Guide for Understanding and Building MAME Files V8.00

This guide is for those who want to create or edit their own MAME files, or at the very least better understand how they work. Ultimately if you just want to use DOFLinx with MAME you don't really need to use this guide.

A core part of MAME files for DOFLinx is getting the live score so that both score changes and score milestones can be used as triggers for actions.

MAME includes a plugin to save and restore high scores. This is done by identifying the memory region that holds the high score, and normally the high score table as well. The plugin then saves this area of memory to a data file on exit and then restores it on start up again. The plugin does not attempt to interpret the information, it merely saves to raw RAM contents and restores it later.

DOFLinx builds on this logic by reading, not the high score memory location, but the current score memory location. In addition to this DOFLinx needs to be able to interpret the data into a score.

MAME File Load Order

MAME files are very similar to FX3 files if you are familiar with them. If not don't worry. A series of files are loaded to build the setup for the game being played. The Load order is;

1. ALL_PRE.MAME
2. Game file
    a. GAMENAME.MAME, or;
    b. If the GAMENAME.MAME does not exist DEFAULT.MAME
3. ALL_POST.MAME

In ALL_PRE you have things that apply to all games. For example loading the ROM you want from DOF (generally for addressable LED effects), and for common outputs [COMMANDS] such as the pause key being turned on and off.

ALL_POST loads after the game so you can globally modify things in many game files if you wanted to. You can add an overriding [COMMAND] for something that resets the parameter like BUTTONS_ON= , or you can remove commands in the [CLEAR COMMANDS] section, just name the trigger such as led0.

The MAME file with the game's (ROM) name contains the individual stuff for that game.

A GAMENAME.MAME file can contain a single line being USES=NAME where NAME is another MAME file. This allows games that have multiple ROMs with the same detail to only have one MAME file with all the details in it. You can not "chain" MAME files with the USES command, so a MAME file with a USES= must refence a GAMENAME.MAME with details in it.

For example, I have built an invaders.MAME for Space Invaders. There is also a ROM called invaders4 that has the same memory locations, so the invaders4.MAME file has a single line USES=invaders

MAME file structure and sections

Here is my MAME file for Galaga

```
#################
#
# MAME configuration for galaga
# DOFLinx force feedback configuration file v1
#
#################

[STARTUP]
BUTTONS_ON=BUT_CN
BUTTONS_ON_COLOUR=BUT_EX,DODGER_BLUE
COLOUR_PALETTE=White,Red,Blue,Green

[SHUTDOWN]
BUTTONS_ON=
BUTTONS_ON_COLOUR=

[COMMANDS]
led0|ON|FF_Button BUT_P1,BA_ON,0,0|FF_DOF E51,-1
led0|OFF|FF_Button BUT_P1,BA_OFF,0,0
led1|ON|FF_Button BUT_P2,BA_ON,0,0|FF_DOF E51,-1
led1|OFF|FF_Button BUT_P2,BA_OFF,0,0

[SCORE]
S1=:maincpu|main|program|83f8|8
M1=,,24,1,NUMBER,REVERSE
S2=:maincpu|main|program|83e3|8
M2=,,24,1,NUMBER,REVERSE
DELAY=2000
# A single ship stationary or in flight
SC=50:160:FF_Flasher DV_FLCN,FL_ON,1,100,100,Random|FF_DOF E223,-1
# Boss Ship in flight
SC=400:400:FF_Flasher DV_FLOL,FL_ON,1,250,100,Orange|FF_Flasher
DV_FLOR,FL_ON,1,250,100,Orange|FF_DOF E514,-1|FF_DOF E518,-1
# Boss ship in flight 1 wingman
SC=800:800:FF_Flasher DV_FLOL,FL_ON,1,350,100,Cyan|FF_Flasher
DV_FLOR,FL_ON,1,350,100,Cyan|FF_DOF E510,-1|FF_DOF E512,-1
# Boss ship in flight 2 wingman
SC=1600:1600:FF_Flasher DV_FLCN,FL_ON,1,350,100,Green|FF_Flasher
DV_FLIL,FL_ON,1,350,100,Green|FF_Flasher DV_FLIR,FL_ON,1,350,100,Green|FF_DOF E695,-1|FF_DOF
E701,-1|FF_DOF E697,-1|FF_DOF E703,-1|FF_DOF E699,-1
# A challenge stage not perfect
SC=2000:9500:FF_Colour Blue,RGB_TT,1500|FF_Flasher DV_FLOL,FL_TT,1,250,100,Blue|FF_Flasher
DV_FLIL,FL_TT,1,250,100,Blue|FF_Flasher DV_FLCN,FL_TT,1,250,100,Blue|FF_Flasher
DV_FLIR,FL_TT,1,250,100,Blue|FF_Flasher DV_FLOR,FL_TT,1,250,100,Blue|FF_DOF E620,-1|FF_DOF
E607,-1|FF_DOF E619,-1
# Challenge Stage Perfect
SC=10000:10000:FF_Dev DV_KN,-1|FF_Colour White,RGB_TT,1500|FF_Flasher
DV_FLOL,FL_TT,1,250,100,White|FF_Flasher DV_FLIL,FL_TT,1,250,100,White|FF_Flasher
DV_FLCN,FL_TT,1,250,100,White|FF_Flasher DV_FLIR,FL_TT,1,250,100,White|FF_Flasher
DV_FLOR,FL_TT,1,250,100,White|FF_DOF E148,-1|FF_DOF E162,-1|FF_DOF E170,-1
# First New Ship
ST=30000:FF_Dev DV_MC,-1|FF_Flasher DV_FLOL,FL_FL,6,750,100,Random|FF_Flasher
DV_FLOR,FL_FL,6,750,100,Random|FF_Flasher DV_FLIL,FL_FL,6,750,100,Random|FF_Flasher
DV_FLIR,FL_FL,6,750,100,Random|FF_Flasher DV_FLCN,FL_FL,6,750,100,Random|FF_DOF E115,-1
# Subsequent New Ships
ST=80000:FF_Dev DV_MC,-1|FF_Flasher DV_FLOL,FL_FL,6,750,100,Random|FF_Flasher
DV_FLOR,FL_FL,6,750,100,Random|FF_Flasher DV_FLIL,FL_FL,6,750,100,Random|FF_Flasher
DV_FLIR,FL_FL,6,750,100,Random|FF_Flasher DV_FLCN,FL_FL,6,750,100,Random|FF_DOF E112,-1
```

Let's pull it apart a piece at a time. I've coloured different parts to help with the explanation.

The Red section is the header, what is this why is it here. It is just a bunch of comments. Any line throughout the MAME file that begins with # is a comment line.

The Orange [STARTUP] section contains parameters for DOFLinx that are run as this file is loaded. This allows for specific setups for this game. In the sample file it turns on the Coin button LED, sets the Exit button RGB LED to dodger_blue and limits the colour palette for this game which impacts the "RANDOM" option for colours.

The Blue [SHUTDOWN] section also contains parameters for DOFLinx. However these are run when the game changes or MAME closes. This allows the resetting of various items, usually those set in the [STARTUP] section.

The Green [COMMANDS] section is for triggers unique to this game. The trigger name, in the example above "led0" and "led1" comes from the MAME ROM and represents triggers built into the original game. In this section you can set and valid action. In the example the "ledX" triggers are turning on and off the Player 1 and Player 2 buttons just as the original game did. According to Google about 1600 MAME games have triggers.

DOFLinx can be set to save all triggers found by setting you MAME_TRIGGER_OUTPUT_PATH= . Check the guide for details on this.

Finally the Purple {SCORE] section. This section has no parallel in FX2 / FX3 files. This is where you can setup to read scores from the MAME game in real time. Let's walk through the line types.

