

# COMBO MODEL F



## OWNER'S MANUAL

VERSION 1.2.0

# 1. INTRODUCTION

Combo Model F is a virtual combo organ, modelled after a well-known Italian combo organ from the 1960s: the Farfisa Mini Deluxe Compact.

*Note that Farfisa does not endorse Combo Model F, nor is Farfisa in any way associated or affiliated with Martinic.*

## 1.1. Features

- 4-octave C-to-C keyboard.
- Harmonic range 6 polyphonic octaves.
- 16', 8', 4', 2 $\frac{2}{3}$ '.
- 3 treble voice tabs: Dolce, Principale, Strings.
- Multi-Tone Booster voice with All Booster tab.
- Knee lever control.
- Bass voice (grey keys).
- Vibrato unit with adjustable speed and depth.
- Volume pedal.
- Adjustable tuning per note.
- Scala scale file support.
- Fully modelled (no samples inside).
- Model includes oscillators, dividers, crosstalk, noise, filters, key contacts and key click.
- Velocity-sensitive key contact attack and release.
- Reverb unit.
- Speaker cabinet simulation.
- Fully automatable.

## 1.2. System Requirements

Combo Model F is available as a VST\* 2.4 or an Audio Units (AU) instrument, which means it needs to run inside VST or AU hosting software. Combo Model F has been tested in the following hosting software:

- Ableton Live 8
- ACID Pro 7
- AU Lab
- AudioMulch 2.0
- Cantabile

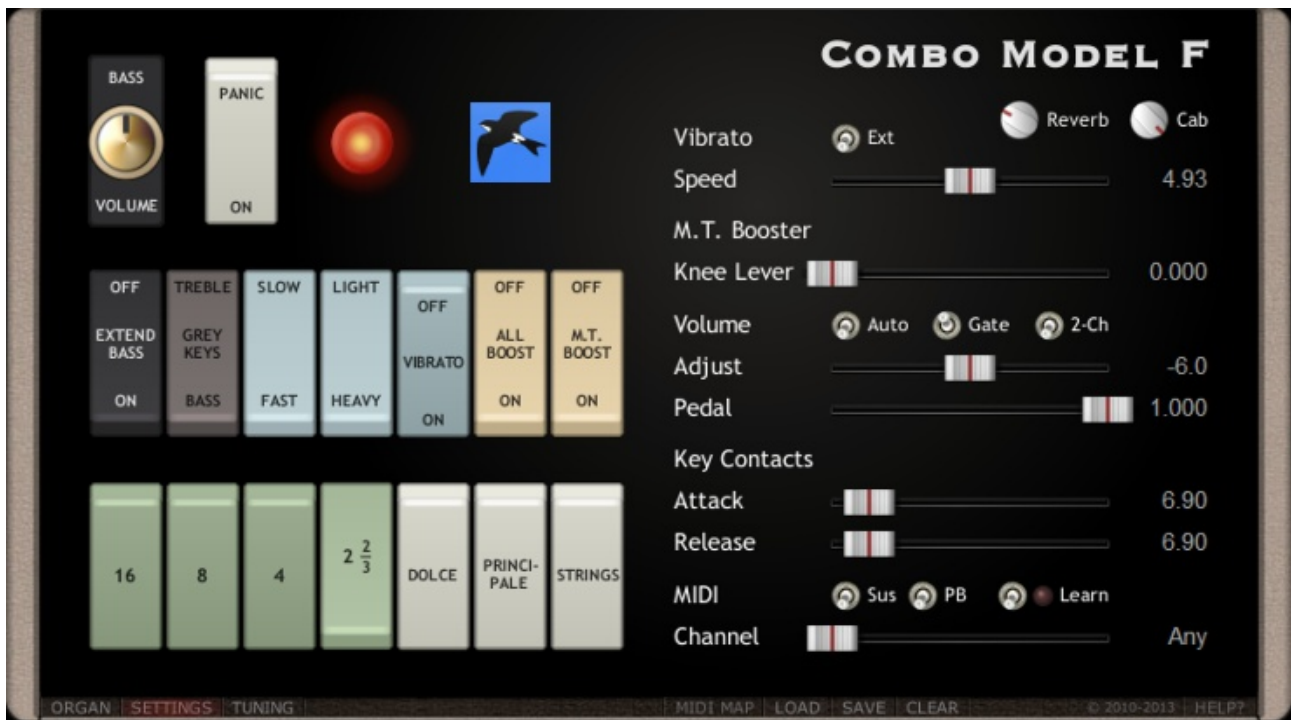
\* VST is a trademark of Steinberg Media Technologies GmbH.

