

mbNET.mini

Version: 2.0.6 DR03
Date: Sept. 23rd, 2020

Technical data

MDH860; MDH861; MDH862 EU; MDH862 AT&T; MDH863; MDH865; MDH866 EU; MDH866 AT&T;
MDH867
from HW02 / 03 and FW from 2.0.6

The **mbNET.mini** is a very compact industrial router for DIN-rail mounting. It offers secure IP-based access to Ethernet devices and networks through the remote service platform **mbCONNECT24**. Therefore, it is not only suitable for remote maintenance applications but also for tasks such as data collection, visualization, alerts and M2M communication.



- integrated Ethernet switch (3-port or 4-port)
- 3G / 4G modem variant
- WiFi variant
- Failover function WAN to Modem / WiFi
- OpenVPN security protocol
- 2 pieces I/Os. These connectors can be independently configured as a digital input or digital output.
- robust metal housing
- ideal for M2M applications



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E482663



1 General

Release notes

Version	Date	Comment
1.9.0 DR02	Jan. 28 th , 2019	Previous version: 1.9.0 DR01 (May 4 th , 2018) Correction / completion of the encryption and OpenVPN parameters
1.9.19	March 11 th , 2019	The following new device types have been added: MDH 865, MDH 866 EU, MDH 866 AT & T and MDH 867. Technical feature of the new types: 3 x LAN interface, 1 x WAN interface with failover function WAN > Modem / WiFi.
2.0.0	May 5 th , 2019	Inclusion of the hardware version HW2 in the extended temperature range.
2.0.0 DR01	Oct. 2 nd , 2019	Technical data exclusively for devices from hardware version HW02.
2.0.6	Dec. 3 rd , 2019	For devices with hardware version HW 02 and firmware from V 2.0.6, the two I/Os can be configured independently of each other as a digital input or digital output.
2.0.6 DR01	Jan. 13 th , 2020	Changed data (frequencies and target region) for devices with LTE (4G) module (MDH 862 EU, MDH 866 EU) with hardware version: HW 03
2.0.6 DR02	July 6 th , 2020	Adding the transmission power for radio modules.
2.0.6 DR03	Sept. 23 rd , 2020	Adding processor speed and RAM

SIMPLIFIED EU DECLARATION OF CONFORMITY

Hereby, MB connect line GmbH declares that the radio equipment types MDH 861; MDH 862 EU; MDH 863; MDH 865; MDH 866 EU; MDH 867 are in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address:

www.mbconnectline.com

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Despite a detailed description of the device and its functions, we cannot be held liable for the correctness of the content. The latest information can be obtained on our homepage.

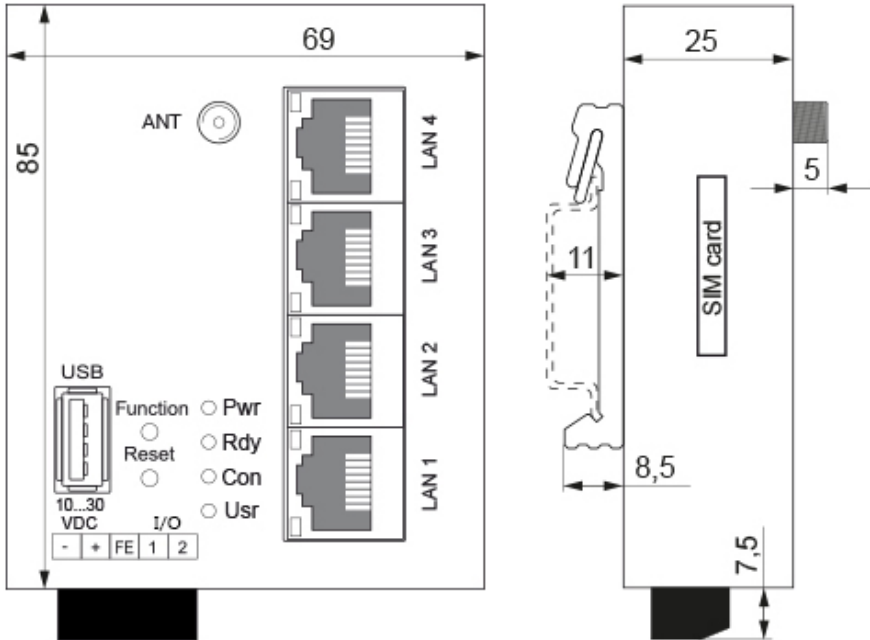
We welcome any comments or suggestions for improvement.

