



PRODUCT OVERVIEW

MPC4000



Product Description

The Akai Professional MPC4000 Music Production Center combines a 128-Track MIDI Sequencer and a 64-voice 24bit Stereo Digital Sampler, with 16 velocity and pressure sensitive rubber pads, providing rock solid sequencing and drum programming combined with extensive sampling facilities in one extremely powerful desktop unit.

Designed for professional audio production, the MPC4000 offers all the advantages of dedicated hardware, features a large LCD plus the computer interface power of akSys PC/Mac control and networking software. And to make sure all this power runs smoothly, at the heart of the MPC4000 is our new custom designed LSI sampling engine which, coupled with a high performance Intel™ Strong Arm CPU provides ultra fast audio processing.

More than just a sampling drum machine, for the first time, the MPC4000 supports not only conventional Drum programs but also gives you the choice of selecting Keygroup programs allowing you to play 'conventional' multi-sampled sounds such as piano, bass, strings, synth, etc., from a keyboard just like our rack mount samplers. Furthermore, it is compatible with the largest variety of sound libraries: Akai S1000, S3000 and XL series, S5/S6000, Z4/Z8, MPC2000XL, MPC3000, Roland S700 series, and EMU 3 and 4 series.

Sample recording can be performed even while the sequencer is running, from digital or analog inputs, including a RIAA phono input for direct connection of a turntable, or from the internal CD drive, and the MPC4000 can also resample its own stereo output.

The MPC4000 shares all the sample-manipulation functionality of the Z series, including looping, time-stretching, pitch-shifting, slicing and dicing.

New filtering is provided by way of 6-pole digital dynamic filters. The new filter design not only supports multi-mode filter types, but also new variations such as the triple filter consisting of three independent 2-pole filters.

Filter modulation is part of the 64-point APM (assignable program modulation) matrix which has more than 30 modulation items freely assignable as either source or destination. Modulation items also include 3 independent envelope generators and 2 sync'able LFOs. Furthermore one source can be assigned to multiple destinations and likewise multiple sources can be assigned to one destination just like on a vintage synth matrix patch board.

Four internal effects processors can be used simultaneously, including a wide range of effects algorithms, such as reverbs, delays, chorus, phasers, flangers, 3-band parametric EQ, compressor/limiter, distortion, pitch shifter, wah, and more.

Real-time control is provided by two note variation sliders and four Q-Link knobs. These can be separately assigned to allow flexible real-time performance control of a wide variety of selectable parameters including level, pan, filter cut-off and resonance, tuning, LFO speed and depth, all effect parameters and more.

Product Description (Continued)

Each assignable Q-Link knob can generate MIDI controller data so that all performance information can be recorded and played back from within a sequence, and the Q-Link sequencer allows cyclic modulation programming.

Of course, as all MPCs, the MPC4000 provides both pattern-based and linear sequencing, with the added capability to play a pattern-based song and a linear sequence simultaneously. Improved sequencing functions include resolution up to 960ppq, and a sequence data clipboard which allows you to create a phrase library.

As on the legendary MPC60 and MPC3000, 2 MIDI ins and 4 MIDI outs also come as standard on the MPC4000 enabling 64 external MIDI channels operation, but in addition, the MPC4000 can control its onboard sampler over up to 128 Parts, allowing to assign a different program on each of the 128 track.

The large LCD also allows an unprecedented view of sequence data showing data as a piano roll or as a drum machine 'grid'. Continuous MIDI data can also be shown (and edited) graphically.

The MPC4000 comes with 272MB of onboard memory as standard that can be expanded up to 512 MB of RAM using a standard DIMM. It is equipped with internal 80GB Hard Disk and CD-RW drives.

The MPC4000 also includes a 50pin SCSI interface and a USB Host port for connection to external drives. The USB port can also be used to connect an ASCII keyboard for easier file naming.

A USB slave port allows direct connection to a PC or Apple Mac for use with the free akSys software.

As well as editing, this graphically rich remote control software allows you to transfer files between the MPC and your computer for efficient organization of sound library, etc., and for speedy integration with your favorite computer music software. Samples can be edited as standard Wav files and sequences as standard MIDI files.

The included Pad editor allows you to drag & drop samples directly onto the Pads with 4 adjustable velocity layers.

