

# TIRIS<sup>TM</sup> NEWS

INTERNATIONAL NEWSLETTER OF THE TIRIS GROUP

ISSUE NO. 16, 1996

## MISSION NOT IMPOSSIBLE: Protect Olympians and Time Them Using TIRIS

**W**hat could be more American than depending on Texas Instruments' technology during the 1996 Summer Olympics?

TIRIS technology was used to ensure the safety of all 1996 Olympic athletes and officials as well as to time the marathons. Mission impossible this was not.

Selecting the security system for the Atlanta hosted Olympics seemed a gargantuan task. The statistics gave the security chief heartburn: eight athlete villages, more than 25 event sites, two million spectators, 400,000 daily visitors, 15,000 athletes from 100 countries, and 185,000 officials and journalists.

The Atlanta Committee for the Olympic Games (ACOG) required the best in security technology. TIRIS was chosen to be part of the solution. According to

Bill Rathburn, chief of security for the 1996 Olympics, this was "the most sophisticated security system that's ever been used in the history of the

Athletes and officials carried identification cards that contained images of their hands. They accessed secured areas by swiping their right palms under a scanner. The 3D image of the athlete or offi-

rowing or stealing IDs was not a security threat.

Sensormatic Electronics Group of Deerfield Beach, FL, developed the Olympic security system by combining TIRIS technology with a hand scanner developed by Recognition Systems of Campbell, CA. The remainder of the controlled access system—closed-circuit TV, access control, and elec-

tronic surveillance—made this a system that was hard to beat.

In addition to providing top-notch security, TIRIS technology also got a workout timing the men's and women's racewalks and marathons. TIRIS transponders fastened to each runner's shoe gave times with split-second accuracy.

With the TIRIS based ChampionChip timing system, the race started for each runner when the tiny shoe-mounted transponder crossed over a special mat placed at the starting line that contained an antenna. Each transponder stored a unique ID that was sent to a host computer

*Continued on page 8*



*What every well-dressed Olympic Marathon Runner wore - 2 TIRIS tags*

Olympic Games." "TIRIS transponder-based cards were at the heart of the security setup. The unique automated identification system combined card IDs with biometric devices.

cial had to match the image of the hand that was stored in the card. Because card and cardholder were uniquely linked, the cards could not be used by anyone other than the cardholder. As a result, bor-

## Leveling the Ground for Marathon Runners

Starting at the back of the race pack is no longer a disadvantage for marathon runners. Thanks to ChampionChip, a TIRIS based solution developed in Holland, the last racer to cross the starting line has the same opportunity to win as the first. Recently, ChampionChip was used to time the Boston Marathon.

Race coordinators knew the 1996 Centennial Boston Marathon would draw a record number of participants, so they

needed a way to accurately track the runners' times. The Boston Athletic Association (BAA), who organizes the marathon, chose the ChampionChip sports timing system. The system was installed by Burns Computer Services, a race timing specialist group



*ChampionChip/TIRIS sports timing tag revolutionizes racing.*

located in Ann Arbor, Michigan. Each runner was issued a ChampionChip transponder, which easily threaded onto the runner's shoelaces and was read by antennas in mats at the start, and finish lines.

With 37,500 racers participating in the marathon,

some runners crossed the starting line up to 40 minutes after the starting gun fired; however, this was not a disadvantage. The ChampionChip system allowed each runner to have two race times. The first was the official time, which elapsed from firing of the race start gun. The second time started when the runner actually crossed the starting line. As each racer passed the finish line,

*Continued on page 8*

# Safety Improved In North Sea Oil And Gas Exploration With RFID

**T**IRIS integrator, Davis Derby teamed with Salem

Automation Limited, a software company, to provide "handsfree", fully automated Personnel Tracking Systems for use on oil and gas platforms in the North Sea.

These production platforms are complex facilities with personnel working varying shifts in many different areas such as on the main platform, on satellite platforms, at production well heads, or relaxing in accommodation, restaurant and recreation areas.

Companies want up-to-the minute information about where their personnel and equipment are in the event of an emergency.

Individuals wear TIRIS ID badges. Special hazardous area readers certified to BASEEFA standards are located at various places around the platform. They are even placed in pairs to detect the direction of travel. The solution includes a powerful Windows™-based user configurable system that interfaces with shore-based heliports and platform administration. Platform managers



*North Sea platforms — the type of environment where RFID really shines.*

can view graphical displays on a computer screen that give an overview of the members of staff in each area. The system stores more than just the ID of an individual; personnel details can include full work experience, survival and medical certificates with expiration dates, allocated muster stations and even photographs.

These Personnel-On-Board (POB) systems are already installed on the BHP Petroleum platform complex in Liverpool Bay off the west coast of England and at the



ELF Norge Frigg platform in the Norwegian sector of the North Sea.

At the ELF site, in addition to tracking personnel, the system also schedules all helicopter passengers and freight movements between Frigg, the mainland and the surrounding platforms.

The system is part of an overall design-and-build package supplied by Brown and Root Engineering.

For more information, contact Geoff Barnes at Davis Derby, Tele: +44 (0)1332 341671, Fax: +44 (0)1332 372190.

*Personnel and equipment pass through side - mount antennas for real - time tracking information.*

## Toyota Sells European Cars With TIRIS Immobilizers

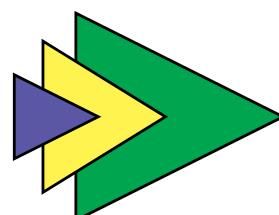
Closing the case on automobile theft, Toyota Motor Corporation's Carina E models sold in Europe are now sporting anti-theft immobilizers with TIRIS.

The security system provides an RFID tamper-proof electronic link between the driver's key and the ignition system of the vehicle. Toyota has been making this anti-theft protection in its popular Corolla and RAV-4 vehicles sold in Europe since April and May 1995.

A transponder containing a unique code is embedded in the head of the ignition key, and a reader is installed in the steering column. When the ignition is turned, the car's engine system will

not function unless the reader receives a signal from the transponder. The entire transaction takes place in milliseconds.

TIRIS technology provides



a more secure level of protection than other anti-theft methods. Many of the most popular anti-theft devices are easily rendered useless by a professional thief.

"The use of RFID technology from Texas Instruments is quickly becoming the standard for vehicle

**T**oyota owners will now have a more affective, reliable and convenient way to combat theft"

Strategy Manager for TIRIS.

"Toyota owners will now have a more effective, reliable and convenient way to combat theft," continues Sabetti.

"TIRIS transponders make auto security as easy as turning a key, and RFID technology has been proven to be one of the most effective theft deterrents available."

