No sprite flicker rom and 15 sprite per scanline rom for AVS

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By bruddog, June 1, 2016 in Hacking Documentation

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bruddog
Down with button mashing

Moderators

3,074
11,466 posts
Location: Ca

Posted June 1, 2016

Report post

These are only meant to be used in hardware or emulators that can take advantage of the no sprite flickering.

This rom completely removes sprite flickering with the following patch

SET(0x2d04C, 0xA901209ACC4C3C90)

TSB_no_sprite_flicker.nes
Unavailable

You would need to use this in nestopia with the Machine->Options No Sprite Limit checked

This next file would take advantage of the upcoming AVS's 15 sprites per scanline feature

This patch changes the check from 8 sprites per scanline to 15. You could also use this in nestopia as with the above using the no sprite limit option to see how much of an improvement it makes (A LOT).

```
L_23_9176:                              ; CHECK SPRITES ($2DC-$278) AND SET OFF SCREEN IF TOO MANY IN QUADRANT
      LDY #$DC                          ; SET SPRITE INDEX= $2DC
L_23_9178:                              ; CHECK SPRITE LOCATION AND UPDATE SPRITE COUNT IN QUADRANT
      LDA $0200,Y                       ; LOAD CURRENT SPRITE Y
      CLC                               ;
      ADC $45                           ; + OFFSET VALUE
      LSR                               ;
      LSR                               ;
      LSR                               ;
      LSR                               ;
      TAX                               ; SET SPRITE COUNTER INDEX
      INC $06E2,X                       ; NUMBER OF SPRITES IN AREA ++
      LDA $06E2,X                       ; NUMBER OF SPRITES IN AREA < 9
      CMP #$09                          ;
      BCC L_23_9192                     ; YES->GO TO NEXT SPRITE
      LDA #$F0                          ; SET CURRENT SPRITE Y = OFFSCREEN
      STA $0200,Y                       ;
L_23_9192:                              ; GO TO NEXT SPRITE
      TYA                               ; SPRITE INDEX -= OFFSET TO NEXT SPRITE
      SEC                               ;
      SBC #$04                          ;
      TAY                               ; SAVE SPRITE INDEX
      CPY #$74                          ; ALL SPRITES CHECKED?
      BNE L_23_9178                     ; NO-> CHECK SPRITE LOCATION AND UPDATE SPRITE COUNT IN QUADRANT
      RTS                               ; RETURN
```

SET(0x2D14E,0x10)
SET(0x2D174,0x10)
SET(0x2D19A,0x10)
SET(0x2D1C0,0x10)

TSB_sprite_limit_15.nes
Unavailable

+ Quote

neidl32

Member

Posted June 1, 2016

There are no other hacks on this rom? I love it. I'll send this to my contact and see if he can post another video to compare it

+ Quote

Members
7
21 posts
Location: Syracuse, NY
Coach T

http://www.twitter.com/NEiDL32

My NES Collection.
Take a look, and PM me an offer!
tinyurl.com/neidlnes

Tecmonster

rom producer

Posted June 1, 2016

Great work, bruddog. That looks awesome.

Members
211
634 posts
Location: Reno, NV

+ Quote

neidl32

Member

Members
7
21 posts
Location: Syracuse, NY
Coach T

Posted June 1, 2016

Report post

Mog had loaded these on to a power Pak and said the results were very interesting. He should have a video available soon

