

STRUMTRACKS

FINGERPICK PRO - Making MIDI Practical

Many people are put off the idea of a midi-based approach to recording virtual instrument tracks because it seems to require fiddling about with large numbers of midi files. But does it? **FingerpickPro** shows how to make a midi-based approach totally viable.

THE PROBLEM

Let's look at one example of the impracticality of the usual midi-based approach. If you want a midi-based approach to producing fingerpicking guitar tracks, you would need such a large number of midi files that it would put most people off. Let's say you were only going to use a total of 50 chords and 50 picking patterns, straight away you would need 2,500 midi files!

It's no surprise that people have generally shied away from taking this approach. But what if there was a solution? What if there was a very practical, easy way to have a midi-based approach to fingerpicking guitar?

Now there is! **FingerpickPro** uses a revolutionary new approach that enables those who don't play keyboard to quickly and easily put

together quite sophisticated fingerpicking guitar tracks.

How does this work? There are **six key elements**.

1. 'STRING KEYS' LAYOUT

The first element of the solution is to lay out the sample player's keyboard-style interface, **not** as a chromatic layout of notes like on a piano, but one **based on guitar chords**. This requires two elements. The lower section of the keyboard is dedicated to Key Switches that select the different chords. And a higher section of the keyboard has the Playable Keys, with **six keys assigned to the six strings of a guitar**.

In **FingerpickPro** these string keys are assigned to:

| A2 (1st string)

| F2 (2nd string)

| D2 (3rd String)

| A1 (4th string)

| F1 (5th string)

| D1 (6th string)

That layout might seem a bit curious at first - why not just consecutive keys? We'll get to that shortly.

This gives a 'String Keys' layout instead of a piano-style layout. When you trigger a chord key switch, the notes of that chord are mapped to the six string keys. You don't even have to know what the notes are, and that would be fairly common, even among people who have learned to play guitar a bit. But with this layout it is just as simple to play a chord like Bm7b5 as it is to play C major.

Selecting a Chord Select Key Switch is the equivalent of what the **left hand** does on the fretboard. Playing the six 'string keys' is the equivalent

of what the **right hand** fingers do on the strings (and vice versa for a left-hander, of course).

By itself this would be quite handy, but what about hammer-ons and pull-offs?

2. HOPO KEYS (HAMMER-ON AND PULL-OFF NOTES)

Although you could do quite a bit using only the notes of the chord, adding hammer-ons and pull-offs adds immeasurably to the appeal of fingerstyle guitar playing. In FingerpickPro the String Keys layout is augmented by additional notes to allow for hammer-ons and pull-offs to be incorporated in the picking patterns.

In FingerpickPro this is done by assigning a hammer-on note on the **next key below each String Key, and a pull-off note on the **next key above** the String Key.**

So for example, since the String Key for the 3rd string is D2 the HOPO Keys for the 3rd string would be HO=C#2 and PO=D#2 This means that within the span of octaves 1 and 2 we have the full layout of string keys and additional HOPO keys (and a few blank keys left over).

***See layout diagram at the bottom of page.**

(*Note: When doing hammer-ons and pull-offs **don't overlap** the notes as is often done in 'legato' mode in virtual instruments. The note you are hammer-on or pulling-off **from** should stop short at the point where the next note begins.)

But what notes are assigned to the HOPO Keys?

3. KEY INSTRUMENTS

The third element in the strategy to make midi practical is to have **a different instrument for each musical key**. So with 12 instruments you can have all the major and minor keys covered.

The reason for having instruments dedicated to different keys is because an approach based solely on chords would

| not be enough to take into account the HOPO Notes.

It would work fine if you were only using the notes of the chord itself, but once you add additional notes for hammer-ons and pull-offs you realise that the **same chord** played as part of a different musical key would often need to have some **different** HOPO notes.

There is a further practical consideration about which notes to make available as HOPO notes, since there can be two or three notes in between the adjacent notes of a particular guitar chord. Which one do you choose? We'll get to that in a moment.

Meanwhile, there is a further advantage from having the additional notes. Although we have been calling them Hammer-On/Pull-Off Notes, in fact they are just notes like any others. You don't have to use them as HOPO notes, but can simply use them to create different chords on the spot. You might not even know what the chord is, you might just like the sound it makes when you experiment by using an Additional Note in the picking pattern instead of a Chord Note.

And aside from those reasons there is another good practical reason to have separate key instruments - it allows you to have **a much greater selection of chords**. If you had to fit everything in one instrument using key switches, the range of chord types you could include would be much more limited. In FingerpickPro each Key Instrument has 36 different chords.

4. AUTO-BASS NOTES

There is a further consideration when trying to adapt guitar playing to a keyboard layout. Unlike a piano, where chords are essentially the same thing moved higher or lower on the keyboard, **guitar chords can have similar, or very different, 'shapes'**. This has important implications when trying to devise a way of making a midi-based approach practical.

