



ATE Instruments Maintenance Guide

Maintenance GUI | IP Change | Firmware Upgrade | USB Installation

User Manual Revision 0.1, January 2021



AT4039E – AT4039D – AT4039EML – AT4079B – AT4025

Innovation for the next generation

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General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazards, use this product only as specified.

Only qualified personnel should perform service procedures.

While using this product, you may need to access other parts of the system. Read the General Safety Summary in other system manuals for warnings and cautions related to operating the system.

To Avoid Fire or Personal Injury

Use Proper Power Cord. Only use the power cord specified for this product and certified for the country of use.

Observe All Terminal Ratings. To avoid fire or shock hazard, observe all ratings and markings on the product. Consult the product manual for further ratings information before making connections to the product. Do not apply a potential to any terminal, including the common terminal that exceeds the maximum rating of that terminal.

Do Not Operate Without Covers.

Do not operate this product with covers or panels removed.

Avoid Exposed Circuitry. Do not touch exposed connections and components when power is present.

Do Not Operate with Suspected Failures.

If you suspect there is damage to this product, have it inspected by qualified service personnel.

Do Not Operate in Wet/Damp Conditions. Do Not Operate in an Explosive Atmosphere. Keep Product Surfaces Clean and Dry



Caution statements identify conditions or practices that could result in damage to this product or other property.

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Revision Control

Revision number	Description	Release Date
0.1	▪ Initial Release	02/03/2021

Introduction

This document will discuss the different steps needed to change IP address or upgrade firmware for any ATE instrument.

All MultiLane ATE instruments have two PC interfaces: USB and Ethernet. The USB interface is only for changing the IP address of the instrument and for updating firmware. One cannot interact with the GUI through USB.

The Ethernet interface is used to interact with the GUI and APIs running on a Windows or Linux system. Ethernet may also be used to change the IP address and update the firmware as well.

In case this document was not downloaded from MultiLane's website, kindly download the "Maintenance" folder from your instrument's dedicated page on www.multilaneinc.com. The folder consists of the following:

- **ML Maintenance** GUI
- **USB Driver** of your instrument
- This **document** that discusses the processes step by step

Note: Refer to "[Appendix II](#)" for USB driver installation

GUI Introduction

To install and start using the **ML Maintenance** interface for the first time, follow this step-by-step installation guide (with pictures) below:

On your PC:

1. **Run** the ML Maintenance setup file.
2. **Install** ML Maintenance.
3. **Connect** ATE instrument to the local network.
4. **Launch** the GUI.

