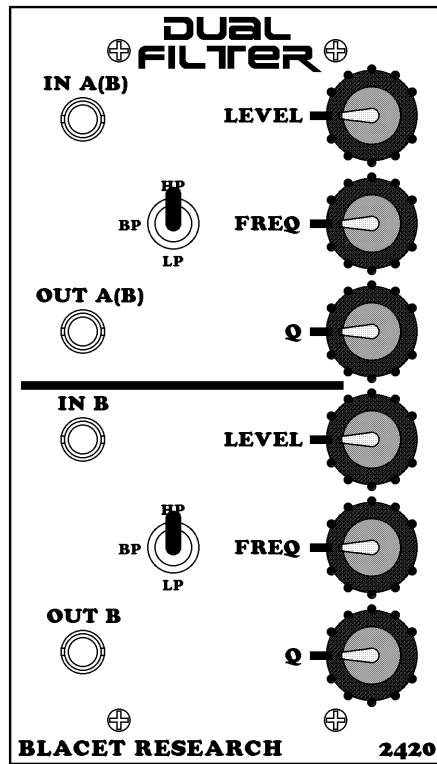


# DF2420

## BLACET RESEARCH MODEL DF2420 Dual State Variable Filter Module

### User Manual



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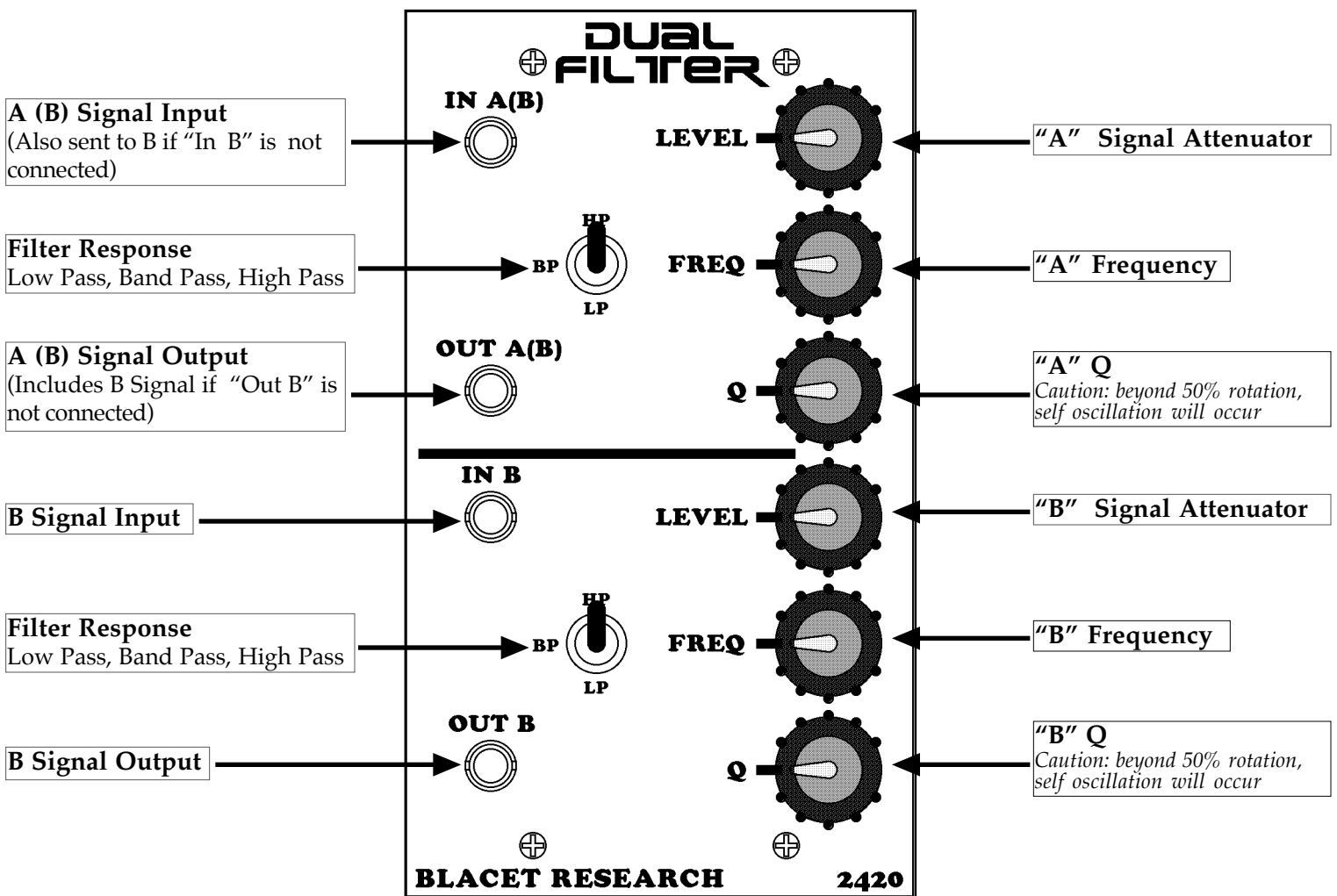
# Introduction

