PROGRAMMING TOOL – DEALER USER GUIDE

Thank you for purchasing and using Marlin Technologies' electronic control units. This programming tool was created to easily program and configure Marlin Technologies modules. The emphasis of the design was ease-of-use and speed of operations.

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A. Supported USB-CAN dongles

- Kvaser
  a. Leaf Light V2 (https://www.kvaser.com/product/kvaser-leaf-light-hs-v2/)
  b. Leaf Light V3 (https://kvaser.com/product/leaf-v3/)
  c. USB-CAN Pro (https://kvaser.com/product/kvaser-usbcan-professional-2/)
- PCAN-USB (https://www.gridconnect.com/products/can-usb-adapter-pcan-usb)


Kvaser Leaf Light v2

PCAN-USB

1. How to install the Programming Tool application

Unzip 'MTI ProgTool Installer.zip' file provided by Marlin Technologies, Inc. Locate and run "MTI Programming Tool Installer.exe" to initiate the Marlin CAN USB Programmer application installation. Follow the prompts during the process until it's finished.

During installation, you have the option to install drivers for your desired CAN dongle. If you don't already have these drivers, they will need to be installed for the program to run.
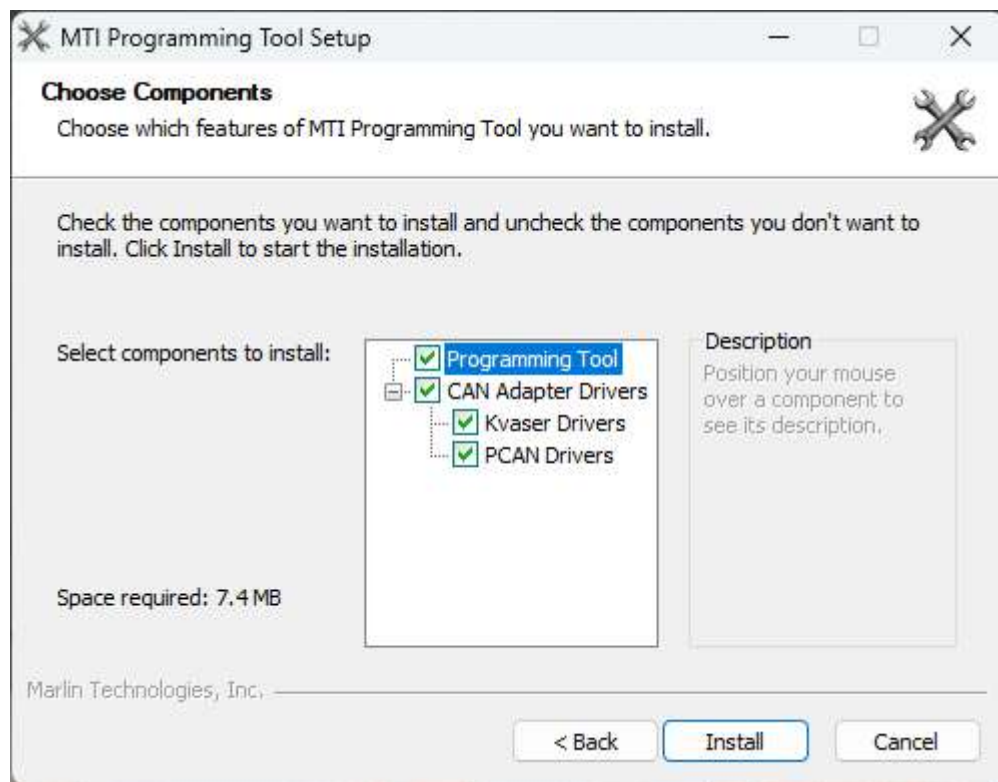
Menu for selecting which CAN Drivers to install

