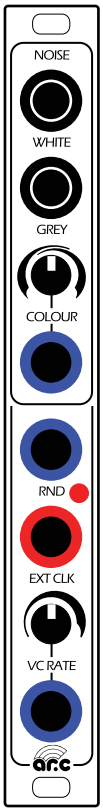
NOISE RAINBOW



Power Warning

This instrument is intended for use in the eurorack modular system. Please use all precautions and correct orientation when connecting this module to your enclosure and power supply.

Due to the extremely varied nature of the eurorack ecosystem, no warranty can be extended for damage caused by faulty or overloaded power supplies, incorrect orientation of power connections, etc. For more information on the eurorack technical standards, please visit the Dopefer website at: www.doepfer.de

Specifications

Module Width:.....3hp

Mounting Depth:.....38mm

Current Draw:

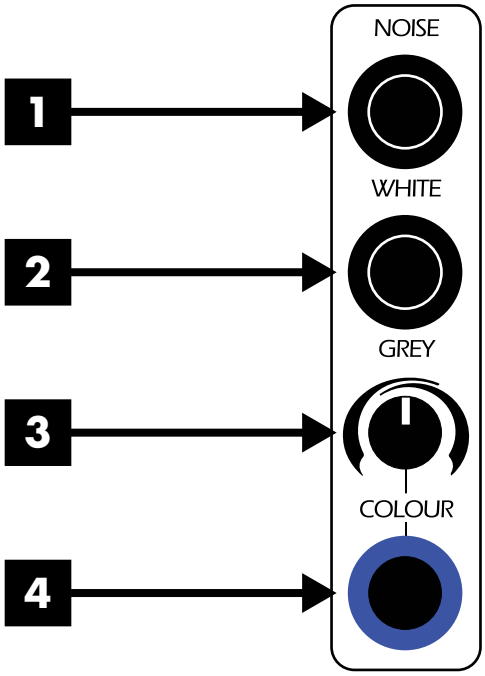
+12V.....20mA
-12V.....10mA
+5V.....0mA

Manufactured by ARC in the
United States of America

Introduction

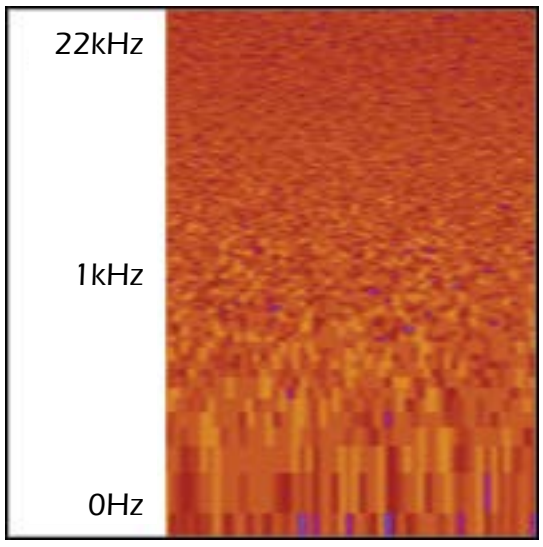
ARC's Noise Rainbow is a metamodule comprised of analogue noise generator and digital pseudorandom noise generator submodules. The analogue noise is available as white, grey and colour outputs. The digital output can be clocked internally or externally to provide noise or low frequency pseudorandom pulses. Let's explore the submodules in more detail.

Analogue Noise Submodule



1 White Noise Output

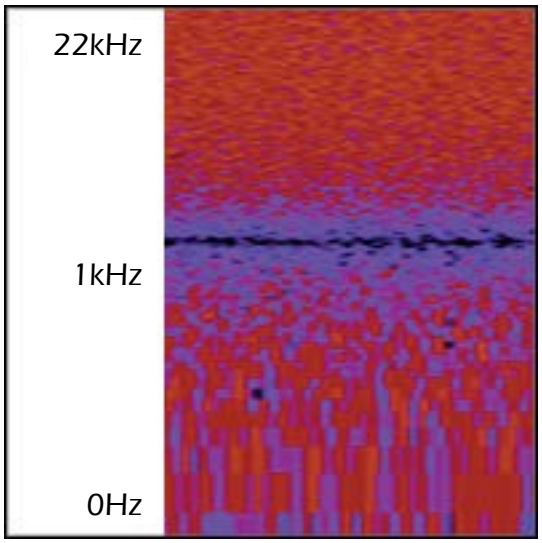
The white noise output has equal energy across the frequency spectrum. This distribution can been seen in the spectrogram plot shown to the right. When used to seed a sample-and-hold, this distribution ensures a random sampling as the output covers the audible spectrum at random instantaneous amplitudes. It is also useful as an audio and modulation source and for percussive synthesis.



White Noise Spectrogram

2 Grey Noise Output

Grey noise is white noise that has been notch filtered. Grey noise retains energy at the high and low ends of the spectrum while rolling off around 1kHz.



