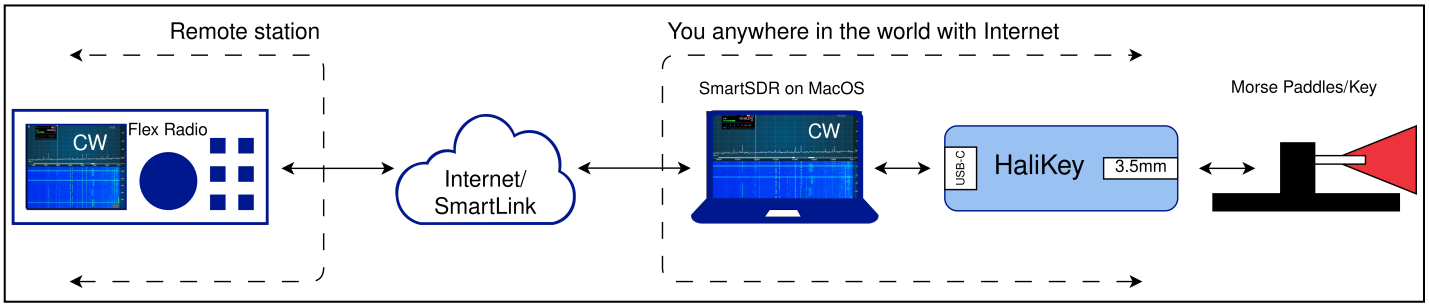
1. HaliKey MIDI, User's Guide

Thank you for purchasing the Halibut Electronics **HaliKey** MIDI!


HaliKey MIDI

HaliKey MIDI is an adapter that lets you have a physical morse code paddle and/or PTT (eg: a foot switch) connected to your computer. It is designed to work with radio control software that uses MIDI events to trigger radio button presses, such as NetKeyer, the various Ham Radio Apps for MacOS and iOS by Marcus DL8MRE and Jan Roskosch, Remote Ham Radio, and others.



HaliKey MIDI allows you to operate morse code with your favorite paddles, or to have a physical PTT switch, while operating at a remote station.

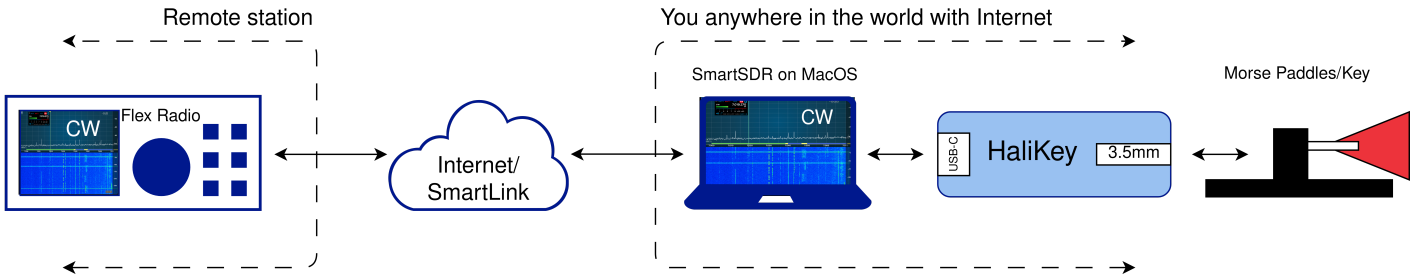
> **IMPORTANT:** This User Guide is for HaliKey MIDI (sometimes referred to as HaliKey v2), that comes in a black plastic case as shown above. If you have a HaliKey v1, v1.3, or v1.4 in the blue heat shrink tubing, please see the User Guide for HaliKey v1 instead.

1.1. Document History

Date	Version	Description
2026-01-01	v2.0c	First public release for HaliKey MIDI.

2. Table of Contents

3. Introduction



HaliKey allows you to connect morse paddles, or a physical PTT switch, to the computer you're using for remote operation of your ham radio station.

3.1. In the bag

Please make sure you received all the parts:

HaliKey, an optional USB adapter (either USB-C or USB-A), a business card with links to documentation, and the all important Halibut Electronics sticker

- HaliKey MIDI
- **Optional**: USB Male to Male adapter (either USB-C or USB-A)
- Business card with a link to documentation
- The most important part: The Halibut Electronics sticker. 😃

If anything is missing, please contact us and we'll get you what you need.