Installation

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

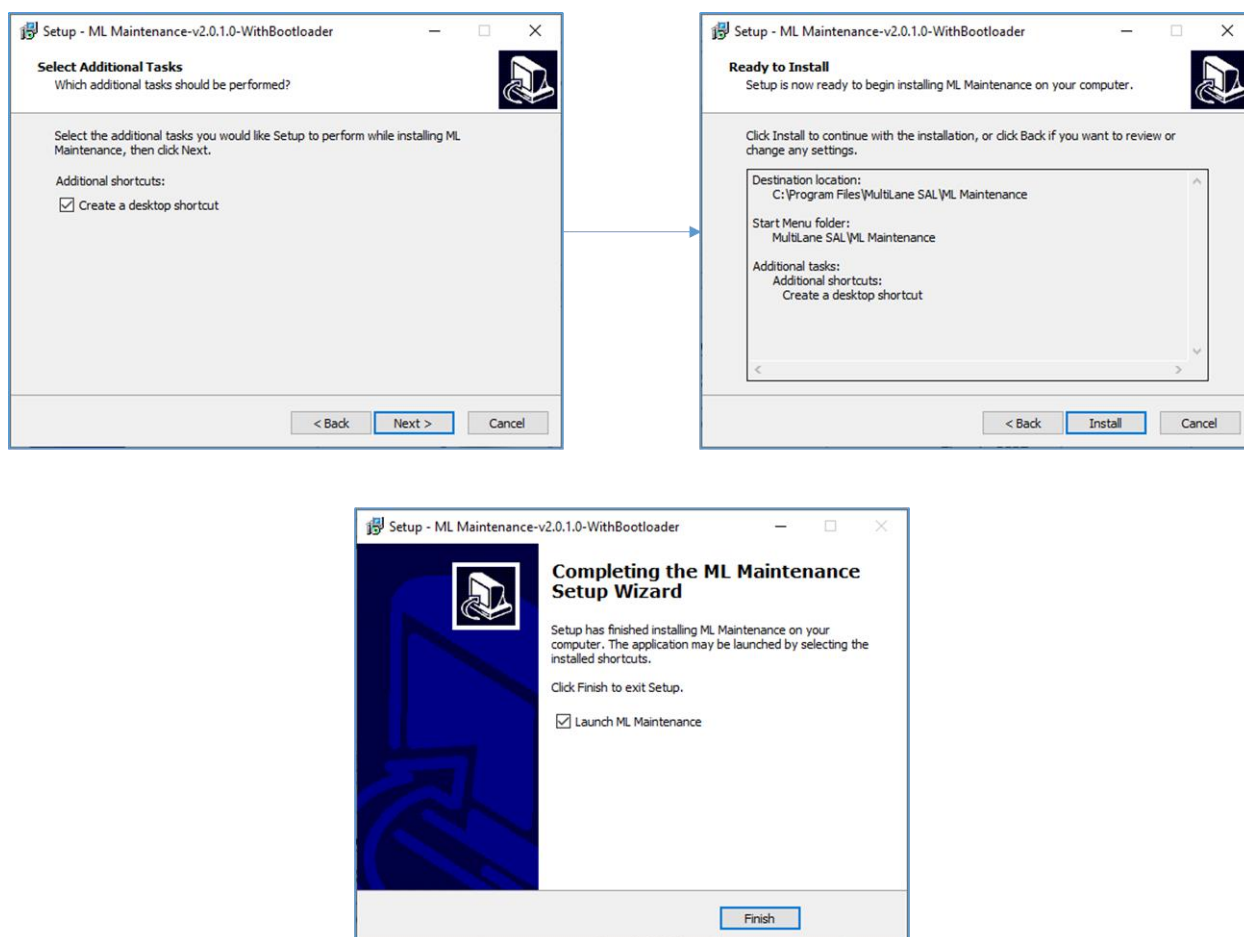


Figure 1: Setup installation procedure

ML Maintenance is now installed on your PC. An icon located on the Desktop and ready to run.

Ethernet and USB options to update IP address and firmware

There are multiple methods to update the IP address and instrument firmware. Use this table to understand which method should be used. See also “Appendix 1 – Plugging the USB Cable into an Instrument” on page 12.

BERT	IP address is known	IP address is not known	USB location
Changing IP address	Use Ethernet cable	Use USB cable	Inside Cassette
Update Firmware	Use Ethernet cable	Use USB cable Ethernet connection is also needed (refer to below)	Inside Cassette

DSO	IP address is known	IP address is not known	
Changing IP address	Use Ethernet cable	Use USB cable	On AT1000
Update Firmware	Use USB cable	Use USB cable Ethernet connection is also needed (refer to below)	On AT1000

Changing IP Address

To change the IP address of an ATE instrument, the “ML Maintenance” GUI is used. The preferred method is via Ethernet because the instrument can be accessed through the Ethernet connection on the AT93000 faceplate without removing the instrument from the AT93000 backplane. If using the USB cable method, make sure to take MultiLane’s approval first and then transfer the instrument from the AT93000 backplane to a Multilane AT1000 maintenance backplane, shown in Figure 6 in page 12. Only use the USB cable method if you do not know the current IP address of the instrument.

Note: Please make sure you print a label with the newly assigned IP address and attach it on the instrument in a location that will be visible when the instrument is installed in the AT93000 twinning frame. If for some reason you cannot remember the instrument IP address, you will have to use the USB cable method together with the “ML Maintenance” software to “read” the IP.