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2 Technical Specifications

Industrial router **mbNET.mini** MDH 860 – MDH 867

(Type: MDH 860, MDH 861, MDH 862 AT&T, MDH 862 EU, MDH 863, MDH 865, MDH 866 AT&T, MDH 866 EU, MDH 867) - from hardware version HW02 or HW03* and firmware version V 2.0.6.





General data	
Voltage --- V (DC)	10 - 30 V DC (SELV and Limited Energy circuit)
Power consumption (Normal mode)	250 mA @ 24 V - without additional consumers
Power consumption under full load	max. 1.8 A @ 24 V - (including 2 digital outputs + USB port)
Random Access Memory	128 MB
Processor speed	454 MHz
IP protection class	IP 30** ** at full occupancy of all connections and interfaces. Alternatively, unused interfaces can be covered with dust protection plugs.
Area of application	Dry environments
Operating temperature	-40 – 75 °C (Type: MDH 860, MDH 861, MDH 862, MDH 865, MDH 866)
Operating temperature	0 – 60 °C (Type: MDH 863, MDH 867)
Storage temperature	-40 – 85 °C (all types)
Humidity	0 – 95% (non condensing)
Weight (max.)	240 g
Dimensions (max.)	69 mm x 38.5 mm x 92.5 mm (W x D x H)
Housing (material)	metal
Mounting	DIN rail mounting (based on DIN EN 50022)

* You will find the hardware version on the device nameplate.

Type: MDH 866 4G EU, LAN, WAN **HW03**
S/N : 18208660XXXXXX



Interfaces / Communication							
	Type						
	MDH 860	MDH 861	MDH 862 EU / AT&T	MDH 863	MDH 865	MDH 866 EU / AT&T	MDH 867
USB interface	1 x	1 x	1 x	1 x	1 x	1 x	1 x
Digital inputs	2 x	2 x	2 x	2 x	2 x	2 x	2 x
LAN interface	3 x	4 x	4 x	4 x	3 x	3 x	3 x
WAN interface	1 x	–	–	–	1 x	1 x	1 x
SIM card reader (mini SIM)	–	1 x	1 x	–	1 x	1 x	–
SMA socket 	–	1 x	2 x	–	1 x	2 x	–
RP-SMA socket 	–	–	–	1 x	–	–	1 x
GSM module 3G (UMTS)	–	1 x	–	–	1 x	–	–
GSM module 4G (LTE)	–	–	1 x	–	–	1 x	–
WiFi modem	–	–	–	1 x	–	–	1 x
Failover WAN > Modem/WLAN	–	–	–	–	✓	✓	✓

Interface specification	
LAN interface	10/100 Mbit/s full and half duplex operation, autodetection patch cable / crossover cable
WAN interface	10/100 Mbit/s full and half duplex operation, autodetection patch cable / crossover cable
USB interface	USB Host 2.0
2 pieces I/Os	These connectors can be independently configured as a digital input or digital output - only in the mbCONNECT24 V2 portal.
Digital input	10 – 30 V DC (low 0 – 3.2 V DC, high 8 – 30 V DC)
Digital output	10 – 30 V DC to a maximum of 1.5 A per output

VPN	
Can only be operated with (my)mbCONNECT24 *	
VPN protocol	OpenVPN, 1 tunnel
Encryption parameter	Control Channel: TLSv1.2, cipher ECDHE-RSA-AES256-GCM-SHA384 Data Channel: Cipher 'AES-256-GCM' initialized with 256 bit key
Authorization	Pre-Shared-Key, X.509

* The types MDH 865, MDH 866 and MDH 867 can only be operated in the portal (my)mbCONNECT24 V2.

Network / Security	
Firewall	1:1 NAT, IP-Filter, Port-Forwarding, stateful inspektion
IP router	NAT-IP, TCP/IP routing, IP forwarding
Service	DHCP client, NTP client
Time synchronization	NTP server

Communication

Devices with UMTS (3G) module - Type: MDH 861, MDH 865	
Target region	Global
GSM/GPRS/ EDGE	850, 900, 1800, 1900 MHz; downlink max. 296 kbps, uplink max. 236,8 kbps
HSxPA	800/850, 900, AWS 1700, 1900, 2100 MHz; downlink max. 21 Mbps, uplink max. 5,76 Mbps
Transmission output power	Class 4 (2 W, 33 dBm) @ GSM 850 / 900 Class 1 (1 W, 30 dBm) @ GSM 1800 / 1900 Class 3 (0.25 W, 24 dBm) @ UMTS Class E2 (0.5 W, 27 dBm) @ EDGE 850 / 900 Class E2 (0.4 W, 26 dBm) @ EDGE 1800 / 1900
Reception sensitivity	-108 dBm @ UMTS -107 dm @ GSM 850 / 900 MHz -106 dBm @ DCS1800 / PCS1900 MHz
FCC	FCC ID: R17HE910
TAC	35613607

