Since 1948
15 YEARS
Made in Germany

MC TECHNOLOGIES
We connect the industry

MC Technologies GmbH
LINECARD

We connect the industry

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NEW: MC MNR - Multi Network Router

- **Powerful and future-proof:** Equipped with a quad-core processor (up to 2 GHz) and AI hardware support.
- **Maximum security:** Benefit from a 5-year update guarantee for maximum cyber security.
- **Industrial quality**: High-quality components guarantee durability and robustness.
- **Critical applications**: Mobile redundancy ensures uninterrupted connections.
- **Flexibility**: Open operating system for free programming and customisation.

5G LTE 450 MHz

OpenWrt WIRELESS FREEDOM

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Variants

Audio interface
+ 2x RJ45 Port
+ 2x M12 Port

Versions (nets):
- 5G / 4G/LTE
- 4G/LTE

SFP interface
+ 4x RJ45 Port

Versions (nets):
- 5G
- 4G/LTE
- 2x 4G/LTE
- 450 MHz
- LAN

Technical Data

General

- Dimensions (B x H x T): 44 x 105 x 124 mm
- Weight: approx. 500 g
- Supply voltage: 8 to 30 V DC
- Storage temperature: -40 °C to +85 °C
- Housing: Aluminium, Protection class IP20
- Mounting: Top-hat rail or wall mounting

Controller, memory and operating system

- Processor: ARMv8, 64bit, Cortex A5x, Quad Core, up to 2 GHz
- DRAM: 2 GB LPDDR4
- Memory: 16 GB eMMC
- Operation system: OpenWRT 24 (Free, programmable and configurable embedded Linux system)

Interfaces

- 4x RJ45 + SFP or
  2x RJ 45 + 2x M12 X-coded 10/100/1000 Base-T(X) in accordance with IEEE 802.3 + Audio M8 Microphone input and loudspeaker output for calls via the LTE module
- USB 3.0
- RS-485 on IO interface
- Analogue: 2x 0-30 V, 2x 4-20 mA
- Digital: 4 Inputs and 4 Outputs (each 0-30 V)
- External Memory: Micro SD card slot
- GNSS: GPS, GLONASS, BDS, Galileo and QZSS
- WLAN: 2.4 GHz
- SIM: 2x Nano-SIM (eSIM optional)
- Up to 8 antenna connections

4G/LTE industrial router for remote maintenance and secure networks

Our 4G LTE industrial routers are compatible with all global mobile phone standards and are equipped with a Quectel module. The mobile routers can be controlled via SMS, and alarm messages and GPIO events can be sent via SMS and email.

An integrated firewall and VPN transmission technologies comprehensively protect the application against unauthorised access. Simple, user-friendly configuration of the router is possible both locally and remotely via the integrated web server or an XML file. Device-specific events are recorded in an integrated logbook and, if required, on an internal SD card or plugged-in USB stick.

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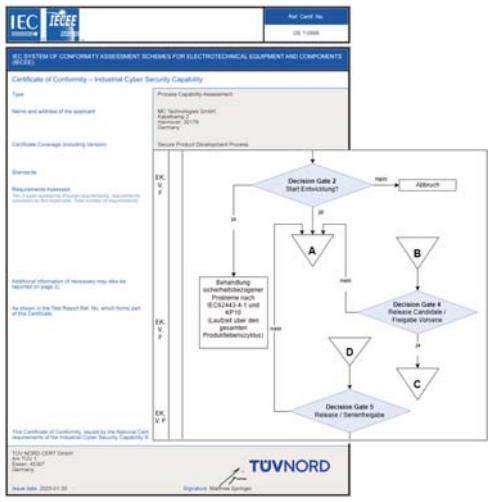
IT security at MC Technologies

MC Technologies is the digitalisation expert for industrial data communication.

IT security features of our industrial routers

- Integrated firewall
- Protection of unauthorised software downloads with Secure Boot
- Access and user management
- Password protection with defined rules
- Cryptographic password encryption in accordance with BSI TR-2102
- Patch and update management
- Protected OS on delivery through pre-configuration
- **Certified development process in accordance with IEC 62443-4-1**



4G/LTE MC100 Gateway SensorBox M-Bus

The MC100 SensorBox with M-Bus extension is a system for control and regulation technology as well as for control and visualisation systems. It is equipped with a large number of interfaces and can be expanded modularly with additional slots. OpenWrt Linux is used as the operating system and the device can be programmed using various programming languages such as C/C++, Python™, Java™ and Node-RED™.