4. Connecting HaliKey MIDI...

4.1. ...to your Computer

HaliKey MIDI connects to your computer using USB. It has a USB-C socket on the board. Optionally, you can buy a USB-C to USB-A adapter, or an USB-C to USB-C adapter, which allow you to connect HaliKey directly to a computer or hub without a cable. When connected to your computer, HaliKey MIDI appears as a Serial port, and a MIDI Device. It uses USB standard protocols for both serial and MIDI, so it doesn't require any drivers.

4.2. ...to physical switches

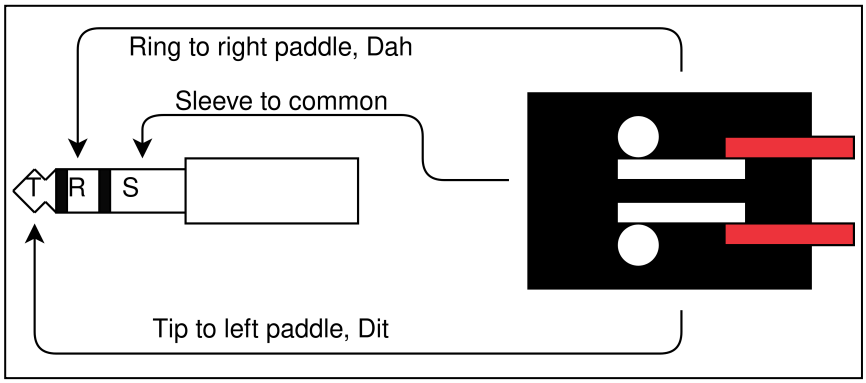
Here, HaliKey MIDI is the same as HaliKey v1. HaliKey has a 3.5mm socket for all connections to switches. It reads a simple contact closure between Tip and Sleeve, or Ring and Sleeve. (Connecting Tip to Ring won't break anything, but it doesn't accomplish anything either.)

Tip is connected to the serial port's CTS signal. Ring is connected to the serial port's DCD signal. As of v1.3, Ring also connected to DSR.

4.2.1. ...to Morse paddles

- Tip to left paddle, Dit
- Ring to right paddle, Dah
- Sleeve to common, Ground.

If your Morse paddles have a 1/4" TRS connection, then use a Stereo 1/4" Female to 3.5mm male adapter.

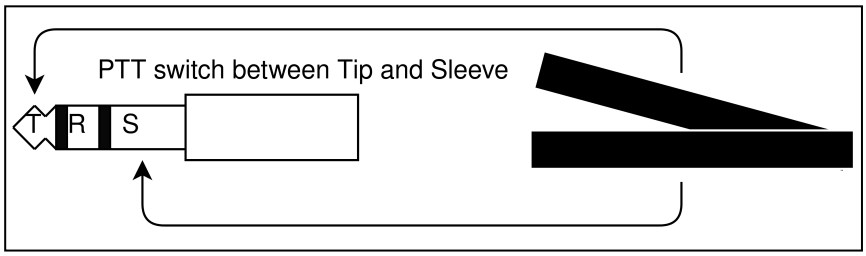


4.2.2. ...to a Straight Key

- Connect the straight key between Tip and Sleeve.
- Leave Ring disconnected!! See below.

4.2.3. ...to a PTT

- Connect your PTT switch between Tip and Sleeve.
- If your software triggers on DCD or DSR instead of CTS, then connect PTT to the Ring and Sleeve instead. It's also most likely safe to connect it to both.

