/r/RTLSDR

RTLSDR | **opmerkingen {toolbar}**   gerelateerd   wil je lid worden? inloggen of registreren kost maar een paar seconden | **Nederlands**

search

deze post is geplaatst op 17 Apr 2012

3 punten (100% upvoted)

shortlink: `http://redd.it/se9vg`

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3

Problem with buffer underruns and audio dropouts anyone? (self.RTLSDR)

geplaatst op 2 jaar geleden door ottiki

Hi, I am experiencing buffer underruns and consequently dropped audio (sounds licke audio clicks) with Hama Nano and ExtIO interface on both HDSDR and WRplus. I tried on three different PC's and even down to the minimum sample rate of 0.9MS/s which I can set in my dongle - all with the same symptoms.

On Balint's youtube video the adio sounds clean in HDSDR. But if you look to this one http://www.youtube.com/watch?v=-Fh4EB0sX2w it sound exactly like mine (with clicking audio dropouts "in the noise")....anyone experiencing the same - any possible workarounds, e.g. working on the buffer size etc. - I already tried many paramteres behind the Device hint but without success?

7 reacties   delen

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alle 7 reacties

gesorteerd op: **beste**

[–] **CJay1337** 1 punt 2 jaar geleden

Did you try lowering the speed of the waterfall display? I get audio dropouts on the highest setting, but when I lower it slightly I get clear audio, even on my crappy netbook.

permalink

[–] **revil0** 1 punt 2 jaar geleden

I also get them occasionally (on Windows, haven't tried GNU Radio yet). I'm using a Hama Nano too. For me, the most reliable sample rate seems to be 2.8 MS/s, I get about one underrun every few minutes this way. Everything else produces more dropouts.

I haven't tried reducing the waterfall speed, but I don't think that's the problem, CPU usage is almost always <10%.

permalink

     [–] **ottiki** [S] 1 punt 2 jaar geleden

     Thanks for those hints. I tried reducing waterfall speeds to minimum (for the top FFT and the smaller bottom FFT at the same time), but it did not significantly reduce audio drop outs...I am using a sample rate of 1MS/s.

     However I was able to reduce the dropouts by slowing the speed AND reducing significantly the resolution bandwith of the FFT (RBW value)...this way the FFT becomes very pixely but dropouts almost disappear.

     I was also able to reduce dropout rate by reducing the output soundcard sample rate from 12000 (presetting) to 8000 or even 4000. (this way the audio sound horrible, but for very narrow band signals would be still OK)

     What I observe when doing this is that the buffer runs empty (% value goes down) very slowly (around 40-50 seconds) and when it is empty the buffer underrun occurs with an audio dropout and a refill of the buffer to 50%. Could this be a sign that the USB speed is too low for the 1MS/s sampling rate?

     This happens on all three tested WINDOWS XP machines. (an old P4 2GHZ, a AMD 3 GHz and Notebook with Centrino Dual Core)...

     permalink   oorspronkelijke post

         [–] **ottiki** [S] 1 punt 2 jaar geleden

         Actually I tried on fourth "high power" machine today under WIN7. This is my "Gaming PC" (i5, 3.1GHz Quad Core) used for Flight Simulation purpose...

         On this machine it works perfectly without drop outs...

         Unfortunately this PC is not in my radio room... :-(

         permalink   oorspronkelijke post

             [–] **[deleted]** 1 punt 2 jaar geleden

             Are there any peripherals or software drivers that you might have installed on all machines that could be interfering? My desktop is a Core2 at 2.4GHz and I can run 2.8MS/s with the soundcard setting to 24khz in wrplus or hdsdr...FFTs wide open at full resolution. I'll get a few buffer underruns, but no rarely do i perceive an audio dropout of any significance.

             permalink   oorspronkelijke post

[–] **roger_** 1 punt 2 jaar geleden

Do you get a notification every time they're dropped?

permalink

[–] **astouffer** 1 punt 2 jaar geleden*

Just experienced this symptom on my work computer which is a small form factor with cheap integrated video (Gateway E4100). I was worried about it not having USB 2.0 but supposedly device manager says it does.

Now on my Q6600 box at home there are no issues.