Ford Motor Company and Mitsubishi Motors also employ TIRIS technology for their anti-theft systems in Europe and the United States. Already, more than 2 million vehicles are protected by TIRIS systems.

anti-theft immobilizing systems," says Anthony Sabetti, Automotive

# Business is Blooming and Gaining Efficiency with TIRIS

**B**usiness is blooming in Lüllingen. In this small German village along the Rhine, the world's first auction house for potted plants is a banquet of begonias, geraniums, pansies, palms, bushes and small trees. The Lüllingen Flower Exchange attracts growers and wholesalers from all over Germany and The Netherlands.

During the peak season, up to 5,000 man-high containers, each holding 10 to 100 plants, are sold at the auction within a few hours. Keeping track of the plants, their prices, the bids and the buyers used to be a labor-intensive and error-prone process. But now, a sophisticated TIRIS system has made the selling of flowers state-of-the-art. The system was installed by system integrators Gesellschaft für Software und Organisationstechniken mbH (S.O.T.), Europe's leading systems and software house in the marketing of flowers, fruits and vegetables.

TIRIS saves the Flower Exchange up to one hour each day in processing, sorting and identifying plants. Flower shops receive their orders faster, and wholesalers and growers get back to business sooner. The auction's error rate



has plummeted to zero. And two fewer people are needed to enter data and process paperwork.

Three to five times a week from 6 a.m. to 10 a.m., the trading floor at the six-year-old Lüllingen Exchange is abuzz.

Plants whiz by the auctioneer on motorized tracks at the rate of 12 to 30 containers per minute. It's a hectic pace made orderly and error-free by

TIRIS.

The system automates record-keeping and tracks every potted plant from its arrival at the auction house to the moment it is claimed at the loading ramp. By collecting and beaming data to the auction house computer system, TIRIS allows the auctioneer, buyers, sellers and clerks to have real-time information about each lot.

When growers deliver their goods, inspectors grade each plant according to its quality and size.



New system saves 1 hour per day in processing, sorting and identifying.

Clerks enter the information, along with other data about the order, into auction house computers. A transponder, assigned a number linking it to the information entered into the computer, is clamped to each plant container. Instantly, the auction-

eer knows which lot is rolling up. The digitally stored information about the plants beams onto the auctioneer's computer screen as well as onto the overhead screen visible to buyers. The overhead display flashes the variety, quality, size, asking price and quantity of each lot as well as the grower's name. Two hundred buyers jostle

electronically for the order they want at the price they are willing to pay.

Before TIRIS was installed in 1994, the auctioneer worked off a sheaf of papers sorted to match the order of containers on the tracks. If one container got out of place, a track malfunctioned or the sheaf somehow got reshuffled, chaos could result. Because errors were commonplace, the auctioneer had to physically verify the lot number attached to the container with the one on each sheet of paper to make sure buyers did not bid on the wrong lot.

With TIRIS, the process is paperless and worry-free. The auctioneer only has to look at the computer screen to glean the contents of each lot. No physical verification is necessary.

"The auction is now faster because the auctioneers do not need paper receipts. They get the data on their screen in the correct order automatically," says Hubert Thumhart of S.O.T.

The Lüllingen Exchange is so pleased with its TIRIS system that it plans to expand it soon.

For more information, contact: S.O.T., Tel.: +49 6261 4762, Fax: +49 6261 18961.



## Speedpass™ From Mobil Launches in St Louis “GAS-UP-AND-GO” System Based on TIRIS

**F**ifty area Mobil® stations are taking self-service gasoline pump advancements to the highest level of sophistication ever with the introduction of a “gas-up-and-go” system based on TIRIS. Called Pegasus Speedpass™, this new convenience lets customers chose between three different types of transponders: one that attaches to a keyring, one that can be mounted on the rear vehicle window, or a card type.

Speedpass is making its “market debut” in St. Louis, Missouri as part of a year-long product launch by Mobil Corporation. One aspect of this rollout is to see which type of transponder customers prefer using. The in-vehicle tag allows customers to simply drive up to the pump, whereupon their credit card is automatically

authorized, and the pump turns. Customers actually have to proactively display, although without contact, the other two types of tags.

Wallis Oil Companies, owner/operator of 80 Missouri Mobil stations, will lead Mobil's launch of the new system. “Wallis Oil has the customer-orientation, commitment to quality and marketing know-how to deliver this product to the market,” says David McGgettigan, Mobil Speedpass product manager.

All Speedpass pumps are clearly

identified and include customer instructions. A light located on the pump turns on when Speedpass is activated so the customer knows when to begin fueling. Consumers can bypass Speedpass at any time by selecting the “Cancel” button on the pump keypad. “We believe we've developed a technology that protects our



**Pegasus**  
**Speedpass**

customers' accounts from unauthorized use, while speeding them on their way,” added McGgettigan.

To support and enhance the

marketing of Speedpass in the St. Louis area, Wallis Oil has teamed up with GM MasterCard® to promote the product's introduction. Customers who designate the GM Mastercard for Speedpass purchases will receive up to 10% GM Card earnings toward the purchase or lease of a GM car or truck.

“When Mobil asked us to be the first location in the world to offer this advanced technology to our customers, we jumped at the chance,” says Bill Wallis, president of Wallis Oil Companies.

“We're extremely pleased--and flattered--to be part of this exciting customer-oriented advancement.”

## Baby Tagging System Reduces Baby Snatching Risk

Baby snatching from hospitals has caught the headlines on several recent occasions.

Hospitals have tried to curb the problem using a variety of systems, but without much success.

According to electronic tagging specialists Eagle

Tracer, one of the most

promising solutions is radio frequency identification (RFID).

One of the main advantages of RFID electronic tagging is that it is easily combined with other hospital security measures such as staff entry and asset protection. "This integrated approach to hospital security has cost and systems advantages that make the technology easier to justify," said Eagle Tracer's managing director, Doug Bowen.

Eagle Tracer recently deployed a system for South Tyneside Healthcare Trust in Northeastern England. Initially targeted at

**“What we have been able to do with electronic tagging is devise a simple yet effective system which is extremely difficult to defeat but unobtrusive in use.”**

baby tagging in the maternity wards, the hospital is already looking at expanding the system to include security for children's wards, employee access control using TIRIS badges, and asset track-

reused as often as required by reactivating the code.

The tags are programmed at birth for each baby. When a tagged baby passes a reader at any hospital exit, its identity is read, and an alarm sounds if the exit is unauthorized. The alarm can activate door locks and closed-circuit cameras, as well as warn ward and security staff and even the police if required.

Every aspect of the system was designed with the close coopera-

because the midwives helped advise from the start. We've already been using the system to cover wards on one complete floor and the trials have been highly effective, so we are now installing the system on a further two floors".

