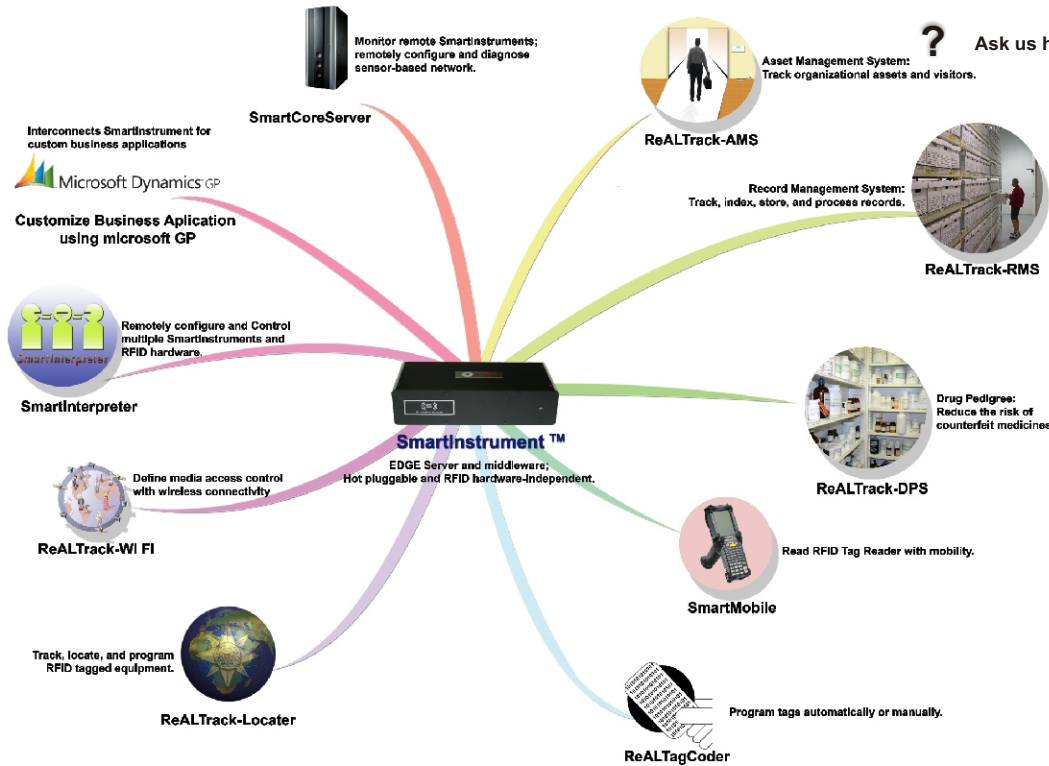


SMARTINSTRUMENT™

- +** Add Values
- Reduce Overhead
- ÷** Re-Engineer the Business Process
- ×** Multiply Returns On Investment
- ?** Ask us how



SmartInstrument™

Executive Summary:

Reltronics Technologies RFID middleware and edgware called the SmartInstrument™ harmonizes and facilitates the output of disparate RFID hardware thus bringing commonality into the RFID infrastructure. SmartInstrument™ is a versatile middleware and edgware that resides between the end-user application and the RFID hardware. SmartInstrument™ does not depend on a particular frequency range, and universally communicates between any type of RFID technology and therefore assists in unifying disparate RFID technologies, old or new.

Need Of the hour:

The versatility in the RFID middleware is a growing concern to the end-users in the supply chain. In order to handle the data streams headed towards the servers, it is pertinent that we employ data filtration as well as data aggregation and abstraction mechanisms. The middleware and edgware architecture within the SmartInstrument™ meets the requirement of interpreting the data streams.

Reltronics Technologies Focus:

Reltronics Technologies' focus is in bringing transparency into the RFID environment. SmartInstrument™ supports the anticipated growth in deploying the new RFID systems while supporting the existing RFID systems and technology. Solution providers and end-users generally deploy the SmartInstrument™ to implement the transparency and flexibility in the users' environment. Transparency is required to achieve quicker and wider deployment.

The applications of Reltronics Technologies that are currently supported by the SmartInstrument™ are as follows:

- ReALTrack-AMS (Asset Management System)
- ReALTrack-RMS (Record Management System)
- SmartMobile
- ReALTagCoder
- ReALTrack-Locater

Our New Initiatives are;

- SmartInterpreter
- SmartCoreServer
- ReALTrack-AMS web system
- ReALTrack-RMS web system
- ReALTrack - Drug Pedigree
- ReALWiFi

Reltronics Technologies integrates all the readers available in the market and enables various functionalities of the application such as AMS, RMS, ReALTagCoder, SmartMobile and ReALTrack-Locater.



SMARTINSTRUMENT™

The SmartInstrument™ is a versatile middleware which supports the following readers:

- ✓ Intermec IP4
- ✓ Intermec IF5
- ✓ Motorola Symbol MC9000
- ✓ Motorola Symbol MC9090
- ✓ Motorola Symbol XR400
- ✓ Alien ALR9800
- ✓ Psion 7435 Gen 2
- ✓ WaveTrend RS-232
- ✓ WaveTrend TCP/IP
- ✓ ThingMagic M4
- ✓ ThingMagic M4e/h
- ✓ ThingMagic M5e/h
- ✓ Intellex Family of readers

The versatility of SmartInstrument™ enables it to be the most efficient, plug and play RFID middleware and the application allows implementation of better control for a successful operation of any business, large or small.

