



How to display on HDMI

How to display on HDMI

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1 Article purpose

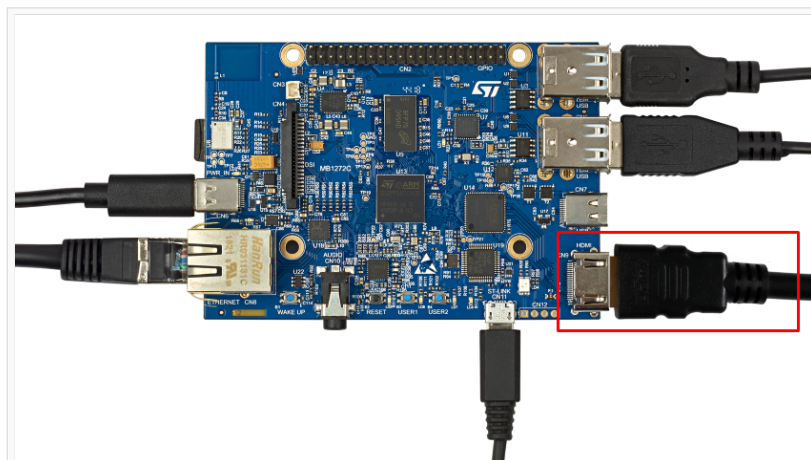
This article aims to specify what is displayed on an HDMI^{®[1]} monitor (or TV) connected, through an HDMI cable, to a STMicroelectronics board, in different use cases explained below.

This article also explains how to get the video modes (resolutions and refresh frequencies) of the HDMI monitor (or TV) that are supported by the device, how to test them, and finally how to select one.

2 Prerequisites

Obviously, it is mandatory that your STMicroelectronics board has an HDMI connector, which is the case for:

- the STM32MP157x-DKx Discovery kit (CN9 HDMI connector)




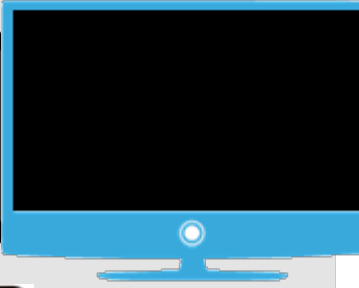











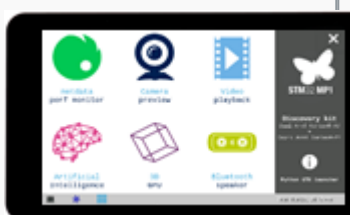

HDMI cable connected on Discovery kit
STM32MP157C-DK2 shown here (without the MB1407 daughterboard DSI display)

An HDMI cable and an HDMI monitor (or TV) are also needed.

3 Use cases

The table below shows the different use cases that involve both the DSI display and the HDMI monitor.

Original situation	Action	Final situation	
		DSI display	HDMI monitor
<p>HDMI unplugged</p> <ul style="list-style-type: none"> - Board not started - DSI display connected - HDMI monitor not connected 	Start the board	 then briefly  and finally 	
<p>HDMI cold-plug</p> <ul style="list-style-type: none"> - Board not started - DSI display connected - HDMI monitor connected 	Start the board		<p>then</p>  

Original situation	Action	Final situation	
		DSI display	HDMI monitor
HDMI hot-plug - Board started - DSI display connected - HDMI monitor not connected	Plug the HDMI monitor		 The demo launcher window is not displayed fullscreen
	Tap or click on the top-right corner cross to close the demo launcher window Tap or click on the left-bottom "nine blue square" icon to start again the demo launcher window		 The demo launcher window is displayed fullscreen
HDMI hot-unplug - Board started - DSI display connected - HDMI monitor connected	Unplug the HDMI monitor	 The demo launcher window is not downscaled	
	Restart Weston ^[2]		



The following statements explain the use cases summarized above:

- The U-Boot graphical console ("ST life.augmented" picture) is never displayed on the HDMI monitor. This console is displayed on the DSI display (if any on the board).
- If the board has both a DSI display and an HDMI monitor, the Wayland background layer is only displayed on one of these displays (see the "rules" below).
- **HDMI unplugged**: if no HDMI monitor is connected to the board before the board starts, and if a DSI display is connected to the board, the Wayland background layer is displayed on the DSI display.
- **HDMI cold-plug**: if an HDMI monitor is connected to the board before the board starts, the Wayland background layer is displayed on this HDMI monitor.
- **HDMI hot-plug**: if an HDMI monitor is connected to the board after the board starts, this plug is automatically detected by Wayland / Weston. The demo launcher window is not automatically upscaled: close and open it again to have it fullscreen on the HDMI monitor.
- **HDMI hot-unplug**: if an HDMI monitor is disconnected from the board while the Wayland background layer is displayed on the HDMI monitor, this unplug is automatically detected by Wayland / Weston. The demo launcher window is not automatically downscaled: restart Weston^[2] to have it fullscreen on the DSI display.