+ Quote

http://www.twitter.com/NEiDL32

My NES Collection.
Take a look, and PM me an offer!
tinyurl.com/neidlnes

Mog

Getting Started

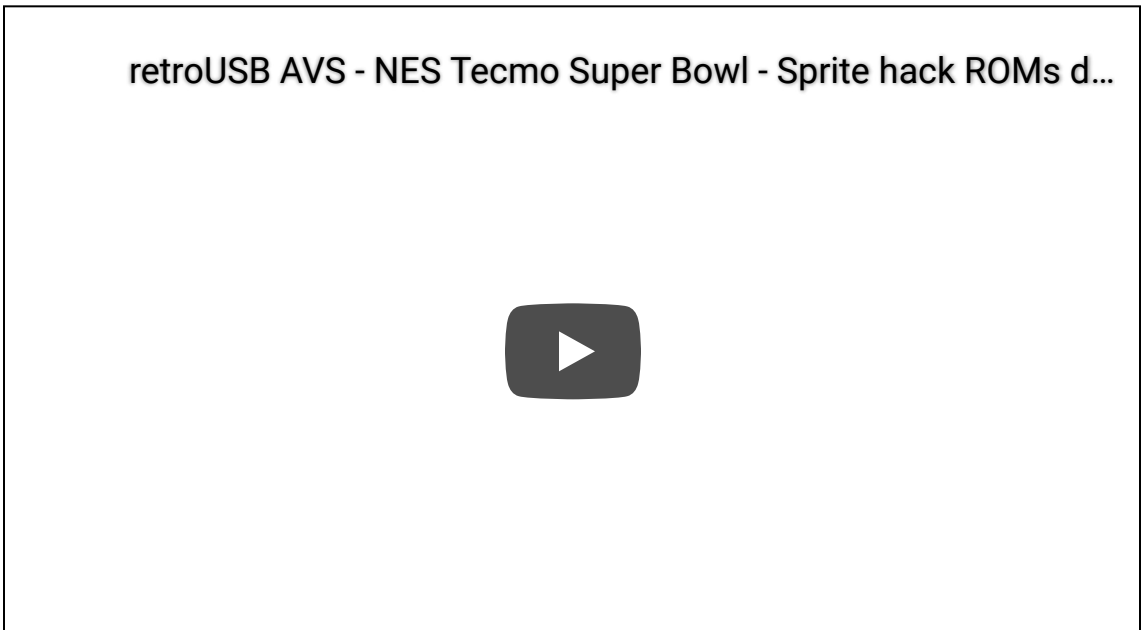
Members
3
1 post

Posted June 1, 2016

Report post

Hello, I am the one who is posting the AVS recordings on youtube.

Here is a video showing both of those ROMs with 'extra sprites' off and on. The 'sprite limit 15' ROM looks pretty awesome. Nice job!



+ Quote

bruddog

Down with button mashing

Moderators

3,074
11,466 posts
Location: Ca

Posted June 1, 2016

Report post

Thanks for the demo! Can you hook me up with a free AVS? Just kidding.

That looks about like what I expected. Only the 15 sprite limit rom is OK to use in the AVS even with the extra sprite setting turned on.

I checked the sprite counters in FCEUX and you still get more than 15 sprites per scanline in certain situations like kickoffs, punt returns and tackles where there are a bunch of players all on/near one horizontal line.You'd need something like 22 or so sprites per scanline to be safe

The **15 sprite limit on the AVS improves the flickering by a lot**.

+ Quote

Knobbe

Tecmo Godfather

Founder

SITE FOUNDER

3,242
17,589 posts
Tecmo Titles: 1
Founder of T-Borg

Posted June 2, 2016

Report post

> **On 6/1/2016 at 11:36 AM, bruddog said:**
>
> These are only meant to be used in hardware or emulators that can take advantage of the no sprite flickering.
>
> This rom completely removes sprite flickering with the following patch
>
> **SET(0x2d04C, 0xA901209ACC4C3C90)**
>
> TSB_no_sprite_flicker.nes
> Fetching info...
>
> You would need to use this in nestopia with the Machine->Options No Sprite Limit checked

1. Does this overwrite any other known hacks or is this a fairly isolated location?
2. Did you test this out in Nestopia without the No Sprite Limit checked? Are there any adverse effects?

+ Quote

Elsewhere

- @Tecmogodfather
- TecmoSuperBowl Facebook
- Join us on Discord
- Tecmobowl Twitch
- Youtube

"You fail all of the time. But you aren't a failure until you start blaming someone else" - Bum Phillips

bruddog

Down with button mashing

Moderators

3,074
11,466 posts
Location: Ca

Posted June 2, 2016

1.It is isolated.

2. Yes. It worked great from the little bit of testing I did. If anything there might be a tiny bit less chance of slowdown since it cuts out cycling the sprites and some logic checking.

+ Quote

Tecmonster

rom producer

Members
211
634 posts

Posted June 2, 2016

I also played a game with it on Nestopia with the No Sprite Limit option and the game ran flawlessly.

+ Quote

Location: Reno, NV

MartinFN

Promising Rookie

Members

20

84 posts

Posted June 4, 2016

Report post

WOW! Awesome hack! I tested it with VirtuaNes, no problems either. Really retarded question. If this hack were applied to a rom that got burnt to chip, what would happen to the game when someone plays it on native (NES) hardware? Would it bomb, or just not have an effect?

