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CANFD LIN Gateway

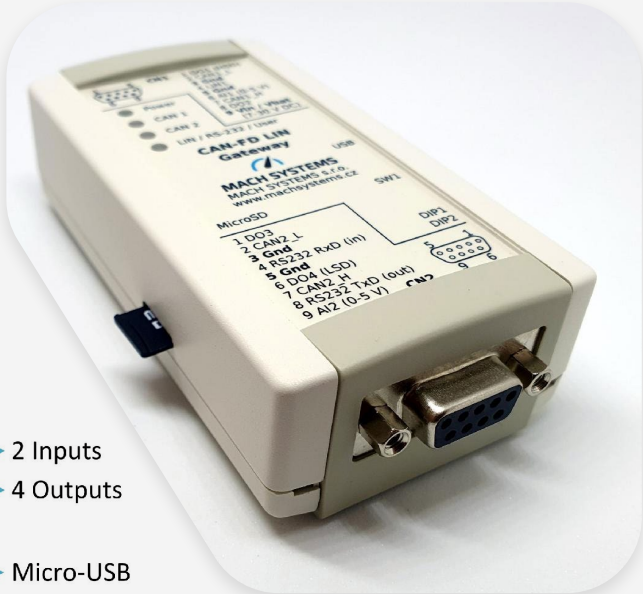
The CANFD LIN Gateway is a freely programmable router/data-logger/simulator that features two CAN FD channels, a LIN channel, and a RS-232 port. The interface also offers a microSD card slot and multiple digital/analogue inputs and outputs, which makes it suitable for a broad range of use-cases such as protocol conversion, network bridging, data logging, rest-bus simulation, and external peripheral control and monitoring.

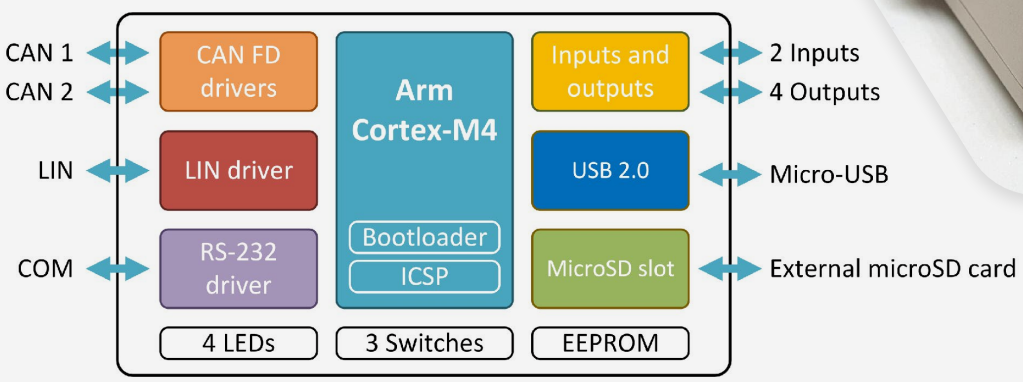
FEATURES

- Two high-speed CAN channels with CAN FD support
- LIN channel
- RS-232 port
- MicroSD card slot
- 4 digital outputs
- 2 analogue/digital inputs
- 4 status LEDs
- 32-bit Arm Cortex-M4 MCU
- Freely programmable in C/C++ language
- Free-of-charge IDE and C/C++ compiler
- Programming examples available
- Firmware upload over USB, CAN, RS-232 or ICSP
- On-board 16 Kbit EEPROM
- Externally or USB-powered
- Table-top use or DIN-rail mount

USE CASES

- Communication simulation
- ECU emulation
- Remote monitoring of inputs
- Remote control of outputs
- CAN FD to CAN bridge
- CAN to LIN gateway
- CAN/LIN to RS-232
- Data logging





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Firmware can be developed in C/C++ and can be transferred into the device over USB, CAN, RS-232, or a standard ICSP SWD interface, which also offers code debugging. The device is based on a STM32G4 Arm Cortex-M4 MCU and comes with a free-of-charge IDE, GNU C/C++ compiler, and programming examples.

The on-board EEPROM memory can store user's application parameters, and the microSD card slot enables the user to load or save large data sets for simulations and data-logging purposes.

The four digital outputs (PWM capable) and the two analogue/digital inputs allow for both input and output triggering. The inputs can read 0-5 V analogue signals, and the outputs offer various output stages (push-pull, HSD, LSD) with currents up to 1.5 A enabling to easily control relays, valves, and other peripherals.

TECHNICAL SPECIFICATION

Communication and Peripherals

Channels	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 RS-232 1 Virtual COM port (USB 2.0 CDC)
Inputs	2 Analogue/digital inputs (0-5 V)
Outputs	4 Digital outputs (PWM capable) DO1: HSD (5 V, max. 0.5 A) DO2, DO3: push-pull (5 V, max. 0.5 A) DO4: LSD (max. 40 V, 1.5 A)
Programming	Free-of-charge IDE and GNU C/C++ compiler (STM32CubeIDE) Programming examples available
Firmware update	over USB, CAN, RS-232, or ICSP (ST-LINK)
Debugging	ST-LINK SWD (a programming header needed)
Non-volatile memory	Internal 16 Kbit EEPROM External microSD card slot (a card is not part of delivery)
LEDs	3 Dual-color LED, 1 Power LED

Electrical and Mechanical

Power	External 7 - 30 V DC with polarity protection over DSUB connector USB-powered over Micro-USB (not for LIN bus)
Consumption	100 mA @ 12 V (approx. 1 W) Note: When no digital output (DO1-DO4) is being driven.
MCU	STM32G483 (Arm® 32-bit Cortex®-M4) with DSP and FPU; 170 MHz, 512 KB Flash, 128 KB SRAM
Transceivers	CAN-FD: MCP2562FD LIN: MCP2003B
Connectors	1 D-SUB9M, 1 D-SUB9F, 1 MicroSD slot, 1 Micro-USB
Buttons and switches	2 DIP switches, 1 Tactile switch
Dimensions (L x W x H)	108 x 54 x 30 mm
Weight	85 g
Operating temperature	-20 to 70 °C
Protection	IP20
Placement	Table (adhesive pads included), DIN-rail mount (clip sold separately)

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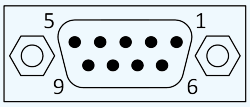
Pin Assignment

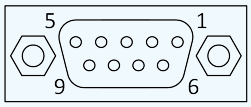
CAN 1, LIN, Power, IOs (DSUB9M)

PIN	NAME	NOTE
1	DO1	5V HSD
2	CAN1_L	
3	GND	
4	LIN1	
5	GND	
6	AI1 / DI1	0 - 5V
7	CAN1_H	
8	DO2	5V push-pull
9	Vin / Vbat	Power input, also used for LIN bus



CAN 2, RS-232, IOs (DSUB9F)

PIN	NAME	NOTE
1	DO3	5V push-pull
2	CAN2_L	
3	GND	
4	RS-232 RxD	In
5	GND	
6	DO4	LSD
7	CAN2_H	
8	RS-232 TxD	Out
9	AI2 / DI2	0-5 V



The gateway can be powered externally via a DSUB connector or via a micro-USB connector.
LIN bus requires external power. All ground signals are connected.

Ordering Information

Product Number	Description
CANFD-LIN-GW	CANFD LIN Gateway
DIN-CLIP	Clip for mounting on a DIN rail

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