- Cubase 6.5
- Digital Performer 7
- DSP-Quattro 4
- energyXT 2.5
- FL Studio 11
- GarageBand '11
- KORE 2
- Logic 9
- MAGIX Music Maker
- Metro 6
- MiniHost
- Mixcraft 6
- MU.LAB 3
- n-Track 7
- Orion 7.6
- Pro Tools 8 (*via FXpansion's VST to RTAS Adapter*)
- REAPER 4
- Renoise 2.5
- SONAR 8
- Studio One 2
- Tracktion 3
- V-Machine
- VSTHost/SAVIHost

If your hosting software is not on the list, then don't worry. There is a big chance it will work anyway, because (in theory) Combo Model F should work in *any* VSTi/AUi-capable host.

Although Combo Model F should be able to run at any sample rate the host provides, a rate of at least 44.1 kHz is recommended.

Combo Model F runs on Windows XP (SP1 or newer), Windows Vista, Windows 7, Windows 8, or Mac OS X 10.4 (Tiger), OS X 10.5 (Leopard), OS X 10.6 (Snow Leopard), OS X 10.7 (Lion), or OS X 10.8 (Mountain Lion). Combo Model F does not have any other special requirements regarding your computer; if your VST hosting software runs on it, then Combo Model F will too. Although not required, a MIDI keyboard will come in handy.



*The settings view with the various tabs, knobs, switches and sliders*

## 2. BASIC CONTROLS

After loading Combo Model F (ComboF) in your hosting software you will see the settings view containing various rocker switches (or *tabs*), knobs, and sliders. In the settings view you can switch the tabs on or off, or adjust the bass volume, all using the mouse. You can also tweak various other settings that are “under the lid”.

To switch a tab on or off, simply left-click on it. To adjust the bass volume, drag the bass volume knob by up or down, or use the scroll wheel. For higher precision, hold down the Ctrl key while moving the knob. You can also right-click (or Command-click on Mac OS X) on the knob to enter a value using the computer keyboard. To reset the bass volume to its default value, double-click on the knob.

The sliders work almost just like the bass volume knob, but a slider handle moves horizontally instead of vertically, and you can left-click anywhere on a slider to move the handle directly to that position. The various toggle switches work just like the tabs.

All the way down in the bottom left corner you will find three small buttons labelled **Organ**, **Settings**, and **Tuning**. By left-clicking these buttons you can switch between the organ, settings, and tuning views. In the organ view you can play the on-screen keyboard using the mouse, in the settings and tuning views the on-screen keyboard is not available. For an in-

depth description of the function of the various tabs, switches and sliders in the settings and tuning views, please refer to chapters 3. *Settings* and 4. *Tuning*.

## 2.1. Help

All the way down in the bottom right corner you will find a small button labelled **Help?**. You can open the Owner's Manual from within the Combo Model F by left-clicking on this button.

Note that the help button is greyed out if you have not installed the documentation.

## 2.2. About

In the settings view, on the right above the tabs, you will find the Martinic logo (🦋). When you left-click on it the about box is displayed, which will tell you which version of Combo Model F you are running.

# 3. SETTINGS

In the left part of the settings view you will find various tabs and a bass volume knob. In the organ view you will see smaller versions of most of the same controls. Both sets of controls offer exactly the same functionality. The only difference is that in the settings view you can actually *read* the labels. Note that the settings view also features a couple of extra tabs that have no small counterparts.

## 3.1. Bass Voice



The black tab labelled **Extend Bass** and the grey tab labelled **Grey Keys** together control the bass voice. With both tabs off, there is no bass voice, and the grey bottom octave plays the same voice as the other octaves. With the grey keys selector on, the grey bottom octave plays the bass voice.

