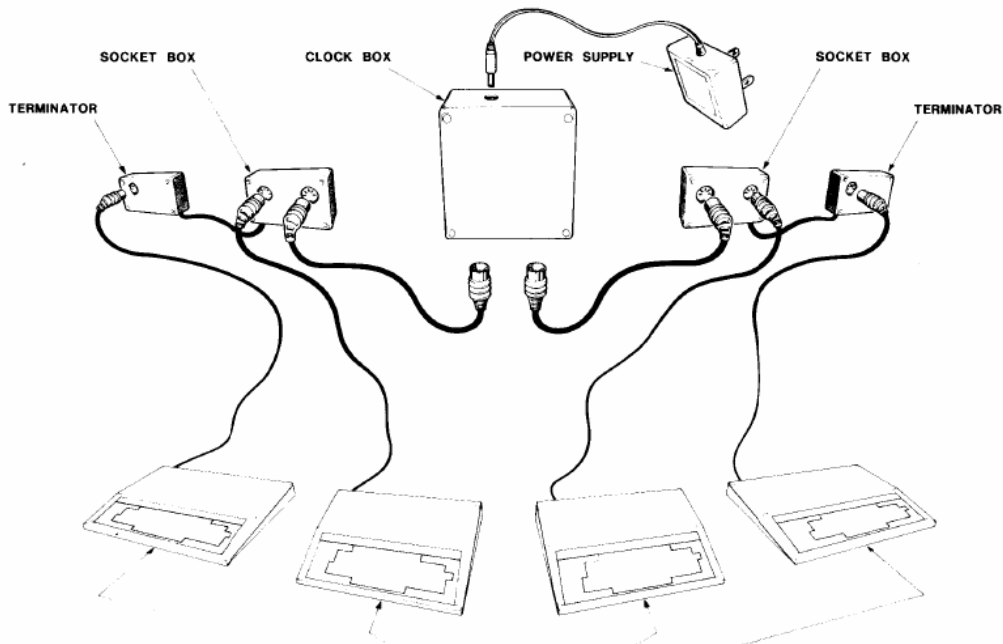# Econet in a Box

INTRODUCTION

This project came into being as a result of attending various Acorn-themed shows and events where an Econet was needed. Econet allows machines to be used by the public with a reasonable certainty that the software system being used will not be damaged or changed. All software accessible by the public has its use permissions set to public read only and this prevents tampering.
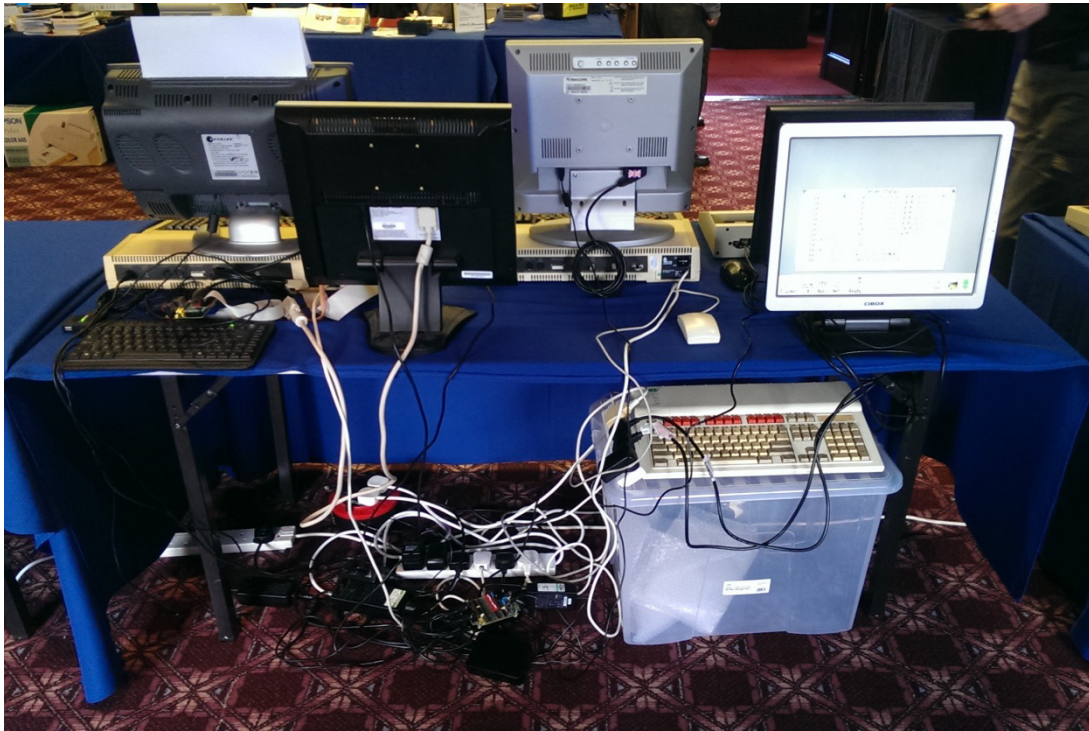
At base the Econet is a distributed system similar to that shown in figure (i) taken from the Acorn Econet Installation Guide Issue 1.

