



## ***The Input-Output Universal Server***

Luciol® is a field device with interfaces for I/Os and digital communication. Designed for harsh environments, Luciol® fits to most industrial installations. Indeed, Luciol® is a modular, robust and compact RTU which provides I/O terminal blocks, networking connectors, an embedded database and a protocol library to interact with many other field devices, DCSs and SCADA systems.

Luciol® design allows quick configuration, installation and testing by End-Users. For Systems Integrators, the comprehensive development environment makes Luciol® a fully programmable device for real-time applications.

***Luciol®: the pervasive "all-in-one-box" solution to build or refurbish control systems made of legacy, bespoke and modern field devices.***

### **Fitted to all types of installations**

- Strong immunity to harsh environments such as HV electrical substations
- DIN rail & other mounting possibilities
- I/O modules support multiple polarities

### **Interface to other devices and digital systems**

- Support Modbus ASCII & TCP, IEC 60870-5-103, 101, 104, DNP3 and UCA2/IEC 61850 (available 2003) protocols
- Master & Slave parts
- Protocol Gateway (converter & pass-thru)
- Fully programmable system for development of legacy or standard protocols

### **Easy to install, set up and test**

- Integrated terminal blocks
- Test activation by push-button or software
- HW & SW modules self-check
- Default configuration for all embedded HW and SW modules
- Embedded Web Server for configuration through Web Browsers or XML schema editors

### **Fast, efficient and reliable**

- Data transfer in a few milliseconds
- Independent and protected I/Os
- Self-tests at start-up and during operation

### **Long-last operation and re-usable**

- Self-adaptive cards
- Redundant embedded I/O database for safe on-line modifications

### **Open processing environment**

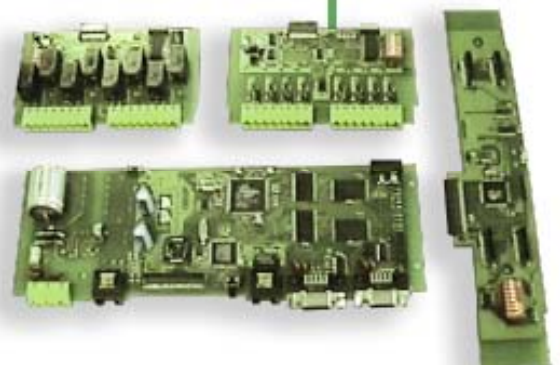
- Real-time environment
- High level programming language for added-value function development
- Soft PLC engine (available 2003)
- Low cost development seat
- Free source code of software library:
  - \*Systems functions
  - \*Industrial protocol library
  - \*HTTP, SSL 128, POP3 & SMTP, PPP, ...



**Comms Port View**



**I/O Modules View**



***Luciol® is an open and cost efficient field device based on a Real-Time Java CPU***

## General Specifications of Modules

### Standard Box

CPU Unit including:

- aJile aJ100 32-bit Processor @ 70MHz
- 1 Mb SRAM (12 ns), 4 Mb FLASH (90 ns)
- 1 Ethernet 10 BaseT, RJ45 connector
- 1 RS232 port, DB9 connector, max speed: 38.4 kb/s
- 1 RS232 or RS485 (2 or 4 wires) port, configuration by jumper, DB9 connector, max speed: 56 kb/s

I/O Capabilities (through the Mother board):

- Mother board: ATmega 128, comms @ 125 kb/s, time stamp and buffer data
- 4 off IO Modules mounted on the Mother board up to 15 expansion boxes (daisy chain)

Internal power supply:

- Input: 35-150 Vdc
- Insulation: 4 kV
- Consumption: 7 W typical, 12 W peak

Dimensions (mm): 240(L)\*90(D)\*75(H)

### Extension Box

Identical to a Main Box without aJ100 CPU

Up to 4 off IO Modules

Comms through 2nd RJ45 port @ 125 kb/s

### Industrial Environment

Operating temperature: -20°C / +60°C

Radiated field immunity: 10V/m and 30 Amp/m

Case protection: IP 30

### 8 Digital Input Module

8 galvanic insulated double points  
Voltage: 12 to 60 Vdc or 150 Vdc  
Detection & time-stamping: 1 ms  
Insulation: 2 kV

### 8 Digital Output Module

8 dry contacts normal or inverted  
Cutting capability:  
-150 Vdc / 150 mAmp permanent  
-30 Amp for 10 ms  
Coil monitoring  
Insulation: 2 kV

### 4 Analogue Input Module

Current or Voltage, configuration by jumper  
Insulation: 2 kV  
Maximum scale: -20 / +20 mAmp or -10 / +10 V  
Self-calibration - Accuracy: 0.5% full scale at 25°C

