R36S Handheld Game Console

From: https://r36shandheld.store/

This manual is meant for first time R36S users and for those who want to maintain their own selection of ROMs (games). It covers optional configurations which I myself found very helpful and preferrable, although they are by no means mandatory. I wrote this manual based on my own experiences and information I found and used that was scattered around many fora, websites and youtube videos. I did my own cherry picking and exploring. This manual will not cover the use of wifi or any non standard ways of using the R36S, just the basics and suggestions for particular configurations to get the most out of the many available ROMs and emulators.

FOR STARTERS…

IMPORTANT: CORRECT WAY TO POWER OFF
The power button only powers the device on and switches to stand-by. It does not turn the device off, unless you press and hold for a forced shutdown. This is not recommended, as it can be harmful.
To power off the R36S, from the main menu (console selection):
`START BUTTON (= menu) > QUIT > SHUTDOWN SYSTEM.`

HOW TO EXIT A GAME
press `FN` + `START`

WHAT DOES IT MEAN?

ROM:	Software package of a game, like Tetris
CORE:	Emulator of a game console, like Atari 2600
BIOS:	Supporting file(s) necessary for certain cores (emulators) to function
ARKOS:	Operating system on which the R36S runs
RETROARCH:	The frontend (what you see onscreen) for running cores in ArkOS

WHAT'S INSIDE YOUR R36S…

Display:	640 x 480 pixels, 3,5 inch IPS
CPU:	RK3326
GPU:	Mali-G31
RAM:	1 GB DDR3L
Operating system:	ArkOS
Weight:	192 gram
Battery:	Model 8040662 Li-ion, 3200 mAh, 3.7 volt, 2 pin JST 1.25mm

CONTENTS

1. CHARGING
Charge battery throught the LEFT USB port, not the right one

The R36S does not have proper power management. It might be best fort he battery to not use a very powerful fast charger. A slower charger (0.5A – max 2A) would be best. The LED turns off when charging is complete. Do not leave the device on the charger overnight.

2. MEMORY CARDS
Choosing and preparing memory cards for games (ROMs) and operating system (OS)

One can either use 1 memory card to store both games and OS, or use 2 memory cards to separate games and OS. Maximum capacity of memory cards is 256 GB. In case of a two card setup, the OS card only needs a 16 GB capacity.
In case of 1 memory card, use the right hand card slot.
In case of 2 memory cards, use the left hand card slot for games and the right hand slot fort he OS.
Using 2 cards has the advantage of storing more games (although 1 card is usually plenty) and not losing games when the OS needs to be re-flashed.

→ The device comes with poor quality stock cards, prone to failure. Replace these as soon as possible with brand cards like Kingston or Samsung. Do not use Sandisk for a ROM card, as the R36S seems to have troubles reading Sandisk cards in het left hand slot.

→ Make a backup of the original card(s), especially the \BIOS folder in the EASYROMS partition. This contains necessary files for several emulators, which might be hard to find online once you lose them.

3. LIST OF COMPATIBLE EMULATORS
Which emulators (cores) are compatible with the R36S (on ArkOS version february 2024)

WORKING:
Arcade games (refer to ARCADE under Adding Games)
Atari 2600, Atari 5200, Atari 7600
Coleco Vision (*)
Commodore 64
Commodore Amiga (gebruik PUAE2021) (***)
CP1, CP2, CP3
Family Computer
Mattel Intellivision (*)
MS-DOS (***)
MSX, MSX 2 (gebruik OpenMSX)
Nintendo 64 (**)
Nintendo DS
Nintendo Entertainment System (NES)
Nintendo Gameboy, Gameboy Colour, Gameboy Advanced
Nintendo Virtual Boy
OpenBor
PC Engine
Sega Dreamcast (**)

Sega Genesis
Sega Master System
Sega Mega Drive
SNK NeoGeo, NeoGeo CD, NeoGeo Pocket Colour
Sony Playstation 1
Sony Playstation Portable (**)
Super Famicom
SuperGrafx
Super Nintendo
TurboGrafx 16, TurboGrafx CD
Wonderswan, Wonderswan Colour

PARTLY OR NOT WORKING:
Atari Jaguar
Atari Lynx
Naomi
Nintendo 64 DD
Sega Saturn

* Coleco Vision and Intellivision:
   These consoles have numerical keypads, which can be troublesome on the R36S buttons.

** Nintendo 64, Sega Dreamcast and Sony Playstation Portable:
   A limited selection of games for these consoles work on the R36S due to hardware limitations.

*** MS-DOS en Commodore Amiga:

These emulate several different computers with full size keyboards. Games might require individual configurations and key mappings. Also, during gameplay the use of an onscreen keyboard might be necessary. In DOS this can be displayed by pressing the left thumbstick. In Amiga by pressing SELECT.

