

# Working Smarter

## Dolby Model DP564 Multichannel Audio Decoder

by Jim Kaiser

I have previously reviewed the DP569 Dolby Digital Encoder/DP562 Multichannel Dolby Digital Decoder combination (see *Pro Sound News*, July 2001). It is obvious from the mere appearance that the new Dolby DP564 Multichannel Audio Decoder is significantly different than its predecessor, the Dolby DP562, which is commonly used in DVD authoring facilities like ours at MasterMix. The new DP564 unit is 2U, very lightweight, and the front panel has a black, contemporary look, with a large VFD (vacuum flu-

orescent display) display and numerous "soft feel" buttons and knobs, which light upon activation. configuration settings include digital ref level, the preset gain for the speaker dim function, individual channel trims and speaker delays and configuration. The unit can also be "named" for purposes of identifying the unit when controlled remotely via Ethernet or serial using the software remote program. The timecode display and screensaver can be customized, and there are parameters to control the network settings used for software control.

As extensive as the range of control is the range of status feedback for the user. Main status

Dolby Digital and PCM), RS-485 (for operation using the Dolby Remote DP564 software), GPIO, for connection to the Dolby Cat.549 GPIO Controller option, and 100Base-T, which enables connection to a network for Dolby Remote DP564 software control and streaming audio from a remote computer.

I found the DP564 very easy to use, especially compared to the DP562—the latter being somewhat awkward due to the tiny display and density of controls. One of the most useful improvements is the large multichannel metering display



On first use, I suggest reviewing all settings and parameters, which is quite easy under Setup. Menus are scrolled through via combination of up/down and left/right arrow buttons. This gives you access to the unit's settings—for the most part, the same that are available on the DP562, but on the DP564 they are not crammed together, and are viewable on a much larger, easy-to-read display. Actually, the display is at the heart of the improvements.

Adjustments to unit operation are done within Unit Setup menus and displays. Menus allow the selection of the operating mode (decode and/or pass Dolby Digital and PCM signals, switching between bitstreams, etc.), and yield monitor control (adjustment of the parameters of Dolby Surround Pro Logic, Dolby Pro Logic II and Dolby Digital EX decoding, setting Extended Bitstream decoding, setting room size settings for Dolby Headphone monitoring, individual speaker muting, Karaoke mode settings and LFE Monitor Mode).

Parameters can be stored in one of 32 available user presets (at shipping, the factory presets are stored in the preset positions 1-4). I/O control is also done within the setup menus, including clock selection, IFE (In Flight Entertainment—it sends the Dolby Headphone signal to the main speaker outputs), master volume on analog or digital and analog outputs, unit bypass and GP I/O hardware remote control setup. The monitor

indications include whether the program is in Dolby Digital, of sample rate, encode data rate, channel mode, time-code readout and Dialog Norm level. Eight vertical bargraph meters show output levels, and horizontal compression meters indicate the dynamics control happening on signals destined for the consumer's line outs, or in the RF mode, for where they watch their programming via an RF modulator. Monitor status and configuration, a scrollable metadata display and input status are all shown, as are AES Ref input status, time-code status (frame rate and delay word), error statistics and system status (software version, etc.).

Not all controls have to be accessed through the menus; many common functions are directly accessible from the front panel. These include Downmix (Stereo LoRo, LtRt, and Mono); Dolby Surround Pro Logic, Dolby Pro Logic II, and Dolby Digital EX decoding, Listening (Full, 3 Stereo, and Phantom; Input (AES1, AES2, Optical, and Streaming; Preset (1-4); Output Volume (Ref and Dim); Dolby Headphone output (w/ volume).

There is a reassuring bright blue LED to the right of the LCD display to provide an indicator of a proper Dolby Digital input, while an orange LED (Error) is lit when no signal or an incorrect signal is present, as well as indicators of Remote Control status and Fault.

Rear connections allow for two AES inputs, AES Ref, LTC Out, and four AES Outs (L/R, C/Sw, Ls/Rs, Bsl/Bsr), and discrete analog outputs. Unfortunately, BNC connectors are used for all but the analog outputs, which are XLR. This will make installation of this unit in many professional audio facilities require 110-75 ohm transformers to integrate into their system. This is consistent with the connecting on the Dolby 569 Encoder, however. For my money, I would have preferred the use of industry-standard AES I/O (and Time Code) on XLR or at least DB-25, which is very common.

