- Smart Remote Controller and versatile Gateway -
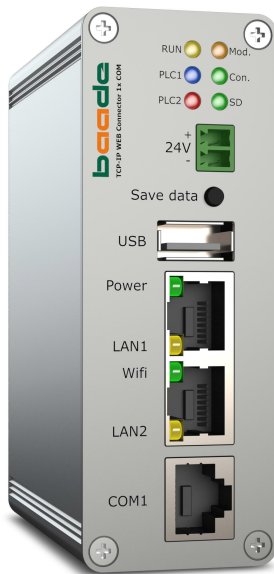
- Proven technology- successfully used in the industry since 2004 -

- **Typ 1xCOM**
- low cost
- compact design
- flexible use in different applications
- secure - usable for CRITIS-Projects
  - VPN (IPsec,OpenVPN, WireGuard)
  - SSL-end-to-end-encryptiong (TLS 1.3) with certificate management in our software "M2M-Manager"
  - guaranteed no back door in the firmware

- optimized for remote control application
  - with PLC´s from various manufacturers
  - for fault annunciating systems
  - for energy management
  - in SMART-Grid projects

Hardware

- COM1 (RS232/RS485)
- 2 x LAN 10/100 Base-T, RJ45
- USB port
- Flash Memory >= 8 GByte

- opt. 24VDC condensor buffered power supply
- security chip for secure boot function
- shielded aluminum housing
- shielded aluminum housing, 35mm rail mounted

Software

- easy direct connection to former and current PLCs (S7-1200, Modbus-TCP/-RTU, OPC-UA)
- communication via <u>TCP/IP protocol</u> :
  - mobile phone networks (GPRS, EDGE, UMTS, LTE systems) with low budget M2M contracts and optimized internal data transfers
  - private or public PST lines, ADSL-/VDSL networks, intranet LAN/WLAN
- communication with SCADA systems and HMI systems via OPC-DA/-UA (IEC870, Modbus or proprietary drivers on request)
- remote programming capabilities with different PLCs (e.g., Siemens, ABB, Wago, etc.)
- long-term data storage according to the DWA M207 standard in the event of connection failures
- integrated TCP/IP and PPP stack, Web and FTP servers,Telnet, text (SMS)
- secure connections via VPN(IPsec or OpenVPN) or SSL with certificates without the need for additional hardware
- redundancy capability allready integrated in basic version
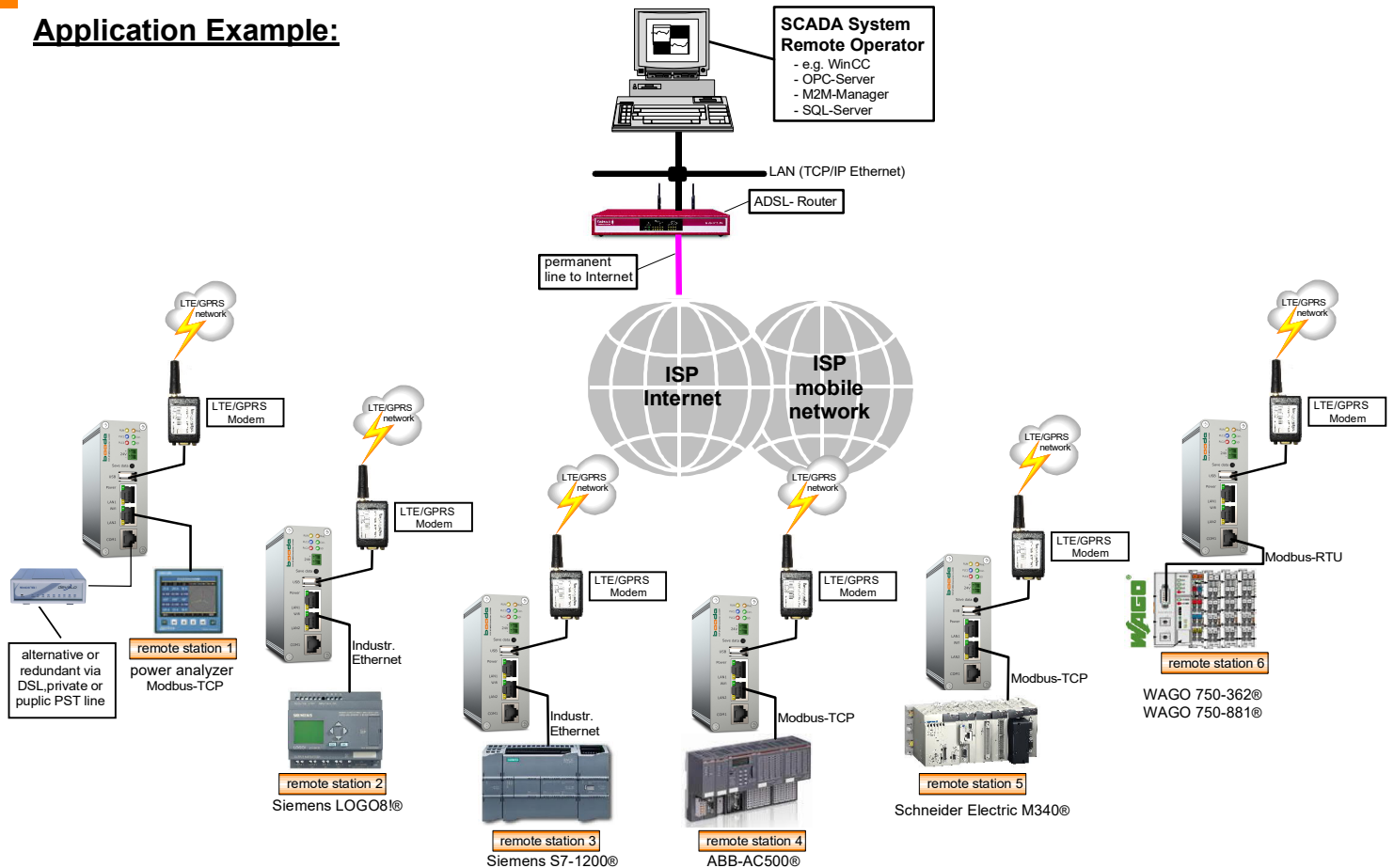- configuration and settings via internal Web server or the Baade "M2M-Manager" software

