Installation setup (v.3) on Windows 10 x64

Please read carefully this document before installation. The included mLAN installer has a rebuilt internal structure and for this reason is not compatible with other setups based on the older mLAN v.1.55 x64 installer. If you already use a setup based on mLAN v.1.55 x64, you need to fully uninstall mLAN. This operation is described in detail in the uninstall notes section. This setup was tested by us and some Yamaha 01X FB group members, but we can't guarantee that it will work on all machines. We'll appreciate every feedback and reports about installation on other computers. You can post your questions and comments on the Yamaha01X Facebook group:
https://www.facebook.com/groups/yamaha01x/

With this setup you will still need to use Windows Test mode (during normal operation) and Disable Driver Signature Enforcement boot (during installation), but you won't need sign driver files or perform other operations on already installed files.

Zip package

The zip package is uploaded to my private FTP webspace, it contains updated the Yamaha mLAN installer and additional files required by installation:

http://grzybek.anet.pl/mLan_on_Win_10_x64_V.3.zip

This package contains the following files:
- This document with my setup.
- MIDI Ports issue on Win x64.pdf document about missed port number issue
- Preinstall_settings.bat
- Advanced_boot_menu_off.bat
- Yamaha mLAN installer files (mlan_v160_x64 custom drivers folder)
- Delete_mLAN_files.bat (Additional Files folder)
- Test_mode_Off.bat (Additional Files folder)
- Test_mode_On.bat (Additional Files folder)
- Power installer.exe (Additional Files folder)
- ohciTool.exe (Additional Files folder)

Note: The additional Files folder contains files not required directly by installation setup, but they could be useful, if you want to reset Windows Test mode, if you would like to uninstall mLAN, system shutdown with running mLAN causes BSODs, etc.

Recommendations

Before installation I recommend use following settings/tools for preparing pro-audio friendly OS configuration:

- Set "High Performance" in "Power Options". Optionally click "Edit Plan Settings", next click "Change advanced power settings" and customize additional plan options.
- Check "Background services" instead "Programs" in Advanced System Settings -> Performance Options -> Advanced -> Processor Scheduling.
- Use Resplendence Latency Mon (http://www.resplendence.com/latencymon) for checking DPC latency and identify drivers/processes, which can generate potential audio issues (dropouts, etc.).
- Optionally disable your Antivirus software during installation.
- Create a system backup. If your mLAN installation fails because you do something wrong (or by other reason), a system image allows you to go back to an initial OS state. After restoring your OS you can launch the installation again. You can use the default Windows System Restore feature, but I recommend the use of third party tools for the creation of a full system image. There are lots of freeware disk/system backup tools, for example AOMEI Backuper or EaseUS Todo Backup.
- I do not recommend the use of the Legacy OHCI driver for IEEE1394 (firewire) adapters. Legacy OHCI driver works perfectly on Windows 10 32-bit, but 64-bit version of this driver can cause communication issues between PC and mLAN devices. For example, you can send audio and MIDI from PC to 01x, but not vice versa. Instead I recommend the use of the standard OHCI firewire driver installed with Windows 10 64-bit or optionally manufacturer drivers. You can check the Firewire driver in use in the Device Manager. If you would like to change driver, right click on the device and select "Update Driver" in the context menu. Next select "Browse my computer for driver software". In next step, click "Let me pick from a list of device drivers on my computer" and then select e.g. "1394 OHCI Compliant Host Controller" on list.
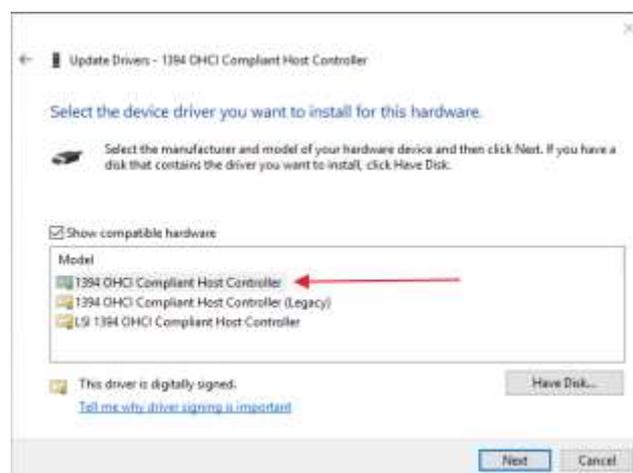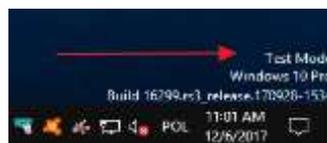
mLAN installation procedure

You can to see full installation procedure also on this [movie](#).