4 Video modes

Generally, the HDMI monitor (or TV) provides several video modes (resolutions and refresh frequencies), that might not be all supported by the platform. In case of **HDMI cold-plug** or **HDMI hot-plug**, the first video mode provided by the HDMI monitor that is supported by the platform, is selected. To change this video mode selected per default, all the video modes both provided by the HDMI monitor and supported by the platform shall be retrieved, optionally tested, and finally set in the *weston.ini* configuration file^[3].

Let us assume that the DSI display and the HDMI monitor are connected to the board, and that the Wayland background is displayed on the HDMI monitor.

- Retrieve the video modes provided by the HDMI monitor and supported by the platform thanks to the `modetest` command (see below how to get all the video modes supported by the HDMI monitor, whether they are supported or not by the platform)

```
Board $> modetest -M stm
```

```
Encoders:
id      crtc    type    possible crtcs  possible clones
28      33      DPI     0x00000001     0x00000000
30      0       DSI     0x00000001     0x00000000

Connectors:
id      encoder status      name          size (mm)    modes  encoders
29      28      connected   HDMI-A-1     700x390     10     28
modes:
name refresh (Hz) hdisp hss hse htot vdisp vss vse vtot)
1920x1080 30 1920 2008 2052 2200 1080 1084 1089 1125 74250 flags: phsync, pvsync; type:
1920x1080 25 1920 2448 2492 2640 1080 1084 1089 1125 74250 flags: phsync, pvsync; type:
1920x1080 24 1920 2558 2602 2750 1080 1084 1089 1125 74250 flags: phsync, pvsync; type:
1280x720 60 1280 1390 1430 1650 720 725 730 750 74250 flags: phsync, pvsync; type: drive
1280x720 60 1280 1390 1430 1650 720 725 730 750 74250 flags: phsync, pvsync; type: drive
1280x720 50 1280 1720 1760 1980 720 725 730 750 74250 flags: phsync, pvsync; type: drive
1280x720 50 1280 1720 1760 1980 720 725 730 750 74250 flags: phsync, pvsync; type: drive
```



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```
800x600 75 800 816 896 1056 600 601 604 625 49500 flags: phsync, pvsync; type: driver
720x576 50 720 732 796 864 576 581 586 625 27000 flags: nhsync, nvsync; type: driver
720x480 60 720 736 798 858 480 489 495 525 27000 flags: nhsync, nvsync; type: driver
props:
  1 EDID:
    flags: immutable blob
    blobs:
      value:
        00ffffffffffff004c2d920900000000
        0a160103804627780aee91a3544c9926
        0f5054bdef80714f81c0810081809500
        a9c0b3000101023a801871382d40582c
        4500a05a0000001e662156aa51001e30
        468f3300a05a0000001e000000fd0018
        4b0f5117000a202020202020000000fc
        0053414d53554e470a20202020200152
        020330f14d901f041305140312202122
        07162309070783010000e2000f72030c
        001000b82d20d0080140073f405090a0
        011d80d0721c1620102c2580a05a0000
        009e011d8018711c1620582c2500a05a
        0000009e011d00bc52d01e20b8285540
        a05a0000001e011d007251d01e206e28
        5500a05a0000001e0000000000000097
  2 DPMS:
    flags: enum
    enums: On=0 Standby=1 Suspend=2 Off=3
    value: 0
  5 link-status:
    flags: enum
    enums: Good=0 Bad=1
    value: 0
  6 non-desktop:
    flags: immutable range
    values: 0 1
    value: 0
  19 CRTC_ID:
    flags: object
    value: 33
31 0 connected DSI-1 52x86 1 30
modes:
  name refresh (Hz) hdisp hss hse htot vdisp vss vse vtot)
480x800 50 480 600 664 784 800 814 828 842 33000 flags: ; type: preferred, driver
props:
  1 EDID:
    flags: immutable blob
    blobs:
      value:
  2 DPMS:
    flags: enum
    enums: On=0 Standby=1 Suspend=2 Off=3
    value: 3
  5 link-status:
    flags: enum
    enums: Good=0 Bad=1
    value: 0
  6 non-desktop:
    flags: immutable range
    values: 0 1
    value: 0
  19 CRTC_ID:
    flags: object
    value: 0

