Professional security concept based on Intels® IoT platform Moon Island

Effortless integration into the Automation Network as standard IO Field Device

Rapid modelling of data paths between Field and Cloud with Web-IoT Editor

Direct OPC UA / MQTT communication to IoT capable Field Devices parallel to the PLC

netIOT Edge devices securely connect automation networks to a Cloud. As IO field devices they are in cyclic data exchange with the PLC and communicate furthermore with IoT capable IO field devices directly. The key data from the field floor exchanged in real time will be transported back and forth to the Cloud or any IoT directed application.

The devices are designed for a continuous operation over Intra- or Internet. Security mechanisms such as physical separation of the automation and cloud network, the execution of signed firmware and apps only and encryption techniques of the latest standards are securing the data integrity in every way.

The web based IoT connection editor Node-RED builds the graphical user interface for modeling the data flow between automation devices and Cloud. Surprisingly easy impressive data apps and profiles are created in minutes with preprogrammed ‘Nodes’ as function blocks. The nodes OPC UA and MQTT address IoT field devices directly and allow the data access down to the sensors and actors. The Cloud communications are MQTT based.
netIOT Edge - Cloud gateways for Automation Networks

Maximum Security
- Start of signed software only protects against manipulation and secures device integrity
- Physical separation of automation and Cloud network avoids mutual attacks
- Data encryption according to the latest state of technology against electronic eavesdropping and data theft

Seamless Integration
- Compatible with existing installations for simple upgrade
- Seamless integration with standardized device description files
- No programming skill necessary, simple configuration of the IO size is enough

Easy Engineering
- Drag-and-drop principle, no programming necessary, just configuration
- Data wiring with given function blocks shortens the application construction time
- Functions encapsulated in nodes prohibits creating malware

Direct IoT communication
- For devices with OPC UA and MQTT protocol support
- In parallel to the PLC over a direct communication channel
- With data semantics for easy abstraction in the Cloud

The gateway as a central element in the netIOT offer negotiates between automation devices, cloud and applications

netIOT is a technology and service offer with the aim of exchanging data of components of an automation network with Cloud or IoT directed applications. It opens the door for cloud-based enterprise communications down to the field level.

netIOT is carried by the domains netIOT Interface, netIOT Edge and netIOT Service. netIOT Service provides development, engineering, consulting and training assistance for all matters around Cloud and IoT. netIOT Edge provides the central network access via gateways and is responsible for data mining, preprocessing and negotiation. The domain netIOT Interface focuses on IoT enabled netX network controllers and communication modules that are capable of transmitting key telemetry data over IoT protocols in addition to their IO data.
**Technical Data / Product Overview**

**Edge Gateway „Connect“**
- **Application**: Data mining and negotiation, Data preprocessing
- **Field protocols**: PROFINET, EtherCAT
- **Cloud protocols**: MQTT Client
- **IoT protocols**: MQTT Broker, OPC UA Client
- **Data wiring**: Node-RED
- **Platform**: Intel® Moon Island, WindRiver® Intelligent Device Platform XT
- **IoT processor**: Intel® Quark X1021 @400Mhz
- **LAN Ethernet**: 2 x 10/100Mbit
- **WiFi**: yes
- **Display**: DVI-I oder DP
- **Digital I/Os**: 2
- **USB**: 2 x USB 2.0
- **Serial**: 1 x RS232/485
- **Dimensions (L x W x H)**: 100 x 22.5 x 115 mm
- **Operating temperature**: 0 °C ... +50 °C
- **Power Supply**: 18 - 30V DC

**Edge Gateway „Remote“**
- **Application**: Data mining and negotiation, Data preprocessing, App based field device configuration, Wi-Fi networking
- **Field protocols**: PROFINET, EtherCAT, PROFINIBUS, Modbus RTU, Modbus TCP
- **Cloud protocols**: MQTT Client
- **IoT protocols**: MQTT Broker, OPC UA Client
- **Data wiring**: Node-RED
- **Platform**: Intel® Moon Island, WindRiver® Intelligent Device Platform XT
- **IoT processor**: Intel® Quark X1021 @400Mhz
- **LAN Ethernet**: 2 x 10/100Mbit
- **WiFi**: yes
- **Display**: -
- **Digital I/Os**: 16
- **USB**: 2 x USB 2.0
- **Serial**: 1 x RS232/485
- **Dimensions (L x W x H)**: 130 x 60 x 140 mm
- **Operating temperature**: -5 °C ... +55 °C
- **Power Supply**: 24V DC +/- 20%

**Edge Gateway „On-Premise“**
- **Application**: Data mining and negotiation, Cloud computing, App based field device configuration, Wi-Fi networking, Data recording, On board graphics
- **Field protocols**: PROFINET, EtherCAT, PROFINIBUS, Modbus RTU, Modbus TCP
- **Cloud protocols**: MQTT Client
- **IoT protocols**: MQTT Broker, OPC UA Client
- **Data wiring**: Node-RED
- **Platform**: Intel® Moon Island, WindRiver® Intelligent Device Platform XT
- **IoT processor**: Intel® Atom™ E3800 @2Ghz
- **LAN Ethernet**: 2 x 1Gbit
- **WiFi**: yes
- **Display**: -
- **Digital I/Os**: -
- **USB**: 3 x USB 2.0, 1 x USB 3.0
- **Serial**: 2 x RS232/422/485
- **Dimensions (L x W x H)**: 214 x 85 x 157 mm
- **Operating temperature**: -5 °C ... +55 °C
- **Power Supply**: 24V DC +/- 20%

**Note:** Technical data are subject to be changed without notice.

**Technical Data**

<table>
<thead>
<tr>
<th>Edge Gateway</th>
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**Overview**

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