grandMA2 for Eos Programmers

and vice versa

A guide for whether you're in a pinch or just want to learn…

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Introduction

This guide started as a small note on my phone several years ago, when I decided to start learning the grandMA on my own. I had essentially mastered the Eos console and it's features, but felt like I was almost starting over when it came to learning the grandMA. As I began searching through the extensive and sometimes unorganized online manual (though it has improved greatly over the past few years), watching tutorials, and just playing around with onPC, I slowly began to realize that the two consoles weren't all that different, and that many of the concepts and actions are very much the same, just with different words. Eventually, I started being able to make comparisons to all the features I was already familiar with on Eos, and began writing them all down in the hopes that it might eventually be able to help others who were doing the same thing. You shouldn't have to go through the turmoil of re-learning the same concepts you already know just because they use different terms on a different console. This is the culmination of that learning.

Because this guide was written from such a perspective, the majority of the comparisons and descriptions are geared more towards those going from Eos to grandMA2. However, that is not to say that the guide couldn't be used in the opposite manner as well. The majority of comparisons are probably just as helpful going from MA2 to Eos as well, but the detailed explanations and examples may be less thorough. (It is the hope that perhaps future versions of this guide will incorporate better descriptions and examples so as to provide better bi-directionality).

It is assumed that the reader/programmer has a general knowledge and understanding of the basic philosophies of lighting control, including:

- Tracking vs Cue Only
- LTP (Latest Takes Precedence) vs HTP (Highest Takes Precedence)
- Priorities and Background states
- Referenced Data vs. Absolute Data
- Basic functions of ETC Eos consoles (or grandMA2 consoles).

While the guide is loosely structured in a way that can be read start to finish as a full tutorial, it is probably more useful as a reference.

As such, you are strongly encouraged to use your device's find/search function to search for whatever terms or commands your are looking for, either Eos or MA2.

Food For Thought (for those with the time…)

Lighting programming is simply data management. It's nothing but numbers. There can be quite an art to how one manipulates those numbers to create something as beautiful as a lighting design. But at it's most basic level, lighting programming isn't all that different from computer coding or data management.

If you're familiar with the concept of relational databases (i.e. Filemaker), or even simple spreadsheets, perhaps it might surprise you to hear that a lighting console is just a big relational database with a fancy user interface. It's nothing special to the entertainment industry necessarily, it's literally a computer database that happens to also spit out a communication protocol called DMX (among others). Sure, there are many user interface features and physical buttons/faders within these consoles that are designed to allow you to manipulate that data in such a quick way that allows almost anyone to come up and flash some lights with the press of a button. But at its essence, a console is just a big database with a bunch of numbers, that are constantly being changed and calculated. Perhaps this is obvious to some from the start, but for those who it isn't, it is a very important concept to grasp, and crucial to taking what might be your first step towards learning a new lighting console.

Along these lines, the Eos and gMA2 are quite similar at their core. So don't let that big ole' grandMA2 fullsize (or Eos Ti) scare you. They both accomplish the same general functions in mostly the same way.

They both have a concept of fixtures/channels that contain attributes (dimmer, pan, tilt, etc.). Those attributes can have values that determine their DMX output. Those values can be changed and stored in memory in a virtually unlimited amount of ways as presets/palettes and cues/sequences. Those cues/sequences can then be played back with timing/fade information to allow the fixtures to go between those stored values in such a way that ultimately creates a light show.

In addition, grandMA2 and Eos both follow the same general philosophies of LTP and HTP, Tracking vs Cue Only, and referenced palettes of data such as Palettes & Presets.

What differs is the syntax of commands and order of operations to access all that information. While some syntax between the two can be essentially identical ("Channel 201 At Full"), there are some commands that might be considered "backwards" or perhaps just have one command in a slightly different place then on the other console.

When this happens, it can be easy to get discouraged when you try a command and it doesn't work the way you'd expect. In my experience, many people may try 2 or maybe even 3 variations of a command, without success, and then give up and conclude that the console simply cannot do what they want it to do.

In reality, nearly all of the functions in Eos can be accomplished on the gMA2 and vice versa (as well as a majority of other popular consoles). It's just a matter of knowing the words and commands to use in which order. You're quite literally learning a new language. Same meanings, different words.

Similarly, another shortcoming that plagues some programmers is that they believe there is only one specific command to accomplish one specific goal. This could not be further from the truth, especially with the grandMA. There are any number of ways to accomplish any one task, and there isn't necessarily a right or wrong one of them. The possibilities allowed within the structure

of the programming environment make it so that if you understand the basic building blocks, you can accomplish your tasks in almost whatever way that makes the most sense to you.

And that's the point. That's what makes this job so unique and personal and fun.

