Model 220 Polyphonic Touch'n'Run Voltage Array

firmware version 1.05

Up-to-four-voice truly polyphonic, freely tunable and scalable, pressure sensitive musical keyboard controller with vast sequencing capabilities. The design is analogue so that no voltages are being digitized and the internal microcomputer just traces the finger touches and routes them through the analogue circuitry. There's no keyboard scanning either, all keys work in realtime having their dedicated logical channels. Control buttons are arranged in coloured groups for convenience.

HOLD - Memorizes activated keys and can reactivate them if pressed again.

Poly, Duo, Mono - Switches the priority logic into respective mode that becomes some kind of global prism for key interpreter engine throughout the system. Each mode has several submodes selectable by holding button in question and touching appropriate key (0, 1, 2).
hint - For current firmware version, there're three submodes for Poly and Duo, and two for Mono.

Random, Shuttle, <- , -> , Actikey - Defines the directional behaviour of the sequencer/arpeggiator, applicable to almost every situation, with very few exceptions. The fifth direction Actikey dictates the keys to be played exactly the same order they were activated. One of the following modes has to be recalled to get to sequencer/arpeggiator: Actikey, Zoning or Combo.
hint - When in Actikey, user can easily switch to one of four directions by pressing appropriate button and then revert back to Actikey mode by pushing Actikey again.

Zoning - One finger splits the sequencer databank into two zones, second finger immediately defines loop, three fingers make four independent sequences. Poly, Duo, Mono buttons

work in different manner in this mode. Poly and Mono change the outputs' engagement while Duo button makes the pattern act asynchronously from zone to zone.

Keybrd - Press that button for live touch keyboard playing, no sequencer/arpeggiator is engaged.

Combo - Provides up-to-three-voice keyboard (W, X, Y outputs) and arpeggiator on output Z, sharing the common voltage databank. The arpeggiator tracery is taken whether from the last memorized Actikey or can be programmed by holding Combo button and touching keys, all in realtime.

Cluster - Allows every key to be whether a chord or an arpeggio, thus presenting the performance surface of 16 independent cells. This is the only mode that needs to be pre-programmed before use. Once the Cluster button is pressed the user chooses either Keybrd or Actikey and then the touch keys become available for activation. When needed keys are defined one can advance to the next cluster cell by pressing **->** button and repeat aforementioned actions. Later editing of programmed data is easily possible, with **<-** and **->** buttons. Pressing Cluster again confirms changes and permits playing. ***hint*** - If Actikey is chosen for particular key, Poly/Mono modes selection also becomes an option.

Capture - This mode is much like the one that legendary Buchla Thunder had. It records what is being played and plays it back. When the Capture button is pressed, the system gets ready and starts recording once a key is touched. User can initiate an immediate playback in any of two directions by pressing either **->** or **<-** button. Playback speed is adjustable during playback by activating touch keys with Capture button pressed, the key #8 sets the original speed. Special "Punch-In" functionality is accomplished so that the user can play during captured data is being played. The Hold button pauses the playback. To erase previous session and re-arm the recorder,

just press Capture and Reset buttons simultaneously.
hint - by pressing Reset during recording, the system erases the buffer and sets the record ready state.

Pattern - Defines the global rhythmic pattern applicable to all sequencing/arpeggiation modes.

RESET - Holding this button longer than 2 seconds invokes system reset. All user presets retain.

Load/Save presets - Located under **<-** and **->** buttons and marked as **L** and **S** respectively. Hold the button and touch the appropriate key to execute the needed action. There're 16 user preset slots.
hint - Voltages are not saved as a part of preset due to their analogue nature. The content of Capture buffer cannot be saved either.

****IMPORTANT**** - All sequencing/arpeggiation modes have to be driven by external timing pulse applied to the **event advance** input.

Buchla 216 mode - pressing Keybrd and Reset buttons simultaneously turns the system into Buchla 216 emulation mode, where first three keys are routed to the outputs W, X, Y while others act as a monophonic keyboard.
hint - exit from this mode is possible only by system reset procedure mentioned above.

User Memory Initialization - pressing **->** and Reset buttons simultaneously causes the user memory to be reset and initialized, thus all user presets will be destroyed.