



Fractal Audio VP4 Compact Multi Effects Processor User Guide

[Home](#) » [FRACTAL AUDIO](#) » Fractal Audio VP4 Compact Multi Effects Processor User Guide 

Contents

- [1 Fractal Audio VP4 Compact Multi Effects Processor](#)
- [2 Controls](#)
- [3 The Main Display](#)
- [4 SETTING UP](#)
- [5 BASIC EDITING](#)
- [6 FAQ:](#)
- [7 Connect Pedals and Switches](#)
- [8 WARRANTY](#)
- [9 Documents / Resources](#)
 - [9.1 References](#)
- [10 Related Posts](#)



Fractal Audio VP4 Compact Multi Effects Processor



Controls

Press **HOME** at any time to show the Home page.

Press **SAVE** to save the current Preset. Press **ENTER** 2x to confirm.

Press **HOME+SAVE** at the same time to show the **MODE SELECT** screen and tap a footswitch to make a choice (See **FOUR MODES** on p. 3)

Depending on the selected **MODE**, use the footswitches to:
 Change **Presets** (green),
 Select **Scenes** (red),
 Toggle **FX** (blue) ON/OFF,
 ...or access the **TUNER/TEMPO** (yellow).
 There are also various press and hold options for each mode. See p. 4

PAGE buttons step left and right through menu pages.

Use **ENTER** and **EXIT** to confirm or cancel various options.

Turn the **ABCD** knobs to adjust settings and values.

Turn **SELECT** to highlight various on-screen areas. On the **Home** page, **SELECT** also changes the **MODE**.

SETUP

Press **ENTER+EXIT** at the same time to open the **EXIT** menu. Use the page buttons to access Audio, Footswitches, Pedals, MIDI, Global, Reset, and more. Press **EXIT** to leave **SETUP** and return to wherever you were.

*NOTE: Changes in the Setup menu are stored as you make them. You do NOT need to press **SAVE**. As you make changes, the VP4 will display "SAVING..." in the title bar. Do not power the VP4 off while it is saving, or your most recent changes could be lost.*

The Main Display

The top line shows the **PRESET** Name.

The VP4 contains 104 presets grouped in lettered **BANKS** (A-Z) containing four presets each.

The second line shows the **SCENE** Name.

Each preset contains four **Scenes**.
 Scenes are a power user feature that can switch FX without "tap-dancing," change channels, and more.
 See your Owner's Manual for more on Scenes.

Labels on some pages show ABCD knob functions. Tips help you to navigate the VP4.

Each preset contains four effects. You'll find Drives, Delays, Reverbs, Modulation FX, EQs, and many more.

The letter beneath each effect shows its current **CHANNEL**. "Channels" are a power user feature that can add greater sonic flexibility within a single preset. See your Owner's Manual for more on Channels.

