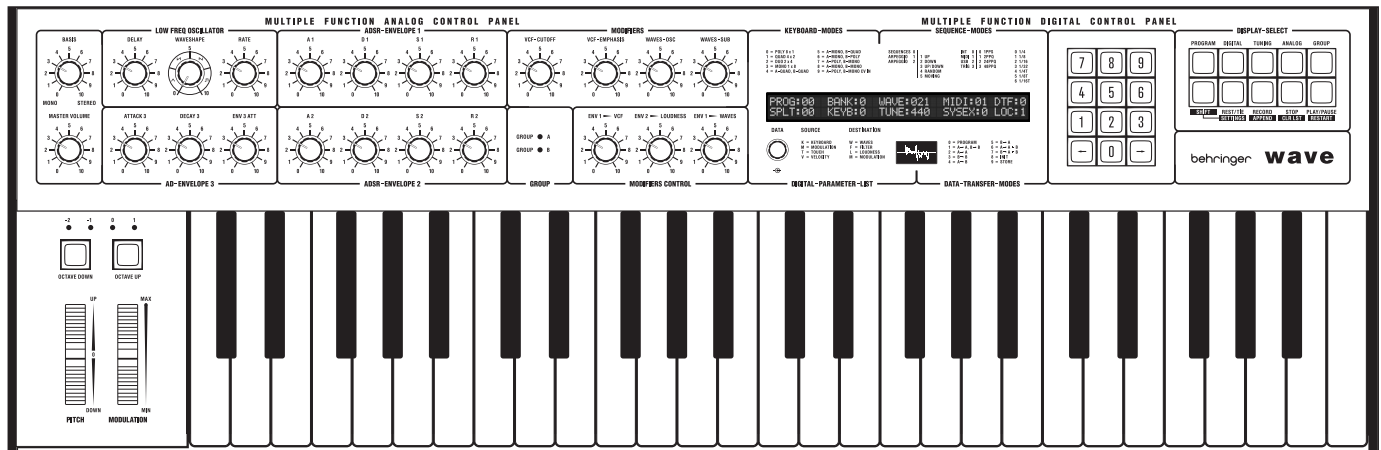
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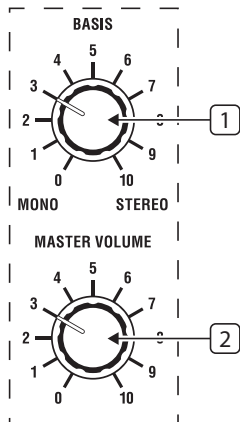
WAVE Controls

EN Step 2: Controls

TOP PANEL



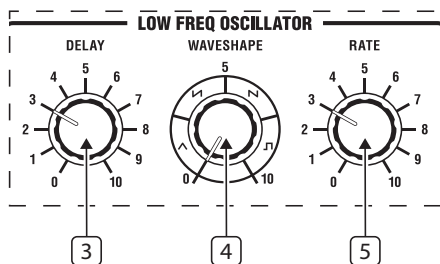
MASTER CONTROLS



1. **BASIS** – adjusts the stereo spread of the notes played on the keyboard. When the control is at minimum then all notes will be output at equal level from both the channel 1 and channel 2 outputs. When the control is at maximum notes will alternate between the outputs.

2. **MASTER VOLUME** – sets the WAVE's output level.

LOW FREQUENCY OSCILLATOR

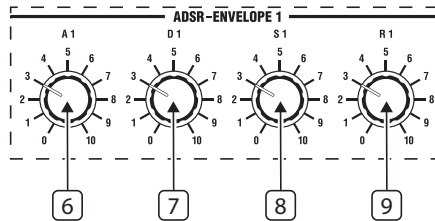


3. **LFO DELAY** – delays the action of the LFO. When the control is at minimum there will be a slight delay before modulation can be heard (depending on the firmware setting). When at maximum there will be a delay of 10 seconds before modulation is applied.

4. **WAVESHAPE** – the LFO has four waveshapes available: triangle, ramp, sawtooth and square.

5. **RATE** – controls the rate at which the LFO runs, from 0.2 Hz to 12.0 Hz.