CRTCs:
```



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```
id      fb      pos      size
33      39      (0,0)    (1280x720)
1280x720 60 1280 1390 1430 1650 720 725 730 750 74250 flags: phsync, pvsync; type: drive
props:
  20 ACTIVE:
      flags: range
      values: 0 1
      value: 1
  21 MODE_ID:
      flags: blob
      blobs:
      value:
          0a22010000056e05960572060000d002
          d502da02ee0200003c00000005000000
          40000000313238307837323000000000
          00000000000000000000000000000000
          00000000
  18 OUT_FENCE_PTR:
      flags: range
      values: 0 18446744073709551615
      value: 0
  25 GAMMA_LUT:
      flags: blob
      blobs:
      value:
  26 GAMMA_LUT_SIZE:
      flags: immutable range
      values: 0 4294967295
      value: 256

Planes:
id      crtc      fb      CRTC x,y      x,y      gamma size      possible crtcs
32      33      39      0,0          0,0          0
formats: AR24 XR24 RG24 RG16 AR15 XR15 AR12 XR12 C8
props:
  7 type:
      flags: immutable enum
      enums: Overlay=0 Primary=1 Cursor=2
      value: 1
  16 FB_ID:
      flags: object
      value: 39
  17 IN_FENCE_FD:
      flags: signed range
      values: -1 2147483647
      value: -1
  19 CRTC_ID:
      flags: object
      value: 33
  12 CRTC_X:
      flags: signed range
      values: -2147483648 2147483647
      value: 0
  13 CRTC_Y:
      flags: signed range
      values: -2147483648 2147483647
      value: 0
  14 CRTC_W:
      flags: range
      values: 0 2147483647
      value: 1280
  15 CRTC_H:
      flags: range
      values: 0 2147483647
      value: 720
```



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```
8 SRC_X:
  flags: range
  values: 0 4294967295
  value: 0
9 SRC_Y:
  flags: range
  values: 0 4294967295
  value: 0
10 SRC_W:
  flags: range
  values: 0 4294967295
  value: 83886080
11 SRC_H:
  flags: range
  values: 0 4294967295
  value: 47185920
34 0 0 0,0 0,0 0 0x00000001
formats: AR24 RG24 RG16 AR15 AR12 C8
props:
  7 type:
    flags: immutable enum
    enums: Overlay=0 Primary=1 Cursor=2
    value: 0
16 FB_ID:
  flags: object
  value: 0
17 IN_FENCE_FD:
  flags: signed range
  values: -1 2147483647
  value: -1
19 CRTC_ID:
  flags: object
  value: 0
12 CRTC_X:
  flags: signed range
  values: -2147483648 2147483647
  value: 0
13 CRTC_Y:
  flags: signed range
  values: -2147483648 2147483647
  value: 0
14 CRTC_W:
  flags: range
  values: 0 2147483647
  value: 0
15 CRTC_H:
  flags: range
  values: 0 2147483647
  value: 0
8 SRC_X:
  flags: range
  values: 0 4294967295
  value: 0
9 SRC_Y:
  flags: range
  values: 0 4294967295
  value: 0
10 SRC_W:
  flags: range
  values: 0 4294967295
  value: 0
11 SRC_H:
  flags: range
  values: 0 4294967295
  value: 0
```

Frame buffers:



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id	size	pitch
----	------	-------

- Analyse the output of the *modetest* command:
 - 10 modes (8 unique modes) of the **connected** HDMI monitor (**HDMI-A-1** / connector **29**) are supported:
 - 1920x1080** resolution with a refresh frequency of **30** Hz
 - 1920x1080** resolution with a refresh frequency of **25** Hz
 - 1920x1080** resolution with a refresh frequency of **24** Hz
 - 1280x720** resolution with a refresh frequency of **60** Hz
 - 1280x720** resolution with a refresh frequency of **50** Hz
 - 800x600** resolution with a refresh frequency of **75** Hz
 - 720x576** resolution with a refresh frequency of **50** Hz
 - 720x480** resolution with a refresh frequency of **60** Hz



In the above example, some 1920x1080 resolutions are available but use cases may not work properly if the platform is not powerful enough for such high resolutions (DDR size and bandwidth, CPU and GPU performances...).

```
Connectors:
id      encoder status      name      size (mm)  modes  encoders
29    28      connected  HDMI-A-1 700x390   10     28
modes:
name refresh (Hz) hdisp hss hse htot vdisp vss vse vtot)
1920x1080 30 1920 2008 2052 2200 1080 1084 1089 1125 74250 flags: phsync, pvsync; type: d
1920x1080 25 1920 2448 2492 2640 1080 1084 1089 1125 74250 flags: phsync, pvsync; type: d
1920x1080 24 1920 2558 2602 2750 1080 1084 1089 1125 74250 flags: phsync, pvsync; type: d
1280x720 60 1280 1390 1430 1650 720 725 730 750 74250 flags: phsync, pvsync; type: driver
1280x720 60 1280 1390 1430 1650 720 725 730 750 74250 flags: phsync, pvsync; type: driver
1280x720 50 1280 1720 1760 1980 720 725 730 750 74250 flags: phsync, pvsync; type: driver
1280x720 50 1280 1720 1760 1980 720 725 730 750 74250 flags: phsync, pvsync; type: driver
800x600 75 800 816 896 1056 600 601 604 625 49500 flags: phsync, pvsync; type: driver
720x576 50 720 732 796 864 576 581 586 625 27000 flags: nhsync, nvsync; type: driver
720x480 60 720 736 798 858 480 489 495 525 27000 flags: nhsync, nvsync; type: driver
```

- 1 mode of the **connected** DSI display (**DSI-1** / connector **31**) is supported
 - 480x800** resolution with a refresh frequency of **50** Hz

