

Battle Animation Commands

| | |
|---|---|
| \$00-\$1F | Show frame number [\$00-\$1F] |
| \$20-\$7F | - |
| \$80 xx | \$C878 Command \$80 Subcommands |
| | \$00 \$D9BE quadra slam/quadra slice |
| | \$01 \$D9A9 |
| | \$02 \$D981 |
| | \$03 \$D995 |
| | \$04 \$D96E Randomize vector angle and |
| position (init fire dance sprites) | |
| | \$05 \$D938 bum rush |
| | \$06 \$D907 init tornado (w wind/spiraler) |
| | \$07 \$D8F2 move tornado to thread position |
| (w wind/spiraler) | |
| | \$08 \$D8EB move thread to vector position (w |
| wind/spiraler) | |
| | \$09 \$D879 update character/monster sprite |
| tile priority for tornado (w wind/spiraler) | |
| | \$0A \$D82B white/effect magic intro |
| | \$0B \$D7E3 Update Esper Pre-Animation Balls |
| Position | |
| | \$0C \$D753 |
| | \$0D \$D7C4 |
| | \$0E \$D79D |
| | \$0F \$D779 |
| | \$10 \$D73E move to target position |
| | \$11 \$D727 Randomize vector angle |
| | \$12 \$D734 |
| | \$13 \$D6E5 toggle imp graphics for target |
| (imp) | |
| | \$14 \$D6BD make target vanish (vanish) |
| | \$15 \$D698 move circle to thread position |
| | \$16 \$D68E |
| | \$17 \$CBC1 update sprite layer priority |
| based on target | |
| | \$18 \$D677 Load Sketched Monster Palette |
| | \$19 \$D62E sketch |
| | \$1A xx \$CB74 |
| | \$1B \$CB5D transform into magicite |
| | \$1C \$CB6A decrement screen brightness |
| | \$1D \$CB61 transform into magicite |
| | \$1E \$D56B |
| | \$1F \$D5FC |
| | \$20 \$D59F |
| | \$21 \$D54E Update Rotating Sprite Layer |
| Priority | |
| | \$22 \$D4F2 pearl wind |
| | \$23 \$D4BE pearl wind |

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|---|---------------------|---|
| | \$24 | \$D49B Clear BG3 HDMA scroll data |
| | \$25 | \$D4AD Clear BG1 HDMA scroll data |
| | \$26 xx | \$D493 Enable/Disable Character Color |
| Palette Updates (x: 1 = disable, 0 = enable) | | |
| | \$27 xx | \$D48B Hide/Show Characters for Esper |
| Attack (x: 1 = hide, 0 = show) | | |
| | \$28 --oo---- | \$D45C Affects all characters o: sprite priority |
| | \$29 xx | \$D454 Hide/Show Cursor sprites (esper |
| attack) | | |
| | \$2A xx | \$D44C load animation palette xx, sprite |
| | \$2B xx | \$D43C load animation palette xx, bg1 |
| (inferno) | | |
| | \$2C xx | \$D444 load animation palette xx, bg3 |
| (justice, earth aura) | | |
| | \$2D xxxx yyyy zzzz | \$D423 Jump based on battle type xxxx: jump location if normal |
| attack | | |
| | | yyyy: jump location if back |
| attack or (side attack and attacker is character 3 or 4) | | |
| | | zzzz: jump location if pincer |
| attack or (side attack and attacker is character 1 or 2 or monster) | | |
| | \$2E xx yy | \$D3E4 Move sprite to (\$xx, \$yy) |
| | \$2F | \$D3AF |
| | \$30 xx | \$D38E load animation palette xx for |
| character 1 | | |
| | \$31 xx | \$D365 move in wide vertical sine wave |
| with speed xx (hope song, sea song) | | |
| | \$32 xxxx yyyy | \$D33E Jump to xxxx if facing left, yyyy |
| if facing right | | |
| | \$33 xx | \$D2D2 update rainbow gradient lines |
| | \$34 | \$D28D copy monster palettes to |
| character palettes (hope song) | | |
| | \$35 | \$D27A use character palettes for |
| monster sprite data (hope song) | | |
| | \$36 | \$D267 restore palettes for monster |
| sprite data (hope song) | | |
| | \$37 | \$D256 clear fixed color value hdma data |
| (\$2132) | | |
| | \$38 | \$D24D enable high priority bg3 |
| (justice) | | |
| | \$39 xx | \$D1E6 update blue gradient lines (S. |
| Cross, Carbunkl, Odin/Raiden) | | |
| | \$3A xx | \$D1DE |
| | \$3B | \$D1B0 Set target's color palette to |
| animation palette | | |
| | \$3C | \$D18A Set target's color palette to |
| normal | | |
| | \$3D | \$D12E quadra slam/quadra slice |
| | \$3E xx | \$D126 Set main screen designation |

