Kvaser Memorator Pro 5xHS CB User's Guide



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https://www.kvaser.com

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We believe that the information contained herein was accurate in all respects at the time of printing. Kvaser AB cannot, however, assume any responsibility for errors or omissions in this text. Also note that the information in this document is subject to change without notice and should not be construed as a commitment by Kvaser AB.

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1 About this manual

This document describes a printed circuit board assembly version of the Kvaser Memorator Pro 5xHS. It contains a description of the hardware properties, its physical dimensions and instructions for connecting the device to a CAN bus and a USB bus. For further information, please refer to the Kvaser Memorator Pro 5xHS User's Guide.

2 Welcome to Kvaser Memorator Pro 5xHS CB



Figure 1: Kvaser Memorator Pro 5xHS CB

Device	Product Number	Firmware	Driver (Windows/Linux)
Kvaser Memorator Pro 5xHS CB	73-30130-00832-8	v3.29	v5.41 (kcany/mhydra)

Table 1: Firmware and driver versions needed to support all functionality present in this guide.

Throughout this document, we use the name Kvaser Memorator Pro 5xHS CB to refer to the product listed in Table 1.

3 Layout

Kvaser Memorator Pro 5xHS CB consists of a printed circuit board (PCB) populated with components.

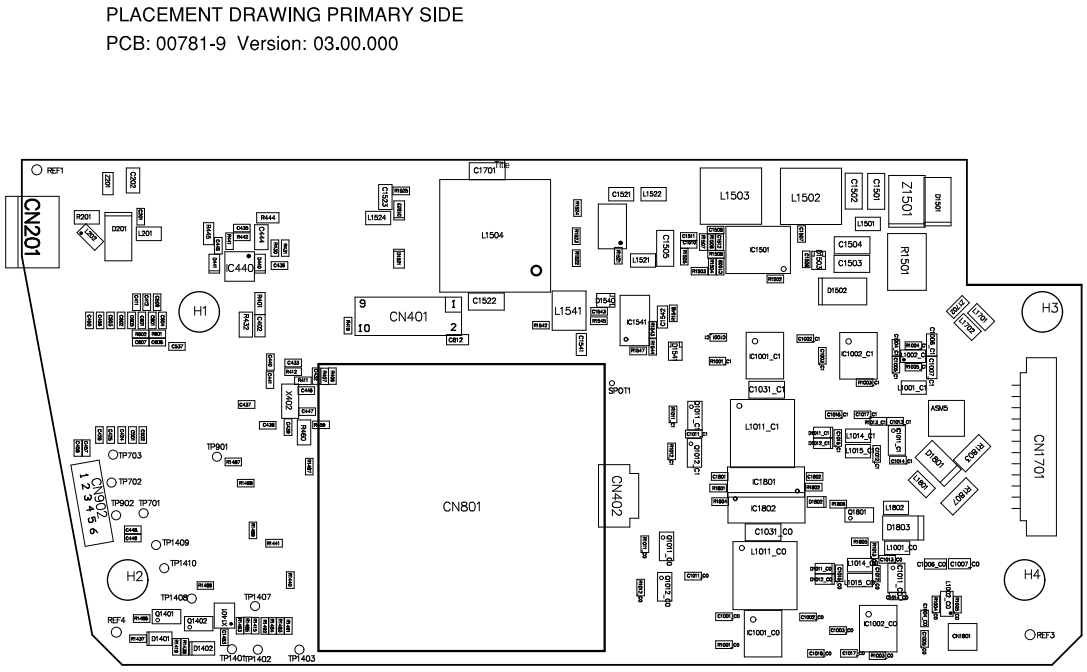

Figure 2: Top view of Kvaser Memorator Pro 5xHS CB

The power LEDs are placed on the bottom right (D401 and D407), with the CAN LEDs are placed to the left (D402–D406 and D408–D412), see Figure 4 on Page 7. The USB connector is placed to the left on the top side (CN201) and the CAN connectors to the right on the top side (CN1701) and to the left on the bottom side(CN1702). The SD card reader is placed on the top side (CN801).