The necessary folder structure for ROMs categorized by console is created while flashing an ArkOS card or while starting the R36S with an empty ROM card in the left hand slot.
The main menu will only display a particular console/emulator if at least one ROM (game) is added to the subfolder for this console.

BIOS FILES

Several emulators cannot function without the necessary bios files in the \BIOS folder on the memory card where your ROMs (games) are stored. Make sure to backup at least the \BIOS folder from the original memory card that came with the R36S.
For additional cores (emulators), consider downloading the RetroArch Bios Pack from Archive.org (and keep a backup of it). Add the contents of this bios pack to the \BIOS folder for maximum compatibility.

https://archive.org/details/retroarch-bios-pack_202308

4. FIRST USE: ARKOS AND/OR NEW MICRO SD CARD
Follow these steps while updating OS or using a new memory card

A new R36S most likely comes with a very old version of the ArkOs operating system. Before using the device, first update ArkOS to the latest version, to improve functionality and stability of the R36S:

Look for the RG351MP/R35S version of ArkOS or a dedicated R36S version. Check these download sources:
https://github.com/AeolusUX/ArkOS-R3XS
https://github.com/christianhaitian/arkos/releases
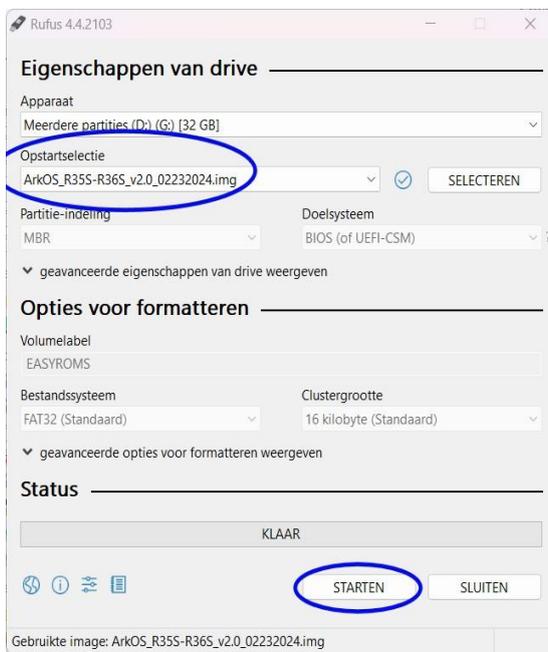
1. Download the ZIP file containing the latest version of ArkOS
2. Unzip the .IMG file (around 8 GB)
3. Use a Disk Imager to flash your memory card, like Rufus: https://rufus.ie/en/
4. Insert the memory card in your PC, start Rufus and make sure the right card is recognized:

5. Select the ArkOS image file and hit START. Flashing will take a few minutes.
6. Once complete, the card will show a partition called BOOT.
7. While the R36S is powered off, insert the card into the right hand card slot.

Notice: although there will be a ROM partition (EASYROMS) on the card directly after flashing, do not yet add games to it, since the partition might not have the right size yet. First, boot the R36S once with the new card inserted. This will further prepare the EASYROMS partition for adding ROMs.

Now follow one of these three steps:

→ **Using 1 memory card for both OS and ROMs (games)**

Power on the device containing the flashed memory card in the right hand slot. First boot takes a couple of minutes to configure everything. Once booted (the display shows the main menu), power off the R36S, place the memory card back in your PC and add your selection of ROMs to the EASYROMS partition (see ADDING AND MANAGING GAMES)

→ **Using 2 memory cards, the separate card for ROMs (games) is a new card**

Power on the device containing the flashed memory card in the right hand slot and a new, empty card for ROMs (games) in the left hand slot. Power on the R36S, first boot takes a couple of minutes. Once it shows the main menu, go to:

`SCRIPTS SETUP > ADVANCED > SWITCH TO SD2 FOR ROMS`
If this option isn't available, first select `READ FROM SD1 AND SD2 FOR ROMS`
and after that go back tot he same menu and select `SWITCH TO SD2 FOR ROMS`
The ROMs card will now be configured with the proper folder structure.
Power off the R36S, place the left hand memory card back in your PC and add your selection of ROMs to the EASYROMS partition (see ADDING AND MANAGING GAMES)

→ **Using 2 memory cards, the separate card for ROMs already contains games**

Power on the device containing the flashed memory card in the right hand slot and a card containing ROMs (games) in the left hand slot. Power on the R36S, first boot takes a couple of minutes. Once it shows the main menu, the ROMs card should be recognized and available right away. If case you do not see your games, go to:

`SCRIPTS SETUP > ADVANCED > SWITCH TO SD2 FOR ROMS`
If this option isn't available, first select `READ FROM SD1 AND SD2 FOR ROMS`
and after that go back tot he same menu and select `SWITCH TO SD2 FOR ROMS`

Micro SD card capacity recommendation:
1 card setup: at least 64 GB
2 card setup: 16 GB for OS, 64 to 256 GB for ROMs

Important notice with regards to memory cards
Never eject or insert a memory card while the R36S is powered on. Memory cards can easily get damaged that way.

