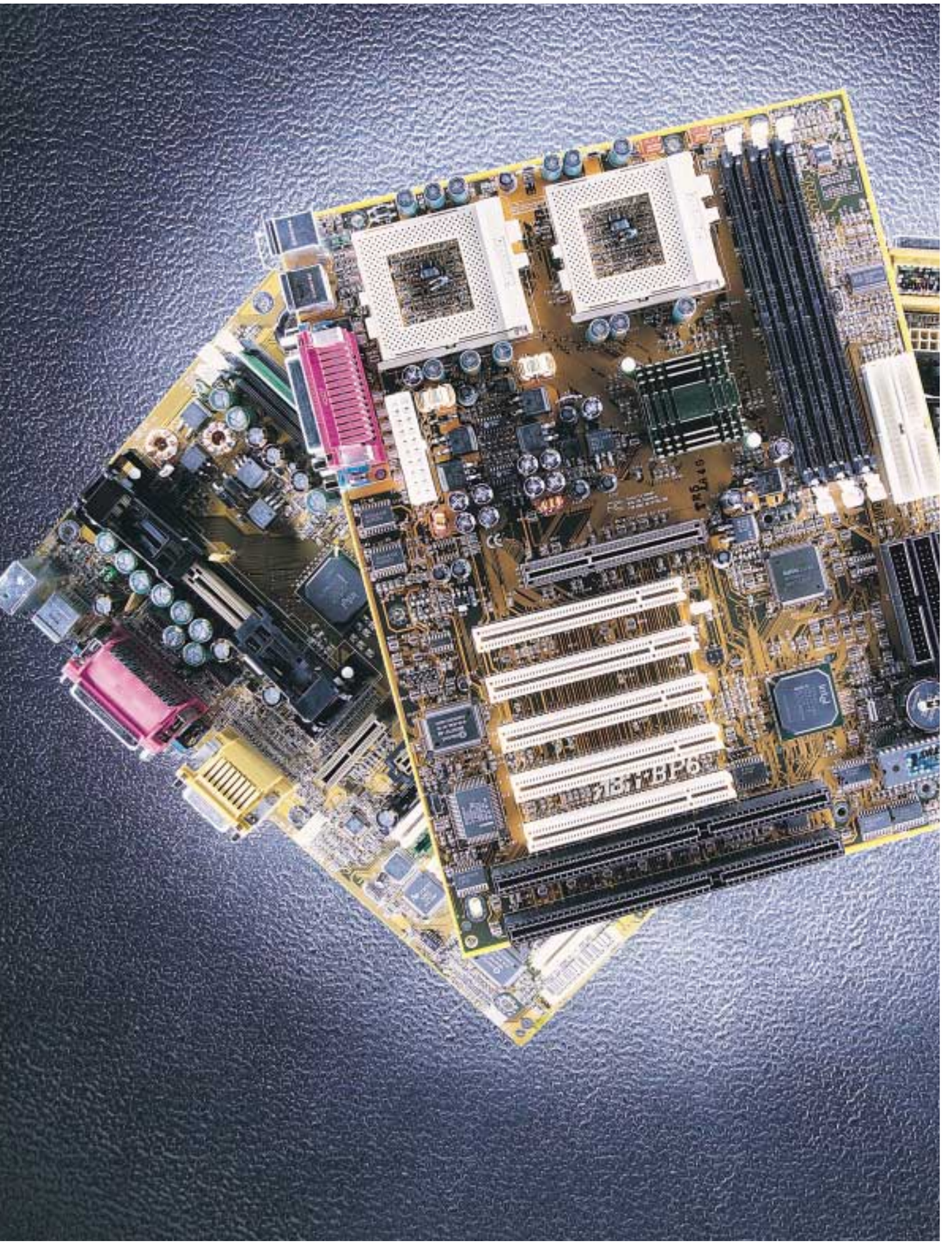


PHOTOGRAPH PATRICK LLEWELYN-DAVIES

Treading the boards

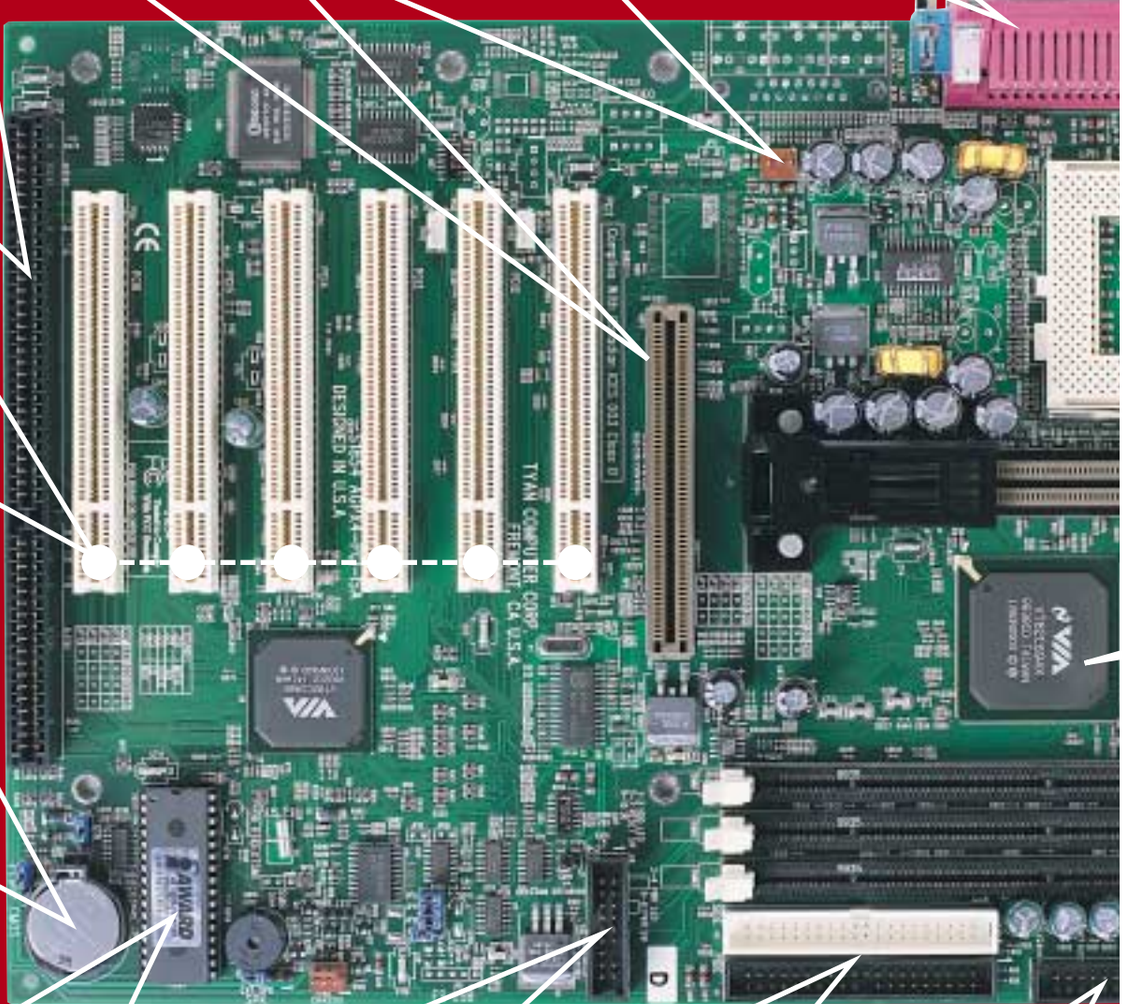
There's no getting away from it, different processors need different motherboards. But don't panic, we've done the hard work for you, by looking closely at the design, features and ease of operation for a massive 30 offerings.

contents

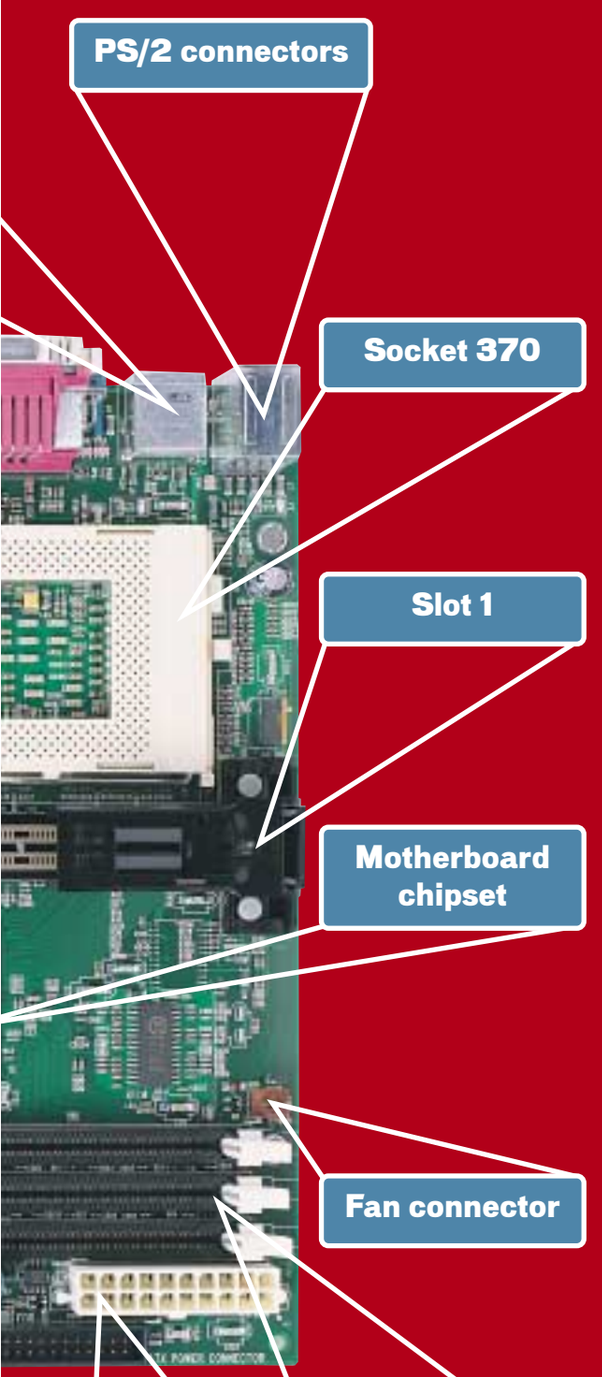
• *Motherboards tested and reviewed by Jason Jenkins and Will Head.*

The past few months have seen an explosion in the number of different types of processors available. Intel has released a huge number of new products that are built to different specifications and run at different clock speeds and front side bus speeds. On top of this, there are Athlons, Celerons and K6-IIIs. All of these processors require motherboards that are very different from each other. This month we take a look at 30 motherboards, covering all the current main processor options, and put them through our series of benchmarks. We look at which boards are laid out in the best way, which have the best documentation, which are the easiest to set up and which have the best features. Whether you've got money to burn or you're looking for a cheap option, there's something in the next few pages to suit your taste.

