



#WeAreConnectivity

MTX is the brand of the Flexitron Group dedicated to the design and manufacture of industrial IoT routers, modems and gateways for cellular communication (NB-IoT/LTE/4G/3G/2G), wired (RS232, RS485, Ethernet or CAN) and LPWAN (Bluetooth, WiFi, LoRa or WMbus). At MTX we have a complete team of R&D engineers devoted to the development of hardware, firmware and software, both for generic solutions and customized projects.



MTX products cover all kinds of communication needs.



Global presence thanks to an extensive distributor network.



A team of engineers committed to the development of MTX products.

• IoT ROUTERS | P. 4



Industrial IoT routers with a variety of interfaces and powerful software features. The configuration of **MTX-Titan** routers can be intuitively done from any computer with a web browser. We can connect via Ethernet, WiFi, 4G/3G/2G, SMS, Modbus RTU, Modbus TCP and SNMP.

◆ IoT MODEMS | P. 6



Programmable industrial IoT modems with a variety of interfaces and powerful software features.

MTX-Tunnel is a firmware that can be run on our modems turning them into powerful LTE/4G-series equipment that provides remote connectivity to devices with just RS232 or RS485.

VERTICAL SOLUTIONS | P. 8



METERING

IoT routers and modems for smart electricity, water and gas metering solutions.



BMS & MONITORING

IoT routers and modems for monitoring solutions with sensors, for facilities and BMS (Building Management System) solutions.



TRANSPORTATION

IoT routers and modems for public transportation, railway and automotive solutions.

CERVELLO STEM - IOT PLATFORM | P. 10 FREE FOR ONE YEAR WITH MTX DEVICES*



Autoprovisioning



Alarms and alerts *Available with compatible devices that have MTX-Tunnel or MTX-Titan





dashboards



Rules engine



Monitoring engine



Analytics



update



Digital systems are turnkey IoT solutions aimed at specific markets and that provide whatever is needed for quick integration and deployment in the field. They include hardware, firmware and software solutions.

• CASE STUDIES | P. 16

MTX devices, in collaboration with Cervello IoT platform, can be part of many IoT solutions.

IoT GATEWAYS | P. 18

Industrial programmable IoT gateways with Linux and several interfaces and powerful software features.

ENTRY LEVEL ROUTERS



MTX-ROUTER-TITAN-Q **NEW IN 2021**

LTE/4G entry level router with battery and MTX-Titan software







MOTT









gateway

DynDNS

No-IP

Dyn DNS







Internal

















MTX-ROUTER-EOS

LTE/4G compact industrial IoT router with dual SIM & 3x Ethernet



DHCP







Modbus









MQTT





SMS control

MTX-TITAN SOFTWARE

Included in all MTX-Router-Titan

The configuration of MTX-Titan routers can be intuitively done from any computer with a web browser. We can connect locally via Ethernet or WiFi, or remotely via 4G/3G/2G. We can also connect via SMS, Modbus RTU, Modbus TCP and SNMP.

Serial Gateways

3 simultaneous 4G/3G/2G/Eth/WiFi <-> RS232/485/ USB gateways

Modes: TCP server/TCP client

SSH encryption enabled

Incoming CSD call for metering applications (only 3G)

Modbus

Modbus TCP/Modbus RTU gateway

Modbus TCP/RTU to SNMP gateway (SNMP connectivity for any modbus device)

Modbus slave RTU/TCP (send/recevice SMS, Email, SNMP traps...)

User scripts

Datalogger

Data from sensors (temperature, distance...)

Serial data collected by RS232, RS485 or USB

GPS data for tracking applications or fleet management

Automatic data sending (HTTP/HTTPS/FTP/MQTT) with JSON format

SMS

Full control by SMS with phone number authorizations

Alarms (digital input, temp., Mbus data read)

Send/receive SMS by Modbus TCP (for PLC)

Sensor Compatible

Temperature, distance and other sensors

Modbus RTU/TCP sensors

RF868 LPWAN sensors

Internal jamming detection sensor with alarm indicator

VPN

OpenVPN with client/server mode

Permanent or activated by SMS, AT command, modbus, SNMP, serial...

