MTX-IoT

Advanced 4G/3G modular programmable IoT modem

The MTX-IoT devices are an innovative and powerful solution for the most demanding IoT applications, enabling 4G/3G high speed cellular data transmission, GSM voice, SMS.MTX-IoT is Java J2ME programmable and have many interfaces (RS232/485, USB, optoisolated IOs, analog-to-digital converter) avoiding the need for further hardware, and reducing costs. Its modular architecture allows optional features like a GPS module, RF card, and analog audio. It is also compatible with MTX-Tunnel, a firmware that can be executed in our modems to use them as powerful gateways or routers.

Main Features

4G 3G/2G	USB 2.0	Up to 2x RS232	RS485	Analog input	GPIO	GPS (optional)	Audio (optional)
Wavenis (optional)	Cervello Stem	4G 3G/2G serial gateway	GPIO management	Relays management	DynDNS No-IP	MQTT/s	Modbus & datalogger

■ HARDWARE ■ SOFWARE

Strenghts & Benefits

- 4G/3G high speed cellular data transmission
- Java programmable.
- A complete set of interfaces.
- Compatible with MTX-Tunnel software, to turn the modem into a powerful gateway or router.
- Compatible with Cervello Stem IoT platform.

Applications

- Ideal for the most demanding IoT applications.
- Its modular architecture allows customization.

Specifications

MTX-IoT 4G	MTX-IoT 3G
EUROPE: Penta-Band LTE: Bands 1, 3, 8, 20, 28 (700, 800,900, 1800, 2100 MHz); Dual-Band UMTS/HSPA+: Bands 8, 1 (900, 2100 MHz); Dual-Band GSM: 900 and 1800 MHz **USA:** Quad-Band LTE: Bands 2, 4, 5, 12 (700, 850,1700/2100 (AWS) and 1900 MHz); Tri-Band UMTS: Bands 5, 4, 2 (WCDMA/FDD 850, 1700/2100 (AWS) and 1900 MHz) **AUSTRALIA:** Quad-Band LTE: Bands 3, 5, 8, 28 (1800, 850,900, 700 MHz); Tri-Band UMTS: Bands 1, 5, 8 (WCDMA/FDD 2100, 850, 900 MHz)	**Five Bands UMTS (WCDMA/FDD) Bands:** 800, 850, 900, 1900 and 2100 MHz **Quad-Band GSM Bands:** 850, 900, 1800 and 1900 MHz
LTE Cat. 1 DL: max. 10.2 Mbps, UL: max. 5.2 Mbps	
HSPA+ Cat.8 data rates DL: max. 7.2 Mbps, UL: max. 5.76 Mbps	**HSDPA Cat.8/HSUPA Cat.6** data rates DL: max. 7.2 Mbps, UL: max. 5.76 Mbps
GPRS Class 12 DL: max. 85.6 kbps, UL: max 85.6 kbps	**EDGE Class 12** data rates DL: max. 237 kbps, UL: max. 237 kbps **GPRS Class 12** data rates DL: max. 85.6 kbps, UL: max. 85.6 kbps
	CSD data transmission up to 9.6 kbps, V.110, non-transparent
SMS: text and PDU mode support	**SMS:** text and PDU mode support

Interfaces

- 4G/3G/2G connectivity
- RS232 (up to 2)
- RS485
- GPIOs
- 3x pulse input counter
- GPS (optional)
- RF expansion (optional)
- Audio in/out (optional)
- Real Time Clock with alarm functionality

Connectors

- 2x SMA F: 4G
- 1x FME M: 3G
- 1x SMA F: GPS
- Micro USB
- 2x RJ11 (only for audio version)
- 1x DB9: RS232
- 1x DB15: RS232, GPIO, pulse input, ADCs
- 1x terminal block (5-ways): power supply, RS485, input
- SIM card

4G antenna | RS232, GPIO, pulse input, ADCs | RS232 | micro USB | 4G antenna | RS485, power supply

Characteristics

- Status LEDs
- DC input: 8 to 50 Vdc
- Temperature range: -30 - 85ºC
- Dimensions: 78.1x66.8x37.2mm
- Weight: <190gr.
- Certifications: CE, FCC, PTCRB, RoHS, ISO9001

Processor

- Flash: 4G 31MB; 3G 10MB
- RAM: 4G 18MB; 3G 10MB
- CPU: 4G ARM11; 3G ARM11

References

PRODUCTS

- MTX-IoT [3-S-N-N]*   000199801393
- MTX-IoT [4-S-N-N]   000199801436
- MTX-IoT [3-S-A-N]*   000199801403
- MTX-IoT [3-S-N-GPS]*   000199801456
- MTX-IoT [3-S-A-GPS]*   000199801448
- MTX-IoT [4-S-N-GPS]   000199801452
- MTX-IoT [4-S-N-W868]   000199801404
- MTX-IoT [4-S-N-GPS] (AT&T)   000199801478
- MTX-IoT [4-S-N-N] (AT&T)   000199801439
- MTX-IoT [4-S-N-N] (AUS)   000199801446

*With MOQ

[C-Variants-Options-Wireless modules]

