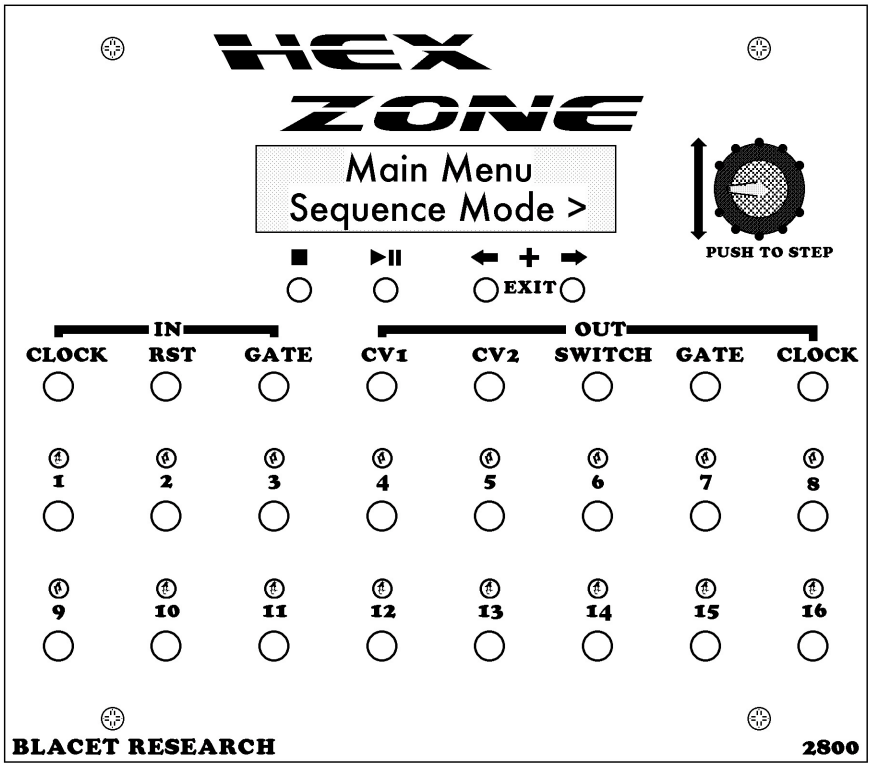
HEX ZONE

16 Channel
μP Controlled Sequential Switch

BLACET RESEARCH MODEL SS2800

User & Assembly Manual



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Introduction

The Blacet SS2800 Hex Zone is a microprocessor controlled 16 stage sequential switch with programmable extras such as 2 control voltage outputs per step, gate width per step (+ rest, hold, loop) and dividable clock out.

All programmable features are automatically stored in non-volatile memory. The memory holds 32 sequences and 60 "chains" of sequences.