Using Ethernet cable

1. Connect to your instrument using the current IP address
2. Click on “IP Configuration” to substitute the current IP with the new desired one
3. Power cycle the instrument

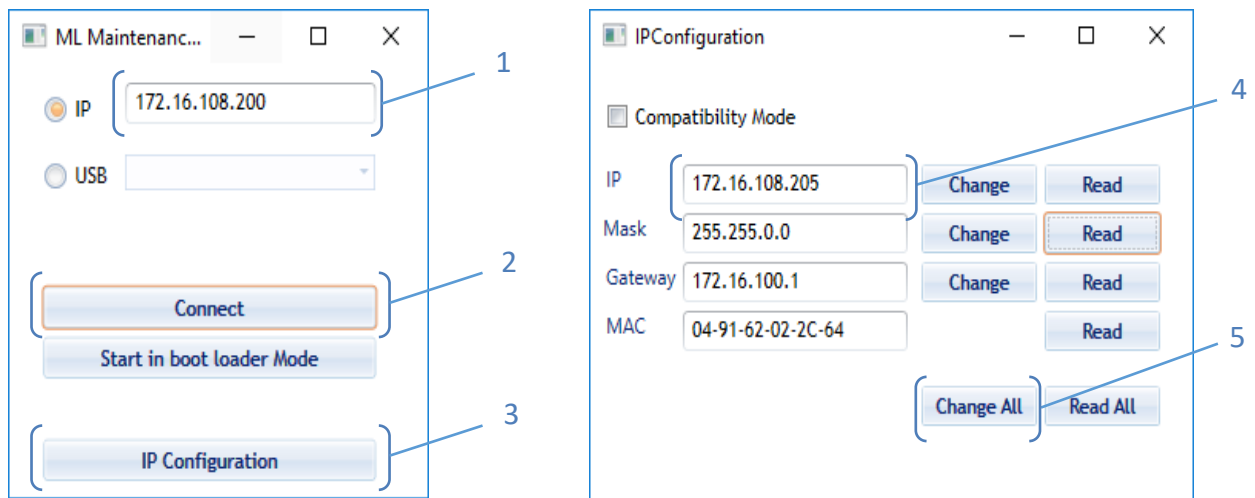


Figure 2: IP Address Changing Using Ethernet Cable

Using USB cable

1. Make sure the USB driver of the instrument is installed. If successfully installed, a USB instance will appear in the ML Maintenance next to the USB radio button selection
2. Connect to your instrument using the USB option
3. Click on "IP Configuration" to substitute the old IP with the new desired one
4. Power cycle the instrument