| | | |
|--|------------------|---|
| (\$212C) | | |
| | \$3F | \$D0E0 sonic dive |
| | \$40 -----mmm | \$D0D3 Set screen mode (\$2105) m: screen mode |
| (positive is smaller) and move (dx,dy) | \$41 cx cy dx dx | \$D06D Shrink/Grow BG1 by (cx,cy) |
| | \$42 -----vh | \$D064 Set MODE7 Settings register |
| (\$211A) | | v: vertical flip h: horizontal flip |
| | \$43 | \$D00B moon song/charm |
| | \$44 | \$CFCC fire beam/bolt beam/ice beam |
| | \$45 xx | \$CFC0 Set BG1/BG2 Mask Settings |
| Hardware Register (\$2123) | | |
| | \$46 | \$CFB9 |
| | \$47 | \$CFAA |
| | \$48 | \$CF8D clear |
| | \$49 | \$CF7F ink hit/virite |
| | \$4A | \$CF6A |
| | \$4B | \$D2CC update red/yellow gradient lines |
| (megazerker) | | |
| | \$4C | \$CF45 move triangle to thread position |
| target | \$4D | \$CF1C set vector from triangle to |
| | \$4E | \$CF15 |
| | \$4F | \$CEF0 |
| | \$50 | \$CE9A |
| | \$51 | \$CE62 rippler |
| | \$52 | \$CE29 stone |
| | \$53 | \$CDDF r.polarity |
| | \$54 | \$CDC4 r.polarity |
| | \$55 | \$CD72 quasar |
| | \$56 | \$CD28 goner |
| | \$57 xx | \$CD1F set bg3/bg4 window mask settings |
| (xx -> \$2124) | | |
| | \$58 xx | \$CD17 change circle shape to xx |
| | \$59 | \$CD12 goner/flare star |
| | \$5A | \$CD0D mind blast |
| | \$5B | \$CD08 mind blast |
| | \$5C | \$CD03 mind blast |
| | \$5D | \$CCDF |
| | \$5E | \$CC98 overcast |
| | \$5F xx | \$CC93 Increase/Decrease Blue Backdrop |
| Gradient (used by Overcast) | | |
| status 1, etc.) (morph/revert) | \$60 aabbccdd | \$CC3F Toggle attacker status (aa = |
| | \$61 xx yy zz | \$CC1A |
| | \$62 | \$CBF5 evil toot/fader |
| with speed xx (evil toot) | \$63 xx | \$D361 move in narrow vertical sine wave |
| | \$64 | \$CBE5 purifier/inviz edge |

