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MA Lighting grandMA3 Console

By: Rob Halliday

MA Lighting's grandMA3.

Think of it, if you like, as a fascinating, slow-motion boxing match between two closely matched protagonists. Each has slightly different strengths, slightly different weaknesses, but each also pays attention to the other, studies their strengths, learns from them, adapts their game accordingly. Neither ever really wins, but perhaps their strength comes from not winning, just from having such a worthy opponent. It is the fight of the century in lighting control land. It is (fanfare please!) Eos versus grandMA...

Consider this part two of a profile of these opponents: In the December 2022 issue, we looked at ETC's latest generation of Eos hardware and software, to which the company decided to append an extra name—Apex. Now it's time to take a look at the latest generation of the grandMA range from Michael Adenau's MA Lighting. The company has opted for a simpler, more self-explanatory and (very much in the style of the console's entire operating philosophy) rather more logical name: incrementing the number on the end to get grandMA3.

Launched to the world in 2018, the grandMA3 has had—I think even MA itself would admit—a somewhat difficult birth. MA has always taken the long view of lighting control: not what would be needed next week, but what would be needed in four years' time—for the next Olympic Games opening ceremony, say. It's an approach that has served the company well, both on the system/hardware side (grandMAs have long had the ability to add extra external processing boxes to scale your system to cope with really big shows, which has been invaluable with the exponential rise in control counts brought by LED pixels) and on the software side (there was a pixel mapper to deal with those pixels all the way back in grandMA1). To achieve that, MA takes a different approach from ETC, which launches new hardware but evolves the same software gently on top of that. MA effectively throws everything away and starts again...

It's a brave choice, the second time the company has made it—the grandMA1-to-grandMA2 transition followed the same route. Like the last time, the new software didn't feel at all ready when the new hardware launched—to the extent where you wonder if MA's hand was forced, perhaps no longer able to make the older hardware. And like the last time, the fallback plan was to let the new hardware run the previous software. Turns out grandMA3 hardware makes a very good physical grandMA2 platform, perhaps better than the actual MA2 consoles!

What didn't help is that the entire entertainment industry then shut down due to COVID. If there's one certainty in lighting life, it's that lighting control systems only really evolve and improve when people are using them for real, identifying what needs to be fixed, improved, or reinvented. Programming a hypothetical show at home on a visualizer is somehow never quite the same.

Curiously, what MA hasn't provided is a way of taking an MA3 showfile and loading it into MA2 software, which might have encouraged people to try the MA3 software sooner. And while MA3 will import MA2 showfiles, the results often have quirks. Consequently, it's only over the last year or so that real people doing real shows have started venturing into the new software that the new hardware they've had for a while was always intended to run.

Hardware

grandMA3 is clearly new, but it's also clearly related to—an evolution of—the grandMA2 hardware, which was, in turn, an evolution of the grandMA1 hardware, which was, I believe, the first to use a control surface layout with motorized faders to the left, keys and encoders to the right, then an adjustable angled panel behind it, containing a number of colored LCD touch screens. This is now pretty much the standard for lighting controls, and for a number of sound desks, too. The big change here is that the MA3 sits much lower on a table than MA2, which had quite a tall box housing the electronics underneath it. It also continues the draining away of color from MA hardware, from the light grey of the 1 to the dark grey of the 2 to the almost jet black of the 3. That bright yellow trackball on the MA1 and 2 which gave a pop of color? Gone.

On the lower panel, MA has retained the layout that has the main numeric keypad/command area set at extreme right on the console. Those of us who like to center themselves on the keypad, like a piano player finding middle C, find this position a bit strange; I've always suspected MA thought the touch screens would win over the keyboard as the principal controller, but watching MA users suggests that's not entirely the case.

MA has clearly also been watching those users move keys around to more useful positions (though, as with Eos, a bit of color coding of buttons might not go amiss!). A sign that these changes are well thought out is that the new key positions quickly become second nature when running in MA2 mode—the switch back to real MA2 hardware proving a bigger shock.

The keys themselves (Figure 1) are a new physical design with a deeper dish on top than on the MA2, made from distinctive, but hard-to-describe, "fuzzy" material, really comfortable in use and, while not quite silent as MA claims, having an unintrusive, very well damped low-noise noise. Their backlights pulse, then fade, as you type, giving an effect almost like fireflies dancing across the keys. Slide back the (MA-patented) armrest cover and you'll find that the built-in QWERTY keyboard uses the same keys.

