



Are we ready for X10?

advertisement

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Would you like to automate control of mains-powered devices and lighting in your home? Is the prospect and cost of replacing much of the existing wiring unappealing? Well, if you can count to sixteen and wield a small screwdriver with the best of them, X10 may be for you. The most commonly used X10 system components are very easily installed and configured.

I'm probably starting to sound like an X10 salesman, but selling is not my forte, and I'm completely new to the system. Furthermore, my background in computing makes me extremely cautious of glowing ease-of-use claims for any newly encountered technology. So when I received the devices I was initially highly sceptical of the grand ease-of-use claims found on the X10's boxes and in the accompanying documentation.

Now I wish more people in the computer industry knew of X10 when designing their so-called plug-and-play systems!

What is X10?

X10 is sometimes also referred to as Powerline Carrier, or PLC. Technically, this is a communications protocol for sending device power (on, off) and dimming status and control signals across mains cabling. There is a lot of information on how PLC works on the web - a good starting place is the X10 technical FAQ at www.x10.com/support/technology1.htm.

To have the most basic X10 setup you need one of each of three types of X10 modules: a receiver, an interface and a controller. In practice, more than one of these functions may be played by a single device. For example, the TM13 transceiver module included in two of the kits described below has an appliance switch that responds to X10 commands (making it a receiver), but its main role is to listen for radio frequency (RF) X10 commands from a remote control and inject them into the mains (making it an interface module).

A truly extensive range of X10 modules is currently available. Light, motion and rain sensors; wall-mounting switches

(to take the place of traditional mains lighting switches); all manner of key fob, "credit card" and conventional remote controls; "socket rocket" lamp base switches; appliance switches and lighting dimmers that are wall socket-, in-wall- and DIN-mounted; irrigation controllers and many more make up the list. Further, some appliances have been made that can have various functions controlled by X10 signals received through their mains cable.

The kit

Basic X10 starter kits and the more popular add-on modules, made by Australia's W Home and I had a chance to check out the LK15, TK15 and CK15 kits. Because of the extensibility of X10 systems, combining the components from multiple kits allowed testing a more extensive system than the individual kits provide.

The LK15 Lighting Starter Pack includes a credit card-sized "key-chain" RF remote control, the TM13 transceiver - capable of switching a 1300w load - and an LM15B lighting module. The remote control has four pairs of on/off switches for four consecutively addressed receivers and a fifth switch pair providing dim/bright control for all dimmable receivers on the remote's house code (see sidebar 'You live where?'). Like most X10 remotes, only one user-settable house code can be controlled.

The remote's buttons are of that soft, mushy kind of "not quite sure if I pressed it hard enough" rubber. Fortunately though, that uncertainty is removed by the inclusion of a small LED that flashes while the device is transmitting. This LED also displays your progress as you step through the process of changing the house code and/or unit codes that the remote will address. All the components in the LK15 kit worked as described and the operating instructions were a breeze to follow.

W Home's TV Room Starter Pack, the TK15, is better value. Included are a very useful (and usable, once you find the right part of the instruction manual) 8-in-1 universal remote control, a TM13 transceiver (as already described) and an LM12 dimmable lamp module.

Initially, the universal remote was very confusing and seemed doomed to failure. This turned out to be due to the "quick start" instructions directing you to the most obtuse (and most likely to fail, at least in my home theatre setup), of the three methods of programming the device. Of all the components I tested, the remote was the device with the worst manual, obviously suffering in translation.

However, if you don't consider yourself a power user and read past the quick start instructions, you get better advice about how to make the universal remote play nicely with your existing TV, DVD, Sky decoder and other common home theatre and entertainment components. Once I found this advice, setting up the remote was simple.

