

Kvaser Linx J1587 User's Guide



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2 About this manual

This manual is intended for users of the Kvaser Linx J1587. The manual contains a description of the hardware's properties and general instructions for using the device.

3 Introduction

This section will describe the functions and features of the Kvaser Linx J1587.

3.1 Welcome to Kvaser Linx J1587



Figure 1: Kvaser Linx J1587.

The Kvaser Linx J1587 is a flexible adapter that converts a Kvaser CAN HS interface to a J1587 interface. The adapter can also be combined with the Kvaser Memorator Professional to provide advanced J1587 logging features. The Kvaser Memorator Professional Setup Tool help files contain more information on using the J1587 logging features.

This guide is applicable to the Kvaser Linx J1587 devices listed in Table 1.

Table 1: The Kvaser Linx J1587 device and its EAN number.

Device	Product Number
Kvaser Linx J1587	733-0130-00387-9

The Kvaser Linx has the following features:

- By using your Kvaser Linx J1587 with a Kvaser Memorator Professional you can log J1587 traffic and trigger on J1587 MID, PID, etc.
- Kvaser MagiSync™ - automatic time synchronization between all Kvaser products that uses the Kvaser MagiSync™ feature.
- By using a Kvaser Linx J1587 with Kvaser Memorator Professional you can log both CAN and J1587 simultaneously.
- Small plastic housing.
- Works with any Kvaser CAN HS (high speed) interface.
- Applications using J1587 can be written with the J1587 library included with the CANLIB SDK.
- Easy to configure.
- The Kvaser Linx J1587 is designed for maximum flexibility and maintainability.
- By using the thumbscrews on the CAN side you get a robust CAN to J1587, and vice versa, interface.

4 Kvaser Linx J1587 hardware

In this section you can read more about the hardware.

4.1 Hardware installation

The Kvaser Linx J1587 can be connected to any other Kvaser CAN HS interface. The Kvaser Linx J1587 has two different connectors: one that speaks CAN and one that speaks J1587. Make sure to use the correct connector when attaching the Kvaser Linx J1587 to your network. The J1587 connector has a green label that says "J1587" and should be connected to the J1587 bus. The CAN connector is not labeled and should be connected to the CAN interface you are using.

The delivery package of Kvaser Linx J1587 contains:

- Kvaser Linx J1587.

4.2 The connectors of Kvaser Linx J1587

The Kvaser Linx J1587 has two connectors. The J1587 connector is marked with a green label seen in Figure 2. The CAN connector is not labeled.



Figure 2: The J1587 connector on Kvaser Linx J1587.

4.3 Power supply

The Kvaser Linx J1587 is normally powered on the J1587 side but may also be powered by the CAN side. Use pin 9 for V+ and pin 3 for ground (see Figure 4 and Figure 5). The supply power should be in the range of 5 – 35 V DC and the typical power requirement is 200 mW.

Note: Power supplied to the J1587 side is routed through a diode to the CAN side to provide power to devices like a Kvaser Memorator Professional in logger mode. Power supplied to the CAN side is **not** routed to the J1587 side.

4.4 LED indicators

There are two LED indicators on Kvaser Linx J1587. See Figure 3. The LED indicators have different meanings. The following tables describe how the LEDs behave.



Figure 3: LEDs of the Kvaser Linx J1587.

Table 2: LED indicators overview.

LED	Function	Description
LED 1 Green	Power	Active when the device is powered.
LED 2 Yellow	Traffic	Active when messages are being sent or received.

Table 3: LED indicators in detail.

PWR (Green)	ACT (Yellow)	Meaning
Slow flash		Waiting for connection with the CAN interface.
Steady		Power ON (The device is active).
	Short flash	Traffic on either CAN or J1587.

5 Appendices

In this section you will find technical information about Kvaser Linx J1587 and its connectors.

5.1 System requirements

- A Kvaser CAN HS interface.
- Operating system Windows ME, Windows 2000, Windows XP, Windows Server 2003, Windows Vista.

5.2 Technical data

In Table 4 below you will find the Kvaser Linx J1587's technical specifications.

Table 4: Kvaser Linx J1587 Technical specifications.

CAN Channels	1 (CAN 2.0A and 2.0B active).
CAN Bit Rate	1 Mbit/s
Power consumption	~ 200 mW.
External power	Pin 9 (V+) and pin 3 (GND) on either J1587 or CAN side. Allowed operating voltage 5 – 35 V DC.
Housing	Black plastic.
Dimensions (W x L x H)	25 mm * 100 mm * 20 mm
Operating temperature	-40 °C ... +85 °C
Storage temperature	-40 °C ... +85 °C
Cable length	30 cm
CAN connector	9-pin female DSUB.
J1587 connector	9-pin male DSUB.