It is a central data collector for the following **use cases**:

- Meter readings are collected in the gateway and, depending on the settings, sent daily, weekly or monthly to servers or a web portal specified by you.
- Ideal solution for data collection for billing water, heating and cooling.
- Data transfer to almost all accounting programmes possible.
- Monitoring of pumps in the water circuit, replacement of expensive PLC controls.

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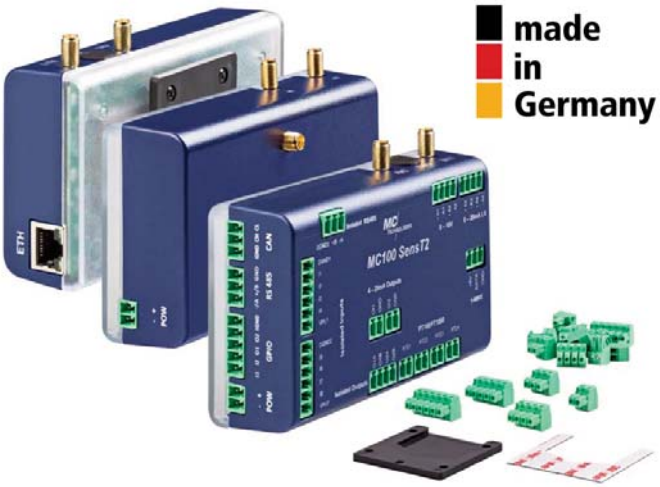
4G/LTE mobile data terminals and gateways for M2M/IoT

The **MC100** is an industrial mobile radio multifunctional platform, OpenWrt Linux-based, freely programmable, network-compatible and available in various versions.

Typical applications include remote maintenance access to industrial control systems or machine components via the mobile phone network and the transmission of data from Ethernet-capable machines and systems to a control centre.

The MC100 is equipped with a lean Linux Board Support Package (BSP) and thus provides drivers for all interfaces, among other things. The Ethernet data terminal functionality via the mobile network is already integrated in the basic version. Configuration is carried out via an integrated web interface.

Customers can develop their own applications on the MC100 platform. This is possible in C/C++, Java™, Python™ or Node-RED™, for example.



Application example:

The MC Technologies **data terminals** can be used in a variety of ways for applications via LTE. Classic AT commands can be used, for example, to send short messages via SMS, HTTP(S), MQTT or SMTP.

We offer a range of standard terminals with different interface variants, with GPS or with very low power consumption.

In addition, the **MC92** alarm terminal can also send commands (such as an emergency shutdown).

Application examples of our M2M/IoT devices:

- Telemetry of vending machines.
- Control of passenger information displays.
- Remote maintenance/monitoring of machines and systems.
- GPS position data transmission (Tracking).
- Data logger, e.g. for temperature monitoring.
- Direct network access to vehicles and GPS tracking.

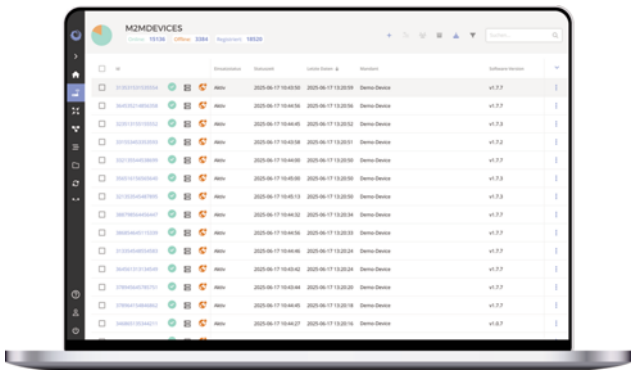
M2MGate - Your fleet management system for IoT devices

With the M2MGate remote management system (RMS) from our partner INSIDE M2M, we offer a reliable, cloud-independent platform that works seamlessly with our hardware.

