multiLane Cooperative Lane Control Application User Manual

Contents

1 multiLane Cooperative Lane Control Application
2 Product Information
3 LaneControl
4 List of Acronyms
5 Introduction
6 GUI Introduction
7 GUI Overview
8 Control ML Instruments
9 Feature Support
10 Documents / Resources
10.1 References
11 Related Posts

multiLane Cooperative Lane Control Application

Product Information

Specifications

- User Manual Revision: 1.0.0, November 2023
- Acronyms:
  - ML: MultiLane
  - GUI: Graphical User Interface
  - VID: USB Vendor ID
  - PID: USB Product ID
  - FW: Firmware

Installation

To install LaneControl, follow these steps:

1. Download the LaneControl setup file.
2. Select “run” and follow the step-by-step installation procedure.
3. If installing for the first time, check the “Install ML Instruments Driver” option to install the required drivers for USB connection.

GUI Overview

The LaneControl GUI provides the following features:

- Scan Window: Allows users to search for MultiLane instrumentson the network or connected via USB.
- Add Window: Manually add a MultiLane instrument by selecting from the supported instruments and choosing either Ethernet or USB connection.
- Filter: Filter devices based on their active/non-active status or communication type (Ethernet/USB).

Control ML Instruments

The Control ML Instruments feature in LaneControl allows you to manage and interact with your MultiLane devices. It includes the following:

- Instrument Info: Displays a list of all detected devices and manually added devices. Clicking on a device's title bar maximizesits information. Each device has a refresh and delete button.

Feature Support

The LaneControl software supports various features for MultiLane instruments. Please refer to the user manual for detailed information on each feature.

FAQ

Q: How do I install LaneControl?
A: To install LaneControl, follow these steps:

1. Download the LaneControl setup file.
2. Select "run" and follow the step-by-step installation procedure.
3. If installing for the first time, check the "Install ML Instruments Driver" option to install the required drivers for USB connection.

Q: How do I add a MultiLane instrument manually?
A: To manually add a MultiLane instrument, follow these steps:

1. Open the Add window in LaneControl.
2. Select the desired instrument from the supported instruments list.
3. Choose either Ethernet or USB connection.
    - For Ethernet, provide the IP address of the device.
    - For USB, provide the port in which the device is connected to.

Q: How do I filter devices in LaneControl?
A: To filter devices in LaneControl, follow these steps:

1. Open the Filter menu in LaneControl.
2. Select the desired filter option:
    - Active/Non-active devices
    - Ethernet/USB communication type

LaneControl

Installation | Features user guide
User Manual Revision1.0.0, November 2023

Notices

Copyright © MultiLane Inc. All rights reserved. Licensed software products are owned by MultiLane Inc. or its suppliers and are protected by United States copyright laws and international treaty provisions.
Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013, or subparagraphs (c)(1) and (2) of the Commercial Computer Software — Restricted Rights clause at FAR 52.227-19, as applicable.

MultiLane Inc. products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specifications and price change privileges reserved.

Revision Control

Revision number	Description	Release Date
1.0.0	▪ Initial Release	24/11/2023

List of Acronyms

Acronym	Definition
ML	MultiLane
GUI	Graphical User Interface
VID	USB Vendor ID
PID	USB Product ID
FW	Firmware

Introduction

This is MultiLane's new Instrument Manager, a powerful and intuitive application designed to manage your hardware MultiLane instruments. It offers a seamless solution for connecting, monitoring, and controlling your instruments with ease.
Scan and connect to devices on your network, or add them manually for quick access.
View various instrument information, including board ID, serial number, and Ethernet settings…Control your instrument by adjusting Ethernet configurations, including IP address, subnet mask, and gateway, and easily

updating firmware and FPGA (if applicable) through our wizard.

GUI Introduction

After downloading the LaneControl setup file, select run and follow the step-by-step installation procedure.

Note: Check the “Install ML Instruments Driver” if you are installing this application for the first time. This will install the required drivers for connecting through USB.