Sx=cpu|region type|region|address|length
Sx, where x is 1 to 4 being the player number

cpu, is the cpu to target, you will see this in the debugger memory window when you find the score memory address. It will mostly be ":maincpu"

region type, is the region type of RAM to read. If you are reading "program" ram this is set to "main", if you are reading a shared memory region then set it to "shared"

region, the memory region with the score, again, you will see this in the debugger memory window.

Address, the address in hexadecimal to start reading at

Length, the length in hexadecimal to read from the above starting address

Mx=region start,region end,filler string,multiplier,data type,order
Mx, where x is 1 to 4 being the player number

The "M" or score mask line is critical so that DOFLinx knows how to decrypt the score. The score is held in different games in different ways.

You can optionally grab a region of RAM with start and end fixed byte. If you set the region start and region end then after the memory is read the first step will be to trim out the bytes in between the markers. So if you read 8 bytes of RAM and got 0C 00 02 04 01 33 4A 4A with start region and end region fixed bytes set to 0C and 33 respectively, then the score section of that will be cut out leaving 00 02 04 01

In many score areas there are "filler" bytes because the score isn't yet that large. So a score of 10 might take 2 bytes whereas a score of 10,000 will take 5 bytes in same machine. So in RAM you might read the score location of 6 bytes being 4A 01 00 00 00 00 for a score 10,000 and 4A 4A 4A 4A 01 00 for a score of 10. If you set the filler to 4A then this will simply be removed leaving the score.

Some games don't store the actual score they store the score divided by 10, 100 or even 1000. This is because when you score in multiples of say 100, the last two digits are irrelevant as they are always "00" so a score of 1,000 might be stored as 10. By having a multiplier you can get the right score. In this example it would be 100.

Scores are not stored in MAME games in the same way, so the "data type" instruction helps DOFLinx decrypt the score. The current valid options are:

NUMBER – each bye represents a number, ie 01 03 01 00 05 is 13,105. You will note that each byte must be in the range of 0 to 9. Galaga is like this.

STRING – The bytes make a simple string of the score, ie 05 34 10 is a score of 53,410. Space Invaders is like this, but only two bytes long.

HEX – A straight hexadecimal conversion, ie a string of A7 71 is a score of 42,865

If you find a machine that doesn't do either of these then let me know and I'll add a new one along with the appropriate decryption.

The "Data order" again is required for score decryption. The valid options are currently:

FORWARD – The bytes are in forward order, ie a NUMERIC score of 130 is represented as 01 03 00

REVERSE – The bytes are in reverse order, ie a NUMBERIC score of 130 is represented as 00 03 01. Both Galaga and Space Invaders are like this

REVERSE4 – This is for 16 bit words that are in reverse order. Ie a STRING score of 11200 is represented as 1200 0001 0000. RType is like this.

While areas of memory have been saved and restored in MAME for save / restoring high scores, the decrypting of scores is something new. The order of events is;

1. Read the number of bytes specified by legth starting from the address supplied
2. If a start and end region byte are specified then trim the result
3. Remove any filler bytes if that is specified
4. Change the order as per the parameter
5. Determine the score based on the specified storage mechanism ie NUMERIC, STRING

DELAY=xxxxx

Where xxxx is a number of milliseconds. This is the time from MAME starting until when DOFLinx starts to poll the memory address. It needs to be long enough for MAME to load and setup the game, some load quickly others no so much given their in game initialisation. If this is too short its possible that you can cause MAME to crash (due to my poor MAME programming for the memory polling no error catching properly), too long of course and you will miss scores when you star the game. Realistically though it takes you a few moments to press a coin button and select player 1 or 2, so the range is pretty forgiving.

SC=From:To:Actions

This drive Actions when a "Score Change" (SC) is >=From and <=To. So SC=50:100:Actions will trigger the Actions when the score changes in one reading (default being every 250Ms) from 50 to 100. Something like a single ship being hit. Actions are the same as all other actions in DOFLinx, read the guide for these.

Note the ":" separator that then changes to a "|" separator between the string of actions

ST=Total:Actions

This drives Actions when a "Score Total" (ST) reaches the set amount. So ST=10000:Actions will trigger the Actions when the score equals of passes 10,000. Any SC amount can only be triggered once by each player during a single game.

SE=From Score:Every Score:Iterations:Actions

This allows you to add a repeating Score Total using "Score Every" (SE). If you wanted set Actions to occur every 200,000 starting from 300,000 onwards for 10 times, so at 300k, 500k, 700k, 900k, etc, you would have

SE=200000:300000:10:Action 1|Action 2|Action 3

Finding RAM address

1. Work out the game (ROM) you are going to work on. Make sure its not already done, no point doing it twice!
2. Have a look in \MAME\plugins\hiscore\hiscore.dat
3. Find the ROM name you are playing, ie galaga

```
galaga:
galaga84:   ; missing
galagab2:   ; missing
galagads:   ; missing
galagamf:
galagamk:
galagamw:
galagao:
gallag:
@:maincpu,program,8a20,2d,00,18
@:maincpu,program,83ed,6,00,24
```

The above means that the RAM addresses work for all of the ROM names above the memory lines. These addresses are not the ones we want as they are the high score, but using these gives us a good starting point.

The address(es) in hiscore.dat are, to state the obvious, for high scores. We can however use them to help locate the live score address.

The line with the small block (length 0x6) is likely the high score at the top of the screen, whereas the line with the larger block (length 0x2D) is likely the high score table.

4. Start up the game you are working on in a windowed mode with the debugger. Ie Mame64 galaga -window -debug

MAME: Galaga (Namco rev. B) [galaga]

1UP   HIGH SCORE
20000

GAME OVER

CREDIT 0

Debug: galaga - Zilog Z80 ':maincpu'

Debug Options

```
cycles  509      038A  ld    ($9002),a        32 02 90
 beamx    4       038D  ld    a,($9201)        3A 01 92
 beamy  224       0390  dec   a                3D
 frame 13702      0391  jr    z,$038D          28 FA
 flags .Z....N.   0393  call  $1242            CD 42 12
-----------      0396  call  $0160            CD 60 01
    PC  038D      0399  rst   $28              EF
    SP  90A0      039A  call  $003C            CD 3C 00
    AF  0042      039D  xor   a                AF
    BC  0000      039E  ld    ($920B),a        32 0B 92
    DE  9900      03A1  ld    c,$13            0E 13
    HL  127B      03A3  rst   $30              F7
    IX  FFFF      03A4  ld    c,$01            0E 01
    IY  FFFF      03A6  rst   $30              F7
   AF2  0000      03A7  ld    hl,$0452         21 52 04
   BC2  0000      03AA  ld    ($9280),hl       22 80 92
   DE2  99B8      03AD  ld    a,($9980)        3A 80 99
   HL2  7100
    WZ  038D     MAME debugger version 0.218 (unknown)
     R  16       Currently targeting galaga (Galaga (Namco rev. B))
     I  00
    IM  1
  IFF1  1
  IFF2  1
  HALT  0
```

5. Look up or dump out the address range for the single high score. In this case 0x83ED for 6 bytes.

You can see the six bytes are 00 00 00 00 02 24

From the line in the high score file, hiscore.dat, you can see that the starting byte is 00 and the ending byte 24, this makes the high score bytes 00 00 00 00 02.

So in this case we can see that the on screen high score of 20,000 is displayed backwards.

6. Now that we have deduced the storage format lets play the game and get a score. I play a little the simply pause the game.

You can see my score is 15760, when reversed it will be 00 06 07 05 01 in RAM

7. Now search the current score, probably wise not to break the high score and make them the same otherwise you might get the wrong address.