1. Right click on attached Preinstall_settings.bat file and select "Run as Administrator" in context menu. This operation enables Advanced Boot Menu, Test mode (after PC restart) and sets compatibility settings for some files installed later by mLAN Yamaha setup.

2. Restart PC and select "Disable Driver Signature Enforcement" in boot menu.
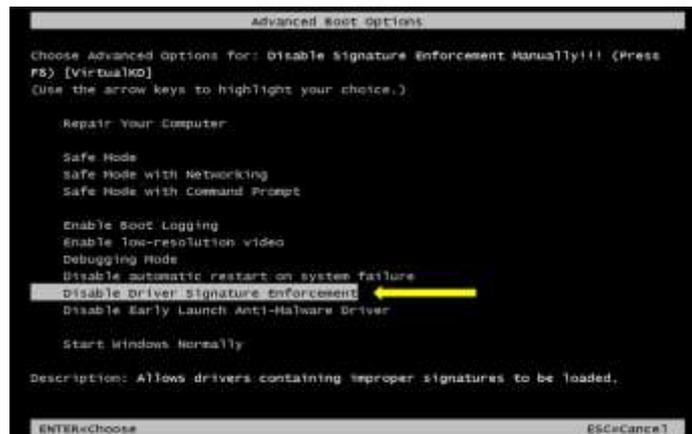
   Note: *This scenario assumes that you use a fresh Windows x64 installation. Fresh installation of Windows x64 always requires GPT disk table model. However, if you upgraded your Windows 10 from older Windows version, your system can still use MBR disk model. Sometimes, command for automatic displaying of Advanced Boot Mode after restart included to my Presinstall_settings.bat could not work with MBR systems. But don't worry, this same bat file will switch boot to legacy mode with the possibility of displaying Advanced Boot Mode after pressing F8 on keyboard. This option is available only for MBR disks. So, if Windows does not display Advanced Boot Mode after restart, restart OS again, press F8 and select "Disable Driver Signature Enforcement boot".*

   After restart you should to see watermark with info about Test Mode in right bottom corner of Windows desktop.

3. Go To mlan_v160 Custom driver\mLAN_ subfolder and double click Setup.exe. It will begin installation process of mLAN drivers and Yamaha software.

4. During installation Windows will display a warning message about installing of unsigned driver: select "Install this driver software anyway".
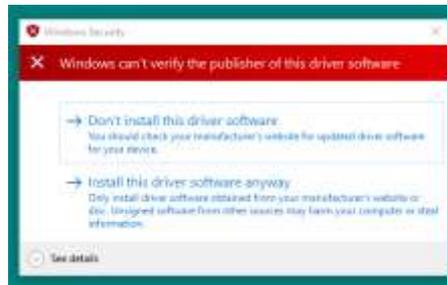
5. When Yamaha setup asks for a system restart, you can select "No, I will restart my computer later" and select "Install this driver software anyway" if/when Windows prompts again about installing of not signed driver.
   *Note: Do not worry, if you selected restart option in the installer. Simply, **during restart select again** "Disable Driver Signature Enforcement boot". After restart mLAN should automatically start with OS.*

6. Now you can launch your mLAN devices.

7. Next go to Windows Start menu, find mLAN Manager program item and run it. After start, mLAN should start displaying messages with information about adding mLAN bus, audio and MIDI to your system. When this message disappears and the mLAN Manager in the system tray change icon color from grey to blue-green, it means that installation is finished.

   Now you can open Autoconnector or Graphic Patchbay, check if your devices are visible and optionally configure connections and wordclock settings in your mLAN network.
   Notes:
   - *The Autoconnector can hags during applying changed configuration on some computers, probably due communication issues caused by some Firewire adapters (chipsets). For this reason, we recommend using The Graphic Pathbay instead Autoconnector for configuring your mLAN settings. However, if your Autoconnector or Graphic Pathbay hang, there is a strong likelihood you'll get correctly configured mLAN after restart.*
   - *Because 01X and other mLAN devices store internally mLAN configuration and connections settings, so after launching Graphic Patchbay you'll see there previously configured mLAN settings.*
   - *If WDM doesn't work on your system (look on Windows sound icon in tray) in the Graphic Patchbay select PC node, click "View" menu -> "Node Information…" and check if WDM CH Out is set as ON. If no, select On in dropdown menu.*

8. After this, you can check if your firewire adapter is fully compatible with this version of mLAN x64 by standard system restarting via Windows Start menu. If this operation doesn't cause a BSOD (system crash) you won't need to use any workaround for system restart and you can disable advanced boot menu.