Many hospitals have tried various security measures such as closed-circuit television to reduce the risk of baby snappings. However, used on its own, closed circuit monitoring does

little to actually prevent an abduction and offers only partial assistance in detecting culprits and recovering the baby.

"What we have been able to do with electronic tagging is devise a simple yet effective system which is extremely difficult to defeat but unobtrusive in use," says Bowen. For more information, contact Doug Bowen, Eagle Tracer Ltd,

Tel: +44 (0)161 929 6929.  
Fax: +44 (0)161 929 6939.



*Alarms sound if baby is illegally taken from the building.*

ing for valuables such as equipment and computers - effectively putting a ring of security around the entire hospital.

The TIRIS-based baby tagging system uses custom transponder carriers that attach securely to even the smallest newborn babies without harm or discomfort. The specially developed carrier material is virtually impossible to remove without specialized knowledge, and the carriers can be

tion of the midwives and staff. According to Christine Lumsdon, Clinical Director of Obstetrics & Gynecology, "The system has been very enthusiastically received by the midwives as well as the mums,

### RUSSIA

## Black Bug "Blackens" Hopes for Car Thieves

**G**eolink offers a new approach to an after-market automobile security system based on TIRIS. In the Black Bug system the driver has a TIRIS ID card that has a read zone of 45-55 cm around the driver's seat. The reader is in the back of the seat. When the reader detects a valid ID number, the system emits three chirps and the engine can start.

Black Bug has the additional feature of protecting vehicles from hijacking. If the driver's car door is opened while the engine is running, the reader attempts to take another valid ID reading. If it fails because the driver's been pulled from the car, the engine stops, and lights and alarms are triggered.



*Vehicle security system based on TIRIS Reader located in back of seat and driver with ID card.*

The first tests of Black Bug took place in Moscow. Automotive electronics and security specialists participated and deemed the results to be excellent. Now it is in use and becoming popular. A number of cases have occurred where Black Bug was the last line of defense against robbery after thieves had foiled other security systems on the car.

Besides automotive security, Geolink offers a security solution to protect premises called Black Bug-Door. A Black Bug owner can use the same card to protect his vehicle, home and office.

For more information, contact Geolink at  
Tel: 7-095-334-9406,  
Fax: 7-095-330-4356.

## Sugar Cane Processing Refined with RFID

**S**ugar has always been one of Brazil's major agricultural products. In fact, 9.3 metric tons of sugar are produced annually, making Brazil one of the largest sugar producers in the world. Brazil also produces 11 billion liters of sugar derived alcohol.

However, the demand for sugar derived alcohol has decreased in recent years. As a result, sugar producers have searched for a way to increase productivity while reducing operating expenses. TIRIS technology provides assistance.

In San Paulo, the richest state in the federation, five sugar cane mills recently automated their operations using TIRIS. As a result, each mill is experiencing a 30% gain in productivity and a 100% increase in reliability, without large capital outlays.

Before using TIRIS, collecting and transmitting data about the sugar harvest was difficult because the harvesting environment is harsh: the fields are dirty and humid, rain often falls, and the sugar cane is sticky and clogs most machinery. Automating in this environment requires a system that is waterproof and can operate well under adverse conditions. The system also needs to be easy for the work force.

TIRIS system integrators Aeroeletronica developed a solution that meets the sugar producers needs. The TIRIS solution collects data at all stages of sugar production and transmits error-free information. The TIRIS system is also waterproof and operates successfully in the harsh environment.

Prior to implementing the TIRIS solution, some mills unsuccessfully tried to use a barcode tracking system. Scanning bar-

codes, which were often corrupted by dirt and humidity, frequently

data collection throughout the sugar mills. Transponders gather



*Sugar mills experience 30% productivity gains with automatic driver, truck and load data capture.*

created bad data. Additionally, time and fuel were wasted as trucks waited in line for their barcode labels to be printed, delivered and scanned. The barcode system was so troublesome for some mills that they switched to TIRIS technology after only one harvest.

"Clearly, the use of barcoding is not the recommended solution," says Claudio Roberto Viana, Sales Manager for Aeroeletronica.

TIRIS technology automates

information on harvested sugar loads such as the origin of the load, the truck's identification and weight, and the driver's identity. The data collected is transferred to the database and is available for immediate review.

Each driver is issued a TIRIS card transponder programmed with his identification and work area. Using a mobile reader, the truck reads the driver's card transponder throughout the day.

As the truck is loaded in the fields, the driver simply pushes a button to transfer information to the truck, which is equipped with a multipage read/write transponder.

Once the truck is loaded, it takes approximately two hours to travel from the field to the plant. After being on the road for so long, the last thing drivers want to do is sit in line at the mill entrance. Management concurs. Fuel wasted while idling becomes a big ticket item.

The TIRIS system however, eliminates long lines at the mill. At the plant entrance, an antenna and a reader are located next to the scale. As the truck travels at a normal speed over the scales, the information stored in the truck's transponder is read by the reader. The truck then proceeds to the unloading area. As the truck is unloaded, information is again added to its read/write transponder. When the truck leaves the plant at the conclusion of the unloading process, a reader at the exit reads the transponder for a final time. This tracking process is repeated 600 to 1,000 times a day.

"The gigantic volume of raw material and the high number of trucks circulating within the mill demand that any automated system provide fast throughput and reliable data processing. TIRIS gives us exactly that," says Viana.

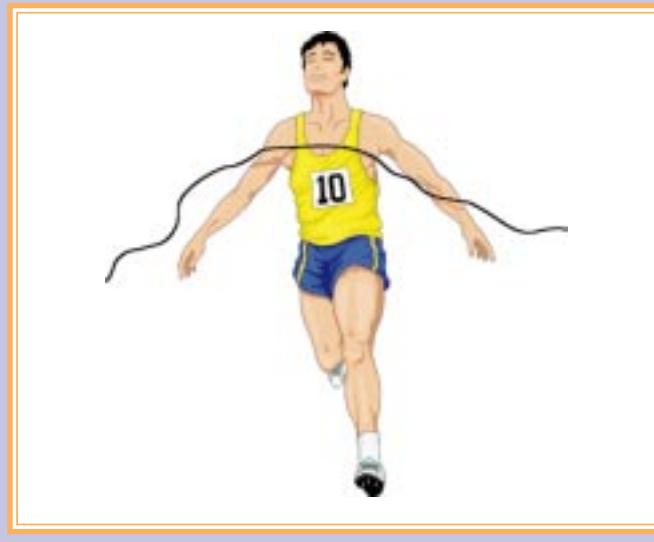
By incorporating TIRIS into the existing systems at each sugar plant and by using the weigh-stations and PCs already in place, the cost of automating each facility was relatively low. The TIRIS systems also provide long-range savings by reducing the staff needed to manually process the data.

