



M13 Stompbox Modeler

DELAY | MOD | DISTORTION | FILTER | VERB

Advanced Guide

An in-depth exploration of the digital technologies and musical machinations of the M13 Stompbox Modeler.

ElectroPhonic Limited Edition

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M13 ADVANCED GUIDE



Table of Contents

Setup Details	1•1
Tuner, Setup Mode.....	1•1
Expression Pedals	1•2
Looper Levels & EQ.....	1•2
Preferences, True Bypass, Scenes	1•3
FX Loop, Factory Reset	1•4
MIDI Backup, Global Noise Gate, Displays	1•5
Model Details	2•1
Tap-based FX, Fine-Tune Mode.....	2•1
DryThru Models, Model Defaults, Mix	2•2
Expression Pedal Details	2•3
Tube Compressor Model	2•3
Scenes Details	3•1
Momentary Scene Mode, Latch Scene Mode	3•1
Autosave, Manual Save	3•2
Scene Setup, Effect Copy.....	3•3
Looper Details.....	4•1
Looper & Live Guitar	4•1
Expression Pedal Control.....	4•1
Looper Switches	4•2
Looper Tutorial.....	4•4

Delay Models	5•1
Parameter Details	5•1
Modulation Models	6•1
Parameter Details	6•1
Distortion Models	7•1
Parameter Details	7•1
Filter Models	8•1
Parameter Details	8•1
Reverb Models	9•1
Parameter Details	9•1
Appendix A: Reference	A•1
MIDI Control.....	A•1
Looper & Expression Pedals.....	A•1
FX Toggle On/Off.....	A•2
Scene Select	A•2
BPM / Milliseconds	A•3

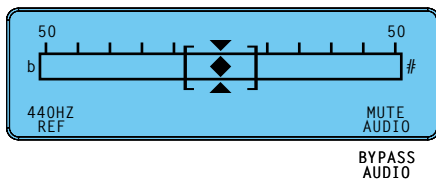
SETUP DETAILS

Welcome to the M13 Stompbox Modeler Advanced Guide. This guide contains in-depth details of your M13's features and functionality. With over 80 Models and a Looper in one device, there's a lot to work with. Our goal with this guide is to provide you with the information you need to make it easy to find the sounds you're looking for.

In the chapters that follow, we'll be referring to the six Knobs that adjust the various parameters of the M13. These are located below each of the four LCD displays. On the top row left is the Model Select Knob. To the right of that are Knobs 1 and 2. Knobs 3, 4 and 5 are in the second row, left to right. Now to begin, let's get in tune.

Tuner

To enter Tuner mode, press and hold the Tap switch for a few seconds. LCD 3 will display the Tuner. LCD 4 will display the note you're tuning. If you'd like to tune to a reference other than standard 440, turn Knob 3 to select from 425 to 455. To toggle between Mute Audio (your guitar will be silent) and Bypass Audio (you'll hear your guitar dry with no FX), turn Knob 5.



Tuning is straightforward: when the graphic diamond is to the left of center, your note is flat; when it's to the right, you're sharp. When the diamond is precisely in the center, two triangles will appear above and below it, indicating your string is in tune. To exit Tuner mode, press Tap again, or any other foot switch.

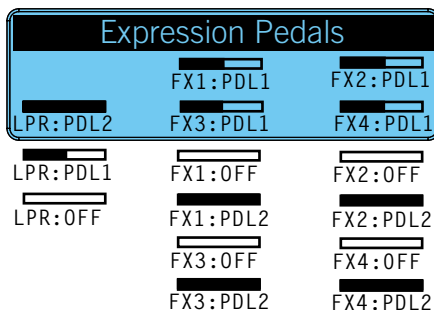
Setup Mode

To enter Setup mode, press and hold the Looper Controls switch for a few seconds. The M13's four LCDs will display your settings, including Expression Pedals in LCD 1, Looper Levels & EQ in LCD 2, Preferences, Scenes & FX Loop in LCD 3, and MIDI, Gate & Displays in LCD 4.

Depending on the way you like to work, most of your Global settings can be left as is after you've set them initially. They'll be recalled each time you power-up. In the following pages we'll describe them all in detail.

Expression Pedals

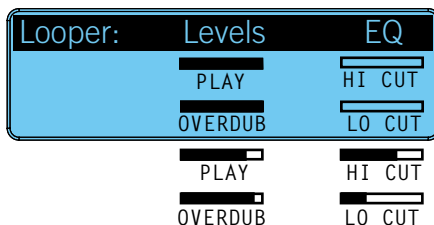
In LCD 1 you set up your expression pedal assignments. Any or all 4 FX Units in the M13 can be controlled by an expression pedal. You can use up to 2 pedals at once. Each can be assigned to an FX Unit or the Looper. You have 3 selection choices here: Pedal 1, Pedal 2, or Off. Knobs 1 & 2 set the assignments for FX 1 & FX 2, Knob 3 sets the assignment for the Looper, and Knobs 4 & 5 set the assignments for FX 3 & FX 4.



*Looper pedal control is a global setting. FX pedal control settings are saved per Scene. See Chapter 2 for more details on how to set up heel and toe expression pedal settings.

Looper Levels & EQ

There are two Looper Levels to set up in LCD 2. The first is Play, which determines the volume of your Looper's playback as balanced with your live guitar. The second is Overdub, which determines the volume of your loop in Overdub mode. To clarify, if your Overdub Level is set to 90%, each time your loop begins a new overdub its volume will be reduced by 10%, sounding quieter and quieter with each overdub pass. The default level for both Play and Overdub is 100%. Use Knobs 1 and 4 to adjust these levels, if desired.



With Knobs 2 and 5 you can adjust Looper Hi Cut and Lo Cut EQ levels. Hi Cut rolls off the high end for loop playback (@2kHz), and Lo Cut rolls off the low end (@500Hz). If applied, this EQ affects the sound of loop playback only, having no effect on live guitar.

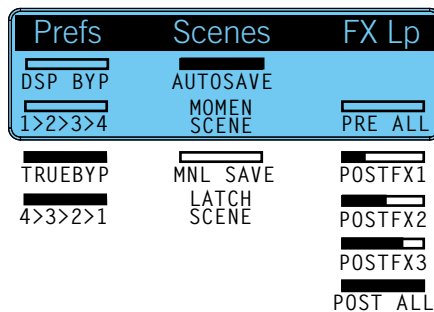
Preferences

In LCD 3 you set up FX Preferences, beginning with FX order. The default is 1>2>3>4, left to right. If you prefer, you can set it to 4>3>2>1 using Knob 3. With this setting, your signal flow begins with FX Unit 4 and flows right to left. Set the FX order you prefer.

The Model Select Knob toggles between True Bypass and DSP Bypass. In True Bypass, mechanically switching relays route your signal directly from input jack to output jack, bypassing all circuitry, for absolutely no processing or conversion when bypassing all FX.

If you're playing back a loop, however, or you want your Delay and Reverb trails to be heard when bypassing all FX, you must use DSP Bypass. True Bypass can only be activated when all of the following conditions are met:

- True Bypass is enabled in Setup mode (via the Model Select Knob).
- All 4 FX Units are in a bypass state.
- The Looper is stopped.
- Looper Controls mode is inactive (Looper Controls footswitch light is off).



Scenes

Knob 1 toggles between Autosave or Manual Save. With Autosave, every change you make to your Scene is saved, like a real pedal board. With Manual Save, changes made to your individual FX will be saved only if you don't change Scenes; if you do recall a Scene, all your changes will be lost. Manual Save is a good choice, however, when you want to be sure your Scenes will always be recalled exactly as programmed.

Knob 4 selects Momentary Scene or Latch Scene mode. Please see Chapter 3, Scenes Details, for more in-depth information on Momentary Scene and Latch Scene modes.

FX Loop

You can insert the FX Loop anywhere in the signal path. Use Knob 5, LCD 3 to select your insert point. Your choices are Pre All, Post FX 1, Post FX 2, Post FX 3, and Post All. The following are a few routing examples to demonstrate the M13's flexibility. (Be aware that multiple amps may cause ground hum - the common cure for this is a ground lift box):

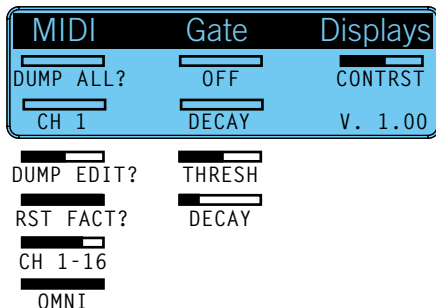
1•4

- Add an external FX unit to the M13: for example, run Vetta Comp in FX 1, U-Vibe in FX2, then assign the FX Loop to Post FX 2 and feed an external distortion pedal. That pedal's output would return to feed FX 3 and 4 to add M13 Delay and Reverb.
- Double routing: set the Loop to Post FX 1 and send an Octave Fuzz from FX1 out to the front of a tube amp. Route the amp's FX Send back into the M13 mono FX Return. Now add M13 Filter, Flange and Delay FX and send the M13 mono Out to your amp's FX return. All the time-based FX will be post your tube amp's preamp.
- Wet/dry stereo: send a Comp or Dist model via FX Loop Send (Post FX 1) to a tube amp for your dry sound. Add Panned Phaser, Ping Pong and Reverb in the M13 and set all Mix controls to 100% wet. Now connect the M13 stereo outputs to 2 other guitar amps. You'll get wide, stereo FX left and right with dry guitar in the middle.

Factory Reset

There may be times when you'd like to reset your M13 to its Factory settings. You may want to recall a particular Factory Scene, for example. To do a Factory Reset, first back up any Scenes you'd like to keep (see MIDI Backup on page 1•5), then follow these steps:

- Turn the Model Select Knob under LCD 4 until "Rst Fact?" is displayed.
- Press down on the Model Select Knob - "Reset To Factory?" will be displayed.
- To initiate the Factory Reset, press down on the Model Select Knob again.
- All Factory defaults will be reset, including Scene Presets and Global settings.



MIDI Backup

With a MIDI interface and a sysex application, you can back up your M13 Scenes to computer. It makes it easy to build a custom Scenes library, or exchange Scenes with others. To backup your Scenes, or to dump the current edit buffer, follow these steps:

- Turn Knob 3 to set your MIDI Channel from Ch. 1-16 or Omni (default is Ch. 1).
- Turn the Model Select Knob to select “Dump All?” (to back up all 12 Scenes) or “Dump Edit?” (to back up the current Scene in its current state).
- With your computer set up to record sysex, press down the Model Select knob.

