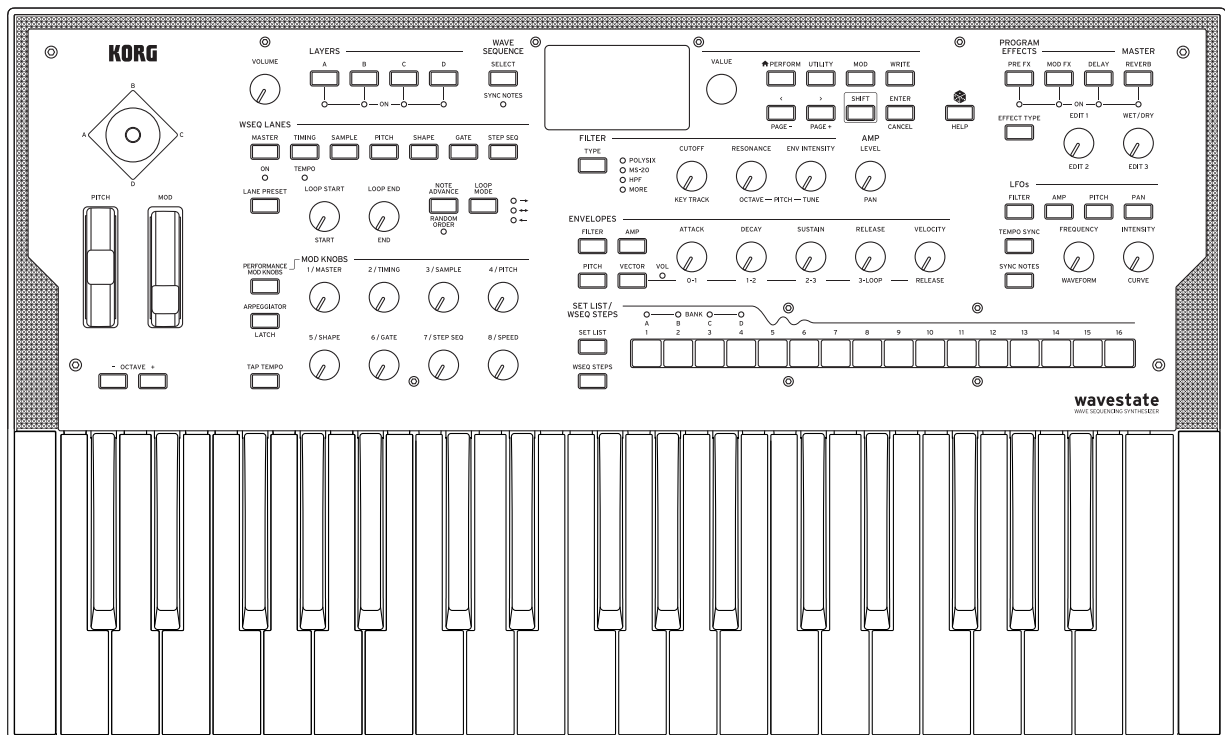# wavestate

WAVE SEQUENCING SYNTHESIZER

wavestate Updater 2.0.1

KORG

Contents

wavestate Updater 2.0.1

About wavestate software version 2.0

This is a major update to the wavestate, with many new features, improvements, and bug-fixes. For details on all of the changes, please see the separate document "New in wavestate 2.0."

What's installed on my computer, and why?

The Updater communicates with the wavestate using networking over USB (as opposed to MIDI). Networking uses either the NCM protocol (for MacOS and Windows 10) or the RNDIS protocol (for Windows 7 and 8). To automatically identify and connect with the wavestate over the network, the Updater uses Apple Inc.'s Bonjour—which is included with MacOS, but not with Microsoft Windows.
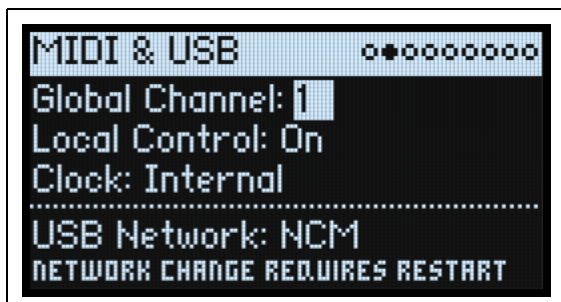
So, the installation for Windows includes not only the Updater itself, but also Bonjour.

USB Network setting

The USB Network parameter is on the MIDI & USB page. To get there:

1.   Press UTILITY twice, and then hold SHIFT and press > (PAGE +).

If this page is named MIDI, and the USB Network parameter does not appear, please update to wavestate software 1.0.6 before proceeding.

