Wireless Radio 2.4GHz Mesh Network Technology

wSerial

exemys

Serial Port
RS232
RS485
USB

Radio
Concentrator

Ethernet 10/100 (depending on model)

- SCADA
- PLC
- HMI

Serial Port
RS232 - RS485 - USB

I/Os

Red Mesh
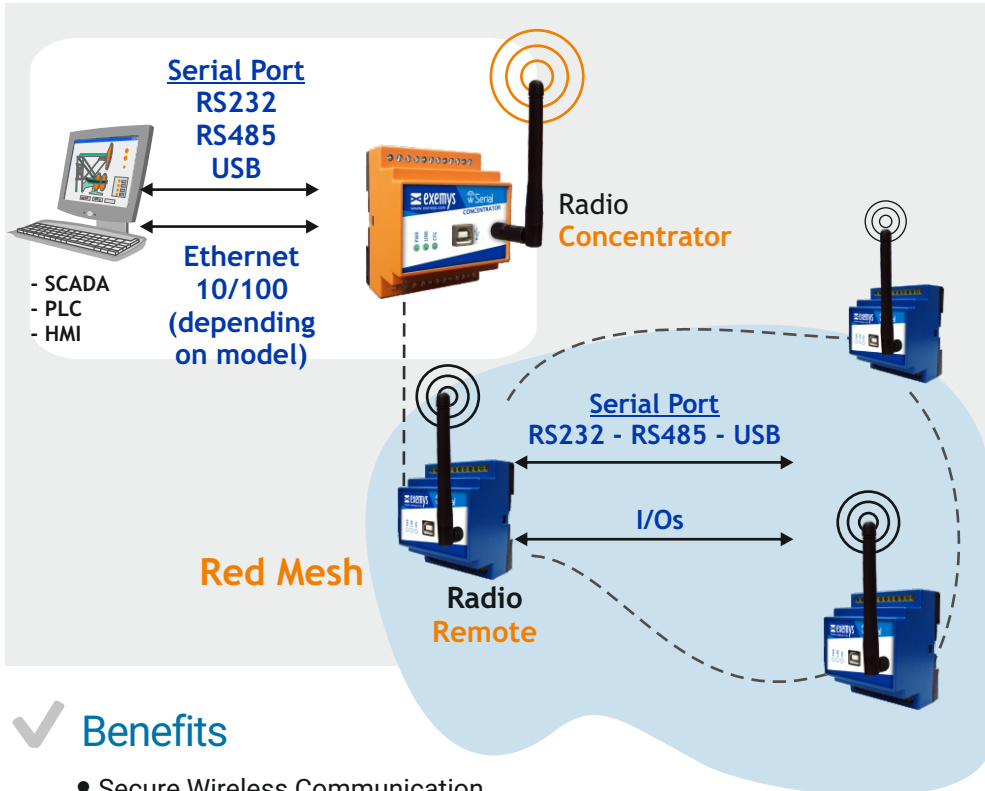
Radio
Remote

wSerial is a new concept in Serial Radio, which introduces Mesh Networks technology to achieve not only point to point, but also multiple connections.

The system was designed to be a real network of serial ports to industrial facilities where need to gather information from remote and dispersed devices, reliably and inexpensively.

✓ Benefits

- Secure Wireless Communication
- Multiple Remote nodes in one area
- Low cost of installation by point
- Mesh Network technology (redundancy and better range)
- Serial Port RS232, RS485 or USB
- Ethernet Port (only concentrator model)

★ GENERAL FEATURES

- Transparent Series Channel
- Models: **Concentrator** and **Remotes Nodes**
- Suitable for Industrial environments
- Communication IEEE 802.15.4 in 2.4GHz
- Mesh Network between devices
- Serial Port RS232/485/USB
- Ethernet Port 10/100 (wSerial-ETH-C)
- Digital and analog I/O (wSerial-3005-N)

Concentrator

↔ 1 x Serial Port
RS232, RS485 or USB

↔ 1 x Ethernet Port 10/100
(wSerial-ETH-C model)
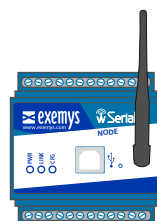
Remote Node

↔ 1 x Serial Port
RS232, RS485 or USB

↔ 1 x digital and analog I/O
(wSerial-3005-N model)

For pricing or any further information, please contact Omni Instruments Ltd.