With the extended bass on, but the grey keys selector off, there is an extra octave below the original 4 octaves that plays the bass voice. If you then also switch on the grey keys selector, the bass voice continues into the grey octave.

The bass volume knob lets you adjust the volume of the bass voice.

### 3.2. Vibrato



The 3 blue tabs control the vibrato effect. The tab labelled **Vibrato** switches the vibrato effect on or off, the tab labelled **Light/Heavy** controls the depth, and the tab labelled **Slow/Fast** controls the speed.

There is also a vibrato speed slider (in the top of the settings view, on the right), which lets you fine-tune the vibrato speed for both slow and fast. Above the vibrato speed slider you will find a toggle switch labelled **Ext**, which extends the vibrato speed range.

### 3.3. Multi-Tone Booster



The 2 yellow tabs control the Multi-Tone Booster voice. With the tab labelled **M.T. Boost** off, the white voice tabs can be used to select a voice. With the Multi-Tone Booster on, the white tabs are bypassed, and you get the Multi-Tone Booster voice.

With the Multi-Tone Booster on, and the other yellow tab labelled **All Boost** off, you can use the knee lever slider (on the right in the settings view, the second slider from the top) to control how much the Multi-Tone Booster voice is “boosted”. By default the knee lever slider is linked to your MIDI pitch wheel (see chapter 5.2. *Default MIDI Map*). With both the Multi-Tone Booster and the All Booster on, the knee lever is bypassed, and you get maximum “boost”.

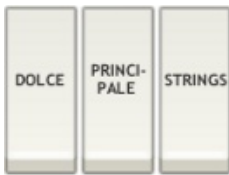
### 3.4. Footage Tabs



The 4 green tabs are the footage tabs. Combo Model F uses additive synthesis, and using the footage tabs you adjust the harmonics mix. You can think of it as an equaliser, where the **16** tab controls the low frequencies, **8** and **4** the middle frequencies, and the **2 $\frac{2}{3}$**  tab the high frequencies.

Note that at least one of the footage tabs should be on, or else you will get no sound.

### 3.5. Voice Tabs



The 3 white tabs are the voice tabs. You can select one voice at the time, or you can combine them in any combination.

Note that at least one of the voice tabs should be on, or else you will get no sound. Note also that the voice tabs are bypassed if the Multi-Tone Booster tab is on (see 3.3. *Multi-Tone Booster*).

Although Combo Model F offers only a limited number of footage and voice tabs, the total number of different sounds it can produce is no less than 100, Multi-Tone Booster and bass voices included.

### 3.6. Reverb and Cab

On the right near the top, beneath the Combo Model F logo, you will find two knobs labelled **Reverb** and **Cab**.

The reverb knob determines the amount of reverberation that is mixed in with the dry output signal. To disable the reverb, turn the knob all the way to the left.

The cab knob selects either speaker cabinet #1 (Vox® AC30) or speaker cabinet #2 (Fender® '59 Bassman®). To disable the cabinet simulation, turn the knob all the way to the left.

*Vox® is a registered trademark of Korg Europe Limited. Fender® and Bassman® are registered trademarks of Fender Musical Instruments Corporation. Note that neither Korg nor Fender endorses Combo Model F, nor is either in any way associated or affiliated with Martinic.*

### 3.7. Volume

The volume adjust and volume pedal sliders together determine the output level of Combo Model F. By default the volume pedal is linked to your MIDI expression pedal (CC #11, see chapter 5.2. *Default MIDI Map*), so it can be used to add dynamics to your performance. The volume adjust can be used to change the overall volume.

### 3.8. Auto Volume

Some of the voice combinations are softer than others, e.g. Dolce on its own is rather soft when compared to Dolce combined with Principale and Strings. If you enable the toggle switch labelled **Auto** (right above the volume sliders), then the volume is automatically raised when using one of the softer voice combinations, so the overall volume stays the same.

### 3.9. Noise Gate

Combo Model F has an internal noise gate, that automatically kicks in when no keys are playing. You can turn off the noise gate using the toggle switch labelled **Gate** (above the volume sliders).