Installation

After downloading the LaneControl setup file, select run and follow this easy step-by-step installation procedure:

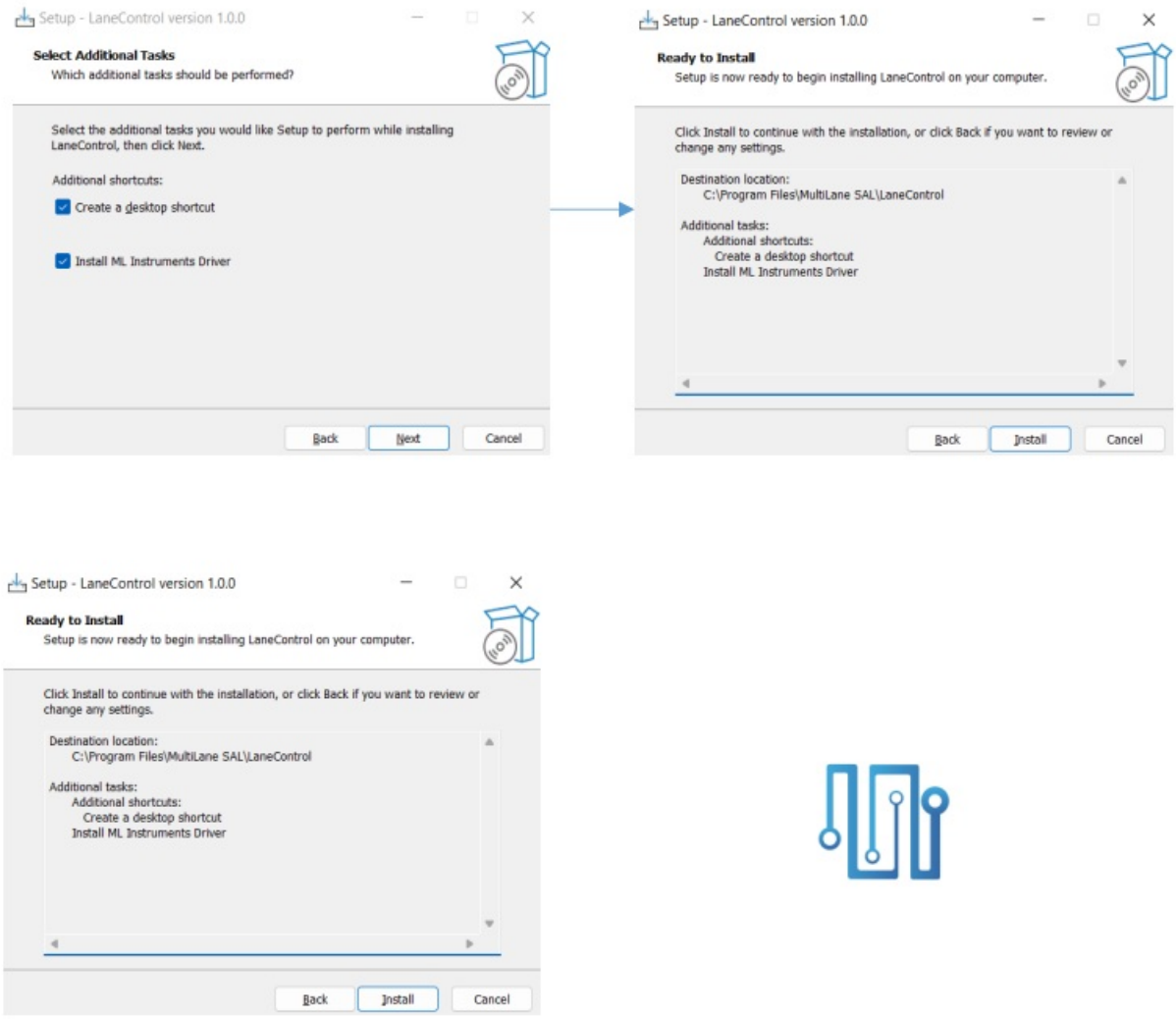


Figure 1: LaneControl installation process

LaneControl should now be ready to run, with a shortcut button on the Desktop.

GUI Overview

Scan Window

LaneControl provides end users with the ability to search for the MultiLane instruments on the network and those connected through USB.

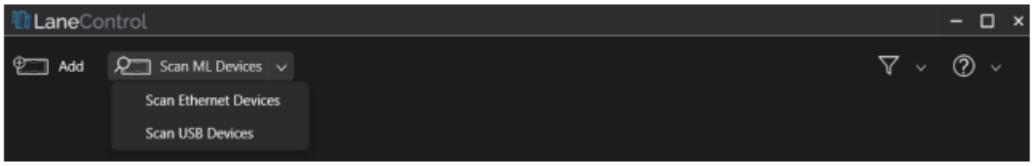


Figure 2: Scan Menu

Add Window
You can add a MultiLane instrument manually through the Add window. You can choose on the left tree from the supported instruments.