The M13 will transmit the sysex file to your computer, creating a backup of your Scenes that you can store and recall at any time.

To load a Scene into your M13, simply transmit the sysex file from your computer into the M13 via MIDI. This will immediately load the Scene into the M13’s memory.

Global Noise Gate

Knobs 1 and 4 in the center of LCD 4 control the Global Noise Gate. When activated, the Gate is in effect full time, for all your FX.

Knob 1 turns on the Gate and sets the Gate Threshold. Lower values make the Gate kick in at quieter levels, higher values make it kick in at louder levels.

Knob 4 sets the Gate Decay. Higher levels result in a longer transition from non-gated to gated audio.

Displays

To adjust the contrast of the LCD displays, use Knob 5. Set it to a value that looks good to you. Settings from 30-50% usually work well.

When you’ve set all the M13’s Global parameters to your liking, press any switch to exit Setup mode. As mentioned previously, the next time you power up your M13, all your Global settings will be recalled.

MODEL DETAILS

The following are details on a few late-breaking models and features that were implemented in the latest M13 firmware. These were the result of customer requests, as well as features the development team wanted to add in the final months of development.

2•1

Tap-based FX

Many guitarists who use time-based effects like to set their delay times to a note value relative to the song tempo, as opposed to setting delay times in milliseconds. This has been included in the M13 as Tap-based FX. To set your delay time to tap tempo, turn Knob 1 to the far right and you'll see a quarter note symbol in the LCD. Change it to any note you like. Now tap the desired tempo and your time-based effect will sync to it. Your note value is persistent, so when you scroll through other effects it will be retained. To set your delay time to ms, turn Knob 2 to the right again, and you'll return to Time-based mode.



Fine-Tune Mode

When you're in Time-based mode, you may want to fine-tune your delay time to an exact number. This may be necessary to match a song's tempo, or to set up precise stereo delays, to 240 ms and 480 ms for example. To make this easy to do, we've implemented Fine-Tune mode. When you want to dial in a precise delay time, simply do the following:

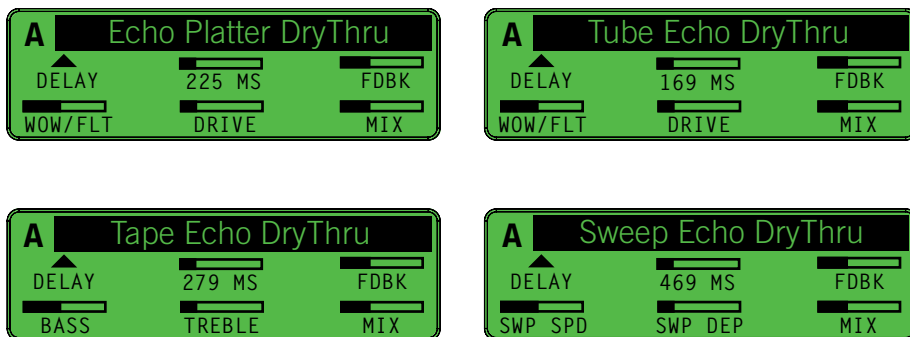
- Adjust Knob 1 to set the delay time close to the desired value.
- Press and hold the Tap switch and turn Knob 1 again to enter Fine-tune mode.
- You can now fine-tune your delay time to the millisecond with Knob 1.



DryThru Models

Another popular request from DL4 users was to provide a completely dry signal path when using specific Delay models with a dry Mix setting, so that no tone coloration was added. When we originally created our Tape Echo, Tube Echo, Sweep Echo and Echo Platter models, for example, we also modeled the dry path of the classic delays these models were based on. We did this because the original effects added a certain tonal character to the sound when Mix was set to dry, and many guitarists wanted that sound.

To make everybody happy, we decided to add what we call DryThru models. These four models are identical to the original models of the same name, but when Mix is at 0%, we removed the tonal coloration of the originals, giving you a flat, uncolored sound.



Model Defaults

All FX in the M13 are programmed with Model Default settings. These provide you with a good musical experience when you first load up each effect, giving you great “stock” settings for that model. Some are also pre-configured for expression pedal control, so if you have an expression pedal plugged in and assigned to an FX Unit and you select a new model, we start you off with what we think is a good expression pedal setup for it. (See the next page for more info on setting heel and toe values for expression pedals).

Mix

As with all other model details, the Mix control is set up to work like it did on the DL4, MM4 or other Line 6 product that first introduced a particular model. In keeping with this, setting Mix to 100% sometimes engages a special setting found on the original effect, such as vibrato in the U-Vibe, or a richer Leslie® sound in the Rotary Drm/Hrn.

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Expression Pedal Details

Almost any parameter in the M13 can be controlled by an expression pedal, as long as you've set up your FX Units and Looper assignments accordingly, in Setup Mode. To set up expression pedal heel and toe values for the parameter you'd like to control, here's an example of how to do it. Let's say you'd like to control the Mix level of a Reverse Delay.

- Select Reverse Delay in one of the FX Units, and adjust the sound to your liking.
- Plug in your expression pedal, and set it to the heel down position.
- Adjust the Mix level of the Reverse Delay with Knob 5. Set it to 0%.
- Put your expression pedal in the toe down position and set the Mix level to 100%.
- Play your guitar and work your pedal; the reverse guitar will fade in and out.

You can repeat this with any effect parameters you like. Your expression pedal will control them simultaneously. If you get to a point where you want to start over, simply unplug your pedal from the rear panel and all unsaved pedal assignments will be cleared.

Tube Compressor Model

In addition to the 5 compressors described in the manual, which are all typical stomp box type compressors, we also snuck in a Tube Comp model based on the studio classic Teletronix LA-2A® Optical Compressor, known for its smooth, easy to adjust, tube sound. You'll find it at the end of the Distortion FX group. Here's how it works:



- Adjust Knob 1 to set the Threshold - lower values result in more compression, along with an automatic makeup gain stage dependent upon the Threshold setting.
- Set the output Level with Knob 2. To use the Tube Comp model for boost only, use a high Threshold value and adjust your Level as desired.

SCENES DETAILS

The M13 offers you two different ways to select your Scenes, depending on the way you like to work. Your choices are Momentary Scene mode or Latch Scene mode.

To clarify what we mean by a Scene, it's basically the equivalent of a unique pedal board setup, which you can program yourself. It includes up to 4 active FX and another 8 FX set up but bypassed. When you select a particular Scene, a combination of 4 active FX is immediately loaded into your M13. The other 8 FX will also be loaded, but bypassed. You can switch any of the 8 FX on at any time, replacing any of the 4 you started with.

If you use an expression pedal in your rig, you should know that all of your heel & toe pedal assignments can be stored in a Scene, so many unique combinations are possible. Here are some details explaining Momentary Scene mode and Latch Scene mode.

3•1

Momentary Scene Mode

In Momentary Scene mode, here's what happens:

- When you step on the Scenes switch, the 4 LCDs will display the 12 Scene names in your M13.
- You select a Scene by stepping on any of the 12 A, B, C switches that correspond with the Scene names in the LCD. The Scene you choose will be loaded immediately.
- You will now see the 4 active FX displayed in the 4 FX Unit LCDs. You can tweak the parameters of each, if you like, or you can activate any of the bypassed FX.
- Any changes you make to the Scene will be saved, like a real pedal board. (see page 3•2 for details on Autosave vs. Manual Save)
- To select a new Scene, you must step on the Scenes switch again, and you'll see the 12 Scene names you started with. Repeat the steps above for new selections.

Latch Scene Mode

In Latch Scene mode, the only difference is when you step on the Scenes switch, the 12 Scene names remain in the LCDs. Any Scene you select will be loaded the same way, but you won't see it's FX displayed in the LCDs. The advantage to Latch Scene mode is, you're always only 1 switch away from selecting a new Scene. So you can have 12 completely different setups ready to go, each only 1 switch away. The disadvantage is, you can't tweak or bypass any of the individual FX. You can only bypass the entire Scene.

Autosave

Whether you're in Momentary Scene mode or Latch Scene mode, your choice of Autosave or Manual Save is an important one. In Autosave, any change you make to your Scene is saved automatically. This includes not only the on or off state of the individual FX while your scene is loaded, but also the configuration of the Scene itself.

Let's load a Factory Scene and see what happens in Autosave mode. Make sure you're in Autosave and Momentary mode first, so you can access the individual FX. To double-check, press and hold the Looper Controls switch for a few seconds, to enter Setup mode. Look at LCD 3 under 'Scenes' and see if AUTOSAVE and MOMEN SCENE are assigned. If you see MNL SAVE and LATCH SCENE, change them with Knob 2 and Knob 4.

Now press the Scenes switch and you'll see all 12 Scene names displayed. Choose Scene 2A, Bridge Of Vibes. Notice the four A switches are lit. That's because the loaded FX, which are displayed in the LCDs, are loaded in the A locations of all 4 FX Units. You should see U-Vibe, Tube Drive, Plate and Ping Pong displayed.

Play your guitar for a minute on the neck pickup. You'll hear a Robin Trower/Hendrix type of sound. Step on all 4 C switches now. You'll see Facial Fuzz, Analog Flange, Rotary Drum and Tape Echo. It's a very different sound. Now step on the Scenes switch and select 1C Swamp Thing. You'll see 3 LCDs lit, because FX Unit 2 is bypassed. Step on the Scenes switch again and go back to 2A, Bridge Of Vibes. It's lost its Trower U-Vibe sound. That's because Autosave has saved your changes. Notice all the C switches are lit.

Manual Save

To see how Manual Save differs from Autosave, let's do a Factory Reset and start over. If you have any special Scenes saved, you can defer this exercise until you back up your Scenes to computer. Read all about it in Chapter 1, Page 5. Assuming you're okay to do a reset, press and hold the Looper Controls switch to enter Setup mode again. This time turn the Model Select Knob under LCD 4 to select RST FACT? and press down on the knob. Press again to initiate the reset. After it resets, select MNL SAVE under LCD 3.

Now repeat the same steps you did before. Press the Scene switch, select Scene 2A, then switch on all the C switches to change the sound of Bridge Of Vibes. Step on the Scenes switch again, select Scene 1C, then step on the Scenes switch and select 2A again. Play your guitar. Notice all the A switches are lit this time. Scene 2A did not retain the changes you made. This can be a good thing, especially if you want to return to the exact same sound you originally programmed. In Manual Save mode, every time you select a Scene, it will be recalled exactly the same way, even if you make temporary changes to it.