Effects Mode 4CM

Title Routing Pages Mini Tuner CPU Meter Tempo

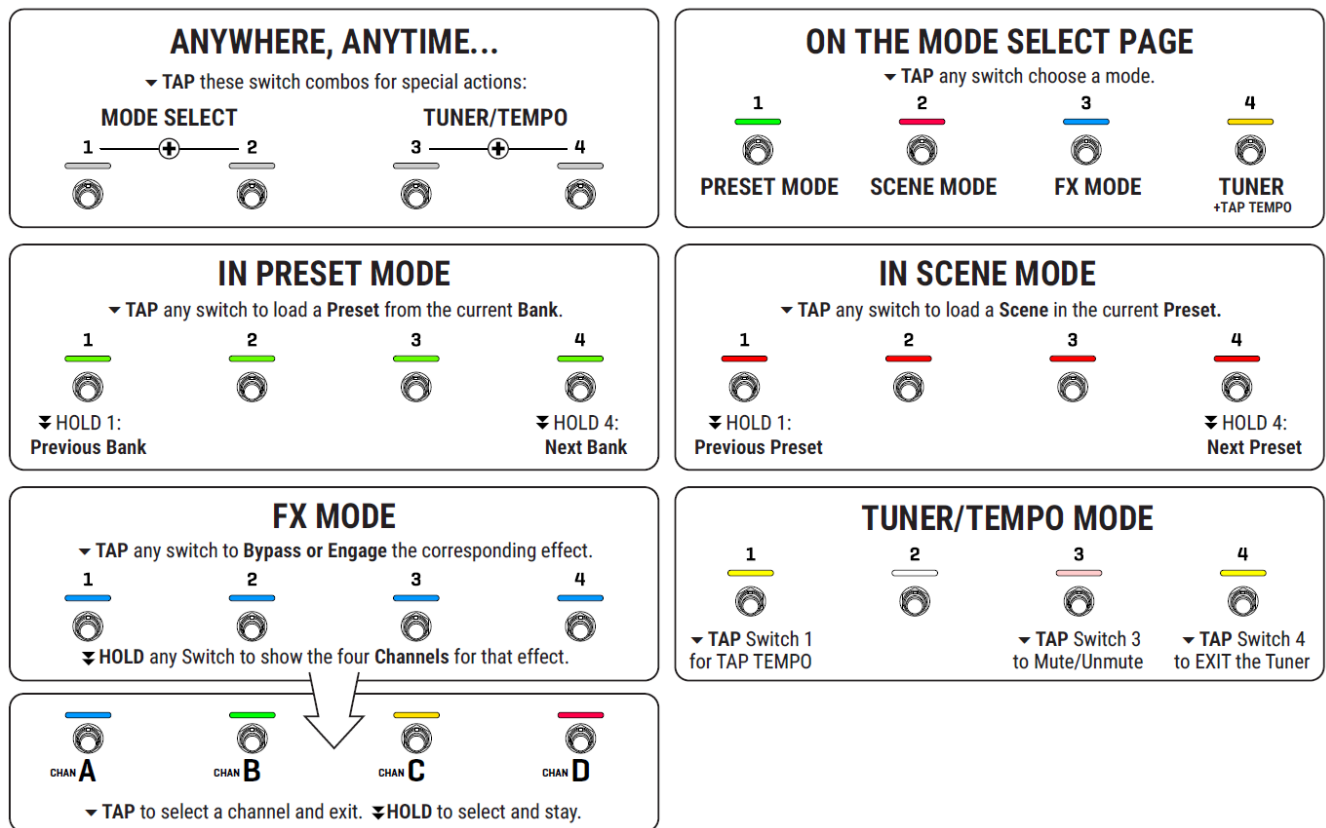
A1: Preset Name
S1: Scene Name

FX 1 TYPE A **FX 2 TYPE A** **FX 3 TYPE A** **FX 4 TYPE A**

Tip Text

Knob A Label Knob B Label Knob C Label Knob D Label

Footswitches & GIG Mode



A convenient master footswitch setting called GIG MODE is enabled by default. It allows you to access Presets, Banks, Scenes, Effects, Channels, Tuner, and Tap Tempo.

NOTE: The default press and hold options in “Gig Mode” cause effects and other footswitches to fire when you release the switch instead of when you press it down. To disable or customize press and hold, use the **SETUP>Footswitches** page. See your Owner’s Manual for more.

SETTING UP

THE VP4 CAN BE USED FOR “PRE” OR “POST” FX IN A WIDE VARIETY OF SETUPS. THE UNIT HAS POP SUPPRESSION BUT AMPS AND SPEAKERS SHOULD STILL BE TURNED ON LAST, AND OFF FIRST.

