CAN isolator gateway

Version 1.0 [2026/06/08]

This evaluation kit is intended for use for ENGINEERING DEVELOPMENT, DEMONSTRATION, OR EVALUATION PURPOSES ONLY and is not considered to be a finished end-product fit for general consumer use. Persons handling the product(s) must have electronics training and observe good engineering practice standards. As such, the goods being provided are not intended to be complete in terms of required design-, marketing-, and/or manufacturing-related protective considerations, including product safety and environmental measures typically found in end products that incorporate such semiconductor components or circuit boards. This evaluation kit does not fall within the scope of the European Union directives regarding electromagnetic compatibility, restricted substances (RoHS), recycling (WEEE), FCC, CE or UL, and therefore may not meet the technical requirements of these directives or other related directives.

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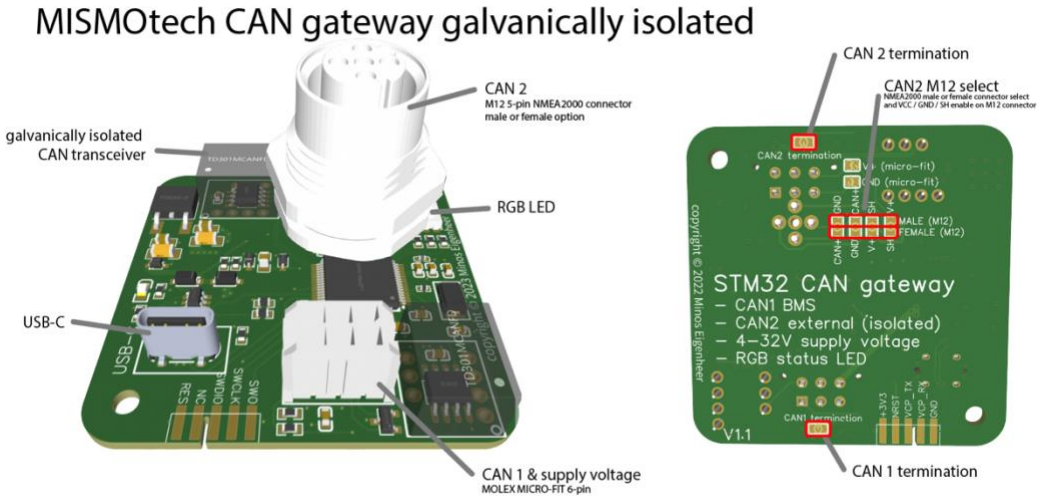
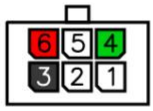
1 Hardware overview

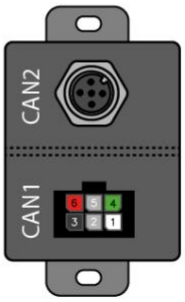


2 Pinout

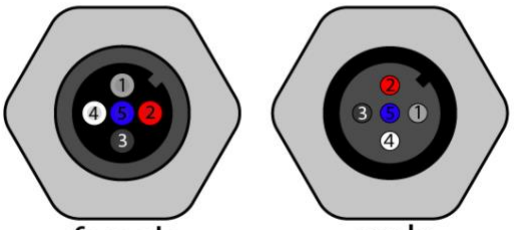
CAN 1
micro-fit 6p.



1 CAN Low
2 Analog input 1
3 GND
4 CAN High
5 Analog input 2
6 Voltage supply 12V



CAN 2 galvanically isolated
NMEA2000 M12 5p. connector



1 Shield (optional SJ) not isolated!
2 PWR (optional SJ) not isolated!
3 GND (optional SJ) not isolated!
4 CAN H isolated
5 CAN L isolated

Connection diagram

3 CAN bus notes

>> Use twisted and shielded cable for the CAN bus.

>> Don’t use drop cables longer than 0.5m.

>> Make sure you have <u>two</u> 120-ohm termination resistors connected on each CAN bus!

The gateway has on-board termination resistors (split terminator type) which can be enabled with a solder jumper on the back of the PCB.

