

ECONET MODULE FITTING INSTRUCTIONS

FOR USE WITH MASTER 128, MASTER COMPACT AND ARCHIMEDES 300/400 SERIES

These instructions explain how to install an Econet module into a Master 128, Master Compact and Archimedes 300/400 series microcomputer. After reading the *Introduction* you should then refer to the part of the instructions relevant to your machine.

INTRODUCTION

Any modification or upgrade carried out to the printed circuit board of any Acorn equipment is undertaken at the sole risk of the person carrying out the modification or upgrade. No claim for loss or damage to the equipment caused by the modification or upgrade by unqualified personnel shall be accepted by Acorn Computers Limited.

Before commencing an upgrade please read all of the instructions carefully. If you do not feel confident to carry out this upgrade then take the upgrade kit and your computer to an Acorn Computers' authorised dealer for upgrade installation.

A charge may be levied by the dealer for installing the Econet upgrade in your machine, such a charge shall be entirely at the discretion of the dealer.

IMPORTANT: Most electronic devices can be damaged by static electricity. To reduce the possible adverse effects of static electricity note the following points when installing any component(s) or upgrade:

- avoid personal static charge where possible
- avoid working in areas where there are manmade fibres, eg nylon carpets and nylon clothing
- after the computer is disconnected from the mains, touch the metalwork of the case while performing the upgrade to ensure that you and the computer are at an equal potential
- keep the IC(s) in anti-static foam until fitted
- avoid touching the pins of the IC(s) during fitting

This upgrade may require the installation of a ROM into your computer. It is important to be able to identify pin one on the ROM so that it can be installed in the correct orientation. Pin one is indicated in one of two ways. Either a small dot or dimple is placed directly above pin one, or a horseshoe shaped indentation is cut into the pin one end of the IC with pin one always being to the left of the indentation. In some instances both of these indicators will be present.

ARCHIMEDES 300/400 SERIES

Disassembly

To remove the top cover of the Archimedes, proceed as follows:

- 1 Switch the computer off and disconnect it from the mains supply by unplugging the power supply cable.
- 2 Disconnect and remove all peripherals, including the keyboard and the monitor.
- 3 Place the computer, with the rear panel facing you, on a worksurface with a clean, soft covering.
- 4 Locate and remove the three screws along the top of the rear panel.
- 5 Locate and remove the two screws (one in each side of the top cover) immediately behind the front moulding.
- 6 Remove the top cover by sliding it off from the rear of the computer.

Installing the Econet module

Included in the Econet module upgrade kit are two plastic printed circuit board support posts. These must be fitted to the main printed circuit board before installing the Econet module.

The positions at which these posts are to be fitted are shown in figure 1.

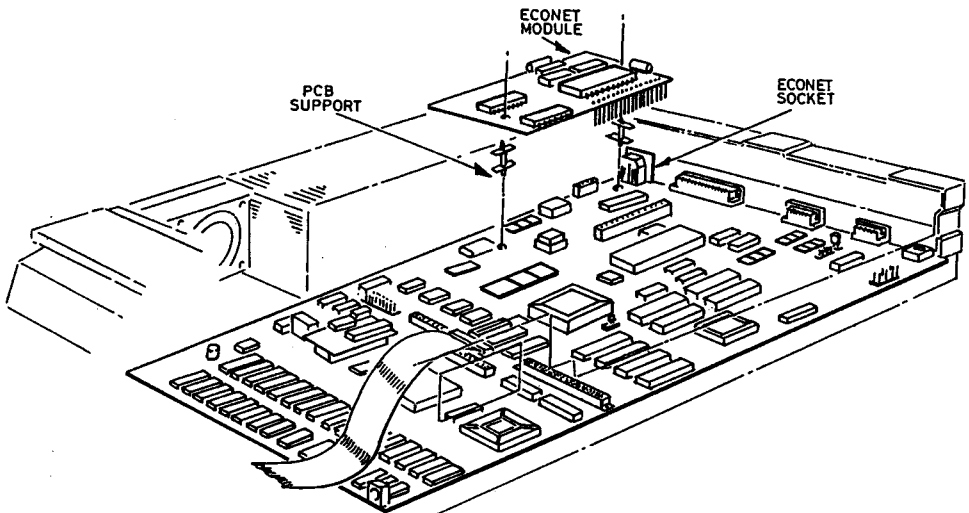


Figure 1

When fitting the PCB supports, ensure that the base flange does not interfere with any component on the PCB. To fit the support, insert one end into the hole in the PCB and press down gently. When the PCB supports are installed on the main PCB, the Econet module should be placed in position ensuring that:

- 1 The pins of PL1 on the Econet module are aligned with the corresponding holes in the socket SK5 on the main PCB.
- 2 The pins of PL2 on the Econet module are aligned with the corresponding holes in the socket SK6 on the main PCB.
- 3 The PCB supports are aligned with the corresponding holes on the Econet module PCB.

