R36S M8 Headless Tutorial

The story of the R36S is a funny space race of a random Chinese company producing a cloned PCB of another cloned PCB of a clone of another PCB. The company would get sued, stop producing the PCB and make revisions to produce it 'legally'. In any case the R36S, the most current and available clone to date has a fairly old RK3326 chipset more commonly found in the very popular Anbernic RG351v/p/MP series. This is why M8 works on this, just not as smooth as some applications of M8c. The format of the R36S seems ideal as it is much more compact than the RG351V and the start/select buttons are larger and closer to center.

The most appealing part of the R36S is the price, it currently runs for about $40-60 USD depending on your location and coupon combinations. The device does feel like budget hardware, but the inputs are functionally good for M8 and the screen is a CRISPY 3.5" 640x480.

To run M8 on the R36s you will need:

1. A R36S with the stock ARKOS installed (mine came with it)
2. A USB wifi dongle with a USB C adaptor
3. A Teensy loaded with updated M8 headless firmware
4. A USB micro to USB C DATA cable (with narrow TYPE C end, the headphone plug is quite close to the OTG Type C port)
5. SD card reader
6. the 1M8ARK folder (provided below)

Step 1: OS

My R36S came with a March release of ArkOS2.0, this is good because it means we do not need any additional SD cards. I did not test the viability of this software to run M8c out of the box so I cannot confirm it would work (you can try, it won't hurt). Attach the wifi dongle and connect to the internet (OPTIONS>WIFI).

Enable remote services (OPTIONS>ENABLE REMOTE SERVICES)

Once connected, update ARKOS (OPTIONS>UPDATE)

You will hear a lot of pinging and wifi noise, this will take 5-10 mins. Turn off the unit afterwards (START>QUIT>SHUTDOWN SYSTEM). Leave the WIFI dongle in.

Step 2: Void the warranty

There are two slots for SD cards on the R36S, on the left is your external SD card for ROMS. On the right is a SD card for your OS, mine came with a warranty sticker over it, immediate flaunt your dominance over it and break the seal and extract the OS SD card. Put this card in your SD card reader into your PC.

There will be two folders a EASYROM and BOOT. Open the EASYROM folder and drop the unzipped 1M8ARK folder and put it in the ROOT of EASYROM, not in any other folder. It will float amongst the other ROM folders. This is crucial as is the name of the folder, will become clear later.

Step 3: M8c setup

Reinsert the SD card back into the R36S and boot it up, your WIFI should already be connected. Boot up should bring you to the home screen, go to OPTIONS>ENABLE REMOTE SERVICES once more. Then go to OPTIONS>FILE MANAGER.

Once inside FILE MANAGER, you should see in the left column, /ROMS. This is your SD card folder you just dropped 1M8ARK into. Right at the top, you should see 1M8ARK. This is why the naming convention is important as it will put the M8 folder right at the top to access every time you want to fire up M8.

Scroll down to 1M8ARK and enter SETUP folder and run SETUP.SH

Wait.

It should access a lot of stuff and build some Serial Lib etc etc (I am not a programmer, just a tinker)

Once complete, if File Manger hasn't already self quit, quit FM (Y button > Quit)

Reboot the system (START > QUIT> RESTART SYSTEM), remove the WIFI dongle.

Step 4: Run M8

Once booted up, connect the teensy to the R36S. Head to (OPTIONS>FILE MANAGER>1M8ARK>M8.SH>EXECUTE

If you've done everything right, M8 should appear and you should have access to the volume controls and sound. In the mixer screen, the OUTPUT VOL is not functional, but you can control the MIX vol and of course, the master VOL with the VOL buttons on the side of the R36S.

Controls are fairly conventional:

DPAD (DIRECTION KEYS)
SELECT (SHIFT)
START (PLAY)
B (OPTION)
A (EDIT)

To quit: Press R3 (press down on the right analog stick) and press SELECT (SHIFT). There is no autosave, so save out before quitting.

Step 5: Ease of Access

Under popular applications of M8c on handheld devices like this, you would be able to access M8 through dropping the folder into ports and accessing it like a game. ARKOS dev has since removed the ability to see a subfolder in the PORTS section. Despite multiple attempts to trick the system into seeing the folder and having it show up, M8 will not work unless accessed through FILE MANAGER and everything contained within its own subfolder.

To make M8 as easy to fire up on boot, take these steps:

1. Press START>UI SETTINGS>START ON SYSTEM>OPTIONS
2. UI SETTINGS>BOOT ON GAMELIST>ON
3. OPTIONAL, remove the left SD care entirely to avoid having ROMS show up

These settings will boot the R36S straight into the OPTIONS menu. When

booted, scroll down to FILE MANAGER and you will see the 1M8ARK folder, enter the folder and EXECUTE M8.sh with the teensy plugged in.

If you are looking to make this a M8 machine only, you can leave the teensy plugged in even to boot up. The OS sound will default to the Teensy as its audio device and won't have any menu sounds, but when M8 is running, it will use that as its sound card.

Step 5: PROFIT

Did you save $50-100 by using a R36S? COOL! Put that away, and save another $500 and buy a M8 from Tim/T80. As much as this is a VERY cool device, it will never replace the real hardware. It lacks midi support, USB audio, and sampling engines.

Thanks Tim for the AMAZING device and even more so for access to the Headless version.