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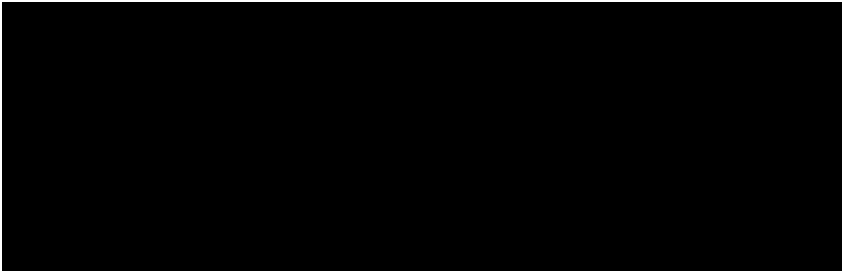
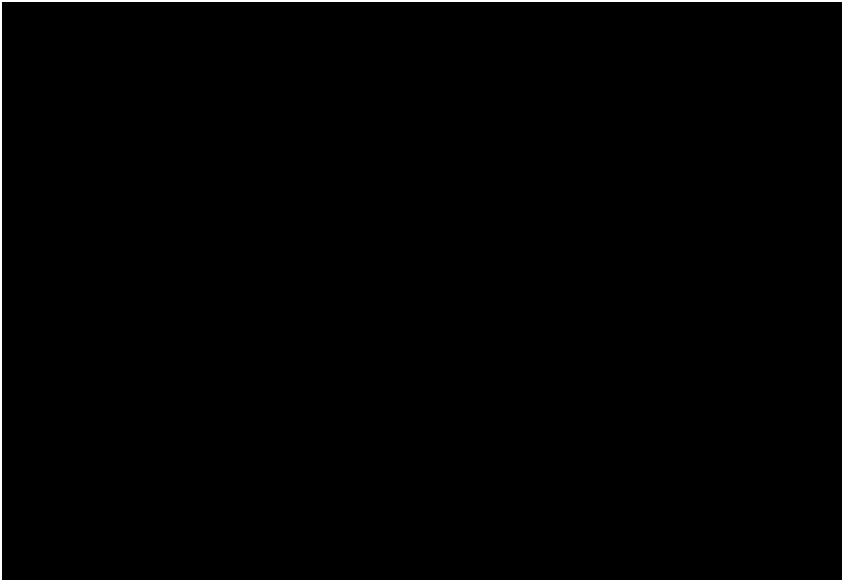
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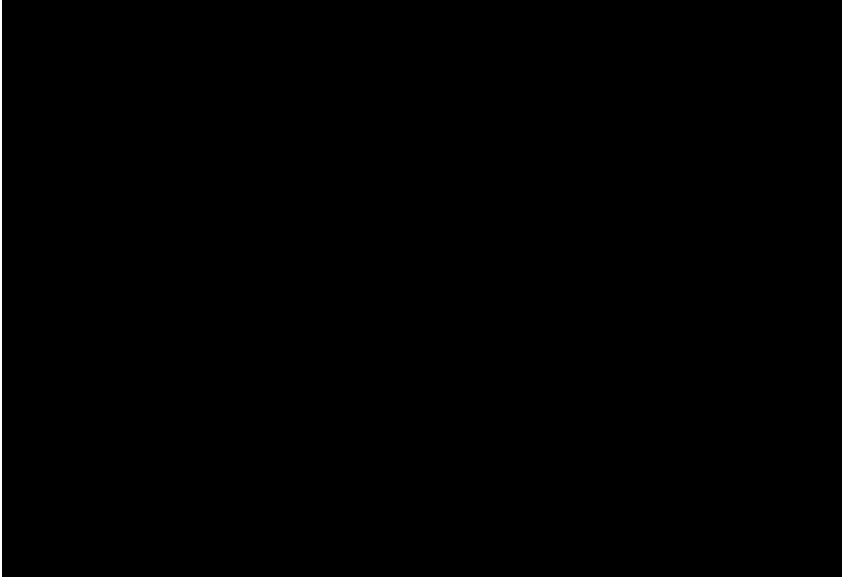
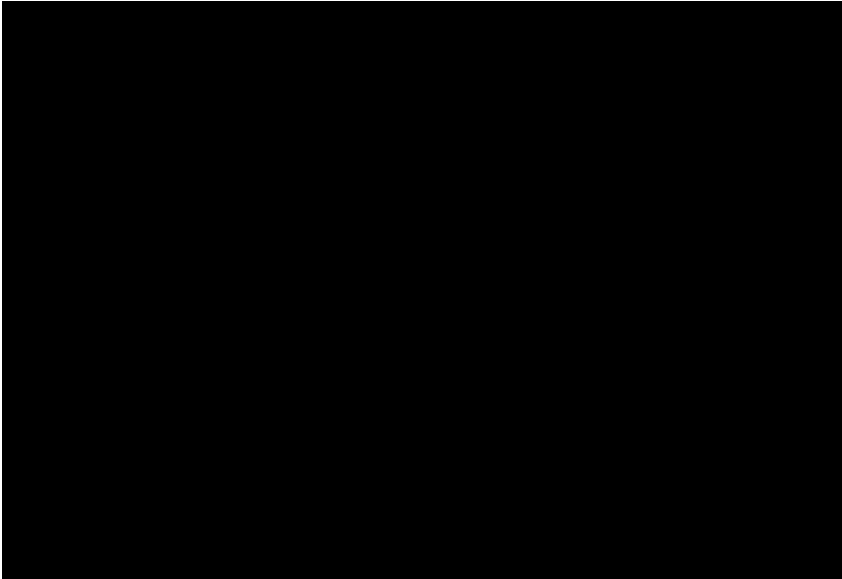
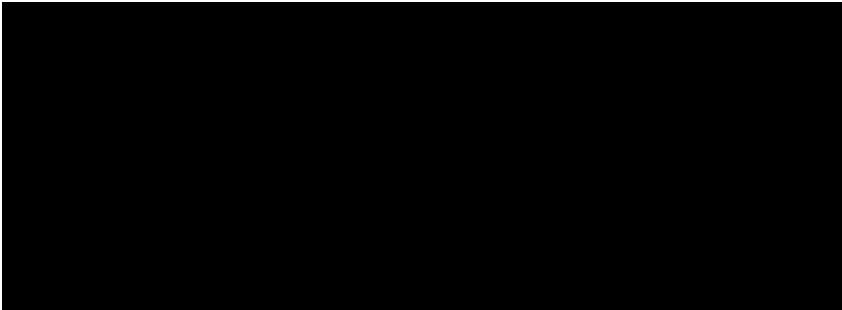
Constant Q transform spectrum analyzer