So don't get discouraged, stay open minded, and use this guide. :)

Tips for reading the guide

Orange = gMA2 command, key, or term (i.e. "Please")
Blue = Eos command, key, or term (i.e "Enter")

{key combo or softkey} = some commands are accessed with a combination of key presses.

|| = Used to separate multiple commands in sequence.
i.e. "Blind || Preset 1 thru 12 || Chan 4 At 30"
i.e. "Fixture 34 At Preset 0.13 || Park Fixture 34"

A few core concepts about MA2:

SYNTAX ORDER

In general (though not necessarily true for all commands) MA2 operates with the syntax of [Action] [Object/Target] At [Object/Target]

Whereas Eos generally operates (though also not true for all commands) with the syntax [Object/Target] [Action] [Object/Target]

For Example:
"Move Preset 4.2 At 4.3" = "Color Palette 2 Move To Color Palette 3"
"Label Cue 2" = "Cue 2 Label"
[Action] [Target] = [Target] [Action]

Don't worry if this doesn't make sense immediately, and don't get caught up on it as some commands don't always necessarily follow this structure. Just remember that if a command you're trying on MA2 isn't working like you'd expect on Eos, try reversing the syntax order.

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CHANNEL SELECTION

On MA2, channel selection is independent of the command line.

Meaning once you've selected channels, the selection will remain regardless of what is typed into the command line until you make a new selection or clear the selection (Clear key one tap).

That is not to say, however, that channel/fixture selections cannot be apart of SOME commands.
i.e. "Fixture 34 At Preset 4.34" is the equivalent of making a new selection AND specifying a new value.

In General, channel selections are NOT required for most commands because again channel selection is independent of command line and is assumed as the target of most commands until otherwise cleared or specified.

On Eos every channel-related command requires a channel selection to accompany it. Depending on the order of operations, the software will automatically input the previous selection to the command line (i.e pressing At after terminated command re-types previous selection), making it fairly easy and quick to type new commands. And thus the extremely important and useful command of Select Last.

- Selection Syntax: "Fixture 304 Please" = "Chan 304 Enter" = Channels/Fixtures Selected
- Then "At 40 Please" = "Select Last At 40 Enter"

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THE "PROGRAMMER"

The "Programmer" is the term used to describe the source of all Manual data (anything in red). If a fixture or attribute is in the "programmer" it means it is being manually controlled by commands (not stored in any sort of cue/playback/sequence/executor)

There are two "states" of manual programmer values: Active and DeActive.

Active means "Manual" ***and*** available for record/store
(In Fixture Sheet: red background and red text)

DeActive also means "Manual" but ***not*** available for record/store (like "make null" in Live)
(In Fixture Sheet: only red text, no red background)

So if all of your current manual values in the programmer are DeActive, and you try to Store a cue or preset, nothing would actually be stored because the values are not Active.

Activate {Please Please or double tap group or Preset Type} is essentially "Make Manual" + making available for store actions
{Please Please or double tap group or preset type} a 2nd time will DeActivate, but will remain in the programmer.

Both active and inactive channels/fixtures come from the "Programmer"

By default, any Active data will become DeActive after a store command. Meaning that if you wish to store the data again, you must re-Activate it. (These are all settings that can be changed in Store Options)

FIXTURE # VS CHANNEL #

gMA2 allows for both a Fixture # and Channel # simultaneously for every patch object. This does **NOT** delineate what type of object can be patched to either number. Meaning any object can contain one or the other or both.
i.e. A moving light could be given a Channel #, and a simple dimmer could be given a Fixture #, or vice versa.

The only delineations these two numbers make is whether the object shows up in the Channel Sheet, the Fixture Sheet, or both, and also whether the object is accessible via the {Fixture} key, the {Channel} key, or both.
i.e. Fixture 20 and Channel 20 ***could*** mean two different separate objects.

For the most part, however, many programmers keep these numbers the same for all patch objects, or use just one or the other, to avoid confusion. So for example, your 20 Mac Vipers could have Fixture #'s of 1-20, as well as Channel #'s of 1-20. Or just Fixture #'s only and no Channel #'s.

But, this can also open up a lot of customization as well. For example, to delineate between simple dimmers (Channels 1-24) vs moving lights (Fixtures 1-10). Or separate channeling schemes for designer and programmer to reference. Or to easily delineate what objects show up on the fixture sheet vs the channel sheet.

