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Synthesizer User Guide 7

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# behringer

behringer DEEPMIND 12XD True Analog 12-Voice Polyphonic Desktop Synthesizer



#### **CAUTION**

RISK OF ELECTRIC SHOCK!

DO NOT OPEN!

- 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).

#### **LEGAL DISCLAIMER**

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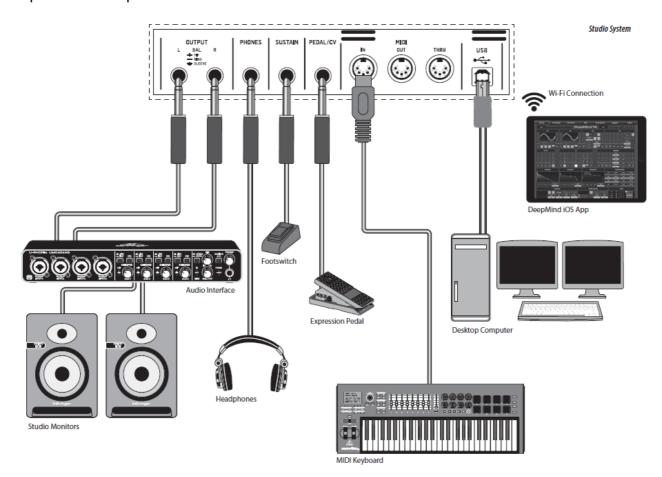
#### LIMITED WARRANTY

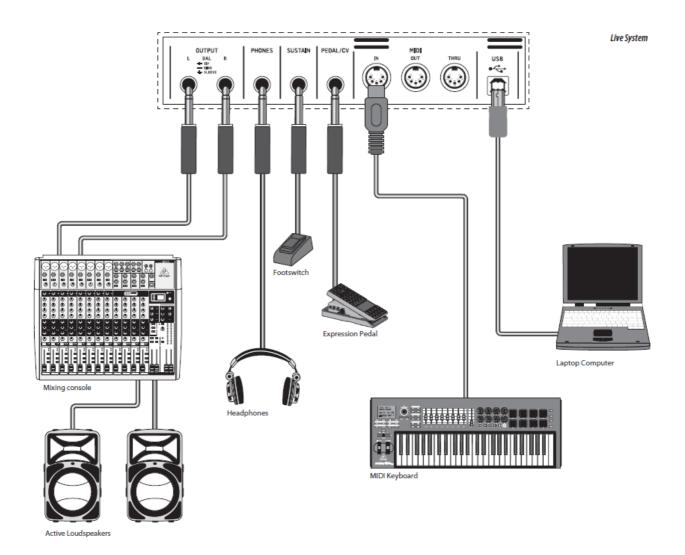
For the applicable warranty terms and conditions and additional information regarding

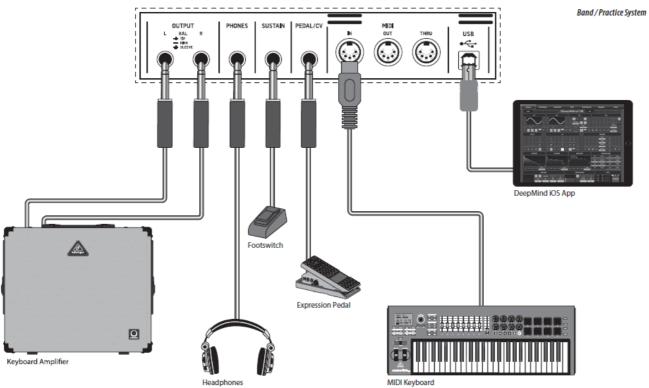
Music Tribe's Limited Warranty, please see complete details online at <a href="mailto:com/support">community.musictribe.com/support</a>

## **DEEPMIND 12XD Hook-up**

### 1. Step 1: Hook-Up







## 2. Step 2: Controls

1. DISPLAY – this large backlit LCD screen shows the synthesizer status, parameters, and the five main menus. The contrast and brightness are adjustable

- on the PANEL SETTINGS page of the GLOBAL menu.
- 2. NAVIGATION navigate within the display menus using the UP, DOWN, +/YES and -/NO buttons.
- 3. MENUS these switches allow access to the display menus.