5.3 The CAN connector

The CAN connector of the Kvaser Linx J1587 (see Figure 4) is a 9-pin female D-SUB with screws. The pinning is described below (see Table 5).

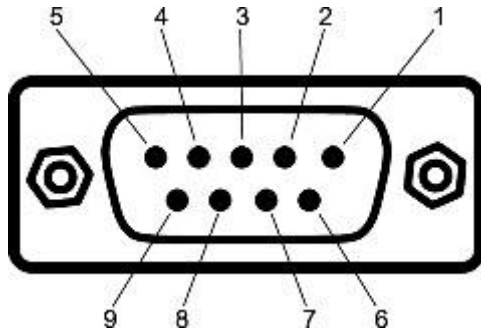


Figure 4: The CAN D-SUB connector pin numbers (female).

Table 5: D-SUB pin configuration of the CAN side.

The CAN side has the following pin configuration. (Auto-reset fuses protect Pins 2, 3, 4, 7 and 9.)		
D-SUB pin number	Color code	Function
1	N/A	Not connected.
2	Green	CAN_L
3	Brown	GND
4	Orange	External trigger.
5	Black	Shield
6	N/A	Not connected.
7	Red	CAN_H
8	N/A	Not connected.
9	Yellow	Power supply to the device.

5.4 The J1587 connector

The J1587 connector of the Kvaser Linx J1587 (see **Figure 5**) is a 9-pin male D-SUB. The pinning is described below (see Table 6).

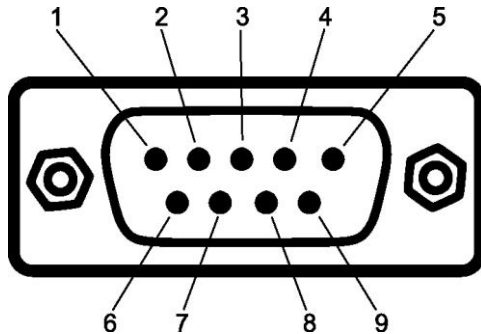


Figure 5: The J1587 D-SUB connector pin numbers (male).

Table 6: D-SUB pin configuration of the J1587 side.

The J1587 side has the following pin configuration.
(Auto-reset fuses protect Pins 2, 3, 4, 7 and 9.)

D-SUB pin number	Color code	Function
1	N/A	Not connected.
2	Green	J1708 A
3	Brown	GND
4	Orange	External trigger.
5	Black	Shield
6	N/A	Not connected.
7	Red	J1708 B
8	N/A	Not connected.
9	Yellow	Power supply to the device.



Note: Always connect the ground pin on the D-SUB to the ground of your bus.

5.5 Updating the firmware

Connect the Kvaser Linx J1587 CAN connector to any Kvaser CAN HS interface. Double-click on the file "update.exe". A small application opens and displays the Kvaser CAN interfaces that are correctly attached to the PC (see Figure 6). Select the device that your Kvaser Linx J1587 is connected to and click the *Next* button. Note that all Kvaser CAN interfaces will be shown, not just the ones with a Kvaser Linx J1587 attached.

