NetLase® LC

Ethernet-Showcontroller with ILDA-output

Quick start guide

Last modified July 17th 2013

Features

- IEEE 802.3u 100BASE-TX Full duplex Ethernet interface
- Supports TCP/IP-Protocol and UDP
- Supports Auto MDI/MDIX (cable crossing)
- Supports Auto-IP (APIPA) and DHCP
- Supports UPnP (Plug and play)
- High performance 32Bit-microcontroller
- Jitterfree output for high stable output
- X/Y-output 12Bit, total 16 millions of coordinates
- Colour outputs 6 colors or 5 colors + intensity12 Bits each
- Outputspeed up to 50.000 points (coordinates) per second (50Kpps)
- Fixed IP-address selectable via Webinterface
- Emergency IP 192.168.0.100 via hardware IP-Reset
- Single voltage powersupply 9-24V DC /300mA reverse connection protected
- ILDA-standard connector with symmetrical X/Y-outputs
- Open driver-DLL (EasyLase compatible)
- DMX-support for 512 Channels input and output
- Firmwareupdate via network (webinterface)
- Integrated SD-card
- Supported by Dynamics, LDS, Mamba, MIII and HE-Laserscan software
- Available as board-only or boxed version
- Size 99 mm x 85 mm

**This device requires to use our latest DLL 'Jmlaser.dll' with your application!
Save your old DLL and use the one which will be located on the CD under the 'NetLase LC' folder.**

Important Note:
NetLase supports **one** output channel for **one** laserprojector.