Also set into this surface are not one, but two, touch screens, and above them are not four, but five, encoder wheels (Figure 2). A distinctive new design—wider, flatter, and each actually a dual encoder with inner and outer wheels, plus a small "select" nubbin below each—these are used for scrolling as well as controlling attributes (MA's use of wheels for scrolling actually predates Apple's on the iPod), but now one scrolls horizontally and one vertically rather than the previous push-turn-for-sideways behavior.

On the left-hand side of the console, there's a new design of motorized fader, each with an LED scale next to it that can change color to indicate different functionality. Above these are tiny rotary controls with illuminated ends, which first appeared on ETC's Cobalt and are now everywhere (Figure 3). On early grandMA3s, these could be clicked as well as turned, but clicking was never implemented in the software and has now been removed from the hardware.

Above all of this are screens—depending on the model, possibly lots of screens, all multi-touch. However, compared to the Apex consoles, the grandMA3's main screens feel quite compact—each just 15.6" diagonal. But that's because MA has taken a slightly different approach to putting in big screens and trying to use them for everything. Instead, immediately above the keyboard/fader area is a strip of short, wide "letterbox" touch screens (Figure 4) set at a fixed angle; these are intended to show the configuration of the faders, buttons, and encoders below them, freeing up the main screens for actual show information, albeit with a sliver to the right of each lost to virtual view but-

Figure 1: Key close-up.

Figure 2: Encoder wheels.

Figure 3: Faders and rotaries.

Figure 4: Letterbox display.

tons—the real ones from the MA2 have gone. The main screens are more adjustable than before, not just hinged at the base but on arms, so you change both the angle and their distance from you. It doesn't have the lie-flat iPad-type view of Apex, but it does mean the screens are face-down, laptop-style, when closed for transport, a latch on either side holding them both closed and away from the keys below. Adjustment is manual: The MA2's motorized screens, while fun, apparently became an issue with American safety rules.

As with Apex and MA2, there are many variations of MA3 to suit space and budget. The "full-size" has three main and three letterbox screens, 30 faders, a couple of extra physical wheels for rate control; the "light" drops to two of each screen type, plus 15 faders. Both are available in "CRV" versions that have the letterbox screens but not the big ones, intended for control rooms where you might need a different monitor layout; they add more DisplayPort connectors to compensate. For smaller budgets, the "compact" and "compact XT" consoles have one or two of the big touch screens but none of the others, though, unlike previous generations, all have motorized faders. The smaller ones do forgo the built-in UPS—which you should be aware of, as MAs do not store your work unless you specifically save.

There's also a replay unit console in a box, and three sizes of external processing units for sharing the workload on really big shows up to a system maximum of 250,000 parameters; the solo parameter count of the individual consoles varies by model, up to 20,480 for the full-size. Be careful with channel counts—MA tends to count internal parameters rather than DMX slots, so a 16-bit "pan" attribute would count as one on an MA but two on Eos. You can also run MA offline with the company's onPC software, now also available for Mac.

On the back, connectivity varies slightly by model, but the biggest ones get power in via TrueCon, have three EtherCon network ports (though, surprisingly, no built-in fiber) plus six real DMX out connectors, one DMX in, MIDI in and out, time code in, audio in, S/PDIF in and out, plus six USB ports on type A connectors and two desklight connectors.

Inside are high-spec Intel processors and GPUs designed to deal with the workload not just of controlling lights, but of managing the displays and running the built-in visualizer when required. MA talks of its "cooling corridor," which takes heat away from the processors while protecting key components from dust and keeping fan noise down: in use, the consoles do feel relatively quiet.

Software

So, a grandMA3 makes a better grandMA2...but, with an eye on the future, let's look at the MA3 software. I played with V1.8.8.2; as the print deadline approached, we heard rumors that 1.9 was coming. Sadly, it didn't make it in time, but if you always waited for the next software version you'd be waiting forever. [Editor's note: It was released on April 14.]

Like the hardware, MA3 software is very recognizably related to MA2, again with a sense of color drained out of it, and with an apparent shift to icons from words in the interface, though there are still a lot of words. Another change: The MA logo feels omnipresent, even in the title bars of windows. This is not vanity, but rather a copyrightable, trademarkable legal line of defense against console counterfeiters and cloners (Figure 5).

