# Street Fighter Alpha 3 VMU Hacking Guide

by Dirk Mayer

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Street Fighter Alpha 3 Saikyo Dojo for Sega Dreamcast
System File: I-ISM and High Score data hacking guide
Version 1.0, 2001-09-09
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     Best viewed in Notepad with non-proportional fonts
     (Courier, Courier New, Fixedsys; size 8)

After spending quite some hours to get to grips with the info, I finally
proudly present this guide. If you want whip through the Grade Recognition
Matches, this is going to prove really handy provided you have a means to change
the file. I used the "EMS DC Linker V2.3b" software with its hex editor. This
was supplied with the "Skillz DC 4M Memory Card" I purchased a few days ago,
which comes with a cable so you can connect the memory card to the serial port
of your computer. For more information check out www.hkems.com.

The system file contains the high scores and the I-ISM data and other stuff
(option settings, key config). However, this guide focuses on the cool bits
only, because you won¦t need to do any hacking to set the controls, right ?

There are still bits I¦m uncertain about as with some high score tables, but
who cares. I¦ve found what I wanted to find so that¦s fine by me.

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I. FILE INFO
------------
Title:          SFALPHA3_SYSTEM_FILE
File Name:      SFALPHA3.SYS
Size on the VM: 24 blocks
Size in bytes:  12288 (12kb)




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II. VALUES
----------

Values for certain parameters, namely the ISM or the characters:
Those may be cunningly used. Think of making an enormous high score with
Mr.Cheap (aka Shin Akuma), then change the value for the character to the one
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for a "weak" character. Oh well, you may always change a high score to 9999999... *heh*

| | | | |
|---|---|---|---|
| 1. Character used | 00 = Ryu | 10 = Zangief | 20 = Guile |
| | 01 = Ken | 11 = Gen | 21 = Fei Long |
| | 02 = Akuma | 12 = Chun Li X | 22 = Deejay |
| | 03 = Charlie | 13 = M.Bison S | 23 = T.Hawk |
| | 04 = Chun Li | 14 = Sodom X | 24 = Shin Akuma |
| | 05 = Adon | 15 = Balrog | |
| | 06 = Sodom | 16 = Cammy | |
| | 07 = Guy | 17 = Evil Ryu | |
| | 08 = Birdie | 18 = E.Honda | |
| | 09 = Rose | 19 = Blanka | |
| | 0A = M.Bison | 1A = R.Mika | |
| | 0B = Sagat | 1B = Cody | |
| | 0C = Dan | 1C = Vega | |
| | 0D = Sakura | 1D = Karin | |
| | 0E = Rolento | 1E = Juli | |
| | 0F = Dhalsim | 1F = Juni | |

Note: No.12 is X-ISM Chun Li (other costume),
----- No.13 is "Shin" M.Bison (Killer Psycho Crusher etc.)
No.14 is X-ISM Sodom (Katanas as weapons instead of Sais)
The ISM dictates the characterIs sprite, this means that when you try to make an A-ISM Chun Li with the old costume, she will just have the new costume. Same goes for Sodom.

WhatIs interesting here is the order. The characters who were in Alpha 1 have the numbers 00-0A, then those who turned up first (or made their return) in Alpha 2 take the numbers 0D-11. Following are three "special" characters (12-14), then Alpha 3 newbies with a kind of suborder (like Fei Long, Deejay and T.Hawk in a row).

| | | |
|---|---|---|
| 2. ISM used | FF = X-ISM | |
| | 00 = A-ISM | |
| | 01 = V-ISM | |
| | 02 = I-ISM | |

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## III. GENERAL MEMORY MAP (as seen in the DC linker hex editor):

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Following is a description of what the different parts of the file contain.

0000-007F some data (contents partially unknown)

0080-027F the icon for display in the DCIs VMU file manager.
You might actually change it... itIs 32x32 pixels in size with 16 colours. Each byte contains two pixels (left and right nibble).
I guess it has its color palette stored somewhere but I couldnIt be bothered to investigate.

