CLGate2

ConnectBox
Industrial Internet Enable Communication Device

CLGate2 – Connecting any devices

Second generation of Industrial Gateway

Multiprotocol Gateway and Datalogger

Protocols Supported

- ❖CANBus 2.0
- ❖SNMPv2/v3
- ❖BACNet Master/Slave
- ❖MODBus RTU(Master)
- ❖MODBus TCP(slave)
- ❖Custom Serial Protocol
- ❖Ethernet IP
- ❖Connex/KNX
- ❖LONWORKS
- ❖Custom Protocols

Main Features

- ❖ Internet connection
- ❖ High performance 32-bit CPU
- ❖ Embedded Web Server
- ❖ Datalogger
- ❖ Ethernet 10/100 BaseT
- ❖ BACNet support
- ❖ CANBus Interface
- ❖ MODBus/TCP Interface
- ❖ Two USB 2.0
- ❖ SD card
- ❖ Two Multistandard serial ports RS-232/RS-422/RS-485
- ❖ One RS-232 port

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Enabling Communication with Anything, Anywhere and Anytime

Flexibility, Compact size, Reliability and low cost are the key features of the CLGate. The CLGate is suitable for any industrial application as communication engine, datalogger, control and management unit for any industrial device.
Thanks to the Ethernet port, the device can be also connected to the internet network allowing support and maintenance team to access remotely at the system.
The integrated web server provide user and administrator access in order to provide different management capabilities.

CLGate2, ConnectBox is the second generation of a successfull multiporotocol gateway:

- **Improving performance**
- **Adding additional USB2.0, SD Slot**
- **Additional RS232 4-wire serial interface**
- **push button for factory reset**
- **Leds and embedded RTC with battery**
- **easily support for any custom protocol thanks to the Smart Flexible Logic**

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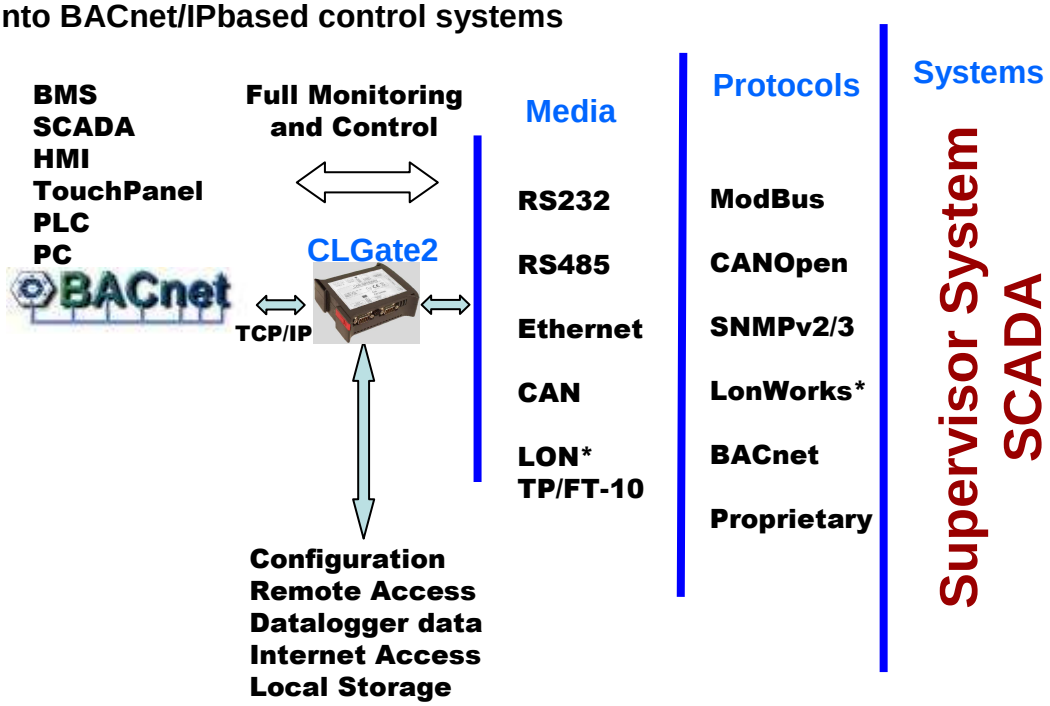
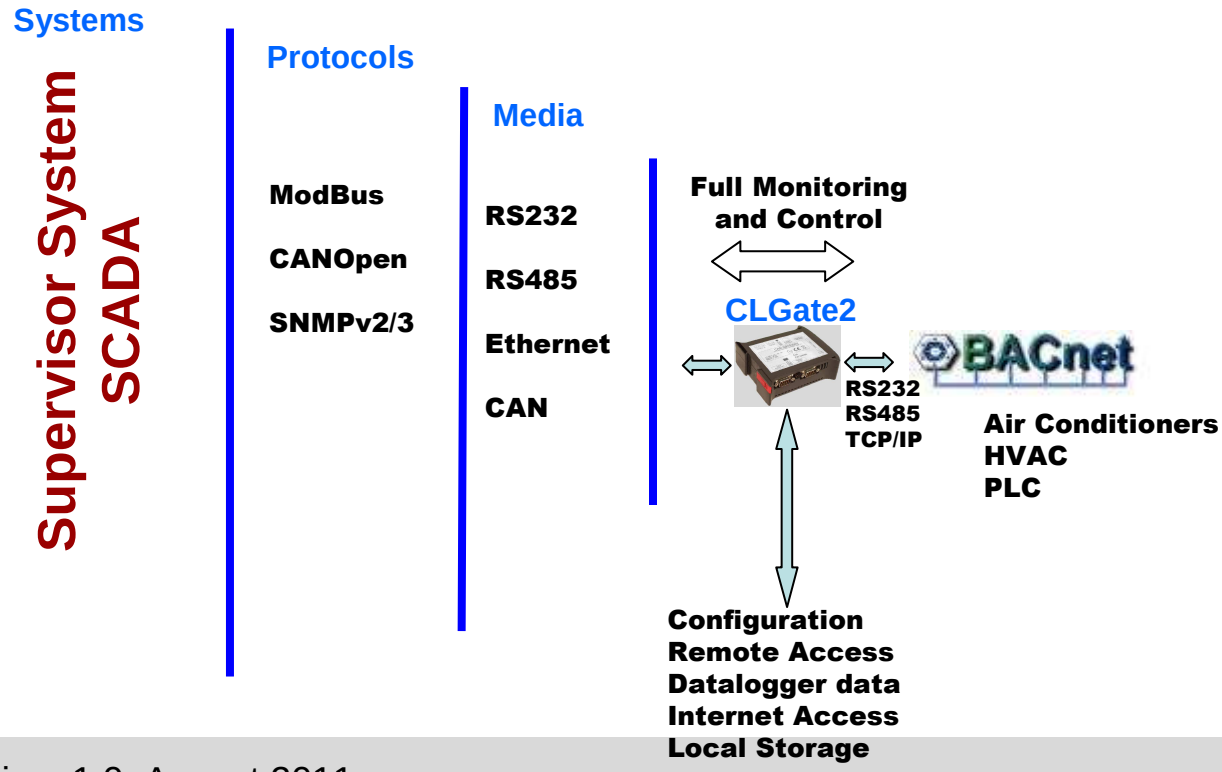
BACnet/IP Server Gateway configuration for integration of third party systems into BACnet/IPbased control systems