ENVELOPE GENERATOR 1



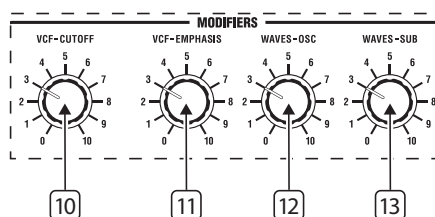
6. **EG 1 ATTACK** – controls the attack time for the filter envelope. If the Envelope attack rate is set above 47 then the attack will fully complete even if the key is released; and will then move to the release phase. This can be used for filter and wavetable sweeps.

7. **EG 1 DECAY** – controls the decay time for the filter envelope.

8. **EG 1 SUSTAIN** – controls the sustain level for the filter envelope following Decay.

9. **EG 1 RELEASE** – controls the release time for the filter envelope.

MODIFIERS



10. **VCF CUTOFF** – controls the cutoff frequency of the low pass filter.

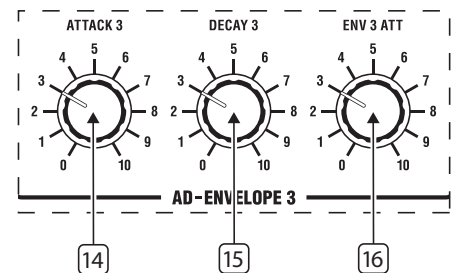
11. **VCF EMPHASIS** – controls the resonance of the filter.

12. **WAVES OSC** – steps through the waveforms of the selected wavetable for the main oscillator, from 00 to 63.

13. **WAVES SUB** – steps through the waveforms of the selected wavetable for the sub oscillator, from 00 to 63.

If a transient is selected then controls [12] and [13] will set the sample playback start points for the main and sub oscillators. A full explanation of Wavetables and Transients can be found in the User Manual.

ENVELOPE GENERATOR 3

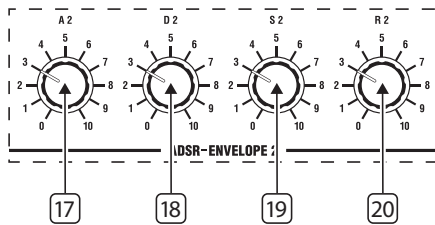


14. **EG 3 ATTACK** – controls the attack time for the third envelope.

15. **EG 3 DECAY** – controls the decay time for the third envelope.

16. **EG 3 ATTENUATION** – attenuates (reduces) the maximum output of the third envelope generator. This has a different effect according to what the third envelope is being used for: if it is being used on the pitch of the oscillator then in position five there is no modulation, with lower settings resulting in negative action and higher in positive. When used for modulating the wavetables then the settings run from no modulation at 0 to full (63 wavetable steps) at 10. This modulation is added to the WAVES SUB value.

ENVELOPE GENERATOR 2



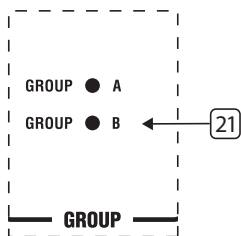
17. EG 2 ATTACK – controls the attack time for the loudness envelope. If the Envelope attack rate is set above 47 then the attack will fully complete even if the key is released; and will then move to the release phase. This can be used for filter and wavetable sweeps.

18. EG 2 DECAY – controls the decay time for the loudness envelope.

19. EG 2 SUSTAIN – controls the sustain level for the loudness envelope following Decay.

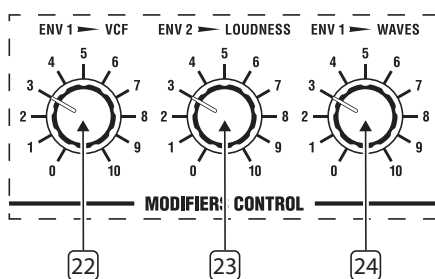
20. EG 2 RELEASE – controls the release time for the loudness envelope.

GROUP



21. GROUP – each program has two sounds associated with it, in groups A and B. The group display shows which is in use. If both LEDs are lit then both sounds are used and altering control settings will affect both simultaneously. The two sounds are variously used in split and layered configurations.