0280-0433 some data (unknown)

---------- Highscore data area ----------

```
0434-0653  Arcade Mode X-ISM,  16 bytes x 34 positions
0654-0873  Arcade Mode A-ISM,  16 bytes x 34 positions
0874-0A93  Arcade Mode V-ISM,  16 bytes x 34 positions
0A94-0CB3  Arcade VS   X-ISM,  16 bytes x 34 positions
0CB4-0ED3  Arcade VS   A-ISM,  16 bytes x 34 positions
0ED4-10F3  Arcade VS   V-ISM,  16 bytes x 34 positions

10F4-1313  Arcade Mode I-ISM,  16 bytes x 34 positions
1314-1533  Arcade VS   I-ISM,  16 bytes x 34 positions

1534-15D3  Survival Arcade,    16 bytes x 10 positions
15D4-1673  Survival Original,  16 bytes x 10 positions
1674-1713  Survival Boss,      16 bytes x 10 positions
1714-17B3  Survival 10 Battle, 16 bytes x 10 positions
17B4-1853  Survival 30 Battle, 16 bytes x 10 positions
1854-18F3  Survival 50 Battle, 16 bytes x 10 positions
18F4-1993  Survival InfBattle, 16 bytes x 10 positions

1994-1A33  ?? (maybe "first setting" for InfBattle when there are no
               highscores yet, but I actually don't really know)

1A34-1AD3  Survival Dramatic,  16 bytes x 10 positions
           --------- Highscore data area end ---------

1AD4-1C8F  I-ISM Character No.1
1E28-1FE3  I-ISM Character No.2
217C-2337  I-ISM Character No.3
24D0-268B  I-ISM Character No.4
2824-29DF  I-ISM Character No.5
2B78-2D33  I-ISM Character No.6
```

## IV. HOW HIGHSCORES ARE COMPOSED

Highscore data is 16 bytes for each entry. The memory map depends on the mode:

1. Arcade Mode -------

```
   Bytes 0-3   = Score (reverse nibbled, see explanation below)
   Bytes 4-6   = Initials
   Byte  7     = (ALWAYS 00, probably unused)
   Byte  8     = Character used (see list in "II. Values")
   Byte  9     = ??
   Byte  10    = ?? usually 0, but in X-ISM it's FF when the game was cleared ?
                      Don't really know.
   Byte  11    = Number of wins (obsolete for Arcade Mode but it's there)
   Byte  12    = a value from 0 to 2 for the ISM: 00=X 01=A 02=V
   Bytes 13-15 = ??

   Example: 2nd place (0664-0673), Initials DMC, used A-ISM Charlie,
            finished the game, Score 1344700
            Byte:  0  1  2  3  4  5  6  7  8  9  10 11 12 13 14 15
            Value: 00 47 34 01 44 4D 43 00 03 02 00 00 01 00 00 00

   Score: Unlike in the Survival modes, the score information is stored in half
          bytes or 4 bits (=nibbles). If you look at the example, you can see
```

how each digit takes up half a byte, so read from byte 3 to byte 0 backwards (left nibble, then right nibble of each byte) and you will understand why I say itIs reverse nibbled.

2. Arcade VS -------

Bytes 0-3 = Score (reverse nibbled; obsolete for Arcade VS but itIs there)
Bytes 4-6 = Initials
Byte 7 = (ALWAYS 00, probably unused)
Byte 8 = Character used
Byte 9 = ??
Byte 10 = ?? (usually 0)
Byte 11 = Number of wins
Byte 12 = a value from 3 to 5 for the ISM: 03=X 04=A 05=V
Bytes 13-15 = ??