BACnet/IP Client Gateway configuration for integration of BACnet/IP devices into other control systems (KNX, Modbus, etc)



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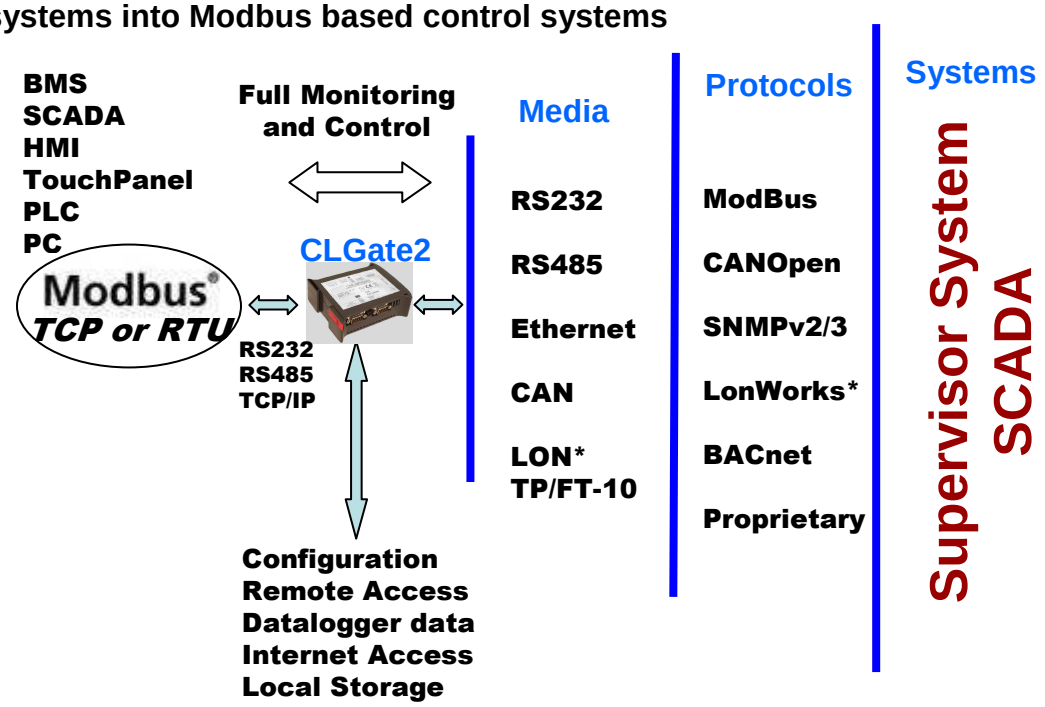
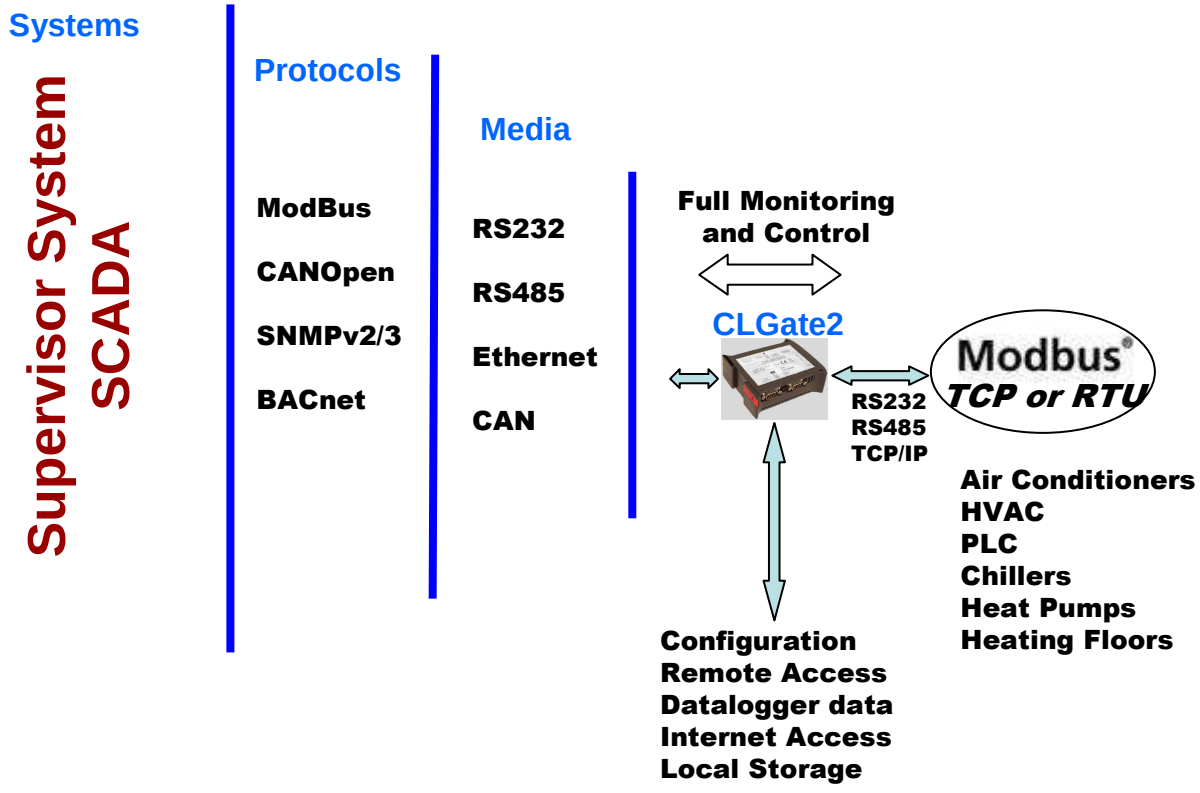
Modbus Server (Slave) Gateway configuration for integration of third party systems into Modbus based control systems



