

Q111 Pan/Fade

Jan 2010

The Q111 Pan/Fade module can pan an input signal between two outputs, or fade an output signal between two inputs. For example: Pan mode would allow a single input signal to be routed to one of two different speakers. Fade mode allows an output to fade from one of two input signals. Both Pan and Fade modes allow both manual and voltage control.



Controls and Connectors

Initial Control

Allows manual control of the Pan or Fade action.

Mode Switch

Selects between Pan or Fade mode.

Control Connector

Voltage control of Pan or Fade action.

This signal is mixed with the manual Initial control setting.

Input Connectors

Input signal(s) to be Panned or Faded. See drawing below.

Output Connectors

Output signal(s) to be Panned or Faded. See drawing below.

Specifications

Panel Size: Single width 2.125"w x 8.75"h.

Signal Levels: 10V PP maximum

Power: +15V@30ma, -15V@30ma

Usage and Patch Tips

Pan Mode Basics

Input #2 is not used in Pan mode. Put an input signal into the Input #1 connector. The combination of the control voltage input and the Initial Control setting will determine how much of the input signal will be routed to each of the outputs. To pan a signal back and forth between the outputs, set the Initial Control to 0, and patch a +/-5volt sine wave from an oscillator to the Control Input connector.

Fade Mode Basics

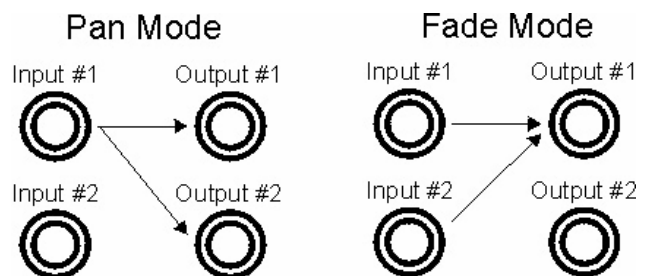
Output #2 is not used in Fade mode. Put signals into both input connectors. The combination of the control voltage input and the Initial Control setting will determine how much of which input signal will be routed to the output. To fade a signal back and forth between the inputs, set the Initial Control to 0, and patch a +/-5volt sine wave from an oscillator to the Control Input connector.

Switching

By using a square wave as the control signal, a voltage controlled switch can be created.

Signal Polarity

In Pan mode, Output #2 is inverted. In Fade mode, Input #2 is inverted. This may or may not be an issue depending on your use. Use a Q125 signal processor to invert the signal back to its original polarity if needed.



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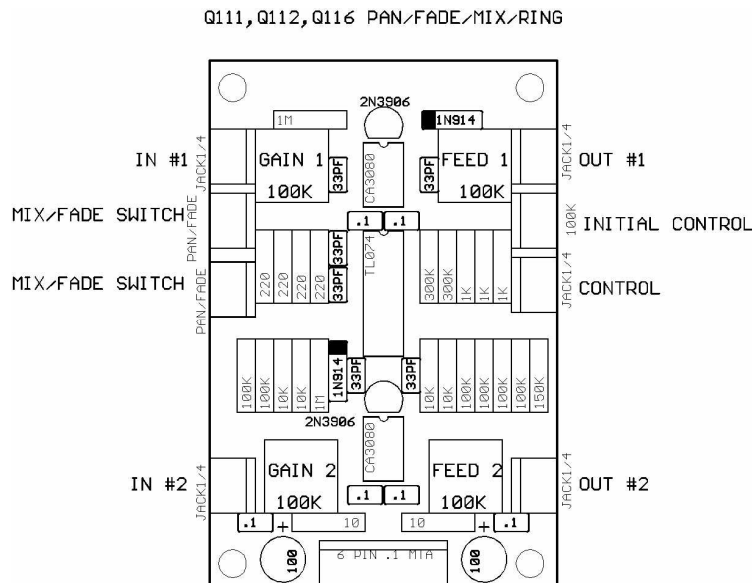
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Calibration and Testing

Calibration is accomplished with 4 trim pots.

1. Center all 4 trim pots and remove connector for the Initial Control pot.
2. Set mode to Pan and set Initial Control to 0.
3. Apply a 1Khz +5v triangle waveform to the control input.
4. While viewing output #1 on an oscilloscope (50mv scale), adjust the feedthru #1 trim pot for 0 output.
5. While viewing output #2 on an oscilloscope (50mv scale), adjust the feedthru #2 trim pot for 0 output.
6. Reattach the connector for the Initial Control pot and apply +5 volts to input #1.
7. Turn Initial Control full counter clockwise (#1 full on)
8. Adjust gain #1 trim pot for 5v at output #1
9. Turn Initial Control full clockwise (#2 full on)
10. Adjust gain #2 trim pot for 5v at output #2
11. Set mode to Fade.
12. View Output #1 on an oscilloscope.
13. Apply a +/-5 volt waveform to Input #1 and verify that the Initial Control will adjust the level.
14. Apply a +/-5 volt waveform to Input #2 and verify that the Initial Control will adjust the level.
15. Apply a voltage to the Control input connector and verify it adjusts the level.

PC Board Layout



Power Connector

6 pin .1" MTA type connector made by AMP. Available from Mouser Electronics or Digi-Key. Modules have a male PCB mount connector and cable harnesses have a female.

Part Numbers:

Female cable mount: #6404416

Male PCB mount: #6404566

Pinout:

- 1 = +15v
- 2 = key (pin removed)
- 3 = +5v
- 4 = gnd
- 5 = -15v

Not all voltages are used on all modules.