Example: 7th place (0F34-0F43), Initials GUY, used V-ISM Guy, 4 wins
Byte: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Value: 00 40 02 00 47 55 59 00 07 04 00 04 05 00 00 00

3. Survival Arcade, Original, Boss, 10/30/50/Infinite Battle -------

Bytes 0-3 = Score
Bytes 4-6 = Initials
Byte 7 = (ALWAYS 00, probably unused)
Byte 8 = Character used
Byte 9 = ISM
Byte 10 = Number of wins
Byte 11 = (Always 00 in Survival modes, probably unused)
Byte 12 = If all matches in the corresponding mode were cleared, the value will be FF, otherwise it is 00.
Bytes 13-15 = Minutes, Seconds, Milliseconds

Example: Survival Arcade, 1st place (1534-1543), Initials DMC, used I-ISM Ken, cleared all stages (27 wins), Time 10I34"48, Score 454700
Byte: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Value: 2C F0 06 00 44 4D 43 00 01 02 1B 00 FF 0A 22 30

4. Survival Dramatic -------

Bytes 0-2 = Initials Player 1 (COM if Player 1 was the computer)
Byte 3 = (Always 00 it seems)
Bytes 4-6 = Initials Player 2 (COM if Player 2 was the computer)
Byte 7 = (Always 00 it seems)
Bytes 8+9 = Characters used for Player 1 and 2
Byte 10 = ISM
Byte 11 = (Always 00 in Survival modes, probably unused)
Byte 12 = Number of wins
Bytes 13-15 = Minutes, Seconds, Milliseconds

Note: I guess that one of the "Always 00" bytes will have a different value if Survival Dramatic is cleared, but I didnIt manage to beat the mode in my "early" SFA3 days and when I did beat it, the default settings were not activated so it wasnIt saved... I canIt be bothered to try it out now, too lazy IIm afraid.

Example: 2nd Place (1A44-1A53), Player 1: DMC (me) used Charlie,
Player 2: COM used Sakura, A-ISM, 11 wins, Time 08I49"66
Byte: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Value: 44 4D 43 00 43 4F 4D 00 03 0D 00 00 0B 08 31 42

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## V. I-ISM DATA MEMORY MAP

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HereIs the interesting stuff! Customize those to make your character really powerful... or rather overpowered like hell... or weak, if you like to. Alternatively make a "funny" character (read on).

Just add the offset to the start address (ref. "III. General Memory Map") for one of the six I-ISM characters.

0000-0053 Data for the I-ISM character
0054-01BB GR match data (12 bytes * 30 matches = 360 bytes)

### 1. Data for the I-ISM character ------

You can actually input two-byte values for attack power etc.!!! But make sure that you change the maximum values for the corresponding values. Have fun with Attack Power 1000+... however, just inserting FFFF (65535) wonIt do the trick all the time, it seems. Experiment with those.

Unknown bytes are omitted this time:

| offset | contents |
|---|---|
| Byte 1 | = Character used |
| Byte 2 | = ISM |
| Byte 5 | = Level (-1) |
| Bytes 8-11 | = Total Exp |
| Bytes 12-15 | = X-ISM Exp |
| Bytes 16-19 | = A-ISM Exp |
| Bytes 20-23 | = V-ISM Exp |
| Bytes 24-27 | = ISM Pluses (see below) |
| Bytes 38+39 | = Attack Power |
| Bytes 40+41 | = Super Combo Attack Power |
| Bytes 42+43 | = Defense |
| Byte 44+45 | = Gauge |
| Byte 46+47 | = Stamina |
| Bytes 48+49 | = Maximum Attack Power |
| Bytes 50+51 | = Maximum Super Combo Attack Power |
| Bytes 52+53 | = Maximum Defense |
| Bytes 54+55 | = Maximum Gauge |
| Bytes 56+57 | = Maximum Stamina |
| Byte 59 | = GD |

(the bytes in between here probably are related to the route taken in the world tour mode)

Byte 80     = Gokuentou cleared (I guess...)