Modbus master (Client) Gateway configuration for integration of Modbus devices into other control systems (SNMP, Modbus, BACnet, etc)



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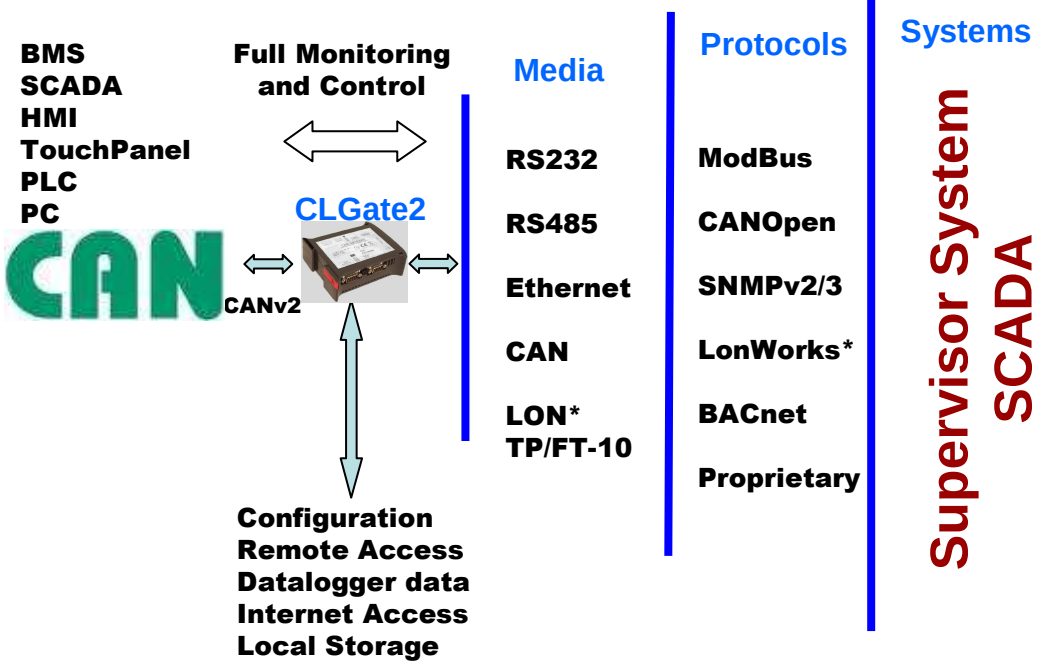
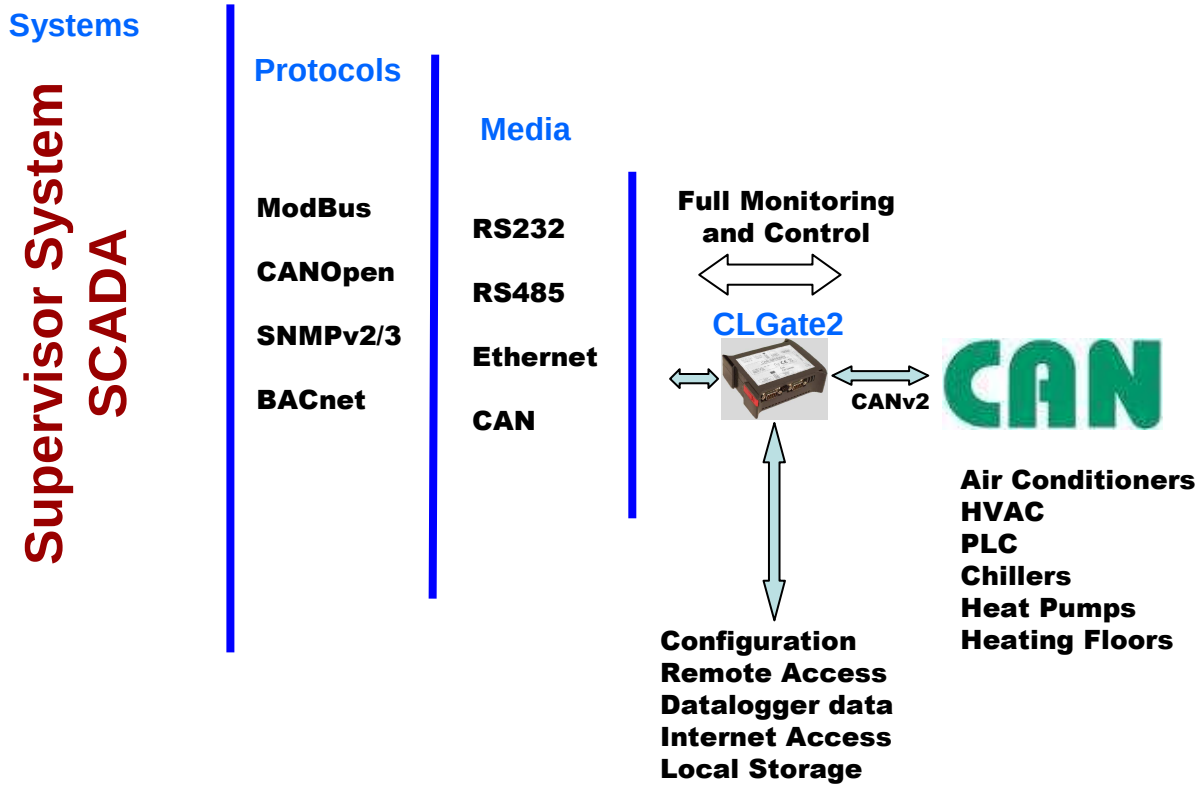
CANbus Server (Slave) Gateway configuration for integration of third party systems into CAN based control systems (not yet Implemented)