ORGANIZATION OF ATTRIBUTES

There are 3 levels of organization for attributes of a Fixture/Channel
PresetType -> Feature -> Attribute

PresetType ≅ Encoder Group
Feature ≅ Encoder Group Page
Attribute = Attribute/Parameter

These are all keywords which can be used as part of a command.
i.e. "Off PresetType 2"
i.e. "On Attribute "Dim""
i.e. "Feature 1.2 At 50"

All PresetTypes, Features, and Attributes can be identified either with numbers (PresetType 2 = PresetType "Position") or with words in quotes (Attribute "Dim" specifies the Dimmer Attribute)

PresetType {MA + Preset}
Feature (not accessible via hard keys)
Attribute {Preset Preset}

You can also tap any of these objects on the Encoder Bar in place of typing it out specifically in a command line.
i.e. Tap on the "Position" Preset Button in encoder bar = "If PresetType "Position""

http://help2.malighting.com/Page/grandMA2/keyword_presettype/en/3.3/presettype
http://help2.malighting.com/Page/grandMA2/ws_preset_control_bar/en/3.3

A NOTE ON WORKFLOW AND COMMANDS

It can be useful to understand from the beginning that MA2 is generally designed to be very touch-screen oriented. So while the MA2 is still a command-line based console like the Eos, the workflow on the MA2 tends to spend much less time on the keys, and more time on the touchscreens.

i.e. Moving Presets or other pool objects is usually accomplished by pressing the Move Key, tapping the object you want to move, and then tapping where you want to move it to.

**For the remainder of this guide, anytime any Object/Target is specified within a command , it can generally be assumed that you can also tap that specific pool object in place of typing out the Object/Target with the keys.

Conversely, all commands in MA can also be executed ***without*** any hard key console presses, by simply typing out the command structure via the standard keyboard on your computer or under the armrest of the console. This is **NOT** possible on the Eos console.

In fact, there are many keywords/commands within MA that are actually not even accessible via HardKeys, and must be typed out on the keyboard.

GENERAL COMMANDS AND TERMS:

Please = Enter

A Please or Enter is required after every command in order to execute it

(From here on out unless otherwise noted, all example commands assume that there is a Please or Enter at the end)

(**||** will also indicate a Please or Enter)

Oops is Undo

Clear does **NOT** behave the same way as Clear in Eos

{Clear} = ClearSelection - Clears out the current channel/fixture selection

{Clear Clear} = ClearActive - DeActivates all fixture/channel data currently in Programmer

{Clear Clear Clear} = ClearAll = Sneak Enter - Removes all manual data from Programmer

Escape is like Clear in regards to command lines

Group = Group

Store is essentially Record…

However grandMA is, by default, always in a "Record Only" state. It will only store data that you've manipulated or Activated in the Programmer, meaning it won't store values that are already coming from a cue or executor (unless you specifically say otherwise in the "store options menu". i.e. There is an option to store all output regardless of whether it is manual/from the programmer)

Press and hold Store to see Store Options pop up

So, by default, Store is actually more like Record Only

At = At for setting intensity or other preset data

"Fixture 205 At 60" = "Chan 205 At 60" = Sets intensity to 60

"Fixture 205 At Preset 0.65" = "Chan 205 At Preset 65"

At also = Recall From.

"Fixture 201 At Fixture 202" = "Chan 201 Recall From Chan 202"

"Fixture 201 At Cue 44" = "Chan 201 Recall From Cue 44"

******See section on Status to include tracked values in your command, as MA2 by default will **NOT** include tracked values when pulling data from other Cues.

{At At} is like "At Level", the level of which can be specified in Setup. Default is Full.
So {At At} brings current selection to Full

".." or "{dot}{dot}" is like "Out" – So ".." brings current selection to 0

DMX {Channel Channel} is equivalent of Address
"DMX 4.50 At 75" = "Address 4/50 At 75"

Full = Full
(wouldn't it be funny if it wasn't?)

DISPLAYS & VIEWS

{Tap on empty screen space} = {New Tab}

Pools are essentially the equivalent of Direct Selects
(Though, Pools can also be set to display in a list view, similar to Eos Target lists (i.e "{Preset Preset}" brings up list view of Presets)

Click/Tap on the yellow ball in upper left corner of a Pool to see all Pool options (and to set the pool to display in list format)

Command Line = Command History
MA2 Command Line also shows errors and whether a command was successful or not. Very useful.

"Fixture Sheet" is essentially "Live Table" Tab (Will only show objects with Fixture # in patch)
"Channel Sheet" is sort of like "Live Tombstone" Tab (Will only show objects with Channel # in patch)

"Sequence Executor Sheet" is essentially "Playback Status Display" Tab
"Sequence Tracking Sheet" is similar to a "Blind Spreadsheet" tab in Eos

Views are Snapshots (but only in the sense of displays, nothing to do with filters or Fader status)

{Setup} is combination of {Displays Setup} and the Eos Settings Shell (for networking, system time, …). Almost all settings and setup can be found in {Setup} screen

- In Eos, all networking setup occurs outside of the main programming environment. {Displays} Scroll down to Exit. Then click on Settings

{Backup} is for all show file Save and Open functions

{Backup}{Backup} = {Shift Update} - Quick Save

PATCH

Patch is found in the {Setup} menu.

Be aware of both Fixture # and Channel #, though in many instances they are kept identical, or only one or the other is used. (See section on "Fixture # vs Channel #" under Core Concepts)

MultiPatch = approximately Channel Parts = Patching multiple addresses to one Channel/Fixture

(i.e. To patch addresses 1 thru 10 to channel 1, create channel 1, then press the softkey Create MultiPatch)

*MultiPatch can only be created for the same Fixture Type i.e. a dimmer and an iris can **not** be in the same MultiPatch.