USB Network
[RNDIS, NCM]

⚠ Changes to this parameter take effect only after the wavestate has been turned off and restarted.

RNDIS: This is the RNDIS protocol, primarily for use with Windows 7 and 8.

NCM: This is the Network Control Model protocol, for use with Macs (especially macOS 11). Once the wavestate has been updated to wavestate software 2.0 (using RNDIS), NCM is also recommended for use with Windows 10.

Cautions

When running the wavestate Updater, make sure that only a single wavestate is connected to the computer.

⚠ *Important:* Do not disconnect your wavestate from USB, or turn its power off, while the updater is running.

Operating requirements

To use the wavestate Updater, you need a USB cable and a USB-capable Mac or Windows computer that satisfies the requirements below.

Note: Full functionality is not necessarily guaranteed with all computers, even if they satisfy these system requirements.

MacOS

Operating system: Mac OSX 10.12 through macOS 11. Apple Silicon supported via Rosetta 2.

Windows

Operating system: Windows 7 SP1 (32bit, 64bit) or later, including Windows 8 and Windows 10.
Touch panel operation is not supported.

Installing using MacOS

🖊 *Important:* The instructions below assume that the wavestate is running version 1.0.6 or later. If not, please either update to 1.0.6 or use the instructions under "Update Via USB Boot Mode," below.

To install the software on MacOS:

1. **On the wavestate, make sure that the USB Network parameter is set to NCM.**

For more information, see "USB Network" on page 1. If you change the setting, restart the wavestate before proceeding.

2. **Connect your wavestate to the computer via USB.**

3. **Open the wavestate Updater Installer 2.0.1.dmg file in the Finder.**

The licensing agreement will appear.

4. **Press Agree to agree to the license terms and open the disk image, or Disagree to cancel.**

5. **On the disk image, open the wavestate Updater 2.0.1 application.**

The Updater will identify the connected wavestate, and show both the software version currently running on the instrument, and the version to be installed.

6. **Press Start to begin the update.**

🖊 *Important:* Do not disconnect your wavestate from USB, or turn its power off, while the updater is running.

The wavestate will show a message on the display, indicating that the update is in progress. During the update, the wavestate will restart, and the screen will go blank for a few seconds. Once the wavestate has finished starting up, the update is complete.

7. **Follow the instructions under "Confirming the update" on page 9.**

Installing using Windows

Part 1: Initial installation

To install the software on Windows:

1. **Double click "Korg wavestate 2.0.1 Updater Installer.exe" to start the installation process.**

The installer will start.

2. **Follow the on screen instructions to complete the installation.**

The installation will run. Two separate items are installed: Apple Inc.'s Bonjour, which allows the computer to communicate with the wavestate through USB networking (see below), and the wavestate Updater application.

✎ *Important:* After running the installer, you must run the wavestate Updater application separately.

3. **After the installation is complete, if you have not already configured the NCM or RNDIS driver, do so now— before running the Updater application. In this case, also un-check the "Start Updater after finishing installation" option on the final page of the installer.**

To communicate with the computer via USB networking, the wavestate uses Microsoft's driver for NCM (for Windows 10, *after* the update to wavestate software version 2.0) or Microsoft's own RNDIS (for Windows 7 and 8, and Windows 10 for wavestate software versions 1.0.6 and earlier). To set up USB networking for the wavestate, follow the instructions below. Note that the process works slightly differently for Windows 7, 8, and 10.

In some cases, the wavestate may not be immediately recognized after installation. If this occurs, simply restart your computer.

Special note for first-time users updating from wavestate version 1.0.6 under Windows 10

If this is the first time you've connected a wavestate running 1.0.6 (or earlier) to your Windows 10 computer, you'll need to set up the wavestate as an RNDIS device in order to install version 2.0.1. After installing 2.0.1, you'll be prompted to set up the wavestate again, this time as an NCM device. We're sorry for the inconvenience.

Part 2: USB network configuration

RNDIS configuration: Windows 7

After connecting the wavestate to a Windows 7, it adds entries in the Device Manger under "Other Devices" and also under "Sound, video and game controllers."

1. **On the wavestate, make sure that the USB Network parameter is set to RNDIS.**

For more information, see "USB Network" on page 1. If you change the setting, restart the wavestate before proceeding.

2. **Plug in the USB cable from the wavestate.**

3. **Open the Start Menu, and select Control Panel.**

The Control Panel opens.

4. **Click on Hardware and Sound.**

The Hardware and Sound window appears.

5. **Under Devices and Printers, click on Device Manager.**

The Device Manager appears.