Positioning

The MPC4000 is the most powerful MPC ever, with a full-featured multi-timbral sampler and a 128-track sequencer with graphic editing. The only 24bit/96kHz hardware MIDI music production center on the market.

Applications/Customers

- For all professional studio productions and live performances
- Connecting a MIDI keyboard to the MPC4000 allows full use of the onboard sampler, not only for drums, bass and loops, but also any kind of multi-sampled/multi-timbral instruments (piano, synths, ...)

Dimensions & Weight

- **Dimensions**
20.71" x 6.69" x 17.83" (W x H x D)
526mm x 170mm x 453mm
(With LCD tilted down)
- **Weight:**
10.5kg (23.15lbs)
(Excluding drives and options)

Key Features

- 1) Improved Akai MPC design
 - Established friendly and intuitive user interface of MPC series, now with large graphic LCD display
 - MPC's legendary "feel" and "groove", with 10 times more resolution for non-quantized live sequencing
 - Great-feeling, velocity and pressure sensitive pads for expressive programming, with more pad banks
 - Expanded Pattern-based and linear 300,000 notes, 128-track sequencer with 128 internal Parts and 64 external MIDI channels
 - 64-voice full-featured 24bit sampler (32-voice at 96kHz) with up to 512MB RAM
- 2) Extensive connectivity
 - Two MIDI inputs and four MIDI outputs
 - Built-in USB and SCSI interface for external drives
 - USB Slave port for connection to a Windows or Mac OS computer with the free akSys software
 - Up to 10 analog outputs, and/or 10 digital outputs with optional IB-48P and IB-4ADT expansion boards
 - XLR and 1/4" stereo analog inputs and outputs with 24bit/96kHz AD/DA converters
 - Phono inputs with RIAA preamp for direct connection of a turntable
 - Flexible Master/Slave synchronization capabilities: MIDI clock, MTC, MMC and built-in SMPTE
 - Two assignable footswitch inputs
- 3) Compatibility
 - Compatible with Akai, Roland® and EMU CD-ROM libraries (programs and samples)
 - WAV file support, and MIDI File Type 0 and 1 support
- 4) Extensive sound control
 - Extensive sample editing that includes cut and paste, timestretch, slice, resampling etc., with waveform display
 - Dynamic resonant multi-mode filters, 3 envelope generators and 2 LFOs for each of the 64 voices
 - Six Q-Link sliders and knobs for real-time control over a wide variety of dynamic changes
 - Internal 4-bus multi-FX processor
- 5) Self-contained
 - Internal 80GB hard drive to store custom sound libraries and sequences
 - Onboard CD-RW drive to load CD-ROM libraries, sample Audio CDs, and backup personal data

MPC4000**Specifications****SOUND GENERATOR**

- Data format: 24bit and 16bit linear WAV
- Sampling rate: 44.1 kHz, 48 kHz, 96 kHz
- Memory: 272MB standard, expandable to 512MB with a 256MB 168pin DIMM (PC133/PC100, CL2)
- Recording time: 51mn / 34mn (16/24 bit) mono @ 44.1kHz (272MB)
96mn / 64mn (16/24 bit) mono @ 44.1kHz (512MB)
- Polyphony: 64-voice (32-voice @ 96kHz)
- Filters: 3 dynamic resonant 2-pole multimode filters per voice
- Envelope generators: 2 multi-stage envelopes and 1 ADSR envelope
- LFOs: 2 multi-wave LFOs
- 64-point modulation matrix
- Number of simultaneous active programs: up to 128 Parts per Multi, with automated Part mixer

EFFECTS

- 4 simultaneous internal effects (2 @ 96kHz)
- 51 effects types including reverbs, delays, chorus, phasers, flangers, 3-band parametric EQ, ompressor/limiter, distortion, pitch shifter, wah, and more

SEQUENCER

- Capacity: 300,000 notes
- Resolution: 960ppq
- 128 Sequences
- 128 Tracks per sequence
- 64 MIDI output channels (16 channels x 4 output ports)
- Song mode: 128 songs, 250 steps per song
- Simultaneous playback of a second sequence
- MIDI Sync: Master/Slave, MIDI Clock, MTC, MMC
- SMPTE Sync: Master/Slave
- Step edit, Piano Roll edit, Drum Grid edit

DRUM PADS:

- 16 velocity and pressure sensitive pads
- 6 pad banks
- 16 Levels: Velocity, Tuning
- Automated Pad Mixer (Level, Pan and FX send)
- Track Mute and Next Sequence features for live performance

Q-LINK

- 2 sliders and 4 rotary knobs
- Assignable to internal sampler controls: pitch, filter cutoff, resonance, LFO, attack, decay, and more
- Assignable to internal effects parameters
- Assignable to external Midi Controllers
- Q-Link Sequence feature

GENERAL

- Display: 320 x 240 pixels grey-scale graphical tilting LCD
- Internal Hard Drive: 80GB
- CD-RW drive
- Standard accessories: 1x CD-ROM sound library, Power cable

CONNECTIONS

- Record Input (L and R): XLR – 1/4" jack combo x 2, balanced
- Phono Input: RCA x 2 with RIAA EQ
- Stereo Output (L and R): XLR x 2 and 1/4" jack x 2, balanced
- Individual Outputs: 1/4" jack x 8, balanced (option)
- Headphone Output: 1/4" stereo jack x 1
- Multi-channel ADAT Digital I/O: Toslink optical x 2 (option)
- MIDI: 2 x MIDI In and 4 x MIDI Out
- SMPTE In/Out: 1/4" jack x 2, balanced
- Footswitches: 1/4" jack x 2, balanced
- SCSI: 50pin high density connector
- USB: Host x 1, Slave x 1 (V1.1)

OPTIONAL ACCESSORIES:

- IB-48P: 8 individual analog outputs (included in MPC4000 Studio A)
- IB-4ADT: multi-channel ADAT digital I/O (included in MPC4000 Studio D)
- IB-4D SPDIF I/O with WordClock

POWER

- 100-240V AC, 50/60Hz
- Consumption: 70W max (with all options)

FAQs**Q. What is the difference between pattern-based sequencing and linear sequencing?**

A. The MPC4000 can do both. With linear sequencing, the whole song is one long sequence which can be recorded continuously in real-time, much like an audio recorder, or edited by copying/pasting bars (such as verse, chorus, etc). This is good when recording tracks while playing live over the whole song. With pattern-based sequencing, a song is made of multiple short sequences (patterns) that can be re-arranged very quickly in Song mode or even in real-time using the Next Sequence feature.

However, unlike limited "groove-boxes" where patterns are only one or two bars, on the MPC4000, pattern/sequences can be of any length. With the MPC4000, you can work on each pattern in a loop, switch patterns, and in Song mode, simply specify the order the pattern playback and number of repeats to create an arrangement. At any time, you can change the arrangement without tedious copying/pasting. In addition, if you decide to modify a pattern (say, the chorus sequence) after having created the song arrangement, it will automatically be modified in all the instances of the same pattern (i.e. all the choruses in this example).

With linear sequencing, you would have to copy/paste the edited bars again, as many times as there are instances. Of course, with the MPC4000, you can also create a copy a pattern if you want to modify only one instance. Furthermore, the Simul Play feature allows the MPC4000 to play a pattern-based song and a linear sequence at the same time.

Q. What are the benefits of having two MIDI Ins and four MIDI Outs?

A. The two MIDI Inputs allow connecting a MIDI controller (keyboard, drum pads) to one input while the other input is used to receive MIDI Sync from another unit such as a digital recorder. Otherwise, you would need an outboard MIDI Merger. The four Midi Outputs allow the MPC4000 to control 64 external MIDI Channels (16x4), in conjunction with the 128 internal Programs. This is very useful if you have more than one outboard multi-timbral sound generator (for instance, your keyboard and a sound module). This also allows using a dedicated MIDI output MIDI Sync.

Q. What type of memory will work in my MPC4000?

A. You should use only 168-pin, PC100 or PC133, CL2 DIMM

Q. Do I need another sound module to add keyboard instruments parts to my beats?

A. No. The MPC4000 includes a full featured multi-timbral sampler. Simply connect a MIDI keyboard to one of the MIDI inputs of the MPC4000, load a piano, organ or synth program for your library, assign it to the current track and play it from the keyboard.

Q. Do I have to load samples in the memory before I can hear them on my MPC4000?

A. No. Since OS V1.60, you can audition samples directly from the disk (hard disk or CD-ROM) before loading them.

Q. Can I record vocals with my MPC4000, in sync with my sequences?

A. Yes. Since OS V1.60, it is possible to trigger audio recording with a Midi Note on a specific channel while the sequence is playing/recording. Using the same note to trigger the playback of your recorded vocal sample will play it in sync with the sequence, exactly where it was recorded.

