PRODUCT STUDY

Don’t just take our word for it...

Products: DM88

Introduction – From Everything, Everywhere, All at Once to Engineer’s Toolbox

You already know how flexible and capable the DM88 is, and how good it sounds. What’s more useful is a closer look at how engineers, installers and users have been putting it to work. It has been something of an eye-opener, changing — and expanding — the way we talk about it.



Part of the original launch campaign advertising...

The DM88 was initially focused on the connectivity and flexibility with the "Everything, Everywhere, All at Once" tagline, but we soon discovered that it was being used in such a wide range of scenarios that we were able to build a picture of real-world use which changed the slant to the "Engineer's Toolbox" as it's been included in live and install cases in situations we will look into in this study.



This year’s focus shifts as seen before InfoComm26.

Let’s look at just how the DM88 has been included in systems over the past 12 months and how they highlight the nature of the beast...

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MAIN SYSTEM EQ

Main System EQ

Ahead of the desk, and in both live and install cases, the DM88 has become the system EQ given to visiting engineers that ensures the speaker management (more on that later) can be separated and kept safe from tampering(!).



The historic 02 Academy – built in 1885 as the Coliseum concert hall & theatre.

At the 02 Academy in Leeds, the DM88 handled both system management (speaker processing) and access was given to the input EQ across linked pairs of channels for visiting engineers to "tune" according to their preferences. This "tuning" could then be removed (a highly granular preset system allows individual channels' EQ to be recalled with a simple reset each day (which can be triggered automatically via a VR2).

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George Puttock, Technical Manager at Adlib Audio who were responsible for the system upgrade had this to say:

> "...There are some slight broad-brush stroke EQ's in there too, but they're the more 'subjective' ones on the system (only a couple) based on taste. The 'scientific' filters / calibration resides in the amps, theory being these gains / times in the amps are 'set' and forgotten about, then the DM88 presents a blank canvas to visiting engineers, to allow them to make other changes."



Main rack with DM88 and one of several VR2 Venue Remotes for easy system reset.

> "Giving engineers the ability to tweak the house sound to their taste in D-Net but giving the venue the ability to clear this out after each show prevents "file creep" which can be an "infection that often plagues venues with parameters accessible to all!"

The full case study about this is here:
[Case Study: O2 Academy, Leeds UK – NST Audio]

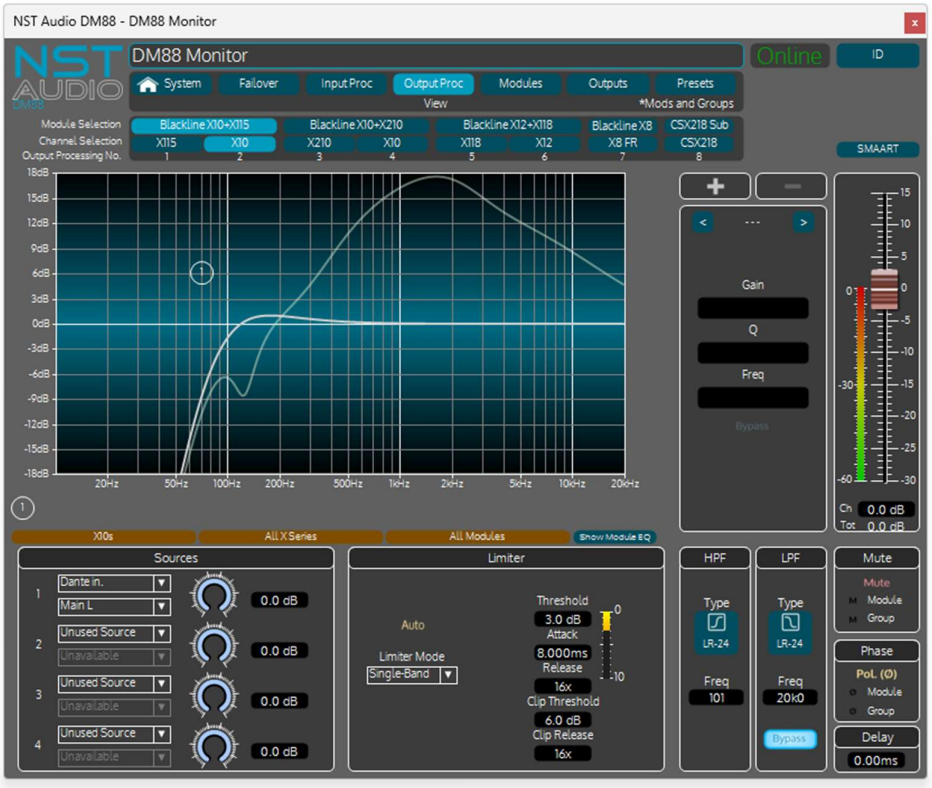
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Speaker Management

As with our other processors, a core feature is loudspeaker management - so crossovers, alignment delays, protective limiters, FIR processing. With 8 DSP channels that feature a dedicated feature set for this purpose, the DM88 can easily perform this role.