Other

Oyn Compatible with DynDNS/No-IP & private DNS

(GSM cell location

Programmable autoreset (schedule, timer...)

Multioperator SIM utilities (integrated rssi scanning tool)

Time synchronization (NTP) with timezones

Over The Air firmware upgrade

Full management with AT Command by serial, socket, SMS, modbus, SNMP, ...

NAT, firewall, DHCP, etc. and other standard router features

4G connectivity supervisor to maintain connection active

Traffic control, TACACS+ (for HTTP, Telnet and SSH), multiuser profiles

IoT ROUTERS



MTX-ROUTER-TITAN II-S

Advanced LTE/4G/3G/GSM/GPRS industrial IoT router























DynDNS

No-IP



MQTT







management



MTX-ROUTER-TITAN II-R

LTE/4G/3G/2G industrial IoT router with dual Ethernet

LTE/4G 4G connectivity







^ WiFi



DIN rail

Rugged connectors Webserver



DynDNS

No-IP

Modbus

MQTT

Datalogger





management



MTX-ROUTER-TITAN

Advanced LTE/4G/3G/2G outdoor industrial IoT router



Serial

gateway

DynDNS

No-IP

IN OUT Relays



USB

Modbus

MOTT













Datalogger



Webserver





Dyn DNS



MTX-ROUTER-TITAN-MINI

Compact LTE/4G/3G/GSM/GPRS industrial IoT router

LTE/4G connectivity

Serial

gateway

DynDNS

No-IP



Modbus

MOTT





IN OUT Relay USB





Webserver



Datalogger



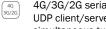
management

MTX-TUNNEL SOFTWARE

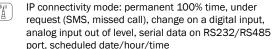
Included in all compatible MTX-Modems

MTX-Tunnel is a firmware that can be run on our MTX modems to turn them into powerful LTE/4G-series, 3G-series or GPRS-series gateways to provide remote connectivity to devices that only have an RS232 or RS485 serial port, to become an intelligent device, or even to send to the cloud sensor data (modbus, temperature, digital/analog signals, pulse counters...).

Connectivity



4G/3G/2G serial gateways: TCP client, TCP server, UDP client/server, accept incoming CSD calls, up to 2 simultaneous tunnel



TCP Services

Web server, Telnet, SNMP, Tacacs+, NTP

Datalogger: MQTT, MQTTs, HTTP, HTTPs, FTP

Shows the status of digital and analog inputs

Change digital output level and relays

Execute AT commands remotely: Telnet, MQTT/MQTTS, SMS, HTTP

Metering, Modbus, Sensors...

868 MHz remote monitoring sensors (LPWAN)

Master for modbus RTU devices, Modbus TCP slave, Modbus TCP to RTU gateway

Relays control

Access to serial devices using 2G/3G/4G and GSM

Astronomical clock

Alarms and Control

Send SMS/MQTT alarm when the level of digital or analog input change

SMS can be sent to up 10 remote users

Execute remote AT commands

Change the status of digital outputs & relays

Customizable SMS commands

Solutions for Dynamic IP

IP session using a SMS or missed call

DvnDNS and NoIP

Private DNS

Security

Authorized phone numbers

Firewall IP, SSL/TLS connections, encrypted configuration

Secure OTAP (remote FW upgrade)