You will a number of possible addresses. It may take a couple of searches, even restarts of the game to be sure. I lucked in and started with the address closed to the high score address being 0x83FC

8. If we examine the RAM at this address we can see the score being 06 07 05 01 with 24 at the end. The 24 byte is a "filler", it's what is there when the score isn't that big.

The extra couple of "blank" bytes (0x24) will allow for score expansion, if you play on you will see this.

So from this you can deduce that 0x83F8 (starting byte) for a length of 8 bytes is the current score area of RAM.

9. Now we need to combine this information to make the required memory string for reading player 1 score in galaga. The format of the lines required in the *.MAME file is
Sx=cpu|memory type|memory name|start address|length

Mx=start byte marker|end byte marker|multiplier|Data type|order

x=player number

So it becomes

S1=:maincpu|main|program|83f8|6

M1=,,24,1,NUMBER,REVERSE

10. Put that into the appropriately named MAME file, galaga.MAME in the [SCORE] section and give it whirl.
11. Start up DOFLinx with DEBUG=1
12. Start up MAME in window mode
13. Play the MAME game and see if the score comes through. If you've got it horribly wrong MAME will crash, don't worry, go again!
14. Now do the same again in two player mode, or when you get the hang of just do the whole thing in 2 player mode.

DOFLinx ROM commands for MX Effects

WORDS, Generic - Back MX					
BEGIN	PF Back Effects MX	E51	"BEGIN" letters flash	MULTI	
START	PF Back Effects MX	E52	"START" letters flash	MULTI	
CREDIT	PF Back Effects MX	E53	"CREDIT" letters flash	MULTI	
COIN	PF Back Effects MX	E54	"COIN" letters flash	MULTI	
STARS - Back MX					
Stars in Space - Back MX - White	PF Back Effects MX	E110	Stars	White	
Stars in Space - Back MX - Red	PF Back Effects MX	E111	Stars	Red	
Stars in Space - Back MX - Green	PF Back Effects MX	E112	Stars	Green	
Stars in Space - Back MX - Blue	PF Back Effects MX	E113	Stars	Blue	
Stars in Space - Back MX - Yellow	PF Back Effects MX	E114	Stars	Yellow	
Stars in Space - Back MX - Cyan	PF Back Effects MX	E115	Stars	Cyan	
Stars in Space - Back MX - Magenta	PF Back Effects MX	E116	Stars	Magenta	
Stars in Space - Back MX - Orange_red	PF Back Effects MX	E117	Stars	Orange_red	
STARS - Left MX					
Stars in Space - Left MX	PF Left Effects MX	E118	Stars	White	
Stars in Space - Left MX	PF Left Effects MX	E119	Stars	Red	
Stars in Space - Left MX	PF Left Effects MX	E120	Stars	Green	
Stars in Space - Left MX	PF Left Effects MX	E121	Stars	Blue	
Stars in Space - Left MX	PF Left Effects MX	E122	Stars	Yellow	
Stars in Space - Left MX	PF Left Effects MX	E123	Stars	Cyan	
Stars in Space - Left MX	PF Left Effects MX	E124	Stars	Magenta	
Stars in Space - Left MX	PF Left Effects MX	E125	Stars	Orange_red	
STARS - Right MX					
Stars in Space - Right MX	PF Right Effects MX	E118	Stars	White	
Stars in Space - Right MX	PF Right Effects MX	E119	Stars	Red	

Stars in Space - Right MX	PF Right Effects MX	E120	Stars	Green	
Stars in Space - Right MX	PF Right Effects MX	E121	Stars	Blue	
Stars in Space - Right MX	PF Right Effects MX	E122	Stars	Yellow	
Stars in Space - Right MX	PF Right Effects MX	E123	Stars	Cyan	
Stars in Space - Right MX	PF Right Effects MX	E124	Stars	Magenta	
Stars in Space - Right MX	PF Right Effects MX	E125	Stars	Orange_red	
Electrical Arcing Effects					
Electrical Effects - Back MX - Red	PF Back Effects MX	E135	Electrical Arcing Effects	Red	
Electrical Effects - Left MX - Red	PF Left Effects MX	E135	Electrical Arcing Effects	Red	
Electrical Effects - Right MX - Red	PF Right Effects MX	E135	Electrical Arcing Effects	Red	
Electrical Effects - Back MX - Green	PF Back Effects MX	E136	Electrical Arcing Effects	Green	
Electrical Effects - Left MX - Green	PF Left Effects MX	E136	Electrical Arcing Effects	Green	
Electrical Effects - Right MX - Green	PF Right Effects MX	E136	Electrical Arcing Effects	Green	
Electrical Effects - Back MX - Blue	PF Back Effects MX	E137	Electrical Arcing Effects	Blue	
Electrical Effects - Left MX - Blue	PF Left Effects MX	E137	Electrical Arcing Effects	Blue	
Electrical Effects - Right MX - Blue	PF Right Effects MX	E137	Electrical Arcing Effects	Blue	
Electrical Effects - Back MX - Yellow	PF Back Effects MX	E138	Electrical Arcing Effects	Yellow	
Electrical Effects - Left MX - Yellow	PF Left Effects MX	E138	Electrical Arcing Effects	Yellow	
Electrical Effects - Right MX - Yellow	PF Right Effects MX	E138	Electrical Arcing Effects	Yellow	
Electrical Effects - Back MX - Cyan	PF Back Effects MX	E139	Electrical Arcing Effects	Cyan	
Electrical Effects - Left MX - Cyan	PF Left Effects MX	E139	Electrical Arcing Effects	Cyan	
Electrical Effects - Right MX - Cyan	PF Right Effects MX	E139	Electrical Arcing Effects	Cyan	
Electrical Effects - Back MX - Magenta	PF Back Effects MX	E140	Electrical Arcing Effects	Magenta	
Electrical Effects - Left MX - Magenta	PF Left Effects MX	E140	Electrical Arcing Effects	Magenta	
Electrical Effects - Right MX - Magenta	PF Right Effects MX	E140	Electrical Arcing Effects	Magenta	

Electrical Effects - Back MX - Orange	PF Back Effects MX	E141	Electrical Arcing Effects	Orange_red	
Electrical Effects - Left MX - Orange	PF Left Effects MX	E141	Electrical Arcing Effects	Orange_red	
Electrical Effects - Right MX - Orange	PF Right Effects MX	E141	Electrical Arcing Effects	Orange_red	
Machine Gun - Sides					
Machine Gun - Left - Bottom to Top	PF Left Effects MX	E182	Streak bottom to top on Left MX	Yellow	
Machine Gun - Right - Bottom to Top	PF Right Effects MX	E183	Streak bottom to top on Left MX	Yellow	
Machine Gun - Left - Top to Bottom	PF Left Effects MX	E184	Streak bottom to top on Left MX	Yellow	
Machine Gun - Right - Top to Bottom	PF Right Effects MX	E185	Streak bottom to top on Left MX	Yellow	
Lazer Blast - Sides - Bottom to Top					
Left Laser Blast	PF Left Effects MX	E186	Streak bottom to top on Left MX	White	
Right Laser Blast	PF Right Effects MX	E187	Streak bottom to top on Right MX	White	
Left Laser Blast	PF Left Effects MX	E188	Streak bottom to top on Left MX	Red	
Right Laser Blast	PF Right Effects MX	E189	Streak bottom to top on Right MX	Red	
Left Laser Blast	PF Left Effects MX	E190	Streak bottom to top on Left MX	Green	
Right Laser Blast	PF Right Effects MX	E191	Streak bottom to top on Right MX	Green	
Left Laser Blast	PF Left Effects MX	E192	Streak bottom to top on Left MX	Blue	
Right Laser Blast	PF Right Effects MX	E193	Streak bottom to top on Right MX	Blue	
Left Laser Blast	PF Left Effects MX	E194	Streak bottom to top on Left MX	Yellow	
Right Laser Blast	PF Right Effects MX	E195	Streak bottom to top on Right MX	Yellow	
Left Laser Blast	PF Left Effects MX	E196	Streak bottom to top on Left MX	Cyan	
Right Laser Blast	PF Right Effects MX	E197	Streak bottom to top on Right MX	Cyan	
Left Laser Blast	PF Left Effects MX	E198	Streak bottom to top on Left MX	Magenta	
Right Laser Blast	PF Right Effects MX	E199	Streak bottom to top on Right MX	Magenta	
Left Laser Blast	PF Left Effects MX	E200	Streak bottom to top on Left MX	Orange_red	
Right Laser Blast	PF Right Effects MX	E201	Streak bottom to top on Right MX	Orange_red	
Lazer Blast - Sides - Top to Bottom					
Left Laser Blast	PF Left Effects MX	E202	Streak bottom to top on Left MX	White	
Right Laser Blast	PF Right Effects MX	E203	Streak bottom to top on Right MX	White	

