

## For mobile and industrial applications



- 1.2GHz Cortex A53 Quad Core, 1GB RAM, 4GB eMMC alternatively up to 128 GB integrated microSD card
- Freely programmable and configurable Linux platform
- Easy cloud connection
- LTE / 4G CAT4 integrated with fallback to 3G / 2G
- GNSS (GPS, GLONASS) integrated
- WiFi and Bluetooth (BLE-Low Energy)
- 1 x 10/100 BaseT LAN connection
- Up to 2 x CAN 2.0A / 2.0B interfaces
- Rich set of industrial I/O ports: RS485, RS232, Digital I/O, analog-in, I-button and sensor interface

The Industrial IoT Gateway RGX-870M is a fanless and RPi-compatible Linux-based computer for IoT and edge computing applications. The field of application of the RGX-870M includes particularly demanding mobile applications, such as in construction vehicles and machines, emergency, special vehicles or even in agricultural machinery. The IoT Gateway RGX-870M has a variety of industry-standard interfaces and a powerful, integrated LTE/4G module that provides fast, wireless access to the Internet. The current position data is precisely supplied by the integrated GNSS/GPS/GLONASS system.

### Wireless Network Interfaces

The connection to the cloud can be made wirelessly via the integrated LTE/4G interface or via an integrated WLAN module. A ready-to-use pppd system or, alternatively, a high-speed QMI interface provides a fast and easy wireless connection to the Internet. The integrated WLAN and the Bluetooth low-energy interface have a combined external antenna connection. The robust SIM card holder is accessible from the outside. The LTE/4G module has an automatic fallback feature for 3G/2G if no 4G network is available. The modules can be reset via a software interface. This enables reliable 24/7 operation.

### Rich Set of Interfaces

The IoT Gateway RGX-870M is available in several product variants and enables the seamless connection to various interfaces on site as well as the coupling of sensors. Up to 2 CAN ports support the standards CAN 2.0A and 2.0B. In addition to the Ethernet LAN connection, further RS485, RS232, 1-wire and sensor interfaces are available. In addition, USB and digital inputs and outputs as well as analog inputs are available. The intelligent power supply of the RGX-870M enables a software-based, safe shutdown of the system.

### Flexible Debian 9 - Stretch Linux operating system

The IoT Gateway RGX-870M is freely programmable and configurable with a Debian-9 / Stretch Linux platform, making it easy and cost-effective to meet customer-specific requirements. A coupling to the common cloud platforms such as Microsoft Azure, Amazon AWS, Cumulocity, Google Cloud Platform, etc. is easily possible. For fast and cost-effective software development, all software packages and tools of the RPi world are available. A variety of software packages and protocols such as Node-RED, GPSD, MQTT, PPPD, Apache, Docker, REST and others are readily available and have proven themselves in daily operation of the RGX-870M. All interfaces such as CAN bus, RS485/232, DIO, sensor and 1-Wire are controlled via standard APIs or standard Linux device interfaces. The powerful ARM quad core processor with 1.2GHz clock ensures a fast execution even in demanding applications. This is complemented by the generously dimensioned mass storage with an integrated eMMC memory of 4GB or with integrated microSD card up to 128GB.