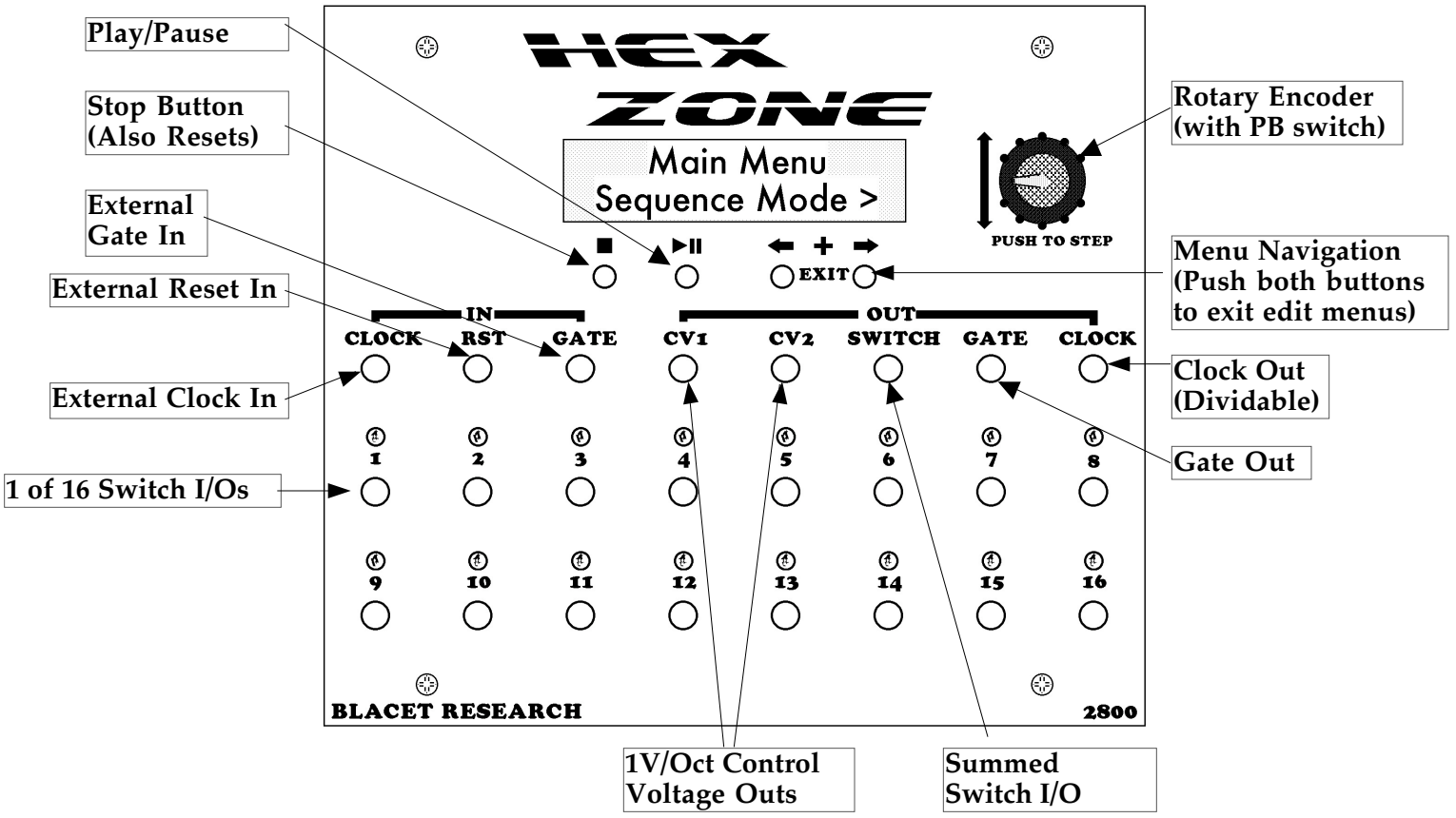
The module has an internal clock that may be programmed in BPM or TPS (Time Per Step) or an external clock may be used. External inputs are also provided for Gate and Reset.

The sixteen switches are fully bidirectional so that the "Switch" jack can be an input or output. The active switch can follow the logical sequence or the module can be programmed to activate any switch on any step. A random function is also available.