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Measurement and data acquisition solutions

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⚙ TECHNICAL SPECIFICATIONS

RF Wireless

- Protocol: IEEE 802.15.4
- Frecuency: 2.4000 to 2.4835 Ghz Free Band
- Channels: 16
- Separation between channels: 5 MHz
- Transmission Power: +20 dBm (100 mW)
- Reception Sensitivity: -104 dBm
- Antenna: 2dBi Connector RP-SMA (other antennas optional)
- Scope: 2Km between nodes, with antenna of 2dBi and line of sight
- Module Certifications: FCC, IC, Europe/ETSI, Australia/Ctick
- Mesh Network - Amount of Nodes: Up to 50 max.
- Mesh Network - Repetition between nodes: Up to 4

General

- Indicators of Leds: On / Link / Data
- Cabinet: Industrial, Rail DIN
- Dimensions: 70 x 90 x 65 mm (Width x Height x Depth)
            150 x 90 x 65 mm (wSerial-C-ETH)
- Operation Temperature: -15°C to +65ºC
- Guarantee: 1 year

Power

- Power Input: +10Vdc min. to +30 Vdc max.
- Average Consumption: 15mA@24Vdc, 25mA@12Vdc
- Maximum Consumption: 20mA@24Vdc, 30mA@12Vdc

wSerial-ETH Model

- Average Consumption: 75mA@24Vdc, 45mA@12Vdc
- Maximum Consumption: 80mA@24Vdc, 50mA@12Vdc

Communications

- Serial Port: 1 Port RS232 or RS485
- Ethernet Port: 10/100 Mbps (only wSerial-ETH)
- USB port: 1Serial port USB
- Configuration: For USB or for radio for the remote nodes.

📋 AVAILABLE MODELS

MODEL	FUNCTION	SERIAL PORT	EXTRAS	
wSerial-C	Concentrator	1x RS232/485	USB	
wSerial-ETH-C	Concentrator	1x RS232/485	USB/ETHERNET	
wSerial-N	Remote Node	1x RS232/485	USB	

Mesh Network

Nodes

1 Km

2 Km

2 Km

Concentrator
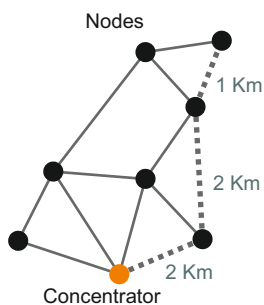
Advantages of Mesh Network

- It is possible to carry messages from one node to another by different paths.
- Each node has its own communications with the others.
- Each node extends the scope of communications.
- It is much safer. If a node fails, another will take over the traffic.

Other family devices

wTunnel

- Inputs and Outputs tunnel
- Tunnel ports RS232 and RS485
- Digital I/O , 0-10V and 4-20mA
- The entry of a computer, reflected in the output of the other

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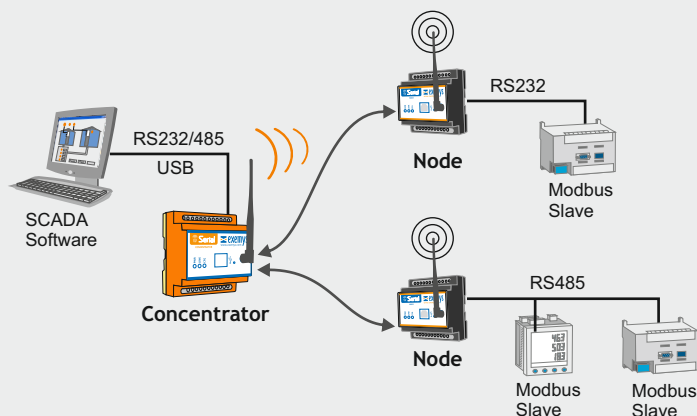**Website:** www.omniinstruments.co.uk

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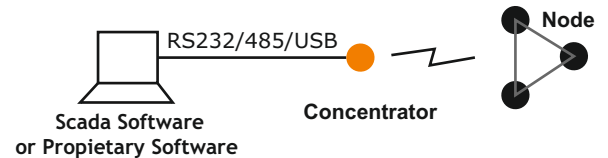
✔ EXAMPLES OF APPLICATION

Access to Remote Serial Ports

This solution allows us to connect the "Nodes, either through the port RS232, RS485 or USB port, and make queries from the "Concentrator"
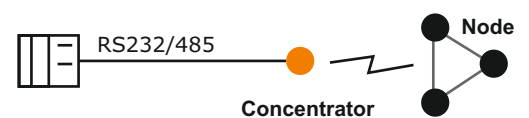

Connection of Concentrador

PC

Scada Software or Propietary Software

Devices
- PLC
- RTU
- DCS
- HMI

- Certification ISO9001:2008 (Quality)

- Certification of Products UL 60950 (Electrical Safety)

- Certification of Products CE (European Community suitable)

- Global Product Exportation

- Own Designs and Know How

ISO 9001:2015 CERTIFICATION

IRAM

GESTION DE LA CALIDAD

RI-9000-6174

Acreditado por OAA

IQNet

IEC

IEC 60950-1:2005+A1

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