Re: The Analog Thing

Watching the video (posted by Deid) brought memories of earlier days of patch-boards used for quick wiring and testing TTL/CMOS logic circuits, including ones designed for wiring analog circuits. These patch-boards were normally found in universities and community college labs used for teaching purposes. The cost was simply too high for personal use.

Digital logic gates patch-board

1961, the Pace TR-48 analog computer, weigh just 400 pounds and $25K.

The Analog Thing changes this. The cost, including shipping, is approximately $300 CND (applying educational discount) making it affordable for individual use. The price is reasonable when considering the large number of operational amplifiers (Op Amps) and other components used in the design.

Is analog computing making a come back? Digital analog circuits are two sides of the same coin with no clear line of demarcation. Both have evolved on a similar path but with their own characteristics. Although less familiar to the computing community, analog devices such as operational amplifiers (Op Amps) have evolved with specs that one could only have dreamed of in the past. Signal to noise ratio, package size (with many footprints), cost and operating voltages have plummeted. Today, Op Amps are available with quiescent bias currents in the low nano amps with temperature drift voltage approaching zero.

Analog computing lost significant ground to digital computing since the introduction of the microprocessor in the early seventies. This paradigm shift was motivated by the need to reduce circuit complexity. It's much easier, as the first step, to convert analog to digital and leave the computation to a digital computing system. Today this principle is used in many available sensors, where the input is analog and the output is digital serial/parallel data. Most of these sensors are easily interfaced to microcontrollers but there are other applications where the microcontroller lacks the computing power to do the analog equivalent such as audio or video processing. However, digital is still king with the use of Digital Signal Processor (DSP), a microprocessor device with architecture design for performing the many floating-point calculations needed to do the analog equivalent. For example, DPS are employed in today's audio codec.

So, is analog computing making a comeback? Analog computing may have value as a tool for research and teaching, but it's very unlikely to be a leading technology employed in new designs such as complex control systems.

Cheers,

Jim