

# Dig Deep MK3 User Manual



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# Controls

## Knobs

The Dig Deep MK3 comes with 5 control knobs, each knob can change two parameters depending on the SHIFT button state:

**Dry:** set the level of the dry signal

**Sub Mix:** set the overall level of the sub signal

**-1 Oct:** set the level of the -1 octave signal, the overall output level depends on Sub Mix

**-2 Oct:** set the level of the -2 octave signal, the overall output level depends on Sub Mix

**Low Pass:** set the cut point of the low pass filter on the sub signal. Turn it down to cut high frequencies; turn it up to pass more high frequencies

**High Pass:** set the cut point of the high pass filter on the sub signal. Turn it down to allow more low frequencies; turn it up to cut low frequencies. Turning it up can also help reduce unwanted noise from an acoustic guitar's body.

**Range:** adjust the range where the sub is tracking on the guitar fretboard. Turn it down to limit tracking on low notes; turn it up to expand tracking to higher notes.

**1<sup>st</sup> Harmonic:** set the level of the dominant frequency, the overall output level depends on Sub Mix

**CTRL I [CTRL II]:** this knob can be assigned to a parameter at choice from the application editor.

## Control Buttons

Two control buttons are available, each button can change two parameters depending on the SHIFT button state:

**Wave:** sets the sub waveform. Each waveform offers a distinct bass sound

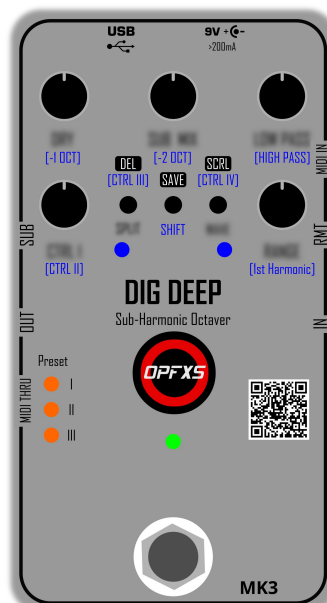
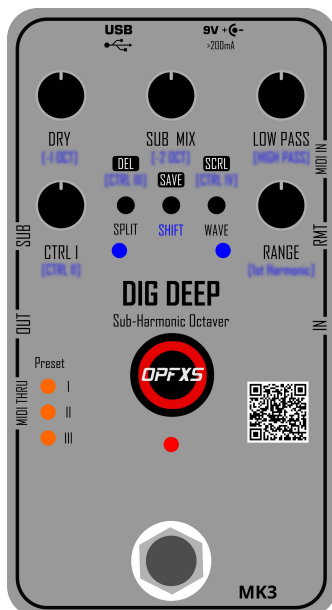
**Split:** when OFF, dry and sub are mixed on main OUT jack. When ON, dry goes through main output jack while sub goes through SUB output jack.

**CTRL III & CTRL IV:** can be assigned to a parameter at choice from the application editor

## SHIFT button

The SHIFT button toggles between SHIFT ON and OFF. When shift is OFF the status LED is **RED** and the knobs/buttons control the primary parameters: Dry, Sub Mix, Low Pass, Range, CTRL I, Wave, Split.

When shift is ON the status LED turns **GREEN** and the knobs/buttons control the secondary parameters: -1 Oct, -2 Oct, High Pass, 1<sup>st</sup> Harmonic, CTRL II, CTRL III, CTRL IV.



## LEDs

The central LED is a bi-color LED. When OFF the pedal is in bypass. When ON, either **RED** or **GREEN**, the effect is ON.

**RED** indicates that the pedal is not in SHIFT state.

**GREEN** indicates that the pedal is in SHIFT state.

The three **ORANGE** LEDs indicate the current preset.

The SX **BLUE** LED either indicates the status of SPLIT or CTRL III.

The DX **BLUE** LED either indicates the status of WAVE or CTRL IV.

## PRIMARY and [SECONDARY] knob parameters

Secondary parameters can be distinguished from primary ones, as their names are enclosed in square brackets and printed in blue on the pedal enclosure. Primary parameters silkscreen color is black.

A parameter updates only when its associated knob is turned.

This is useful when toggling SHIFT status since the value of parameters are temporarily stored between changes.

*EXAMPLE: SHIFT state is OFF (RED LED ON) and you set DRY knob to maximum. Then you press SHIFT to enter SHIFT mode (GREEN LED ON) and move OCT -1 to minimum. When SHIFT is pressed again to exit the SHIFT state, the dry signal remains at maximum, even if the knob is set at minimum.*

When the knob is turned the central LED blink once.

