JAX   CONCERT GRAND PIANOS

JAX CONCERT GRANDS
(Sound Modules & AudioUnits)

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The JAX CONCERT Grand Piano collection is a comprehensive set of quite different sounding, high quality virtual Grand Pianos, specifically created for mobile device usage and performance in mind.

We used in difference to the large competition market a rather unique economic approach for recreating the realistic sound of the pianos with a low memory and disk storage footprint.

We designed an audio engine with the maximum polyphony of 128 real stereo voices, added sympathetic string resonance emulation and real body and ambient emulation. And we tested for authentic playback (dynamics) of famous classical piano music compositions, recorded under real life conditions by real pianists, playing real pianos with attached event recorders.

Usually virtual piano instruments use gigabytes of disk space and memory for the recreation of the more or less realistic piano sound and use massively common sampling technology, often with disk streaming mechanisms. This always results in total device

occupation and therefore quite limits the usage with a performant mobile project setup.

Often such recreations also suffer from different other problems, like a clearly limited polyphony and strange sounding artefacts due to the sampling technology, especially the unnatural summing up of the sound layers (string and body resonances) when played back with higher polyphony.

The piano sound is always very much a matter of personal taste, so the number of really usable pianos with mobile devices is quite limited due to these restrictions and requirements regarding available disk space, memory usage and CPU performance.

The JAX CONCERT GRANDS aim to deliver high performance virtual Grand Pianos of all well known established real classic instruments, categorized after their typical sound character.

Copyright issues prevent us for using brand names like "Blüthner", „Bechstein", "Steinway", "Fazioli", "Bösendorfer" or "Yamaha" in our collection, but the typical sound of such devices was indeed recreated and is available within our collection.

JAX *Superior* **CONCERT GRAND PIANOS**
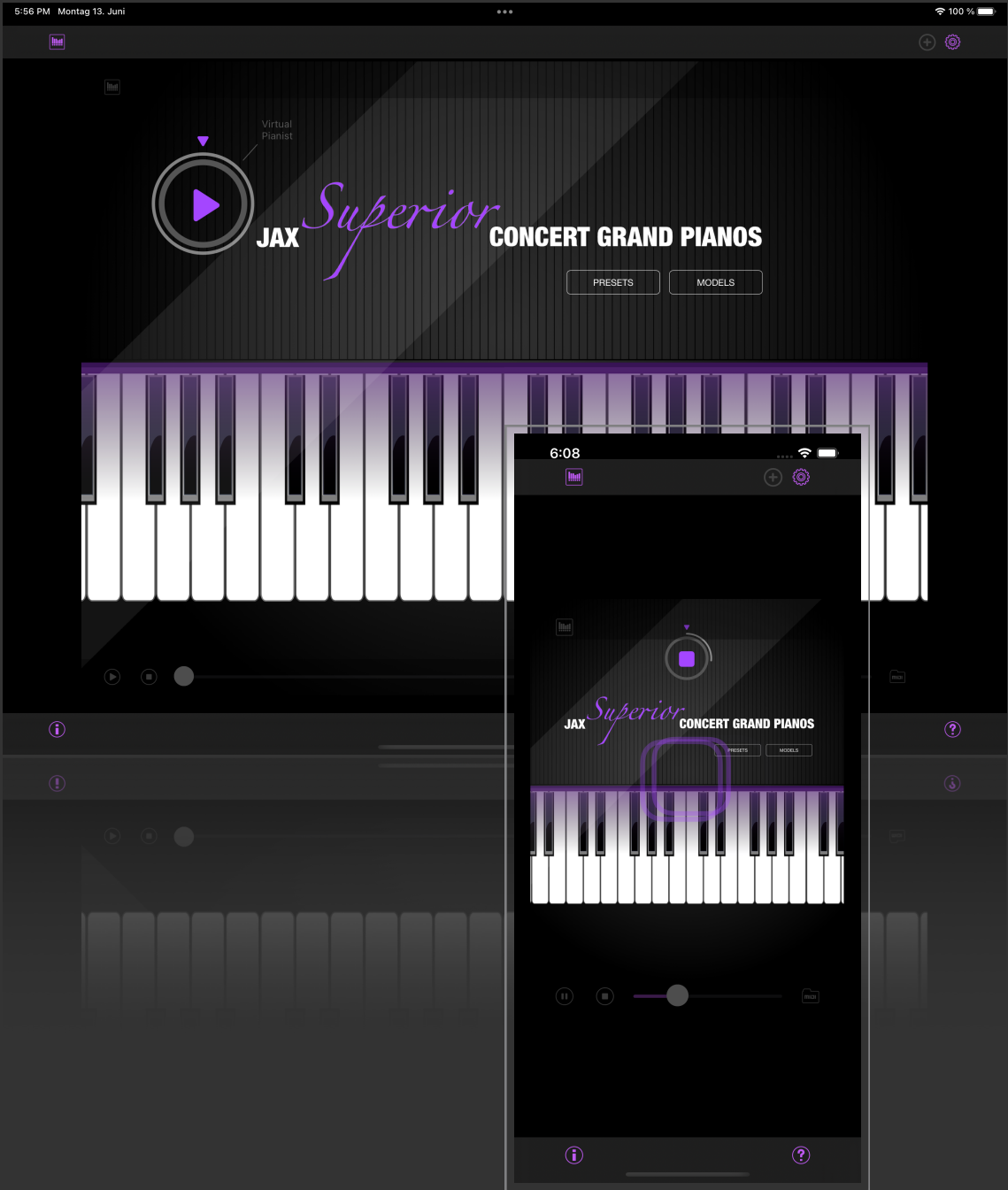
JAX Superior Grand