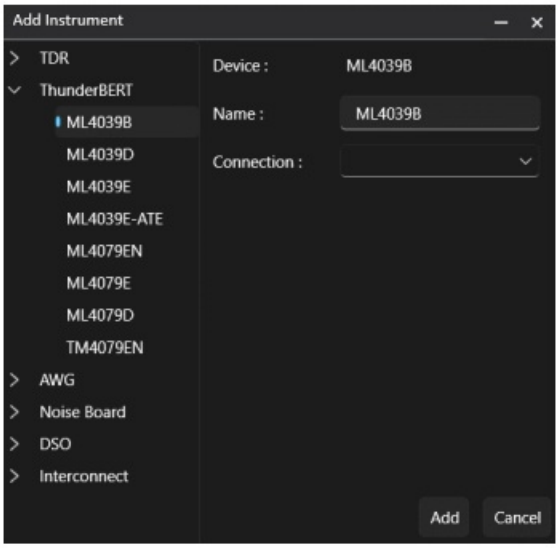


Figure 3: Manual Add window

- You can choose to either connect through Ethernet or USB.
  - For Ethernet, you should provide the IP address

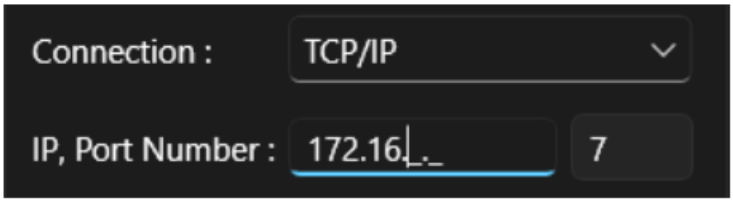


Figure 4: Add ML Ethernet Instrument

  - For USB, you should provide the port in which the device is connected to.

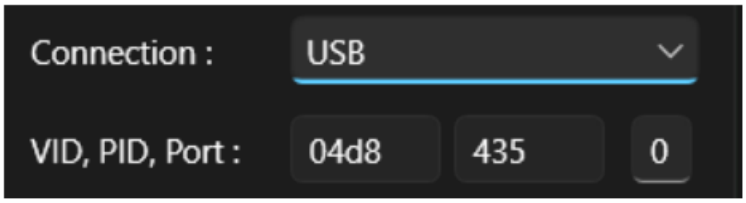


Figure 5: Add ML USB Interface Instrument

Filter
Filter through active and non-active devices, or through Ethernet and USB communication type.

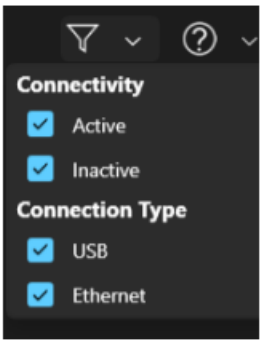


Figure 6: Filter menu

Control ML Instruments

Instrument Info

All the list of devices (auto detected or manually added) will be shown in the main window. To see more info about a device, you can click on its title bar to maximize it.

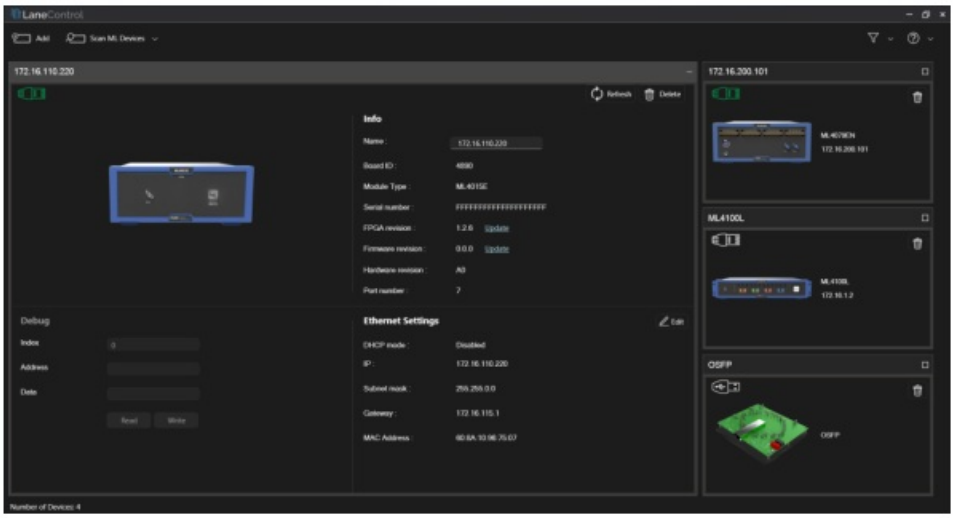


Figure 7: Device Info

As shown in the above figure, each device has a refresh and a delete button.

