



FPGA MiSTer

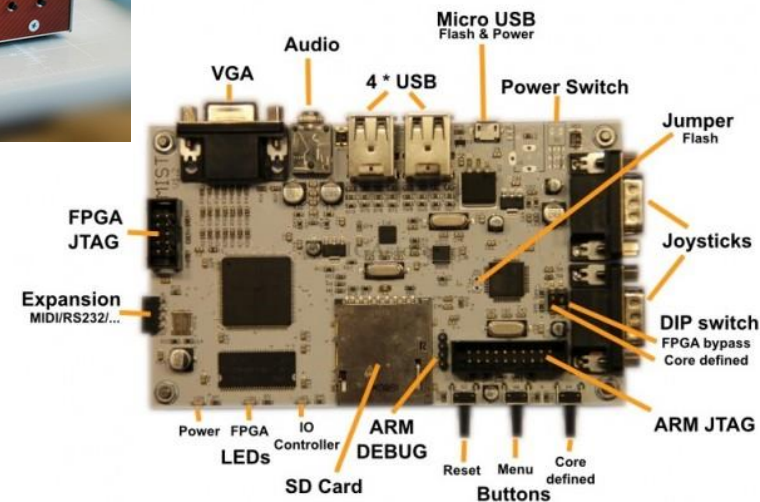
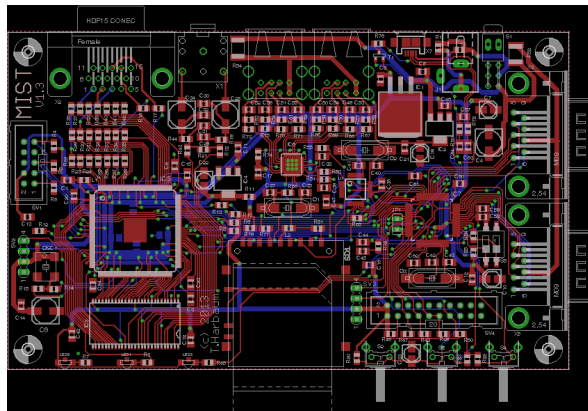
Brahim HAMADI CHAREF
Hackware V5.3

FPGA MiSTer – MiST / MAME

MiST - FPGA retro gaming

<https://github.com/mist-devel/mist-board>

<https://github.com/mist-devel/fpgagen>



Multiple Arcade Machine Emulator

MAME 0.211 (26 June 2019)

