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# 100BASE-T1 Media Gateway

**A flexible automotive Ethernet switch with active TAP and gateway functions**


## SPECIFICATION

- 3x 100BASE-T1 port
- 1x 1000BASE-T port (gigabit Ethernet)
- All Ethernet ports are "switched" (including the MCU)
- 2x CAN(/FD)
- LIN bus
- USB 2.0
- MicroSD card slot
- 2x Digital output
- 2x Analogue input
- Embedded web server for configuration and status information
- User-programmable MCU (C language SDK available free-of-charge)
- 14x Status LED

## FEATURES

- 100BASE-T1 Automotive Ethernet switch with Active TAP function
- 100BASE-T1 – CAN(/FD) gateway
- On-board switches for basic configuration
- Embedded web server for advanced configuration and status information
- User-programmable firmware (C language SDK)

## USE-CASES

- Interconnection of automotive Ethernet and standard Ethernet devices
- Active TAP for ECU frame sniffing
- Gateway between 100BASE-T1 and CAN(/FD)

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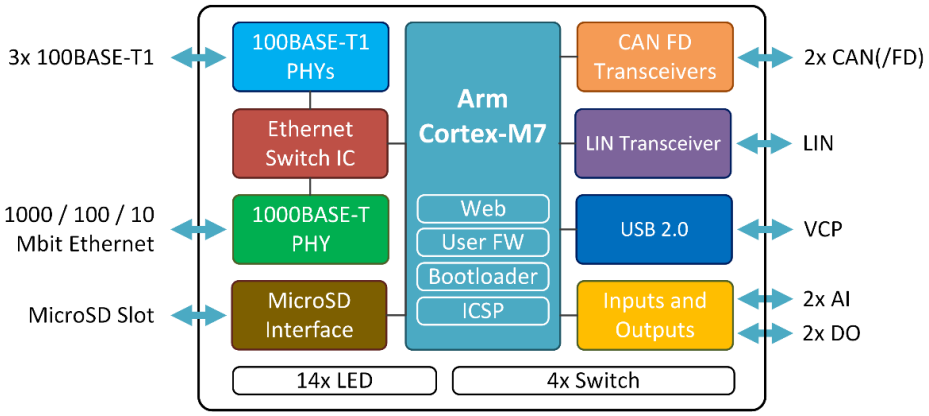
The **100BASE-T1 Media Gateway** is a configurable Automotive Ethernet switch and communication bridge. The device can be used as frame sniffer (Active TAP), employing the packet forwarding function, as well as Ethernet – CAN(/FD) gateway, allowing data to be bi-directionally passed between any of the Ethernet ports and the CAN or CAN FD network.

The gateway features three 100BASE-T1 ports, one Gigabit Ethernet (1000BASE-T or 10/100BASE-TX) port, two CAN(/FD) channels, LIN bus, and a USB port. All Ethernet ports are internally connected to an Ethernet switch. A microSD card slot, two digital outputs, and two analogue inputs are also available.

The free-of-charge C language SDK allows the user to develop a custom device firmware for monitoring/sniffing, testing and simulations.




## TECHNICAL SPECIFICATION

### GENERAL

| | |
|---|---|
| Web | Web interface for configuration and status information |
| Switch function | Internal Ethernet switch circuit interconnects the 100BASE-T1 ports, 1000BASE-T port, and the MCU; IEEE 1588v2 support |
| Active TAP | Ethernet ports can be configured for frame forwarding |
| Gateway function | Data between Ethernet and CAN/CAN FD bus can be forwarded in both directions |
| Interface function | Open communication protocol for realizing an Ethernet – CAN(/FD) and a USB – CAN(/FD) interface |
| Firmware | Upgradable over web |

### COMMUNICATION

| | |
|---|---|
| Automotive Ethernet | 3x 100BASE-T1 (IEEE 802.3bw) port |
| Standard Ethernet | 1x 1000BASE-T / 100BASE-TX / 10BASE-T port |
| CAN | CAN-HS with ISO CAN FD support (ISO 11898-1:2015; CAN2.0A/B) |
| LIN | LIN v2.2a (ISO 17987), both classical and enhanced checksum support |
| USB | USB 2.0 VCP |