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5. FIRST USE: CONFIGURATION AND MENU
Follow these steps for an optional, practical setup

→ **NOTICE ABOUT POWERING OFF / REBOOTING**
START (menu) > QUIT > SHUTDOWN (or REBOOT)
Always use this procedure to power off, never press-hold the power button unless absolutely necessary.

1. Insert memory card(s)
Make sure they include the updated OS, the EASYROMS partition with at least one ROM (game) and the \BIOS folder with necessary files to run the desired emulator(s).
Power on the R36S

2. Adjust the look and feel of the main menu
Below is an example of a nice menu theme, but make adjustments based on your preferences:

`START (menu) > UI SETTINGS > THEME >`   ES-THEME-ARKOS-CARBON
Go back to activate this theme.

Then, enter the same menu again, under `THEME CONFIGURATION`:
Gamelist View Style: DETAILED
Default Grid Size: AUTOMATIC

3. Enable 2-player games on one R36S
With the standard settings, it's not possible to play, for instance, an NES game with 2 players, because the keypad will not respond when the game switches to player 2. To resolve this, the "second controller" needs to be configured in RetroArch. This virtual, second controller, must have the same mapping as the main, first controller:

1. In the main menu, open "console" `RETROARCH`
2. Go to `SETTINGS > INPUT > MAXIMUM USERS`. Switch from 1 to 2.
3. In the same menu, go to `RETROPAD BINDS`. This will now show Port 1 and Port 2 controls.
4. Both ports must be configured the same, since they will both use the keypad on the R36S:

`Analog to Digital Type:` Left Analog
`Device Index:`   GO-Super Gamepad

Make sure that Port 2 has the same button numbers as Port 1. To change these, select a button in the list, press A and then press-hold the desired button. In the standard configuration, most likely only button A needs reconfiguration in Port 2.

→ *Do not forget to save changes in the Retroarch configuration file:*
On the first page of the menu: `CONFIGURATION FILE > SAVE CURRENT CONFIGURATION.`

4. Activate Quick Exit activeren (in order to exit games with 1x FN+START in stead of 2x)
1. In the main menu, open "console" `RETROARCH`
2. Go to `SETTINGS > INPUT > CONFIRM QUIT`. Switch to OFF

→ A few consoles/emulators will still require 2x FN+START to exit a game.

→ *Do not forget to save changes in the Retroarch configuration file:*
On the first page of the menu: `CONFIGURATION FILE > SAVE CURRENT CONFIGURATION.`

5. Selecting specific emulators for certain consoles
In most cases, the emulator choice can remain on AUTO. In some cases, it might be better to select a specific emulator. For example, for MS-DOS and Amiga games:

`START (menu) > EMULATOR SETTINGS > COMMODORE AMIGA`:
Emulator: RETROARCH - Core: PUAE2021 - GOVERNOR: AUTO

`START (menu) > EMULATOR SETTINGS > MICROSOFT-DOS`:
Emulator: RETROARCH - Core: DOSBOX_PURE - GOVERNOR: AUTO

6. Make unwanted menu-items ("consoles") invisible
Aside from your favorite consoles, the main menu will also show "consoles" only needed for configuration/settings. You may desire not to show these menu items:
`START (menu) > UI SETTINGS > VISIBLE SYSTEMS`
Uncheck undesired items, like for instance Options and RetroArch (after configuring your R36S).
These items can always be made visible again.

7. Shaders configuration for screens like Gameboy
This is a terrific option to experience games like on the original screen. At least one ROM (game) for the desired console needs to be available to configure this. See chapter SHADERS for complete instruction/example.

8. Switch A and B keys (optional)

By default, the R36S uses the "Nintendo configuration" of A and B keys, where A = confirm and B = back/exit.

If desired, these can be switched for all emulators to the "X-Box/Playstation configuration:"
START (menu) > ADVANCED SETTINGS > SWITCH A/B BUTTONS IN EMULATION STATION

(Alternatively, buttons can also be remapped for individual consoles/games. See chapter 10)

9. Simplified menu / kid function

In case the R36S will be used by children or by someone who does not need access to all configuration functions (except display/brightness, sound and power off function), you can switch from full mode to kiosk or kid mode:

START (menu) > UI SETTINGS > UI MODE

FULL: full functionality, no restrictions
KIOSK: all games available, brightness/audio settings and power off
KID: child friendly games only, brightness/audio settings, but → NO power off option!