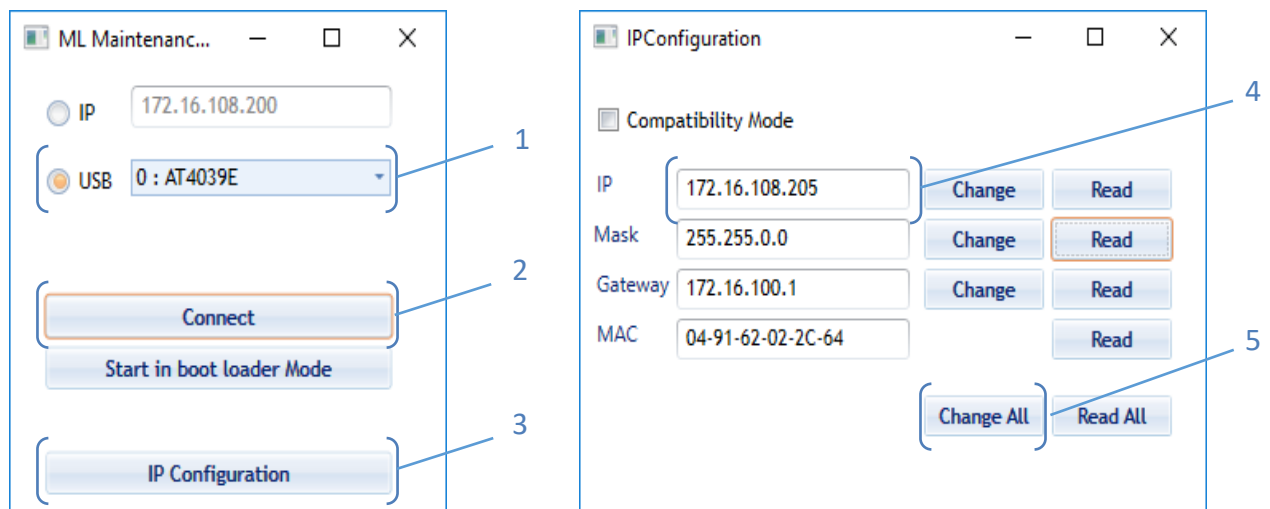


Figure 3: IP Address Changing Using USB Cable

Upgrading Firmware

To update the firmware of an ATE instrument, the “ML Maintenance” GUI is used. The firmware can be updated via Ethernet cable or via USB cable as shown below. If using the USB cable method, make sure to take MultiLane’s approval first.

Note: To avoid removing the shell of the cassette and difficulties in plugging the USB cable, updating firmware using Ethernet cable is strongly recommended for ATE BERTs.

Using Ethernet cable (for BERTs only)

1. Connect to your instrument using the IP address
2. Click on “Start in boot loader mode”
3. Enable the Ethernet port by checking its box
4. Add a same range IP address in your PC settings, under Advance TCP/IP Settings e.g. 192.168.1.5 (see Figure 4)
5. Click on “Connect” then “Load Hex File”
6. Click on “Erase-Program-Verify” and wait till it displays update success, then click “Run Application”
7. Power cycle the instrument

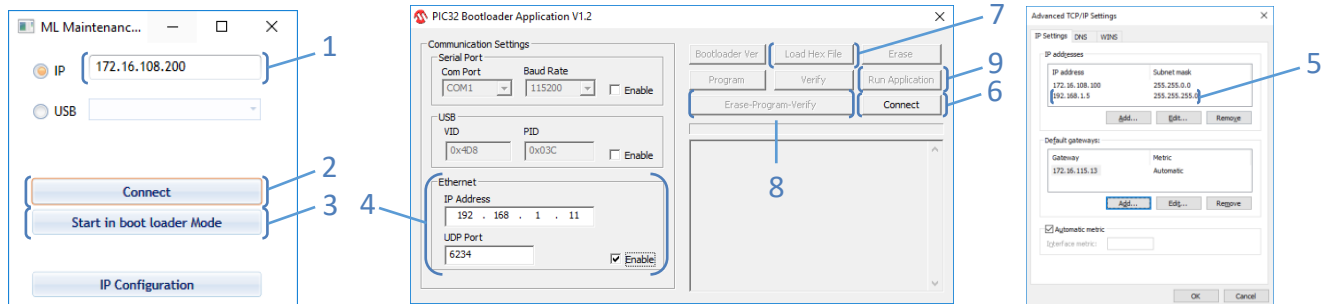


Figure 4: Firmware Update Using Ethernet Cable

Using USB cable (for BERTs and DSOs)

Note: To avoid removing the shell of the cassette and difficulties in plugging the USB cable, updating firmware using Ethernet cable is strongly recommended for ATE BERTs. For DSOs, the USB port on the AT1000 is used and then the DSO cassette shell does not have to be removed.