```
Connectors:
id      encoder status      name      size (mm)  modes  encoders
[... ]
31    0      connected  DSI-1    52x86    1     30
modes:
name refresh (Hz) hdisp hss hse htot vdisp vss vse vtot)
480x800 50 50 480 600 664 784 800 814 828 842 33000 flags: ; type: preferred, driver
```

- Per default, the first video mode provided by the HDMI monitor that is supported by the platform, is selected: here, it is the **1280x720 60** resolution
 - Check it with the information provided by the *modetest* command: make the link between the HDMI connector **29**, the encoder id **28**, the CRTC id **33**, and finally the video mode **1280x720 60**



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```
Connectors:
id      encoder status      name      size (mm)  modes  encoders
29      28      connected  HDMI-A-1  710x400    3      27

Encoders:
id      crtc   type  possible crtcs  possible clones
28      33     DPI   0x00000001     0x00000000
```

```
CRTCs:
id      fb      pos      size
33      39      (0,0)    (1280x720)
1280x720 60 1280 1390 1430 1650 720 725 730 750 74250 flags: phsync, pvsync; type: drive
```

- Stop Weston^[2], use the `modetest` command^[4] to test the different modes, and restart Weston^[2]

Syntax:

```
Board $> modetest -M stm -s <HDMI connector>:<selected resolution> -v
```

Example with the 8 modes identified above:

```
Board $> systemctl stop weston
Board $> modetest -M stm -s 29:1920x1080-30 -v
Board $> modetest -M stm -s 29:1920x1080-25 -v
Board $> modetest -M stm -s 29:1920x1080-24 -v
Board $> modetest -M stm -s 29:1280x720-60 -v # -60 to specify the Hz as there are two 12
Board $> modetest -M stm -s 29:1280x720-50 -v # -50 to specify the Hz as there are two 12
Board $> modetest -M stm -s 29:800x600 -v
Board $> modetest -M stm -s 29:720x480 -v
Board $> modetest -M stm -s 29:720x576 -v
Board $> systemctl start weston
```

- Set the selected video mode in the `/etc/xdg/weston/weston.ini` configuration file, and restart Weston^[2]

Syntax:

```
[output]
name=HDMI-A-1
mode=<selected resolution>
```

Example (720x480 resolution selected):

```
mode=720x480
```

```
Board $> systemctl restart weston
```



- Check that the new video mode has been taken into account with the information provided by the `modetest` command: make the link between the HDMI connector **29**, the encoder id **28**, the CRTC id **33**, and finally the new video mode **720x480**

```
Board $> modetest -M stm
```

```
Encoders:  
id      crtc    type    possible crtcs  possible clones  
28     33     DPI     0x00000001     0x00000000
```

```
Connectors:  
id      encoder status      name          size (mm)    modes  encoders  
29     28     connected  HDMI-A-1     700x390     10     28
```

```
CRTCs:  
id      fb      pos      size  
33     35     (0,0)   (720x480)  
720x480 60 720 736 798 858 480 489 495 525 27000 flags: nhsync, nvsync; type: driver
```

5 FAQ

5.1 How to get all the video modes supported by the HDMI monitor

This chapter gives a method to retrieve **all the video modes supported by the HDMI monitor**, whether they are supported or not by the platform.

- Retrieve all the video modes supported by the HDMI monitor

```
Board $> dmesg -C  
Board $> echo 4 > /sys/module/drm/parameters/debug  
Board $> systemctl restart weston  
Board $> dmesg
```

```
[ 2527.787272] [drm:drm_helper_probe_single_connector_modes] [CONNECTOR:29:HDMI-A-1]  
[ 2527.825480] [drm:drm_add_display_info] non_desktop set to 0  
[ 2527.825502] [drm:drm_add_display_info] HDMI: DVI dual 0, max TMDS clock 225000 kHz  
[ 2527.825551] [drm:drm_add_edid_modes.part.19] ELD monitor SAMSUNG  
[ 2527.825569] [drm:drm_add_edid_modes.part.19] HDMI: latency present 0 0, video latency 2  
[ 2527.825580] [drm:drm_add_edid_modes.part.19] ELD size 32, SAD count 1  
[ 2527.825591] [drm:drm_add_display_info] non_desktop set to 0  
[ 2527.825601] [drm:drm_add_display_info] HDMI: DVI dual 0, max TMDS clock 225000 kHz  
[ 2527.828842] [drm:drm_mode_debug_printmodeline] Modeline 36:"1920x1080" 60 148500 1920 2  
[ 2527.828863] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: CLOCK_HIGH  
[ 2527.828888] [drm:drm_mode_debug_printmodeline] Modeline 39:"1366x768" 60 85500 1366 143  
[ 2527.828901] [drm:drm_mode_prune_invalid] Not using 1366x768 mode: CLOCK_RANGE  
[ 2527.828922] [drm:drm_mode_debug_printmodeline] Modeline 40:"1920x1080i" 50 74250 1920 2  
[ 2527.828934] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
```