The DF2420 is a manually controlled, dual state variable filter. Each filter can be switched to LP, BP or HP response. An input level attenuator and a wide range Q control is provided for each filter.

Each filter may be used separately or in series with each other. Normaling allows convenient parallel uses such as one input signal being routed to both filters with mixed or separate outputs. Two signal inputs may also be processed by each filter section and mixed on the "A (B)" output.

A phase uncertainty circuit provides subtle sound animation when a signal is plugged into the "A" input and the "B" input is not used.

Applications include formant filtering, tone control and basic percussion sounds.



## Controls and Operation

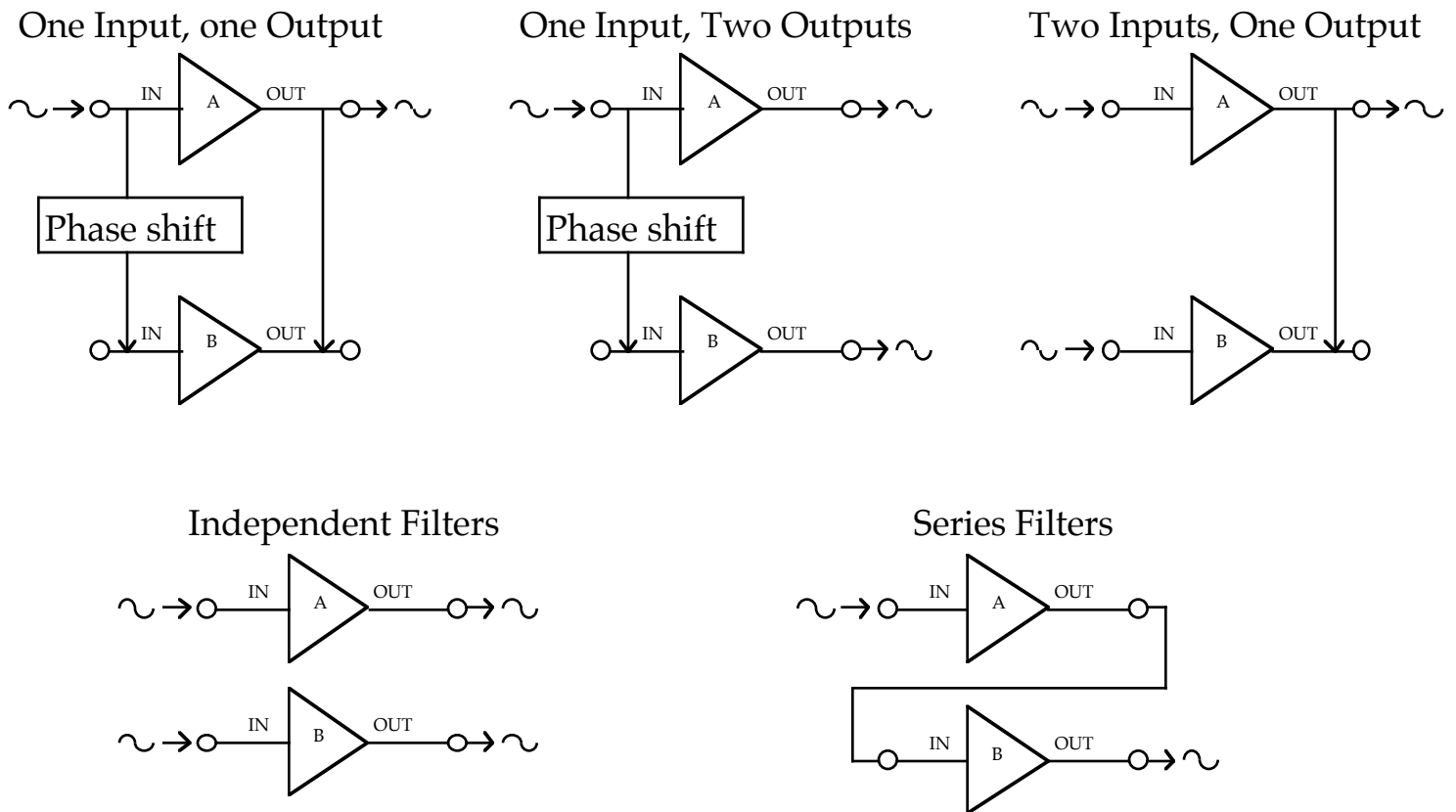
**IN A(B), OUT A(B), LP, BP, HP Switch, Level, Freq and Q pots:** The 2420 has two filter sections. A signal applied to In A(B) will be filtered and appear at Out A(B). The signal level will be determined by the setting of the Level pot. The center frequency will be determined by the Freq pot.