MODIFIERS CONTROL

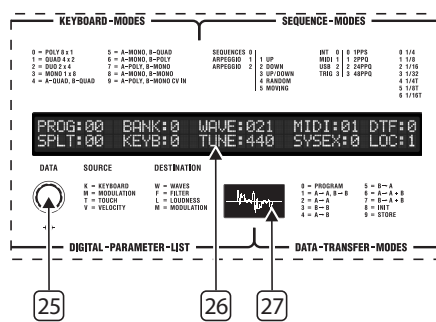


22. ENV 1 VCF – controls the amount of filter modulation from Envelope Generator 1.

23. ENV 2 LOUDNESS – this control adjusts the output level of the active group; and can be used to balance group A and B sounds when used together or in a split mode.

24. ENV 1 WAVES – controls the use of Envelope Generator 1 to step through the waveforms in the wavetable in use. If a transient is selected then this control will set the loop point for sample playback for both the main oscillator and the sub-oscillator.

DISPLAY

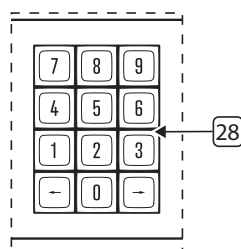


25. DATA CONTROL – used as an alternative to the keypad for entering values. Turn the control to the desired value then press to change the value.

26. LCD DISPLAY – 2 x 40 character display, showing different parameter information according to which button on the keypad is in use. The display is vitally important when using the various menus.

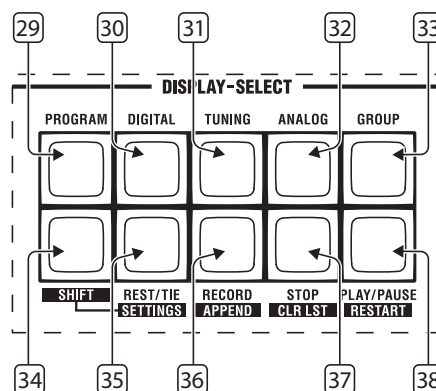
27. OLED DISPLAY – The OLED display serves as an oscilloscope, displaying the real-time output waveform of the synth. During calibration, it provides calibration information. It also shows the names of selected wavetables and transients when in editing mode and confirms successful receipt of wavetables or transients transferred via SynthTribe.

NUMERIC KEYPAD



28. NUMERIC KEYPAD – used for direct number entry and cursor control.

DISPLAY/MENU SELECT AND SEQUENCER CONTROLS



29. PROGRAM – calls up the program menu to the display. This is the default menu on power-up. Pressing the button twice calls up the User menu.

30. DIGITAL – calls up the digital parameters to the display for editing.

31. TUNING – calls up the tuning parameters to the display for editing.

32. ANALOG – calls up the analog parameters to the display for editing.

33. GROUP – each program has two sounds associated with it, in groups A and B. The group LEDs indicate which sound can be edited when using the DIGITAL/TUNING/ANALOG menus. If both LEDs are lit, parameter changes effect both group sounds. In KEYB POLY 8x1 mode, the lit LED indicates which sound is used. (if both LEDs are lit, group B sound is used).

SEQUENCER BUTTONS

34. SHIFT – used to access the shifted functions on buttons **35** - **38**.

35. REST/TIE – pressing this button while holding a note or chord will extend (tie) the note(s) across more than one step of the sequence. Pressing it without holding any notes will insert a rest at that point in the sequence.

36. RECORD – puts the sequencer into Record mode.

37. STOP – when a sequence is running pressing the stop button stops the sequence and resets it to the first position.

38. PLAY/PAUSE – if a sequence is not running then pressing this button starts it. A further press will pause the sequence, but unlike the use of the Stop button will not reset to first position. Pressing the button a third time will restart the sequence from the point that it was paused.

Using the Shift button with the four sequencer buttons adds additional functions:

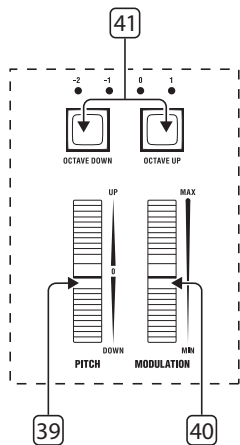
SHIFT & **35. SETTINGS** – accesses sequencer settings menu.