Scene Setup

With the M13 you can create your own custom Scenes and save them in all 12 Scene locations. Combine this with the fact that you can back up all your Scenes to computer, and you have an unlimited ability to customize and store your own library of sounds. When you begin tweaking the FX models and creating combinations you like, you'll want to familiarize yourself with Scene Setup mode. This is where you store and name your custom Scenes. Let's take it step by step, and you'll see how easy it is. Once you have a combination of FX you'd like to store, do the following:

- With your custom Scene ready to be stored, press and hold the Scenes switch.
- The switch light will flash, and you'll see "Select a Scene for Setup" displayed.
- Select the switch for your current Scene, the one you want to save.
- Its name will appear in the center of the LCD. Name it by turning the Model Select Knob for character, and Knob 2 far right to move to the next character. *Here's a tip: press down on the Model Select knob to quickly jump to 'a', 'space', '0' or 'A'. It makes it a lot faster to name your Scene.
- With your scene named, press its switch again. It will stop flashing.
- Press the Scenes switch, then select your custom Scene. You've just saved it.

3•3

Effect Copy

The main purpose of Effect Copy is to enable you to move your current effect, with all its settings intact, to another location, and to save it there with all your edits intact. This can very useful when you've been tweaking an effect, and you get it sounding exactly right, but you'd rather have it routed either before or after another effect in your Scene. Effect Copy makes this extremely easy to do. Here's how:

- Set up the Effect you want to copy, with all parameters adjusted to your liking.
- Press down on the Select knob of the source FX Unit - its LCD will begin flashing.
- Press the foot switch of the destination location you'd like to use.
- The LCD will stop flashing, indicating the Effect Copy was successful.

Your source effect will now be stored in the destination location, with all your settings intact. You can also use Effect Copy to simply re-arrange your existing FX in a Scene. Or experiment with duplicates of a particular sound you've created in the same Scene, for an extreme or unique musical effect.

LOOPER DETAILS

The Looper in the M13 is similar to the looper in the DL4 Stompbox Modeler. It gives you up to 30 seconds of mono recording time at normal speed, or 60 seconds at half speed. Keep in mind your loop will play back in mono, even if you're running stereo FX.

Looper & Live Guitar

When you record and play back a loop, your current Scene will still be active. In fact, while your loop is playing you can select a new Scene at any time by stepping on the Scenes switch, then selecting a Scene as usual.

Since the M13 responds to MIDI messages, you can optionally set up a MIDI control device to control the looper, leaving all 12 of your FX Unit switches dedicated to your M13 effects. This way, you could switch your M13's four sets of A, B and C effects on or off at any time and still control Play, Record, Overdub, Half Speed and Reverse functions.

Below is a Reference Table of MIDI CC values for controlling M13 Looper functions via MIDI. For a more comprehensive list of M13 MIDI messages, see Appendix A.

MIDI CC Reference Table : Looper Control

MI3 Footswitch	MIDI CC#	Looper Function
Record/Overdub	50	0 to 63 = Overdub 64 to 127 = Record
Play/Stop	28	0 to 63 = Stop 64 to 127 = Play
Half Speed	36	Toggles between Half Speed & Normal Speed
Reverse	85	Toggles Reverse On or Off
Undo	82	Activates Undo
Play Once	80	Activates Play Once function
Pre/Post	84	0 to 63 = Pre 64 to 127 = Post
Looper Levels	83	Controls Looper Levels

Expression Pedal Control

You can optionally control Looper EQ, Playback and Overdub Levels with an expression pedal by setting up your heel and toe values and assignments in Setup Mode, as described in Chapter 1, Page 2. Also see Chapter 2 for more expression pedal info.

Looper Controls

When you engage the Looper Controls switch, the 7 switches in the two bottom rows will control the Looper, enabling you to record and play back a loop while your current Scene is still active. Here are the details:



4•2

1 Looper Controls Switch – when you step on this switch it will light up red, indicating the two bottom rows of footswitches will now control various functions of the Looper. Your current Scene will still be active, and each of the loaded FX in your Scene will be displayed in the four FX Unit LCDs.

2 Record/Overdub – to record a guitar loop, step on this switch and the M13 will record up to 30 seconds of whatever you play. Step on it a second time and your recorded loop will begin to play back immediately, with Overdub mode activated (LED will flash).

Overdubbing – once you have a loop recorded, you can layer an overdub on your current loop at any time. Simply play back the loop and step on the Record/Overdub switch. Your new live guitar will be recorded along with your previous guitar track.

Looper Levels – the Playback and Overdub Level of your loop will be determined by the Looper Levels you set in Chapter 1, Page 2. Play Level is the volume of your recorded loop in relation to your live guitar volume. Overdub Level is the level of your

loop that will be recorded each time the loop cycles in Overdub mode. In other words, if Overdub Level is set at 80%, every time your loop cycles in Overdub mode it will decrease in volume by 20% in relation to your live guitar. For no reduction in volume, set Overdub Level to 100%, but be aware that hot levels may build up and distort.

EQ – your recorded loop will also be affected by the EQ settings you made in Chapter 1, Page 1. If Hi Cut is set to On, your loop will play back with the high end slightly attenuated. Conversely, if Low Cut is set to On, your loop will play back with the low end slightly cut. Both Hi Cut and Low Cut can be active or off at the same time.

3 Play/Stop – this switch simply plays or stops your loop. When in Play mode, you can step on Record/Overdub at any time to overdub live guitar with your recorded loop.

4 Half Speed – step on this switch while in Play mode and your loop will play back at half speed. If you switch it again it will toggle back to normal speed. If you want to record an overdub while your loop is playing back at half speed, simply step on the Record switch and play. If you then switch back to normal speed, your new track will play at double speed, while your original track will play at normal speed, as it was originally recorded.

5 Reverse – this switch puts your loop into reverse, so it will play backwards. You can activate Reverse at normal speed or half speed, and you can also record an overdub while Reverse is activated. If you do so, when you exit Reverse your newly recorded track will play backwards, and the original track will play back normally, as it was recorded.

6 Undo – to undo your most recent take while in Overdub mode, step on the Undo switch. Your earlier recording will remain intact. Only the last take will be undone. *Note: there's no way to archive loops in memory. Only the current loop is preserved.

7 Play Once – when you step on this switch, your loop will play once then stop.

8 Pre/Post – this switch controls whether your loop will play back pre or post the FX in your current Scene. If toggled Pre (blue), this means your loop will not pass thru the current FX. If toggled Post (green), your loop will play back with your Scene FX applied.

9 FX Switches – when the Looper Controls are active, the top row of C switches will control the on/off state of the four loaded FX in your Scene. Stepping on one of these switches will engage or bypass the Effect in that FX Unit, be it loaded in A, B or C. For example, if your current Scene includes a Tube Drive in FX1-A, stepping on the C switch for FX1 will toggle your Tube Drive on or off. This setup enables you to control all four of your FX while their locations may be hidden under the Looper switches.

Looper Tutorial

If you're new to loopers, here's a basic example of how you might use the M13 Looper along with your live guitar. We'll step thru the recording of a loop, add an overdub or two, use Half Speed and Reverse, and demonstrate how Pre/Post has an effect on the mix.

Start by selecting one of your favorite Scenes. For this example, make sure you're in Momentary Scene mode by first pressing and holding the Looper Controls switch. Now check the third LCD and make sure `MOMEN SCENE` is displayed in the lower center. If it's set to `LATCH SCENE`, turn Knob 4, bottom row center, to toggle it to `MOMEN SCENE`.

Now step on the Scenes switch and you'll see the names of all 12 Scenes in the LCDs. Select one by stepping on the appropriate switch, and you'll see the loaded FX models for that Scene displayed in the 4 LCDs. Play your guitar to make sure you're happy with the sound. When you're ready, step on the Looper Controls switch, then follow these steps:

4•4

- Step on the Record switch and play. Make sure you hit the downbeat accurately, so that when you play back the loop it will start exactly on the beat. This is especially important if you want the loop to be rhythmically correct when it cycles around.
- When you reach a good out point, step on the Play switch. This will take your new loop out of record and immediately play it back. Let it loop around a few times, and see if sounds good. If it doesn't sync quite right, press Stop then record a new take.
- If you're happy with your loop, decide what you'd like to play as an overdub. Jam along with your loop a few times in Play mode, then when you're ready to layer an overdub, step on the Overdub switch and play your part. Finish it up before the loop cycles around again, then press Stop to exit Overdub mode.
- Press Play and listen to your loop. You should hear your original guitar part plus your overdub. As it plays, press the Half Speed switch. You'll hear your loop an octave lower, at half its normal speed. Press Half Speed again to return to normal speed.
- As your loop continues to play, press the Reverse switch. You'll hear your loop play backwards. As an experiment, let it roll and hit the Overdub switch. Play for the duration of your loop then hit Stop. (You might also try this with Half Speed)
- Hit the Reverse switch to exit, then press Play. You'll hear your initial loop and your first overdub as originally recorded, while your second overdub will play in reverse.
- Toggle the Pre/Post switch, and you'll hear your loop play back with and without your current Scene's FX applied to the loop. Jam along with live guitar.

This should demonstrate a few of the possibilities. Feel free to experiment on your own.

DELAY MODELS

This chapter contains details on the M13 Delay models, which include all the Delay models from the Line 6 DL4. We've also added Echo Platter from Echo Pro, and 4 new DryThru models for Tube Echo, Tape Echo, Sweep Echo and Echo Platter. See Chapter 2, Model Details, for a description of the DryThru Delay models.

Parameter Details

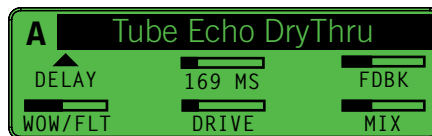
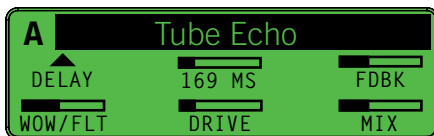
Below is a Reference Table listing all the Controls and Parameters for the Delay models. Knobs 1, 2 and 5 are basically the same for all models, adjusting Delay Time, Feedback and Mix respectively. Knobs 3 and 4 control various parameters depending on the Delay model loaded. We'll detail them all in the following pages.

