GIoE
Edge Computer for IoT Ecosystems

Main features:

- Multiprotocol (wireless and wired)
- Digital/Analog I/O
- Reliable performances
- Interoperable with off-the-shelf devices and software
- Linux Embedded (and suitable for JVM)
- OTA upgradable
- Customizable
- Plastic DIN RAIL case

embedded available protocols

some of the protocols available via USB ports

Designed for several applications envinroment, **GIoE** is a multiprotocol edge computer that allows full configurability, modularity and scalability. **GIoE** can be used in combination with third-party software, running both local or cloud, for the implementation of an integrated management and control system: compliant with «frameworks» (as for OSGI OpnenHab) and tools (MQTT, REST / API, NODE-RED, HomeAssistant, OPC-UA, etc.), as well as with FIN FRAMEWORK by J2Innovation (a Siemens company), a powerful and flexible software environment for designers, System Integrators and OEMs.

GIoE can be used as edge computer but also as smart gateway/hub, equipped with up to 12 communication protocols (customizable outfittings, from basic version to full version). It can run algorithms of all types thanks to its computational capacity. It is able to receive and store data provided by **1G and 2G electricity meters** via Power Line.

General Features	
	ARM Cortex A7 dual core @1GHz processor
	1 (up to 2) GB DDR3 RAM
	8 (up to 32) GB onboard Flash
	up to 128 GB microSDHC internal memory
	up to 128 GB microSDHC externally accessible (without removing enclosure)
	Real Time Clock (72 hours backup)
	Linux Embedded & JVM, OTA upgrade capable, OSGi compliant, FIN™ FRAMEWORK, IBM EDGE and other software package
	MQTT publication/subscription
	Web Server on board for a local interaction for: - gateway/hub/edge computer configuration - local device configuration - data monitoring
	3 push buttons (Power On/off, programmable function key, WPS)
	1 cold reset button
	1 RGB LED for smart visualization programmable events
	4 status LED: 1 power state (power on/battery low), LAN/Internet, LDN (Local Device Network), M2M connection
	1x RGB 40 pin connector for external RGB touch panel (custom adapter needed)
	1x HDMI 1.4 port

Connectivity	
Wired	1x Gbit Ethernet (RJ-45) + 1x Fast Ethernet [10/100 Mbps] (RJ-45)
	2x isolated (5kV) RS485 ports (female socket - mating with pluggable terminal block- screw type)
	1x CAN Bus
	4x USB 2.0 Host Ports *Note: one of this can be used to communicate with electricity smart meters 1G by e-distribuzione, by means of "Smart-Info", or also smart meters 2G using Beeta Power with custom cable; in case of 2G "chain2" (Band C, by e-distribuzione with the following features: C Band, Interface: H1, compliant with CEI CEN / CLC / ETSI / TR 50572 standards; EN 62056-7-5 (updateable for two-way mode); application layer compliant with the DLMS standard COSEM IEC 62056-5-3; data model compliant with the DLMS COSEM standard (IEC 62056-6-1 obis, classes of interfaces compliant with the IEC 62056-6-2 standard).*
Wireless	Embedded Wi-Fi 802.11b/g/n with internal antenna (alternatively, optional, ipex connector for external antenna) optional 802.11ac
	Embedded Bluetooth 2.1/3.0 EDR/4.2 BLE with internal antenna (alternatively, optional, ipex connector for external antenna)
	Embedded NB-IoT (cat NB1) or alternately 2G/3G/4G with SMA side connector; optional GPS inside
	Embedded 169MHz WM-Bus (alternatively, optional, wM-bus 868MHz) with SMA side connector

Input/output	
Input	4xS0 female socket (mating with pluggable terminal block- screw type)
	2x Dry Contact inputs (internal pullup/down) female socket (mating with pluggable terminal block- screw type)
	4x programmable ADC inputs (free combination programmable through software: 0-4 mA, 0-20 mA, 0-5 V, 0-10 V)
	3x RTD sensors inputs (PT100 or PT1000 selectable by DIP-switch)
	2x K thermocouple connectors
Output	2x Open Collector (max 80 Vdc and 80 mA) 3,75 kVrms optical isolation, PWM capable (up to 4 kHz) female socket (mating with pluggable terminal block-screw type)

Environment	
Operating	Temperature Range -40÷85 °C (or 0-50°C if battery operated), RH range 5%-55% not condensing
Storage	Temperature Range -40 ÷ 85 °C (or 0-55°C if battery operated), RH range 5%-90% not condensing

Power	
Input Power	5,5 ~ 24 Vdc input power (external 12 V with battery backup suggested; 3,8 A rated), female socket (mating with pluggable terminal block)
Internal Optional Battery	Internal Optional Battery: 3,7 V 2000 mAh LiPo battery (battery life: 6hrs @1GHz (18hrs @350 MHz) without external devices connected and with not M2M connection)

P2P Encryption	
Wired	Optional Trusted Platform Module (TPM 1.2) soldered chip

Case	
Material	Plastic (ABS or optionally other) 9M DIN-RAIL mount and screws wall mount
Dimensions	Dimensions: 159mm x 90mm x 58mm (without external antennas); weight 0,5 kg

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