Quick Start Guide

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JT-16 VST

Vintage virtual synthesizer modelled on the legendary early 1980's classic. Virtual analog engine with meticulous recreation of all the original oscillators, filters, and envelopes. Authentic arpeggiator operation and direct front panel access to all the original factory patches and presets.

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Installation

The Behringer JT-16 VST is designed to work with both Microsoft™ Windows (Minimum version Windows 10), Windows 11 recommended; and Apple™ Mac OS (Minimum version 12 (Monterey), 13 (Ventura) or upwards recommended).

To install first download the required version from the Behringer.com website. This will usually be found in your download folder once complete.

Windows

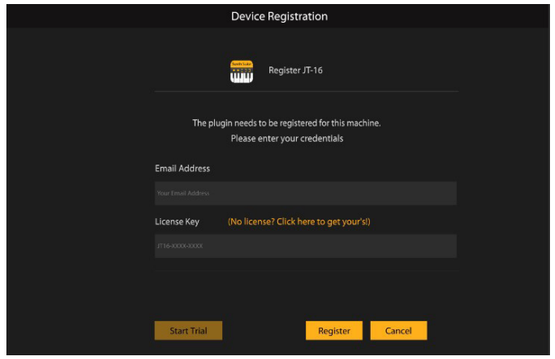
- Double mouse click the downloaded file, which can be found in the Downloads folder
- You will then see an information screen. Click Next.
- The next screen offers the option to install the JT-16 as a VST plugin and/or standalone application (the default is both). Select your requirement and click Next.
- You will then be offered a default location for the VST (if selected) to be installed, which you can change if you wish. Click Next.
- You will then be offered a default location for the standalone app (if selected) to be installed, which you can change if you wish. Click Next.
- The next screen offers you the option of creating a desktop shortcut for the standalone app)if selected). Click Next.
- The next screen shows information about the Installation. Click Install.
- The final screen confirms successful installation. Click End.

Mac OS

- Double mouse click the downloaded file, which can be found in the Downloads folder
- On the Introduction screen press Continue
- On the Destination Select screen select which drive (if you have more than one) you wish to install onto. The default is your Mac OS drive
- On the Installation Type screen you can select whether you wish to install AU, VST3 and/or Standalone. The default is all three
- Then press Install
- At this point you may be asked to enter your password
- You will be informed of the installation progress, and whether it has been successful
- At the end of the process you have the option of keeping the download, or moving it to Trash
- The JT-16 VST can now be found in your Applications folder

Registration and Payment

The first time that the JT-16 is run, whether as a standalone application or within a DAW, it requires registration to unlock, otherwise you will not be able to hear the audio output. Click on the NOT REGISTERED button to start the registration process. You will see the following dialogue box:



- First enter your email address, then click on “No license? Click here to get yours!”. This takes you to the Behringer Plugin Store (plugins.musictribe.com).
- Add the JT-16 to your cart then checkout using PayPal.
- The license code will be sent to the email address entered at the checkout.
- Once it has been entered the JT-16 will be unlocked and ready to use.
- There is also an option to start a 14 day free trial without registering first.

Operation

Depending on the options selected when installing the JT-16 VST will appear in your DAW’s list of software instruments and can be selected to be used alongside other instruments and audio tracks as you would normally do.

If you selected Standalone then, depending on your operating system:

Windows

The JT-16 VST will have been installed in the folder that you selected during installation. Double mouse click it to launch. It is recommended that when it has been launched for the first time you pin it to your task bar for easy future access.

Mac OS

The JT-16 VST will have been installed in your Applications folder. Double mouse click it to launch. It is recommended that when it has been launched for the first time you pin it to your dock for easy future access.

Both Platforms

The virtual controls can be operated by clicking with the mouse button then moving the mouse up to increase the settings, down to decrease.

Clicking on any control shows the current value for that control in a pop-up window; and gives information about the control’s function at the bottom left of the screen.

Hover the mouse over a button to get a description of the button’s function at the bottom left of the screen; and click on it to activate or deactivate. A virtual LED lights when a button is activated.

The version number for the plugin is displayed at the bottom right of the screen.