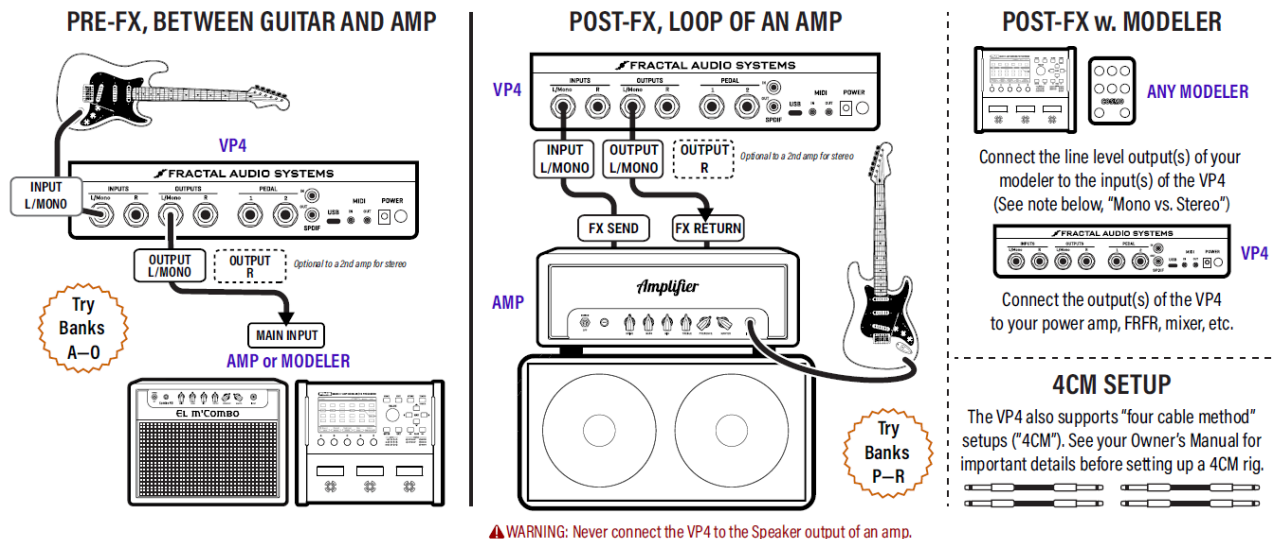
Input Levels

The VP4 comes set for a typical guitar with hot pickups. If the IN CLIP warning appears in the display, it means the input levels are too high. To adjust, go to **SETUP > Audio > Input Pad** and turn the A knob to increase the pad setting until clipping stops. If the VP4 still clips at the maximum pad setting of 18 dB, reduce the output level of the connected guitar or device. See your Owner’s Manual for more, including how the VP4 makes automatic Input Pad adjustments.

Output Levels

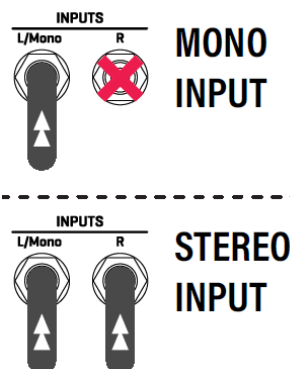
With no effects or custom settings, the VP4 outputs a unity gain signal. However, overall output levels can vary based on the settings of your effects, presets, and scenes. If output clipping occurs, an OUT CLIP warning will be displayed, indicating that you need to lower the levels of your effects, preset, or scene. See your Owner’s Manual for more on Output Levels.

Setting up



MONO vs. STEREO

The VP4 defaults to "MONO" Input Mode. In mono, use only the L/Mono input. For stereo input signals, connect to both L/Mono and Right inputs and change SETUP > Audio > Input Mode to "STEREQ."



The VP4 defaults to "STEREO" Output Mode which is also compatible with mono setups. For more on Mono vs. Stereo, see your Owner's Manual.

BASIC EDITING

First, select any preset by entering Preset Mode.

SELECT OR CHANGE FX BLOCKS

- Change to FX Mode.
- Turn ABC or D to change the corresponding Block Type (for example Chorus, Delay, Drive)
- Press ENTER.

EDIT FX SETTINGS

- Turn SELECT to highlight any effect.
- Press ENTER to show the Basic Editor
- Use knobs ABCD to adjust settings. Turn SELECT to change rows.

- Use PAGE buttons for FX with more options. The left-most page allows you to change Effect Type.

SAVING CHANGES

- Press SAVE. Use ABCD and SELECT to choose a location and edit names. Press ENTER to confirm.

FAQ:

Block Type vs. Effect Type?

Effects on the VP4 are organized as high level “Blocks” like “Reverb” or “Drive” Blocks contain an “Effect Type” picker for sub-types like “Deluxe Verb” or “Face Fuzz” The TYPE PICKER appears automatically the first time you edit a new effect. To change Effect Type later, edit the effect and Page Left to the type page. The VP4 uses many different types of page layouts allowing you to edit effects and other settings. Use SELECT and ABCD knobs to navigate and make changes.

What is a Preset?