NOTICE: in order to re-enable full functionality from Kiosk/Kid modus, go to main menu (console selection) and enter the following key code::

2x up – 2x down – 1x left – 1x right – 1x left – 1x right – B – A

After this, the R36S needs a restart in order to re-enable the quick menu.

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6. KEY COMBOS AND BUTTON LAYOUT

Power off:	Start (menu) > Quit > Shutdown System
Standby:	Single press power button
Exit running game:	Press FN + START (2x if Quick Exit is disabled)
Adjust brightness:	Start (menu) > Display Settings and Info > Brightness
Add/remove game to favorites:	In game selection list, press Y (* = favorites list)

OPEN QUICK MENU
In order to either save/load progress or configure game/console related settings, make sure this game or a random game for this console is running.
press R3 + X   ← *R3 = press right hand thumbstick*

SAVE/LOAD STATES (GAME PROGRESS)
Progress in a game can be saved in multiple save states:
1. In a running game, enter quick menu (R3 + X)
2. First, pick a slot: State Slot
3. Select Save State to save current progress in this slot or Load State to open progress saved in this slot.

2-PLAYER GAMES ON CERTAIN CONSOLES LIKE NINTENDO
The game will automatically switch between "controller 1" and "controller 2" if the proper configuration for Port 1 and Port 2 is set (chapter 5, step 3).

NINTENDO DS
Because of the double screen on NDS, the R36S needs to switch screens where necessary to play a game.
This can be done with the FN button. The quick exit option (FN + START to exit a game) does not work on NDS.
In order to exit a Nintendo DS game, press the left hand thumbstick and go down to the last line of very tiny text on the popup menu.

7. ADDING AND MANAGING GAMES

While the R36S comes with a huge selection of games, many of these might be undesired, so you'll want to make your own collection and obtain a more managable list of games in your emulator menus.
Also, your R36S stock card(s) might get corrupted, so you need to download proper ROM collections. A very good source, with complete collections sorted by console, can be found here:

retro-arcade-v-04-rg-35-m-p directory listing (archive.org)

In order to prepare new memory cards, see chapter 4.

NOTICE:
Although not necessary, it is recommended to keep a backup of your ROM collection. Make sure that this backup also includes the \BIOS folder with the necessary files for all the emulators. In case of a memory card failure, you can easily use this backup to restore your own game collection.

Optional method for adding / managing ROMs (games)
This method is, of course, not mandatory, but I personally found it very conventient, combined with keeping a backup on an external hard drive.

Both the backup and the memory card with EASYROMS partition will have the same structure: separate folders per console/emulator with the proper names that the R36S will put in the EASYROMS partition when a new memory card is first configured. Each console folder will also have a subfolder containing media (boxart images and/or videos/screenshots)

1. When you have downloaded ROM collections on your PC, open three windows in Explorer:
    - 1. subfolder \MEDIA or \MEDIA IMAGES in a selected console folder
    - 2. folder with unsorted ROMs of this particular console
    - 3. corresponding ROM folder on your backup drive

2. Use the media folder (1) to browse and decide which games you want to add to your collection.
3. Select these titles in the middle (2) window
4. Copy them to the right (3) window, to build your game collection on the backup drive.

5. After making your selection (this can of course be done in parts), you can scrape the boxart and additional screenshots/example videos to build your game menus. For this, see chapter 8.

ARCADE GAMES (\MAME)

Games from the good old arcade machines in stead of home game consoles, can be played with the MAME (Multiple Arcade Machine Emulator). Do not unzip these ROMs, as they contain multiple files with similar names and can be run from inside the ZIP files anyway. Copy these zipped ROMs to the \MAME subfolder. Several additional files in the \MAME folder might be needed to run these games, so make sure to obtain these files from the stock card that came with the R36S and add them to the backup as well.

MS-DOS SPELLEN (\DOS)

Due to the many different configurations with regards to processor speed and keyboard controls, adding DOS games needs a different approach than console games. Refer to chapter 11: MS-DOS GAMES.

8. SCRAPING BOXART
Images (and videos) to present in the game selection lists on the R36S

Boxart images are available in the ROM collections on Archive.org (see link above), but in order to add additional images and videos, boxart can be scraped from scratch very easily by using the free application Skraper. This can be done on your PC, so you do not need to find the proper hardware to obtain a wifi connection on the R36S.