Workflow:

For better understanding, the SmartInstrument™ middleware and edgware architecture has been divided in to 2 main layers depending upon the function that each module within the middleware and edgware architecture performs:

- Data Routine Layer
- Configuration Layer

1. Data /Routine Layer:

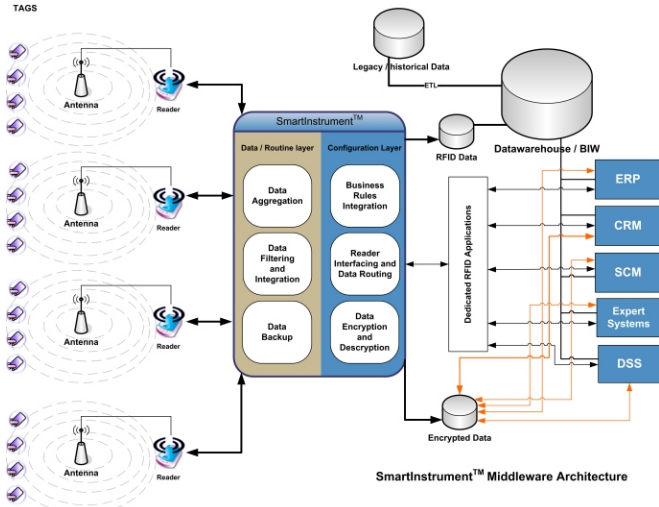
Data /Routine layer includes the modules which deal with EPC data handling, data aggregation, data filtering, data integration and data back-up. SmartInstrument™ has the ability to aggregate the data from multiple readers and antennas using different sets of protocols and frequencies. Besides that, SmartInstrument™ also co-ordinates and synchronizes multiple hardware devices.

SmartInstrument™ has an inherent RFID data filtering that compensates for such discrepancies by going through several read cycles to receive the information from the tag. It has a set of rules to filter out redundant or unneeded information created due to interference and noise from other wireless networks, physical obstructions and other tags.

The SmartInstrument™ middleware and edgware controls all the hardware readers, printer encoders and input/output devices linked to the interrogators needed in an RFID system. It can monitor the status of a reader and alert the administrators in the event of a malfunction. When this happens, the SmartInstrument™ middleware and edgware automatically activates the backup interrogator devices, so that the system does not face any downtime.

2. Configuration Layer:

This layer configures the SmartInstrument™ for data routing, data encryption and business rules integration. By utilizing the configuration layer, remote diagnostics of the reader can be performed. The SmartInstrument™ middleware and edgware has built-in business rules that monitors the data stream and directs the data to



Features:

Protocols and standards:

SmartInstrument™ middleware and edgware allows the deployment of RFID systems by allowing transparency with the following:

- Any protocol: Class0-gen1, class1-gen1, class1-gen2,
- Any standard: EPCGlobal, AIMGlobal, ISO,
- Any RFID technology: Active or passive tags/transponders, Circular or linear antennas,
- Any Frequency: LF, HF, VHF, and UHF.

Hardware Independent: SmartInstrument™ is not dependent on any particular type of reader. It can detect any reader that is present in the network.

Extensible: Its utility is extensible and can be customized according to the user environment.

Scalable: It is able to handle large amount of data and work efficiently in high volume environment.

Secure: SmartInstrument™ has its own API library and the encrypted data facility is available for high data security.

Reliable: It is reliable and handles transactions with low or no error rates.

Capable of Remote Diagnostic: Supports remote interfacing with industry standard readers and enables remote diagnostic to solve reader specific issues.

EPC an ISO Compliant: Supports AIMGlobal, EPC standards and ISO standards.

Data Independent: Supports various data storing technologies from XML, SQL, oracle and other industry standards.

Data aggregation, filtering, integration and routing: SmartInstrument™ handles all the data specific needs of the enterprise application.

Data encryption and Decryption: Data encryption and decryption is provided to assure confidentiality, integrity and authentication within the SmartInstrument™. SmartInstrument™ decryption algorithm returns encrypted data or cipher text back to its original plain text form

Business Rules integration: Assists in integrating the business rules to handle the business effectively.

Cost effective solution: Delivers high performance data capture storage and communication as a standalone application or a system component.

Enterprise connectivity: Integrates and communicates through various protocols such as TCP/IP, UDP etc to make sure that the data reaches the place without any loss.

Hardware Requirements:

Dimension:

With mounting bracket: 278mm* 117.1mm*67mm (10.1in * 4.61in * 2.64in)
Without mounting bracket: 250mm* 117.1mm* 59mm (9.84in * 4.61in * 2.32in)

External I/O:

1. PS2 keyboard and Mouse interface
2. 4 USB 1.1 ports
3. 4 RS-232C ports
4. 10/100 Mbps LAN port supported by RTL 8100B
5. Audio output

Internal I/O:

1. GPIO: 4 input, 4 output
2. 1 USB 1.1 port share with external USB
3. Audio: Mic in, line in
4. Printer port

Front Panel:

Power LED (Blue)

Rear Panel:

1. Analog VGADB-15 connector
2. Line out
3. RJ45 LAN (100 Mbps)
4. One Wi-Fi Antenna hole
5. 12V DC Voltage input
6. Four USB 1.1 connector
7. Four DB9 RS-232 connector
8. PS/2 Keyboard/Mouse connector

SMARTINSTRUMENT™

- 9. DB25 LVDS connector
- 10. Power Switch

Supported Operation System:

- 1. Windows XP and XP Embedded
- 2. Windows CE 5.0
- 3. Realtime Linux

Power Adaptor

- 1. 90 to 264V AC input
- 2. 12V DC input
- 3. Rated current: 1.5A
- 4. Quick Lockable DC plug in jack
- 5. UL/CSA/TUV

Standards:

FCC, UL, CE marking



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