The outline in Figure 5 on Page 8 also shows the four mounting holes which have a diameter of 4.5 mm.

PLACEMENT DRAWING SECONDARY SIDE
PCB: 00781-9 Version: 03.00.000

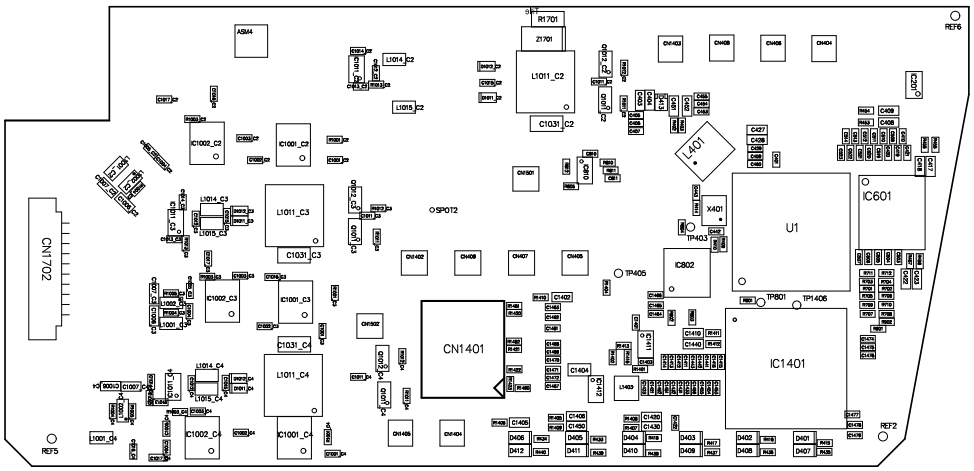

Figure 3: Bottom view of Kvaser Memorator Pro 5xHS CB

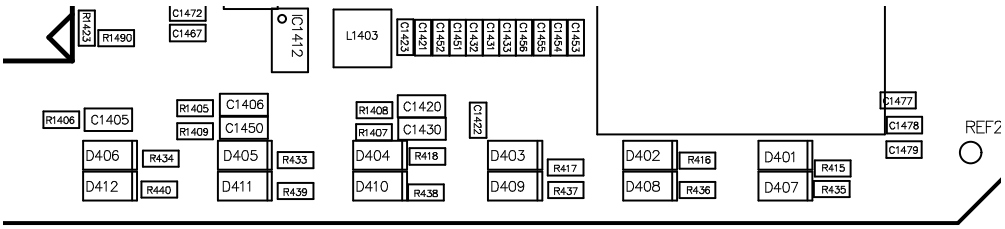

Figure 4: Placement of LEDs (D401–D412) in bottom right corner of bottom side.