- Delete: Used to remove a device from the list of devices
- Refresh: Used to check the status of the device. On refresh you can read the device's general info (Boards ID, Serial Number, FPGA revision, Firmware revision, Hardware Revision, Ethernet settings …)

Ethernet Settings

You also have the ability to read or change the device's Ethernet settings.

Figure 8: ML instrument Ethernet settings

- DHCP Mode (Enable/Disable)
- Static|Dynamic IP address (Read/Write)
- Subnet Mask (Read/Write)
- Gateway (Read/Write)
- MAC Address (Read only)

ML Instrument Update

The GUI can also be used to upgrade the firmware or the FPGA image by following these next steps:

- In order to update the firmware, you should connect your device through a USB cable.
- FPGA update requires Ethernet connection
- In the device info, next to the revision, press on update (FW or FPGA). This will open the update wizard (Below example is for FW update)

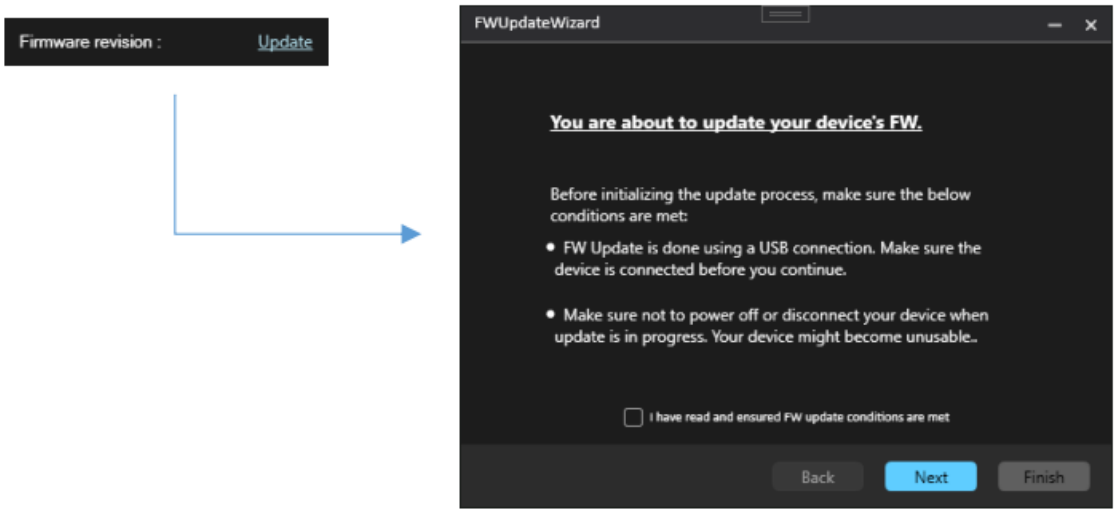
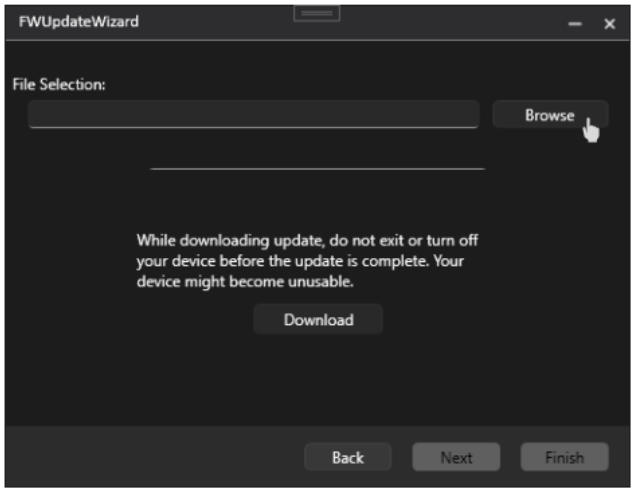
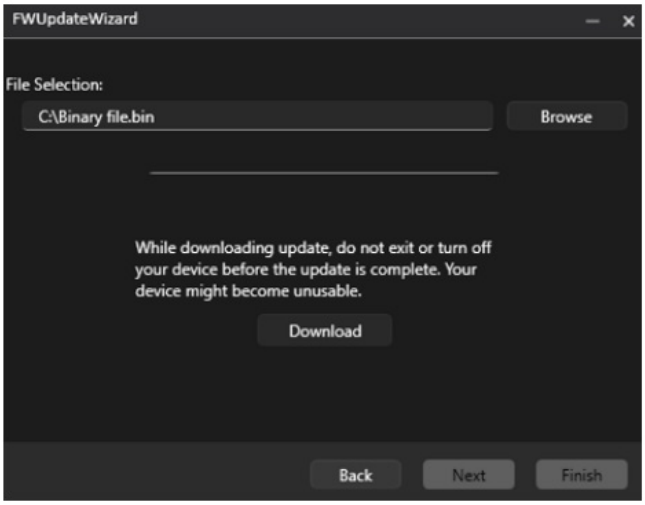


