PERFORMANCE/COMPOSITION SYNTHESIZER

TS-10



Whatever your musical needs, the TS-10 Performance/Composition Synthesizer is the one complete answer. A keyboard synthesizer designed to be comfortable on stage, as part of a home MIDI studio, or in the professional production studio, the TS-10 delivers stunning sounds, comprehensive features, and the ease-of-use that have been the hallmark of ENSONIQ products.

With 300 Sound Programs, 300 Performance Presets, and the ability to load sample disks from the acclaimed ASR/EPS library, the TS-10 has a wide array of sounds to choose from. The 6 Megabyte waveform ROM contains a broad selection of waveforms, ranging from acoustic instruments, drums and percussion, to analog synth and exotic digital timbres. ENSONIQ's unique Transwaves™ offer sweepable wavetables that will add moving harmonics to your sounds. Use the new Hyper-Wave™ voice architecture with 16-step wavelists to create shifting textures or rhythmic Jam-Loops.

The 73 effects algorithms in the TS-10 further extend ENSONIQ's developments in professional signal processing. In addition to studio quality reverbs, delays and chorus/flanger/phasers, the TS-10 has many combination effects designed to meet the needs of a multi-timbral/multi-track sequencing keyboard. Each algorithm has a detailed set of parameters including two modulation sources routable to any effects parameters. Best of all, each algorithm has pre-programmed variations *(692 in all!)* covering most of your processing needs.

Combining sounds is as easy as double-clicking a button, with complete control over both internal and external sound sources. Adjust the relative volumes, panning, brightness, attack and release times, key ranges, velocity ranges *(for cross-switching),* tuning, LFO rates, controllers, MIDI settings, effects bussing and more. You can name and save 120 of these custom sound combinations *(called Performance Presets)*, with another 180 permanently stored in ROM.

For composition the TS-10's 24-track sequencer offers features you would expect from a dedicated sequencer. 30,000 note capacity *(expandable to 97,000 notes),* multiple recording modes, range editing *(including bar/beat/clock and note range options),* percentage and swing quantization, event editing, controller filtering/scaling, and full mixing capabilities add up to a powerful recording environment that far surpasses the "sketchpad" nature of most onboard sequencers.

After playing the new ENSONIQ TS-10 you'll agree — there has never been a synthesizer that offers more sound making, performance, and creative composing tools. As easy to use as it is powerful, the TS-10 Performance/Composition Synthesizer is the one complete answer for your music.

ensoniq®

THE TECHNOLOGY THAT PERFORMS

Keyboard
- 61-key *(C-C)* weighted synth-action Poly-Key™ *(polyphonic aftertouch)* keyboard with programmable velocity and pressure sensitivity
- Up to 24 programmable keyboard zones for splits and layers

Controllers
- Exclusive Patch Select buttons for instant access to 4 different sound variations within each Program
- 2 programmable single/dual Foot Switch inputs for sustain, sostenuto, Patch Select, preset up/down, FX mod, and sequencer control *(SW-2, optional SW-6 or SW-10)*
- Pitch and Mod Wheels
- Mod/Volume pedal *(optional CVP-1)*
- Data Entry Slider functions as a real time controller transmitting on any MIDI controller number

Internal Program Memory
- 300 Programs *(120 RAM/180 ROM)*
- 300 Performance Presets *(120 RAM/180 ROM)*
- 2 SIMM sockets provide for up to 8 Megabytes *(4 Megaword)* of 16-bit sample RAM
  - 2 Megabytes of sample RAM *(standard)* provides for 10 Sampled Sound locations
  - 8 Megabytes of sample RAM provides for 20 Sampled Sound locations
  - Maximum memory per Sampled Sound: 4 Megabytes *(2 Megawords)*

Waves
- 48 Megabits *(6 Megabytes–3.5 Megawords)* of waveform ROM
- Over 4000 variations possible from the 254 wave selections, which include:
  - Multi-sampled acoustic instruments in Keyboard, String, Brass & Horn, Wind & Reed, Vocal, Bass, Drum, Percussion, and Sound Effect groups
  - Sustain waveforms with harmonic and inharmonic structures
  - Transwave™ spectral interpolation waves with real time modulation
- Modulatable start point, forward or backward playback, and multi-sample key shift available on most samples
- Pitched or fixed frequency playback of all waves possible
- Ability to read and edit sample disks created for the EPS/EPS-16 PLUS/ASR-10 samplers