Every preset is a complete virtual pedalboard with its own four effects. In every preset, you can choose FX, dial them in, and save your settings. Every preset in the VP4 can be customized or even overwritten. Some players may use only a single preset. Others might create one preset for every gig, every guitar, or even parts of a song. Every preset also contains extra settings. Press HOME and use the PAGE buttons to find the Noise Gate, Levels, EQ, and more.

What is a Scene?

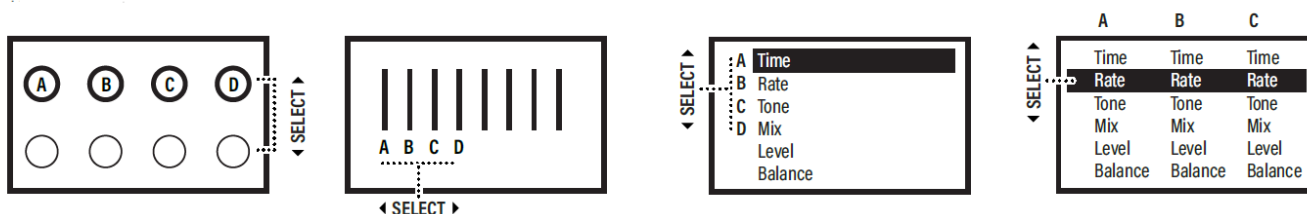
A SCENE is like a traditional pedalboard at a particular moment: effects are either ON or OFF and can even have different “channel” settings. To learn more about Scenes, see the VP4 Owner’s Manual.

What is a Channel?

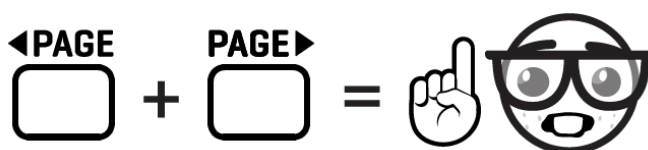
A channel is one of four independent sets of settings within a block, labeled A,B,C, and D. Channels allow you to switch between different configurations of the same effect block without needing multiple instances. For example, a Drive block could use Channel A for a clean boost, Channel B for overdrive, Channel C for distortion, and Channel D for fuzz. This provides a greater range of tones while saving CPU by using one block with multiple settings. For amenu of channels, press and hold the footswitch for any effect.

EFFECT EDIT PAGES

The VP4 uses many different types of page layouts allowing you to edit effects and other settings. Use SELECT and ABCD knobs to navigate and make changes.



Gear Nerd? Expert Tweaker?



The VP4 was designed to be easy to use, with minimal options like those you would expect from traditional pedals. Fractal Audio is also known for extensive depth and flexibility, however, allowing creative players and FX nerds to dive deep into sound design. If this sounds like you, then Expert Edit may be of interest. This special

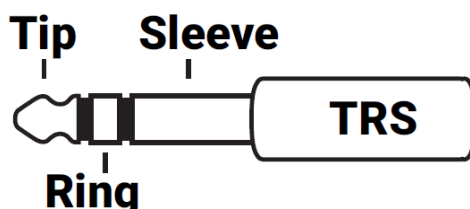
mode reveals expanded options for editing effects, modifiers, and the noise gate. To open Expert Edit, press PAGE LEFT and PAGE RIGHT at the same time while editing. Press EXIT at any time to leave Expert Edit.

Connect Pedals and Switches

The VP4 has two jacks for expression pedals or switches. When you first connect a pedal or switch it needs to be configured:

SET UP AN EXPRESSION PEDAL

- Expression pedals should have a linear taper and max resistance in the range of 10-100kΩ. The Fractal Audio EV-1 and EV-2 are ideal.
- To Connect using a TRS-to-TRS cable. Guitar patch cables will not work!
- To configure a pedal, open SETUP
- For the desired pedal (#1 or #2), set Pedal Type to “Expression”
- Select the Calibrate line, press ENTER, and follow the prompts.



SET UP A SWITCH

- Instead of a pedal, you can connect one switch to one Pedal jack.
- To configure a pedal jack to work with a switch, open SETUP > Pedal and set Pedal Type to one of the “Switch” options. (Choose “Virtual Toggle” to change the action of a momentary switch to latching. Switches do NOT require calibration.)

