

## Re: PC Based Oscilliscopes

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**From:** Telamon (*telamon\_spamshield\_at\_pacbell.net.is.invalid*)

**Date:** 01/22/05

Date: Sat, 22 Jan 2005 21:44:34 GMT

In article <MPG.1c5c3d153e17de829896ac@localhost>,  
Dr. Anton T. Squeegee <SpammersAreVermin@dev.null> wrote:

> In article <uLadnd295aUM\_G\_cRVn-qg@comcast.com>,  
> james.douglas@genesis- software.com says...  
>  
> < Top-posting corrected. Please don't top-post! See this link for  
> the reason why: <http://www.html-faq.com/etiquette/?toppost>  
>  
>> "Jim Douglas" <james.douglas@genesis-software.com> wrote in message  
>> news:Re6dnVkvnsMeDGzcRVn-gw@comcast.com...  
>>> Anyone use these? Any recommendations good or bad? I am looking  
>>> at some  
>>> that  
>>> have Scope, Meter, Spectrum Analysis, etc. Are the "multi-use"  
>>> type PC scopes any good? I see some that are down around  
>>> \$200-300? which is in my price range.  
>>>  
>>> Thanks!  
>>>  
>>>  
>>> Jim Douglas [www.genesis-software.com](http://www.genesis-software.com) Carrollton, TX USA 75006  
>>> Latitude 32.9616 Longitude 96.8916  
>  
>> Thanks for all the input, I am going to pass on the PC stuff and  
>> shop EBay and ?? for a good used scope. Any recommendations other  
>> than EBay?  
>  
> Sure. Check <http://www.arrl.org/hamfests.html> for hamfests in your  
> area. They happen all over the country (heck, all over the world) at  
> various times during the year, and the swap meet portion of any  
> hamfest bears (usually) a 95% or higher focus on electronics in terms  
> of test gear, radios, computers, etc.  
>  
> If you've never been to such an event in your life, I would  
> (SHAMELESS PLUG ALERT) take a look at an article I wrote on my own  
> page at this link:  
> <http://www.bluefeathertech.com/technoid/Scrounger.html>

- >
- > *This is a guide to scrounging at both surplus places and swap meets.*
- > *I hope you find it helpful.*
- >
- > *Happy hunting.*

It is very rare for a cross posted article to RRS to be useful. Most are Trolls. I enjoyed your web page on scrounging. I'm taken aback on the prices that you posted about equipment however quoted below.

> *Dr. Anton T. Squeegie wrote:*

- > > *If you want some serious bandwidth, you should have a look at the*
- > > *Tek 7904 or 7104. The base frames have bandwidths of 500MHz and 1GHz,*
- > > *respectively, and you should be able to get a good 7904 with plug-ins*
- > > *for a little over \$300.*

A TDS7104 sold new in the \$30K to \$40K range depending on options. I have priced this scope at used equipment resellers in the \$8 to \$10K range. The equipment is sold in calibration and working with a short warranty like 30 days for verification that the equipment is in proper working condition from resellers.

At prices under \$1K even with no guarantees I expect this equipment is hot at those prices. All equipment from the major makers have serial numbers throughout the equipment and in the firmware. If you ever send this equipment in for repair you might be in for an unpleasant surprise.

In the last few years there is a new class of scope called real time. The reason I'm responding to this thread is that you just happened to mention a real time scope the TDS7104. Tek calls real time scopes DPO or Digital Phosphor scopes. Most digital scope are repetitive sampling making them a poor choice for low frequency events like an intermittent pulse and these are useless for high speed single shot events. The DPO's resemble an analog scope with memory. There are the best suited digital type for single shot or low frequently occurring events. The DPO's are designed for a very high re-acquisition rate compared to digital sampling types, which is why they are better suited for the low frequency events as they are more likely to be actually sampling the input during an event rather than being in another part of the processing cycle. DPO's have a rapid processing cycle and also have most of that cycle being actual sample time so they are able to catch that infrequent pulse. The repetitive sample high speed scopes generally have cycle times of 200KHz or slower and most of that cycle time is signal processing and display. Repetitive sampling scopes are good at any type of recurring signal like clocks. They are poor choice at looking at data streams with long patterns. The only way you can look at long patterns is at the bit level or eye mode.

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Telamon

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Ventura, California