Whether monitoring, remote maintenance or device management – M2MGate provides everything that industrial communication needs today:

- Secure and scalable data transmission
- Simple configuration and management of devices in the field
- Flexible and customizable cloud or on-premise solution

Perfect for anyone who wants to network their machines or systems more smartly and efficiently



Key features:

Flexibility & scalability

- Customizable user rights and device assignment for different company structures.
- Support for cloud and on-premise solutions for different requirements.
- Easy integration of new devices and software updates without manual intervention.

Security & Compliance

- Secure access through VPN management and encrypted data transmission.
- Logging of activities for complete traceability.
- Protection against unauthorized access through detailed user management.

Real-time monitoring & control

- Live data on connection status, location, firmware versions and more.
- Ability to identify problems quickly and rectify them directly.
- Ensuring optimum performance of all devices.

https://mc-technologies.com/m2mgate/

Visualization

Monitoring, operating and managing systems and buildings with the EDL portal

EDL stands for EnergieDienstLeistung. The EDL internet portal provides a user-friendly platform with which systems and buildings can be efficiently monitored, controlled and managed. It serves as a central tool for the management of all relevant building data - from process information and energy monitoring to technical facility management.

Energy data can also be recorded via the control system and processed further in the portal (e.g. analyses, reports, utility bills or invoice audits, KPIs, CO2 balances, etc.).

An EDL box (MC100 SensorBox M-Bus or MC100 Gateway) is used to record data in smaller buildings without control systems.

The box offers the following options:

- Recording consumption data (meter readings)
- Recording alarms and faults
- Recording physical values (e.g. temperatures)

https://mc-technologies.com/en/visualization/

AI-supported monitoring and optimisation of industrial plants

AI gives you deep insights into the condition of your machines and systems. While humans are limited by their senses, AI analyses machine data precisely and identifies errors or deviations in real time. This enables process optimisations that were previously difficult or expensive to achieve.

KI-ready:

Our routers and gateways have powerful processors that make it possible to execute complex AI algorithms directly on the hardware.

A key advantage of this architecture is the processing of data directly at the source (edge computing). This reduces latency times, conserves bandwidth and increases security, as sensitive data does not have to be constantly transferred to the cloud.

Applications for our AI-enabled routers and gateways can be found, for example, in Industry 4.0, where real-time analyses and adaptive network control are required.

Unleash the full potential of your data

Use your unused data treasures to make your machines and systems more efficient and profitable. Optimize processes, increase productivity and maximize performance – all thanks to AI-supported process optimization!

Modern maintenance with predictive maintenance

Maximize your machine uptimes and reduce costs with AI-supported error detection. Identify wear and problems at an early stage – before they become visible or audible – and benefit from these advantages:

- **Cost savings**: Less unplanned downtime and lower maintenance costs.
- **Increased efficiency**: Optimized use of resources and longer machine running times.
- **Improved planning**: Targeted maintenance minimizes production downtimes.
- **Longer service life**: Protects and maintains the value of your systems.

Process optimization - keeping an eye on your production

Discover valuable insights into your production processes by analyzing and intuitively displaying large volumes of data. With intelligent IoT hardware, your production is controlled automatically, precisely and efficiently. Unlock hidden potential and benefit from the following advantages:

- **Cost reduction**: Save on unnecessary operating costs.
- **Resource efficiency**: Reduce your material consumption.
- **Fault prevention**: Prevent defects and production downtimes.
- **Energy savings**: Reduce your energy consumption by up to 30 %.

The 4.0 upgrade for your industry - optimise now!

Do you have any questions? Please feel free to contact us: Phone +49 172 523 13 38

Mobilfunk-Antennen - immer den besten Empfang

We offer antennas for a wide variety of mounting situations, whether for soldering or for magnetic, adhesive, screw or mast mounting, and for a wide range of applications from simple SMS applications to complex, data-intensive applications in the LTE/5G network. Our range also includes antennas in the ISM and VHF/UHF range, as used in building technology (wM-Bus) or marine radio.

All antennas can be customised to your desired cable length or with other connectors.We also offer customised cable assemblies and customer-specific solutions. With our large selection, you are guaranteed to find the ideal solution for your specific requirements.