Still here from previous MAs: that feeling of having a lighting desk construction kit rather than a pre-made lighting desk. It starts with the screens generally blank, waiting for you to lay out the interface you want (though some predefined screen layouts are included to help you get going). Its graphical interface feels more modern than Eos'—click and drag to resize a window, for example, plus new tricks such as a swipe up to adjust a parameter or setting. But, in the other direction, there's still a command line, which

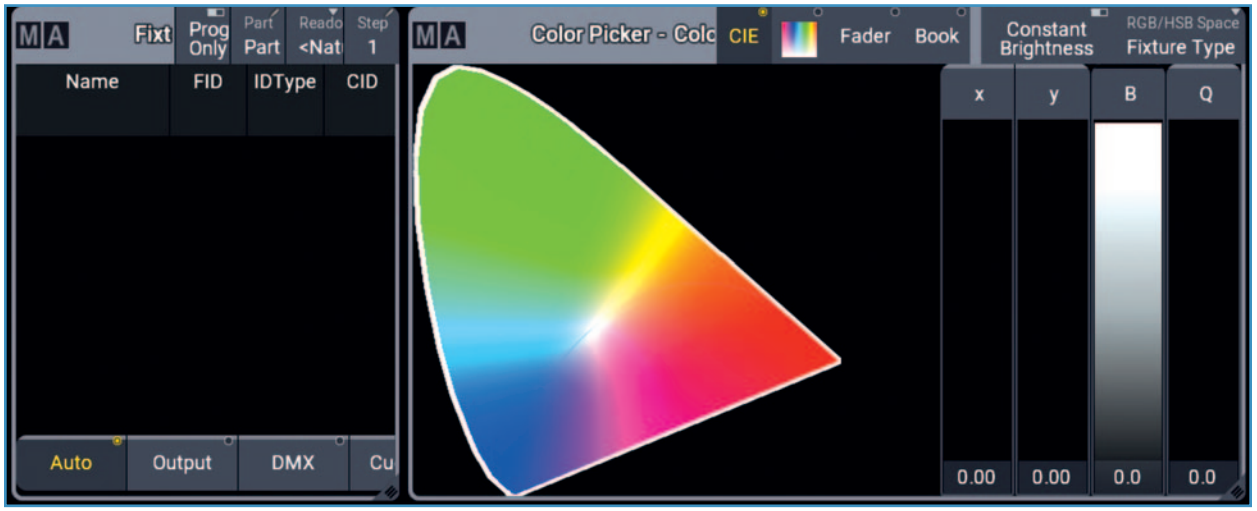

Figure 5: Windows with MA logo.

can behave like a traditional lighting desk—pushing one button inserts an entire command—or can switch to "computer" mode, where you type out commands one character at a time. That means the desk's language is no longer limited by the physical keys or ability to display commands on soft-keys. You can collect those commands into macros, but there's also a built-in computer programming language, Lua, if you want to do more. Want to just use it to turn lights on and off in time? You can do that, with lots of sophistication. Need to go way beyond that? You absolutely can.

On the lighting side: I always find it instructive to start with a simple show— five channels, five cues is often surprisingly revealing. I immediately learned, for example, that as soon as you patch anything, MA3 gives you an extra "virtual" channel, the place it stores universal data and a sort of hub for when you change a fixture from one type to another and expect your console to intelligently manage that transition for you—which MA3 does a good job of doing.

The most surprising thing I learned was that, if you run a cue that fades a light up but, before it's finished, run another that fades it down, then the light's intensity doesn't immediately change direction (as it would on Eos, and most other consoles), but slows down to a stop, then reverses, then speeds up in its new direction. With movement, in particular, this might well make for more subtle direction changes than on other consoles. Turns out MA2 does the same thing and I've just never noticed—which does suggest that, despite this being new software, there is some common code beneath it, or perhaps just the same software programmers behind it.

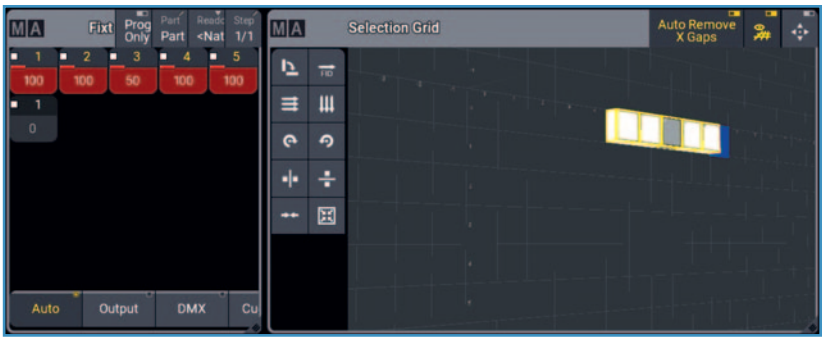

Figure 6: Channel order grid.