Left Laser Blast	PF Left Effects MX	E204	Streak bottom to top on Left MX	Red	
Right Laser Blast	PF Right Effects MX	E205	Streak bottom to top on Right MX	Red	
Left Laser Blast	PF Left Effects MX	E206	Streak bottom to top on Left MX	Green	
Right Laser Blast	PF Right Effects MX	E207	Streak bottom to top on Right MX	Green	
Left Laser Blast	PF Left Effects MX	E208	Streak bottom to top on Left MX	Blue	
Right Laser Blast	PF Right Effects MX	E209	Streak bottom to top on Right MX	Blue	
Left Laser Blast	PF Left Effects MX	E210	Streak bottom to top on Left MX	Yellow	
Right Laser Blast	PF Right Effects MX	E211	Streak bottom to top on Right MX	Yellow	
Left Laser Blast	PF Left Effects MX	E212	Streak bottom to top on Left MX	Cyan	
Right Laser Blast	PF Right Effects MX	E213	Streak bottom to top on Right MX	Cyan	
Left Laser Blast	PF Left Effects MX	E214	Streak bottom to top on Left MX	Magenta	
Right Laser Blast	PF Right Effects MX	E215	Streak bottom to top on Right MX	Magenta	
Left Laser Blast	PF Left Effects MX	E216	Streak bottom to top on Left MX	Orange_red	
Right Laser Blast	PF Right Effects MX	E217	Streak bottom to top on Right MX	Orange_red	
Bumper Blast					
Bumper Blast	PF Back Effects MX	E218	Fast horizontal Dashes - Top & Bottom - Center to Edge	White	
Bumper Blast	PF Back Effects MX	E219	Fast horizontal Dashes - Top & Bottom - Center to Edge	Red	
Bumper Blast	PF Back Effects MX	E220	Fast horizontal Dashes - Top & Bottom - Center to Edge	Green	
Bumper Blast	PF Back Effects MX	E221	Fast horizontal Dashes - Top & Bottom - Center to Edge	Blue	
Bumper Blast	PF Back Effects MX	E222	Fast horizontal Dashes - Top & Bottom - Center to Edge	Yellow	
Bumper Blast	PF Back Effects MX	E223	Fast horizontal Dashes - Top & Bottom - Center to Edge	Cyan	
Bumper Blast	PF Back Effects MX	E224	Fast horizontal Dashes - Top & Bottom - Center to Edge	Magenta	
Bumper Blast	PF Back Effects MX	E225	Fast horizontal Dashes - Top & Bottom - Center to Edge	Orange_red	
Strobes					
Strobes	PF Back Strobe MX	E226	Strobes on Back MX using User's Strobe "Shape"	White	
Beacon					
Beacon	PF Back Effects MX	E227	Beacon - Two Dashes - Top & Bottom	White	
Beacon	PF Back Effects MX	E228	Beacon - Two Dashes - Top & Bottom	Red	
Beacon	PF Back Effects MX	E229	Beacon - Two Dashes - Top & Bottom	Green	

Beacon	PF Back Effects MX	E230	Beacon - Two Dashes - Top & Bottom	Blue	
Beacon	PF Back Effects MX	E231	Beacon - Two Dashes - Top & Bottom	Yellow	
Beacon	PF Back Effects MX	E232	Beacon - Two Dashes - Top & Bottom	Cyan	
Beacon	PF Back Effects MX	E233	Beacon - Two Dashes - Top & Bottom	Magenta	
Beacon	PF Back Effects MX	E234	Beacon - Two Dashes - Top & Bottom	Orange_red	
Circle Pulse - Animated Shape					
Circle Pulse - Outer Left	PF Back Effects MX	E444	Circle Pulse	White	
Circle Pulse - Inner Left	PF Back Effects MX	E445	Circle Pulse	White	
Circle Pulse - Center	PF Back Effects MX	E446	Circle Pulse	White	
Circle Pulse - Inner Right	PF Back Effects MX	E447	Circle Pulse	White	
Circle Pulse - Outer Right	PF Back Effects MX	E448	Circle Pulse	White	
Circle Pulse - Outer Left	PF Back Effects MX	E449	Circle Pulse	Red	
Circle Pulse - Inner Left	PF Back Effects MX	E450	Circle Pulse	Red	
Circle Pulse - Center	PF Back Effects MX	E451	Circle Pulse	Red	
Circle Pulse - Inner Right	PF Back Effects MX	E452	Circle Pulse	Red	
Circle Pulse - Outer Right	PF Back Effects MX	E453	Circle Pulse	Red	
Circle Pulse - Outer Left	PF Back Effects MX	E454	Circle Pulse	Green	
Circle Pulse - Inner Left	PF Back Effects MX	E455	Circle Pulse	Green	
Circle Pulse - Center	PF Back Effects MX	E456	Circle Pulse	Green	
Circle Pulse - Inner Right	PF Back Effects MX	E457	Circle Pulse	Green	
Circle Pulse - Outer Right	PF Back Effects MX	E458	Circle Pulse	Green	
Circle Pulse - Outer Left	PF Back Effects MX	E459	Circle Pulse	Blue	
Circle Pulse - Inner Left	PF Back Effects MX	E460	Circle Pulse	Blue	
Circle Pulse - Center	PF Back Effects MX	E461	Circle Pulse	Blue	
Circle Pulse - Inner Right	PF Back Effects MX	E462	Circle Pulse	Blue	
Circle Pulse - Outer Right	PF Back Effects MX	E463	Circle Pulse	Blue	
Circle Pulse - Outer Left	PF Back Effects MX	E464	Circle Pulse	Yellow	