We will be happy to advise you and find the optimum solution for you.

smart collection

PANORAMA ANTENNAS DISTRIBUTOR

REEL

Application examples of our antennas:

- Smart Farming: Utilise the latest technologies for more efficient and sustainable farming.
- Vehicle technology: Benefit from robust and powerful antennas for vehicles of all kinds.
- Traffic technology: Ensure smooth communication and safety in traffic.
- Railway technology: Rely on reliable antennas for use in railway traffic.
- Building technology: Improve the connectivity and efficiency of your buildings with our antennas.
- Renewable energy: Support sustainable energy projects with our specialised antenna solutions.
- Smart manufacturing: Our antennas enable efficient, flexible and cost-saving wireless communication between machines and systems, significantly increasing productivity and sustainability.

Quectel M2M/IoT wireless modules

Quectel offers high-performance modules in the areas of mobile radio (from GSM, NB-IoT to LTE and 5G) and GNSS (GPS, GLONASS, BeiDou, Galileo and QZSS).

Products with Java VM as well as Wi-Fi and Bluetooth are a matter of course to enable IoT connectivity in every market and every industry. The modules are available in LGA, LCC, M.2 and mini PCIe variants.

MC Technologies has been your partner in wireless modules for data communication for over 20 years. Not only do we offer a wide range of products, we also use the modules in our own router, gateway and terminal products.

We are happy to pass this experience on to you, e.g. with design-in support. With us, you have a personal contact who is a specialist in the subject. And on site if required.

Cavli M2M/IoT wireless modules

Cavli Wireless is a company that specialises in the development and production of cellular IoT modules. These modules are equipped with an integrated eSIM and offer worldwide connectivity thanks to the Cavli Hubble platform.

Cavli product portfolio:

- Wireless modules for 5G, 4G, NB-IoT, LTE-M technologies and Smart Modules
- Wireless modules for global use
- The modules feature integrated GNSS, low power consumption, compact form factor, power saving mode and eSIM
- Cavli Hubble Plattform: Platform for IoT connectivity, device management and monitoring

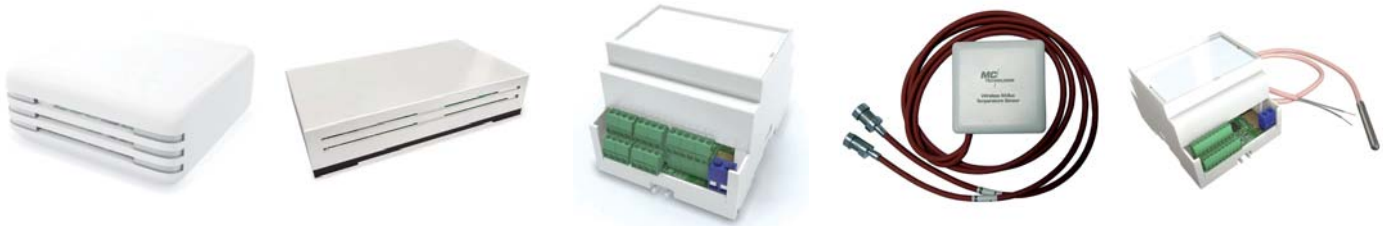
Wireless universal sensors with wireless M-Bus or Sigfox

Receive and collect data wirelessly in the building: Our wireless, battery-operated sensors make it possible.

Wireless measurements of temperature, humidity, pressure, flow rate or gas are carried out via corresponding sensors.

Convenient data processing via MQTT, OPC UA and FTP are just one practical application example.

The sensors are an ideal addition to our MC100 SensT2, MC100 SensorBox and MC100 wM-Bus.



Cable assembly

High quality cable assembly according to your requirements - realized quickly, reliably and cost-effectively

- We advise you from the initial idea, through design-in to series production.
- We assemble individual strands, simple connecting cables and complex cable harnesses for you, from one up to large series.
- We crimp, solder, assemble, mould and label according to your according to your requirements.
- We test your cable assemblies in consultation with you or according to the rules of technology.
- We offer you consignment warehouses, framework agreements, KAN-BAN and customised packaging.

References:

For which application areas does MC Technologies customise?

MC Technologies offers cable assembly for a wide range of applications. These include the building automation and mechanical engineering industries, medical technology, the aerospace industry and the telecommunications and audio/video sectors. We can develop and manufacture customised solutions for any area of application.

