

ReFlexFX

Performance MIDI Controller



User Guide V1.04

Welcome to ReFlexFX... and thanks for your support!

ReFlexFX (previously FlexFX) was designed to be as simple as possible to use, but fitting so much functionality on a small screen meant that a lot of the button labels etc had to be abbreviated so their meanings became less obvious. So in this guide I'll be going through each screen of the app explaining each function and button in detail... and also explaining my reasoning for adding the functions as well as giving hints for their use. I'll be making some YouTube videos to show some setup examples and connection options.

The app started out as a funky little prototype project that I'd mess around with when playing live with my band. Then the pandemic hit and I (like so many others) lost my day job... and decided to put all my efforts into making this the most useful, versatile, customizable, unique, all-encompassing MIDI controller I'd ever seen. So many, many months of development and testing later... here we are. Let's get started!

Main Screen

1 **SENSOR DISPLAY** - This area simply shows visual feedback for the current tilt and acceleration readings, which is useful when deciding which axis name to use for your intended application. This display can be hidden by setting an option in the APP SETUP screen.
*** Tap inside this area to reset the tilt orientation.

2 **XY PAD** - This is the basic touch pad area for real-time control of the parameters set up in the XY PAD SETUP screen. X is the horizontal touch position, Y is the vertical. The logo gives a visual indication of the current tilt reading, so you can easily see if the the tilt is centered. You can tap the SENSOR DISPLAY to center it anytime. You can also set the visibility of the xy pad and the logo in the APP SETUP screen.

3 **SHOW/HIDE BUTTON** - Tap this button to show and hide the extended section of the main screen.

4 **PATCH DOWN BUTTON** - Tap this button to switch to the next patch down.

5 **PATCH UP BUTTON** - Tap this button to switch to the next patch up.

6 **PATCH DISPLAY/PATCH SELECT** - This shows the currently selected patch. Tapping it brings up a list of all patches so you can skip directly to any patch.



Main Screen - Extended Section

1 COPY Button - Copies all settings from the current patch, ready for pasting into another patch location.

2 EDIT PATCH Button - Brings up the EDIT PATCH screen, allowing you to set the patch name, image etc.

3 PASTE Button - Pastes the previously copied settings into the current patch, overwriting existing settings.

4 ZERO TILT - Has the same effect as tapping the top Sensor Display, resetting the tilt center.

5 EDIT TILT Button - Brings up the EDIT TILT screen, allowing you to set up MIDI settings to be controlled by any of the tilt axes.

6 EDIT ACCEL Button - Brings up the EDIT ACCEL screen, allowing you to set up MIDI settings to be controlled by any of the acceleration directions.

7 IMPORT/EXPORT Button - Brings up the IMPORT/EXPORT screen, allowing you to import/export the patch data as text using the device clipboard.
*** This allows easy sharing of patches using Messages, email etc.

8 ALL OFF Button - This sends All Notes Off messages to all connected MIDI devices, useful if there are any hanging notes for some reason.

9 EDIT XY PAD Button - Brings up the EDIT XY PAD screen, allowing you to set up MIDI settings to be controlled by any of the main XY touch pad axes.

10 APP SETUP Button - Brings up the APP SETUP screen, allowing you to choose UI options, connect to Bluetooth MIDI devices, and access other app settings.



APP SETUP Screen

1 SET UP Button - allows setting up any Bluetooth MIDI devices as peripherals, meaning the iPhone acts as the main central MIDI hub.

2 SET UP Button - allows connection to a Bluetooth MIDI device as a peripheral, meaning the iPhone acts as an accessory to the main MIDI hub (PC for example).