1.1 How to uninstall the application

To uninstall the application, right click on the windows icon in the taskbar and navigate to "Installed apps".
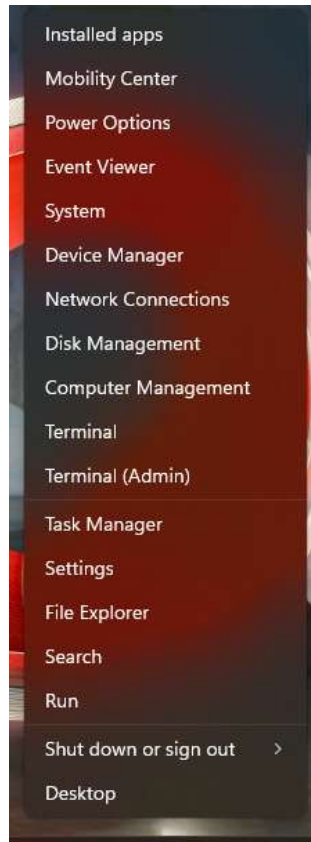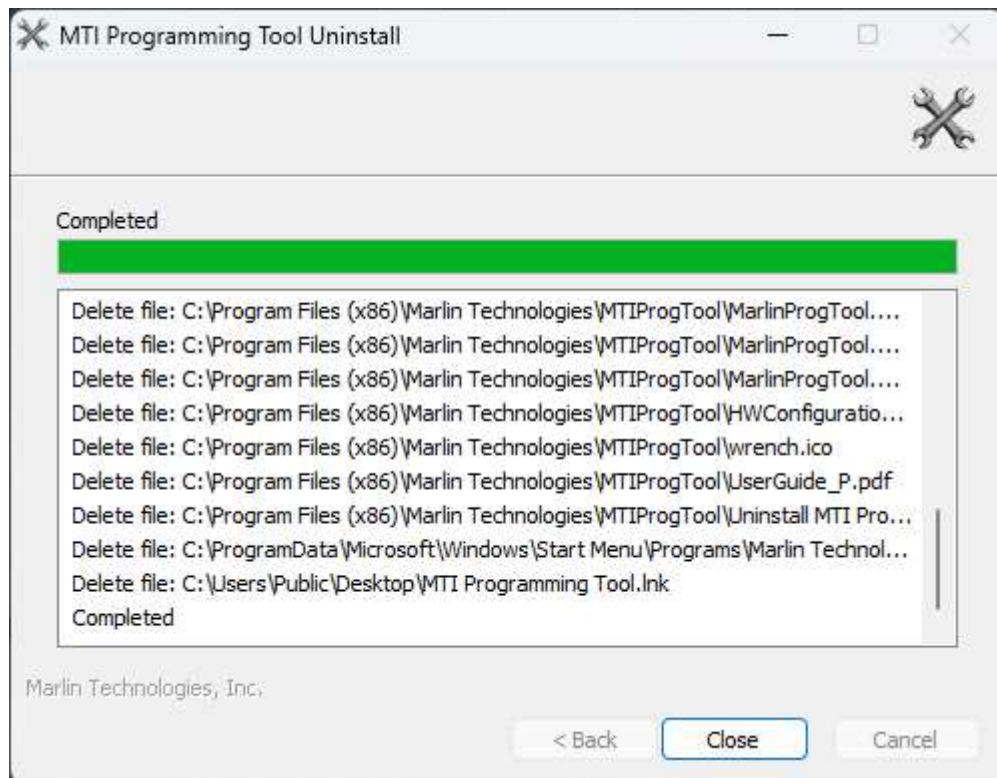

Menu showing "Installed apps"

Locate "MTI Programming Tool", click on the 3 dots to the side, and click on "Uninstall" to start the uninstall process.


Uninstalling the Programming Tool

Follow the prompts and wait for the process to complete. The shortcut should disappear from your workstation's Desktop.

Uninstallation completion

2. Launch the installed application

After successful installation, a shortcut called "MTI Programming Tool" will appear on the user's desktop. To launch the application, double click it.
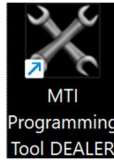
Shortcut icon for Programming Tool

Once the program is launched, the application's main page will appear and an automatic search for compatible dongle(s) attached to the computer's USB port(s) will be performed.

More than one dongle can be connected to the user's PC workstation at the same time, however, only one of them can be active at a given time.
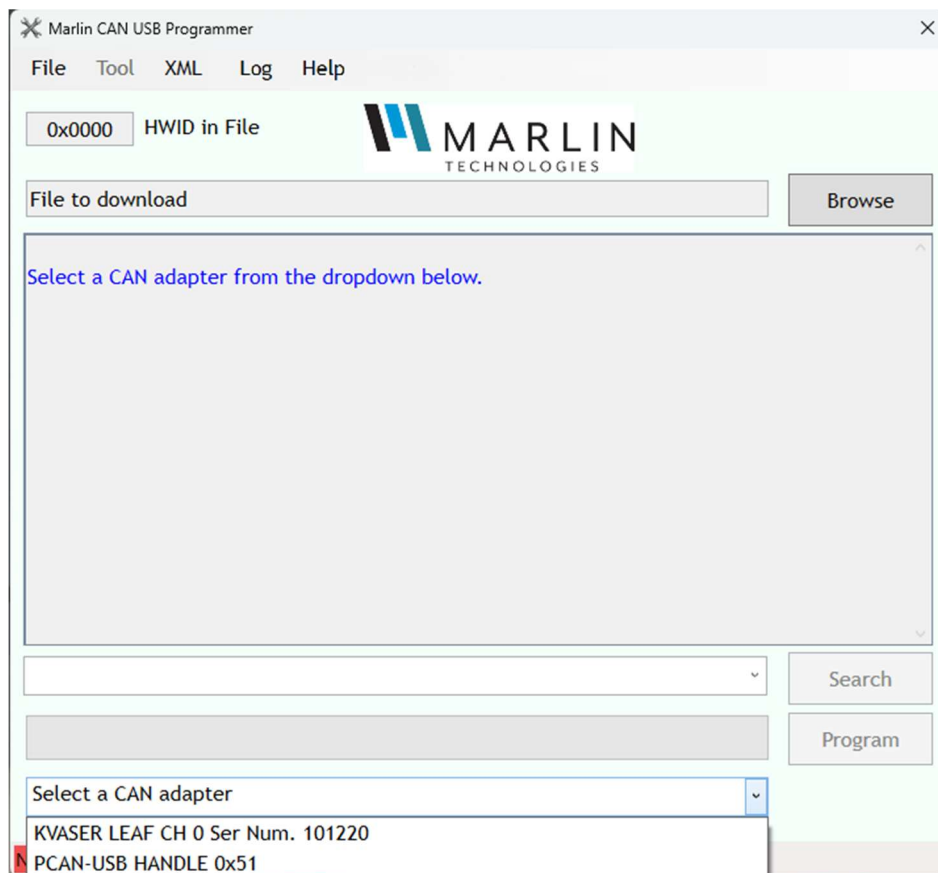