USING PEDALS TO CONTROL SOUND



Modifiers provide an easy way to use a connected pedal or switch to control sound settings like the sweep of a Wah or Whammy, the rate of a Rotary, the mix of a Delay or Reverb, or hundreds of other settings. To set up a modifier, look for the Modifier symbol while editing any effect. It appears as a small yellow circle in the center of a knob, or near a dropdown or menu parameter. Select the desired knob/control and press ENTER to open the modifier screen. Choose a Source, such as “PEDAL 1” to assign it. You can set the range and more. Press EXIT when you’re finished, and don’t forget to save the preset. See your Owner’s Manual for more on Modifiers and other ways to use pedals or switches using the SETUP > MIDI Remote menu.

BYPASS THE VP4 5

The VP4 features buffered analog bypass. This passes signal directly from the input to the output with no digital conversion, latency, or processing. If you want analog bypass to turn on automatically whenever all four effects are by passed, enable SETUP > Global Settings > Automatic VP4 Bypass.

CPU

As you add effects or use settings that are more demanding, the CPU level will increase. A meter in the upper right shows the current CPU level. The normal limit is about 80%. If the limit is exceeded, the VP4 will switch to Bypass and show a warning, “CPU LIMIT: By passed” See your Owner’s Manual for more on CPU.

USB

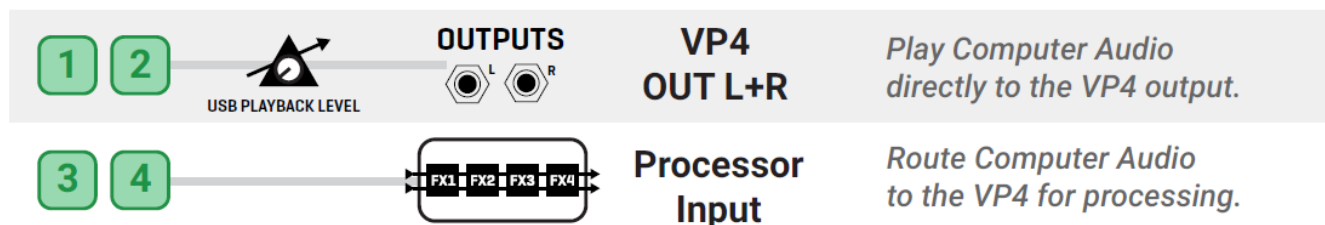
The VP4 can connect over USB to a Mac or PC. This offers capabilities including audio recording, playback, the use of VP4-Edit with Fractal-Bot, and direct MIDI integration with a DAW.

NOTE: Windows requires a driver, available at <https://www.fractalaudio.com/vp4-downloads>

USB INPUTS (RECORDING)



USB OUTPUTS (PLAYBACK)



Hum with USB Connected?

Computers can create a ground loop with a guitar amp, causing hum when the VP4 is connected to both. To address this, consider a USB Audio Ground Loop Eliminator (Type C > C) between the VP4 and the computer, or an audio isolation transformer between the VP4 and the amp. Changing your computer between AC power and battery may also affect hum.

PRESET EXTRAS

Every preset has additional features besides effects. From Home, use the PAGE buttons to navigate. Remember, the title bar shows where you are.

The Noise Gate reduces noise when you’re not playing. Increase Threshold to close the gate on louder noise. Setting it too high may gate your playing. Ratio adjusts how powerful the gate is — from no effect to extreme.

Note: Some gate types rely on a global setting. For Europe, Australia and other regions with 50 Hz AC power, change SETUP > Global Options > AC Line Frequency to 50 Hz.

The Main Levels page lets you adjust the overall levels of the current Preset and each Scene in it. If you set levels too high, a “clipping” warning may appear. Lower the levels of effects, the preset, or the scene to address this. The Preset EQ page provides a 10-band EQ which can be set differently for every preset — a great tone shaping tool. If you make dramatic boosts, you may need to lower the overall level of the preset to avoid clipping.

