

# **Dimension Semi-Pro**

## **“Tips for Programming the Dimension DXi”**

**Text authored by the Cakewalk Project5 User Forum Members**

**Compiled into this format by tethead (Bob Hammond)  
of the Cakewalk Project5 User Forum  
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## Dimension Semi-Pro 1 [12 String Guitar]

**Authored By:** b rock (Tom Brockway)

**Intro:** Let's get going by loading up the Twelve Strings Guitar program in the top-level Program Browser [[06 - Guitars](#) folder]. Click through the E1-E4 Element buttons, and you'll see that the Martin 6 steel.sfz is used in Elements 1 & 2. The other two Elements remain unused. While you're scanning the Elements, notice that the second Element with the Martin.sfz occupies 0.0 MB. The sample is used twice, but it only gets loaded into memory once. This'll go a long way towards conserving resources, and it's an important point to remember in more complex programming.

### **Warning! Graphic SFZ Reference Ahead!**

Those wishing to avoid this, skip to the next section *now!*

OK, now that the room has cleared: Go ahead and click on the Multisample slot, as if you were loading something instead of the Martin. Navigate to the Martin 6 Steel.sfz, and right-click; choose Open or Edit, and Notepad will pop up automatically (given a WinXP association). There's really nothing exotic in here; it's pretty much the basics. The samples used in the .sfz are all in the [Martin 6-String Steel](#) subfolder under [05 - Guitar](#).

You have Regions set up to map all the individual samples to a specific Key range. Only the Lokey opcode is used to represent the start point of each range, and that's in effect until the next opcode. The samples have all been fine-Tuned by 1/100ths of a semitone [cents], and the Keys are all mapped over the usually usable acoustic guitar range of notes. Notice those "X" samples at the bottom. Those are the different "finger squeaks" that are mapped to a high MIDI key range, and are transposed down in adjacent keys. The "normal" played notes are in the upper "fng" portion of this .sfz file.

**Analysis of the Basic Patch:** Let's start at the top. I'm only going to include the sections of Dimension that are actually used in this patch. The sample parameters in each Element are fairly standard, but look to the Lo/Hi Vel in the first two. E1 has a range of 48-127, so this Element will be triggered by harder key presses on your KB. E2 is mapped to lower velocities [0-81], but there's a middle range [48-81] where you'll hear both Elements triggered.

Makes sense: You've got a dual six-string sample to simulate twelve guitar strings, and most of the time you hear that. But extremely soft and loud notes cut through as a single string. If you want to hear how they differ, drop down to the Mix section below, and select either Element with the On buttons, while playing in some notes at different velocities.

**Filters:** The filters in each Element are both set to a mild 1-pole filter setting at the same cutoff frequency [75 Hz.]. E2 is in HP mode, which will pass everything above 75 Hz. But E1 is in lowpass mode, passing only frequencies *below* 75 Hz. Huh? Consider these as a base frequencies, because they'll be modified later with cutoff

Envelopes, and in the MIDI Matrix (Filter 1, anyway).

**EQ:** Different guitar strings are going to have a slightly different mass, amount of finger oil, wear & tear, etc. For realism, you need to take each string of a pair and differentiate the sound. One of the ways that this patch does it is with EQ. One section is enabled only on E2, in a low shelving mode. It gives a little "body" to the second string, and the setting give a mild low-end boost.

**Modulators:** We're going to start right-to-left with the envelopes [to Amplitude], because this is the route you might take in programming from scratch yourself. Click on the "A" button in both Elements, and compare them. Identical; it appears that they were copied and pasted using the right-click modulator menu. I might've varied them slightly to distinguish between strings. The flat-line Sustain stage will be in effect until you lift your fingers from the KB; then the Release stage glides "naturally" to zero. It mimics a plucked string shape. The Depth is maxed at 100%, so this envelope takes over (from the "hidden" EG), and the VelTrack is set to 90%. Your playing velocity will strongly affect how the envelope amount is added.

You can skip the panning and resonance envelopes ["P" & "R"]; they're not used in this patch. In the "C" envelopes [for Cutoff Frequency], you'll see some long decaying envelopes, which also mimic how a guitar's overtones fade away from a bright initial pick attack to mellow fadeout. The EG is On, but the Depth is at zero. The Vel->Int is set to 13700, and the popup Tip says in cents, but this doesn't make "sense" to me. I always thought of this as in Hertz, and that it indicated an Initial value. But the documentation indicates Intensity, and who am I to argue with Rene?

