



# hardware

## Comparison Test

Photograph: IRA

**IN TEST: 33** INPUT DEVICES



# Getting it ACROSS

## A test of ergonomic keyboards, mice, force feedback steering wheels and joysticks, touch pens and other radical input devices

Ever since the inception of the first computer, researchers have been trying to improvise and create faster and more powerful computers. With more stress on fabricating faster and more efficient microchips and bigger storage devices, we often fail to realise the importance of devices that get the information inside the computer.

Unlike the other computing components that have been getting faster, bigger and more complicated, the creators of input devices have been striving to produce smaller, more intuitive and simpler devices.

The ergonomic keyboards available today promise healthier and safer prolonged use, pointing devices have been getting more and more unconventional with the presence of trackballs, touch sensitive pads and electronic pens. All these promise to streamline the first stage of computing—getting the data into the computer.

### What is an input device?

Since computers operate in binary (consisting of 'high signals' and 'low signals') and humans communicate using language and speech, there has to be some device that bridges this communication gap. An input device is an interface that bridges this communication gap. Computers have interface points known as ports through which these input and

output peripherals can be connected. Generally, computers have two serial (also known as COM) ports, two USB (Universal Serial Bus) ports and one game port. The serial and USB ports are present on the motherboard and the game port is usually on the soundcard.

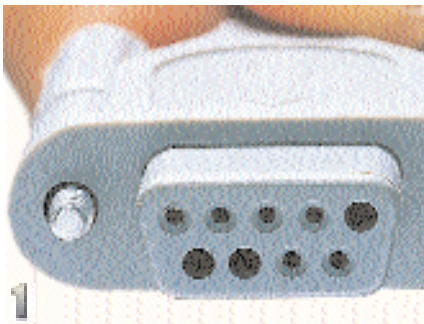
Each input device contains a circuitry that converts analog signals to a digital format, which can be recognised by the computer. The computer periodically queries the different ports for the presence of devices using a process called 'polling'. If these devices have any data that needs to be sent, they do so using the BIOS which assigns space to that particular device in memory space.

The processor reads this memory space, interprets the data stored there and carries out the appropriate action such as moving the cursor of the mouse or registering a click of a button. These various input devices communicate with the operating system of a computer through the associated driver.

### Types of input devices

Primarily, there are three types of input devices categorised according to interface they use: serial, USB and game port. Each of these ports operates at different speeds and offers different features. The type of device that is connected to these ports varies according to the intended application they are used for.

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**1. Serial Port:** This general purpose interface is suitable for peripherals that are not very demanding on speed—such as mice, touch-sensitive tablets and electronic pens. Unlike a parallel or SCSI port, the data is transmitted in a serial manner and the maximum rate of data transfer is 115 Kbps. There are usually two serial ports on systems (COM1 and COM2). There is support for up to four serial ports in a computer, which is achieved by attaching an additional serial card. The interface to a serial port is through a 9-pin or a 25-pin connector and the type of cable varies according to the device in use.

**2. Universal Serial Bus:** One of the newer interface technologies, USB is a good all-purpose interface that can be used to connect devices such as mice, keyboards and peripherals such as digital cameras, printers etc. USB ports operate at two speeds—1.5 Mbps and 12 Mbps—depending upon the speed of the device attached to the port. For peripherals like mice and keyboards, USB will use the low-speed band while digital cameras and scanners use the high-speed channel. The major advantage with USB is that devices can be hot-plugged into the system and appropriate drivers are loaded on the fly. With USB, up to 128 devices can be connected to a single port. Though USB did take a while to gain acceptance, now there is a



plethora of devices like joysticks, mice and other such devices that sport the USB interface.

**3. Game port:** Earlier an interface for connecting gaming devices, the game port now exists on practically all soundcards. Though initially used only for connecting joysticks, the presence of other devices like flight sticks, rudders and steering wheels have made the game port a standard for all gaming peripherals. 15 pins are used to monitor signals like joystick movement, button presses etc. The only inherent disadvantage with the game port is that only one device can be connected to it at a time. However, you can buy devices like port replicators, which when connected to the game port, allow more than one such device to be connected. Apart from gaming peripherals, the game port can also be used to connect digital musical instruments.

Choosing the right device depends largely on the type of software and the operating system that you are running. For devices like mice, a serial port is a good choice regardless of applications and operating systems. Serial peripherals are easy to configure and set up—many are plug-and-play devices and are automatically detected upon startup. The disadvantage is that only one device can be connected on each serial port. In contrast, USB features support multiple devices on a single port and speeds up to 12 Mbps. USB is a good choice for Windows 98-based systems as this OS inherently supports this technology. With Windows 95, a USB patch has to be loaded or OSR 2.1 has to be installed.

A game port is present on virtually all soundcards in the market today and has always been a very good choice for gaming devices. The fact that it supports only one device is a disadvantage, so it is better to opt for a USB device if the choice is available.

## TEST PROCESS

The input devices were graded on the basis of ease of installation, documentation, usability and price. Ease of installation was determined by the ease with which the peripheral was installed using the accompanying documentation and drivers.

The configuration of the peripheral was also considered and extra points were accorded if the setup was exceptionally simple and effortless.

For the documentation grading, the clarity in explanation of the documentation was noted. Other aspects of documentation like an installation guide, explanation of features, troubleshooting and specifications of the hardware were also noted. Features and overall ease of use were noted to give an idea of the usability of the hardware. Ergonomic and sturdy designs were allotted more points.

The presence of special features on the hardware that simplify its use was also noted. The price was compared to that of other products to decide whether the product was a good buy.

The test system consisted of a PII-350 on a 440BX motherboard with 64 MB of PC100 SDRAM, Seagate 6.4 GB IDE hard disk configured as the primary master, 60X Creative Infra CD drive with an SBLive! Value soundcard and Samsung Samtron 50E. An Intel i740 with 8 MB of SDRAM served as the graphics accelerator. The driver for this card was OpenGL compliant and for games that supported this standard, Open GL was used, otherwise DirectX was used. The operating system chosen was Windows 95 OSR 2.1 with DirectX version 6.1 installed.

