

S90 ES

MUSIC SYNTHESIZER



Specifications

Keyboard	88 keys, Balanced Hammer Effect Keyboard (Initial Touch/Aftertouch)
Tone Generator block	Tone Generator: AWM2 (complying with the Modular Synthesis Plug-in System) Maximum polyphony: 128 notes + the polyphony of the Plug-in Board (if installed) Multi Timbral Capacity: 16 Internal Parts + 3 Plug-in Boards + Audio Input Part(s) (A/D, mLAN*) * 4 stereo parts
Wave	228MB (when converted to 16-bit linear format), 1,935 waveforms
Voice	Preset: 512 normal voices + 64 drum kits GM: 128 normal voices + 1 drum kits User: 128 x 2 (Bank 1: Original, Bank 2: copied from Preset bank) Normal Voice + 32 drum kits
Plug-in Voice	Preset for the PLG150-AN/DX/PF/DR/PC: 64 Preset for the PLG-150VL: 192 User: 64 for each Plug-in slot
Performance	User: 128 (up to 4 Parts)
Multi	User: 64
Filter	18 types
Effects	Reverb x 20 types, Chorus x 49 types, Insertion (A, B) x 117 types x 8 blocks, Master Effect x 8 types, Master Equalizer (5 bands), Part EQ (3 bands, stereo), Plug-in Insertion (available when the PLG100-VH has been installed to slot 1)
Expandability	3 Slots for Modular Synthesis Plug-in Boards

Sequencer	Sequence: Play SMF Format 0 (playback only)
Section	BPM (Tempo): 1 - 300 Number of Chain Steps: 100 Arpeggio: Preset x 1,787 types User x 256 types (when loading the User Arpeggio data of MOTIF ES). * MIDI Sync, MIDI transmit/receive channel, Velocity Limit, and Note Limit can be set.
Other	Master: User: 128 * 4 Zones (Master keyboard settings), Assignable Slider settings, Program Change Table Sequence Software compatible with the Remote Control function: For Windows*: Cubase SX 3, SO01 V2, SONAR 4, S90 ES/MOTIF ES/MOTIF-RACK ES/MOTIF-RACK Multi Part Editors. For Macintosh*: Cubase SX 3, Logic Pro 7, Digital Performer 4.52, S90 ES/MOTIF ES/MOTIF-RACK ES/MOTIF-RACK Multi Part Editors * Functions to be controlled by the S90 ES differ depending on the software you use. Controllers: Pitch Bend wheel, Modulation wheel, Assignable Control sliders (4), Data dial Display: 240 x 64 dot graphic backlit LCD Jack and Terminals: OUTPUT L/MONO, R (standard phone jack), ASSIGNABLE OUTPUT L, R (standard phone jack), A/D INPUT L, R (standard phone jack), PHONES (standard stereo phone jack), FOOT CONTROLLER 1, 2, FOOT SWITCH x 2 (SUSTAIN, ASSIGNABLE), BREATH, MIDI IN/OUT/THRU, USB (TO HOST, TO DEVICE), AC INLET Power Consumption: 33W Dimensions, Weight: 1,472 (W) x 385 (D) x 163 (H) mm, 22.5 kg Accessories: AC Power cord, Owner's Manual (this book), Data List, sticker label for optional mLAN16E.

* Specifications and descriptions in this owner's manual are for information purposes only. Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.



Studio Connections offer this flexibility in an open and easy to implement way. software plug-ins coexist with software control surfaces talking to hardware in your DAW applications like Cubase SX and Nuendo, and when you save a project, you can guarantee that all of your Studio Connections compatible devices will have their settings saved too. This makes for a better creative workflow, and ensures no wasted time setting up your studio when you return.
www.studioconnections.org

Modular Synthesis Plug-in Expandability

The S90 ES delivers a lot of impressive features and sound on its own, but if you want to expand its capabilities its Modular Plugin System lets you add the sounds you need with easy to install expansion boards. Add the legendary sounds of the DX7 or the warm punch of an analog synth. Each expansion board has its own dedicated tone generator and polyphony so it's almost like adding another synthesizer to your system without loosing any of the S90 ES's onboard voices.