A picking pattern will commonly have a musical form such as beginning each successive chord on the root note of the chord. Or using an alternating bass pattern using the root note and the fifth. Yet these can occur on different strings, depending on the chord. Consider the

difference between a D major chord and a G major chord. Using the common open chord voicings of these chords in standard tuning, the lowest root note of D major is on the 4th string, while the lowest root note of the G major chord is on the 6th string. The fifth of the D chord is on the 5th string, while the fifth of the G chord is on the 4th string.

This poses a problem when trying to devise a practical way of using midi.

FingerpickPro addresses this problem by using what could be called **Auto-Bass Notes. It does this by mapping the root and fifth notes to additional keys on the keyboard.**

There is no single way of doing this that would suit all circumstances, so three options are provided, mapped to the keys going from G3 to C4.

***See layout diagram at the bottom of page.**

Option 1

Option 1 is the simplest and most straightforward, and maps the **lowest available root note** of the chord to key G3, and the **lowest available fifth note** of the chord to G#3. This means that you can use these keys **instead of** the String Keys for the lower strings, and each successive chord will **automatically adjust** to play the root or fifth note instead of being limited to a merely mechanical approach based on string selection alone.

Option 2

Option 2 is provided so as to allow an alternating bass to play a bit higher where this is possible, so that the lowest root note is not on the 6th string. This allows an alternating bass on the 4th and 5th strings in many cases. Where this doesn't work Option 1 is repeated instead. In some cases a third is used instead of a fifth, such as in C major, where the E on the 4th string is used instead of the G on the 3rd string, which would be getting a bit high for many purposes.

Option 3

Option 3 is provided so you can have an alternating bass that is played at a higher pitch. This is because an additional feature of FingerpickPro is two extra 'string keys' higher up the guitar, so that in addition to the six strings played in the standard open string/lower frets chord voicing you can create chord voicings that go somewhat higher.

This Auto-Bass Notes idea might all sound a bit complicated when set out briefly like this, but its utility soon becomes apparent in use. To get your head around it, just focus on Option 1 for a while.

5. FINGER STRUMS

In addition to picking notes, FingerpickPro also includes **Finger Strums**, already mapped to specific keys (C#4 -B4). These also change with the Key Switches, so that notes and strums can easily be included in the same midi file. You don't need to use any special technique to play strums - they are simply there, available to use as easily as the notes.

A range of strum types is provided: a full/fullish down strum (5 strings), down and up strums on the top 4, 3, and 2 strings, as well as on strings 2 and 3. It also has what could be called down and up 'arpeggio strums' of the whole chord. These are somewhere in between a strum and an arpeggio and are often used as a flourish at the end of a song, or a section.

***See layout diagram at the bottom of page.**

6. THE ALL-CHORD MIDI FILE

All the above makes possible the **All-Chord Midi File**, the centrepiece of the whole arrangement. It is this that ultimately makes using midi practical.

All the elements of the layout explained above make possible the use of a SINGLE MIDI FILE to play ANY of the available CHORDS in ANY of the KEY instruments.

At a stroke this vastly reduces the number of midi files you need to provide an extensive library of fingerpicking patterns, and also makes it far quicker to modify them. **And these patterns can incorporate 'auto-bass' notes, hammer-ons, pull-offs and finger strums.**

It also makes composing your own arrangements from scratch much quicker, especially if you have a 'guitarist's mentality' rather than a 'keyboardist's mentality'. A 'guitarist's mentality' means a greater mental familiarity with a guitar fretboard than a keyboard, and a habituation to thinking of chords in terms of the different chord 'shapes' used on a fretboard.

Now we can take up the question touched on earlier (in point 3. HOPO Keys) as to why the choice of HOPO Notes has been done the way it has. The desire to have a system of all-chord midi files has also shaped the choice of which notes to choose for the Hammer-On and Pull-Off Keys. In order to remain as musically useful as possible, hammer-ons and pull-offs in FingerpickPro are all **at least one whole tone** (i.e. two or three semi-tones) above or below the String Key note.

Having more than one HOPO note available for each string would be possible, but it would make the all-chord midi file system unpredictable. In any case, one semi-tone hammer-ons and pull-offs are still possible outside the chord-based set up by using the chromatic layout (see below).

THE CHROMATIC LAYOUT

To complete the comprehensive approach to implement a midi-based system we need to note that FingerpickPro also includes a full 'chromatic' keys layout of all the notes on the guitar. These are mapped in a piano-style layout from C5-G8. This means that, notwithstanding all the measures taken to make midi practical in FingerpickPro by using the Chord Select System, you still have access to every note simultaneously with any of the chords.

- If there is a chord you want that is not provided in the Chord-Based System you can set it up here.