1. If not yet available, first install Skraper on your PC:
Go to Skraper.net > Download > Download for Windows. Unzip and start the .EXE file. It is not necessary to create an account. Be aware that the first download of resources takes some minutes.

2. Start Skraper and select RECALBOX > NEXT (or use the Wizard in the main menu)
3. Click the folder icon and select the ROM folder on the backup drive.
Skraper will now show the consoles of which the corresponding subfolders contain ROMs.
4. Check "Include non-Recalbox rom folders", click Next > Next.
5. In the main screen, select GAME LIST:
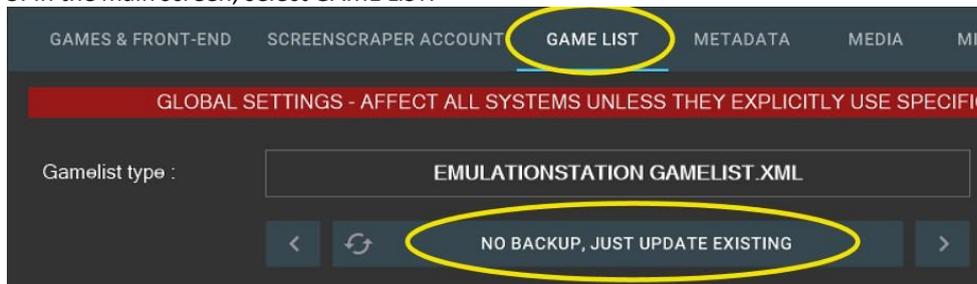
6. Set to "NO BACKUP. JUST UPDATE EXISTING"

7. Then, go to MEDIA:
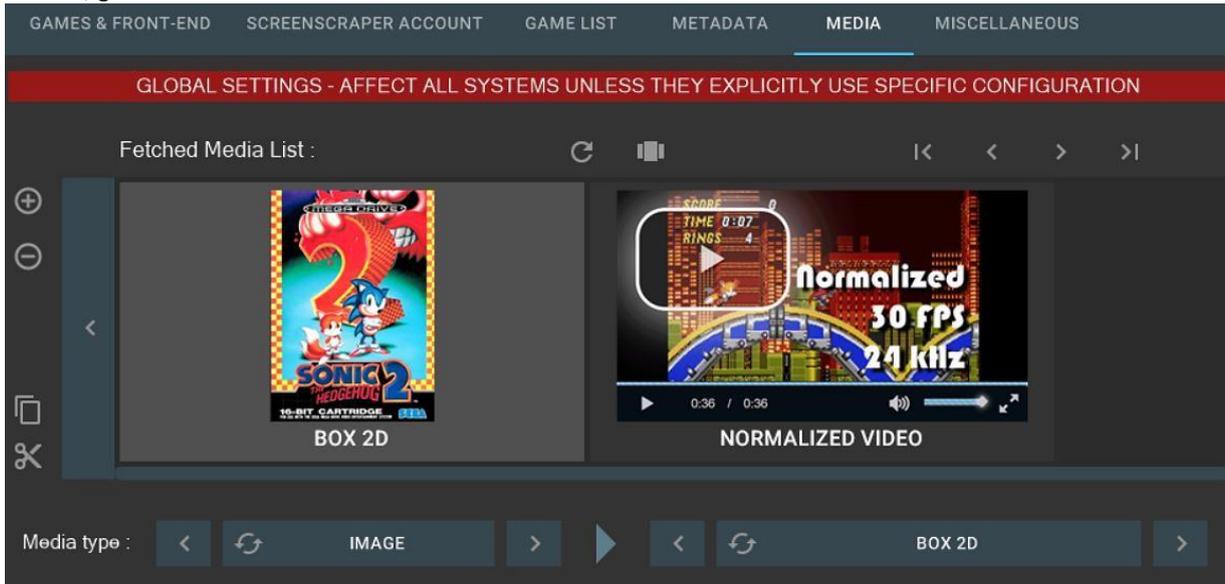
8. Now, two items of media can be selected. A nice option is:

      Click the left image and set options to IMAGE > BOX 2D

      Click the right image and set options to NORMALIZED VIDEOS

With this setting, the games lists on the R36S will show the box cover, followed by a short gameplay video.