To facilitate this further, the DM88 includes two new workflow additions - grouping and modules. Modules allow users to quickly pick (or create themselves!) a speaker box (or system) from a library and apply it to a set of outputs, instantly configuring them with the required processing for that cabinet. D-Net makes this process simple, and the introduction of modules (instead of presets) is also backwards compatible with all other processors (they have access to the library too).



DM88 loaded with several speaker modules and configured with groups.

Modules are also filtered according to the older processors' capabilities - worth knowing. Modules loaded into DM88s also introduce the grouping abilities of the processor. Modules (thinking of them as speaker cabs) can be grouped in D-Net and additional layers of EQ, delay and gain added to them, allowing engineers to create incredibly system-specific tuning, depending on loudspeaker deployment, above and beyond what the manufacturer has specified for the box tuning. This could be as basic as an overall gain control for the main system and one for delays/fills in a live situation, or as complex as removal or delay shading in large arrays.

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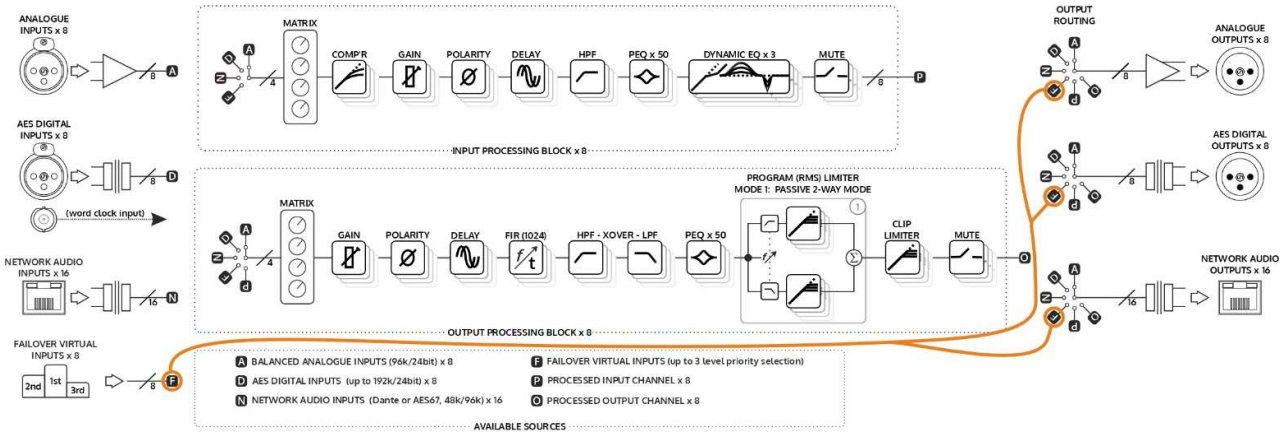
In System View, we can add groups, add links and see all modules and inputs (DM88 only at time of writing).

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Format Conversion

With all 32 inputs and outputs live all the time (8 analogue, 8 AES, 16 Dante), it's entirely possible to route signals from in to out without going through unnecessary processing just to get, perhaps, some analogue inputs onto the Dante network, or create some AES backups of other outputs.



Don't waste processing if all you need to do is format convert...

Include the failover system in this mix, and the DM88 can not only function as the highest performance IO, but also as a means of swapping between audio formats. At the Neushoorn music venue and rehearsal rooms in the Netherlands, it was performing this role (as well as system EQ!) ahead of an immersive sound processor for the multi-channel install.

Ted Beets of More AV, who helped design and commission the system explained how it was a key component of the installation upgrade:

> "In 'normal mode' a desk sends AES3 to the DM88 over one of the inputs. I love the DM88 because maybe the opener is AES and the main act can have a separate AES line, or analogue, whatever they feel like, and the big original system is fed Dante from the DM88. Some extra analogue outputs are handled by the DM88 and we are also working on making analogue desks able to feed the Holophonix processor over Dante via the DM88's analogue inputs."

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DM88 working in conjunction with the immersive processing.

"[With a requirement for] redundant Dante networks, analogue backup, I insisted on using a DM88 as the universal translator for the system."

More on that here:
Immersive Sound Upgrade for Neushoorn – NST Audio

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CONSOLE SWITCHING

Console Switching

With the killer combination of input flexibility, routing capabilities and the memory granularity, it's simple to use the DM88 for switching between desks. This was part of its remit in Leeds at the O2 Academy (see above). It was also configured with some specific presets that just swapped the input routing that fed the system (which can also be used in conjunction with the failover system).