After evaluating each of the devices and before testing the next one, all the software and drivers were uninstalled. This was done to ensure that the software and drivers of one device do not clash with another.

For evaluating flight sticks and rudders, *F-22 Raptor* and *Microsoft Combat Flight Simulator* were used. In testing motor racing simulations, we ran *Need For Speed III Hot Pursuit* and *Microsoft Precision Racing*. The joysticks and the game pads were also tested in *Quake II* using OpenGL drivers.



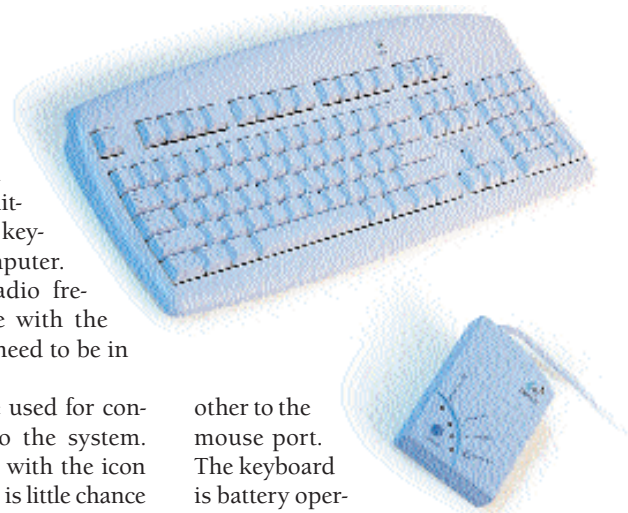
## Logitech Cordless Keyboard If you are the wireless type

**W**ith no wires, the Logitech Cordless keyboard is a very good and convenient alternative to the conventional keyboard. The unit consists of a radio transmitter that is plugged into the keyboard socket of the computer. Since the system uses radio frequencies to communicate with the keyboard, the two do not need to be in line of sight of each other.

Colour-coded wires are used for connecting the transmitter to the system. These wires are embossed with the icon of the input device, so there is little chance of putting the wrong plug in the wrong socket.

Adapters for both AT and serial ports have been provided to configure the ports with your particular system. There are two connections from the transmitter—one goes to the keyboard socket and the

other to the mouse port. The keyboard is battery operated and can work at a distance of up to 20 feet away from the receiver. The typing is very accurate and comfortable. It has all the comfort of normal keyboard—without the hassle of wires. The software was very simple to install and the application



programs bundled with the keyboard were easy to install and configure. The Logitech Cordless Keyboard and the Logitech Cordless Mouse are sold together but are evaluated separately.

If you already have many existing peripherals, the Logitech Cordless Keyboard is a very good choice as it eliminates the addition of more wires. Also, it is ideally suited for multimedia presentations and applications that require the user to be located away from the computer.

With rich features and an easy setup process, the Logitech Cordless Keyboard is a very good choice. However, the price is too high.

**VERDICT** **A+**

- ♦ Hassle-free usage, excellent application programs
- ♦ Too expensive

Price: Rs 6,375 (with mouse)  
Contact: Vinton Industries  
Phone: 011-6810033  
Fax: 011-6810816

## Multimedia Keyboard The one-touch solution

**F**or those who are used to one-touch launch of programs and applications, the Multimedia keyboard is a very good choice. This AT-interface keyboard features 18 buttons other than the function and alphabet keys. These buttons allow control of FF, REW, PLAY,

STOP, Volume, Mute etc, for VCD, DVD, Web browser and CDs. The drivers for using all these functions are included on a 1.44 MB disk but should have been on a CD-ROM, which is a more reliable media.

The keyboard includes a palm rest that can be attached to its base to facilitate very comfortable typing. However, the keys are very loud and are rather springy.

The keys that launch the DVD player, the VCD player and the game keys have to be manually programmed while the rest of the multimedia functions like audio CD control are automatically picked up by the program.



Setup of the driver and programming the keys is very simple and is accomplished through the application software. The application program also has an uninstall feature which removes all traces of the application.

Going beyond being just a standard Windows keyboard, this Multimedia Keyboard simplifies the use of Windows applications.

At a very economical price and with a very simple setup procedure, it is an excellent buy.

**VERDICT** **A+**

- ♦ One-touch application control
- ♦ Too noisy

Price: Rs 700  
Contact: Micro Masters  
Phone: 022-3880597  
Fax: 022-3800998

## hardware

## Comparison Test

### Mechanical Keyboard

#### Cheap, programmable



This is a standard 104-key Windows 95 keyboard with an AT connector. A palm rest attaches to the base of the keyboard for comfort during extended use. The keyboard is comfortable for typing, though the keys have a little too much play in them.

They are also slightly firmer than those found on other keyboards. The keys are duo-toned and you can differentiate the alphabet keys from the rest. The keyboard features a 'turbo' function to increase the typematic rate setting

of the keys. There is a tabular notation of the keys and instructions on the rear side of the keyboard indicate how this is done.

**VERDICT** **A**

- ♦ Programmable typematic rate
- Keys have too much play

Price: Rs 750  
Contact: Micro Masters  
Phone: 022-3880597  
Fax: 022-3800998

### Logitech Keyboard

#### All-time favourite



This conventional Windows 95 keyboard has a good design and is comfortable to use. It features a detachable palm rest to facilitate comfortable typing, especially during extended use. An AT converter has been included to connect the keyboard to the systems that do not feature a PS/2 keyboard interface.

This keyboard is slightly heavier than most others and is good, as long as you do not rest it on your lap.

The best part about this keyboard is the extensive instruction manual which contains a painstaking explanation of

how to install the keyboard and also tips on how to comfortably and safely use the keyboard. This keyboard comes with a standard one-year warranty.