<https://www.mamedev.org>

MAMEdev - MAME Developers

<https://github.com/mamedev>

C++ / Macro

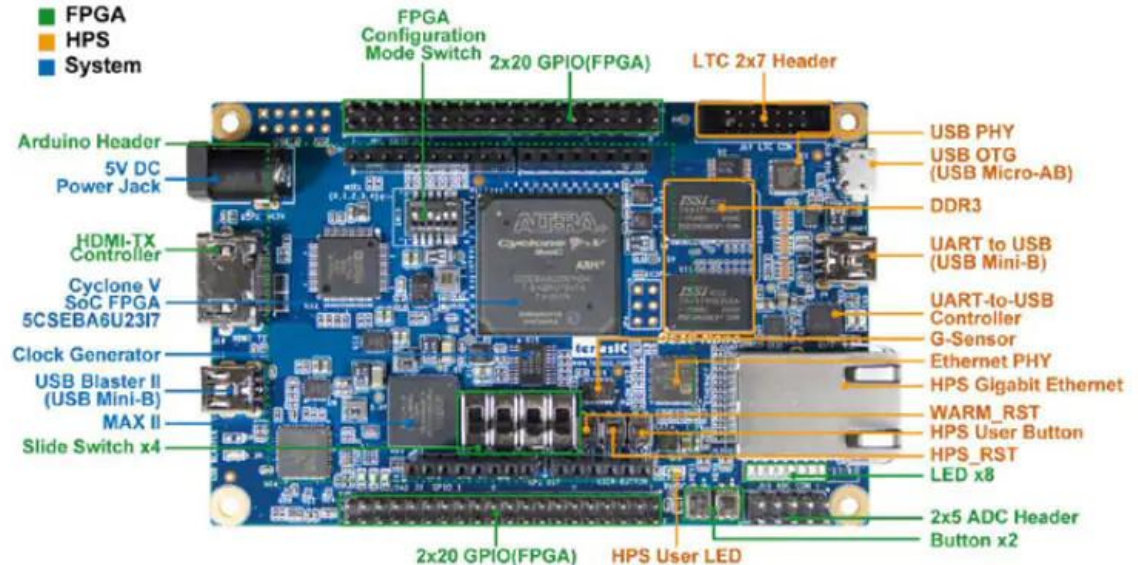
src / mame / audio/video/machine



FPGA MiSTer – Hardware



DE10-Nano Board (Front)



Terasic DE10-Nano

- Altera Cyclone V SE FPGA with 110,000LE (41,500ALM) and 5,570Kbit of Block RAM.
- ARM Cortex A9 dual-core CPU at 800MHz.
- HDMI video and audio allowing connect to any modern monitor/TV.
- DDR3 1GB available for both ARM and FPGA.
- High speed ARM<->FPGA interconnect due to both are in the same chip.
- Linux on ARM support for many I/O devices and file systems.
- Board is mass-produced by a large manufacturer and freely available for a relatively cheap price 130USD (99USD for students/professors).

FPGA MiSTer – Software

- **Cores**

Boot Menu Acorn Archimedes Altair 8800 Amiga Amstrad CPC 6128 ao486 Apogee Apple II+ Apple Macintosh Plus Aquarius Atari 800XL BBC Micro B,Master BK0011M Commodore 16, Plus/4 Commodore 64, Ultimax Commodore PET Commodore VIC-20 DEC PDP-1 Jupiter Ace MSX MultiComp Orao SAM Coupe Sharp MZ Series Sinclair QL Specialist/MX TI-99/4A TSConf Vector 06C X68000 ZX Spectrum ZX81

- **Consoles Cores**

Astrocade Atari 2600 Atari 5200 ColecoVision, SG-1000 Gameboy, Gameboy Color Genesis/Megadrive Master System, GameGear NES Odyssey2 SNES TurboGrafx 16 / PC Engine Vectrex