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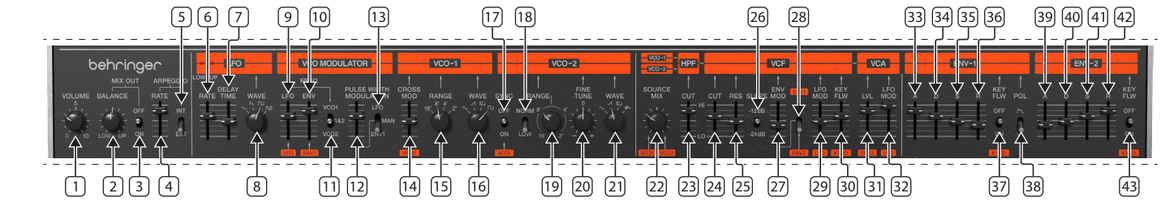
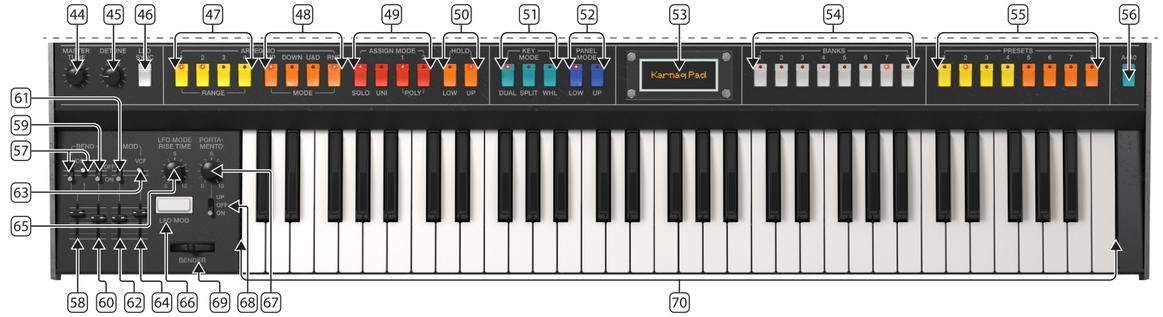
Controls





CONTROL SECTION

1. **VOLUME** – use this control to set the output level of the JT-16
2. **BALANCE** – use this control to set the balance between the upper and lower keyboard sounds.
3. **MIX OUT** – use this switch to set whether the balance control is operational or not.
4. **ARPEGGIO RATE** – use this control to set the tempo of the arpeggiator, from 6 bpm to 600 bpm when using the internal clock. If externally controlled then 1 = 1, 2 = 3/4, 3 = 1/2, 4 = 3/8, 5 = 1/3, 6 = 5/16, 7 = 1/4, 8 = 3/16, 9 = 1/6, 10 = 1/8, 11 = 1/12, 12 = 1/16, 13 = 1/24, 14 = 1/32, 15 = 1/48, 16 = 1/64 quarter notes.
5. **INT/EXT** – use this switch to select whether the arpeggiator is controlled by the internal clock set by control 4; or by an external clock.

44. **MASTER TUNE** – use this control to tune the JT-16 to other instruments.
45. **DETUNE** - use this control to adjust the detuning amount between voices in unison mode. Range is 0 to 10 cents.
46. **LFO SYNC** – use this button to select whether the LFO is synced to an external clock, or free running.

LFO

6. **RATE** – use this control to set the LFO rate, from 0.03 Hz to 30 Hz using internal sync. If external sync is used then 1 = 8, 2 = 6, 3 = 4, 4 = 3, 5 = 2, 6 = 3/2, 7 = 1, 8 = 3/4, 9 = 1/2, 10 = 3/8, 11 = 1/3, 12 = 5/16, 13 = 1/4, 14 = 3/16, 15 = 1/6, 16 = 1/8, 17 = 1/12, 18 = 1/16, 19 = 1/24, 20 = 1/32 quarter notes
7. **DELAY TIME** – use this control to set the length of the delay before LFO modulation takes effect. Range is instantaneous (no delay) to 7.5 s.
8. **WAVE** – use this switch to set the LFO waveform: sine, sawtooth, square or noise.

VCO MODULATOR

9. **LFO** – use this control to set the amount of LFO frequency modulation to the VCOs.
10. **ENV 1** – use this control to set the amount of frequency modulation to the VCOs from Envelope 1.
11. **VCO SELECTOR** – use this switch to select whether the frequency modulation set by controls 9 and 10 affects VCO 1, VCO 2 or both VCOs.
12. **PWM AMOUNT** – use this control to set the level of pulse width modulation applied to the VCOs’ pulse waves when selected. Range is 0% to 100%.
13. **PWM SOURCE** – use this switch to select the source of the pulse width modulation: LFO, manual or Envelope 1.

VCO 1

14. **CROSS MOD** – use this control to set the amount of modulation of VCO 1's frequency by VCO 2.
15. **RANGE** – use this switch to set the pitch range of VCO 1: 16', 8', 4' or 2'.
16. **WAVE** – use this switch to select the waveform for VCO 1: triangle, sawtooth, pulse or square.

VCO 2

17. **SYNC** – use this switch to select whether the frequency of VCO 2 is synced with that of VCO 1.
18. **NORM/LOW** – use this switch to select whether VCO 2 is running in its normal range (selected with control 19) or in a low frequency range for modulation.
19. **RANGE** – use this control to set the range of VCO 2: 16', 8', 4' or 2' in NORM mode, or -12 semitones to 24 semitones. in LOW mode.
20. **FINE TUNE** – use this control to either fine tune VCO 2 to VCO 1; or to detune it slightly.
21. **WAVE** – use this control to select the waveform for VCO 2: sine, sawtooth, pulse or noise.