Voice Architecture
- 32 dynamically assigned voices *(31 voices when using Sampled Sounds)*
- A single Program can use up to 6 waves per key simultaneously
- A Drum Program can use up to 61 waves per program/4 waves per key, with separate pitch, volume, panning, and 32 voice parameter templates for each wave
- Instant selection of alternate voices within a program using Patch Select buttons or velocity
- Programmable voice delay up to 5000 msec or by keyup trigger
- Each voice has a complete set of program parameters including:
  - 2 independent multi-mode dynamic digital filters *(low pass, high pass, variable bandwidth band pass)*
  - 3 six stage loopable hardware envelopes with 15 parameters per envelope
  - 35 preset envelope templates for ease of programming
  - 1 multi-waveform LFO with adjustable phase, delay, and restart mode
  - Variable rate random Noise generator for modulation
  - 15 modulation sources, routable to pitch, filter cutoff, volume, pan, wave start offset, Transwave index, LFO depth and rate
  - Programmable modulation Mixer/Shaper
  - Glide mode, glide time, pitch bend range, and Held pitch bend mode
- Hyper-Wave™ architecture allows up to 16 waves to be defined in a list, which can be swept through or crossfaded for timbre-shifting and Jam-Loop effects
- Hyper-Wave voice parameters include start step, loopstart, loop end, volume, pitch, pitch tracking, wave direction, duration, crossfade time, and modulation options
- One fully programmable pitch table available per Program for alternate tunings *(with 1 cent resolution and interpolation and extrapolation capabilities)*
- System Pitch Table allows user to apply any ROM or Program Pitch Table on all sounds instantly

Performance Preset Parameters
- The combination of up to 3 Programs, special performance parameters and an effects setup can be named and saved as a Performance Preset
- Performance Presets can use any combination of RAM/ROM Programs, Sampled Sounds, and external MIDI control
- Easy access performance parameters: mix, pan *(stereo or mono modes)*, attack time, release time, timbre, brightness, key zone, velocity range, velocity sensitivity, transpose, detune, LFO or Hyper-Wave rate, controller enables, Patch Select status, channel or Poly-Key aftertouch On/Off, volume pedal modes (positive, inverse, off), MIDI status, MIDI channel, Program Change remapping, MIDI Bank Select, effect bus overide and effect parameters

Disk
- 1.4 Megabyte High Density *(HD)*/Double Density *(DD)* 3.5" micro-floppy
- Save Programs *(Individual, Banks)*, Sampled Sound edits and Banks *(TS-10 format)*, Performance Presets *(Individual, Bank)*, Sequence/Song *(Single, Half, All)*, System Setup
- Save MIDI Sys-Ex dumps *(256K Bytes)* from any MIDI device to disk *(expandable to 768K Bytes with optional SQX-70)*

Effects
- Custom VLSI 24-bit digital signal processor *(ESP chip)* with 48-bit accumulation
- Programmable stereo effects processing with real time modulation of any effects parameters from 13 sources
- 73 effects algorithms
- Multiple preset effects variations per algorithm for ease of programming *(692 effects presets in ROM)*
- Three stereo busses allowing for dry, individual or grouped effects processing *(routed to Main stereo outputs)*
- One additional dry stereo bus routed to AUX outputs