In bypass mode the knobs are disabled and parameters are not updated if you move the associated knob or press the associated button.

## Connectors

Audio input: MONO jack input.

Audio output: main OUT and SUB (SUB is only active when SPLIT mode is selected).

MIDI IN: TRS 3.5mm mini jack, to receive MIDI messages (*official MIDI specs wiring*)

MIDI THRU: TRS 3.5mm mini jack, to route MIDI signal to other devices (*official MIDI specs wiring*)

## Power Supply

USB-C: used to power the pedal and connect to devices

DC JACK: BOSS<sup>(TM)</sup> standard 9V DC 2.1 mm jack with negative center for applying power to the pedal

The pedal needs at least 130mA but 200mA is recommended. There's no conflict in using both USB and DC jack at same time. In this case the pedal will source current from the 9V DC jack and USB communication will work still.

Only use 9V DC power supplies with negative center. The pedal can tolerate a maximum of 12V DC but this may cause stress and overheating of some parts.

The Dig Deep MK3 is protected against over-voltage, polarity inversion and over-current. If an over-current event occurs, the internal resettable fuse will activate, putting the pedal into protection mode until power is removed.

## Preset

The Dig Deep MK3 can store up to 3 presets. The selected preset is indicated by the associated LED.

When the pedal is powered on all the preset LEDs are turned OFF.

To enter preset mode long press footswitch and PRESET LED 1 will load if previously saved.

## Preset Buttons

Long pressing these buttons handle the following preset functions:

**SAVE**: a long press of the central button saves the preset in the current position indicated by **ORANGE** LEDs I, II or III

**SCRL**: a long press of DX button scrolls the presets without loading.

**DEL**: a long press of SX button deletes the selected preset. If no preset was saved it will do nothing

## Load a preset

In the default mode a long press of the footswitch loads the next preset. The preset is loaded only if it was previously saved. If no preset was previously saved nothing will happen. At pedal power on no preset is loaded unless “Load Preset At Power ON” is set from editor.

The Dig Deep Editor allows to change the mode how a preset can be loaded in 3 different ways:

- Footswitch long press
- Footswitch short press
- Remote switch

If a preset has been deleted or was never saved, the pedal will skip that position when cycling through presets.

**Example:** If presets are saved in positions I and II, and you are currently on preset II, a long press of the footswitch will attempt to load the next preset. Since preset III is empty, the pedal will skip it and return to preset I.

Presets can also be loaded via MIDI by sending a Program Change message.

## Save a preset

To save a preset, first select the desired preset slot. You can do this in two ways:

- **Scroll to it** using a long press of the **SCRL** button
- **Load it** using a long press of the **footswitch** (only if that preset was previously saved)

Once the preset is selected, **long-press the SAVE button**. The corresponding **orange LED** will flash a few times to confirm that the preset has been saved.

## Delete a preset

To delete a preset, first select the preset slot you want to remove. You can select it in either of the following ways:

- **Footswitch long press** (only if the preset was previously saved)
- **Long press of the SCRL button**

Once the preset is selected, **long-press the DEL button**. The corresponding **orange LED** will flash a few times to confirm that the preset has been deleted.

## Debug Mode

The Debug Mode allows to boot the pedal without memory settings. This can be useful in case of memory mismatch at startup. To boot the pedal in Debug Mode keep Wave button pressed at startup, the blue LED below will flash a few times.

Debug Mode is available starting from firmware 8.

# Editor

## Difference between Algorithm and Firmware in the Dig Deep MK3

The Dig Deep MK3 internally runs 2 programs:

- the firmware
- the audio algorithm

They are separate entities but communicate each other to make the pedal do its job.

The algorithm is the program that performs all the audio functions. It's updated from the editor through the Upload Selected button.

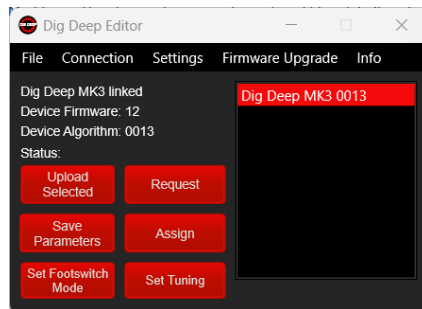
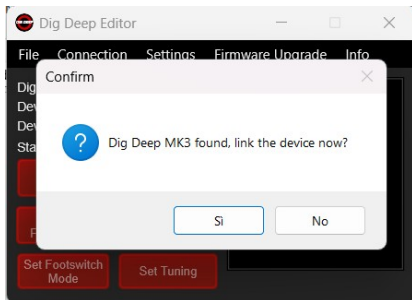
The firmware is the program which handles all the rest, knobs, buttons, presets, midi and communication with the editor. It can be upgraded through the Firmware Upgrade menu.