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|---|---------|--|
| | \$65 | \$CBE0 |
| | \$66 | \$CBDB shock wave |
| | \$67 | \$CBD6 Load Extra Esper Palette |
| (purifier) | | |
| | \$68 | \$CBD1 purifier |
| | \$69 | \$CBB6 update sprite layer priority |
| based on attacker | | |
| | \$6A | \$CBAC align bottom of thread with |
| bottom of target (ice 3) | | |
| | \$6B | \$CBB1 l? pearl |
| | \$6C | \$CB5A overcast |
| | \$6D | \$CB56 disable battle menu |
| | \$6E | \$CB51 |
| | \$6F | \$CB4D |
| | \$70 | \$CB43 |
| | \$71 | \$CB34 restore character palettes |
| (purifier/hope song) | | |
| | \$72 xx | \$CB48 Branch forward xx if attack |
| didn't miss | | |
| | \$73 xx | \$CB1D Set graphics for dice roll (xx = |
| die index) | | |
| | \$74 | \$CAB8 |
| | \$75 | \$CAE5 super ball |
| | \$76 | \$CAD6 seize |
| | \$77 | \$CADB seize |
| | \$78 | \$CAE0 discard |
| | \$79 | \$CAC2 Characters Run to Left Side of |
| Screen (takes 56 loops to reach other side) | | |
| | \$7A | \$CAC7 Characters Run to Right Side of |
| Screen | | |
| | \$7B | \$CACC Flip All Characters (after |
| running to opposite side of screen) | | |
| | \$7C | \$CAD1 Swap Target and Attacker |
| | \$7D xx | \$CABD Branch forward xx bytes if dragon |
| horn effect is active | | |
| | \$7E | \$CAA1 Flip Target Character Vertically |
| | \$7F | \$CA9D Hide all monsters |
| | \$80 | \$CA65 boss death |
| | \$81 | \$CA61 |
| | \$82 | \$CA3D boss death |
| | \$83 | \$CA38 |
| | \$84 | \$CA29 chadarnook exit |
| | \$85 | \$CA24 chadarnook exit |
| | \$86 xx | \$CA0F Play Sound effect xx (pan based |
| on sprite X position) | | |
| | \$87 xx | \$C9F7 Play Sound effect xx (pan based |
| on sprite Y position) | | |
| | \$88 | \$C9C9 |
| | \$89 xx | \$C9C1 |
| | \$8A | \$C9A9 Set Target Monster Sprite |

Priority to 0

| | | |
|------------------|---------|---|
| | \$8B | \$C9A5 Play Ching Sound effect |
| | \$8C xx | \$CA09 Play Sound effect xx (pan center) |
| \$81 xx yy | \$F347 | Change attacking character's graphic to \$xx if facing left, \$yy if facing right |
| \$82 xx yy | \$F33F | Change targetted character's graphic to \$xx if facing left, \$yy if facing right |
| \$83 dddxxxxx | \$F377 | Move Thread |
| | d: | direction (0 = down/forward, 1 = down, 2 = down/back, 3 = forward, 4 = back, 5 = up/forward, 6 = up, 7 = up/back) |
| | x: | distance - 1 |
| \$84 xx | \$F7B3 | Set Animation Speed to xx |
| \$85 | \$F89D | Move Thread to Attacker Position |
| \$86 dddxxxxx | \$F491 | Move Attacker (data same as command \$83) |
| \$87 dddxxxxx | \$F476 | Move Target (data same as command \$83) |
| \$88 xx | \$F71D | Jump forward with weapon for "Fight" command (xx = frame index) |
| \$89 xx | \$F7BC | Loop start (loop xx times) |
| \$8A | \$F82F | Loop end |
| \$8B xx | \$F7E6 | Animated loop start (loop xx times, increment frame offset each loop, start at frame 0) |
| \$8C | \$F84B | Animated loop end |
| \$8D dddxxxxx | \$F263 | Move Thread if Animation is Flipped Horizontally |
| \$8E bf-----h | \$F27A | Show Thread Above/Below Other Sprites |
| | b: | show below |
| | f: | show in front |
| | h: | 1 = show with weapon hand, 0 = show opposite weapon hand |
| \$8F dddxxxxx | \$F263 | Move Thread if Animation is Flipped Horizontally |
| \$90 --oo---- | \$F255 | Set Thread's Sprite Tile Priority |
| \$91 | \$F8B4 | Move This Thread to Attacker Thread Position |
| \$92 xx yy | \$FADB | Move Thread along Vector (speed xx, code branch yy) |
| \$93 xx | \$FA3D | Set position on vector |
| \$94 | \$F8E0 | Set vector from attacker to a random location on the target (GP Rain, AutoCrossbow) |
| \$95 | \$F9E6 | Set vector from attacker to target |
| \$96 xx yy | \$FB63 | Branch if ??? (xx = bytes to branch backwards) |
| \$97 | \$FBD7 | boomerang/wing edge/full moon/rising sun |
| \$98 xx bbbbeeee | \$FBA8 | Increment graphic index offset every x frame(s), (b..e) |
| \$99 ----ppp- | \$FC37 | Set Thread Palette to p |
| \$9A | \$FC40 | Set Thread Facing Direction to Match Attacker |
| \$9B | \$F31A | |
| \$9C xx | \$F2A2 | |
| \$9D xx | \$F2F1 | |
| \$9E | \$F2B6 | |
| \$9F xx | \$F7CF | Animated Loop start (loop count equal to the number of active threads, xx = 0) (autocrossbow) |
| \$A0 xx yy | \$FA4B | Jump Forward Along Vector (speed xx, code branch yy) |
| \$A1 xx yy | \$FA90 | Jump Backward Along Vector (speed xx, code branch yy) |
| \$A2 | \$F2E1 | drill |