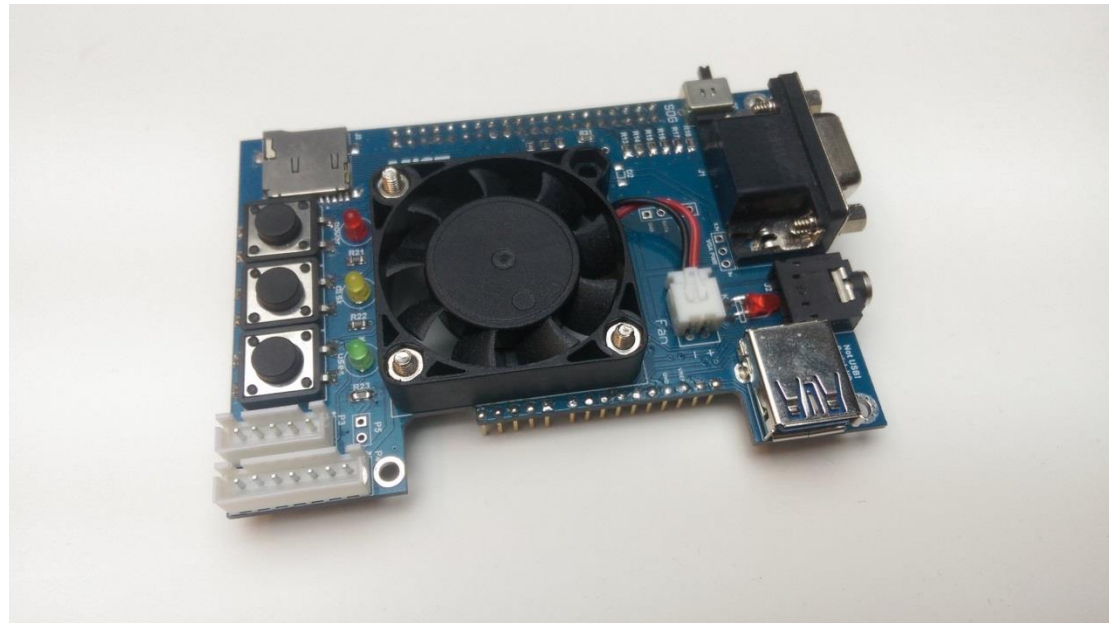
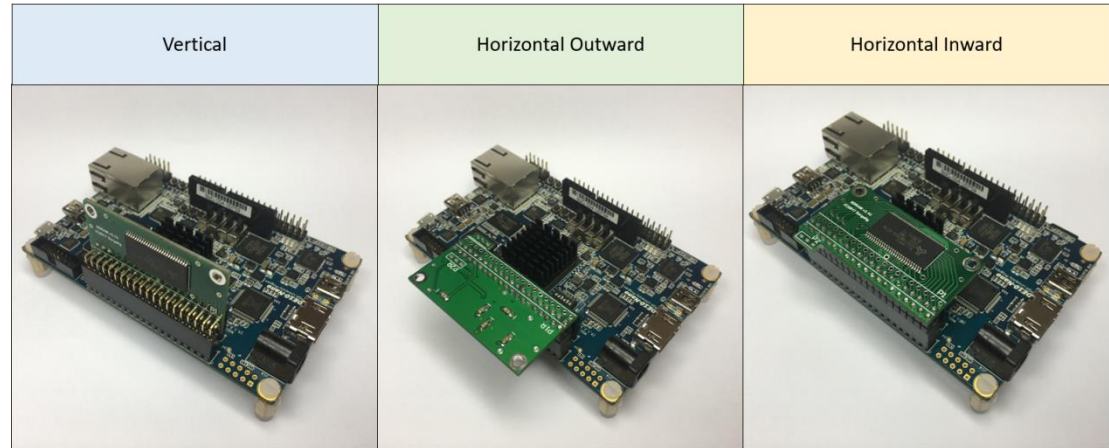
- **Arcade Cores**

1942 1943 Alibaba and 40 Thieves Azurian Amidar Arkanoid Asteroids Asteroids Deluxe Bagman Berzerk Black Hole Bomb Jack Botanic Bubbles Burger Time Burning Rubber Canyon Bomber Catacomb Centipede Colony 7 Computer Space Cosmic Avenger Crazy Climber Crazy Kong Crush Roller Defender Dominos Donkey Kong Dorodon Dream Shopper Eeekk! Eyes Frenzy Frogger Galaga Galaxian Ghosts'n Goblins Gorkans Jin Joust Lady Bug Lizard Wizard Lunar Lander Mayday Moon Cresta Moon Patrol Mr.Do's Nightmare Mr.TNT Ms.Pacman Omega Orbitron Pacman Pacman Club Pacman Plus Pacmanic Miner Pengo Phoenix Pickin Pisces Pleiads Ponpoko Pooyan Robotron Scramble Sinistar Snap Jack Splat Sprint One Sprint Two Stargate Super Breakout Super Glob The End Time Pilot Traverse USA Van-Van Car War of the Bugs Woodpecker Xevious ZigZag

- **Memory test**

FPGA MiSTer – Add-Ons

- **SDRAM Board**
Assembly (DIY) and Core support
- **IO Board**
Assembly (DIY) and Secondary SD card
e.g. MiSTer IO Board v5.5
- **RTC board**
Assembly (DIY) and Core support
- **USB Hub**
USB Hub Assembly (DIY)
- ADC-in (Audio/Tape input)
- **Cases**
3D-printed (DIY) and Pi-Top (v1)



FPGA MiSTer – Wiki / github

- **MiSTer - Wiki**
https://github.com/MiSTer-devel/Main_MiSTer/wiki
- **MiSTer - github**
<https://github.com/MiSTer-devel/>
- **MiSTer - Linux Kernel**
https://github.com/MiSTer-devel/Linux-Kernel_MiSTer
- **MiSTer – NES**
https://github.com/MiSTer-devel/NES_MiSTer
MiSTer – Genesis (Sega MD)
https://github.com/MiSTer-devel/Genesis_MiSTer
MiSTer – Gameboy
https://github.com/MiSTer-devel/Gameboy_MiSTer
MiSTer – NeoGeo
https://github.com/furrtek/Neogeo_MiSTer/
MiSTer – Arcade 1943
https://github.com/MiSTer-devel/Arcade-1943_MiSTer