**Andrey Demenev** Posts: **362**  
[August 2013](#)   edited [August 2013](#)   in [Propeller 1](#)   ▲ 0 ▼

I have been asked many times about this piece of code. And today I have got a comment at my Youtube page saying I am cheating about this. Here is the code and schematic. I do not have time to prepare English language documentation. Anyone who is really interested, and equipped with theoretical knowledge about constant-Q transform, can get how this all works. The simplest way to get this working is to use VGA output - although the code supports many other display types. Schematic and board layout in Eagle CAD format are included. The firmware should be compiled with BSTC. You can get the idea about options to use from the code and build\_all script





[Judith\\_B.zip](#)



Day OFF? You must be pulling my leg! Stop making humor before someone sees you, fool!

Tagged: [propeller1](#)

Comments

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**Andrey Demenev** Posts: 362  
August 2013    edited August 2013    ▲ 0 ▼

Here is a spectrum analyzer made by someone else, using my board and firmware

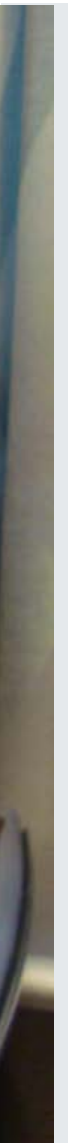












edited August 2013 ▲ 0 ▼



edited August 2013 ▲ 0 ▼

+1

Infernal Machine



**richaj45** Posts: 179

August 2013

edited August 2013

▲ 0 ▼

Andrew, so what is your algorithm?

Were can i get a tech look at the board of yours?

How many props does it use.

