
33 Melodious Sequencer

□ Press pushbutton S1, and this circuit will play you a short melody up to nine notes long. The immediate effect of pressing the button is to reset counter IC2 and set pin 3 of the counter HIGH. A voltage, determined by the setting of the pot attached to pin 3 of IC2, gets fed to the input of voltage-controlled oscillator IC3.

IC3's output consists of either a squarewave or a triangular wave, one of which can be selected by S2. The frequency of both these waveforms is identical and is determined by the voltage fed to

the VCO. Potentiometer, R21 is the circuit's volume control.

Meanwhile, back at counter IC2, a pulse has just arrived from oscillator IC1. This increments the counter by one, causing pin 2 of the counter to go HIGH, and pin 3 to return to a LOW state. Successive pulses from IC1 cause the HIGH signal to advance along IC2's output (3, 2, 4...9). The ninth pulse send pin 11 high, thereby turning Q1 on and halting the oscillation of IC1. Pressing S1 sends pin 11 LOW and allows normal

sequencing to resume.

Potentiometer R3 controls the tempo, which can be varied from 5 notes per second to one note every two seconds. Trimmers R6 through R14 are used to set the pitch of individual notes

over the range from 200 to 2000Hz. If you desire a shorter sequence of notes, omit pots and diodes from end of the sequence starting with pin 9 of IC2 and working backwards.

PARTS LIST FOR MELODIOUS SEQUENCER

R1—6,800-ohm, ½-watt 10% resistor
R2—47,000-ohm, ½-watt 10% resistor
R3—500,000 trimpot resistor
R4—3,900-ohm, ½-watt 10% resistor
R5—33,000-ohm, ½-watt 10% resistor
R14—20,000 trimpot resistor
R15—4,700,000-ohm, ½-watt 10% resistor
R16—1,000-ohm, ½-watt 10% resistor
R17—68,000-ohm, ½-watt 10% resistor
R18—10,000-ohm, ½-watt 10% resistor
R19—18,000-ohm, ½-watt 10% resistor

C1—100 uF, 25-WVDC electrolytic capacitor
C2, C4, C5—.1 uF, ceramic disc capacitor
C3—3.3 uF, 25-WVDC electrolytic capacitor
C6—.001 uF polystyrene capacitor
C7—.02 uF, mylar capacitor
C8—.47 uF, mylar capacitor
D1-D9—1N914 silicon diode
IC1—555 timer

IC2—4017B CMOS decade counter
IC3—LM566 voltage-controlled oscillator
Q1—2N3904 PNP transistor
R20—4,700-ohm, ½-watt 10% resistor
R21—5,000-ohm, audio-taper potentiometer
S1—SPST normally open pushbutton switch
S2—SPDT switch