CANbus master (Client) Gateway configuration for integration ofCAN devices into other control systems (SNMP, Modbus, BACnet, etc)



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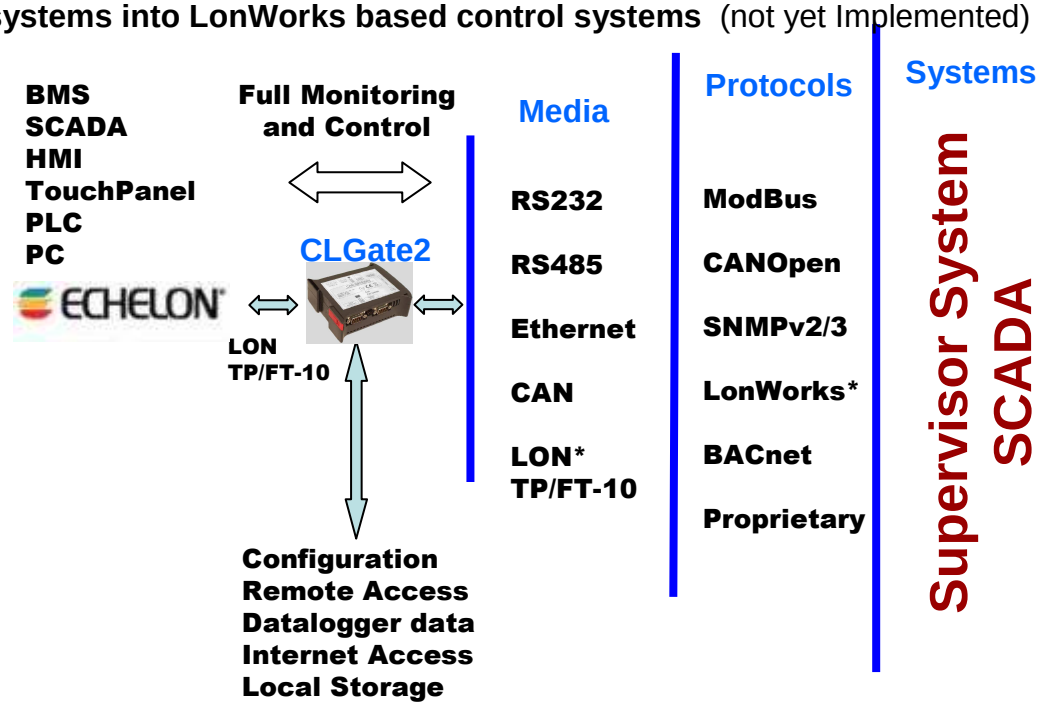
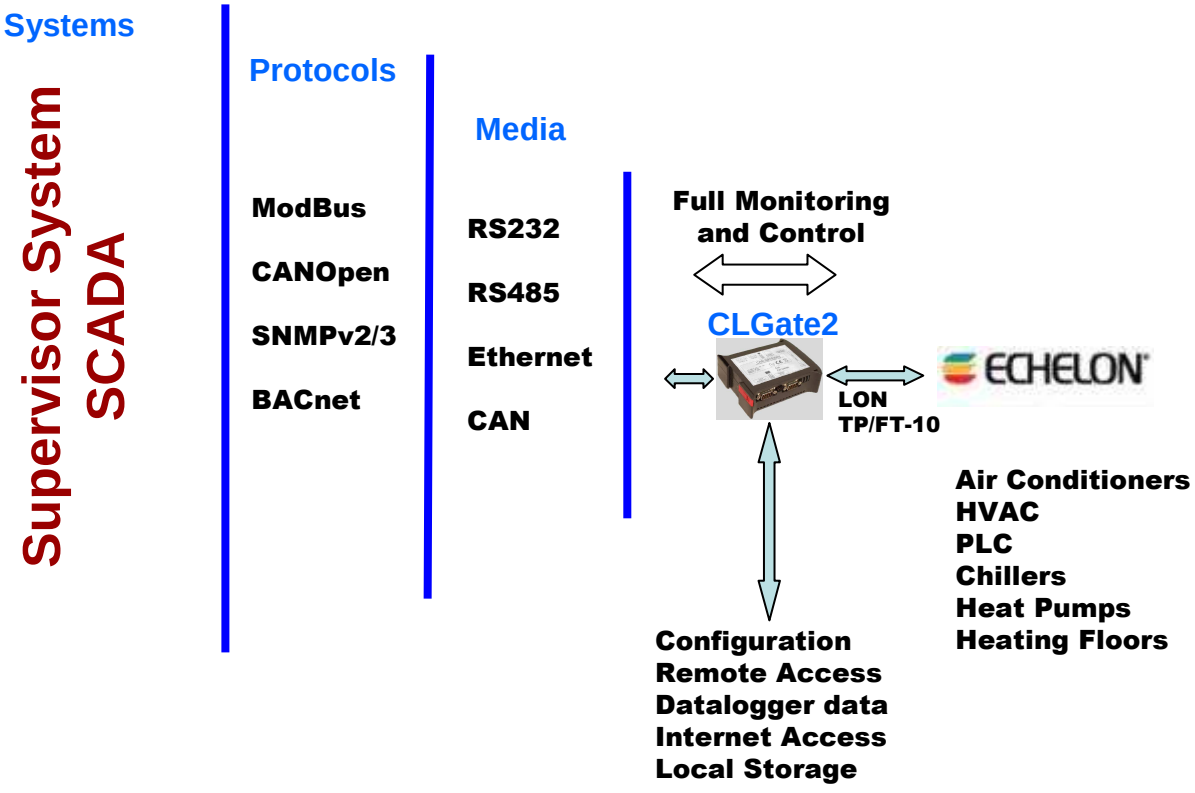
LonWorks Server (Slave) Gateway configuration for integration of third party systems into LonWorks based control systems (not yet Implemented)



LonWorks master (Client) Gateway configuration for integration of LON devices or systems into other control systems (SNMP, Modbus, BACnet, etc)



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The CLGate multiprotol gateway supports most common