*An example of this would be an I-cue or Auto-Yoke or VL-1000 with external dimmer. In Eos these fixtures can be patched simply by breaking down the separate addresses and types into Channel Parts and then patching the starting addresses. In MA2, you must create or use a specific Fixture Type that specifies all of those individual parts. In the Fixture Type editor, the Break column, defines the separation between chunks of DMX addresses.

So for a typical I-Cue fixture setup, the Dimmer would be within Break 1, the I-Cue would be within Break 2, and the Iris would be within Break 3. Then when patching, you are given the option to assign a separate starting address for all 3 of these "Breaks"

Patch syntax via command line (Fixture Objects must already exist in the Patch Schedule):

"Assign Fixture 201 At DMX {Channel Channel} 4.101" = "Patch || Chan 201 At 4/101"

Overwrites previous address assigned to fixture.

"Assign DMX {Channel Channel} 4.101 At Fixture 201" = "Patch || Chan 201 Part # At 4/101"

ADDS address to channel as MultiPatch.

MORE COMMANDS

Next & Last partially behave the same way as Next & Last in Eos, but **only** in terms of channel selection.
i.e. "Group 18 Please" {Next}{Next}{Next} = "Group 18 Enter" {Next}{Next}{Next}
Next & Last are used in Channel Selection, MAtricks, Highlight, Solo

****MA2 Next & Last will **NOT** function with any other type of object or target, other than channel selection.
Whereas Eos Next & Last can pertain to whatever object or target is currently in the command line.

A Sequence is a Cue List

Executor is Fader on Eos (as of Eos v2.4).
An Executor contains a Sequence. A Sequence contains Cues.

Select acts sort of like the Master Load button
i.e. "Select Executor 1.14" = "Cue 14/ [Load]"
(Select also can be used with other targets such as Filters)

Break Cue is a Block Cue. (This is found in the Sequence Executor Sheet under Cue Type)

Block and Unblock are also keywords that can be used for ***forcing tracked values to be hard values***, either per cue or per fixture.
"Block Cue 4" or "Block Cue 4 If Fixture 34"
But these commands only apply to existing values or tracked values in a cue, and act only as a one-time action. If a new fixture is added to the sequence later on, only a Break Cue will block the newly tracked values.

MIB (Move in Black) is like "Marking". Though it is a little more like Eos AutoMark, in that in MA2 you cannot specify specific Channels for Marking/MIB. You can only apply MIB options on a per Cue basis.
* in the MIB column of the Sequence Executor Sheet is essentially the same as a Live Move Flag in the Playback Status Display.

In general, it is very time consuming to manually MIB cues, so it's usually easiest to just leave it on Auto in the Executor Options.

Masks are like Flexi (but much more customizable and complex).
Masks are used in the Fixture Sheet and Channel Sheet to "mask" away different fixtures/channels.

Filters {Group Group Group} are like record filters/snapshots or selective recording.
Press and hold At to open the temporary command filter. This means that the next command you type/execute will only apply to the attributes that you select in this command filter screen). You can then store your current attribute selection as a Filter object for later use if you wish.

Press "Edit Filter #" to create a new Filter in the Filter pool.

"Filter 3" or simply tapping a Filter Pool tile will only ***temporarily*** activate the filter for the ***next command only***.

"Select Filter 3" will permanently change the Filter for all future commands until a new Filter is selected.

PRESETS

Preset is like a combination of Palettes and Presets.
i.e. Color Preset, Position Preset, Gobo Preset = Color Palette, Focus Palette, Beam Palette. (Only that category of attribute can be stored to that preset)

An "All-Preset" is the equivalent of "Preset" on Eos, in that all attributes can be stored to this type of preset.

**Technically, any preset in MA2 can store any attribute info if the "Preset Filter" in Store Options is turned off. But by default, the Preset Filter is on and presets will only store the attributes of their PresetType.

**There is a setting called "Allow Embedded" in Store Options, which is essentially the equivalent of being able to store Palettes within Presets. It will allow Presets to be stored within other Presets.

PresetType is the category of gMA2 Preset (Color, Position, etc.)
(a term used often in MA language, which is why I mention it)
Each PresetType has an equivalent number (Dimmer=1, Position=2, Color=4, All=0, etc.) to specify PresetType objects within the command line.
So i.e. "Preset 4.34" refers to Color Preset 34, "Preset 2.7" refers to Position Preset 7
i.e "At Preset 4.34" will place the currently selected fixtures into Color Preset 34.