SOURCE MIX

22. **SOURCE MIX** – use this control to balance the outputs of VCO 1 and VCO 2.

HIGH PASS FILTER

23. **CUT** - use this control to set the cutoff frequency of the high pass filter.

VCF

24. **CUT** – use this control to set the cutoff frequency of the low pass filter.
25. **RES** – use this control to set the resonance amount of the low pass filter. Note that at high levels this will cause the VCF to self-oscillate.
26. **SLOPE** – use this switch to select whether the VCF's operating slope is 12 dB/oct or 24 dB/oct.
27. **ENV MOD** – use this control to set the amount of modulation of the VCF cutoff frequency by either Envelope 1 or Envelope 2.
28. **MOD SOURCE** – use this switch to select whether the envelope modulation of the VCF is by Envelope 1 or Envelope 2.
29. **LFO MOD** – use this control to set the amount of modulation of the VCF cutoff frequency by the LFO.
30. **KEY FLW** – use this control to allow the notes played on the keyboard to affect the VCF cutoff frequency. Higher notes will sound brighter. At full range this can also be used for keyboard control of the VCF when it is self-oscillating.

VCA

31. **ENV 2 LVL** – use this control to set the amount of VCA modulation from Envelope 2.
32. **LFO MOD** – use this control to set the amount of VCA modulation from the LFO.

ENV 1

33. **A** – use this control to set the attack time of Envelope 1, from 1 ms to 7.2 s.
34. **D** – use this control to set the decay time of Envelope 1, from 2 ms to 46.5 s.
35. **S** – use this control to set the sustain level of Envelope 1, which will be maintained until keys are released.
36. **R** – use this control to set the release time of Envelope 1, from 2 ms to 46.5 s.
37. **KEY FLW** – use this switch to select whether Envelope 1 tracks the keyboard or not.
38. **POL** – use this switch to select whether Envelope 1 is following a normal or inverted curve.

ENV 2

39. **A** – use this control to set the attack time of Envelope 2, from 1 ms to 7.2 s.
40. **D** – use this control to set the decay time of Envelope 2, from 2 ms to 46.5 s.
41. **S** – use this control to set the sustain level of Envelope 2, which will be maintained until keys are released.
42. **R** – use this control to set the release time of Envelope 2, from 2 ms to 46.5 s.
43. **KEY FLW** – use this switch to select whether Envelope 2 tracks the keyboard or not.

ARPEGGIATOR

47. **RANGE** – use these buttons to set the arpeggiator range: 1, 2, 3 or 4 octaves.
48. **MODE** – use these buttons to select the arpeggio mode: up, down up and down, random. When no button is selected then the arpeggiator is not operational.

KEYBOARD MODE

49. **ASSIGN MODE** – use these buttons to select what mode the keyboard control is set to: solo, unison, poly 1 or poly 2.
50. **HOLD** – use these buttons to hold notes played on either the lower or upper keyboard. Both can be used simultaneously.
51. **KEY MODE** – use these buttons to select whether the keyboard is operating as a dual keyboard, a split keyboard or a single (whole) keyboard.
52. **PANEL MODE** – when a dual or split keyboard is selected by buttons 51 use these buttons to select whether the panel is controlling the lower or upper keyboard sound.

PRESETS

53. **DISPLAY** – the display shows the current preset name. Click on the display to show the presets menu.
54. **BANK** – use these buttons to select which preset bank (1 – 8) is in use.
55. **PRESET** – use these buttons to select a preset (1 – 8) from the current bank.
56. **A440** – use this button to activate a tuning tone of 440 Hz.

    Presets can also be selected by using the < and > buttons (71 & 72) on the toolbar; or by using the preset menu (73).

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MODULATION

57. **VCO BEND** – use these switches to select whether pitch bend affects VCO 1, VCO 2 or both.
58. **BEND AMOUNT** – use this control to set the amount of pitchbend to the VCOs.
59. **VCF BEND** – use this switch to select whether pitch bend affects the VCF cutoff frequency.
60. **BEND AMOUNT** – use this control to set the amount of pitch bend to the VCF.
61. **VCO MOD** – use this switch to select whether LFO modulation affects the VCOs or not.
62. **MOD AMOUNT** – use this control to set the amount of LFO modulation to the VCOs.
63. **VCF MOD** – use this switch to select whether LFO modulation affects the VCF or not.
64. **MOD AMOUNT** – use this control to set the level of LFO modulation to the VCF.
65. **LFO MOD RISE TIME** – use this control to set the rise time of the LFO, from 0 ms to 8 s.
66. **LFO MOD** – use this button to trigger LFO modulation to the selected destinations.
67. **PORTAMENTO TIM**E – use this control to set the portamento time from 0 ms to 0.875 s.
68. **ORTAMENTO MODE** – use this switch to select whether portamento is off, on or upwards only.
69. **BENDER** – use this control to bend the pitch to the selected destinations.
70. **KEYBOARD** – this virtual keyboard can be used to play the JT-16 by pointing and clicking with the mouse of your computer; or will display the incoming MIDI notes played on an external keyboard or DAW.

