

Home-based Music Recording Systems

There are now an incredible amount of options for home-based music recording systems!

Essentially the field is split into two distinct categories – “stand alone” systems and computer based systems. Let’s take a look at both to see which option will suit you best:

STAND ALONE RECORDERS –

There are many types of stand-alone or “all in one” recording packages available. From humble beginnings as 4 track cassette recorders these have developed into sophisticated production machines. The recorders combine an audio mixer, some sort of recording format (hard disc, flash card etc) and often a CD burner for you to produce your finished product. Many of these also include vocal effects such as reverb and delay plus guitar effects already built in for the musician to enhance his work.

A great example of this kind of recording system is the Zoom HD-16CD.

This is a 16 track recorder which stores music onto a built-in hard disc. The unit provides a familiar audio or sound mixer format with connections to plug in vocal microphones, guitars, bass and other instruments. There are a huge variety of built in effects to add to your recordings as well. In addition the unit has a bass generator (like a synthesizer that you can use to “play” bass guitar parts – without using a bass guitar!) and a drum machine for programming drum sounds as well. You can literally become a “one man band” with this unit.

Once you’ve recorded all of the parts of your music project you can “edit” or change some of these parts before mixing the individual recorded parts to create the perfect song. Then you can burn your song to CD instantly – straight from the hard disc in the machine. You can even do a whole album right at home!

COMPUTER BASED RECORDING SYSTEMS –

Computer-based music recording systems have become extremely popular. There are now many affordable options for home users to produce professional quality results on a “shoe string” budget. However, this is still probably one of the least understood parts of the entire music industry! Let’s try to get you pointed in the right direction...

The first major component of your computer-based music recording system is the **HARDWARE** which is the actual computer itself. Regardless of whether you're a Mac or a PC person (that's Macintosh or IBM compatible type computers) your machine must have enough computing power to run the recording software you choose, and the correct operating system too. Laptops are a great way to record as they have battery back up.

As a guide here are the basic minimums your computer requires to run most recording software: 512MB RAM with 80GB hard drive, at least 2 USB ports (preferably 4+) and hopefully a Firewire port (but not absolutely essential). You will also need a computer *operating system (eg. Microsoft XP or MacOS version) that is compatible with the recording software you are going to use (eg ProTools, Cubase etc).

*Note – some music recording software will only work with specific operating systems and some will only work with specific versions of an operating system – so choose carefully.

Next is the SOFTWARE you will require for music recording applications – there are now literally hundreds of companies producing music recording software and additional software to compliment other manufacturer's products. Digidesign ProTools has almost become the "industry standard" in digital recording but many others such as Cubase, Logic and Nuendo offer great packages too. You will just have to do a little research to see which system best fits your requirements and your budget – but don't forget to check the computer hardware and operating system requirements specified by the software manufacturer to make sure it will work with your machine.

OK, so we've got a music recording computer which we will now call a **DAW** (that's Digital Audio Workstation) and we have our software of choice installed and ready to go. The next thing is "How do you get the music inside the box?" Again there are numerous choices, if you are lucky enough to have a keyboard/synthesizer that connects directly to your computer you can pretty much start recording tracks right away. But when it comes to getting acoustic instrument signals (guitar, bass, VOICE) into the computer you will need some sort of **analogue-to-digital interface**. These units convert analogue signals, such as your beautiful singing voice, into digital signals that can be recorded on your computer. Again there are many products on the market – M-Box, Traction, Omega etc.

All these products provide a hardware "bridge" between the real world and your computer recorder by converting the signals into digital information. You plug in your guitar or microphone to the unit and it uses analogue to digital converters (A/D converters) to give out a digital signal to the computer. Most will also offer digital to analogue converters (D/A converters) so that you can hear the digital signals back in an analogue format. Handy for when you want to re-record sections of a song, for example.

Once converted into digital signals and recorded on your software-based recording studio you will probably want to use some effects to enhance your music. Welcome to the world of "plug ins". Plug ins are pieces of software written to interface with your computer-based recording system that emulate various effects like classic reverbs, equalizers, tube

compressors, vocal processors etc. Beware, some plug ins can use up a LOT of your computer's power so be careful how many plug in effects you use on any song production or you may face a big CRASH when you run out of computing power.

Now that you have recorded some tracks and used plug in effects, it's time to mix the music and get it back out of the box and into the real world again. To do this many people will mix their music with headphones, a good and inexpensive option, but if you want to hear you mix through speakers you will need to buy some decent studio monitors. These can be passive speakers (you will also need an amplifier to power them) or active speakers with an amplifier built in. Another issue to consider here is "latency" which is the delay in signals caused by all this digital processing you are doing. **Latency** is the time delay between a signal entering your computer recorder, being subjected to all those plug in effects etc, and coming back out at the other end so you can hear it in the monitors/headphones. Fortunately this problem has been minimized in current versions of almost all software and is now at acceptable levels as to be almost un-noticeable.

Now that you have mixed your tune you need to get it back into the real world for other people to hear – this is where a CD burner comes in very handy. Most recording software will offer a "Master" mode where you can tweak your final mix before burning it to a CD. When you have used the "Master" facility to your satisfaction and got a 2 track stereo mix you can simply burn a CD and listen to it on your home hifi system. If you want to make a lot of copies you will need a CD replicator – a machine which makes many copies of the original disc. Otherwise you are just going to have to burn multiple copies one-at-a-time from your computer.

Hopefully that has cleared up some of the mystery surrounding digital recording. It really is quite a simple process as long as you remember the basic parts:

- You must have enough computing power to run your chosen software
- You must choose software that is compatible with your computer operating system (or vice versa)
- You will need some sort of analogue to digital interface (A/D converter) if you want to record analogue instruments and vocals – there is now a "direct to USB" microphone available which can record straight into the software recorder via USB port!
- You will need to be able to hear what's going on inside your "recording studio in a box" with either headphones, studio monitor speakers or preferably BOTH
- You may want to use plug in effects but make sure they are compatible with both your computer hardware and your particular recording software
- You will eventually want to get your music out on some sort of easily transportable format – a CD burner is a great and inexpensive option

WRAP UP –

Stand alone recorders offer great value for money and are getting more sophisticated all the time. They give a much more "analogue" look and feel to the recording process as

you turn knobs and adjust faders just like a professional studio. This is a great option for home-based musicians with limited budgets who want to produce professional results and be able to burn their songs to CD immediately.

Generally, when you add up the costs of hardware, software and A/D-D/A interface equipment, the computer based recording system is a little more expensive. However you may find greater flexibility in the software and more recording and mixing options to try out.

The greatest advice I can give you is “Buy the best piece of equipment you can afford, that suits your style of recording, and learn how to use it really well”. Once you become familiar with how your new “toy” works you can forget about the mechanical side of the process and concentrate on producing great MUSIC!

Keep playing!

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