3 Switch to show or hide the Sensor Display on the Main Screen UI.

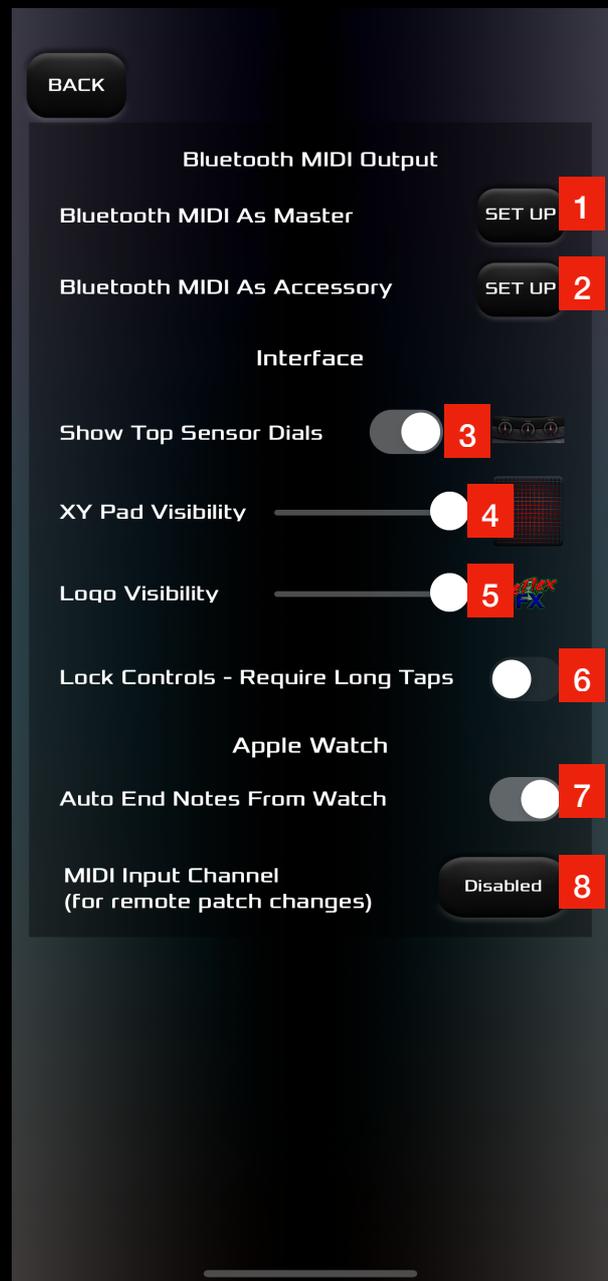
4 Slider to set the visibility of the XY Pad on the Main Screen UI.

5 Slider to set the visibility of the app logo on the Main Screen UI.

6 Switch to Lock Controls - when enabled, this prevents accidental touches from changing patches or resetting tilt. Instead of taps, this will require buttons to be held for 2 seconds before being accepted as deliberate.
*** I'd recommend enabling this when the iPhone is mounted on a guitar for example.

7 Switch to Auto End Notes From Watch - When using the Apple Watch ReFlexFX app's 9 assignable buttons, the switch will automatically send Note Off MIDI messages after any Note On MIDI messages.
*** Enable this if you're using the buttons to emulate hardware MIDI buttons... MCU transport controls for example.

8 MIDI Input Channel - Sets a MIDI channel to listen for remote patch changes. You can send Program Change messages 1 to 32 to switch to patches 1 to 32, with Program Change 0 used to remotely reset the tilt orientation.
*** A MIDI foot controller could therefore be very useful for stage use... but be careful with selecting MIDI channels, as it could be possible to cause an endless loop if connected devices echo incoming Program Change messages.



PATCH SETUP Screen

1 Tap the EDIT button to rename the current patch. Longer names will be truncated to 15 characters.

2 Tap the NEW button to select a new background image from your device's camera roll. You can use the default background instead by disabling the switch.

3 "On Load" will allow setting which MIDI messages should be sent whenever this patch is loaded into memory.

*** This is very useful for syncing external MIDI device's settings, switching a synth to a particular sound for example.

"On Unload" will allow setting which MIDI messages should be sent before leaving the patch. You might want to reset the pitch bend to center if you've been controlling it with the app.