6. **Confirm that a new RNDIS device is present under "Other devices."**

7. **Right click on the new RNDIS device and select "Update Driver Software".**

8. **Click "Browse my computer for driver software."**

9. **Click "Let me pick from a list of available drivers on my computer."**

10. **Select "Network Adapter" for the device type and click "Next."**

11. **Select "Microsoft Corporation" for the Manufacturer and click "Next."**

12. **Select "Remote NDIS Compatible Device" for the Model and click "Next."**

A pop-up window titled "Update Driver Warning" appears. This is expected behavior.

13. Click "Yes" to continue installing the driver.

Wait for the process to complete, and close the window when done.

RNDIS configuration: Windows 8

After connecting the wavestate to a Windows 8 computer, it adds entries in the Device Manger under "Other Devices" and also under "Sound, video and game controllers."

1.   On the wavestate, make sure that the USB Network parameter is set to RNDIS.

For more information, see "USB Network" on page 1. If you change the setting, restart the wavestate before proceeding.

2.   Plug in the USB cable from the wavestate.

3.   Open the Device Manager.

There are various ways to do this, but the easiest is from the Power User Menu:

3a. Press the WIN (Windows) key and the X key together.

The Power User Menu appears.

3b. Select Device Manager from the menu.

The Device Manager appears.

4.   Confirm that a new RNDIS device is present under "Other devices."

5.   Right click on the new RNDIS device and select "Update Driver."

6.   Click "Browse my computer for driver software."

7.   Click "Let me pick from a list of available drivers on my computer."

8.   Select "Network Adapter" for the device type and click "Next."

9.   Select "Microsoft" for the Manufacturer and click "Next."

10. Select "Remote NDIS Compatible Device" for the Model and click "Next."

A pop-up window titled "Update Driver Warning" appears. This is expected behavior.

11. Click "Yes" to continue installing the driver.

Wait for the process to complete, and close the window when done.

RNDIS configuration: Windows 10

Important: You must use RNDIS when connecting to a wavestate running software version 1.0.6 or earlier.

1.   On the wavestate, make sure that the USB Network parameter is set to RNDIS.

For more information, see "USB Network" on page 1. If you change the setting, restart the wavestate before proceeding.

2.   Plug in the USB cable from the wavestate.

3.   Open the Device Manager.

There are various ways to do this, but the easiest is from the Power User Menu:

3a. Press the WIN (Windows) key and the X key together.

The Power User Menu appears.

3b. Select Device Manager from the menu.

The Device Manager appears.

4.   Confirm that a new RNDIS device is present under the "Other devices" heading.

5.   Right click on the new RNDIS device and select "Update driver."

6.   Click "Browse my computer for driver software."

7.   Click "Let me pick from a list of available drivers on my computer."

8.   If necessary, select "Network Adapter" for the device type and click "Next." Otherwise, skip to the next step.

9.   Select "Microsoft" for the Manufacturer.

10. Select "USB RNDIS Adapter" for the Model and click "Next."

A warning may appear: "Installing this device is not recommended." If so, press "Yes" to continue.

Wait for the process to complete, and close the window when done.

NCM configuration: Windows 10

📝 *Important:* NCM is only supported with wavestate software version 2.0 or later. If you are updating a wavestate running 1.0.6, you'll need to use RNDIS for the update, and then switch to NCM after the update is complete.

1.   **On the wavestate, make sure that the USB Network parameter is set to NCM.**

For more information, see "USB Network" on page 1. If you change the setting, restart the wavestate before proceeding.

2.   **Plug in the USB cable from the wavestate.**

3.   **Open the Device Manager.**

There are various ways to do this, but the easiest is from the Power User Menu:

   3a.   Press the WIN (Windows) key and the X key together.

The Power User Menu appears.

   3b.   Select Device Manager from the menu.

The Device Manager appears.

4.   **Confirm that a new device named "CDC NCM" is present under the "Other devices" heading.**

5.   **Right click on the new NCM device and select "Update driver."**

6.   **Click "Browse my computer for driver software."**

7.   **Click "Let me pick from a list of available drivers on my computer."**

8.   **If necessary, select "Network Adapter" for the device type and click "Next." Otherwise, skip to the next step.**

9.   **Select "Microsoft" for the Manufacturer.**

10.   **Select "UsbNcm Host Device" for the Model and click "Next."**

A warning may appear: "Installing this device is not recommended." If so, press "Yes" to continue.

Wait for the process to complete, and close the window when done.

Part 3: Running the Updater

Once the USB network is set up, you can run the Updater itself.

1.   **Connect your wavestate to the computer via USB.**

2.   **Open the wavestate Updater 2.0.1 application, under KORG/wavestate in the Start Menu, All Programs, etc.**

The Updater will identify the connected wavestate, and show both the software version currently running on the instrument, and the version to be installed.