At any rate, this parameter will give you the base value which is then reflected as a 1.0 level in the envelope. Keep in mind that the cutoff frequency of E1's filter is also modulated in the MIDI Matrix. More on this later. One more thing to notice: the Keytracking indicator under the LFO section is dragged with a slight downward slope. The higher that you play on your keyboard; the lower that the base frequency of the filter will be. It's subtle, but it helps to soften the higher notes, and accentuate the picking attack in lower notes.

Pitch ["P"] Envelopes? Why are we here? There's nothing to look at, except ... Look to the LFO sections. They're enabled, and set to a slow 3.17 Hz. That's about half the speed of common vibrato, and there's no Depth set. It's another way to simulate having a twelve string guitar. This is set up to trigger from the MIDI Matrix, and it provides some rolling, wavering pitch variations with a sine waveform that you'll hear when two strings are not in digitally-exact tuning (which is always).

**The Mix/FX Section:** You'll see that Element 1 and 2 are turned On. In own my programming template, these are assigned to controller buttons to easily preview each Element. The FX1 and FX2 knobs are up for both Elements, providing a little more Chorus to the mix than Reverb. The two Elements are panned slightly left & right of center, to further differentiate between the two "strings". Element volumes are at a nominal RMS value [75%]. Like most Dimension programs, the Limiter is On to help tame those sharp peaks.

Click on the FX button, and note that we've got Chorus and Reverb in the two global effects. These are at the end of the signal chain, and are added in varying amounts in the Mix section. The slow [1 cycle per second] Chorus Frequency adds to the impression of string detuning. There's the slightest of Delay times, a healthy amount of Depth, and a goodly amount of Feedback. You can get away with that with a very short Delay time, and still make a patch sound natural. Notice that you have more chorused [wet] signal than dry.

The Room Reverb is almost at ambient settings. A very short Pre-Delay gives up a small room, but the Size parameter is up there with a longer decay time. The Damping and Tone controls really work in conjunction with each other, knocking out the high frequency characteristics of the room reflections. It's a little more obvious when you listen to these settings with the Hall algorithm. As it stands, this saved setup seems to envision a long, narrow room with some carpeting, or full of "absorptive" patrons. Perhaps a small, intimate club or coffeehouse stage. Once again: wetter than dry, so this places you more in the audience than on-stage.

**MIDI Matrix:** Yup. You've got to open it. It'll be painless; I promise you. Click on that third icon from the left; next to the Program top-level slot. You'll see that it uses CC#1 [Mod Wheel] to modulate both the Pitch LFO in E2, and the Cutoff Frequency in E1. I have a feeling that the first entry was intended for Pitch LFO 1. It's set up to receive, but nothing heads it's way. This is where that subtle rolling effect comes into play. If you really want to exaggerate the effect to study it, bring the Depth of 10 way up to 200, or even 1200 [one octave]. Fade in with your Mod Wheel, and you'll hear the exaggerated pitch sweeps. Because it's sent to only E2, this effect is only present on softer notes [remember the Lo/Hi Vel setting?]. Harder notes come through unaffected.

The Mod Wheel also drops the cutoff frequency of E1 by 2000 Hz. (I assume), and the effect is Smoothed out with a softer 7.0 curve in the last Matrix column. Bringing in the Mod Wheel strips the higher frequencies from E1. Drop the Depth to -13,700 (to offset that Vel ->Int parameter setting in the "C" envelope of E1), and you'll see what I mean.

The third Matrix slot has Channel Aftertouch as a source. If you don't have that on your controller, don't worry. Just click on it, and choose something that you have access to, like Pitchbend. Once again, you can exaggerate the Depth setting to hear it clearly, and it'll only affect softer [E2] played notes.

**The Application:** I was scrambling for quick patch that was appropriate for a solo acoustic idea that I had in my head. I wanted to do an improv in a dropped-D guitar tuning, and my intention was to play it only on the Trigger Finger drum pad controller. As such, I didn't modify the base patch extensively, and concentrated instead on capitalizing on what was there already. I did bump up those LFO Depth values in the MIDI Matrix to 30 or so for more impact, in preparation for sending an aftertouch message from each of the TF pads. In hindsight, I'd have been better off setting up "choke groups" in Dimension that would mute one string when another

played [either in the Elements with Lo/Hi Key, or even better: with .sfz editing].