SHIFT & **36. APPEND** – after using the </> buttons to go to a specific step in the sequence pressing Shift and 36 allows you to add additional notes to those already recorded on the selected step, to the maximum allowed by the keyboard settings; or to replace the already programmed note(s), depending on the OVP settings in the Sequencer menu.

SHIFT & **37. CLR LST** – Clear Last allows steps to be erased from the sequence, starting with the last step recorded. Pressing and holding Clear Last will erase the whole sequence.

SHIFT & **38. RESTART** – when a sequence is running pressing Shift and 38 restarts it from the first step.

PERFORMANCE CONTROLS

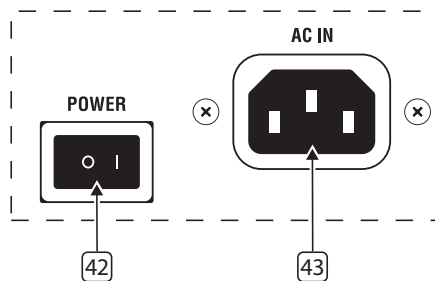


39. **PITCH WHEEL** – the function of the Pitch Wheel is configured through the BD option in the Digital menu. It can operate as a traditional pitch bend controller for one or both oscillators or be assigned to control other parameters, such as filter cutoff or wavetable position. The wheel automatically returns to its center position when released.

40. **MODULATION WHEEL** – can be used for various types of modulation depending on the user settings. Please note that the wheel position is stored in each preset, separate for Group A and B sound parameters.

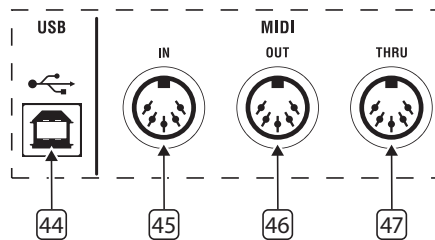
41. **OCTAVE DOWN/UP** – transposes the keyboard up by one octave or down by one or two octaves, as indicated by the associated LEDs.

REAR PANEL



42. POWER SWITCH

43. **IEC POWER INLET** – connects to AC power source in the range 100 – 240 volt, using the supplied IEC cable.

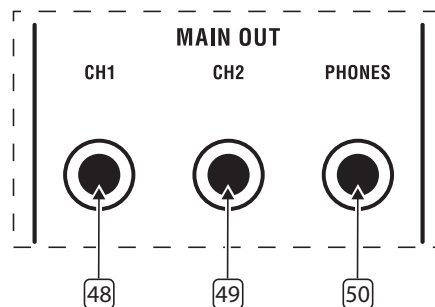


44. **USB SOCKET** – connects to your computer for MIDI control and firmware updates.

45. **MIDI IN DIN** – allows control of the WAVE from an external MIDI source using 5-pin DIN lead.

46. **MIDI OUT DIN** – outputs MIDI messages from the WAVE to other connected equipment using 5-pin DIN lead.

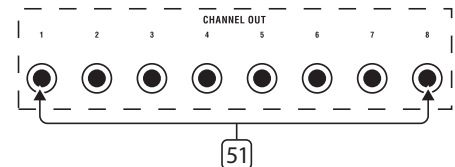
47. **MIDI THRU DIN** – passes messages received at the MIDI IN socket to external MIDI equipment using 5-pin DIN lead.



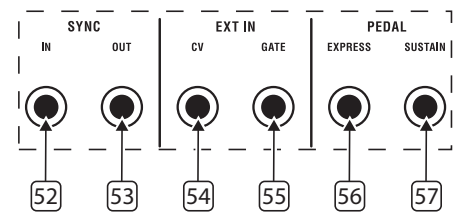
48. **CHANNEL 1 OUTPUT** – unbalanced audio output using 6.35 mm (1/4") TS jack. If the Basis control 1 is set to minimum then the WAVE will be in mono. When Basis is above minimum then this carries the left hand part of the signal.

49. **CHANNEL 2 OUTPUT** – carries the right hand part of the signal when Basis is above minimum. Doubles up the mono output of Channel 1 when the Basis control is set to minimum.

50. **PHONES** – stereo headphone output on 6.35 mm TRS jack.