field bus in the industrial market an the most common supervisor bus protocol. The software architecture implemented allows easily the connection between different protocols using the software component Smart Flexible Logic.
Using the Smart Flaxible Logic all the protocols are managed at the same way implementing an adaptation layer.
A new protocol that can be required in order to control a custom device can be easily added without any impact on the existing software architecture using the Smart Flexible Logic technology.

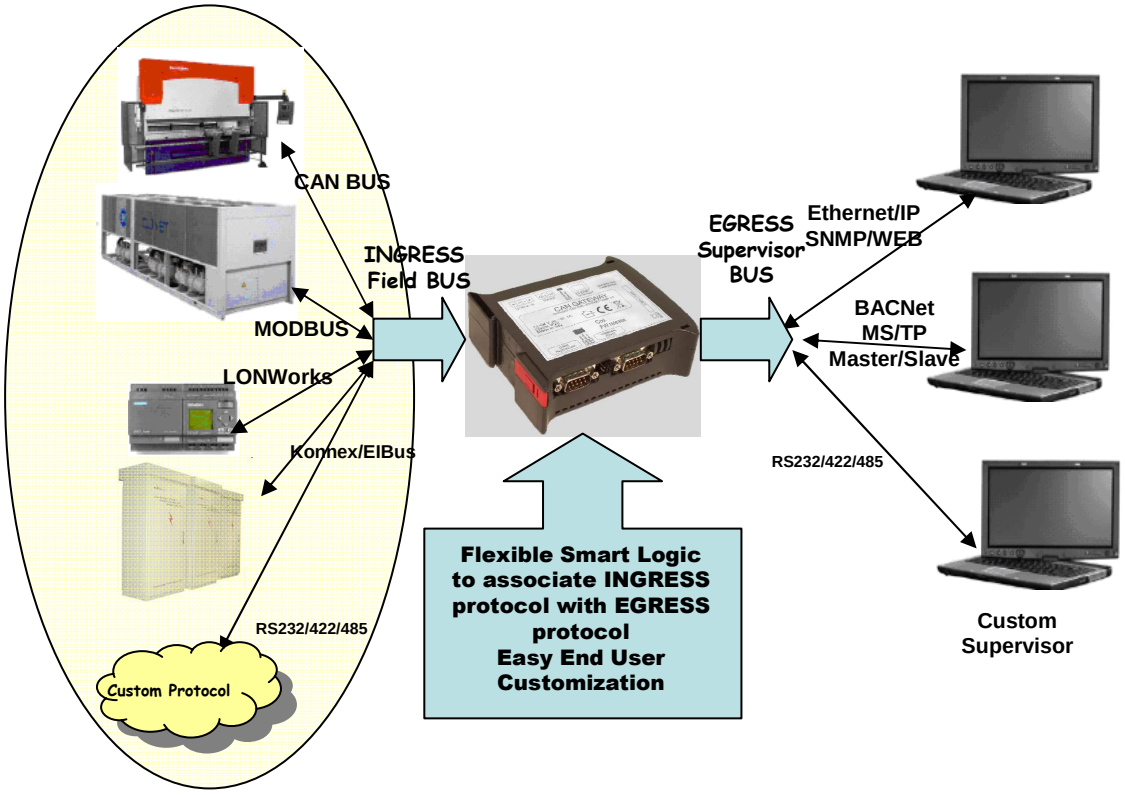
The Smart Flexible Logic allows the integration of new protocols and device in very short tim