Anatomy of a mother



board



Glossary

AGP – Accelerated Graphics Port. An expansion slot specifically for graphics cards, offering high bandwidth.

BIOS – Basic Input Output System. Communicates between the hardware and the OS. Where all the system settings are configured and stored. A BIOS can be upgraded if new features arrive.

DIMM – Dual Inline Memory Module. A 168-pin memory stick, usually SDRAM although EDO DIMMs are still available.

EDO – Extended Data Out. The memory of choice before SDRAM arrived, now rarely seen except in older machines.

EIDE – Enhanced Integrated Device Electronics. The standard used for most hard disks and other storage devices. Most motherboards can support four EIDE devices, although some can handle eight.

FSB – Front-Side Bus. The speed at which the CPU communicates with the system memory.

ISA – Industry Standard Architecture . A 16bit expansion slot that's now almost extinct. Very few new cards are available in this format.

Parallel port – Similar to the serial port but with faster bi-directional transfer. Usually used for printers and scanners.

PCI – Peripheral Component Interconnect. A 32bit expansion slot used for the majority of expansion cards other than graphics adaptors.

POST – Power On Self Test. The first operation that is executed when the system is switched on. Checks the status of the memory, processor and other components.

RIMM – RAMBUS Inline Memory Module. The latest generation of memory, fast but also very expensive.

SCSI – Small Computer System Interface. Similar to EIDE but catering to a more professional market. Up to 15 devices can be connected and transfer rates are far superior to EIDE.

SDRAM – Synchronous Dynamic Random Access Memory. Fast system memory that superseded EDO RAM.

Serial port – Also known as com ports, serial ports are used to connect peripherals to your PC such as modems, PDAs and digital cameras.

SIMM – Single Inline Memory Module. The predecessor to the DIMM, now rarely seen. Can only be fitted to motherboards in pairs.

Slot 1 – The CPU connector for Intel Pentium III processors.

Slot A – The CPU connector for AMD Athlon processors.

Socket 370 – The CPU connector for Intel Celeron processors.

Socket 7 – The CPU connector for AMD K6-2 and III, Cyrix and WinChip processors.

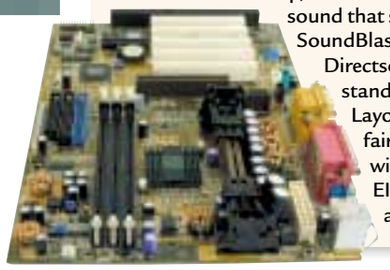
SMP – Symmetric MultiProcessing. A multi-processor configuration where two or more processors share the same memory and system bus.

USB – Universal Serial Bus. The successor to serial and parallel ports. USB offers 12Mbits/sec transfer and hot swapability.

Asus **K7M**

Slot A

This board is the most unusual Slot A model here. Unlike the others, it uses the AMD-751 system controller on the Northbridge and VIA's VT82C686A peripheral bus controller on the Southbridge. It has room for three DIMMs and the usual four PCI slots, one AGP slot, one shared slot and one AMR slot. Thanks to the VIA chip, there's on-board sound that supports SoundBlaster and Directsound standards. Layout is fairly good with the EIDE ports at the side of the board and the ATX connector towards the top. The AGP slot is far enough away from the processor and memory slots to make access to the various components very easy.



We found this board a bit tricky to set up correctly. It took some time before we could get a stable system working; much longer than it took to get the Intel machines going. The documentation is extensive, though, and fully describes all the jumper settings. The default setting is jumperless, which means you can adjust the vast majority of the settings in the AMIBIOS. It's also got the Winbond W83782D chip to monitor your PC's CPU and system voltages and its temperature. We noticed a slight performance increase over the other Athlon boards, but it probably wouldn't be noticed by the end user.

PCW DETAILS

Price *£129.25 (£110 ex VAT)*
Contact *Top PC 0113 242 2416*
www.asus.com
Good points *Good layout, jumperless settings*
Bad points *Unstable in our tests*
Conclusion *A fast Slot A board, but not the most stable*

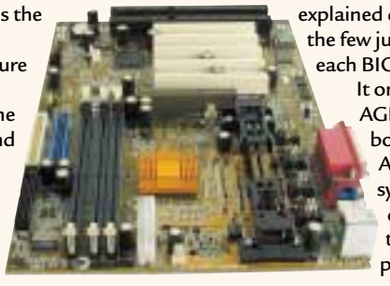
Layout	★★★★
Ease of Installation	★★
Performance	★★★★
Overall Rating	★★★

Gigabyte **GA-7IX**

Slot A

The GA-7IX is based on the AMD-750 chipset and has four PCI slots, one ISA and one shared, just like the MSI 6167. The ATX power and EIDE connectors are positioned well to allow for maximum tidiness inside the PC. Using the correct cable you can connect an extra two USB ports to a plug towards the bottom right of the board.

There are two temperature sensors – one that keeps an eye on the processor and one between the DIMM slots and the floppy connectors that measures the ambient temperature of your PC. This was the only Athlon board we tested that exhibited no setup problems. It detected the correct speed of our Athlon processor and made adjustments automatically without the need to move any jumpers.



The Gigabyte GA-7IX was very stable in our tests and was not as fussy as other Slot A boards about the components it needed. The manual explained clearly what the few jumpers do and each BIOS setting. It only supports AGP 2X but all boards that use AMD's 751 system controller have the same problem. Overall, it's a fantastic Athlon solution and should be a doddle to set up.

PCW DETAILS

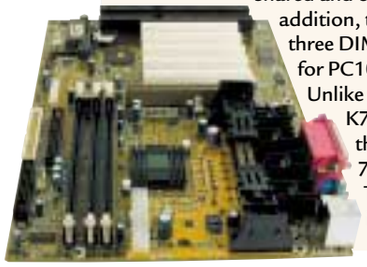
Price *£105.75 (£90 ex VAT)*
Contact *Dabs Direct 0800 138 5204*
www.gbt-tech.co.uk
Good points *Very good layout, easy to install, well-written documentation*
Bad points *No support for AGP 4X*
Conclusion *An excellent choice for Athlon processors*

Layout	★★★★★
Ease of Installation	★★★★★
Performance	★★★★
Overall Rating	★★★★★

MSI **6167**

Slot A

This was one of the first Athlon boards on the market and we've seen it in a good number of group test PCs. It's a tricky board to master, though, and is by no means the best Slot A offering. The layout is good – it's easy to plug all the necessary cables in and the ATX connector is in a sensible place. There are four PCI slots, one shared and one ISA. In addition, there are three DIMM sockets for PC100 memory. Unlike the Asus K7M, this uses the full AMD-750 chipset. This resulted in a small performance decrease, but not so much as to dramatically affect the end user.



There's no on-board sound so you'll have to buy a sound card if you go for this option. Documentation is fair, with a comprehensive, well-written printed manual included in the retail box. Its main problem in our tests was that it was not the most stable board. It's fairly picky about the type of components you put in it, and you'd be well advised to check AMD's website for a list of approved components. When you compare it to Gigabyte's GA-7IX, the MSI's comparatively low cost seems to be less of a good deal. Generally, putting a machine together using this motherboard was a hit and miss affair and we wouldn't recommend it unless you feel very brave.

PCW DETAILS

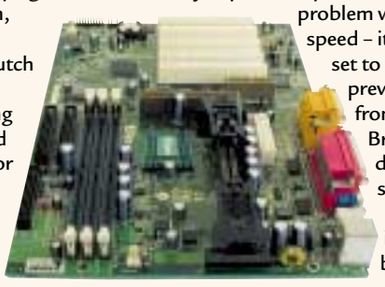
Price *£61.10 (£52 ex VAT)*
Contact *Dabs Direct 0800 138 5204*
www.msi.com.tw
Good points *Good layout and documentation*
Bad points *Proved unstable in our tests, lots of specialist hardware requirements*
Conclusion *Some good points, but overall too hit and miss for our liking*

Layout	★★★★★
Ease of Installation	★
Performance	★★★★
Overall Rating	★★★

AOpen **AX6C**

PIII 133FSB

Based on Intel's new 820 chipset, this motherboard is most notable as a three-RIMM solution. All the other 820 boards here are two-RIMM models. The board was laid out fairly well, but we did have one or two complaints. The ATX power connector is in an annoying, but unfortunately common, position: next to the processor slot and a clutch of hot capacitors. This means you have to bring the power cable around the side of the processor and into the motherboard to connect it.



There are five PCI but no ISA slots. This version comes with Analog Devices' AC97 sound on-board. It is one of the few units to have a truly jumperless design. This made it simple to set up as all the changes can be achieved through settings in the BIOS, so you don't get your hands dirty shifting jumpers or dip switches. We had a problem with the RDRAM speed – it was automatically set to 1,000MHz, preventing the system from POSTing. Bringing the speed down to 800MHz solved the problem.

Documentation is adequate: the brief printed manual covers most of the important points, but the online version is more detailed.

PCW DETAILS

Price *£128.08 (£109 ex VAT)*
Contact *RK Distribution 01844 261 226 www.aopen.com*
Good points *Easy to set up*
Bad points *Layout could be better, as could the printed documentation*
Conclusion *A good board that has the added advantage of three RIMM sockets*

Layout	★★★★
Ease of Installation	★★★★
Performance	★★★★★
Overall Rating	★★★★

AOpen **AX63 Pro**

PIII 133FSB

Intel would like you to use its 820 chipset and RAMBUS memory to run its Coppermine processors, but that's not the only option. VIA has two chipsets that support a 133MHz FSB – the Apollo Pro 133 and the newer Apollo Pro 133A. The only major difference is that the latter supports AGP 4X while the former only goes as far as AGP 2X. This board has the older of the two chipsets but still managed to outperform the other Apollo Pro 133 boards in our SYSmark tests by 18 points.

In terms of layout, this AOpen board is not one of the best. The floppy connector is to the left of the processor slot, so you have to stretch your floppy cable across the processor to the drive. Having said that, the ATX power and dual EIDE connectors are in sensible places to the right of the board. In terms of setup, though, this unit was a dream. There's no need to move any jumpers as all the adjustments can be made in the Award Modular BIOS. Our PC133 SDRAM and Pentium III 733EB ran very happily, giving us a stable system.

Documentation is not the best. Although we hardly needed to refer to it, the booklet is only nine pages long and for anything more than basic information, you'll need the PDF manual on the CD.