Does it use biquad digital filters?

What AD do you use?

What kind of tubes are those being driven?

Beautiful workmanship!!

Rich



**Phil Pilgrim (PhiPi)** Posts: 20,066

August 2013

edited August 2013

▲ 0 ▼

Andrey,

Very, very nice! For those interested, here's a paper that talks about constant Q transforms:

[http://www.imamu.edu.sa/Scientific\\_selections/abstracts/Math/Calculation%20of%20a%20constant%20Q%20spectral%20transform.pdf](http://www.imamu.edu.sa/Scientific_selections/abstracts/Math/Calculation%20of%20a%20constant%20Q%20spectral%20transform.pdf)

-Phil

*Perfection is achieved not when there is nothing more to add, but when there is nothing left to take away.* Antoine de Saint-Exupery



**Rayman** Posts: 7,568

August 2013

edited August 2013

▲ 0 ▼

Very cool and interesting stuff...

You could have a Propeller do something when you whistle a tune, like in that James Bond movie...

Prop Info and Apps: <http://www.rayslogic.com/>



**Toby Seckshund** Posts: 1,995

August 2013

edited August 2013

▲ 0 ▼

There was an article, about a year back I believe, in Elektor, that used neon tubes like that for VU meters on a Valve amplifier. They said that they had to come from Russia.

It is good to see some of the old technology still being made, and used in this case so beautifully used.

Alan



**Phil Pilgrim (PhiPi)** Posts: 20,066

August 2013

edited August 2013

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The same effect can be obtained with the EL tubes that Parallax sells -- or used to sell, viz:

<http://forums.parallax.com/showthread.php/117022-Electroluminescent-wire-something-you-would-buy-from-Parallax?p=851938&viewfull=1#post851938>



-Phil

*Perfection is achieved not when there is nothing more to add, but when there is nothing left to take away.*    Antoine de Saint-Exupery

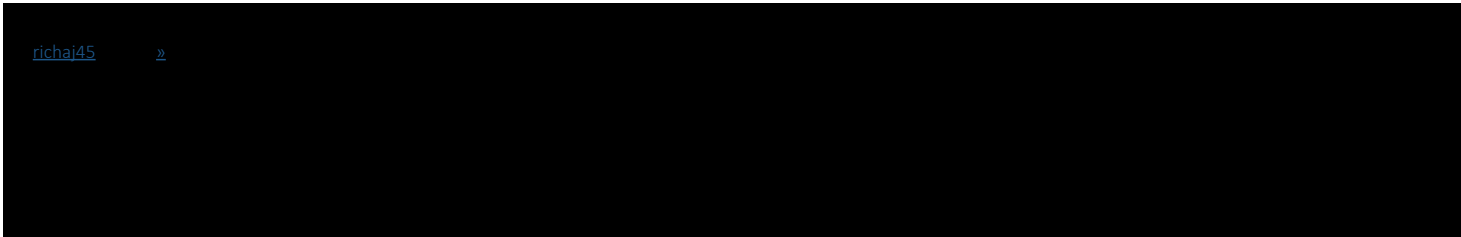


**Andrey Demenev** Posts: **362**

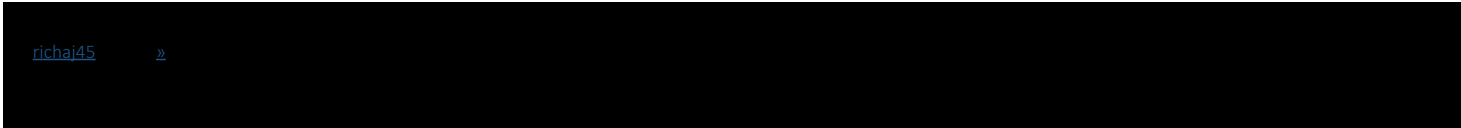
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The answers can be found by looking inside the archive attached to the first post



IN-13. Sellers from Russia and Ukraine have lots of them on Ebay,

The spectrum analyzer was named after Professor Judith C. Brown from MIT. She published some papers on signal analysis, and about CQT in particular.

Day OFF? You must be pulling my leg! Stop making humor before someone sees you, fool!

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