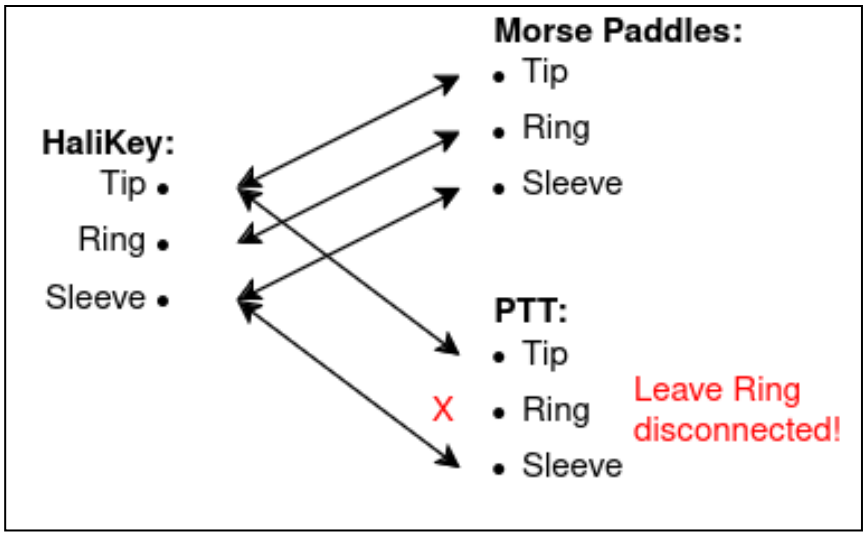


4.2.4. ...to Morse paddles AND a PTT!

Since HaliKey uses contact closures, you can put multiple switches in parallel on the same signal. This means you can connect both: Morse paddles, *and* a PTT, at the same time. No need to switch back and forth.

- Connect the Tip, Ring, and Sleeve of the Morse Key, as above.
- Connect the Tip and Sleeve (*only*) of the PTT, as above.

Use whatever connectors make sense for your paddles and PTT.



5. Configuring Software

HaliKey MIDI is designed to work with the various Ham Radio Apps™ written by Marcus and Jan Roskosch. It works with SmartSDR for Flex™ radios, SDR-Control for Icom™ radios, FT-Control for Yaesu™ radios, TS-Control for Kenwood™ radios, and K4-Control for Elecraft™ K4 radios. It works with both the MacOS and iOS/iPadOS versions of these apps.

Other applications have adopted the same MIDI interface that the Ham Radio Apps use, such as NetKeyer and Remote Ham Radio™.

> **Note:** HaliKey MIDI will actually work with any software capable of using MIDI events described by the MoMIDI protocol. If you have a software package you'd like to see added to this documentation, please contact us with details.

5.1. SmartSDR for Windows

Unfortunately, for technical reasons, HaliKey MIDI is currently (2026 January) unable to work directly with SmartSDR for Windows. Use NetKeyer instead.

The short version is that the Windows USB CDC ACM driver (as of Windows 10 and 11) does not interpret serial flow control signals like DSR and DCD. HaliKey v1 did this using an FTDI chip, which does NOT use the USB standard protocols and requires its own driver, which DOES implement serial flow control signals. HaliKey MIDI switched to a micro-controller, which uses the ACM standard for serial communications. So until Windows implements DSR and DCD in `winser.sys`, there's nothing HaliKey MIDI can do.

5.2. NetKeyer

To replace the functionality we lost in SmartSDR for Windows, Andrew Rodland KC2G has written NetKeyer, a cross platform application that talks MIDI to HaliKey on one side, and SmartLink to a Flex™ radio on the other.

1. Download, install, and start NetKeyer.
2. **Radio Selection:**
    1. If you're running on the same network as your radio, it will show up in the Radio Selection drop-down automatically.
    2. **TODO SMARTLINK**
    3. If you don't have a radio, or you just want to practice with local side-tone only, select `No radio (sidetone only)`.
3. **Input Device Selection:**
    1. Select `MIDI (HaliKey MIDI, CTR2)`.
        - Unless you're using NetKeyer as an Iambic keyer on Windows with a HaliKey v1, then select `Serial Port (HaliKey v1)` and select the correct serial port.
    2. **MIDI Device:** Select `HaliKey MIDI`. You will have to click `Refresh` if you've connected HaliKey after NetKeyer started up.
    3. You shouldn't have to **Configure MIDI Notes**, or worst case click **Reset to Defaults** to get back to HaliKey defaults. But just in case, a good config is:
        - Note 20: Left Paddle and Straight Key
        - Note 21: Right Paddle
        - Note 30: Straight Key
        - Note 31: PTT
4. Click **Connect**. The settings on this page are all your personal preference.

5.3. Ham Radio Apps for MacOS

These instructions are written based on the SmartSDR and SDR-Control UI as of 2026-01-01. I haven't tested these on all the Ham Radio Apps, but their UIs and functionality are very similar. Your UI may look a little different than what's shown/described below, but it should be pretty close.