Circle Pulse - Inner Left	PF Back Effects MX	E465	Circle Pulse	Yellow	
Circle Pulse - Center	PF Back Effects MX	E466	Circle Pulse	Yellow	
Circle Pulse - Inner Right	PF Back Effects MX	E467	Circle Pulse	Yellow	
Circle Pulse - Outer Right	PF Back Effects MX	E468	Circle Pulse	Yellow	
Circle Pulse - Outer Left	PF Back Effects MX	E469	Circle Pulse	Cyan	
Circle Pulse - Inner Left	PF Back Effects MX	E470	Circle Pulse	Cyan	
Circle Pulse - Center	PF Back Effects MX	E471	Circle Pulse	Cyan	
Circle Pulse - Inner Right	PF Back Effects MX	E472	Circle Pulse	Cyan	
Circle Pulse - Outer Right	PF Back Effects MX	E473	Circle Pulse	Cyan	
Circle Pulse - Outer Left	PF Back Effects MX	E474	Circle Pulse	Magenta	
Circle Pulse - Inner Left	PF Back Effects MX	E475	Circle Pulse	Magenta	
Circle Pulse - Center	PF Back Effects MX	E476	Circle Pulse	Magenta	
Circle Pulse - Inner Right	PF Back Effects MX	E477	Circle Pulse	Magenta	
Circle Pulse - Outer Right	PF Back Effects MX	E478	Circle Pulse	Magenta	
Circle Pulse - Outer Left	PF Back Effects MX	E479	Circle Pulse	Orange_Red	
Circle Pulse - Inner Left	PF Back Effects MX	E480	Circle Pulse	Orange_Red	
Circle Pulse - Center	PF Back Effects MX	E481	Circle Pulse	Orange_Red	
Circle Pulse - Inner Right	PF Back Effects MX	E482	Circle Pulse	Orange_Red	
Circle Pulse - Outer Right	PF Back Effects MX	E483	Circle Pulse	Orange_Red	
Cross Pulse - Animated Shape					
Cross Pulse - Outer Left	PF Back Effects MX	E484	Cross Pulse	White	
Cross Pulse - Inner Left	PF Back Effects MX	E485	Cross Pulse	White	
Cross Pulse - Center	PF Back Effects MX	E486	Cross Pulse	White	
Cross Pulse - Inner Right	PF Back Effects MX	E487	Cross Pulse	White	
Cross Pulse - Outer Right	PF Back Effects MX	E488	Cross Pulse	White	
Cross Pulse - Outer Left	PF Back Effects MX	E489	Cross Pulse	Red	
Cross Pulse - Inner Left	PF Back Effects MX	E490	Cross Pulse	Red	

Cross Pulse - Center	PF Back Effects MX	E491	Cross Pulse	Red	
Cross Pulse - Inner Right	PF Back Effects MX	E492	Cross Pulse	Red	
Cross Pulse - Outer Right	PF Back Effects MX	E493	Cross Pulse	Red	
Cross Pulse - Outer Left	PF Back Effects MX	E494	Cross Pulse	Green	
Cross Pulse - Inner Left	PF Back Effects MX	E495	Cross Pulse	Green	
Cross Pulse - Center	PF Back Effects MX	E496	Cross Pulse	Green	
Cross Pulse - Inner Right	PF Back Effects MX	E497	Cross Pulse	Green	
Cross Pulse - Outer Right	PF Back Effects MX	E498	Cross Pulse	Green	
Cross Pulse - Outer Left	PF Back Effects MX	E499	Cross Pulse	Blue	
Cross Pulse - Inner Left	PF Back Effects MX	E500	Cross Pulse	Blue	
Cross Pulse - Center	PF Back Effects MX	E501	Cross Pulse	Blue	
Cross Pulse - Inner Right	PF Back Effects MX	E502	Cross Pulse	Blue	
Cross Pulse - Outer Right	PF Back Effects MX	E503	Cross Pulse	Blue	
Cross Pulse - Outer Left	PF Back Effects MX	E504	Cross Pulse	Yellow	
Cross Pulse - Inner Left	PF Back Effects MX	E505	Cross Pulse	Yellow	
Cross Pulse - Center	PF Back Effects MX	E506	Cross Pulse	Yellow	
Cross Pulse - Inner Right	PF Back Effects MX	E507	Cross Pulse	Yellow	
Cross Pulse - Outer Right	PF Back Effects MX	E508	Cross Pulse	Yellow	
Cross Pulse - Outer Left	PF Back Effects MX	E509	Cross Pulse	Cyan	
Cross Pulse - Inner Left	PF Back Effects MX	E510	Cross Pulse	Cyan	
Cross Pulse - Center	PF Back Effects MX	E511	Cross Pulse	Cyan	
Cross Pulse - Inner Right	PF Back Effects MX	E512	Cross Pulse	Cyan	
Cross Pulse - Outer Right	PF Back Effects MX	E513	Cross Pulse	Cyan	
Cross Pulse - Outer Left	PF Back Effects MX	E514	Cross Pulse	Magenta	
Cross Pulse - Inner Left	PF Back Effects MX	E515	Cross Pulse	Magenta	
Cross Pulse - Center	PF Back Effects MX	E516	Cross Pulse	Magenta	
Cross Pulse - Inner Right	PF Back Effects MX	E517	Cross Pulse	Magenta	

Cross Pulse - Outer Right	PF Back Effects MX	E518	Cross Pulse	Magenta	
Cross Pulse - Outer Left	PF Back Effects MX	E519	Cross Pulse	Orange_Red	
Cross Pulse - Inner Left	PF Back Effects MX	E520	Cross Pulse	Orange_Red	
Cross Pulse - Center	PF Back Effects MX	E521	Cross Pulse	Orange_Red	
Cross Pulse - Inner Right	PF Back Effects MX	E522	Cross Pulse	Orange_Red	
Cross Pulse - Outer Right	PF Back Effects MX	E523	Cross Pulse	Orange_Red	
Diamond Box Pulse - Animated Shape					
Diamond Box Pulse - Outer Left	PF Back Effects MX	E524	Diamond Box Pulse	White	
Diamond Box Pulse - Inner Left	PF Back Effects MX	E525	Diamond Box Pulse	White	
Diamond Box Pulse - Center	PF Back Effects MX	E526	Diamond Box Pulse	White	
Diamond Box Pulse - Inner Right	PF Back Effects MX	E527	Diamond Box Pulse	White	
Diamond Box Pulse - Outer Right	PF Back Effects MX	E528	Diamond Box Pulse	White	
Diamond Box Pulse - Outer Left	PF Back Effects MX	E529	Diamond Box Pulse	Red	
Diamond Box Pulse - Inner Left	PF Back Effects MX	E530	Diamond Box Pulse	Red	
Diamond Box Pulse - Center	PF Back Effects MX	E531	Diamond Box Pulse	Red	
Diamond Box Pulse - Inner Right	PF Back Effects MX	E532	Diamond Box Pulse	Red	
Diamond Box Pulse - Outer Right	PF Back Effects MX	E533	Diamond Box Pulse	Red	
Diamond Box Pulse - Outer Left	PF Back Effects MX	E534	Diamond Box Pulse	Green	
Diamond Box Pulse - Inner Left	PF Back Effects MX	E535	Diamond Box Pulse	Green	
Diamond Box Pulse - Center	PF Back Effects MX	E536	Diamond Box Pulse	Green	
Diamond Box Pulse - Inner Right	PF Back Effects MX	E537	Diamond Box Pulse	Green	
Diamond Box Pulse - Outer Right	PF Back Effects MX	E538	Diamond Box Pulse	Green	
Diamond Box Pulse - Outer Left	PF Back Effects MX	E539	Diamond Box Pulse	Blue	
Diamond Box Pulse - Inner Left	PF Back Effects MX	E540	Diamond Box Pulse	Blue	
Diamond Box Pulse - Center	PF Back Effects MX	E541	Diamond Box Pulse	Blue	