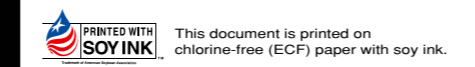


Expand the capabilities of your S90 with Modular Synthesis Plug-in Boards

- Piano Plug-in Board**
PLG150-AP **NEW**
The Ultimate Yamaha Piano. Acoustic Piano voice expansion board.
- Drums Plug-in Board**
PLG150-DR
Ultra realistic stereo-sampled drum kits
- Analog Physical Modeling Plug-in Board**
PLG150-AN
Warm and punchy analog modeling synthesizer
- XG Plug-in Board**
PLG100-XG
High-quality XG voices with 16 multitimbral parts
- Percussion Plug-in Board**
PLG150-PC
An oasis of world-class Latin percussion
- Advanced DX/TX Plug-in Board**
PLG150-DX
Get the classic sounds of the DX-7 synthesizer
- Virtual Acoustic Plug-in Board**
PLG150-VL
Acoustic modeling synthesizer with expressive realtime control
- Vocal Harmony Plug-in Board**
PLG100-VH
Complement your singing with three-part harmony!



For details please contact: www.yamahasynt.com



MODULAR SYNTHESIS
PLUG-IN SYSTEM

The Perfect Balance of Synthesizer and Piano

Is the S90 ES an 88-note weighted action digital piano with the sonic flexibility of a synth or a synthesizer with the best sounding piano samples ever available?

Actually, it's the perfect balance of both. The new multi-velocity stereo samples of Yamaha's hand-built S700 grand piano, the damper reverb effects, and half damper capability all ensure the S90 ES has the most expressive acoustic piano sound Yamaha has ever offered in a synthesizer. The 128-note polyphony tone generator based on the award winning Motif ES (including 8 inserts, 2 system and separate mastering effects) and Studio Connections, mLAN, and PLG expandability give it all the sonic power and control flexibility of our Motif ES workstation lineup.

The new S90 ES, the perfect balance of synthesizer and piano.

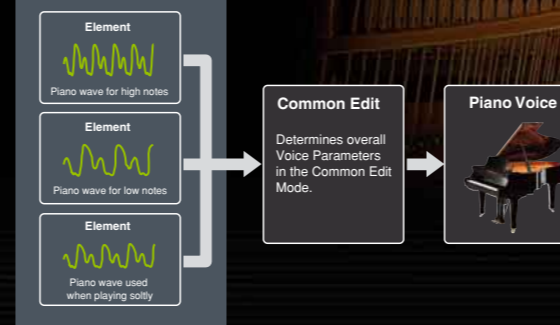


The Most Expressive Piano Voice Available in a Synth

In designing the S90 ES's new grand piano voice, the focus was in creating a voice that produces naturally sounding long tones even when played at a pianissimo level. To realize this goal, a generous 53MB of memory was dedicated to this voice to use longer samples of a specially selected S700 grand piano—a \$250,000 acoustic grand handcrafted by Yamaha's master artisans. Played at normal tempos and dynamic levels the sound of this voice is truly superb, but it's at the opposite end of the tempo and dynamic range that the results are most stunning. The longer waves give each note a very natural sustain that, when used on ballads and slow, exposed pieces, plays expressively with a full, natural sound.

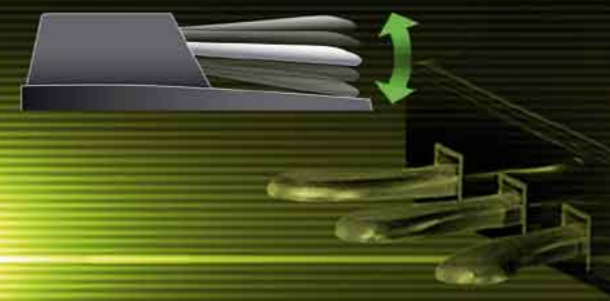
This voice also features stretch tuning and a damper resonance effect, which bring this voice even closer to reality by simulating the inner workings of an acoustic grand piano. Damper resonance simulates the resonance of the strings and soundboard when the damper pedal is pressed—a factor that contributes to the unique sound of a grand piano. Using the sustain pedal on soft, slow pieces it adds a rich resonance to the piano's tone and enhances its natural sustain and decay.