Multiple dongles connected

Selecting the 'PCAN-USB' dongle

Once a dongle is chosen, its name and the current baud rate will appear on the status strip at the bottom of the main window highlighted in green. A search for available on CAN bus controllers will start automatically. The user can then repeat the search by clicking on the "Search" button.

3. Setting up desired baud rate for a dongle

The first time you open the application, a default value of 250 kbit/s will be set. To change the speed, click on "Tool" -> "Baud Rate:" and pick any of four available rates: 125 kbit/s 250 kbit/s, 500 kbit/s or 1 Mbit/s. This selection will be remembered after the application is closed.
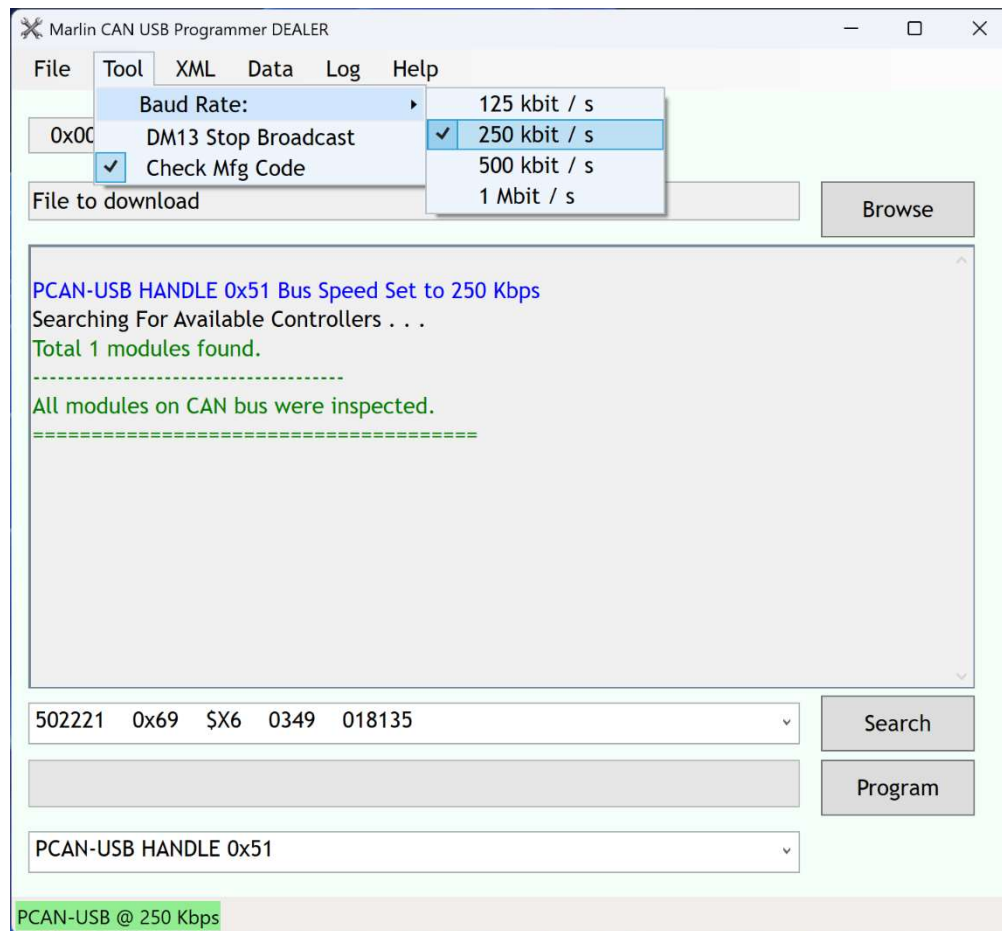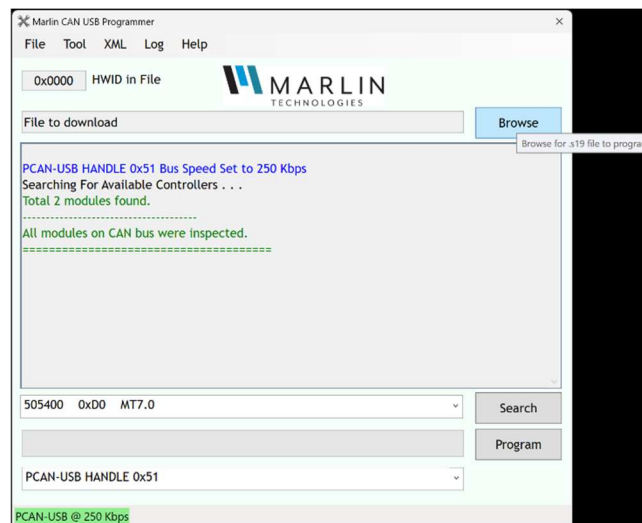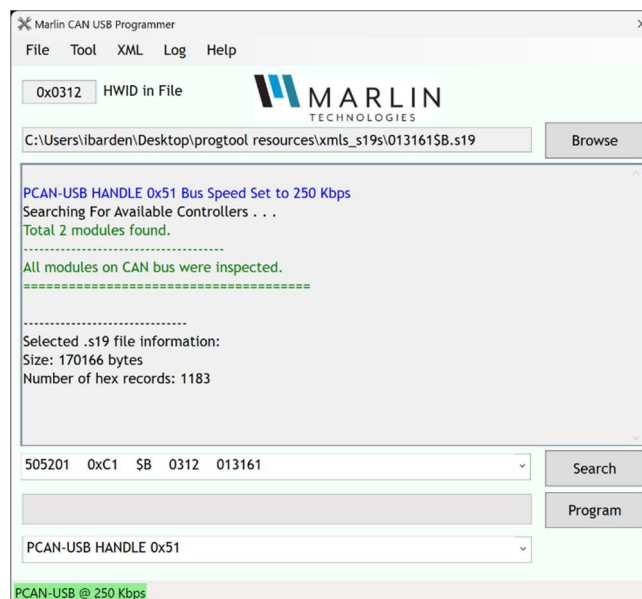
Selecting a baud rate