**VERDICT** **A+**

- ♦ PS/2-AT converter included
- ♦ Heavy

Price: Rs 810  
Contact: Vintron Industries  
Phone: 011-6810033  
Fax: 011-6810816

### Samsung SEM DT-45

#### Smooth, responsive



This PS/2 keyboard features very tactile and springy keys. The SEM DT-45 also has a palm rest to allow for comfort during prolonged use. The palm rest is hinged and effectively contours to the surface that the keyboard is kept on.

Duo-toned colouring differentiates the alphabet keys from the rest of the characters like the numeric keys, the [Enter] and the [Shift] keys. Metal backing imparts a very sturdy look to the keyboard.

This keyboard, with its smooth and

comfortable keys, is a good choice for applications that need constant and rugged use.

**VERDICT** **A+**

- ♦ Good for rugged use

Price: Rs 550  
Contact: Micro Masters  
Phone: 022-3880597  
Fax: 022-3800998

### TVS keyboard

#### Overly expensive



This keyboard from TVS has retained its style for a very long time—it is very large and does not feature trendy additions like the palm rests found in most newer keyboards.

The feel is very much like the Multimedia keyboard and the keys are rather loud and mechanical. There is an AT-style interface and there is no adapter for connecting the keyboard to computers with a PS/2 socket. The main disadvantage of this keyboard is its unusually high price, when compared with other keyboards in

the same price range or lower, that have more features. It would be advantageous if it were priced more reasonably.

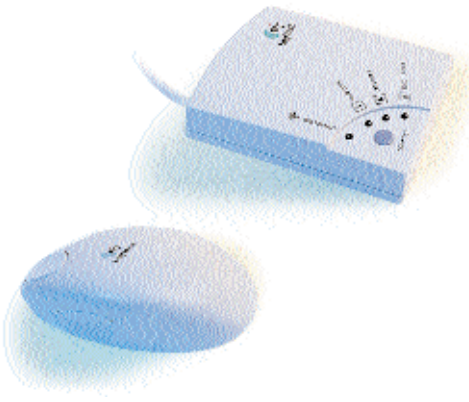
**VERDICT** **B-**

- ♦ Sturdy mechanical keys
- Too expensive, few features

Price: 1,400  
Contact: Micro Masters  
Phone: 022-3880597  
Fax: 022-3800998



## Logitech Cordless Mouse The 'no strings' mouse



Part of the Logitech Cordless Desktop kit, the cordless mouse is a very good addition to a system since it does away with the hassles of getting entangled in a mesh of wires. The receiver is connected to the PS/2 port that is colour-coded and embossed to ease the installation procedure.

The mouse contains a battery that operates the transmitter. However, the contouring and the placement of the buttons on this well-styled mouse is suitable only for a right-handed user. The drivers are easy to load and the application software facilitates easy configuration with a host of features like universal scrolling

and zooming into documents and other Windows applications.

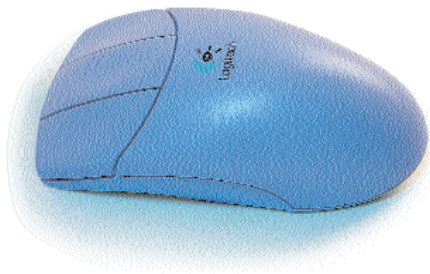
Though this mouse, along with the Cordless Keyboard, eliminates the hassles of wires, the high price places it beyond the scope of an average buyer.

**VERDICT** **A+**

- ♦ Works even at long distances
- ♦ Restricted to right-hand user

Price: Rs 6,375 (with keyboard)  
Contact: Vinton Industries  
Phone: 011-6810033  
Fax: 011-6810816

## Logitech First Mouse The all-rounder



An ergonomic mouse from Logitech, the First Mouse is a well-designed standard three-button mouse that features a PS/2 interface and also a COM-to-PS/2 converter.

The accompanying documentation

has comprehensive instructions on installing the drivers, cleaning and troubleshooting. The drivers are included on two 1.44 MB disks—disk too many for a mouse. After running the setup program on these disks, the applications software inflates to over 6 MB on the hard disk, which is large for a mouse driver and application software.

Configuring the mouse is a simple task and parameters such as mouse tracking speed, button assignments and universal scrolling in Windows applications can be set through the software. Functions like cut, paste and copy are a few of the many tasks that can be assigned to the buttons making navigation and working with applications very easy.

Straightforward installation, ergonomic use and a feature-rich driver make the Logitech First Mouse one of the best pointing devices for general applications.

With a very attractive price and informative documentation, it is ideally suited to the inexperienced and the power user as well.

**VERDICT** **A+**

- ♦ Excellent documentation
- ♦ Large drivers

Price: Rs 500  
Contact: Vinton Industries  
Phone: 011-6810033  
Fax: 011-6810816

## Truemouse A true performer



This standard 9-pin serial mouse is one of the most popular pointing devices available. The buttons have a firm feel and are rather sturdy. The package does not

include any documentation but the DOS and Windows 9x drivers are included on the accompanying 1.44 MB disk. Installing these drivers was a straightforward task and Windows detected the mouse on start-up without any problems. A COM-to-PS/2 converter is not included in the package and has to be bought separately if it has to be used on a system that features a PS/2 port. The mouse has a resolution of 400 dpi, which is sufficient for most applications and is also suited to CAD and multimedia applications where detailed work is done.

This is a very straightforward point-

ing device and is useful for the home computer and for the budget office computer. Economical pricing and sturdy build make this mouse a good choice for the price-conscious home user. Unlike other mice available today, it does not feature unconventional styling and very ergonomic features, but is a good all-round choice.

**VERDICT** **A**

- ♦ Inexpensive
- ♦ COM to PS/2 convertor not included

Price: Rs 300  
Contact: Micro Masters  
Phone: 022-3880597  
Fax: 022-3800998

## Anubis mouse The affordable one



Though it has a very unusual name, this rather plain-looking mouse is a standard 9-pin serial mouse with extremely sensitive buttons. The pack does not include any installation documentation. The DOS drivers are included on a 1.44 MB disk and Windows 95 automatically detects the mouse upon startup.

