







UB MADI RECORDING





before seen on a console in this price bracket, and is the first in the SD Range with built-in recording interfaces; which makes Virtual Soundchecking very straightforward indeed.

Furthermore, the SD12 now includes a DVI output, for an overview of the console.

New LED meters allow for a brighter, faster operation, and the SD12 Lightbar is identical to that of the SD5 and flagship SD7 consoles.

And guess what? We even had space for two assignable master faders - only previously seen on the larger DiGiCo consoles - as well as dual DMI Slots, perfect for expandability.



FPGA (Field Programmable Gate Array)

These neat components have been around almost as long as DSP. Historically, due to the size, they played the role of the glue logic in larger applications, allowing multiple DSP chips to communicate, but as the technology has grown, so have the FPGAs; much larger the smarter components are now available, which can perform a staggering amount of calculations, surpassing even the most advanced DSP.

Stealth Digital Processing™

is the increadibly powerful technology that DiGiCo has applied to process of milenguing on land reverb algorithms in one of the latest FPGA design components. One single child process is unfive exchannel counts, and more channel processing than can be found on any other digital live consoler.

Virtual Soundcheck

All DiGiCo consoles benefit from this very handy function - and it's super-easy to use: just select your channels and route your signals using the audio I/O screen, and in conjunction with a DiGiCo UB-MADI or DiGiGrid MGB (or any MADI-based recorder for that matter), you can track your show into any DAW. It's a simple one-button press, no routing is required, so unlike on many other systems, there's no pops or clicks, and certainly no rebooting! But the SD12 takes this one step further, becoming the first ever SD console with its own inbuilt 96kHz 24-track recording interface.

But there's more... Just as you would with an inline console in a recording studio, once the band disappears, and you realise you need to re-record, or rehearse something, you can route one (or many) items from stage on any of the channels at the press of a button. 'Listen to Copied Audio' allows monitoring of playback. 'Listen Safe' prevents this on a per channel basis. So if your singer missed that all important high note on the night, or the drummer flunked the odd paradiddle, you don't need the rest of the band present to fill in the gaps.





Aux Sends on Busses

A feature recently added to the DiGiCo SD console range is the inclusion of aux sends on busses, which allows the user to create a sub group, and apply whatever processing they want across it. If the user then unfolds that sub group, he or she has dedicated aux sends for that buss, which can be sent directly to someone's aux mix, rather than have to waste time sending to individual channels. It's essentially a broadcast feature, but after chatting with a number of live engineers, we realised





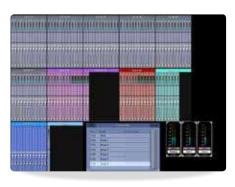
This standalone piece of software allows the user to load their files from any console in the SD Range into the SD Convert application, and choose which model they want to convert to, defining their existing session with the resources available on the new console. This makes it possible to move freely up and down the console range depending on space, budget, and system requirements.

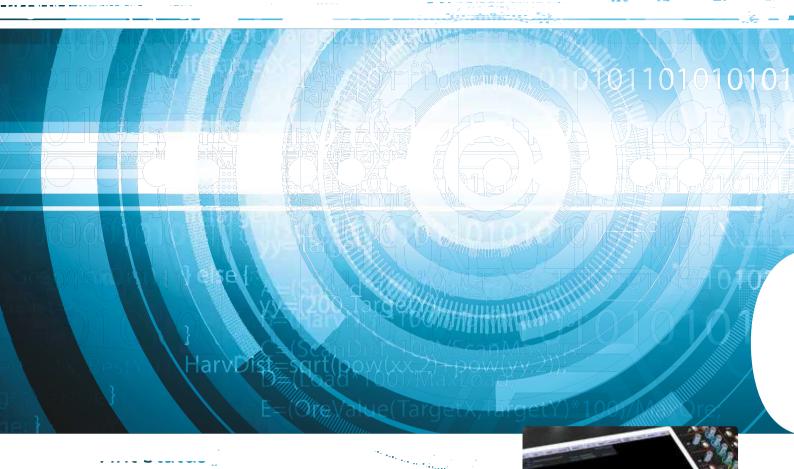
Ultimately, it's an easy way of converting session files between the large and the small consoles within the range.



Overview Screen

This is an external DVI output that shows what is going on with the console at all levels; it displays all your channels, groups, auxes, matrices, control groups, fx, dynamic processing, metering, sub groups, and your master, all in an easy-to-navigate format.





Aux to Faders

We've come up with a solution to a common problem monitor engineers have, by creating a panel which floats on top of any SD console's screen, to provide a very quick way of getting to Send to Faders for any of the aux mixes. Why? So that when they're listening to one mix – let's say it's the lead vocal - and want to make tweaks to another at the same time – the guitarist, perhaps - they can do so, without even listening to it. Just drop the console into Send to Faders mode at any time to make it happen; and although it's defaulted to auxes, users can also activate the solo fader, should they require further flexibility.

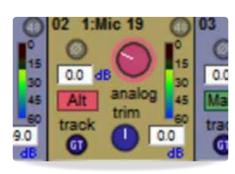
Control Group Faders Control Aux Sends

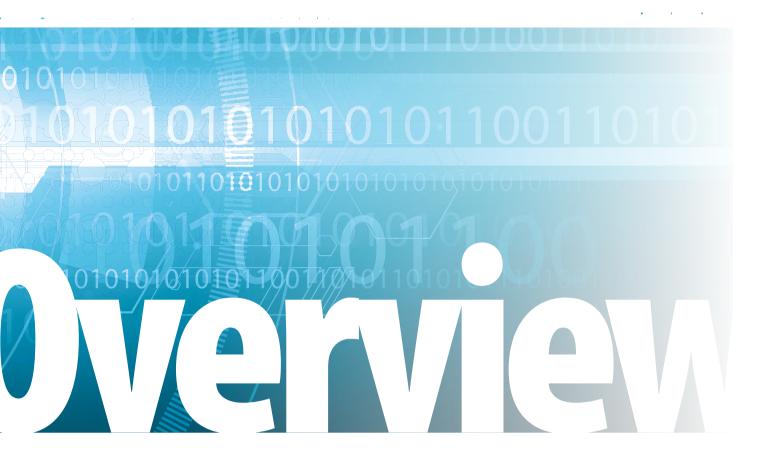
When the user goes to Send to Eaders, the control groups adjust the individual aux mixes levels, as opposed to the main master buss level on anything that's assigned to them. In other words, let's imagine Eric wants more guitar: the user finds his mix, the control group faders drop down to middle of the fader path to give he or she +/-18dB worth of trim. So you can immediately solo his mix, increase or decrease his overall guitar level (or any level, of course). And by the same token, if Rik wants his keyboard turned up (or down) that's no problem, either. It's essentially providing the user with VCAs on every single aux mix.



Gain Tracking™

DiGiCo were the pioneers of Gain Tracking™. In a nutshell, it's there to keep channel levels consistent when two or more DiGiCo consoles share a single rack. When Gain Tracking™ is enabled on an input channel, any changes to the analogue gain on one console will be compensated for by the digital trim on the other. When Using MADI, one console is the master for the analogue gain; when using Optocore, up to five redundant engine consoles can be on the same loop, each with its own Gain Tracking™, while retaining full access to the analogue gains.

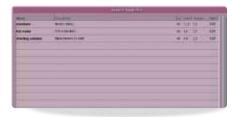




Session Templates

The templates option allows users and engineers to save sessions as templates. Once loaded, the templates session cannot be overwritten and must be saved as a new session file.

An example of use – If the desk has been installed into a facility, having templates will mean the console will have sessions to load straight away. This can be useful in places where part-time sound engineers or volunteers use the console and an easy to navigate and familiar to use session is required.



Alternative Input

Routing an alternative (ALT) input is as simple as it sounds. The spare input becomes the main in an instant, and keeps all of the same settings: EQ, dynamics, aux sends, gangs, and group routing.