Also on the back panel are Optical In (for

of level and compression characteristics, which is not available in the DP562. The Dolby Headphone (another new feature) output on the front panel gives a convincing representation of the multichannel output, and made it very convenient to monitor the effect of changes in my encoding setup. I was able to adjust and monitor changes to Dolby Digital processing, e.g. dialog norm and dynamic range control. Also LoRo and LtRt (with Mono), along with 3 Stereo, Phantom Stereo, and Full variations, give one the ability to check all manner of listening possibilities.

The real fun began when I loaded the Dolby Remote software into a networked PC located in the machine room. My decoder was setup in the DVD authoring room where it would typically be used. With the software installed, I simply plugged a network cable into the back of the DP564, loaded in the assigned I/P address, and, voila! I was able to adjust the operation of the decoder and precisely monitor it from a distance. The Dolby Remote software screen shows in clear, single and nested displays all of the above-mentioned adjustments and status indicators, which is quite valuable in a large facility operation. Just remember to listen carefully to the audio processing as well.

The Dolby DP564's capabilities encompass the entire Dolby family of processes. Yet even with all the different modes of operation, and all the possible parameters of each mode, Dolby has made its new flagship decoder reasonably straightforward to use, with a high degree of visual feedback for the operator. The metering is simply outstanding. Though we've been happy with the two Dolby DP562s we own, after spending time with the DP564, we'll have to revisit the appropriations budget.

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## The Drawing Board

There were two primary motivations addressed during the development of the Dolby DP564, says Steve Venezia, manager, DTV broadcast support at Dolby, and the man who compiled the user wish list. "Almost everything you see that's better in the DP564," he says, "is based on user requests. Certainly, a lot of the new features are in there because we added new technologies like Dolby Digital EX and Dolby Headphone, but most of it was just operational functionality."

The most demanded feature, Venezia reveals in a near jest, was "a big volume-control knob," second would be the request for multiple inputs, third for network/Ethernet control, and fourth, the time-code output. This latter feature allows users to play a stream, extract the time code, and have video follow the audio, something that was very difficult before the DP564. "We have a lot of DVD customers, but we also have a lot of new broadcast customers," says Venezia, so the feature set added requests from the DVD camp, and tried to anticipate the broadcaster's needs.

Previous units offered computer control via serial ports, but it made more sense in today's world to use network protocols to access and control gear. "What we were hearing was that their pipes were full of serial cable, running all these discrete control lines, and the users wanted everything to be networkable," Venezia elaborates. And with network control, multiple control windows can be opened for multiple machines on a single PC.

The GPIO control is another unique feature for the broadcast crowd. "Not only, through the GPIO menu can you control just about everything on the unit," says Venezia, "that menu is also a great example of how the VFD display and menu design makes control really easy." Through GPIO, hardware control can be done on pin basis for hookup to other gear (with user-settable control type), or through a Dolby Cat. 549 programmable remote control—a user can program whatever operational modes, monitoring setups, or parameters that need to be changed from the remote location, giving operators the opportunity to switch monitor modes without going to the unit, for example.

Venezia's favorite new feature has to be the VFD display and its integration into the control system. Most of the screens were designed by Venezia, who reveals that the design team worked extensively from an end-user point of view to determine the best functions for various knobs, the best way to enter data, the best way to exit menus. "We put a lot of work into not only how the screens look but into the intuitiveness of navigating the menus," he says, citing "what's logical to the user" as the criteria for operation, "instead of making the human interface conform to what we built."

The display and including a large number of direct access buttons were the main features necessitating the larger size of the unit. Venezia says, "What I hear back from some customers is, 'I wish it was still one rack space, but I wouldn't give up the larger display to get it.'" —Frank Wells

## Product information

**DP564 Multichannel Audio Decoder:**  
**\$4,900**  
**Dolby Laboratories**  
**415-558-0200**  
**www.dolby.com**