PCW DETAILS

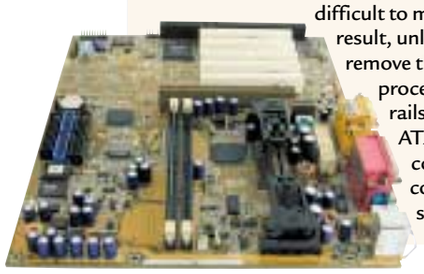
Price *£64.63 (£55 ex VAT)*
Contact *Dabs Direct 0800 138 5204 www.aopen.com*
Good points *Great performance while maintaining stability*
Bad points *Layout, slim documentation*
Conclusion *Good board but could have been even better*

Layout	★★★
Ease of Installation	★★★★
Performance	★★★★
Overall Rating	★★★★

Asus **P3C-E**

PIII 133FSB

Based on the Intel 820 chipset, this model has two RIMM sockets and an on-board Yamaha 744 PCI audio controller. There's also an AGP Pro slot, four PCI slots and one shared. An Audio Modem Riser (AMR) slot sits above the AGP Pro slot just below the processor. A jumper that puts the BIOS settings back into safe mode sits between the two, and is very difficult to move as a result, unless you remove the processor rails. The ATX power connector could be sited better as it's adjacent to some hot capacitors and means you have to bring the power lead round some awkward components. Other than these minor niggles, however, the layout is adequate.



This motherboard was very easy to set up. By default, its jumperless mode is enabled, so you can set the speed of the CPU using the BIOS menu. If this doesn't work, however, the board has a selection of jumpers and switches to move so you can change settings manually.

Our review board only came with a six-page photocopied document, but the information on Asus' website is much more comprehensive. Asus' DIMM riser card is optional (£25 ex VAT), and this convertor sits in one of the RIMM slots and is held in place by two screws. You can then use standard SDRAM to run Intel's Coppermine processors. Overall a good board with a few minor problems.

PCW DETAILS

Price *£182.13 (£155 ex VAT)*
Contact *Top PC 0113 242 2416 www.asus.com*
Good points *DIMM riser card available as an option, easy to set up*
Bad points *Some jumpers hard to get to*
Conclusion *Not without its faults, but overall a very good 820 board*

Layout	★★★★
Ease of Installation	★★★★
Performance	★★★★★
Overall Rating	★★★★

Gigabyte **GA-6CX**

PIII 133FSB

This two-RIMM 820 solution is well designed, with slots and jumpers in appropriate places. Unfortunately, this good design is let down by poor documentation, which made installation a lot harder than it needed to be.

Our board had no ISA slots, but we have seen various versions of this board, so check the exact specs before you buy.

The AGP, RIMM, ATX and EIDE connectors are in sensible places, to allow cables to be tidily positioned inside the case. This board features Gigabyte's Dual BIOS technology, which allows for a backup BIOS to be stored in flash memory in addition to the normal BIOS. Should the primary BIOS become corrupt, you can fall back on your secondary BIOS.

Installation was not the easiest. The board did not automatically detect a 133MHz FSB-compatible processor, and we had to force it to a 133MHz FSB by moving a jumper.

The manual contained several errors, and described a three-RIMM, rather than a two-RIMM board. We could not get the board to detect our CD-ROM as a secondary master, and had to settle for making it a slave on the primary channel.

One good thing is that you can adjust the CPU multiplier in the BIOS menu rather than moving any switches.

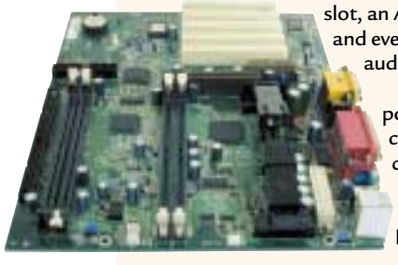
Overall this was a good effort, let down by a lack of attention to detail.

PCW DETAILS

Price *£133.95 (£114 ex VAT)*
Contact *GBT Tech (UK) 01908 362 700 www.gbt-tech.co.uk*
Good points *Excellent layout*
Bad points *Tricky to install due to poor documentation, could not detect secondary EIDE channel*
Conclusion *A board that nearly makes it but falls at the last hurdle*

Layout	★★★★★
Ease of Installation	★★
Performance	★★★★★
Overall Rating	★★★

Supermicro **Super PIIISCA**



PIII 133FSB

This board is targeted at people looking to upgrade and includes both DIMM and RIMM slots. Although you can't populate the motherboard with both, it gives you the option if you can't afford expensive RAMBUS memory and want to use your existing DIMMs. There's still room left for five PCI slots, an AMR slot, an AGP slot and even on-board audio.

The ATX power connector could be in a better position, but at least it is towards the top of the board so the power lead does not have far to travel to it.

The two EIDE and floppy ports are thoughtfully placed so your ribbon cables can be tucked neatly away within the system case itself, with no need for them to cross the motherboard.

Setup was the easiest of all the 820 boards here – the BIOS detected the presence of our Pentium III 733EB straight away and adjusted itself automatically. The only slightly annoying point is that you have to screw on the processor rail yourself.

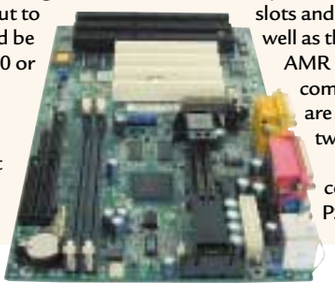
Documentation is excellent and the necessary cables, RIMM spacer, driver CD and EIDE cables are included. The AMIBIOS has useful features such as temperature monitoring and the ability to turn the processor fan off when the system is in sleep mode.

PCW DETAILS

Price *£128.08 (£109 ex VAT)*
Contact *Dabs Direct 0800 138 5204 www.supermicro.com.*
Good points *RIMM and DIMM slots, good layout, easy to set up*
Bad points *You have to construct the processor rails yourself*
Conclusion *An excellent board that is aimed squarely at the upgrade market*

Layout	★★★★★
Ease of Installation	★★★★★
Performance	★★★★★
Overall Rating	★★★★★

Supermicro **Super PIIISEA**



PIII 133FSB

The PIIISEA presents an unusual conundrum. On the one side it supports the latest Coppermine processors that run on a 133MHz front-side bus due to its 810E chipset. On the other side, you won't see the true benefits of this increase due to the lack of an AGP slot and mediocre on-board graphics performance. You may protect your investment by being able to upgrade to Coppermine, but to increase performance you'd be better off opting for the 820 or VIA Apollo solution.

Installation was uneventful, the board was configured by default to set the front-side bus speed. Once the processor was installed and everything else connected up it correctly identified it as a 733MHz PIII.

The layout of components could be improved. The ATX power connector is between the processor slot and the back panel connectors, resulting in an untidy path for the cables. The second serial port connector is also nestling here, which could make using it difficult.

Unusually, the PIIISEA has two ISA slots and one shared slot, as well as three PCI slots and an AMR port. Two UDMA66-compliant EIDE channels are on offer, as well as two DIMM sockets.

The back panel has connections for two PS/2, two USB, one serial, one parallel, one D-SUB video port, one game port and audio in, out and mic.

PCW DETAILS

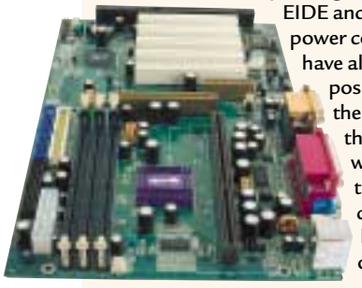
Price *£104.58 (£89 ex VAT)*
Contact *Dabs Direct 0800 138 5204 www.supermicro.com*
Good points *Support for 133MHz Coppermine processors*
Bad points *No AGP slot, awkward layout*
Conclusion *Although you could put a 733MHz PIII on this board, there isn't a compelling reason to do so*

Layout	★★★★
Ease of Installation	★★★★★
Performance	★★★
Overall Rating	★★★

TMC TI6VG4

PIII 133FSB

This board is based on the older VIA Apollo Pro chipset, so does not support AGP 4X. Unlike the other boards based on this chipset, though, it has on-board sound, although the ports are not properly colour-coded for PC99 compliance.



The layout is good – floppy, EIDE and ATX power connectors have all been positioned in the top right of the unit. This will ensure that all the cables can be kept out of the way of the major components and allow for a user-friendly upgrade path. There are four PCI slots and one shared slot, plus the standard single AGP slot. There's also an AMR slot that is unusually positioned below the AGP slot.

It was fairly easy to set this board up with our Pentium III 733EB processor and PC133 memory. The manual, however, said we could change the FSB speed to 133MHz through the BIOS, but we had to force this by moving a jumper. The board then detected a 733EB processor and left us with a stable machine.

Documentation was comprehensive. The AOpen AX63 Pro and this board were very close in terms of the final analysis but this one has the edge due to a better layout and documentation.

PCW DETAILS

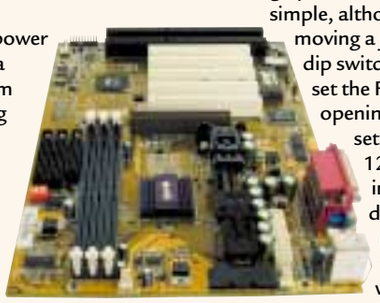
Price *£72.85 (£62 ex VAT)*
Contact *Dabs Direct 0800 138 5204*
www.mycomp-tmc.com
Good points *Good layout, good documentation*
Bad points *We had to force a 133MHz FSB by moving a jumper*
Conclusion *A good implementation of the VIA chipset that we would recommend if you don't want an 820 solution*

Layout	★★★★★
Ease of Installation	★★★★
Performance	★★★
Overall Rating	★★★★★

Transcend TS-AVD1

PIII 133FSB

In a similar vein as the previous board, this one is also based on VIA's Apollo Pro 133 chipset. There are quite a few differences between this offering and the others, however. It is laid out fairly well, with the EIDE and floppy connectors on the far right of the unit. The positioning of the ATX power connector might cause a problem for some system cases – you have to bring the power cable around the processor, which could be a bit awkward. Other than this though, it's fine.



There are three fan connectors that all have status indicators in the BIOS and can be set up to independently run at different speeds. To the side of the processor is a temperature gauge that will sound an alarm if it looks like there's a danger of overheating.

Setting up this board was fairly simple, although it did involve moving a jumper and some dip switches. Once you've set the FSB to 133MHz by opening a jumper you can set it to anything from 124MHz to 150MHz in the BIOS, but you do this at your own risk. The system was very stable, but we would have liked to have seen the ability to do it all in the BIOS as with the AOpen AX63 Pro.