The Preset Mix/Routing page provides a central place to adjust Mix, Level, Bypass, Channel, and more for every

effect in the current preset. Since these options are also found in the regular FX edit pages, most people will probably never need to use this area, but it is still a convenient tool to make adjustments, dial in scenes, etc. You can also change effect Routing, Kill Dry, Bypass Mode, and more. See your Owner's Manual for additional details. The Controllers page is actually the gateway to another menu. In the same way that an expression pedal can be used as a modifier (p. 5), you can also assign an Envelope Follower, ADSR, LFO, and Sequencer to make creative sound changes in real time. Also included are a Tempo page and a Modifiers overview. All settings in the Controllers sub-menu are part of the preset and can be dialed in and saved. See your Owner's Manual for more.

Use the Tools page to RESET any channel of any effect in the current preset to its default settings— useful for a fresh start or during troubleshooting. You can also reset the Noise Gate, Preset EQ, or the Controllers menu for the current preset. Remember to save if you want any changes to be permanent.

MANUAL & DOWNLOADS



The VP4 has a detailed Owner's Manual providing essential guidance on setup, operation, and troubleshooting.

Available downloads also include the Windows USB driver as well as any new firmware updates for the VP4.

<https://www.fractalaudio.com/vp4-downloads>

VP4-EDIT



VP4-Edit is a companion editor/librarian app for Mac or Windows, providing a powerful way to dial in every aspect of the VP4.

<https://www.fractalaudio.com/vp4-edit>

SUPPORT



Fractal Audio offers support via email. If you need help with the VP4, please visit <https://support.fractalaudio.com>

FORUM



Our forum is also a great resource, with members helping members around the clock: <https://forum.fractalaudio.com>

WARRANTY

Fractal Audio Systems warrants that your new Fractal Audio Systems product shall be free of defects in materials and workmanship for a period of one (1) year from the original date of purchase directly from Fractal Audio Systems. During the warranty period, Fractal Audio Systems shall, at its sole option, either repair or replace any product that proves to be defective upon inspection by Fractal Audio Systems. Fractal Audio Systems reserves the right to update any unit returned for repair and to change or improve the design of the product at any time without notice. Fractal Audio Systems reserves the right to use reconditioned parts and assemblies as warranty replacements for authorized repairs. This warranty is extended to the original retail purchaser for units purchased directly from Fractal Audio Systems or one of its authorized distributors or resellers.

This is your sole warranty. Fractal Audio Systems does not authorize any third party, including any dealer or sales representative, to assume any liability on behalf of Fractal Audio Systems or to make any warranty for Fractal Audio Systems. Fractal Audio Systems may, at its option, require proof of original purchase date in the form of a dated copy of original authorized dealer's invoice or sales receipt. Service and repairs of Fractal Audio Systems products are to be performed only at the Fractal Audio Systems factory or a Fractal Audio Systems authorized service center. Fractal Audio Systems may require advanced authorization of repairs to authorized service centers. Unauthorized service, repair or modification will void this warranty.

DISCLAIMER AND LIMITATION OF WARRANTY

THE FOREGOING WARRANTY IS THE ONLY WARRANTY GIVEN BY FRACTAL AUDIO SYSTEMS AND IS IN LIEU OF ALL OTHER WARRANTIES. ALL IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE, EXCEEDING THE SPECIFIC PROVISIONS OF THIS WARRANTY ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS WARRANTY. UPON EXPIRATION OF THE APPLICABLE EXPRESS WARRANTY PERIOD (1 YEAR), FRACTAL AUDIO SYSTEMS SHALL HAVE NO FURTHER WARRANTY OBLIGATION OF ANY KIND, EXPRESS OR IMPLIED. FRACTAL AUDIO SYSTEMS SHALL IN NO EVENT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES SUFFERED BY THE PURCHASER OR ANY THIRD PARTY, INCLUDING WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS OR BUSINESS, OR DAMAGES RESULTING FROM USE OR PERFORMANCE OF THE PRODUCT, WHETHER IN CONTRACT OR IN TORT. FRACTAL AUDIO

SYSTEMS SHALL NOT BE LIABLE FOR ANY EXPENSES, CLAIMS, OR SUITS ARISING OUT OF OR RELATING TO ANY OF THE FOREGOING.

Some states do not allow the exclusion or limitation of implied warranties so some of the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state. This warranty only applies to products sold and used in the USA and Canada. Fractal Audio Systems shall not be liable for damages or loss resulting from the negligent or intentional acts of the shipper or its contracted affiliates. You should contact the shipper for proper claims procedures in the event of damage or loss resulting from shipment.