The encoder grouping touchscreen buttons above the encoders are called the PresetType buttons. These can be used in combination with many other commands such as Off, On, Extract, Default, Release, Remove, If, etc.
i.e. "Off (Touch "Position" PresetType Button)"

Preset Store/Scope options:

Selective is like discrete palette data
Global is By-Type
Universal is a super special By-Type that will apply to any and all fixtures with those parameters. Only works for intensity, position, and mix color.

Found in Store Options or Preset Pool window options.

IF

IfOutput {If} is select active
IfActive {If If} is select manual, but doesn't include deactivated (red text only) data
IfProg {If If If} is select manual, both active and deactive (red text and red background)

IfOutput, IfActive, and IfProg also work very similarly to Query when used in combination with At and with other targets/objects.
"IfOutput At Preset 4.34" = "Query Color Palette 34"
"IfOutput At 0" = "Query At 0"

If {MA + If} or {If If If If} is primarily used as a helping keyword with many other commands to limit the scope of that command.

For example Selective Recording:
"Store Cue 34 If Fixture 9" = "Chan 9 Record Cue 34"
"Store Cue 34 If PresetType 4" = "Color Record Cue 34"

Or recalling data from other objects or sources:
"Fixture 202 At Fixture 203 If PresetType "Color"" = "Chan 202 Color Recall From Chan 203"
"Fixture 41 At Cue 23 If Attribute "Pan"" = "Chan 41 Pan Recall From Cue 23"

"Block Cue 34 If Fixture 9" = "Blind || Cue 34 || Chan 9 Block"

OTHER COMMANDS

Copy is essentially the same as Copy To, but requires different syntax.
"Copy Preset 4.2 At 4.3" = "Color Palette 2 Copy To Color Palette 3"
"Copy Cue 4 At Cue 22" = "Cue 4 Copy To Cue 22"
**See section on Status to include tracked values in your Copy command

Move is essentially the same as Move To, but requires different syntax.
"Move Preset 4.2 At 4.3" = "Color Palette 2 Move To Color Palette 3"
"Move Cue 4 At Cue 5" = "Cue 4 Move To Cue 5"

MAtricks is Offset
- Wings is like Pan Fan Mirror (Think of symmetry of "wings" on a bird or plane)
- Single X is simply the individual selection within a group that is controlled by {Next} & {Last}
- Blocks are like {Chan Per Group}
- Interleave is like {Chan Per Group} {Interleave}
- http://help2.malighting.com/Page/grandMA2/matricks/en/3.3

Align is Fan
You can also use the syntax "At 10 thru 100", much the same as you would in Eos to Fan values.
(Note: This can **NOT** be done with Presets or other referenced data on gMA2, as you can in Eos. Only possible with hard values on gMA2.
i.e "At Preset 4.1 thru 4.5" does **NOT** currently work)

{Assign Assign} is Label - i.e. "Assign Assign Cue 2 Please" opens dialog to label Cue 2
(Eos syntax: "Cue 2 Label")

Worlds {Group Group} are like Partitions, but way more flexible, in that you can also exclude/include specific attributes.
Worlds are like a combination of Partitions and Record Filter Snapshots.

Stomp {MA+At} is like "Stop Effect" command, but if applied to an attribute or Fixture acts more like a value than a command (see section on *Effects*) and behaves as such in regards to LTP, higher/lower priorities, and background values.
i.e. "Stomp Selection" or "Stomp PresetType "Dimmer"" will stop any running effects respectively in the Programmer

**Not to be confused with Eos Stomp (v2.4) Eos Stomp has to do with a Fader (cue list, submaster, etc) being overwritten by another Fader (cue list, submaster, etc). The Eos Fader options for Stomp dictate what the Fader will do when it no longer "owns" the fixtures or attributes, when another Fader has taken over control of those fixtures. See *Executor Options* for gMA2 equivalent.

Layout is like a Magic Sheet
To put Fixtures/Channels in a Layout, make a selection then "Store Layout #". Those fixture objects will then appear in the Layout.
To place any other object (Presets, Groups, Macros): "Assign Preset # At Layout #". Those objects will now appear in the Layout.
Press Setup at the top of the Layout View to arrange your Layout objects.

Freeze is capture
Freeze on MA is just an on/off state of the programmer. It cannot be applied to individual fixtures/channels.

Call {On On} is the equivalent of "Recall From [Record Target]", meaning it will put all stored data of that object into the Programmer.
i.e. "Call Preset 4.2" = "Recall From Color Palette 2"

OFF & ON

On is like Make Manual (and also Activates), in regard to Fixtures or Attributes or PresetTypes
i.e. "On Fixture 201" = "Chan 201 Make Manual"
i.e. "On Selection {Fixture Fixture}" = "Select Last Make Manual"
i.e. "On {Touch Color PresetType encoder group}" = "Select Last Color Make Manual"

Off is like Sneak, in regards to channels or attributes
i.e. "Off Fixture 201" = "Chan 201 Sneak"
i.e. "Off Selection {Fixture Fixture}" = "Select Last Sneak"
i.e. "Off {Touch Color PresetType encoder group}" = "Select Last Color Sneak"

Both of these also have functions relating to executors and playback that is more like releasing content and "Go To Cue 0" and such
i.e. "Off Sequence 12" is somewhat equivalent to "Go to Cue 12/0"
(gMA2 "Off" is also essentially equivalent to Eos "Off", in that gMA2 will release control of that Sequences/Executors fixtures to the background values, just like in Eos")

"Off Page Thru" = "Go To Cue Out", in that it is turning off all executors on all pages.
"Off Please" = "Go To Cue 0" will turn off the currently selected executor
"Off Executor 3" = "Go To Cue 3/0"

Off Off opens up the Off Window, which shows you all running executors, effects, macros, etc.