INGRESS – field's protocols supported

- CAN (CANOpen)
- MODBUS RTU (RS485)
- LONWorks
- Konnex/EIBus
- Custom Protocol (RS232/422/485)

EGRESS supervisor's protocols supported

- Ethernet/IP SNMPv2/3
- HTTP WEB (Ethernet)
- BACNet Master/Slave (RS485 and IP)
- Custom Protocol (RS232/422/485)



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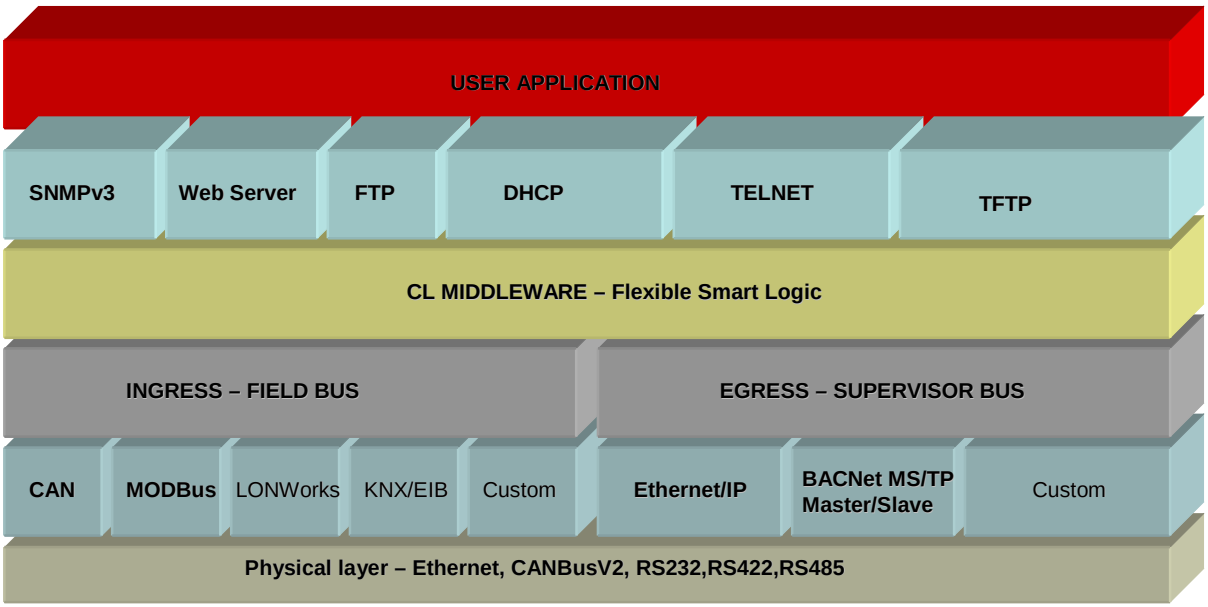
Protocol Stack Achitecture:



Configuration examples:

- ✓ **Gateway with CANBus/CANOpen field bus and Ethernet SNMP v3.0 supervisor bus**
- ✓ **Gateway with CANBus/CANOpen field bus and BACNet IP supervisor bus**
- ✓ **Gateway with CANBus/CANOpen and BACNet MS/TP supervisor bus**
- ✓ **Gateway with MODBUS and BACNet IP supervisor bus**
- ✓ **Gateway with MODBUS and BACNet MS/TP supervisor bus using a multistandard serial port configured as RS485 for BACNet MS/TP**

CLGate - Typical Application

SUPERVISOR computer

RS485

PC

ETHERNET

User/Supervisor PC using a standard browser via HTTP protocol is connected to the CLGate Web Server and manage the device connected to the CANBus, MODBus BACNet, etc

CLGate converts data from Field Bus to Ethernet and Supervisor Bus viceversa

RS-422/485

canbus

Devices managed via Filed bus as CANBus, MODBus, BACNet

ETHERNET

Through a easy to use web interface, the PC manage all the devices connected to the CLGate via RS-232 or RS-422/485 (Multipoint)

RS-422/485

Devices connected to a multidrop RS 422/485 network

RS-232

Single device on RS-232

ETHERNET - as powerfull supplementary supervisor bus
The PC trhough the web interface manage all the devices connected to the CANBus filed bus. The CLGate converts all the data coming from the device to data available on the ethernet interface and viceversa.
In such configuration all the devices (also more than one) are connected to the CLGate using one of the Field bus. All the connected devices can be manage remotely both using the supervisor bus connected at the second multiserial port and using a PC connected to the embedded web.

