ITAR

ITAR Preliminary User's Manual v0.13 2/28/2025

The iTar is a MIDI guitar controller with interactive lighting in the fingerboard and a companion iOS app for performance and setups. The instrument communicates over Bluetooth wireless and uses USB both for data and charging the onboard battery.

Thanks for participating in our Apple iOS development program as a tester.

- As of 12/13/2024 the top panel buttons are getting new app software and will be updated as part of the Tesflight program updates.
- As of 1/9/2025 **V116** is the current iTar app version.
- 2/28/2025: V129 is current this manual is current to v126

Getting Started

Wired connections on the iTar

- The iTar has a USB-microB port for charging the battery and communicating with a computer. You can also load new firmware into the iTar through this USB port.

- Also, a USB-A port is provided for powering another USB or USB-MIDI device. If your iPhone or iPad needs charging you can use the USB-A port, but be aware that your iOS device consumes much more power than the iTar and can quickly drain the iTar battery. If the iTar is fully charged and the iPad is fully discharged, the iTar can charge the iPad to about 30-40% before it's battery is depleted.

Charging the iTar: Slide the backplate to the side so you can see the Battery and charging board. When fully charged all 4 LEDs will be illuminated. Use a USB micro-B cable for connecting to a charger or computer. A short USB jumper cable is included to ease connecting the cable.

The Top panel

O+/O- : Octave Up and Down

TRIG: toggles between Tapping and Strumming Modes

EDIT: for reserved features

: Bluetooth pairing button.

Attach the iPhone/iPad to the iTar

The iTar is supplied with a magnet plate that attaches to your phone/tablet, or preferably a cover case, using a strong adhesive tape. With the magnet plate in place, the iPhone/iPad snaps securely to the iTar with magnets.

It's advisable that you purchase a separate cover for your iOS device that you can dedicate for use with the iTar so that the magnets are not attached to your phone/iPad when not using the iTar.
An Amazon gift card is included with your iTar that you can use to purchase a case that you can dedicate to attach the magnet plate for use with your smart device.

Follow these steps to install the magnet plate holder to your iPhone or iPad

1) Drop the magnet plate into the iTar so the magnets engage. You may want to check to see if the camera on the phone is obscured by the plate. If so, you may want to cut a notch from the plate to clear the camera lens.
2) If necessary, use an alcohol wipe to clean the back of your iPhone /iPad case so the adhesive tape will stick.
3) Peel off the protective liner from the tape.
4) Open the App and align the String Trigger Surface with the strings on the iTar neck, position your device close to the wooden cover cap and press it onto the magnet plate.

Install Testflight from the Apple app store and we will authorize your Apple account to download the iTar3 mobile app. We will need your email address for the Apple developer account.

EDIT screens

When the app is installed it will come up with the selected Surface and ready to play. Pull out the little tab at the left of the top screen with the Arrow icon. This is the main EDIT flyout screen.

Connect Bluetooth to your desktop or mobile device:

- Press the button next to the BLE icon on the iTar. It will blink quickly when advertising.
- Pull out the Edit flyout screen. Tap the Bluetooth icon at the top of the screen and it will bring up a list of devices. Select SLABS-module and it should connect. This screen will appear with any iOS music app you are using when you want to connect with BLE, not just the iTar app.
- If you want to manually disconnect, press the button again and the LED will turn off.

Surfaces *select the way the iPad/iPhone interacts with the iTar fingerboard*

- The iTar app screen has several performance surfaces that interact with the fingerboard and the LED lighting system. When you first open the app a default surfaces will appear. To change surfaces tap the Surfaces icon and select the surface you want to use. You will notice that the Surfaces menu has several choices that do not actually load a surface. The iTar app is a work-in-progress and new surfaces will be populated in the future. Any help is appreciated. Your ideas and suggestions are welcome!
- The various surfaces offer Pitchbend in addition to triggering notes. The enable-surface-pitchbend switch for this is in the Performance Settings screen.
- The Guitar surface shows six strings. The tap-velocity (Loudness) varies along the length of the string.

- Tap the XY-Pad to Trigger Notes and continue to swipe for Pitchbend and Modulation on the X and Y axes. You have the option to rutn of the Notes-trigger and you can reprogram the swiping gesture to any other MIDI-CC#.
- The Drum Surface has a bank of pads that are programmed to MIDI messages and used for playing Drums/Clips/Samples as well as controlling anything over MIDI (wirelessly) including the LEDs on the fingerboard.
- At the bottom Right corner for all screens is a “Panic” button which will clear any hanging notes.

SETTINGS

This is where most of the hardware settings are made.

TapMode<> TriggerMode

Configure the fingerboard to either tap the keys keyboard style, or fret the keys and "Trigger" with the Right (strumming) hand.