Watchdog hardware

IoT MODEMS



MTX-IoT-S

4G programmable IoT modem with 8x digital I/O, 2x ADC, ULP and battery



USB



IN OUT 8x digital 1/0

2x ADC (W) 4x DAC

Latch [][relav







Dyn Dyn סאוט and No-IP **DynDNS**

4G/3G serial gateway **MQTT**





SMS SMS control

management



MTX-IoT-XS

Basic 4G/3G/2G programmable IoT modem with up to 2x RS232

LTE/4G 4G 3G/2G connectivity



Up to 2x RS232 RS485

1x digital IN OUT input

SMS control

1x digital output

4G/3G serial gateway

GPIO

management

DynDNS Datalogger and No-IP

MOTT

Modbus TCP/RTU



MTX-IoT

Advanced 4G/3G modular programmable IoT modem



(M)

Analog

LPWAN

optional

DynDNS

and No-IP

input









Audio

GPIO 4G/3G serial gateway



optional Relavs management











MTX-T/T2

Basic 4G/3G programmable IoT modem with up to 2x RS232

and No-IP

LTE/4G connectivity







Digital input management

SMS control



MOTT

4G/3G serial gateway







VERTICAL SOLUTIONS: TRANSPORTATION



MTX-StarRail **NEW IN 2021**

Industrial IoT router with dual LTE/4G for railway solutions

- Dual LTE Dual LTE/4G
- 💠 4x USB
- RS232 422/485
- 5x Ethernet Ultra POE Railway

8x DIOs IN OUT isolated 2KV

MQTT/s

- GPS
- Audio
- EN50155 **DynDNS** and No-IP

- Serial gateway

Modbus

server/client

Datalogger

Security



MTX-StarRail Lite NEWIN 2021

LTE/4G IoT router for railway solutions with 2x Ethernet

- Dual LTE Dual LTE/4G
- \$ USB
- RS232 422/485
- 2x Gb ф Ethernet

Webserver

- Rugged ф connectors
- Audio
- Railway EN50155

Datalogger

DynDNS and No-IP

- Serial gateway MQTT/s
- Modbus
- server/client
- Security



MTX-StarRoad II

Industrial LTE/4G router for automotive with 8x inputs, 4x outputs and CAN

1x Ethernet

LTE/4G connectivity

(000)

2x CAN

Linux

- 2x RS232 /RS485
- 8x digital inputs
- 4x digital outputs
- 1x HDMI
- 2x USB

GPS Acceler.

Hardware features

- Automotive enclosure
- ITxPT compliant
- MTX-Titan or MTX-Tunnel software features

MONITORING



MTX-StarSensor NEWIN2021

4G IoT modem for sensor control with IP67, Ultra Low Power and primary batteries

- LTE/4G connectivity
 - - USB
- RS232/485
 - - 4x GPIOs

2x 4-20mA /0-10Vdc

DynDNS

and No-IP

- 2x sensor
 - power supply
 - - **GPIO** IN OUT management
- Ultra Low Power

- Serial IP67 gateway
 - - MQTT/s
- - Modbus & datalogger

Primary

batteries

Sensor management SMS

control

- Hardware features
 - MTX-Titan or MTX-Tunnel software features

VERTICAL SOLUTIONS: METERING



MTX-StarEnergy-M

LTE & 230V industrial IoT modem for metering solutions



4G 3G/2G Serial

communic.

Watchdog









Rugged connectors

TACACS+





Firewall





DIN rail



management



MTX-StarEnergy-E **NEW IN 2021**

LTE industrial IoT modem for metering solutions









Legacy communic.

Watchdog



SMS











management



Firewall

BMS



MTX-StarBMS NEWIN 2021

4G IoT gateway with Niagara for Building Managment System solutions



outputs

Hardware features



















Niagara license





MTX-StarWater NEW IN 2021

NB-IoT industrial IoT modem for water metering







W-Mbus















Industrial temperature





Hardware features



CERVELLO STEM IoT PLATFORM

Cervello Stem is a flexible, customizable, scalable and secured IoT Platform to onboard, control and remotely monitor IoT devices and to integrate them with enterprise and industrial systems and apps.

A platform designed for your needs

SECURITY

Comprehensive security capabilities to satisfy the most demanding requirements.