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|-------------------|--|
| \$A3 xxxx | \$F1E5 Shift Color Palette Left |
| \$A4 xxxx | \$F21D Shift Color Palette Right |
| | aaaabbbb ccccdddd |
| | a: offset color |
| | b: number of colors |
| | c: palette index |
| | d: speed (number of loops per shift) |
| \$A5 aabbccxyyyzz | \$F0EC circle origin (aa,bb), (80,80) is center of screen |
| | cc: grow speed? |
| | xx |
| | yyyy: max size |
| \$A6 xx yy zz | \$F094 Move circle (\$xx,\$yy), size changes by zz (signed) |
| \$A7 | \$F088 Update Circle? |
| \$A8 | \$F073 Move circle to attacker |
| \$A9 xx yy | \$EFC8 Move circle (\$xx,\$yy) (signed, based on character facing direction) |
| \$AA rgbffffff | \$EC6E Set sprite palette 3 color subtraction (absolute) |
| | r: affect red |
| | g: affect green |
| | b: affect blue |
| | f: amount to subtract |
| \$AB rgbffffff | \$EC58 Set sprite palette 3 color addition (absolute) |
| | r: affect red |
| | g: affect green |
| | b: affect blue |
| | f: amount to add |
| \$AC xx yy | \$EE9C set background Scroll HDMA data |
| | 123ffffff vhaaaaaa |
| | 1: affect BG1 |
| | 2: affect BG2 |
| | 3: affect BG3 |
| | f: frequency |
| | v: vertical |
| | h: horizontal |
| | a: amplitude (max 14, must be even ???) |
| \$AD nnxxxxxx | \$EFA3 Set BG Scroll HDMA Index |
| | n: BG (0,1,2) |
| | x: index |
| \$AE vh---123 | \$ED86 Update Scroll HDMA data |
| | v: vertical |
| | h: horizontal |
| | 1: affect BG1 |
| | 2: affect BG2 |
| | 3: affect BG3 |
| \$AF rgbffffff | \$EBDA Set background palette color subtraction (absolute) |
| \$B0 rgbffffff | \$EBC4 Set background palette color addition (absolute) |
| \$B1 rgbaffff | \$ECAC Set sprite palette 1 color subtraction (absolute) |
| \$B2 rgbaffff | \$EC96 Set sprite palette 1 color addition (absolute) |
| \$B3 rgbaffff | \$EC4F Add color to sprite palette 3 (relative) |