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```
[ 2527.828955] [drm:drm_mode_debug_printmodeline] Modeline 41:"1920x1080i" 60 74250 1920 2
[ 2527.828967] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.828987] [drm:drm_mode_debug_printmodeline] Modeline 46:"1152x864" 0 108000 1152 121
[ 2527.828999] [drm:drm_mode_prune_invalid] Not using 1152x864 mode: CLOCK_HIGH
[ 2527.829019] [drm:drm_mode_debug_printmodeline] Modeline 47:"1280x800" 0 71000 1280 1328
[ 2527.829039] [drm:drm_mode_prune_invalid] Not using 1280x800 mode: CLOCK_RANGE
[ 2527.829059] [drm:drm_mode_debug_printmodeline] Modeline 48:"1280x1024" 0 108000 1280 13
[ 2527.829071] [drm:drm_mode_prune_invalid] Not using 1280x1024 mode: CLOCK_HIGH
[ 2527.829091] [drm:drm_mode_debug_printmodeline] Modeline 49:"1440x900" 0 88750 1440 1488
[ 2527.829103] [drm:drm_mode_prune_invalid] Not using 1440x900 mode: CLOCK_RANGE
[ 2527.829123] [drm:drm_mode_debug_printmodeline] Modeline 50:"1600x900" 0 108000 1600 162
[ 2527.829135] [drm:drm_mode_prune_invalid] Not using 1600x900 mode: CLOCK_HIGH
[ 2527.829155] [drm:drm_mode_debug_printmodeline] Modeline 51:"1680x1050" 0 119000 1680 17
[ 2527.829167] [drm:drm_mode_prune_invalid] Not using 1680x1050 mode: CLOCK_HIGH
[ 2527.829188] [drm:drm_mode_debug_printmodeline] Modeline 52:"800x600" 0 40000 800 840 96
[ 2527.829199] [drm:drm_mode_prune_invalid] Not using 800x600 mode: CLOCK_RANGE
[ 2527.829220] [drm:drm_mode_debug_printmodeline] Modeline 53:"640x480" 0 31500 640 656 72
[ 2527.829231] [drm:drm_mode_prune_invalid] Not using 640x480 mode: CLOCK_RANGE
[ 2527.829253] [drm:drm_mode_debug_printmodeline] Modeline 54:"640x480" 0 31500 640 664 70
[ 2527.829265] [drm:drm_mode_prune_invalid] Not using 640x480 mode: CLOCK_RANGE
[ 2527.829287] [drm:drm_mode_debug_printmodeline] Modeline 55:"640x480" 0 30240 640 704 76
[ 2527.829298] [drm:drm_mode_prune_invalid] Not using 640x480 mode: CLOCK_RANGE
[ 2527.829318] [drm:drm_mode_debug_printmodeline] Modeline 56:"640x480" 0 25175 640 656 75
[ 2527.829330] [drm:drm_mode_prune_invalid] Not using 640x480 mode: CLOCK_RANGE
[ 2527.829350] [drm:drm_mode_debug_printmodeline] Modeline 57:"720x400" 0 28320 720 738 84
[ 2527.829372] [drm:drm_mode_prune_invalid] Not using 720x400 mode: CLOCK_RANGE
[ 2527.829393] [drm:drm_mode_debug_printmodeline] Modeline 58:"1280x1024" 0 135000 1280 12
[ 2527.829404] [drm:drm_mode_prune_invalid] Not using 1280x1024 mode: CLOCK_HIGH
[ 2527.829424] [drm:drm_mode_debug_printmodeline] Modeline 59:"1024x768" 0 78750 1024 1040
[ 2527.829436] [drm:drm_mode_prune_invalid] Not using 1024x768 mode: CLOCK_RANGE
[ 2527.829457] [drm:drm_mode_debug_printmodeline] Modeline 60:"1024x768" 0 75000 1024 1048
[ 2527.829469] [drm:drm_mode_prune_invalid] Not using 1024x768 mode: CLOCK_RANGE
[ 2527.829489] [drm:drm_mode_debug_printmodeline] Modeline 61:"1024x768" 0 65000 1024 1048
[ 2527.829501] [drm:drm_mode_prune_invalid] Not using 1024x768 mode: CLOCK_RANGE
[ 2527.829521] [drm:drm_mode_debug_printmodeline] Modeline 62:"832x624" 0 57284 832 864 92
[ 2527.829533] [drm:drm_mode_prune_invalid] Not using 832x624 mode: CLOCK_RANGE
[ 2527.829553] [drm:drm_mode_debug_printmodeline] Modeline 65:"800x600" 0 50000 800 856 97
[ 2527.829564] [drm:drm_mode_prune_invalid] Not using 800x600 mode: CLOCK_RANGE
[ 2527.829585] [drm:drm_mode_debug_printmodeline] Modeline 67:"1920x1080" 0 148500 1920 20
[ 2527.829596] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: CLOCK_HIGH
[ 2527.829617] [drm:drm_mode_debug_printmodeline] Modeline 70:"1920x1080" 0 148500 1920 24
[ 2527.829629] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: CLOCK_HIGH
[ 2527.829649] [drm:drm_mode_debug_printmodeline] Modeline 78:"1920x1080i" 0 74250 1920 20
[ 2527.829661] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.829690] [drm:drm_mode_debug_printmodeline] Modeline 79:"1920x1080i" 0 74250 1920 24
[ 2527.829701] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.829722] [drm:drm_mode_debug_printmodeline] Modeline 85:"720x480i" 0 13500 720 739 8
[ 2527.829733] [drm:drm_mode_prune_invalid] Not using 720x480i mode: NO_INTERLACE
[ 2527.829754] [drm:drm_mode_debug_printmodeline] Modeline 86:"720x576i" 0 13500 720 732 7
[ 2527.829765] [drm:drm_mode_prune_invalid] Not using 720x576i mode: NO_INTERLACE
[ 2527.829787] [drm:drm_mode_debug_printmodeline] Modeline 87:"1920x1080i" 50 74250 1920 2
[ 2527.829799] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.829820] [drm:drm_mode_debug_printmodeline] Modeline 88:"1920x1080i" 60 74250 1920 2
[ 2527.829832] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.829853] [drm:drm_mode_debug_printmodeline] Modeline 89:"1280x720" 50 74250 1280 172
[ 2527.829865] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.829885] [drm:drm_mode_debug_printmodeline] Modeline 90:"1280x720" 50 74250 1280 172
[ 2527.829897] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.829917] [drm:drm_mode_debug_printmodeline] Modeline 91:"1280x720" 60 74250 1280 139
[ 2527.829929] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.829950] [drm:drm_mode_debug_printmodeline] Modeline 92:"1280x720" 60 74250 1280 139
[ 2527.829961] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.829982] [drm:drm_mode_debug_printmodeline] Modeline 93:"1280x720" 0 74250 1280 1390
[ 2527.830003] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.830024] [drm:drm_mode_debug_printmodeline] Modeline 94:"1280x720" 0 74250 1280 1390