INTEROPERABILITY

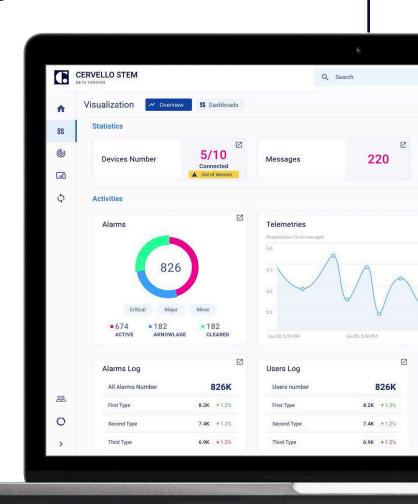
Integrate it with significant amount of legacy operations technologies including SCADA, M2M and other on-premises infrastructures.

SCALABILITY

Access as much or as little data as you need, and scale up and down as it is required by adding new devices.

PROGRAMMABILITY

It has remote control, and flexible and adaptable configurations with drag and drop, and custom code.



CERVELLO STEM IoT PLATFORM: FEATURES

Save your time managing devices



Data Collection

Multiple protocol listeners to collect data from MQTT, CoAP, etc.



Data Processing

Make a lot of aggregation functionalities on data telemetries before it is saved on the fly.

Locate your devices quickly



Location Monitoring

See the past and present location of all of your devices connected to the cloud during the day.



Asset Visualization

Visualize current and past locations of devices with the map widget. It provides a map view of location history for any device or asset.

Automate based on real time data



Command Templates

Create a template of commands with dynamic variables to be assigned to millions of devices.



Rules Engine

Set multiple rules and conditions using an intuitive user interface without coding. Program what to do in case of success or failure.

Remote monitor, get notified in real time



Alarms

Set alarms with different severity levels and expose them to be handled by dashboard operators.



Events

Set and save specific events. Events are not alarms but it is something you need to log when it occurs. For example, a bus makes a stop to pick up a passenger.

Connect anything to Cervello Stem



3rd Party Integrations

Send or receive data from third parties' systems.



No SDK

No need to use any SDK to send or receive data from Cervello. No need to change devices firmware, or use specific topic in MOTT.

Design your dashboard, arrange widgets



Customized Dashboard

Create in a drag and drop fashion real time visualized dashboards to analyze your IoT application current or previous state.



Dashboard Widgets

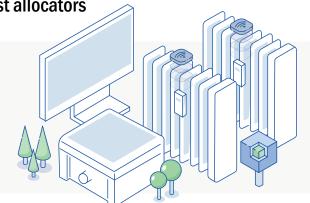
Visualize your data using a variety of components for different solutions with more than 30 components out of the box: charts, graphs, control, maps.

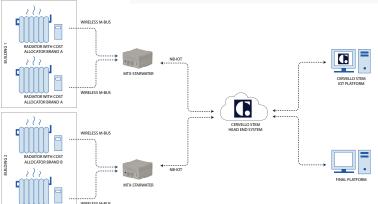
MTX-DIGITALHEAT SYSTEM

Smart IoT system for the telemetry of heat cost allocators

NEW IN 2021

MTX-DigitalHeat is a smart system for the wireless collection of measurements of heat cost allocators and their subsequent sending through narrow-band communications (NB-IoT). A Head End System platform extracts and unifies the information for its delivery to any final management platform.





HOW DOES IT WORK?

MTX-DigitalHeat is a smart system for the wireless collection of the measurements of heat cost allocators and their subsequent sending through narrow-band communications (NB-IoT). Cervello Stem then acts as Head End System, unifying all the frames received and sending them to the customer's final platform or to Cervello Stem IoT Platform.

1. Data collection: MTX-StarWater

Industrial IoT modem with NB-IoT, wireless Mbus, IP67 and primary batteries.

- NB-IoT
- Wireless Mbus
- Internal batteries
- Ultra Low Power
- Industrial temperature
- () IP66/67
- Remote configuration
- Remote update

2. Storage and Transmission

It stores the collected data in the internal memory and sends it, in the configured connectivity windows, via NB-IoT to Cervello Stem IoT Platform.