PROG MENU- the main display of the synthesizer. Shows the current program, the currently adjusted parameter and a visual representation of the parameter and the three envelopes.

FX MENU – add up to four effects from the list available. Change the effects routing by selecting one of the ten MODEs available. Each of the effects has individual controls for all parameters.

GLOBAL MENU – view and adjust settings for the synthesizer. There are five pages, CONNECTIVITY, KEYBOARD, PEDAL, PANEL and SYSTEM.

COMPARE MENU – in this menu, you can compare the current program with the stored program and see the difference in physical fader positions.

WRITE MENU – in this menu, you can write the current program settings to the program library. You can also rename the program and set its category type.

- 4. DATA ENTRY selected parameters on the display are adjusted using the rotary knob or the fader. The rotary knob has a click which allows very accurate control. The fader allows rapid adjustment across the full range. MOD- this switch opens the modulation matrix on the display and allows up to 8 modulations to be created from the list of sources and destinations.
- 5. ARP/SEQ this area controls the arpeggiator and the control sequencer.
  ON/OFF when activated, this generates an arpeggio based on pressed keys.
  Note the control sequencer is turned on from its edit page only.
  RATE adjusts the rate of the arpeggiator / sequencer in beats per minute
  (RRM) CATE TIME adjusts the duration of the note played based on a

(BPM). GATE TIME – adjusts the duration of the note played based on a percentage of the time between triggered notes.

CHORD – allows you to play any chord with a single key. The chord is given a root note and mapped across the keyboard.

POLY CHORD – allows you to play multiple chords from multiple keys. The chords are mapped to individual keys.

TAP/HOLD – tap this button in time with your performance to set the rate/BPM, or press and hold to engage the HOLD function.

EDIT – this allows additional arpeggiator/control sequencer parameters to be

- edited from the main display.
- LFO 1 and 2- low frequency oscillators used to modulate or control other parameters.
  - RATE- this sets the rate, or speed of the LFO.
  - DELAY TIME the duration of time which will elapse before the LFO starts.
  - EDIT this allows additional LFO parameters to be edited from the main display.
  - LFO WAVEFORMs these LEDs indicate the type and status of the waveforms produced by each LFO
- OSC 1 & 2 These analog full range oscillators create waveforms which are the sound source of the synthesizer.
  - OSC 1 & 2 PITCH MOD amount of pitch modulation applied to respective OSC.
  - OSC 1 SQUAREWAVE- this switch turns the square wave output for OSC 1 on/off.
  - OSC 1 PWM amount of pulse width modulation applied to the OSC 1 square wave. OSC 1 SAWTOOTH- this switch turns the sawtooth output for OSC 1 on/off.
  - OSC 2 TONE MOD- amount of tone modulation applied to OSC 2.
  - OSC 2 PITCH- controls the base pitch of OSC 2. OSC 2 LEVEL- controls the level of OSC 2. NOISE LEVEL- controls the amount of white noise added to the oscillators.
  - EDIT- this allows additional OSC parameters to be edited from the main display.
- 8. POLY this area is used to control the polyphony of the synthesizer.
  - UNISON DETUNE when voices are playing in unison, this adjusts the amount of detuning between the voices.
  - EDIT- this allows additional POLY parameters to be edited from the main display.
- 9. VCF the voltage controlled low pass filter used to filter high frequencies from the sound of the synthesizer.
  - FREQ adjusts the cut-off frequency of the filter.
  - 2-POLE changes the roll off slope of the filter from the default 4-POLE mode to a 2-POLE mode.
  - RES adjusts the resonance of the filter cut-off point.
  - EDIT allows additional VCF parameters to be edited from the main display.
  - ENV adjusts the level of the VCF ENVELOPE which controls the filter cut-off frequency.

INVERT – used to invert the polarity of the VCF envelope applied to the filtercutoff frequency.