4. Program an .s19 file into a selected controller

Click on the "Browse' button or go to 'File' -> 'Open .s19 File' to choose an .s19 file saved on your PC's hard drive.

Note: do not place your .s19 files into 'C:\Program Files (x86)\Marlin Technologies\'. The access to this location might be denied by the operating system.


Button to browse for an .s19 file

.s19 file selected

Once an .s19 file is selected, the file path will be shown in the text box by the "Browse" button. You can now download a program to the selected controller by clicking on the "Program" button. During programming, the progress bar will advance and completion percentage will be shown, and all buttons are disabled to prevent programming disruption.
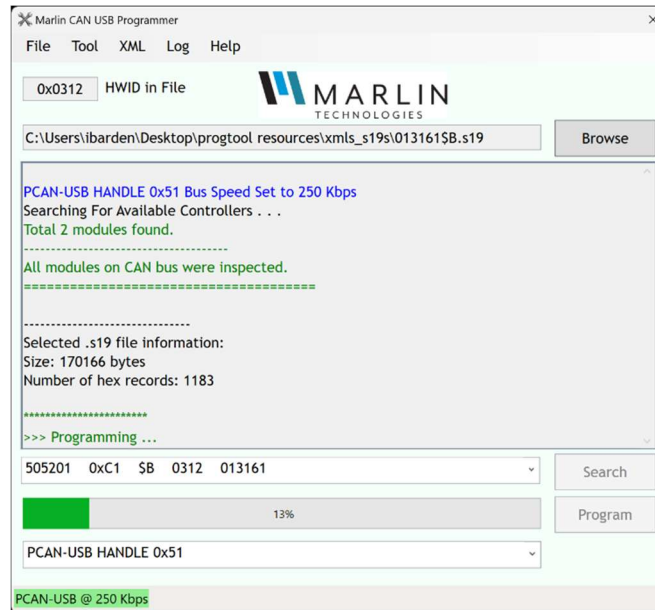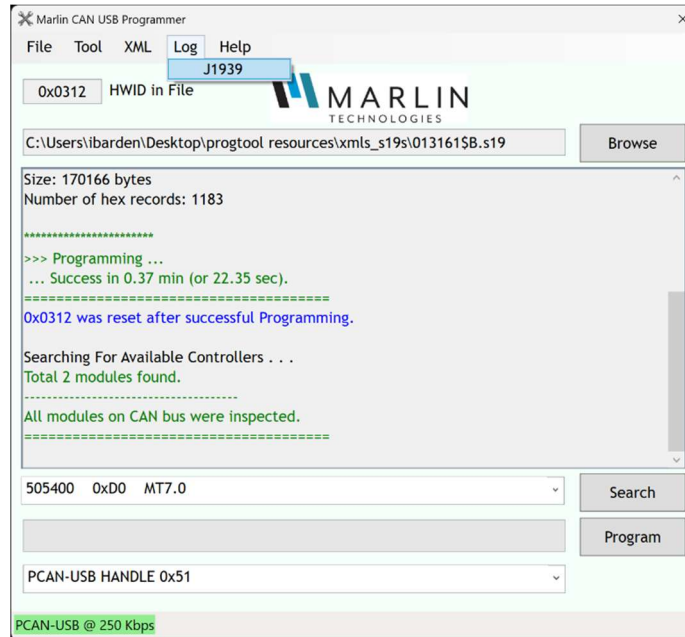