CLGATE - BENEFITS
•Allows to connect at the company network any remote device using:
•PSTN or GSM Modem
•Internet
In this situation any remote device able to comunicate via CANBus, via RS-232, RS-422 ed RS-485 can be reached and managed. The remote management can be useful to provide to the customer the best and fast support.
•Support Centre can provide the best service to their customer in real time, optimize maintenance plan implementation and prevent break-down of the managed device
•Reduction of the troubleshooting time
•Possibility to use one CLGate to control multiple devices in the network

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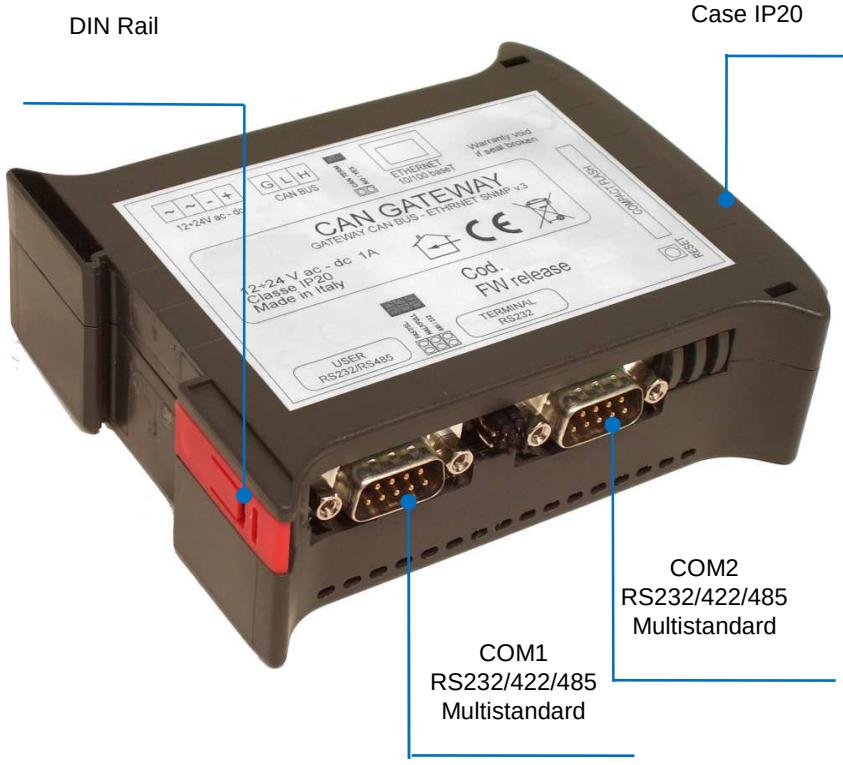

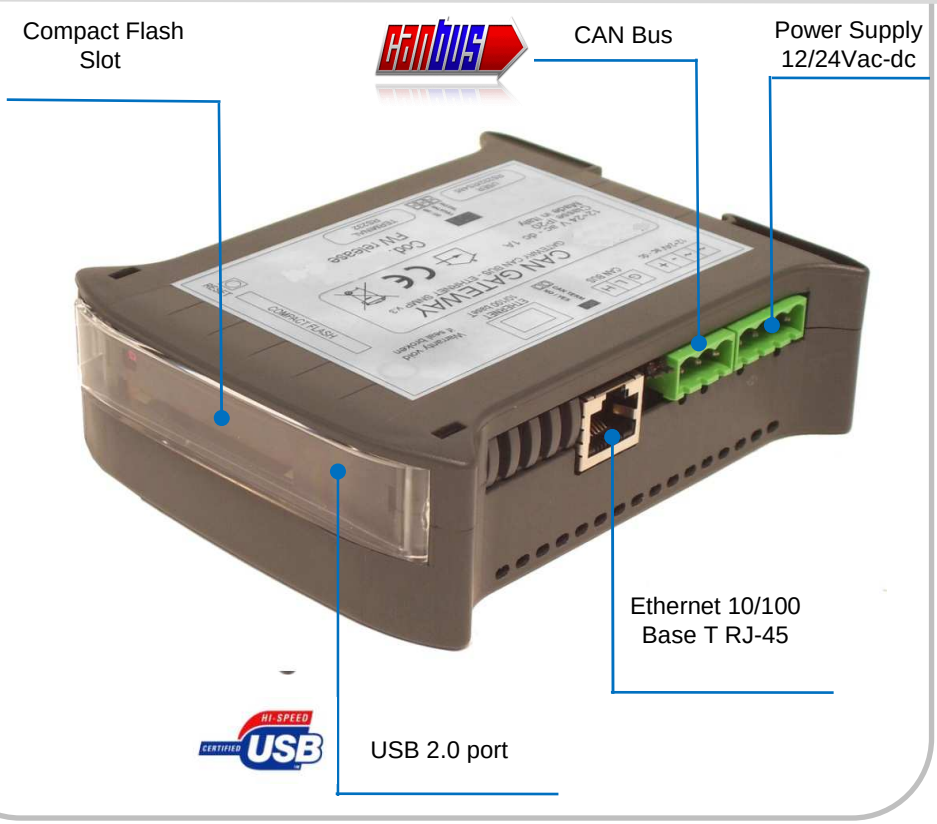

WHY USE CLGATE

•Every device connected to the CLGATE can be integrated and managed by a supervisor computer or tool.
•Allows remote management of the connected devices reducing the effort for support and maintenance. Every device that can be connected to the CLGATE through CANBus, MODBus, BACNet, RS-232 RS-422 or RS-485 can be remotely managed via Internet or PSTN/GSM modem.