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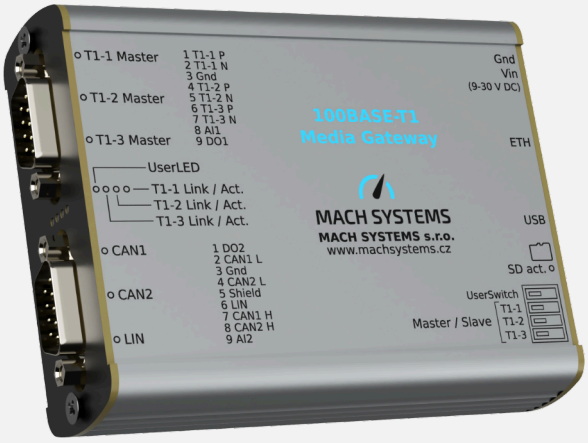
## ELECTRICAL

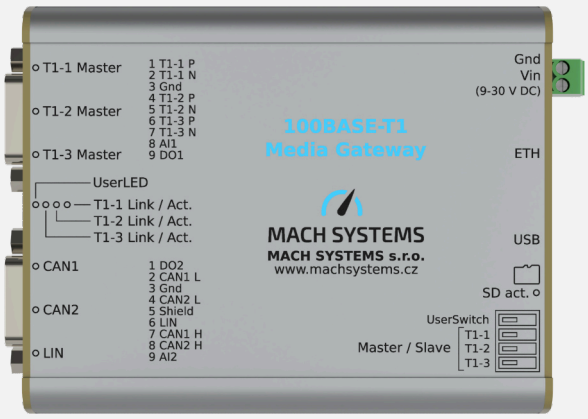
| | |
|---|---|
| Power | USB power over USB Type-C<br>External 7 - 30 V DC power input (polarity and surge protection) over a 2-pin terminal block or DSUB9 connector |
| Consumption | 300 mA @ 12V |
| Transceivers | 100BASE-T1: TJA1102A<br>1000BASE-T: KSZ9131<br>CAN: MCP2562FD<br>LIN: MCP2003B |
| LEDs | 10x Dual-colour LED<br>2x ETH LEDs (RJ-45 connector)<br>1x MicroSD LED<br>1x Power LED |
| Buttons and switches | 4x DIP switches |
| I/O | 2x Analogue input (0-30 V)<br>2x Digital output (1x high-side 5V/0.5A, 1x low-side 40V/1A) |
| MCU | STM32H7 (1 MB Flash, 564 KB RAM) |

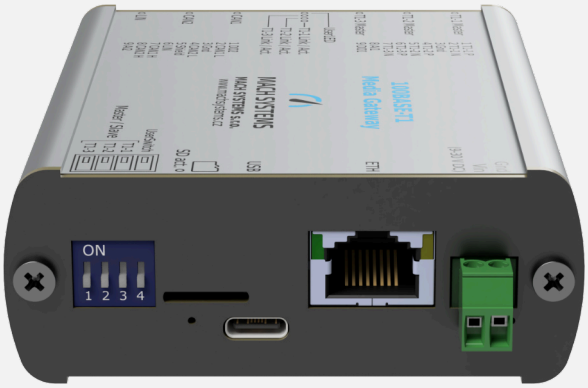
## MECHANICAL

| | |
|---|---|
| Connectors | 100BASE-T1, CAN, LIN, I/O, power: 2x D-SUB 9 Male<br>1000BASE-T: RJ-45<br>Power: 2-pin removable terminal block<br>USB 2.0: USB Type-C |
| Dimensions (L x W x H) | 108 x 82 x 33 mm |
| Weight | 160 g |
| Operating temperature | –20 to 70 °C |
| Enclosure | Aluminium profile, DIN-rail bracket sold separately |
| Protection | IP20 |
| Placement | Table (adhesive pads included)<br>DIN-rail mount (bracket sold separately) |

## PRODUCT IMAGES




## ORDERING INFORMATION

| Product Number | Description |
|---|---|
| 100BASET1-MG | 100BASE-T1 Media Gateway (a removable 3-pin terminal block is included) |
| DIN-BRACKET-UNI | Universal bracket for mounting many types of enclosures on a DIN rail |

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