Devices with LTE (4G) module - Type: MDH 862 EU, MDH 866 EU, hardware version: HW 03	
Target region	Europe
GSM/GPRS/EDGE	900 (B8), 1800 (B3) MHz; max. 236 kbps
HSxPA	900 (B8), 2100 (B1) MHz; downlink max. 42 Mbps, uplink max. 5,76 Mbps
LTE	800 (B20), 900 (B8), 1800 (B3), 2100 (B1), 2600 (B7) MHz; downlink max. 150 Mbps, uplink max. 50 Mbps
Transmission output power	Class 3 (0.2 W, 23 dBm) @ LTE Class 3 (0.25 W, 23 dBm) @ 3G Class 4 (2 W) @ GSM 900 Class 1 (1 W) @ DCS 1800
TAC	35162207

Devices with LTE (4G) module - Type: MDH 862 EU, MDH 866 EU, hardware version: HW 02	
Target region	Europe, Australia
GSM/GPRS/EDGE	900, 1800 MHz; max. 236 kbps
HSxPA	850, 900, 2100 MHz; downlink max. 42 Mbps, uplink max. 5,76 Mbps
LTE	800 (B20), 1800 (B3), 2600 (B7) MHz; downlink max. 100 Mbps, uplink max. 50 Mbps
Transmission output power	Class 4 (2 W, 33 dBm) @ GSM 850 / 900 Class 1 (1 W, 30 dBm) @ GSM 1800 / 1900 Class E2 (0.5 W, 27 dBm) @ EDGE 850 / 900 Class E2 (0.4 W, 26 dBm) @ EDGE 1800 / 1900 Class 3 (0.25 W, 24 dBm) @ UMTS Class 3 (0.2 W, 23 dBm) @ LTE
TAC	35985205

Devices with **LTE (4G)** module - **AT&T** - Type: MDH 862 AT&T*, MDH 866 AT&T*

NOTICE

*The device types MDH 862 AT&T and MDH 866 AT&T are not CE marked and must not be operated or commissioned in the European Economic Area (EEA)!

Target region	North America
GSM/GPRS/EDGE	850, 1900 MHz; max. 236 kbps
HSxPA	1900 (B2), 850 (B5) MHz; downlink max. 21 Mbps, uplink max. 5,76 Mbps
LTE	1900 (B2), AWS 1700 (B4), 850 (B5), 700 (B17) MHz; downlink max. 100 Mbps, uplink max. 50 Mbps
Transmission output power	Class 4 (2 W, 33 dBm) @ GSM 850 / 900 Class 1 (1 W, 30 dBm) @ GSM 1800 / 1900 Class E2 (0.5 W, 27 dBm) @ EDGE 850 / 900 Class E2 (0.4 W, 26 dBm) @ EDGE 1800 / 1900 Class 3 (0.25 W, 24 dBm) @ UMTS Class 3 (0.2 W, 23 dBm) @ LTE
FCC	FCC ID: R17LE910NA

Devices with **WiFi** module - Type: MDH 863, MDH 867

WiFi	IEEE802.11b/g & 802.11n (1T1R mode), up to 150 MBit/s
WiFi specification	<ul style="list-style-type: none">· EU (2.412 GHz-2.472 GHz, 1-13 channel)· USA (2.412 GHz-2.462 GHz, 1-11 channel)· WPA/WP2, 64/128/152bit WEP, WPS· 802.11b: 1,2,5,5,11 Mbps· 802.11g: 6,9,12,18,24,36,48,54 Mbps· 802.11n: (20 MHz) MCS0-7, up to 72 Mbps· 802.11n: (40 MHz) MCS0-7, up to 150 Mbps
Transmission output power (typical)	11b: 19+/- 1.0 dBm @ 11 Mbps 11g: 16+/- 1 dBm @ 54 mbps 802.11n: (HT20), 15 +/- 1dBm, 802.11n: (HT40), 15 +/- 1dBm
Reception sensitivity (typical)	11b: -84dBm @ 11 Mbps; 11g: -70dBm @ 54 Mbps 802.11n: (HT20), -66 dBm @ MSC7, (HT40), -62 dBm @ MSC7
FCC	FCC ID: YWTWFXM05



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