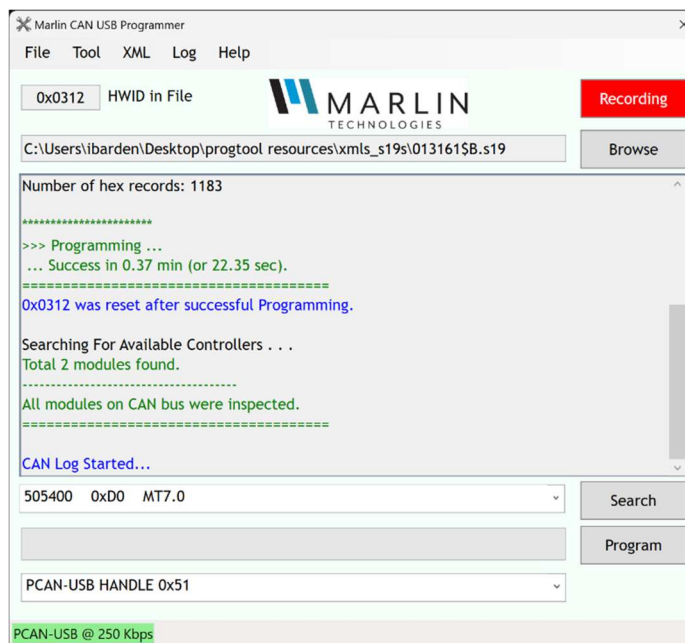
Device programming in progress
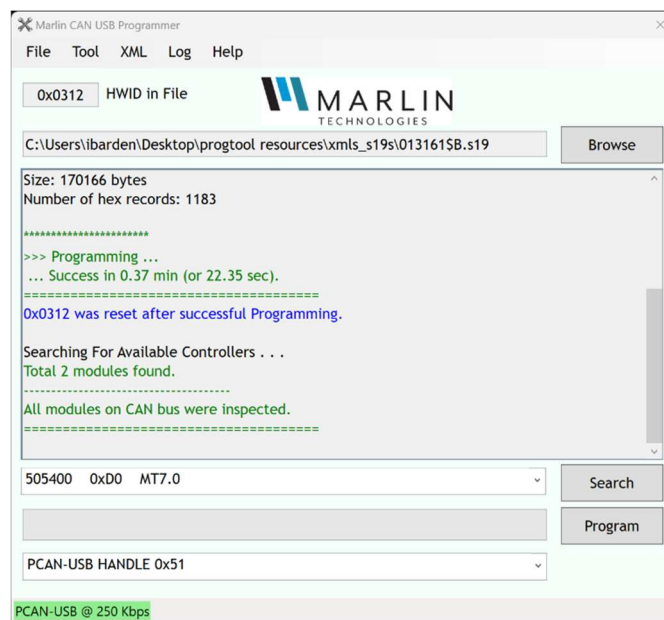
Device programming success

5. Log CAN Bus traffic

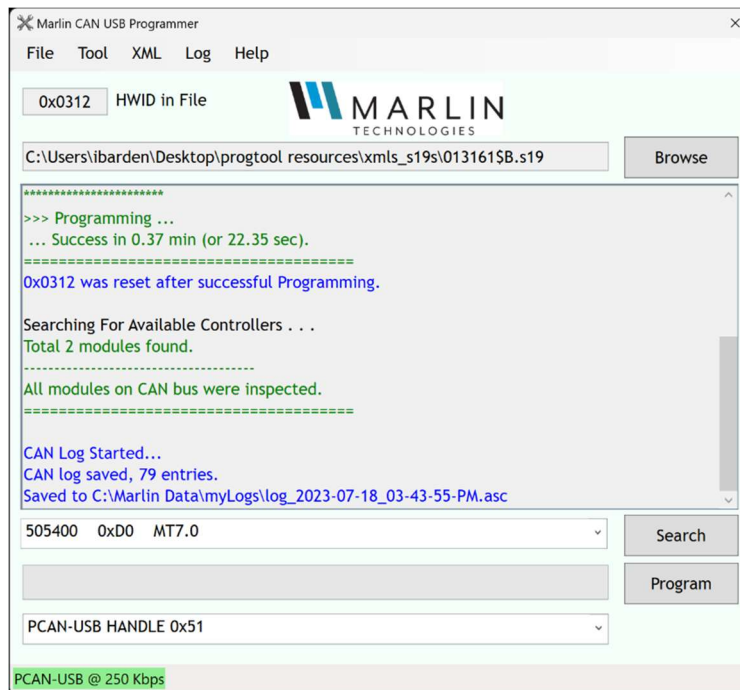Check the "Log" -> "J1939" box to log messages sent over the CAN Bus:

Location of start logging button

CAN logging in progress

To stop logging, click on the "Recording" button or click on "Log" -> "J1939" again. A new log file (file extension .asc) will be created and saved to C:\Marlin Data\myLogs\.