FPGA MiSTer – Developers

- **Alexey Melnikov** is creating MiSTer (FPGA project)
<https://www.patreon.com/FPGAMiSTer>
- **Sorgelig** main MiSTer developer
https://www.youtube.com/watch?v=s_p7hhpZBf4
- **Jose Tejada (jotego)**
<https://github.com/jotego?tab=repositories>
<https://www.patreon.com/topapate>
- **FurrTek (Woof woof I like low level code)**
https://github.com/furrttek/Neogeo_MiSTer
<https://www.patreon.com/furrttek>
- **Sergey Dvodnenko (srg320)** (SNES core, special chips, SVP chip core.)
<https://github.com/srg320>
- **Gregory Estrade (Torlus)** PC Engine, SEGA Megadrive/Genesis, Atari Jaguar
<https://github.com/Torlus>
<http://torlus.github.io/>
- **Dar - Galaga**
<http://darfpga.blogspot.fr>

FPGA MiSTer – YouTube

- **Introducing MiSTer FPGA Multi Console**
<https://www.youtube.com/watch?v=igiVHfBzX8w>
- **MiSTer FPGA Cores Spectacular - Vol. 1**
https://www.youtube.com/watch?v=NIBPoB3_2KQ
- **MiSTer New Arcade Cores + 1943**
https://www.youtube.com/watch?v=s_p7hhpZBf4
Jotego - FPGA_1943 - Verilog re-implementation of the arcade game
https://github.com/jotego/fpga_1943
- **MiSTer NeoGeo core 2019-01-25**
<https://www.youtube.com/watch?v=LZOj3maMHVc>
- **Preliminary NeoGeo core for MiSTer**
<https://www.youtube.com/watch?v=BmjuC47jTxE>



FPGA MiSTer – Facebook

MiSTer FPGA Computer

Closed group

About

Discussion

Chats

Announcements

Members

Events

Videos

Photos

Files

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Shortcuts

MiSTer FPGA Computer

Intel Edison Singapore ...

FPGA Developers

FPGA Community Si...

A PLACE IN NORT...

Arduino Community Sin...

DataScience SG

RaspberryPi & Co Si...

Hackware

HackerspaceSG

SP-2400 Users Group

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Arduino Community Sin...

DataScience SG

RaspberryPi & Co Si...

Hackware

HackerspaceSG

SP-2400 Users Group

See more

Joined

Notifications

Share

More

Write post

Add photo/video

Live Video

More

Write something...

Photo/Video

Watch Party

Tag friends

More

NEW ACTIVITY

Keith F. Kelly

29 June at 13:53

Gameboy never looked so good!

INVITE MEMBERS

+ Enter name or email address...

MEMBERS

1,388 members

DESCRIPTION

Mister FPGA Computer discussion group.

1) No spam please!
Spamm... See more

GROUP TYPE

General

CREATE NEW GROUPS


Groups make it easier than
ever to share with friends,
family and teammates.



Create Group

RECENT GROUP PHOTOS

See all

FPGA MiSTer – Twitter


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mister fpga   [Tweet](#)


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 **#N64Memories** @N64Me... [×](#)


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#G20Summit 





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 Promoted by Bloomberg


 **Scralings** @Scralings · Jun 20

Replying to @RantsByDesign @Kulinski_crat


#MiSTer is an **FPGA** retro video gaming project that is trying to preserve classic computer and console systems from the past. It's a fairly new open source project but I just am continually blown away by it. github.com/MiSTer-devel/M...