The mouse features a resolution of 300 dpi, which is suited to general purpose applications that do not require a very high level of accuracy.

The very low price makes this mouse a very good choice for general use and for home computers.

**VERDICT** **A**

- ♦ Very low price
- No documentation

Price: Rs 200  
Contact: Micro Masters  
Phone: 022-3880597  
Fax: 022-3800998

## Logitech TrackMan Marble FX High on technology and looks



A definite deviation from normal design and functionality, the Marble FX looks and operates unlike any other mouse. The large trackball built into the body of this device is the primary component. The mouse uses light

to track the speed and the direction of movement, and as a result, gives very sensitive and accurate response. This also ensures that the mouse can be used in a variety of environments (dusty, dirty etc) with virtually no effect on the performance.

The drivers and application software are easy to install and the mouse is automatically detected at startup. The interface for assigning functions to the various buttons is very lucid and there is a visual indication of the button assignments.

There are a total of four buttons on the mouse that can be assigned a variety of tasks like copy, paste, universal

scrolling in documents, etc.

The contours make the mouse comfortable to use. Though it takes you a while to get used this mouse, it is a pleasure to work with. However, technology does come at a price and the Marble FX was the most expensive device in this test. High accuracy and ease of use make it very suitable for design applications.

**VERDICT** **A+**

- ♦ Programmable buttons
- Expensive

Price: Rs 3,600  
Contact: Vintzon Industries  
Phone: 011-6810033  
Fax: 011-6810816

## SuperPen PP6045 The artist's choice



An ideal companion to a digital artist, the SuperPen consists of a touch-sensitive tablet and a pen which can be used as a substitute for a mouse. This is a serial port device, which mimics the movement and the clicks of a two-button mouse. However, the primary

difference is that it is pressure sensitive—it can distinguish 512 levels of sensitivity. The SuperPen is a very valuable addition for those working with programs such as Photoshop and other imaging packages as it facilitates creation of drawings.

The installation of the system is simple and straightforward. The tablet gets detected on startup. The drivers on the accompanying 1.44 MB floppy were automatically detected and loaded. The device can be configured through an icon in the taskbar.

The two buttons on the barrel of the pen can be assigned functions and you can set sensitivity for double clicking. To test the pressure sensitivity, the pen was tried in a graphics-demanding application like Photoshop and was found to be very accurate and responsive. A mouse

user will need time to get used to this pen, but will also soon get addicted to it.

When used in *Quake II*, the response was poor. Since the device would probably be installed on the second serial port on a system, it can also be used in conjunction with a standard mouse.

This device is very useful for graphics artists as it imparts unparalleled control in creating illustrations and freehand drawings on screen.

**VERDICT** **A+**

- ♦ High degree of control
- Has to be held nearly perpendicular

Price: Rs 3,200  
Contact: Batchu Trade International  
Phone: 044-8275607  
Fax: 044-8275698

## Virtual Pilot Pro Pricy but responsive



This effective and realistic flight control is a flight yoke that allows left-right motion. The shaft of this yoke features a pistonic movement to simulate the

up-down motion of an aircraft. There are a total of six fire buttons that can be configured through the gaming software, two Point-of-View (POV) hats can be used for looking around the cockpit of an aircraft in simulation games, then there are three levers for elevator, aileron and throttle control.

The Windows drivers are included on a 1.44 MB disk. Instructions for installing the driver, calibrating and explanation of the various features and buttons are present in the documentation with a listing of the features and an explanation of the device.

Clamps have been provided to secure the device to a table or a flat surface so that it does not move while in use.

The Virtual Pilot Pro gave a very realistic and precise response under test. Especially impressive is the sturdiness of the device, which is very necessary during gameplay, to ensure that intensive gaming does not damage the device.

This is a very good peripheral for the avid gamer especially one who likes flight and racing simulations.



## Pro Throttle Too expensive



To be used with a good joystick, the Pro Throttle imparts that extra feel of realism to flight simulators. It can control the throttle of the aircraft and features buttons that can be configured separately to suit

the user. The throttle is meant to be used as a left-handed jet-type throttle control. The driver is included on a 1.44 MB floppy and a software called SpeedKeys is provided to enable macro programming of the buttons. Even very powerful combinations of sequences can be controlled by a single button.

Instructions for installing the driver, calibrating and explanation of the various features and buttons are explained in the accompanying leaflet. When used in conjunction with a flight controller, the device has to be connected via the keyboard to the joystick. For this reason, it features both AT and PS/2 connectors. The 7-foot cable and buttons are rated to one million presses each, ensuring a long life.

Though the device has to be connected

to another flight stick, instructions on how this is to be done are not provided in the manual. This is a drawback since the procedure is rather long and would seem complicated to the first-time user. To facilitate access, there are four buttons that have been strategically placed on the grip. This device is a must to add that extra bit of realism to flight simulators.



## F-16 Flight Stick As real as it gets



One of the most realistic devices, the F-16 Flight Stick features four Point-of-View hats and four buttons. The drivers are included on the accompanying

disk and like the Pro Throttle, SpeedKeys for enabling macro programming of the buttons has also been included on another floppy disk.

Installing the drivers was simple and straightforward. Instructions for installing the driver, calibrating and explanation of the various features and buttons are clearly mentioned in the accompanying documentation.

The buttons are well within reach, and two thumbwheels for calibration of the device along the two axes and another for throttle control are present on the base of the controller.

A PS/2 converter for connecting the stick to a throttle or additional

flight pedals. The PS/2 port is also integrated into the base of the joystick for connecting it to the throttle or any such device.

This device is strictly for the serious gamer and is one of the most expensive devices in its category.





