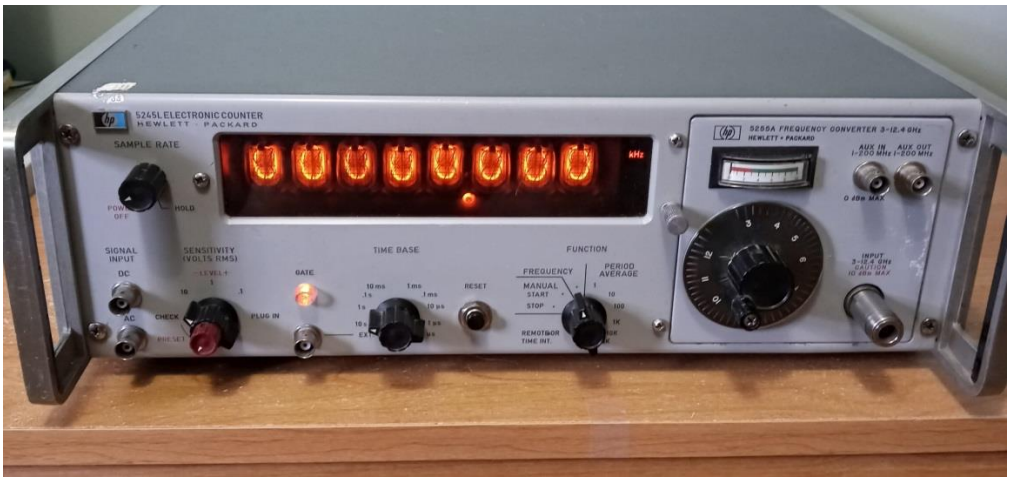
The Hewlett Packard 5245L Electronic Counter

This was a top of the line counter when it came out in I believe the late 1960's.

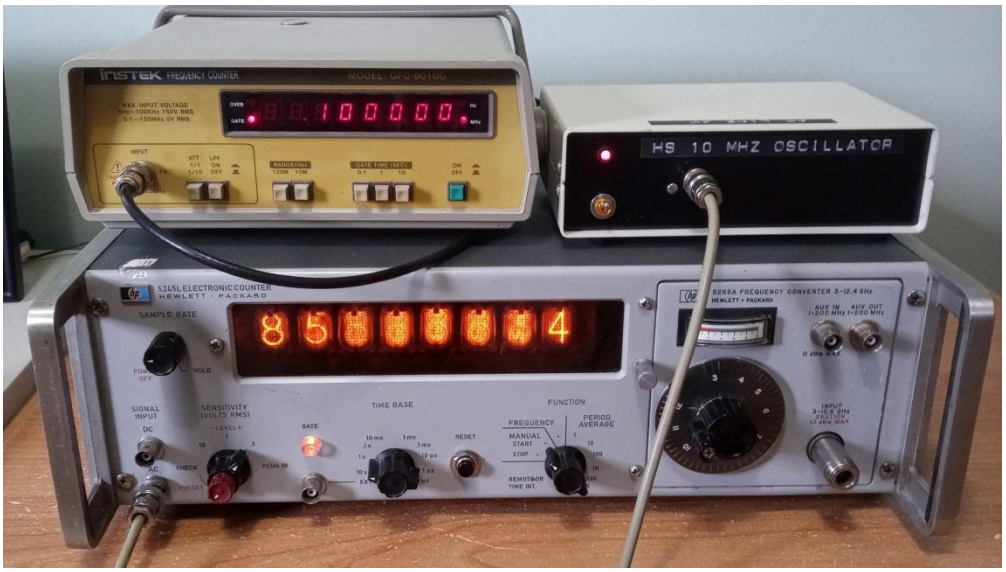


It has a very good time base oscillator (TCXO) unlike the less expensive counters available today. This directly affects the accuracy of the readout. Other than counting frequencies it has a few other features like displaying Period, Period Averaging, a scaler and others. It can accommodate a number of plug-in's to extend the frequency range. The basic counter is limited to 50 MHz. This counter came with a 5255 Frequency Converter plug-in to cover 3 to 12.4 GHz. This plug-in also has a 1-200 MHz Aux Input that allows the counter to read up to 200 MHz instead of the standard 50 MHz. In effect this counter can read from DC to 200 MHz and 3 to 12.4 GHz. The lower frequency range can be extended with an off the shelf pre-scaler.

The counter's Gate did not work when I got it. It turned out to be a bad switch contact on a switch located on the back of the instrument.

I was trying to figure out a use I would have for the Period feature. It turns out I probably don't have much. The period feature does allow very accurate reading of lower frequencies. I measured my line voltage frequency through a low voltage AC wall wart. For 2 measurements taken at different times I got 60.0853 Hz and 59.9988 Hz after doing the necessary calculations. Running a 1 second or 10 second Gate in the frequency mode won't give you the resolution of a Period measurement at these low frequencies. Also tried running about a 5 Hz tone from one of my test oscillators resulting in a frequency of 5.00175 Hz. Once again you need to do the calculation to convert time to frequency.

As mentioned above, the counter has a scaler feature that is controlled by switches on the back of the instrument. The upper frequency limit is 50 MHz that can be divided down in decade steps.



Shown is a 10 MHz signal divided down to 100 KHz. The instrument is flexible enough to allow this signal to be divided down to below 1 Hz. This feature might be useful if you had for example a GPSDO with an output of 10 MHz and you wanted a lower frequency output. The scaler seems to be independent of the instrument's time base oscillator or I don't know why this feature would have to rely on the internal time base.

The counter has a few other features that I won't cover here.

This was a popular counter in the 1970's and there seem to be a lot out there still. It's a nice counter if you are looking for a high quality one but it's big, heavy and loud.

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