

ONLINE TEACHING: a personal experience and some personal views

Predrag Pejović

a virus pushed us online . . .

- ▶ around March 15, 2020, our school went online . . .
- ▶ not fully prepared, neither fully unprepared . . .
- ▶ unprepared only for video lectures and conferences . . .
- ▶ missing cameras and experience; not a big deal to fix.
- ▶ perfect opportunity to fix our teaching materials!
- ▶ lots of written materials already online!
- ▶ a consequence of **this** conference: **Zenodo!**
- ▶ thanks Milica!
- ▶ server, bandwidth, DOI . . .
- ▶ not that every cloud brings bad weather!
- ▶ not much recording in my case, it was hard to record at that time (camera? setup? studio? access?)

an example . . .

zenodo

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peja@etf.rs

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New version

Peak Detector and/or Envelope Detector — A Detailed Analysis —

Pejovic, Predrag

In this document, a simple circuit constructed using a diode, a resistor, and a capacitor, utilized as a peak detector and/or as an envelope detector is analyzed. The analysis is approached by applying approximate methods and by a mix of exact and numerical methods, aiming design guidelines and understanding of the circuit operation. Approximate and exact approaches are compared, and a region where the approximate analysis provides adequate answers is identified. Ability of the circuit to track the envelope variations is analyzed, and it is shown to depend both on the circuit time constant and the output voltage value, i.e. the modulation signal frequency and the modulation index. Relevant relations are derived and presented. Finally, distortion of the output voltage caused by the output voltage ripple is addressed, and averaged model of the circuit is derived. It is shown that average of the output voltage over the carrier period is increased about three times when filtering of the output voltage is applied. Transfer function for averaged waveforms of the envelope detector is derived, containing slight attenuation and a real pole at the double of the carrier frequency.

433

views

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Versions

Version 1

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Preview



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Automatic Zoom



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Predrag Pejovic

April 7, 2018

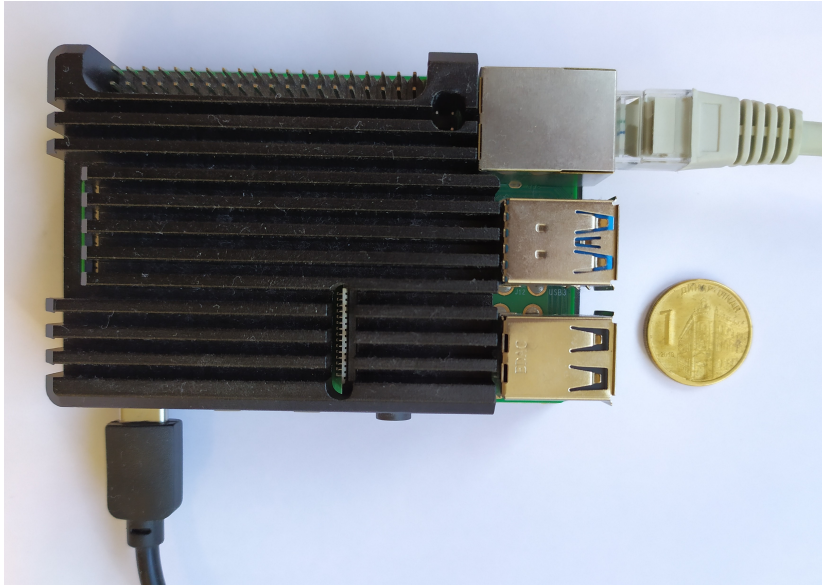
starting point ...

- ▶ teaching materials mostly at Zenodo
- ▶ all the information posted at our site ...
- ▶ <http://tnt.etf.rs/~peja>
- ▶ a machine kicked out of my office around 2005 as obsolete ...
- ▶ but still used as a server!
- ▶ Ubuntu 06.04?
- ▶ some problems with ssh, a bit unreliable ...
- ▶ and Raspberry Pi 3 B became obsolete ...
- ▶ so I had to kick it out of my apartment ...
- ▶ where it was used as my personal server; my server?
- ▶ Ubuntu 20.04, just appeared ...
- ▶ and good old apache2 could be installed ...
- ▶ domain name familiar?

<http://peja.freedombox.rocks>



since the new version, RPi 4, is at home ...



translation: in size, 1 din \approx 10 euro cent;
in value, 1 din \approx 1 euro cent



results ...

- ▶ <http://peja.freedombox.rocks>
- ▶ home page for all six of my courses ...
- ▶ served about 370 of my students ...
- ▶ and hosted my home page ...
- ▶ it was fun to setup and maintain!
- ▶ I really like it and enjoy to work with it!
- ▶ I do not have to ask anyone for anything.
- ▶ I am independent and free ...
- ▶ and I really enjoy that!

October 2020 ...