## Microsoft SideWinder Standard

### The all-time favourite



This standard game port compatible joystick has a straightforward design. There are two buttons on the top of the stick that can be configured within the

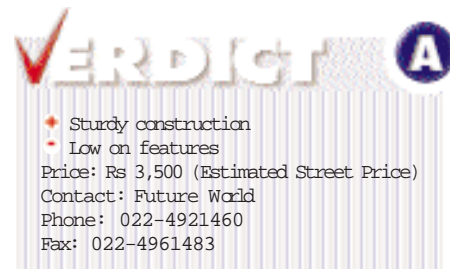
game being played. The stick has grooves for better grip and there are three wheels on the base of the device for calibrating the joystick.

Rubber pads on the underside of the controller anchor the device to the surface and the joystick stays put even despite rough use.

No specific drivers have been included and the device is automatically configured in Windows. It is very easy to set up and calibration of the SideWinder is very straightforward. It is compatible with all games (flight

simulators and others that need two-axis motion), and applications in Windows 9x.

Sturdy build makes this a very good general-purpose joystick. Even though it does not offer the more advanced features, buttons and controls provided by the newer joysticks.



## Jane's Combat Stick

### Realistic but pricey



Modelled on the actual flight control stick of an F-16 Falcon, the Combat Stick at first appears cluttered with buttons and switches. However, once you get accus-

tomed to it, the control buttons fit within the reach of the index finger and thumb. Two four-way switches and an additional five fire buttons with a Point-of-View hat are located at strategic points on the flight stick.

Four other buttons are used for controlling various armaments on the aircraft and can be assigned to any weapon, depending on the game and its configuration. All the buttons are rated to withstand one million presses each, ensuring a long product life.

The Windows 95 and DOS drivers are bundled on an accompanying game CD *Jane's ATF* (Advanced Tactical Fighter). The graphics of the game are average, but the flight characteristics are very realistic. The drivers for the joystick install easily in Windows 95 and give a smooth

and accurate response. However, a beginner might find the joystick a little heavy and might need some time to get used to the buttons.

With rich features and a plethora of ergonomically placed buttons, this is one of the most realistic flight sticks available. However, for the average gamer, this is a rather expensive game controller.



## Rockfire Fire Dino

### The affordable choice



This little joystick is very compact. Even though no drivers or manuals have been provided with the device, the configuration is not a problem—it is eas-

ily achieved through the Control Panel in Windows. The device should be configured as a standard two-button, 2-axis joystick. There are two buttons on the stick with two thumbwheels for adjusting the x- and y-axis control during calibration.

The joystick was tested with the flight simulator *F-22 Raptor* and the response was fairly good.

Four suction cups on the base of the unit help to anchor the joystick to a surface, but this did not prove too effective on smooth surfaces as the joystick was

unstable. Apart from this, the buttons located on the stick are quite responsive and recorded no errors in firing.

The Rockfire Fire Dino is a very affordable game controller and is, suited to the price-conscious gamer, even though it loses out on the more advanced and exotic features of other joysticks.



## Microsoft SideWinder Force Feedback Steering May the force be with you



Racing cannot get any more real than this. The Microsoft SideWinder Force Feedback Wheel incorporates a powerful stepper motor that interprets the lightest of touches to the hardest crashes in racing simulation games.

Impressive build quality and radical looks make this device an absolute must for serious gamers. The wheel has been designed well and has a firm rubber grip. It is modelled on a real racing wheel where the radius of the wheel is small.

The drivers and software are included on the accompanying CD-ROM. And

setting up the device is very intuitive through an HTML program interface. A guided tour highlights the features of the device. The eight buttons on the steering wheel can be configured for various actions depending on the game being played. A toggle button on the wheel lets you switch the device between force feedback and normal mode.

The wheel is automatically added to the joystick configuration and needs minimal amount of setting during the set up. The user can preview the type of feedback depending on the type of surface and action that the car faces in the game. A firm and realistic pair of pedals is included with the wheel. The steering wheel has an external power adapter.

The level of feedback varies according to the situations such as gravel roads, bumping into railings and obstacles along the road. During the test, the device was recognised on startup and all calibration was perfect. In the bundled

*Microsoft Precision Racing* simulation game, the full effect of the force feedback was realised and the resistance offered by the controller was very high. The configuration includes profiles for different games in conjunction with different Microsoft Force Feedback game controllers.

As far as realism in gaming goes, the SideWinder Force Feedback Steering is one of the most accurate and immersive gaming devices available.

However, technology does come at a price and this is certainly borne out by the results. With true-to-life effects and good build quality, this is one gaming peripheral that you will definitely get hooked on to.

**VERDICT** **A+**

- ♦ Very powerful response
- Rather expensive

Price: Rs 9,750 (Estimated street price)  
Contact: Future World  
Phone: 022-4921460  
Fax: 022-4961483

## Microsoft SideWinder Force Feedback Pro A force to be reckoned with



A 16-bit in-built processor makes the SideWinder Force Feedback Pro one of the most responsive joysticks available.

The joystick can process multiple forces from games. The construction is very robust and the stepper motor is very powerful. The presence of the device near a computer is very intimidating and forces you to acknowledge it as a serious gaming device.

There are four buttons on the stick,

one eight-way PoV hat, four buttons on the base of the system with a Shift key and throttle wheel. The stick also supports rotational motion where the yawing of the aircraft can be simulated. The base of the joystick houses a cooling fan which has to be powered by an external power adapter.

An accompanying CD has the drivers, which are extremely easy to install. Minimal amount of configuration is required at Startup. Once the joystick is installed, the various forces that the joystick can simulate can be previewed through the control panel.

These effects include a shotgun recoil, jumping, engine vibration and other such forces. In fact, the preview itself is addictive!

To experience the full effect of this device, play the *Microsoft Combat Flight Simulator* game that is bundled with the device. Effects like engine vibrations and crosswinds can be felt through the stick

making the gaming experience very immersive so much so that after using this controller, you will not want to revert to using conventional joysticks.