The "Q" will be determined by the Q pot, with self oscillation likely beyond 50% rotation. **This will result in an increase in output level so use with caution.**

**IN B, OUT B, LP, BP, HP switch, Level, Freq and Q pots:** The second section of the 2420 operates in a similar manner, except for the presence of jack normalling. If nothing is plugged into In B, then the In A(B) signal will also be connected internally to the B filter via a phase uncertainty circuit.

If nothing is plugged into Out B, then the Out B signal will be summed internally with the A signal and appear at the Out A(B) jack. This avoids the use of an external mixer.

The diagrams below illustrate some typical configurations.



**Power Input Connector J5:** 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 J5 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.

## Safety Information

The use of any audio equipment requires some care to avoid potential damage to the hearing of the operator or their audience. Even short term exposure to high audio levels can lead to temporary hearing loss and ringing in the ears. Repeated exposure can eventually lead to permanent hearing problems.

Your ears have to last you all your life; take a few precautions to keep them happy so that you can enjoy music even when you are older!

- When using mid to high volume levels, be aware that the ear will lose sensitivity at some point, causing you to turn up the volume to compensate. In an extended session, this can happen repeatedly, until the volume is quite high and potentially dangerous.

- Break up sessions into half hour segments; avoid “all night” jams.
- Take breaks often and choose a maximum volume setting for “mandatory” breaks.
- Try using very, very low volumes as a break.
- Music can sound quite different at low levels; use low volumes for initial setup and routine practice, saving high levels for final mixes.
- If your music starts to sound “painful”, it’s most likely causing hearing damage as well!