PCW DETAILS

Price *£53.05 (£45.15 ex VAT)*
Contact *Vortex Services 0161 343 5555 www.transcend.nl*
Good points *Good documentation, CPU warning indicator, good layout*
Bad points *No jumperless setting*
Conclusion *A good board for the price that's just beaten by others here*

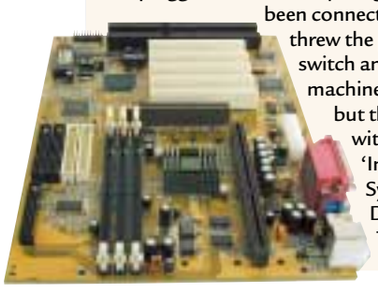
Layout	★★★★
Ease of Installation	★★★
Performance	★★★
Overall Rating	★★★★

Abit BE6

PIII 100FSB

Although the BE6-II has just been released there is still a place for the BE6. Built around the 440BX chipset, it supports Slot 1 CPUs running on a 100MHz front-side bus.

Installation started well. The CPU retaining supports needed to be fitted to each side of the slot before the processor was plugged in. After everything else had been connected up we threw the power switch and the machine POSTed but then failed with the 'Invalid System Disk' error. The BIOS messages told us the drive was not being detected. We discovered that all drives were set to 'None' by default. Changing this to 'Auto' fixed the problem.



Unlike the BE6-II, this board only features SoftMenu II, providing less control over all the CPU settings. There is also no switch box for the multiplier setting, so you have to use the BIOS for your tweaking.

Four EIDE channels (two UDMA66 and two UDMA33) are present along with the standard floppy-drive connector. In terms of slots, you'll find one AGP, four PCI, one ISA and one shared. The back panel has two PS/2, two USB, two serial and one parallel port. Layout was good, but the ATX power connector was between the CPU slot and the rear panel connectors.

PCW DETAILS

Price *£92.83 (£79 ex VAT)*
Contact *Top PC 0113 242 2416*
www.abit.com.tw
Good points *SoftMenu multiplier and bus configuration, four EIDE channels*
Bad points *Poorly positioned ATX power connector, drives set to 'None' in BIOS*
Conclusion *A good board but given the price differential between this and the BE6-II, unless you need the extra ISA slot you'd be better off with the newer model*

Layout	★★★★
Ease of Installation	★★★★
Performance	★★★★★
Overall Rating	★★★★

Abit **BE6-II**

PIII 100FSB

The BE6-II comes in a Slot 1 configuration based on the 440BX chipset. Installation was simple. After attaching the CPU retaining supports on either side of the Slot 1, it was just a matter of connecting up the relevant parts.

The BE6-II provides two methods to specify the multiplier and clock settings. The default method is to use SoftMenu to control all the settings, allowing you to tweak things more easily than physically moving jumpers on the board. The BE6-II uses SoftMenu III, which allows even greater control over all the aspects involved in squeezing every last bit of performance out of the chip. For those who prefer to do things by hand, a set of dip switches is provided. If these are used the SoftMenu option is disabled in the BIOS and you have to resort to flicking switches to modify any of the settings.

The board configuration offers one AGP slot, five PCI and one ISA slot, with no shared slots. It can accommodate up to three DIMMs and three fan connectors are provided, all of which can be monitored through the BIOS.

Like its earlier sibling, the BE6-II also has four EIDE channels – allowing eight devices to be connected. There was also a temperature sensor for the processor, so that it can be monitored using software.

PCW DETAILS

Price *£96.35 (£82 ex VAT)*
Contact *Dabs Direct 0800 138 5204*
www.abit.com.tw
Good points *More versatile SoftMenu configuration*
Bad points *One less ISA slot than the earlier BE6*
Conclusion *The BE6-II is a worthy successor to the BE6 and a good option if you only need one ISA slot*

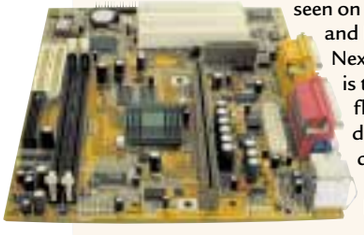
Layout	★★★★
Ease of Installation	★★★★★
Performance	★★★★★
Overall Rating	★★★★★

Abit **WB6**

PIII 100FSB

Installation of Abit's Slot 1 810E chipset solution was easy. The WB6 uses SoftMenu to control the frequency and front-side bus settings, so setup was just a matter of plugging everything in, connecting the power and pressing the on switch.

The two EIDE channels support UDMA66, but you don't get the extra UDMA33 channels as seen on the BE6 and BE6-II. Next to these is the floppy-drive connector. The board can hold a maximum of two DIMMs so offers limited memory upgradability. As well as the three PCI slots there is an AMR slot but no ISA slots. Unfortunately, the lack of AGP port means that the WB6 will never make a good gaming machine.



The back panel hosts two PS/2 ports, two USB, one joystick, one serial, one parallel and audio in, out and mic. A riser for the second com port is provided if you need to use both. In the shadow of the final PCI slot is a V-BUS connector that provides video out through the optional V-BUS adaptor. The latter provides both composite and S-Video output.

The layout of the WB6 could have been better. The ATX power connector is between the Slot 1 connector and the rear ports, which means the power cable has to reach over the processor to make connection with the board.

PCW DETAILS

Price *£89.30 (£76 ex VAT)*
Contact *Dabs Direct 0800 138 5204*
www.abit.com.tw
Good points *UDMA66 support*
Bad points *No AGP port due to 810E chipset*
Conclusion *Would make a good second PC, but it's not a good upgrade option*

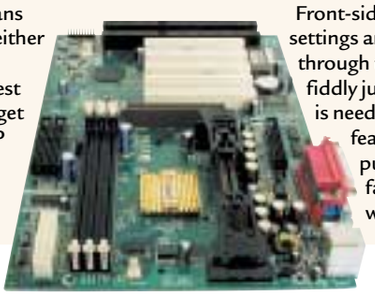
Layout	★★★
Ease of Installation	★★★★★
Performance	★★★
Overall Rating	★★★

AOpen **AX6BC Pro Gold**

PIII 100FSB

The AX6BC comes in a Slot 1 flavour running the 440BX chipset. Installation was simple enough, but the board's layout could be improved. After slotting in the processor and memory, connecting up the hard drive and CD-ROM was no problem. Unfortunately, the floppy-drive connector has been relegated to the far left of the board – in between the processor slot and the com ports. This means the floppy cable has to either drape untidily over the processor (not the coolest part of a PC system) or get tangled up with the AGP card (another potential source of heat).

The board hosts three DIMM sockets, one AGP slot, four PCI, one ISA and a shared slot. There is support for up to four EIDE devices through two channels, although these only support UDMA33 not 66. The usual complement of two serial, one parallel, two USB and two PS/2 connectors are present. The AX6BC Pro also has an IrDA connector, but nothing is supplied to attach it to.



Front-side bus and frequency settings are configurable through the BIOS so no fiddly jumper configuration is needed. One useful feature is that if you push the settings too far and the machine won't POST, holding down the Home key will restore factory settings and allow the machine to boot.

PCW DETAILS

Price *£91.65 (£78 ex VAT)*
Contact *Dabs Direct 0800 138 5204*
www.aopen.com
Good points *Jumperless configuration*
Bad points *Poorly located floppy-drive connector*
Conclusion *A reasonable contender but the poor placement of the floppy connector let it down*

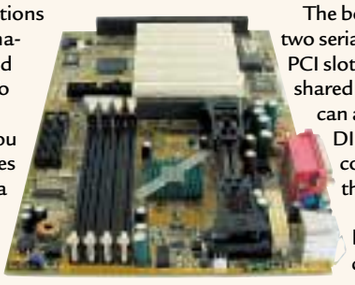
Layout	★★★
Ease of Installation	★★★★
Performance	★★★★★
Overall Rating	★★★★

Asus **P3B-F**

PIII 100FSB

The 440BX Slot 1 P3B-F performed admirably, but its installation and ease of use were not the greatest. The board offers physical and BIOS CPU speed configuration. Physical configuration is done through a bank of switches – a step up from fiddly jumpers. The manual details switch configurations for many combinations of bus speed and multiplier. To select BIOS configuration, you set all the switches to off and move a specific jumper.

After plugging everything in and connecting up the power, we set the system going, only to be presented with a blank screen. We checked everything and the system still wouldn't POST. We eventually got the system to boot and once the multiplier and frequency had been set the board behaved itself and operated consistently.



The board has two PS/2, two USB, two serial and one parallel port. Five PCI slots are on offer along with one shared slot and one AGP. The P3B-F can accommodate up to four DIMMs. The two EIDE channels conform to UDMA33, rather than the UDMA66 standard.

The layout could have been better. The ATX power connector sits awkwardly behind the processor slot, while the floppy connector lurks between PCI slots one and two, making it difficult to reach.

PCW DETAILS

Price *£111.63 (£95 ex VAT)*
Contact *Top PC 0113 242 2416*
www.asus.com
Good points *Four DIMM slots*
Bad points *Temperamental to set up initially, awkward layout in parts*
Conclusion *Once it was up and running it behaved itself, but it took some effort*

Layout	★★★
Ease of Installation	★★
Performance	★★★★★
Overall Rating	★★★

Asus **P3W**

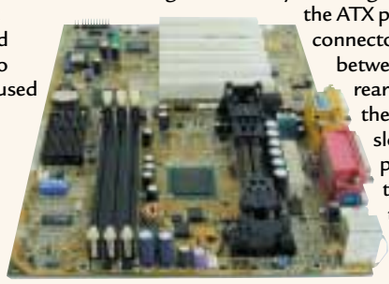
PIII 100FSB

Based on the 810 chipset, this is a Slot 1-based board with a 100MHz front-side bus. You'll find six PCI slots and one AMR slot but no ISA connectors, so you won't be able to run any legacy components. There is no AGP slot, so increasing the power of the on-board graphics could be difficult. Both the EIDE channels support UDMA66 and there is a standard floppy connector adjacent. Up to three DIMM modules can be housed on the board.

The bus multiplier can be configured via the BIOS or through a bank of switches. For ease of use we opted for the software method and powered up the system. Once into the BIOS we had to manually select the desired multiplier.

On the rear of the board there are connectors for two PS/2, two USB, one serial, one parallel, D-SUB video, joystick and audio in, out and mic. A riser card for the second serial connector is provided.

In general the layout was good, but the ATX power connector was between the rear ports and the processor slot, so putting together a tidy system could be troublesome. It was also nestling next to some large capacitors, hindering access.



PCW DETAILS

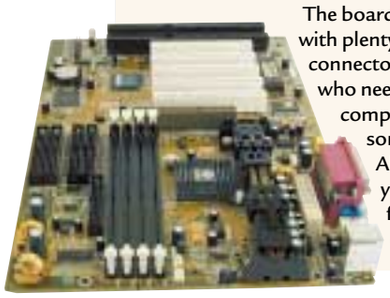
Price *£141 (£120 ex VAT)*
Contact *Top PC 0113 242 2416*
www.asus.com
Good points *Six PCI slots, jumperless configuration*
Bad points *No AGP slot, layout could be better*
Conclusion *Integrated solution but lack of AGP prevents good graphics performance*

Layout	★★★
Ease of Installation	★★★★
Performance	★★★★
Overall Rating	★★★★

Soyo **SY-6BA+IV**

PIII 100FSB

This 440BX chipset board accepts Slot 1 processors running at a 100MHz front-side bus. Setting up the board, we found that the default bus speed was correct for the processor we were running and setting the multiplier was simply a matter of selecting the correct value from the BIOS menu.