[ 2527.830035] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.830056] [drm:drm_mode_debug_printmodeline] Modeline 95:"1280x720" 0 74250 1280 1720
```




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```
[ 2527.830068] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.830088] [drm:drm_mode_debug_printmodeline] Modeline 96:"1280x720" 0 74250 1280 1720
[ 2527.830099] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.830120] [drm:drm_mode_debug_printmodeline] Modeline 97:"1920x1080i" 0 74250 1920 20
[ 2527.830131] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.830152] [drm:drm_mode_debug_printmodeline] Modeline 98:"1920x1080i" 0 74250 1920 24
[ 2527.830164] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.830185] [drm:drm_mode_debug_printmodeline] Modeline 99:"1920x1080" 0 74250 1920 255
[ 2527.830196] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830217] [drm:drm_mode_debug_printmodeline] Modeline 100:"1920x1080" 0 74250 1920 25
[ 2527.830229] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830250] [drm:drm_mode_debug_printmodeline] Modeline 101:"1920x1080" 0 148500 1920 2
[ 2527.830261] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830282] [drm:drm_mode_debug_printmodeline] Modeline 102:"1920x1080" 0 148500 1920 2
[ 2527.830293] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830322] [drm:drm_mode_debug_printmodeline] Modeline 103:"1920x1080" 0 148500 1920 2
[ 2527.830334] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830355] [drm:drm_mode_debug_printmodeline] Modeline 104:"1920x1080" 0 148500 1920 2
[ 2527.830366] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830387] [drm:drm_mode_debug_printmodeline] Modeline 106:"1280x720" 0 74250 1280 139
[ 2527.830399] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.830419] [drm:drm_mode_debug_printmodeline] Modeline 108:"1280x720" 0 74250 1280 172
[ 2527.830431] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.830452] [drm:drm_mode_debug_printmodeline] Modeline 109:"1920x1080i" 0 74250 1920 2
[ 2527.830463] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.830484] [drm:drm_mode_debug_printmodeline] Modeline 111:"1920x1080i" 0 74250 1920 2
[ 2527.830496] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.830517] [drm:drm_mode_debug_printmodeline] Modeline 114:"1920x1080" 0 74250 1920 25
[ 2527.830528] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830549] [drm:drm_mode_debug_printmodeline] Modeline 115:"1920x1080" 0 74250 1920 24
[ 2527.830561] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830582] [drm:drm_mode_debug_printmodeline] Modeline 116:"1920x1080" 0 74250 1920 24
[ 2527.830593] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830614] [drm:drm_mode_debug_printmodeline] Modeline 117:"1920x1080" 0 74250 1920 20
[ 2527.830625] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830646] [drm:drm_mode_debug_printmodeline] Modeline 118:"1920x1080" 0 74250 1920 20
[ 2527.830667] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830688] [drm:drm_mode_debug_printmodeline] Modeline 119:"1920x1080i" 0 74250 1920 2
[ 2527.830699] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.830842] [drm:drm_mode_debug_printmodeline] Modeline 120:"1920x1080i" 0 74250 1920 2
[ 2527.830854] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.830876] [drm:drm_mode_debug_printmodeline] Modeline 121:"1920x1080" 0 74250 1920 24
[ 2527.830887] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830908] [drm:drm_mode_debug_printmodeline] Modeline 122:"1920x1080" 0 74250 1920 20
[ 2527.830919] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.830941] [drm:drm_mode_debug_printmodeline] Modeline 123:"1920x1080" 60 148352 1920
[ 2527.830952] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: CLOCK_HIGH
[ 2527.830973] [drm:drm_mode_debug_printmodeline] Modeline 124:"1920x1080i" 60 74176 1920
[ 2527.830985] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.831006] [drm:drm_mode_debug_printmodeline] Modeline 125:"1280x720" 60 74176 1280 13
[ 2527.831026] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: CLOCK_RANGE
[ 2527.831046] [drm:drm_mode_debug_printmodeline] Modeline 126:"640x480" 60 25200 640 656
[ 2527.831058] [drm:drm_mode_prune_invalid] Not using 640x480 mode: CLOCK_RANGE
[ 2527.831078] [drm:drm_mode_debug_printmodeline] Modeline 130:"720x480" 60 27027 720 736
[ 2527.831089] [drm:drm_mode_prune_invalid] Not using 720x480 mode: CLOCK_RANGE
[ 2527.831110] [drm:drm_mode_debug_printmodeline] Modeline 131:"1920x1080" 24 74176 1920 2
[ 2527.831122] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: CLOCK_RANGE
[ 2527.831142] [drm:drm_mode_debug_printmodeline] Modeline 132:"1920x1080" 30 74176 1920 2
[ 2527.831154] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: CLOCK_RANGE
[ 2527.831174] [drm:drm_mode_debug_printmodeline] Modeline 133:"720x480i" 60 13514 720 739
[ 2527.831186] [drm:drm_mode_prune_invalid] Not using 720x480i mode: NO_INTERLACE
[ 2527.831207] [drm:drm_mode_debug_printmodeline] Modeline 134:"1920x1080i" 60 74176 1920
[ 2527.831218] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.831239] [drm:drm_mode_debug_printmodeline] Modeline 135:"1280x720" 60 74176 1280 13
[ 2527.831251] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.831272] [drm:drm_mode_debug_printmodeline] Modeline 136:"1280x720" 60 74176 1280 13
[ 2527.831283] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
```