SmartSDR CW Keyer Window

1. Connect HaliKey MIDI to your Mac, then start SmartSDR.
2. Go to "Tools -> Controller -> MIDI Controller".
3. Configure as:
    1. **Device:** HaliKey MIDI
        - If you see `HaliKey MIDI (Offline)`, see below.
    2. **Compatibility:** Custom
    3. **Wheel sensitivity:** Leave unchanged; not used here.
    4. **Mapping:** Custom (This is probably grey'd out, or possible not there at all.)
4. Click **Edit Mapping**
    1. This is a list of MIDI events, and how they're mapped to actions in the app. Only three mappings are relevant to HaliKey MIDI. Any others won't get used. Whether you delete any unused

mappings is up to you.
2. Add mappings for the three following events. Click **+** to add a mapping, **Button**
    - **Code/Control:** 20, **Action:** Trigger CW left Paddle
    - **Code/Control:** 21, **Action:** Trigger CW right Paddle
    - **Code/Control:** 31, **Action:** PTT Push
5. Click **Enable**

Your HaliKey MIDI is now active. When in CW mode, it will act as a paddle input. When in a Phone mode (eg: USB or LSB), the Tip acts as a PTT.

> **Note:** The CW Keyer configuration will persist across application (and computer) restarts. However, if you start SmartSDR without HaliKey MIDI plugged in, it will not be enabled. To enable it, you can either open "Tools -> Controller -> MIDI Controller" and click Enable (as you did during configuration), or restart SmartSDR with HaliKey plugged in.

5.3.1. HaliKey MIDI (Offline), Waiting for Controller

When configuring or enabling your HaliKey MIDI, you see the device as `HaliKey MIDI (Offline)` and the Status as `Waiting for Controller...`, two things might be the case.

Check to make sure HaliKey is actually connected to the system:

1. Open the `MIDI Monitor` application. It can be found by pressing Command-Space and typing "MIDI Monitor".
2. In the `Sources` box at the top, look whether the line `MIDI sources` is checked, and whether `HaliKey MIDI` is listed under it.
    - If it is, then HaliKey MIDI is connected correctly and seen by the OS.
    - If you don't see HaliKey MIDI in the `Sources` box, then there is a problem with the USB cable, or possibly HaliKey MIDI itself. Try disconnecting and reconnecting it, try a new cable, etc.

If you see HaliKey MIDI in the MIDI Monitor tool but it still shows as (Offline) in the radio app, then you might have a ghost HaliKey device that needs to be removed.

1. Open the `Audio MIDI Setup` application. It can be found by pressing Command-Space and typing "Audio MIDI Setup". This should open a window called `MIDI Studio`.
2. In `MIDI Studio`, delete every greyed out instance of HaliKey MIDI you find. Select it, and click **-** in the tool bar.
    1. If a HaliKey MIDI is currently connected, that instance will not be greyed out, and you won't be able to delete it. This is ok. The important part is to make sure there aren't any OTHER instances of HaliKey MIDI on this screen.
3. If you deleted a greyed out HaliKey MIDI instance, then that was definitely the problem. Go back to the application and it should no longer show as `(Offline)`.

If: You do see HaliKey MIDI in MIDI Monitor, and there's only one instance of HaliKey in MIDI Studio and it's active, and it STILL shows up as (Offline) in the radio app, then this is a new one. Contact Halibut Electronics Support and we'll help you dig into this.

5.4. Remote Ham Radio

When you login to Remote Ham Radio, if the browser tells you that remotehamradio.com wants to Control MIDI Devices, grant it this permission.

1. On the main operating windows, go to Tools -> Browser Devices.
2. Check **Enable CTR2-MIDI**
3. Select `HaliKey MIDI` from the drop-down.
4. Click **Done** in the upper right corner.

HaliKey MIDI and the Lynovations CTR2-MIDI use the same MIDI events for left and right paddle, and PTT.

6. Thank you!

Thank you again for your purchase and support, it really means the world to us.

Current versions of this document, and all Halibut Electronics documentation, can be found at https://electronics.halibut.com/docs/

If you have any questions or problems, please contact us and we'll do what we can: https://electronics.halibut.com/contact

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Cheers, 73 de N6MTS
-Mark, Head Cheese, Halibut Electronics.