51. **CHANNEL OUTPUTS** – unbalanced outputs for individual voices on 6.35 mm (1/4") TS jacks. Voices will still feed the main left and right outputs when channel outs are in use.



52. **SYNC IN** – external synchronization input for the sequencer and arpeggiator, selected in the sequencer menu. The socket is TRS with the start/stop function on the ring and the clock on the tip.

53. **SYNC OUT** – outputs a trigger pulse in time with the internal sequencer and arpeggiator. The socket is TRS with the start/stop function on the ring and the clock on the tip.

54. **CV IN** – allows control of group B voices, monophonically, from an external 1 volt/octave CV source, when in Keyboard Mode 9. CV range is -5 V to +5 V.

55. **GATE IN** – allows the envelope generators to be controlled by an external gate, when in Keyboard Mode 9.

56. **EXPRESSION PEDAL** – allows connection of a footpedal, such as the Behringer FC600, to control a variety of parameters based on the selected settings.

57. **SUSTAIN PEDAL** – allows notes to be held indefinitely at the sustain level of envelope generator 2 using a footswitch.

See the User Manual for a full explanation of Wavetable Synthesis and how the menu options function.

MENU SHORTCUTS

Firmware 1.0.11 April 2025

Program Menu

PROG: program number 00 – 99

BANK: bank number 0 or 1

WAVE: wavetable from 00 to 127

MIDI: MIDI channel from 00 (MIDI off) to 16

DTF: Data Transfer Function

0 – Program

1 – Edit buffer A to A, B to B

2 – Edit buffer A to A

3 – Edit buffer B to B

4 – Edit buffer A to B

5 – Edit buffer B to A

6 – Edit buffer A to A and B

7 – Edit buffer B to A and B

8 – Initialize (does not erase user wavetables or transients)

9 – Store

SPLT: keyboard split point

KEYB: keyboard mode

0 – Poly (8 voice polyphonic)

1 – Quad (4 voice polyphonic)

2 – Duo (2 voice duophonic)

3 – Mono (Unison)

4 – Quad A/B

5 – A mono, B quad

6 – A mono, B poly

7 – A poly, B mono

8 – A mono, B mono

9 – A poly, B mono CV in

TUNE: A 400 – A499

SYSEX: Used for manual dump of program data.

0 – default (no action).

1 – sends current edit buffer data.

2 – sends current program data.

3 – sends current bank.

4 – sends sequencer edit buffer.

5 – sends current program's sequencer data.

6 – sends current bank's sequencer data.

LOC: Local control 0 to disable, 1 to enable

User Menu

PROG: Program number 00 to 99

EXP-PED: Expression pedal action

0 – disabled

1 – loudness

2 – filter frequency

3 – filter emphasis

4 – wave

5 – modulation

TOUCH: Channel aftertouch

0 – disabled

1 – enabled and transmitted

2 – enabled for receive only

3 – enabled for transmission and receipt

BRT: LCD display brightness 00 – 99

CNT: LCD display contrast 00 – 99

V: Firmware version

PAR-COM: MIDI CC parameters

0 – disabled

1 – transmission only

2 – receive only

3 – transmitted and received

FIRM: Firmware emulation

0 – original

1 – enhanced with linear envelopes

2 – enhanced with exponential envelopes

OSC: Oscillator quality

0 – original

1 – enhanced

LFO: LFO precision

0 – original

1 – improved precision

Sequencer Menu

PR: program number 00 – 99

MOD: Sequencer mode. First digit

0 – sequencer active

1 – arpeggiator one active

2 – arpeggiator two active

Second digit

0 – only used when sequencer is active

1 – arpeggio up

2 – arpeggio down

3 – arpeggio up and down

4 – arpeggio random

5 – arpeggio moving

CLK: Clock source and rate. First digit

0 – internal clock

1 – DIN MIDI

2 – USB MIDI

3 – Analog trigger

Second digit (internal and analog only)

0 – 1 pulse per step

1 – 2 ppqn

2 – 24 ppqn

3 – 48 ppqn

GAT: Gate duration from 1 to 99

DIV: Clock division

0 – ¼ note

1 – ⅛ note

2 – ⅜ note

3 – ⅜ note

4 – ¼ note triplet

5 – ⅛ note triplet

6 – ⅜ note triplet

BPM: Internal clock speed from 40 to 240 bpm

MTN – Metronome

0 – disabled

1 – enabled

OVP: First digit – overdub

0 – disabled

1 – enabled

Second digit – transposition of sequence

0 – enabled

1 – keyboard independent of sequencer

SAVE: Saves the sequence to current program

STEP: Indicates current sequence step and total steps programmed

STATUS: Indicates whether sequencer is stopped, playing, recording, appending or arpeggiating.