When you are satisfied that all the pins and supports are correctly aligned, the Econet module PCB may be pressed gently into place. The Econet module is correctly seated when the barbs on the tips of the PCB supports have cleared the surface of the Econet module PCB. An audible click should be heard when the barbs spring into place securing the PCB.

Take care not to exert too much pressure when pressing home the Econet module PCB, this may lead to damage of the various connectors.

Visually check that all is well and re-assemble the computer unit by refitting the top cover and inserting the five fixing screws, three in the rear panel and one at each side of the computer.

Network Software

The ANFS ROM supplied with the Econet module upgrade is not required in the Archimedes. An enhanced version of the ANFS software is incorporated into the Arthur operating system ROM already installed in the Archimedes 300/400 series.

The Archimedes is now ready to be connected to an Econet network. See your Network Manager who will assign and set your station number.

If you have a version of the Arthur operating system earlier than 1.2 then contact your supplier for information on how to obtain an upgrade

MASTER 128 AND MASTER COMPACT MICROCOMPUTERS

Machine orientation

Within this fitting instruction, the points of the compass are used to indicate the way in which components are oriented. With the machine positioned such that the keyboard is nearest you and uppermost, the nearest edge is designated to be SOUTH, the rear NORTH and right and left are designated EAST and WEST respectively.

The Econet module will be installed in the NORTH-EAST corner of the printed circuit board on both the Master 128 and Compact machines.

Upgrading the Master 128

Before attempting to fit the Econet module to your machine first ensure that the unit is disconnected from the mains power supply. The upper half of the case must be removed from the unit to allow access to the main printed circuit board. To do this, turn the computer upside down and place it on a firm, flat surface; locate and remove the four fixing screws that hold the upper half of the case in place. These screws are located on the underside of the unit, two at the rear and two at the front of the machine, and are labelled **FIX**. Note that the two fixing screws fitted to the rear positions are longer than the front two.

When the screws have been removed, carefully turn the computer over again (whilst holding the two halves of the case together) and remove the upper half of the case by lifting it directly upwards from the machine.

Included in the Econet module upgrade kit are two plastic printed circuit board support posts. These must be fitted to the main printed circuit board before installing the Econet module.

The positions at which these posts are to be fitted are shown in **figure 2**. When fitting the PCB supports, ensure that the base flange does not interfere with any component on the PCB. To fit the support, insert one end into the hole in the PCB and press down gently.

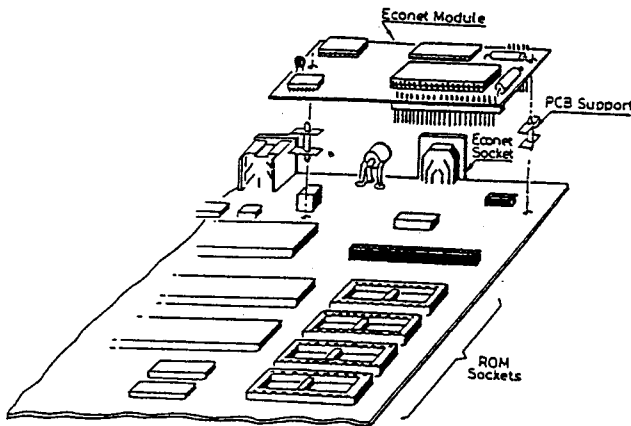


Figure 2

When the support is correctly fitted, it will not be possible to withdraw it from the hole in the PCB. Care must therefore be taken to ensure the correct positioning of the PCB support before pressing it home.

When the PCB supports are installed on the main PCB, the Econet module should be placed in position ensuring that:

- 1 The pins of PL1 on the Econet module are aligned with the corresponding holes in socket SK5 on the main PCB. The two WEST most holes of SK5, labelled 'A' and 'B', are not used.
- 2 The pins of PL2 on the Econet module are aligned with the corresponding holes in socket SK6 on the main PCB.
- 3 The PCB supports are aligned with the corresponding holes on the Econet module PCB.

When you are satisfied that all the pins and supports are correctly aligned, the Econet module PCB may be pressed gently into place. The Econet module is correctly seated when the barbs on the tips of the PCB supports have cleared the surface of the Econet module PCB. An audible click should be heard when the barbs spring into place securing the PCB.

Take care not to exert too much pressure when pressing home the Econet module PCB, this may lead to damage of the various connectors.

Installing the ANFS

Having fitted the Econet module, it is necessary to fit the Advanced Network Filing System (ANFS) ROM.

The ANFS ROM must be inserted into one of three sockets, IC27,37 or 41. It is recommended that socket IC27 should be used where possible. If it is not possible to use socket IC27 then one of the other two sockets may be used, but it will be necessary to change the position of a link on the main PCB (see NOTE 1).

To insert the ANFS ROM, hold the ends of the IC between thumb and forefinger, and line up all the pins over the destination socket. The pin one end of the IC should face to the WEST. If you are unsure of which way round the IC should be installed, refer to the other ICs on the main PCB which all face WEST.

