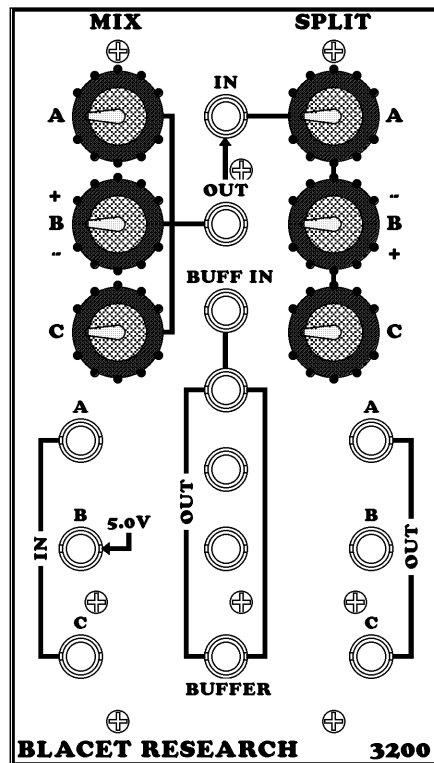


# Splitter/Buffer/Mixer

## Utility Module

### BLACET RESEARCH MODEL SBM3200

#### User & Assembly Manual



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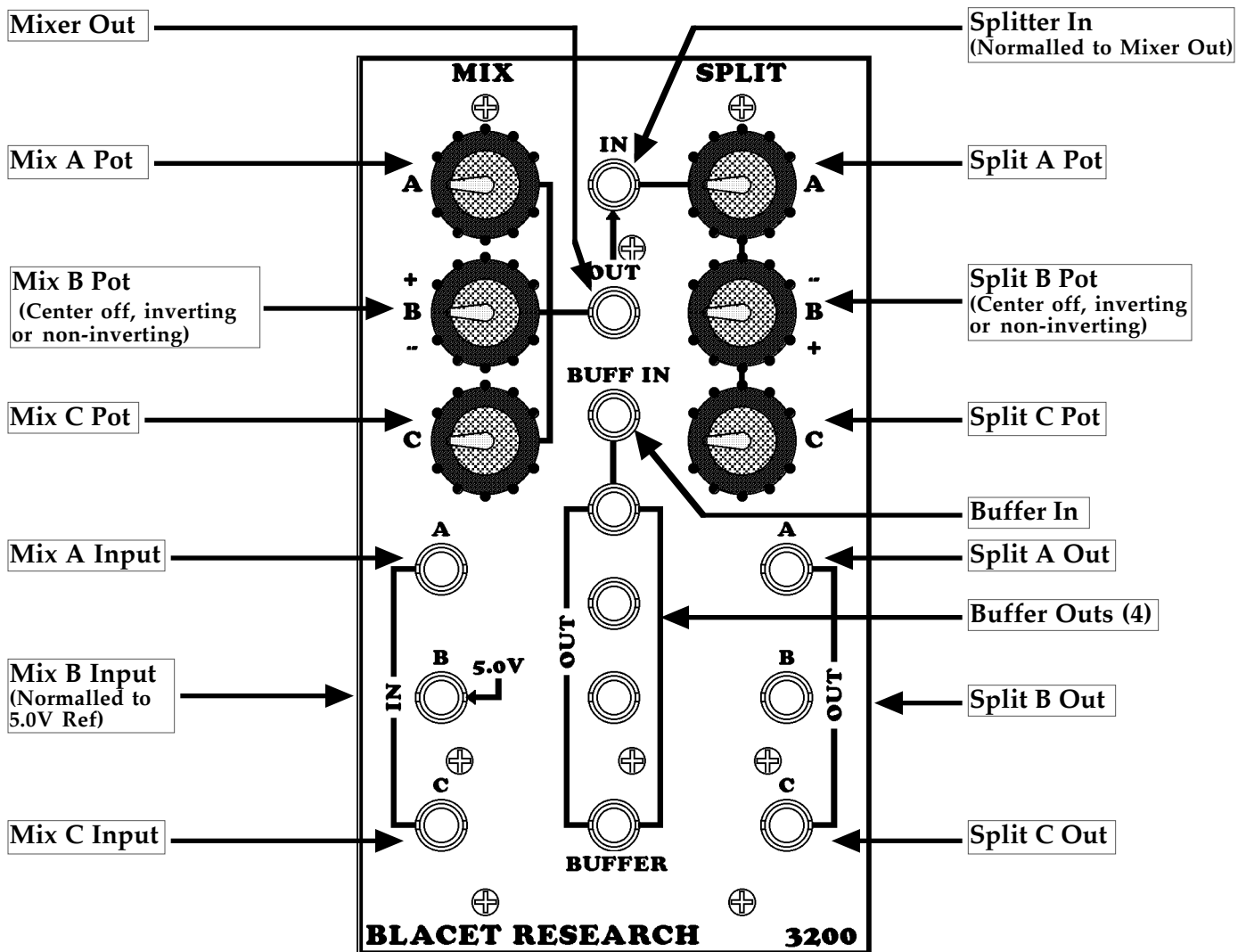
## Introduction

The Blacet SBM3200 combines three channel Mixing and three channel Splitting in one module. Also included is a four output active ultra precision Buffer, especially useful for driving multiple VCOs.