Digital Menu

PROG: program number 00 – 99

GROUP: Group A or Group B

UW: Upper Wavetable

When a wavetable is in use:

0 – use selected wavetable and enable wavetable wrapping

1 – use most interesting waves from wavetables 1 – 30

2 – use selected wavetable with no wrapping

When a transient is in use the sample length options are:

- 0 – 128 samples
- 1 – 2048 samples
- 2 – 8192 samples

SW: Sub-oscillator wave

- 0 – sub-oscillator uses main oscillator waves
- 1 – sub-oscillator uses waves set by sub control
- 2 – swaps envelope 1 for envelope 3
- 3 – disables sub-oscillator
- 4 – sub-oscillator muted and used for main oscillator sync
- 5 – sub-oscillator used to ring modulate main oscillator
- 6 – noise generator

KW: Keyboard control of wavetable

- 0 – disabled
- 1-3 – higher notes take higher waves
- 4 – all notes have own wave
- 5-7 – notes have own wave, some are skipped

KF: Keyboard filter tracking

- 0 – No keyboard tracking
- 1-2 – keyboard tracking is less than 100%
- 3 – keyboard tracking is approximately at 100% (double VCF frequency for every octave)
- 4-6 – keyboard tracking is between 100% and 200%
- 7 – keyboard tracking is approximately at 200%

KL: Keyboard loudness tracking

- 0-3 – higher keys are louder than lower keys
- 4 – all keys equal
- 5-7 – lower keys are louder than higher keys

MW: Wavetable modulation by wheel and LFO

- 0 – disabled
- 1 – LFO controlled by modulation wheel
- 2 – waveform swept by modulation wheel
- 3-9 – waveform swept by LFO to varying extents

MF: Filter frequency and emphasis modulation

- 0 – disabled
- 1 – frequency modulation by LFO controlled by modulation wheel
- 2 – frequency modulation by modulation wheel
- 3 – emphasis modulation by modulation wheel
- 4-9 – frequency modulation by LFO to varying extents

ML: Loudness modulation 0 to disable, 1 to enable

BD: Pitchbend destination

- 0 – disabled
- 1 – pitchbend main and sub oscillators
- 2 – bend wheel controls filter frequency
- 3 – bend wheel sweeps wavetable

4 – pitchbend sub-oscillator only

- 5 – pitchbend oscillators and filter frequency
- 6 – pitchbend oscillators and sweep wavetable
- 7 – filter frequency and wavetable sweep

Bl: Pitchbend range

- 0 – 2 semitones
- 1 – major third
- 2 – fifth
- 3 – octave
- 4 – two octave
- 5 – octave stepped

TW: aftertouch wavetable sweeping/
LFO modulation

- 0 – disabled
- 1 – wavetable sweeping
- 2 – LFO waveform modulation

TF: aftertouch filter frequency/LFO modulation

- 0 – disabled
- 1 – filter frequency
- 2 – LFO modulation of filter frequency

TL: aftertouch loudness/LFO Modulation

- 0 – disabled
- 1 – loudness
- 2 – LFO modulation of loudness

TM: aftertouch control of modulation wheel

- 0 – disabled
- 1 – enabled

VF: velocity control of filter frequency

- 0 – disabled
- 1 – low sensitivity
- 2 – medium sensitivity
- 3 – high sensitivity

VL: velocity control of loudness

- 0 – disabled
- 1 – low sensitivity
- 2 – medium sensitivity
- 3 – high sensitivity

Tuning Menu

PROG: program number 00 – 99

GROUP: Group A or Group B

DETU: detuning sub-oscillator from main oscillator

- 0 – no detuning
- 1 – slight detuning
- 2 – increased detuning
- 3 – obvious detuning
- 4 – strong detuning
- 5 – five semitone detune