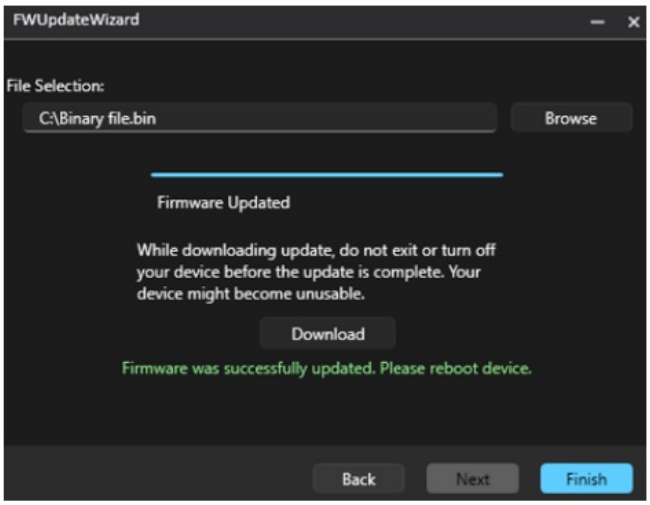
Figure 9: FW/ FPGA Update Wizard

- Check the “I have read and ensured …” button and press on Next
- Select the Firmware file (or the FPGA file) (.BIN). This selection is made by browsing the location of the file.



- After selecting the file, click on Next and proceed to the next steps.





NOTE S: DO NOT TURN OFF THE DEVICE UNTIL THE UPDATE IS COMPLETE!

Feature Support

This section indicates which functions are supported across the various MultiLane Instruments.

Table 1: MultiLane Instruments Supported Features

Instrument PN	UDP Auto Detect	DHCP	Control Ethernet Settings through USB	Control Ethernet settings Through LAN	FW/FPGA Update
ML4039B	**	**	RO**	Supported	Supported
ML4039D	**	**	RO**	Supported	Supported
ML4039E	**	**	RO**	Supported	Supported
ML4039E-ATE	**	**	RO**	Supported	Supported
ML4079D	**	**	RO**	Supported	Supported
ML4079EN	Supported	Supported	Supported	Supported	Supported
ML4100L	Supported [>FPGA v1.1.1]	Supported [>FPGA v1.1.1]	Not Supported	Supported	Supported
ML4081	Supported	Supported	Supported	Supported	Supported
ML4015E	Supported [>FPGA v1.2.2]	Supported [>FPGA v1.2.2]	**	Supported	Supported
ML406B	Supported [>FPGA v1.5.2]	Supported [>FPGA v1.5.2]	**	Supported	Supported
TM4079EN	**	NA	NA	NA	NA
TM4025	*	NA	NA	NA	NA
ML4035	Supported [>FPGA v1.3]	Not Supported	Supported	Supported	Supported

- Requires FPGA Image update
- Requires FW Update

Documents / Resources

	multiLane Cooperative Lane Control Application [pdf] User Manual Cooperative Lane Control Application, Lane Control Application, Application

References

- User Manual

Manuals+, **Privacy Policy**

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.