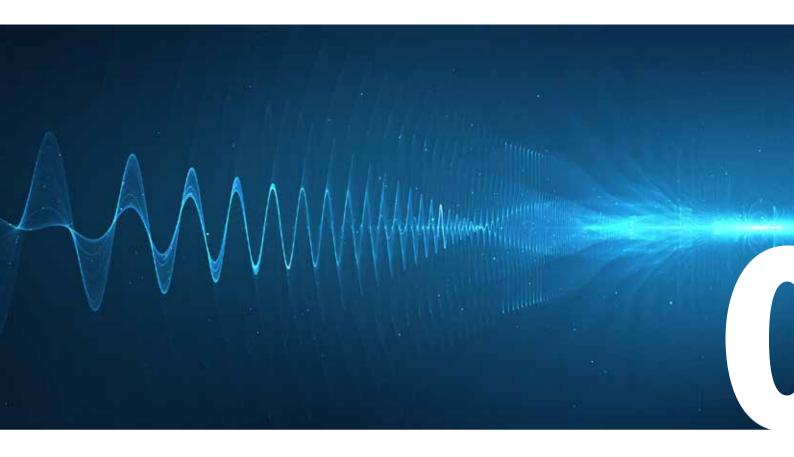
Let's say the lead singer, pastor, or commentator's microphone fails, and there is always a back-up on hand. Having this routed into the ALT input means the microphone will always be ready to be switched over; and if you assign it to a macro, you don't even have to be looking at the channel to switch it! There is no need to create another input channel, or have to waste time and effort copying all your parameters from the main channel, these are still there, even in the snapshots.



Merge Inputs

allows the user to bring a secondary source into a buss. Back in the analogue days, when you needed more channels, you had an additional input on a buss where you could cascade desks together – and this is doing just that. You can bring in any source - internal or external – with a dedicated level control and an on switch; it's as simple as that. Some users also find it handy as a secondary channel – and why not? If you turn it on, and you haven't routed anything to it, you can bring in your FX returns into subgroups, as all the subgroups effectively now have the processing you would have on a channel, including aux sends. In fact, it's providing the user with additional channel processing. Furthermore, we now have ident control. If you're using busses to get a record feed to a camera, or a stereo signal to a broadcaster somewhere, just hold down the Merge Input button, and you'll get tone coming out of that buss. No need to have to go and create the tone, and route it to a buss; it's all doable direct, to make setting your levels totally hassle-free.





Line Check Mode

This feature was introduced recently within the Copy Audio page - originally designed to be able to route an input to an output for virtual soundcheck work by mapping any sockets to any MADI stream. However, now people are using it to route an input to output without it physically coming to the desk. The issue being, however, a lack of gain control: they have had to bring a socket into a socket to do that, unroute it, and so on. But Line Check mode changes all of that: if the user goes to a rack, selects a socket, he or she now has the ability to adjust the gain of that socket without having to patch it into a channel to do it there. There is also 48v Phantom Power, and it tells you which channel it's being used by; you can also solo it, and choose which buss it goes to. So in the live environment, you could potentially have an output assigned to a solo buss to your technician on stage, and whenever he or she hits solo via the offline software, he or she can immediately hear what's coming out. It's a great way of checking everything's on the money before going live.



Dual Solo Busses

Dual Solo Busses are present on all DiGiCo SD consoles, and can be either mono or stereo, or even up to 5.1, providing the engineer with ultimate flexibility. The solo busses can also be assigned to a master fader/pot on the work surface and brought into a bank as a fader, allowing for easy fader control over the solo output level. If you have 2 solo busses, for example, one can be assigned stereo, the other as a mono, which means when creating stereo in-ear mixes for your band, all of your stereo auxes can be assigned to solo buss 1, and for those listening to the mix through a mono wedge, all mono auxes can be assigned to solo buss 2.





Matrix

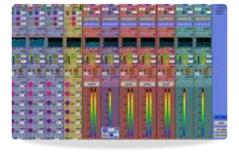
A Matrix is available on all SD consoles, and on the SD12, it's a 12 x 8 Matrix with full processing. What's unique about a DiGiCo Matrix is, all of these busses are in addition to any Aux, Groups, Masters, or Solo Busses, unlike many others on the market that share resources, no processing power is borrowed from the console.

What's also cool is, any source can be used as an input to the Matrix. Let's say you're working monitors, for example, using the matrix as a Comms mixer: you can bring the crew mics and solo buss outputs into the Matrix and submix them together, which means you can still hear the technicians, even when a buss or channel is soloed.



Fader Bank Customisation

Across the entire DiGiCo range, users can completely customise the layout of their fader banks; input channels, aux busses, group busses, master busses, solo busses, control groups, talkback and matrix outputs can be assigned quickly and effectively to provide the user with the perfect customised work-surface layout. At a live show, for example, an engineer might assign all inputs to the left hand fader banks, and all outputs to the right.



Set Spill

This feature provides quick access to a custom group of channels, and any number of different channels can be assigned to a set. This set can then be assigned to an easy-access macro button on the work-surface; by pressing the macro button, the channels will 'spill' (vertically or horizontally) onto the work-surface, giving the operator access to the channels.

Typically, you would select your most important channels to access at a press of a button. For example, the input channels that make up a drum kit on stage: maybe the high-hat needs to come down in the mix? Just a press of the assigned set spill button, and those channels will come to the surface, regardless of what screen is being viewed at the time. Press it again, and it will change the work-surface back to the fader banks that you were viewing before. This can be done with everything, including buss outputs, VCAs, and talkback inputs.

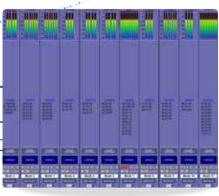
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Multi channels

are available on the entire SD Series, to assign up to 11 input channels onto a single channel strip, and are great for saving space in fader banks. All the channels are assigned to a multi fold into a single fader with a meter bridge at the top of the channel to show meters of all the channels. If all channels within the multi are linked or 'ganged', then control parameters (EQ, Gain, etc.) can be applied across the whole multi. To access the individual channels, unfolding the multi-channel will spill the channels across the bank, allowing adjustments to be made per channel.

Folding and unfolding of Multi Channels can be done in stereo, LCR, or 5.1 - imagine having your whole drum set allocated to one channel strip! Then just unfold it to access the channel processing for all of the contained channels. And it's more than that – you can also include processing into a folded channel strip: EQ, dynamics, aux sends, whatever you like. This super-flexible setup is the ultimate for control, gone are the days of searching through banks on your work-surface while mixing: fold your guitars, your brass section, a group of BVs, anything you like, for much quicker access to parameters, and without switching banks.



And we've gone that bit further... We've taken that folding and unfolding concept, and applied it to our output busses, so you can take stereo, LCR, or surround, and unfold it to reveal its individual components. Once unfolded, you can apply unique processing such as changes to EQ, or re-patching, then fold it back up. Unfold to adjust, fold to mix, quickly and efficiently.

Snapshots

The clue is in the name... These are literally snapshots of the state of your console; every time one is made, it stores the position of every compressor, EQ, aux send, fader, mute – you name it - on every channel. You might snapshot each song at a gig, or each scene in a theatre production; and when recalling them, you can filter recorded or stored snapshots through a series of filters or 'scopes', and the level of control is staggering. Thanks to precision programming, you can set different crossfade times for individual parameters on every channel, to provide ultimate control, and they can even fire MIDI messages.

Furthermore, and unique to DiGiCo, is the ability to group snapshots together relatively, then apply changes to them as a group, rather than updating them individually; and you also have the ability to take the surface offline on the SD11, SD9, SD8, SD12, SD10, SD5 (cs) and SD7.

All SD consoles have the ability to take Snapshots offline allowing the user to recall the Snapshot parameters to the worksurface without affecting the audio path. Parameters can then be adjusted and saved. The user can then recall that specific snapshot with its new changes or return to audio.





Local I/O

The SD 12 has plenty of connectivity: 8 local mic/line inputs, 8 local line outputs; 8 mono AES/EBU in/out; Dual MADI in/out; a Dual DMI card slot; 2nd generation dual Optocore loops; the UB MADI 24-Channel USB interface; 16 GPI/GPO, MIDI, Network, USB; and Overview Monitor Output.



iPad® Control

DiGiCo also has an SD App, which allows you to control any of the major parameters of the console over WiFi with an iPad. Better still, the iPad is not only a remote control surface, but also an expansion of the control surface. As an example, the SD9 has 8 macro buttons, but if you connect the iPad via the SD App, many more user-defined buttons appear; in fact as many as 256 Macros can be created. So you can have your quick access go-tos in one hand (literally), while the console remains clear to mix the show on.