3: 3G/2G **4**: 4G/3G/2G	**STANDARD MODELS** **S**: both DB9 and DB15 connectors are available **CUSTOM MODELS** **15**: only connector available DB15 **9**: only connector available DB9 **LC**: neither DB9 nor DB15 connectors are available	**N**: no options **A**: analog audio **S**: SuperCap **NOTE**: not all options are available at the same time	**N**: no options **W868**: Wavenis/Emeris 25mW 868MHz **W868LR**: Wavenis/Emeris 500mW 868MHz **W915**: Wavenis/Emeris 25mW 915MHz **W915LR**: Wavenis/Emeris 500mW 915MHz **GPS**: GPS/Glonass (-165dBm) **NOTE**: if using 2 modules, the RS232 (8-wire) port (DB9) will not be available anymore

Features & Compatibility

MTX-IoT			
	STANDARD VERSIONS	CUSTOM VERSIONS (by request only)	
	-S	-15	-9
GPS	*	*	*
RS232 (8-wire)	X		X
RS232 (4-wire)	X	X	
RS485	X	X	X
USB	X	X	X
ADC	x2	x2	
Optoisolated IO	x4	x4	
Counter input	x3	x3	x1
Analog Audio (A)	(*1)	(*1)	(*1)
Internal wireless module	(*1)	(*1)	(*1)

*Optional
(*1) option. See incompatibility table

	3G (3G/2G)	4G (4G/3G/2G)	RS232 (8-wire) DB9	RS232 (4-wire) DB15	RS485	-A (Analog audio)	-S (SuperCap)	Wireless module	GPS module
3G (3G/2G)									
4G (4G/3G/2G)						🟥			
RS232 (8-wire) DB9								(*1)	(*1)
RS232 (4-wire) DB15								(*1)	(*1)
RS485						🟥		(*1)	(*1)
-A (Analog audio)		🟥		🟥					
-S (SuperCap)									
Wireless module			(*1)	(*1)	(*1)				
GPS module			(*1)	(*1)	(*1)				

MTX-Tunnel Software Features

CONNECTIVITY

- 4G/3G/2G serial gateways: TCP client, TCP server, UDP client/server, accept incoming CSD calls, up to 2 simultaneous tunnel
- IP connectivity mode: permanent 100% time, under request (SMS, missed call), change on a digital input, analog input out of level, serial data on RS232/RS485 port, scheduled date/hour/time

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

SECURITY

- Authorized phone numbers
- Firewall IP, SSL/TLS connections, encrypted config
- Secure OTAP (remote FW upgrade)
- Watchdog hardware

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

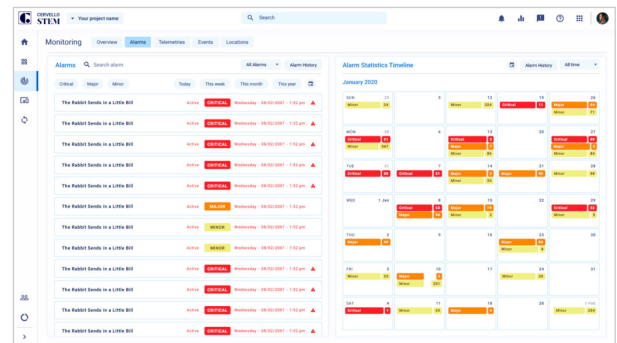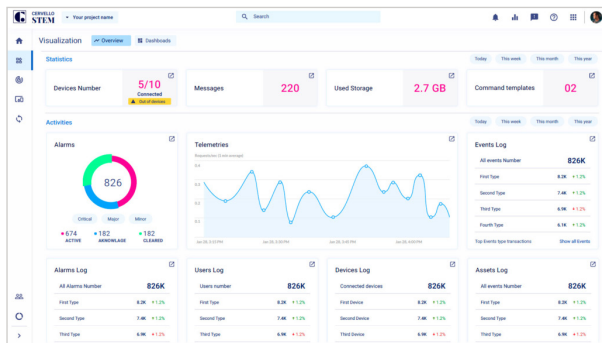## SOLUTIONS FOR DYNAMIC IP

- IP session using a SMS or missed call
- DynDNS and NoIP
- Private DNS

METERING, MODBUS, SENSORS...

- 868 MHz remote monitoring sensors (Wavenis)
- 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

Cervello Stem - IoT Platform

GENERAL FEATURES

- Up to unlimited devices
- Autoprovisioning
- Real time dashboards
- Remote control
- Monitoring engine
- Alarms and alerts
- Rules engine
- Remote update
- Connect engine*
- API Keys*
- Analytics*
- Multi-tenant*
- White labeling*
- Custom admin role*

MONITOR

- Alarms, Events and Incidents
- Tracking*

CONTROL

- Command template
- OTA

DEVICES INVENTORY

- Add single from template
- Add Bulk from template and from autoprovisioning
- Manage: Device template, Groups, Assets and Bulk actions

CONNECT

- Topics*
- Transformation*
- Integration keys*

VISUALIZE

- Dashboards
- Reports

AUTOMATE

- Rules Engine
- Actions
- Triggers

SECURITY

- 2-factor authentication
- SSL for end user application
- Custom admin roles*

*Upgrade required
**Available with compatible devices with MTX-Tunnel or MTX-Titan