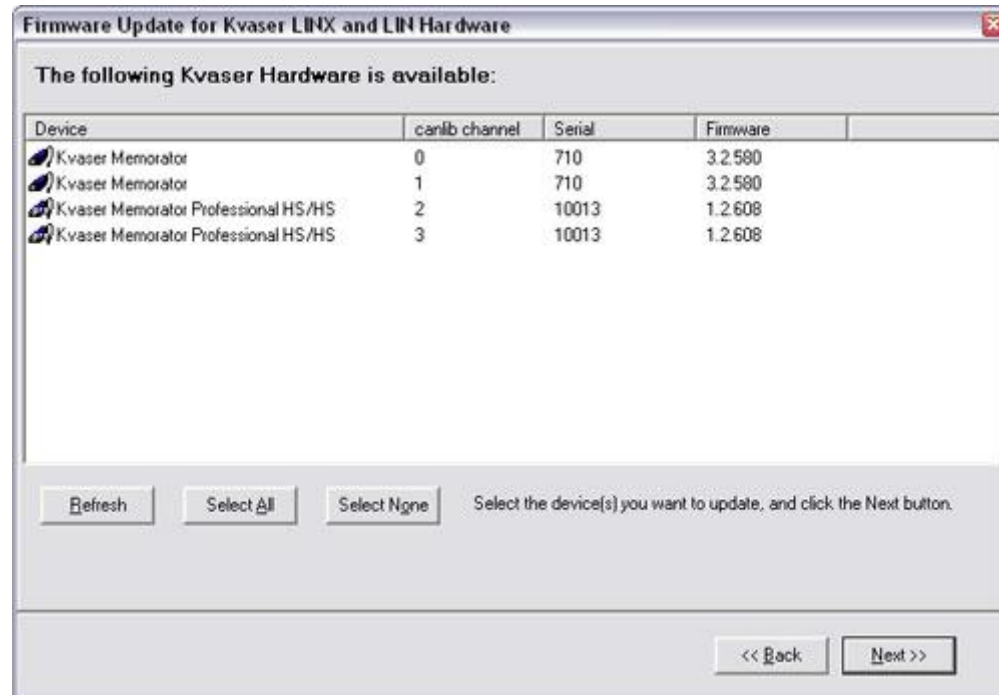


Figure 6: Firmware update, select device.

Click on the *Start Upgrade* button to start programming (see Figure 7). The progress is printed on the screen, and typically looks like this:

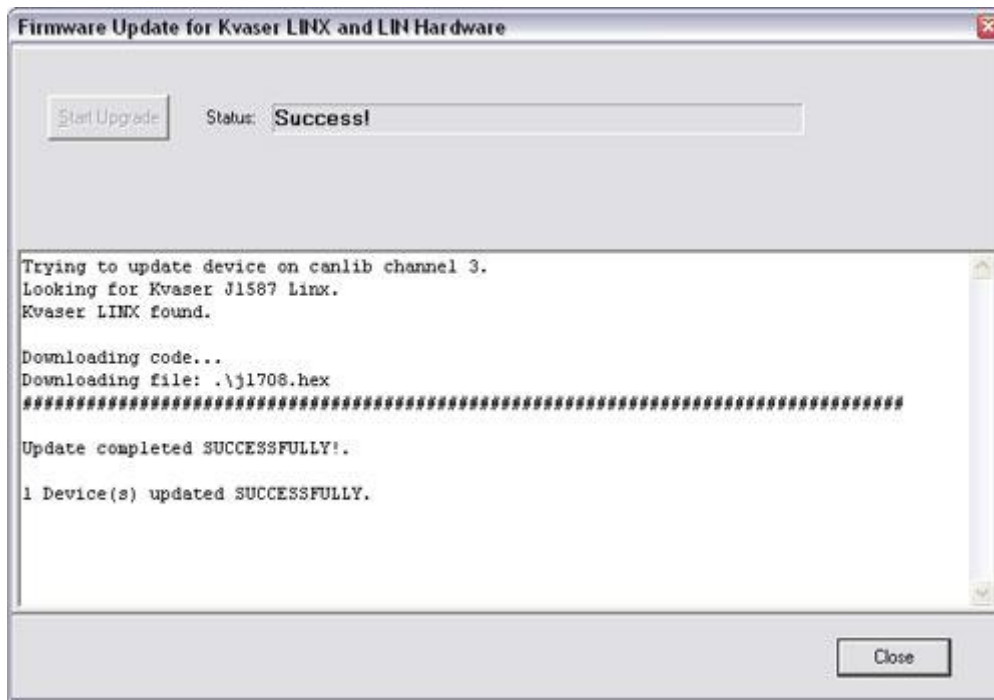


Figure 7: Firmware update, start upgrade.



No error messages should appear. If you see error messages, try to disconnect and reconnect the device, and then perform the operation again.

5.6 Bus termination

The J1587 side of the Kvaser Linx J1587 has built in bus terminators. Depending on the selected operating mode, the termination can be either weak (47 kOhm) or strong (4.3 kOhm). According to J1587 terminology, weak mode is called “Node mode” and strong mode is called “Normal mode”.

The CAN side of the Kvaser Linx J1587 is also internally terminated; hence, there is no need for external termination when directly connected to a Kvaser CAN HS interface.

6 Frequently Asked Questions

Q: Can I use a Kvaser Linx J1587 with Kvaser Memorator Professional to get logging features for my J1587 network?

A: Yes. Use the Kvaser Memorator Professional Setup Tool to configure your Kvaser Linx J1587.

Q: When using a Kvaser Linx J1587 with Kvaser Memorator Professional is it possible to trigger on a specific event on the J1587 side and then log all incoming messages on both CAN and J1587?

A: Yes. Use the Kvaser Memorator Professional Setup Tool to extract the data.

7 Legal acknowledgements

7.1 Usage warning



WARNING FOR ALL USERS

WARNING! - YOUR USE OF THIS DEVICE MUST BE DONE WITH CAUTION AND A FULL UNDERSTANDING OF THE RISKS!