Diamond Box Pulse - Inner Right	PF Back Effects MX	E542	Diamond Box Pulse	Blue	
Diamond Box Pulse - Outer Right	PF Back Effects MX	E543	Diamond Box Pulse	Blue	
Diamond Box Pulse - Outer Left	PF Back Effects MX	E544	Diamond Box Pulse	Yellow	
Diamond Box Pulse - Inner Left	PF Back Effects MX	E545	Diamond Box Pulse	Yellow	
Diamond Box Pulse - Center	PF Back Effects MX	E546	Diamond Box Pulse	Yellow	
Diamond Box Pulse - Inner Right	PF Back Effects MX	E547	Diamond Box Pulse	Yellow	
Diamond Box Pulse - Outer Right	PF Back Effects MX	E548	Diamond Box Pulse	Yellow	
Diamond Box Pulse - Outer Left	PF Back Effects MX	E549	Diamond Box Pulse	Cyan	
Diamond Box Pulse - Inner Left	PF Back Effects MX	E550	Diamond Box Pulse	Cyan	
Diamond Box Pulse - Center	PF Back Effects MX	E551	Diamond Box Pulse	Cyan	
Diamond Box Pulse - Inner Right	PF Back Effects MX	E552	Diamond Box Pulse	Cyan	
Diamond Box Pulse - Outer Right	PF Back Effects MX	E553	Diamond Box Pulse	Cyan	
Diamond Box Pulse - Outer Left	PF Back Effects MX	E554	Diamond Box Pulse	Magenta	
Diamond Box Pulse - Inner Left	PF Back Effects MX	E555	Diamond Box Pulse	Magenta	
Diamond Box Pulse - Center	PF Back Effects MX	E556	Diamond Box Pulse	Magenta	
Diamond Box Pulse - Inner Right	PF Back Effects MX	E557	Diamond Box Pulse	Magenta	
Diamond Box Pulse - Outer Right	PF Back Effects MX	E558	Diamond Box Pulse	Magenta	
Diamond Box Pulse - Outer Left	PF Back Effects MX	E559	Diamond Box Pulse	Orange_Red	
Diamond Box Pulse - Inner Left	PF Back Effects MX	E560	Diamond Box Pulse	Orange_Red	
Diamond Box Pulse - Center	PF Back Effects MX	E561	Diamond Box Pulse	Orange_Red	
Diamond Box Pulse - Inner Right	PF Back Effects MX	E562	Diamond Box Pulse	Orange_Red	
Diamond Box Pulse - Outer Right	PF Back Effects MX	E563	Diamond Box Pulse	Orange_Red	
Point Plop - Animated Shape					
Point Plop - Outer Left	PF Back Effects MX	E564	Point Plop	White	
Point Plop - Inner Left	PF Back Effects MX	E565	Point Plop	White	

Point Plop - Center	PF Back Effects MX	E566	Point Plop	White	
Point Plop - Inner Right	PF Back Effects MX	E567	Point Plop	White	
Point Plop - Outer Right	PF Back Effects MX	E568	Point Plop	White	
Point Plop - Outer Left	PF Back Effects MX	E569	Point Plop	Red	
Point Plop - Inner Left	PF Back Effects MX	E570	Point Plop	Red	
Point Plop - Center	PF Back Effects MX	E571	Point Plop	Red	
Point Plop - Inner Right	PF Back Effects MX	E572	Point Plop	Red	
Point Plop - Outer Right	PF Back Effects MX	E573	Point Plop	Red	
Point Plop - Outer Left	PF Back Effects MX	E574	Point Plop	Green	
Point Plop - Inner Left	PF Back Effects MX	E575	Point Plop	Green	
Point Plop - Center	PF Back Effects MX	E576	Point Plop	Green	
Point Plop - Inner Right	PF Back Effects MX	E577	Point Plop	Green	
Point Plop - Outer Right	PF Back Effects MX	E578	Point Plop	Green	
Point Plop - Outer Left	PF Back Effects MX	E579	Point Plop	Blue	
Point Plop - Inner Left	PF Back Effects MX	E580	Point Plop	Blue	
Point Plop - Center	PF Back Effects MX	E581	Point Plop	Blue	
Point Plop - Inner Right	PF Back Effects MX	E582	Point Plop	Blue	
Point Plop - Outer Right	PF Back Effects MX	E583	Point Plop	Blue	
Point Plop - Outer Left	PF Back Effects MX	E584	Point Plop	Yellow	
Point Plop - Inner Left	PF Back Effects MX	E585	Point Plop	Yellow	
Point Plop - Center	PF Back Effects MX	E586	Point Plop	Yellow	
Point Plop - Inner Right	PF Back Effects MX	E587	Point Plop	Yellow	
Point Plop - Outer Right	PF Back Effects MX	E588	Point Plop	Yellow	
Point Plop - Outer Left	PF Back Effects MX	E589	Point Plop	Cyan	
Point Plop - Inner Left	PF Back Effects MX	E590	Point Plop	Cyan	
Point Plop - Center	PF Back Effects MX	E591	Point Plop	Cyan	
Point Plop - Inner Right	PF Back Effects MX	E592	Point Plop	Cyan	

Point Plop - Outer Right	PF Back Effects MX	E593	Point Plop	Cyan	
Point Plop - Outer Left	PF Back Effects MX	E594	Point Plop	Magenta	
Point Plop - Inner Left	PF Back Effects MX	E595	Point Plop	Magenta	
Point Plop - Center	PF Back Effects MX	E596	Point Plop	Magenta	
Point Plop - Inner Right	PF Back Effects MX	E597	Point Plop	Magenta	
Point Plop - Outer Right	PF Back Effects MX	E598	Point Plop	Magenta	
Point Plop - Outer Left	PF Back Effects MX	E599	Point Plop	Orange_Red	
Point Plop - Inner Left	PF Back Effects MX	E600	Point Plop	Orange_Red	
Point Plop - Center	PF Back Effects MX	E601	Point Plop	Orange_Red	
Point Plop - Inner Right	PF Back Effects MX	E603	Point Plop	Orange_Red	
Point Plop - Outer Right	PF Back Effects MX	E604	Point Plop	Orange_Red	
Round And Round - Animated Shape					
Round And Round - Outer Left	PF Back Effects MX	E605	Round And Round	White	
Round And Round - Inner Left	PF Back Effects MX	E606	Round And Round	White	
Round And Round - Center	PF Back Effects MX	E607	Round And Round	White	
Round And Round - Inner Right	PF Back Effects MX	E608	Round And Round	White	
Round And Round - Outer Right	PF Back Effects MX	E609	Round And Round	White	
Round And Round - Outer Left	PF Back Effects MX	E610	Round And Round	Red	
Round And Round - Inner Left	PF Back Effects MX	E611	Round And Round	Red	
Round And Round - Center	PF Back Effects MX	E612	Round And Round	Red	
Round And Round - Inner Right	PF Back Effects MX	E613	Round And Round	Red	
Round And Round - Outer Right	PF Back Effects MX	E614	Round And Round	Red	
Round And Round - Outer Left	PF Back Effects MX	E615	Round And Round	Green	
Round And Round - Inner Left	PF Back Effects MX	E616	Round And Round	Green	
Round And Round - Center	PF Back Effects MX	E617	Round And Round	Green	
Round And Round - Inner Right	PF Back Effects MX	E618	Round And Round	Green	

