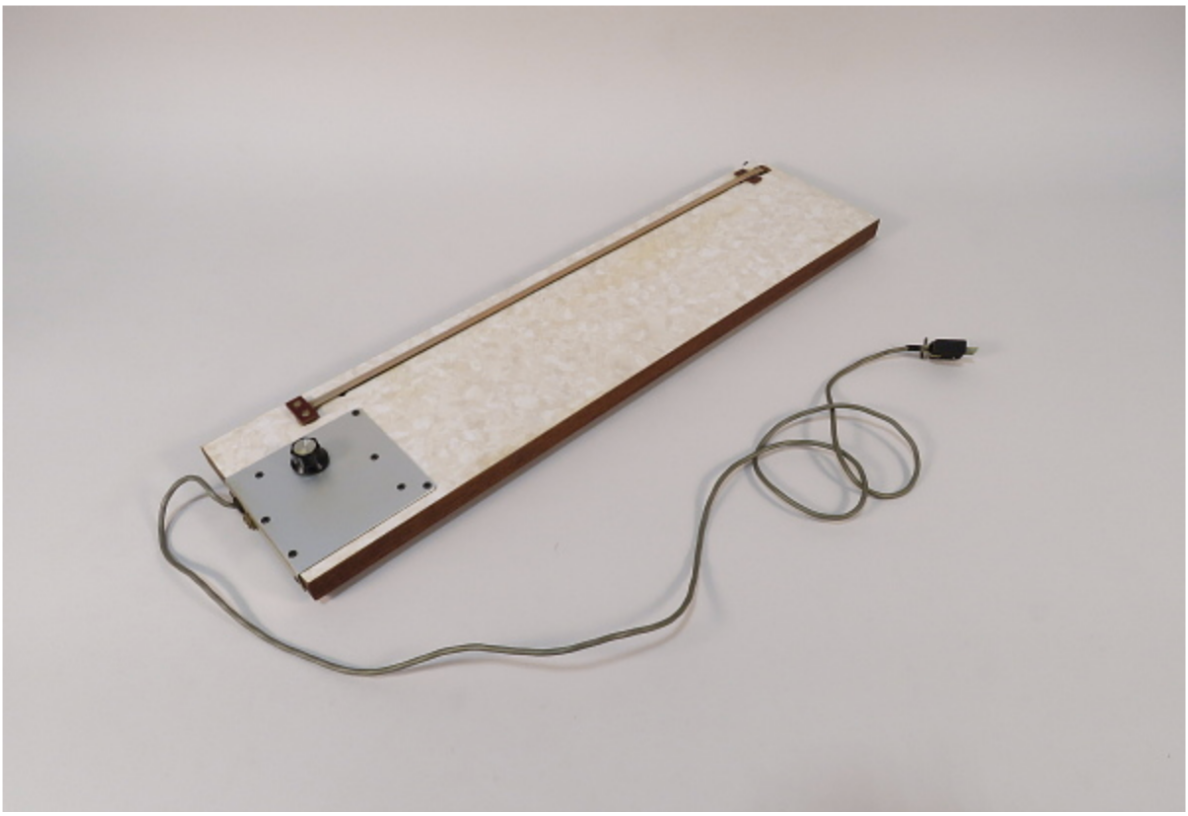
Micromoog Ribbon Demo: Some Background Info

by

Tom Rhea

Live Recording: Moog Dealer Personnel Training Event
"Moog University" at Kenmore, NY ca. 1979

The Moog Micromoog's ribbon design is due to Jim Scott, assisted by Tom Rhea. It grew out of our understanding of and experiences with the Model 955 Ribbon Controller, part of the Moog Modular 900 Series of synthesizers:



We had heard Chris Swansen play the Model 955 during live performances in Trumansburg, NY and elsewhere.

The Micromoog's prototype ribbon is shown below:

The Moog Micromoog prototype was located at David Van Koevering's home in Cleveland, TN when it burned to the ground . . .

