v1.3 (2023/09/30)

1. Improved audio performance.
2. Removed the audio feed and delay settings from resources/settings.json file.
3. Added ARM NEON instruction for nenon_memcpy() function for audio and video processing.
4. Added high resolution 3D support.
5. Added new background images for high resolution 3D mode. **(images contributed from 河馬)**
6. Added "book style" display mode.
7. Added new background images for "book style" mode. **(images contributed from 河馬)**
8. Added alpha settings for both 00 and 01 display modes.
9. Added the maximum CPU clock setting in resources/settings.json file.
10. Added adjustable position support for both 00 and 01 display modes.
11. Added adjustable position support for stylus pen (shows on screen 0 or screen 1).

https://github.com/steward-fu/archives/releases/download/miyoo-mini-plus/drastic-v1.3.zip

Hotkeys

Hotkey	Functionality
R2	Swap screen
L2	Change Keypad mode / Stylus mode
SELECT + X	CPU clock +50MHz
SELECT + B	CPU clock -50MHz
SELECT + START	**Change display mode for normal resolution (13 modes)** 00: 640x480, 170x128 01: 640x480, 256x192 02: 512x384 (bg_s0.png) 03: 640x480 04: 256x192, 256x192 (bg_v0.png) 05: 320x240, 320x240 (bg_v1.png) 06: 256x192, 256x192 (bg_h0.png) 07: 320x240, 320x240 (bg_h1.png) 08: 480x360, 160x120 (bg_vh_s0.png) 09: 384x288, 256x192 (bg_vh_s1.png) 10: 384x288, 256x192 (bg_vh_c0.png) 11: 384x288, 256x192 (bg_vh_c1.png) 12: 427x320, 427x320 (bg_hh0.png) **Change display mode for high resolution (2 modes)** 13: 512x384 (bg_hres0.png) 14: 640x480
SELECT + R1	Fast forward
SELECT + R2	Quick save state
SELECT + L2	Quick load state
SELECT + L1	Exit DraStic emulator

Only work for small screen on 00 and 01 display mode	
SELECT + UP	Alpha +1 (0 ~ 9 level)
SELECT + DOWN	Alpha -1 (0 ~ 9 level)
SELECT + LEFT	Change the position (top-left, top-right, bottom-left, bottom-right)
SELECT + RIGHT	Change the position (top-left, top-right, bottom-left, bottom-right)
SELECT + A	Change the border color (none, white, red, green, blue, black, yellow, cyan)

Keypad Mode	
Hotkey	Functionality
MENU	Enter DraStic's menu
SELECT + Y	Change wallpaper

Stylus Mode	
Hotkey	Functionality
DPAD	Move the stylus pen
A	Touch screen
SELECT + Y	Change image for stylus pen

Q & A

Q1. How to change the moving speed for stylus pen ?
A1: Change the xv and yv values in resources/settings.json file.
Speed for X position = time_cur – time_init / xv
Speed for Y position = time_cur – time_init / yv

Q2: How to change the initial CPU clock ?
A2: Change "./cpuclock 1500" to what you want. (1500 = 1500MHz = 1.5GHz)
For Miyoo Mini, the maximum CPU clock should be less than 1550MHz (experimental value)
For Miyoo Mini Plus, the maximum CPU clock should be <= 1850MHz (experimental value)

Q3: How to change the maximum CPU clock ?
A3: Change the maxcpu value in resources/settings.json file.

Q4: How to use the customized wallpaper (or background image) ?
Q4: All of wallpapers are put in resources/bg folder. User can replace the old ones or create the new folder for the new wallpapers.

Q5: How to use the customized stylus image.
A5: All of stylus images are put in resources/pen folder. The touch point is set by checking suffix file name. For example, the file name of 1_lt.png means the touch point is at left-top (_lt) and 2_lb.png means the touch point is at left-bottom (_lb) and so on. User can replace the old ones or create the new image for stylus pen. Here are all of supported positions:

Q6: How to use the customized logo shown on DraStic's menu ?
A6: Replace the images in resources/logo folder. The resolution must be at 400x150 resolution.

Q7: How to use the customized digital images for digital display ?
A7: Replace the images in resources/digit folder. The image resolution will be checked automatically when loading it.

Q8: How to change the stylus pen to show on the another screen ?
A8: Change the value of touchpad in resources/settings.json file. 0: show the stylus pen on bottom screen, 1: show the stylus pen on top screen.

Q9: How to enable high resolution 3D mode ?
A9: Turn on "Hight-resolution 3D" and "Threaded 3D" settings on DraStic's menu.

v1.2 (2023/09/25)
1. Added both audio feed and audio delay settings for user to fine-tune in resources/settings.json file.
2. Fine-tuned audio latency by setting feed=768 and delay=1000 in resources/settings.json file.
https://github.com/steward-fu/archives/releases/download/miyoo-mini-plus/drastic-v1.2.zip

While DraStic emulator is processing frameskip, no any audio data is feeded into our customized alsa library but we still need to provide dummy audio data to SSD202D's audio driver (even though DraStic emulator doesn't provide it to our alsa library) to avoid noising. Therefore, in gerneal, we delay an audio frame for such situation. In our customized alsa library, we set **BUFFER** as 8192 bytes and **FREQUENCY** as 44100, which is also the default settings in DraStic emulator. Honestly, these setting values are trade-off configuration because of frameskip and now it is time to customize by user.