4 Switch whether or not to send MIDI All Notes Off messages before proceeding to the next step.

5 You can send up to 5 separate messages in order. Select which one to edit here.

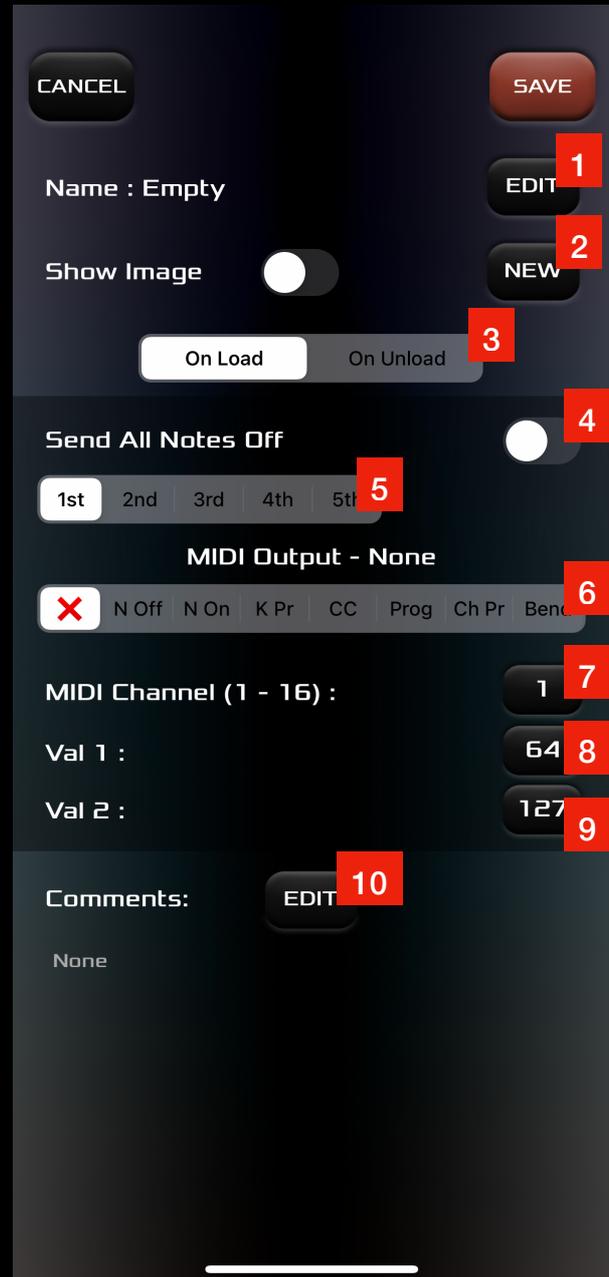
6 Choose the type of MIDI message to be sent.

7 Choose the MIDI channel to send the message to.

8 Set the value of the first data byte here.

9 Set the value of the second data byte here.

10 You can add comments to the patch here. You might want to remind yourself of all the parameters and devices controlled by this particular patch.



TILT SETUP Screen

1 Axis Select - Choose which tilt axis to edit here.

2 Dead Zone slider - A dead zone higher than 0% will give some leeway before the tilt affects the MIDI output.
*** 0% is good for smooth, full range parameters like wah-wah effects. I use around 20% for pitch bend, which leaves a useful gap for reliable center pitch.

3 The Multiplier Slider can be adjusted to boost the output parameter, allowing less movement to have more effect.

4 The Offset Slider adjusts the center of control, enabling down-only or up-only parameter control.

5 Switching Invert on simply changes up to down etc.

6 Choose the type of MIDI message to be sent.

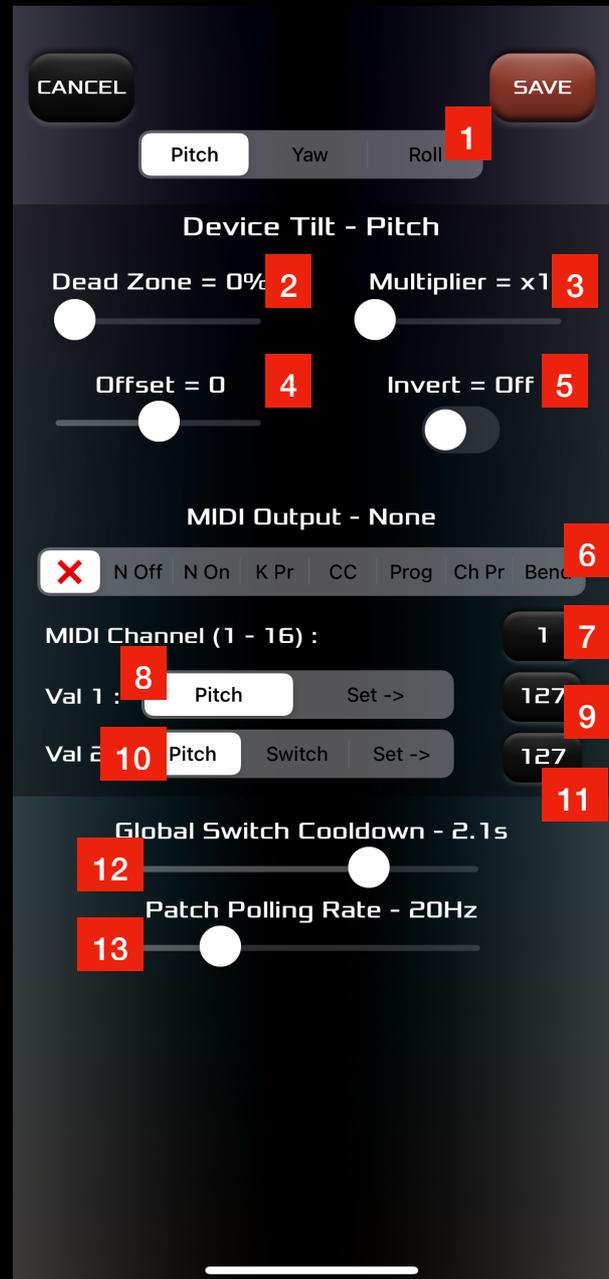
7 Choose the MIDI channel to send the message to.