LFO – adjusts the depth of the selected

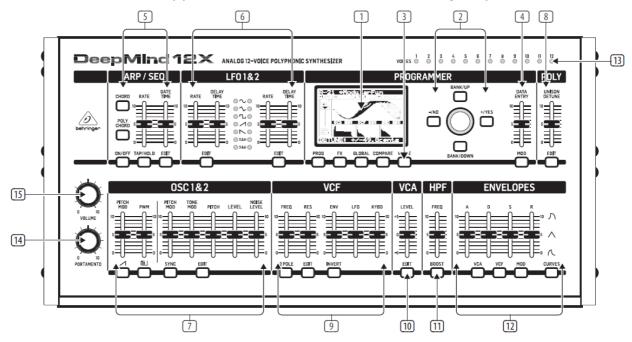
LFO waveform applied to the filter cut-off frequency.

KYBD – adjusts the amount of keyboard tracking to be applied to the filter cut-off frequency.

- 10. VCA the voltage controlled amplifier used to control the output level.
  - LEVEL controls the output level of the VCA. EDIT this allows additional VCA parameters to be edited from the main display.
- 11. HPF the voltage controlled high pass filter used to filter low frequencies from the sound of the synthesizer.

FREQ – used to adjust the frequency of the high pass filter.

BOOST – this switch applies a +12 dB bass boost to the signal path



12. ENVELOPE – these are the three envelopes used to modulate other parameters.

A [ATTACK]- controls the attack time of the envelope.

D [DECAY] – controls the decay time of the envelope.

S [SUSTAIN] – controls the sustain level of the envelope.

R [RELEASE] – controls the release time of the envelope.

VCA – selects the envelope used to control the voltage controlled amplifier.

VCF – selects the envelope used to control the voltage controlled filter.

MOD – selects the envelope used for user specific modulation.

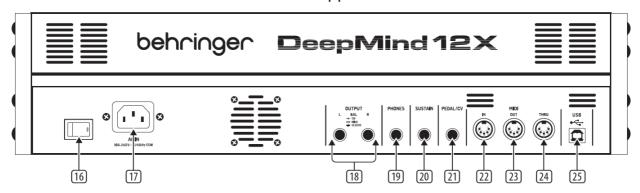
CURVES – changes the ADSR controls to affect the associated curves for each stage of the envelope.

- 13. VOICES these LEDs show which voices are active as keys are played.
- 14. PORTAMENTO changes the slide time between played notes.
- VOLUME controls the output level of the synthesizer.
   Rear Panel
- 16. POWER SWITCH use this to turn the synthesizer on and off. Only turn it on after all connections have been made.
- 17. POWER INPUT connect using the supplied power cable only.
- 18. OUTPUT L / R this is the main output of the synthesizer. It should be connected to your audio interface or sound system. Remember to turn your monitors / loudspeakers on last when turning on your system and turn your monitors / loudspeakers off first when turning your system off.
- 19. PHONES the headphones output of the synthesizer follows the main output.

  Connect your headphones here. Ensure the volume control is at minimum when putting on headphones or when turning the synthesizer on or off.
- 20. SUSTAIN this ¼" TS jack allows you to connect a sustain pedal, such as a normally-open switch. The operation of this pedal can be customized using the GLOBAL / PEDAL SETTINGS menu.
- 21. PEDAL/CV this ¼" TRS jack allows you to connect an expression pedal. The operation of this pedal can be customized using the GLOBAL / PEDAL SETTINGS menu.
- 22. MIDI IN this 5-pin DIN jack receives MIDI data from an external source. This will commonly be an external hardware sequencer, a computer equipped with a MIDI interface, etc.
- 23. MIDI OUT this 5-pin DIN jack sends MIDI data to an external source. This will commonly be an external hardware sequencer, a computer equipped with a MIDI interface, etc.
- 24. MIDI THRU this 5-pin DIN jack is used to pass through MIDI data received at the MIDI INPUT. This will commonly be sent to another synthesizer or drum machine assigned to a different DEVICE ID, or MIDI Channel.
- 25. USB PORT this USB type B jack allows connection to a computer. The DeepMind 12XD will show up as a class-compliant USB MIDI device, capable of supporting MIDI in and out. The DeepMind 12XD does not require any additional drivers to work with Windows, Android, MacOS and iOS devices.

USB MIDI IN – accepts incoming MIDI data from an application.

USB MIDI OUT – sends MIDI data to an application.