A VR2 installed for easy stage-side console switching.

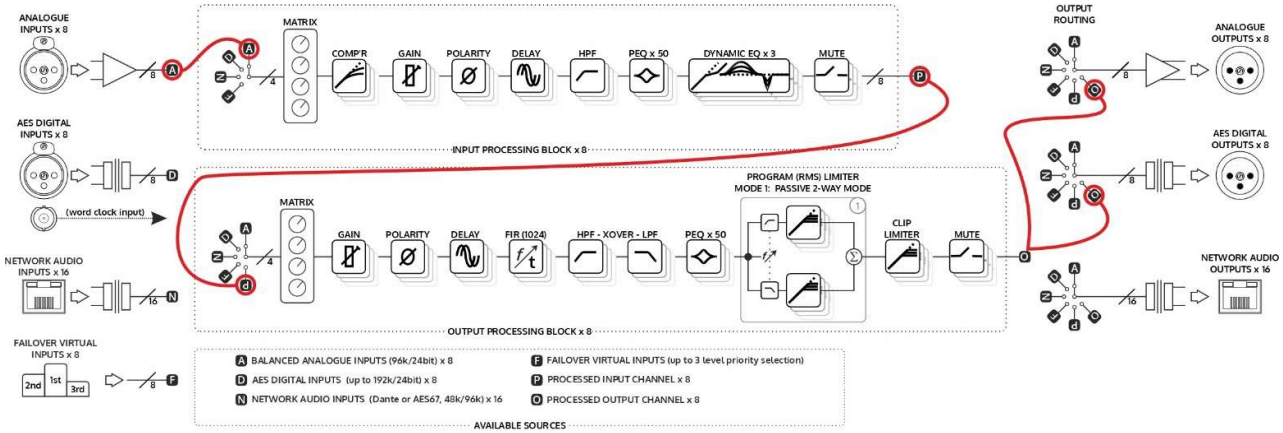
A couple of basic presets were created and assigned to a specific VR2 for swapping between desks with no-one needing access to software or the DM88 itself. Simple, safe and quick. George from Adlib was keen to mention the remotes' use with the DM88:

> "The integration of how the VR2 & VR1 work in the ecosystem is perfect, simple enough to do things quickly, complicated enough to get to the real nuts-and-bolts. Makes for a very quick setup!"

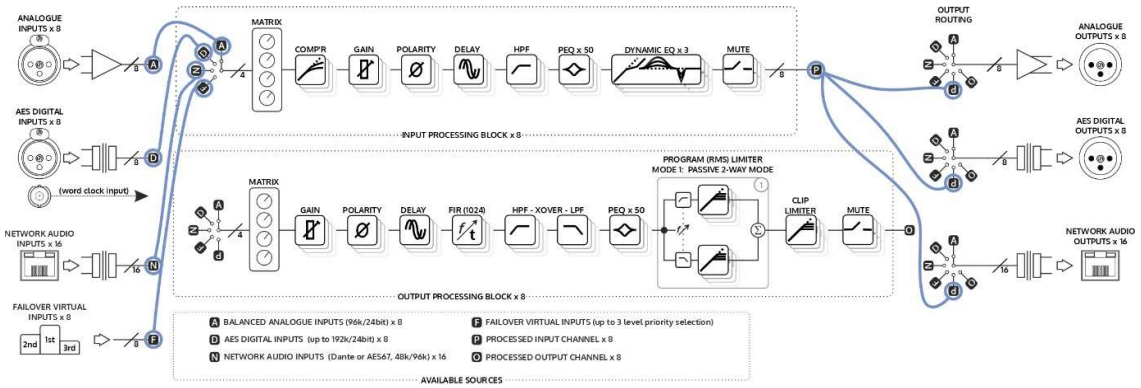
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Matrix and Routing

Whilst we've explained how flexible and powerful the routing aspects of the processor can be, the matrix mixing capabilities should not be overlooked. The matrix implementation is a departure from previous products as it's not limited by fixed architecture DSP paths in the same way...



Use the DM88 like any other processor...input – processing – output or...



...mix up to 4 inputs of any type and only use input processing or anything in between!

Now you can choose to mix up to four inputs on a mini-matrix on every input processing channel, and every output processing channel. This approach allows the input DSP channels (system EQ, DEQ compressor) and output DSP channels (speaker EQ, FIR, limiters etc.) to operate entirely independently. For example, a stereo 4 way system would only really need to use 2 channels of input processing, allowing the other 6 to maybe process analogue sources that were just fed back on the Dante network.

That preset granularity comes into its own again here - you can create a preset that might only change the source and mix matrix level of an individual channel, thereby making all inputs fully accessible to every input and output processing block.