For more information call Aeroeletronica,  
Phone: +55-51-361-1222,  
FAX: +55-51-361-2773.

### Boston Marathon continued from front cover...

the ChampionChip system identified the runner and instantaneously calculated his or her race times.

"It was great to be able to get an accurate time," said TI employee Rio King, who competed in his fifth Boston Marathon this year. King said



that in previous marathons, runners had to wait in chutes at the finish line to have their times recorded, which led to inaccurate results. The ChampionChip system, however, allowed this year's marathon to have a clean finish, according to King.

For more information about ChampionChip, please contact: Wim Meyer, Tele: +31 24 3601172, Fax: +31 24 3601802.

# VAR Conference Surpasses Expectations

Value Added Resellers (VARs) from around the world converged in the Netherlands last spring for the 1st Annual TIRIS Conference. One hundred participants from countries that included the far East, most of Europe as well as Brazil, Estonia, Hungary and Israel took the opportunity to exchange ideas with each other.

The three day conference was held at the five-star Grand Hotel in Amsterdam. The conference opened with a reception followed by dinner. At the dinner, John Scarisbrick, President of TI Europe, welcomed everyone to the meeting and spoke about TI's growth and achievements. Over the next two days, VARs attended presentations and viewed exhibits and demonstrations of TIRIS based systems.

Presentation topics included successful TIRIS solutions such as a UK system for tracking shopping carts within the supermarket and a logistics automation solution for Brazilian sugar plantations. TIRIS engineers led seminars about custom antenna design, reader synchronization and new product features.

In the demonstration area,

resellers saw their own systems at work. Sphinx Electronik of Germany demonstrated their contactless lock systems used for hotels and safes. ChampionChip of Holland presented their successful sports timing system.

The conference, however, was not all work and no play. On the second evening, attendees went on a dinner cruise down the canals. VARs had the opportunity to get to know one another while enjoying the beautiful surroundings of Amsterdam.



*Mr. Alpnyr, Mr. Rik de Bruyckere, Mr. Seger, Mr. Rex Beckett and Mr. Kendir exchange ideas with other resellers.*

Following the conference, the opinion was unanimous: the meeting offered valuable information, and the VARs would like to meet on a regular basis.

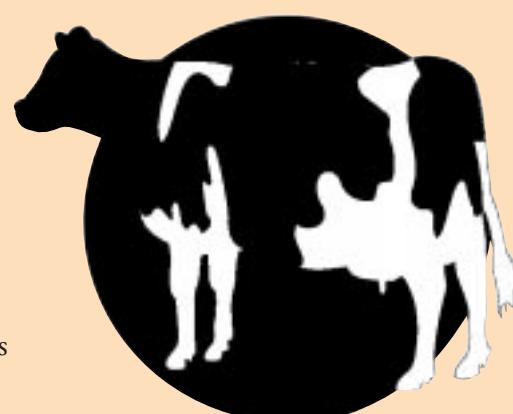
"Thanks for an inspiring conference. In light of all the day to day difficulties which we face when promoting TIRIS in Israel, observing these advanced applications was indeed an encouraging experience. And besides work, work, work, the seminar was very well arranged. I feel that it was fruitful and enjoyable." concluded Eli Holtzman, Managing Director of Advanced I.D. Systems of Israel.



*From left to right: Mr. Antero Virtanen, Mr. Kangasniemi, Mr. Ojaniemi, Mrs. Vlafria Safinro, Mr. Petr Havlik, Not Identified, and Mr. Dick Dane get acquainted at the conference dinner.*

## New ISO Standards for Animal Identification

The International Standards Organization (ISO) recently approved a measure to standardize systems used in the electronic identification of animals. As a result, identification systems built to this standard will allow customers to retrieve information from different brands of transponders with one reader. TI has long supported the implementation of ISO standards.



TIRIS representatives participated in many work sessions around

the world to insure the measure passed. Consequently, customers



as well as identification systems producers will benefit.

The new standard consists of two parts. The first, ISO 11784, defines the construction of the unique codes used in the transponders to identify animals. The second, ISO 11785, outlines how the exchange of energy and information between the transponder and the reader must take place.

## TIRIS Marks As Tires Squeal In Indoor Kart Racing

**M**echanics zip around the pit. Drivers slap on overalls, gloves, face protectors, and helmets. Tires squeal. The fans, impatient for the start of the race, cheer as the flags go down and the light turns green to signal the start of the qualification lap.

The race is on, BUT in a qualification lap it's each driver against the clock, not driver against driver. It's a tricky business to accurately establish the best lap time for each driver. It's impossible for the naked eye to distinguish the cars and drivers as they pass the pole position and calibrate each competitor's lap to the hundredth second.

That's why Formula One Grand Prix Indoor Kart Racing started using TIRIS to time each driver. A



*Capturing lap times keeps pace with the speed of the karts at Formula One Prix Kart Racing.*

large disk transponder is mounted under the seat of each kart. An inground antenna at the starting

line registers the ID and time of each kart as it passes. This data is sent to a central computer. Each

driver gets a complete performance report at the end of each race.

According to Antonio Ari Gomes, director of the Grand Prix Kart Indoor in Sao Caetano do Sul, Sao Paulo, two things are equally important to the drivers—the choice of the car and the final performance report. He adds, "Without a system like this, kart indoor racing would be dead."

At the Grand Prix Kart Indoor, the record on the 250m circuit is 19.5 seconds for drivers over 12 years old. Thanks to TIRIS' reliability the racing director can make decisions more easily.

Without delays from recording results and adjudicating contentions, the thrill of the race is not diluted.

## Illegal Intruders Outfoxed by the Fox II and TIRIS Technology

**I**t may be impossible to outfox James Bond and his cinematic successors who use brute force, gymnastic wall-scaling, and clever pyrotechniques to gain entry to seemingly impenetrable castles. But then, that's Hollywood.

However, outfoxing the real-life, day-to-day attempts at gaining entrance to site perimeters of manufacturers, commercial airlines, chemical plants, and other firms with physical complexes is a problem that perplexes security pundits: How do you keep illegal intruders out without exceeding your budget and burdening the very people for whom you want to provide access?

That question confounded Rohm and Haas, Texas, Inc., a chemical manufacturer near Houston. Not only did the company need to guard against unauthorized entry, they had to account for every employee at all times because of the inherent dangers and risks posed by the products they manufacture.