ISM Pluses:
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You're gonna love this! People thought you could only have 11 ISM Pluses at most, but no, Sir, you can have all 25 ISM Pluses AT THE SAME TIME !!! Simply set the corresponding bits in the bytes 24 to 27. However, there seems to be a catch, though: I tested this in the infamous G.R. match no. 16 against Cody and Guy. While I managed to dizzy them VERY quickly (well, with attack power 768...), they could also dizzy ME just as fast.

And apparently some other strange side effects can be achieved by messing around with the "empty" bits, I don't know. In one example I had a Zangief with 767 for Attack/SC Attack and 2048 for Defense/Gauge/Stamina as well as all bits set in Byte 26 (thus including bits 5 and 6), giving him 27 ISM Pluses. The combination of the stats and the ISM Pluses seemed to cause funny effects: While you could knock your opponent out with one single Fierce Punch, some moves and throws (namely Spinning Piledriver, the last hit of both Super Combos...) would actually give the opponent some energy BACK! Strange indeed. Oh yes, neither would his SC Gauge recover nor would he have infinite guard power and so on, despite having all ISM Pluses.

Try it out for yourself; following is the data for the Zangief described above. Just paste the data into bytes 0000-0058 (offset) of a character, of course you need to put all data down here into one long line first by deleting the spaces and carriage returns. You may also customize this as you like (other character etc.).

011000011F0A070EFCF53000F4F10A0084651100849E1400FFFFFF0700000000000000000
F1FFF02FF02000800080008FF02FF02000800080008010D8B220100852028000B01810013
4402012308310000000000

Okay, now for the description what each bit does:

| Byte | Bit | ISM Plus |
|---|---|---|
| 24 | 0 | Alpha Combo |
| | 1 | Alpha Cancel |
| | 2 | Super Alpha Cancel |
| | 3 | Super Guard |
| | 4 | Infinite Guard |
| | 5 | Auto Guard |
| | 6 | Guard Power Plus |
| | 7 | Custom Combo |
| 25 | 0 | Air Guard |
| | 1 | Alpha Counter Plus |
| | 2 | Super Combo Gauge Plus |
| | 3 | Resist Dizziness |
| | 4 | Damage Plus |
| | 5 | - |
| | 6 | - |
| | 7 | Status Plus |
| 26 | 0 | Guard Smash |
| | 1 | Super Guard Smash |
| | 2 | Supreme Guard Smash |
| | 3 | Custom Combo Charger |
| | 4 | Alpha Power |

```
          5  Super Alpha Power
          6  Supreme Alpha Power
          7  infinite Auto Guard

   27     0  SC Gauge Recover
          1  Overall Power Up
          2  Multiple Taunt
          3  -


2. GR match data ------

   The following bytes contain zeros only for each GR match until a match has
   been cleared, in which case the following info replaces the zeros:

   Bytes 0-2   = ? (bytes 0 and 2 seem to have value 1 when a match is cleared.)
   Byte  3     = Max Combo
   Bytes 4-7   = Score
   Byte  8     = Minutes
   Byte  9     = ? (always 0)
   Bytes 10,11 = Seconds, Milliseconds

   Note: for some reason the value for milliseconds is different. Supposedly
         itIs handled in the game by multiplying the value of Byte No. 11 with
         1,66 (for the following example it would be 22 (decimal) * 1,66 = 36),
         the result is then rounded.

   Example: Match No. 16 against Cody and Guy (2C80-2C8B),
            Score 97300, Time 1I49"36, Max Combo 10
            Byte:  0  1  2  3  4  5  6  7  8  9  10 11
            Value: 01 1B 01 0A 14 7C 01 00 01 00 31 16




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VI. LEGAL / DISCLAIMER
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contents. This guide is hosted at GameFAQs (www.gamefaqs.com).

For suggestions and questions feel free to send an e-mail to sokaku@gmx.de.
And donIt forget to kick M.Bison where he belongs!
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