- 1- Make sure the USB driver of the instrument is installed
- 2- Connect to your instrument using the IP address
- 3- Click on “Start in boot loader mode”
- 4- Enable the USB port by checking its box
- 5- Click on “Connect” then “Load Hex File”
- 6- Click on “Erase-Program-Verify” then “Run Application”
- 7- Power cycle the instrument

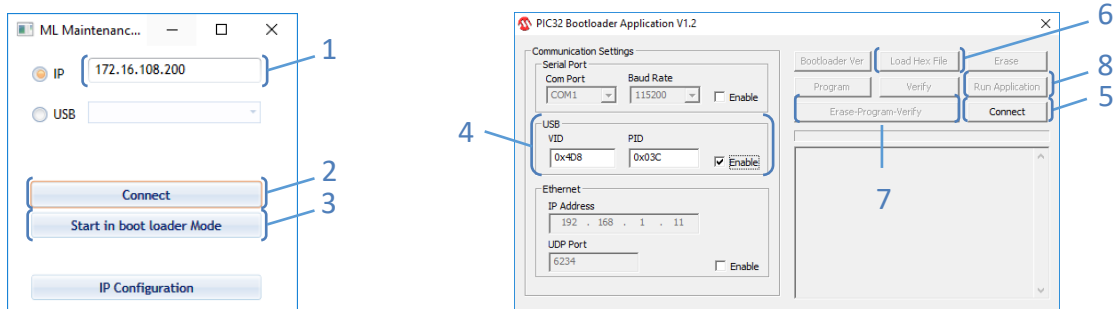


Figure 5: Firmware Upgrade Using USB Cable

Appendix 1 – Plugging the USB Cable into an Instrument

The ATE **DSO** (like AT4025) plugs into the AT1000 and the USB connector on the AT1000 is used (Figure 6).

The ATE **BERTs** also plug into the AT1000 for power during firmware upgrades; however, the USB connector on the AT1000 is not used. Instead, the instrument cassette cover needs to be detached and the USB on the instrument's PCB is used.



Figure 6: AT1000

Notes:

1. A power cord is shipped with AT1000 to supply 12V, red wire for +12V.
2. USB connector placed on the AT1000 is only used for the AT4025 because it does not contain any USB port on it, unlike rest of instruments
3. In case of an ATE BERT the USB port located on the instrument is used.
4. Always insert the instrument with caution to avoid breaking any connector. Refer to Figure 7 for better visualization on how to plug in the instrument.
5. If an AT1000 is not available, a second option is to install the BERT cassette into U453 of either backplane 1 or 2 as shown in Figure 8.