Creates Individual Element Sounds in the Element Edit Mode.



Half Damper Capability

Some classic pieces call for a half damper technique, where the damper pedal is pressed half way down raising the felts only partially off the strings. As the sustain function on most synths is a simple on/off operation, such use is normally unavailable. The S90 ES however, is able to respond to small changes in the FC-3 foot controller's pedal position due to its half damper capability. This gives the performer greater control over the muting of the damper, and expressive freedom to create the subtle nuances required by the music.



Tone Generation Derived From the Motif ES

Using a powerful new tone generator derived from the Motif ES, the S90 ES produces voices with stunning clarity and great response that heightens the musical experience for both you and your listeners. To meet the needs of today's players its 228MB* of wave memory holds an enormous library of expressive voices and drum kits, many of which come from the Motif ES, that cover everything from acoustic pianos and orchestra to cutting-edge hip-hop and Electronica.

* When converted to 16-bit linear format.



88 Keys That Put You In Touch With Each Voice

An 88-note weighted action keyboard based on our acoustic piano designs offers players a feel that is natural, smooth, and responsive especially on keyboard voices like the acoustic grands and electric grands. For its non-keyboard instruments like basses, drums and percussion, which require slightly varied playing styles, the action is evenly balanced from top to bottom making these instruments feel and play more responsive. Aftertouch is also included so you can gain more expression from every note.

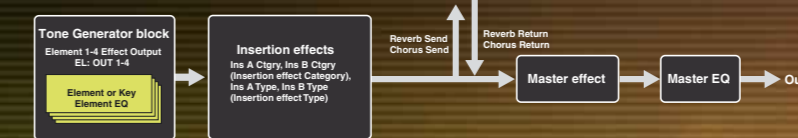


New Signal Processing Effects System

The S90 ES takes great advantage of the processing power inherited from the Motif ES to produce effects like damper resonance, reverb and others with stunning clarity. This power also satisfies users of its multi-timbral capabilities, allowing liberal application of effects without the restraints experienced in lesser designs.

The system is designed with two blocks of insertion effects (117 types) for each voice and two overall system effects that include 20 reverb types and 49 chorus/delay effects. This way you can apply the right type of signal processing where its needed most. Even in song or pattern modes you won't feel confined since voice insertion effects can be applied on up to eight individual parts simultaneously. Further sound tailoring is available with three-band individual part EQ settings, eight types of mastering effects, and a five-band master EQ.

Effect connection



Seamless System Integration

Compatibility with Studio Connections lets the S90 ES function as if it were a plugin within compatible DAW applications like Cubase and Nuendo. Hardware and software systems integrate seamlessly in this environment where total recall of entire hardware/software systems is possible.

In other DAW systems, the S90 ES's sliders and data dial can be used to control start/stop of record or playback, track volumes, panning and more to increase system efficiency.

The graphic user interface of the dedicated voice editing application lets you edit and create your own voices with point and click convenience. Up-to-date applications and USB drivers are available for download at www.yamahasynth.com.

If you want to connect the S90 ES to an mLAN network just install an optional mLAN expansion board and start sharing MIDI data and multiple channels of 24-bit/96kHz digital audio with other mLAN equipped devices and computers through an IEEE1394 Firewire cable.



Powerful Arpeggiator Delivers Real-Time Performance with a Human Touch

The S90 ES arpeggiator is a powerful real-time performance tool that can be used in combination with Keyboard Mega Voices to create remarkably realistic instrumental performances. Call up a guitar voice for example, play a chord and it delivers a performance complete with hammer-ons, pull-offs, harmonics, slides, even fret noise.

A library of 1787 phrases offers everything from popular phrases to the latest cutting edge rhythms. With drum kits it generates innovative rhythm patterns while normal voices and its chord recognition capabilities produce pitched phrases. For fuller accompaniments use a split voice to create two part accompaniments—bass phrases from lower keys and chords or melodies from mid and high range keys—that are great for backing vocals or instrument solos.