Figure (i)

The actual setup used at the Archive has a BeebMaster clock box with custom designed socket boxes and terminator boxes and can handle up to 10 connected user stations, which are currently one BBC model B, two BBC Masters, two A5000s, an A3020 (the Level 4 Fileserver), an A3000 and an A4000. One BBC Master can act as a Level 3 Fileserver and all the Archimedes machines can act as Level 4 Fileservers as required.

When going to shows the whole system of figure (i) used to be disconnected and reconnected at the show venue, which was quite a time-consuming process and could lead to faulty connections preventing the Econet working. Figure (ii) shows the spaghetti wiring involved with the usual Econet system at a show.

Figure (ii)

What was needed was a compact Econet wiring system that would support up to four stations and which could be quickly set up and later packed away. As an additional requirement the Econet must be extendible.
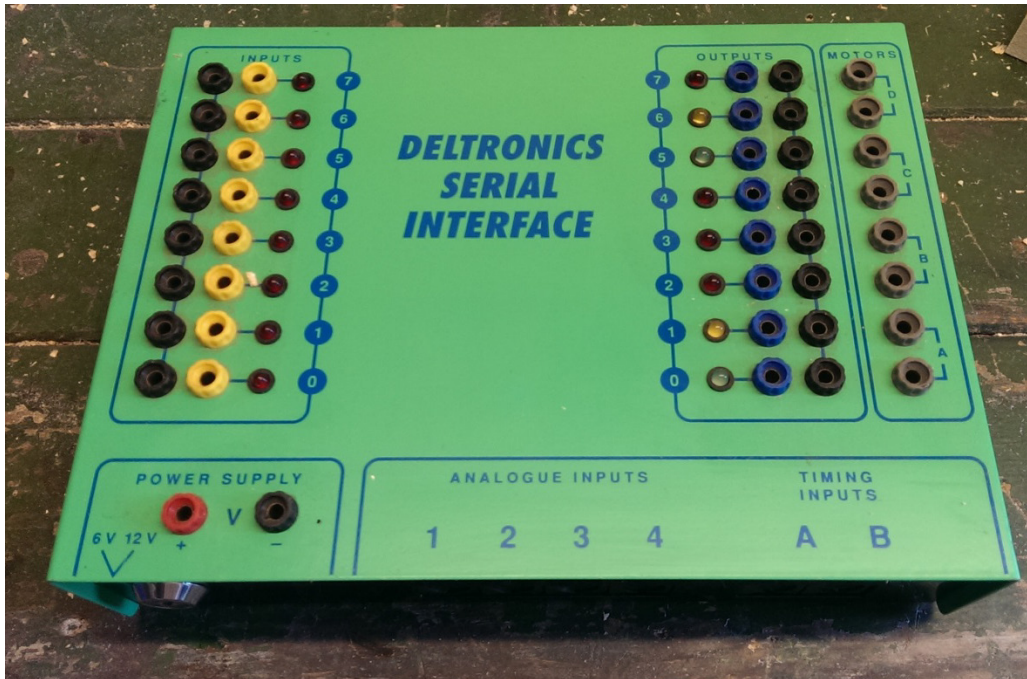
From this requirement the 'Econet in a Box' was born.