For games ranging from Flight Simulators to Motorbike and F1 racing simulations, the Microsoft SideWinder Force Feedback Pro is undoubtedly the most well-designed joystick available.

This is largely due to the very powerful motor and the processors integrated into the unit. The device is not cheap but it is definitely worth the investment for the serious gamer.

**VERDICT** **A+**

- ♦ Highly configurable and realistic
- Rather expensive

Price: Rs 8,900 (Estimated Street Price)  
Contact: Future World  
Phone: 022-4921460  
Fax: 022-4961483



## Rockfire Fire Plus A cheap alternative



The Fire Plus is small and compact, and is different from the Fire Dino in having two additional buttons on either

side of the top button. No drivers or manuals have been provided with the joystick and you need to configure the stick as a 4-button, 2-axis joystick within the Windows 9x Control Panel.

Besides the four buttons on the stick, there are two thumbwheels for adjusting the x and y axes during the calibration phase.

The joystick was used with *F-22 Raptor* and the response was fairly good. Four suction cups on the base of the unit help to anchor it to a surface, but they proved ineffective on a smooth surface. The joystick assembly would have been better with rubber pads on the underside of the stick which would have helped secure the controller to

the surface.

Like the Rockfire Fire Dino, this game controller does not feature controls like the Point-of-View hat and throttles.

However, since this game controller is aimed at the price-conscious user, the absence of these features is not a significant loss.

**VERDICT** **A**

- ♦ Small size
- Does not fix well on smooth surfaces

Price: Rs 800  
Contact: J S Equipment  
Phone: 022-4922384  
Fax: 022-4963634

## QuickShot Robo Warrior The radical joystick



This joystick has a translucent blue shell reminiscent of the iMac. It looks very appealing and has a wonderful design

that can be comfortably used by both left and right-handed users. You can choose between the standard game port interface and a USB port. The software for the controller is present on a 1.44 MB disk but it did not install correctly during the test.

Even after the setup program was run, the device failed to show up in the list of game controllers. This prevented the device from being tested to its full capabilities. It was eventually configured as a 2-axis 4-button joystick with a PoV hat. In this mode, the joystick responded correctly to axial movement and the buttons functioned correctly, but the PoV hat refused to respond.

With radically different styling and a

transparent shell, this is definitely a good game controller to have on your desk. However, since the drivers could not be loaded properly on startup, all the features on this controller could not be tested. With this rectified, it could be a very good joystick that provides smooth and responsive gameplay.

**VERDICT** **A**

- ♦ Excellent looks
- Drivers could not be installed

Price: Rs 2,300  
Contact: J S Equipment  
Phone: 022-4922384  
Fax: 022-4963634

## Rockfire Avant Garde Firm and well designed



This well-designed joystick features 6 buttons on the stick and one Point-of-View hat. Using a switch, you can

configure the joystick to be used in four different modes of operation. An instruction manual outlines the functions of the buttons and explains the installation process in detail. One major disadvantage of this stick is that it is suited only to right-handed players.

No specific drivers have been included and the installation manual does not state which driver is to be used for the stick. Even though suction cups are absent, there are rubber pads on the base of the controller that firmly anchor the device to a surface.

During the test, the joystick was configured as a custom game controller with two axes and four fire buttons. The joystick responded acceptably and offered

good control.

This good-looking joystick is suitable for general-purpose gaming. With controls and settings for different modes of play and applications, this is a feature-rich joystick. However, the addition of drivers would have made the use of the joystick much easier.

**VERDICT** **A**

- ♦ Anchors firmly to the base
- No drivers included, sketchy manual

Price: Rs 2,200  
Contact: J S Equipment  
Phone: 022-4922384  
Fax: 022-4963634

## Powerstick Pro

### Average performer



This joystick features four buttons with one PoV hat. Unlike other controllers where the calibration wheels are located at

the side of the device, here they are located at the base of the joystick. The rubber pads on the underside of the controller are supplied separately and need to be manually stuck on.

An instruction manual is supplied in the form of a leaflet that details the process of installing the device with the configuration and an explanation of the features. There are no specific drivers that are to be used for the joystick and the manual asks the user to configure it as a 4-button gamepad.

The stick functioned well under this configuration, but the PoV hat gave very unpredictable results. The action associated with other buttons was invoked when the PoV hat was pressed.

With improperly functioning drivers that do not recognise the PoV hat, the Powerstick Pro can function only as a standard joystick. The addition of drivers would be very useful. Though cheap, the other more costly joysticks outperform the Powerstick Pro both in features and in ease of use.

**VERDICT** **B**

- ◆ Attractive design
- ◆ Improperly functioning drivers

Price: Rs 1,200  
Contact: J S Equipment  
Phone: 022-4922384  
Fax: 022-4963634

## Rockfire Halberd Knight

### The feature-rich stick



This feature-packed 4-axis, 4-button joystick has two PoV hats and a knob that can be rotated and pressed to create

two additional axes. These are to be used as brake and accelerator in car simulation games.

There are four sets of switches on the base of the unit and these allow the user to set the device up in a variety of operating modes—racing/flight, programmable/conventional buttons etc. An LED on the top indicates the status of the device.

The manual is very informative and indicates the uses of the buttons and the various features of the stick. No specific drivers have been provided for the device, but the manual indicates that you must configure it as a 4-button, 4-axis device. The manual also has screenshots of the installation process.

However, the configuration does not take into account the presence of the two POV hats. On the games *F-22 Raptor* and *NFS III*, these did not respond.

This game controller is very useful for racing simulations and four axis configuration offers complete control of the car through the stick.

**VERDICT** **A**

- ◆ Feature-packed, informative manual
- ◆ Could not configure the PoV hats

Price: Rs 3,600  
Contact: J S Equipment  
Phone: 022-4922384  
Fax: 022-4963634

## CH Racing Wheel

### A Lauda performance



This single racing controller is composed of just a steering wheel. The wheel has two switches and another switch toggles between steering wheel

and steering wheel+pedals. A single sheet details the features, installation process and troubleshooting of the device.