→ In order for media to show up on the R36S, the output folder for both media types (image and video) need to altered. Remove the text "media\" from both of them, so the folders are changed to:

    %ROMROOTFOLDER%\images en %ROMROOTFOLDER%\videos
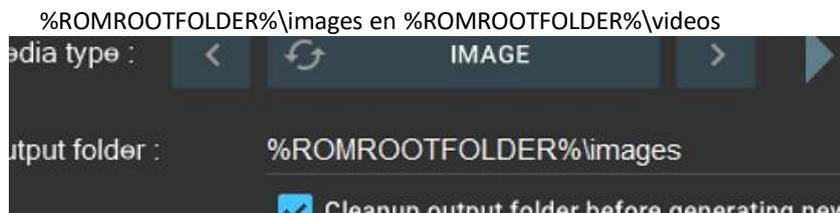
11. Arcade games do not have boxart, obviously. In order to show media for those, use a specific configuration for the "MAME console":
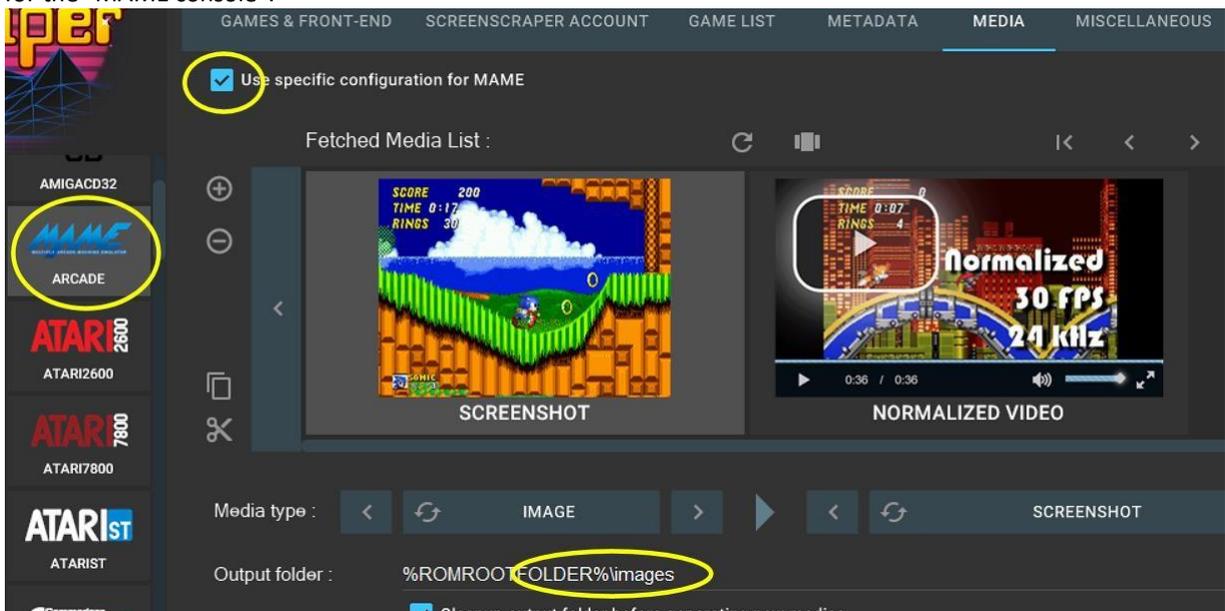
Select MAME ARCADE in the left pane. Then, check "Use specific configuration."

Set the left one to IMAGE > SCREENSHOT and the right one to NORMALIZED VIDEO.

Again, remove "media\" from the output folder, or the R36S will not recognize it.

Now, you're ready to scrape:

11. Above the left pane, click ALL SYSTEMS (or, in case you only added a single console type and do not want to re-check many already existing ROMs in your collection, only select that particular console.
Now click the PLAY button to start scraping. This might take a while. You will hear a short clip of game music when it's finished.

12. The scraped images and videos are now added to your game collection backup.
13. Insert the R36S ROM memory card in the PC and copy the backup ROM collection to the memory card.

You now have a similar ROMs collection on the backup drive and on the R36S memory card.
Repeat the steps in chapters 7 and 8 everytime you want to expand your collection with additional games.

9. SHADERS
Simulate old displays

Here are two examples to demonstrate how to relive the experience of particular old displays:

GAMEBOY
RetroArch uses shaders to simulate particular screen/display properties. This can be particularly useful to emulate the experience of the original 1989 Gameboy. By default, the R36S will display these games in a very crips black and white, but originally the Gameboy had a black and green dot matrix display with visible pixels and blurred movement because of its low refresh rate. Here are optional settings to simulate that experience:

1. Start a random Gameboy game
2. Open the quick menu (`R3 + X`)
3. `SHADERS > LOAD PRESET > SHADERS.GLSL`
4. For Gameboy, select `HANDHELD > LCD-GRID-V2-MOTIONBLUR.GLSP`
5. `APPLY CHANGES`
6. `SHADERS > SAVE PRESET > SAVE CONTENT DIRECTORY PRESET`

This will apply these settings to all games in the Gameboy emulator folder. The display now has visible matrix pixels and blurred movement. However, it is still black and white, not green.

