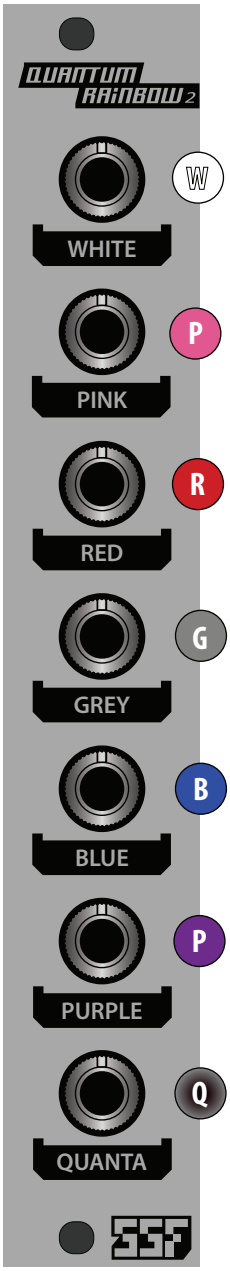
QUANTUM RAINBOW 2

Control and function reference guide

Thank you for purchasing the Steady State Fate Quantum Rainbow 2
This revised noise source features a smaller footprint and an additional two unique noise sources. The QR2 is very simple to use and only requires that you patch into one of the seven noise outputs.
Each output is described below. Enjoy!



WHITE NOISE

This is the raw sound of electrons breaking through a reverse biased semi-conductor junction. White noise exhibits a flat spectral power density - meaning that the noise amplitude is relatively constant across the audible frequency spectrum. However, the human ear detects changes in pitch and amplitude in accordance with a logarithmic scaling factor - therefore the mid range frequencies of white noise sound the loudest.

PINK NOISE

Pink noise is a slightly filtered white noise that exhibits a spectral power density of -3dB/oct. This has the effect of slightly rolling off the amplitude as the frequency increases - equal power distribution across all proportional bands. Pink noise is also known as 1/f (one over f) noise. Pink noise is the most naturally occurring form of noise and can be found in all electrical circuits (flicker noise), radiation and as a statistical accumulation in many types of data including images. In biology, pink noise is found in DNA, heart beat patterns, brain activity and even epiphenomenal psychological states.

RED NOISE

Red noise is a one-pole low pass filtered white noise that results in a -6dB/oct spectral power density. This type of noise emphasizes the lower frequency spectrum and is sometimes referred to as Brownian noise. Brownian motion is the natural jitter or vibratory signature of molecules - credit given to Robert Brown

GREY NOISE

New to the Quantum Rainbow, Grey noise spectral density is based on an A-weighting (sound pressure) curve which exhibits the effect of the majority of the audible spectrum being equally loud.

BLUE NOISE

Blue noise is the inverse of pink noise. Blue noise spectral power density is +3dB/oct.

PURPLE NOISE

Purple noise, also known as violet noise has a spectral power density of +6dB/oct.

QUANTIZED NOISE (QUANTA)

Quanta is also new to version 2. This noise output is called quanta because the output is restricted to a discrete state also known as a quantum. The quanta output exists in a discrete binary state of +/- 5V quanta. The level of perceived quanta is adjustable via the trimmer on the bottom of the QR2 PCB. The effects are variable from the cracking of a record all the way to a discrete binary version of white noise. Although this output is calibrated to sound like a crackly but dense noise, you are encouraged to adjust this output to your taste.

INSTALLATION AND WARM-UP

Now that you read all that important info it's time to install your QR2 into your modular system. Start by connecting the small end of the power cable by aligning the RED STRIPE on the cable to face down on the module. There is a marking on the PCB -12V/RED, in which the red stripe should be closest to if it is installed correctly.
Now install the cable in the proper orientation with the red stripe aligning with negative 12V (-12V) on your bus board. When you power the QR2 please allow for a roughly 8 second warm up period before all features are fully operational.

Noisy Suggestions

The colored noise outputs make excellent percussion noise on their own and mixed together. One of the unique features of the QR is that the noise is derived from single source which produces nice effects when the colors are mixed in different proportions. Use noise to add grit and texture to oscillators and complex mixes. Patching into the FM input of an oscillator or filter is one way to produce a pitched noise from any of the outputs.
Although the colors of noise are derived from the same noise source, the distribution of spectra is unique to all the outputs - which make them great for sourcing the sample and hold inputs of the Ultra-Random for even more random variations.

Enjoy!

TECH SPECS

Width.....4hp
Depth, Max.....22mm
Current Draw
Max.....+/- 23mA

Output level.....13.5Vpp(max)

Rev Polarity Protected
RoHS & CE compliant