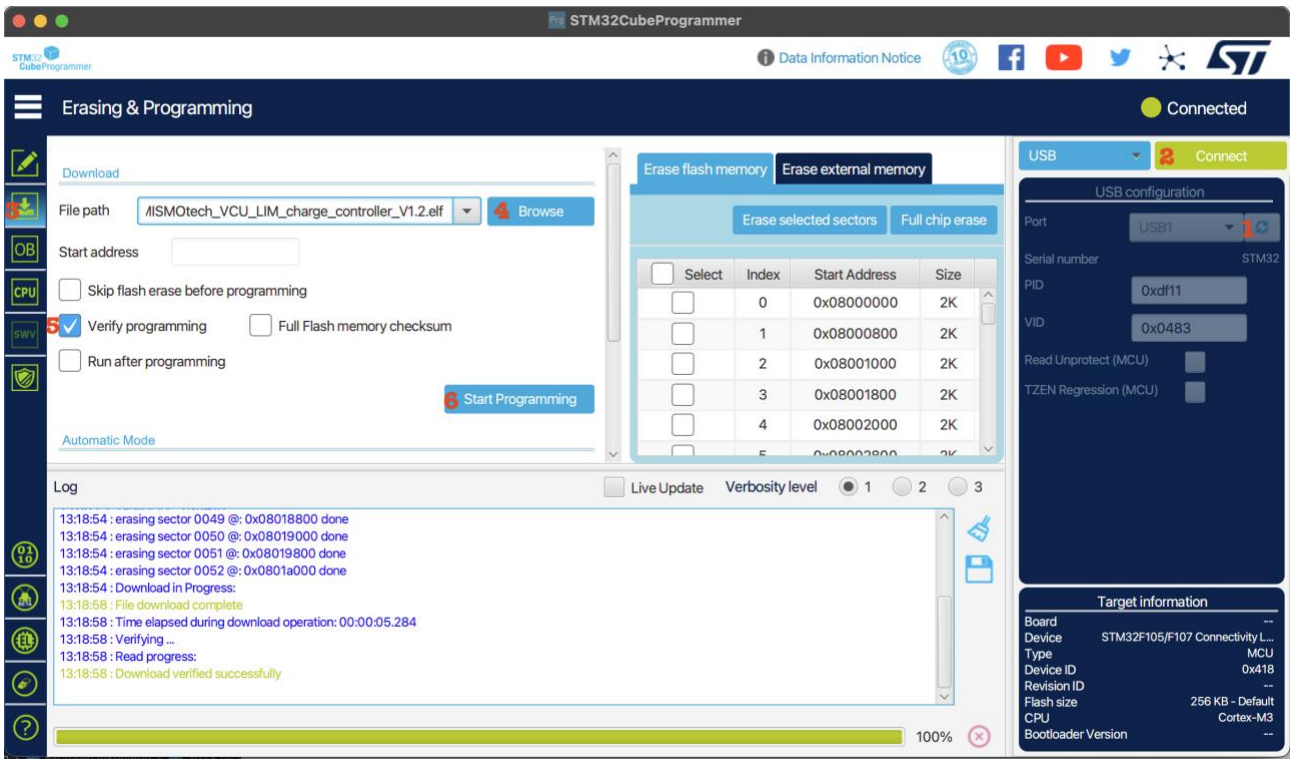
4 RGB status LED

Yellow dimmed	No connection
Green breath	Ready
Off	No Power supply
Dark blue	SW update mode

5 CAN gateway software update process

The controller software can be updated with a USB-C data cable. **Make sure the cable has actually data wires and not only power!** The device is also powered by the USB during the software update.

1. Download and install STM32CubeProgrammer for your operating system.
   https://www.st.com/en/development-tools/stm32cubeprog.html
2. Disconnect the CAN cables from the gateway to turn it off.
   Remove the case with the two screws at the bottom.
3. Connect a USB-C cable from your computer to the device.
   The status LED should be blue.
4. Select USB as the communication method in STM32CubeProgrammer.
   It sometimes takes a few seconds before the device is recognized in DFU mode, just press the refresh button a couple of times until you see USB1 device.
   >> Try a different USB cable if it does not work.
5. Press “Connect” to establish a connection to the device.
6. Move to the Erasing & Programming tab on the left and press “Browse” to select the *.elf image with the new software.
7. Select “Verify programming”.
8. Make sure “Run after programming” is **not** selected.
9. Press “Start Programming” and wait until the process finishes.
   Do not disconnect the device during the download process!
10. You should get a few pop-ups with the “File download complete” and “Download Verified successfully” messages and your VCU should be updated at this point.
    You can press “Disconnect” and remove the USB-C cable.
11. Put controller back in the case and reconnect the CAN cables.



6 Revision history

Revised on	Version	Description	Approved by
01-06-2023	0.1	Initial document creation	ME
08-06-2026	1.0	Publish document	ME