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| | | r: affect red |
| | | g: affect green |
| | | b: affect blue |
| | | a: 0 = increase addition amount, 1 = decrease addition amount |
| | | f: amount to increase/decrease |
| \$B4 rgbaffff (relative) | \$EC46 | Subtract color from sprite palette 3 palette |
| | | r: affect red |
| | | g: affect green |
| | | b: affect blue |
| | | a: 0 = increase subtraction amount, 1 = decrease subtraction amount |
| | | f: amount to increase/decrease |
| \$B5 rgbaffff | \$EBB2 | Add color to background palette (relative) |
| \$B6 rgbaffff | \$EBBB | Subtract color from background palette (relative) |
| \$B7 rgbaffff | \$EC84 | Add color to sprite palette 1 (relative) |
| \$B8 rgbaffff | \$EC8D | Subtract color from sprite palette 1 (relative) |
| \$B9 rgbffffff | \$ECEA | Set monster palettes color subtraction (absolute) |
| \$BA rgbffffff | \$ECD4 | Set monster palettes color addition (absolute) |
| \$BB rgbaffff | \$ECCB | Add color to monster palettes (relative) |
| \$BC rgbaffff | \$ECC2 | Subtract color from monster palettes (relative) |
| \$BD abcd---- | \$EAA1 | Hide/Show BG1/BG3 Animation Thread Graphics |
| | | a: affect bg1 |
| | | b: affect bg3 |
| | | c: bg1 (0 = show, 1 = hide) |
| | | d: bg3 (0 = show, 1 = hide) |
| \$BE xx | \$EA98 | Set Screen Mosaic to xx (\$2106) |
| \$BF xxxx | \$EA85 | Jump to Subroutine \$xxxx |
| \$C0 | \$EA76 | Return from Subroutine |
| \$C1 xx yy | \$EA05 | xx = vector movement speed ???, yy = number of bytes to branch backwards |
| \$C2 abc----- | \$E9EB | Unpause Animation |
| | | a: unpause bg1 |
| | | b: unpause bg3 |
| | | c: unpause sprites |
| \$C3 | \$F02F | Move circle to target |
| \$C4 ab----- | \$E99F | Move BG1/BG3 Thread to This Thread's Position |
| | | a: affect bg1 |
| | | b: affect bg3 |
| \$C5 4 addresses | \$E8FB | jump based on swdtech hit |
| \$C6 xx yy | \$E830 | quadra slam/quadra slice |
| \$C7 <varies> | \$C873 | Command \$C7 Subcommands |
| | \$00 xx | \$C2C39B Change Attacking Character Facing Direction (xx: 0 = face left, 1 = face right) |
| | \$01 | \$C2C362 reset position offsets for attacking character |
| | \$02 | \$C2C31E save attacking character position |
| | \$03 | \$C2C339 restore attacking character position and reset offsets |
| | \$04 | \$C2C303 restore attacking character |

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|----------------------------|---------------|--|
| position | | |
| | \$05 xx | \$C2C2B7 (unused) |
| | \$06 xx yy | \$C2C26A |
| | \$07 | \$C2C247 update character action based on |
| vector direction (walking) | | |
| | \$08 xx yy | \$C2C1D6 set vector target (xx,yy) from |
| attacker | | |
| | \$09 | \$C2C1B3 update character action based on |
| vector direction (arms up) | | |
| | \$0A xx | \$C2C194 (unused) |
| | \$0B xx yy zz | \$C2C171 spc command |
| | \$0C xx yy | \$C2C136 change actor xx graphic index to |
| yy | | |
| | \$0D xx | \$C2C115 |
| | \$0E xx | \$C2C0F8 enable/disable screen shaking (xx |
| -> \$6285) | | |
| | \$0F | \$C2C0F2 (unused) |
| | \$10 xx | \$C2C0B9 |
| | \$11 | \$C2C0B0 disable running with L+R |
| \$C8 xx | \$E7B1 | Set attacker modified graphic index |
| \$C9 xx | \$DAE4 | Play sound effect xx (\$00 means play default for this |
| animation) | | |
| \$CA | \$E798 | |
| \$CB edddddd | \$E779 | Enable/Disable Echo Sprites (4 copies of character |
| sprite) | | |
| | | e: 1 = enable, 0 = disable |
| | | d: frame delay between echo sprites (bitmask) |
| \$CC rgbffffff | \$EC24 | Set sprite palette 2 color subtraction (absolute) |
| | | r: affect red |
| | | g: affect green |
| | | b: affect blue |
| | | f: amount to subtract |
| \$CD rgbffffff | \$EC02 | Set sprite palette 2 color addition (absolute) |
| | | r: affect red |
| | | g: affect green |
| | | b: affect blue |
| | | f: amount to add |
| \$CE rgbaffff | \$EBF0 | Add color to sprite palette 2 (relative) |
| | | r: affect red |
| | | g: affect green |
| | | b: affect blue |
| | | a: 0 = increase addition amount, 1 = decrease addition |
| amount | | |
| | | f: amount to increase/decrease |
| \$CF rgbaffff | \$EBF9 | Subtract color from sprite palette 2 (relative) |
| | | r: affect red |
| | | g: affect green |
| | | b: affect blue |
| | | a: 0 = increase subtraction amount, 1 = decrease |
| subtraction amount | | |