3. Step 3: Getting

#### **OVERVIEW**

This 'Getting Started Guide' will help you set up the DeepMind 12XD analog polyphonic synthesizer and briefly introduce its capabilities.

#### CONNECTION

To connect the DeepMind 12XD to your system please consult the connection guide earlier in this document.

#### BROWSING PROGRAMS

To change programs, use the -NO and +/YES switches. To access the program browser press and hold the PROG switch, then press the GLOBAL switch, or move the rotary knob. For more information on program management please consult the product manual.

#### PROGRAMMING

The DeepMind 12XD programming techniques are described in detail in the product manual.

#### RECORD, EDIT and PLAYBACK AUTOMATION

When using the analog engine of the synthesizer with a Digital Audio Workstation (DAW) you can record and playback any automatable parameter. This allows you to record expressive automation and playback or edit that automation in your DAW.

#### USING AS A CONTROLLER

When using the synthesizer features as a controller you can control your virtual instruments and Digital Audio Workstation (DAW). For mapping please consult the product manual.

#### SOFTWARE SET-UP

The DeepMind 12XD is a USB Class Compliant MIDI device, and so no driver installation is required. The DeepMind 12XD does not require any additional drivers to work with Windows, Android, MacOS and iOS devices.

#### HARDWARE SETUP

Make all the connections in your system.

Apply power to the DeepMind 12XD using the supplied power cable only. Ensure your sound system is turned down. Turn on the power switch.

#### • DAW SETTINGS

In your DAW, create a new channel and select your master keyboard as the MIDI input device. On the same channel ensure that recorded MIDI is also sent back by making the DeepMind 12XD the same channel's MIDI output device.

If you can't see the DeepMind 12XD in your DAW channel options please consult your DAW documentation to ensure you have enabled the DeepMind 12XD as a MIDI device.

#### GLOBAL SETTINGS

The GLOBAL menus allow you to customize the DeepMind 12XD analog polyphonic synthesizer to your specific workflow / requirements. For more information on the GLOBAL settings, please consult the product manual.

#### • FIRMWARE UPDATE

Check that the latest firmware in your unit is up to date (see the GLOBAL/SYSTEM SETTINGS menu of the display). If not, then updating the firmware will give you the latest enhancements. Visit <a href="Behringer.com">Behringer.com</a> and download the SynthTribe app which enables firmware updates and allows control over features

IMPORTANT NOTE: Updating the firmware may affect your programs, please ensure you make a full back up. For detailed instructions please consult the product manual.

## **Specifications**

Global	
Display	Backlit LCD
Main Menus	PROG, FX, GLOBAL, COMPARE, WRITE

Edit Menus	ARP/SEQ, LFOs, OSCs, POLY, VCF, VCA, VCA ENV, VCF ENV, MOD ENV, MOD MATRIX	
Presets	8 banks each with 128 programs	
Fader Modes	MIDI CC, NRPN, OFF	
Controls		
Encoders	1 rotary knob	
Faders	26 slide faders (35 mm)	
Switches	31 backlit switches	
Connectivity		
MIDI In/Out/Thru	5-pin DIN / 16 channels	
Pedal/CV	1/4" TRS	
Sustain	1/4" TS	
USB	USB 2.0, type B	
Output L/R	1/4" TRS, balanced, max. +18 dBu	
Headphones	1/4" TRS, unbalanced, max. +21 dBu	
Synthesizer Architecture		
Number of voices	12 analog	
osc	2 per voice	
LFO	2 per voice	
VCF	2-pole / 4-pole	
HPF (Common to all voices)	6 dB per octave	

Envelopes	VCA, VCF, MOD
Mod Matrix	22 sources / 130 destinations
Digital Effects	
FX Slots	4 per Program
FX Types	34 Algorithms
Internal effects engines	1 true stereo SHARC DSP
Effects signal processing	32/40-bit floating point @ 48 kHz
A/D-D/A performance	24-bit 48 kHz, 114 dB dynamic range
Bypass	True hard bypass