Rohm and Haas, Texas found the answer in a new security system based on TIRIS. The FOX II security system, developed and manufactured by Security Electronic Systems, Inc. (SES), of Wichita, Kansas, provides total, unattended control over personnel entering and exiting a facility or complex. Without breaking pace,

employees can enter by walking through a locked-entry turnstile. Once an authorized person gains entry, no one can piggyback on the user's ID by re-using the badge. Nor can two people squeeze in at the same time using only one badge.

In the year since the system has been installed, employees have gained access one million times with no guard present. As a result, Rohm and Haas, Texas has saved close to a quarter of a million dollars normally spent on guards. And throughput has increased tremendously: prior to installing the FOX II system, lines formed as guards checked individuals one by one. Now, sophisticated TIRIS technology permits between 65 and 70 employees to go through the turnstile in one minute.

"When we introduced the Fox II and TIRIS transponder tags, we went from low security to high security overnight. It was so successful because it is easy to adapt. People don't have to do anything!" said David Ghormley, Security Director for Rohm and Haas, Texas.

Using RFID-based badges, authorized personnel can walk through the turnstile hands-free. In fact, the badge does not have to be removed in order to gain entrance. A user friendly green light and an audible chime signal



*Rhom and Haas, Texas uses Fox II for fast and secure entrances and exits to facilities.*

users when they are authorized to enter. Information about the entrance, exit, and flow of authorized personnel is sent in real-time to the safety dispatch control center, who manages the system and the access authorization.

Because this is a real-time, on-line personnel ID and management system, information is accessible immediately. If an emergency occurs, the TIRIS based system can locate employees quickly based on the last time their badges were read. TIRIS technology also

makes it easy to turn on and off access to key areas. For example, if an unusual number of visitors are expected, management can seal off an area for a limited time.

For more information, contact, Tim West, SES, Ph: 316-943-3777, Fax: 316-943-2877, Toll Free 888-473-7462.

## TIRIS Parking Systems Begin to Appear In TI's Hometown

**S**everal parking garages in Dallas have installed TIRIS "Handsfree" parking systems for better security and convenience. The first was a downtown Dallas parking garage owned and operated by Chavez Properties of Cincinnati, Ohio, who have a nationwide network of commercial parking operations.

At the 1,700 space Dallas garage, employees working in the area pay for parking by the month. The new access system installed by Vehicle Access Control, Inc. cuts the time needed to enter or exit the garage roughly in half.

"With the card readers most garages use, a driver is always fumbling in a wallet or a purse, looking for the card," says John Hall of Chavez Properties. "It holds up the line when people are in a hurry to get to work, and it forces us to install extra gates. It's amazing to see how quickly a line of cars can move through a gate with this new system."

The windshield transponders used by garage patrons contain the ID of the customer, which is communicated back to a central computer that uses the well-known parking application software made by Federal A.P.D.



*Entry and exit time is cut in half at Dallas Garage.*

The system keeps track of the number of cars in the garage and flashes a "Lot Full" sign when no spaces remain. The system also monitors its own operations and reports to garage managers when a gate does not work or a reader malfunctions.

The computerized system also provides information about customer usage and feeds billing and revenue control systems. Eventually, it will help Chavez optimize garage capacities at new locations and manage the allocation of spaces to customers who park by the hour or by the day.

"We want our facilities to be as secure as possible," says Hall. "Because we operate the garages we own, we can make the capital

investments needed to remain state of the art." Hall adds that he expects the new access system to save his company money in the long run. Faster ingress and egress means fewer gates and ramps in new garages the company

uses their cars and never have to stop," says Keith Tumminello of TI's Corporate Electronic Security group. "The gate rises before you reach it, allowing for better throughput and convenience for employees."

TIRIS also supplies added security. TI employees currently park in unsecured, open lots. The new system will provide employees with a safe parking facility and greatly reduce the risks of vandalism and

auto theft. The system also prevents unwanted vehicles from entering the garage. By linking the TIRIS system with their security system, TI can monitor who's in the area if an incident should occur.

As with the Chavez project, the TI facilities

use a parking equipment solution developed by SIRIT Corporation, based on TIRIS, that is called HANDS FREE Parking Access Systems. TI's Corporate Electronic Security group developed software that provides a protocol in the reader that allows for the TI-specific wiegand format to be programmed into TIRIS transponders.



*DMOS-5 Garage uses TIRIS*

ny plans to build. It also means better overall revenue control.

Texas Instruments is installing TIRIS in three of its new Dallas parking facilities. The DMOS-5 Parking Garage and the South Building garage, the first to open, provides space for approximately 2,500 TI employees who use windshield transponders for fast access.

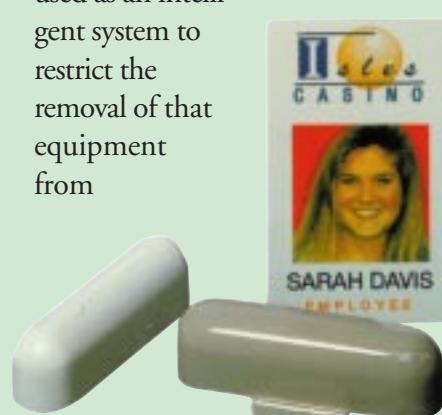
"Employees will pull up to the gate and never have to reach out of

## Sensormatic Launches SenTrac ID™ and "smart tags" for Security and Loss Prevention

**P**ersonal computer theft exceeds \$1-billion per year, as recently reported in a major security publication. That's why Sensormatic Electronics Corporation formed a strategic alliance with TIRIS, and invested major resources to develop and launch a comprehensive solution for "intelligent electronic asset protection and tracking."

In addition to standard ID badges, and vehicle-mount tags, the system also includes unique tags based on low frequency TIRIS that can be attached to capital equipment such as computers, fax machines, copiers, or lab equipment. SenTrac ID lets companies automatically track and manage these valuable assets.

The system can be used to simply track the removal of a piece of equipment from a building, or it can be used as an intelligent system to restrict the removal of that equipment from



internal or perimeter zones—by triggering alarms or exception events. These exception events can initiate custom activity reports and provide instantaneous video documentation when SenTrac

ID is integrated with CCTV systems.

Added features of SenTrac ID are:

- Manage inventory on-the-fly
- Track maintenance schedule and historical movement of assets
- Limit employee and visitor access to restricted areas
- Control access to parking areas and fleet vehicle yards.

Finally, the system includes powerful database management tools that provide management with user-definable reports about assets and people, and the ability to query for information on the movement of both.

For more information, call Sensormatic at: Tel: +1 561 989 7000, Fax: 561 9897644.

**Olympic Story**  
Can't from  
cover.



along with the exact time the runner was recognized at the start line. The process was repeated throughout the races as runners crossed mats at 5K intervals and at the finish line.