Round And Round - Outer Right	PF Back Effects MX	E619	Round And Round	Green	
Round And Round - Outer Left	PF Back Effects MX	E620	Round And Round	Blue	
Round And Round - Inner Left	PF Back Effects MX	E621	Round And Round	Blue	
Round And Round - Center	PF Back Effects MX	E622	Round And Round	Blue	
Round And Round - Inner Right	PF Back Effects MX	E623	Round And Round	Blue	
Round And Round - Outer Right	PF Back Effects MX	E624	Round And Round	Blue	
Round And Round - Outer Left	PF Back Effects MX	E625	Round And Round	Yellow	
Round And Round - Inner Left	PF Back Effects MX	E626	Round And Round	Yellow	
Round And Round - Center	PF Back Effects MX	E627	Round And Round	Yellow	
Round And Round - Inner Right	PF Back Effects MX	E628	Round And Round	Yellow	
Round And Round - Outer Right	PF Back Effects MX	E629	Round And Round	Yellow	
Round And Round - Outer Left	PF Back Effects MX	E630	Round And Round	Cyan	
Round And Round - Inner Left	PF Back Effects MX	E631	Round And Round	Cyan	
Round And Round - Center	PF Back Effects MX	E632	Round And Round	Cyan	
Round And Round - Inner Right	PF Back Effects MX	E633	Round And Round	Cyan	
Round And Round - Outer Right	PF Back Effects MX	E634	Round And Round	Cyan	
Round And Round - Outer Left	PF Back Effects MX	E635	Round And Round	Magenta	
Round And Round - Inner Left	PF Back Effects MX	E636	Round And Round	Magenta	
Round And Round - Center	PF Back Effects MX	E637	Round And Round	Magenta	
Round And Round - Inner Right	PF Back Effects MX	E638	Round And Round	Magenta	
Round And Round - Outer Right	PF Back Effects MX	E639	Round And Round	Magenta	
Round And Round - Outer Left	PF Back Effects MX	E640	Round And Round	Orange_Red	
Round And Round - Inner Left	PF Back Effects MX	E641	Round And Round	Orange_Red	
Round And Round - Center	PF Back Effects MX	E642	Round And Round	Orange_Red	
Round And Round - Inner Right	PF Back Effects MX	E643	Round And Round	Orange_Red	

Round And Round - Outer Right	PF Back Effects MX	E644	Round And Round	Orange_Red	
Square Plop - Animated Shape					
Square Plop - Outer Left	PF Back Effects MX	E645	Square Plop	White	
Square Plop - Inner Left	PF Back Effects MX	E646	Square Plop	White	
Square Plop - Center	PF Back Effects MX	E647	Square Plop	White	
Square Plop - Inner Right	PF Back Effects MX	E648	Square Plop	White	
Square Plop - Outer Right	PF Back Effects MX	E649	Square Plop	White	
Square Plop - Outer Left	PF Back Effects MX	E650	Square Plop	Red	
Square Plop - Inner Left	PF Back Effects MX	E651	Square Plop	Red	
Square Plop - Center	PF Back Effects MX	E652	Square Plop	Red	
Square Plop - Inner Right	PF Back Effects MX	E653	Square Plop	Red	
Square Plop - Outer Right	PF Back Effects MX	E654	Square Plop	Red	
Square Plop - Outer Left	PF Back Effects MX	E655	Square Plop	Green	
Square Plop - Inner Left	PF Back Effects MX	E656	Square Plop	Green	
Square Plop - Center	PF Back Effects MX	E657	Square Plop	Green	
Square Plop - Inner Right	PF Back Effects MX	E658	Square Plop	Green	
Square Plop - Outer Right	PF Back Effects MX	E659	Square Plop	Green	
Square Plop - Outer Left	PF Back Effects MX	E660	Square Plop	Blue	
Square Plop - Inner Left	PF Back Effects MX	E661	Square Plop	Blue	
Square Plop - Center	PF Back Effects MX	E662	Square Plop	Blue	
Square Plop - Inner Right	PF Back Effects MX	E663	Square Plop	Blue	
Square Plop - Outer Right	PF Back Effects MX	E664	Square Plop	Blue	
Square Plop - Outer Left	PF Back Effects MX	E665	Square Plop	Yellow	
Square Plop - Inner Left	PF Back Effects MX	E666	Square Plop	Yellow	
Square Plop - Center	PF Back Effects MX	E667	Square Plop	Yellow	

Square Plop - Inner Right	PF Back Effects MX	E668	Square Plop	Yellow	
Square Plop - Outer Right	PF Back Effects MX	E669	Square Plop	Yellow	
Square Plop - Outer Left	PF Back Effects MX	E670	Square Plop	Cyan	
Square Plop - Inner Left	PF Back Effects MX	E671	Square Plop	Cyan	
Square Plop - Center	PF Back Effects MX	E672	Square Plop	Cyan	
Square Plop - Inner Right	PF Back Effects MX	E673	Square Plop	Cyan	
Square Plop - Outer Right	PF Back Effects MX	E674	Square Plop	Cyan	
Square Plop - Outer Left	PF Back Effects MX	E675	Square Plop	Magenta	
Square Plop - Inner Left	PF Back Effects MX	E676	Square Plop	Magenta	
Square Plop - Center	PF Back Effects MX	E677	Square Plop	Magenta	
Square Plop - Inner Right	PF Back Effects MX	E678	Square Plop	Magenta	
Square Plop - Outer Right	PF Back Effects MX	E679	Square Plop	Magenta	
Square Plop - Outer Left	PF Back Effects MX	E680	Square Plop	Orange_Red	
Square Plop - Inner Left	PF Back Effects MX	E681	Square Plop	Orange_Red	
Square Plop - Center	PF Back Effects MX	E682	Square Plop	Orange_Red	
Square Plop - Inner Right	PF Back Effects MX	E683	Square Plop	Orange_Red	
Square Plop - Outer Right	PF Back Effects MX	E684	Square Plop	Orange_Red	
Up Down - Animated Shape					
Up Down - Outer Left	PF Back Effects MX	E685	Up Down	White	
Up Down - Inner Left	PF Back Effects MX	E686	Up Down	White	
Up Down - Center	PF Back Effects MX	E687	Up Down	White	
Up Down - Inner Right	PF Back Effects MX	E688	Up Down	White	
Up Down - Outer Right	PF Back Effects MX	E689	Up Down	White	
Up Down - Outer Left	PF Back Effects MX	E690	Up Down	Red	
Up Down - Inner Left	PF Back Effects MX	E691	Up Down	Red	
Up Down - Center	PF Back Effects MX	E692	Up Down	Red	

Up Down - Inner Right	PF Back Effects MX	E693	Up Down	Red	
Up Down - Outer Right	PF Back Effects MX	E694	Up Down	Red	
Up Down - Outer Left	PF Back Effects MX	E695	Up Down	Green	
Up Down - Inner Left	PF Back Effects MX	E696	Up Down	Green	
Up Down - Center	PF Back Effects MX	E697	Up Down	Green	
Up Down - Inner Right	PF Back Effects MX	E698	Up Down	Green	
Up Down - Outer Right	PF Back Effects MX	E699	Up Down	Green	
Up Down - Outer Left	PF Back Effects MX	E700	Up Down	Blue	
Up Down - Inner Left	PF Back Effects MX	E701	Up Down	Blue	
Up Down - Center	PF Back Effects MX	E702	Up Down	Blue	
Up Down - Inner Right	PF Back Effects MX	E703	Up Down	Blue	
Up Down - Outer Right	PF Back Effects MX	E704	Up Down	Blue	
Up Down - Outer Left	PF Back Effects MX	E705	Up Down	Yellow	
Up Down - Inner Left	PF Back Effects MX	E706	Up Down	Yellow	
Up Down - Center	PF Back Effects MX	E707	Up Down	Yellow	
Up Down - Inner Right	PF Back Effects MX	E708	Up Down	Yellow	
Up Down - Outer Right	PF Back Effects MX	E709	Up Down	Yellow	
Up Down - Outer Left	PF Back Effects MX	E710	Up Down	Cyan	
Up Down - Inner Left	PF Back Effects MX	E711	Up Down	Cyan	
Up Down - Center	PF Back Effects MX	E712	Up Down	Cyan	
Up Down - Inner Right	PF Back Effects MX	E713	Up Down	Cyan	
Up Down - Outer Right	PF Back Effects MX	E714	Up Down	Cyan	
Up Down - Outer Left	PF Back Effects MX	E715	Up Down	Magenta	
Up Down - Inner Left	PF Back Effects MX	E716	Up Down	Magenta	
Up Down - Center	PF Back Effects MX	E717	Up Down	Magenta	
Up Down - Inner Right	PF Back Effects MX	E718	Up Down	Magenta	
Up Down - Outer Right	PF Back Effects MX	E719	Up Down	Magenta	

