

# HAWK Single Board PC

## Installing Your Processor and Memory

If your Single Board Computer is supplied with a processor and/or memory they are packed separately, to avoid any possible damage during transportation. Before proceeding further please read the whole of this sheet.

### Electro-Static Discharge

Your Single Board Computer is susceptible to damage by electrostatic discharges. In order to avoid damage, you should work at an anti-static bench and observe normal anti-static precautions. Wear an anti-static wrist strap connected to an earth point *before* opening any packaging. Keep all items in their anti-static packing until required.

If your computer board was supplied with processor and/or memory, you will also have a disposable wrist strap. Remove the protective paper from the end with the visible copper strip, and stick this firmly to any available earthed metalwork or chassis. Remove the protective paper from the other end, hold the free end against the bare wrist with the adhesive uppermost and wrap the tape firmly around the wrist and stick it down. The strap can be used only a limited number of times.

Where a wrist strap is not available, discharge any static charge you may have built-up by touching an earth point. Avoid any further movement that could build up another static charge. Touch an earth point from time to time to avoid further build-up, and remove the items from their anti-static bags only when required.

### Battery

Your Single Board Computer is fitted with an on-board Lithium battery. Take care not to short circuit the battery by placing the board on conducting surfaces. Shorting the battery will reduce its life, and may be hazardous.

### Fitting the Processor & Memory

#### Set the Processor Speed

Check the processor type, speed and CPU core voltage requirements, and then set the links on the computer board at jumpers J2, J3, J4 and J5 according to the following tables.

CPU CORE SPEED (MHZ)	HOST BUS SPEED (MHZ)	PCI BUS SPEED (MHZ)	HOST CLK SCALING FACTOR	JUMPER J5		JUMPER J4	
				A PAIR	B PAIR	A PAIR	B PAIR
75	50	25	1.5	Open	Open	Link	Link
90	60	30	1.5	Open	Open	Link	Open
100	66	33	1.5	Open	Open	Open	Link
120	60	30	2	Open	Link	Link	Open
133	66	33	2	Open	Link	Open	Link
150	60	30	2.5	Link	Link	Link	Open
166	66	33	2.5	Link	Link	Open	Link
200	66	33	3	Link	Open	Open	Link
233	66	33	3.5	Open	Open	Open	Link

If the processor is a “classic” Pentium type, set all three jumpers at J3 to “STD”. For Pentium MMX processors set them to “VRT”.

Set the jumper J2 according to the processor CPU core voltage. The available options are 2.9, 3.3, 3.45, and 3.6 Volts. Most MMX processors use a CPU core voltage of 2.9 V.

#### Assembling the Fan and Processor

Unscrew the fan and heatsink completely from the outer CPU clamp section by hand. Hold the processor with the pins down and slide the loose clamp section onto the CPU. Notice that the clips, which retain the heatsink assembly, are very small, and may be easily damaged by over-tightening later.

### **Fit the Processor**

Place the board on a flat surface with the D-type connectors to the left. Align the processor pins with those of the socket. The processor should be fitted with the identifying corner dot or chamfer at the upper left corner. Fit the processor and the loose clamp section by entering the pins into the socket holes. Once you are confident that all the pins are lined up, centre the clamp and press down firmly on the centre of the processor. The processor should fit closely and squarely in the socket.

Ensure that the contact face of the heatsink is clean. Smear a small amount of thermal heatsink compound onto the fan-heatsink assembly and spread it evenly. Ensure that the clamp is centred, and then screw the fan down hand tight. **DO NOT OVER-TIGHTEN.** Over-tightening will break the retaining clips.

Connect the fan lead to a suitable supply using the fitted Molex four-pin plug.

Note that removal of the processor requires the removal of the heatsink, and then levering the processor out using a special tool.

### **Fit the Memory**

If cache memory is to be fitted, align the module with the socket, and plug the COAST module in vertically.

Memory modules (SIMMs) must be fitted in matching pairs. Insert the first SIMM into the leftmost of the two sockets, when viewed with the D-type connectors to the left. It should be fitted from the right at an angle of about 45° to enter the connector, and then rotated to bring it vertical, engaging the spring clips at the outer edges. The second SIMM may then be fitted to the leftmost SIMM socket using the same method.

### **Fitting the DiskOnChip Module**

Note that the DiskOnChip module may be permanently damaged if it is installed incorrectly. Align pin 1 of the DiskOnChip module with pin 1 of the on-board socket marked "FLASH" adjacent to the PC-104 socket. Push the module into the socket carefully until it is fully seated. Check that it is secure and that there are no bent pins. Refer to the User Manual on the CD-ROM for the software configuration.

### **Installing and Cooling the Board**

The board is now ready to be installed, but given that the Hawk is intended for embedded applications, consideration should be given to cooling the board. Since the applications are diverse, there is no single preferred method of cooling. Pay particular attention to items such as cables or other items of equipment that could impede the airflow.

### **Transportation**

If the processor board is to be transported, it is strongly recommended that the memory modules be removed from the board and packed separately. (Removal is a reversal of the above). This should avoid damage due their vulnerability. The units should be enclosed in anti-static bags.

Avoid the black conductive plastic type of anti-static bags for the processor board - they will discharge the on-board battery. Use the clear metallised type as supplied.