Mandorla

User's Manual

INTRO

You are now the lucky owner of a Mandorla pedal from Dusky Electronics. That's awesome! We're happy to have our original design and unique sound on your pedal board.

The Mandorla is a boost pedal, so it makes your signal louder, obviously. It also adds a fair amount of even-order harmonic distortion to your signal. Unlike clipping distortion, even-order harmonic distortion isn't audible as distortion, per se, but does sweeten the signal and make it sound better—a lot like a clean tube amp. You can also turn the pedal up enough that it pushes your amplifier into overdrive, producing a more audible distortion. Depending on how you have it set up, the boost can emphasise treble frequencies or it can boost the full frequency range of your instrument.

The Mandorla takes as inspiration a vintage treble boost circuit from the 1960s, updates the sound, and dramatically increases its versatility. The Mandorla sounds great on guitar, bass, and keyboards—and probably also some other things we haven't tried.

CONTROLS

MORE

The **More** knob controls the output volume. Clockwise is louder. You *might* hear a little bit of scratching when you turn this knob. Don't worry, the vintage treble boosters do this, too. (The volume pot is also the load resistor on the transistor, so there's some DC across the pot which causes it to be a little scratchy when you turn it.) All the way down is roughly unity gain (output volume is same as input volume)—so you can use the Mandorla just to sculpt the low end response and enhance the sound a bit. At higher settings, of course, you can pummel a tube amp into some nice singing overdrive.

MEAT

The **Meat** knob controls the amount of bass content in your signal. Clockwise is more bass. All the way down voices the Mandorla a lot like a classic '60s treble booster, although it still sounds pretty different because of its MOSFET transistor instead of a germanium bipolar junction

transistor (BJT). All the way up, the Mandorla is a full range monster with bass for days. Use this knob to tailor an instrument's frequency range to fit into your band's mix.

POWER

The Mandorla may be powered from an internal 9V battery or from an external power supply. The 9V battery is accessed by removing the four screws that hold on the bottom plate of the pedal.

The Mandorla can be powered from any power supply intended for use with pedals, which has a negative tip (the standard) and provides DC voltage anywhere from 9 to 18 volts. You might notice the Mandorla has a bit more headroom and is a little louder on 18V. It can't hurt to experiment and see if you have a preference.

DESIGNER'S STATEMENT

What I love about analog circuit design is that simple circuits can have such complex behaviors. Something like a single tube or a single transistor—in all its classic, nonlinear, imperfect glory—is, at the end of the day, downright complicated in the way it behaves. And it's those complexities, those infidelities, those inaccuracies in reproduction that make a circuit musical. That's where the magic happens.

The concept for the Mandorla was to really play to the inherent, delicious nonlinearity of the MOSFET transistor and design a circuit that misbehaves in the most beautiful way possible. The Mandorla doesn't, on its own, produce clipping distortion, although it can certainly push an amp into overdrive and clipping. The Mandorla *does* produce a lot of harmonic distortion as a result of its less-than-faithful reproduction of an instrument's signal, and, in a musical context, this just makes it sound good. It's the same reason tube amps sound so good.

The **Meat** knob is a crucial element of the design. The ability to control the bass contour of an instrument's frequency response gives you the ability to find the perfect spot in the frequency spectrum for your instrument to sit in the overall mix. What some less-experienced guitar players sometimes don't realize is that, in an ensemble setting, turning down the bass frequencies on the guitar can help to make both the guitar and the bass more-discernible in the mix. When each instrument is occupying its own spot in the frequency spectrum, the result is that the audience can hear more of each instrument in the mix. Of course, with the Mandorla, you can also have *a lot* of bass, if that's what you need. In fact, I use the Mandorla all the time on bass. I wouldn't hesitate to try it on anything.

I guess what I'm most proud of is that such a simple circuit design—with an equally simple two-knob user interface—can sound so good and be so versatile. It really can be used in a lot of different places on a lot of different kinds of instruments. And it really shines in an ensemble setting where every instrument is trying to be heard.

—Chris Rossi (cr@duskyamp.com)