

Preface

The 566 is an eight pin marvel, designed especially for voltage controlled oscillator (VCO) applications. However, over the years it's gotten just a bit of a bum rap. Many people will tell you that the 566 is hard to use, or that its range is too restricted or that the control voltage input is awkwardly (and backwards) referenced to the positive supply only.

Well, if all you ever do is go by the data sheet, then these comments would be true. But in fact, there are a number of slick tricks known only to a handful of designers that really unleash the power of the 566. Once you master these techniques you can coax the chip to flex its muscles, giving you:

- A 1:1000 sweep range (not the puny 1:10 span specified in the data sheet)
- Exponential response in addition to the standard linear response
- Direct voltage control, referenced to ground (i.e., an increase in voltage yields a higher frequency)
- Ramp, pulse and sine outputs, in addition to the usual triangle and square waves
- The ability to hard sync to another oscillator
- And more!

By the time you're done reading this guide, you should come away with a new respect for the 566!

Now I'm not going to claim that the chip is ideal for all musical applications. There's no doubt that dedicated integrated circuits like those produced by Curtis Electromusic Specialties (CEM Series) and Solid State Micro Technology (SSM Series) are still the quickest and easiest way to get a pro quality keyboard synthesizer up and running. But for other applications like electronic drums and control circuits, these special purpose ICs are simply overkill. Not only are they expensive, but they're often hard to find.

Enter the 566! While not as common nowadays, it remains the perfect choice for a low cost sound generator in lots of different musical situations – most notably synthesized percussion. I have used and continue to use it in all sorts of electronic drum circuits.

Like most of my books and articles, I wrote this initially to help me organize my own thoughts. Over the years I had stumbled across a number of interesting techniques for turbocharging the 566, some in magazine articles and some right at the workbench. I decided to pull together all my notebook scribbles and come up with a one-stop reference on using the 566 for my ideas and present them in an easy to use format. Like I say, I (rather selfishly) wrote this up to simplify my own work with the chip, but perhaps you'll find the results useful in your own projects.

I hope you'll like it.

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June 2003