

Audio on board - nexgentec DSP and SDM magic



Many solutions used on board of superyachts and in private residences use DSP's or Digital Signal Processors for the routing and control of audio and its functionality, but what exactly is so special about the nexgentec solution?

All Sources in all Zones

For most of the larger superyachts it is common that on the technical specifications for entertainment it is stated 'all sources in all zones'. This means that all audio sources, such as Spotify, for example, are available in every cabin and on every deck. Traditionally, there were big matrix switches (on large yachts 4-5 of them even filling a space the size of a crew cabin) that routed each source to every zone. The problem was, once it was full, it became a big space issue if you wanted to add or change any sources, since you needed to add another large matrix switch.

Today, DSP's are commonly used to do the job of the matrix switch. The advantages are that these are fully digital, so the sound quality is much better and that they are a lot smaller (1 RU or rack unit). This makes adding or changing sources or zones a lot easier, so the system has a lot more flexibility. Nevertheless, certain tasks are allocated to a particular DSP, so if something does need to be changed or added, it is often necessary to reprogram many different DSP's. Therefore, when designing such a system, the engineer needs to spend a lot of time in thinking ahead what may change or be added where, during the next refit, in order to facilitate future changes.

Save more than 65%
of space on
audio-visual solutions

- NO MATRIX SWITCH • NO AVR'S • LESS CABLING
- EASIER INSTALLATION • MATRIX IN THE SOFTWARE
- MINIATURE HARDWARE • FIBRE-OPTIC CABLING
- AMAZING FEATURES & FUNCTIONS IN THE SOFTWARE



Software Defined Matrix – SDM

Just one year ago, at METSTRADE 2019, nexgentec released their SDM or Software Defined Matrix. Thanks to this small but revolutionary device, that manages the source – zone switching via the DSP's, the 'matrix' information now is available 'virtually', so it can be routed to any DSP at any time. This means adding or changing source or zone information can be done quickly in a linear fashion and it also means that the system design can be done faster, since it is reduced to making a list of sources and zones and programming this into the SDM software, where any changes can be made easily always.



Another important advantage of the SDM is that it has incorporated syslog features, meaning that if there is ever anything wrong with a part of the audio entertainment system, the ETO gets notified immediately and can fix the issue before it even gets noticed by the users. Besides that, it gives options for remote access, so if the ETO needs help from other professionals, such as the integrator who installed the system on board, he can grant them access to the DSP system and they can start to help him solve any issue immediately without even going on board. This can also be an added value, for example, if there is an unexpected party on board and any DJ equipment needs to be connected electronically to the on-board sound system by the integrator.

DSP Functionality versus AVR 'issues'

But the DSP's do a lot more than just routing sources to zones. All pre- and postprocessing features and functions can be programmed in, such as bass management, ramps to turn on and off and mute, EQ-ing, etc. Going back to the very recent 'old days', there was an AVR in most cabins, that was in charge of these features and functions. One of the downsides, besides using up a lot of space in the cabin (about 3 shoe boxes) and needing cooling equipment to keep it from overheating, was that the functionality depended on the type of AVR used. Of course, if it would break down 2 years later it was not possible to get exactly the same model again and the functionality was typically 'improved' with the newer model. Similarly, with these devices you would commonly have different functionality in different cabins on board, since it was AVR-dependent and different AVR's were being used. So there was no unity in functionality from one cabin to another, a bit user unfriendly, especially for charter guests.

With everything programmed into the software, the DSP solution, besides saving space and needing a lot less cooling, solves these 'issues' and makes it possible to have the same or different functionality, as required, for every zone on board, regardless of the other sound equipment used in each cabin.

DSP 'Magic'

As we have seen, the DSP solution, in general, is a lot better than the matrix and the AVR solutions, especially together with the nexgentec SDM, but what is so special about the nexgentec DSP functionality?

On behalf of their clients, the integrators, nexgentec has programmed all features and functions into the DSP software that has been used on some of the largest superyachts. Thanks to feedback of the end-users it has been refined over the last 5 years, into the smallest details, to make source switching as smooth as possible, to provide a great, rich sound on any volume and for any type of music and further to be easily customisable by the integrator to the tastes of any end-user.

Indeed, nexgentec, with its high care to detail, has used its specialist audiophile programmers to make sure any sound coming out of the speakers of its end-clients is as magical sounding as the yacht or residence that they are set in. Using the nexgentec DSP software super modules guarantees the end-user with the best high-end audio functionality in every zone and gives the integrator the peace of mind that it's clients will have the best quality and the highest flexibility while being very robust.



More Software, less Hardware - Robust and Sustainable

This last advantage is thanks to nexgentec's quest to replace as much hardware as possible by software. With almost zero risk of failure, no need to have spare software on board and access from anywhere in the world, if granted by the local integrator or ETO, this is the way to go in 2020. Especially since it has no waste, consumes a lot less energy and uses less space. All ways to make the pleasant experience not only more robust but also more sustainable.

For further information please contact us via: enquiries@nexgentec.eu