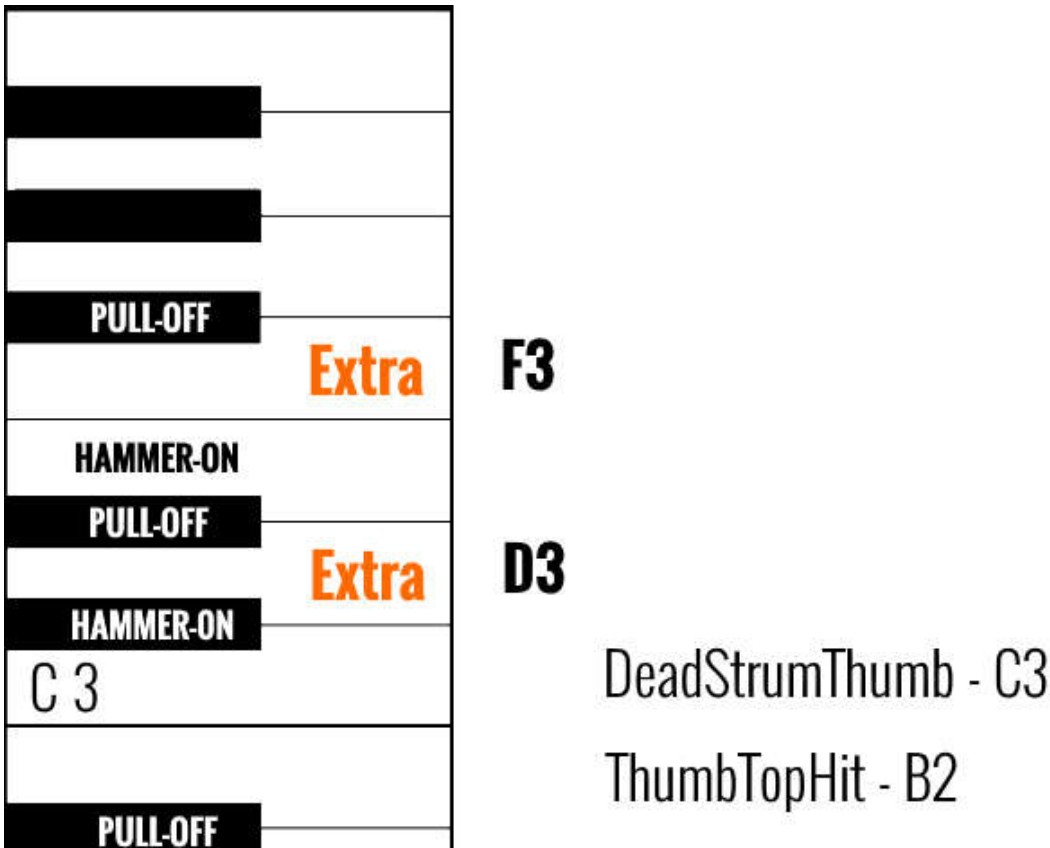
- If you want to do one semi-tone, or other, hammer-ons or pull-offs not provided for, you can add them here.
- If you want to create a bassline for a 'thumb-and-strum' or 'thumb-and-pluck' style of track you can do that here as well.

And if you do play keyboard you can do that too! All the efforts to make FingerpickPro friendly for non-keyboardists is not meant to detract from its utility to keyboard players.

SUNDRY SOUNDS

A 'sundry sounds' sections is included, independent of the Chord Select System, consisting of various percussive sounds made by slaps, hits and knocks on the body of the guitar. These can be incorporated into the All-Chord Midi Files as well, as can muted articulations on the Auto-Bass Notes. These can be quite useful when doing fast Travis-style fingerpicking to provide a more punchy, rhythmic effect, as well as reducing too much resonance from too many sustained notes sounding simultaneously.

LAYOUT OF STRING KEYS, HOPO KEYS, AND SUNDRY SOUNDS



	1st	A2	
HAMMER-ON			ThumbKnock - G2
PULL-OFF			
	2nd	F2	
HAMMER-ON			
PULL-OFF			
	3rd	D2	
HAMMER-ON			KnuckleKnock - C2
C 2			SharpFingerSlap - B1
PULL-OFF			
	4th	A1	
HAMMER-ON			PalmSlap - G1
PULL-OFF			
	5th	F1	
HAMMER-ON			
PULL-OFF			
	6th	D 1	
HAMMER-ON			PalmBridgeSlap - C1
C 1			

LAYOUT OF AUTO-BASS KEYS AND STRUM KEYS

ARP-STRUM DOWN	
STRINGS 2&3 - UP	
	2&3 - DOWN
TOP 2 STRING - UP	
	TOP 2 - DOWN
TOP 3 STRING - UP	
	TOP 3 - DOWN
TOP 5 STRINGS DOWN STRUM	
TOP 4 STRING - UP	
	TOP 4 - DOWN
ARP-STRUM UP	
C 4	FIFTH NOTE - HIGHER
	ROOT NOTE - HIGHER
FIFTH (OR 3RD)	
	ROOT NOTE
FIFTH NOTE	
	ROOT NOTE
PULL-OFF	
	EXTRA CHORD NOTE
HAMMER-ON	
PULL-OFF	
	EXTRA CHORD NOTE
HAMMER-ON	
C 3	

Strum Section - C#4 > B4

Auto-Bass Option 3 - B3/C4

Auto-Bass Option 2 - A3/A#3

Auto-Bass Option 1 - G3/G#3

F3

D3