6 – one octave detune

- 7 – two octave detune
- 8 – one octave detune down
- 9 – two octave detune down

MO: pitch modulation of main oscillator

- 0 – disabled
- 1 – enabled

MS: pitch modulation of sub-oscillator

- 0 – disabled
- 1 – enabled

EO: pitch modulation of main oscillator by Env 3

- 0 – disabled
- 1 – enabled
- 2-9 – varying levels of portamento effect

ES: pitch modulation of sub-oscillator by Env 3

- 0 – disabled
- 1 – enabled

Bl: pitchbend range

- 0 – 2 semitones
- 1 – major third
- 2 – fifth
- 3 – octave
- 4 – two octave
- 5 – octave stepped

SEMIT: semitone detuning of individual voices

WAVE Getting started

EN Step 3: Getting Started

OVERVIEW

This getting started guide will help you set up the **WAVE** and briefly introduce its capabilities.

HARDWARE SETUP

Please follow the instructions at the beginning of this guide to correctly connect the WAVE to your equipment.

WARM UP TIME

We recommend leaving 30 minutes or more for the WAVE to warm up before recording or live performance. (Longer if it has been brought in from the cold.) This will allow the precision analog circuits time to reach their normal operating temperature and tuned performance.

SOFTWARE AND FIRMWARE SETUP

The WAVE is a USB Class Compliant MIDI device, requiring no additional drivers for Windows and MacOS. Please check the Behringer website regularly for updates to the **SynthTribe** app, which can download and apply the latest firmware to your synthesizer, ensuring you have the most recent features and performance improvements.

NAVIGATING THE INTERFACE

The main LCD shows parameter information and menus, while the OLED functions as an oscilloscope, displaying the real-time output waveform of the synth. To navigate the LCD menu pages, use the **DISPLAY-SELECT** buttons located on the right side of the panel. The Data Encoder allows you to move through the menu and adjust values and settings; to change a setting, press the encoder push button once and then turn it, with changes applied immediately. You can also use the numeric Keypad to navigate the menu and input values.

SELECTING AND PLAYING SOUND PROGRAMS

You can change the current sound program from any menu by navigating to the **PROG** position and typing in the program number you want to load. Alternatively, use the encoder to quickly scroll through presets by pushing it in and rotating; the sound program will load immediately. The **WAVE** has two banks with 100 programs each, and you can switch between them using the **BANK** setting. Each time you load a sound program, two different sounds are loaded: **GROUP A** and **GROUP B**, which can be layered or split using the keyboard modes. The **GROUP** button on the right allows you to switch between GROUP A and B and choose which one to edit when changing sound parameters. The two LEDs on the panel indicate which group is currently selected.

KEYBOARD MODES

Select **PROG:02** from **BANK:1**. When playing the keyboard, you will listen the sound of GROUP A. Now press the **GROUP** button; the GROUP B LED will turn on, confirming the selection. Now the keyboard will play the sound of GROUP B. The current keyboard mode is set to **KEYB:0**, which means the synth is configured as an 8-voice polyphonic synthesizer. In this mode, the selected GROUP defines which sound will be used. Now move the cursor to **KEYB** and type in **1** for keyboard mode **QUADx4**, often called “Double” in other synths. In this mode, the synth becomes 4-voice polyphonic, with 2 sounds per key corresponding to GROUP A and B. Now type in **KEYB:4** to enter split mode; the keyboard will be split at the key number defined by **SPLT**. GROUP A will play on the right part of the keyboard, and GROUP B will play on the left. Explore the remaining keyboard modes by following the information in this guide.

EXPLORING SOUND SHAPING TOOLS

With keyboard mode 1, select **GROUP A** and ensure the corresponding LED is lit. Rotate the **CUTOFF FREQUENCY** control and listen to how the sound changes. Only the sound from GROUP A is affected, while GROUP B remains unchanged. Now, select GROUP B and repeat the same process to notice how GROUP B’s sound is altered. Press the **GROUP** button again so that both LEDs are lit and adjust the Cutoff Frequency. This time, both sounds are affected simultaneously. You can monitor the changes of each control of the analog control panel from the **ANALOG** menu. You can also modify the analog values from the menu using the encoder or the keypad.