The manual states that the device has to be configured as a 2-axis 2-button joystick, but the driver disk that accompanied the package contains a setup program that automatically installs a driver. Once installed, the CH Racing Wheel is detected when adding a game controller in the Control Panel in Windows 9x.

There are clamps on the underside of the device for attaching to a table. These proved effective and the steering wheel was stable throughout the test.

The configuration is effortless and the wheel responds well. There are four

buttons on the wheel—two on the front and two on the rear. The former are configured as accelerator and brake and the rear two can be configured any way. CH Racing Wheel is a very economical alternative to the joystick. However, it is rather expensive.

**VERDICT** **A**

- ◆ Easy to install
- ◆ Rather expensive

Price: Rs 6,300  
Contact: Elite Technologies  
Phone: 022-6048531  
Fax: 022-6048538



## hardware

## Comparison Test

### Champ PowerPad 100

#### An average gamer



This is a standard game-port compatible gaming pad and has two switches for configuring the mode of operation of the buttons. The manufacturers have supplied a separate stick that can be attached to the centre of the direction controller for additional control.

There is no instruction or installation manual with this device. A novice would be at a complete loss as there is no indication regarding the configuration of the device. This is an average performing

game pad and is suited only for the budget-conscious gamer.

**VERDICT** **B**

- ♦ Easy to control directional buttons
- ♦ No installation guide

Price: Rs 550  
Contact: J S Equipment  
Phone: 022-4922384  
Fax: 022-4963634

### Champ PowerPad 300

#### The good-looking one



The PowerPad 300 is a well-designed game controller with ergonomic grips that are very comfortable during extended use. The controller has four buttons and an additional eight-way direction controller. Two switches allow the device to be toggled between modes of operation where specific groups of buttons can be used together. A turbo mode enables the buttons to fire rapidly once pressed.

Two more buttons are present on the front of the controller. Unlike conventional game pads in which the control is

analog, this one is a digital controller. This device is suited for those used to working with game pads.

**VERDICT** **B+**

- ♦ Very ergonomic
- ♦ No specific drivers

Price: Rs 600  
Contact: J S Equipment  
Phone: 022-4922384  
Fax: 022-4963634

### CH Pro Pedals

#### Step on it!



This racing device mimics the action of racing pedals. This device has to be connected to an additional steering wheel through an interface (using a standard game port) on the rear of the unit.

This unit does not come with any device drivers and all the configuration is done through the Windows Control Panel. The pedals have to be configured and identified by checking the appropriate box in the Joysticks section.

After doing this, the pedals can be used either in aircraft mode or racing

mode. The Pro pedals were connected to a steering wheel and the unit was successfully tried out on *NFS III* and *F-22 Raptor*.

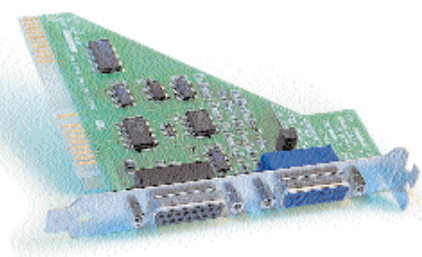
**VERDICT** **B+**

- ♦ Very firm
- ♦ No drivers at all

Price: Rs 6,500  
Contact: Elite Technologies  
Phone: 022-6048531  
Fax: 022-6048538

### CH Gamecard 3

#### For the avid gamer



One of the most powerful game cards available, the Gamecard 3 features two game ports which, unlike conventional ports that operate at 4.77 MHz, run at multiple speeds ranging from 4.77 to over 200 MHz. This card can be used with a 4-axis device on the first port.

The configuration of the card is stored on the on-board RAM, which is volatile and gets lost each time the system is shut down. However, a line is inserted into the startup files, which re-programs the card each time the system is booted.

Detailed instructions for installing the

card and configuring the port and address settings have been provided in the manual. This card is a good choice for gamers who insist on using high-speed ports for their gaming peripherals.

**VERDICT** **A**

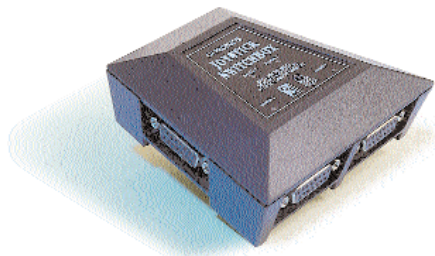
- ♦ High speed, programmable
- ♦ Rather difficult to configure for the novice

Price: Rs 2,200  
Contact: Elite Technologies  
Phone: 022-6048531

## hardware

## Comparison Test

## CH Joystick Switchbox Many from one



This handy device is aimed at those who have more than one game controller and want to do away with the hassle of plugging and unplugging devices for different games. Primarily, this device is a game port

replicator that can be used to connect up to four game controllers to a single game port.

The switchbox is connected to the game port of the computer and the gaming devices are connected to the four ports on the switchbox, allowing simultaneous use of two controllers (for two-player games) or as a switch for cycling between controllers for different games.

After the device is plugged in and the drivers loaded, a utility configures and calibrates the game controllers and makes the function of switching between them effortless. By right-clicking on the icon in the system tray, a list of the installed devices is displayed and the appropriate device can be chosen or calibrated. An LED next to the active device indicates that the port is

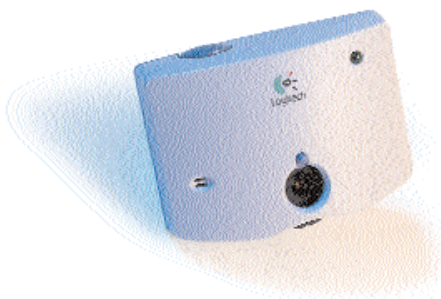
active. Up to four switchboxes can be cascaded together, allowing 13 game controllers to be connected to a single computer. One downside is that it does not support 'digital only' devices like the Microsoft Force Feedback range of joysticks and steering wheels. However, since the large majority of devices available are analog, this is not such a glaring disadvantage.