As a customer, you benefit from our expertise, our flexibility and the high quality of our products. We work closely with our customers to ensure that our cable assemblies are customised to their requirements and function optimally.

Why is MC Technologies the right partner for cable assembly?

We have been manufacturing at 5 locations (Germany, Poland, Portugal, Asia) for more than 30 years and can therefore offer a very wide range of products. Short-term requirements can be realised as well as cost-effective procurement in Asia. In addition, 2 contact persons with many years of experience are available to answer technical questions at any time.

Connectors

MC Technologies GmbH is your personal distributor for industrial connectors from well-known manufacturers.

We are a certified distributor of leading manufacturers such as binder and JST. Many connector types are available from stock to ensure security of supply, customised delivery batch sizes and optimum conditions for you.

We are also happy to advise you on the selection of the right type and design-in for your application.

Further manufacturers: Conec, FCT, IMS, Lemo, Molex, Neutrik, ODU, WAGO

Customised solutions

By working together with binder solution, we are able to develop a customised electromechanical solution from your idea.

Core competences

- Product design in appearance and function
- Validation of the product idea through to series production
- Prototypes and series design through to series production

Special features

- Solution-orientated consulting
- Defined contact persons
- Agile project management
- High flexibility and short distances
- Cost transparency

EMS service

We are your service provider for SMD and THT PCB assembly of samples and small series in industrial quality. We also offer you the service of component rework. We rework incorrectly assembled PCBs or realise complete conversions in small series.

As a competent specialist in the field of sample, prototype and series assembly, we create customised solutions for our customers in the shortest possible delivery time - our motto: "Your project is our challenge."

Excerpt from our range of services:

- Procurement of solder paste stencils and printed circuit boards.
- Single-sided and double-sided assembly of printed circuit boards (SMD and THT).
- Complete apparatus construction including programming (flashing) and final testing, according to your specifications.
- Programming (flashing) of assemblies according to your specifications.
- Rework of assemblies.

References

ABB
BOPLA A Phoenix Mecano Company
DB
EMERSON
EMH metering
IVU TRAFFIC TECHNOLOGIES
MENNEKES MY POWER CONNECTION
RMG
WMF
schaerer swiss coffee competence
LIEBHERR

Your contact persons

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Company profile

We are a leading European provider of innovative solutions for:

- Machine-to-machine (M2M) hardware and end-to-end solutions
- Mobile-based remote maintenance and remote control

Thanks to our many years of experience we can offer:

- A broad, attractively priced range of products meeting German quality standards
- Development of the optimum solution specifically tailored to your application
- Competent technical advice on product selection and design-in
- Quick, professional implementation of all associated commercial and logistics processes
- Comprehensive service concepts for our products and solutions

We cover a wide range of products:

- GSM/GPRS/UMTS/HSPA+/LTE/5G/GPS modules, terminals, gateways, routers and antennas
- Customer-specific cable assemblies
- Connectors for industry
- Automation technology
- Software development

CERTIFICATE

MC TECHNOLOGIES

ISO 9001:2015

DEKRA Certification GmbH hereby certifies that the organization

MC Technologies GmbH

Kabelkamp 2, 30179 Hannover, Germany

for the scope of certification:

IoT Solutions for mobile communication, distribution of electronic components and design and production of cable harness.

has established and maintains a quality management system according to the above mentioned standard.
The conformity was adduced with audit report no. A22121202.

Certificate registration no.:	50508329/6
Validity of previous certificate:	2023-05-15
Certificate valid from:	2023-05-16
Certificate valid to:	2026-05-15

Language translation

Dr. Rolf Krökel
DEKRA Certification GmbH, Stuttgart, 2023-04-25

DEKRA Certification GmbH * Handwerkstraße 15 * D-70565 Stuttgart * www.dekra.de/audits Page 1 of 1

The contractual quality of our goods is based exclusively on our product specifications in their current version.

We make no representation or warranty as to the suitability of our goods for any particular purpose. We expressly disclaim all warranties relating to the use of the goods sold by the buyer or its customers, including any warranty that may be implied by law, custom or tradition.

08/2025

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