### 3.10. 2-Channel Output

Normally the bass voice and the regular voices are mixed together and sent to both the left and right channels. However, if you enable the toggle switch labelled **2-Ch** (above the volume sliders), the bass voice is sent to the left channel, and the regular voices are sent to the right channel.

### 3.11. Key Contacts

A real-world Compact has up to 4 contacts for each key. When you depress a key these contacts will not sound all at once, but they will rather sound one after another, especially when you depress the key very slowly. To mimic this behaviour Combo Model F uses the velocity from your MIDI keyboard to control how fast the individual key contacts will sound.

You may want to adjust the attack and release settings to match the velocity curve of your MIDI keyboard.

### 3.12. MIDI Channel

By default Combo Model F receives MIDI data on all 16 channels, but you can also select one particular channel.

### 3.13. Sustain and Pitch Bend

Above the MIDI channel slider you will find two toggle switches labelled **Sus** ("sustain") and **PB** ("pitch bend"), which toggle sustain pedal (CC #64) and pitch bend support on/off. Note that while the pitch wheel is linked to a control, you cannot use the pitch wheel for pitch bend, and *vice versa*. The same goes for the sustain pedal and CC #64.



### 3.14. MIDI Learn

By default Combo Model F's most-used controls are mapped to a standard set of MIDI Control Change (CC) numbers (see chapter 5.2. *Default MIDI Map*). However, the buttons of your MIDI keyboard may well send out other CCs.

Here is how you can learn Combo Model F to respond to the sliders, knobs and buttons of your MIDI keyboard:

1. Set the slider, knob or button on your MIDI keyboard to zero or "off".
2. Left-click on the toggle switch labelled **Learn** (on the right above the MIDI channel slider).  
The MIDI learn status LED will now light up, indicating that Combo Model F is in learning mode.
3. Left-click on a Combo Model F control, e.g. the volume pedal. Note that MIDI learn is available only for the tabs, and for the vibrato, knee lever and volume sliders.
4. Move the slider, knob or button on your MIDI keyboard to the "on" position, and then back to the "off" position. Alternatively you can left-click on the MIDI map **Clear** button (all the way down below the MIDI channel slider) to clear the mapping for the selected control.

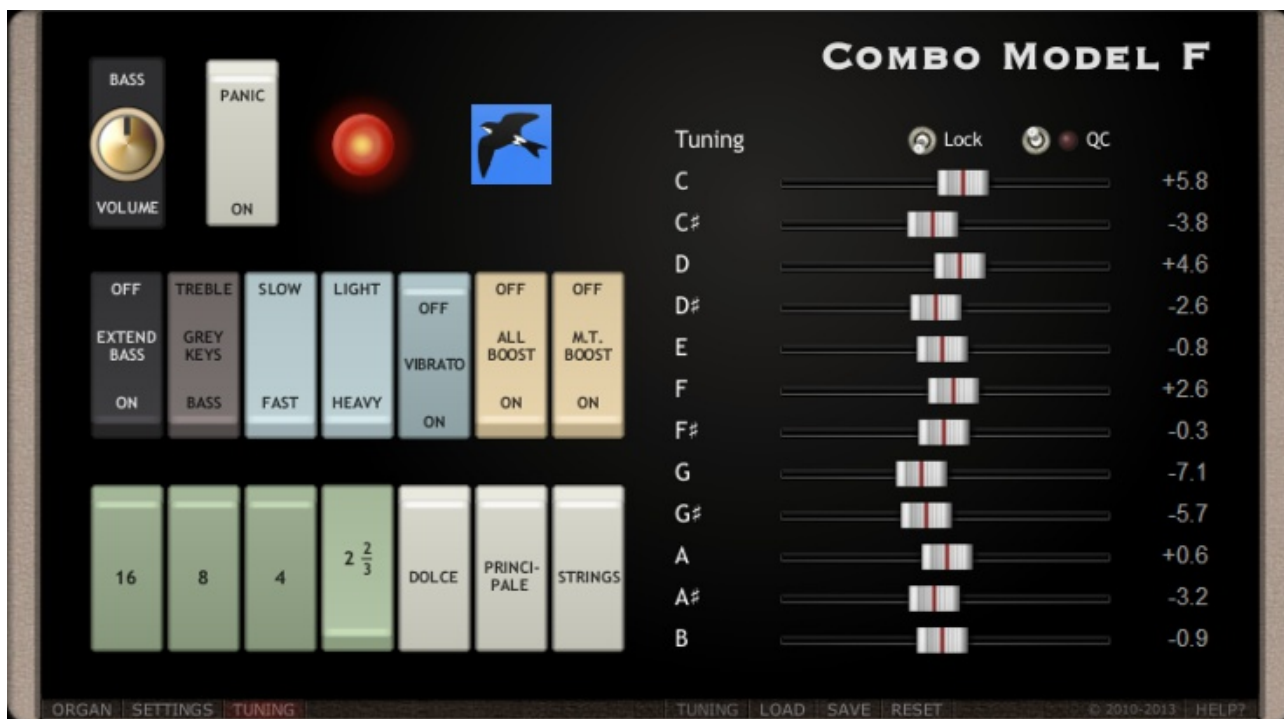
When the MIDI learn status LED is no longer lit up you are ready. You will have to repeat these steps for each control you want Combo Model F to learn.