SPECIFICATION

Power Input: 250v AC fused at 1A. The equipment must be earthed

Network Connections: Six free 5-pin DIN sockets to connect up to 6 Econet stations.
                          Two 5-pin DIN sockets for extension or for terminator plugs
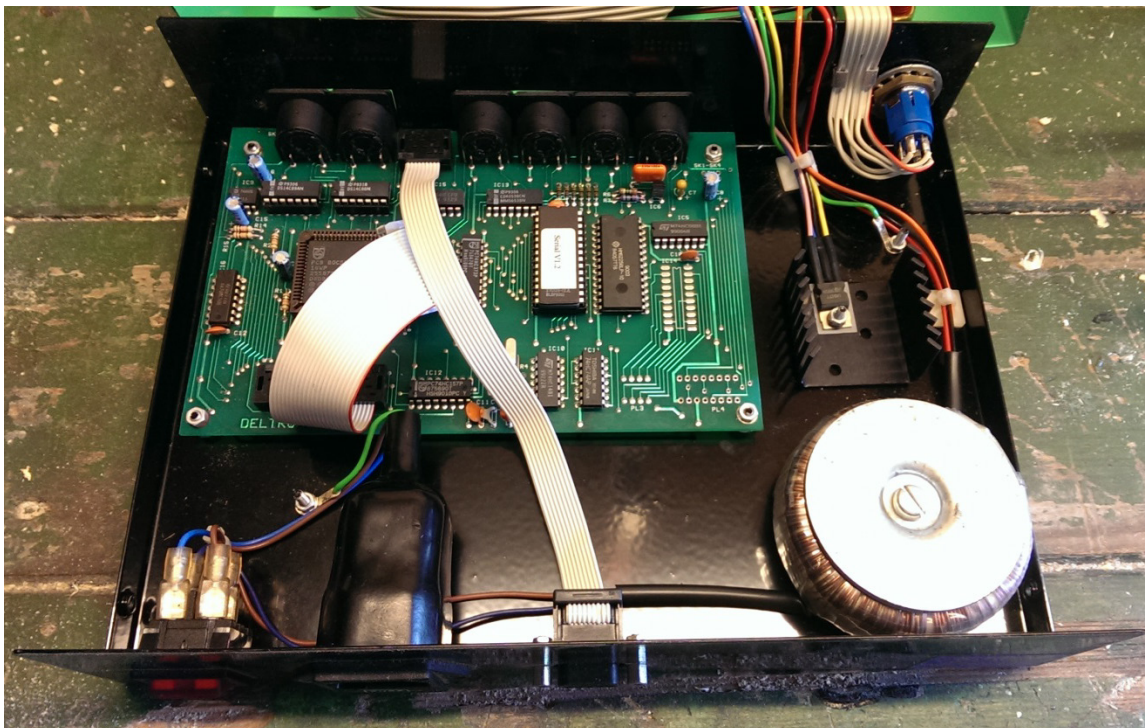
CONSTRUCTION

The box was constructed in a salvaged DELTRONICS SERIAL INTERFACE box. The original equipment was rescued from a skip. Figure (iii) shows the box.

Figure (iii)

This box was chosen because of its size, integral mains transformer and a row of DIN connectors on the front.
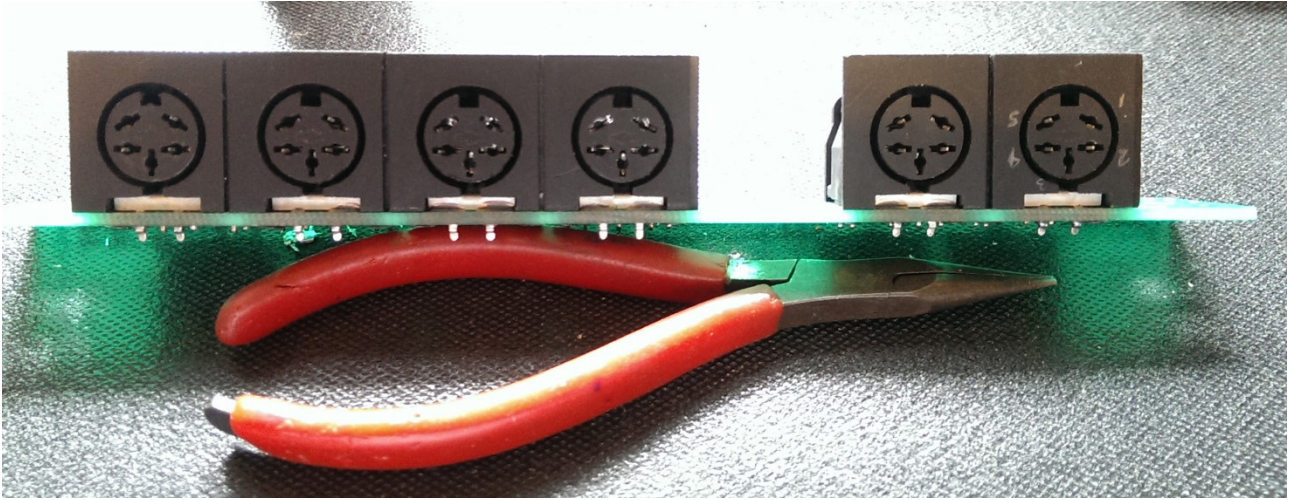
The internal wiring of the base is shown in figure (iv) below.