9. If your system BSODs during restart, it means your firewire adapter is not fully compatible with our installer, you probably get ASIO audio, MIDI and WDM audio working well. But before system shutdown/restart you need first stop mLAN, otherwise you will get BSOD. You can do it in following ways:

   ● Do it manually via mLAN Manager menu in system tray.
   ● Use Windows scheduler or third-party schedule tool for automatic stop mLAN before shutdown/restart.
   ● Use attached Power installer.exe setup file.

   This installer installs one executable file for managing shutdown operation and shortcut on desktop and in the Start menu. This application first tries stop mLAN and next display Windows shutdown dialog available in older Windows version after pressing Alt+F4.

   Displaying of this dialog not only gives you option for selecting a specific shutdown action, but also prevents from accidental system shutdown/restart and gives you time and possibility of closing mLAN manually in case mLAN system can't be closed by mLAN Manager (in other way you will get BSOD).

10. If you would like use the standard Windows boot menu and disable advanced boot menu, right click on the attached Advanced_boot_menu_Off.bat file and select "Run as Administrator" in the context menu.

Appendix

Windows updates

Major/important Windows updates or system recovery operation can reset some settings, for example some advanced option in power plan, resets advanced parameters of bcd, etc. for example it can disable Test mode. If you don't see Test Mode watermark and mLAN can't start, right click on Test_mode_On.bat (in Additional Batch Files subfolder) and select "Run as Administrator" in the context menu. Next restart your OS.

Uninstall notes

- If you want to update your mLAN installation to a newer version we highly recommend full uninstalling the existing mLAN version before updating. First go to Control Panel -> "Programs and Features" and fully uninstall "mLAN Applications for YAMAHA (x64 Edition)" and "mLAN Tools 2.0". You can also use Delete_mLAN_files.bat file included to beta package for deleting driver files not removed by uninstaller. If you have launched your mLAN devices e.g. 01x, go to Device Manager, find your mLAN devices, right click on them and select "Uninstall" in context menu. Check "Delete the driver software for this device". After these operations you can restart your computer.
- If you don't want to use mLAN at all, use all above described operations and additionally run Test_mode_Off.bat located in the Additional Batch Files subfolder (Run as Administrator). It disables Test Mode. After these operations you can restart your computer.

mLAN Installer Release Notes

- 1.55 - Latest official release of Yamaha mLAN drivers
- 1.56 - In this version I've replaced original mLanBus.sys, mLanMIDI.sys and mLanstrm.sys driver files with signed versions of those drivers.
- 1.57 - In this version I've streamlined a bit the original mLanBus.inf file and moved compatibility settings for mLANStart.exe, mLANStop.exe, mLANmanager.exe from Preinstal_settings.bat file directly to the mLAN installer.
- 1.58 - Fixed mLAN startup issue. Correct work of mLAN requires use of the mLAN Manager with admin rights, while Windows, for security reasons, automatically disables from startup all programs with elevated privileges. I've added a small exe file to installer. This file automatically starts up with Windows and runs mLAN Manger. Afterwards this file is automatically closed, so it doesn't work in the background.
- 1.60 - This installer has fully rebuilt internal structure, partially based on latest mLAN installer (1.63) for x86 Windows systems. Here is a detailed changelog:
  - Fixed BSOD (system crash) issue at system restart / shutdown with enabled mLAN on machines with some firewire adapters. With fully compatible Firewire adapters (chipsets) you don't need to stop mLAN manually or use any workaround such as schedule tool or third-party application to power off your PC. Current solution used in our mLAN installer should also protect from BSODs (at least with fully compatible IEEE1394 adapters) also in other cases, for example when stopping mLAN with incorrectly configured wordclock setting, when mLAN is locked by other application (e.g. a DAW), etc.
  - Better and more stable connectivity and wordclock synchronization between devices in mLAN network, also with h 01x (or other external mLAN device)

configured as wordclock master. There are no audio dropouts, wordclock issues, Audio IN/OUT and MIDI IN/OUT are working well on my PC, but I can't guarantee this setting gives identical results on other computers with different hardware (e.g. firewire adapter). However, loading mLAN with 01X as wordclok master takes a bit more time than with PC wordclock master.
- GUI changed to newer mLAN v.1.63 x86 style.
- Faster mLAN loading after start.

Results

- With this setup you should get fully working Audio (ASIO) in most DAWs and other applications with implemented ASIO support. This setup was tested on Windows 10 x64 and Windows 7 x64. Here is a short video about using our mLAN custom driver with some DAWs and Studio Manager: [Yamaha 01x on WIndows 10 x64, using with Bitwig, FL Studio, Studio One](#)
  Note: This screencast was made with my previous version of custom mLAN installer.
- WDM audio works also with Windows audio system (but only as stereo) without problems on Windows 10, however there are WDM audio issues on Windows 7.
  Note: WDM Audio strictly depends on internal Windows audio solutions, and probably this is the reason of the issues on Windows 7. Microsoft probably solved them in the official Windows 8/10 driver, which are not mLAN compatible anymore.
- You can use your 01x as Mackie Control controller, MIDI interface and control 01X via Yamaha Studio Manager after correct configuration of MIDI ports in your software.

