



MACH-ETH

A flexible interface for Ethernet, CAN(/FD) and LIN bus with user-scripting and I/O

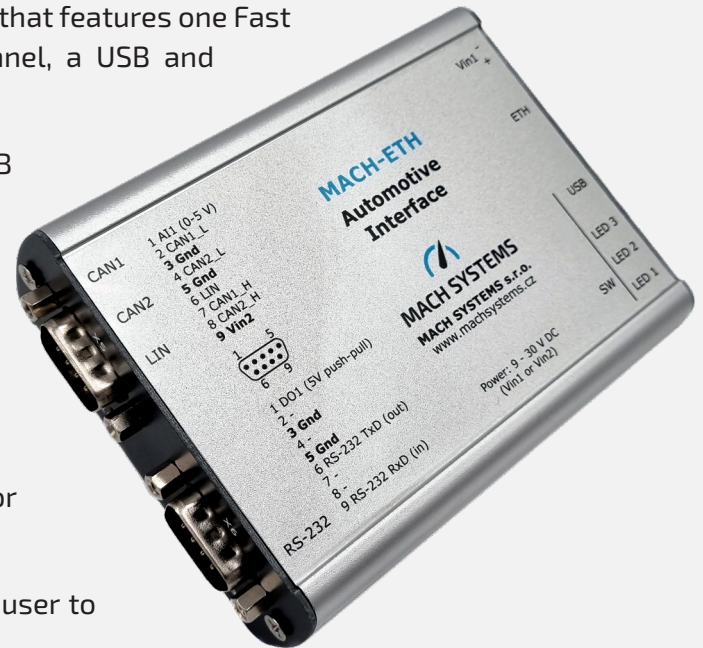
The MACH-ETH is an automotive network interface that features one Fast Ethernet port, two CAN FD channels, a LIN channel, a USB and RS-232 port, and multiple I/Os.

The communication protocol over Ethernet or USB enables access to CAN(/FD) and LIN bus channels over TCP/IP or virtual COM port respectively.

A user-scripting feature, which allows to run user applications directly on the MCU, can be used for HiL testing and rest-bus simulations.

The device can act as an interface, a gateway, or bridge between all its channels.

An analogue input and a digital output enable the user to interact with external peripherals.



FEATURES

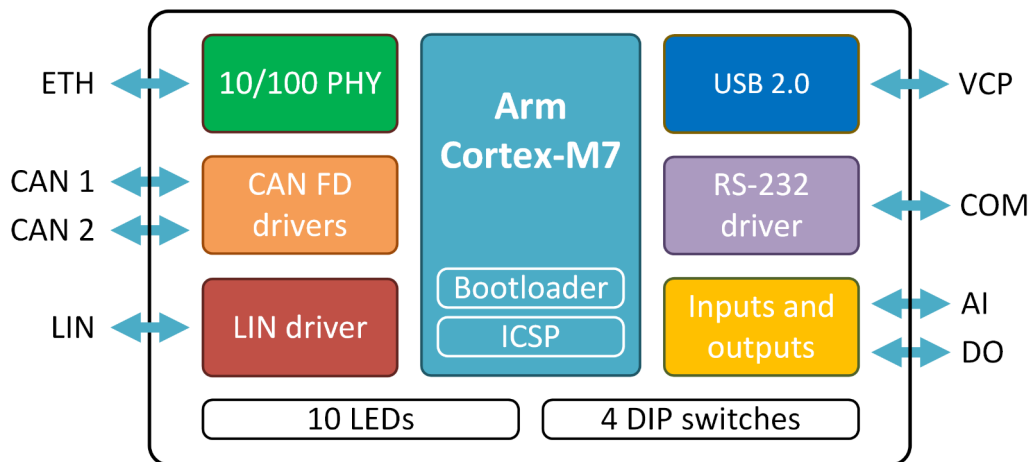
- 10/100 Ethernet port
- 2 CAN channels with CAN FD support
- LIN channel
- USB 2.0
- RS-232
- Analogue input and digital output
- 4 DIP switches
- 10 status LEDs
- User-programmable
- Externally or USB-powered
- Table-top use or DIN-rail mount

USE CASES

- ETH-CAN(/FD) and ETH-LIN interface
- CAN(/FD) – LIN gateway
- CAN - CAN-FD gateway
- Remaining bus simulations
- User-programmable HiL simulations

USER PROGRAMMING

- Firmware customizable in C/C++
- Free-of-charge C language SDK
- Free-of-charge IDE and C/C++ compiler
- Firmware update over USB, Ethernet or ICSP



TECHNICAL SPECIFICATION

COMMUNICATION AND USER-PROGRAMMING

Channels	1 Fast Ethernet (10BASE-T / 100BASE-TX, IEEE 802.3u) 2 CAN-HS (ISO 11898-2) with CAN FD support (ISO 11898-1:2015; CAN 2.0A/B, ISO CAN FD) 1 LIN bus (supports both master and slave; ISO 17987; LIN 2.2a) 1 USB 2.0 CDC (Virtual COM port) 1 RS-232
Integration	Communication protocol for accessing CAN-FD and LIN channels over Ethernet (TCP/IP) and USB (VCP)
User-programming	Free-of-charge C SDK with programming examples Free-of-charge IDE and GNU C/C++ compiler (STM32CubeIDE)
Firmware update	over Ethernet, USB, or ICSP (ST-LINK)
Debugging	ST-LINK SWD (a programming header required)

ELECTRICAL

Transreceivers	CAN-FD: MCP2562FD LIN: MCP2003B Ethernet: KSZ8041
I/O	1 Analogue input (0-5 V) 1 Digital output (5 V push-pull, 0.5 A, PWM capable)
LEDs	5 Dual-colour LEDs 2 Single-colour LEDs 2 ETH LEDs (RJ-45 connector) 1 Power LED
MCU	STM32H7 (1 MB Flash, 564 KB RAM)
Power	USB-powered over Micro-USB (not for LIN bus) External 9 - 30 V DC power input (polarity and surge protection) over DSUB connector or terminal block
Consumption	100 mA @ 12 V

MECHANICAL

Connectors	2 DSUB9M 1 RJ-45 1 Micro-USB 1 Terminal block (2-pin)
Switches	4 DIP switches
Dimensions (L x W x H)	108 x 82 x 33 mm
Weight	185 g
Operating temperature	-20 to 70 °C
Enclosure	Aluminium profile
Protection	IP20
Placement	Table (adhesive pads included) DIN-rail mount (see Ordering Information)



PRODUCT PHOTOS



ORDERING INFORMATION

Product Number	Description
MACH-ETH	MACH-ETH device
DIN-BRACKET-UNI	A universal bracket for mounting any enclosure on a DIN rail
MACH-ETH-NET-SDK	.NET C# SDK API (DLL) for accessing CAN-FD and LIN channels over Ethernet (TCP/IP) and USB (VCP)

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