### 4 Analogue Output Module

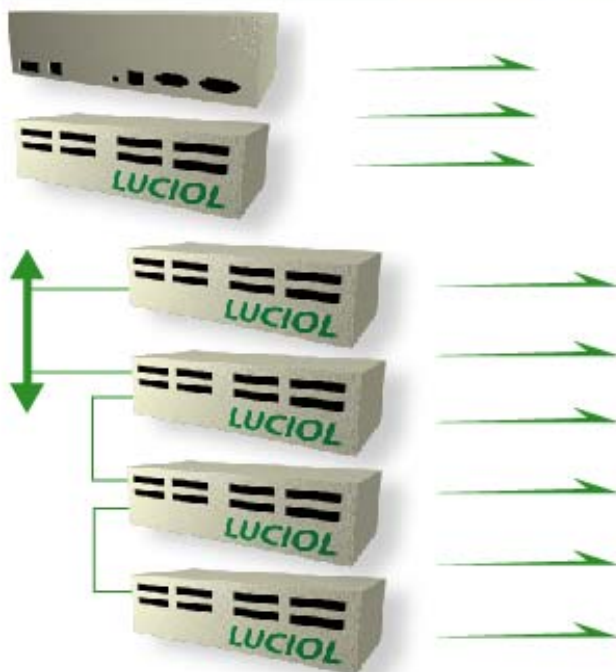
Current or Voltage, configuration by jumper  
Insulation: 2 kV  
Maximum scale: -20 / +20 mAmp or -10 / +10 V  
Self-calibration - Accuracy: 0.5% full scale at 25°C

**Note:** all the Modules have a micro-controller to execute low-level IO treatment and to buffer data

### Communication Modules (2003)

PSTN Modem Module, GSM Module, GPS Module  
and 2 off RS232/485 port Module

## Architectures and Typical Applications



Serial <-> LAN Protocol Gateway & Pass-thru Bridge

Legacy Device Supervision and Interface

Process Data Server

Interface Between Wiring and Digital System

Ethernet I/O

Distributed I/O System

Remote Terminal Unit

Local Processing for Process Automation

Control and Supervisory System

**Luciol® networks I/Os for local or remote control & I.T. systems**



## Public Price List – 1 I 2003

Prices are EXWORKS our French offices, exclusive of any tax, duties, packing & transport.  
Prices and availability may vary without prior notification, please check with I.T. Lity prior to order.

**Regular Luciol: 850 €**, complete box with a CPU & 4 off I/O modules of any type

**Extension Luciol: 550 €**, complete box with no CPU & including 4 off I/O modules of any type

**Main Luciol: 550 €**, box with a CPU and neither Mother nor I/O modules

### Additional Modules

- 8 DI or 8 DO Module: **85 €**
- 4 AI or 4 AO Module: **100 €**
- Modem Module: **150 €**

**Development Pack: 200 €**, JTag connector & cables plus aJile Systems Inc. software licence

**Run-Time Licence: free**

**User & Developer Guides:** available **free** from [www.luciol.info](http://www.luciol.info)

**Manufacturing Lead Time** (check stock prior placing order)

- Order quantity up to 5 units: 5 days
- Order quantity from 6 up to 50 units: 6 weeks
- Order quantity from 51 up to 100 units: 8 weeks
- Order quantity from 101 units: 12 weeks

**Discount policy** (if no distributorship agreement exists)

- Order quantity < 50 units: full fare
- Order quantity in 51 - 150 range: 5% of full fare
- Order quantity in 151 - 250 range: 7.5% of full fare
- Order quantity in 251 - 500 range: 10% of full fare
- Order above 500 units: please, contact I.T. Lity for formal quotation

**Warranty** is one year from delivery. A 48-hour replacement policy for some countries is available for orders of more than 50 units and costs 10% on the top of the full fare.

### Technical Support

- email support: **free** @ [support@luciol.info](mailto:support@luciol.info)
- advanced email & phone support: **5,500 €** for a one year period
- premium support: contact I.T. Lity for formal quotation

**Training** for developers: **1,500 €** per person for a 5 day session in our offices (Alès, France), a session is for a minimum of 3 trainees and up to 7 trainees.

**Specific Services for Application Development: 550 €** per man\*day in our offices (Alès, France)

### Terms of Payment

- for orders below 10,000.00 € payment is made at order;
- for other orders a 30% down payment is payable at order, final invoice at delivery and complete payment 30 days nett from delivery.

Payments in € Euro, US dollar and GB £ are accepted.