 **SmokeMonster** @SmokeMonsterTWI · Jun 22


If you use and love **MiSTer**, consider supporting the project



Alexey Melnikov is creating MiSTer (FPGA project) | Patreon

Become a patron of Alexey Melnikov today: Read posts by Alexey Melnikov and get access to exclusive content and experiences on the world's large... patreon.com

 2  19  86 

 **oSean** @oSean · Jun 21

Building a retro Commodore Amiga 1200 using the **MiSTer** Project. Got the DE-10 Nano **FPGA** yesterday. More to come.

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FPGA MiSTer – Discord

The screenshot shows a Discord server interface. On the left is a sidebar with a list of channels under the 'Classic Gaming' category. The main area displays the 'mister-news' channel with three messages from 'Bits n Stuff'.

Sidebar Channels:

- analogue-mega-sg
- analogue-help
- SD2SNES
 - sd2snes-news
 - sd2snes-general
 - sd2snes-themes
 - sd2snes-help
- MISTER FPGA
 - mister-news
 - mister-general
 - mister-help
- RETROARCH
 - retroarch-news
 - retroarch-general
 - retroarch-help
- TERRAONION
 - terraonion-news

Channel: #mister-news

8 members, 1 bot, 1 role

Bits n Stuff Yesterday at 22:44

Menu:

- Update LEDs behaviour.

MiSTer:

- Improved 2-buttons combo for OSD button.
- SNES: enable F1 ROCII saves.
- Rework disk LED activity: now it includes Linux disk access.
- Some other minor tweaks and fixes.

Linux:

- Improve media files handling in MC - many types support multiple selections for batch playback.
- Support for adlib tracker music.
- Add Perl package (also used in archive browsing in MC)
- Support for some national symbols of European languages (incl. Russian).
- UTF8 support for FTP daemon.
- Some other tweaks and fixes.

Bits n Stuff Yesterday at 22:55

NES:

- Many fixes and PAL mode from Kittrinx
- New mappers from GreyRouge
- Internal stability improvements.

28 June 2019

Bits n Stuff Today at 01:50

ZX-Spectrum:

- Improve PSG/FM stability
- Update framework.

BK0011M:

- Update framework.

You do not have permission to send messages in this channel.

FPGA MiSTer – Forum

ATARI-FORUM.com

Search...

Atari-Forum

A forum about Atari 16/32 computers and their clones. This forum is in no way affiliated with Atari Interactive.

Quick links

FAQ

Rules

Notifications [0]

Private messages [0]

bhamadicharef ▾

[Board index](#) < [FPGA-based clones](#) < [MiSTer](#)

MiSTer

Moderators: [Mug UK](#), [Zorro 2](#), [Greenious](#), [spiny](#), [Sorgelig](#), [Moderator Team](#)

New Topic

Search this forum...

Mark topics read • 360 topics

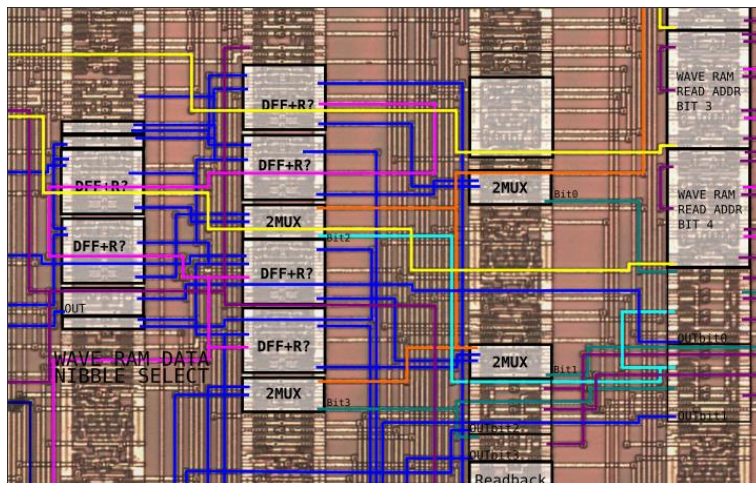
ANNOUNCEMENTS	REPLIES	VIEWS	LAST POST
Tapatalk disabled by Dal » Mon Sep 14, 2015 8:57 pm » in News & Announcements	29	448993	by Dal Tue Jul 24, 2018 3:57 pm
Atari Links by bandit » Mon Aug 04, 2014 8:04 pm » in Demos - General	70	776439	by littleneo Sun Apr 07, 2019 6:43 pm
Thank You! by Dal » Wed Feb 16, 2011 6:18 pm » in Demos - General	0	389458	by Dal Wed Feb 16, 2011 6:18 pm
Donations by Dal » Wed Feb 16, 2011 6:06 am » in Demos - General	70	897086	by leech Fri Apr 05, 2019 12:34 pm