	RGX-870M CAN	RGX-870M FLEX
<b>Linux Operating System</b>	Debian 9/Stretch based Raspbian system with full access to software, tools and know-how of the Raspberry Pi	
<b>Processor</b>	1.2GHz Cortex A53 Quad core	
<b>Flash</b>	4 GB eMMC onboard alternatively up to 128GB microSD onboard Flash memory (factory option)	
<b>Main memory</b>	1GB Low Power DDR2 memory	
<b>LTE/4G</b>	CAT4 150MBit/s download, 50 MBit/s upload (maximum values) Dual-Band TDD-LTE B38/B40, Five-Band FDD-LTE B1/B3/B7/B8/B20, Dual-Band UMTS/HSDPA/HSPA+ B1/B8, Dual-Band GSM/GPRS/EDGE 900/1800 MHz Power and Reset of the module can be controlled independently via software	
<b>4G antenna connector</b>	SMA female connector, Optional: auxiliary antenna connector, optional FAKRA connector	
<b>GNSS (GPS, GLONASS)</b>	Protocol: NMEA-0183, GPS supports MS/UE-based, MS/UE-assisted and hybrid modes with AFLT (CDMA), NMR (GSM), and MRL (UMTS, WCDMA, LTE), standalone and network-aware modes, A-GPS Accuracy: 2.5m (CEP50) TTFF (Open Sky), Hot start <1s, Cold start 35s, GPS: Cold start sensitivity: -148dBm, Tracking sensitivity: 159 dBm, GLONASS: Tracking sens. -158 dBm	
<b>GNSS antenna connector</b>	SMA female connector, integrated power supply for active antennas, optional FAKRA connector	
<b>Integrated WiFi</b>	Optional WiFi 802b/g/n with external antenna connector (combined with external Bluetooth antenna if option is present)	
<b>Integrated Bluetooth</b>	Optional Bluetooth V4.1, V3.0+HS, V2.1+EDR with external antenna connector (combined with external WiFi antenna if option is present)	
<b>CAN-Bus, 2.0A/2.0B</b>	2	0/1/2
<b>Network</b>	1 x 10/100 BaseT Ethernet Port	
<b>USB Host</b>	2 x USB host 2.0 high speed 480MBit/s, Power supply of each USB port can be controlled by software So the USB device can be reset by software without user intervention	
<b>RS232 Console</b>	1 x RS232 - Console interface	
<b>RS232 / RS485</b>	-	0/1/2/3/4 isolated/non isolated RS485 interfaces or RS232 interfaces (RS485 12MBit/s speed available)  additionally 0/1 nonisolated RS485 interface or RS232 interface (BT is disabled with this additional 1 serial interface option present)
<b>Digital inputs</b>	8 digital, isolated inputs	0/4/8/10 digital, isolated inputs
<b>Digital outputs</b>	4 digital outputs	0/2/4/6 digital outputs
<b>Analog inputs</b>	-	Up to 4 analog inputs 0..5V, 0..10V, 0..20mA
<b>HDMI Port</b>	Optional: HDMI Interface Typ A connector	
<b>RTC</b>	Battery-buffered RTC	
<b>Sensors integrated</b>	3-Axis acceleration: +-2G,+-4G,+-8G, Temperature sensor: -40°C..+85°C opt.: 6 axis gyroscope with acceleration sensor and Digital Motion Prozessor™	
<b>iButton (1-Wire)</b>	-	0/1/2
<b>Sensor Port</b>	-	0/1/2 Port(s) for external sensors like temp./hum. lum., gyroscope etc.
<b>Status LEDs</b>	1 x Power on, 1 x eMMC access, 4 user-programmable LED's LTE/4G status	
<b>Hardware Watchdog</b>	Hardware Watchdog for automatic reboot trigger	
<b>ActionButton</b>	Hidden button for starting a user-specific program or script	
<b>Power supply</b>	Wide range DC input 8..40 Volts with polarity protection, Industrial connector very low power consumption from ~ 3 watts	
<b>Powercontrol</b>	Optional: Intelligent power control by means of a power control input The power supply can be switched on and be switched off by software, e.g. by ignition line	
<b>Temperature</b>	Storage: -40 °C .. + 85 °C, Operating: -25 °C .. + 70 °C non-condensing Optionally extended temperature range -30 °C .. + 70 °C non-condensing, Variable temperature-controlled system clock control	
<b>Case</b>	Sturdy aluminum housing, Dimensions: ca. 102 x 95 x 38 mm	
<b>Mounting options</b>	Mounting brackets, DIN-Rail holder	