

### Potentiometers

Label	Function
Stage 1	Programming Pot - Adjusts the voltage of Stage 1
Stage 2	Programming Pot - Adjusts the voltage of Stage 2
Stage 3	Programming Pot - Adjusts the voltage of Stage 3
Stage 4	Programming Pot - Adjusts the voltage of Stage 4
Stage 5	Programming Pot - Adjusts the voltage of Stage 5
Stage 6	Programming Pot - Adjusts the voltage of Stage 6
Stage 7	Programming Pot - Adjusts the voltage of Stage 7
Stage 8	Programming Pot - Adjusts the voltage of Stage 8
Stage 9	Programming Pot - Adjusts the voltage of Stage 9
Stage 10	Programming Pot - Adjusts the voltage of Stage 10
Stage 11	Programming Pot - Adjusts the voltage of Stage 11
Stage 12	Programming Pot - Adjusts the voltage of Stage 12
Stage 13	Programming Pot - Adjusts the voltage of Stage 13
Stage 14	Programming Pot - Adjusts the voltage of Stage 14
Stage 15	Programming Pot - Adjusts the voltage of Stage 15
Stage 16	Programming Pot - Adjusts the voltage of Stage 16
Slew A	Adjusts the slew of Voltage Output A
Slew B	Adjusts the slew of Voltage Output B
Slew A+B	Adjusts the slew of Voltage Output A+B
Random Level	Adjusts the level of the applied random source voltage
Random Reference	Adjusts the threshold at which the applied random source voltage, as adjusted by Random Level, will create a digital '1' to be inserted into the bit pattern at the rising edge of the clock.
Total Number of Potentiometers: 21	

### Toggle Switches

Label	Function
Pattern Switch 1	Programs a 1 or 0 for pattern bit 1
Pattern Switch 2	Programs a 1 or 0 for pattern bit 2
Pattern Switch 3	Programs a 1 or 0 for pattern bit 3
Pattern Switch 4	Programs a 1 or 0 for pattern bit 4
Pattern Switch 5	Programs a 1 or 0 for pattern bit 5
Pattern Switch 6	Programs a 1 or 0 for pattern bit 6
Pattern Switch 7	Programs a 1 or 0 for pattern bit 7
Pattern Switch 8	Programs a 1 or 0 for pattern bit 8
Pattern Switch 9	Programs a 1 or 0 for pattern bit 9
Pattern Switch 10	Programs a 1 or 0 for pattern bit 10
Pattern Switch 11	Programs a 1 or 0 for pattern bit 11
Pattern Switch 12	Programs a 1 or 0 for pattern bit 12
Pattern Switch 13	Programs a 1 or 0 for pattern bit 13
Pattern Switch 14	Programs a 1 or 0 for pattern bit 14
Pattern Switch 15	Programs a 1 or 0 for pattern bit 15

Label	Function
Pattern Switch 16	Programs a 1 or 0 for pattern bit 16
Gate Bus Switch 1	Directs signal to Gate Bus 1, 2 or 3 from Step 1
Gate Bus Switch 2	Directs signal to Gate Bus 1, 2 or 3 from Step 2
Gate Bus Switch 3	Directs signal to Gate Bus 1, 2 or 3 from Step 3
Gate Bus Switch 4	Directs signal to Gate Bus 1, 2 or 3 from Step 4
Gate Bus Switch 5	Directs signal to Gate Bus 1, 2 or 3 from Step 5
Gate Bus Switch 6	Directs signal to Gate Bus 1, 2 or 3 from Step 6
Gate Bus Switch 7	Directs signal to Gate Bus 1, 2 or 3 from Step 7
Gate Bus Switch 8	Directs signal to Gate Bus 1, 2 or 3 from Step 8
Gate Bus Switch 9	Directs signal to Gate Bus 1, 2 or 3 from Step 9
Gate Bus Switch 10	Directs signal to Gate Bus 1, 2 or 3 from Step 10
Gate Bus Switch 11	Directs signal to Gate Bus 1, 2 or 3 from Step 11
Gate Bus Switch 12	Directs signal to Gate Bus 1, 2 or 3 from Step 12
Gate Bus Switch 13	Directs signal to Gate Bus 1, 2 or 3 from Step 13
Gate Bus Switch 14	Directs signal to Gate Bus 1, 2 or 3 from Step 14
Gate Bus Switch 15	Directs signal to Gate Bus 1, 2 or 3 from Step 15
Gate Bus Switch 16	Directs signal to Gate Bus 1, 2 or 3 from Step 16
Merge 1 Switch	Merges Gate Bus 1 adjacent gates and triggers
Merge 2 Switch	Merges Gate Bus 2 adjacent gates and triggers
Merge 3 Switch	Merges Gate Bus 3 adjacent gates and triggers
Bus 1 Load Switch	Enables pattern re-load when Bus 1 transitions to high
Clock Enable Switch	Connects/Disconnects clock input
Rand/Pat Switch	Switches between random and programmed pattern mode
8X2/16X1 Switch	Switches between two 8 stage patterns or one 16 stage pattern
Invert B Switch	Enables inversion of Register B recirculated data
Total Number of Toggle Switches: 40	