The race timing system developed by ChampionChip BV of Holland has been used successfully in several prominent races including the 1995 Berlin Marathon, the 1996 Los Angeles Marathon and the 1996 London Marathon. This fall the system will time the 1996 Berlin Marathon, the 1996 EtaMarathon in Frankfurt, and the 7 Heuvelenloop Nijmegen in Holland.

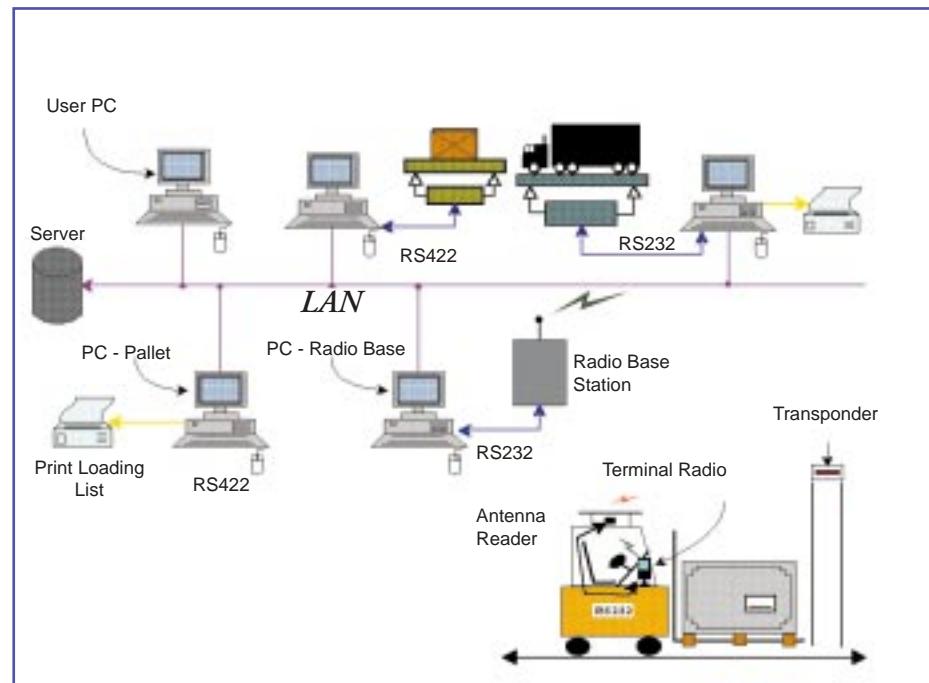
## “Smart Pallet System” at Unilever

**T**oday's shorter product life cycles and just-in-time orders are challenging warehouse managers to rethink time-honored assembly systems. TIRIS makes possible what today's warehouse managers want — more flexibility on the floor.

A new “smart pallet system” based on TIRIS is revolutionizing how product is moved, handled and tracked in Unilever's warehouse. Now order fulfillment takes 20 percent less time and requires one-third the manpower. TIRIS integrator Sinformat SRL installed the Unilever system at a plant located near Milan.

Before TIRIS, processing 200 pallets daily took three workers. Today, one warehouse worker can expedite 350-plus pallets a day.

“The TIRIS system solves completely and efficiently the problem of management of information connected to the flow of materials,” says Renzo Codeca, industrial engineering manager for Unilever Italia's Elida-Gibbs plant. “TIRIS



has played a relevant part in raising productivity, both increasing the number of pallets handled daily and guaranteeing the validity of information about those materials.”

Transponders are attached to gates in the warehouse through which pallets pass. The reader and antenna are on the forklift. Each pallet is assigned a bar code that is

scanned into the programmable logic controller — the warehouse computer. Along with the bar code, the computer stores a description of the pallet: how many boxes it holds, where the order is bound and, of course, what product is being shipped.

A pallet might contain 2,000 bottles of shampoo or 10,000 tubes of toothpaste. Unilever, the

25th largest company in the world, manufactures shampoo, toothpaste, laundry detergents, cosmetics, floor care and a variety of other consumer products.

When the pallet reaches the loading bay, another transponder lets the computer know which trailer the pallet has entered. When a trailer is full, the truck scale automatically compares the total weight of its load with the individual pallet weights the computer has in memory, signaling any discrepancies.

“With this system,” says Codeca, “it is possible to know in real time what and how much we are producing and sending. The principal advantages of TIRIS include better security of the stock and elimination of rehandling, saving us both time and mistakes.”

For more information, contact Sinformat at Tel: +39 51 370525, Fax: +39 51 355067.

## RFID Ensures Consistent Mix

**U**nited Biscuits, a household name in the production of quality biscuits, cakes and other prepared foods, refined the food preparation processes at their McVities plant in Ashby, UK, through the introduction of a system that automatically identifies stainless steel “bins” used to carry ingredients around their food processing facility.

Every bin has a TIRIS 32 mm glass transponder encased in a small plastic box bolted to the side. By using TIRIS tags, the food manufacturer can track raw materials and finished products as they travel through the plant.

United Biscuits demanded a lot from their identification system. The system needed to improve stock management, increase control over material usage and improve product traceability and reporting.

They selected systems integrators Control, Design &

Development Limited of Peterborough, UK, specialists in process monitoring and production control systems, to undertake the design and implementation of an



United Biscuits tracks and directs raw materials throughout food processing plant.

automatic identification, tracking and reporting system. Control, Design & Development designed a system that allows every bin used in the process to be uniquely identified for inventory control purposes. Additionally, the system records and tracks changes in bin content. The coded tags secured to bins are unaffected by washing and scrubbing, and the overall system requires negligible maintenance.

The factory uses the system to

track bin movement around the plant from the initial weighing, through preparation and mixing, and onward to baking. Every bin has a tag attached with an unique identification code. The monitoring computer issues the unique code when the bin is introduced into the system. When the bin starts to pass through the system, the identification code is assigned to a specific product batch by the



Tag with unique ID attached to bottom of stainless steel cart for automatic product tracking.

control system. At each point in the dispensing, weighing and mixing process, the bin's tag is read to ensure that it is in the correct loca-

tion and loaded with the proper ingredients. Expected location, bin contents and next destination are all held in a recipe and process map in the monitoring computer. Since the monitoring computer knows what it needs to have at each location and when, it can immediately detect any variation from the programmed requirements. As the process flow continues, bin movement is tracked, and overhead display units at every

mixing station guide operators, who move the bins around the preparation and mixing areas.

The control system is able to provide detailed records for every product and batch produced by the plant. Furthermore, it can supply accurate status information for each mixer and its production cycle.

The identification, tracking and process management system has worked very reliably in the food processing plant. The TIRIS-based solution has met and even exceeded the expectations of United Biscuits management.