THIS WARNING IS PRESENTED TO INFORM YOU THAT THE OPERATION OF THIS DEVICE MAY BE DANGEROUS. YOUR ACTIONS CAN INFLUENCE THE BEHAVIOR OF A CAN-BASED DISTRIBUTED EMBEDDED SYSTEM, AND DEPENDING ON THE APPLICATION, THE CONSEQUENCES OF YOUR IMPROPER ACTIONS COULD CAUSE SERIOUS OPERATIONAL MALFUNCTION, LOSS OF INFORMATION, DAMAGE TO EQUIPMENT, AND PHYSICAL INJURY TO YOURSELF AND OTHERS. A POTENTIALLY HAZARDOUS OPERATING CONDITION IS PRESENT WHEN THE FOLLOWING TWO CONDITIONS ARE CONCURRENTLY TRUE: THE PRODUCT IS PHYSICALLY INTERCONNECTED TO A REAL DISTRIBUTED EMBEDDED SYSTEM; AND THE FUNCTIONS AND OPERATIONS OF THE REAL DISTRIBUTED EMBEDDED SYSTEM ARE CONTROLLABLE OR INFLUENCED BY THE USE OF THE CAN NETWORK. A POTENTIALLY HAZARDOUS OPERATING CONDITION MAY RESULT FROM THE ACTIVITY OR NON-ACTIVITY OF SOME DISTRIBUTED EMBEDDED SYSTEM FUNCTIONS AND OPERATIONS, WHICH MAY RESULT IN SERIOUS PHYSICAL HARM OR DEATH OR CAUSE DAMAGE TO EQUIPMENT, DEVICES, OR THE SURROUNDING ENVIRONMENT.

WITH THIS DEVICE, YOU MAY POTENTIALLY:

- CAUSE A CHANGE IN THE OPERATION OF THE SYSTEM, MODULE, DEVICE, CIRCUIT, OR OUTPUT.
- TURN ON OR ACTIVATE A MODULE, DEVICE, CIRCUIT, OUTPUT, OR FUNCTION.
- TURN OFF OR DEACTIVATE A MODULE, DEVICE, CIRCUIT, OUTPUT, OR FUNCTION.
- INHIBIT, TURN OFF, OR DEACTIVATE NORMAL OPERATION.
- MODIFY THE BEHAVIOR OF A DISTRIBUTED PRODUCT.
- ACTIVATE AN UNINTENDED OPERATION.
- PLACE THE SYSTEM, MODULE, DEVICE, CIRCUIT, OR OUTPUT INTO AN UNINTENDED MODE.

ONLY THOSE PERSONS WHO:

- (A) ARE PROPERLY TRAINED AND QUALIFIED WITH RESPECT TO THE USE OF THE DEVICE,
- (B) UNDERSTAND THE WARNINGS ABOVE, AND
- (C) UNDERSTAND HOW THIS DEVICE INTERACTS WITH AND IMPACTS THE FUNCTION AND SAFETY OF OTHER PRODUCTS IN A DISTRIBUTED SYSTEM AND THE APPLICATION FOR WHICH THIS DEVICE WILL BE APPLIED, MAY USE THE DEVICE.

PLEASE NOTE THAT YOU CAN INTEGRATE THIS PRODUCT AS A SUBSYSTEM INTO HIGHER-LEVEL SYSTEMS. IN CASE YOU DO SO, KVASER AB HEREBY DECLARES THAT KVASER AB'S WARRANTY SHALL BE LIMITED TO THE CORRECTION OF DEFECTS, AND KVASER AB HEREBY EXPRESSLY DISCLAIMS ANY LIABILITY OVER AND ABOVE THE REFUNDING OF THE PRICE PAID FOR THIS DEVICE, SINCE KVASER AB DOES NOT HAVE ANY INFLUENCE ON THE IMPLEMENTATIONS OF THE HIGHER-LEVEL SYSTEM, WHICH MAY BE DEFECTIVE.

7.2 EMC compliance statement

EMC Tests

The equipment has been tested for compliance with the EN 50 081-2:1993 (emission) and the EN 61000-6-2:1999 (immunity) standards.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

7.3 WEEE compliance statement

This product is sold in compliance with the directive 2002/96/EC of the European Parliament on Waste Electrical and Electronic Equipment (WEEE.)

7.4 RoHS compliance statement



This product is sold in compliance with the directive 2002/96/EC of the European Parliament on Waste Electrical and Electronic Equipment (WEEE.)

7.5 Patents, copyrights and trademarks

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NMEA 2000® is the registered trademark of the National Marine Electronics Association, Inc.

The products described in this document are protected by U.S. patent 5,696,911.

8 Document revision history

Revision	Date	Changes
1	2007-03-23	Original revision
2	2008-12-01	Updated legal information