Sequencer
- 24 polyphonic tracks *(including 12 "Song Tracks")* each with its own sound and complete set of track parameters *(same as Presets)*
- Tracks can play any combination of ROM/RAM Programs, Sampled Sounds, and external MIDI control
- Up to 32 internal voices per track, dynamically assigned *(no limit on MIDI voices per track)*
- Up to 60 Sequences or Songs in any combination
- Song form provides up to 99 Steps with up to 99 Repetitions for each Step *(each Sequence Track in a Step can be individually muted and/or transposed)*
- Song Steps can be advanced with the foot switch for performance flexibility
- 30,000 note capacity, expandable to over 97,000 notes with optional SQX-70
- Clock resolution of 96 PPQ, synchronized to Internal or MIDI clock source
- 3 real time record modes *(Replace, Add, Looped)*, Step-Entry, and Multi-Track recording via MIDI
- Automated punch/edit points remembered for each Sequence
- Post-quantization *(auto-correct to 1/64th note triplets)*, with percent, swing and random options
- Song Step editing, bar/beat/clock and key range editing, event list editing, copy, append, change length, time-shift, transpose, merge tracks, filter/extract/scale any event
- All editing can be auditioned before saving changes
- Auto-locate controls, adjustable click track *(routable to Main or AUX outputs)*, and Tap Tempo control
- MIDI Auto Mix *(automated mixdown)* feature records all volume/panning changes for each Track

MIDI
- Poly, Omni, Multi, Mono A and Mono B modes
- Multi-timbral, accommodating up to 12 simultaneous polyphonic MIDI channels with separate Programs and performance parameters
- MIDI Local On/Off per track allows up to 24 outbound MIDI keyboard zones for master controller applications
- Global controllers in Mono mode for use with MIDI guitar and alternate controllers
- MIDI Song Position Pointer, Song Select, and Bank Select supported
- XCTRL allows any MIDI controller *(0-127)* to be used as a voice modulator, and/or to be transmitted to external devices

Output
- 16 bit D/A conversion with 96dB dynamic range, 98 dB signal-to-noise
- First-order linear interpolation for wide transposition range
- Dynamic stereo panning per voice

Inputs/Outputs
- Left/Mono and Right/Mono Main audio outputs
- Left/Mono and Right/Mono AUX audio outputs *(dry signal)*
- Stereo headphone output
- Pedal/Control Voltage input *(allows modulation of voices or volume control with optional CVP-1 pedal)*
- 2 single/dual pedal inputs *(SW-2, optional SW-6, SW-10)*
- MIDI In/Out/Thru

Display
- 80 *(2x40)* character vacuum-fluorescent display, with 6 soft buttons for ease of programming
- Six Program names/sequence locations may be viewed simultaneously

Standard Accessories
- Tutorial Manual *(with examples provided on disk)*
- Musician's Manual
- Sound Manual
- TSD-100 Sound Disk *(contains back-up of 300 ROM & Internal Programs, 300 ROM & Internal Presets, additional Programs, demo sequences)*
- SSD-100 sampled sound disk
- SW-2 Foot Switch

Optional Accessories
- TSD-1000 Series Program disks
- ISD-1000 Series Program disks "International Collection" TS-10 version
- AS Series sample disks *(5 disks per set)*, SL Series sample disks *(5 disks per set)*, ESS "Signature Series" sample disks *(3-5 disks per set)*, SLT Series sample disks *(10 disks per set)*
- CDR Series CD-ROM libraries *(requires optional SP-4 SCSI interface)*
- SW-10 Dual Foot Switch – 2 pedal piano-type for sustain pedal, sostenuto, Patch Select, preset up/down, FX mod, and sequencer control
- SW-6 Foot Switch – single pedal piano-type
- CVP-1 *(CV Pedal)* – for voice modulation or volume control
- SQX-70 sequencer memory expander – expands memory to over 97,000 notes
- Industry-standard SIMMs can be used to provide up to 8 Megabytes of Sampled Sound memory
- SP-4 SCSI interface – offers read-only access to CD-ROM libraries and other SCSI devices

Physical
- Dimensions: 40 3/8" *(102.55cm)* wide x 4" *(10.16cm)* high x 14 1/2" *(36.83cm)* deep
- Weight: 37 pounds *(16.78 kilograms)*

Limited Warranty
- One year, parts and labor

©1993 ENSONIQ Corp
PN #9345004701 Rev B

ensoniq®

THE TECHNOLOGY THAT PERFORMS

ENSONIQ Corp Worldwide Headquarters, 155 Great Valley Parkway, P.O. Box 3035, Malvern, PA 19355-0735 215-647-3930 FAX 215-647-8908
ENSONIQ products are available through Authorized ENSONIQ Dealers throughout the world.