

FSH-1

The main purpose with the frequency shifter is to make frequency shift up and down for processed audio signal. Two signal sources are needed; the carrier and the audio. Both carrier and audio signals are split in two chains and are pre-processed to accomplish 90 degrees phase shift between split signals.

The carrier generator has two frequency ranges; LF (low frequency) and AUDIO and it's controlled by knobs COARSE, FINE and external CV signals (CARRIER CV). The carrier generators outputs are pure sine waveforms with 90 degrees delay between them.

Outputs are patched to both ring modulators inputs. Two ring modulators (dual balanced multipliers) receives 0 and 90 degrees shifted carrier and audio signals. The outputs from the multipliers are combined in two ways; the frequency shift UP and DOWN. The frequency shifted audio signal is a sum (UP) or difference (DOWN) of the carrier generators frequency (a pure sine waveform) and all audio signals frequencies (fundamentals and harmonics).

The FSH-1 works in two modes; as frequency shifter and as dual ring modulator.

A ring modulator is a classic audio effect device and due to the non-harmonic character of the output signal. It's very useful to create metallic timbres such as bells, sweeping whistles and percussive sounds and tremolo effects. The obvious effect (particularly in LF mode) is a stereo panning effect of audio signal.

Performances

Frequency range; 30 Hz to 20 kHz

Inputs two inputs; leveled INPUT1 and unleveled INPUT2

Outputs AUDIO, DOWN, UP and MIX (mix of up and down outputs)

CV inputs MIX, CARRIER frequency

MIX CV control for mixing of UP and DOWN outputs, 10 Volts p-p

CARRIER CV variable CV1 and CV2 (1 Volt/octave

Carrier frequency range from 0.01 Hz to 14 kHz, controllable manually and by a leveled external CV signal

Carrier Range in two ranges;

LF, 0.01 Hz to 24 Hz

AUDIO, 6 Hz to 14 kHz

(CARRIER CV1) and unleveled CV2

Mode frequency shifter/ring modulator

Audio signal accept up to 10 Volts p-p

Current 40 mA

Dimensions 128.4mm (H), 70.7mm (B)

3 HE, 14TE