• Cost reduction for device's support .

•Datalogger tracks all the events and alarms, storing it in the internal non volatile memory. All the storical data can be available through the web server and can be exported in excel format

• Multidevice application can be possibile.

• One step ahead:
A powerfull 32bit CPU, Linux 2.6 operating system; Embedded Web Server , SNMP v3.0, multiporotocol support datalogger and more are the building blocks for every custom application.

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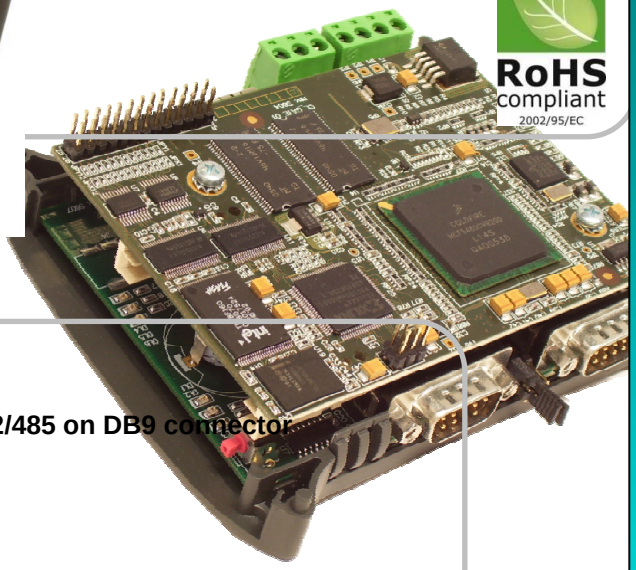
Electrical Features

- Power Supply: 12/24Vac-dc 10W
- Size: 120x101x22.5 mm (H x W x D)
- Case protection grade: IP20
- Operational Temperature: -40 … +85℃
- Mounting: Rail DIN (EN 50022)
- Compatibility EMC: CEI EN 50081-1
  CEI EN 50082-2
- CE Marking

RoHS compliant 2002/95/EC



Hardware Features

- Ethernet 10x100 Base T (IEEE 802.3)
  RJ45 connector
- n.2 Multistandard communication ports RS-232/422/485 on DB9 connector
- n.1 4 wire RS232
- CANBus Interface on connector
- LONWorks TP connector
- n.2 USB 2.0 Interface High Speed (480Mbit/s)
- n.1 Slot SDIO Compact Flash
- n.2 LEDs
- n.2 push button

CPU ATMEL AT91SAM9263

•CPU: AT91SAM9263, 240 MHz ARM926EJ-S •64MB DRAM, 32-bit •4MB NOR Flash, 16-bit (bootable, see note) •256 MB NAND Flash (see note) •4 MB Atmel Serial DataFlash (bootable, see note) •4 MB Video Memory on a separate external bus •10/100 MBits Ethernet •Serial number chip DS2401 •SODIMM200 module (67x40mm) MMU con 32 bit

- 10/100 MBits Ethernet
- •Watchdog
- •Three UARTs
- •Controller Master/Slave I^2C Bus,
- Real Time Clock with calendar and alarms
- SPI interface
- CAN 2.0B interface
- JTAG test/debug ports

Memory Configuration

- Flash: 4MB NOR Flash Bootable, 256 MB NAND Flash, 4MB Atmel Serial DataFlash
- RAM: 32bit 64MB or 128MB
- Graphic Memory: 4MB dedicated on separate external bus

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Software Features

CLGate family has been developed using Open Source Linux and can benefit from the huge availability of software, tools and drivers available from the comunity Open Source Linux.
Same hardware platform can support Linux, WinCE 6.0, Android

Linux Kernel 2.6 pre-configurated and customized for the CLGate2
- **Supported INGRESS field protocols**
- **CAN (CANOpen)**
- **MODBUS RTU (RS485)**
- **LONWorks**
- **Konnex/ElBus**
- **Custom Protocol (RS232/422/485)**
- **Supported EGRESS supervisor protocols**
- **Ethernet/IP SNMPv2/3 with encription**
- **HTTP WEB (Ethernet)**
- **BACNet Master/Slave (RS485 and IP)**
- **Custom Protocol (RS232/422/485)**
- **Network Stack and network utilities (TCP/IP, DHCP, TFTP, TELNET, NTP, etc…)**
- **CANOpen integrated**
- **Web Server integrato with**
    - **Password protected access**
    - **Two different access type: USER and SUPERVISOR**
    - **Capability to display the variable's value**
    - **Depending on the access right variables value modification with range check**
    - **Datalogger for variables and alarm**
    - **Configurable Datalogger policy**
    - **Display stored variables**

E-mail: info@m3t.it
Web: www.m3t.it

CUSTOM DESING HW/SW

CLGATE2 is not fullfilling 100% your needs and you need a dedicated device?

We can design for you a dedicated product both HARDWARE and SOFTWARE.

CONTACT: info@m3t.it

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