DiGiTuBe

is there to emulate the non-linearity of a valve amplifier. At low levels, the valve is almost linear, whereas at high levels, it starts to compress, which leads to "soft clipping". The drive control increases the input gain into the valve, automatically reducing the output gain, so the volume stays the same. The indicator shows how hard you are driving the valve and how much distortion is happening, and the bias control sets the symmetry of the distortion, and the intensity of the distorted sounds.

If you crank up a classic guitar amp, you can see clearly how the valves glow and kick into action to transform the sound; DiGiTuBe, like real valves, works great if you want to add presence to an instrument. Now available on all channels and busses with Core 2 software, the SD12 benefits from no less than 119 of them.





Remote Control and Offline Software

An embedded PC powers the SD Series' user interface and work-syrface, running it describes held on the console's Stealth engine, therefore you can take the standard DiGiCo software and runnion a consume PC as offline software. It gives access to every console function, adding real functionality in two ways offline preparation of sessions, which means you can tweak and edit your session while on a plane, train, tour bus, or wherever takes your fancy. Just fire up the appropriate dffline software version, load a session, and away you go; and then when you're done, save it to a USB, and plantsmake into the console.

You can also turn your offline software into remote control via your C, to achieve realtime recontrol over every aspect of your session; and because it's network on acta is, you're not just limited to one: multiple remotes are supported simultaneously (wired or wirely 5). This is gold in the theatre environment in particular, where it's commonplace for sound designed to a strepa at expanse workstations with multiple screens, working independently of the operator during techniques also

Dynamic EQ

is the holy grail of audio mixing; it allows the audio level to dynamically control the amount of EQ being applied to the signal. But to perform these calculations in realtime requires a serious processing resource, which many of today's standard DSP systems simply cannot deliver; and the same is true of many plugin systems, as the resource required consumes such a vast amount of the processing pool. However, none of these limitations even come into play when you're working with a DiGiCo console, as the capabilities of a single FPGA are so great. Dynamic EQ is like a super-smart EQ. It can be applied variably, and it's based on the incoming signal passing a threshold set in the individual band of EQ. It means total control for the engineer, as the further past the threshold the signal goes, the more EQ is applied.

Let's say you're working a show, and your lead vocalist is eating the mic half the time, and moving away from it the rest of the time. It's a common thing with a dynamic vocalist, but it causes something called the 'proximity effect', which often leaves the engineer struggling to cope with low frequency boost. Dynamic EQ, however, will fix all that... In this example, when the bass frequency increases past a set threshold, the EQ will activate and auto-correct the timbre changes from the singer's voice, and keep it at a consistent level. Simple. Now available on all channels and busses with Core 2 software, the SD12 has a total of 119 Dynamic EQs, which means ultimate flexibility and functionality, with plenty of processing power.



Multi-Band Compression

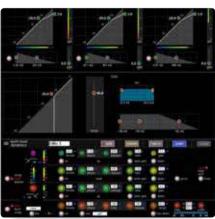
DiGiCo offers three compression bands, and the engineer can set the attack, decay, release and gain (including auto-gain) on each compressor. Additionally, there are Link and Listen functions. Link enables the user to link compressors' control voltages to another channel; and Listen lets the user listen to individual compression bands rather than the whole signal. Nice and simple.

Multi-band compression works particularly well on drum groups. Let's say you've got a really loud kick drum to deal with... A single band compressor would compress the entire signal, whereas with a multi-band compressor, only the lowest band will compress, which leaves the mid and high bands unaffected. The key word here is control, which the engineer now has in abundance. Now available on all channels and busses with Core 2 software. The SD12 has 119 of them.

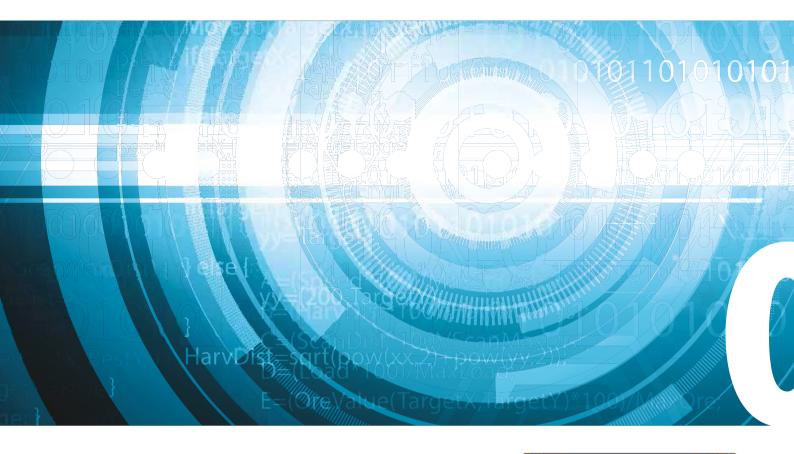
Graphic EQ

The SD12 has 16 internal 32-band Graphic EQs, each of which can be applied to any channel's input and output, normally using channel insert A or B. There is a large EQ display which can be adjusted individually via either of the touch screens. There is also an overall trim control and an EQ on/off button, and the EQs can be linked together globally, or by ganging groups of them together.

This is ideal, for example, if you want to apply a pair of mono EQs across a stereo buss: if you touch any Graphic EQ, it immediately transfers to the 12 faders below it, and you can sweep or swipe your finger across to highlight the faders you wish to adjust.







FX

The FX menu button on the console's master screen opens the master FX display, which shows all assigned FX units in a single rack. Touch any control on the screen, and the Touch-Turn controls will become live on the console's work-surface. A number of factory presets are built-in, including stereo FPGA reverbs and other high quality effects such as delays, choruses, pitch shifters, and audio enhancers; and up to 12 Stereo effects can be used at any one time on the SD12.



Waves Plugins

In addition to the SD Series' superb internal processing, you can also access all the plugins you know and love from the studio into any SD console thanks to Waves SoundGrid®, which allows access to a vast range of Waves plugins, available in special bundles. The SD12 is the first console in the SD series to allow total offline operation of this with a DMI Waves card. This is particularly useful, for example, if you're a rental company with five SD12s and one DMI Card, you can move it around between the consoles.

If a Waves DMI card is fitted directly to the console, this is ano-compromise I/O; it doesn't use up any existing I/O on the console.













C4 Multiband Compressor

CLA-2A



MADI (Multi Channel Digital Interface)

This classic AES Audio format may have been designed for the studio environment some twenty years ago, but its capabilities have grown, as has its popularity; MADI is now commonplace in the broadcast sector as well as the live console market.

MADI was already a proven reliable transmission system, capable of carrying a vast amount of audio, but cable run limitations deemed it null and void for the live sector. However, DiGiCo developed a method of line driving the MADI, more than doubling the distances, and as a result, it is very much the industry standard today. On the SD-Racks, you can also run the MADI (utilising the Aux MADI connections) at 96kHz.

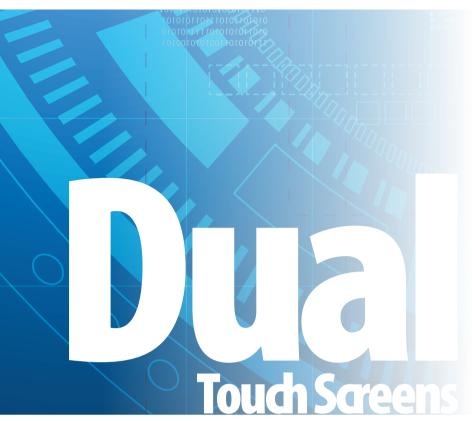
DiGiCo's optical connectivity via 2nd generation Optocore

All DiGiCo consoles benefit from a 2Gigabit Optocore system, which allows users to connect up to 14 racks and 5 audio engines or consoles on one optic loop; as a result, users can assign any output card on any rack to any console on the loop. Users can also send up to 56 channels of audio between the desks - making it a no-brainer for submixing - with HMA, Opticalon, or ST connectivity (single or multi-mode). In addition, the desks also connect people, thanks to the new text chat function on every Optocore-enabled console. The system is functional in single or multi-mode, and users also benefit from a graphical display of the Audio I/O.

