prophet-600

THE *NEW* PROPHET 600

The **PROPHET-600** from Sequential Circuits is a completely programmable, six-voice polyphonic synthesizer. Each voice features *two* voltage controlled oscillators, a voltage controlled low-pass filter, and *two* 4-stage envelope generators. The voices can be controlled by either the front panel knobs and switches or by one of the programs in memory. The PROPHET-600 comes with 100 patches preprogrammed; included are orchestral timbres (brass, strings, etc.), keyboard sounds (organs, clav, harpsicords, electric pianos, etc.), special effects (animal sounds, bells, aliens, etc.), and synthesizer "specialties" (lead synth, bass, percussion, etc.). All of these programs can easily be modified or replaced by your own sounds.

THE FRONT PANEL

CONTROL PAD

PROGRAM display indicates the current program in Preset or Manual Modes and indicates Edit Mode by lighting a decimal point between the digits. Programs are arranged in ten banks (0 to 9) with ten programs in each bank; the left digit is the bank and the right digit is the program.

PROGRAM SELECT switches are used to select programs 00 to 99.

TO TAPE switch initiates program or sequence storage through the cassette interface (see RECORD switch).

FROM TAPE switch verifies and loads programs or sequences through the cassette interface (see RECORD switch).

TUNE switch activates computer tuning of the oscillators and filters.

PRESET switch, when on, activates the programs in computer memory; a preset program may be altered ("edited") by changing any front panel control. The original program can be recalled by pressing the corresponding PROGRAM SELECT switches. When PRESET is off (unlit), the front panel controls determine the sound (Manual Mode).

RECORD switch is a momentary control for storing or relocating front panel settings, edited presets, or previously recorded programs. This switch also initiates tape interface operations, latches the arpeggiator, and is used for recording sequences.

SEQ 1 and SEQ 2 switches select sequence banks for recording or playback.

ARPEG UP-DN switch enables an arpeggio in an up then down scanning direction.

ARPEG ASSIGN switch arpeggiates in the order the keys are depressed.

SPEED knob adjusts the arpeggiator and sequence playback rate.

POLY-MOD

This section allows a variable amount of filter envelope and/or Oscillator B output to affect ("modulate") Oscillator A frequency and/or Filter Cutoff frequency for each voice individually and independently.

SOURCE AMOUNT knobs determine the relative mixture of Filter Envelope and Oscillator B output used as modulation source.

DESTINATION switches, when activated, route the modulation source mixture to the indicated destination.

LFO-MOD

This module uses a single low-frequency oscillator (LFO) as the source for modulation and routes the selected output waveform through a programmable amount knob and/or the MOD wheel to both oscillator frequencies, pulse widths, and/or filter cutoff frequency.

FREQUENCY knob adjusts the LFO frequency.

SHAPE switch selects a triangle wave (for vibrato) or a square wave (for trills).

INTIAL AMOUNT knob programs modulation depth independently of the MOD wheel.

FREQ A-B switch applies modulation to both oscillator frequencies.

PW A-B switch applies modulation to the pulse width of both oscillators.

FILTER switch applies modulation to filter cutoff frequency.

UNISON TRACK

UNISON TRACK switch assigns one (true monophonic) or all six voices to the lowest key played. This switch also "latches" any chord that's held and allows any key played to become the root, while the upper intervals follow along (track).

OSCILLATOR A and B

These controls determine the relative oscillator frequencies and output waveforms sent to the MIXER and POLY-MOD sections for each of the PROPHET-600's voices.

FREQUENCY knobs vary the pitch of each oscillator in stepped semitones over a four-octave range. For basic "concert" tuning, where the middle A on the keyboard equals 440 Hz, set the Oscillator A FREQUENCY knob two octaves above "0" (exact oscillator pitch is fine-tuned with the MASTER TUNE knob).

SYNC switch (OSC A only) forces Oscillator A to follow Oscillator B in "hard" synchronization; it will therefore tune only to harmonic frequencies of Oscillator B.

