



BM-CANFD-X2 / X4 / XL2 / XL4

Multi-Channel USB CAN FD and LIN Analyzers - Generation 3

RELEASE - REV A

Product models	BM-CANFD-X2, BM-CANFD-X4, BM-USB-XL2, BM-USB-XL4
Document	English product datasheet
Revision	REV A - 2026-07-27
Technical source	Generation-3 X2/X4/XL2/XL4 Chinese product specification



Document purpose

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

1. Product overview

This generation-3 family provides two or four high-throughput CAN/CAN FD channels over USB. XL models add the same number of LIN channels for mixed-bus analysis, simulation, diagnostics, and automation.

Scope and limitation

Generation-3 units are non-isolated and do not include a TF card. They support saved configuration, hardware-timed transmission, routing, and sequence replay, but they are not long-duration standalone file recorders.

Key capabilities

- Two or four CAN/CAN FD channels; XL models add two or four LIN channels.
- CAN receive and transmit throughput above 26,000 fps per channel.
- Two hardware receive filters per channel with payload filtering.
- Software-controlled CAN termination; XL models include LIN pull-up and auxiliary supply control.
- CAN FD data-phase bit rate up to 12 Mbps.
- One-microsecond hardware timestamp resolution.
- Up to 64 hardware-timed transmit tasks and 64 hardware routing entries per channel.
- Saved configuration and sequence playback without a continuously connected PC.

Typical applications

- Multi-network ECU development
- Vehicle and industrial data acquisition
- Automated validation and production test
- CAN FD and LIN integration
- UDS and ISO-TP diagnostics
- Hardware routing and sequence replay

2. Technical specifications

CAN protocols	CAN 2.0 and CAN FD (ISO and Bosch modes)
CAN FD bit rate	5 kbps to 12 Mbps
CAN receive throughput	> 26,000 fps per channel
CAN transmit throughput	> 26,000 fps per channel
LIN protocols	LIN 1.3 to LIN 2.x on XL models
LIN bit rate	1,200 to 19,200 bps
Timestamp resolution	1 us hardware timestamp
Receive filters	2 hardware filters per channel
Timed transmit	Up to 64 tasks per channel
Hardware routing	Up to 64 entries per channel
Termination	CAN: 120 ohms / disabled; LIN: 1 kohm / disabled
Isolation	Not isolated
USB	USB 2.0 High-Speed Type-B, 480 Mbps
Power	USB 5 V; < 0.6 W
Operating temperature	-40 to +85 deg C
Storage temperature	-40 to +105 deg C

3. Model selection and operating guidance

Model matrix

Model	CAN FD	LIN	Dimensions
BM-CANFD-X2	2	0	74 x 29 x 93 mm
BM-CANFD-X4	4	0	80 x 45 x 93 mm
BM-USB-XL2	2	2	74 x 29 x 93 mm
BM-USB-XL4	4	4	80 x 45 x 93 mm

Performance and integration notes

- At CAN FD data rates above 2 Mbps, keep the total low-capacitance twisted-pair length within approximately 1.5 m and use correct termination.
- The source test reaches more than 26,000 fps with 8-byte frames at a 1 Mbps arbitration phase and 12 Mbps data phase.
- LIN master and slave operation supports classic, enhanced, and custom checksum behavior.
- Saved configuration, timed transmit, routing, and short sequence playback are supported; TF-card logging is not.

Selection rule

Generation-3 units are non-isolated and do not include a TF card. They support saved configuration, hardware-timed transmission, routing, and sequence replay, but they are not long-duration standalone file recorders.

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-B, 480 Mbps
Power	USB 5 V; < 0.6 W

Connector notes

- DB9: pin 2 CAN-L, pin 7 CAN-H, pins 3/5/6 optional ground.
- XL models additionally use pin 4 for LIN and pin 9 for controllable LIN auxiliary supply.

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.