Both the Mixer and Splitter have a "center off" phase shifting control on the B Channel allowing waveforms and voltages to be inverted or not. The B Channel of the Mixer has a normalised 5.0V reference, which is available when nothing is plugged into the B jack. This allows a variable voltage from -5 to +5 volts to be added to the mix.

The output of the Mixer is normalled to the In of the Splitter when nothing is plugged into the Splitter In.

All inputs accept CVs or audio and these pass through the module uninverted except when the B pots are in the minus half of their rotation.



## Controls and Operation

The SBM is basically three modules on one panel; with the added bonus of a variable 5.0V reference.

**Mixer:** The left side of the panel is a three input Mixer which can be used to mix CVs or audio signals. Channel B has a “center off” pot that can be used to invert the input. The B In has a normalled 5.0V reference which can be used when nothing is plugged into B. This results in a variable -5 to +5V which can be used by itself or to change the level of the combined A and C Inputs.

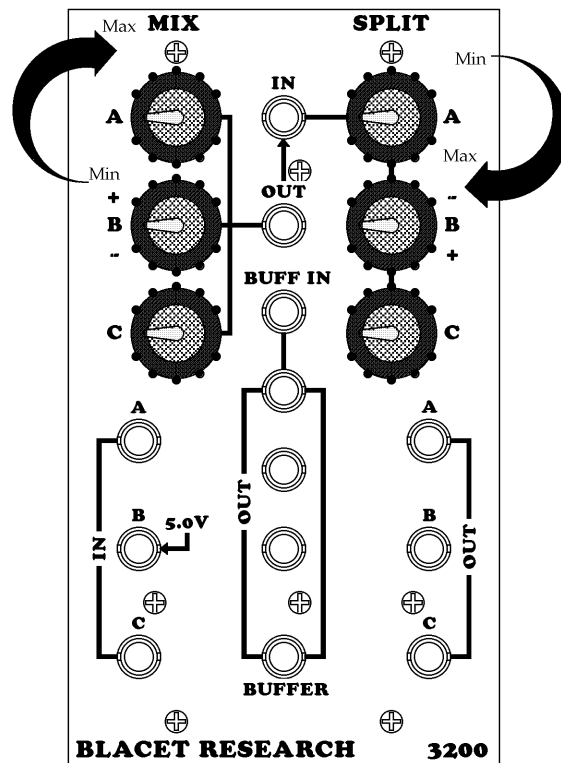
The output of the Mixer is normalled to the Splitter Input which is useful for sending CV or audio mixes to several destinations at different levels. This is a powerful tool for modulation routing.

**Splitter:** The right side of the panel is a one input, three output fully buffered Splitter which can be used to send CVs or audio signals to multiple destinations. A splitter is related to a multiple or “Multi” but features active circuitry for more control and less loading of the input signal. Channel B has a “center off” pot that can be used to invert the signal. When nothing is plugged into the Split In, it is normalled to the Mix Out, as mentioned above.

**Buffer:** Located in the center of the panel is a one in four out buffer. This is a fully active design with a low offset op amp buffer on each output. This is especially useful when a single voltage is used to drive multiple VCOs as it reduces loading on the source and minimizes frequency tracking errors.

**Splitter Knob Pointer Orientation:** Because the PCB on the Splitter side of the module is reversed, the **knob pointers** will operate in a mirrored fashion, as shown below. The pots still operate in the usual way, with FCCW being off or minimum and FCW being full on or maximum. The knob manufacturer had a pointer option for this knob that would have “fixed” this but they are out of business.

Pot B is still center off. Note that the silkscreen shows the plus sign on the bottom of the pot to compensate.



**Power Input Connector PWR:** This PCB connector requires a source of regulated +15Vdc @30mA and -15Vdc @30mA power to run the module. Use a Blacet PS505 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**

RT1 and RT2 are used to null out the center detent of the two B pots.

Insert an audio signal into Mix B and monitor Mix Out. Rotate Pot B so it settles in the center detent and adjust RT1 for minimum audio.

Insert an audio signal into Split In and monitor Split B Out. Rotate Pot B so it settles in the center detent and adjust RT2 for minimum audio.