

# Guitar Synthesiser

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This circuit uses a CMOS Phase Locked Loop, the 4046, to produce a very unusual sound from a guitar, which sounds something like a synthesiser.

The signal from the guitar is amplified by two of the amplifiers in the 4007. The amplified signal is used by the phase comparator to lock the VCO to the frequency of the note played. The VCO does not oscillate until a note is played, when using the low pass filter shown (i.e. the 15 k resistor and 100 n capacitor). If the value of the resistor is increased, the VCO oscillates continuously at about 1 kHz (with no input signal). This gives very smooth note changes. The basic frequency may be changed by varying the 100 k resistor.