CAN logging is complete

The format of the log file is such that it can be used with Vector Informatik CANAlyzer:
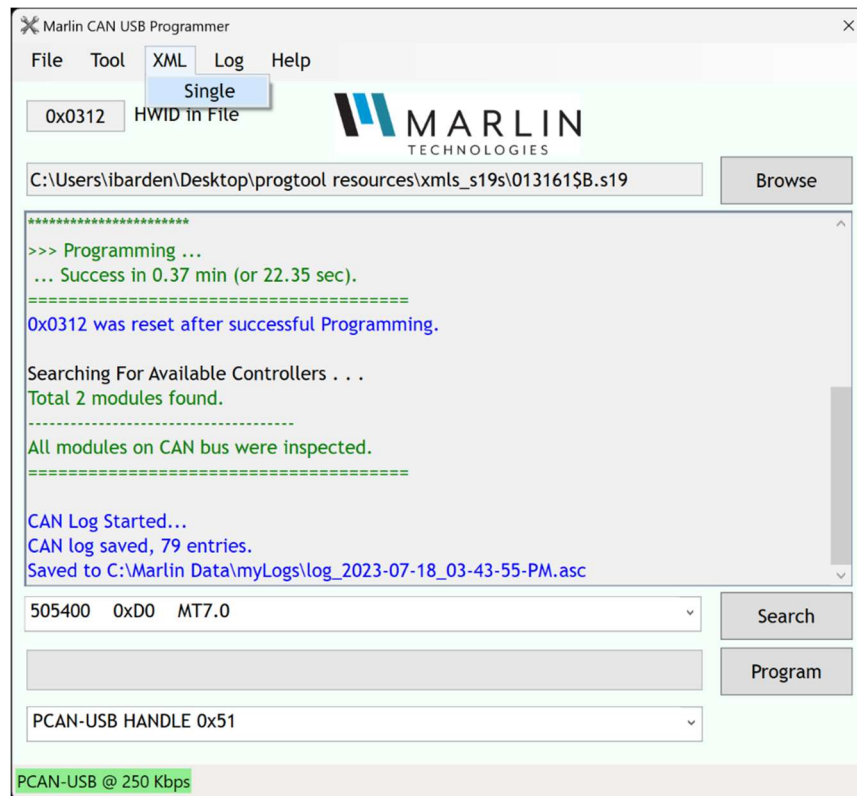

Format of CAN log

6. Loading EEPROM Data from a controller into an XML File

The user can read and write data to a compatible controller by selecting the "XML" tab:

Entering the XML Menu

NOTE: YOU WILL ONLY BE ABLE TO OPEN XML FILES CREATED BY THE STANDARD PROGRAMMING TOOL FOR THE DEALER VERSION

The application will prompt you to choose an .xml template file. After choosing the file, a new table will appear. The user can also save the .xml file by clicking 'Save As' button.

To read attributes from a controller, select the desired controller on the main window and then click on '*Read from EEPROM*':

Selecting the desired device on the main menu

An XML file is opened

EEPROM attributes read from device

To see the values of parameters in hexadecimal, check the 'HEX' box:
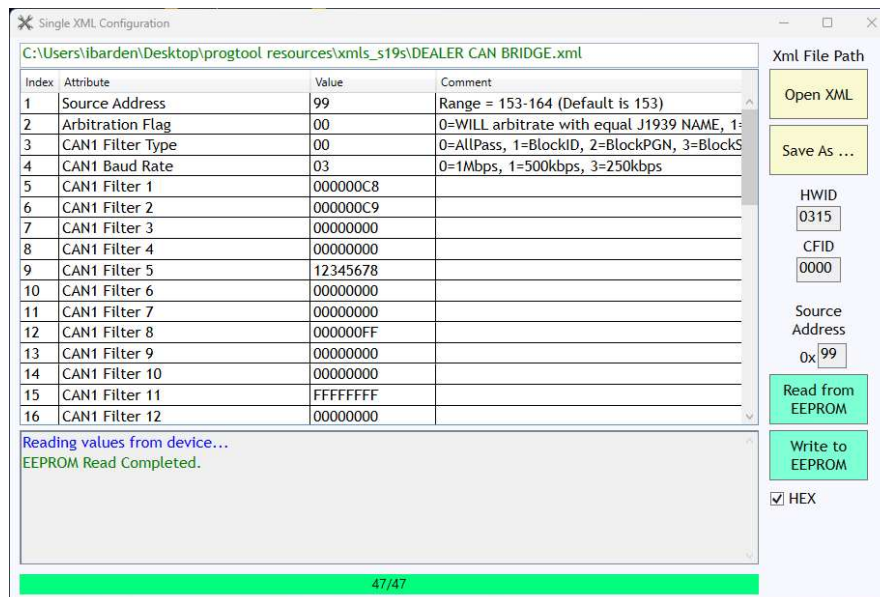
Read attributes in hexadecimal

7. Advanced Settings

Two checkboxes have been added as of 3.0.5, under the "Tool" tab.