For more information contact: CDD Ltd. TEL: +44 1733 311566 Fax: +44 1733 312566.

## TIRIS Supports Flexible Automobile Manufacturing

**A**n automobile says a lot about its driver. Cars can be status symbols, speedsters, or just a way to get from point A to point B. Whatever the case, drivers want to put their individual stamps on their vehicles.

The automotive industry has implemented a TIRIS based manufacturing solution to maximize the output of customized vehicles. BMW of Germany and Vauxhall Motors of the United Kingdom, a subsidiary of the world's largest car manufacturer General Motors, are using TIRIS technology on the assembly line to optimize production.

Both BMW and Vauxhall construct cars based on a customer's individual order. Customers can choose from a myriad of interior and exterior options such as color, engine type, moldings and tires. As a result, the total number of variations traveling on the assembly

line can be in the hundreds.

"Only a highly organized and complex control system can make



*Vauxhall: Cars traveling down the assembly line receive customized features.*

such flexible manufacturing possible," says Dave Hyslop, UK TIRIS Sales Manager.

Vauxhall and BMW have integrated TIRIS systems into their production lines. Both companies employ reusable electronic tags that are programmed with the details of each model variation. This data is used to ensure that the correct operations are carried out on each vehicle at the various stages of production, saving time, cost and rework.

At the Ellesmere Port Plant in Cheshire, Vauxhall Motors produce their best selling Astra range of automobiles. Customers can choose from a wide selection of cars, including three-and five-door hatchbacks, vans and estate cars. All offer a broad range of options.

BMW produces an equally diverse lineup at

its Regensburg factory. There, the BMW 3 series is manufactured, including the sedan, coupe, convertible and touring models.

At both factories, multipage transponders programmed with vehicle specifications are attached to the skids that carry the cars along the assembly line. The operator or the robot at each workstation reads the information from the transponder and builds the vehicle based on the data received. Each transponder can store more than 150 possible variations.

BMW and Vauxhall are enjoying the benefits of their new TIRIS systems. Some of the major advantages are that the transponders can be:

- Read without direct line of sight
- Reprogrammed to reflect different requirements
- Integrated into a complete system
- Reused at the end of assembly
- Used under harsh conditions because they are maintenance-free and battery-free.

## Secure Hands-free Access for Coopers & Lybrand

**C**oopers & Lybrand, one of the UK's top accounting firms, selected TIRIS technology for their new access control system. The system provides hands-free access for 1,000 authorized staff members and visitors to one of their largest UK facilities, a recently refurbished office complex in Birmingham.

The C&L building at Temple Court in Birmingham is the largest office renovation completed in all of Europe during 1995-1996. When it came time to select an access system, planners wanted one that would be totally invisible and would not damage the building's expensive interior finish. The system also needed to provide a high degree of security, monitoring and control, while maintaining completely transparent operations for authorized users. TIRIS system integrator, R&D Security Manufacturing Ltd. of Essex, designed the perfect solution.

"We have been working with



*Hands-free access for employees and visitors at prestigious accounting firm harmonizes with interior design.*

Coopers & Lybrand for a number of years now, and when they decided that they wanted a hands-free access control system, we were confident that TIRIS technology would provide the best solution," says Mike Topping, Director of R&D Security Manufacturing Ltd.

The Birmingham system provides

control via 48 automatic doors. A RFID antenna is embedded into the frame of each doorway, and access is controlled by identification badges.

"The installation is unique in that the RF antennas and readers were embedded into the doors at the time of manufacture. In other

access control applications these electronics tend to be fitted to doorways already in place. The result is a high quality finish to the installation," adds Topping.

Each badge carries a unique code that controls the unlocking of doors in selected sections of the building. The badges are coded to allow only staff and visitors with proper authorization to enter secured areas. For example, only computer staff is admitted to the computing rooms, and only personnel staff can access areas containing employee records.

In addition to being coded with the relevant access level, each badge can also be programmed with time zone permissions. The system can restrict an employee's access to certain times of the day, such as his normal working hours. For instance, the janitorial staff has building access only during the evening.

## Reader Add-on Modules Now Available

Four new add-on products provide exciting expansion capabilities to those using TIRIS technology for applications such as vehicle access, product and inventory tracking, and waste management.

The new products include an **inductance expansion module**, a **dynamic auto-tuning module**, and a **2-channel and a 4-channel multiplexer module**. The inductance expansion module extends the standard tuning range for RF modules allowing greater flexibility in custom antenna development. The dynamic auto-tuning



4 — Channel MUX.

module automatically tunes the reader and antenna at the time of setup and during every read cycle, which eliminates the need for manual tuning. Finally, the 2-channel and 4-channel multiplexer module allows users to have one reader with up to four antennas attached.

All four new products are compatible with each other as well as the TIRIS S2000 Control Module and the Power Radio Frequency Module.

## RESELLERS ADD VALUE

### Score 1 For RFID And 0 For Motorcycle Thieves

Wallstreeter GmbH develops and markets a TIRIS-based antitheft system for motorcycles and outboard engines. "After the success of TIRIS in the automobile security market, it was the next logical step to expand to these areas," said Andreas Stulz, Chairman of Wallstreeter.

The system is directly combined with the existing motorcycle electric. A thief has to destroy the whole wire

harness if he wants to remove the immobilizer to steal the vehicle. This makes it an unworthy target. With TIRIS, owners don't have to rely on bulky mechanical devices anymore. "Bike owners are virtual-

**Wallstreeter**

Andress Stule GmbH & Co..



ly unaware of the presence of this system," added Stulz.

For more information, contact Wallstreeter at Tele: +49 (0)40 55 49 170.

## Product Announcement

### As Easy As "Plug And Run"

TIRIS announces the Series 2500 Reader System that is easy to install and setup. Simply "plug and run" to start using TIRIS to track products through production and in warehouses, for handsfree access to parking lots and into buildings.

"We designed the new reader to save on installation and maintenance costs for systems integrators who install TIRIS applications," said Alain Berthon, TIRIS Logistics Strategy Manager.

This reader is housed in an industry standard IP20 plastic box that can be clipped onto a DIN rail, or mounted with 4 screws on a support. It includes an automatic antenna tuning feature, has a configurable interface for RS232, RS422, or RS485, and is compatible with the popular S2000 TIRIS Reader.

The S2510 comes with standard TIRIS firmware that can be customized for application



Model S2510  
the new Series 2500 Reader System.

specific requirements.

This latest member of the evolving TIRIS family, can be designed in as an integral part of an overall control scheme that includes industrial computers and programmable logic controllers. Or, it can be incorporated into a simple system using a standard configuration.