BUFFER: 8192
FREQUENCY: 44100
audio frame delay = (((BUFFER * 1000) / FREQUENCY) - 10) * 1000 = 175759us

In resources/settings.json file, we set them as the following new values after try-and-error testing:
feed: 768 bytes
delay: 1000 us
It means we feed 768 bytes (dummy data) into SSD202D's audio driver and then delay 1ms when DraStic is doing frameskip. In version v1.1, we set the feed as 8192 and the delay as 175759, which means feed 8192 bytes into SSD202D's audio driver and then delay ~176ms.

For example, user can also reconfigure these values as:
feed: 0 bytes
delay: 0 us
It means we always wait for the next audio data coming from DraStic emulator without any delay.

P.S. if (feed < 0) or (delay < 0), we use the default settings (feed=768, delay=1000)

v1.1 (2023/09/24)
1. Fixed background pop noise. (happened every second)
2. Set frameskip value as 4 in order to improve latency issue. (DraStic's default value)
https://github.com/steward-fu/archives/releases/download/miyoo-mini-plus/drastic-v1.1.zip

v1.0 (2023/09/23)
1. Improved sound performance.
2. Built-in 13 display modes. **(images contributed from 河馬)**
3. Built-in 4 customized wallpapers. **(images contributed from 河馬)**
4. Built-in 6 customized images for stylus pens.
5. Built-in overclock functionality.
6. Customized the direction for stylus pen.
7. Customized the movement speed for stylus pen.
8. Customized the DraStic logo. **(images contributed from 河馬)**
9. Fine-tuned swap ration in launch.sh file.
10. Removed swap file (ram.img) because the system has cachefile already.
https://github.com/steward-fu/archives/releases/download/miyoo-mini-plus/drastic-v1.0.zip
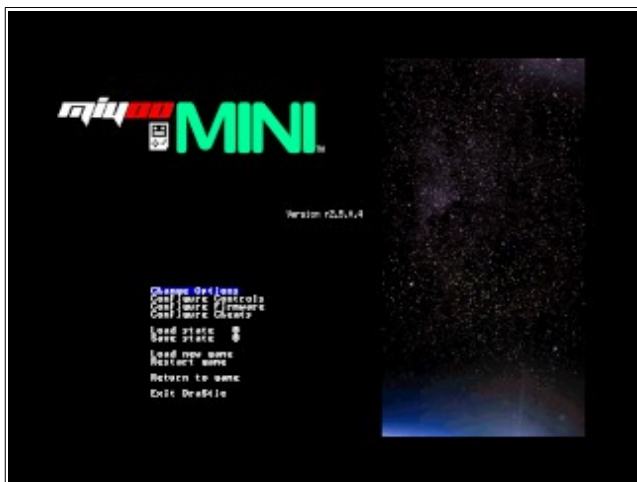
Display Mode (SELECT + START)

Wallpaper (SELECT + Y)

Overclock (SELECT + X: +50MHz, SELECT + B: -50MHz)
The initial CPU clock is set in launch.sh file.

DraStic logo
400x150 pixels (in resources/logo/ folder)

Stylus pen (L2: change to stylus mode/dpad mode, SELECT + Y: change image for stylus pen)
The moving speed is set in resources/settings.json file. SPEED = time_cur – time_init / (xv, yv)

xxx_lt.png (_lt: Left-Top)
The touch point is located at left-top.

xxx_lb.png (_lb: Left-Bottom)
The touch point is located at left-bottom.

xxx_rt.png (_rt: Right-Top)
The touch point is located at right-top.

xxx_rb.png (_rt: Right-Bottom)
The touch point is located at right-bottom.

Hotkey (in dpad mode)	Functionality
R2	Swap screen
L2	Change stylus mode / dpad mode
SELECT + X	CPU clock +50MHz
SELECT + B	CPU clock -50MHz
SELECT + Y	Change wallpaper
SELECT + START	Change display mode

Hotkey (in stylus mode)	Functionality
L2	Change stylus mode / dpad mode
DPAD	Move the stylus pen
A	Touch screen
SELECT + Y	Change image for stylus pen

RC4 (2023/09/11)
1. Improved the sound performance.
https://github.com/steward-fu/archives/releases/download/miyoo-mini-plus/drastic_rc4.zip

RC3 (2023/09/11)
1. Fixed the last button user pressed will be reported again when VOL-/VOL+ is pressed.
2. Fixed the issue of 1.5 times speed by setting the frameskip to 2 (4 by default).
3. Fine-tuned the sound library.
https://github.com/steward-fu/archives/releases/download/miyoo-mini-plus/drastic_rc3.zip

RC2 (2023/09/10)
1. Added "noaudiofix: 1" option in config.json for Stock system
2. Added "stop_audioserver.sh" command in launch.sh for Onion system
https://github.com/steward-fu/archives/releases/download/miyoo-mini-plus/drastic_rc2.zip

RC1 (2023/09/10)

1. Implemented the customized version of alsa library for DraStic emulator.
2. User can change the background image:
      bg_s.png: background image for single screen (without stretch mode)
      bg_v.png: background image for vertical screen (without stretch mode)
      bg_h.png: background image for horizontal screen (without stretch mode)
      bg_vh.png: background image for vertial/horizontal screen (with stretch mode)
3. User can change the image of stylus pen:
      pen.png: stylus image (no matter what WxH size you use, 32x32, 64x128 are all fine)
4. User can change the stretch mode by pressing SELECT+START
5. User can swap the screen by pressing R2
6. User can use stylus pen by pressing L2
      In this mode, only the buttons of L2, D-PAD and A work.
      User need back to D-PAD mode by pressing L2 again.

https://github.com/steward-fu/archives/releases/download/miyoo-mini-plus/drastic_rc1.zip