BY ACCEPTING, INSTALLING OR USING ANY PART OF THIS PRODUCT YOU ARE CONSENTING TO ALL OF THE TERMS AND CONDITIONS OF THIS ENTIRE END USER LICENSE AGREEMENT ("EULA"). IF YOU DO NOT AGREE TO ALL THE TERMS AND CONDITIONS OF THIS ENTIRE AGREEMENT, ARE UNABLE OR UNWILLING COMPLY WITH THESE TERMS AND CONDITIONS, YOU MUST DISCONTINUE USE OF THE PRODUCT IMMEDIATELY AS YOU HAVE NO AUTHORITY OR LICENSE TO USE THE PRODUCT.

TERMS AND CONDITIONS

1. GRANT OF LICENSE FOR PRE INSTALLED OR USER UPGRADED FIRMWARE ("THE SOFTWARE")

Subject to the terms and conditions set forth herein, Fractal Audio Systems, ("FAS") grants you an individual, personal, non-sub licensable, nonexclusive license to use this product in accordance with the applicable end user documentation, if any (the "License"). The user will not, directly or indirectly, reverse engineer, decompile, disassemble or otherwise attempt to discover the source code or underlying ideas or algorithms of the Software; modify, translate, or create derivative works based on the Software; or copy (except for archival purposes), rent, lease, distribute, assign, or otherwise transfer rights to the Software (except as expressly authorized by this Agreement); remove any proprietary notices, comments, terms and conditions and or labels on or in the Software. As between the parties, you acknowledge that FAS and its licensors retain their respective ownership of the Software, any portions or copies thereof, and all rights therein throughout the world. Upon termination of this Agreement for any reason, the License and all rights granted to you under this Agreement will terminate and you will cease to use the Software. You may permanently transfer the limited rights of use of the Software granted to you under this Agreement only as part of a permanent sale or transfer of the hardware device containing the software, and only if the recipient agrees to be bound by the terms and conditions of this Agreement. You acknowledge that you have no rights in or to, and may not transfer or otherwise authorize the use of, any "beta" or "preview" software of FAS and its licensors. THIS LIMITED LICENSE TO USE AND TRANSFER THE SOFTWARE IS PROVIDED AS-IS AND IS SUBJECT TO THE RESTRICTIONS, INDEMNITY AND WARRANTY DISCLAIMERS AND LIMITATIONS OF LIABILITY SET FORTH BELOW.

2. RESTRICTIONS, WARRANTY DISCLAIMERS AND INDEMNITY OBLIGATION AGREED TO BY YOU IN EXCHANGE FOR LIMITED GRANT OF LICENSE.

YOU WILL ONLY USE THE SOFTWARE FOR LAWFUL PURPOSES AND IN COMPLIANCE WITH ALL APPLICABLE LAWS. YOU HEREBY AGREE TO DEFEND AND INDEMNIFY FAS AND ITS LICENSORS AGAINST ANY CLAIM OR ACTION THAT ARISES FROM YOUR USE OF THE SOFTWARE IN AN UNLAWFUL MANNER (INCLUDING, WITHOUT LIMITATION, ANY CLAIM OR ACTION ALLEGING INFRINGEMENT OF ANY PATENT, COPYRIGHT, TRADEMARK, TRADE SECRET, OR OTHER INTELLECTUAL PROPERTY; UNFAIR COMPETITION; VIOLATION OF GENERAL BUSINESS LAWS; OR VIOLATION OF ANY OTHER LAWS OR RIGHTS) OR ANY OTHER USE OF THE SOFTWARE NOT EXPRESSLY AUTHORIZED PURSUANT TO THIS AGREEMENT.

3. IMPULSE RESPONSE EXPORT FOR COMMERCIAL USE

Offering for sale any Impulse Response data (e.g. "Tone Match Export/Save/Dump", "User Cab Export/Save/Dump") created, converted or modified using Fractal Audio Systems hardware and/or software requires a commercial use license. Recording studios, consultants, and other commercial entities may use these features in conjunction with work performed for their commercial customers, but the resulting data files created may not be offered for sale or gifted to their commercial customers or other third parties without a commercial license from FAS and its licensors where applicable. Contact sales@fractalaudio.com to obtain a commercial license.