EDIT-Surface Screen

Press the EDIT-surface button in the Settings flyout to add/subtract/move/re-assign performance objects on the Screen. Double tap the object to open its Assignment-pulldown.

Polyphonic: Poly<> Mono

Poly Mode – The fingerboard plays multiple notes per string (Try it!)

GuitarMode – The fingerboard plays one note per string like a guitar with hammer-ons
(High-note priority)

MIDI IN/ MIDI OUT

Select the input and output MIDI locations from the menu choices.

- "itar-Virtual" denotes the App itself.
- Select the "SLABS-Module" , the iTar fingerboard's BLE transceiver, as the MIDI input source and Output destination for MIDI data. You may also see other iOS apps and the "Session" available selections.

XYpad Triggers Notes : On/Off

- When On, the fretted notes can be triggered from the XY Pad
- When Off, the XYpad will be used for expression (MIDI Continuous Control) only

MIDI Panic button

Silences all notes, sequences, and scripts. Show/Hide the button on your active Surface.

MIDI Monitor

Displays the Monitor screen that shows all MIDI traffic in and out of the app.

Presets [all of the Fingerboard and Surface settings, and sound selections are saved in a Preset]

The iTar app comes up with your last elected Preset. Tap the Preset button at the bottom of the Edit-flyout to edit your preset. When you create settings you want to keep, SAVE them to a Preset by tapping the "Done" button. Most people will probably only use one preset.

Fingerboard Setup Menu

These screens are where you can define how the fingerboard is to respond for the selected Preset.

The opening view shows an image of the fingerboard. You can drag the Cross-handles to define the boundaries for a Zone of keys that can have a separate sound or voice as well as other settings.

5 Zones are available per Preset. You may find this useful when using Ableton Live which can reside in one Zone while you play the fingerboard in another Zone. Or simply set up one Zone of keys to play a selected sound, and another zone of keys to play a different sound.

Tap one of the cross-handles to open the Zone-actions view where the various settings can be created.

Always tap “Done” in the top right corner of the screen to save your changes.

Tunings

You can set the Open-string note for any string. There are also a number of preset tunings available.

Channels

You can define channels for the MIDI note output for use with systems that work with traditional MIDI channels. This is useful for setting up “multi-timbral” voices on the fingerboard. Each string may have a different voice or sound. There are several channel Presets available with various string/Channel combinations,

Lighting

Select Scripts: Various lighting animations. A speed control is under the Script select button. Adjust to match the music tempo for an interesting effect. Refer to the Clipper Manual and Clipper command chart for details regarding the Lighting commands.

XY Pad Operation

- You can use the XY Pad to Trigger notes held on the fingerboard.
- You can also swipe Up/Down and Left/Right on the XY Pad to apply expression to the sound. These effects default to Pitchbend on one axis and Modulation on the other axis, but you can program the effects yourself in the EDIT Surface screen.

You have the option to Trigger notes and send MIDI expression or to only send the MIDI expression.

1. In the Settings Menu go to the XY Pad and select Trigger Notes Enable to allow you to tap the XY Pad screen to trigger notes.
2. Further up the Settings menu select Fingerboard Sustain. This allows you to hold fretted notes on the fingerboard and release those notes when you release the frets.
3. If you want to play tapping style and only want the MIDI expression on the XY Pad, turn OFF Trigger Notes Enable.

Sounds

The iTar app has an embedded SoundFont player with a selection of basic instrument sounds. But you can also load any iOS plugin. When you select a plugin iTar screen that software's UI will appear for your use.

You may also simply open another iOS synth app and select the iTar as a MIDI source.
You can also select the SLABS-Module BLE as the direct source of MIDI data from the iTar fingerboard.

There is also an Effects control bank which allows applying Reverb, distortion and other effects to your sound.

Sensitivity: Set the fingerboard response by moving the handles. The X-axis is force, how hard you strike the keys. The Y-axis is the velocity output, how loud the note is. Adjust for your touch so that you get the best dynamic range you can, soft to loud.

Gain:

Adjust as needed to optimize the fingerboard response.

Connecting the iTar to your DAW:

There are several ways to do this.

1. Direct connection with USB from the iTar to the computer.
    - MIDI data is sent over USB in both directions. Also charge from the USB port.
2. Connect the fingerboard directly to the computer via Bluetooth.
    - In the Mac: Press the Bluetooth pairing button on the iTar and select "SLABS-Module in the AudioMIDI setup screen.
    - Windows PC : Load MIDI drivers for your hardware. Your results may vary.
3. Connect the iPhone to your MacOS computer via Bluetooth-MIDI data link
    - Open the Computer Bluetooth settings. Using the iTar App, tap the circulating Arrow icon. Your iPhone/iPad should selectable in the computer's Bluetooth screen.
4. Connect the iPhone to your computer with an Audio connection.

