



Action Home Automation - White Paper

Levels of Home Automation

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Home Automation systems can be categorized into 5 different levels based on several factors. The factors are primarily complexity and functionality. These factors determine the level of sophistication, the type of hardware and the software used. The levels are:

- 1 – Remote Control
- 2 – Macros
- 3 – Conditional Control
- 4 – Interactive
- 5 – Learning

Level 1 is the simplest and includes simple remote control of lights and appliances using a transmitter and a receiver. There is no intermediate hardware involved. For example, you might have a controller and a lamp module...



Level 1 may also include a timer type controller to turn on the device at a certain time of day...



or it may even use an RF controller.



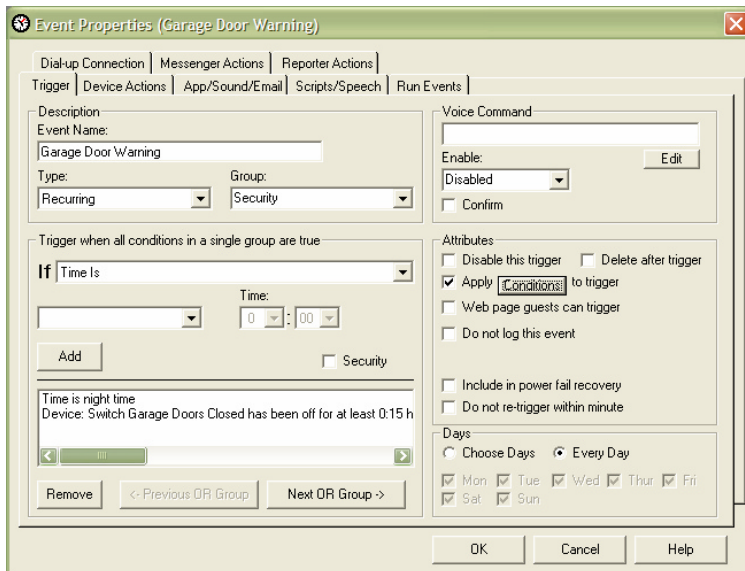
Obviously the Level 1 system can be fairly inexpensive. But it basically consists of controlling “one” device at a time.

Level 2 adds a “macro” capability. A macro is the ability to use one command to actually control several devices. A single touch could dim the lights, close the drapes, put on soft

music and start the Hot Tub. One macro can actually run another macro as well. Some type of programming is required to store the macros. This programming can be done from another controller or from a computer. These devices are in fact sophisticated controllers that do not require a computer to run normally.



The Level 2 unit is a sophisticated transmitter but does not monitor actions or do conditional control. That is where Level 3 takes over. Level 3 has the ability to do conditional logic. For example, turn on a sound device if the time is night time and the garage doors have been open for over 15 minutes.



(Screen shot from HomeSeer)

Generally this device is computer controlled or is based on a dedicated processor based controller.

Up to this point, the manual control of devices comes from a controller consisting of buttons or switches. While the controller may be a keypad, remote control, touch panel, or a sensor, the interface is not interactive. Interactive interfaces comprise the Level 4 system.

Level 4 systems include the ability to control the system via a web site, voice recognition, instant messenger, email, telephone, or other system. There are few systems available that can do any or all of these. These are almost always computer based.

And finally the most sophisticated level of control is Level 5. Level 5 incorporates “learning” into the system. The actions of the system might change automatically based on living patterns, etc. This capability is basically the ability for the system to reprogram itself. For example, if the system detects that someone routinely turns a particular device on at about the same time on weekdays, an event would be automatically added to turn on this device.

Summary...

Our system is capable of all levels of control. The wonderful aspect of our system is the ability to start out at Level 1 and gradually move up to the more sophisticated levels. Or you can start out at our recommended Level 4 which is the most cost effective.