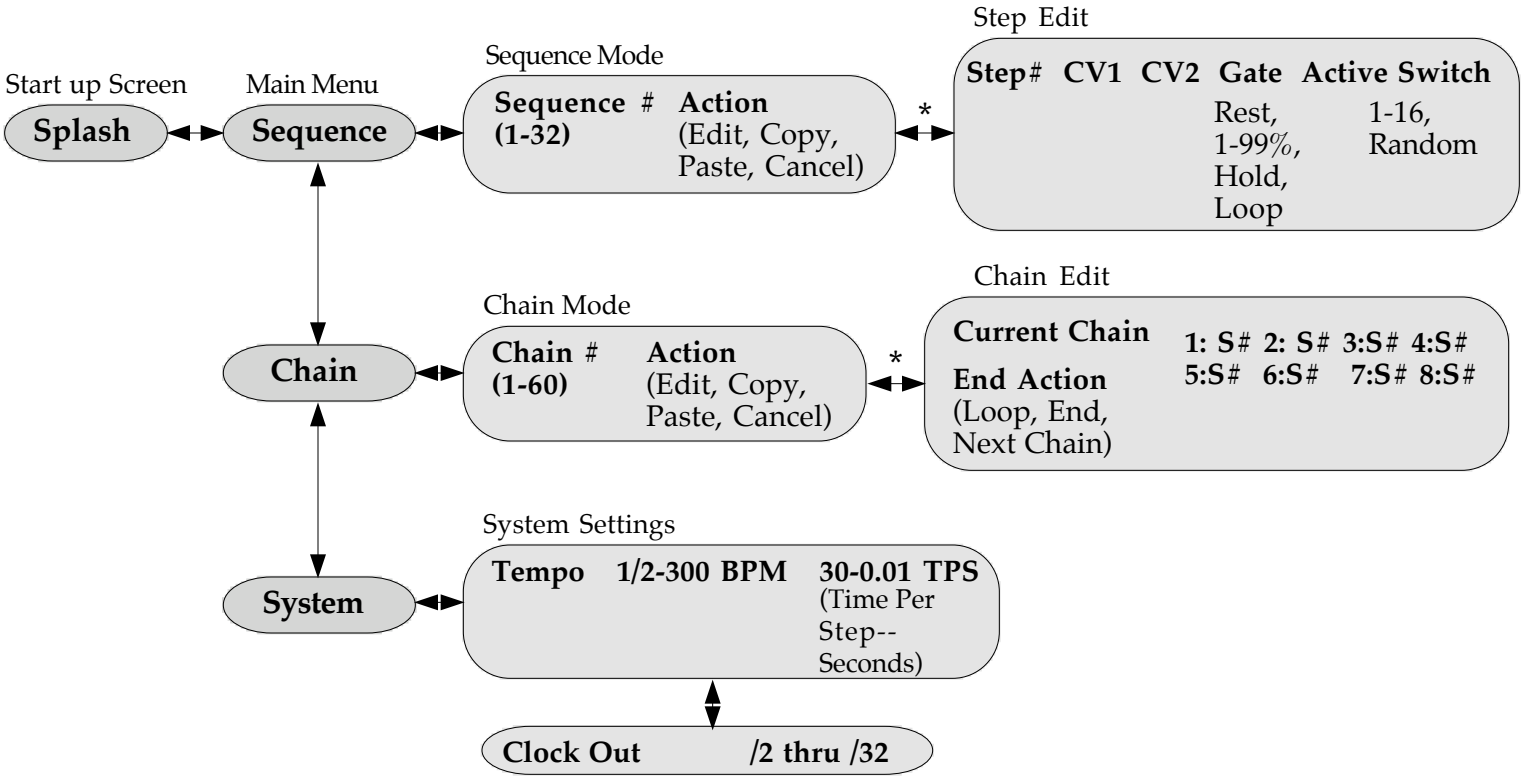
A high quality rotary encoder with a built in push button switch is used to select most programmable settings. The push button can be used in the sequence edit mode to step through the sequence, allowing fast editing.

A backlit LCD display provides easy to read information.

We designed the Hex Zone to get you up and running and having fun without having to plow through hundreds of manual pages of esoteric features and complex menus!



Menu System



* Press "**Exit**" (both arrow buttons)to exit Menus on right

Controls and Operation

The Hex Zone is a real time module, meaning that you can edit sequences and chains as they are running.

Saving is automatic so copy and paste anything you want to save before editing. You might want to consider using the first few sequences or chains as "working area" and the higher numbers as "save area".

The module also remembers the last sequence or chain playing before power down. All that is necessary on power up is to hit the Play button.

Main Menu: Use the rotary encoder (RE) to select the Sequence, Chain or System Menu. Press the right arrow push button.

Sequencer Mode: The current sequence (1-32) can be selected with the RE. Press the right arrow to move the brackets over to **Edit**. Now you can select the **Copy** function with the RE or press the right arrow again to enter the **Step Edit** Menu.