Figure (iv)

All the components were removed from the base except for the toroidal mains transformer, the mains input socket and the mains switch. The printed circuit board was cut down to keep just a strip of DIN sockets and the associated PCB mounting holes.
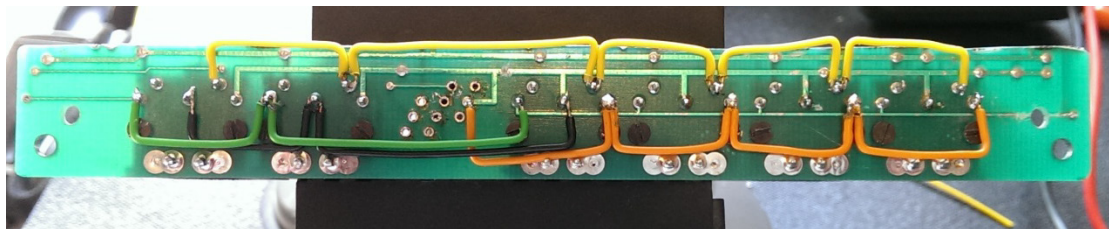
The DIN socket strip is shown below in figure (v).

Figure (v)

Unfortunately these sockets were not suitable for the Econet connection system. They were 5-PIN DIN but had the wrong pin outs. They were not 180° DIN sockets. However, they were very easy to replace with the correct sockets.

The socket strip was then wired so that all the sockets were in parallel. That is all pin 1s were connected, all pin 2s were connected and so on. The wiring is shown in figure (vi).

Figure (vi)

The next stage was to tidy the chassis base. After removing the unwanted components a number of welded bolts were left sticking up and these had to be removed. The serial socket was modified to receive a 5-pin DIN chassis socket and the hole for the key switch was also prepared to receive a 5-pin DIN chassis socket.

Figure (vi)

Figure (vi) shows the chassis after these modifications had been made. The transformer was removed for ease of access. Figure (vii) shows the rear of the chassis.

Figure (vii)