1. Again, open the quick menu from within a running game (`R3 + X`)
2. `CORE OPTIONS > MANAGE CORE OPTIONS`
3. If there is an option <u>REMOVE</u> `CONTENT DIRECTORY OPTIONS`, click this first.
4. Go back and choose `GB COLORIZATION > INTERNAL > INTERNAL PALETTE`
5. One of the best options to simulate Gameboy green is palette "TWB64-285 (DMG-SWITCH." If you prefer to use the R36S outdoors and you find this palette too dark, consider "SGB – 3H" which is less green, but brighter and has a higher contrast:

`INTERNAL PALETTE: TWB64 PACK 3` (at the bottom of the list)
Set `TWB64-PACK 3 PALETTE to: TWB64 285 – DMG-SWITCH`

or:

`INTERNAL PALETTE: SGB – 3H`

6. Ga back to `MANAGE CORE OPTIONS > SAVE CONTENT DIRECTORY OPTIONS`
In the upper right corner it will now show GB.OPT. This file sets this configuration for all Gameboy ROMs.

VECTREX

This neat old console had monochrome vectors in stead of pixels and they sometimes had a certain glow around them. In order to simulate this display, a shader is not needed, but adjustments can be made to the Vectrex core (emulator):

1. Run a random Vectrex game and open the quick menu (`R3 + X`)
2. `CORE OPTIONS > MANAGE CORE OPTIONS`
3. If this shows `REMOVE CONTENT DIRECTORY OPTIONS`, then click that first, in order to be able to save them after changing the settings.
4. Go back and select `CORE OPTIONS`. The following values give a nice result:

Hardware rendering:	Hardware
Rendering resolution:	580 x 720
Line brightness:	8
Line width:	6
Bloom brightness:	4
Bloom width:	10x
Scale horiz./vertically:	1
Horizontal/vertical shift:	0

5. Go back to `MANAGE CORE OPTIONS > SAVE CONTENT DIRECTORY OPTIONS`
In the upper right corner you will see VECTREX.OPT. Settings are now saved for all Vectrex ROMs.

10. REMAPPING BUTTONS

Some consoles, like Nintendo 64 and NeoGeo have a different mapping, which might feel contra-intuitive while playing those games on the R36S. RetroArch can remap buttons for a single game or a single emulator. This example shows how to switch the A and B button for Nintendo 64 and NeoGeo:

1. While running a random N64 or NeoGeo game, open the quick menu (`R3 + X`)
2. `CONTROLS > MANAGE REMAP FILES`
3. If this shows `REMOVE CONTENT DIRECTORY REMAP FILE`, then click that first, in order to be able to save it after changing the settings.
4. `CONTROLS > PORT 1 CONTROLS`
5. Go to `B BUTTON (DOWN)`
6. Press A to change it. In the list, select the B button: `B BUTTON (C-LEFT)`
7. Press A to confirm.
8. Repeat step 5 - 7 for: `A BUTTON (C-RIGHT) > A BUTTON (C-DOWN)`
9. Go back to `MANAGE REMAP FILES > SAVE CONTENT DIRECTORY REMAP FILE`

From now on, when you start a game for this particular console, you will briefly see a notification: *Content directory remap file loaded,* indicating that it will use the remapped layout.

11. MS-DOS GAMES (AND COMMODORE, ATARI, COLECOVISON)

Much like console ROMs, MS-DOS games can be added to their own subfolder: \DOS.
Since MS-DOS games were not programmed for consoles with specific hardware and controllers, particular settings might be needed for each game. Also, not all games are guaranteed to work on the R36S.

ADDING MS-DOS GAMES TO THE ROMS COLLECTION
Put the files and subfolders of a single game in a single ZIP file*
Copy this ZIP file into the \DOS folder.
Scraping boxart can be done similar to console ROMs.

* if, after first configuration/first use of a game in a ZIP-file, this title suddenly appears as a duplicate in the MS-DOS games list, it means that the game has created new files, for instance to store player data. Because these new files cannot be added to the ZIP-file, they are placed in a new subfolder with the same name. This causes the duplicate in the games list. To avoid this, games who show this behaviour can be placed in the ROMs collection in a subfolder, in stead of a ZIP-file.

