

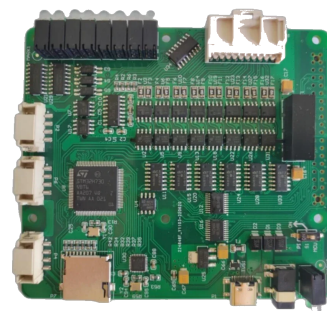


BM-CANFD-X8PI

Eight-Channel CAN FD Interface and Development Board

RELEASE - REV A

Product models	BM-CANFD-X8PI
Document	English product datasheet
Revision	REV A - 2026-07-27
Technical source	X8PI Chinese product specification dated 2022-07-08



Document purpose

Technical product information for evaluation, integration, and purchasing. Specifications are based on the approved Chinese product document identified above.

1. Product overview

BM-CANFD-X8PI is an eight-channel CAN FD board with USB host control, a Raspberry Pi 40-pin interface for six channels, two RS232 ports, and exposed debug resources for custom firmware.

Scope and limitation

The standard product is an interface/development board without an enclosure. TF-card logging, routing, and replay are optional or custom functions and must not be assumed in the standard configuration.

Key capabilities

- Eight CAN/CAN FD channels with isolated bus front ends.
- Receive throughput above 16,000 fps and transmit throughput above 4,000 fps.
- USB 2.0 High-Speed host interface.
- Two hardware receive filters and one hardware-timed transmit task per channel.
- CAN FD data-phase bit rate up to 5 Mbps.
- Two RS232 ports up to 115,200 bps.
- Raspberry Pi 40-pin control of CAN channels 3 through 8.
- Exposed SWD, UART, GPIO, and peripheral resources for custom development.

Typical applications

- Raspberry Pi vehicle gateways
- Eight-channel CAN FD monitoring
- Custom embedded firmware
- Linux edge data acquisition
- Protocol gateway development
- Industrial and laboratory integration

2. Technical specifications

Protocols	CAN 2.0, CAN FD (ISO and Bosch modes), and RS232
CAN channels	8
CAN FD bit rate	5 kbps to 5 Mbps
Receive throughput	> 16,000 fps per channel
Transmit throughput	> 4,000 fps per channel
RS232	2 channels; up to 115,200 bps
Receive filters	2 hardware filters per CAN channel
Timed transmit	1 hardware task per CAN channel
Termination	Software-controlled 120 ohms / disabled
Isolation	Supported
USB	USB 2.0 High-Speed Type-C, 5 V / 2 A
Raspberry Pi	Standard 40-pin header; controls 6 CAN FD channels
Signal connector	22-pin Molex 5018762240
PCB dimensions	87 x 99 mm; maximum assembled height 17 mm
Weight	< 100 g
Enclosure	None

3. Model selection and operating guidance

Model matrix

Control path	Available channels	Purpose	Interface
USB host	CAN 1 to CAN 8	Online analysis / BMAPI	USB Type-C
Raspberry Pi	CAN 3 to CAN 8	Embedded gateway	40-pin header

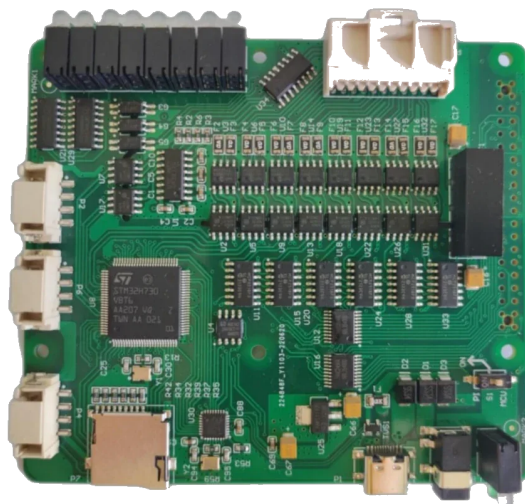
Performance and integration notes

- The stated maximum frame rates require sufficient bus bit rate and load.
- For operation above 2 Mbps, use short low-capacitance wiring, correct termination, and suitable CAN FD timing.
- The standard configuration does not provide standalone file logging or replay.
- Custom firmware can use the published MCU pin and peripheral allocation.

Selection rule

The standard product is an interface/development board without an enclosure. TF-card logging, routing, and replay are optional or custom functions and must not be assumed in the standard configuration.

4. Mechanical and connector information



Product configuration shown for identification. Exact appearance and fitted options depend on the ordered model.

Mechanical and host interface summary

USB	USB 2.0 High-Speed Type-C, 5 V / 2 A
Signal connector	22-pin Molex 5018762240
PCB dimensions	87 x 99 mm; maximum assembled height 17 mm
Weight	< 100 g
Enclosure	None

Connector notes

- The 22-pin Molex connector carries eight CAN FD pairs and two RS232 channels.
- UART and SWD headers use 3.3 V logic; consult the pinout before connecting external hardware.

5. Software and engineering workflow

BUSMASTER

Use the graphical application to select the device, configure channels, observe frames and signals, record or replay traffic where supported, and run diagnostic workflows.

BMCLI

Use command-line and AI-assisted workflows for repeatable configuration, data inspection, diagnostics, test automation, and auditable engineering tasks.

BMAPI SDK

Build custom Windows or Linux applications through the shared BUSMUST programming interface. Availability of a specific function still depends on the hardware capabilities stated in this datasheet.

Important

Do not infer an unsupported function from software availability. Isolation, standalone operation, storage, routing, replay, and channel count are hardware-specific and are controlled by the model and configuration.

6. Ordering and support

Confirm the exact model, channel count, isolation requirement, connector or harness, operating environment, and any optional expansion before ordering.

Sales	sales@busmust.com
Technical support	support@busmust.com
Website	https://busmust.com/
Documentation	https://busmust.com/en/docs/

Specifications may change as the design evolves. Formal quotations, ordered configurations, approved samples, and project agreements govern delivered products.