All the components were fitted and wiring was completed using multi-coloured ribbon cable. This is
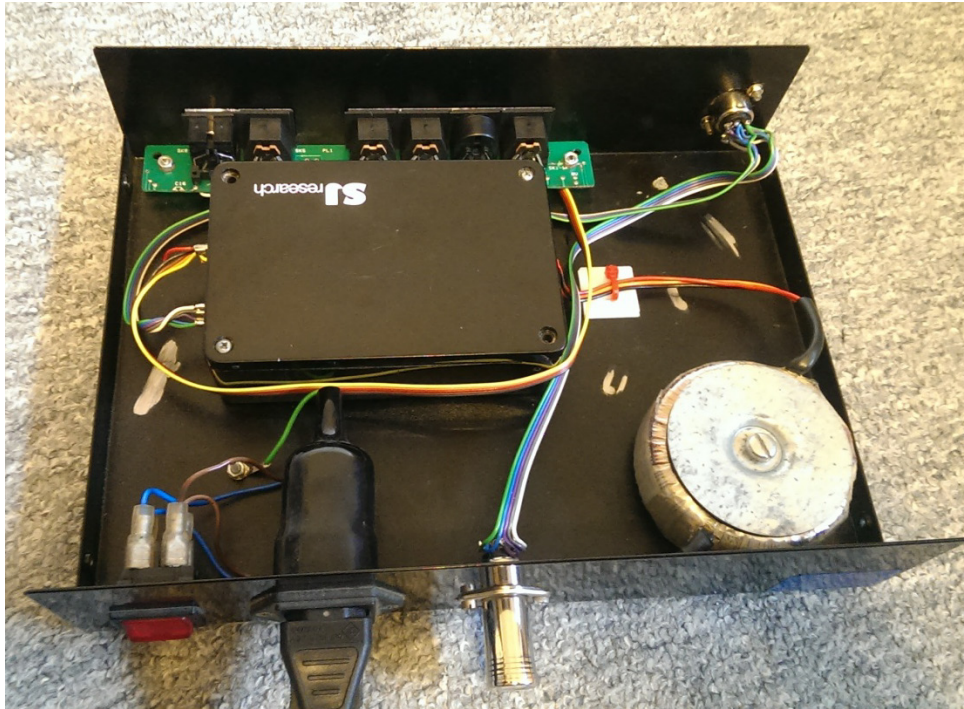

Figure (viii)

shown in figure (viii) above. The SJ Research clock box was hot glued into place. The power requirements for the box were 9v AC. The captive mains plug transformer was unsoldered and the 9v AC connection from the toroidal transformer was connected instead.

5-pin DIN plug inserts were plugged into the clock box DIN sockets and wired to the external sockets such that terminator plug should be fitted to the rear DIN socket and to the rightmost PCB DIN socket.

At this stage the box was powered and tested and found to be working.

The next step involved stripping the cover of all its components as these were not needed.
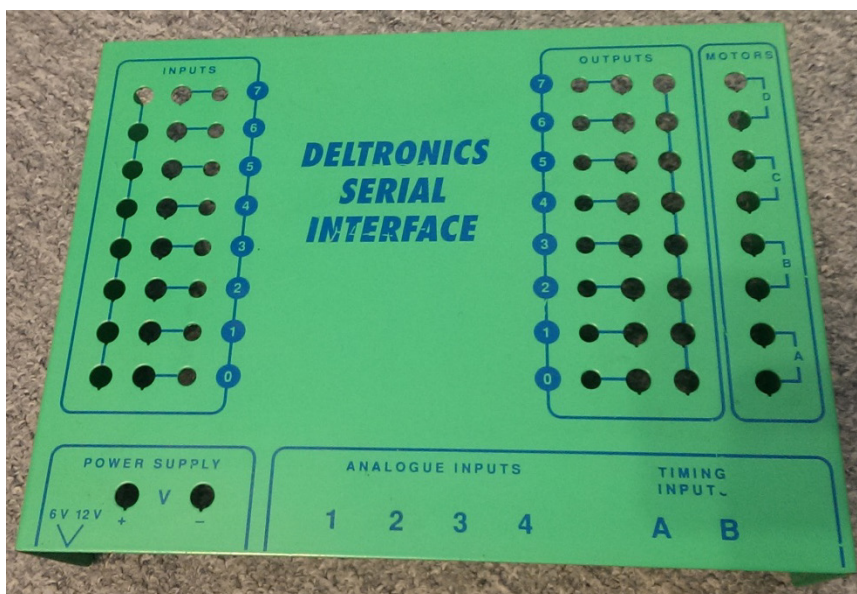

Figure (ix)

Figure (ix) shows the top with all the components removed and cleaned ready for vinyl wrapping.

Figure (x)

Figure (x) above shows the completed and assembled box.

This has been used at several shows over the past few years and has proved to be very reliable. With terminator plugs fitted to the box up to six user stations can be supported at a time. If a terminator is replaced with a link to more outlet boxes and a final terminator box then a full-sized Econet can be run from the one box.

This has been part of a very large (electronically speaking) Econet with two Econet Bridges connecting three different Econet systems.

The cost of this system was very low as almost all the components were available from the proverbial 'junk box'. The only components which had to be bought were the six 5-PIN DIN 180° PCB sockets.