TOPICS	REPLIES	VIEWS	LAST POST
Local Sellers for MiSTer Expansion Boards by THaase » Sun Apr 29, 2018 12:30 am	386	121749	by digitron Wed May 29, 2019 7:32 am
MiSTer updates and changelog by Sorgelig » Thu Jul 13, 2017 1:40 am	409	177478	by Sorgelig Mon May 27, 2019 11:14 pm
I/O Board by Sorgelig » Sun Sep 03, 2017 1:44 am	307	84626	by damopinn Sat May 25, 2019 9:21 pm
USB Hub board by Sorgelig » Sat Mar 24, 2018 1:50 am	195	53574	by damopinn Tue May 21, 2019 7:54 pm
If you want to donate to MiSTer project. by Sorgelig » Mon Jan 29, 2018 11:23 pm	185	52595	by Sorgelig Sun May 19, 2019 1:22 pm
SDRAM board by Sorgelig » Sun Sep 03, 2017 1:46 am	178	64957	by hyiger Mon Mar 18, 2019 2:02 am
RTC board by Sorgelig » Fri Sep 22, 2017 8:40 pm	92	42773	by Sorgelig Wed Jan 30, 2019 9:11 am
Arcade ROM Builder & Injector GUI by nakedarthur » Mon Mar 04, 2019 11:37 am	38	4533	by Newsdee Thu May 30, 2019 10:28 am
ScummVM running on FrameBuffer			

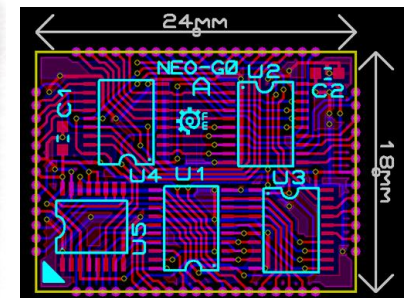
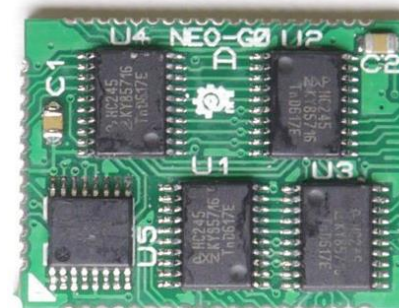
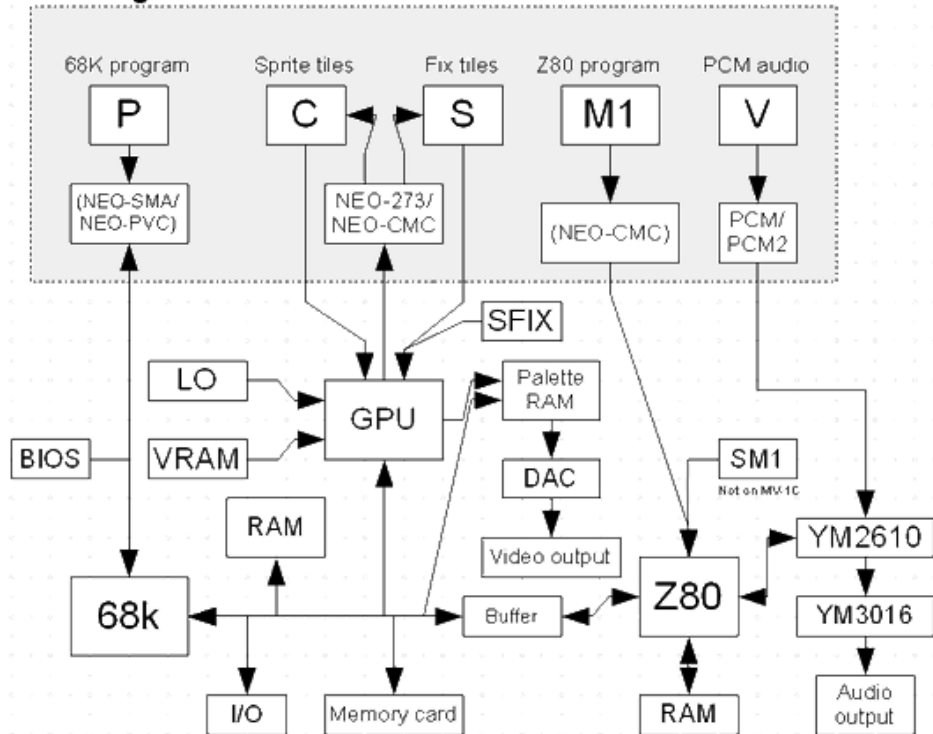
FPGA MiSTer – SNK NeoGeo

