



MFC - 101 FIRMWARE UPDATE GUIDE

What is Firmware? Why do I need to update?

Firmware is simply semi-permanent software. Programmed into chips, it “runs” like an operating system to enable an electronic device to function. Like software, firmware is tracked using version numbers: 1.0, 2.0, etc. Every Axe-Fx II sold by Fractal Audio Systems is shipped with the latest version pre-installed. You can check your version any time by pressing following button sequence on your MFC-101: EDIT | #5 SETUP | #6 <PAGE

The firmware in our products is upgradeable, and Fractal Audio Systems is dedicated to continual improvement. You don't “need” to update, but the free updates we release several times per year are highly anticipated by our customers, who appreciate the new features, performance improvements, and bug fixes. We recommend that you keep the firmware in your MFC-101 up to date as new updates are released.

Should you encounter any trouble with MFC-101 firmware updates, please refer to **Troubleshooting** on Page 3.

IMPORTANT: Firmware files for the MFC-101 Mark III and MFC-101 Mark II/original are not cross-compatible. Please use the correct type of file, indicated by whether “mk3” appears in its name or not (ex: mfc101-**mk3**-3p01)

How do I update my MFC-101?

Updating the firmware of your MFC-101 is easy with our free utility, Fractal-Bot. You will also need a MIDI Interface, which will likely require a driver installation as directed by the manufacturer. If no other MIDI Interface is available, the Axe-Fx II can be used, but this requires special settings (detailed below).

You will also need to download and extract the MFC-101 firmware file if you haven't already done so.

I. Install and Connect Your Midi Interface

Install your 3rd party MIDI Interface as directed by the manufacturer.

For instructions on how to use the Axe-Fx II as a MIDI Interface, see **Page 2** of this guide.

Connect the MIDI OUT port of your Interface to the MIDI IN port of the MFC-101 with a standard MIDI Cable.

II. Install Fractal-Bot

Download and install Fractal-Bot from our web site at <http://fractalaudio.com/fractal-bot.php>

NOTE: 3rd party applications such as [Snoize SysEx Librarian](#) (OS X) or [MIDI-OX](#) (Win) can also be used to update firmware. Since the launch of Fractal-Bot, we no longer provide support for configuring or using these applications.

III. Download and Unzip The Firmware... And Read The Release Notes!

Since you're reading this file typically packaged with firmware, you've probably done this already...

If not, the latest firmware can be found on our web site at <http://fractalaudio.com/support.php>

Firmware is packaged in a **zip archive** that may contain various documents in addition to the actual firmware—a MIDI System Exclusive or “SysEx” file. Extract this .syx file to a location you can easily find when required. Do not double-click the .syx file; Fractal-Bot will prompt you for its location when it is needed.

Please read the “Release Notes” included with the firmware. They'll let you know what's new and alert you to anything you may need to be aware of before updating to the new version.

IV. Launch Fractal-Bot And Perform The Update

Fractal-Bot is easy to use. Simply launch the application and proceed through three self-explanatory steps.

NOTE: Before performing a firmware update, it may be wise to back up the settings of your MFC-101. Fractal-Bot's RECEIVE feature provides a convenient and self-guided way to do this.

For additional information, consult the **Fractal-Bot Manual**, included with the Fractal-Bot download.

OPTIONAL: Using the Axe-Fx II as a MIDI Interface

Axe-Fx II owners have the option of using the Axe-Fx II as a MIDI Interface to transmit MFC-101 updates. Using the Axe-Fx II in this way requires that you have the **Axe-Fx II USB driver** for your operating system installed, and that you make two **temporary setting changes** to the Axe-Fx II.

1. Install the Axe-Fx II USB Driver

(This step is required only the 1st time you connect to a particular computer.)

- a. Download the driver for your operating system from the support page of our web site:
<http://fractalaudio.com/support.php>
- b. Connect your Axe-Fx II to your computer using a standard USB cable (not included).  
- c. Power on the Axe-Fx II.
- d. Install the Driver you downloaded, following any on-screen instructions.

2. Configure your Axe-Fx II as a MIDI Interface

On your Axe-Fx, press the I/O button, PAGE to “MIDI”, and make the following settings:

- a. Change USB ADAPTER MODE to “ON”.
- b. Change SEND REALTIME SYSEX to “NONE”.

Please remember to revert these settings to their previous values when the update is complete. The default for USB ADAPTER MODE is “OFF”, and the default for SEND REALTIME SYSEX is “ALL”.

3. Connect Axe-FX II MIDI OUT to MFC-101 MIDI IN with a 5-pin MIDI Cable



It is **NOT POSSIBLE** to power the MFC via 7-pin phantom power during a firmware update. Instead, please connect the supplied MFC-101 AC Adapter directly to its power input jack.



