



 Linux-based  
microcomputer

## wirma<sup>®</sup> nomad

■ wireless intelligent remote m2m appliance

**wirma<sup>®</sup> nomad** is part of the Machine To Machine (m2m) family of networking products developed by KerLink<sup>®</sup>. It is designed for embedded wireless applications. It is particularly suitable for automatic collection of local data while roaming.

**wirma<sup>®</sup> nomad** has a high power microcomputer. It has many embedded interfaces and a GPS receiver. It also has embedded interfaces for accessing many different wireless and wired communications networks.

**wirma<sup>®</sup> nomad** has a programming interface for accessing the hardware resources. Customers' applications can be easily adapted to any environment and to all operating requirements.

**wirma<sup>®</sup> nomad** can be used within the KerLink<sup>®</sup> network architecture to provide a global solution for m2m services. The KerLink<sup>®</sup> optimised high reliability connection protocol allows communications software to build all the company's equipment into its information system quickly and easily to provide value added services.

### ● ● ● ● **Versatility**

**wirma<sup>®</sup> nomad** is an open microcomputer which can be adapted physically and functionally for any type of application:

- Mobile data collection from home or public counters,
- Recording and collection of local data,
- Local information for passengers using public transport,
- Traceability of goods or persons,
- Fleet management (position, itinerary, geofencing),
- Remote diagnostics of the vehicle components, raising geographic alarms,
- Supervision of the vehicle's components or on board equipment,
- ...



#### **Example: remote collection of measurements from environmental sensors**

- A health risk consultancy responsible for an environmental risk management system, accelerates its sampling cycle by transmitting all the field measurements with geolocation in real time. This mobile system for collecting measurements from fixed sensors improves monitoring of health risk zones. The alarm system has also become more responsive and the appropriate actions can be taken more rapidly.



#### **Example: traceability of goods containers**

- A transporter offers its customers the possibility of monitoring the progress of the parcels being delivered in real time via Internet. There are reporting and alarm systems, for example if the vehicle leaves predefined geographical zones, making it easier to track goods and prevent wastage. This provides the quality of service required by the end customer.

## Advanced features

- Multi protocol equipment
- Several machines can be connected to a single wirma<sup>®</sup>
- Applications can be configured
  - Basic m2m data models
  - Data acquired stored locally
- KerLink<sup>®</sup> m2m Services: software interface providing simple, unified, reliable access to hardware (TCP/IP, XML)
- Advanced GPS geolocation

## Specifications

### Physical:

Robust extruded aluminium case  
Compact (105mmx44mmx120mm)

### System:

Processor ARM920T 200 MIPS at 180 MHz  
RAM: 32 Mb SDRAM (up to 128 Mb)  
ROM: 32 Mb FLASH (up to 64 Mb)  
Supply voltage: 7V – 42V  
Wake-up modes: CAN, GSM, RTC  
Battery backup optional  
Ignition switch detection  
Built-in GPS receiver

### Networking:

Embedded Bluetooth V1.2  
USB2.0, CAN 2.0A or B, high speed  
Serial (RS232 or RS485), GPIO, I2C, etc  
Embedded protocols (Modbus, etc)

## Advantages

- Rapid implementation: m2m applications development tools
- Rapid, easy modification for updates: new machines, new types of sensor, etc
- Configurable state machine
- Upgradable embedded application
- Several programming languages (C, C++, Java)

### Networking:

GSM/GPRS 900/1800 Class 10, FME male antenna connector, removable SIM card  
Ethernet 10/100 baseT, RJ45  
WLAN 802.11G optional

### Open operating system:

Linux standard version V2.6.13  
Cross compilation system for developing embedded applications in C or C++ (optionally Java)

### Standards:

CE mark, conforms to R & TTE Directive  
Directive 2006/28/EC e-marking  
Wide operating temperature range

## Development tools

- Starter Kit (optional): wirma<sup>®</sup> all hardware options (including Bluetooth and WLAN), demo board extension card (GPIOs, relays, etc), power supply, antennae, training and software development kit (SDK).
- Nomad Debug Kit (optional): wirma<sup>®</sup> nomad, dedicated debugger, power supply, GSM/DCS, GPS, Bluetooth antennae, training and software development kit (SDK).
- Software development kit (SDK): GNU tools for compiling and linking embedded applications, specifications for basic M2M function interfaces and debugging. For rapid, easy development of specific solutions under Java, in C or C++.

## Can be used in the KerLink<sup>®</sup> m2m network solution: wanesy<sup>®</sup> (optional)

- Optimised connection and encryption of the data transfer
- Standardised protocol for interface to customer IT systems for any application
- Unified hardware interface for local or remote applications
- Concentrator for several units using wireless protocols (Bluetooth, WLAN optional)
- Optimum selection of physical layer
- Simple administration (remote software updates, reporting, alarms, etc)
- Time-saving using real time management
- Profitability/minimisation of operating costs through better handling of the data collected
- Permanent link between the customer's information system and the equipment
- Network QoS