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The recently completed install at The Trafalgar in London made good use of the routing and matrixing capabilities in a mainly active system. A single DM88 handled all signal sources, routing, system EQ, zone control and speaker management for subs.



The Trafalgar on the King's Road in Chelsea, London

David Gammon, CEO of Audio Architects who specified the system in this high-end install, had this to add:

> "The DM88 has become my go-to for any install that needs flexibility, easy control, and exceptional audio performance. It's so adaptable and capable that, used in conjunction with the Venue Remotes, it's perfect in many applications. Plus, D-Net [our software platform, for PC, Mac and iPad] is easy to pick up and yet still very powerful; even if I am not using it every day, I can get straight back into it quickly and I really appreciate that."

More on that here:

Hi-Fi Performance at the Trafalgar – NST Audio

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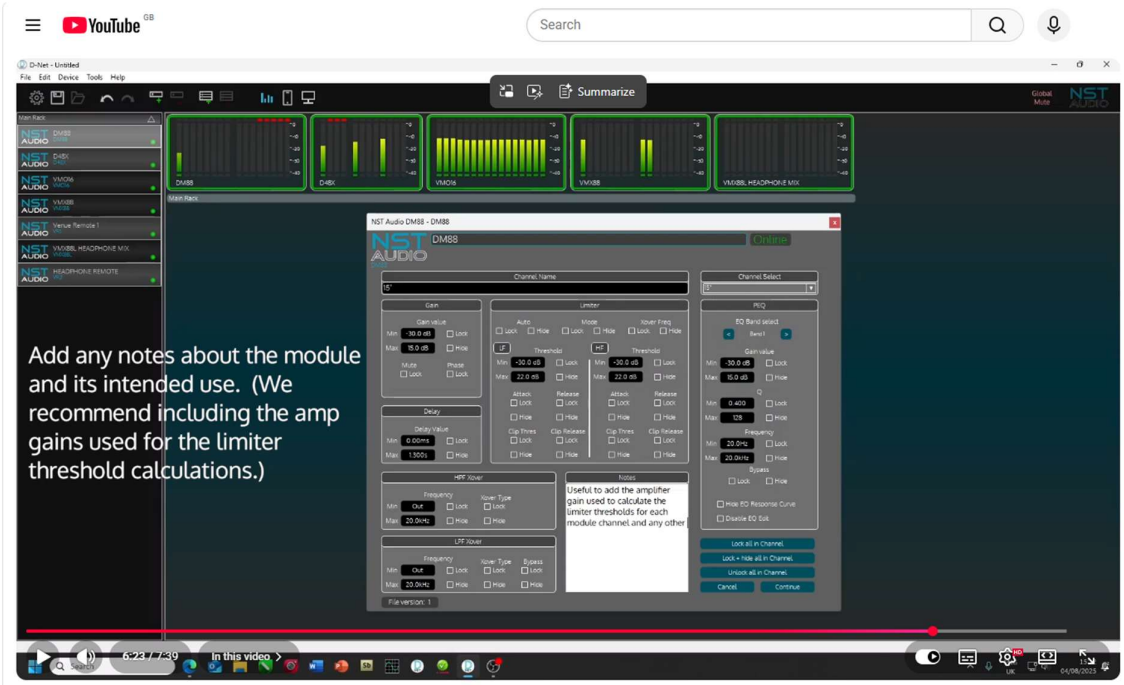
Side Note: Integration with FFA Amplifiers & Workflow Enhancements for Engineers.

Whilst FFA have their own version of D-Net (Fatware) - all their DSP enabled amps, plus the current F-IF48X, and the new Tour 1 amp (with DM88 level DSP) , all appear in standard D-Net and, looking forward to the Tour1, will integrate seamlessly via iPad, mac and PC, along with all remotes and including V-Remote for iPhone.

What does this mean for engineers?

A single application that supports current and future FFA products, and opens up the possibilities of system wide EQ, speaker grouping and tuning (when Tour1 is available or before that, using DM88s). It's worth noting that the DM88 is used as the design tool for creating engineer's own bespoke speaker or system modules (up to 6-way!) which can then be used with FFA DSP amps (not just Tour1). You can do this without owning a DM88 - just add one offline and start making modules.

As the module creation workflow recently received a shot in the arm in D-Net 3.4, we created a newer version of the module creation process which is on the YT channel here:



DM88 Creating Modules (D-Net 3.4 update)

DM88 Creating Modules (D-Net 3.4 update)

It's also worth noting the new multiverse capabilities of D-Net which can now be used simultaneously on all three platforms (and iPhone). This allows engineers to set up the main system on a large screen device (PC/Mac) and then roam about to tune via an iPad, safe in the knowledge that all updates applied on any instance of D-Net or Fatware will be syncing in real time.

[ENDS]

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