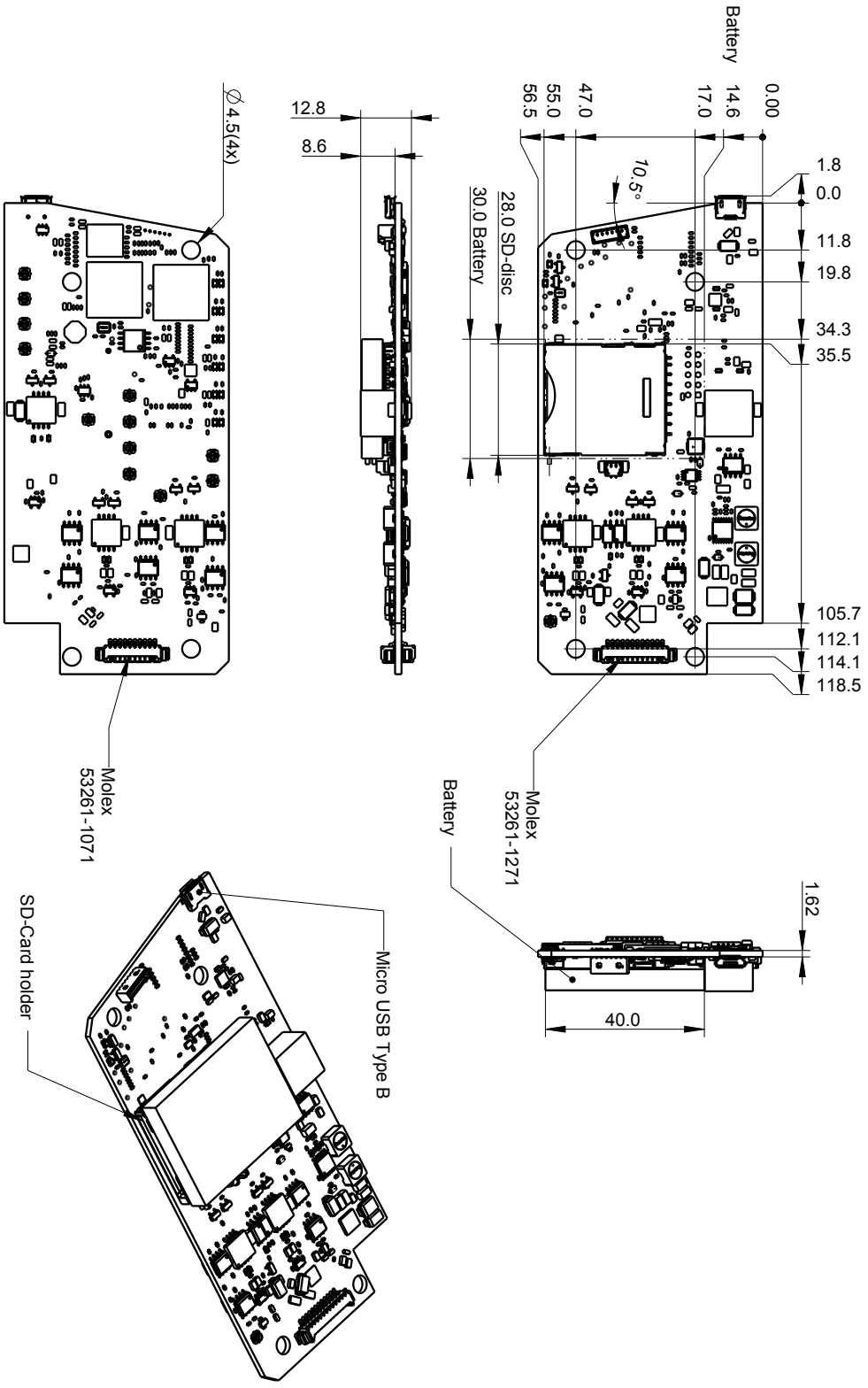

Figure 5: Physical dimensions of Kvaser Memorator Pro 5xHS CB.

4 Connectors

4.1 USB connector

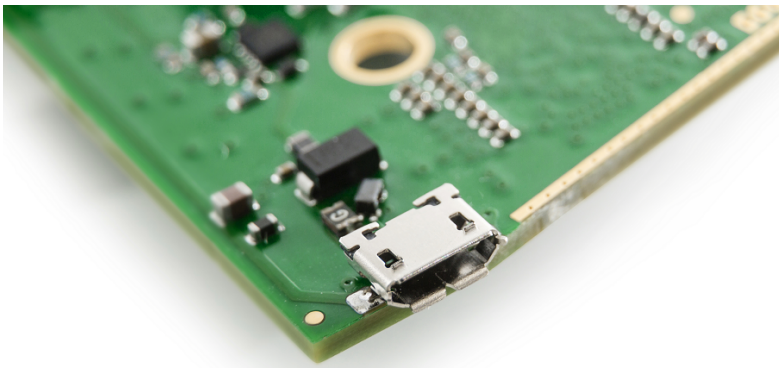

Figure 6: USB connector on Kvaser Memorator Pro 5xHS CB

The Kvaser Memorator Pro 5xHS CB has a standard USB type "Micro-B" female connector, as seen in Figure 6. Figure 2 on Page 6 and Figure 6 show the placement of the USB connector.