Delay Models Reference Table : Controls & Parameters

Model	Knob 1	Knob 2	Knob 3	Knob 4	Knob 5
Tube Echo & DryThru	Time	Fdbk	Wow/Flutter	Drive	Mix
Tape Echo & DryThru	Time	Fdbk	Bass	Treble	Mix
Multi-Head	Time	Fdbk	Heads 1-2	Heads 3-4	Mix
Analog Echo	Time	Fdbk	Bass	Treble	Mix
Analog w/Mod	Time	Fdbk	Mod Speed	Mod Depth	Mix
Analog w/Mod	Time	Fdbk	Mod Speed	Mod Depth	Mix
Sweep Echo & DryThru	Time	Fdbk	Sweep Speed	Sweep Depth	Mix
Lo Res Delay	Time	Fdbk	Tone	Resolution	Mix
Digital Delay	Time	Fdbk	Bass	Treble	Mix
Digital Delay w/ Mod	Time	Fdbk	Mod Speed	Mod Depth	Mix
Stereo Delay	Left Time	Left Fdbk	Right Time	Right Fdbk	Mix
Ping Pong	Time	Fdbk	Time Offset	Stereo Spread	Mix
Reverse	Time	Fdbk	Mod Speed	Mod Depth	Mix
Dynamic Delay	Time	Fdbk	Threshold	Ducking	Mix
Auto Volume Echo	Time	Fdbk	Mod Depth	Swell Time	Mix
Echo Platter & DryThru	Time	Fdbk	Wow/Flutter	Drive	Mix

Tube Echo & Tube Echo DryThru

Based on the classic '63 Maestro® EP-1, the first of a series of “Echoplex” designs featuring a cartridge of looped 1/4” tape that passed over separate record and playback heads. In the M13, we’ve also included a new DryThru model, with a flat, dry signal path when Mix is set to 0%. For more info on DryThru models, see Chapter 2, Model Details.



- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback.
- Knob 3: Wow / Flutter. Controls the tape emulation wow and flutter effect.
- Knob 4: Drive. Adjusts the emulated tube distortion and tape saturation.
- Knob 5: Mix.

Tape Echo & Tape Echo DryThru

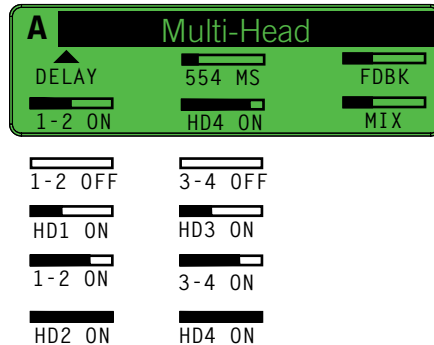
Based on the solid state EP-3, with transistors instead of tubes for the sound electronics. The EP-3 used the same basic mechanical design as the original Echoplex, including the looped 1/4” tape. Unlike the Tube Echo Model, which gives you control of wow, flutter and distortion, our EP-3 emulation is designed to give you a less distorted tape emulation with adjustable tone controls. We’ve also included a Tape Echo DryThru model.



- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback.
- Knob 3: Bass EQ.
- Knob 4: Treble EQ.
- Knob 5: Mix.

Multi Head

Based on the Roland® RE-101 Space Echo, which had multiple stationary heads. You change delay times by switching amongst these heads, and you can play back on multiple heads at the same time to get multi-tap delay effects.



- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback.
- Knob 3: Turns heads 1 & 2 on and off.
- Knob 4: Turns heads 3 & 4 on and off.
- Knob 5: Mix.

When using the Multi Head Delay model, you'll find there are many possible combinations of delay effects, depending on your selection of Head On/Off parameters. It's best to set a Delay Time first by adjusting Knob 1.

To set a Delay Time to a precise millisecond value, dial in a delay time that's close to what you want, then fine tune it by pressing and holding Tap while continuing to turn Knob 1. As an option you can set Delay Time to a note value by turning Knob 1 clockwise until the 1/4 note symbol is displayed, then Tap in the tempo of your song.

Once your main tempo is set, experiment with different delay repeats by selecting different combinations of the Head On/Off settings, using Knobs 3 and 4. When you have the effect you want, adjust the Delay Feedback amount using Knob 2.

Analog Echo

Based on the Boss® DM-2, an analog echo unit treasured for the warm, distorted tones it produced. This model is great for creating more experimental delay sounds.

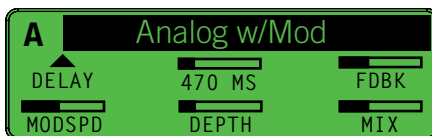


- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback. Higher levels result in more repeats.
- Knob 3: Bass EQ.
- Knob 4: Treble EQ.
- Knob 5: Mix. At 100% you will hear the delay only.

5•4

Analog With Modulation

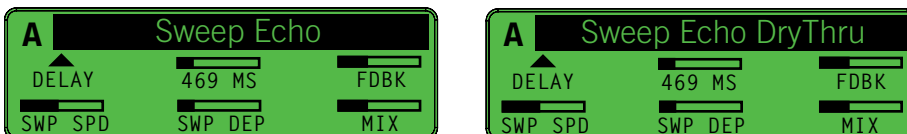
This model is based on the Electro-Harmonix® Deluxe Memory Man. This pedal uses the “bucket brigade” electronics of other analog echoes and adds an adjustable chorus circuit, which is applied to the echoes only, leaving the direct sound unaffected.



- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback.
- Knob 3: Modulation Speed. Higher levels result in faster modulation.
- Knob 4: Modulation Depth.
- Knob 5: Mix.

Sweep Echo & Sweep Echo DryThru

For this model we started with the tone of our EP-1 delay emulation, then added a sweeping filter effect to the delay repeats. By design, our original Sweep Echo model did not have a flat EQ response in the dry signal path, so the character of the original was retained. In the M13 we've added a DryThru version, with flat EQ when Mix is at 0%.



- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback.
- Knob 3: Speed of the sweep effect.
- Knob 4: Depth of the sweep effect.
- Knob 5: Mix between dry guitar and wet. At 100% you will hear the delay only.

5•5

Lo Res Delay

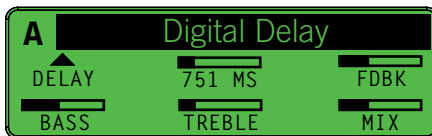
Low bit resolution can create a unique sort of grunge and noise that is sometimes just the sound you're looking for, and that's what the Lo Res Delay model provides.



- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback.
- Knob 3: Tone of the delays only.
- Knob 4: Resolution, adjustable from 6 to 24 bits.
- Knob 5: Mix.

Digital Delay

This model is a Line 6 original. With 32 bit floating point processing and a true stereo audio path, it's one of the best digital delays you'll find in a pedal unit. Use it when you want a clean delay effect.



- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback. Higher levels result in more repeats.
- Knob 3: Bass EQ.
- Knob 4: Treble EQ.
- Knob 5: Mix. At 0% you will hear dry guitar; at 100% you will hear the delay only.

5•6

Digital Delay With Modulation

Use this model to add a chorus effect to your digital delays. Like the chorus in the Analog Delay w/ Mod model, the modulation is applied to the delay repeats only, leaving your direct sound unaffected.



- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback.
- Knob 3: Modulation Speed. Higher levels result in faster modulation.
- Knob 4: Modulation Depth.
- Knob 5: Mix.

Stereo Delay

This is another Line 6 high resolution digital delay, with separate delay times available for L and R channels. Some players set one side as a fast echo with many repeats, and the other slow with just a few repeats. Set it to taste for a rhythmic stereo delay effect.

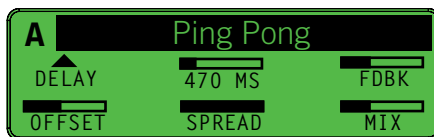


- Knob 1: Delay Time for the left channel only.
- Knob 2: Feedback amount for the left channel.
- Knob 3: Delay Time for the right channel only.
- Knob 4: Feedback amount for the right channel.
- Knob 5: Mix.

5•7

Ping Pong

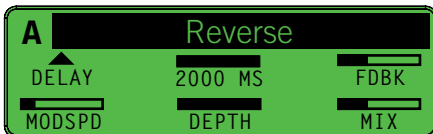
The ever-popular Ping Pong Delay has two separate channels of delay panned left and right, with the output of each channel flowing into the other, usually used with a moderate level of feedback.



- Knob 1: Delay Time for the left channel, displayed in milliseconds or note value.
- Knob 2: Delay Feedback. Higher levels result in more repeats.
- Knob 3: Offset. This sets the right channel delay time as a percentage of the left channel delay time. Half of the value in the screenshot above would equal 235 ms.
- Knob 4: Spread. The minimum position is mono, while max would be wide stereo.
- Knob 5: Mix.

Reverse

As the name implies, whatever you play on guitar is played back in reverse, delayed by the time you set with Knob 1.



- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback.
- Knob 3: Modulation Speed. Higher levels result in faster modulation.
- Knob 4: Modulation Depth.
- Knob 5: Mix. 100% means you'll hear the reverse delay only.

5•8

Dynamic Delay

This effect was made popular by the TC Electronic® 2290 Dynamic Digital Delay. It features a “smart” volume control for your delay effect’s echoes, which sets the loudness of the delays based on how hard you play. When you stop playing in between phrases, the delay level increases for a dynamic effect.



- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback.
- Knob 3: Threshold. The breakpoint where the automatic volume control stops working and lets the echoes through at full volume.
- Knob 4: Ducking. Adjusts the level of the “ducked” repeats; higher settings will duck the delay level down more.
- Knob 5: Mix.

Auto Volume Echo

This model gives you two effects in one. The first is an auto-volume fade-in, like the attack time on a synthesizer's envelope generator. Higher Swell settings will give you a longer swell time, so that the sound slowly fades in. The second is an echo, complete with tape-style wow & flutter modulation.

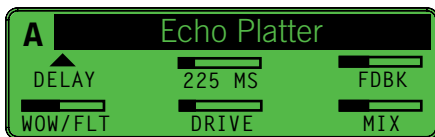


- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback.
- Knob 3: Modulation Depth.
- Knob 4: Swell. Sets the ramp time for the auto-volume swell.
- Knob 5: Mix.

5•9

Echo Platter & Echo Platter DryThru

The Echo Platter model was originally inspired by the Binson Echorec. The dry signal path had such a cool tone that we decided to include it in our original model. Echo Platter DryThru is the same model, but it gives you the option of a flat signal path when the Mix is set to 0%.



- Knob 1: Delay Time. Displayed in milliseconds or note value.
- Knob 2: Delay Feedback.
- Knob 3: Wow / Flutter. Adjusts the emulated tape's wow and flutter amount.
- Knob 4: Drive. Adjusts the amount of distortion created by the tube electronics and tape saturation.
- Knob 5: Mix.