TOOLBAR

Above the panel controls is a toolbar to control presets, settings etc.

71. **PRESET BACK** – use this button to step back through the presets.
72. **RESET FORWARD** – use this button to step forward through the presets
73. **PRESET MENU** – this shows the currently loaded preset. Clicking on the arrow to the right opens the menu page:
    - Factory Presets
    - User Presets
    - Save / Save As where presets have been edited
    - Browse Favorites Only
    - Reveal Preset Folder in Finder (Mac OS) / Explorer (Windows)
74. **PRESETS BROWSER**

    The Presets Browser allows the sounds stored in your JT-16 to be explored, categorized and marked as a favorite. When first downloaded the JT-16 comes with a number of factory presets, which are stored in the Factory Bank. These can be added to the 'liked' list by clicking on the heart icon to the left of the preset name. The factory presets cannot be deleted.

    Using the 'bank' tab at the top of the screen allows the bank to be switched between Factory and User. User presets are the ones that you have created yourself; and as well as having the same 'like' option as the factory sounds can also be saved, loaded and deleted.

    When creating a sound of your own you can also categorize it by type and style. Available types are:

    - Bass (five sub-types)
    - Drums (six sub-types)
    - Strings (four sub-types)
    - Electric Piano (four sub-types)
    - Lead (ten sub-types)
    - Sound Effects (six sub-types)
    - Brass and Winds (four sub-types)
    - Vocal (two sub-types)
    - Sequence (five sub types)
    - Keys (eight sub-types)
    - Organ (three sub-types)
    - Pad (six sub-types)

    Styles are grouped into three categories: Genre, Style and Characteristics. You can pick as many from each group as you like to describe a sound.

    The use of Type and Style makes it easy to search for the sound(s) that fit into what you are working on by using the search function to search on specific words.

    Factory and User presets can also be allocated MIDI patch numbers in the browser for use by controllers and DAWs.

75. **SAVE NEW** – use this button to save a new preset. Options available are:
    - Preset Name
    - Designer
    - Description
    - Bank
    - Type
    - Genre (optional)
    - Style (optional)
    - Characteristics (optional)
76. **LIKE** – use this button to add the currently selected preset to the Liked group.
77. **FX** – use this button to access the FX menu, where effects can be added to the JT-16's output. There are three effects slots, each of which can have one effect allocated to it. Options are:
    - Chorus (speed, depth, dry/wet mix)
    - Delay (time, feedback, dry/wet mix)
    - Reverb (decay, damping, dry/wet mix)

    All effects can be switched in or out as required. When active the control positions are indicated by yellow surrounds to the controls.

78. **MAP** – use this button to open the Map menu, which gives control over the following macros:
    - Brightness (LPF cutoff)
    - Timbre (HPF cutoff)
    - Time (Arpeggiator rate)
    - Movement (LFO rate sync)

    The MAP button also contains the Key Mode Overlay function, which allows the split point of a split keyboard to be set by pressing the Key Mode Overlay button and using the mouse to set the point. The lower keyboard is marked in blue; the upper in yellow. The presets for each keyboard can also be set here.

    A macro can be removed by clicking on the trash icon; and there is a tickbox to select whether it affects both upper and lower panels.

79. **MIDI** – use this button to set MIDI parameters for each of the virtual controls, macros and the effects controls. Click the button, then click a control to see the associated information, which can be edited if necessary:

    - Item (automatically allocated)
    - Channel
    - CC Number
    - Parameter Name (cannot be edited)
    - Minimum Level
    - Swap (swaps minimum and maximum values)
    - Maximum Level
    - Trash (removes the line from the table)
    - Affects both panels – if ticked then the CC will alter both upper and lower keyboard sounds

80. **SETTINGS** – use this button to access the settings menu:

    - VST output (shows all available outputs – default is the computer's built in output)
    - Sample Rate (44.1 kHz (default), 48 kHz, 88.2 kHz, 96 kHz)
    - Audio Buffer Size (Available range is 16 samples to 2048 samples. Default is 512 samples)
    - Active MIDI Input (shows available MIDI sources and allows selection of the required source by tickbox)

    Please note that this is based on the Standalone VST. The AU and VST3 versions also have a power switch to the left of the toolbar to activate or deactivate the plugin; and may have different options according to the DAW used.

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We Hear You

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