The board comes with plenty of connectors for those who need a lot of components. Like some of the Abit boards, you'll find four EIDE channels, each supporting two devices – giving you a maximum of eight separate devices. Two of the ports support UDMA66, with the other two providing UDMA33 operation. In terms of slots, there's one AGP, four PCI, one ISA and one shared. Four DIMM slots are there for the taking. A standard floppy-drive connector is near the EIDE ports.

The rear panel offers two PS/2 ports, two USB, two serial and one parallel port. Layout was fair, but the ATX power connector had been poorly placed. Sitting between the processor slot and the rear panel connectors meant that it was not in the most accessible position.

Although the BX chipset has now been around for about two years, the deficiencies of the 810 and the high price of RAMBUS for the 820 mean that it is still a good option.

PCW DETAILS

Price *£78.96 (£67.20 ex VAT)*
Contact *CCL Computers 01274 269 001 www.soyo.co.uk*
Good points *Lots of connectors*
Bad points *Minor layout and installation problems*
Conclusion *A fair performer, but pipped at the post for an award*

Layout	★★★★
Ease of Installation	★★★★
Performance	★★★★★
Overall Rating	★★★★

Transcend **TS-AWE1**

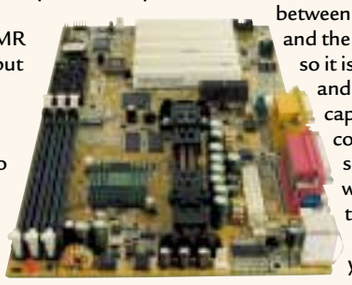
PIII 100FSB

The TS-AWE1 is built around the 810E chipset and supports Slot 1 processors. In theory it should support the latest Coppermine processors running on a 133MHz front-side bus, but we couldn't get one to work with this board, although this could have just been a problem with the sample that was sent to us for testing.

The TS-AWE1 has one AMR slot as well as five PCI slots, but no ISA slots. The two EIDE channels support UDMA66 and there is also a standard floppy-drive connector. Up to three SDRAM modules can be installed, but the lack of an AGP slot is an issue.

The rear panel connectors are two PS/2, two USB, one serial, one parallel, one D-SUB video, one game port and audio in, out and mic. A riser is provided for the second com port so if you need to use this you don't need an extra cable.

The layout could be better. The ATX power connector lives in the space between the processor and the rear connectors so it is difficult to get to and surrounded by capacitors. The connector for the second serial port was at the end of the board after all the PCI slots, so if you didn't want it to occupy this position in the case things could become a little untidy.



PCW DETAILS

Price *£81.43 (£69.30 ex VAT)*
Contact *Vortex Services 0161 343 5555 www.transcendusa.com*
Good points *Plenty of PCI slots*
Bad points *No AGP slot, poor layout*
Conclusion *Even if you want an 810E-based board, the layout of the TS-AWE1 makes it less desirable*

Layout	★★★
Ease of Installation	★★
Performance	★★★★
Overall Rating	★★★

Abit **BP6**

Socket 370

Celerons do not provide support for SMPs (Symmetric Multiple Processors) and therefore will not work in a dual-processor system, so why has Abit produced a board with two sockets?

SMP functionality has been removed from the Celeron. As it is based on the Pentium II, which will happily share a bus with other processors, removing this functionality without redesigning the core or stopping it working completely was troublesome. The result is that with a little modification (or a board that does this for you) the Celeron will comply. The dual functionality of this board is for experimental and testing purposes only, but it works very well.

We only installed one processor, since Windows 98 would simply ignore the extra chip. The board itself couldn't be easier to set up. The multiplier and FSB speed are fully configurable, with SoftMenu making the process even simpler.

As well as the two sockets, the BP6 offers three DIMM slots, one AGP, four PCI, one ISA and one shared slot. It also sports four EIDE channels, so if you have a lot of devices that need to be attached, this board is ideal.

PCW DETAILS

Price *£116.33 (£99 ex VAT)*
Contact *Top PC 0113 242 2416 www.abit.com.tw*
Good points *Dual-Celeron support. four EIDE channels, easy to configure and set up*
Bad points *None to speak of*
Conclusion *Even if you don't want to enter the realms of dual processing, the BP6 is a powerful platform for the relatively cheap Celeron chip*

Layout	★★★★★
Ease of Installation	★★★★★
Performance	★★★★★
Overall Rating	★★★★★

AOpen **MX3W**

Socket 370

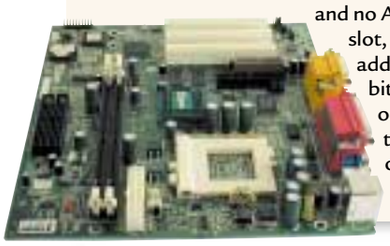
The MX3W is a Socket 370 810 chipset-based board, manufactured in a MicroATX form factor. It has two UDMA66-compliant EIDE channels and a standard floppy-drive connector. Up to two DIMM modules can be used, so if you want the maximum upgradability then this may not be the board for you. Only three PCI slots are present, with no ISA.

The MX3W also features an AMR slot and no AGP slot, so adding a bit more oomph to the on-board graphics could prove troublesome.

The rear panel offers two PS/2, two USB, one parallel, one serial, one joystick, audio in, out, mic and a D-SUB video connector for the on-board graphics. The second serial port is available by using the supplied riser card.

Installation was simple enough, except the board that arrived in our Labs had obviously had an exciting journey, as the pins on the fan connector were slightly bent during transit, so a minor adjustment was necessary to complete the setup.

The unusual AOpen position of the floppy-drive connector meant that the layout of the board could be improved. Rather than being near the EIDE connectors, the port was marooned on the opposite side, forcing the floppy cable to be draped across the board.



PCW DETAILS

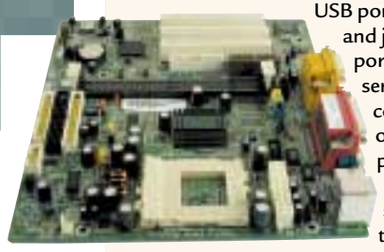
Price *£77.55 (£66 ex VAT)*
Contact *Dabs Direct 0800 138 5204 www.aopen.com*
Good points *Simple to set up*
Bad points *No AGP slot, poor layout*
Conclusion *The MX3W will appeal to some markets, but if you want a bit more performance the lack of AGP means it just doesn't cut the mustard*

Layout	★★★
Ease of Installation	★★★★
Performance	★★★★
Overall Rating	★★★★

Biostar M6TWC

Socket 370

The M6TWC is Biostar's Socket 370 810 chipset-based offering. The board comes in a MicroATX form factor, reducing the overall size of the PC. Three PCI slots are available, but no ISA slots. You'll also find an AMR slot and two DIMM slots so memory upgrading may be limited. On the rear panel are two PS/2 sockets, two USB ports, audio and joystick ports, one serial connector, one parallel port, and a D-SUB socket for the on-board video. The second com port is on the end of a wire that can be attached to the case.



There are two EIDE channels that conform to UDMA33, although UDMA66 is available as an optional extra. In addition to the standard floppy-drive connector there are sockets for a front USB port and digital flat panel/TV adaptor card, although these were not supplied. Installation did not raise any issues and all the default jumper settings were correct for the setup we were using.

As the M6TWC comes in a MicroATX form factor, it would be suitable for those who want to build a small, reasonably cheap computer, such as a basic Internet terminal. If you wanted to use it for games, however, you'd find the lack of AGP slot and slow on-board graphics a bit limiting.

PCW DETAILS

Price *£69.33 (£59 ex VAT)*
Contact *TopPC 0113 242 2416*
www.biostar.com.tw
Good points *Small form factor*
Bad points *810 graphics, limited upgradability*
Conclusion *You could build a good starter PC with this, but the limited upgradability may become an issue*

Layout	★★★★
Ease of Installation	★★★★
Performance	★★★★
Overall Rating	★★★★

Gigabyte GA-6WMM7

Socket 370

The GA-6WMM7 supports Socket 370 Celerons using the 810 chipset. Unfortunately, installation was not easy. The board arrived set up for a 100MHz front-side bus, even though all Celerons currently operate at a 66MHz bus.

The manual said changing this was simply a matter of moving one jumper. After making the change, however, the system still wouldn't respond. A detailed trawl of the motherboard uncovered a secret jumper not mentioned anywhere in the documentation. Luckily the settings for this were written on the board and after this had been changed the system finally kicked into life.

The board comes in a MicroATX form factor and has on-board sound and video. The Gigabyte has no AGP slot so upgrading it to decent performance for games is only possible via a PCI card.

Only two DIMM slots are available, plus two PCI, one shared slot and one AMR. In terms of ports there are two PS/2, two USB, one joystick, audio in, out and mic, one parallel and two serial. The two EIDE channels support UDMA66, there is a standard floppy connector and TV/Digital Flat Panel socket that connects to Gigabyte's custom card.

PCW DETAILS

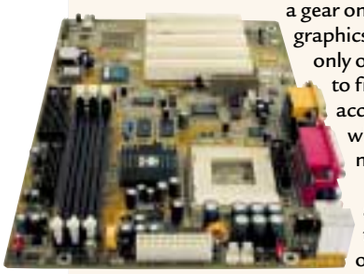
Price *£88.12 (£75 ex VAT)*
Contact *Watford Electronics 0800 035 5555*
www.gbt-tech.co.uk
Good points *Small in size*
Bad points *Poor documentation, difficult to set up*
Conclusion *If you want to build a cheap, small computer then this is worth a look, but it's not the easiest board to configure*

Layout	★★★
Ease of Installation	★
Performance	★★★★★
Overall Rating	★★★

Soyo SY-7IWA-F

Socket 370

The SY-71WA-F is a Socket 370 board based on the integrated 810 chipset, which seems to be the way that most Celeron boards are going. While the 810 offers advantages such as on-board sound and graphics, it also has disadvantages such as no AGP slot, so if you want to step up a gear on the graphics front the only option is to find a PCI accelerator – which is not easy. In addition to the on-board D-SUB connector, there is a Digital Flat Panel (DFP) connector for use with an LCD screen. This means the signal is not needlessly converted from digital to analog and then back to digital when it reaches the screen – the whole journey is digital, reducing the chance of image degradation. The downside of the connector is that it won't fit the standard blanking plate. However, there is a replacement plate in the box.