Ok still get underruns and dropped audio on a Dell Precision 370 3.4Ghz. No difference with the integrated sound or an SB Audigy 2. Has a "real" Nvidia video card as well.

permalink

Een nieuwe link posten

Een nieuwe tekstpost plaatsen

RTLSDR

abonneren   7.152 lezers

~8 gebruikers aanwezig

A subreddit dedicated to the noncommercial open low-cost software defined receiver user community and platforms including the rtl-sdr and Gr-Osmosdr supported devices

"RTLSDR" is a generic term for USB digital TV (DVB-T) receivers that use the Realtek **RTL2832U** chip which it was discovered in 2011 can function as general purpose software defined radio receivers. RTL2832 based hardware is by far the least expensive, costing as little as $8-12. (Photo of midsized RTL2832+ R820T dongle with BNC adaptor Image credit: /u/sanjuro)

We encourage discussion of low cost SDR, signals, software, DSP, projects, news, etc. Feel free to ask genuine beginner questions, start discussions, post news, articles, etc. No posts on illegal subjects, or spam/sock-puppetry. *(Threads that ignore these requests will be deleted without any notice.)* Also, apart from DVBT, RTLSDRs generally can't be used to receive TV. They don't transmit, either. They are cheap consumer devices that can do a lot more than just TV and that's their appeal.

Driver Software

Driver software source (and binaries for the Windows platform) are at http://sdr.osmocom.org/trac/wiki/rtl-sdr . On Windows you'll also need a Zadig installer for libusb -from http://zadig.akeo.ie/

Feature summary:

- Frequency range[1] : 24-to-~1750 MHz.
- Cost of the most popular RTL2832+R820T dongles ranges from $7-12 on ebay to $11-18 from "local" Amazon and ebay vendors. E4000 devices are unavailable
- Frequency range using direct sampling (hw mod) is 0-28 MHz.
- An upconverter can convert HF/shortwave bands to 50-125 MHz or higher for receiving below 30-50 MHz.
- Max sample rate: 3.2 MS/s (Typical 2.6 MHz without dropped samples)
- Resolution: 8 bits/sample
- Noise figure[1] : < 4.5 dB

[1] depends on specific tuner (The Rafael Micro R820T covers 24-1766 MHz, and the elonics e4000 covers approximately 52-2200 MHz with a gap around 1100 MHz.)

Tutorials:

- Wiki with tutorials and other resources

Other Resources:

- **Tuner compatibility list (WIP)**.

- Osmocom RTL-SDR project wiki (+ technical questions mailing list)
- RTLSDR IRC channel (chat)

Third Party:

- Comparison of the e4000 and R820T tuners (the two most popular chips)

Software:

- Drivers and compatible software links at Osmocom rtl-sdr wiki (Start there. Don't install the software that comes with the device, or thats found on other web sites!)
- Gnuradio - SDR toolbox and IDE
- GQRX - General purpose receiver, Linux + OSX
- Linrad SDR app. Linux, Windows, OSX. Fast.
- SDR# (sdrsharp) C# SDR app for Windows .Net
- HDSDR Fast, stable SDR app, strong in signal analysis. Windows
- librtlsdr and Python wrapper (older one here) (Or use rtl_power) For making graphs of spectrum)

OSX:

- MacPorts rtl-sdr, Also gr-osmosdr and gnuradio. Best method for OSX users.
- GQRX OSX port (Easiest to install and use >= 10.6)
- Linrad (>= 10.5 runs well on lots of HW)

How-to videos:

- Youtube has >6000 videos on rtl-sdr

Tips:

- **Most important: Use a USB extension cable and ferrite beads to reduce noise. (Many USB cables already have them)**
- Don't use the supplied "antenna". Replace it. Here is an easy planar disk antenna that works well. You'll also need a coax adapter.
- Use a vertical antenna (like a discone) for most VHF/UHF.
- Thin coax has too much loss at VHF/UHF. Use thick cable and keep it short.
- If you're running Linux, **you may need to blacklist or detach the dvb_usb_rtl28xxu module.**
- For HF use with a long wire antenna try putting a 9:1 "unun" at the antenna end of your coax line. You also need a good ground for HF..

Misc:

- WebSDR Free online HF SDR. Streams live. See what SDR is.

Recommended subreddits

- /r/eebooks+csbooks+mathbooks
- /r/Electronics
- /r/ECE
- /r/DSP
- /r/AskElectronics
- /r/RFelectronics
- /r/GNURadio
- /r/RTLSDR
- /r/amateurradio
- /r/hamradio
- /r/HackRF
- /r/MiniPCs
- /r/SignalIdentification

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