## Specifications

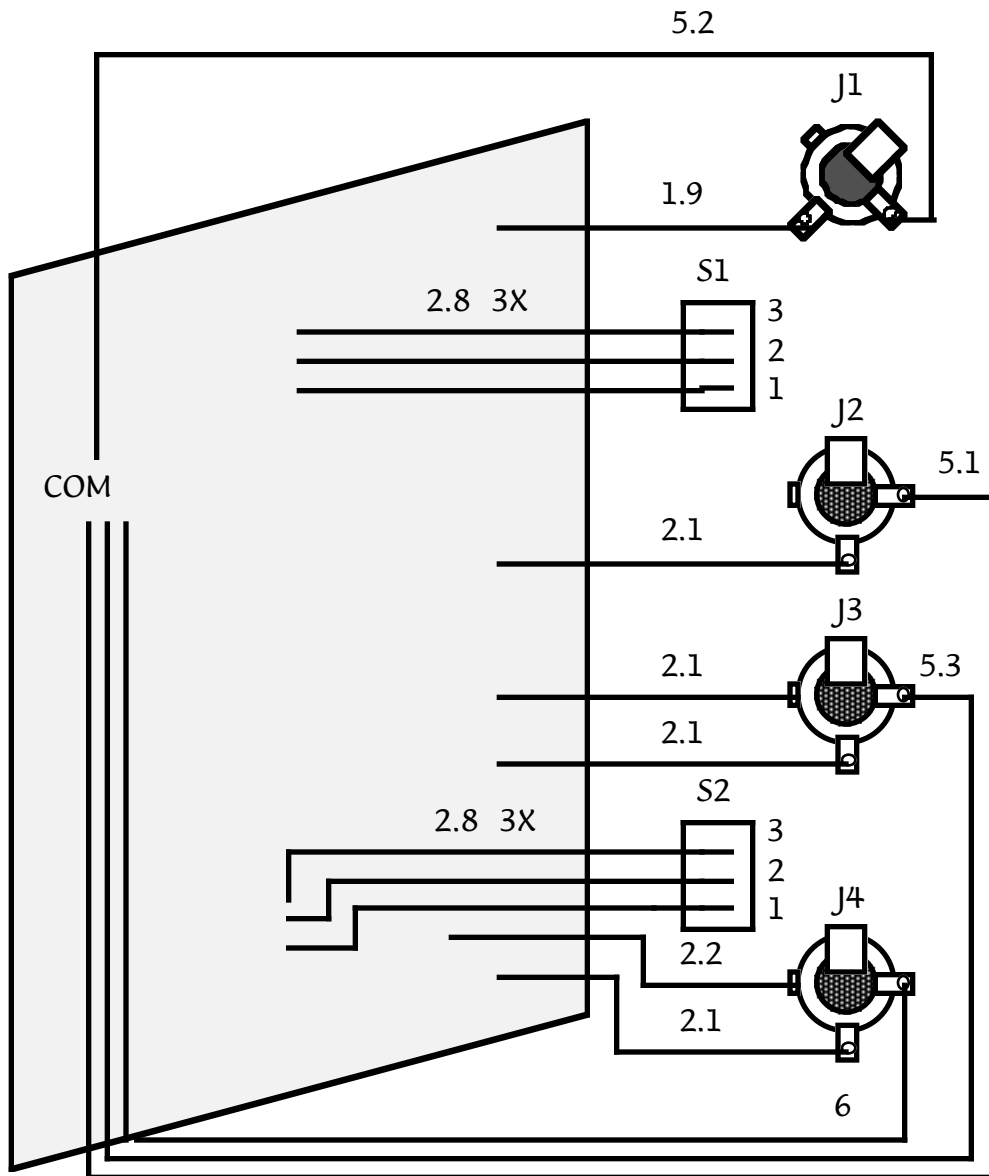
Front Panel Size: 5.25 x 3" W

Module Depth: 4.8"

Center Frequency Range: 16 Hz to 16 KHz

Signal Level: typ. 10V p-p, Max: 26V p-p

Power: +/-15 Vdc @+40/-40 mA



## Calibration

RT1: This sets the amplitude of the phase modulator. Connect a DMM to TP1 and com. Adjust to 0.644V.

## Troubleshooting, Repair, Warranty

If you encounter problems that you can't solve, contact us, preferably via e-mail with a description of the problem. Let us know what does and does not work. We can then help you get your module working. We can fix modules for a minimum fee of \$25.

The parts contained in this unit have been carefully selected and tested. They are guaranteed for 90 days from the date of purchase.