Off and On are very useful and powerful commands

"Selection" {Fixture Fixture} - makes the current channel selection usable in a command.
i.e. "Off Selection" = "Select Last Sneak" - will knock out the currently selected channels from the programmer)
Selection can be used in combination with: On, Off, Release, Remove, Park, UnPark, Stomp, etc.

SelFix {Select Select} = Group (Object/Target)
i.e. "SelFix Executor 8" = "Group Sub 8"

Default {MA + dot} or {MA + .} = Home
**Unfortunately, executing Default as a command by itself also applies to Intensity/Dimmer, which will usually have a value of 0… Whereas Eos Home will only apply to All NIPs by default.
However, "Default (Tap Position Preset Encoder button)" = "Select Last Focus Home"

"Extract" {MA + At + At} is like Make Absolute.
But the command "Extract" is used in place of the command "At" in syntax.
i.e. "Extract Preset 4.2" is essentially like "… At Color Palette 2 Make Absolute"
Meaning that gMA2 will apply the values of Color Preset 2 to the currently selected fixtures as hard, unreferenced data.

Path is Curve

Remove {Delete Delete} is like "@ Enter"
i.e. "Remove Fixture 204" approximately = "Chan 204 At Enter"
HOWEVER once you give an attribute a "Remove" value, in MA2 you must Store Merge or Update to the record target in order to actually *remove* the move instruction, letting tracking values through. Or in the case of Presets, removing the data altogether.

Similar to Eos ***except*** if in Eos Blind, "@ Enter" takes effect immediately.
Whereas in MA2 Blind, a Store Merge or Update is still required.

Delete can also be used to remove values, which is **NOT** possible in Eos
i.e. "Delete Cue 4 If Fixture 201" will remove any values for Fixture 201 stored in Cue 4

Release {Delete Delete Delete} = "Release" found under "Make Null" in Blind softkeys
i.e. "Release Fixture 204" = "Chan 204 {Make Null, Release}"
The same Store Merge and Update rules apply as mentioned above with Remove

Highlight in MA works pretty much the same as Highlight in Eos. Though there is **no** such thing as a Lowlight level in MA. MA only uses the current background value for the non-highlighted fixtures, it does not force a new value on the non-highlighted fixtures.

Solo is like Remdim
Highlight + Solo = Highlight Remdim

Time is similar to Time, but with different syntax.
Time in MA2 by default will alter the individual discrete timing of whatever fixtures are selected.
Time in Eos by default will alter the cue time of whatever Cue is currently selected.

"Fixture 201 || Time 3" or "Fixture 201 Time 3" = "Channel 201 Time 3"
(A Store or Record command is then required)

To change time of Cue:
"Assign Cue 2 Time 3" = "Cue 2 || Time 3" or "Cue 2 Time 3"

PARK

Park {Pause Pause} is mostly similar to Eos Park…
"Park Fixture 34" = "Channel 34 Park"
"Park Fixture 34 If PresetType "Color"" = "Channel 34 Color Park"

However, there are a few differences/limitations as well…
On MA2, including a specific value within the Park command does **NOT** behave the same way as Eos.

MA2 Park will always assume the entire fixture unless you specify a specific Attribute, Feature, or PresetType.
Whereas Eos will assume Intensity only, unless otherwise specified.
"Park Fixture 34 Attribute "Dim" At 75" = "Channel 34 At 75 Park"
"Park Fixture 34 At 75" actually parks ALL attributes at a value of 75. Not that useful…

In addition, you can only specify hard numeric values within a Park command. Specifying Presets within a Park command does **NOT** work.
"Park Fixture 34 At Preset 4.17" will **NOT** work as expected. Workaround:
"Fixture 34 At Preset 4.17 || Park Fixture 34 If PresetType "Color"" = "Chan 34 Color Palette 17 Park"

UnPark {Go+ Go+} takes a fixture out of Park.
"UnPark Fixture 34" = "Chan 34 Park" (If already Parked)

You can also Park DMX/Addresses. This works the same as Eos.
"Park DMX 3.50 At 30" = "Address 3/50 At 30 Park"

**Some MA2 programmers actually prefer to create a special Super Priority "Park" Executor/Sequence that they can store and update values into, either manually or using macros. Some find this easier to quickly change, turn on/off, rather than working with the sometimes inconvenient syntax of Park.