This learning remote can control up to seven infrared remote-controlled devices, and has X10 RF remote capabilities too. For example, as well as being able to individually address all X10 modules on a single house code, it has 'all lights on' and 'all off' buttons. The first turns on (at 100% for dimmable receivers) all X10 lighting switch and dimmer modules, and the latter turns off all X10 modules, not just the lighting ones. The X10 control set includes an 'all lights off' command, but, oddly, it's not supported on this remote.

As promised in all the X10 bumpf, the components of this kit and the LK15 interoperated neatly, with the remote from both able to control suitably configured modules from either kit. Expanding a basic configuration looks to be as easy as the advertisements claim.

After learning the basics of X10 with the LK15 and TK15 kits, I finally got to break out the Computer Control Starter Pack, CK15. This pack includes a CM12 computer interface, an AM12 appliance switching module (for loads up to 10A) and an LM12 dimmable lamp module (also in the TK15 kit).

Also included is a copy of the ActiveHome software for Windows. Mac users are out of luck here, having to download free (but with limited functionality) trial versions of Mac OS/OSX home automation software (easily found through Google) or paying extra up front to replace the Windows software included in this kit. The cost savings inherent in buying the kit over its individual hardware components still make it an attractive starting place for non-Windows users

looking to get into computerised home automation.

The CM12 provides RS232 (serial port) access to your X10 network. Again, Mac users are left short as they will likely have to buy a separate cable to interface their computer to the CM12, with the 'standard' PC DB9 comms port cable supplied being of little use to them.

The CM12 includes non-volatile memory that can be used to store macros produced in the ActiveHome software. In this sense, a macro is a sequence of X10 control events that can happen through time and can be triggered by other X10 events. For example, you could have the garage and hallway lights turn on when the garage door opens, but only if it is after dusk. Ten minutes later you have the garage light turn off and much later the hallway light, after your usual bed time.

If you have an always-on computer, or one that has "wake on modem event" capability (and a lot of X10 receivers) you can greatly extend the usefulness of macros. With such a configuration you need not be limited to the amount of macro programming that can be stored in the CM12's memory, but instead let the software on your computer manage all macro-controlled events.

ActiveHome also supports a 'lifestyle' feature whereby it can learn your normal daily routines, watching all X10 control events and then automating your house by replaying them each day. This can also be used as the basis of a security feature that provides a 'lived in' look to your home, replaying a learnt sequence but adding a dash of randomness to the times at which events in the sequence occur.

The verdict

X10 has its foibles. There are some limitations regarding the control of fluorescent and halogen lighting, low-power and energy-saver lamps. Standard modules are not two-way, meaning in general, interface modules cannot reliably determine whether a specific device has actually carried out a command issued to it, or that a module's state has been changed through some action external to that controller.

I had trouble with the expected range of the X10 RF remotes because of the significant use of concrete walls and floors in my house, which would probably need three or more interface modules to get reliable house-wide RF remote control. I was also far from impressed by the total lack of response from W Home. Oh, and your AV system installers will almost certainly point their fingers at such devices should you ever complain of intermittent noise in their systems.

Overall, however, I was pleasantly surprised to see a technology product not only promising ease of use but delivering it in spades.

You live where?

X10 control commands are generally addressed to a specific module. Modules can have one of 256 addresses, which comprise two codes - a house code (A to P) and a unit code (one to 16). As the expected range of X10 signals is up to 200m on the mains wiring (though 80m is more commonly observed), closely adjacent buildings or apartments would likely see each other's signals, so control commands from one X10 installation could unintentionally alter the state of other installations nearby.

One of the tricks of X10 addressing is that multiple modules may use the same address and all will respond to the same command. In some cases this is necessary - for example, you may have four ceiling lights all on one physically switched circuit and want to keep controlling all four as one circuit.

Four LM15 plug-in bayonet switch modules, all set to the same address, would allow for this. Alternatively, you may wish to split that same four-light physical circuit into two two-light circuits. Without any wiring alterations, two LM15 modules set to the same address, and another two set to the same address as each other but different from the first

pair, gives you control of what are now two logical circuits.



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