8 Choose between using the tilt axis value for the first byte, or a fixed value Set by using button 9.

10 Choose between using the tilt axis value for the second byte, or a fixed value Set by using button 11. The other option "Switch" will alternate between 0 and 127, which can be useful for switching individual effects on and off.

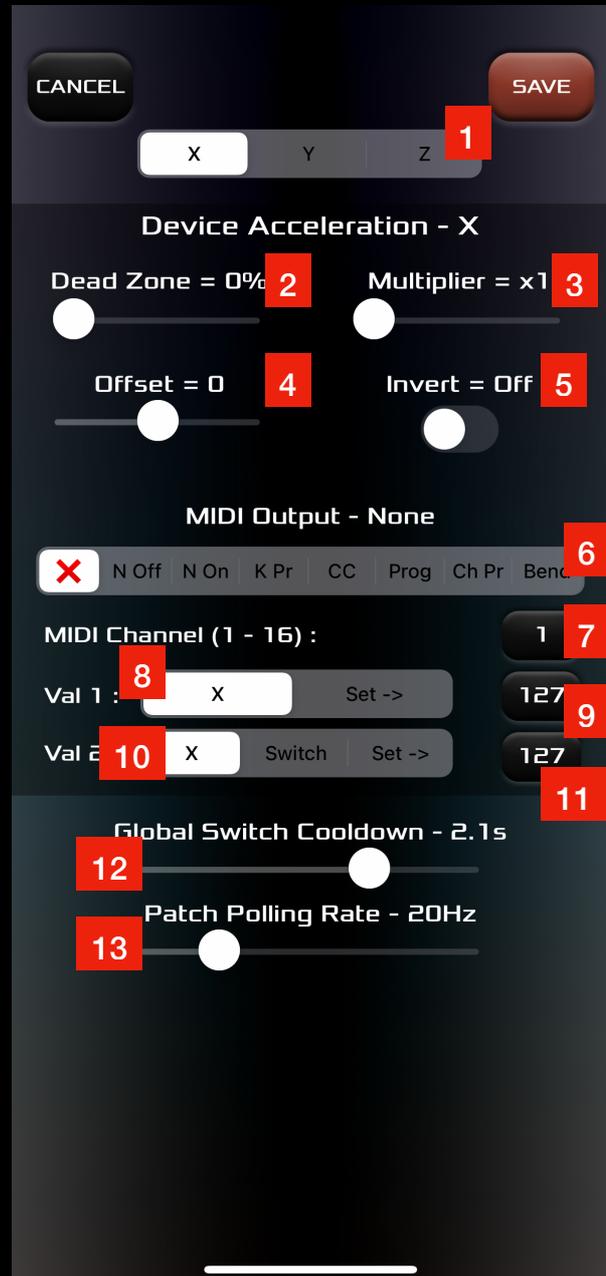
12 The Global Switch Cooldown slider sets the minimum time between activations when using the "Switch" option for byte 2. This can prevent multiple unintended switches, but can be customized for special effects.

13 The Patch Polling Rate slider sets how often the tilt will be checked every second. If you only use one axis, this can be as high as you like. But you might want to reduce it if you find you're saturating MIDI bandwidth with many constant outputs from multiple axes.



ACCEL SETUP Screen

- 1** Axis Select - Choose which acceleration axis to edit here.
- 2** Dead Zone slider - A dead zone higher than 0% will give some leeway before the acceleration affects the MIDI output.
*** 0% is good for smooth, full range parameters like wah-wah effects. I use around 20% for pitch bend, which leaves a useful gap for center pitch.
- 3** The Multiplier Slider can be adjusted to boost the output parameter, allowing less movement to have more effect.
- 4** The Offset Slider adjusts the center of control, enabling down-only or up-only parameter control.
- 5** Switching Invert on simply changes up to down etc.
- 6** Choose the type of MIDI message to be sent.
- 7** Choose the MIDI channel to send the message to.
- 8** Choose between using the acceleration axis value for the first byte, or a fixed value Set by using button 9.
- 10** Choose between using the acceleration axis value for the second byte, or a fixed value Set by using button 11. The other option "Switch" will alternate between 0 and 127, which can be useful for switching individual effects on and off.
- 12** The Global Switch Cooldown slider sets the minimum time between activations when using the "Switch" option for byte 2. This can prevent multiple unintended switches, but can be customized for special effects.
- 13** The Patch Polling Rate slider sets how often the acceleration will be checked every second. If you only use one axis, this can be as high as you like. But you might want to reduce it if you find you're saturating MIDI bandwidth with many constant outputs from multiple axes.