Using the SurfaceBuilder

Adding a Drum Pad

Select a Surface.

- Go to the Settings menu and select EDIT SURFACE.
- Notice the icons at the left of the screen.
- Tap the square pad to add a Drum Pad and place in where you want on the screen.

Programming a Drum Pad

- Double-tap the Pad and the note-assignment dropdown will appear.

- Use the +/- buttons to adjust the Note-number, Channel number, and Velocity number.
- To finish editing
    - Tap the check mark to,
    - Tap a different Pad,
    - Add another object
    - Exit the SurfaceBuilder.

Notes regarding Tunings , GeoShred and other iOS apps

- Both the iTar fingerboard and the virtual-iTar app appear as BLE-MIDI devices, and within GeoShred both the Itar and the iTar-app appear as MIDI sources. If they are both selected there may be conflicting tunings.
- GeoShred operates both standalone and as a plugin selectable within the iTar app. So GeoShred sounds can be played with GS or the iTar app in the foreground, and our app , when in the foreground, can get to GS two ways. I by far prefer the standalone GS view to the plugin view but maybe I have more to learn about running a plugin UI.

Itar Mode

When our app is paired with the iTar a sysex command is sent to change the iTar's note output to what we call internally "iTarMode" or Ableton tuning, a contiguous block of notes on two channels, 15 and 16. It doesn't reference String/Fret locations directly. There is a screen in the app that sets Tunings/Channels.

In addition, the fingerboard LEDs use the same addressing scheme – the key address matches the LED address.

It was easier for our app to translate a consistent block of incoming note-numbers into tunings/mappings in the app. But the iTar also is useful as a guitar controller on a PC or whatever over BLE or USB, without our app, so it has a default guitar tuning of its own on channels 1-6. There is a screen in the app that sets Tunings/Channels.

ItarMode tuning

Strings1-5: Channel15/ String6: Channel16

String1:Notes 0-20
String2: 21-41
String3:42-62
String4:63-83
String5:84-104

String 6: Ch16: Notes 0-20

[The entire iTar fingerboard note range will fit on one MIDI channel but we're using two in order to be compatible with our 24-fret fingerboards that use the same LED code.]

GeoShred Setup

In GeoShred:

1. Tap the 3 dots in the upper right corner
2. Select MIDI
3. Tap the little MIDI connector icon
4. Notice the iTar will be listed as two MIDI Input sources
    i. If the iTar App is open Select the virtual-iTar, the output from the iTar App
    ii. If the iTar app is not open Select theiTar-Bluetooth direct from the fingerboard.

Troubleshooting

1) Occasionally the audio will either stutter or quit entirely. You may be able to reset the audio by closing the app and re-opening it but you may need to power-cycle the phone to reset the iOS Audio engine. This behavior can exhibit when multiple synth apps are active.
2) Connectivity:
    a. To check whether you have a good Bluetooth connection and the app is not receiving notes:
        i. Check the iTar activity LED on the instrument. If it does not flash when you play the fingerboard then the iTar is not sending and probably needs to be power-cycled.
        ii. If the MIDI indicator in the app is not flashing but the iTar activity LED flashes when you play, you are not receiving Bluetooth from the iTar.
        iii. Go into the Fingerboard Edit screen and tap a few notes on the fingerboard image. Those keys should light up on the fingerboard. This test the Bluetooth connection by sending notes <u>from</u> the app.
        iv. If the output to the iTar lights the LEDs, check your MIDI-IN setting in the Settings screen.
        v. If the LEDs to not illuminate and the app does not receive notes from the iTar, re-pair the iTar with the App. Try power-cycling the iTar if need be.

3) If you don't hear any notes from the iTar fingerboard , select the Plucker (String) surface and tap the strings to see if Open string notes will play.
    a. If they do,
        i. check that the Bluetooth is still connected
        ii. check in the settings screen that the fingerboard is in TapMode or StrumMode

iii. check the MIDI Input source is selecting the iTar- Bluetooth
iv. check that the MIDI indicator is turned on and responds to the fingerboard

b. If they do not sound,
   i. check whether a sound is selected
   ii. check the volume setting in the app
   iii. check that the MIDI indicator is turned on and responds to the screen
   iv. Check to see whether any audio plugins are enabled or whether and other music apps are live in the background.
   v. Try any incantations, curses, pleas, prayers, anything short of violence please.
   vi. Close the app and re-open it
   vii. Power-cycle the iPad
   viii. Uninstall and re-install the app which will clear any cached data by the app.

Any questions:

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