You can also learn Combo Model F to use to pitch wheel to temporarily "bend" one of its controls up or down. Controls that support the pitch wheel are the knee lever, volume adjust, volume pedal, vibrato speed, and vibrato on/off. When the pitch wheel is in its neutral (centre) position, you can adjust the value of the linked control using the mouse. The adjusted value will then become the new centre value for the pitch wheel. Note that you can link both a CC and the pitch wheel to the same control.

### 3.15. MIDI Map

When you save your project containing Combo Model F, the learned MIDI map will be saved along with the other settings. However, if you load a new instance of Combo Model F, the default MIDI map will be loaded again. By left-clicking on the MIDI map **Save** button (all the way down below the MIDI channel slider) you can save your customised MIDI map in an FXP file. If you save it as **Default MIDI Map.fxp** in the ComboF data folder\*, then Combo Model F will automatically load your customised MIDI map the next time you add Combo Model F to a project.

\* %AppData%\Martinic\ComboF on Windows, ~/Library/Application Support/ComboF on Mac OS X.



*The tuning view with the tuning sliders on the right*

If you need to revert to the default MIDI map while you are in the middle of a project or session, then left-click on the MIDI map **Load** button, select an FXP file, and the selected MIDI map will be loaded without affecting any other settings. If you hold down the Alt key while clicking on the load button, the original default MIDI map will be loaded.

If you somehow don't want Combo Model F to have any MIDI mappings at all, then make sure the MIDI learn button is *not* active (i.e. the status LED is off), and left-click on the MIDI map **Clear** button.

## 4. TUNING

In the right half of the tuning view you can adjust the tuning independently for each of the 12 notes in an octave. The tuning for the same note in different octaves is always the same, so if you detune the F# by -0.3 cents, all F# notes in all octaves will be detuned -0.3 cents.

You can adjust the tuning using the 12 sliders labelled **C** through **B**. You can change all 12 tuning sliders at once by holding down the Shift key while adjusting any one of the tuning sliders. You can semi-randomly detune the organ by holding down the Alt key while adjusting any one of the tuning sliders.

By default Combo Model F is more or less equally tuned to  $A_4 = 440$  Hz.

## 4.1. Tuning Lock

Above the tuning sliders you will find a toggle switch labelled **Lock**. If you lock the tuning, then it will persist when you select another preset, or when you load a preset or a preset bank. However, you can still change the tuning by hand, or using automation.

## 4.2. Quality Control

For optimal quality Combo Model F's internals need to be recalculated when you change the tuning. Because recalculating the internals uses a lot of CPU resources, you may want to disable quality control in some situations (e.g. when you are automating the tuning using a LFO).

You can toggle quality control on or off by left-clicking on the toggle switch labelled **QC**. You will find this toggle switch a little to the right above the tuning sliders.

While Combo Model F's internals are being recalculated the quality control LED will momentarily turn on, unless you turn off quality control, in which case the LED will stay on.