The JAX Superior Grand is a hybrid style Concert Grand Piano with a sound fusion of the classic timbres from selected German Grand Pianos of larger (concert) sizes.

Note:
The documentation for the JAX Superior Model is representative for all other models in the JAX Concert Grand series too. The difference are mainly the included models. Each item in the collection includes 4 unique base models (timbres) and 16 fusion models. So the complete series has 20 x 5 (=100) different piano models available.

The JAX Superior Grand is specifically well suited for playing back classical piano music of all decades. German Grands have developed their own characteristics in timbre over a long historical way.

JAX Superior Grand comes with 4 ground models with quite different timbres and characteristics. It additionally delivers 16 hydride fusion models, which can be chosen instantly for performance.

Quite a few sound parameters are available for tweaking and optimising the sound for special requirements. The velocity curve can be adjusted to the needs, as many cheap computer keyboards will

not have the typical weighted keys of a real piano, which is extremely important for nuanced and expressive perfaormances.

JAX Superior Grand and all other models from the series also include an integrated sample perfect MIDI player and a collection of hundreds of classical pieces for randomised selection and playback. These MIDI files were recorded by real piano players with real concert pianos and taken with YAMAHA piano recording technology (Disklavier). The player will send out the MIDI signal for usage with other (external) sound generators, making direct sound comparisons with external sound modules and real pianos possible.

The app will work as a sound module, driven by usual MIDI drivers on any mobile device and the desktop Mac and comes with an embedded AudioUnit for usage by any host application, that is supporting Apples AUv3 format MIDI instruments.

We optimised the user interface for iPhones and iPads and usage with touchscreens.

On the macOS of all currently available architectures, Apples flagship host like Logic Pro X, MainStage 3 and GarageBand can be used and all applications, which support Apples sandboxed AUv3 format. **However,**

for 3rd party vendors, we do not specifically test and so do not give any guarantees.

Controls

The user interface of the JAX Concert Grand main app has several buttons and controls.

Button Velocity Animation:
The velocity animation can be switched on or off for saving realtime performance. Default is off.

Real dynamics via velocity is a unique key feature of the JAX Grand Concert Pianos. We recommend to use weighted keyboards for playing a piano in general.

If the velocity animation is enabled, animated round rectangles will indicate pitch and velocity of the playback. This is especially very useful for learning better playing dynamics while exercising. The included classical pieces demonstrate the expressive usage of velocity. If the velocity always stays on a line of the screen or does not change very much vertically, there is obviously a playing deficit without any dynamics, resulting in a expressionless and flat piano sound.

Button Player / Speed:
The player button will randomly select a classical piece from hundreds of MIDI recordings and play back thru the sound engine. The playback speed can be adjusted by selecting the arrow around the play button shape. Top (center) position means 100 percent of the

MIDI encoded speed, tweaking left will slow down and tweaking right will speed up the playback. A playing piece can be stopped any time by pressing the play/ stop button repeatedly. Each time a new piece will be selected.

Button Model Select:
The model button will expose the model selector dialog, where the current piano model can be selected. There are 4 base models and 16 fusion models, which are combinations of the base models. The numbers have special meaning and let see you exactly, which combination of base models is used.

Button Presets:
The presets button will invoke the preset dialog, which enables to save, load, import and export presets. Presets can be shared across all devices, where JAX Superior is available. Preset files are XML based text files in Apples *.plist format, human readable and also editable. However we recommend editing only, if advanced knowledge of Apples file format is available.

Button File Select:
The file select button enables loading of Standard MIDI files from the file system. Please note, that multi channel files will play back all channels on MIDI channel 1 (hex: 0x00). If you select multi channel files, i.e. with drum tracks and SysEx and such, you may

most likely confuse the synthesis engine and produce musical chaos or even possible crashes.

