# iRMX® for Windows

## Seamlessly merge the power of the iRMX RTOS with the latest Microsoft® Windows® operating system.

### Key features and capabilities

- Field-proven real-time technology
- Seamless real-time operation for Windows XP, XP Embedded, 2000 and Windows Server 2003
- Integrated with Microsoft Visual Studio 6 and .NET IDE — edit, compile, and link iRMX applications using the Visual Studio development environment
- Real-time source-code debugger
- Integrated on-line help
- Scalable architecture — real-time applications can run locally with Windows or across multiple nodes
- Full memory protection and address isolation for real-time applications
- Real-time TCP/IP communications stack — operates independently of the Windows network stack
- DeviceNet, PROFIBUS, CANopen, and ControlNet drivers available
- GPIB (IEEE-488) and motion control real-time device drivers available
- Direct I/O and memory-mapped access to all hardware
- Precise 100 µs system timer granularity for periodic events
- Mailboxes, semaphores, alarms, regions and shared memory IPC mechanisms
- EC++ libraries conform to the latest ANSI standards — with support for exception handling and namespaces
- Real-time Shared Libraries (RSLs) for loadable real-time libraries
- INtime Explorer tool (INtex) for real-time object browsing and crash analysis
- INscope real-time system performance analysis tool

iRMX for Windows is a fully featured real-time operating system (RTOS) that runs concurrently with all current off-the-shelf Microsoft Windows operating systems (XP, 2000, and Server 2003). It is based on the successful INtime RTOS extension for Windows. iRMX for Windows provides direct upper layer support (IOS, EIOS, Application Loader, Human Interface and UDI) under Windows for legacy applications based on the iRMX for Windows 3.1 product originally produced by Intel® in 1992. iRMX for Windows is the perfect migration path for those real-time applications originally designed for DOS-based Windows 3.1 to move to modern Windows technology.

### With iRMX for Windows

- Windows runs concurrently with iRMX for Windows on the same microprocessor, sharing the same console.
- Existing Windows application programs run without modification.
- Existing iRMX application programs run unmodified under iRMX for Windows while maintaining real-time performance.
- Windows applications communicate directly with iRMX for Windows applications using iRMX objects, such as mailboxes and segments.
- Windows application programs can map iRMX memory into their address space and share memory with iRMX for Windows applications.
- iRMX for Windows programs have access to files on Windows-controlled mass storage devices.

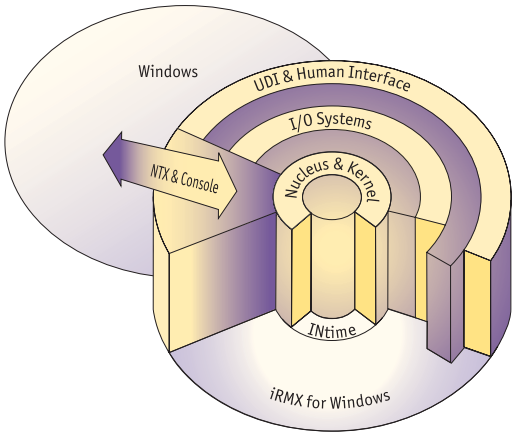
### A history of real-time engineering

TenAsys provides the only line of real-time operating systems and extensions designed and optimized specifically for the Intel x86 architecture and Microsoft Windows software. TenAsys engineers were key developers of the original INtime RTOS extension product and iRMX at Intel, and have accrued over 100 years of combined INtime and iRMX development experience. TenAsys is committed to providing continued support and innovation for these proven products that form the basis of thousands of critical, real-time applications around the world.

### Modern development environment

iRMX for Windows applications are edited, compiled and linked using the standard Microsoft Visual Studio IDE.

The non-real-time Windows portion of an iRMX for Windows application has full access to the standard Win32 APIs and MFC libraries; TenAsys' NTX interface facilitates communication between Windows and iRMX for Windows applications. The entire iRMX for Windows API (NTX and iRMX) is documented with context-sensitive help.



### Dynamic object browser: INtex

To speed the process of debugging and testing, iRMX for Windows developers can use the INtime explorer tool (INtex) to browse the status of iRMX objects. Used either locally or remotely, INtex can examine real-time processes, threads, semaphores, mailboxes, etc., to aid in understanding where the objects are located in memory and their current operational state.

### Real-time system analysis: INscope

INscope, a real-time performance analyzer, facilitates the acquisition of precise time and sequence data of real-time tasks. INscope is a Windows application that traces the execution of an iRMX for Windows application. Results for task switches, system library calls and interrupts are displayed on a graphical trace containing various tools for system analysis.

INscope includes an API that gives developers the ability to add custom events to the trace log and precisely control trace trigger points. The INscope API can be used to verify proper operation of time-critical code, as well as proper sequence of events, within real-time applications.

### Flexible real-time interrupt isolation

iRMX for Windows supports APIC interrupts in those systems that include APIC hardware (the majority of PC systems available today). The use of APIC interrupts results in substantially greater flexibility when isolating hardware for exclusive real-time use, accommodating better allocation of hardware resources between Windows and real-time applications.

### Real-time access to TCP/IP networks

iRMX for Windows applications have direct access to a TCP/IP stack without requiring Windows as an intermediary. Real-time applications use a standard sockets API to communicate with dedicated, real-time Ethernet hardware.

Device drivers for Ethernet hardware include Intel®, 3Com® and Realtek PCI interface cards and NE2000 ISA interface cards. Support is included for 10/100BaseT and gigabit Ethernet interfaces. Visit the TenAsys website or contact us directly for the latest information regarding specific Ethernet device drivers.

### Industrial I/O drivers

DeviceNet, PROFIBUS, CANopen, ControlNet, and other industrial communication protocols can be easily incorporated into iRMX real-time applications using either direct I/O (x86 IN and OUT instructions) or real-time device drivers. The Hilscher GmbH line of CIF and COM industrial bus interface cards are currently supported with ready-to-use real-time device drivers.

## Ordering Information

### RFW-DK (iRMX for Windows INtime Add-on Development Kit)

Development license for use on a single computer. Includes all INtime and iRMX for Windows libraries and APIs; installation and configuration tools; Windows-based dynamic real-time debugger, performance monitoring and characterization tools; real-time wizards and on-line help for Microsoft Developer Studio 6 and .NET; and real-time C/EC++ libraries and headers.

### RFW-DKA

iRMX for Windows software development license for additional development systems.

### INTIME-RT

iRMX for Windows uses INtime run-time licenses. One is required for each CPU on which the INtime kernel executes.

### INTIME-SUPPORT

Annual technical support agreement, providing priority technical support assistance.

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