**VERDICT** **A**

- ♦ Very easy to set up
- ♦ Supports digital devices only

Price: 1,950  
Contact: Elite Technologies  
Phone: 022-6048531  
Fax: 022-6048538

## Logitech QuickCam Home A snap for the home



Video capturing and conferencing in a home system can't get any better than this. The Logitech QuickCam Home brings simplicity, rich features and

extreme ease of installation to a home digital camera. This camera uses a USB interface and is capable of capturing full motion video at up to 30 fps and can also be used as a standard-still photo digital camera. For this purpose, there is a button on the top of the camera, thus eliminating the need for clicking photos through the software. The camera is attached to the top of the computer monitor through a bracket that is stuck on with the supplied dual-sided tape. This firmly fixes the assembly to the monitor and it also has a swivel joint that allows the camera to be rotated. It can also be detached from the bracket and used for shooting pictures and video clips of areas around the computer.

The bundled software is very powerful and feature-rich with previews of the

image and a cataloguing facility that allows the user to arrange and store the images. Images and video clips taken using the camera are stored as JPEG and AVI files respectively and can be compressed when they are sent through e-mail. With very rich features, a good software bundle and good performance, this is a very good choice for the home user.

**VERDICT** **A+**

- ♦ Easy to control directional buttons
- ♦ No installation guide

Price: Rs 8,000  
Contact: J S Equipment  
Phone: 022-4922384  
Fax: 022-4963634

## NetView NV300M Pretty eye



With looks that match that of the iMac, the translucent blue NetView NV300M is very appealing. This digital camera which features a USB interface has

a manually operated lens for focusing. An LED on the front of the unit lights up when the unit is powered on. The lens can be covered by a plastic shield when not in use.

The installation in Windows 98 was effortless and the drivers for the device get installed during startup.

Using this USB camera, video can be captured at up to 30 frames per second in CIF format and 15 frames per second in VGA format. Bundled with the camera is a CD-ROM that contains a Video mail software, a card maker, Photo album and NetMeeting, in which live video conferencing can be achieved over the Internet with two digital cameras.

Installing the camera was simple, and the camera was identified as the video

capture device. The Video mail software allows the user to capture video clips and automatically attach them to e-mail that can eventually be sent across the Net.

This is a very neat-looking digital camera with smooth frame rates and good features. A good software bundle makes it an ideal choice for home and office use.

**VERDICT** **A**

- ♦ Easy to control directional buttons
- ♦ No installation guide

Price: Rs 6,000 + tax  
Contact: J S Equipment  
Phone: 022-4922384  
Fax: 022-4963634



**DECISION MAKER: DO YOU VALUE PERFORMANCE, FEATURES OR ARE YOU BUDGET CONSCIOUS?**

INPUT DEVICE	PERFORMANCE	FEATURES	BUDGET
<b>Gaming Devices</b>	<b>Racing:</b> Microsoft FF Steering <b>Flight:</b> Microsoft FF Pro	RockfireHalberdKnight/ Jane'sCombat Stick F-16 Flight Stick	<b>Racing:</b> CH RacingWheel <b>Flight:</b> Fire Plus
<b>Pointing Devices</b>	Logitech TrackMan Marble FX	<b>Drawing:</b> Super Pen	Logitech First Mouse Anubis Mouse
<b>Keyboard</b>	Logitech Cordless Keyboard	Multimedia Keyboard	Mechanical Keyboard

**CONCLUSION** Sterling performance by Logitech and Microsoft

Rating for the best performance and value were based on installation, documentation, usability and price.

**Keyboards**

In the performance category, the clear winner was the **Logitech Cordless Keyboard** with its ease of installation, rich features and 'no-wires' hassle-free computing. This keyboard is a full-fledged Windows 95 keyboard and communicates with the computer using radio frequency. The keyboard can be used at a range of up to 20 feet. The keyboard can even be operated out of the line of vision of the PC. Though this device is not the most affordable, it is a good choice for those who need to make presentations often.

The keyboard that received the value award was the **Samsung Keyboard** since this device incorporated very good value with ease of use. The feel of the keyboard was very firm and the typing was comfortable.

**Pointing devices**

With a range of pointing devices available, this roundup encompassed devices like

mice—both mechanical and optical—and touch sensitive tablets. The mouse that bagged the best performance rating was the **Logitech Trackman Marble FX**. With its technically superior optical approach to sensing motion and speed, this pointing device maintains its accuracy even in the harshest of environments. Especially useful is the driver, which allows the user to accurately configure all the functions offered. One very useful aspect of the Marble FX driver is the universal and auto scroll feature, which is indispensable once you are used to it.

In the value category, the **Logitech First Mouse** was the best choice with its detailed installation guide, smooth and responsive usage and sturdy build quality. This ergonomically designed pointing device has a very attractive pricing that will fit the budget of most home and office users.

**Gaming devices**

With a whole array of radical devices in the market, the one peripheral that undoubtedly stands out in the crowd is the



**Microsoft SideWinder Force Feedback Steering** wheel. This device boasts of unparalleled realism in racing and game simulations that require the use of a steering wheel. With a powerful built-in stepper motor that replicates the forces experienced in real life, the feedback from the wheel is so real that it can get very addictive. This game controller comes with a very good software bundle in the form of an ultra-realistic racing simulation and drivers that are very easy to set up. Setting up the controller is straightforward, with a minimal amount of user intervention.

A close second in the performance category was the **Microsoft SideWinder Force Feedback Pro** joystick with the same level of realism and ease of setup.

The game controller that won the best value award was the **Rockfire Fire Plus**.

With the power, capabilities and the features of systems getting better and with so many technically advanced games available that challenge the power of these systems, importance is now being given to input controllers and gaming devices that can complement these computers. We have seen that there is a large choice of devices available and arriving at the right controller is solely dependent upon how your financial status is and how badly you need it!