HDMI cables are NOT all the same!

Sometimes very cheap or thin HDMI cables do not work with the Raspberry Pi Camera extension kit I made. Even if a camera is correctly plugged at startup, the Rpi cannot detect the camera and output an error message. In this short post I will explain why and show a quick fix.

First a normal HDMI cable with 19 lines. This is the most common design. There are four data buses (one is hidden behind in the pictures) with 3 cables in each, a GND line and a GND shield. The HDMI connectors are also put to GND. The Raspberry Pi Camera extension kit works with this kind of cable.

Now, this is a smaller diameter (it was Micro HDMI before I cut it) cable with only 15 threads. This cable has 5 data shields but there are no GND lines in them! There is not GND shield, just a wrapping that was cut before taking the picture. The HDMI connectors are put to GND. This cable does not work out of the box with the Raspberry Pi Camera extension kit.

The trick to make the second cable work with the kit is to connect with a short piece of wire and solder the GND on the PCB and the HDMI connector. Of course this must be done on both sides of the cable. Et voila!

Even if there are no data shields, the quality of the image from the camera does not seem to be affected.
If at this stage if there is no image from the camera it is time to ask me an exchange.

Note that I could have connected the HDMI connector to GND by default, I decided against this. For safety reason I try to avoid connected metallic parts floating around.

40 comments:

Unknown May 24, 2015 at 1:06 AM

Does this modification need to be done to both connectors (ie the camera end and the Raspberry Pi end)?

Reply

fd July 19, 2015 at 4:45 PM

Yes on both connectors to connect their ground pins.

Reply

Unknown July 8, 2015 at 3:25 AM

Hi, great product. Just wondered if there was an enclosure for the rpi with twin hdmi ports?

cheers

Phil

Reply

John Burns July 29, 2015 at 7:23 PM

I still can't get mine to work. I've got three different HDMI leads and brought three pairs of the HDMI extenders. Testing with a multimeter it appears that connector 14 on the ribbon cable (SDA0) is not connected at the other end. Any tips?

Reply

John Burns July 30, 2015 at 10:37 AM

I tried this, but it turns out in my HDMI leads even the metal plug cases are not connected!

I had CSI pins 1,4,7,10 (Grounds) and 14 (I2C data) unconnected.

My fix is detailed at https://www.john.geek.nz/2015/07/petit-studio-raspberry-pi-hdmi-extender-cheap-cable-fix/

Reply

Ray Wells 4.0 November 10, 2016 at 2:54 AM

Awesome and fun writeup on that page. Recommend for anyone working with these to go read John's work on the cables.

Reply

Martin October 5, 2015 at 6:40 PM

Did anyone succeed using a 'cheap' 5m "flat-styled" HDMI cable? If so, which one? A short round cable (1.5m) works properly, but the 5m of http://www.aliexpress.com/snapshot/6933422178.html does not work, even after re-routing pin 14 to signal path to pin 'A' (because 14 was not connected). Shielding & all relevant pins are properly connected with this mod, but signal integrity seems insufficient (led on camera remains on though). Ferrite cores don't make any difference...

I really could use a working 5m (white) HDMI cable, preferably flat(!), so it would be great to have some reference of any success stories.
Replies

mosch February 16, 2018 at 5:51 PM
I'm using the Adafruit DIY flat cables. They don't work either - how are they different?

Reply

marty November 13, 2015 at 12:59 PM
Great to have a link to good cables as well

Reply

Anonymous December 9, 2015 at 6:46 PM
If HDMI cables costs a few more dollars it doesn't matter as along as they work properly I have seen couple of good hdmi cables at cheaper price HDMI Cable NT

Reply

Jobs-It -India February 3, 2016 at 1:46 PM
Yes by looking at the clarity of the screen we get to know the HDMI Cable quality whether it's good or best and now a days we can find cheap quality cables at cheap prices under any online websites like a href="http://latestone.com/"latestone</a> still better to have proper warranty attached

Reply

jpmathew March 4, 2016 at 7:56 PM
I am in Kolkata, India, where even a good quality HDMI cable is rare. I got your extension boards and tried three different HDMI cables. None worked. I tried to check continuity and found pins 13 and 14 shows open through the HDMI cable. Can you share the Name of a working Cable, so that I can order that from ebay or amazon. Thanks

Reply

Unknown May 12, 2016 at 5:41 AM
It would be awesome to have a list of HDMI cables that work, or some kind of identifier for the good ones. Thanks!

Reply

Unknown May 31, 2016 at 5:02 PM
My Experience with some eBay HDMI Cables...
This one works fine ... http://www.ebay.de/itm/251772881370
And this is a Trouble cable ... http://www.ebay.de/itm/141346687308

Reply

Unknown June 20, 2016 at 7:00 PM
We are pleased to introduce M/S Mandeep Cables Pvt Ltd one of the leading manufacturer of wire, USB cables, networking cables, cords & wire harness, a name for excellence and quality engaged in the manufacturing of diverse electric wires.Call +91-9899000668

Reply

Unknown July 16, 2016 at 8:39 PM
Hello, I followed above blogpost as my camera wasnt working with HDMI cable. Still I face following issue...
mml: No data received from sensor. Check all connections, including the Sunny one on the camera board
I used jumperwire for now to connect the ground

Reply

Anonymous September 21, 2016 at 8:32 PM
The "multimedia" in HDMI includes audio and visual, whereas DVI only includes video. Additionally, HDMI is by definition "high definition" graphics only, whereas DVI is anything involving digital graphics, which includes high definition as well as low definition graphics. DVI includes all images created via the display of pixels, or non analog video. So, though all HDMI is digital video, or DVI, not all DVI is HDMI. HDMI offers superior, higher resolution graphics displays. DVI includes the universe of digital video displays, high and low.
http://www.latestone.com/eCommerceCategoryList?productCategoryId=1501

Reply

hippo December 12, 2016 at 10:37 PM

http://petitstudio.blogspot.com/2015/05/hdmi-cables-are-not-all-same.html
Petit Studio: HDMI cables are NOT all the same!

RF-AV  February 8, 2020 at 3:32 PM
Great post!
You can find HDMI cable adapter ring at best deal. Visit https://rf-av.com/
Reply

Enter your comment...

Comment as: [Google Account]

Publish  Preview

Home  Older Post

Subscribe to: Post Comments (Atom)

PetitStudio. Powered by Blogger.