3. Unification: Head End System

The data frames are transformed in Cervello Stem (Head End System), unifying the protocols and sending a single frame fully integrated with the final platform.

4. Data Visualization & Device Manager

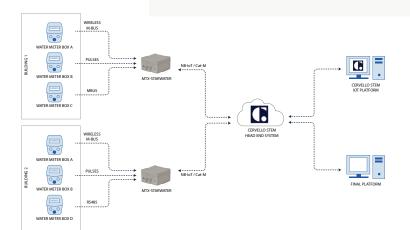
MTX-DigitalHeat System works in a transparent and fully integrated way with any final cost sharing and billing platform. By receiving a single unified data frame, the exclusive dependence on a manufacturer of cost allocators and/or platform provider disappears. In addition, Cervello Stem also works as an IoT platform for the management of devices and data visualization.

MTX-DIGITALWATER SYSTEM

Smart IoT system for the telemetry of water meters

NEW IN 2021

MTX-DigitalWater is a smart system for the collection of water meter measurements and their subsequent sending through narrow band communications (NB-IoT or Cat-M). A Head End System platform extracts and unifies the information to send it, regardless of the meter brand and the final platform.



HOW DOES IT WORK?

The MTX-StarWater device collects all the information from the water meters through different interfaces and protocols, stores the data and sends it to the cloud via NB-IoT/Cat-M in the established connection windows. Cervello Stem then acts as Head End System, unifying all the frames received and sending them to the customer's final platform or to Cervello Stem IoT Platform.

1. Data collection: **MTX-StarWater**

Industrial IoT modem with NB-IoT/Cat-M, IP67 and primary batteries.





Ultra Low

IP66/67

Power













2. Storage and Transmission

It stores the collected data in the internal memory and sends it to Cervello Stem IoT Platform, in the configured connectivity windows, through NB-IoT or Cat-M.

3. Unification: Head End System

Data frames are transformed in Cervello Stem (Head End System), unifying the protocols and sending a single frame fully integrated with the final platform.

4. Data Visualization & Device Manager

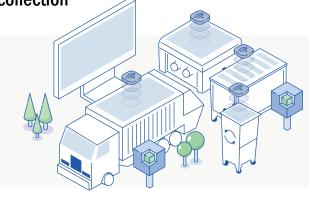
MTX-DigitalWater System works in a transparent and fully integrated way with any final water management and billing platform. By receiving a single unified data frame, the exclusive dependence on a manufacturer of water meters and/or platform provider disappears. In addition, Cervello Stem also works as an IoT platform for the management of devices.

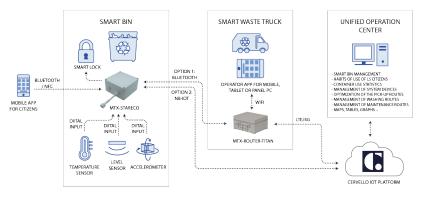
MTX-DIGITALECO SYSTEM

Complete IoT system for the selective waste collection

NEW IN 2021

MTX-DigitalECO System is a complete solution, turnkey and adaptable to different scenarios, for selective waste collection. It includes solutions for filling control, bin opening management, and unified operations system (smartphone apps, route management, operation center, etc.).





HOW DOES IT WORK?

MTX-DigitalECO System consists of four environments. On the one hand, it manages the openings and monitors the status of the bins. On the other hand, it provides connectivity to the truck, along with an app for the operators. In addition, another app for the users identifies every opening. Finally, everything is managed from a unified operations center in the cloud.

1. Smart Bins: MTX-StarECO

The MTX-StarECO modem manages the openings through the identification the users, and monitors the status of the bin (fill level, temperature, movement). The data is sent periodically through NB-IoT or Bluetooth. It works autonomously with batteries.



