Step Edit Menu: From this menu, you can select the step number (**ST**) (1-16), enter the note values for **CV1** and **CV2**, set the gate width (**GW**) from 0 (rest) to 99% of the step width, Hold the gate or place a loop point. You can also alter the active switch (**SW**) (1-16) on each step or make this a random function.

also alter the active switch (**SW**) (1-16) on each step or make this a random function.

The RE push button switch will advance the step (if sequencer is not in Play mode), allowing quick editing.

Copy Function: While you are in the Sequence you wish to copy, select **Copy** as mentioned above. Press the right arrow. The brackets will move to the **Seq#** area where you can select the destination sequence with the RE. Press the right arrow again and the brackets will show **Paste.** Press the right arrow once more to complete the paste. To cancel the operation, you can select **Cancel** with the RE and push the right arrow or use the left arrow to exit the menu.

Chain Mode: Sequences can be chained together to form complex patterns. The current chain (1-60) can be selected with the RE. Push the right arrow twice to enter the edit menu. Note that you can also select **Copy** as shown in the Sequence Mode. See **Copy Function** above to copy chains.

In the Chain Mode, you can edit the currently playing chain or another chain. Pushing the Stop button is required before a new Chain can be played.

The menu shows the current chain being edited (**C1-60**) and the 8 positions in the chain where sequence numbers can be placed. To enter sequences, use the right or left arrow to position the arrow cursor and the RE to select a sequence number. Note that the cursor *under* the number moves as the sequence is playing. (If the chain being edited is not the one currently being played, this play cursor will *not* be present.

The End Action area on the lower left allows you to loop (**LP**), **END**, or "chain the chain" by selecting another chain (**N1-60**). The chain will complete and then jump to the selected chain, playing that chain. This process can be repeated as desired. By cross referencing two chains to each other, a 16 position chain that loops can be achieved.

The RE push button switch will provide shortcuts in chain mode:

If the Chain is playing and the arrow cursor is pointing to a chain element, pushing the switch will seamlessly play that element.

If the Chain is not playing and the arrow cursor is pointing to a chain element, pushing the switch will move the play cursor to that element. Play will commence from this point.

If the arrow cursor is on End Action and is showing a chain number (NX), pushing the switch will switch the chain currently being edited to that number, without interrupting play.

System Settings: Select **Tempo** or **Clock Out** with the RE.

In **Tempo**, press the right arrow and use the RE to select the desired setting. Press the right arrow again to toggle between **BPM** (Beats Per Measure) and **TPS** (Time Per Step).

In **Clock Out**, press the right arrow and use the RE to select the desired setting of divide by 1, 2, 4, 8, 16, or 32. This effects both the internal clock and any external clock and is available at the **Clock Out** jack.

Power

Power Input Connector PWR: This PCB connector requires a source of regulated +15Vdc and -15Vdc power to run the module. Use a Blacet PS500 supply or the equivalent.

Connections to this connector should be made only when the power supply is OFF and the connector must be positioned correctly on the pins. As using the wrong supply can cause damage to the unit, please contact us if you have any questions! Do not attempt to use "wall warts" to power the module.

Calibration: Connect a DMM to the left side of diode DB (com) and the left side of C3 (+). Set RT1 to 5.20V.

Specifications

Front Panel Size: 5.25" H x 6" W
Module Depth: 2.1"
Input/Output Jacks: 3.5 mm (1/8")
Power: +/-15 Vdc @+150/-1mA

Precautions

The heatsinked regulator (U9) and the small red power resistor (R21) on the top right of the PCB get hot in operation. Avoid touching them.

Avoid touching anything on the PCB while power is on, especially the connector pins to the display as this may cause a malfunction due to data interference between the digital components. Cycle the power to reset if this occurs.

Bug Reports

Bugs are almost inevitable in any software based project. Even though we have spent many long hours weeding them out, we expect that a few will crop up and would appreciate your feedback!

Please DO NOT post these to any discussion lists including the Blacet one!

E-mail them directly to blacet@blacet.com.

To be useful, include as much information as possible so that we can duplicate the bug.