24 IDs (devices) are available on the optical loop, which means engineers can access I/O from each engine or console. As an example, let's say an engineer at FOH might only want L/C/R with an aux sub out – he or she could take the first output strip on rack one; the broadcast engineer might only need

talkback feeds from his console – he or she takes the second output strip; and the monitor engineer could then take the last five slots (40 outputs). The SD7 platform also allows for two independent optical loops, so it can buss and route between both.





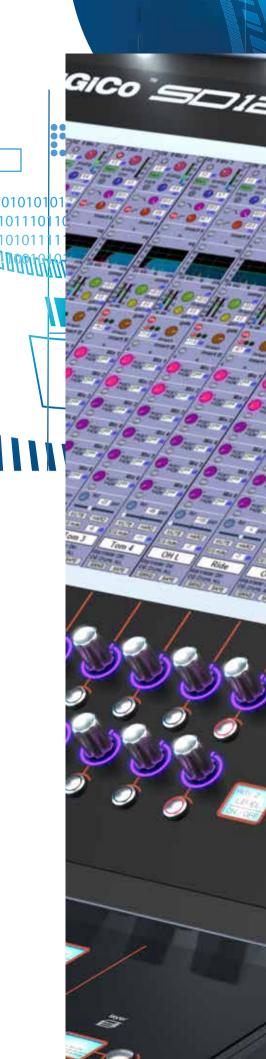
Instant Control

101110

One of the defining features of the DiGiCo range of consoles are the large touch screens, bringing all of the information and control to where you need it, quickly and easily. The SD12 is no exception, and features not one but two TFT screens, one for each section of the console. Furthermore, up to 24 channels are available in one view, and a dual operator mode means, for example, that the right hand screen could be the dedicated master while somebody else works on the first screen.

Access to the channel strip and all of its features is just a touch away. Select your inserts or sends and their settings are right in front of you. Then, simply use the relevant Hidden Till Lit rotaries or Quick Select buttons to select or alter your required parameters. As you change fader banks, access Set Spills or fold and unfold multi-channel faders the information on the screens changes instantaneously to reflect the channel setup.

Multiple Touch Screens - See, Touch, Hear.











Find what you want at the speed of light.

When it comes to operating a console in a live, or other high pressure environment, it is fundamentally important that the desk works with the operator to provide the fastest and simplest way to create the mix you want.

Fast access to channels, easy control of gain and quick intuitive management of all-of the sends, dynamics, effects and EQ is where HTL comes in to its own. Even operators with little or no experience of digital consoles-will instantly be able to see which control on the desk alters which parameter, as HTL dynamically colour codes each rotary-encoder to reflect the colour scheme of EQ, processing or sends currently displayed on the screen.

Bring up your dynamics on a channel and watch as the two rows of rotary encoders directly below change colour exactly mirroring the controls on the screen.

The SD12 has 2×24 encoders with an RGB HTL ring, and an SD7-style channel strip with HTL EQ encoders. It also benefits from new Dynamics metering in each channel strip, as well as extra bright responsive meters by its faders.

HTL - The guiding light



As with other consoles in the SD range the SD12 includes Macros. The five, multi-colour backlit displays are positioned to be easily seen at the top right section of the console and can be programmed to run any macro you have programmed into the desk. If for example you need to trigger a sound effect via MIDI you can assign your macro, or if you want fast access to your Set Spill groups, bringing all the channels you need to you in one button press, you can also allowate them to

In fact, Macros can basically be allocat the desk. Simply program your may one easily reachable button pre

But, if five Macros just five banks to use, o instantaneous acces console. Furthermore, the

Assignable macros and



group









Assignable Master Faders.

Normally seen only on the SD7 and SD5 consoles, the inclusion of Assignable Master Faders on the SD12 is a real treat to any user.

If you're working FOH, for example, one could be your solo, one could be your master; or equally, one could be assigned to your PA centre cluster, while one caters for the stereo mix. The freedom to do whatever you want is there, and it's all very simple.

Having these onboard is also a great asset to any monitor engineer: instead of fiddling about with rotaries, you now have two faders that can be assigned to be your in-ears and wedge mix level. Or perhaps there's a group of backing vocals you want to keep a close eye on, while simultaneously riding the lead singer's dynamic vocal?

Whatever the job, this added functionality makes it all a lot easier.



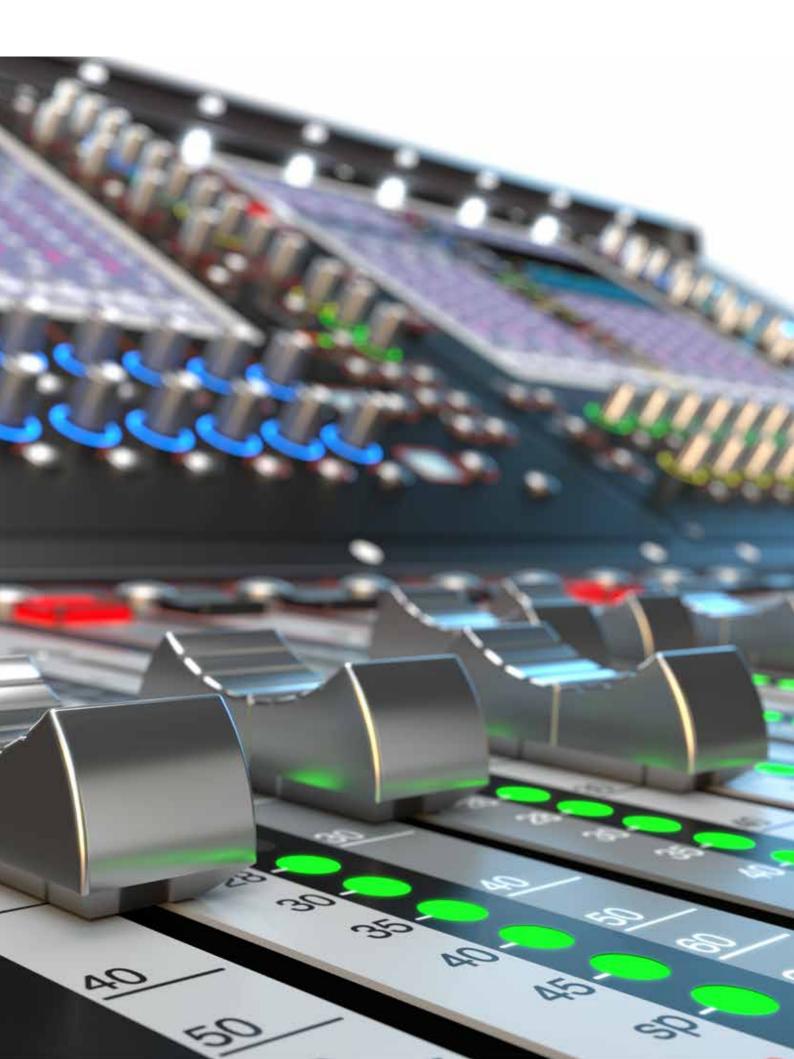
Meters

Before now, high brightness resolution meters have only featured on the SD7 and SD5 consoles. But guess what? They're on the SD12, too.

They sit next to the faders, which allows for a clearer, much easier workflow, no matter what environment you're working in.

As time goes on we come across newer technology which has enabled us to implement higher brightness resolution meters which are situatred diown by the faders, and the added functionaluty of gain reducuion on the channel meters, and the tradffic lights for the noise gate which up until now have only featured on the SD7 and SD5.







DiGiCo brought its DMI (Digital Multichannel Interface) into the pro-audio world via its Orange Box, then into the S-Series, and now it makes its way into the SD Range for the first time via the SD12. Not only is MADI built into this console, as well as all the local I/O you'd expect from a DiGiCo, there are also two slots for DMIs - that's a whopping 64 channels of I/O per slot.

This card can be used to connect a Standard MADI stream (64 channels in and out) at 48KHz or 96KHz or an SD Series DiGiCo Rack with the appropriate connector (D-Rack, D2-Rack, SD-Rack, SD-MiNiRack)

DMI-DANTE

This card provides 64 input and 64 output channels at 48KHz and 32 input and 32 output channels at 96KHz. It is provided with Primary and Secondary (backup) Gigabit Ethernet ports for connection to the Dante network.