Q. I have produced a complete beat with my MPC4000. How can I burn it to a CD or share it via Internet?

A. When your beat is ready, go to the RECORD mode and select MAIN OUT as the source for stereo recording. Set the sampling time to the length of your beat and the threshold to the minimum. Arm for recording and play your sequenced beat from the start. This will create a new stereo sample of your beat, including the effects. When finished recording, transfer this stereo sample as a WAV file in your computer (via USB or any removable media), and use your computer software to either write this file to an audio CD or encode it as an MP3 file to share it via Internet.

Q. What are the Q-Link controls?

A. The MPC4000 has four Q-Link™ knobs, and two Q-Link™ sliders, that can be separately assigned to allow flexible real-time control of a wide variety of selectable parameters including amplitude, filter cut-off and resonance, sample start offset, effect send, sample tune and more. Control of an entire program or an individual sound assigned to a single keygroup is possible. Each assignable Q-Link™ control is also capable of generating MIDI controller data to external sound generators, and so that all performance information can be recorded and played back from the MPC4000's sequencer.



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FAQs

Q. What is Quick FX?

A. Quick FX allows sounds to be sampled and re-sampled through the 4-bus internal multi-effects processor. A variety of presets are available that describe the final result allowing (as the name implies) very quick operation. Of course, if you want to, you have access to the effect's parameters to customize the presets. Presets such as Dirty, Swell, Squash, Stretch, Distant, Fat, etc., provide the desired results without the complexity.

Q. Can I edit the sounds of my MPC4000 on a computer?

A. Yes. Programs can be edited graphically in real-time via USB on a computer using the supplied akSys software for Windows and Mac OS. Samples are saved as standard WAV files and can be edited and processed in any sample editing software, such as the "Audacity" freeware for Windows and Mac OS.

Q. What is ak.Sys? What does it do?

A. ak.Sys is a free Control and Networking software available for Windows, Mac OS 9 and OS X. The intuitive nature of this computer based interface means the MPC4000's sampler is easy to manage and since all the DSP processing takes place in the sampler, it relieves the strain on your computer allowing it to run efficiently while simultaneously using other audio applications. In fact, such is the level of integration, you'd be forgiven for thinking that you are using a software sampler... except you're not! And when you're ready to take your show on the road, dedicated hardware travels much better than a computer! Up to 32 samplers can be connected to the same computer and share the same sound library via a simple USB connection. Ak.ys V2 supports any combination of Z4/Z8, MPC4000 and S5000/S6000 samplers.

The ak.Sys Browser allows you to manage sound libraries. Files can be dragged and dropped between disks and memory to load sounds into the sampler (and *vice versa* to save sounds to disk). You can also drag and drop sounds between your Mac/PC's desktop and ak.Sys and use your computer's hard disk to store and manage sound library. Double click on a program in the ak.Sys Browser and you launch the ak.Sys Program Editor where you can create and edit programs using a large virtual synth panel, with plenty of virtual knobs, graphic envelopes, etc... Drag and drop is fully supported and you can drag samples from the Browser or your Mac/PC's desktop directly onto programs to assign samples to specific key ranges (which can also be set simply by setting them graphically with the mouse). There is also a Graphic Pad Editor that allows you to assign samples directly to the Pads with 4 adjustable velocity layers.

The Multi Editor allows you to create and edit Multis quickly and easily. Drag and drop programs onto a channel of the Multi Editor's virtual mixing console to assign sounds and use the mixer's controls to set levels, pan, effects sends, output routing, etc., and solo and mute channels with a single mouse click.

Double clicking on a sample within ak.Sys will launch your own preferred wave editor and transfer the sample from the Z4/8 automatically to your Mac/PC where it can be edited and processed on-screen. Once you are happy with the edit/processing, saving the sample will transfer it back to the sampler where it is immediately available for playback.

Of course, when you are dealing with a large database of sounds and samples in memory and/or on disk, you need a quick way to locate them. Ak.Sys has its own Search Engine that enables you find the sounds you want simply by typing in their names. And if all this isn't enough, it is also possible drag & drop Sequences between the MPC4000 and the computer, as standard MIDI files.