MASTERING WAVETABLES

Every voice has two independent oscillators, called **MAIN** and **SUB** oscillators. They use the same wavetable and can be configured to operate in different modes. To explore the wavetable capabilities of the synth, load **PROG:05, BANK:1**. Go to the **DIGITAL** menu and type in **SW3** to temporarily disable the sub oscillator. Turn the **CUTOFF FREQUENCY** control fully clockwise and start turning the **WAVES-OSC** control while playing one key. You will listen the waveform moving through the wavetable and the **OLED** will show the currently selected waveform. Now turn the **ENV1>WAVES** control clockwise; this will apply the ADSR 1 to the wavetable position. Start increasing the attack time and notice how the oscillator sweeps through the wavetable. Wavetable position can be modulated by many sources such as touch sensor, pitch wheel and keyboard. To explore the various control possibilities, refer to the complete WAVE user manual.

STORING A PRESET

To store a preset, first make sure you have edited the sound parameters to your liking. Navigate to the **DATA TRANSFER FUNCTION (DTF)** in the **PROGRAM** menu by using the keypad or the data encoder and type in **9**. Select the desired **BANK** (0 or 1), then move the cursor to the **PROG** position and enter the program number where you want to save the preset. Once you’ve selected the target program, confirm the operation by typing **1** to save or **0** to cancel. After confirmation, your edited sound will be stored in the chosen program slot, allowing you to recall it at any time.

Specifications

Synthesizer Architecture

Type	Hybrid
Number of voices	8
Type of oscillators	Wavetable
Number of oscillators	16
Filter	24 dB lowpass

Connectivity

USB (MIDI)	USB 2.0, type B
MIDI In/out/thru	5-pin DIN/ 16 channels
Main Output	2 x 6.35 mm (1/4") TS, unbalanced, max. +22 dBu
Impedance	50 Ω
Channel out	8 x 6.35 mm (1/4") TS, unbalanced, max. +22 dBu
Headphones	1/4" TRS stereo max 25 mW
Impedance	8 Ω
Sync in	6.35 mm (1/4") TRS
Sync out	6.35 mm (1/4") TRS
CV in	6.35 mm (1/4") TS
Gate In	6.35 mm (1/4") TS
Expression pedal	6.35 mm (1/4") TRS – voltage send on tip
Sustain pedal	6.35 mm (1/4") TS

USB

Type	Class compliant USB 2.0, type B
Supported operating systems	Windows 7 or higher/ Mac OS X 10.10 or higher

Keyboard and Controls

Keyboard	49 semi-weighted, full-size keys, velocity and aftertouch
Wheels	Pitch, Modulation
Controls	Octave down / up
LED	Octave -2/-1/0/1

Volume Section

Controls	Basis (mono to stereo) Master volume
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LFO Section

Controls	Delay Waveshape: triangle, sawtooth, ramp, square Rate
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ADSR Envelope 1 Section

Controls	Attack Decay Sustain Release
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Modifiers Section

Controls	VCF Cutoff VCF Emphasis WAVES Osc WAVES Sub
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AD Envelope 3 Section

Controls	Attack 3 Decay 3 Env 3 Att
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ADSR Envelope 2 Section

Controls	Attack Decay Sustain Release
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Modifiers Controls

Controls	ENV 1 VCF ENV 2 Loudness ENV 1 WAVES
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Display and Controls

Buttons	Program, Digital, Tuning, Analog, Group Shift, Rest/Tie (Settings), Record (Append), Stop (Clear Last), Play/Pause (Restart)
Numeric Keypad	0-9, cursor left, cursor right
Digital Encoder	Data Entry Encoder (press to enter)
Main Display	2 x line, 40-digit LCD display
Secondary Display	2.5 cm x 1.5 cm OLED
LED	Group A / B

Power Requirements

Mains connector	Standard IEC C13 receptacle
Power consumption	20 W max
Internal switch-mode PSU	Autorange 100-240 V, (50/60 Hz)

Physical

Standard operating temperature range	5°C – 45°C (41°F – 113°F)
Dimensions (H x W x D)	112 x 796 x 257 mm (4.01 x 31.34 x 10.12")
Weight	7.26 kg (16.0 lbs)

We Hear You