When a new version of the editor is available the application will warn you if it needs to upgrade either the firmware, the algorithm or both.

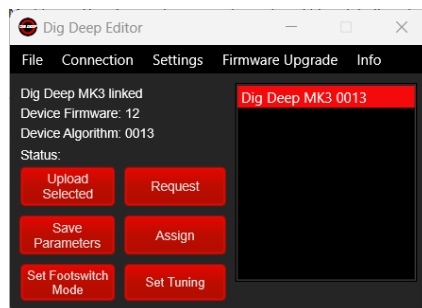
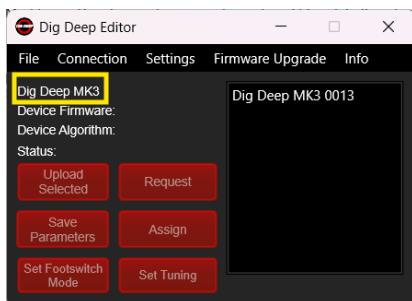
## Pedal detection and connection

The application can detect the pedal in two different ways:

- 1) Go to Connection menu and click SCAN. If the pedal is detected the application will ask if you want to link the pedal:



- 2) If the pedal is detected the "Device" label on top left will display Dig Deep MK3. Go to Connection menu and click Link. The label will show "Dig Deep MK3 linked":



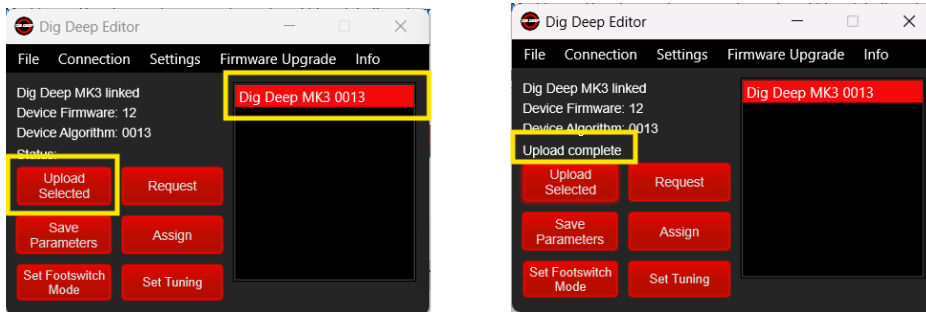
## Algorithm Effect upload

To upload a new algorithm:

1. Select the desired algorithm in the right list
2. Click Upload Selected and confirm.

3. The pedal will now enter in bypass and preset LEDs will turn ON in sequence from 1 to 3, RED LED will blink a few times. The pedal will now exit from bypass and RED LED will turn on. The status will display “Upload Complete” if successful.

Upload is fast, it should take no more than 3 seconds. If upload fails the status label will show “Upload failed”. Click Upload Button again and if it fails again try repeating the procedure. Eventually disconnect the pedal from USB and close the editor.



## Request

The Request button gets all settings currently stored on the pedal:

- parameters
- assignments
- footswitch mode
- current tuning
- firmware and algorithm version

If FX window is open move a knob on the pedal (except CTRL if not assigned) and click Request. You will see the parameter update on the application.

## Assignments

The Dig Deep MK3 allows to assign CTRL I, CTRL II, CTRL III and CTRL IV to different parameters. It's also possible to assign the Remote input either to Preset selection or Bypass.

To assign a parameter to a control select the desired parameters in the drop-down boxes and click the Assign button.

## Footswitch Mode

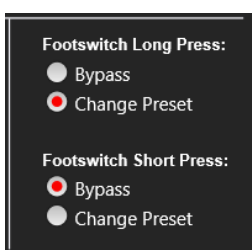
The footswitch mode function allows to configure which action the footswitch will perform for short and long press. You can choose if short or long press will handle Bypass toggle or Preset selection.

Footswitch short press:

- Bypass
- Preset

Footswitch long press:

- Bypass
- Preset

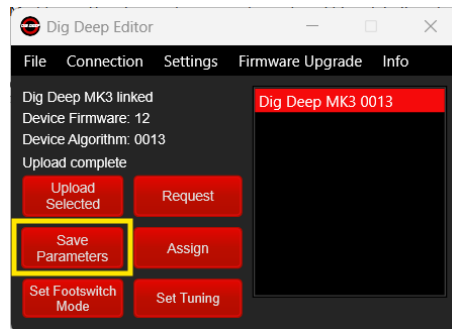


Note that you can also set the footswitch to perform one function only, for example you can set that short press and long press will both handle bypass toggling.