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f: amount to increase/decrease
$D0 vhftpppm $E746 Set sprite data for all character/monster sprites
$D1 xx $E73D Validate/Invalidate Character/Monster Order Priority
(0 = validate, 1 = invalidate)
$D2 xx yy $F86D Set Target Position (xx,yy) doesn't actually move
target
$D3 $F044 Move Circle to Attacking Character
$D4 xxxx yy $E722 Set Color Addition/Subtraction Data
shbo4321 mmss--cd (+$2130)
s: 0 = add, 1 = subtract
h: 0 = full add/sub, 1 = half add/sub
bo4321: layers affected by add/sub (b =
background)
m: 0
s: 0
c: 0 = fixed color add/sub, 1 = subscreen
add/sub
d: 0
---o4321 subscreen designation ($212D)
o4321: layers to add/sub
$D5 -----vh $E707 Flip Monster (v = vertical, h = horizontal)
$D6 $E6CD
$D7 xx $E68D Move Fire Dance Sprites
$D8 xx yy zz $E5F9 x: x speed, y: y speed, z: ???
$D9 xx $E5F0 (bum rush)
$DA xxxx $E528 update tornado (w wind/spiraler)
$DB xx $E509 Branch forward xx bytes if character already stepped
forward to attack
$DC $E43A Rotate Triangle 2D
$DD xx yy dd rr $E416 Init Triangle
$DE $E401 move triangle to attacker position
$DF $E3EC move triangle to target position
$E0 xx yy dd rr $E3A0 Modify Triangle
$E1 xx $E328 show/hide attacker sprite
$E2 $DD8D
$E3 $DD42
$E4 $E286
$E5 xx yy zz $E15D yy = number of bytes to branch backwards
$E6 xx yy zz $E1B3 yy = number of bytes to branch backwards
$E7 $E25A
$E8 rr tt $DCDF Move rr,tt in polar coordinates (radius,theta)
$E9 xx yy $DC9B Move randomly (0...xx,0...yy)
$EA 13--xxxx $DC81 Set BG Tile Data Quadrants
1 = affect bg1
3 = affect bg1
x = quadrant
$EB xxxx ... $DC66 Jump to $xxxx... based on thread index (number of
addresses is number of threads)
$EC xx $DC55 Change Thread Layer (0 = sprite, 1 = bg1, 2 = bg3)
$ED $DB8F
$EE --oo---- $E5C5 Set Target's Sprite Tile Priority

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|----------------|--------|--|
| \$EF rr tt | \$DCD9 | similar to \$E8 |
| \$F0 5 words | \$DB6C | Jump based on current target index (char1, char2, char3, char4, monster) |
| \$F1 xx | \$E2C0 | |
| \$F2 | \$F980 | Set a trajectory from target center to attacker |
| \$F3 5 words | \$DB64 | Jump based on current attacker index (char1, char2, char3, char4, monster) |
| \$F4 -----t | \$F30F | Set Sprite Layer Priority |
| \$F5 | \$F7FC | Loop End (loop until no threads are active) |
| \$F6 | \$E4A2 | Rotate Triangle 3D |
| \$F7 xx | \$DB50 | Wait until vertical scanline position xx |
| \$F8 xxxx yyyy | \$DB31 | Jump to either xxxx or yyyy if magitek mode is enabled |
| \$F9 xx yy zz | \$DAF9 | |
| \$FA xxxx | \$DB23 | Jump to \$xxxx |
| \$FB rgbffffff | \$ED4C | Set character palettes color subtraction (absolute) r: affect red g: affect green b: affect blue f: amount to subtract |
| \$FC rgbffffff | \$ED12 | Set character palettes color addition (absolute) r: affect red g: affect green b: affect blue f: amount to add |
| \$FD rgbaffff | \$ED00 | Add color to character palettes (relative) r: affect red g: affect green b: affect blue a: 0 = increase addition amount, 1 = decrease addition amount f: amount to increase/decrease |
| \$FE rgbaffff | \$ED09 | Subtract color from character palettes (relative) r: affect red g: affect green b: affect blue a: 0 = increase subtraction amount, 1 = decrease subtraction amount f: amount to increase/decrease |
| \$FF | | End of Animation |

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