"Because it is so simple to install, the S2510 is the ideal reader for system integrators. It appeals especially to companies who want to integrate TIRIS RFID solution into logistics chain management systems," added Berthon.

## TIRIS Saved My Rear

The London Evening Standard reported that undercover police officer Tom Davies was one of the luckiest men at the 1996 Olympics. His TIRIS badge did more than allow him quick access to the Olympic venues; it saved his behind.

Everyone connected with the games had to wear plastic identification badges around their necks. When Davies, a special agent with the Georgia Bureau of Investigation, was off duty, he placed his plastic ID card and holder in his back pocket.

The night of the bomb scare, off-duty Officer Davies was in



the vicinity of Centennial Park. He rushed to help, and as he was ushering people away from the suspect package, the bomb exploded.

At first, Davies thought he escaped unscathed; however, when he sat on a wall a few moments later, he felt a sharp pain in his behind. Davies discovered that a jagged piece of shrapnel from the bomb had flown at him and embedded itself in his identification card, rather than giving him a potentially serious wound in a very sensitive place.

"It saved my rear," said the grateful cop.

# Sao Paulo Police, Owners, Insurance Companies Benefit From New Stolen Car Recovery System

In São Paulo, the number of cars stolen monthly reaches 11,000. Annually, that means 132,000 cars. It's estimated that based on the car value alone an annual average of \$3.5 billion is lost due to car thefts in Brazil. IDENTICAR is a new company established to reduce car thefts in Brazil and to collaborate with its sister company, the 12-year-old National Registry of Stolen Vehicles.

An infrastructure of in-ground TIRIS antennas already exists throughout the city that was installed to track the fleets of 82 private bus companies who serve the area along 1200 routes. IDENTICAR will leverage this system by encouraging other types of vehicles—both public and private to attach TIRIS transponders.

Using the national registry, authorities are able to recover 40% or 4400 cars a month.

IDENTICAR's goal is to increase the recovery rate to 65% or 7150 cars per month. That's almost 86,000 vehicles that IDENTICAR

hopes will be returned to their owners annually.

"Using TIRIS, cars get a digital identity, which eliminates the problems encountered when using the car's color, its license tag number or its chassis number to identify

When vehicles bearing TIRIS tags pass over an antenna point, the tag ID and the time are relayed to a central computer. ID's are stored in the massive LINCES database built from vehicle inspections required by insur-

for recovering stolen cars.

Besides the 450 fixed inground antennas, there are 10 transportable mobile rug-antennas. The police can place these on roadways anywhere to catch car thieves.

According to Marco Antonio de Lucca, a partner in IDENTICAR, the project was a total success before implementation. "Initially fleet owners, the first market to be explored, were skeptical of the new technology. But after we installed the transponders in some of their fleet cars on a test basis, it was not hard to convince them that their operating and capital costs could be greatly reduced by installing TIRIS in all their fleet vehicles." De Lucca adds, "When these executives were given complete reports showing each vehicle's itinerary and the exact time it passed at each readpoint, they were speechless."

For more information call Aeroeletronica, Phone: +55-51-361-1222, FAX: +55-51-361-2773.



*IDENTICAR patrols locate and apprehend thieves based on information provided from tag readings.*

fy a stolen car," explains Luiz Negrini, director of IDENTICAR.

ing companies. Insurance companies and individuals contract with IDENTICAR to provide services

## Write or Call TIRIS Sales and Application Centers

### EUROPE

**France**  
Texas Instruments  
Boite Postale 67  
8-10 Avenue Morane Saulnier  
78141 Velizy-Villacoublay Cedex,  
France  
Phone: +33 1 30 70-1065  
FAX: +33 1 30 70-1054

**Germany**  
Texas Instruments  
Haggertystrasse 1, MS 4297  
85356 Freising, Germany  
Phone: +49 816 180-4005  
FAX: +49 816 180-4918

**Holland**  
Texas Instruments  
Kolthofsingel 8,  
P. O. Box 43, MS 4220  
7600 AA Almelo  
The Netherlands  
Phone: +31 546 879300  
FAX: +31 546 870535

**Italy**  
Texas Instruments  
Centro Direzionale Colleoni  
Palazzo Perseo,  
Via Paracelso, 12  
20041 Agrate Brianza,

**Milan, Italy**  
Phone: +39 39-6842 315  
FAX: +39 39-6842 316

**United Kingdom**  
Texas Instruments  
TIRIS - MS 05  
800 Pavilion Drive  
Northampton NN4 7YL  
United Kingdom  
Phone: +44 1604-663070  
FAX: +44 1604-663099

### NORTH & SOUTH AMERICA

**United States**  
Texas Instruments  
13020 Floyd Road, M/S 3626  
Dallas, Texas 75243  
Phone: 1 214 917-1462  
FAX: 1 214 917-1440

**Texas Instruments**  
34 Forest Street, MS 20-27  
Attleboro, MA 02703  
Phone: 1 508-236-3174  
FAX: 1 508-236-3227

**Brazil**  
Texas Instrumentos  
Av. Eng. Luiz Carlos Berrini,  
1461- 110 andar

**04571-903 São Paulo, Brazil**  
Phone: +55-11 5506-5133  
FAX: +55-11 5506-0544

### ASIA PACIFIC

**Australia**  
Texas Instruments  
Royal Domain Centre  
Level 14/380 Saint Kilda Road  
Melbourne, Victoria 3004  
Australia  
Phone: +613 9696 1211  
FAX: +613 9696 4446

**Hong Kong**  
Texas Instruments  
8th Floor, World Shipping Centre  
7 Canton Road  
Kowloon, Hong Kong  
Phone: +852-7351223  
FAX: +852-7354954

**Japan**  
Texas Instruments  
Aoyama Fuji Bldg. 8F  
3-6 12 Kita Aoyama  
Minato-ku  
Tokyo 107, Japan  
Phone: +81 3-3498-2195  
FAX: +81 3-3498-5266

### Korea

Texas Instruments  
29F Trade Tower 159-1  
MS 4202, SamSung-Dong  
KangNam-Ku, Seoul  
135-729, Korea  
Phone: +82 2 551 2934  
FAX: +82 2 551 3211

### Malaysia

Texas Instruments  
I Lorong Enggang 33,  
Empang/Ulu Kelang,  
54200 Kuala Lumpur, Malaysia  
Phone: +60 345 72097  
FAX: +60 345 13211

### Singapore

Texas Instruments  
990 Bendemeer Road,  
Singapore 339942  
Phone: +65 3907 100  
FAX: +65 3907 063

### Taiwan

Texas Instruments  
26F, No. 216, Sec. 2  
Tun Hua S. Road  
Taipei 106, Taiwan  
Phone: +886 2 378 6800  
FAX: +886 2 377 2717