Apply firm pressure to the IC, but do not force it. When the chip is in place it may appear to be slightly raised. Check that all the pins have entered the socket and that none are bent either outwards or under the body of the IC.

When the Econet module PCB and the ANFS ROM have been installed, the re-assembly procedure is the reverse of the dismantling procedure.

Setting the station number

Before attempting to add a machine to an existing Econet, the station number must be set. The Network Manager should be asked to carry out this operation.

NOTE 1:Sockets IC37 and 41 share the same address space as four sideways RAM pages. The position of links LK18 and LK19 determine whether the address space is claimed by ROM or sideways RAM.

These two links are located close to the WEST side of ICs37 and 41, LK18 is used with IC41 and LK19 is used with IC37. These links consist of a three pin plug with a connector which may be push fitted onto two pins of the plug to make a connection. There are two possible positions for this connector:

EAST - the connector joins the central pin to the right hand pin (enables sideways ROM)

WEST - the connector joins the central pin to the left hand pin (enables sideways RAM)

The use of one of the sockets with a ROM will preclude the use of 32K (two 16K pages) of sideways RAM. If both IC37 and IC41 are used in conjunction with sideways ROMs, all four of the 16K sideways RAM pages will be unavailable.

If IC27 is already occupied and you need all four pages of sideways RAM, you will need to fit the ANFS ROM into an EPROM cartridge which can then be plugged into one of the cartridge sockets.

Further information about the use of sideways RAM/ROM may be obtained from *Part 1* of the *Master 128 Reference Manual*.

Upgrading the Master Compact

Unplug all peripherals and remove the power lead from the computer.

Lay the computer face down on a flat surface and undo the four case fixing screws. Gently turn the computer over allowing the screws to fall free. Put them in a safe place until required again.

Lift the top case including keyboard away from the base of the computer - (taking care not to strain the ribbon cable) and lay it in front of the machine.

Installing the Econet Module

Included in the Econet module upgrade kit are two plastic printed circuit board support posts. These must be fitted to the main printed circuit board before installing the Econet module.

The positions at which these posts are to be fitted are shown in **figure 3**. When fitting the PCB supports, ensure that the base flange does not interfere with any component on the PCB. To fit the support, insert one end into the hole in the PCB and press down gently.

When the support is correctly fitted, it will not be possible to withdraw it from the hole in the PCB. Care must therefore be taken to ensure the correct positioning of the PCB support before pressing it home.

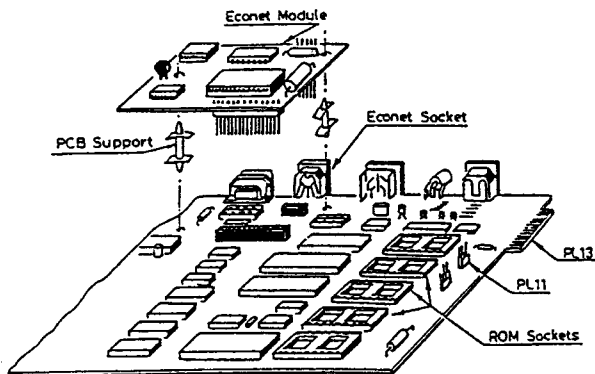


Figure 3

When the PCB supports are installed on the main PCB, the Econet module should be placed in position ensuring that:

- 1 The pins of PL1 on the Econet module are aligned with the corresponding holes in the socket SKT4 on the main PCB.
- 2 The pins of PL2 on the Econet module are aligned with the corresponding holes in SKT5 on the main PCB.
- 3 The PCB supports are aligned with the corresponding holes on the Econet module PCB.

When you are satisfied that all the pins and supports are correctly aligned, the Econet module PCB may be pressed gently into place. The Econet module is correctly seated when the barbs on the tips of the PCB supports have cleared the surface of the Econet module PCB. An audible click should be heard when the barbs spring into place securing the PCB.

Take care not to exert too much pressure when pressing home the Econet module PCB, this may lead to damage of the various connectors.

Installing the ANFS

Having fitted the Econet module, it is necessary to fit the Advanced Network Filing System (ANFS) ROM.

The ANFS ROM should be inserted into one of three sockets, IC17, 23, or 29.

Although it may be inserted into socket IC38 if PL11 is made South (refer to figure 3) it must be noted that fitting ANFS in this way will disable selection of external ROMS via PL13.

To insert the ANFS ROM, hold the ends of the IC between thumb and forefinger, and line up all the pins over the destination socket. The pin one end of the IC should face to the WEST. If you are unsure of which way round the IC should be installed, refer to the other ICs on the main PCB which all face WEST.

Apply firm pressure to the IC, but do not force it. When the chip is in place it may appear to be slightly raised. Check that all the pins have entered the socket and that none are bent either outwards or under the body of the IC.

When the Econet module PCB and the ANFS ROM have been installed, the re-assembly procedure is the reverse of the dismantling procedure.

Your Master Compact is now ready to be connected to a network, see your Network Manager who will assign and set your station number.

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