Micromoog prototype's initial "keyboard" as first devised by Jim Scott using parts he happened to have on hand:

Tom Rhea at one of his storage lockers holding scorched Micromoog prototype:

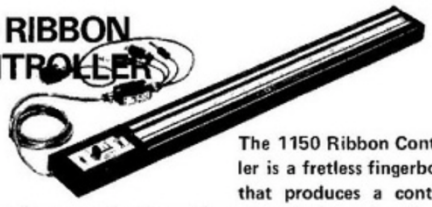
The Moog Micromoog's ribbon controller advanced the possibilities of creative pitch bending to new heights:

This Micromoog ribbon controller has no "dead spot." The ribbon always *can* control the VCO oscillator's pitch when it is depressed sufficiently. This lack of a dead spot makes it possible to create an accurate and playable vibrato by hand. There is a discernible center position that can be felt by the performer's finger. This is provided by a short wire at a 90 degree angle to the ribbon controller's orientation (forward and backward with respect to the keyboard). This short wire can be touched without engaging the ribbon, and then the ribbon can be activated by pressing down slightly. You always can know "where you are."

The Micromoog ribbon controller has "zero electrical inertia" with respect to the control signal it produces. When it is released, it will "fly back" to having *no effect* on pitch control *instantly.* This is unlike a wheel or pot that must be moved *physically* back to its center position. This makes it possible to create many effects impossible with a wheel, by simply tapping on the ribbon. My audio demo at https://www.drtomrhea.com/resources see under (Functional Design of Synthesizers: Development of the Moog Micromoog) provides a good idea of possibilities. I was playing many of the notes heard by tapping on the ribbon–in between notes played on the keyboard. Makes me sound like a keyboard wizard, which I wasn't!

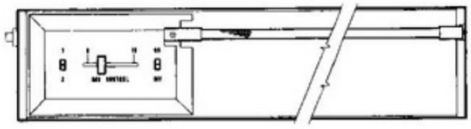
The Moog 1150 Ribbon Controller for Minimoog and Sonic Six preceded the Micromoog's ribbon controller:

1150 RIBBON CONTROLLER



The 1150 Ribbon Controller is a fretless fingerboard that produces a continuously variable control voltage. The voltage is determined by the point depressed on the surface of a taut metallic ribbon. A slide potentiometer provides a second continuously variable control voltage. Triggers (both "S" and "V") are produced by touching etched traces on the fingerboard.

1150 Ribbon Controller



The 1150 is activated by the ON-OFF switch to the left of the ribbon element. When switched ON, the 1150 Ribbon Controller provides two independent, continuously variable control voltages available at the black and red phone plugs. S-Triggers are available at the two-prong plug; V-Triggers are available at the six-prong plug. The control voltage at the *red* phone plug may be varied continuously according to the point at which the *ribbon* is depressed; the voltage corresponding to the last point depressed is held when the ribbon is released. The 1-2 switch selects the span of voltage the ribbon covers – position 1 selects a *wide* voltage span equivalent to ten or more octaves of pitch control. Position 2 is the *narrow* span, in which the spatial relationship of a musical interval played on the ribbon approximates that of the same interval played on the keyboard. Note that the ribbon on the 1150 is a *linear* device, like a keyboard – a musical interval retains the same spatial relationship on any portion of the ribbon. This prevents cramped fingering of upper notes as encountered on, say, a violin fingerboard.

The voltage at the *black* phone plug is controlled by the AUXILIARY CONTROL slider, which is calibrated from zero (no voltage) to 10 (maximum voltage, determined by the supply voltage available at the ACCESSORY socket on model of synthesizer in use.)

Triggers (both "S" and "V") are generated when the players finger bridges the etched metal traces at *any* point along the fingerboard – the particular position touched on the traces has *no effect* on the control voltage produced by touching the ribbon. The S-Trigger is made available at the two-prong plug; the V-Trigger is available at the six-prong plug and appropriate models of Moog™ synthesizers are wired to receive this trigger through the ACCESSORY socket.