DM13 Stop Broadcast (off by default): Sends out a J1939 DM13 STOP BROADCAST message before programming. Only supported my some Marlin modules, particularly those that broadcast lots of data over the CAN bus.

Check Mfg Code (on by default): Filters searched modules by Marlin Technologies manufacturer code.
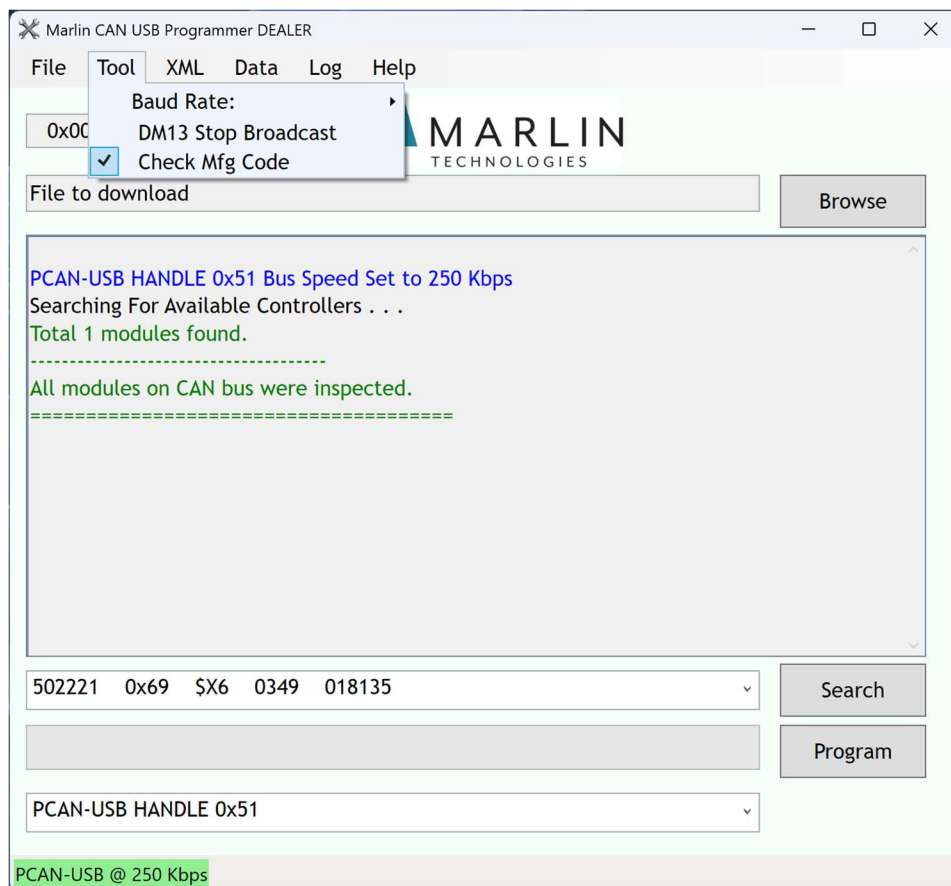
Location of advanced settings checkboxes

8. Get information about the Programming Tool

The "Help" tab on the main window contains two options:

"About…" will open a small window that gives some information about the Programming Tool

"User Guide…" will open this document.