+ Quote

bruddog

Down with button mashing

Moderators

3,074

11,466 posts

Location: Ca

Posted June 4, 2016

Report post

The players would dissapear completely if there were more than 8 sprites on a line so you wouldn't want to use this on an old cart + nes

+ Quote

buck

DARRELL GREEN

Members

2,060

6,332 posts

Location: Tecmo Super Street

Tecmo Titles: Lincoln V (2015)

Posted June 5, 2016

Report post

> **On 6/4/2016 at 4:10 PM, MartinFN said:**
>
> WOW! Awesome hack! I tested it with VirtuaNes, no problems either. Really retarded question. If this hack were applied to a rom that got burnt to chip, what would happen to the game when someone plays it on native (NES) hardware? Would it bomb, or just not have an effect?

magtv.jpg

+ Quote

"The right to speak and the right to refrain from speaking are complementary components of … 'individual freedom of mind.'"

link to change one's signature

MartinFN

Promising Rookie

Members
20
84 posts

Posted June 6, 2016

..?...?...

Quote

gojiphen malor

Tecmo Super Champion

Members
669
838 posts
Location: Monster Island

Posted September 8, 2017 (edited)

I was getting a bit of slowdown after adding both the push/pull hack and the sprite flicker hack.
Overclocked emulator. Fixed.
Here's how :

(from reddit)
SpriteLimitOverclock.jpg
Edited September 8, 2017 by gojiphen malor

Quote

Knobbe

Tecmo Godfather

Founder
SITE FOUNDER
3,242

Posted September 14, 2017

> **On 6/4/2016 at 4:10 PM, MartinFN said:**
>
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17,589 posts
Tecmo Titles: 1
Founder of T-Borg

+ Quote

Elsewhere

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- TecmoSuperBowl Facebook
- Join us on Discord
- Tecmobowl Twitch
- Youtube

"You fail all of the time. But you aren't a failure until you start blaming someone else" - Bum Phillips

bruddog

Down with button mashing

Moderators

3,074
11,466 posts
Location: Ca

Posted September 14, 2017

> **On 9/8/2017 at 10:57 PM, gojiphen malor said:**
>
> **I was getting a bit of slowdown after adding both the push/pull hack and the sprite flicker hack.**
> **Overclocked emulator. Fixed.**
> **Here's how :**
>
> **(from reddit)**
> SpriteLimitOverclock.jpg

Hmm I don't think I noticed that but I didn't check closely on FCEUX. Does it do it both in old and new PPU mode? Old ppu mode usually runs faster because its slightle less accurate. The sprite flicker hack should help reduce game slowdown as the amount of time the CPU is spending on the game logic in any given frame has been reduced since it no longer has to check for which sprites to "flash" on and off.

+ Quote

gojiphen malor

Tecmo Super Champion

Posted September 14, 2017

After adding the Push/Pull hack on top of the 'no sprite flicker,' I noticed slowdown on Punts, Field Goals, Extra Point tries.. any time there was alot of 'moving bodies' at the same time.
This is what's available in FCEUX :

Members
669
838 posts
Location: Monster Island

Timing.thumb.jpg.99049de24f4bbb205a39c69813472b46.jpg

After the overclock, the game runs like a champ. However I trust your insight, Bruddog lol. I'm still very new when looking at the HEX code, and thank you because any insight you guys give is very helpful!

+ Quote

bruddog

Down with button mashing

Moderators

3,074
11,466 posts
Location: Ca

Posted September 14, 2017

The sprite flicker hack has nothing to do with the slowdown. It's likely the moving grapple hack adding slowdown. I bet the slowdown would be even worse without the no sprite-flicker hack.

There is slowdown in the original game on the NES on punts when there are a lot of moving bodies at once.

+ Quote

gojiphen malor

Tecmo Super Champion

Members
669
838 posts
Location: Monster Island

Posted September 14, 2017

> **On 9/14/2017 at 11:02 AM, bruddog said:**
>
> There is slowdown in the original game on the NES on punts when there are a lot of moving bodies at once.

Thank you! It's been so long since I've used original NES hardware, I guess I didn't remember lol.

+ Quote

Atrain400

Promising Rookie

Posted January 20, 2018 (edited)

When using Nestopia with this fix and you put on "No Sprite Limit", it makes the scoring cutscenes very choppy. The trade off is great during gameplay, I was just curious if there

Members
13
73 posts
Location: Philadelphia, PA

was a way to fix this or if anyone noticed this and has commented.
Edited January 20, 2018 by Atrain400

Quote

bruddog
Down with button mashing

Posted January 20, 2018

Report post

Hadn't noticed that.