Once you have checked the desired selection click Set Footswitch Mode button. The red LED will blink a couple of times indicating that the message was successfully received by the pedal.

## Save Parameters

This function stores on the pedal the current status of the application parameters. For example if you want to set a different INPUT LEVEL adjust the knob to the desired position and click Store Parameters button. The new setting will be stored on the effect permanently until you change them again.



## Application Parameters

For application parameters we mean every knob, switch etc. available on the application that will change the actual functions of the effect.

Application parameters are divided into:

- standard parameters (those available on the pedal too, like Dry, Sub Mix, etc.)
- assignable parameters

Assignable parameters are those that are not physically available on the pedal itself but can be modified from the application and/or assigned to the 4 controls (CTRL).

When you open the FX setting by clicking on the algorithm the window will display both standard and assignable parameters. If the pedal is connected and you click Request all the parameters will update to the current effect settings.

Standard parameters are initially “disabled” (you can enable them in Settings menu)

Any change you do to parameters it will be updated in real time on the pedal but they won't be stored until you click Store Parameters Settings button.

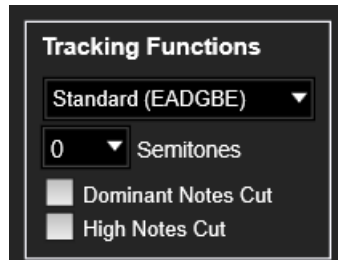
## Tracking Functions

The Tracking Functions allow to set advanced tracking features on the pedal.

- **DOMINANT NOTES CUT (DNC):** improves tracking on lowest chord (E-open chord in standard tuning) with high RANGE settings.
- **HIGH NOTES CUT (HNC):** reduce tracking on undesired notes on the first guitar frets and open strings from the 3<sup>rd</sup> string (G string in standard tunings).

Both **DNC** than **HNC** can be assigned to the CTRL III or CTRL IV button, like other assignable parameters, or stored on the pedal.

When assigned to CTRL buttons you can toggle them via the associated CTRL button. When saved to the pedal they will be stored permanently (until removed).



## Setup Tracking Functions

To allow Tracking Functions to do their trick you need to tell the pedal in which tuning are you playing. This can be done from the tuning choice box where you can select one of the major tunings and eventually adjust the semitones setting.

For example:

- if you are playing in standard tuning with capo on 3<sup>rd</sup> fret select Standard Tuning and +3 Semitones.
- if you are playing in Drop-D and tuned a half-step down select Drop-D tuning and -1 Semitones.

To store a tuning on the pedal:

- select the tuning in the choice box in the parameter window
- click Set Tuning button in the main window. The bypass LED will blink a few times.

## Settings menu

### Look

Allows to change the aspect of the editor.

### MIDI channel

Allows to set the receiving MIDI channel from 1 to 16 or set it to OMNI mode. In OMNI mode the pedal will listen to all the channels. When the channel is selected the configuration is immediately stored on the pedal.

### Upload Tuning Data

This uploads all the tuning data requested by Tracking Functions to work. They are factory loaded before shipping the pedals so there is no need to upload them again unless you perform “Erase Settings” action from Firmware Upgrade.

### Instrument Range

The **Instrument Range** setting defines the overall tracking range of the Dig Deep MK3. Two options are available:

- **Standard** – Recommended for standard guitars or guitars tuned down by up to one whole step.
- **Low** – Recommended for bass, baritone guitars, or guitars tuned down by more than one whole step.

The “one step” guideline is not absolute, as results may vary depending on the instrument and playing style. For best performance, experiment with both settings to determine which works best for your setup.

When an option is selected, the instrument range is immediately applied and saved to the pedal. The status LED will flash a couple of times to confirm the change.

### Bypass Status

This option allows the pedal to **remember its current bypass state when powered off**. When enabled, the pedal will restore the same bypass status at the next power-on.

## Set assignable Parameters to Default

This function resets **all assignable parameters** in the editor to their default values. After resetting, click **Save Parameters** to store the new default configuration.

## Load Preset At Power ON

When this option is enabled, the pedal will automatically load the **first available preset** at startup.

The pedal checks the preset slots in order:

1. **Preset I**
2. **Preset II**
3. **Preset III**

If preset I is empty, the pedal will attempt to load preset II. If preset II is also empty, it will attempt to load preset III. If **none** of the three preset slots contain a saved preset, no preset will be loaded and the pedal will start with its **default settings**.