Figure 7: MAtricks XYZ controls.


Figure 8: 3D Visualizer.

New here is that selecting channels also puts a graphical grid onto the screen. The MAs were among the earliest to understand that selection order was as important as just selection, and that with lots of lights you needed tools for picking out combinations of lights rather than just selecting them one at a time. MA called its approach to this MAtricks; it provides ways for subgrouping within a selection. MAtricks hit a limit when you wanted irregular subgrouping that was hard to define by pattern. It also hit a limit when you started adding a second dimension—an array of lights, say. Now you get to deal with this graphically, if you need to, dragging the boxes representing lights into different arrangements including stacking them underneath each other—it's not just 2D but 3D (Figure 6); this all then gets stored when you record a group.

MAtricks now has separate X, Y, and Z controls to work across a rig in 3D, and you can also now control time as part of MAtricks (Figure 7). These selection order tools are distinct from the physical positions of the lights, which you can define in the console (MA supported this, and the resulting ability to program positions as XYZ rather than pan-tilt values for many years before Eos) and see in its

built-in visualizer. The 3D visualizer view (Figure 8) is probably not a replacement for something like Depence in terms of pitching a show to a client but is a far more sophisticated tool than the stick-beam graphical visualizer on MA2. Selection grids are also distinct from any magic sheet-type layout view you might create (Figure 9).

In terms of storing data, MA3 is a tracking desk that operates through a programmer—an editor, in effect. As I said in the Apex review, this is actually the biggest differentiator from the Eos family: Eos will generally try to store

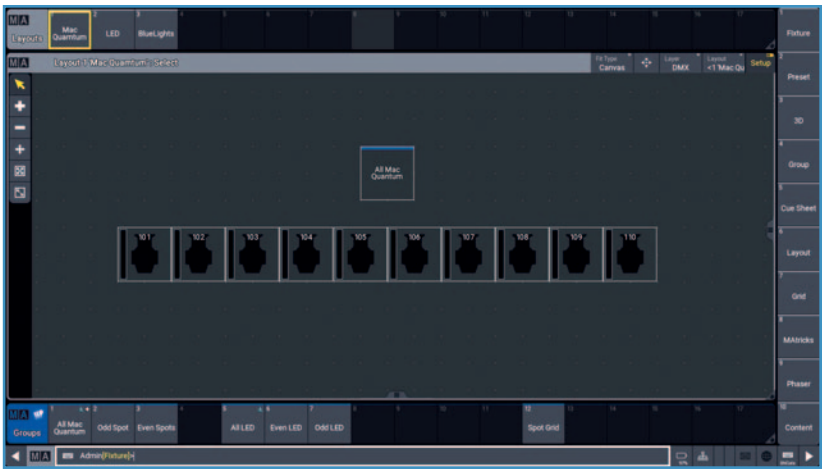

Figure 9: Layout.

Figure 10: Store options.

everything unless you tell it otherwise, MA will generally try to store only the things you've been working on, unless you tell it otherwise. Dealing with this is part (human) programmer mindset, part how they're working with the LD. Eos, I suspect, can be more protective of less experienced drivers—its "record" command will always safely grab the state, whereas grandMA might not, depending on how it is configured. MA3's options for this are very like MA2's, though a key one—"look," which is effectively equivalent to Eos' record—has been re-located in the interface in a way that makes it a bit clearer what it's doing (Figure 10).

Figure 11: Channel view.

Within this interface, MA has clearly been chipping away at the superfluous things, just like on the control surface. So, for example, deciding whether you see intensities or all parameters is now a setting of a single view rather than two view types (Figure 11). But also, as with the hardware, MA has also been expanding familiar functionality where it might be useful: the long-standing ability to define lights as "channels" or "fixtures" has been expanded to let you make other types—"houselights," say. It's useful as rigs get ever bigger.