Quote

Moderators

3,074
11,466 posts
Location: Ca

Atrain400
Promising Rookie

Posted March 4, 2018

Report post

@bruddog

any ideas on how to possibly fix this?

Quote

Members
13
73 posts
Location: Philadelphia, PA

bruddog
Down with button mashing

Posted March 4, 2018

Report post

Not quickly or easily. The game uses the sprite overflow to hide the big player sprites to keep the player rising up out of the ground transition looking smooth. You'd probably have to redesign the cutscenes

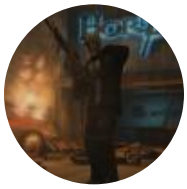
Moderators

3,074
11,466 posts
Location: Ca

+ Quote

kamphuna8

Tecmo Fanatic



PureTecmo Administrators

3,917
14,517 posts
Location: Tacoma
Tecmo Titles: Overrated
Overstated

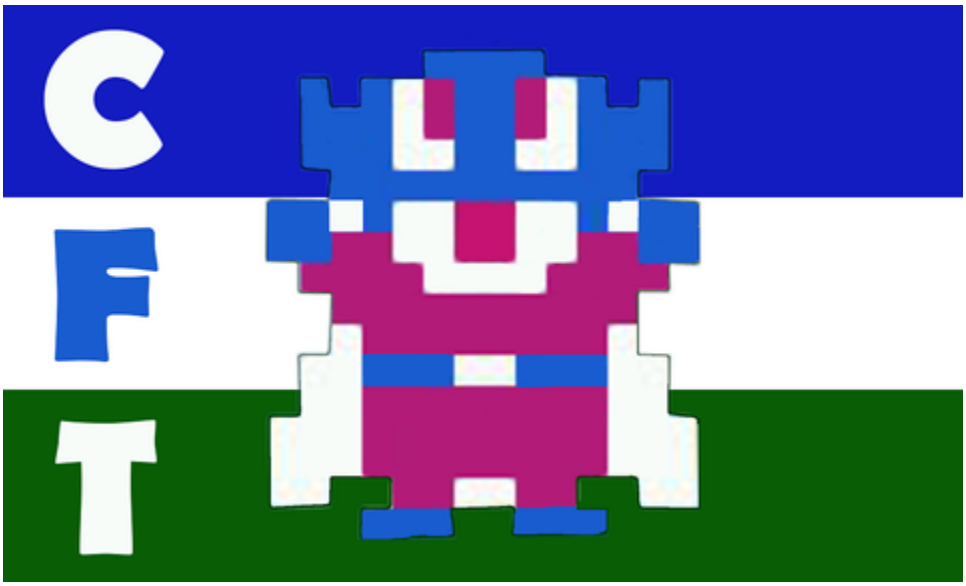
Posted March 15, 2018

Report post

> **On 6/1/2016 at 11:36 AM, bruddog said:**
>
> These are only meant to be used in hardware or emulators that can take advantage of the no sprite flickering.

Sorry if this is a dumb question. Using our Everdrives on NES console, basically is hardware that can NOT take advantage of this, correct?

+ Quote



tecmo gods, über alles

PLAY HARD

bruddog

Down with button mashing

Moderators

3,074
11,466 posts
Location: Ca

Posted March 15, 2018

Report post

Correct.

+ Quote

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SBlueman

No sprite flicker rom and 15 sprite per scanline rom for AVS

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By bruddog, June 1, 2016 in Hacking Documentation

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cleestew
Getting Started

Members
0
2 posts

Posted September 14, 2018

Report post

Will this work on a classic snes mini?

+ Quote

bruddog
Down with button mashing

Moderators

3,074

Posted September 14, 2018

Report post

I'm going to take a guess and say no unless there is an option somewhere for you to allow more sprites. I'm not sure what the SNES would be using to emulate NES games.

+ Quote

11,466 posts
Location: Ca

manYo
Tecmo Legend

Members
6,357
1,920 posts

Posted September 14, 2018

Report post

wow, thanks bru... just saw this thread, and I have an AVS and am gonna try it out this wkd

+ Quote

- **TWITTER:** https://twitter.com/SHAmanYo1080

King Javo
Getting Started

Members
0
3 posts

Posted January 28, 2019

Report post

Are there rom downloads that include this or do we have to hack the rom ourselves somehow? I'm trying to use this on my SNES mIni console... FYI.

+ Quote

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SBlueman

/