"Programming Resources…" will open a webpage containing information and programming files for M-Flex devices
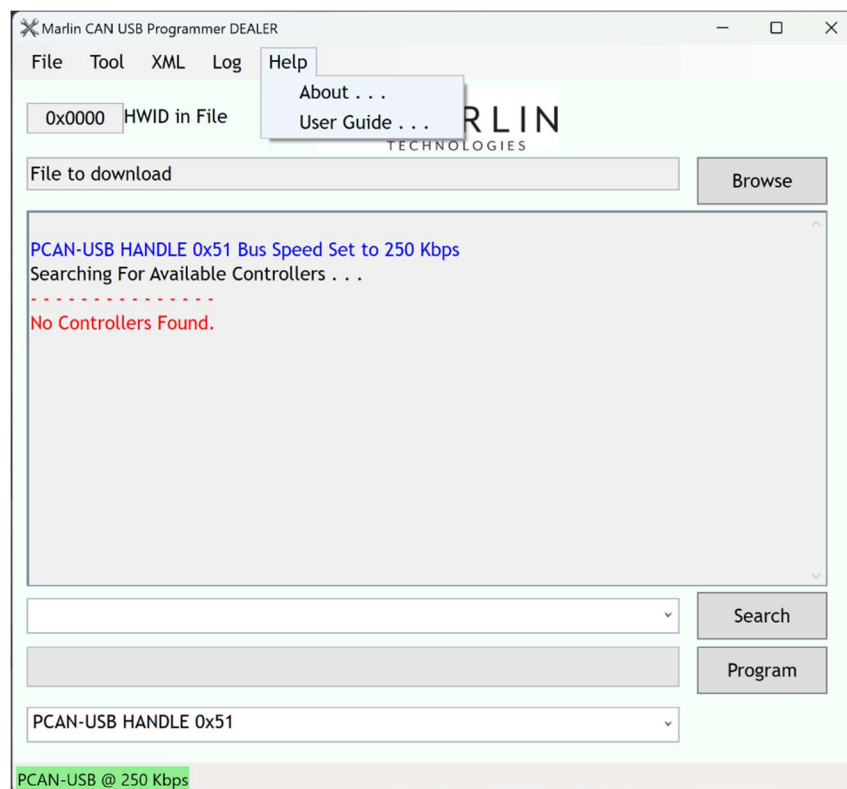
Location of help tab in main menu
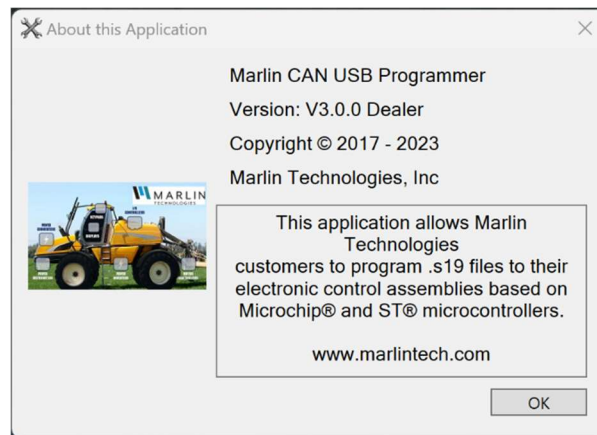
About tab

Design Resources page on the Marlin Teechnologies website.

If you have any additional comments, questions, or concerns, please contact Marlin Technologies Inc customer service by calling 920-485-4463.

Appendix A: Change Log

3.0.0:

-Initial release

3.0.1:

-Updated HWConfigs.xml

-Improved how source addresses are selected in the Single XML menu

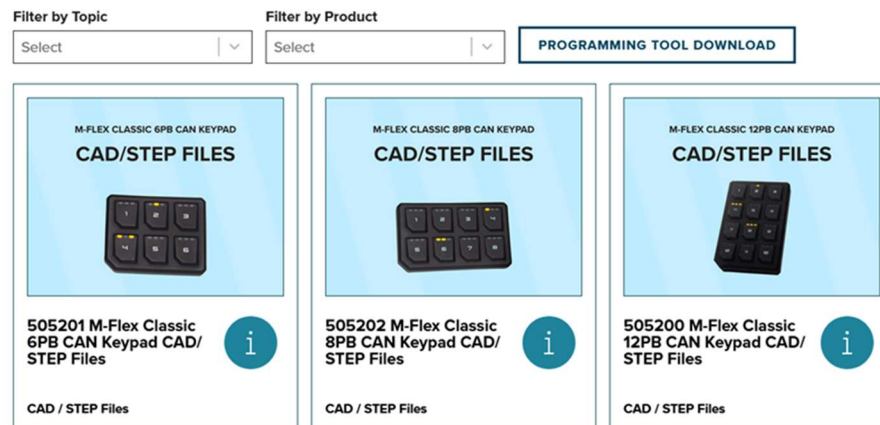-Better error handling when creating Marlin directories

3.0.2:

-Improved EEPROM queries

-Module to configure can now be selected from the Single XML menu

-Browse button on main window now disabled while searching and programming

3.0.3:

-Fixed issue when programming EMC-hardened displays (e.g. 505404)

3.0.4:

-Added EEPROM Dump function to Dealer version

-Added 505408 and 505411 to the list of modules that support EEPROM dump

-Periodic messages no longer continue after CAN window is closed

-User is no longer warned about writing a null value XML cell

-Fixed issue with empty Tx messages in CAN log

3.0.5:

-Added DM13 Stop Broadcast checkbox

-Added Address Claim Manufacturer Code checkbox

-Hitting the "F" and "S" key no longer crashes CAN menu

3.0.6:

-Signed installer

3.0.7:

-Modules with HW revisions (i.e. 501214B, 501214C) will now include the letter revision in the search menu

-XML menus now stay aligned when switching between decimal and hex

-Updated Kvaser Drivers

-Added support for Kvaser Leaf Light v3 and Kvaser USBcan Pro

3.0.8:

-Added progress bar to XML read write operations

-Added cancel button to XML read write operations

-Added logging feature for single XML

-Made CAN menu's Rx and Tx sections resizable

-Opened s19 files now persist across sessions

3.0.9:

-Added "Identify Device" PGN

-Multi Channel CAN adapters (i.e. USBCan Pro) now show all channels

-Dealer XMLs can now be opened in the Standard version, in read-only mode

-Updated HWConfigurations.xml to 1.13