- **Furrtek - NeoGeo**
<http://furrtek.free.fr/>
<https://www.patreon.com/furrtek>
<https://github.com/furrtek/>

- **NeoGeo Development Wiki**
<https://wiki.neogeodev.org>

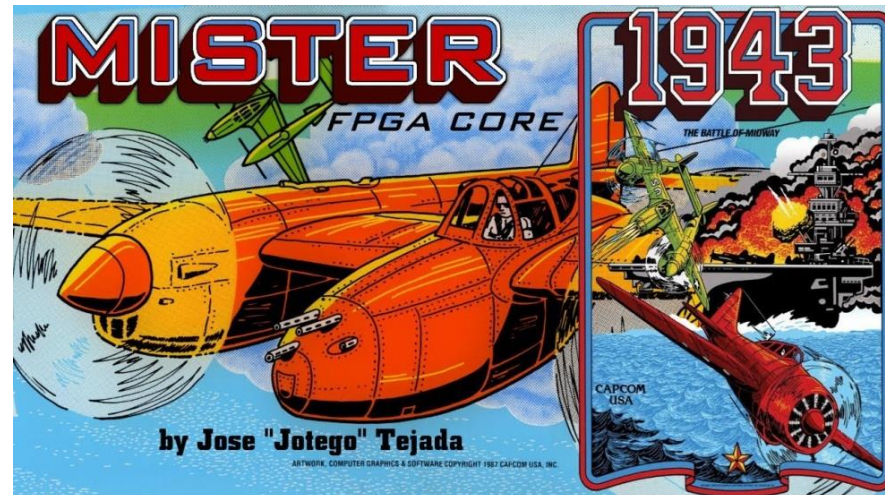
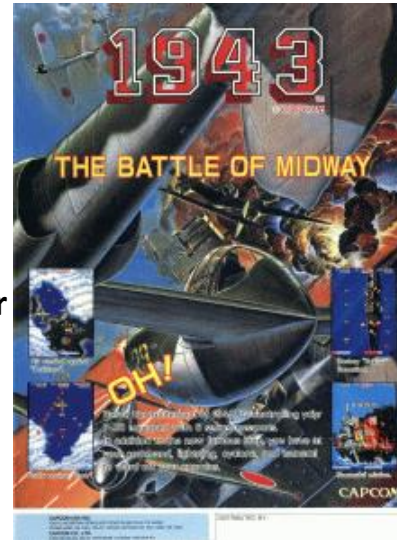


Cartridge



FPGA MiSTer – Midway Arcade 1943

- Arcade system Capcom Commando Hardware
CPU Z80 @ 6 MHz + Sound CPU: Z80 @ 3 MHz
Sound Chips: (2x) YM2203 @ 1.5 MHz
Display Raster, 224 x 256 pixels (Vertical), 256 colors
- Jose Tejada (jotego) - Professional IC design engineer
Interested in open source hardware development of retro computers, Valencia, Spain
<https://www.patreon.com/topapate>
<https://github.com/jotego>
- **Implementation**
Uses the TV80 Z80 core
Run 16-bit SDRAM running at 72 MHz
Background 32x32 tile layer (16 colors)
Foreground 32x32 tile layer (16 colors)
8x8 character layer (4 colors)
prite generator that handles 128 sprites (16 colors)
Security chip is implemented
Two upscaling schemes : Scale2X or CRT grid with blooming
ROMs are not included with the core
graphics ones must be translated in friendly format,
Sound is missing :-(



FPGA MiSTer – Retro Gaming ...