XY PAD SETUP Screen

1 Axis Select - Choose which axis to edit here.

The same options are available for each phase of touch:

First Touch Down - The first message to be sent when a touch is detected on the XY Pad.

Last Touch Up - The final message to be sent when the last touch is lifted from the XY Pad.

Touch Movement - Whenever a touch movement is detected on the XY Pad, this message will be sent.

2 Choose the type of MIDI message to be sent.

3 Choose the MIDI channel to send the message to.

4 Choose between using the X or Y axis value for the first byte, or a fixed value Set by using button 5.

6 Choose between using the X or Y axis value for the second byte, or a fixed value Set by using button 7. The other option "Switch" will alternate between 0 and 127, which can be useful for switching individual effects on and off.

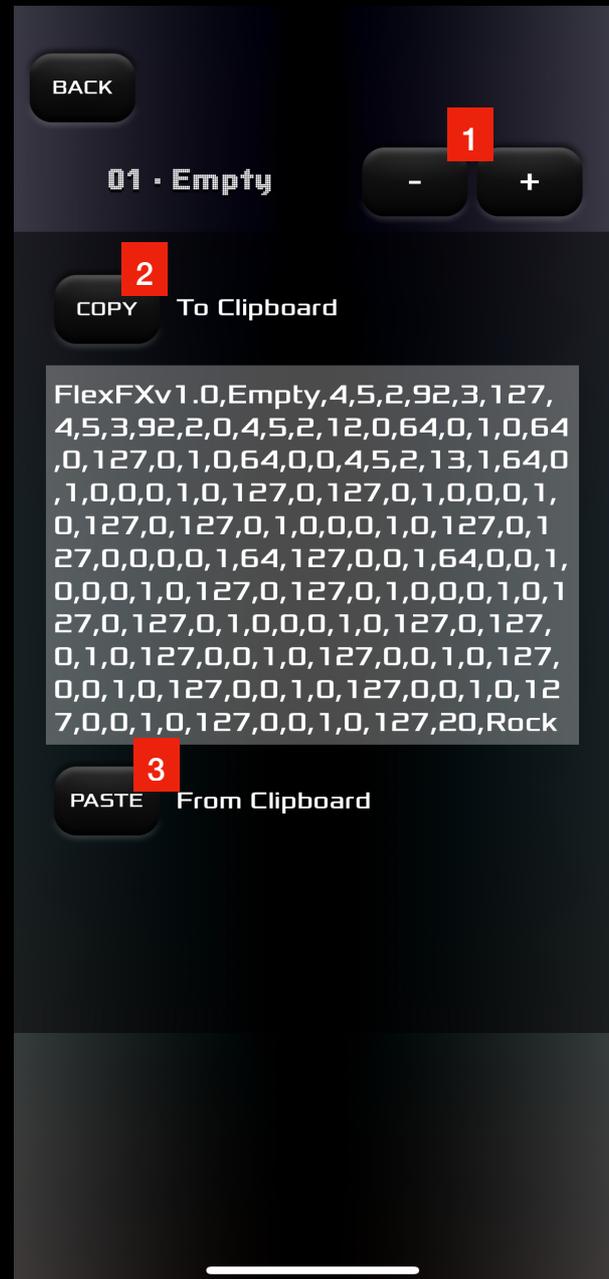


IMPORT / EXPORT Screen

1 Use the + and - buttons to select a patch location.

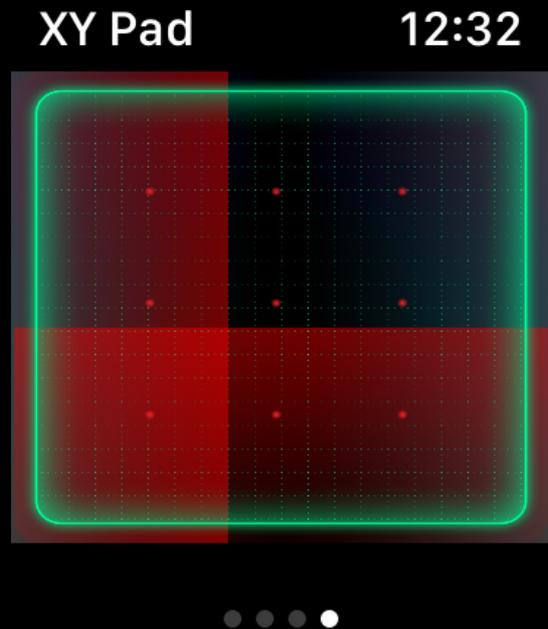
2 Tap the COPY button to copy the patch's text representation to the device's clipboard. You could then paste this text into an email or other document in order to easily share the patch with other users.

3 Tap the PASTE button to paste the patch's text representation from the device's clipboard (copied from the web, email etc). The pasted data will be checked for validity before overwriting the current data for this patch.