CLONE

Clone {Copy Copy} is an extremely powerful command in MA2, and it is relatable to the Eos, though it may seem somewhat backwards from how one performs the same action on Eos.

Clone is essentially the same as going into Eos Blind, and using Recall From or Copy To to copy values across multiple fixtures and objects/targets. So for example:

"Clone Fixture 31 At Fixture 44 If Preset 4.1 thru 4.30" = "Blind || Color Palette 1 Thru 30 || Channel 44 Recall From Chan 31"

"Clone Fixture 4 At Group 12 If Cue 1 Thru 12" = "Blind || Cue 1 Thru 12 || Group 12 Recall From Chan 4"

You can also use a graphical interface for cloning multiple targets/objects at once using the Clone Interface under Setup.

You can also Clone/Copy all show data at once:
"Clone Fixture 31 At Fixture 44" = "Patch || Chan 31 Copy To Chan 44 {Show Only}"

**A note on Cloning Presets: By default, Cloning one Fixture to another Fixture will always create Selective Preset data, regardless of whether the source data was Universal, Global, or Selective. To Clone Global Preset data, you must clone to a FixtureType {MA + Fixture}.

i.e. "Clone Fixture 34 At FixtureType 4.1.1 If Preset 4.1 Thru" creates Global data.
i.e. "Clone FixtureType 1.1.1 At FixtureType 4.1.1 If Preset 4.1 Thru" creates Global data, as long as the source data is also already Global.

http://help2.malighting.com/Page/grandMA2/clone_clone_presets/en/3.3/clone

EFFECTS

Effects are probably THE biggest difference between MA and Eos, so it can be hard to compare.

All MA Effects are most essentially equivalent to Eos Linear Effects.
MA does not contain any sort of step-based effects engine (meaning there is no direct equivalent to an Eos step-based effect or an absolute effect)

All MA Effects, like Eos Linear Effects, use a graph to determine the movement of a value.
In this regard, an MA effect can **only** contain a High and Low value.
This is roughly the equivalent of saying that all MA effects are limited to only two "steps".

These High and Low values (two steps) can either be relative or absolute. Meaning they can be plus or minus the background value, or they can be hard absolute values – either a numeric value, or referencing a Preset. (It is **NOT** possible to set one of the steps to a "Background" value, as you can on the Eos.)

The only way to create the equivalent of a multi-step (more than 2 step) Eos Absolute effect is to create a Chaser (see Chaser in Executor options section).

As far as ***channel selection*** for effects, an effect in MA can either be a Template effect or a Selective effect.
So roughly:
Template Effect **≅ sort of** Absolute Effect - only in that it **does not** contain a channel selection and is instead applied to a selection in the programmer/manually.
Selective Effect **≅ sort of** Step Based Effect - only in that it **does** contain a selection and will only run on that specific channel selection.

In MA, you can create an effect either by directly modifying values in the effect layer of the programmer/fixture sheet/encoders, and then storing to the effect pool,
OR by saying "Edit Effect ##" which gives you the effects editor screen (I find this to be much easier than directly modifying effect values in the programmer)
Additionally, you'll find that many of the predefined effects will accomplish a lot of what you need, so it's usually easier to start with those.

Phase is similar to Grouping
Width is similar to Trail
Groups, Blocks, and Wings are essentially shortcuts to changing the Phase values across fixtures

High and Low values are roughly equivalent of setting values in an Absolute Effect
Can also change the setting to be Center and Size mode, which is much more similar to Scale in a Linear effect

MORE ON UNDERSTANDING EFFECTS

Like I said, Effects are probably one of the more difficult things to equate between MA2 and Eos.

The most important thing to try and understand is that MA's effects engine is an attribute-based effects engine, whereas Eos is a step-based effects engine (yes, even absolute effects have "steps")

What this means is that on MA, effects (and all of the settings that change an effects look) are additional values that belong to each attribute within a fixture or channel, just like the values for RGB, Pan + Tilt, Dimmer, etc.
In the Fixture Sheet, there is a layer view that you can select for "Effects" (Purple colored tabs on the bottom). This changes the view to show all of the values for effects for those fixture attributes.
This is ultimately where all effect information is applied and stored, **just like any other attribute value such as intensity or RGB values.**

On Eos, effects are separate "programs" that contain all of the settings to make the effect. The effect is then applied ***to*** channels, and from that point on that effect program is controlling that channel's parameters as an external entity.

The way that I like to think about it is MA effects run from within the channels themselves - you can make a single channel flash just simply by manipulating the various effect values on the encoders, without ever calling up an effect #. All the effect values are part of the channels attributes.
Whereas in Eos, an effect is external program that is then applied TO a channel's attributes.