- ▶ things are getting serious!
- ▶ not just a temporary turbulence ...
- ▶ we have to record our lectures ...
- ▶ and organize video conferences ...
- ▶ we have support for a proprietary platform ...
- ▶ and we are informed that it is for free ...
- ▶ sounds like a really sustainable business model ...
- ▶ what is **vendor lock-in**?
- ▶ so I decided to use **online teaching freedom #1**

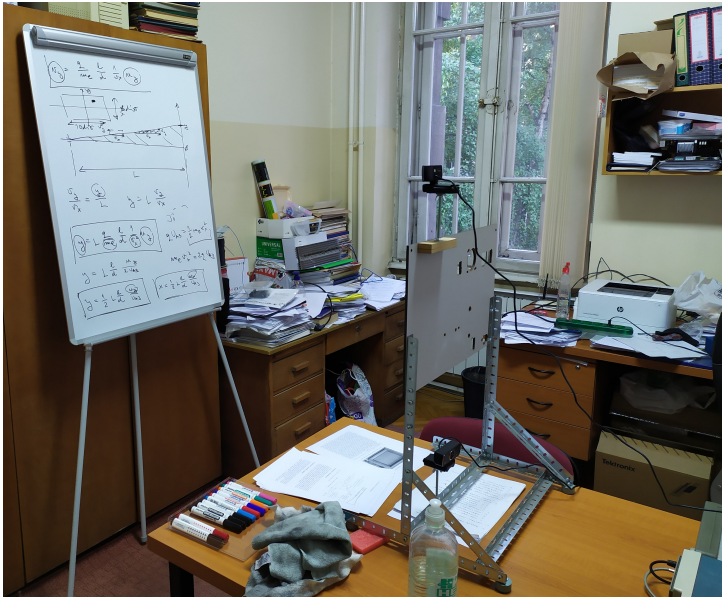
online teaching freedom #1

- ▶ teachers are free to choose their online teaching platform!
- ▶ we **HAVE** that freedom at our school!
- ▶ I appreciate that, and I believe that this right should be universal!
- ▶ ... though, there were different voices:
 - objection 1:** “to simplify it for our students, all teachers should use the same platform”
 - reply 1:** “teaching the same content in all courses would simplify it to our students further”
 - objection 2:** “it is hard for our students to handle so many installed software packages”
 - reply 2:** “the software I use does not require students to have any software other than a browser; not even plugins”

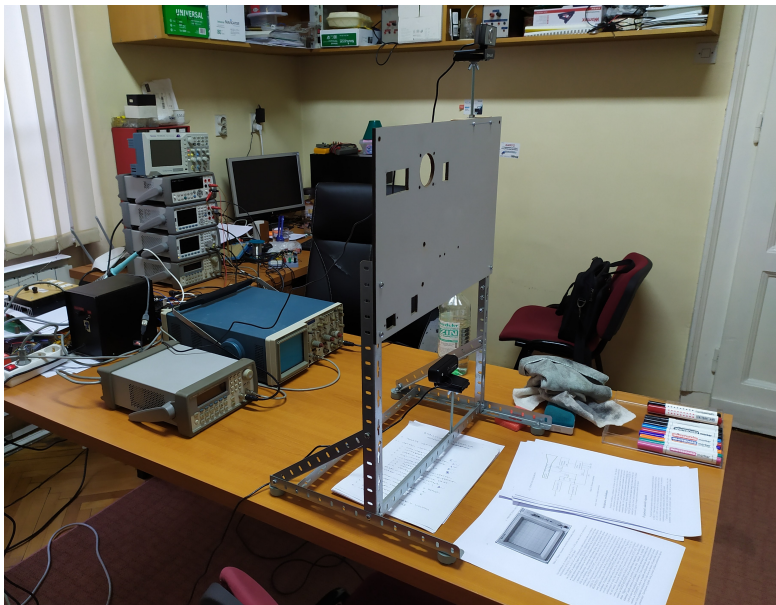
present situation ...

- ▶ OBS to record lectures ...
- ▶ ... in an improvised self-funded studio ...
- ▶ Zenodo to post lectures and get DOI
- ▶ students immediately asked for a streaming service, at this moment posted at YouTube
- ▶ public access: public lectures for public money
(Fair Access to Science and Technology Research Act)
- ▶ office hours using Jitsi, over <https://meet.jit.si/>
- ▶ information root still at <http://peja.freedombox.rocks>
- ▶ seems it works ...
- ▶ lots of feedback ...
- ▶ enjoyable ...
- ▶ however, what can we do better?

the “studio”



the “studio”



a platform proposal

three components:

1. learning management system (LMS); Moodle is a mature tool, <https://moodle.org/>
2. web audio/video conferencing software; free software examples: Jitsi, <https://jitsi.org/>, BigBlueButton, <https://bigbluebutton.org/>, eduMEET, <https://edumeeet.org/>, and Apache OpenMeetings, <https://openmeetings.apache.org/>
3. media server, “player”; GNU MediaGoblin, <https://mediagoblin.org/>

to be run at our servers, locally, at home

what do we need?

1. installation and configuration tutorials ...
(software is already available)
2. resource planning guidelines
(storage, processor, bandwidth ...)

conclusions?

let's work together!

we want to run, build, and maintain our own servers!

we want to be free!