2. Smart Trucks

The MTX-Router-Titan provides the truck with LTE/4G and WiFi connectivity. Through an app, the operators can check the route and the alerts, and report incidents.

3. App for Citizens

Users can identify themselves and open the bin using an app on their smartphones or an NFC device (card, tag, mobile app).

4. Unified Operations Center

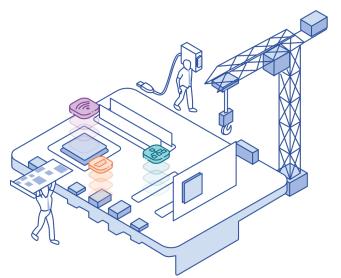
Using Cervello as the core, an integral platform that allows managing the deployed devices, knowing the status of the bins, registering openings, monitoring the collection process and displaying statistics about user patterns, among other things.

• IoT PROJECT DEVELOPMENT

At MTX we have a complete team of R&D engineers devoted to the development of hardware, firmware and software, both for generic solutions and customized projects.

We are specialized in the development of large custom projects for all kinds of sectors (metering, BMS, transportation, waste management, etc.).

We are committed to offering an integral solution to any IoT project. From the design and manufacturing of IoT devices to the programming of our IoT platform, Cervello, we adjust our solution to meet the needs of your project.





OUR DEVELOPMENT TEAM MAKES YOUR PROJECT A REALITY

Flexitron Group has a team of 70 R&D engineers exclusively dedicated to the development of both generic and customized products, to meet the needs of our customers.



20 hardware engineers



10 firmware engineers



40 software engineers



A STRONG TECHNICAL SUPPORT TEAM

We have a team of specialized engineers who will provide you with one of the most advanced technical support in the IoT industry.



17 engineers dedicated to offer technical support



24 hours a day, 365 days a year

CASE STUDIES

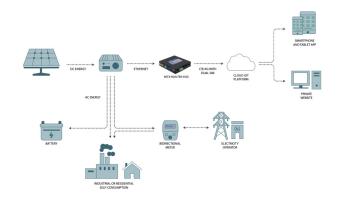


Monitoring of Solar Installations for Self-Supply

For the monitoring of the status of the devices and the consumption and energy generated, a communication equipment is needed to receive data from the inverters and to send it to the cloud, so the pertinent IoT platform can analize it. This is especially relevant in industrial environment solar installations, where fail-proof LTE/4G connectivity is required.

Device: MTX-Router-EOS

Platform: Integrator's platform



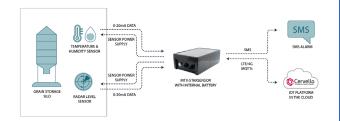


Storage Silos Monitoring

In storage silos there are three variables that need to be monitored periodically. On the one hand, temperature and humidity guarantee the ideal storage conditions. On the other hand, probably the biggest challenge is measuring the level. These silos, normally found in rural, agricultural or industrial environments, are usually devoid of any kind of power supply, so a self-sufficient solution is essential both for the sensors and for the communications equipment that will receive the data and send it to the cloud, where it will be processed.

Device: MTX-StarSensor

Platform: Integrator's platform



CASE STUDIES

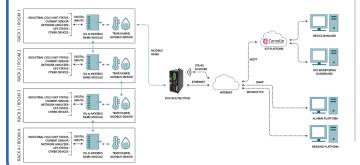


Data Center Monitoring

A typical solution is organized in four rooms, each one with a modbus temperature and humidity sensor and a connectivity module with up to 16 digital inputs and a modbus output to which the sensors and the equipment are connected: an industrial cold unit, a network analyzer, UPS, sensors or any other device with digital outputs. Internet connectivity via Ethernet is established as the main means of communication and, in the event of a network crash, it is necessary that the connectivity device can also access the network using LTE/4G technology.

