Q110 Noise

Aug 2014

The Q110 Noise Source creates random waveforms useful for creating sounds such as thunder, explosions, drums, rainfall, breath simulation and more. Noise can also be used to modulate other modules such as oscillators and filters to create more realistic, unpredictable sounds. An output level control is provided to eliminate the need for patching through an attenuator.

Three outputs are provided (available simultaneously):

White Noise is composed of all frequencies in equal amounts.
Pink Noise contains equal energy per octave.
Low Frequency Noise low frequencies for modulation.

Specifications

Panel Size: Single width 2.125"w x 8.75"h.
Output Levels: 10V PP maximum
Power: +15V@8ma, -15V@8ma.

Controls and Connectors

Output Level Control
Sets the level of all 3 outputs from 0 to approximately 10 volts PP.

White Connector
White Noise Signal Output.

Pink Connector
Pink Noise Signal Output.

Low Freq Connector
Low Frequency Noise Signal Output.

Usage and Patch Tips

Basics

Noise is just a waveform consisting of many different frequencies. It sounds like the static you hear on the radio or TV. Pink noise is filtered White noise, and the Low Frequency output is simply filtered further.

Percussion

The Pink and White noise outputs can be used to create cymbals, gun shots, and wind type sounds. The White noise sounds higher in pitch than Pink noise. Use fast attacks and slow release envelopes for most percussion sounds. Use a low pass filter with various resonance settings for wind and waves.

Tuning

Patch the White or Pink noise into a bandpass filter to highlight certain frequencies. The frequency can be controlled with a keyboard, sequencer, envelope, or oscillator.

Controls the level of all noise outputs

White Noise is composed of all frequencies in equal amounts.

Pink Noise contains equal energy per octave.

The low frequency output is slow-moving and great- for modulation.

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Modulation
Use the Low Frequency output to control oscillators, filters and other modules. This can result in more realistic vibrato than modulating with a perfect sine wave.

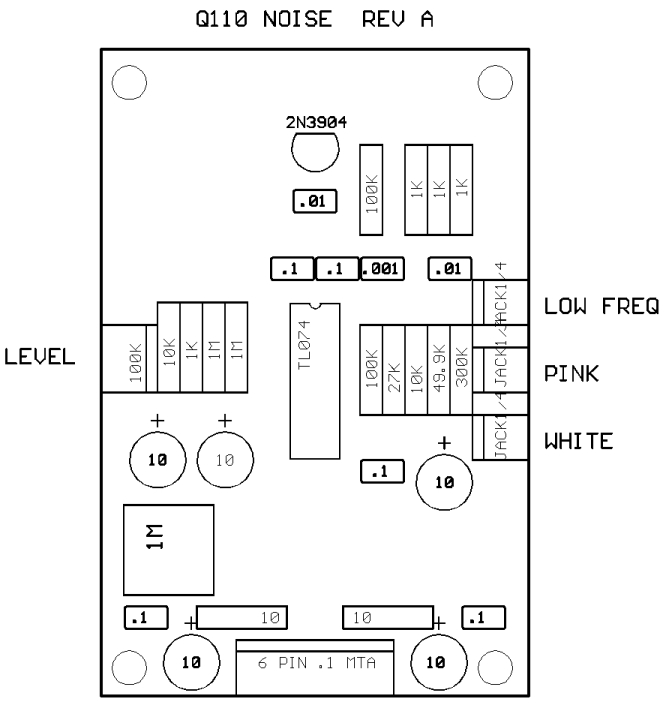
Patch any of the Noise outputs into the Sample and Hold input then patch then use the output to control an oscillator or filter. This results in interesting random steps like that created by pressing random keys on a keyboard.

Calibration and Testing

Calibration is performed by one trim pot.

1. Turn the Level control to the full clockwise position.
2. Attach an oscilloscope to the White noise connector.
3. Adjust the PCB trim pot for a maximum amplitude of 10 volts PP.
4. Also view the Pink and Low Freq connectors for acceptable waveforms.

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.