4.2 CAN connector

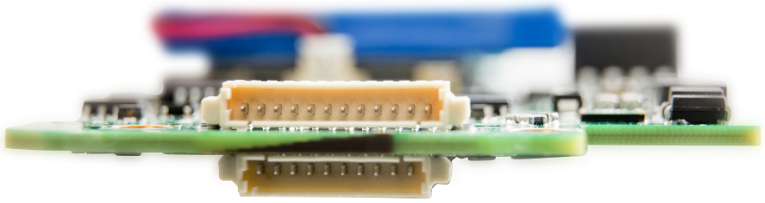

Figure 7: CAN connectors on Kvaser Memorator Pro 5xHS CB

CAN is connected using a 12-way (top side) and a 10-way connector (bottom side) and mate with Molex 51021 PicoBlade™ (housing 51021-1200 and 51021-1000, with terminal 50079-8000), as seen in Figure 7. Figure 2 on Page 6 and Figure 3 on Page 7 show the placement of the CAN connectors. Table 2 on Page 10 and Table 3 on Page 10 describe the CAN connectors.

Pin Number	Function
1	CAN_L channel 2
2	CAN_H channel 2
3	GND channel 2
4	External trigger output
5	Not connected
6	Not connected
7	External trigger input
8	CAN_L channel 1
9	CAN_H channel 1
10	GND channel 1
11	Power supply to the device
12	Shield

Table 2: Pin configuration of the top-side CAN connector.

Pin Number	Function
1	GND channel 3
2	CAN_L channel 3
3	CAN_H channel 3
4	GND channel 4
5	CAN_L channel 4
6	CAN_H channel 4
7	GND channel 5
8	CAN_L channel 5
9	CAN_H channel 5
10	Not connected

Table 3: Pin configuration of the bottom-side CAN connector.

5 LED indicators

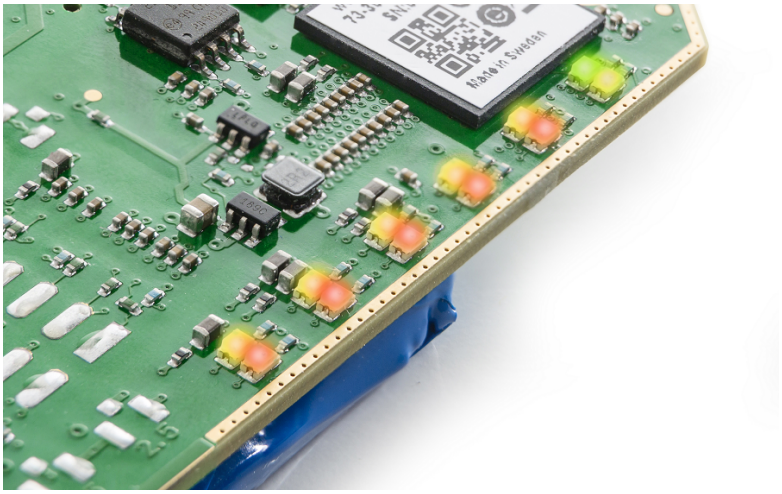

Figure 8: The LEDs on Kvaser Memorator Pro 5xHS CB

Figure 8 show the LEDs on the PCB. For further information about the LED functionality, please refer to the Kvaser Memorator Pro 5xHS User's Guide.

6 Updating the firmware

For the Kvaser Memorator Pro 5xHS CB to communicate with the host computer, compatible versions of the Kvaser CANlib (including driver) and firmware must be installed.

The latest versions of firmware and drivers can be downloaded for free at www.kvaser.com/download.

Connect the Kvaser Memorator Pro 5xHS CB to your host computer with the USB cable and start the update.exe application. A window opens showing the Firmware Update Instructions; read and follow those carefully.