Standalone Controls

The standalone apps of the JAX Concert Grands will expose additional buttons for load, configuration, help and information. The load button will toggle the user interface of the audio unit. With the configuration dialog, some global preferences can be adjusted, for instance, selecting the current MIDI ports for in- and output. The info button opens a connection to the product website inside a browser window and the help button shows the embedded (this) PDF manual.

Please note, that for security reasons, the connections to the internet via links may be limited by the operating system.

Parameters

All parameters of the JAX Concert Grand are exposed to the host application. basic MIDI Control is available regarding the GM/XG/GS Standards.

Volume:

This is the global output volume of the generated audio.
Supports MIDI controller 007 (0x07)

Expression:

This allows to control the loudness of the Grand Piano. This is usually channel specific.
Supports MIDI controller 011 (0x0B)

Pan:

Controls the aural positioning of the Grand Piano sound.
Supports MIDI controller 010 (0x0A)

Brightness:

This parameter is for adjusting the brilliance in conjunction with the velocity response of the Grand Piano. Virtual velocity offsets can be adjusted here.
Supports MIDI controller 074 (0x4A)

Tonal Presence:

Controls the tonal presence and entire tonal resonance of the piano sound.
Supports MIDI controller 071 (0x47)

Tonal Decay:
The decay (initial falloff) of the tone can be adjusted with this parameter.
Supports MIDI controller 075 (0x4B)

Tonal Release:
Controls the release (duration) of the piano tone, if keys are released. This should be adjusted regarding the character of the playing. Too long release times will result in a ‚reverberation' like effect.
Supports MIDI controller 072 (0x48)

Sustain Pedal:
Standard sustain pedal implementation for holding notes (controlling the string dampers).
Supports MIDI controller 064 (0x40)

Model Select:
This parameter selects one of the 4 base models or one of the 16 different fusion models.

The model selection has special logic. Valid numbers for the fusion models are combinations of the base model. 23 for instance means a

fusion of base model 2 (attack/decay) and base model 3 (decay/release) and so on.

Stereo Width:
The stereo width of the sound can be adjusted with this parameter between mono and wide stereo.

Tonal Balance:
Adjusts the tonal balance with an impression of far or near to the audience, some models will adjust the stereo expression of bass and treble from left to right.

Ambience:
The amount of the surrounding ambience.

Body Resonance:
The amount of the body resonance. More body resonance will result in increased bass response and vice versa. It is comparable with closing and opening the Lid of the piano.

String Presence:
Intensity and mixture of the string resonance tone.

String Resonance:
The amount and duration of the realtime generated String resonance tone.

Sympathetic string resonances will occur due to the vibration of all strings with certain frequency ratios. This parameter is often mismatched with ‚reverberation'. All, especially larger Concert Grands will naturally create a strong string resonance tone, that basically sounds like a chromatic analog spring reverb.
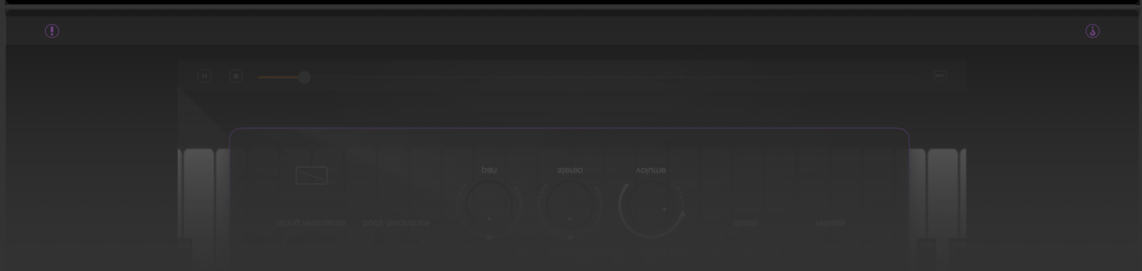
Tonal Adjust 1:
Tonal Adjust 2:
Tonal Adjust 3:
Controls are reserved for various subtile tonal adjustments and may not be activated yet, reserved for future enhancements.

Velocity Table:
The velocity response curve can be drawn with the mouse. This is especially useful if using unweighted plastic keys.

Following JAX Concert Grands collections are available or pending for release:

JAX Superior (German Models)

The German Grands collection includes timbres from Bechstein, Blüther, Steinway/Hamburg and Schimmel concert pianos.

JAX Imperior (American Models)

The American Grands collection includes timbres from Steinway New York, Baldwin and Mason & Hamlin

JAX Emporeor (Japanese Models)

The Japanese Grands collection includes timbres from Yamaha and Kawai.

JAX Xcelsior (Largest Models)

This Concert Grands collection includes timbres from the worlds largest pianos from Bösendorfer, Fazioli, Steinway and Yamaha.

JAX Xperior (Selected Models)

This Concert Grands collection includes timbres from selected and somewhat ‚out of type' pianos.

If there are any questions, please contact us via support@digitster.com