MODULATION MODELS

The following pages provide information on the 16 Modulation Models in the M13. All 16 are from the Line 6 MM4 Modulation Modeler Stompbox. These models were originally based on a dream collection of classic effects, stomp boxes and rack units.

Parameter Details

In this chapter we'll describe the various parameters of the Modulation Models in detail, to make it easier for you to tweak your sounds. Below is a chart of all the Controls and Parameters you can adjust using Knobs 1 thru 5, located just below the LCD display.

Modulation Models Reference Table : Controls & Parameters

Model	Knob 1	Knob 2	Knob 3	Knob 4	Knob 5
Opto Tremolo	Speed	Depth	Shape	Vol Sensing	Mix
Bias Tremolo	Speed	Depth	Shape	Vol Sensing	Mix
Phaser	Speed	Depth	Feedback	Phase Stage	Mix
Dual Phaser	Speed	Depth	Feedback	LFO Shape	Mix
Panned Phaser	Speed	Depth	Phaser Output	Pan Speed	Mix
U-Vibe	Speed	Depth	Feedback	Vol Sensing	Mix
Analog Flange	Speed	Depth	Feedback	Manual	Mix
Jet Flanger	Speed	Depth	Feedback	Manual	Mix
Analog Chorus	Speed	Depth	Chorus/Vibrato	Tone	Mix
Tri Chorus	Speed	Depth 1	Depth 2	Depth 3	Mix
Pitch Vibrato	Speed	Depth	Rise Time	Vol Sensing	Mix
Panner	Speed	Depth	Shape	Vol Sensing	Mix
Rotary Drum	Speed	Depth	Tone	Drive	Mix
Rotary Drm/Hrn	Speed	Depth	Horn Depth	Drive	Mix
Dimension	Switch 1	Switch 2	Switch 3	Switch 4	Mix
Ring Modulator	Speed	Depth	Shape	AM/FM Select	Mix

Opto Tremolo

Based on the tremolo circuitry of the 1965 Fender® Deluxe Reverb® amplifier, which features a pulsing light source directed at a photo resistor.



- Knob 1: Tremolo Speed.
- Knob 2: Tremolo Depth.
- Knob 3: Shape, from classic smooth tremolo to dramatic sci-fi throb.
- Knob 4: Volume Sensitivity. Louder input signals speed up the tremolo and lower input slows it down.
- Knob 5: Mix. Tremolo usually sounds best from 90-100% wet.

6•2

Bias Tremolo

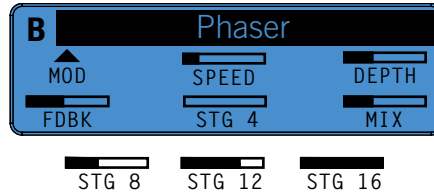
This Model emulates a classic Vox® tremolo circuit design. Bias tremolo produces a deep, 3-dimensional tremolo with a wide stereo spread.



- Knob 1: Tremolo Speed.
- Knob 2: Tremolo Depth.
- Knob 3: Shape. The minimum setting is a sign wave and max is a square wave.
- Knob 4: Volume Sensitivity. Louder input signals speed up the tremolo and lower volume inputs slow it down.
- Knob 5: Mix. As with Opto, Bias Tremolo usually sounds best from 90-100% wet.

Phaser

Based on the MXR® Phase 90, a four-stage phaser that has a relatively subtle sound compared to other phasers, but it has a lush, organic quality to it.

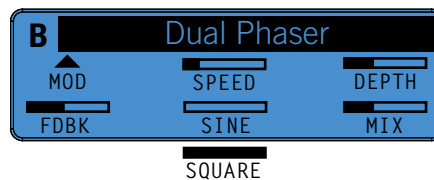


- Knob 1: Phaser Speed.
- Knob 2: Phaser Depth. Keep at maximum for classic phase sounds.
- Knob 3: Feedback. Keep at minimum for classic, subtle phasing.
- Knob 4: Selects phase Stage, which determines the degree of out-of-phase-ness.
- Knob 5: Mix, from 0% (dry) to 100% (wet).

6•3

Dual Phaser

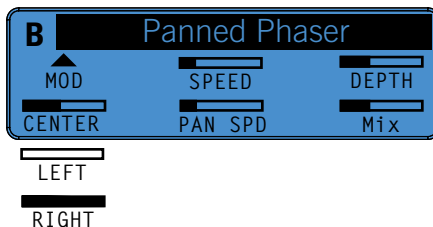
Based on the Mu-Tron® Bi-Phase, a multi-stage phaser known for its big jet sound. Our Dual Phaser gives you the lush, offset phasing that made the Bi-Phase a classic.



- Knob 1: Phaser Speed.
- Knob 2: Phaser Depth. Sounds best at maximum.
- Knob 3: Variable feedback control.
- Knob 4: LFO Shape. Minimum is a Sine wave and maximum is a Square wave.
- Knob 5: Mix. From 0% to 100%.

Panned Phaser

Modeled from the Ibanez® Flying Pan, a 4-stage phase shifter with panner built in. The original featured a 3-position switch to assign phasing to the left, right, or center.



- Knob 1: Phaser Speed.
- Knob 2: Phaser Depth.
- Knob 3: Assigns the Phaser output to the Left, Center or Right channels.
- Knob 4: Pan Speed. Higher values result in faster panning.
- Knob 5: Mix.

6•4

U-Vibe

Essentially a four-stage phase shifter, the legendary Uni-Vibe® is best known for its watery texture and sultry tones. Made famous by the late, great Jimi Hendrix.



- Knob 1: Speed.
- Knob 2: Depth.
- Knob 3: Feedback amount.
- Knob 4: Volume Sensitivity. Play harder and the U-Vibe effect speeds up, play softer and it slows down.
- Knob 5: Mix. Setting Mix at 100% switches on a vibrato effect, like the original.

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Analog Flange

This is our model of the classic MXR® Flanger. It's known for a very warm-sounding flange, featuring a bucket brigade analog circuit design and a uniquely shaped waveform.



- Knob 1: Speed.
- Knob 2: Depth.
- Knob 3: Flanger Feedback.
- Knob 4: Manual control, to adjust the delay time for the flanging effect.
- Knob 5: Mix. From 0% to 100%.

Jet Flanger

This is our model of the A/DA “studio quiet” Flanger. Introduced in 1977, this stomp box has a sweep range of 35-to-1 and a built-in compressor that work together with the tone circuitry to give the A/DA its signature jet-like sweep. It's a bit more dramatic than the MXR®, and has a different wave shape.



- Knob 1: Speed.
- Knob 2: Depth.
- Knob 3: Feedback amount.
- Knob 4: Manual. This controls the delay time for the flanging effect.
- Knob 5: Mix.

Analog Chorus

Based on the classic stomp box chorus, the Boss® CE-1. The CE-1 came onto the music scene in 1977 and made waves with its big, warm chorus tones.



- Knob 1: Chorus Speed.
- Knob 2: Choru Depth.
- Knob 3: Selects Chorus or Vibrato.
- Knob 4: Adjusts overall Tone of the Chorus effect.
- Knob 5: Mix. Usually sounds best with higher Mix levels.

6•6

Tri Chorus

This model is based on the Songbird/DyTronics Tri-Stereo Chorus. This analog chorus featured 3 chorus circuits working off of 12 low frequency oscillators and 3 delay lines.



- Knob 1: Chorus Speed.
- Knob 2: Depth of Circuit 1.
- Knob 3: Depth of Circuit 2.
- Knob 4: Depth of Circuit 3.
- Knob 5: Mix from 0% (dry) to 100% (wet).

Pitch Vibrato

Based on the Boss® VB-2 vibrato, which featured a bucket brigade analog circuit that produced a lively vibrato. Its big claim to fame was the “Rise Time” control. Thanks to this clever circuit, each time you kicked it on, it sped up to where you last had it set.

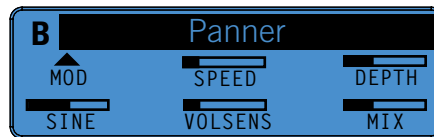


- Knob 1: Vibrato Speed.
- Knob 2: Vibrato Depth.
- Knob 3: Rise Time control. Lower levels mean a longer Rise Time.
- Knob 4: Volume Sensitivity. A louder input speeds up the vibrato, and a lower input slows it down.
- Knob 5: Mix.

6•7

Panner

The Panner model makes your sound constantly pan back and forth between the left and right stereo channels. If you decide to run it in mono, you’ll basically hear tremolo.

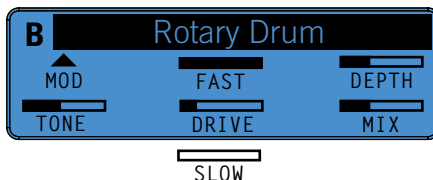


- Knob 1: Speed.
- Knob 2: Depth.
- Knob 3: Wave Shape. Minimum for Triangle, 50% for Sine, maximum for Square.
- Knob 4: Volume Sensitivity. Input level speeds up or slows down the panning rate.
- Knob 5: Mix. For wide stereo panning, set Mix to 100%.

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Rotary Drum

Based on a Fender® Vibratone, which features a rotating drum surrounding a 10” speaker. The Styrofoam drum has two slots, and the cabinet has three (left, right and top). The drum rotates with a vertical motion, sending sound spinning in all directions.

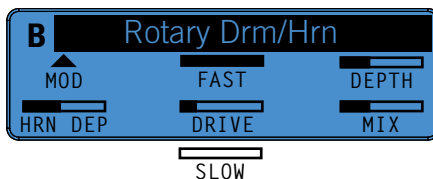


- Knob 1: Speed. Select between two speeds, Fast or Slow.
- Knob 2: Depth.
- Knob 3: Overall Tone of the Rotary effect.
- Knob 4: Drive. Higher levels add an overdriven effect.
- Knob 5: Mix. For best results, set Mix at or near maximum.

6•8

Rotary Drum/Horn

Based on a Leslie® 145, originally designed for the Hammond® B3. The 145 features two sound sources: the lower part of the cabinet, which has a 12” speaker surrounded by a motorized rotary drum, and the upper enclosure, which houses a spinning horn.

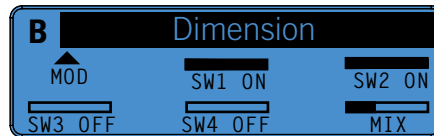


- Knob 1: Speed. Select between two speeds, Fast or Slow.
- Knob 2: Depth of the lower part of the cabinet.
- Knob 3: Horn Depth. This adjusts the depth of the horn sound.
- Knob 4: Drive. Higher levels add an overdriven effect.
- Knob 5: Mix. For best results, set Mix at or near maximum.