I can't remember exactly how the dropped-D tuning was accomplished. I either transposed in the Trigger Finger, the Track Inspector, or I dropped in a Transpose MIDI FX instance into the single track. They'll all work about the same, and I wanted to avoid the limitations of a 16-pad controller. I could've simply reprogrammed the per-pad note messages. The TF was programmed to send a two-octave scale [plus one] of MIDI Note Ons, and each pad also sent aftertouch with pressure sensitivity. It also sends velocity messages. I adjusted the velocity curves in the TF to approximate a guitar response, and started tooling around.

Too thin-sounding. It's not like you can jump around the Trigger Finger like a KB (although I am getting better with practice). So I enabled the Arpeggiator for that track, set it to 1/8th notes (at 125 BPM), and set a two Octave Span with an As Played Shape. That filled in the blanks a bit, and brought in a finger-picking technique of alternating octaves that added to the realism. But it was the addition of a sustain pedal [CC#64] and mapping velocity to the Arp's Latch function that brought it all together. The sustain message effectively extends a Note Off message, and allows you to mute the strings, or let them ring. If you don't have one, get it! In the meantime, set a pattern up with some CC#64 automation, or program a slider to send it. Sustain reception is on for this patch (and most others) in the multisample manipulation section.

I set up the Latching by right-clicking on the control in the Arp, and selecting velocity as a source. This is most useful in a Note On/Note Off controller (don't get me started on this), but it has the result of enabling you to (in effect) turn the Arp sequencing on and off with your playing technique. It's much more natural than controlling the Arp On/Off, and you can breathe some variations into your patterning. Light touch turns off the Latch, and a harder velocity kicks it in.

These were the missing ingredients for what I heard in my head. At the last minute, I assigned the Pitch Wheel in MIDI Remote Control to the Pitch Offset parameter in the Arpeggiator, as I wanted to have a means for a end-of-song flourish that was ... let's say: extra-scalar. The .mp3 results of the improv [\[We The People.zip\] can be heard here](#). Mission accomplished (in more ways than one).

## Dimension Semi-Pro 2 [“Space Flute – Space Goblins” (sound)]

**Authored By:** Cloudwalker

This is a tutorial to teach you how to make your own sound in Dimension

First, check out this link:

[Space Flute - Space Goblins Sound Demo and Element Pictures](#)

(Update: This link sometimes has trouble. If its down, check again later)

Keep the pictures, they might come in handy later! If you like how it sounds, then continue on to learn how to make it!

(If you dont think you will need pics but you want to hear the demo song,

Go to my soundclick page and take a listen -----> [Soundclick](#))

We will begin by taking a look at **Element One**....

Open up Dimension in p5. It should say in the top righthand-corner box 'Empty Program' and just below that it should say 'Empty Multisample'. Its these 'multisamples' that give Dimension sound.

Now, make sure that element 1 is selected (the element selection icons are found right below the program name box at the top). Now, click on the words 'Multisample'. A browser box should pop up and it should show a bunch of folders. For element 1, you need to go into the folder called 'Extended waves'. (All of our elements will be using Multisamples from this folder!)

Now it should show a bunch of subfolders with weird names. Go into the folder named 'Breath'. Now you will see many different .wav files. Now select the one called 'Breath-C5'. Go ahead and open it.

Now that we have our first sound loaded, we want to tweak it a bit. Down towards the bottom, you will see the 'Modulators' panel. There are buttons that a titled 'p' 'c' 'r' 'p' 'c' 'a'. These are Pitch, Cutoff, Resonance, Pan, and Amplitude. For element one, all we need to tweak is amplitude. It is already selected by default. You will see that there is a graph that shows how long and how much the Modulator is used. The further right you go, the longer it will last, the higher to the top you are, the stronger its effect (in this case amplitude). Lets start be making our first line on the graph. Right-click anywhere on the graph. You will notice that it just created a line that starts from the bottom left corner, to wherever you clicked. You will also notice that numbers shifted in the Modulator panel as well. These numbers show how far, and how much the modulator is used. 'Time' is how long the effect lasts, and 'level' is how strong it is.

Now, click and drag that point that you just made, and align it to time = 200.5 Level

= 1.00

Now you need to right click again to make another point. Click and drag this new one to time = 599.0 Level = 1.00

(Any time you need to make a new point in the graph, just right-click)

Now, do you see the box on the left entitled "EG"? Right now it says 'Status - off'. Just click the word 'off' and it will turn the modulator effect on.

Now we need to add a LFO to this sound. The LFO box is located on the right side of the modulator panel. You need to edit the LFO to these settings

Status = ON

Frequency = 0.00

Sync = 2

Delay = 2.00

[Note: Did you know that Delay kicks in the LFO suddenly at 3 milliseconds here, and a Fade gradually comes up to full Depth at 3 milliseconds?]