In patching lights, MA draws on a fixture library primarily (as with other consoles) drawn from Carallon, but MA is then leaning very heavily into the GDTF data format it helped create as a way of adding data about new fixtures—ideally with manufacturers writing their own, accurate GDTF files as they launch new products. MA3 will import GDTF files locally, but will, if you let it, also talk to MA's servers over the Internet to download new GDTF files (Figure 12). Originally there was talk of wider use of the

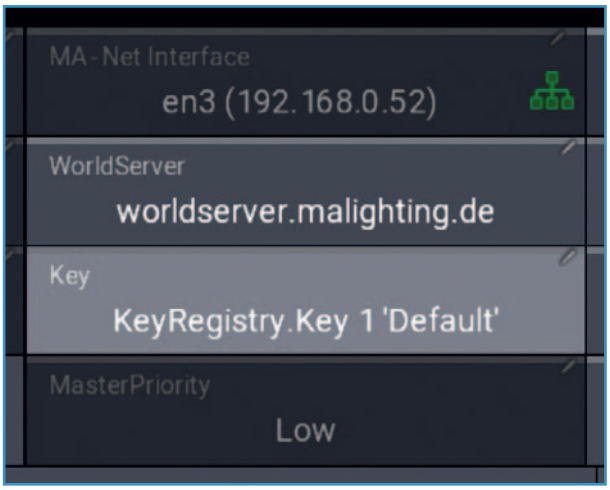

Figure 12: GDTF server.

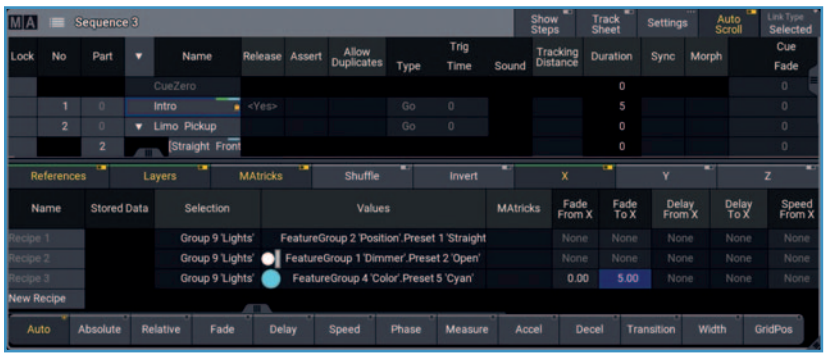

Figure 13: Recipes.

Figure 14: Phasers.

Internet, for example to allow consoles in different locations to connect. As the last few years have shown, that's a really useful thing to be able to do, but this seems to have dropped down the priority list for now.

I remain unconvinced GDTF will ever give you the magical ability to pick a gel number you know and see the light deliver that as you get with fixtures calibrated into Eos, but I am eager to be proven wrong!

Alongside all the layers of parameter data (levels, times, delays) in cues familiar from MA2, there are some interesting new functions. For example, a cue can store an absolute value—70% intensity, say. Alternatively, it can store a relative value—"up 20%," so if, in the previous cue, the light was at 30 it will now be at 50, but if you adjust the previous cue to 40, it will now be at 60. This is fascinating in terms of almost having the console understand what you're actually trying to achieve ("make it brighter") rather than what you've traditionally had to do to make that happen ("I know that 60 is brighter than 40"). But confusion happens when, in the next cue, you go "down 10%"—expecting the light to go to 50. In fact, it goes to 30, because that's 10% less than the last absolute value, 40. It feels like the nugget of a really good idea that's not quite fully worked through yet, perhaps because of those two years of lockdown. (The "tracking distance" function—how many cues a value will track for—has a similar feel.)

But this "programming by intent" idea also leads us to what I think is the most interesting part of the grandMA3 software: recipes (Figure 13). The idea here is that you define what you want to have happen, rather than spelling it out by hand for particular lights. So, a simple recipe could say something like "every third light from the center out in three seconds with a delay of zero thru five." Then, you select your light and apply the recipe to it, and it creates that transition for you. Interestingly, you have two choices on how you apply these: The cue effectively triggers the recipe, so it's created on the fly when you run that cue and would change each time if, say, you changed the content of the cue. Or if you want to make it and be sure it never changes, you can "cook" the recipe with those specific channels into the cue, at which point it effectively creates hard data, as you could have done manually. It feels useful right now, particularly for those working on shows who need to create lots of dynamic looks quickly; it is a fascinating step towards a future of lighting where we tell the machine what we want to achieve, and it helps figure out how to achieve it. I'm sad that MA3 is (yet another) missed opportunity to recover some of that ability

for a cue to remember how it was made that Strand's Galaxy and Lightboard had, but maybe that's backward-looking, whereas MA's approach is forward-looking. It is also, I suspect, the kind of step forward that is easier to make when you throw all your old software away and start afresh.