DMI-HYDRA 2

This card will provide 56 Input and 56 output channels at 48kHz with Primary and Secondary (backup) optical connections.

DMI-AVIOM

This card provides 16 output channels at 48kHz (with SRC) and Supports Aviom's proprietary A-Net Pro16 protocol. It has 1 CAT5E connection and faceplate DIP switched for Stereo output selection.

DMI-WAVES

This card will provide 64 input and 64 output channels at 48kHz or 96kHz to the SoundGrid™ Network with 2 CAT5E connections.

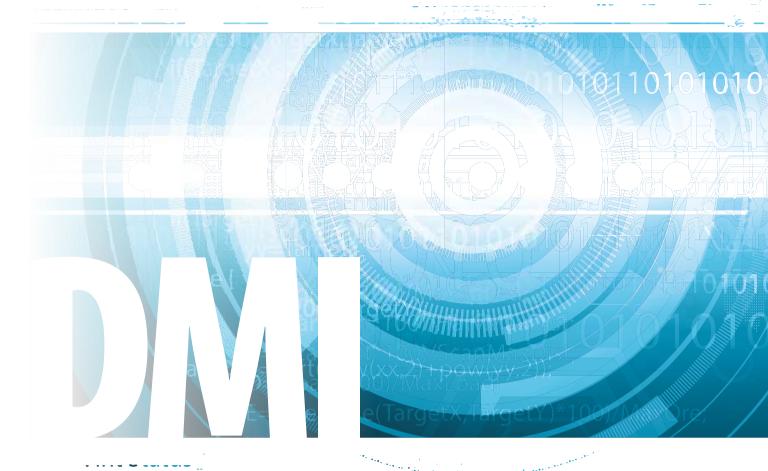














DMI-ADC





DMI-MADI-C

This card can be used to connect a Standard MADI stream (64 channels in and out) at 48KHz or 96KHz or an SD Series DiGiCo Rack with the appropriate connector-(D-Rack, D2-Rack, SD-Rack,

DMI-ADC

This card provides 16 analogue inputs on 2 x 25 way "D" connectors. The ADC card is a line card only. There is no microphone amplifier or pharitom power available. There is no gain control function for these inputs (only digital trim). Maximum input level +22dBu

DMI-DAC

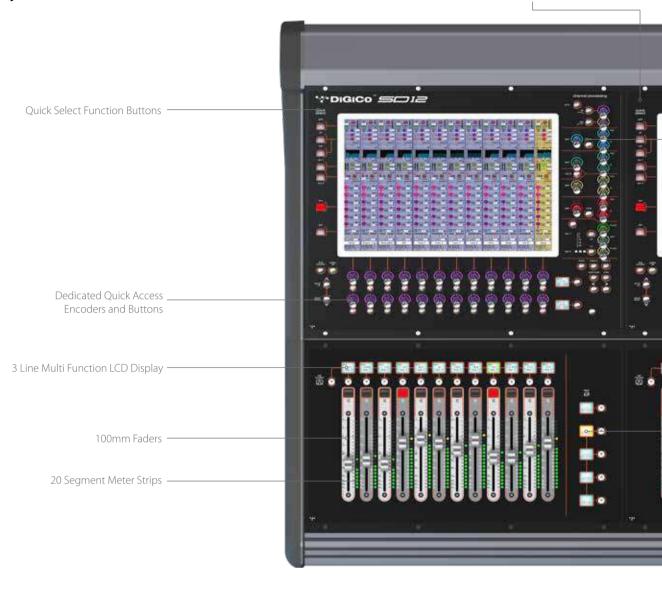
This card provides 16 analogue outputs on 2 x 25 way "D" connectors DAC card is line level only. Maximum output level +22dBu (Digital Full Scale)

DMI-AES

This card provides 16 Inputs (8 pairs) and 16 outputs (8 pairs) on 2 x 25 way "D" connectors. All AES inputs are provided with sample rate conversion (SRC) by default. All AES outputs are synchronised to the mixer system clock.

SD12 Layout

Quick Select Function Buttons











It's the perfect compact 96kHz'ready for the road' package.



The D2 hock is the latest in addition to the land so if his council rate race. The compact 9U D2-Rack has a fixed form a laß in the with 16 outputs fitted as standard. The output count can be increased to 32 by probating the 2 spare output slots with one or more of the 2 option most also standard or AES out or Aviom.

The 48 inputs can be specified as either 48 mic in or 24 mic/24 AES in.

As state large, there are 2 MADI Ports, available either as BNC or DiGiCo (CITSE connections that are available on the SD9 and SD11. There ports allow racke haring but ween any a two SD Series to isoles are quital splits for ecording. When unling at 90K, mede 2 pore combined ocreate a single high definition 96K MADI connection with no reduction in IO.

The D2-Rack has dual redundant power supplies as standard with LED indicators on the front panel.

The SD-Rack Style menu system allows for customises rack settings and the control and activation the D2-Rack's internal oscillator.



SD-Rack

The SD-Rack is the finest I/O rack available, capable of delivering up to 192kHz high resolution analogue I/O converters and multiple digital formats simultaneously, be it MADI, AES/EBU, Dante, AES-42, ADAT, or Aviom.

It's also based around the same Stealth FPGA technology present in the SD console engines, so it can run the optical loop at 96KHz, while providing a down-sampled 48KHz feed to the broadcast truck from one of the MADI output streams. This is industry-leading A/D conversion, and complete with DiGiCo's famous Gain Tracking™, all consoles benefit from +/-40dB of digital gain.

The gain can be set independently, on a channel-by-channel basis: once it's set, each of the consoles on the loop can then Gain Track their own mixes; and if you do need to tweak any analogue gain settings, each Gain Tracked channel will automatically compensate, ensuring your mix stays the same. And what's really cool is, any of those 5 consoles on the loop can then take control of an analogue gain should clipping occur, safe in the knowledge that everyone else's mix will be unaffected.

There are 14 slots on the SD-Rack, which amounts to 56 ins and outs, and it comes with or without optics. When running at 48kHz, the two MADI ins and outs provide 56 fully redundant input and output channels via a duplicate MADI aux; and if you need to run at 96kHz, you can get a full complement of 56 channels of MADI (in and out).

Each interface card is hot swappable, so the SD-Rack will automatically identify and configure each card for you; and because the power supplies are located at the top of the rack (also hot swappable, by the way), you won't find yourself battling through mountains of cable to get to them!





SD-Mini Rack

The SD-MINI is a 4U rack and can accept SD input and output cards, be they analogue or digital, including AES/EBU, Dante, AES-42, ADAT, HD-SDI and Aviom. Running purely digital, the MINI can run up to 32 ins and outs. Or if it's all analogue, you can have a maximum of 32 ins or outs or any combination in banks of 8 (8 in and 24 out for example). The MINI has MADI connectivity as standard, with optical as an option.

There is also the ability to run the rack at different sample rates and to convert the Gain Tracking[™] split outputs to other sample rates for compatibly with external devices.



SD-Nano Rack

At the smallest end of the spectrum is the SD-NANO Rack. This 2U stage box works almost exactly the same way as the MINI, except it is half the size and therefore can only handle half the amount of inputs and outputs. The NANO is only available with optical connectivity.