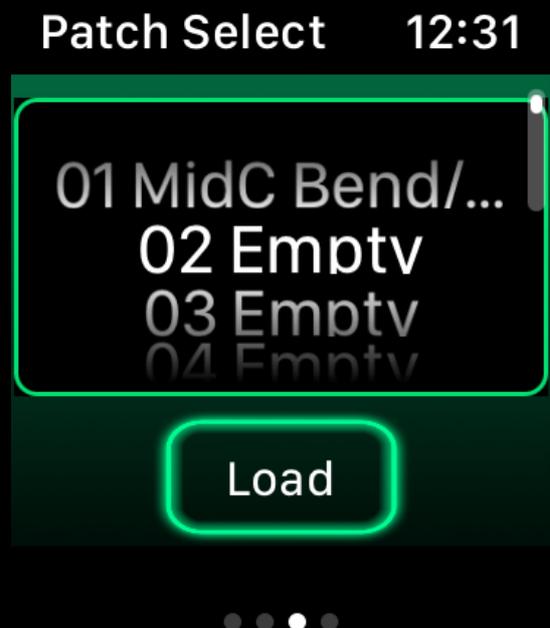
APPLE WATCH - XY PAD Screen

You can use one finger on the watch app's XY Pad screen, which acts as a remote version of the iPhone's XY Pad Screen. So the settings from the current iPhone patch will be mirrored here.



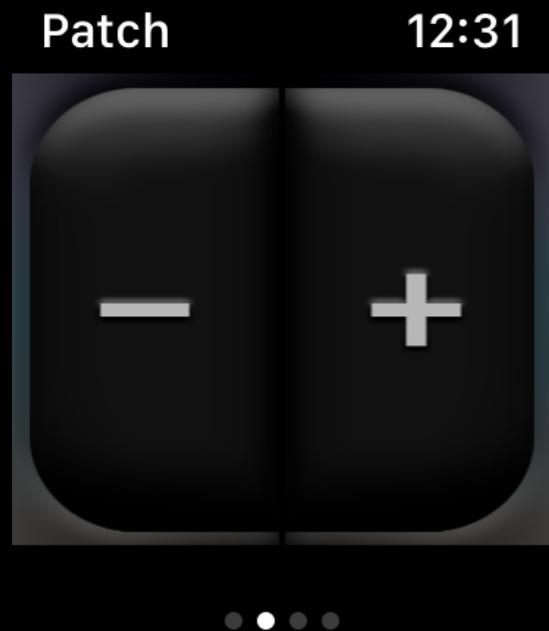
PATCH SELECT Screen

From this screen you can remotely switch to a new patch in the iPhone app. Swipe up/down or use the crown wheel to select the patch, then tap the Load button



PATCH Screen

Nothing complicated here, just tap the + and - buttons to change patch on the iPhone app.



WATCH MAIN Screen

The "OFF" button works the same as the ALL OFF button in the iPhone app's main screen, and the "RESET" button resets the iPhone's tilt orientation.

Buttons 1 to 9 are assigned independently from the iPhone app's patch settings. Set each one up by tapping the "EDIT" button, then tapping the numbered button.

This will bring up the EDIT screen.



EDIT Screen

1 MIDI Channel - tap here then use the digital crown to select the MIDI output channel for the message.

2 Message Type - tap here then use the digital crown to select the type of MIDI message to output.

3 Byte 1 - tap here then use the digital crown to select the value to send as the first data byte.

4 Byte 2 - tap here then use the digital crown to select the value to send as the second data byte.