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Dimension

Based on the Roland® Dimension D, one of the first true stereo chorus units that featured two separate delay lines working off the same oscillator. These independent chorus effects were then panned between the stereo outputs, resulting in a wide stereo image. Various combinations of the on/off switches provide a rich, smooth chorus.

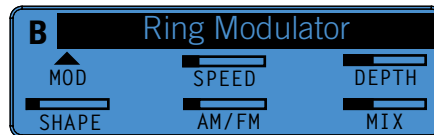


- Knob 1: Selects Switch 1 On or Off.
- Knob 2: Selects Switch 2 On or Off.
- Knob 3: Selects Switch 3 On or Off.
- Knob 4: Selects Switch 4 On or Off.
- Knob 5: Mix. Keep it set near max for the best chorus sound.

6•9

Ring Modulator

Ring modulators are for those special times when you want different, distinctive, weird, strange and otherwise non-traditional guitar sounds. With Mix set under 100%, some of your dry guitar sound will be heard. At 100%, there are no rules.



- Knob 1: Speed.
- Knob 2: Depth.
- Knob 3: Adjusts your Wave Shape from Sine to Square.
- Knob 4: Select AM (amplitude modulation) or FM (frequency modulation). Set to minimum for AM, maximum for FM, or anywhere in-between to blend the two.
- Knob 5: Mix. Experiment with different Mix levels for different effects.

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DISTORTION MODELS

This chapter provides parameter details on the 16 Distortion models from the Line 6 DM4. Also included are a Volume model, 6 Compressors and a Noise Gate. Most of the Distortions have the same parameters, and are controlled by Knobs 1 thru 5 as follows:

- Knob 1: Drive control.
- Knob 2: Bass EQ.
- Knob 3: Mid EQ.
- Knob 4: Treble EQ.
- Knob 5: Output level.

Distortion Models Reference Table : Controls & Parameters

Model	Knob 1	Knob 2	Knob 3	Knob 4	Knob 5
Tube Drive	Drive	Bass	Mid	Treble	Output
Screamer	Drive	Bass	Mid	Treble	Output
Overdrive	Drive	Bass	Mid	Treble	Output
Classic Dist	Drive	Bass	Filter	Treble	Output
Heavy Dist	Drive	Bass	Mid	Treble	Output
Colordrive	Drive	Bass	Mid	Treble	Output
Buzz Saw	Drive	Bass	Mid	Treble	Output
Facial Fuzz	Drive	Bass	Mid	Treble	Output
Jumbo Fuzz	Drive	Bass	Mid	Treble	Output
Fuzz Pi	Drive	Bass	Mid	Treble	Output
Jet Fuzz	Drive	Fdbk	Tone	Speed	Output
Line 6 Drive	Drive	Bass	Mid	Treble	Output
Line 6 Distortion	Drive	Bass	Mid	Treble	Output
Sub Octave Fuzz	Drive	Bass	Sub	Treble	Output
Octave Fuzz	Drive	Bass	Mid	Treble	Output
Boost Comp	Drive	Bass	Comp	Treble	Output

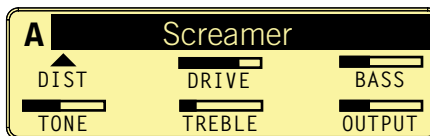
Tube Drive

Based on the Chandler Tube Driver®. The original was designed by keyboardist Brent Butler to add grind and girth to his Farfisa. Utilizing a single 12AX7 preamp tube, the Tube Driver delivers the sweet singing sustain craved by guitarists worldwide.



Screamer

Based on the Ibanez® TS-808 Tube Screamer®. This medium-gain pedal was introduced in the early '80s. From Stevie Ray Vaughan to Michael Landau, the simple Tube Screamer is the overdrive heard 'round the world.



- Knob 3 controls Tone, true to the original Tube Screamer's Tone knob.

Overdrive

Based on the DOD® Overdrive/Preamp 250, which was designed to slam the input of a tube guitar amp as well as add distortion. The original had only gain and level controls, but the M13 adds Bass, Mid and Treble EQ.



- You can set Knob 1 at a minimum level on this and other Distortion models to get a boost in level without distorting your tone too much.

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Classic Distortion

Based on the ProCo Rat from the late '70s. The Rat was the beginning of a new generation of distortion boxes, with a sound that was angrier and more aggressive than a conventional fuzz tone.



- Knob 3 functions like the original Rat's Filter control, which gives you a brighter tone at lower settings, and a darker tone at higher settings.

Heavy Distortion

Based on the Boss® MT-2 Metal Zone, which was introduced at the height of the big-hair metal craze of the late '80s/early '90s. Heavy and scooped, the tones of this model beg to be chunked upon.



7•3

Colordrive

Based on the Colorsound® Overdriver, which originated from London's Macari's Music Exchange in 1965. With a high demand for Tone Benders at that time, brothers Larry and Joe Macari started building their own unique pedals under the name Sola/Colorsound.



- Knob 3 at 50% has no effect on the Mids; below 50% is a cut, above 50% a boost.

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Buzz Saw

Based on the Maestro® Fuzz Tone. Legend has it that the sound of this pedal was inspired by a broken and buzzing mixer channel heard in Nashville in 1961.



Facial Fuzz

Based on the Arbiter® Fuzz Face, the infamous circular stompbox that hit the London music scene in 1966. It's best known for its association with guitar legend Jimi Hendrix.



7•4

Jumbo Fuzz

Based on the Vox® Tone Bender. The classic Tone Bender sound can be heard all over the early Led Zeppelin albums, and is especially apparent on “Communication Breakdown.”



Fuzz Pi

Based on the Electro-Harmonix® Big Muff π®. America's answer to the British fuzz pedals, the Big Muff π® was known more for its sweet sustain than for its buzz.



Jet Fuzz

Based on the Roland® Jet Phaser/AP-7. As Roland states in their catalog from the '70s: “... the Jet Phaser is a phase shifter producing dynamic jet sounds for rock guitar.”



- Knob 2 controls the amount Feedback.
- Knob 3 controls the Tone of the fuzz.
- Knob 4 controls the Speed of the phasing.

Line 6 Drive

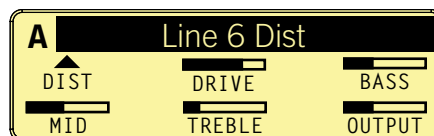
A Line 6 original, this model makes special use of Knob 3, labeled Mid. At minimum, you'll get the sound of a '70s-style fuzz box clone. As you adjust it towards 50%, you'll get a more modern, high gain sound like the Rat or the Boss® Super Distortion. Turning it up to maximum, you'll get the gritty bite typical of a Sola Sound Tone Bender.

7•5



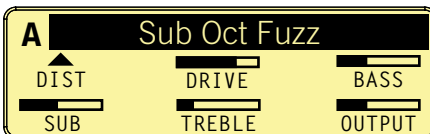
Line 6 Distortion

Another Line 6 original, this model is out of control. Sure, it's massive. Yes, it's over the top. But it's a great distortion model.



Sub Octave Fuzz

Inspired by the PAiA Roctave Divider, which combined a double octave shift with a fuzz effect, resulting in deep fat square wave distortion.



- Knob 3 controls the amount of Sub octave content.

Octave Fuzz

Based on the Tycobrahe Octavia, another example of a fuzz plus octave effect. The Octavia used an audio output transformer and two germanium diodes to rectify the guitar signal, creating the high octave type sound. Jimi Hendrix used one on “Purple Haze”.



7•6

Boost Comp

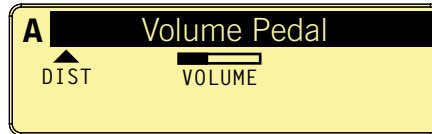
Based on the MXR® Micro Amp. This effect was used to “push” the front-end of non-master volume tube amps in order to achieve a cranked sound at less than stadium levels.



- Knob 3 adds Compression similar to that of an MXR® Dyna Comp.

Volume Pedal

Use the Volume Pedal model in any of the 4 FX Units to control Volume using an expression pedal. Set your minimum Volume by adjusting Knob 1.



Red Comp

Based on the MXR® Dyna Comp.



Blue Comp

Based on the Boss® CS1 Compression Sustainer with the Treble switch off.



Blue Comp Treb

Based on the Boss® CS1 Compression Sustainer with the Treble switch on.



Vetta Comp

From the Line 6 Vetta. Adjust the threshold with Knob 1, the Sensitivity control.



Vetta Juice

Another Vetta original. Knob 1 adjusts Amount, a variable Compression ratio control. Knob 2 adjusts Level, with 30dB of available gain.



7•8

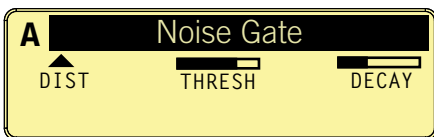
Tube Comp

This is a Compressor model from the POD X3 family, based on a vintage Teletronix LA-2A® optical compressor. Adjust Threshold with Knob 1 and Level with Knob 2.



Noise Gate

If you're not using the M13's Global Noise Gate, you can use this model in any or the 4 FX Units. Knob 1 controls the Threshold, and Knob 2 controls Decay.



FILTER MODELS

These pages provide details on the 16 Filter Models in the M13. All 16 are from the Line 6 FM4 Filter Modeler Stompbox. A few Line 6 originals are also included.

Parameter Details

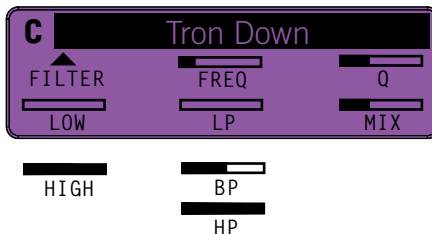
In this chapter we'll describe the various parameters of all the Filter Models in detail, to make it easier for you to tweak your sounds. Below is a chart of all the Controls and Parameters you can adjust using Knobs 1 thru 5, located just below the LCD display.

