



Bi-colored STATUS LED

Input sensitivity knob (31 detent positions)

Bi-colored SIGNAL level LED

Output MODE button

DDT DEFEAT/ENABLE button



Peavey DPC 1400X Power Amp

By Terry Buddingh

Construction: 4

Back in the '80s Peavey began experimenting with "switch-mode" power-amp designs, which use digital technology to supply large amounts of power without the huge transformers and capacitors required by conventional amps. The flagship DPC 1400X uses the company's patented phase-modulated circuitry to provide unprecedented power in a single-rackspace package. Its austere exterior is no indication of the sophisticated design work hidden inside.

A large glass-epoxy printed circuitboard board spans the full width of the rugged steel chassis, housing the power supply and extensive filtering components required by a switch-mode amp.

A smaller PC board holds an abundance of ICs and modern surface-mount components. Silicone adhesive secures the large toroidal inductors, while the smaller inductors are soldered directly to the board. A low-profile cooling fan draws air through the back panel and forces it through a channel-shaped heatsink, exhausting it through a front-panel vent.

Electronics: 4.5

With today's proliferation of 5-strings and low alternate tunings, power has never been more important—extra power is required to faithfully reproduce extra-low notes. Solid-state class AB amps have been the standard for many years; these must use a large power-supply transformer to provide the high current needed to run its output devices, as well

as large capacitors for current storage and filtering. This explains the large size and weight of high-powered conventional amplifiers. An alternative is to raise the 120-volt, 60Hz line to a much higher frequency. The class D 1400X uses a switching power supply to run at 280kHz, where a smaller transformer and capacitors can do the same work as class AB amps' heavy components.

Most class D amps use pulse-width modulation to control the output stage. Since the output devices are constantly being turned on and off at different rates, the amp's performance is ultimately limited by the speed, or rise time, of the devices used. Peavey avoided this problem by using *two* non-changing pulses that vary in their phase relationship rather than their width. This elegant solution also

enables the DPC 1400X's output MOSFETs to be driven with a simpler circuit. The audio signal gets amplified with the switching signal; then the high-frequency switching signal gets filtered out before it reaches the amp's output. The result is unheard-of power in a smaller and lighter package.

The DPC 1400X also includes Peavey's DDT (Distortion Detection Technique) protection circuitry, which compares the amp's output with its input and reduces the internal gain when clipping or current limiting occurs. You can defeat the DDT via a front-panel button.

Ease of use: 5

Peavey specializes in user-friendly products, and despite the DPC 1400X's sophisticated design, it's no exception. All the controls and



Each channel's output offers a set of binding posts and a pair of 1/4" jacks. The inputs use a combo connector to accommodate balanced XLR or 1/4" TRS plugs; they also accept 1/4" mono plugs for unbalanced operation. 1/4" THRU jacks allow easy connection of additional amplifiers.

Cooling fan exhaust vent



switches are on the front panel, and the rear-panel connectors are clearly labeled and easily accessible.

Peavey placed all the control functions conveniently on the front panel. Two solid-feeling knobs adjust each channel's input sensitivity. The output mode and DDT circuitry buttons are tiny and recessed to prevent accidental switching—you need a small pointed object (like a pen) to alter their settings. Front-panel LEDs

indicate the amp's operational and signal-level status.

The rear panel accepts a wide variety of connectors, but Neutrik Speakon connectors are conspicuously missing. Wasn't there enough room to include them? Banana jacks provide a viable high-current-handling alternative, though—important for an amp this powerful.

Sound: 4.5

We preferred the tremendous headroom bridged-mono mode offers—it sounded punchier and more focused than stereo mode, with a tighter and more controlled bottom. Its reserve power was nearly frightening; one mistake could spell death for speakers of insufficient power-handling capability. A Demeter VTBP-201s pre-amp emphasized the amp's hi-fi

clarity and detail, while it reproduced a Modulus Quantum 5's lowest notes faithfully and effortlessly through an Eden D-410XLT cab. There really is no substitute for an overabundance of power—dynamics were effortless at high volumes, and transients were always crisp and snappy.

For even louder tests, we used a pair of Peavey 410TXF cabs. This allowed us to test the amp at its limits—and it also let us hear the DDT circuitry's effects. At high volume the DDT rounded the leading-edge attack and compressed the dynamic range, but not excessively. Some may prefer the smoother feel the DDT provides; however, with the protection disengaged we noticed a more open, toothy growl, with livelier dynamics and a more assertive immediacy.

One quirk: The fan speed tends to follow your playing. With no signal present it idles slowly, but it speeds up immediately to match the demand of even moderate signal levels, returning to idle the instant you stop playing. This shouldn't be a problem on a gig, but in a quieter setting (like a recording studio) it could become annoying.

Value: 4.5

The Peavey DPC 1400X packs unbelievable power into an amazingly portable package. Because of its extra complexity, class D technology is not the cheapest to manufacture, but it becomes more cost-effective as the power increases. As higher-performance output devices become available, look for even more powerful (and affordable) class D amps in the future. For those more concerned with size and weight rather than price alone, the DPC 1400X is quite a buy.

TECH SPECS

Type: Class D stereo power amp
Made in: U.S.A.
List price: \$1,400
Warranty: Five years limited
Dimensions: 19" x 1 3/4" x 16 1/2"
Weight: 15 lbs
RMS power:
Per channel, EIA (1kHz):
8Ω: 325 watts
4Ω: 500 watts
2Ω: 700 watts
Bridge mode:
8Ω: 1,000 watts
4Ω: 1,400 watts
THD: .1% @ 1kHz
Damping factor: >500
(4Ω: 100Hz)
Frequency response: +0.5dB/
-3dB (1 watt; 4Ω) 3Hz-25kHz
Input sensitivity: 1.4V_{RMS}
(+3dBV) for 4Ω rated power
Manufacturer's address:
711 A St.
Meridian, MS 39301
(601) 483-5365
(601) 486-1278 fax
www.peavey.com



Tight squeeze: Switch-mode amps use smaller power supply components that enable the DPC 1400X to be shoehorned into a single rackspace.

Peavey DPC 1400X Power Amp

List Price: \$1,400

SCORE 1 • 2 • 3 • 4 • 5

Construction:
Electronics:
Ease of Use:
Sound:
Value:

Bottom Line: Awesome power in a lightweight box.