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```
[ 2527.831304] [drm:drm_mode_debug_printmodeline] Modeline 140:"1920x1080" 24 74176 1920 2
[ 2527.831316] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.831337] [drm:drm_mode_debug_printmodeline] Modeline 141:"1920x1080" 24 74176 1920 2
[ 2527.831357] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.831378] [drm:drm_mode_debug_printmodeline] Modeline 142:"1920x1080" 60 148352 1920
[ 2527.831390] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.831411] [drm:drm_mode_debug_printmodeline] Modeline 143:"1920x1080" 60 148352 1920
[ 2527.831422] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.831443] [drm:drm_mode_debug_printmodeline] Modeline 145:"1280x720" 60 74176 1280 13
[ 2527.831455] [drm:drm_mode_prune_invalid] Not using 1280x720 mode: NO_STEREO
[ 2527.831476] [drm:drm_mode_debug_printmodeline] Modeline 146:"1920x1080i" 60 74176 1920
[ 2527.831487] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.831509] [drm:drm_mode_debug_printmodeline] Modeline 149:"1920x1080" 24 74176 1920 2
[ 2527.831521] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.831542] [drm:drm_mode_debug_printmodeline] Modeline 150:"1920x1080" 30 74176 1920 2
[ 2527.831553] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.831574] [drm:drm_mode_debug_printmodeline] Modeline 151:"1920x1080" 30 74176 1920 2
[ 2527.831585] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.831605] [drm:drm_mode_debug_printmodeline] Modeline 152:"1920x1080i" 60 74176 1920
[ 2527.831617] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
[ 2527.831637] [drm:drm_mode_debug_printmodeline] Modeline 153:"1920x1080" 30 74176 1920 2
[ 2527.831649] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: NO_STEREO
[ 2527.831682] [drm:drm_helper_probe_single_connector_modes] [CONNECTOR:29:HDMI-A-1] probe
[ 2527.831703] [drm:drm_mode_debug_printmodeline] Modeline 76:"1920x1080" 30 74250 1920 20
[ 2527.831731] [drm:drm_mode_debug_printmodeline] Modeline 75:"1920x1080" 25 74250 1920 24
[ 2527.831750] [drm:drm_mode_debug_printmodeline] Modeline 74:"1920x1080" 24 74250 1920 25
[ 2527.831770] [drm:drm_mode_debug_printmodeline] Modeline 45:"1280x720" 60 74250 1280 139
[ 2527.831789] [drm:drm_mode_debug_printmodeline] Modeline 68:"1280x720" 60 74250 1280 139
[ 2527.831808] [drm:drm_mode_debug_printmodeline] Modeline 44:"1280x720" 50 74250 1280 172
[ 2527.831827] [drm:drm_mode_debug_printmodeline] Modeline 69:"1280x720" 50 74250 1280 172
[ 2527.831846] [drm:drm_mode_debug_printmodeline] Modeline 63:"800x600" 75 49500 800 816 8
[ 2527.831865] [drm:drm_mode_debug_printmodeline] Modeline 73:"720x576" 50 27000 720 732 7
[ 2527.831883] [drm:drm_mode_debug_printmodeline] Modeline 72:"720x480" 60 27000 720 736 7
[ 2527.832937] [drm:drm_helper_probe_single_connector_modes] [CONNECTOR:31:DSI-1]
[ 2527.833066] [drm:drm_helper_probe_single_connector_modes] [CONNECTOR:31:DSI-1] probed m
[ 2527.833092] [drm:drm_mode_debug_printmodeline] Modeline 37:"480x800" 50 33000 480 600 6
[ 2528.077108] [drm:drm_mode_addfb2] [FB:36]
[ 2528.945095] [drm:drm_mode_addfb2] [FB:38]
```

- Analyse the *drm* logs
 - The modes of the HDMI monitor (**HDMI-A-1** / connector **29**) that contain one of the following keywords are not supported: **CLOCK_HIGH**, **CLOCK_RANGE** and **NO_INTERLACE**

