

# DIGICO S21

The overview on a compact digital console platform.

by **Mark Frink**

**E**very few years a new live mixing console moves the bar and becomes an industry standard, including the DiGiCo SD7, which debuted in 2007 when the company launched its Stealth Digital (SD) consoles that employ a single large-scale FPGA chip. Now the DiGiCo S21, released a year ago and shipping since November, is transforming the sub-\$10K console market.

With any new technology, longer service life and introductory pricing offset the risk taken by early adopters. My friend George Relles bought America's first Heritage 3000 and benefitted from a decade of use that resulted in a per-show cost of \$100. The sooner you get it, the longer it's in service. DiGiCo is currently breathing new life into its SD consoles with Core 2 upgrades that increase channel, mix bus and FX counts, plus providing dynamic EQ, multiband compressors and DiGi-Tubes on every mix path.

The S21 tested in this review was used this spring for a variety of front of house and monitor applications at the Jacksonville (Florida) Symphony's Jacoby Hall. The D Rack Touring Package provided (\$13,300 list) consists of the S21 in a "nose cone" flight case, plus a 32 x 8 D-Rack and a 246-foot (75-meter) Cat-5 cable. MSRP for the S21 alone is \$6,995. With 40 channels, the S21 isn't up to the scale of the SD9 regularly provided by symphony audio vendor and DiGiCo dealer Everyman Sound of Gainesville, FL, but its pristine 96 kHz sonic quality proved identical.



## GENERAL OVERVIEW

Named for its 21 faders, the S21 is both compact (30 inches wide x 23 inches deep) and light in weight (42 pounds), immediately recalling other brands that have gotten progressively smaller and lighter. The compact, sturdy design really feels like a DiGiCo and its polycarbonate surface has a sleek, rugged finish.

Faders and buttons are borrowed from the SD line, providing a familiar touch to experienced DiGiCo operators, though breaking from SD's 12-fader bank tradition by using two 10-fader banks below a pair of smaller multi-touch screens. Underneath each screen is a row of 10 encoders, and to the right of the right-hand screen are six assignable master encoders, all of which have multi-colored LED rings.

The S21 borrows the SD7's powerful scheme of colored LED backlighting around each encoder to match selected onscreen graphics, indicating the knob's function and leveraging the use of color in the graphic user interface. Like the SD7, the S21 is un-illuminated or "Hidden Till Lit" (HTL) when not in use, helping the operator focus on active controls.

Many experienced SD operators focus on a single touch screen surrounded by a plethora of encoders and buttons while

## *The DiGiCo S21 compact digital console.*

employing two or three fader banks, as found on the SD8, SD9 or SD10. Thanks to a workflow that relies more on its touch screens, the S21 leverages its two screens with fewer knobs and switches for faster operation after adjusting to its new graphics and encoder workflow.

The ability to easily customize channel layout for four layers, as well as its Spill Set that can overlay the right bank of any layer, allows each operator to find a comfortable mode of operation. The Spill Set can contain up to 10 of any combination of processing channels: inputs, outputs, control or matrix. It fills the right screen from the right side, and less than 10 members leave one or more of the left-most display channels in any right screen layer uncovered.

Some engineers might prefer S21's 40 input channels arranged in two layers of 20 channels, its default configuration, and then perhaps call up control groups by assigning them to the Spill Set, available or hidden at the press of a button. As a monitor engineer, I liked assigning all inputs to all four layers of the left bank, with each dedicated vocal effect return nested beside its associated input, and

aux masters available on the right screen via the spill set. Your mileage may vary.

Opening channel processing windows covers the right screen's graphics, but channels on any layer of the left bank remain unhidden. Channel layout is easily edited on the Overview page by dragging and dropping, similar to the way apps are moved on an iPhone. The S21 is intuitive and straightforward.

## NAVIGATION

To the right of the two fader banks are two square buttons: one to access the console's overview screen, where all four layers are displayed and another above it for quickly displaying or hiding channels assigned to the Spill Set on the right bank, regardless of chosen layer. Beside them are a pair of triangular buttons for moving up and down the S21's four layers.

Above these, "forward" and "back" triangular buttons navigate snapshots. The far right is simply master fader, headphone control, twin 24-segment multi-colored master/solo meters and both 1/4- and 1/8-inch high-power headphone jacks under the armrest.

## SOFTWARE

The S21's new "flat" graphic user interface (GUI) is a departure for DiGiCo and reminds me of an iPhone. Seasoned DiGiCo users will discover they spend more time touching S21's screens, which takes getting used to; however, after a week I realized that many buttons and knobs on my SD consoles were relatively unused and I enjoyed the new S21 workflow more. I eventually found myself eager for the S21's new design aesthetic to slowly be incorporated into SD console revisions.

DiGiCo regulars are familiar with the company's tradition of semi-annual software revisions that gradually adds features across the entire SD range. Even in its third revision, the S21 still has a way to go, especially compared with the SD range's mature feature set. It's easy to imagine many of the SD's (often unique) features making their way to the S21 over time, but the company may be

in no hurry to have it compete strongly with the SD range.