FINE knob (OSC B only) continuously adjusts the basic pitch of Oscillator B over a range of one semitone (½ step).

SHAPE switches, when activated, mix the corresponding waveform(s) into the oscillator output at full level.

PULSE WIDTH knobs adjust the harmonic content of the square wave by setting its duty cycle from approximately 0 to 100%.

MIXER

MIXER knob adjusts the ratio of OSC A and OSC B output to the FILTER.

GLIDE

GLIDE knob varies the rate of "portamento" (glide) between notes from short to long. This is operational in both polyphonic and unison modes (unison chord tracks with glide are particularly useful.)

FILTER

The FILTER module contains controls for the 24 dB per octave (4-pole) low-pass filter and for its envelope generator.

CUTOFF knob determines the amount of filter resonance; when fully activated, the filter breaks into oscillation, acting like a sine wave audio source whose pitch is determined by the cutoff frequency.

ENVELOPE AMOUNT knob sets the amount of ADSR envelope (Attack, Decay, Sustain, Release) applied to the voltage controlled filter.

KEYBOARD switch, when FULL, causes the filter to "track" the keyboard, maintaining the cutoff frequency at a constant point relative to the notes being played, resulting in a consistency of timbre over the entire keyboard range. When this control is OFF, notes played higher on the keyboard will have more of their overtones suppressed; the ½ setting selects the midrange between the FULL and OFF effects.

ATTACK knob adjusts the length of time for the envelope generator's output to go from zero to maximum level.

DECAY knob varies the length of time for the envelope generator's output to go from maximum level to sustain level.

SUSTAIN knob adjusts the sustain level from zero to maximum.

RELEASE knob sets the length of time for the envelope generator's output to go from sustain level to zero.

AMPLIFIER

ATTACK, DECAY, SUSTAIN, and RELEASE knobs in this module shape the envelope applied to the voltage controlled amplifier (VCA) in the same manner as the corresponding controls in the FILTER section.

MASTER TUNE

MASTER TUNE knob (non-programmable) simultaneously varies the frequency of all oscillators for fine tuning with other instruments.

VOLUME

VOLUME knob (non-programmable) adjusts the PROPHET-600's overall audio output level.

PITCH and MOD (Modulation) WHEELS

The PITCH wheel has a center detent position, from which the pitch of all voices may be varied up or down by approximately a third.

The MOD wheel determines the amount of modulation routed via the LFO-MOD settings of a particular program.

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BACK PANEL FUNCTIONS

AUDIO OUT jack provides a 1K ohm output impedance, unbalanced audio signal suitable for most sound reinforcement systems. The PROPHET-600 has a monophonic output signal, but the jack is wired so that both sides of standard stereo headphones can be driven.

FILTER CV IN jack accepts a 0 to 10 V dc control voltage (CV) which raises programmed filter frequency settings. This enables remote spontaneous increase of brightness. The Sequential Circuits Model 840 Voltage Pedal is the most common remote controller for this input but various control voltage sources can be used: ribbon controller, x/y joystick, sample-and-hold module, etc.

FOOTSWITCH relates chords in the Unison/Track Mode, latches the arpeggiator in arpeggiate, and controls sequencer stop/record or stop/playback when using the sequencer. When using the arpeggiator, if the SPEED knob is off, the Footswitch will advance (step) the arpeggiator. A clock can be used in this jack to advance the arpeggiator synchronously with another instrument.

CASSETTE IN and OUT jacks connect to any tape recorder (including cassette recorders) for program and sequence storage (most MIC IN, LINE IN, MONITOR OUT, EARPHONE, or LINE OUT jacks can be used).

MIDI IN and OUT jacks (Musical Instrument Digital Interface) provide an interface for other MIDI-equipped instruments and home computers.

LINE VOLTAGE switch selects 115 or 230 AC voltage level.

FUSE: ½ amp Slo-Blo for 115 or 230 AC voltage level.

POWER SWITCH turns the PROPHET-600's power on.

We Listen to Musicians.

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