TESTING MS-DOS GAMES ON THE R36S
Go to "console" MS-DOS and try if the game works. If so, check the speed and controls.
In case you need to input text/numbers, press the left hand thumbstick for the onscreen keyboard. To use the mouse (in case it's properly mapped), use the right hand thumbstick.
To adjust settings regarding speed/controller keys, follow this process:

ADJUST SPEED OF MS-DOS GAME AND/OR MOUSE SENSITIVITY
1. In the running game, open the quick menu (`R3 + X`)
2. `CORE OPTIONS > PERFORMANCE > EMULATED PERFORMANCE`
3. Select a processor that might fit the age of this game. For instance, a 1982 game will most likely need a slow 8086 processor, while a 1992 game might run better on a 386 processor. This is a matter of trial and error.
4. If the game also needs mouse control, it is possible to lower mouse sensitivity, because the thumbstick might react too quickly:
Go to `CORE OPTIONS > INPUT > MOUSE SENSITIVITY`
In many cases, a sensitivity as low as 20 – 40% might be sufficient.
5. Save your changes at `CORE OPTIONS > MANAGE CORE OPTIONS`
Select `SAVE GAME OPTIONS` if there are not yet any custom adjustments for this game. If there are and they need to be overwritten, select `SAVE AS` and enter the exact same name as the existing .OPT file (case sensitive).

ADJUST KEYBOARD MAPPEN MS-DOS GAME
Many MS-DOS games use different key inputs than the usual arrow keys and space bar. For instance, you might need keys W-A-S-D to enter direction in a game. Configure this for the individual game where needed:
1. In the running game, open the quick menu (`R3 + X`)
2. `CONTROLS > PORT 1 CONTROLS`
3. Check all controls and select different keys where needed. You might not be able to select from the complete PC keyboard layout. If you need to be able to select from all keys, set `DEVICE TYPE` to `CUSTOM KEYBOARD BINDING`.
4. Don't forget to save changes: `CONTROLS > MANAGE REMAP FILES`
Select `SAVE GAME REMAP FILE` to save a new mapping or `SAVE REMAP FILE AS` to overwrite an existing mapping (enter the exact same name for the .RMP file, case sensitive).
→ NOTICE: do NOT select SAVE CONTENT DIRECTORY REMAP FILE or SAVE CORE REMAP FILE, because this will set these configurations for all MS-DOS games, in stead of just the one that needs them.

COMMODORE / ATARI MSX
Much like MS-DOS games, Commodore and Atari MSX often depend on the use of the PC keyboard.
Press the SELECT button to show or hide the onscreen keyboard. Follow the MS-DOS instructions above to adjust configuration and key mapping for individual Amiga games.

COLECOVISION
This console had numerical keypads. In order to press the numerical keys (0-9) and * or #, press and hold the left (L1) or right (R1) shoulder button. Meanwhile, use the cursor keys to select the desired keypad key. Release L1 or R1. Now, press X to press the selected keypad key.

12. BACKUP AND DUPLICATION

After adding many games/favorites and making custom configurations/alterations, it makes sense to create a backup.

BACKUP ARKOS SETTINGS (keymappings, core settings, save states and more)
1. In the main menu, open "console" `SCRIPTS SETUP`
2. Go to `ADVANCED > BACKUP ARKOS SETTINGS`.
3. All configuration files, save states and keymappings are now copied to subfolder `/BACKUP` in the EASYROMS partition.
4. To restore these settings when needed, go to `ADVANCED > RESTORE ARKOS SETTINGS`.

BACKUP FAVORITES LIST
This is not a single file. Favorites are marked in the individual `GAMELIST.XML` files for each emulator/console. These .XML files are located in the subfolders in the EASYROMS partition. When a backup is made from the current EASYROMS partition on the R36S memory card, the current favorites list will be preserved along with the ROMs.

DUPLICATING MEMORY CARD
This might be necessary when purchasing another R36S, SD card issues or simply as a backup card.

1. Make a current backup of the ArkOS settings on the old memory card (see above).
2. Flash a new memory card (see chapter 4).
3. Copy the complete contents of the EASYROMS partition from the old card to the new card. This will include the favorites list, ArkOS configuration, keymappings and custom made menu- and background images (except for the boot image, which is stored as logo.BMP in the BOOT partition).

13. MISCELLANEOUS

CHANGING IMAGES
The boot image, loading image and menu background images can be altered/replaced with custom images. Always make sure to stick with the correct resolution (mostly 640 x 480 pixels) and the correct file type (BMP, JPG, PNG). Images can be altered/replaced by using Photoshop, Paintshop or any other image editor.

BOOT SCREEN: `logo.bmp` (640 x 480) in the BOOT partitie

LOADING SCREEN: `/LAUNCHIMAGES/loading.jpg` (640 x 480) in the EASYROMS partition

MENU SCREENS: several images in `/THEMES/…` in the EASYROMS partitie

BATTERY REPLACEMENT
In case the battery is defective or worn out, it can be replaced by disconnecting the 2-pin cable.
Replace it with a Li-ion battery model 8040662 (3.7 volt, 2 pin JST 1.25mm, 3200 mAh).