That said, any console is made of three elements: parts, algorithms and engineering. Clearly DiGiCo carefully selected some of the best parts – though fewer of them – found a more affordable FPGA chip, and has many of the same engineers and software processes employed on SD. The result is DiGiCo quality at a new price point.

## FUNCTIONALITY

The S21 operates at 48 or 96 kHz without penalty, but SD9 users are familiar with D-Rack's use of 28 channels instead of 32 at the higher sampling rate. The console's rear is generously appointed with 24 local inputs and 12 outputs, allowing us to deploy it in Jacoby Hall's control booth immediately without the D-Rack, simply replacing the hall's ancient Crest console. When the D-Rack was added weeks later, everyone immediately noticed the improvement in sound quality provided by locating preamps on stage.

The S21 has a fairly fixed arrangement, though both its inputs and

processing blocks can be further opened and adjusted on the right screen.

Each channel and bus has 4-band parametric EQ plus high-pass and low-pass filters. For those not accustomed to low-pass, its benefit is a cornerstone of "big boy" mixing, even though many consoles force users to "steal" it from the parametric EQ high band. The S21's EQ also opens onto its right-hand screen, where encoders to its right are colored to match the selected band. The multi-touch screen allows users to use "pinch" and "spread" gestures to narrow or widen EQ filters intuitively.

Gate and compressor also open on the right screen. Dynamics 2 is a keyed, filtered gate that shows signal spectrum on the left to aid tuning its HPF and LPF. It can alternately be configured as a compressor with side-chain or as a ducker. Dynamics 1 can be selected on up to four channels as a multiband



*The rear panel of the S21, with Dante expansion card highlighted.*

"group/auxes" are "flexi" channels that can be stereo or mono. In addition to the main stereo mix, it has 40 inputs as well as 16 mix buses that can be either variable auxiliary buses or fixed gain groups. Any or all can be mono or stereo, so far more than 40 inputs can be handled, depending on how many sources can be used as stereo.

Opening any channel's Setup View displays its signal path on the right-hand screen: its preamp source, high-pass/low-pass filters and delay, EQ and dual dynamics, and both pre- and post channel processing insert points. These pro-

cessor that splits the familiar "bent knee" graphic interface in three, with signal spectrum shown across the crossover point display below the three knees in a powerful interface that makes it easy to get desired results.

There are also 16 freely assignable graphic EQs whose 32 filters don't all fit on 20 faders, but easily "slide" left or right with a swipe motion to move frequency control up or down on the faders where it's needed. Fun.

The S21 also includes four DigiTubes and eight effects. I'm not a fan of dis-

tortion, but some will enjoy DiGiCo's tube emulation on particular channels for effect. Each of the console's eight effects engines also open on the right screen from a familiar rack-like graphic interface and have a modest number of adjustable parameters and decent variety of algorithms, including tap delay.

### I/O OPTIONS

In addition to the generous local 24 x 12 analog XLR I/O on the rear, the S21 has two DiGiCo Multichannel Interface (DMI) expansion card slots as used in the company's Orange Box for expanding SD desks. There are 10 choices of DMI cards: 64 x 64 Dante, co-axial MADI, Cat-5 MADI (used with D-Rack), DiGiCo Optocore, Aviom A-Net, 16-channel analog outputs, 16-channel analog mic/line inputs, 16-channel AES, Waves Soundgrid interface, and Calrec Hydra2 connectivity.

There's also a built-in UB-MADI, a Type-B USB connector that provides a

built-in 48-channel, 48 kHz recording interface. Running at 96 kHz, the USB output down-samples to 48 kHz to not sacrifice recording channel count, and 48 kHz audio played back to the console for virtual sound check is up-sampled to 96 kHz, making multi-track recording and virtual sound check as easy as putting your favorite DAW on a laptop. It also makes the S21 an outstanding \$7K recording interface, especially when considering the various DMI options for bridging to other consoles. It also makes a great desk for support acts touring with a DiGiCo (or Dante) ecosystem.

### CONCLUSION

Having mixed on an SD10 with the Zac Brown Band on tour, an SD9 with the Jacksonville Symphony, and an SD7 with Dr. John on tour, I'm very aware of the "DiGiCo sound." At one pops show with the symphony we deployed an SD9 at FOH and the S21 on stage for monitors, and they really sound identical. Though

the S21 lacks a few features found on the SD9, it sounds just as good. Over time I'm sure software updates will provide many features found on the more mature SD platforms.

The S21 carefully brings DiGiCo quality down-market in a package that combines flexibility and quick touch screen operation with outstanding sound in a powerful, compact and affordable system. Further, customer support is excellent, including the services of U.S. distributor Group One Ltd., headed by Jack Kelly.

U.S. MSRP: S21 – \$6,995; S21 with 32 x 8 D-Rack – \$11,995; D-Rack Touring Package (S21 with flight case, 75-meter Cat-5 and 32 x 8 D-Rack) – \$13,300 **LSI**

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**Mark Frink** ([livesound@markfrink.com](mailto:livesound@markfrink.com)) is serving as production manager at the South Shore Music Circus in Cohasset, MA this summer and would like to thank James Pitts, Shamus McConney and Ray Klasse at the Jacksonville Symphony for their assistance and support with this review.