Filter Models Reference Table : Controls & Parameters

Model	Knob 1	Knob 2	Knob 3	Knob 4	Knob 5
Tron Down	Freq	Q (Width)	Range	Filter LP/BP/HP	Mix
Tron Up	Freq	Q (Width)	Range	Filter LP/BP/HP	Mix
Seeker	Freq	Q (Width)	Speed	Steps 2-9	Mix
Obi-Wah	Freq	Q (Width)	Speed	Filter LP/BP/HP	Mix
Voice Box	Strt Vowel	End Vowel	Speed	Auto 1-4	Mix
V Tron	Strt Vowel	End Vowel	Speed (Attack)	Up/Down	Mix
Throbber	Freq	Q (Width)	Speed	Shape	Mix
Spin Cycle	Freq	Q (Width)	Speed	Vol Sensing	Mix
Comet Trails	Freq	Q (Width)	Speed	Gain	Mix
Slow Filter	Freq	Q (Width)	Speed (Attack)	Up/Down	Mix
Octisynth	Freq	Q (Width)	Speed (Vibrato)	Depth (Vibrato)	Mix
Synth O Matic	Freq	Q (Width)	Waveform	Pitch	Mix
Attack Synth	Freq	Ramp	Speed (Attack)	Pitch	Mix
Synth String	Freq	Attack	Speed (Modulation)	Pitch	Mix
Growler	Freq	Q (Width)	Speed	Pitch	Mix
Q Filter	Freq	Q (Width)	Gain	Filter LP/BP/HP	Mix

Tron Down

Inspired by the Mu-Tron® III envelope follower, part auto-wah, part triggered filter. The original Mu-Tron® had an up/down switch. This model is the Tron Down version.

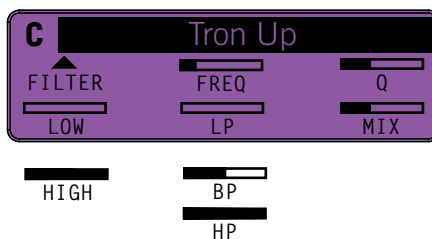


- Knob 1: Frequency. Determines the high and low settings of the filter sweep.
- Knob 2: Q. Sets the width of the filter.
- Knob 3: Range. Selects High or Low frequency focus of the filter effect.
- Knob 4: Filter. Selects Low Pass, Band Pass, or High Pass filter.
- Knob 5: Mix.

Tron Up

8•2

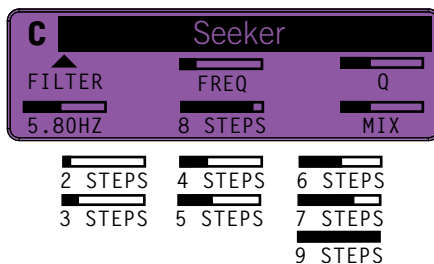
This model emulates the Mutron® III with its switch in the up position.



- Knob 1: Frequency. Determines the high and low settings of the filter sweep.
- Knob 2: Q. This sets the width of the filter.
- Knob 3: Range. Selects High or Low frequency focus of the filter effect.
- Knob 4: Filter. Selects Low Pass, Band Pass, or High Pass filter.
- Knob 5: Mix.

Seeker

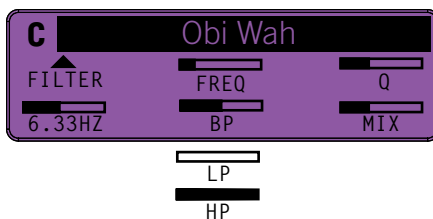
Inspired by the Z-Vex Seek Wah, a box that contains 8 parked wah filters that can be set at varying positions and then sequenced through, creating a pulsating hypnotic effect.



- Knob 1: Frequency. Select from a range of sequenced patterns of wah filter settings.
- Knob 2: Q. Sets the width of the filters.
- Knob 3: Speed. Controls the time it takes to cycle through the filters.
- Knob 4: Steps. Sets the number of filter steps in the sequence, from 2 to 9.
- Knob 5: Mix.

Obi-Wah

Based on the Oberheim® Voltage Controlled Filter, a classic Sample and Hold filter, which creates changes in tone by randomly emphasizing certain frequencies.



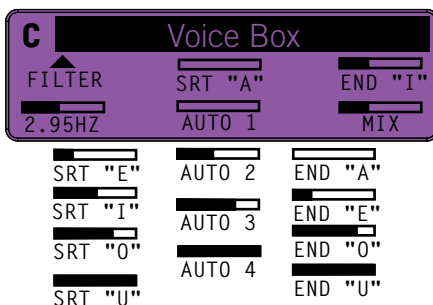
- Knob 1: Frequency. Sets the frequency where the filter will change your tone.
- Knob 2: Q. Controls the width of the filter.
- Knob 3: Speed. Sets the rate of the random filter changes.
- Knob 4: Filter. Selects the type of filter used (Low Pass, Band Pass or High Pass).
- Knob 5: Mix.

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Voice Box

Inspired by Vocoders, this model gives your guitar a sound that's typical of a classic "talk box". It shifts between a starting and ending vowel sound as you play, automatically. Knob 1 selects a Start vowel and Knob 2 selects an End vowel.

Auto lets you choose one of four settings for shifting back and forth between the Start vowel and End vowel, automatically shifting at the Speed you set with Knob 2. You can also use an expression pedal to control the shift.



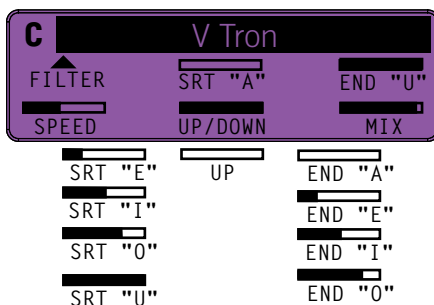
8•4

- Knob 1: Sets the starting vowel sound (A, E, I, O or U).
- Knob 2: Sets the ending vowel sound (A, E, I, O or U).
- Knob 3: Speed. Set how long it takes to “speak” from Start to End vowel.
- Knob 4: Auto. Select among 4 different start-to-stop vocal transition settings.
- Knob 5: Mix.

VTron

This model is based on the combination of a Mu-Tron III® envelope filter and a Voice Box effect. With the V Tron, your guitar “speaks” with an almost human voice in response to your playing.

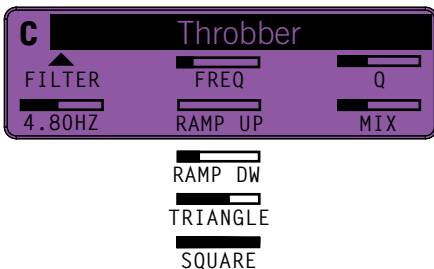
Each time you strike a new note or chord, the vowel sequence will be “spoken.” You can choose whether to go from Start vowel to End vowel only (Up), or have it turn around and come back again (Up/Down).



- Knob 1: Sets the starting vowel sound (A, E, I, O or U).
- Knob 2: Sets the ending vowel sound (A, E, I, O or U).
- Knob 3: Speed. Set how long it takes to “speak” from Start to End vowel.
- Knob 4: Mode. Selects either Up or Up/Down.
- Knob 5: Mix.

Throbber

Inspired by the versatile Electrix® Filter Factory. Like the LFO section of the Filter Factory, the Throbber alters the brightness of your tone with an emphasis on a specific frequency that you can select. Throbber is perfect for those Electronica sounds.



- Knob 1: Frequency: Selects a specific frequency range for the filter.
- Knob 2: Q. Controls the width of the filter.
- Knob 3: Speed. Sets the rate of the low frequency oscillator.
- Knob 4: Mode. Selects between four different wave shapes.
- Knob 5: Mix.

8•6

Spin Cycle

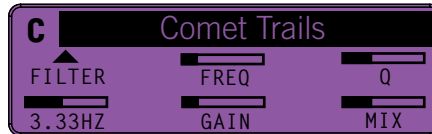
Inspired by Craig Anderton's Wah/Anti-Wah, this effect takes full advantage of the M13's stereo capabilities. It's essentially two wah pedals panned L & R that wah in the opposite direction from each other. One goes up while the other goes down. Additionally, the wahs are sweeping from min to max automatically, and they react to playing volume.



- Knob 1: Frequency. Controls the range of the filter emphasis in the wah tone.
- Knob 2: Q. Controls the width of the filter.
- Knob 3: Speed. Sets the speed at which the wah effects sweep.
- Knob 4: Volume Sensitivity. Sets the way volume will affect the speed of the effect.
- Knob 5: Mix.

Comet Trails

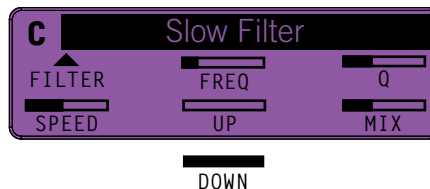
After several days spent crafting the code that makes up our digital secret sauce, one of our DSP developers came up with an inspired model that features 7 filters, all chasing each other around and looping back and forth across sonic space. We call it Comet Trails.



- Knob 1: Frequency. Controls the range of the filters.
- Knob 2: Q. Controls the width of the filters.
- Knob 3: Speed. Sets the rate of the filter movement.
- Knob 4: Gain. Controls the overall Gain.
- Knob 5: Mix.

Slow Filter

This triggered filter rolls off the high end of your tone, with adjustable speed. You get a choice of having your tone sweep from dark to bright (Up mode), or bright to dark (Down mode). The Q lets you further shape your tone by creating a sharp boost at the point of the high end roll off.



- Knob 1: Frequency. Sets where the filter begins its tone shaping roll-off.
- Knob 2: Q. Controls the width of the filter.
- Knob 3: Speed. Sets the speed of the filter sweep.
- Knob 4: Mode. Selects between two modes: Up or Down.
- Knob 5: Mix.

Octisynth

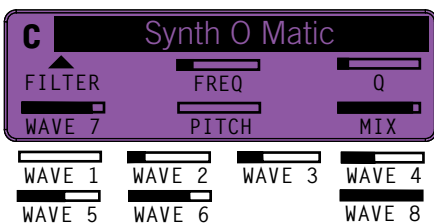
This model is a velocity sensitive combination of Ring Modulator, Synthesizer VCO and Vibrato pedal. As an added bonus, your guitar's volume knob can control the frequency of the oscillator. Set it low for a mellow, muted response, or turn it up all the way for a radical, aggressive sound.



- Knob 1: Frequency. Controls filter content, adding second order harmonics.
- Knob 2: Q. Controls the width of the filters.
- Knob 3: Speed. Sets the rate of the Vibrato.
- Knob 4: Depth. Controls the Depth of the Vibrato.
- Knob 5: Mix.

Synth O Matic

This model features waveforms captured from a collection of vintage analog synths, including a Moog® Modular and an Oberheim® Synthesizer Expander Module.