Issues

Unfortunately, there are still important issues not solved by this setup:
- We still need to use mLAN in Test Mode and Disable Driver Signature Enforcement boot option during mLAN installation.
- With some Firewire chipsets BSODs can still occur at system shutdown/restart.
- MIDI port names displayed in SM and DAW application don't have number suffixes in their names. You can find details and hints about this issue in attached MIDI Ports issue on Win x64.pdf document. I made also short tutorial video about solving this issue: [Configuration of mLAN MIDI ports on Win 10 64 bit](#)
- This setup doesn't work reliably with Harrison Mixbus.
- With enabled UAC, after start of mLAN Manager, you'll get UAC prompt message, because mLAN Manager requires admin rights. If you would like disable displaying of this message you need to go to Control Panel, -> "User Accounts -> "Change User Accounts settings" and change setting to "Never Notify".

Small issues pointed below occur also in original mLAN 1.63 x86 and/or in mLAN 1.55 x64 versions and for now we can't fix them, but there are simple workarounds for solving those problems:

- Sometimes Autoconnector and Graphic Patchbay lose connectivity with external mLAN devices e.g. when you stop mLAN and afterwards restart it again via mLAN Manager menu. It doesn't not affect the mLAN audio/midi working (it still can work well in background). If this occurs, power cycle your mLAN device and reopen/refresh Autoconnector or Graphic Patchbay.
- After mLAN finishes establishing of mLAN network (blue-green icon in tray), Autoconnector and Graphic Patchbay require some additional time for receiving information about connected devices and mLAN network status. If you try to open those tools just after the network becomes available, you can receive a message about not started mLAN driver. In this case, close Autoconnector or Graphic Patchbay, wait a few seconds and try to open them again.
- With some Firewire chipsets applying changes in the Autoconnector or Graphic Patchbay (less often) can hang those tools. I wrote above about this issue.

Firewire chipsets database

Because mLAN drivers are "fuzzy" about hardware, especially firewire chipsets, mLAN can behave different way on different computers. For this reason, I decided to create a database with compatible/incompatible IEEE1394 adapters/chipsets. You can find information about all tested Firewire chipsets in this shared sheet:

FW Chipset Survey

You can also help us, by adding info about your system to our sheet. Please, go to Additional files folder and run OHCI Tool.exe, check "Show additional details" and click "Scan now" button. Next copy info about your chipset (visible on below screenshot in red rectangle) and paste to FW chipset column to our FW Chipset Survey sheet.
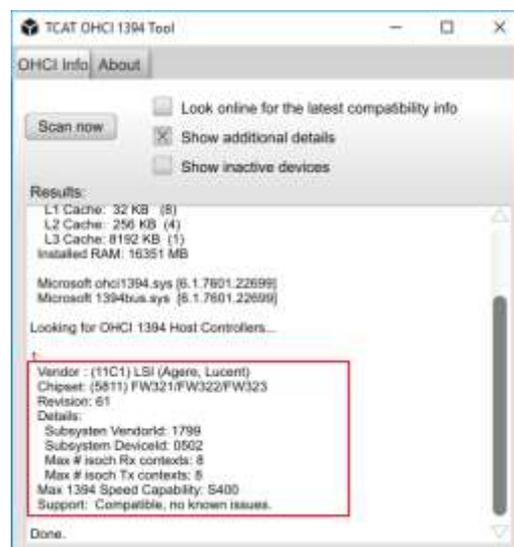
Please, type also all other information in the appropriate columns. In the "Notes" column enter your short description how mLAN behaves on your computer (e.g. about mLAN ASIO in your DAWs, wordclock issues, etc.). For better and more precise results, I recommend filling this survey a few days after installing of mLAN on your Windows.

Development and credits

Because we haven't fixed all issues yet, we still think about further (deeper) redeveloping of mLAN drivers. However, editing/rewriting Yamaha installer files, driver files and adjusting OS environment for mLAN requires lot of work and time for tests. We also can't guarantee positive results in the forthcoming research and work.
However, if you appreciate my efforts made so far and would like to support potential future research, you can donate to this project in this PayPal form:

Donate to this project with PayPal

We would like also thank our beta testers: Andrew Littley, Lindsay Rex, Bram de Vries and Andrew Ventham, Jared Sager

Janusz Grzybek and "El Tortugo"