

For Mobile and Industrial Applications, Long-term available



- 1.2GHz Cortex A53 Quad Core
- 1GB RAM, 4GB eMMC or up to 128 GB integrated microSD
- Debian 9 - Stretch-based Raspbian Linux support  
RPI software compatible, freely programmable
- IP 67 protection class
- 4G/LTE CAT4 integrated with fallback to 3G/2G
- GNSS (GPS, GLONASS) integrated
- Up to 2 x CAN 2.0A / 2.0B interfaces
- 1 x 10/100 Base-T LAN connection
- WiFi and Bluetooth (BLE-LowEnergy)
- Manyfold industrial I/O ports, digital, analog, 1-Wire
- Programmable in C/C++, Node-Red and many others

The IPX-860 Embedded IoT Gateway Computer is a fanless and RPi-compatible Linux-based rugged and IP67 protected computer designed specifically for mobile and industrial applications. The IPX-860 allows easy and secure connection of vehicles, machines, equipment and sensors to the cloud. The platform is ideal for tasks such as automation applications to capture, process, store and transmit on-site data. Remote monitoring, predictive maintenance, process control, data acquisition and automation are so easy and individually realizable. The IPX-860 system meets the most important requirements for customers in a variety of industrial applications. It is an ideal host for custom application software.

## 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 is externally accessible. The LTE/ 4G module has an automatic fallback feature for 3G/2G if a 4G network is not available. The modules can be reset via a software interface. The IPX-860 is designed for reliable 24/7 operation.

## Rich Set of Interfaces

The IPX-860 IoT Gateway Computer enables seamless connection to a variety of interfaces on site as well as the coupling of sensors. Up to 2 CAN ports support the CAN 2.0A and 2.0B standards. In addition to the Ethernet LAN connection, RS485, RS232, 1-wire, digital inputs and outputs, USB and sensor interfaces are available. The intelligent power supply of the IPX-860 enables a software-based shutdown of the system.

## Flexible Debian 9 - Stretch Linux operating system

The IPX-860 embedded computer supports the Raspbian-based Debian 9/Stretch Linux system. All interfaces, such as the CAN bus and serial interfaces, as well as the digital inputs and outputs are controlled via standard APIs or standard Linux device interfaces. The system offers high flexibility by supporting a variety of different programming systems. Depending on your preference, programming can be done in C / C ++ or with the Node-Red system, Python, Java, or other popular programming systems. Prototype applications of a RPi system can be directly adopted. The RPI software compatibility also allows access to a huge knowledge base about the system. This results in significant time and cost savings in implementing the application system.

	IPX-860 CAN	IPX-860 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	
<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	
<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) TTF (Open Sky), Hot start <1s, Cold start 35s , GPS: Cold start sensitivity: -148dBm, Tracking sensitivity: 159 dBm, GLONASS: Tracking sens. -158 dBm , supports standalone mode	
<b>GNSS antenna connector</b>	SMA female, integrated power supply for active antennas	
<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>LAN</b>	1 x 10/100 BaseT LAN Port, optional available by means of breakout cable (not combined with USB)	
<b>USB Host</b>	1 x USB host 2.0 high speed 480MBit/s internal for system usage, accessible through removable cover 1 x USB host optional available by means of breakout cable (not combined with LAN)	
<b>RS232 Console</b>	1 x RS232 - Console interface, accessible through removable cover	
<b>RS232 / RS485</b>	1 x RS232 / RS485 Universal	2 x RS485 or 1 x RS485 and 1 x RS232
<b>Digital inputs</b>	4 digital isolated inputs	0/2/4 digital isolated inputs
<b>Digital outputs</b>	4 digital outputs	0/2/4 digital outputs
<b>RTC</b>	Battery-buffered RTC	
<b>Sensors</b>	Gyroscope, Acceleration etc. (opt.)	
<b>Optional</b>	I2C or One-Wire Interface	
<b>Status LEDs</b>	1 x Power on, 1 x eMMC access, 1 user-programmable LED's LTE/4G status, accessible through removable cover	
<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	
<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, Standard operational: 0°C..+70°C non condensing Wide Temperature models, operational extended: -25°C..+70°C non condensing, -30°C..+70°C non condensing with onboard microSD	
<b>Protection Class</b>	IP67	
<b>Connector IP67 protected</b>	30 pin connector with screw lock	
<b>Case</b>	Sturdy plastic case with 4 attachment points, Dimensions: ca. 145/152 x 150 x 50/55 mm	
<b>Mounting</b>	Case with integrated fastening flaps	