```
[ 2527.787272] [drm:drm_helper_probe_single_connector_modes] [CONNECTOR:29:HDMI-A-1]
[...]
```

```
[ 2527.828842] [drm:drm_mode_debug_printmodeline] Modeline 36:"1920x1080" 60 148500 1920 2
[ 2527.828863] [drm:drm_mode_prune_invalid] Not using 1920x1080 mode: CLOCK_HIGH
[ 2527.828888] [drm:drm_mode_debug_printmodeline] Modeline 39:"1366x768" 60 85500 1366 143
[ 2527.828901] [drm:drm_mode_prune_invalid] Not using 1366x768 mode: CLOCK_RANGE
[ 2527.828922] [drm:drm_mode_debug_printmodeline] Modeline 40:"1920x1080i" 50 74250 1920 2
[ 2527.828934] [drm:drm_mode_prune_invalid] Not using 1920x1080i mode: NO_INTERLACE
```

- The 10 modes of the HDMI monitor (**HDMI-A-1** / connector **29**) that are supported (as analyzed from the *modetest* output), are also seen with these *drm* logs

```
[ 2527.831682] [drm:drm_helper_probe_single_connector_modes] [CONNECTOR:29:HDMI-A-1] probe
[ 2527.831703] [drm:drm_mode_debug_printmodeline] Modeline 76:"1920x1080" 30 74250 1920 20
[ 2527.831731] [drm:drm_mode_debug_printmodeline] Modeline 75:"1920x1080" 25 74250 1920 24
[ 2527.831750] [drm:drm_mode_debug_printmodeline] Modeline 74:"1920x1080" 24 74250 1920 25
[ 2527.831770] [drm:drm_mode_debug_printmodeline] Modeline 45:"1280x720" 60 74250 1280 139
```



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```
[ 2527.831789] [drm:drm_mode_debug_printmodeline] Modeline 68:"1280x720" 60 74250 1280 139
[ 2527.831808] [drm:drm_mode_debug_printmodeline] Modeline 44:"1280x720" 50 74250 1280 172
[ 2527.831827] [drm:drm_mode_debug_printmodeline] Modeline 69:"1280x720" 50 74250 1280 172
[ 2527.831846] [drm:drm_mode_debug_printmodeline] Modeline 63:"800x600" 75 49500 800 816 8
[ 2527.831865] [drm:drm_mode_debug_printmodeline] Modeline 73:"720x576" 50 27000 720 732 7
[ 2527.831883] [drm:drm_mode_debug_printmodeline] Modeline 72:"720x480" 60 27000 720 736 7
```

- The only mode of the DSI display (**DSI-1** / connector **31**) that is supported (as analyzed from the *modetest* output), is also seen with these *drm* logs

```
[ 2527.833066] [drm:drm_helper_probe_single_connector_modes] [CONNECTOR:31:DSI-1] probed m
[ 2527.833092] [drm:drm_mode_debug_printmodeline] Modeline 37:"480x800" 50 33000 480 600 6
```

6 References

- [â HDMI \(High-Definition Multimedia Interface\)](#)
- [â 2.02.12.22.32.4 How to restart Weston](#)
- [â How to configure Weston](#)
- [â DRM KMS Overview - Test Vsync](#)