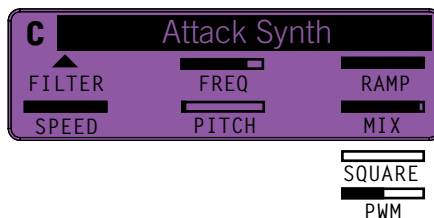


- Knob 1: Frequency. Determines how bright your sound will be.
- Knob 2: Q. Sets filter width to add more or less emphasis on the selected frequency.
- Knob 3: Speed. Selects one of the eight synth waveforms.
- Knob 4: Pitch. Controls the Pitch of the synth sound.
- Knob 5: Mix.

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Attack Synth

Inspired by a Korg® X911 Guitar Synth. The Attack Synth model features one of the waveforms used in the original X911, along with a few of the unique wave shaping functions we found on the unit we modeled.



- Knob 1: Frequency. Controls the stop frequency of the filter (VCF on the X911).
- Knob 2: Q. Selects Square, Pulse Width Modulation or Ramp for the waveform.
- Knob 3: Speed. Controls Attack (the time it takes to get to the stop frequency).
- Knob 4: Pitch. Controls Pitch over a two octave range.
- Knob 5: Mix.

Synth String

Based on the Roland® GR700 Guitar Synth, which has some of the coolest analog synth sounds designed for guitar. The Synth String model is based on one of the signature sounds of the GR700.



- Knob 1: Frequency. Controls a low pass filter tone control.
- Knob 2: Q. Controls the attack time.
- Knob 3: Speed. Sets the speed of the vibrato-y pulse width modulation.
- Knob 4: Pitch. Controls the Pitch of the effect over a two octave range.
- Knob 5: Mix.

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Growler

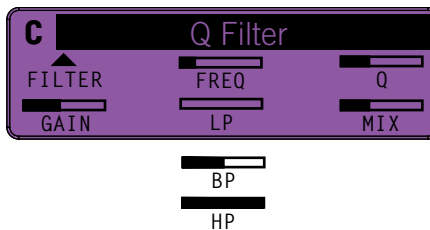
For the Growler, we modeled yet another great-sounding GR700 tone and fused it with the characteristics of the Mu-tron III®, resulting in a model that gives you user-controllable pitch and pulse width modulation, and a unique sound.



- Knob 1: Frequency. Controls the frequency of the filter.
- Knob 2: Q. Sets the width of the filter.
- Knob 3: Speed. Dials in the speed of the vibrato-y pulse width modulation.
- Knob 4: Pitch. Controls the Pitch of the synth over a two octave range.
- Knob 5: Mix.

Q Filter

This is essentially a parked wah model – a wah “parked” in one position that creates a unique, notched kind of sound. With the Q Filter, this effect is programmable and repeatable. You can even use it as a wah pedal if you connect an expression pedal to the M13 and set it to sweep Frequency from low to high.



- Knob 1: Frequency. Controls filter frequency (like the position of a wah pedal).
- Knob 2: Q. Controls the width of the filter.
- Knob 3: Speed. Sets the gain (the amount of boost the effect gives to your guitar).
- Knob 4: Filter. selects the type of filter effect (Low Pass, Band Pass, or High Pass).
- Knob 5: Mix.

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REVERB MODELS

This chapter describes the 11 Reverb models we ported from the Line 6 Verbzilla pedal, one of our most popular stomps in the ToneCore family. All Reverbs are stereo, and they sound best routed towards the end of your FX chain.

Parameter Details

As indicated in the Reference Table below, all M13 Reverb models are set up the same way. Mix is persistent for all Reverbs (your Mix level will stay the same when you load a different Reverb model). Knobs 1 thru 5 control the following for all Reverb models:

- Knob 1: Decay time.
- Knob 2: Pre-delay time, adjustable from 20 to 200 milliseconds.
- Knob 3: No assignment for the Reverb models.
- Knob 4: Overall Tone of the wet reverb signal.
- Knob 5: Mix from 0% (dry) to 100% (at 100% you'll hear wet reverb signal only)

Reverb Models Reference Table : Controls & Parameters

Model	Knob 1	Knob 2	Knob 3	Knob 4	Knob 5
'63 Spring	Decay	Pre-Delay	-	Tone	Mix
Spring	Decay	Pre-Delay	-	Tone	Mix
Plate	Decay	Pre-Delay	-	Tone	Mix
Room	Decay	Pre-Delay	-	Tone	Mix
Chamber	Decay	Pre-Delay	-	Tone	Mix
Hall	Decay	Pre-Delay	-	Tone	Mix
Ducking	Decay	Pre-Delay	-	Tone	Mix
Octo	Decay	Pre-Delay	-	Tone	Mix
Cave	Decay	Pre-Delay	-	Tone	Mix
Tile	Decay	Pre-Delay	-	Tone	Mix
Echo	Decay	Pre-Delay	-	Tone	Mix

'63 Spring

Based on a 1963 brown self-contained spring reverb head unit. Best known for great surf guitar tone.



Spring

Based on a studio spring reverb. The spring reverb's characteristic resonant sound was created by springs suspended inside a metal box.



Plate

Plate reverbs consisted of a thin metal sheet suspended inside a box. Dampening the metal plate was a method for adjusting the reverberant effect.



Room

Simulates the acoustic properties of a classic echo chamber, which was a room used in early recording studios for reverb effects. Room reverbs consist mainly of early reflections.



Chamber

An elongated ambient space such as a hallway, stairwell or elevator shaft creates this reverb type. Lots of decay on tap here.



Hall

This model simulates the sound of a concert hall or large open space with a strong reverb tail. Imagine a gymnasium, performance hall, or cathedral.



Ducking

Built using a 'Hall' model but with a ducking effect. The volume of your reverb is “ducked” (reduced) while you’re playing, and increases when you pause between phrases.



Octo

Creates a lush, ambient space. Its dense, harmonic decay is controlled by Knob 1 (Decay Time). Octo is very effective when using volume swells.



Cave

A Line 6 original. Cave is a surreal, cavernous echo chamber. Definitely deep.



Tile

This model Emulates the acoustic reflections of a tiled room, such as a bathroom or shower, with clearer/brighter discreet early reflections.



Echo

Another Line 6 original. This is a lush echo with reverb, and distinct repeats as it decays.



APPENDIX A : REFERENCE

MIDI Control

The M13 will send and receive MIDI CC and Program Change messages on any MIDI Channel from 1 thru 16 or Omni, selectable from the M13 Setup mode, LCD 4. MIDI implementation includes MIDI CCs for Looper Control, FX Unit On and Bypass messages, Tap Tempo, Expression Pedal CCs and Program Change messages for Scene select. It is therefor possible to control the M13 from a MIDI controller or a computer sequencer.

The most common application would probably be to use a separate MIDI controller to control the M13 Looper, so that all 12 Scene select switches on the M13 would be available for individual FX control.

Individual Model selection and assignment for each FX Unit from the 5 different FX groups is not implemented, but individual FX loaded into the A, B and C memory locations of all 4 FX Units can be engaged or bypassed via MIDI CCs. The MIDI Reference Tables in this chapter represent the currently implemented MIDI spec. A more expanded MIDI implementation may be forthcoming in future M13 firmware updates.

Looper & Expression Pedals

M13 Footswitch	MIDI CC#	Looper Function
Record/Overdub	50	0 to 63 = Overdub 64 to 127 = Record
Play/Stop	28	0 to 63 = Stop 64 to 127 = Play
Half Speed	36	Toggles between Half Speed & Normal Speed
Reverse	85	Toggles Reverse On or Off
Undo	82	Activates Undo
Play Once	80	Activates Play Once function
Pre/Post	84	0 to 63 = Pre 64 to 127 = Post
Looper Levels	83	Controls Looper Levels

Expression Pedal 1	1	0 to 127
Expression Pedal 2	2	0 to 127
Tap Tempo	64	2 taps determine tempo

FX On/Off Toggle

Memory Location	MIDI CC#	
FX Unit 1A	11	0 to 63 = Bypass 64 to 127 = On
FX Unit 1B	12	0 to 63 = Bypass 64 to 127 = On
FX Unit 1C	13	0 to 63 = Bypass 64 to 127 = On
FX Unit 2A	14	0 to 63 = Bypass 64 to 127 = On
FX Unit 2B	15	0 to 63 = Bypass 64 to 127 = On
FX Unit 2C	16	0 to 63 = Bypass 64 to 127 = On
FX Unit 3A	17	0 to 63 = Bypass 64 to 127 = On
FX Unit 3B	18	0 to 63 = Bypass 64 to 127 = On
FX Unit 3C	19	0 to 63 = Bypass 64 to 127 = On
FX Unit 4A	20	0 to 63 = Bypass 64 to 127 = On
FX Unit 4B	21	0 to 63 = Bypass 64 to 127 = On
FX Unit 4C	22	0 to 63 = Bypass 64 to 127 = On

Scene Select

Memory Location	Program Change	
Scene 1C	0	Scene 1C Selected
Scene 1B	1	Scene 1B Selected
Scene 1A	2	Scene 1A Selected
Scene 2C	3	Scene 2C Selected
Scene 2B	4	Scene 2B Selected
Scene 2A	5	Scene 2A Selected
Scene 3C	6	Scene 3C Selected
Scene 3B	7	Scene 3B Selected
Scene 3A	8	Scene 3A Selected
Scene 4C	9	Scene 4C Selected
Scene 4B	10	Scene 4B Selected
Scene 4A	11	Scene 4A Selected

BPM / Milliseconds

BPM	1/4 Note	1/8 Note	1/16 Note	1/4 Triplet	1/8 Triplet	1/32 Note
80	750	375	187.5	500	250	94
82	732	366	183	488	244	91
84	714	357	178	476	238	89
86	698	348	174	465	233	87
88	682	341	170	455	227	85
90	667	333	167	444	222	83
92	652	326	163	435	217	82
94	638	319	159	426	213	80
96	625	312	156	417	208	78
98	612	306	153	408	204	77
100	600	300	150	400	200	75
102	588	294	147	392	196	74
104	577	288	144	385	192	72
106	566	283	142	377	189	71
108	555	277	139	370	185	69
110	545	272	136	364	182	68
112	536	268	134	357	179	67
114	526	263	132	351	175	66
116	517	259	129	345	172	65
118	508	254	127	339	169	64
120	500	250	125	333	167	63
122	492	246	123	328	164	61
124	484	242	121	323	161	60
126	476	238	119	317	159	60
128	469	234	117	312	156	59
130	462	231	115	308	154	58
132	455	227	113	303	152	57