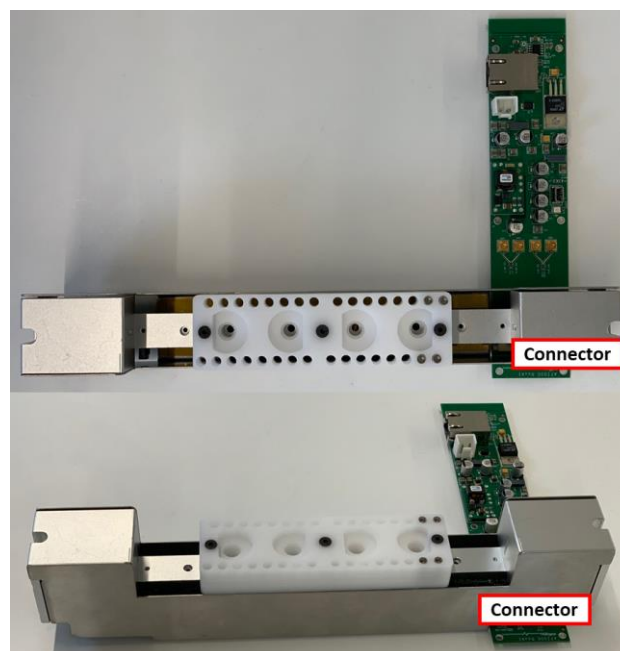


Figure 7: AT1000 & Instrument Orientation

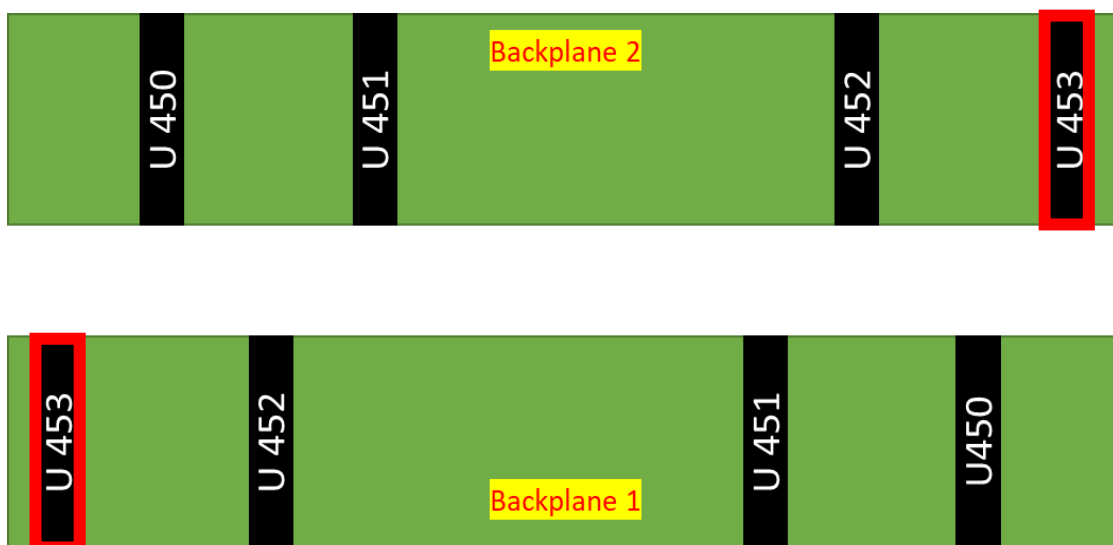


Figure 8: Backplanes U453 Connectors

Appendix 2 – USB Driver Installation

The following instructions are applicable for a manual USB driver installation using Windows XP, Windows 7, 8 and 10.

- Power on the instrument.
- Plug-in the USB cable into the PC and connect it to the panel

Make sure the PC can locate and install the driver. If this does not happen automatically, you will need to give Windows the path to the driver's folder.

USB Driver Installation on Windows platforms:

- Ignore the messages *new hardware found* or *driver software not successfully installed* by pressing **cancel** or **close**.
- Go to the device manager via a right click on **My Computer**:
 - Click on **Manage**.
 - Click on **Device Manager**.
- Right click on the top-level tab
(Here multilane-PC) and select “**Scan for hardware changes**”.

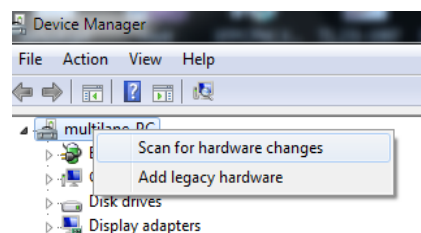


Figure 9: Scan for Hardware Changes

- A message appears stating: “**Scanning Plug and Play compliant hardware**”.

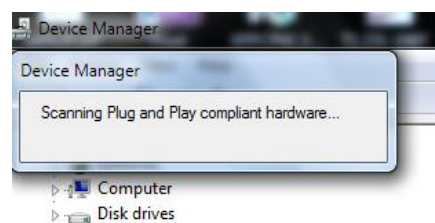


Figure 10: Scanning for Plugs

- In the **Other Devices** tab, the **ML USB Device** description appears.
- In the **Other Devices** tab, right-click on the **MultiLane USB Device** and select “**Update Driver Software**”
- A dialog box appears asking for the method to search for the driver software. Select “**Browse my computer for driver software**”.
- A dialog box appears asking for the Driver software path. Enter the path and click “**Next**”.
- A security dialog box appears, select “**Install this driver software anyway**”.

- The PC commences Driver software installation.
 - A Windows message appears (after some time) saying that you have successfully updated your driver software.
- Press close.
- In the Device Manager, a new tab appears named **MultiLane SAL Devices**. Expanding it reveals “**MultiLane SAL USB Device**”.
- You are now connected via USB and you can control the instrument.