The other headline feature is what MA—which has always had an ear for catchy, fun names (see also "oops" for undo)—calls "Phasers" (Figure 14). In MA2, effects were always based on mathematical patterns applied as offsets, which was fine when you wanted something to just change, but harder work if you wanted them to change between something specific and something else specific—i.e., if you really wanted a good, old-fashioned step chase. Phasers try to combine all this so you can define a waveform or, if you prefer, you can set the lights to something, make that a step, change them, make that a step, and repeat with the console, effectively creating the "maths" of those changes for you. Phasers feel ungainly and awkward when you first try to set them up, partly because lots of the functions have icons but they're not always easy to decode. But they also clearly have great power, and those who take the time to work through the awkward phase come back singing their praises.

Other things that caught my eye? Lots of details. Some are positive—like scribbles (Figure 15), which let you sketch labels for things rather than just typing text (though, unusually, Avolites beat MA to this), or the clever way the console will often figure out a cue label for you based on what the cue contains. Some are negative, like the cue timing screen that is still more Excel spreadsheet than useful information, and then the list of old functions that are still missing, including not being able to see an "oops" list of your previous actions.

And then there are some things that have changed slightly from previous MAs but still don't feel right in the real-world, even though their logic is unassailable. One you might have thought of as a glitch if it's happened to you, but is in fact deeply revealing of the differences in the underlying way a console operates: On Eos, if you're in cue 1 and delete cue 1, nothing changes onstage; you weren't actually in cue 1, but in a copy of cue 1 put into the playback when you ran the cue; that you've deleted the actual memory doesn't matter. On MA2, if you were in cue 1 and deleted cue 1, all the lights went out: The console was constantly calculating its output state based on the contents of its cue data, and since that cue was no longer there, there was no data to output. Completely logical—but at the same time embarrassing when you did it. The MA3 version? It keeps the lights onstage, which is better. But it also sets the next cue to the start of the cue list—so it's when you press Go that all the lights fade out.

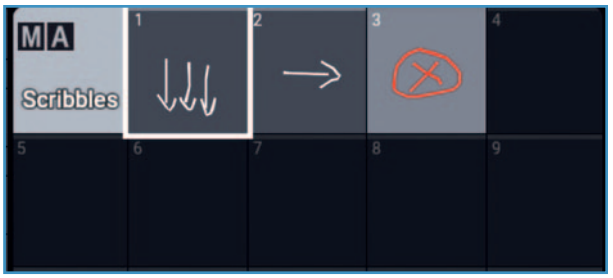

Figure 15: Scribbles.

Different, but not necessarily an improvement.

Conclusion and choice

There is no right console, there is no wrong. What's right for you depends on the project, what you know, what you like, and what you can use to deliver the designer's vision for the show. It matters not whether the console can deliver it, but whether you can use that console, and how quickly and comfortably you can do so. Plus, of course, budget (while Eoses used to be cheaper than MA2s, that's not necessarily the case with Apex versus MA3), and how much you trust both the hardware and the support you'll get from the manufacturer when it fails—because they all do, eventually. Touring, in particular, is a hard life!

For a lot of people over the last decade-plus, that choice has been grandMA2, and the console has delivered some of the biggest shows on earth—some probably far bigger than anything anyone had imagined when the console was designed, but benefitting from that look-to-the-future design approach. That sheer number of users, and the fact there are so many consoles out there still running shows, demonstrates how well it has been supported by its manufacturer and dealers around the world.

It's a simple, yet effective, summary just to say that grandMA3 feels like the next generation of that, its outlook adjusted forward to another decade of new lighting challenges, in a hardware package that feels like a honed, refined, and expanded version of what was there before, supported in the same way by the same people, with software that is now really finding its feet. If you like MA's logic, now might be the time to start to play with the 3 software, particularly the fascinating new power tools it offers.

If you're of that "store everything" rather than "programmer" mindset, will those tools be enough to pull you over to MA's world? Not sure. But, as has been the case for the last 15 years, they're certainly enough to make you hope something like them will appear in your console, as those two great boxers keep pushing each other to be ever-better versions of themselves.