Console prices, adjusted for inflation



\$796

1977- Atari 2600
Original price: \$200

\$935

1979- Intellivision
Original price: \$300

\$410

1982- ColecoVision
Original price: \$175

\$412

1986- Master System
Original price: \$200



\$595

1995- Saturn
Original price: \$400

\$289

1996- Nintendo 64
Original price: \$200

\$272

1999- Dreamcast
Original price: \$200

\$395

2000- Playstation 2
Original price: \$300



\$412

1986- NES
Original price: \$200

\$346

1989- Genesis
Original price: \$190

\$365

1989- TurboGrafx 16
Original price: \$200

\$1,125

1990- NeoGeo
Original price: \$650



\$259

2001- Gamecube
Original price: \$200

\$389

2001- Xbox
Original price: \$300

\$348

2005- Xbox 360
Original price: \$300

\$567

2006- Playstation 3
Original price: \$500



\$332

1991- SNES
Original price: \$200

\$1,095

1993- 3DO
Original price: \$700

\$391

1993- Jaguar
Original price: \$250

\$446

1995- Playstation
Original price: \$300



\$284

2006- Wii
Original price: \$250

\$300

2012- Wii U
Original price: \$300

\$400

2013- Playstation 4
Original price: \$400

\$500

2013- Xbox One
Original price: \$500

FPGA MiSTer – Trend Mini



SNK
NeoGeo



FPGA MiSTer – Trend Mini



Sega
MegaDrive



FPGA MiSTer – Arcade Cores

Arcade Cores

[1942](#) - [1943](#) - [Alibaba and 40 Thieves](#) - [Azurian](#) - [Amidar](#) - [Arkanoid](#) - [Asteroids](#) - [Asteroids Deluxe](#) - [Bagman](#) - [Berzerk](#) - [Black Hole](#) - [Bomb Jack](#) - [Botanic](#) - [Bubbles](#) - [Burger Time](#) - [Burning Rubber](#) - [Canyon Bomber](#) - [Catacomb](#) - [Centipede](#) - [Colony 7](#) - [Computer Space](#) - [Cosmic Avenger](#) - [Crazy Climber](#) - [Crazy Kong](#) - [Crush Roller](#) - [Defender](#) - [Dominos](#) - [Donkey Kong](#) - [Dorodon](#) - [Dream Shopper](#) - [Eeekk!](#) - [Eyes](#) - [Frenzy](#) - [Frogger](#) - [Galaga](#) - [Galaxian](#) - [Ghosts'n Goblins](#) - [Gorkans](#) - [Jin](#) - [Joust](#) - [Lady Bug](#) - [Lizard Wizard](#) - [Lunar Lander](#) - [Mayday](#) - [Moon Cresta](#) - [Moon Patrol](#) - [Mr.Do's Nightmare](#) - [Mr.TNT](#) - [Ms.Pacman](#) - [Omega](#) - [Orbitron](#) - [Pacman](#) - [Pacman Club](#) - [Pacman Plus](#) - [Pacmanic Miner](#) - [Pengo](#) - [Phoenix](#) - [Pickin](#) - [Pisces](#) - [Pleiads](#) - [Ponpoko](#) - [Pooyan](#) - [Robotron](#) - [Scramble](#) - [Sinistar](#) - [Snap Jack](#) - [Splat](#) - [Sprint One](#) - [Sprint Two](#) - [Stargate](#) - [Super Breakout](#) - [Super Glob](#) - [The End](#) - [Time Pilot](#) - [Traverse USA](#) - [Van-Van Car](#) - [War of the Bugs](#) - [Woodpecker](#) - [Xevious](#) - [ZigZag](#)