Fade = 0.00

Depth = 3.00

Now your done with the Modulator settings!

Now for elemental FX: In the middle of Dimension is the FX panel. It should say Type - 'off' Filter - 'off'. Click on 'type' and select 'Panning Delay'. A bunch of knobs to the right of the FX panel will light up now. find the one that says 'feedback' and put it on 60%. Don't worry about the other knobs for this element.

Now we need to add a cutoff filter. It is located near the top-right corner, and its a small panel that says 'filter'. You will want to select the 'HP 4p' filter and set the cutoff to 87.8 Hz.

Now you need to go to the very bottom of the screen and make sure element 1's volume is 75% and you need to set FX 2 to 100% (We will cover this later)

You are done with Element 1!

For the rest of the tutorial, I am going to just give you an outline of the next 3 elements since you have already learned the basics.

## ==== Element 2 ==== On

Multisample = glitch-c1.wav

Volume = 1.0% (yes thats right 1.0%)

FX 2 = 100%



Cutoff = BP 2p set to 1104.9 Hz

Modulators:

Resonance-

Eg: On

Graph line points:

-point 1 time=0 lvl=1.00

[Note: the first point is already there. Just drag it to a 1.0 Level.]

-point 2 time=599 lvl=0.00

-point 3 time=1200.5 lvl=1.00

-Point 4 time=1799.5 lvl=0.00

-No LFO for this Element

FX

-Type = L/R/C Delay

-Left = 1 d

-Right = 1 d

-feedback = 50%

-input = 100%

-dry/wet = 50/50

**==== Element 3 ==== ON**

Multisample = Tonek-c1.wav

Volume = 40%

FX 2 = 100%

Cutoff = LP 6p set to 743.8 Hz

Modulators:

Amplitude-

Eg: On

Graph line points:

-point 1 time=0.0 lvl=0.0

-point 2 time=3599.0 lvl=1.0

Resonance-

Eg: On

Depth: 20.0

Graph line points:

- point 1 time=0.0 lvl=0.0
- point 2 time=200.5 lvl=1.0
- point 3 time=799.5 lvl=1.0

-No LFO for this Element

-No FX for this Element

#### ==== Element 4 ==== ON

Multisample = stellar-c4.wav

Volume = 1.0%

Cutoff = LP 2 set to 743.8 Hz

Fx

- Type = Chorus
- Left = 25.5
- Right= 25.5
- Feedback = 100.0%
- Frequency= 6.1 Hz
- Depth = 63%
- Input = 100.0 %
- dry/wet = 50/50

Now that you are done with your elements, all we have to do is map volume to your Modulation wheel (so that you can switch between flute and goblin).

You need to open the 'midi matrix'. This can be done by clicking on the 3rd button over from the sound name. (the button looks like a circle with dots in it) After you click it, a box should pop up.

The first column is what midi parameter is going to control your effect. In this case we want the mod wheel to control everything, so click on the first cell and go to 'Midi CC' ---> 'CC 1 (Mod Wheel)'. next you want to select what the mod wheel controls. So, you click under 'destination', and look under volume, then select 'Volume 1'. Then go to depth and drag that number down to '-20.0'. Now when you move the mod wheel up, the volume of element 1 will go down.

Here is an outline for the rest of the Midi matrix setup:

source: CC 1 (Mod Wheel) Destination: Volume 2 Depth: 66.9

source: CC 1 (Mod Wheel) Destination: Volume 3 Depth: -12.0

source: CC 1 (Mod Wheel) Destination: Volume 4 Depth: 80.0

(PS: You can also use the 'Vector Mixer' to get similar results)

We're almost there, one last thing to set up!

Down at the bottom of dimension, you will notice a 2 tabs that say 'Mix' and 'FX'. Go ahead and click 'FX'. Uh oh! The screen changed! Thats ok, this is where you select FX that effect ALL the elements On the right side you will notice that is has a reverb. Select 'Hall' and twist the knobs to the following:

Predelay = 0

Size = 83%

Damp = 21%

Tone = 70%

Dry/Wet = 19.0/81.0

Now you are done! Have some fun with this sound!

In the future I am only going to mostly provide an outline of how to make the sound (Since we covered most of the basics in this tutorial).

Enjoy, and learn to love the depth and beauty of Dimension!

-Cloudwalker

(Ps: Many of you would say, "Just give me the sound!" Well, Its not about that. Its about learning how to use Dimension and how to create something beautiful with your own two hands.)