Туре	Class compliant USB 2.0, type B
Supported operating systems	Windows 7 or higher** Mac OS X 10.6.8 or higher iOS 8 or higher (iPad) Android 6.0 or higher
Wi-Fi	
Antenna	Internal
Access Point, number of clients	Max. 1
IEEE 802.11 b/g standard	2.4 GHz
Frequency Range	2,412 - 2,462 MHz
WLAN channels	11
Max Output Power	16 dBm (802.11 b) / 20 dBm (802.11 g) / 20 dBm (802.11 n)
Power Requirements	
Mains connector	Standard IEC receptacle
Power consumption	55 W max.
Internal Switch-mode PSU	Autorange 100-240 V, (50/60 Hz)
Environmental	
Operating temperature range	5°C – 45°C (41°F – 113°F)
Physical (Packaged)	
Dimensions (H x W x D)	116 x 461 x 224 mm
Weight	5.0 kg
Shipping Weight	5.9 kg

Other important information

1. Register online. Please register your new Music Tribe equipment right after you

purchase it by visiting <u>musictribe.com</u>. Registering your purchase using our simple

online form helps us to process your repair claims more quickly and efficiently. Also,

read the terms and conditions of our warranty, if applicable.

2. Malfunction. Should your Music Tribe Authorized Reseller not be located in your

vicinity,

you may contact the Music Tribe Authorized Fulfiller for your country listed under

"Support" at <u>musictribe.com</u>. Should your country not be listed, please check if your

problem can be dealt with by our "Online Support" which may also be found under

"Support" at musictribe.com. Alternatively, please submit an online warranty claim at

musictribe.com BEFORE returning the product.

3. Power Connections. Before plugging the unit into a power socket, please make sure

you are using the correct mains voltage for your particular model. Faulty fuses must

be replaced with fuses of the same type and rating without exception.

FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE **INFORMATION** 

Behringer

**DEEPMIND 12XD** 

Responsible Party Name: Music Tribe Commercial NV Inc.

• Address: 122 E. 42nd St.1,

• 8th Floor NY, NY 10168,

**United States** 

• Email Address: <a href="mailto:legal@musictribe.com">legal@musictribe.com</a>

FCC ID: QWHDEEPMIN12D

**DEEPMIND 12XD** 

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 the 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 the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment 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.

### Important information:

Changes or modifications to the equipment not expressly approved by Music Tribe can void the user's authority to use the equipment.

#### Caution!

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification to this equipment.

Such modifications could void the user authority to operate the equipment.

### FCC RF Radiation Exposure Statement:

Hereby, Music Tribe declares that this product is in compliance with Directive 2014/53/EU, Directive 2014/30/EU, Directive 2014/35/EU, Directive 2011/65/EU and Amendment 2015/863/EU, Directive 2012/19/EU, Regulation 519/2012 REACH SVHC

and Directive 1907/2006/EC.

- Full text of EU DoC is available at <a href="https://community.musictribe.com/">https://community.musictribe.com/</a>
- EU Representative: Music Tribe Brands DK A/S
- Address: Gammel Strand 44, DK-1202 København K, Denmark
- UK Representative: Music Tribe Brands UK Ltd.
- Address: 8th Floor, 20 Farringdon Street London EC4A 4AB, United Kingdom



Correct disposal of this product: This symbol indicates that this product must not be disposed of with household waste, according to the WEEE Directive (2012/19/EU) and your national law. This product should be taken to a collection center licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the efficient use of natural resources. For more information about where you can take your waste equipment for recycling, please contact your local city office, or your household waste collection service.

### **Documents / Resources**



behringer DEEPMIND 12XD True Analog 12-Voice Polyphonic Desktop S ynthesizer [pdf] User Guide

12XD, DEEPMIND 12XD True Analog 12-Voice Polyphonic Desktop Synthesizer, DEEPMIND 12XD, True Analog 12-Voice Polyphonic Desktop Synthesizer, 12-Voice Polyphonic Desktop Synthesizer, Polyphonic Desktop Synthesizer, Desktop Synthesizer, Synthesizer

#### References

User Manual

- Behringer
- ◆ 12-Voice Polyphonic Desktop Synthesizer, 12XD, Behringer, DEEPMIND 12XD, DEEPMIND 12XD True Analog 12-Voice Polyphonic Desktop Synthesizer, Desktop Synthesizer, Polyphonic Desktop Synthesizer, True Analog 12-Voice Polyphonic Desktop Synthesizer

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