It is **NOT POSSIBLE** to update the MFC-101 over an Axe-Fx II Ethernet/EtherCon connection. You **MUST** use a MIDI Cable to connect the Axe-Fx II MIDI OUT to the MFC-101 MIDI IN.

ADVANCED: Power via Ethernet/EtherCon

The following option is detailed for advanced users in cases where no other alternative is possible. Under normal circumstances you should use the provided MFC-101 AC Adapter connected directly to the unit's power jack when performing a firmware update. If this isn't possible, however, Ethernet/EtherCon can in fact be used to provide power while a standard MIDI cable transmits a firmware update to the MFC-101.



WARNING! Use the Axe-Fx power switch to cycle MFC-101 power when required, rather than disconnecting the Ethernet/EtherCon cable. As stated in the MFC-101 manual, the Axe-Fx II must be powered OFF whenever you connect or disconnect the MFC-101. Carelessly “pulling the CAT5” to power cycle the MFC-101 can result in “tell-tale” damage to your Axe-Fx II, the repair of which is not covered under warranty.

The sequence of events must be as follows.

1. Configure the Axe-Fx for use as a MIDI Interface as described above.
2. Power on the Axe-Fx II while holding footswitch #1 to boot the MFC-101 into Firmware Update Mode.
3. If you are using the Axe-Fx as a MIDI Interface to transmit the update, you must wait until after the Axe-Fx has fully booted before connecting a cable from its MIDI OUT port to the MIDI IN port of the MFC-101. Otherwise, the Axe-Fx will try to sync and cause “ERROR 18” in the MFC-101.

With the MFC safely in Firmware update mode, launch Fractal-Bot and perform the update.

Troubleshooting

Most firmware update problems are easy to solve once you've identified the source of the trouble.

After the firmware update, my MFC-101 is not behaving normally

The first step in troubleshooting MFC-101 irregular behavior is to check all connections, reboot the Axe-Fx and MFC-101 and try the test again. Please also refer to the firmware update RELEASE NOTES to ensure you didn't miss an important advisory or change.

In the event of continued trouble, you may also choose to revert to **factory default settings** by power cycling the MFC-101 while holding footswitch #11 and then pressing ENTER (#14) when prompted.

My MFC-101 stays on "FW UPDATE MODE" even after I begin sending the firmware file.

The MFC-101 should display a "% COMPLETE" indicator during updates. If the display remains on "FW UPDATE MODE" even after you press "SEND" in Fractal-Bot, this indicates that the MFC-101 is not receiving the update from Fractal-Bot. Possible causes include MIDI Interface problems, "competition" from another MIDI device, incorrect "Output Port" selection in Fractal-Bot, defective MIDI cables, or failure to set **I/O : MIDI : USB ADAPTER MODE** to "ON" while using the Axe-Fx II as a MIDI Interface.

My MFC-101 freezes on 0% COMPLETE during the update.

The MFC-101 "% COMPLETE" indicator should progress steadily from 0-100 during firmware updates. When the display freezes at 0% (or some other position) this typically means that the update is being transmitted too quickly for the MFC-101 to process. Check the **MIDI Buffer Delay** setting in Fractal-Bot, which should be at the default setting of 150ms.

What does ERROR 18 mean?

Error 18 indicates that the MFC-101 has received some stray MIDI message while awaiting a firmware update. Please make sure no other MIDI applications are running on your computer, or, if using the Axe-Fx II as a MIDI Interface, ensure that **I/O: MIDI: SEND REALTIME SYSEX** is set to "NONE".

What does ERROR 16 mean?

Error 16 usually indicates that the MFC saw "garbage" during a firmware update. This problem is often seen when using "inferior" MIDI Interfaces, but can also indicate computer problems, or even a bad MIDI cable. In rare cases, re-downloading the firmware update can also solve this problem.

What does ERROR 14 mean?

Error 14 is a rare problem that occurs after the MFC-101 a failed firmware update. Once this occurs, you can start over to achieve success, but the MFC-101 will "time out" if the update is not completed quickly enough, causing the unit to display ERROR 14 again. Decrease the **MIDI Buffer Delay** setting in Fractal-Bot (In step 1 "READY") to 90ms or lower to speed the firmware transmission process.

What if I need further assistance?

If you need additional help, please contact our support team via <http://support.fractalaudio.com>

Customers outside the US or Canada may also contact the [official distributor](#) for their region.

Our forum at <http://forum.fractalaudio.com/forum.php> can also be a valuable resource, with members helping members around the clock.