Multiple projectors can be connected to one NetLase parallel and will output the **same** content.
If multiple projectors should output different content (channels) of a lasershow, more cards are **necessary, one for each different channel.**

When the device is used as open board version (OEM), it should be taken into account, that the device is sensitive object. Static discharge and other external influence can damage electronic components on the board.
The device can also be damaged by applying external voltage to signal pins, by wrong connections and other kind of manipulation. Watch for correct connection of signals and careful handling.
The device operates at very low internal voltage of 3,3V and 1,8V.
Overvoltage can damage sensitive parts very quick.
The manufacturer excludes liability in case of damages as result of unproper handling, wrong signal connection and unspecified working conditions, unless it is verifiable that damage existed when the product left factory.
Also any liability claims regarding damage caused by the use of this product will be rejected.
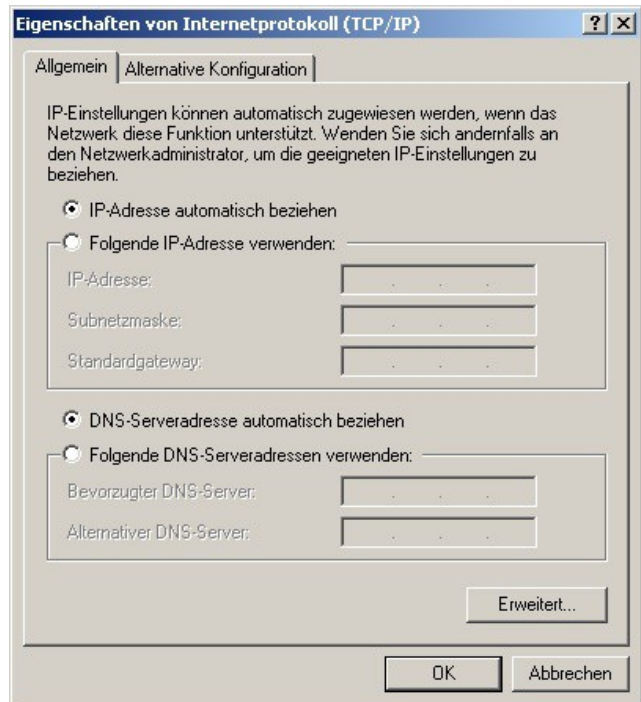
Boardlayout
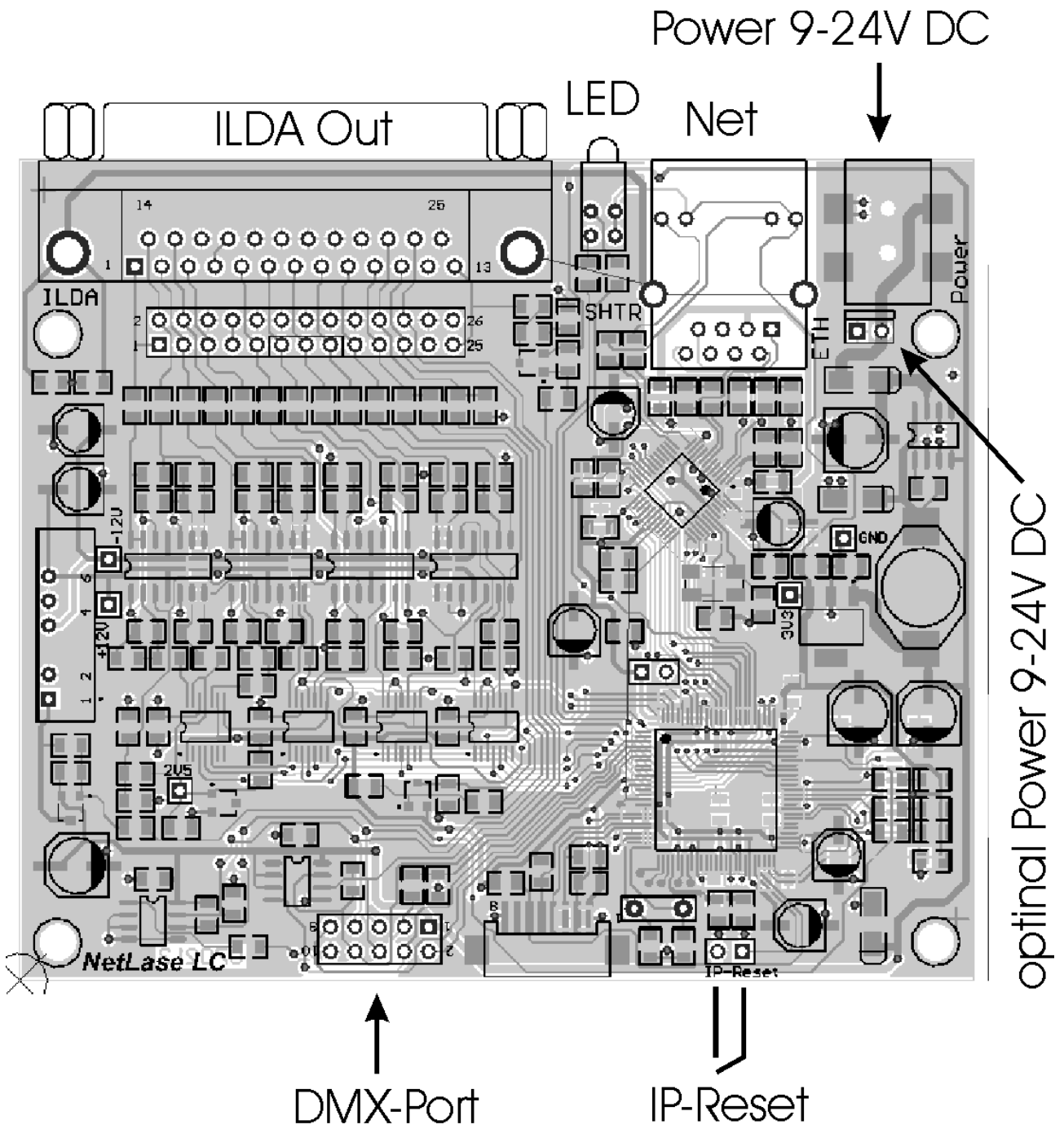
Power can be connected at the front connector or at the additional 2pin connector.
Power input is reverse voltage protected.