Device: MTX-Router-Titan II-S

Platform: Cervello Stem IoT Platfotm





Smart Metering for Electric Meters

For smart metering it is important to provide 4G/LTE communications to the meters with a low cost, without taking up too much space in the meter boxes and adapting to the interfaces these devices have. To do this, we need a basic and compact modem that can be easily installed and configured, allowing serial data connectivity (up to 2x RS232 interfaces and optional RS485) in RJ45 ports), and that sends the data via 4G/LTE. Furthermore, it is important that, in the meters that allow it, the modem can be powered from the meter itself thanks to an RJ11 power supply interface.

Device: MTX-IoT-XS, 4G

Platform: Cervello Stem IoT Platform



IOT GATEWAYS



MTX-GTW II-S

Advanced LTE/4G industrial IoT gateway













Firewall



NodeRed























MTX-GTW II-R

LTE/4G industrial IoT gateway with dual Ethernet

Optional 4G modem









WiFi

Java

compatible







Rugged













ACCESORIES

Power Supplies

All kinds of power supplies and Li-Po batteries for industrial devices with IoT and M2M connection.

Antennas

4G, 3G, 2G, WiFi and GPS antennas in several formats and different types of cables, lengths and connectors.

RF and Data Cables

Coaxial and data cables with different types of cables and connectors.

Connector Adapters

RF and data connectors adapters: SMA-FME, DB15 terminal block, DB15-DB9...

DIN Rail Accesories

Accessories for the assembly of DIN rail with MTX devices.



Read the OR code and discover all available accessories for MTX devices in our catalog and website.

SENSORS —

Temperature & Humidity Sensors

Temperature & Humidity sensors with RS232 or RS485 communications. With IP65, ideal for applications requiring ruggedness and reliability.

Proximity & Position Sensors

Ultrasonic sensors with RS232/I2C/ analog communications. With IP67, ideal for applications requiring ruggedness and reliability.

CO2, CO & Air Quality Sensors

Designed to detect concentration of carbon dioxide. Indoor and outdoor models available.

Pressure and Level Sensors

Pressure and Level sensors for the measurement of liquids, gases, etc.



Read the OR code and discover all the sensors compatible with MTX devices in our catalog and website.

MTX WORLDWIDE

R&D Offices

- Madrid (Spain)
- Barcelona (Spain)
- Seville (Spain)
- Cairo (Egypt)

Distributors

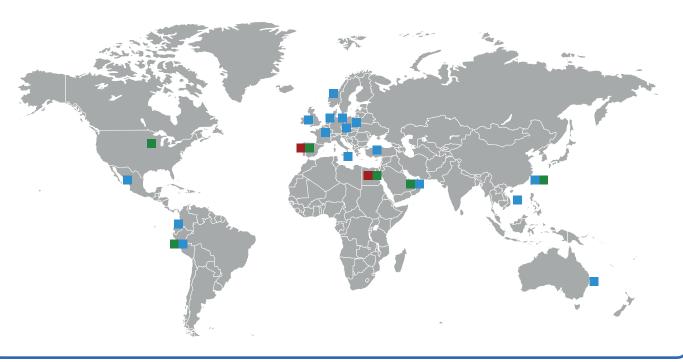
- Syscom-ProREP (France)
- Tyrrell (UK)
- Oritech (Vietnam)
- Fortec (Germany)
- Sigint Solutions (Cyprus)
- Scatek (Turkey)

Commercial Offices

- Madrid (Spain)
- Barcelona (Spain)
- Lisbon (Portugal)
- Dubai (MEA)

- Chicago (USA)
- Cairo (Egypt)
- Lima (Peru)
- Taipei (Taiwan)
- Delta M2M (Denmark)
- Ares M2M (Peru)
- Smart Leader (Taiwan)
- Enertronics (Mexico)
- FCC PS (Czech Rep.)
- Australis (Australia)

- Infopulsas (Lithuania)
- Maritex (Poland)
- Alcom (Benelux)
- Elteco (Norway)
- Amplicon (UAE)
- Liseng (Hong Kong, China)





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