4. IMPULSE RESPONSE DATA EXPORT FOR NON-COMMERCIAL USE

If the product supports Impulse Response capture and export, you are free to export Impulse Response data for non-commercial use. This includes producing, converting, or modifying Impulse Response data for yourself, or offering/distributing such data at no charge to third parties. Creating Impulses for sale requires a Commercial License. Files created without a commercial license cannot be included for free with another product or package that is offered for sale. Contact sales@fractalaudio.com to obtain a commercial license.

5. SUPPORT

Subject to the terms hereof, FAS will provide you with e-mail support services for the Software. Under no circumstances will FAS have any obligation to provide you with hard-copy documentation, upgrades, enhancements, modifications, or telephone support for the Software.

6. TERMINATION

This Agreement is effective until terminated. Either party may terminate this Agreement upon written notice to the other party. FAS may also terminate this Agreement immediately, without prior notice or liability, if you breach any of the terms or conditions of this Agreement. All sections of this Agreement which by their nature should survive termination will survive termination, including, without limitation, warranty disclaimers and limitations of liability and limitations of use and transfer of the Software.

7. WARRANTY DISCLAIMER

The software is provided as is without warranty of any kind. FAS disclaim all warranties, expressed or implied, including but not limited to implied warranties, fitness for a particular purpose, and non-infringement. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

8. LIMITATION OF LIABILITY

NOTWITHSTANDING ANYTHING CONTAINED IN THIS AGREEMENT OR OTHERWISE, YOU AGREE THAT FAS AND ITS LICENSORS WILL NOT BE LIABLE WITH RESPECT TO THE SUBJECT MATTER OF THIS AGREEMENT UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY, INFRINGEMENT OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY INCIDENTAL, CONSEQUENTIAL, EXEMPLARY OR PUNITIVE DAMAGES OF ANY KIND. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE MAY NOT APPLY TO YOU.

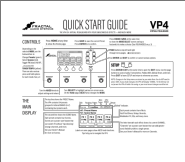
9. EXPORT RESTRICTIONS

You acknowledge that the Software, or any part thereof, or any process or service that is the direct product of the Software (the foregoing collectively referred to as the "Restricted Components") are of U.S. origin. You agree to comply with all applicable international and national laws that apply to these products, including the U.S. Export Administration Regulations, as well as end-user, end-use and destination restrictions issued by U.S. and other governments.

10. MISCELLANEOUS

The failure of either party to exercise in any respect any right provided for herein will not be deemed a waiver of any further rights hereunder of FAS and or its licensors. If any provision of this Agreement is found to be unenforceable or invalid, that provision will be limited or eliminated to the minimum extent necessary so that this Agreement will otherwise remain in full force and effect and enforceable. This Agreement will be governed by and construed in accordance with the laws of the state of New Hampshire without regard to the conflict of laws provisions thereof. You agree that this Agreement is the complete and exclusive statement of the mutual understanding of the parties and supersedes and cancels all previous written and oral agreements, communications and other understandings relating to the subject matter of this Agreement, and that all modifications to this EULA, or any commercial license that you may have obtained from FAS and or its licensors must be in a writing signed by you, FAS and or its licensors, where applicable, except as otherwise provided herein. No agency, partnership, joint venture, or employment is created as a result of this Agreement and you do not have any authority of any kind to bind FAS and or its licensors in any respect whatsoever. In any action or proceeding to enforce rights under this Agreement, the prevailing party will be entitled to recover costs and attorneys' fees. All notices under this Agreement will be in writing and will be deemed to have been duly given when received, if personally delivered; when receipt is electronically confirmed, if transmitted by facsimile or e-mail; the day after it is sent, if sent for next day delivery by recognized overnight delivery service; and upon receipt, if sent by certified or registered mail, return receipt requested.

Documents / Resources

	<p>Fractal Audio VP4 Compact Multi Effects Processor [pdf] User Guide VP4 Compact Multi Effects Processor, VP4, Compact Multi Effects Processor, Multi Effects Processor, Effects Processor, Processor</p>
---	--

References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.