SD12 Specifications

Quick Reference	
Max no of Input Processing Channels	72
Maximum Buss Count	98***
Max aux / sub-group busses	36 (full processing**)
Matrix (in addition to aux / sub - group)	12 x 8 (full processing **)
Solo busses	2
Max no. of inputs - Non optic consoles	296
·	800
Max no. of inputs - 1 console on optic loop	
Max no. inputs - 2 consoles on optic loop	688
Local I/O spec	8x mic/line, 8x line outputs, 8x AES/EBU I/O (mono streams)
Max no. of outputs	800
Max no. of faders	26
Screen	2 x 15" touch
Ext. overview screen	Yes
I/O expandability	Yes
Insert points / channel	2
On Board FX	12
Graphic Eqs (32-Band)	16
Dynamic EQ	119
Buss 4-band Parametric EQ	Yes
Multiband Compression	119
DiGiTuBes	119
Multi-channels	Yes
VCA - style control groups	12
Set Spill	Yes
Mute Groups (part of control groups)	12
Reorder Busses	Yes
Multi-operator	Yes
Surround	Yes
MADI connectivity	2 x Ports
Optocore	Optional (Dual Loop)
Snapshot Offline	Yes
Snapshot Auto-Update	Yes
Sampling rates	48kHz / 96kHz
Signal processing	FPGA, up to 40-bit floating-point
Audio processing and OS location	Surface
Redundant Processing and Computer	Yes (Dual Surface)
Redundant PSU's	Yes
Stage Rack spec	Up to 56 in / 56 out / MADI split x2 (@ 48kHz) D2-Rack (42-32)
Max no of Racks	16. On 2 loops = 30
Rack Interface	MADI / Optocore
Connector type for racks	BNC / HMA optics / ST / OptiCON CAT5 (With Optional DMI Card
Rack sharing FOH/MON	Gain Tracking
Offline Software	Yes
Recording	Virtual Soundcheck up to 128 channels
DMI Slots	2
UB MADI (24 ch)	Yes
, ,	
Dimensions (mm) and Weight (kg)	1124(w) x 795(d) x 389(h) - 42Kgs
Dimensions (inches) and Weights (lbs)	44.25(w) x 31.30(d) x 15.32(h) - 93lbs

General Specifications				
Faders	26 x 100mm touch-sensitive, motorised			
Screens	2 x 15" LCD high - resolution touch screens			
Input Channels	72			
Busses	Up to 36 plus masters Aux / Group busses with full processing Mono / Stereo / LCR			
Matrix	Up to 12 Input / 8 Outputs with full processing			
Control Groups	Up to 12, selectable for VCA- style, Moving fader, Mute Group			
Graphic Eq	16 x 32-band, Gain +/- 12dB			
Internal FX	Up to 12 stereo effects comprising of reverbs and delay/chorus/pitch/enhancer			
Local I/O	8 x mic/line I/O, 8 x AES I/O			
MADI interface	2 Interfaces, BNC connectivity			
Optic interface	Optional			
Sampling rates	48kHz / 96kHz			
GPI/GPO	16			
Ext Sync	Wordclock, AES, MADI, Optics			
Physical	1124 mm (w) x 795mm (d) x			
Dimensions	389 mm (h)			
Weight	42Kg (82 Kg with flightcase)			
Power	90V-260V, 50-60Hz, 150VA			
Requirements	(140W)			

Audio Specification

Sample rate	96kHz / 48kHz
Processing delay	1ms Typical (channel, SD Rack input through L-R buss to stage output @96kHz)
Internal processing	Up to 40-bit, floating point A>D & D>A 24-bit Converter Bit Depth
Frequency response	+/- 0.6dB (20Hz - 20kHz)
THD	<0.05% @ unity gain,
	10dB input @ 1kHz
Channel Seperation	Better than 90dB (40Hz – 15kHz)
Residual output noise	<90dBu Typical (20Hz - 20kHz)
Microphone Input	Better than -126dB Equivalent Noise
Maximum Output Level	+22dBu
Maximum Input Level	+22dBu

^{***} Full Processing - Includes Delay, DiGiTuBe, HP/LP Filters, 4 or 8 Band EQ, Dynamics 1 and Dynamics 2.

*** Max Buss Count is calculated as Aux / Group Buss + Master Buss (LCR or 5.1 depending on product) + Matrix Buss + 2 Solo Busses (up to 5.1 depending on product)

Processing Channel Specification
Input Channel

Input Channel	
Name	User-defined / Presets
Channel Selection	Mono / Stereo / Multi
Input Routing	Main & Alternate Input
Analogue Gain	-20 to +60dB
Phase	Normal / Reverse
Digital Trim	-40 to +40dB
Delay	>1 sec (coarse & fine control)
DiGiTuBe	Drive 0.01 - 50.0 Bias 0 - 6
LPF	20 – 20kHz, 24dB / Oct
HPF	20 – 20kHz, 24dB / Oct
Insert A	(pre eq/dyn) On/off
Equalisation	4 band EQ: Parametric or Dynamic (low/lowshelf, lower-mid/ lowshelf, upper-mid/hishelf, hi/ hishelf) on/off Freq; 20 – 20kHz Gain; +/- 18dB Q: 0.1 -20 (parametric) / 0.10- 0.85 (shelf) Dynamic Eq on/off Over/under Band on/off Threshold; -60 – 0dB Attack; 500us – 100ms Release; 10ms – 10s Ratio; 1:1 – 50:1
Dynamics 1	Single or multiband (3-band)
Compressor	on / off Threshold; -60 – 0dB Attack; 500us – 100ms Release; 10ms – 10s Ratio; 1:1 – 50:1 Gain; 0 to +40dB with Autogain option Link; any channel / buss Hi crossover; 20Hz – 20kHz Lo crossover; 20Hz – 20kHz Knee : hard, med, soft
De-Esser	Threshold: 20us – 20ms Release: 1ms – 100ms Ratio: 1:1 – 50:1 Ess-band: Listen on/off Ess-band filter freq / width: 20Hz – 20kHz
Dynamics 2	on/off
Gate / Ducker	Threshold; -60 – 0dB Attack; 50us – 100ms Hold; 2ms – 2s Release; 5ms – 5s Range; 0 - 90dB Key; Any source Key listen Freq/width; 20 – 20kHz
Compressor	on / off Threshold; -60 – 0dB Attack; 500us – 100ms Release; 10ms – 10s Ratio; 1:1 – 50:1 Gain; 0 to +40dB with Autogain

option

	Link; any channel / buss Hi crossover; 20Hz – 20kHz Lo crossover; 20Hz – 20kHz s/c source : Any source
	s/c listen : on/off
	s/c filter freq / width: 20Hz – 20kHz
Insert B	(post eq/dyn) On/off
EQ/Dyn order	EQ/Dyn or Dyn/EQ
Mute	Channel mute / hard mute
Solo	Solo Buss 1 / Solo Buss 2 / Both, Auto solo
Channel Safe	Input, eq, dyn, aux, pan, fade/ mute, inserts, buss, directs, full safe
Output Routing	Buss, Insert A, Insert B, FX Direct: on/off, pre-mute / pre- fade / post-fade, level +/- 18dB
Fader	100mm motorised fader ∞ to +10dB

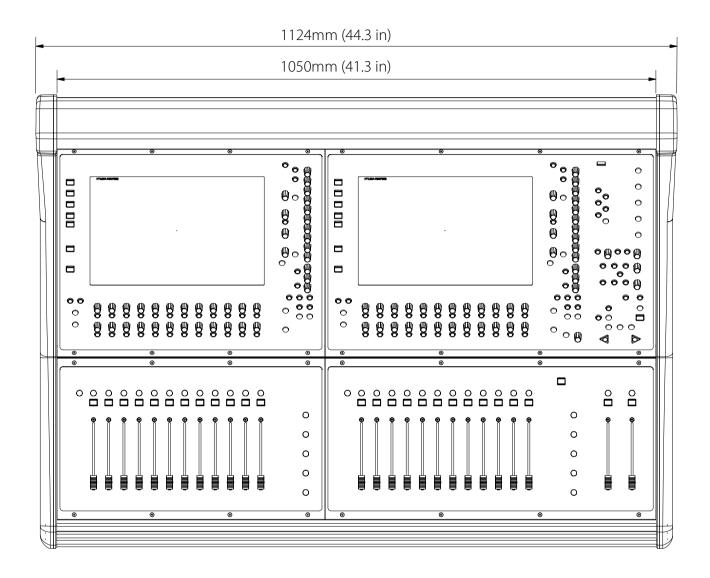
Processing Channel Specification Aux / Group / Matrix Output

