

**Adapting Airconditioner remote controls for use with ECU systems**

Most ECU systems can learn the infra red signals from remote controls and then “play them back” under the control of the disabled user. The ECU is put into a learning mode, and then the original remote control is operated. After a number of samples the ECU stores the signal and then can faithfully replicate it.

Infra red remote controls that are supplied with many airconditioners behave differently to television and video remotes, which can make it very awkward to train an ECU. Each time a button is pressed on a tv remote it emits a code corresponding to that button. It always emits the same code, and is therefore easy to replicate.

Many airconditioner remotes have a LCD display that shows the current settings. They emit a complicated code to ensure the status of the display and the airconditioner are synchronised. The following examples illustrate the differences:

	TV	Air Conditioner
Power - 1st press	Sends toggle power" signal	sends "turn on" command
Power - 2nd press	Sends toggle power" signal again	sends "turn off" command
Vol/temp up - 1st press	Sends up signal	sends "temp = 21" command
Vol/temp up - 2nd press	Sends up signal again	sends "temp = 22 "command
Vol/temp up - 3rd press	Sends up signal again	sends "temp = 23 "command

One way of tackling this is to work out exactly what the airconditioner remote is doing, and then train specific codes into the ECU. This will involve one ECU button for “on”, another for “off”, and one for each discrete temperature and mode setting. Training the ECU can be fiddly as you have to keep putting the remote back to a known position so the ECU “sees” consistent data. This method also means the display on the remote does not reflect the settings in the airconditioner.

An alternative approach that we have proven to work is to adapt the remote. This is done with an interface that is wired into the relevant buttons on the airconditioner remote.

The ECU user then just selects a function on their equipment that corresponds exactly with the remote buttons. The ECU sends a consistent IR signal to the interface, and the remote responds as if the button on it had been physically pressed. The display on the remote shows the status of the system as the genuine remote is controlling the airconditioner



*This unit receives a simple IR signal from an ECU and activates the airconditioner remote, which in turn emits its own codes.*