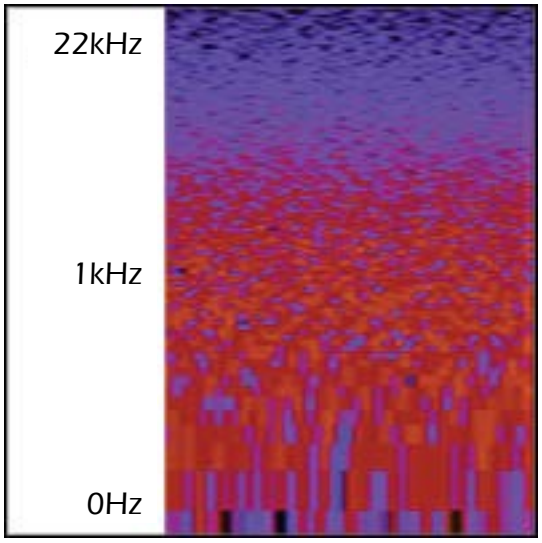
Grey Noise Spectrogram

3 Colour Potentiometer

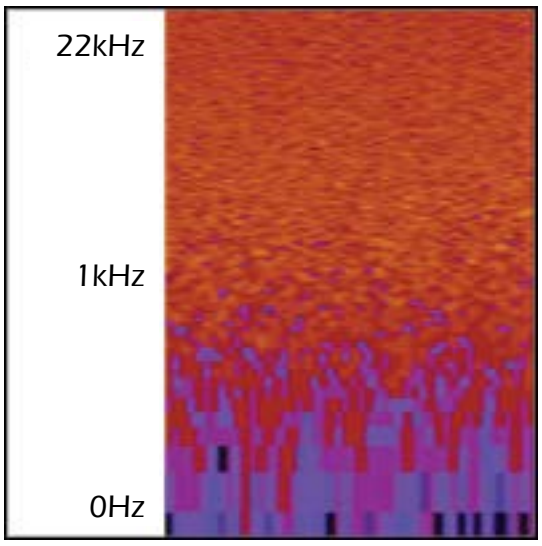
This potentiometer controls the filter of the Colour output (see 4). Continuously variable response allows for tailored noise colour.

4 Colour Output

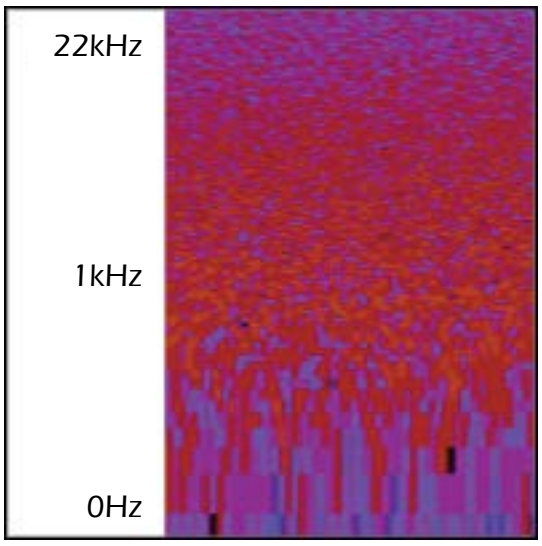
The Colour output is white noise that has been filtered to rolloff bands of the frequency spectrum. When the Colour control is set fully counterclockwise, the output will be red noise – noise that is rich in the lower frequencies and attenuated at the higher end. At the midway point of the control setting, the output will be blue noise – noise that is rich on the higher end of the frequency spectrum but rolls off in the lower end. At the full clockwise setting, the output will be Violet noise – noise that is also rich in the high end of the spectrum, but that rolls off drastically and has no low end content.



Red Noise Spectrogram

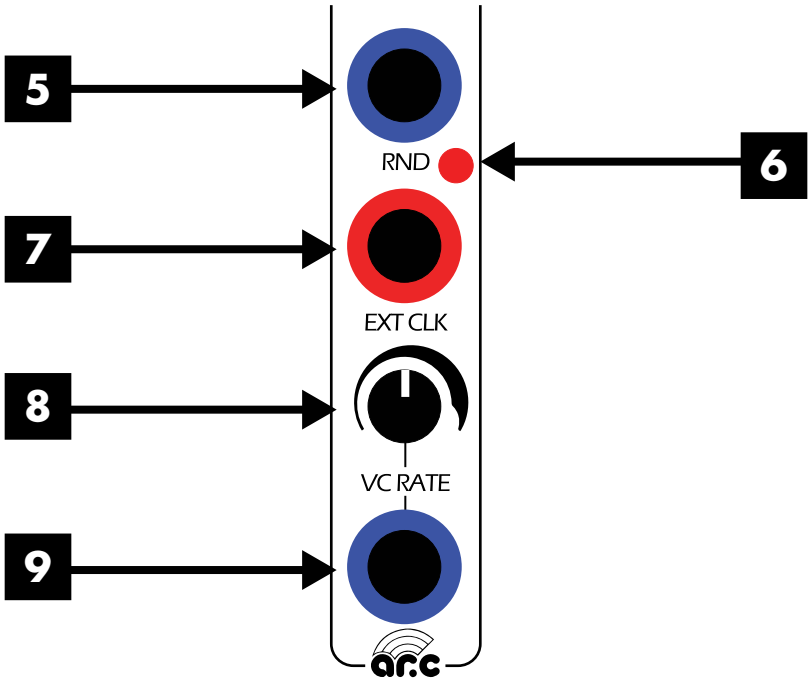


Violet Noise Spectrogram



Blue Noise Spectrogram

Digital Noise Submodule



5 Digital Random Output

The digital submodule produces a pseudo-random pulse train. An internal oscillator clocks the rate of the pulses and can range from digital white noise to low frequency random pulses.

6 Output Indicator Lamp

LED visual indicator for digital output.

7 External Clock Input

The digital noise generator is normalized to its own internal VCO. If an external control voltage source is patched in, the rate can be adjusted over an even wider range, from extremely low frequency pseudorandom pulses to an audio rate digital VCO reminiscent of chiptune sounds.

8 VC Rate Potentiometer

This potentiometer controls the rate of the digital random output. If a modulation source is patched to the VC Rate input, the potentiometer attenuates the amount of control voltage.

9 VC Rate Input

A control voltage source patched to this input will modulate the internal linear VCO.

Hints & Tips

The digital noise submodule can be modulated or clocked with a signal from the analogue noise submodule, creating extremely complex pulse trains and noise.