As the two display connectors sit where you'd normally expect to find the com ports, these have been relegated to a riser plate. The back panel also sports two PS/2, two USB, one parallel, one game port and standard audio connectors.

Installation of the CPU was tricky, due to the large capacitors at the back of the socket. The fan had to be put on 'backwards' and was difficult to attach.

PCW DETAILS

Price *£82.72 (£70.40 ex VAT)*
Contact *CCL Computers 01274 269 001* *www.soyo.co.uk*
Good points *Digital Flat Panel connector*
Bad points *810 chipset so no AGP slot*
Conclusion *If you need the DFP connector and can make do with on-board graphics then the SY-71WA-F is a good buy, otherwise there are better boards*

Layout	★★★
Ease of Installation	★★★
Performance	★★★★
Overall Rating	★★★

Supermicro **370SWT**

Socket 370

Supermicro has opted for the 810 chipset for its Socket 370 MicroATX board. The board offers three PCI slots but no ISA slots. As the graphics are on-board there is no AGP slot, so to get decent graphics acceleration you'll have to resort to a PCI card, such as the Voodoo3 3000 PCI version. One AMR slot is available as well as a TV-out port. Supermicro has kindly included the riser card, withTV-out connectors for composite and S-Video. The two EIDE channels are UDMA66-compliant and there is a standard floppy-drive connector. A maximum of two DIMM modules can be installed, so it is best to buy as big a capacity as you can afford at the time.

The back panel has the usual array of ports: two PS/2, two USB, one serial, one parallel, one D-SUB video, one joystick and audio in, out and mic. If you need more com ports there is an internal connector for the second port, although no riser card was provided for this, so you'll have to go hunting in computer shops if this is a major requirement.

The installation was simple, with no jumper changes having to be made. The layout of the board was logical, with everything easily accessible.

PCW DETAILS

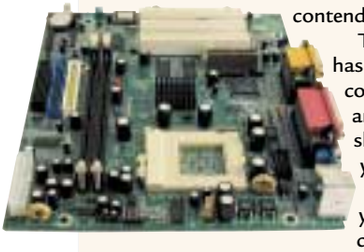
Price *£81.08 (£69 ex VAT)*
Contact *Dabs Direct 0800 138 5204*
www.supermicro.com
Good points *TV-out included in the box*
Bad points *810 graphics solution, no AGP port*
Conclusion *You could build a decent second PC, and the TV-out is a bonus, but if you need more power then there are more suitable boards*

Layout	★★★★
Ease of Installation	★★★★
Performance	★★★★
Overall Rating	★★★★

TMC **M17WBM**

Socket 370

TMC's Socket 370 offering is built around the integrated 810 chipset. The board comes in a MicroATX form factor, so if you want a base to build a small second PC on, the M17WBM could be a contender.



The board has three PCI connectors and no ISA slots, so you'll have to leave your legacy cards gathering dust if you opt for this board. No AGP slot is present, so bumping up the on-board graphics could be a problem. One AMR slot is available and up to a maximum of two DIMM modules can be added. Both the EIDE channels support UDMA66 and there is a standard floppy-drive connector.

Layout of the board is good with most components sensibly placed to allow for tidy installation. The connectors on offer at the rear take the form of two PS/2, two USB, one serial, one parallel, one D-SUB video, one joystick port and audio in, out and mic. A riser card for the second com port is supplied in the box.

The M17WBM was simple to set up. As default the board is configured to automatically detect the bus speed, although you can force it to a 100MHz bus by changing a jumper. The multiplier settings can be modified through the BIOS, which features a 'safe mode' boot if you happen to push the system too far.

PCW DETAILS

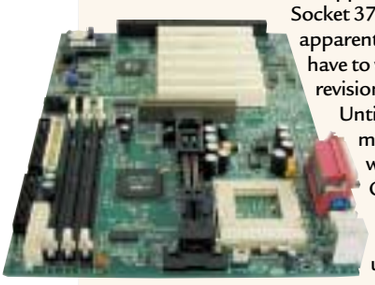
Price *£83.43 (£71 ex VAT)*
Contact *Dabs Direct 0800 138 5204*
www.mycomp-tmc.com
Good points *Jumperless configuration*
Bad points *810 on-board graphics, no AGP slot*
Conclusion *A good board to build a small second PC, but not really a viable upgrade option*

Layout	★★★★★
Ease of Installation	★★★★
Performance	★★
Overall Rating	★★★

Tyan **Trinity S1854**

Socket 370

If you like to have a finger in as many pies as possible then Tyan has a board for you. The S1854 offers both Slot 1 and Socket 370 connectors (although not in a dual-processor configuration) and is based on the VIA Apollo Pro 133A chipset. A lot of rumours claim this board supports the Socket 370 PIII, but apparently you'll have to wait for revision three. Until then we made do with a Celeron. Setup involved using jumpers to set the multiplier, which is fiddly and could have been done with switch blocks or software-controlled options. The manual did not specify the configuration for a multiplier of 7.5, which the 500MHz Celeron requires, so we set it to 7. Since the Celeron is multiplier-locked this wasn't an issue. Another problem was that pin one on the front panel connector had been incorrectly labelled.



As the S1854 uses the Apollo Pro 133A chipset, it supports AGP 4X as well as 2X cards. There are five PCI slots, one shared and three DIMMs for memory. The two EIDE channels support UDMA66, with a standard floppy connector next door. The back panel has ports for two PS/2, two USB, two serial and one parallel.

PCW DETAILS

Price *£92.83 (£79 ex VAT)*
Contact *Top PC 0113 242 2416*
www.tyan.com
Good points *Socket 370 and Slot 1. AGP 4X support*
Bad points *Not the easiest to set up, incorrectly labelled front panel connector*
Conclusion *A good board if you can't decide which processor format to go for. If the next revision supports the Flip Chip as well, it'll be a winner*

Layout	★★★★
Ease of Installation	★★★
Performance	★★★
Overall Rating	★★★★

AOpen **AX59 Pro**

Socket 7

This Super Socket 7 motherboard is based on the VIA MVP3 chipset, which can support up to 2MB of on-board cache. This board comes with either 1MB or 512KB, so check before you buy. It has the advantage of accepting both SIMMs and DIMMs – there are two SIMM and three DIMM slots.

The board is not one of the best laid out, though. The ATX power and floppy connectors are both located below the SIMM slots, making it awkward to connect the power lead and resulting in a messy floppy cable stretching across the whole board. The two EIDE connectors are located on the far right of the board, however, which makes up slightly for the poor positioning of the other connectors. In common with all of the other Socket 7 boards, this does not have a jumperless setting and you have to set the CPU core and I/O frequencies by moving a series of dip switches and jumpers. This can be a bit tedious, and is more time-consuming than the software settings found in the other sections of this group test. We tested all the Socket 7 boards with a K6-III 450MHz, but this model will also accept K5, K6-2 and other Cyrix and Intel chips.

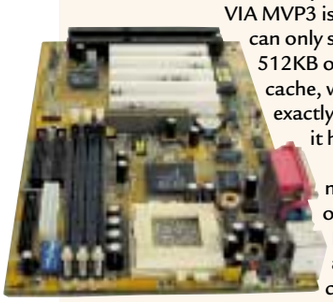
The documentation was fair but, once again, AOpen provides only the briefest of printed manuals with more comprehensive versions on the CD and website.

PCW DETAILS

Price *£66.98 (£57 ex VAT)*
Contact *Dabs Direct 0800 138 5204*
www.aopen.com
Good points *Fastest performing board*
Bad points *Poor design and inadequate manual*
Conclusion *A fair Socket 7 board, but there are better designed ones available*

Layout	★★
Ease of Installation	★★★
Performance	★★★★★
Overall Rating	★★★

Gigabyte **GA-5AX**



Socket 7

The second entry in our Socket 7 section is based on the ALi Aladdin V chipset. This had a few problems when it was first released but these have largely been solved in various new revisions. The only real difference between this chipset and the VIA MVP3 is that this can only support 512KB of on-board cache, which is exactly the amount it has.

This model is laid out well, with EIDE, floppy and ATX connectors in sensible positions that allow for a tidy system, with wires kept out of the way. Our only complaint is that the DIMM slots are placed a tad too near the AGP slot, so you can't insert/remove memory and still have the AGP card in the slot.

Setting up the board was a bit fiddly as we had to move a succession of dip switches and jumpers. Once we established the correct settings, however, it was fairly stable. In common with the other Socket 7 boards, though, there were a few random moments of instability that made us wary of recommending the K6-III as a good option if you're thinking of building a system. On a more positive note, there is a temperature sensor underneath the CPU socket, which automatically slows it down if it runs too hot. All in all, the GA-5AX is a good board that is well supported.

PCW DETAILS

Price *£61.10 (£52 ex VAT)*
Contact *Dabs Direct 0800 138 5204*
www.gbt-tech.co.uk
Good points *Well laid out, good documentation*
Bad points *More stable than others, but still a few problems*
Conclusion *A good, stable implementation of Socket 7 technology*

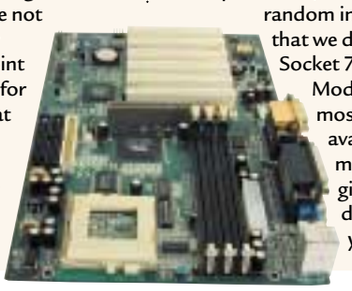
Layout	★★★★
Ease of Installation	★★★★
Performance	★★★
Overall Rating	★★★★

TMC **TI5VGA**

Socket 7

This board was one of the easiest for us to set up, and it's fairly well laid out and stable too. TMC has used a slightly refined version of VIA's MVP3 chipset, which allows it to support UDMA66. It comes with a massive 2MB of cache on-board.

It's the only Super Socket 7 to come with on-board sound, although unfortunately the ports are not correctly colour-coded for PC99 compliance. One point that may cause a problem for some people is the fact that there are no ISA slots, although you do get a whopping six PCI slots for your money. Layout is generally good, except for the poor positioning of the ATX power connector. It's right next to the DIMM slots and between a series of capacitors, which makes the building process a bit more fiddly than it needs to be.



The supplied manual was well written and spelt out all the possible settings in depth. After moving the various jumpers and dip switches, we didn't encounter the random instability problems that we did with the other Socket 7 boards. The Award Modular BIOS isn't the most user-friendly BIOS available, but it's the most common and gives you a high degree of control over your system.

Overall, this is a good board and one we would recommend for anyone considering building a K6-III system.