Applications

- Low cost monitoring & control of central sewer systems, fresh water treatment plants, remote facilities, supply and disposal networks etc., both local and remote.
- replacement for permanent public PST lines (always "on" via Internet)
- diagnosis / service via Intranet / Internet
- protocol converter and gateway
- energy management and smart grid projects

Application Example:

SCADA System Remote Operator
- e.g. WinCC
- OPC-Server
- M2M-Manager
- SQL-Server

LAN (TCP/IP Ethernet)

ADSL- Router

permanent line to Internet

ISP Internet

ISP mobile network

LTE/GPRS network

LTE/GPRS Modem

alternative or redundant via DSL, private or puplic PST line

remote station 1
power analyzer
Modbus-TCP

Industr. Ethernet

remote station 2
Siemens LOGO8!®

Industr. Ethernet

remote station 3
Siemens S7-1200®

Modbus-TCP

remote station 4
ABB-AC500®

Modbus-TCP

remote station 5
Schneider Electric M340®

Modbus-RTU

remote station 6
WAGO 750-362®
WAGO 750-881®

Technical Data:

com ports	1 x RS232/RS485, 2 x Ethernet 10/100 Base-T (RJ45-socket), USB
hardware	MIPS-architecture, 128MB/32GByte, memory >= 8 GByte, div. diagnosis LEDs
dimensions	35mm rail mounted, aluminum housing, W40xH105xD85mm, weight: ca. 300g
connections	TCP/IP via GPRS, EDGE, LTE, ADSL, VDSL, LTE, etc.
software	connection management, data reduction, redundancy, mean value calculations, historical data buffering, VPN connections, SLL Connections with certificates
PLC drivers	S7-1200®, LOGO!®-Ethernet, Modbus-TCP with PLCs from ABB, Schneider Electric, WAGO, Beckhoff, Phoenix Contact, Eaton-EASY®, Modbus-RTU, RS232, LoRaWAN-Gateways and more on request
	Options: keys for expansion items/tags, S7-1500®, -MPI, -IEC-870, -OPC-UA connection
decentral I/O	WAGO-I/O-System 750 and more
other functions	PLC remote programming, text alerts (SMS), gateway, direct communication between devices
drivers for SCADA	OPC-DA, OPC-UA, SQL-DB-Interface more drivers on request
administration	complete remote configuration and settings via Baade "M2M-Manager"-Software
integrated functions	FTP server, Web server, Telnet, long term data logger
service	log files, modem diagnosis, data volume monitoring, device temp, TCP/IP configuration
environmental conditions	operation: -20 to 70°C, humidity: 5 - 85% non condensing
power supply	10 - 30 VDC, about 3W (max 5W + USB device)
protection grade	IP20
order no	M2M-1XCOM-TCP-LTE10 for S7-1200®, Modbus, access to max.200 items/tags
M2M-1XCOM-MAX-LTE10 for S7-1500®, OPC-UA, Modbus, no limit access to items/tags
incl. LTE-Modem, external antenna with magnetic base, more configurations on request
accessories	various antennas, power supplies, etc.

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