## Firmware upgrade

Starting from firmware v9 there are 2 methods for upgrading the firmware:

### **New Method (only from firmware v9 and Editor 1.12 and above):**

1. Connect the pedal to USB and Editor as usual
2. Go to Upgrade Firmware menu and click Upgrade Mode
3. Follow the on screen instructions

### **Legacy Method (valid for all the firmware versions):**

To upgrade the firmware keep SHIFT button pressed while connecting the USB cable to the Dig Deep MK3 (the pedal has not to be powered from DC jack PSU). Preset LED II will be ON (just very dim).

1. Open the Dig Deep editor, go to Firmware Upgrade menu and click Upgrade Mode.
2. Go to Connection menu and click Scan & Link.
3. If connection is successful the message “connection to bootloader success” will appear.
4. Click OK and a new window will open, click Upgrade Firmware.
5. Once the upgrade is complete the message “Firmware Upgrade Complete, device will now restart” will appear, click OK and the pedal will exit firmware upgrade mode.

## File menu (save and load presets)

Save and Load preset menu allow to save files locally to be recalled later.

Save preset will store the values of the current controls status on editor. To get the actual configuration stored on the pedal it's essential to click Request button before saving the preset. You can give the preset a name at your choice and save as many as you want. Presets are stored in the user document folder in “/OPFXS/Dig Deep MK3/Preset/” folder.

Preset files are simple text files and you can copy, rename, delete them or move to any other location outside the Dig Deep editor folder.

When a preset is loaded through Load Preset the editor parameters will update and if the pedal is connected it will update its parameters too. This action won't overwrite the presets stored on pedal. If you want to store the Editor preset in one of the 3 preset positions on the pedal simply scroll to the desired preset with SCRL button and long press SAVE button.

## Editor Upgrade

There are 2 methods to upgrade the Dig Deep Editor application:

1) go to our website, download the latest version and install manually.

2) upgrade directly from the application:

- at application startup, if a new version is available, a pop-up window will appear
- go to Info menu and click Update Now

When upgrading the application the editor will warn if firmware and/or audio algorithm upgrade is required too.

## INFO menu

The info menu displays the following entries:

- Support: will redirect to a form on our website where you can email us to ask for support, report any bugs or request features
- Editor Version: the current version of the editor
- If there's any new version of the editor available or not
- Device serial number: the serial number of the pedal if connected
- Show update message: you can select if you want to display the update message at startup or not, by default it's checked to ON

## MIDI

### List of MIDI messages

Control Change

CC number	CC data	Function	Description
0	0-127	Bypass	Toggle bypass. 0=bypass ON; 1-127=bypass OFF
1	0-127	Dry	Set level of dry signal
2	0-127	Sub Mix	Set level of sub mix
3	0-127	-1 Oct	Set level of -1 octave level signal
4	0-127	-2 Oct	Set the level of -2 octave level signal
5	0-127	Wave	Toggle Wave type. 0 or 1-127
6	0-127	LPF	Set the Low Pass Filter
7	0-127	HPF	Set the High Pass Filter
8	0-127	1 <sup>st</sup> Harmonic	Set level of 1 <sup>st</sup> Harmonics signal
9	0-127	Split	0=Split OFF; 1-127=Split ON
10	0-127	Range	Set Range value

11	0-127	Input Level	Set the Input Level
12	0-25	1 <sup>st</sup> Harmonics Pitch	Set the pitch of 1 <sup>st</sup> Harmonic in semitones from -12 to +12: 0 = -12; 1 = -11; 2 = -10 ..... 13 = In pitch; 14 = +1; 15 = +2 ..... 25 = +12;
13	0-127	Clip	Add clipping to the sub signal
14	0-127	Dominant Notes Cut	0 = OFF; 1-127 = ON MAKE SURE TO SET THE TUNING AND SEMITONES BEFORE SENDING THIS MESSAGE
15	0-127	High Notes Cut	0 = OFF; 1-127 = ON MAKE SURE TO SET THE TUNING AND SEMITONES BEFORE SENDING THIS MESSAGE
16	0-127	Dry HPF	Set Dry HPF value
17	0-127	Limit Range	0 = OFF; 1-127 = ON
18	0-127	Noise Gate Status	0 = OFF; 1-127 = ON
19	0-127	Noise Gate Threshold	Set the Noise Gate Threshold
....			

#### Program Change

Program Change Number	Description
0	Set Preset 1
1	Set Preset 2
2	Set Preset 3