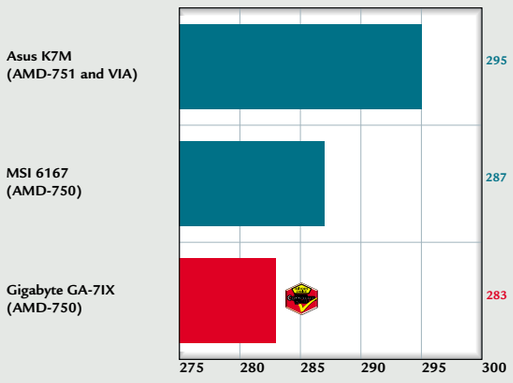
PCW DETAILS

Price *£81.08 (£69 ex VAT)*
Contact *Top PC 0113 242 2416*
www.mycomp-tmc.com
Good points *Easy to install, on-board sound*
Bad points *ATX power connector could be better positioned*
Conclusion *An excellent Socket 7 board*

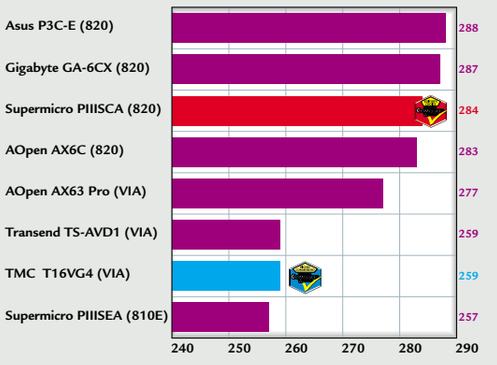
Layout	★★★★
Ease of Installation	★★★★
Performance	★★★★★
Overall Rating	★★★★★

Performance results

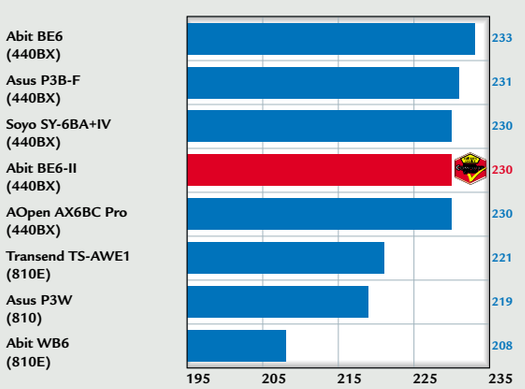
Slot A SYSmark 98



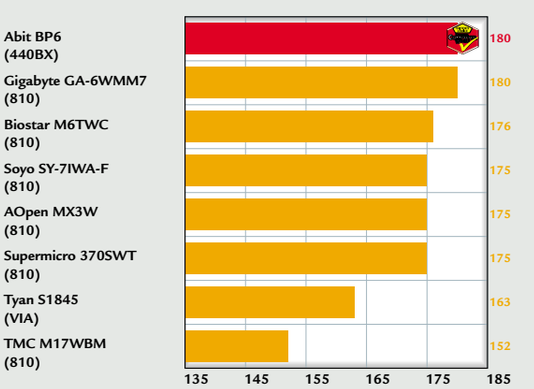
Pentium III 133FSB SYSmark 98



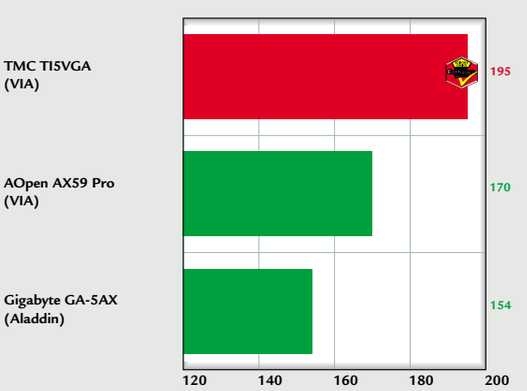
Pentium III 100FSB SYSmark 98



Socket 370 SYSmark 98



Socket 7 SYSmark 98



How we did the tests

We assembled each machine as we felt the end user would approach it, relying on the supplied documentation to guide us through the various connections and jumper changes. Each system was built using a 13GB 7,200 rpm IBM Deskstar hard drive and a 16MB AOpen TNT2 Ultra graphics card, apart from the Socket 7 boards, where a 32MB Asus TNT2 Ultra was used. 128MB of the appropriate memory (PC100, PC133 or RAMBUS) was added. Using a fresh install of Windows 98 SE we set SYSmark 98 to run three times at a resolution of 1,024 x 768 in 16bit colour and noted the results.

Table of features

	Slot A			PIII 133FSB				
	K7M	GA-7IX	6167	AX6C	AX63 Pro	P3C-E	GA-6CX	
Manufacturer	**Asus**	**Gigabyte**	**MSI**	**AOpen**	**AOpen**	**Asus**	**Gigabyte**	
Price inc VAT (ex VAT)	£129.25 (£110)	£105.75 (£90)	£61.10 (£52)	£128.08 (£109)	£64.63 (£55)	£182.13 (£155)	£133.95 (£114)	
Supplier	Top PC	Dabs Direct	Dabs Direct	RK Distribution	Dabs Direct	Top PC	GBT Tech (UK)	
Telephone	0113 242 2416	0800 138 5204	0800 138 5204	01844 261 226	0800 138 5204	0113 242 2416	01908 362 700	
URL	www.asus.com	www.gbt-tech.co.uk	www.msi.com.tw	www.aopen.com	www.aopen.com	www.asus.com	www.gbt-tech.co.uk	
Slot/socket type	Slot A	Slot A	Slot A	Slot 1	Slot 1	Slot 1	Slot 1	
Processor types	Athlon	Athlon	Athlon	All Pentium III	All Pentium III	All Pentium III	All Pentium III	
Chipset	AMD-751/VIA VT82C686A	AMD-750	AMD-750	Intel 820	VIA Apollo Pro 133	Intel 820	Intel 820	
Form factor	ATX	ATX	ATX	ATX	ATX	ATX	ATX	
Front-side bus speeds	100MHz	100MHz	100MHz	100MHz/133MHz	100MHz/133MHz	100MHz/133MHz	100MHz/133MHz	
AGP/PCI/shared/ISA slots	1/4/1/0	1/4/1/1	1/4/1/1	1/5/0/0	1/4/1/1	1/4/1/0	1/5/0/0	
PS/2/USB/serial/parallel slots	2/2/2/1	2/2/2/1	2/2/2/1	2/2/2/1	2/2/2/1	2/2/2/1	2/2/2/1	
SIMM slots	0	0	0	0	0	0	0	
DIMM slots	3	3	3	0	3	0	0	
RIMM slots	0	0	0	3	0	2	2	
On-board sound	✔	✘	✘	✔	✘	✔	✔	
AMR slot	✔	✘	✘	✔	✘	✔	✔	
EIDE channels	2	2	2	2	2	2	2	
Wake on LAN	✔	✔	✔	✔	✔	✔	✔	
Other connectors	IR/USB	IR/USB	IR/ USB	IR	IR	IR	IR/USB	
BIOS type	AMIBIOS	Award	Award	Award	Award	Award	Award	
AGP speeds	1X/2X	1X/2X	1X/2X	1X/2X/4X	1X/2X	1X/2X/4X	1X/2X/4X	
No. of fan connectors	2	3	3	3	2	3	3	
On-board graphics	✘	✘	✘	✘	✘	✘	✘	
Jumperless/Soft BIOS	✔	✔	✔	✔	✔	✔	✔	

Table of features

	PIII 100FSB				Socket 370			
	P3B-F	P3W	SY-6BA+IV	TS-AWE1	BP6	MX3W	M6TWC	
Manufacturer	**Asus**	**Asus**	**Soyo**	**Transcend**	**Abit**	**AOpen**	**Biostar**	
Price ex VAT	£111.63 (£95)	£141 (£120)	£78.96 (£67.20)	£81.43 (£69.30)	£116.33 (£99)	£77.55 (£66)	£69.33 (£59)	
Supplier	Top PC	Top PC	CCL Computers	Vortex Services	Top PC	Dabs Direct	Top PC	
Telephone	0113 242 2416	0113 242 2416	01274 269 001	0161 343 5555	0113 242 2416	0800 138 5204	0113 242 2416	
URL	www.asus.com	www.asus.com	www.soyo.co.uk	www.transcend.nl	www.abit.com.tw	www.aopen.com	www.biostar.com.tw	
Slot/socket type	Slot 1	Slot 1	Slot 1	Slot 1	2x Socket 370	Socket 370	Socket 370	
Processor types	100MHz Pentium III	100MHz Pentium III	100MHz Pentium III	All Pentium III	All Celeron	All Celeron	All Celeron	
Chipset	Intel 440BX	Intel 810	Intel 440BX	Intel 810E	Intel 440BX	Intel 810	Intel 810	
Form factor	ATX	ATX	ATX	ATX	ATX	Micro ATX	Micro ATX	
Front-side bus speeds	100MHz	100MHz	100MHz	100MHz/133MHz	100MHz	100MHz	100MHz	
AGP/PCI/shared/ISA slots	1/5/1/0	0/6/0/0	1/4/1/1	0/5/0/0	1/4/1/1	0/3/0/0	0/3/0/0	
PS/2/USB/serial/parallel slots	2/2/2/1	2/2/1/1	2/2/2/1	2/2/1/1	2/2/2/1	2/2/1/1	2/2/1/1	
SIMM slots	0	0	0	0	0	0	0	
DIMM slots	4	3	4	3	3	2	2	
RIMM slots	0	0	0	0	0	0	0	
On-board sound	✘	✔	✘	✔	✘	✔	✔	
AMR slot	✘	✔	✘	✔	✘	✔	✔	
EIDE channels	2	2	4	2	4	2	2	
Wake on LAN	✔	✔	✔	✔	✔	✔	✔	
Other connectors	IR	IR	IR	IR/COM2	IR	IR/COM2	IR/COM2/USB	
BIOS type	Award	Award	Award	Award	Award	Award	Award	
AGP speeds	1X/2X	N/A	1X/2X	N/A	1X/2X	N/A	N/A	
No. of fan connectors	3	3	3	3	3	2	1	
On-board graphics	✘	✔	✘	✔	✘	✔	✔	
Jumperless/Soft BIOS	✔	✔	✔	✘	✔	✔	✔	