Up Down - Outer Left	PF Back Effects MX	E720	Up Down	Orange_Red	
Up Down - Inner Left	PF Back Effects MX	E721	Up Down	Orange_Red	
Up Down - Center	PF Back Effects MX	E722	Up Down	Orange_Red	
Up Down - Inner Right	PF Back Effects MX	E723	Up Down	Orange_Red	
Up Down - Outer Right	PF Back Effects MX	E724	Up Down	Orange_Red	
Left Right - Animated Shape					
Left Right - Outer Left	PF Back Effects MX	E725	Left Right	White	
Left Right - Inner Left	PF Back Effects MX	E726	Left Right	White	
Left Right - Center	PF Back Effects MX	E727	Left Right	White	
Left Right - Inner Right	PF Back Effects MX	E728	Left Right	White	
Left Right - Outer Right	PF Back Effects MX	E729	Left Right	White	
Left Right - Outer Left	PF Back Effects MX	E730	Left Right	Red	
Left Right - Inner Left	PF Back Effects MX	E731	Left Right	Red	
Left Right - Center	PF Back Effects MX	E732	Left Right	Red	
Left Right - Inner Right	PF Back Effects MX	E733	Left Right	Red	
Left Right - Outer Right	PF Back Effects MX	E734	Left Right	Red	
Left Right - Outer Left	PF Back Effects MX	E735	Left Right	Green	
Left Right - Inner Left	PF Back Effects MX	E736	Left Right	Green	
Left Right - Center	PF Back Effects MX	E737	Left Right	Green	
Left Right - Inner Right	PF Back Effects MX	E738	Left Right	Green	
Left Right - Outer Right	PF Back Effects MX	E739	Left Right	Green	
Left Right - Outer Left	PF Back Effects MX	E740	Left Right	Blue	
Left Right - Inner Left	PF Back Effects MX	E741	Left Right	Blue	
Left Right - Center	PF Back Effects MX	E742	Left Right	Blue	
Left Right - Inner Right	PF Back Effects MX	E743	Left Right	Blue	
Left Right - Outer Right	PF Back Effects MX	E744	Left Right	Blue	
Left Right - Outer Left	PF Back Effects MX	E745	Left Right	Yellow	

Left Right - Inner Left	PF Back Effects MX	E746	Left Right	Yellow	
Left Right - Center	PF Back Effects MX	E747	Left Right	Yellow	
Left Right - Inner Right	PF Back Effects MX	E748	Left Right	Yellow	
Left Right - Outer Right	PF Back Effects MX	E749	Left Right	Yellow	
Left Right - Outer Left	PF Back Effects MX	E750	Left Right	Cyan	
Left Right - Inner Left	PF Back Effects MX	E751	Left Right	Cyan	
Left Right - Center	PF Back Effects MX	E752	Left Right	Cyan	
Left Right - Inner Right	PF Back Effects MX	E753	Left Right	Cyan	
Left Right - Outer Right	PF Back Effects MX	E754	Left Right	Cyan	
Left Right - Outer Left	PF Back Effects MX	E755	Left Right	Magenta	
Left Right - Inner Left	PF Back Effects MX	E756	Left Right	Magenta	
Left Right - Center	PF Back Effects MX	E757	Left Right	Magenta	
Left Right - Inner Right	PF Back Effects MX	E758	Left Right	Magenta	
Left Right - Outer Right	PF Back Effects MX	E759	Left Right	Magenta	
Left Right - Outer Left	PF Back Effects MX	E760	Left Right	Orange_Red	
Left Right - Inner Left	PF Back Effects MX	E761	Left Right	Orange_Red	
Left Right - Center	PF Back Effects MX	E762	Left Right	Orange_Red	
Left Right - Inner Right	PF Back Effects MX	E763	Left Right	Orange_Red	
Left Right - Outer Right	PF Back Effects MX	E764	Left Right	Orange_Red	
Animated Effects and Shapes					
Horizontaly Moving Dashes Side to side -2 Colours, and Stars	PF Back Effects MX	E765	Horizontaly Moving Dashes Side to side -2 Colours, and Stars	Red	Blue
Horizontaly Moving Dashes Side to side -2 Colours, and Stars	PF Back Effects MX	E766	Horizontaly Moving Dashes Side to side -2 Colours, and Stars	Purple	White
Pulsing Diamonds, Squares	PF Back Effects MX	E767	Pulsing Diamonds, Squares	Yellow	Red
Horizontaly Moving Dashes Side to Center-2 Colours, and Stars	PF Back Effects MX	E768	Horizontaly Moving Dashes Side to Center-2 Colours, and Stars	Blue	Cyan

Horizontaly Moving Dashes Side to side -2 Colours	PF Back Effects MX	E769	Horizontaly Moving Dashes Side to side -2 Colours	Yellow	White
Pulsing Circles, Pulsing Point Plop	PF Back Effects MX	E770	Pulsing Circles, Pulsing Point Plop	Purple	Blue
Pulsing Squares, Bottom Up	PF Back Effects MX	E771	Pulsing Squares, Bottom Up	Red	Blue
Side to Side, Bottom Up	PF Back Effects MX	E772	Side to Side, Bottom Up	Red	Orange
Top Bottom, Arrow Shift Right	PF Back Effects MX	E773	Top Bottom, Arrow Shift Right	White	Purple
Right Left, Pulsing Diamonds	PF Back Effects MX	E774	Right Left, Pulsing Diamonds	Green	Blue
Plasma Sideways - 2 colours	PF Back Effects MX	E775	Plasma Sideways - 2 colours	Red	Blue
Square Plop, Up Down	PF Back Effects MX	E776	Square Plop, Up Down	Cyan	Green
Circle 4, Round Plop	PF Back Effects MX	E777	Circle 4, Round Plop	Green	Cyan
Circle Pulse, Cross Pulse	PF Back Effects MX	E778	Circle Pulse, Cross Pulse	Yellow	Red
Diamond Pulse, Cross Pulse	PF Back Effects MX	E779	Diamond Pulse, Cross Pulse	Blue	White
Cross, Round and Round	PF Back Effects MX	E780	Cross, Round and Round	Orange	Purple
Pulsing Diamonds, Squares Plops	PF Back Effects MX	E781	Pulsing Diamonds, Squares Plops	Red	Green
Arrow Shift Right, V-Line Pulse	PF Back Effects MX	E782	Arrow Shift Right, V-Line Pulse	Blue	Yellow
Horizontaly Moving Dashes Side to side -2 Colours, and Stars	PF Back Effects MX	E783	Horizontaly Moving Dashes Side to side -2 Colours, and Stars	White	Orange
Plasma - 2 colour, and Stars	PF Back Effects MX	E784	Plasma - 2 colour, and Stars	Purple	Green
Pulsing Diamonds, Squares	PF Back Effects MX	E785	Pulsing Diamonds, Squares	Blue	White
Pulsing Diamonds, Squares	PF Back Effects MX	E786	Pulsing Diamonds, Squares	Purple	Cyan
Misc Effects					
Afterburners	PF Left Effects MX	E799	Reverse Electrical Power Effect	Orange_Red	
Afterburners	PF Right Effects MX	E799	Reverse Electrical Power Effect	Orange_Red	