To check the current firmware version, open "Kvaser Device Guide" which can be found in the Control Panel. Select "Kvaser Memorator Pro 5xHS CB" in the tree view to the left, and click on the channel. The firmware revision information now appears in the right half of the window.

The absolute minimum firmware and driver versions needed in order to use Kvaser Memorator Pro 5xHS CB are listed in Table 4

Device	Min. Firmware Version	Min. Driver Version
Kvaser Memorator Pro 5xHS CB	v3.28	V5.40

Table 4: Minimum compatible driver and firmware versions of Kvaser Memorator Pro 5xHS CB.

7 Safety Instructions

7.1 Intended Use

Kvaser interfaces are used to connect computer systems to CAN buses. The Kvaser Memorator Pro 5xHS CB is intended for connection to a computer via the USB port.

7.2 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.

8 Disposal and Recycling Information



When this product reaches its end of life, please dispose of it according to your local environmental laws and guidelines.

Dispose of batteries according to your local environmental laws and guidelines.

For information about Kvaser's recycling programs, visit:
https://www.kvaser.com/en/kvaser/recycling-policy.html

9 Legal acknowledgements

9.1 EU Regulatory Compliance

KVASER **EU Declaration of Conformity (DoC)**

We

Company Name:	Kvaser AB	City:	Mölndal
Postal address:	Aminogatan 25	Telephone number:	+46 31 886344
Postcode:	431 53	E-mail address:	sales@kvaser.com

declare that the DoC is issued under our sole responsibility and belongs to the following product:

Product: Kvaser Memorator Pro 5xHS CB

Object of the declaration (identification of apparatus allowing traceability):
Product: Kvaser Memorator Pro 5xHS CB
Type: 73-30130-00832-8

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:
Electromagnetic Compatibility (EMC) Directive 2014/30/EU (Art. 6)

RoHS recast Directive 2011/65/EU (Art. 4.1)

The following harmonised standards and technical specifications have been applied
(title, date of standard/specification):

EN 55032 (2015 + A11:2020)

EN 55035 (2017 + A11:2020)

EN IEC 63000 (2018)

Signed for and on behalf of:

Mölndal	2025-01-10	
Place of issue	Date of issue	Kent Lennartsson, Research Manager

9.2 FCC Regulatory Compliance

KVASER

Federal Communications Commission (FCC) Compliance Information Statement

IDENTIFICATION OBJECT:
Product: Kvaser Memorator Pro 5xHS CB
Type: 73-30130-00832-8

APPLICABLE COMPLIANCE STATEMENTS:
CFR Title 47 Part 15 §15.107, §15.109
This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received,
including interference that may cause undesired operation.

RESPONSIBLE PARTY (IN USA) NAME:
Kvaser Inc.
41650 Gardenbrook Road, Suite 130
Novi, MI 48375

Internet contact: support@kvaser.com

9.3 Patents, Copyrights and Trademarks

All trademarks are the property of their respective owner. Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

Adobe, the Adobe logo, and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

MagiSync is a trademark of Kvaser AB.

DeviceNet is a trademark of Open DeviceNet Vendor Association, Inc.

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

For information about Kvaser related CAN patents, see www.kvaser.com/patent.

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

10 Document Revision History

Version history for document UG_98171_memo_pro_5hs_cb:

Revision	Date	Changes
1.0	2015-04-16	Initial version.
1.1	2017-01-09	Updated compliance text, added link to patents.
2.0	2017-08-25	Updated EU Declaration of Conformity.
3.0	2018-10-15	Updated EU Regulatory Compliance.
3.1	2019-08-09	Url protocol updated.
3.2	2020-01-27	Added sdoc.
3.3	2023-02-13	Added firmware and driver version and a section about how to update the firmware. Added section about intended use.
3.4	2024-03-15	Updated Kvaser logo.
3.5	2025-01-10	Updated EU Declaration of Conformity.