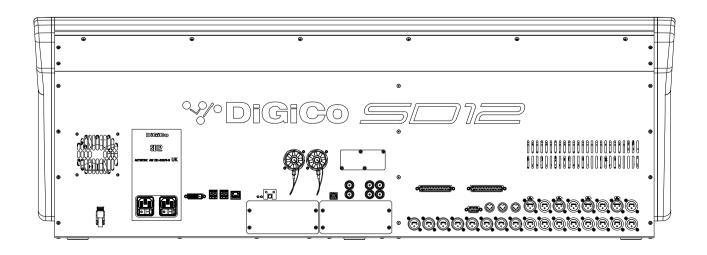
Name	User-defined / Presets		
Phase	Normal / Reverse		
Digital Trim	-20 to +60dB		
Delay	>1 sec (coarse & fine control)		
DiGiTuBe	Drive 0.01 - 50.0 Bias 0 - 6		
LPF	20 – 20kHz, 24dB / Oct		
HPF	20 – 20kHz, 24dB / Oct		
Insert A	(pre eq/dyn) On/off		
Equalisation	8 band EQ: Parametric or Dynamic 4 band EQ: Parametric Only (low/lowshelf, lower-mid/ lowshelf, upper-mid/hishelf, hi/ hishelf) on/off Freq; 20 – 20kHz Gain; +/- 18dB Q: 0.1 -20 (parametric) / 0.10- 0.85 (shelf) Dynamic Eq on/off Over/under Band on/off Threshold; -60 – 0dB Attack; 500us – 100ms Release; 10ms – 10s Ratio; 1:1 – 50:1		
Dynamics 1 Compressor	Single or multiband (3-band) on / off Threshold; -60 – 0dB Attack; 500us – 100ms Release; 10ms – 10s Ratio; 1:1 – 50:1 Gain; 0 to +40dB with Autogain option Link; any channel / buss Hi crossover; 20Hz – 20kHz Lo crossover; 20Hz – 20kHz		

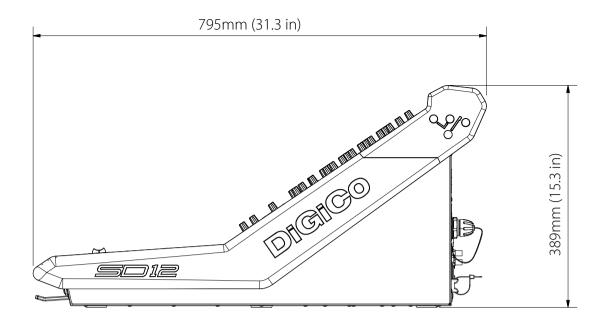
Knee: hard, med, soft

De-Esser	Threshold: 20us – 20ms Release: 1ms – 100ms Ratio: 1:1 – 50:1 Ess-band: Listen on/off Ess-band filter freq / width: 20Hz – 20kHz
Dynamics 2	on/off
Gate / Ducker	Threshold; -60 – 0dB Attack; 50us – 100ms Hold; 2ms – 2s Release; 5ms – 5s Range; 0 - 90dB Key; Any source Key listen Freq/width; 20 – 20kHz
Compressor	on / off Threshold; -60 – 0dB Attack; 500us – 100ms Release; 10ms – 10s Ratio; 1:1 – 50:1 Gain; 0 to +40dB with Autogain option Link; any channel / buss Hi crossover; 20Hz – 20kHz Lo crossover; 20Hz – 20kHz s/c source : Any source
	s/c listen : on/off
	s/c filter freq / width: 20Hz – 20kHz
Insert B	(post eq/dyn) On/off
EQ/Dyn order	EQ/Dyn or Dyn/EQ
Mute	Channel mute / hard mute
Solo	Solo Buss 1 / Solo Buss 2 / Both, Auto solo
Channel Safe	trim, eq, dyn, fade/mute, inserts, outputs, full safe
Output Routing	Outputs, Insert A, Insert B, FX
Fader	100mm motorised fader ∞ to + 10dB

SD12 Line Drawings







Dimensions

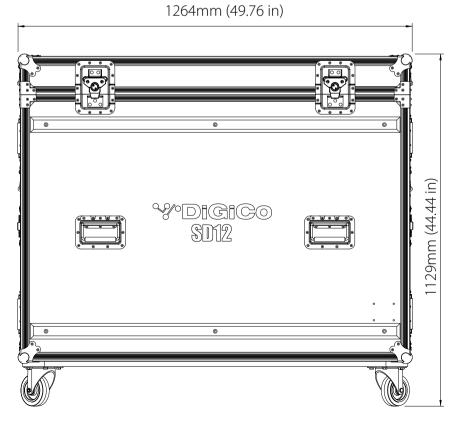
W 1124mm x D 795mm x H 389mm, 44.25" x 31.30" x 15.32" Weight 42kg/93lb

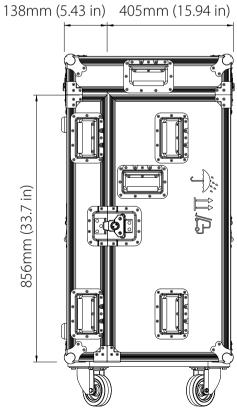
Dimensions inc Flightcase

W 1264mm x H 1129mm x D 542mm, 49.76" x 33.7" x 21.33" Weight inc Flightcase 82kg/181lb

Dimensions inc Cardboard Box

W 1250mm x D 920mm x H 550mm, 49.21" x 36.22" x 21.65" Weight 55kg/121.25lb





Product Comparison







	-	-			
	SD7/SD7B/SD7T	SD5/SD5B	SD5cs	SD10/SD10B/SD10T	
Max no of Input Processing Channels	253	253	132	132	
Max aux / sub-group busses	128 (full processing**) (inc 2x solo buss)	128 (full processing**) (inc 2x solo buss)	56 (full processing**)	56 (full processing**)	
Surround	Yes	Yes	Yes	Yes	
Matrix (in addition to aux / sub - group)	32 x 32 (full processing**)	24 x 24 (full processing**)	24 x 24 (full processing**)	24 x 24 (full processing**)	
Solo busses	2	2	2	2	
Max no. of inputs - Non optic consoles	N/A	N/A	272	144	
Max no. of inputs - 1 console on single	784	776	N/A	648	
optic loop					
Local I/O spec	12x mic/line, 12x line outputs, 12x AES/EBU I/O (mono streams)	8x mic/line, 8x line outputs, 8x AES/EBU I/O (mono streams)	8x mic/line, 8x line outputs, 8x AES/EBU I/O (mono streams)	8x mic/line, 8x line outputs, 8x AES/EBU I/O (mono streams)	
Max no. of outputs	784	776	272	648 (Non Optics)	
Max no. of faders	52 (plus 48 if used with 2 x EX007)	37	37	37	
Screen	3 x 15" touch	3 x 15" touch	3 x 15" touch	1x 15" touch	
Ext. overview screen	Yes	Yes	Yes	Yes	
I/O expandability	Yes	Yes	Yes	Yes	
Insert points / channel	2	2	2	2	
On Board FX	48	48	24	24	
Graphic Eqs (32-Band)	32	32	24	24	
Dynamic EQ	253	253	218	218	
Buss 8-band Parametric EQ	Yes	Yes	Yes	Yes	
Multiband Compression	253	253	218	218	
DiGiTuBes	253	253	218	218	
Multi-channels	Yes	Yes	Yes	Yes	
VCA - style control groups	36	36	24	24	
Set Spill	Yes	Yes	Yes	Yes	
Mute Groups (part of control groups)	36	36	24	24	
Reorder Busses	Yes	Yes	Yes	Yes	
Multi-operator	Yes	Yes	Yes	By remote only	
MADI connectivity	4x Redundant ports	4x Redundant ports	4x Redundant ports	2x Redundant ports	
Optocore	Yes (including dual loop)	Yes (including dual loop)	N/A	Optional	
Snapshot Offline	Yes	Yes	Yes	Yes	
Snapshot Auto-Update	Yes	Yes	Yes	Yes	
Sampling rates	48 / 96 kHz	48 / 96 kHz	48 / 96 kHz	48 / 96 kHz	
Signal processing	FPGA, up to 40-bit floating-point	FPGA, up to 40-bit floating-point	FPGA, up to 40-bit floating-point	FPGA, up to 40-bit floating-point	
Audio processing and OS location	Surface	Surface	Surface	Surface	
Redundant Processing and Computer	Standard	Yes (Dual Surface)	Yes (Dual Surface)	Yes (Dual Surface)	
Redundant PSU's	Yes	Yes	Yes	Yes	
Stage Rack spec	Up to 56 in / 56 out / MADI split x2 (@ 48kHz)	Up to 56 in / 56 out / MADI split x2 (@ 48kHz)	Up to 56 in / 56 out / MADI split x2 (@ 48kHz)	Up to 56 in / 56 out / MADI split x2 (@ 48kHz)	
Max no of Racks	18. On 2 loops = 32	18. On 2 loops = 32	4	16	
Rack Interface	MADI / Optocore	MADI / Optocore	MADI / Optocore	MADI / Optocore (option)	
Connector type for racks	BNC / HMA optics / ST / Opticalcon	BNC / HMA optics / ST / Opticalcon	BNC / HMA optics / ST / Opticalcon	BNC / HMA optics / ST / Opticalcon (option)	
Rack sharing FOH/MON	Gain Tracking™	Gain Tracking™	Gain Tracking™	Gain Tracking™	
Offline Software	Yes	Yes	Yes	Yes	
Recording	Virtual Soundcheck up to 256	Virtual Soundcheck up to 256	Virtual Soundcheck up to 256	Virtual Soundcheck up to 128	
-	channels	channels	channels	channels	
DMI Slots	0 No	0 No	0 No	0 No	
UB MADI (24ch)	No	No	No	No	
Dimensions (mm) and Weight (kg)	1496(w) x 875(d) x 503(h) - 107Kgs	1465(w) x 838(d) x 458(h) - 116Kgs	1465(w) x 838(d) x 458(h) - 116Kgs	1398/*982(w) x 818(d) x 285(h) - 60/*52Kgs	
Dimensions (inches) and Weights (lbs)	58.9(w) x 34.45(d) x 19.8(h) 236lbs	57.67(w) x 32.99(d) x 18.03(h) - 256lbs	57.67(w) x 32.99(d) x 18.03(h) - 256lbs	55/*38.66(w) x 32.2(d) x 11.22(h) - 133/*114lbs	