3.   **Press Start to begin the update.**

📝 *Important:* Do not disconnect your wavestate from USB, or turn its power off, while the updater is running.

The wavestate will show a message on the display, indicating that the update is in progress. During the update, the wavestate will restart, and the screen will go blank for a few seconds. Once the wavestate has finished starting up, the update is complete.

4.   **Follow the instructions under "Confirming the update" on page 9.**

Part 4 (Optional): Resetting the Windows 10 MIDI driver name

When the wavestate is connected to a Windows 10 computer, the USB MIDI driver is installed automatically. During that installation, the MIDI driver's name is set permanently. The wavestate now provides Windows with a more informative name ("wavestate" plus the System ID number from the System Setup page), but in order to see that name you need to take the following steps:

1.   **With the wavestate plugged in, go to the Device Manager and select "Sound, video and game controllers."**

2.   **Select "USB MIDI," which was the previous name for the wavestate's MIDI driver.**

3.   **Right click on "USB MIDI," and then select "Uninstall Device."**

4.   **Once the un-installation is complete, disconnect the wavestate USB cable.**

5.   **Finally, re-connect the USB cable.**

Installing using Windows

Windows will then install a new USB MIDI driver for the wavestate, with the new name.
Note that if you change the wavestate's system ID and you want that change to be shown in Windows, you will need to repeat the process above.

Tools menu

Update Via USB Boot Mode

This allows you to update the wavestate software even if the network connection is not available.

1. **Start with the wavestate powered off.**
2. **Connect the wavestate via a USB cable.**
3. **Using three fingers on one hand, press and hold the following buttons simultaneously: PERFORMANCE MOD KNOBS, MASTER, and NOTE ADVANCE**
4. **While holding the three buttons, press and release the power button on the back of the wavestate, to turn it on.**
5. **When the wavestate display shows the text "USB Boot Mode," release the three buttons on the front panel.**
6. **In the wavestate Updater application, open the Tools menu and select the command Update Via USB Boot Mode.**

A window appears, titled Start wavestate in USB Boot Mode, which includes a version of the instructions above.

7. **Press the OK button to continue.**

Note: After pressing OK, you may see a system message about accessing files on a remote volume. If the message appears, press OK to allow access.

Several progress messages will then appear. Once the initial Boot Mode process is complete, a new window will appear, titled "Files written successfully." The wavestate must now be re-started to finish the installation. To do so:

8. **Physically disconnect the wavestate power cable.**

The power switch is software-controlled, and will not function at this point of the installation. You may see a system message about a disk not being ejected properly. You can safely ignore this message.

9. **Re-connect the wavestate power cable, and then turn on the wavestate.**

The wavestate will start the software update process.

When the update is complete, the screen may go dark for about 12 seconds. The system will then restart automatically, ready to play.

Restore Boot Partition

This restores the boot partition, which may be useful in rare and very specific troubleshooting situations. If required, start with the instructions above for putting the wavestate into USB Boot Mode, select the "Restore Boot Partition" menu command, and then follow the on-screen instructions.

Confirming the update

To check the software version of the wavestate:

1.   **Press UTILITY twice, and then hold SHIFT and press < (PAGE -).**

This will take you to the About page. The version number is shown at the top of the screen.

After the update, it should show 2.0.1.

Troubleshooting

Software won't start up

Make sure that your computer meets the operating requirements
See "Operating requirements" on page 1.

Check whether other applications might be running
If other applications are running, it is possible that they might somehow interfere. As a troubleshooting step, quit the other applications.

Can't connect to the wavestate/"Waiting for device" message

Make sure that the wavestate is connected via USB
The Updater requires USB, and cannot communicate with the wavestate over 5-pin DIN MIDI.

Try connecting the wavestate directly to your computer, without a USB hub
A faulty hub might interfere with the connection.

Try a different USB cable
A faulty cable might interfere with the connection.

Make sure that the wavestate has been detected by the connected computer
Windows 7/8/10: open the Device Manager (see the instructions under "Part 2: USB network configuration" on page 4) and check the "Other Devices" tab. If the wavestate does not appear, repeat the NCM or RNDIS configuration procedure.

Mac OS: open the System Preferences application, in the Applications folder. Go to the Network panel, and check the list of networks and network devices on the left of the window.

Make sure that the required network ports are not blocked by a software firewall
When communicating with the wavestate over USB, the Updater uses TCP ports 50000 and 50001, and Bonjour uses UDP port 5353. These won't be affected by an external firewall in a separate server or router, but can be blocked by a software firewall running on the same computer.

Disable VPN software
Some users have reported that VPN software may interfere with communication to the wavestate.

Try using Update Via USB Boot Mode
See "Update Via USB Boot Mode" on page 8.