	PIII 133FSB				PIII 100FSB			
	Super PIIISCA	Super PIIISEA	TI6VG4	TS-AVD1	BE6	BE6-II	WB6	AX6BC Pro Gold
	Supermicro	Supermicro	TMC	Transcend	ABit	Abit	Abit	AOpen
	£128.08 (£109)	£104.58 (£89)	£72.85 (£64)	£53.05 (£45.15)	£92.83 (£79)	£96.35 (£82)	£89.30 (£76)	£91.65 (£78)
	Dabs Direct	Dabs Direct	Dabs Direct	Vortex Services	Top PC	Dabs Direct	Dabs Direct	Dabs Direct
	0800 138 5204	0800 138 5204	0800 138 5204	0161 343 5555	0113 242 2416	0800 138 5204	0800 138 5204	0800 138 5204
	www.supermicro.com	www.supermicro.com	www.mycomp-tmc.com	www.transcend.nl	www.abit.com.tw	www.abit.com.tw	www.abit.com.tw	www.aopen.com
	Slot 1	Slot 1	Slot 1	Slot 1	Slot 1	Slot 1	Slot 1	Slot 1
	All Pentium III	All Pentium III	All Pentium III	All Pentium III	100MHz Pentium III	100MHz Pentium III	All Pentium III	100MHz Pentium III
	Intel 820	Intel 810E	VIA Apollo Pro 133	VIA Apollo Pro 133	Intel 440BX	Intel 440BX	Intel 810E	Intel 440BX
	ATX	ATX	ATX	ATX	ATX	ATX	MicroATX	ATX
	100MHz/133MHz	100MHz/133MHz	100MHz/133MHz	100MHz/133MHz	100MHz	100MHz	100MHz/133MHz	100MHz
	1/5/0/0	0/3/1/2	1/4/1/0	1/4/1/1	1/4/1/1	1/5/0/1	0/3/0/0	1/4/1/1
	2/2/2/1	2/2/1/1	2/2/2/1	2/2/2/1	2/2/2/1	2/2/2/1	2/2/1/1	2/2/2/1
	0	0	0	0	0	0	0	0
	2	2	3	3	3	3	2	3
	2	0	0	0	0	0	0	0
	✔	✔	✔	✘	✘	✘	✔	✘
	✔	✔	✔	✘	✘	✘	✔	✘
	2	2	2	2	4	4	2	2
	✔	✔	✔	✔	✔	✔	✔	✔
	IR	COM2/IR	IR	IR	IR	IR	IR/COM2	IR
	AMIBIOS	AMIBIOS	Award	Award	Award	Award	Award	Award
	1X/2X/4X	N/A	1X/2X	1X/2X	1X/2X	1X/2X	N/A	1X/2X
	3	2	3	3	3	3	2	2
	✘	✔	✘	✘	✘	✘	✔	✘
	✔	✔	✔	✔	✔	✔	✔	✔

	Socket 370					Socket 7		
	GA-6WMM7	SY-7IWA-F	370SWT	M17WBM	Trinity S1854	AX59 Pro	GA-5AX	TI5VGA
	Gigabyte	Soyo	Supermicro	TMC	Tyan	AOpen	Gigabyte	TMC
	£88.12 (£75)	£82.72 (£70.40)	£81.08 (£69)	£83.43 (£71)	£92.83 (£79)	£66.98 (£57)	£61.10 (£52)	£81.08 (£69)
	Watford	CCL Computers	Dabs Direct	Dabs Direct	Top PC	Dabs Direct	Dabs Direct	Top PC
	0800 035 5555	01274 269 001	0800 138 5204	0800 138 5204	0113 242 2416	0800 138 5204	0800 138 5204	0113 242 2416
	www.gbt-tech.co.uk	www.soyo.co.uk	www.supermicro.com	www.mycomp-tmc.com	www.tyan.com	www.aopen.com	www.gbt-tech.co.uk	www.mycomp-tmc.com
	Socket 370	Socket 370	Socket 370	Socket 370	Socket 370/Slot 1	Socket 7	Socket 7	Socket 7
	All Celeron	All Celeron	All Celeron	All Celeron	All Pentium III & Celeron	K6, Cyrix, WinChip	K6, Cyrix, WinChip	K6, Cyrix, WinChip
	Intel 810	Intel 810	Intel 810	Intel 810	VIA Apollo Pro 133A	VIA MVP3	ALi Aladdin V	VIA MVP3
	Micro ATX	ATX	Micro ATX	Micro ATX	ATX	ATX	ATX	ATX
	100MHz	100MHz	100MHz	100MHz	100MHz/133MHz	100MHz	100MHz	100MHz
	0/2/1/0	0/5/0/0	0/3/0/0	0/3/0/0	1/5/1/0	1/3/1/1	1/4/1/1	1/6/0/0
	2/2/1/1	2/2/0/1	2/2/1/1	2/2/1/1	2/2/2/1	2/2/2/1	2/2/2/1	2/2/2/1
	0	0	0	0	0	2	0	0
	2	3	2	2	3	3	3	3
	0	0	0	0	0	0	0	0
	✔	✔	✔	✔	✘	✘	✘	✔
	✔	✔	✔	✔	✘	✘	✘	✘
	2	2	2	2	2	2	2	2
	✔	✔	✔	✔	✔	✔	✔	✔
	IR/COM2/USB	IR/COM1/COM2	IR/COM2	IR/COM2	IR	✘	IR	IR
	Award	Award	Award	Award	Award	Award	Award	Award
	N/A	N/A	N/A	N/A	1X/2X/4X	1X/2X	1X/2X	1X/2X
	3	3	3	3	3	3	1	3
	✔	✔	✔	✔	✘	✘	✘	✘
	✔	✔	✔	✔	✔	✘	✘	✘

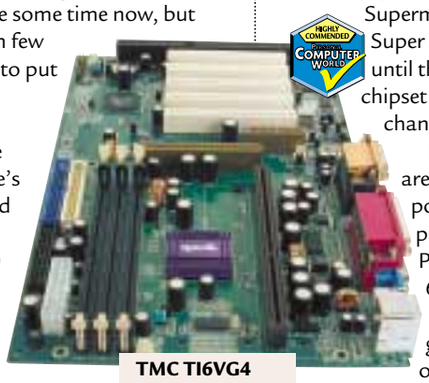
Editor's **Choice**

Due to the massive array of motherboards and processors available, we've decided to give six awards this month – so that you can easily see what the best motherboard option is at the various price and CPU points.

Starting with the big boys, our first **Editor's Choice** goes to **Gigabyte's GA-7IX** Slot A motherboard. We generally had a difficult time testing our Athlon boards and it was a welcome relief to find a board that we could set up and use with minimum effort. This board produced a stable system first time and there are fewer hardware compatibility issues to worry about. On top of that, it is well laid out and has useful extra features such as temperature monitoring. All in all, it's the only board we would recommend for Athlon enthusiasts.

GIGABYTE GA-7IX

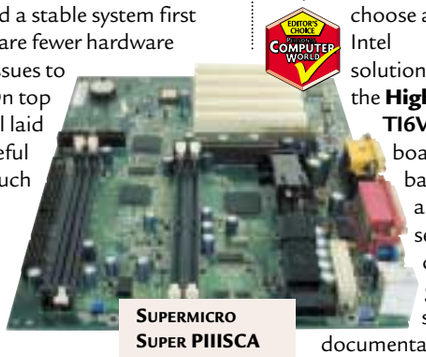
The next behemoth chip, the Pentium III 733EB, is the most interesting story to come out of this group test. The chip itself has been floating around the *PCW* offices for quite some time now, but there have been few motherboards to put it on until very recently. Two standards have emerged. There's Intel's approved version, that couples its 820 chipset with RAMBUS memory, and VIA's solution, that uses affordable PC133 memory with the Apollo Pro 133 chipset.



TMC TI6VG4

You get the best performance from the first solution, and for this reason we've awarded the **Editor's Choice** in this section to the **Supermicro Super PIIISCA**. Not only is it well laid out and documented, it was incredibly easy to set up – we simply plugged the components in and off we went. RAMBUS is still horribly expensive, though (at the time of writing it was around £650 for 128MB 800MHz RIMM), and so the real bonus is that you can put SDRAM in it as an alternative to RAMBUS.

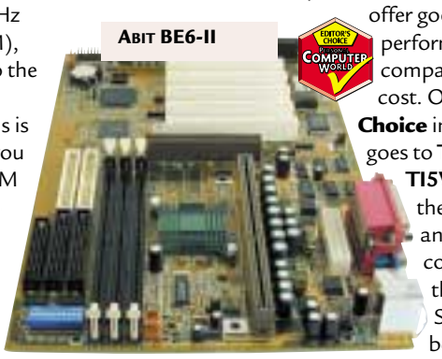
If you don't want to choose an Intel solution, though, there's always the **Highly Commended TMC TI6VG4**. Not only is the board itself an absolute bargain at £62 ex VAT, it's also very easy to set up and comes with good supporting documentation. Our only bugbear is that it doesn't support AGP 4X, so if you feel you need this feature then you're going to have to opt for the Supermicro Super PIIISCA until the Apollo Pro 133(A) chipset filters through the channel.



SUPERMICRO SUPER PIIISCA

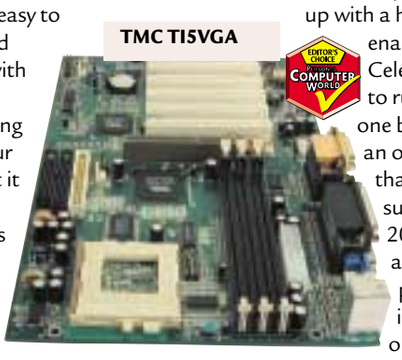
For those of you who aren't after the most powerful processors, a Pentium III 600 could still be a good option. For this, we'd recommend the **Abit BE6-II** which also grabs an **Editor's Choice** award. Based on the faithful old 440BX chipset, it impressed us most with its SoftMenu III that gives you the best control over all of the settings that you could ever need.

Super Socket 7 hasn't received much attention recently, but there are still plenty of processors you can use for it. K6-IIIs are not as easy to set up as some of the other processors here, but they do offer good performance for a comparatively low cost. Our **Editor's Choice** in this section goes to **TMC's TI5VGA**. It was the best laid out and easy to configure of all the Super Socket 7 boards and comes with 2MB of on-board cache and on-board sound.

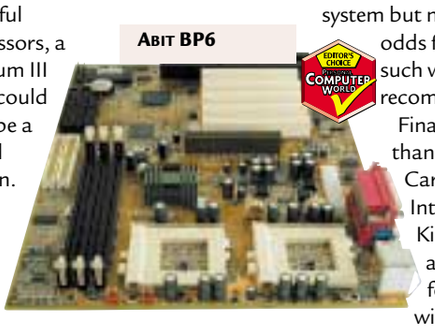


ABIT BE6-II

Our last **Editor's Choice** award goes to **Abit's BP6**. The company has come up with a hack that enables two Celeron processors to run together on one board. If you use an operating system that supports it, such as Windows 2000, you'll see a massive performance increase with optimised software. It's an extremely easy board to set up and you can use the Softmenu to adjust all the settings without moving jumpers. It's the ultimate board for the PC enthusiast who wants a powerful system but not pay over the odds for it and as such we thoroughly recommend it.



TMC TI5VGA



ABIT BP6

Finally, a word of thanks must go to Carrera, AMD, Intel, AOpen, Kingston, Top PC and Techworks for supplying us with the hardware needed to perform this test.