Factory settings

NetLase LC is factory set to DHCP / AutoIP mode!
When connecting NetLase LC to a host the first time, host must be set to automatic IP or DHCP.

Depending on your system, it can take up to 1 minute until the NetLase LC is recognized by the host. After connecting NetLase LC to the host with a network cable, the green LED (not the one of the Network connector) will blink. After a valid IP was given by the host, the green LED will stay on. The connection then will be showed on your host.
If the connection is showed as a 'limited connection', this should be no problem.
Under Windows 7 or 8, you could set your network to a 'private network' to prevent limited connection.

After the connection is established, you can open the hardware test program.
The red LED will blink, when there is an access from the host to the NetLase LC.
The device now should be listed on the left side of the hardware test program.

**Using the webinterface of NetLase LC to change settings**

The hardware test program shows you the current IP-address of the NetLase LC.
When clicking into that Window, the webbrowser should open and should display the startup screen
of the NetLase LC:

If the browser could not be opened automatically, you can also open a browser and type in the
IP-address, given in the hardware test program. For example:
http://169.254.54.251

The startup screen shows you the current status (Output Standby / Output Active), the actual
IP-address, the name of the card (friendly name), the serial number and the firmware release
version.

When switching to 'Device Settings', you can alter some settings:
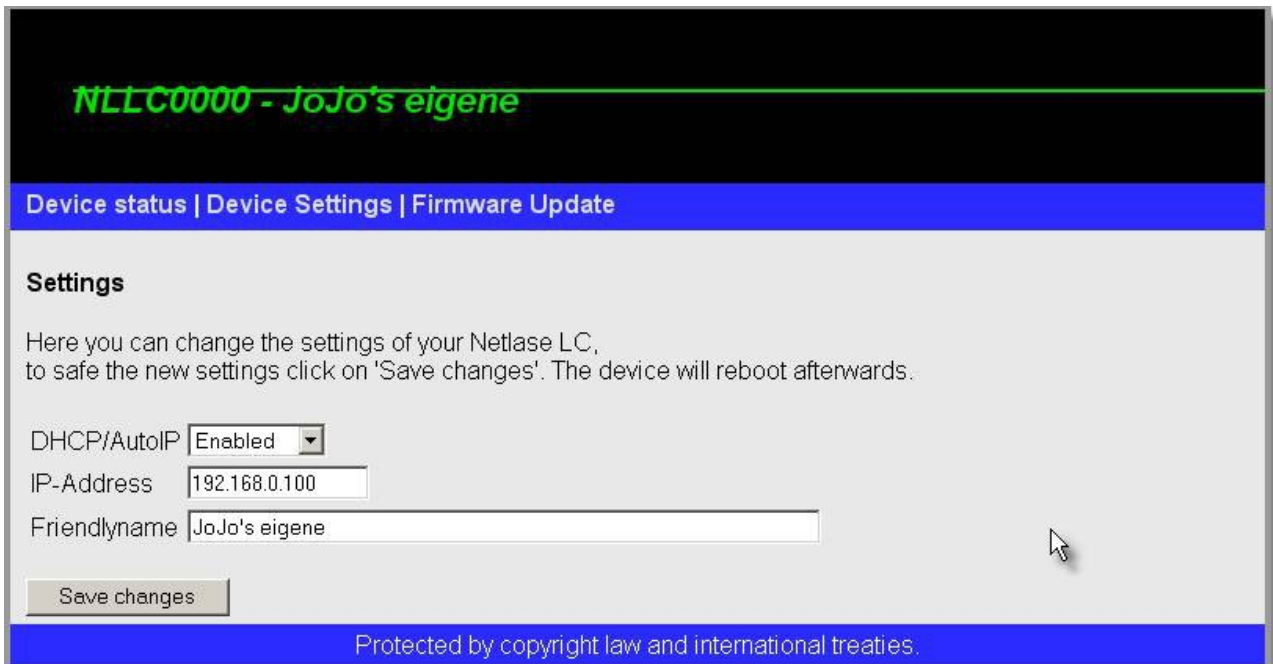
You can choose, if you want to use an automatic or static IP-address with this card by changing 'DHCP/AutoIP' to 'Enabled' or 'Disabled'.
If disabled, the static IP-address given in the field below will be used.

You can also change the name (friendly name) of the card, so you can identify the card in your lasershow software more easy.
Note: The lasershow software must support the 'friendly name'-feature to show the name in the device list!

All device settings will be stored on the on-board memorycard.

Important:
After altering settings via webinterface and confirming by 'Save changes', the NetLase LC will reboot!
If you switch from 'DHCP/Auto-IP Enabled' to 'Disabled' and use a fixed IP-address, you also must change your host network settings to a fixed IP-address!

Firmwareupdate via webinterface

An update to the latest firmware release can be done using the webinterface.
The file you need to do so is called *.jmi, for example 'NetLaseLC_V1.0.jmi'
Go to the Firmwareupdate menu and select the firmware file.
After confirming with 'Send Update', the file will be copied to the on-board memorycard of NetLaseLC.
Note that the update will not be executed instantly!
The update will be done automatically, when Netlase LC is powered-on the next time!
After executing the update successful, the file will be deleted from the memorycard.

Do NOT change any settings or do a firmwareupdate, while an output session is running!
This can cause malfunction of the application and/or NetLase LC card.

IP-Reset

If your host is unable to find NetLase LC via DHCP/AutoIP or if NetLase LC was set to a fixed IP-address, you forgot, it is possible to set NetLase LC to an emergency IP-address.
Closing the pins 'IP-Reset' while switching power on will set the card to the following IP-address:

192.168.0.100

Set your host to a fixed IP-address, for example 192.168.0.200
Now you can establish a connection to the card to acces it by a webbrowser.

After rebooting the card (by power off/on) or after saving new settings via webinterface, the card will restart with the settings stored on the on-board memorycard, if the pins 'IP-Reset' are left opened.
If you wanto to use the new settings, be shure to open 'IP-Reset' pins before restart.

LEDs

There are 2 LEDs, except the ones at the network connector, giving some operating status information:

Green LED

Switches ON at power-on. If no network cable is connected, the green LED stays ON.
If a network cable is connected, the LED blinks until the card has got a valid IP-address.
In DHCP-mode, this could take a minute.
In fixed IP-mode, the blinking sequence could be skipped.

Red LED

When establishing a connection (receiving a Ping), the red LED will flash.

After a network session is opened by an application, the red LED will stay ON.

While output mode is active, the red LED will be switched OFF, if the datastream is interrupted.
Under some circumstances, datastream may be interrupted for short time (1-2ms). During that time, the red LED will be switched OFF.
This would normally not be visible in the lasershow output, but in case of a datastream interruption, color outputs and/or intensity output are shut down for that time.
If data connection to NetLase LC is very bad, displayed images can start flickering in intensity.

Connection Timeout

An active session will be closed, if a data connection is interrupted for longer than 0,5 seconds.
The DLL will try to establish a new session automatically after reconnection.

Error

If both LEDs are blinking simultaneous, there is an error condition with NetLase LC.
Contact our service.