If your VST hosting software has an option to inform plug-ins of offline rendering, then enable this option. This will ensure optimal quality during offline rendering.

## 4.3. Scala Scale Files

All the way down below the tuning sliders you will find the tuning **Load**, **Save**, and **Reset** buttons. When you left-click the load or save button, you will be asked to browse for a Scala scale (.scl) file to load a new scale from, or save the current scale in. The reset button will reset the scale to Combo Model F's default tuning. If you hold down the Alt key while clicking the reset button, then the scale is reset to twelve-tone equal temperament.

If you save the tuning as **Default Tuning.scl** in the ComboF data folder\*, then Combo Model F will automatically load this tuning the next time you add Combo Model F to a project.

More about Scala scale files, and an archive of over 4000 scales, is available on the Scala website at [www.huygens-fokker.org/scala](http://www.huygens-fokker.org/scala). Note that Combo Model F can only handle twelve-tone scales.

# 5. MIDI IMPLEMENTATION

Combo Model F can receive MIDI data on all 16 channels, or on one specific channel (see chapter 3.12. *MIDI Channel*).

\* %AppData%\Martinic\ComboF on Windows, ~/Library/Application Support/ComboF on Mac OS X.

Combo Model F will respond to Note On/Off messages within the C2..C7 range. It supports both Note On and Off velocity. However, velocity is not used to vary the volume of the played notes, as is the case with most (software) synthesizers. Instead it is used to mimic the key contacts of a real-world Mini Compact (see chapter 3.11. *Key Contacts*).

Combo Model F supports Control Change (CC) values in both 7-bit (standard) and 14-bit (MSB/LSB) resolution, depending on the control the CC is mapped to. Combo Model F optionally supports the sustain pedal (CC #64) to sustain notes (see chapter 3.13. *Sustain and Pitch Bend*), provided that CC #64 is not mapped to another control.

Combo Model F supports Pitch Wheel messages, which can be used to bend the pitch up to 2 semitones down (note that bending the pitch up is not supported). Alternatively the pitch wheel can be linked to one of Combo Model F's controls (see chapter 3.14. *MIDI Learn*).

Combo Model F supports Program Change messages for selecting one of the 32 presets (see chapter 6. *Presets*).

## 5.1. Panic

Next to the bass volume knob there is a white tab labelled **Panic**, and when you left-click on it all notes will immediately stop playing, and sustain and pitch bend will be reset.

When Combo Model F receives an All Notes Off message, it will also immediately mute all notes.

## 5.2. Default MIDI Map

| CC | Control                   |
|----|---------------------------|
| -  | Bass volume [MSB]         |
| -  | Bass volume [LSB]         |
| -  | Extended bass on/off      |
| -  | Grey keys selector        |
| -  | Vibrato slow/fast         |
| -  | Vibrato light/heavy       |
| 1  | Vibrato on/off            |
| 16 | All Booster on/off        |
| 17 | Multi-Tome Booster on/off |
| 12 | 16'                       |
| 13 | 8'                        |
| 14 | 4'                        |
| 15 | 2 $\frac{2}{3}$ '         |
| 18 | Dolce                     |
| 19 | Principale                |
| 20 | Strings                   |
| 73 | Vibrato speed             |
| -  | Knee lever* [MSB]         |
| -  | Knee lever* [LSB]         |

\* Linked to pitch wheel

| CC | Control       |       |
|----|---------------|-------|
| -  | Volume adjust | [MSB] |
| -  | Volume adjust | [LSB] |
| 11 | Volume pedal  | [MSB] |
| 43 | Volume pedal  | [LSB] |

Is your MIDI keyboard sending out very different CCs altogether? Don't worry; you can learn your MIDI keyboard and Combo Model F to get along with each other (see chapter *3.14. MIDI Learn*).

## 6. PRESETS

Combo Model F comes with 32 factory presets, which will give you an idea of the kind of sounds it is capable of.

Combo Model F

Version 1.2.0

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[www.martinic.com/combof](http://www.martinic.com/combof)

Cabinet #1 impulse response by Gregor Hennig, Studio Nord.

Cabinet #2 impulse response originally by Beamsonic.

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