### **Momentary Pushbutton Switches**

Label	Function
Manual Load	Loads programmed pattern into shift register
Manual Step	Advances shift register one step with each key press
Total Number of Momentary Pushbutton Switches: 2	

### **Rotary Switches**

Label	Function
Range	Selects maximum range of programming pots (eight position)
Total Number of Rotary Switches: 1	

**Connectors**

Label	Function
A Output	Outputs voltage pattern generated by section A (first 8 stages)
B Output	Outputs voltage pattern generated by section B (second 8 stages)
A+B Output	Outputs summed A+B pattern signal (all 16 stages)
Master Gate	Outputs constant gate signal synchronous with clock
Master Trigger	Outputs constant trigger signal synchronous with clock
Bus 1 Gate	Outputs Gate Bus 1 gate signal
Bus 1 Trigger	Outputs Gate Bus 1 trigger signal
Bus 2 Gate	Outputs Gate Bus 2 gate signal
Bus 2 Trigger	Outputs Gate Bus 2 trigger signal
Bus 3 Gate	Outputs Gate Bus 3 gate signal
Bus 3 Trigger	Outputs Gate Bus 3 trigger signal
Clock Input	Accepts clock signal
External Load In	Accepts pulse signal to initiate pattern load on rising edge
Random In	Accepts signal from which random patterns are generated
Total Number of connectors: 14	

**LED Indicators**

Label	Function
Pattern Bit 1	Indicates active bit/stage 1
Pattern Bit 2	Indicates active bit/stage 2
Pattern Bit 3	Indicates active bit/stage 3
Pattern Bit 4	Indicates active bit/stage 4
Pattern Bit 5	Indicates active bit/stage 5
Pattern Bit 6	Indicates active bit/stage 6
Pattern Bit 7	Indicates active bit/stage 7
Pattern Bit 8	Indicates active bit/stage 8
Pattern Bit 9	Indicates active bit/stage 9
Pattern Bit 10	Indicates active bit/stage 10
Pattern Bit 11	Indicates active bit/stage 11
Pattern Bit 12	Indicates active bit/stage 12
Pattern Bit 13	Indicates active bit/stage 13
Pattern Bit 14	Indicates active bit/stage 14
Pattern Bit 15	Indicates active bit/stage 15
Pattern Bit 16	Indicates active bit/stage 16
Clock	Indicates clock rate
Master Gate Bus	Indicates gate present on Master Gate Bus
Gate Bus 1	Indicates gate present on Gate Bus 1
Gate Bus 2	Indicates gate present on Gate Bus 2
Gate Bus 3	Indicates gate present on Gate Bus 3
Random Reference	Indicates random signal has crossed reference and will generate a "1" if a rising clock signal is present
Total Number of LEDs: 22	

### Optional Elements

Label	Function
Aux A Output	Outputs voltage pattern generated by section A (first 8 stages) Not affected by Slew Control A
Aux B Output	Outputs voltage pattern generated by section B (second 8 stages) Not affected by Slew Control B
Aux A+B Output	Outputs summed A+B pattern signal (all 16 stages) Not affected by A+B Slew Control
Total Number of Optional Connectors: 3	

Label	Function
Manual Level	Pot selected by one position of rotary level switch that allows a variable, manually programmed maximum programmed pot voltage
Total Number of Optional Potentiometers: 1	

Some panel recommendations:

It's recommended that the Pattern LEDs, Pattern Switches, Programming Pots, and Gate Bus Switches be placed in four horizontal rows on the front panel, arranged in 16 columns of these elements. Ideally, the pattern programming switches would be placed directly under the pattern LEDs, with the programming pots beneath the pattern switches, and the gate bus switches below the programming pots.

It is also recommended that some demarcation be given between the first eight columns and second eight columns of these four rows (part of the functionality splits the two eight step sections into individual yet linked entities). This demarcation should be graphic rather than an actual increased dimensional spacing between the first eight and second eight columns.

The gate bus LEDs ideally would be placed in a position so that they are not in a direct line horizontally with the pattern LEDs (no LED should be placed in a direct horizontal line with the pattern LEDs).

The clock LED and Master Gate bus LED provide essentially the same indication. However, it is beneficial to have the clock LED situated close to the clock input. It is similarly beneficial to have the Master Gate Bus LED grouped with the other gate bus LEDs.

It is an aid in Klee programming that every fourth programming pot have some sort of outline distinguishing it from the other programming pots.

This list does not include any power On/Off switch that the builder may wish to implement.