^{*} Smaller frame size weights and dimensions
** Full Processing - Includes Delay, DiGiTuBe, HP/LP Filters, 4 or 8 Band EQ, Dynamics 1 and Dynamics 2.











		the same of the sa	
SD12	SD8	SD9/SD9B/SD9T	SD11/SD11i/SD11B
72	120	96	48/80/80
36 (full processing)	48 (full processing**)	48 (full processing**)	24 (full processing**)
No	Yes	No/Yes/No	No/No/Yes
12 x 8 (full processing)	16 x 16 (full processing**)	12 x 8 (full processing**)	8 x 8 / 12 x 8 / 12 x 8 (full processing**)
2	2	2	2
296	144	204	146
800	648	708	650
8x mic/line, 8x line outputs, 8x AES/EBU I/O (mono streams)	8x mic/line, 8x line outputs, 8x AES/EBU I/O (mono streams)	8x mic/line, 8x line outputs , 4x AES/EBU I/O (mono streams)	16x mic/line inputs, 8x line outputs, 2x AES/ EBU I/O (mono streams)
800	648	708	138 (Non Optics)
26	37	24	12
2 x 15" touch	1 x 15" touch	1x 15" touch	1x 15" touch
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
2	2	1	1
12	16	12	6/8/8
16	24	16	12
119	190	155/158/155	83/115/118
No (4 band only)	No (4 band only)	No (4 band only)	No (4 band only)
119	190	155/158/155	83/ 115/118
119	190	155/158/155	83/115/118
Yes	Yes	Yes	Yes
12	24	12	8
Yes	Yes	Yes	Yes
12	24	12	8
Yes	Yes	Yes	Yes
Yes	By remote only	By remote only	By remote only
2x Port	2x Redundant ports	1x Port	1x Port
Optional (dual loop)	Optional	Optional	Optional
Yes	Yes	Yes	Yes
Yes	Yes 40 (OC IIII)	Yes	Yes
48 / 96kHz	48 / 96 kHz	48 / 96 kHz	48 / 96 kHz
FPGA, up to 40-bit floating-point	FPGA, up to 40-bit floating-point	FPGA, up to 40-bit floating-point	FPGA, up to 40-bit floating-point
Surface	Surface	Surface	Surface
Yes (Dual Surface)	Yes (Dual Surface)	Yes (Dual Surface)	Yes (Dual Surface)
Yes	Yes	Yes - Option	Yes - by remote PSU option only
up to 56 in / 56 out / MADI split x 2 (@48kHz). D2-Rack (48 - 32)	Up to 56 in / 56 out / MADI split x2 (@ 48kHz) D2-Rack (48 - 32)	D-Rack (32 - 16) - D2-Rack (48 - 32) - SD-Rack (56-56)	D-Rack (32 - 16) - D2-Rack (48 - 32) - SD-Rack (56-56)
16. On 2 loops = 30	16	17	16
MADI / Optocore	MADI / Optocore (option)	MADI / RJ45 CAT5E / Optocore (option)	MADI / RJ45 CAT5E / Optocore (option)
BNC / HMA Optics / ST / OpticalCON / CAT5 (with optional DMI card)	BNC / HMA optics / ST / Opticalcon (option)	BNC / CAT5E / HMA optics / ST / Opticalcon (option)	BNC / CAT5E / HMA optics / ST / Opticalcon (option)
Gain Tracking™	Gain Tracking [™]	Gain Tracking [™]	Gain Tracking [™]
Yes	Yes	Yes	Yes
Virtual Soundcheck up to 128 channels	Virtual Soundcheck up to 128 channels	Virtual Soundcheck up to 64 channels	Virtual Soundcheck up to 64 channels
2 Yes	0 No	0 No	0 No
1124(w) x 795(d) x 389(h) - 42Kgs	1347/*923.5(w) x 811.3(d) x 254(h) -	878(w) x 785(d) x 258(h) - 36Kgs	496.8/483(w) x 638.7/577(d) x 253/232(h)
44.25(w) v 21.20(d) v 15.22(b) 0.21b-	71/*50Kgs	24 50(w) v 20 04/d) v 10 15/h) 00/h-	- 24Kgs
44.25(w) x 31.30(d) x 15.32(h) - 93lbs	53.03/*36.35(w) x 31.94(d) x 10(h) - 157/*111.23lbs	34.59(w) x 30.94(d) x 10.15(h) - 80lbs	19.6/19.1(w) x 25.1/22.7(d) x 10/9.14(h) - 53lbs

^{***} Max Buss Count is calculated as Aux / Group Buss + Master Buss (LCR or 5.1 depending on product) + Matrix Buss + 2 Solo Busses (up to 5.1 depending on product)







Concert Sound

DiGiCo's digital evolution really began with the release of the D5 Live – a breakthrough console that turned the pro-audio world on its head, and raised eyebrows across the industry. A super-powerful and slick piece of kit, with a massive feature set, which would set the standard for years to come.

Fast-forward 5 years, and the first of the SD Series was born – another real trend setter, combining a quick and intuitive user interface, and sonic capabilities that are still yet to be beaten. Each console in the range



Broadcast

retains that classic analogue feel, with the ultimate in digital processing.

The SD Series raised the bar in many ways: not only in terms of power and flexibility, but creativity; never before had engineers experienced Super FPGA technology, which allowed for massive I/O capabilities, and the ultimate dynamic toolbox, easily accessible at the press of a button or via the touch screen.

From the rackmount SD11, all the way up to the flagship SD7, and everything in between, there is an SD



Permanent Install

console suited to every possible audio application - and they all pack a similar punch. Be it a bar or club gig, a stadium world tour, or a massive broadcast event such as The Grammys or The Oscars, the SD Series is so often the go-to.

In 2015, DiGiCo launched the S Series: S21 and S31, which brought serious power in a super-small package; and in 2016, Stealth Core 2 software multiplied the power of the SD Range.

Now, in 2017, DiGiCo has released the SD12; it's a



Houses of Worship

small footprint, powerful, and highly advanced console, with all the functionality and processing power you'd expect from an SD console, but at an unbelievable





Musical Theatre

touchscreens, that familiar DiGiCo workflow, and advanced connectivity. As always, DiGiCo looks into the future to keep all users one step ahead.





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