Non-Similar Commands & Syntax - Important commands on MA2:

BLIND & PREVIEW

MA2 has several "Blind" modes called Blind, BlindEdit, and Preview.
Blind is not exactly the same as in Eos. The equivalent of Eos Blind is a combination of Preview and BlindEdit, depending on what type of target you want to view.

Preview = Blind for Cues
BlindEdit = Blind for Presets and other record targets

Regular Blind (Press & release Blind key) utilizes the same programmer as in live, **which means** that anything you may have in your programmer in live will get knocked out when you enter standard Blind mode.
BlindEdit (Press & hold Blind key) is a separate Blind programmer, meaning live programmer values will remain. In general, I always prefer using BlindEdit, as it is much more similar to Eos blind.

By default on MA2, any editing of values in Blind or Preview requires an Update or Store command to complete the process. (Preview has an option for Auto-Update)
Whereas any changes or edits made in Eos Blind are automatic and immediate.

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EDIT

Edit is a very common action command for editing and updating contents of almost any kind of target or object, such as cues, presets, macros, etc.
i.e. "Edit Macro 23" , "Edit Cue 4" , "Edit Preset 2.9"

"Edit [Record Target] " is partially similar to going into Eos Blind and viewing the contents of objects (cues, palettes, presets).
However, while Edit can be used in MA2 Blind, it also works in the Live Programmer. Meaning that "Edit Preset 2.9" not in Blind will call all the contents of Positions Preset 9 into the Live Programmer, sending live data to all DMX outputs. From here you can easily make changes, then press the flashing Update button to update all changed data to that Preset. Edit can make quick work of updating presets.

Edit is also a common command for many other objects that don't involve attribute data, such as Macros, or even the Patch of a fixture i.e "Edit Fixture 201" opens window popup showing patch info for Fixture 201

Edit can also be used the same way in MA2 Blind and BlindEdit, which will NOT send to the Live DMX output. See the section on "Blind"

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ASSIGN

Assign - no simple Eos equivalent. But is a common action-command to change parameters of objects, as well as Map objects to layouts or physical buttons. Can:

- Assign Cues/Sequences to Executors
- Change Timing of Cues, as well as other Cue options (MIB, etc.)
- Assign Macros or Views to specific buttons or soft keys
- Access or modify many options for most object and targets

"Assign executor 1.14" opens Executor options.
"Assign Macro 1 At Viewbutton 1.1".
"Assign Sequence 12 At Executor 1.1" = "Fader 1/1 {Mapped To} Cue 12/"
"Assign Cue 12 {Time} 2.5" = "Cue 12 Time 2.5"

List of many possible attribute options using Assign:
https://support.actlighting.com/knowledgeBase/11662799

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STATUS

Status is a term/command used in various instances to include tracked values.
MA2 by default, when pulling data or copying data from other Cues, will only look at hard stored values. It will **NOT** include any tracked values unless the /status keyword is included in the command.
Eos by default will always include both hard values and tracked values in any Recall From or Copy To command.

"Fixture 203 At /status Cue 34" ***truly*** = "Chan 203 Recall From Cue 34"
"Copy Cue 4 At Cue 10 /status" ***truly*** = "Cue 4 Copy To Cue 10"

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There is no such thing as a "Submaster" in MA2. Only Sequences (cue lists in Eos terms). To create the equivalent of a "Submaster" you simply Store a Sequence with one Cue.

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There isn't really a way to "Select Last" in MA2. But you're less likely to need such a command because MA2 keeps your channel selection until you tell it not to. So you're less likely to lose your channel selection accidentally.

EXECUTOR/FADER OPTIONS

Accessed by Command "Assign Executor #.#" or tapping on top title bar of executor label
i.e. "Assign Executor #.#" = "Sub # {Properties}" or "Cue #/ {Properties}"

Here you can find a lot of options for things like:
- Tracking vs cue Only
- Priorities
- MIB settings (Marking)

Flash button is like your standard bump button.

Swop is like "Solo" (as of Eos v2.5)

Black is like a Blackout button for that specific executor

Off on Overwritten is essentially the same as the Off on Stomp

Temp Fader will make an Executor's fader behave much like a default Submaster
In that all parameters will fade with the fader, as opposed to just intensity parameters.

Group master is like an Inhibitive Submaster

Chaser turns the Sequence/Executor into something sort of resembling an Absolute or Step-based effect. When Chaser is enabled, all of the cues in the sequence automatically loop based on the cue's time. The Cues essentially become the steps of the effect.

MA2 Priority is similar to Eos Priority, but MA2 Priority also includes LTP/HTP behavior as part of different priorities, whereas Eos has a separate option for LTP vs HTP.
******* It is important to note that all MA2 executors default to LTP, whereas all Eos Faders default to HTP. In MA2, the LTP/HTP option is within the Priority selection (there is no specific separate LTP/HTP option, as there is in Eos).

External Resources

https://support.actlighting.com/knowledgeBase