



BOLTEK CORPORATION

Lightning Detection



LD-350 Lightning Detector Firmware V1.13 Upgrade & Configuration Guide

SEE DISCLAIMER ON REVERSE

BOLTEK LIGHTNING DETECTION

LD-350 Lightning Detector

Disclaimer

LD-350 lightning data is only approximate and should not be used for safety applications. Strike and storm locations indicated and alarm statuses may be erroneous and should not be used to safeguard personnel, equipment or data.

Neither Boltek Corporation nor its affiliates shall be liable to the purchaser of this product or third parties for damages, losses, costs, or expenses incurred by purchaser or third parties as a result of use, misuse, accident, or abuse.

Notwithstanding the above Boltek Corp's liability shall not exceed the purchase price of the equipment.

THIS EQUIPMENT IS NOT TO BE USED FOR SAFETY PURPOSES

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FCC Compliance Statement For United States Users

This equipment is tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification of this device and may cause interference levels which exceed the limits established by the FCC for this equipment. It is the responsibility of the user to use a shielded interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

For Canadian Users

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la class B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.



Installation & Firmware Update

This software application will allow you to update your LD-350 to the latest firmware version.

The included configuration utility will allow you to configure the LD-350 settings without the need of installing or running any lightning display software that is normally used to change the settings.

It is very important to close down any open lightning display software programs that are currently running. The next step is to open a web browser and go to the Boltek downloads webpage: <http://boltek.com/downloads/ld-350>. Scroll down to the LD-350 Lightning Detector section and click on the **Refresh and Configuration Software** download link. Run the installation program directly from the website or save the install file to a disk or flash drive to run at a later time or on another computer. Follow the prompts to complete the installation process.

Connect the 120/220V power supply from an available outlet to the LD-350 and power on the detector. Plug the USB cable from the LD-350 to an available USB port on the computer. Verify that both **Lightning Detector A & Lightning Detector B** USB drivers have successfully loaded in Windows Device Manager (see Diagram 1).

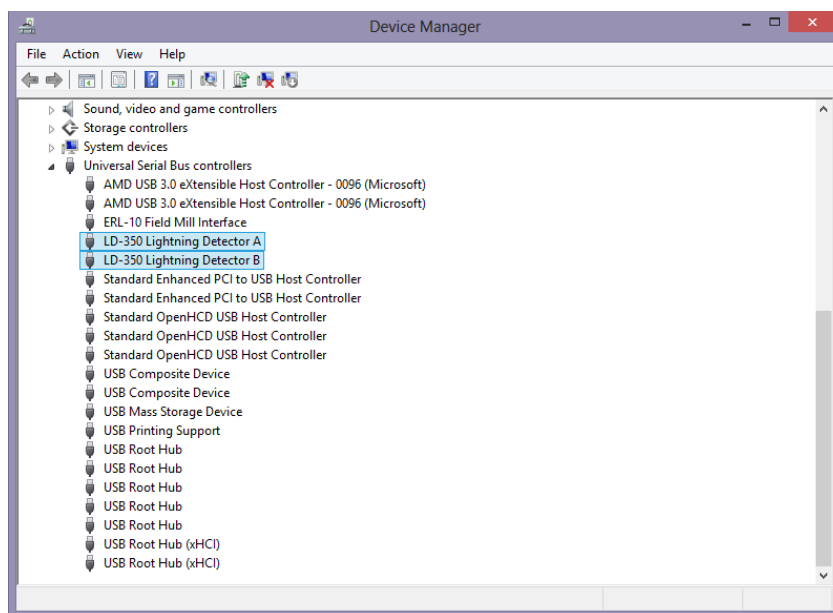


Diagram 1

CHAPTER 1 - INSTALLATION & FIRMWARE UPDATE

Run the LD-350 Reflash program from **Start -> Programs -> Boltek** and the following window should appear:

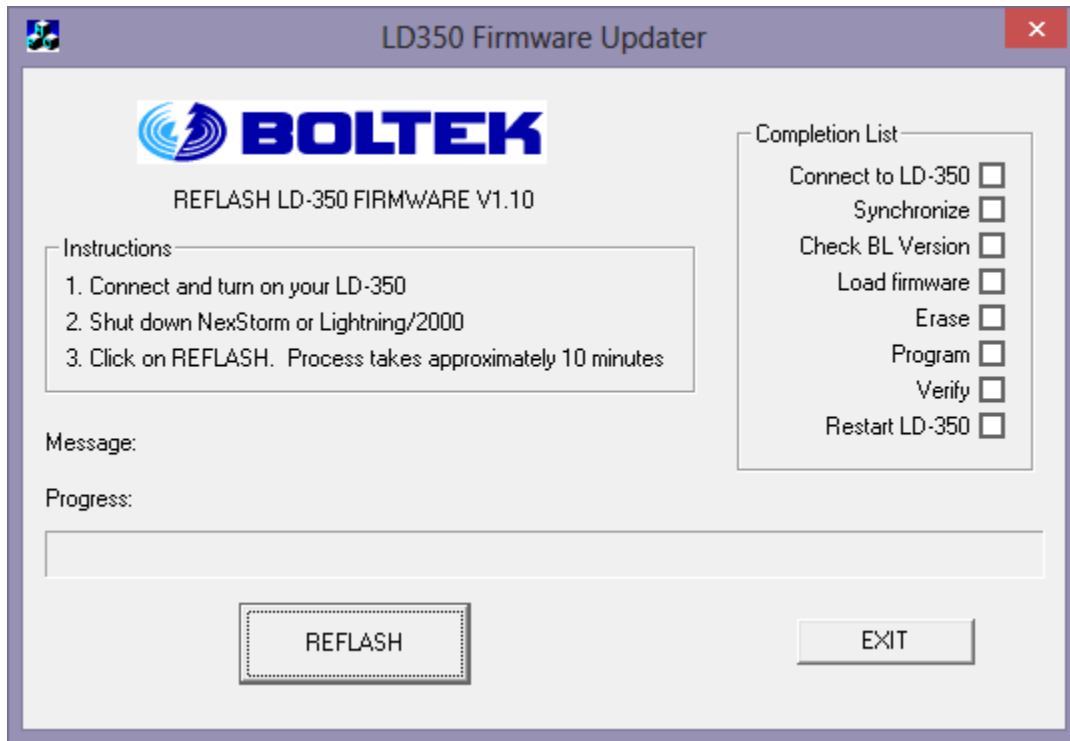
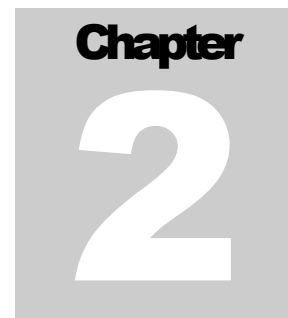


Diagram 2

Click on the REFLASH button and wait a few minutes until the firmware upgrade has completed then click the EXIT button to close the Reflash program.



Configuration Utility

To modify the settings on the LD-350 without using a Lightning Display software program, the LD-350 Config utility program can be run from **Start -> Programs -> Boltek** and the following window should appear:

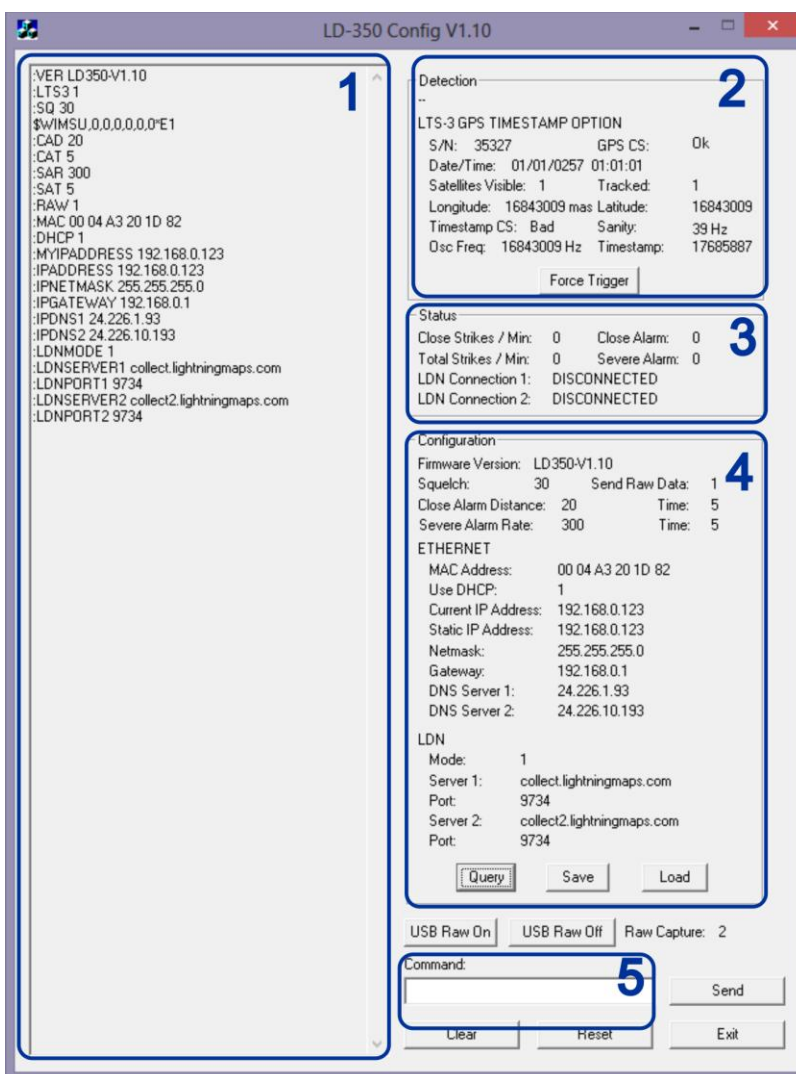


Diagram 3

1. Output Display

This window displays status messages, processed lightning strike information, and LD-350 configuration settings. This is a display only and contents cannot be modified here. Status messages will display automatically once per second, strike and noise signals will appear as they are detected. Pressing the **Clear** button will clear this display window.

Note: Messages will not appear if the LTS-3 timestamp card is installed but can be seen with '**STATUS**' command.

2. Detection

Displays GPS Timestamp information when LTS-3 Timestamp is installed on LD-350. This data will only display or update when **USB Raw On** button is pressed and either a signal is detected or the **Force Trigger** button is pressed.

3. Status

When the LD-350 is in Stand-Alone Mode (no LTS-3 Timestamp installed) it will display Close and Severe storm alarm status, as well as the Close Strike and Strike rate strike count. This mode will show LDN connections as DISCONNECTED. When the LD-350 is in LDN mode (with LTS-3 Timestamp installed) the alarm status and strike counts are disabled and will only display the connection status of the LDN Servers.

4. Configuration

This section displays the configuration and alarm settings of the LD-350. Press the **Query** button to view the current settings or any updated settings after commands have been entered. The **Save** button should be pressed before the LD-350 is powered off to save any configuration changes. The **Load** button will revert the settings back to the last saved configuration.

5. Command

This box is where the commands are typed. Pressing the **Send** button after typing a command will update the corresponding setting on the LD-350. The commands are case sensitive and should all be capitalized or the settings will not update. See Appendix A for a full list of commands that can be used. The **Reset** button restarts the LD-350, this is mainly used for confirming that any changes to the settings have been saved properly. The **Exit** button will shut down the Config Utility program.



USB Commands and Messages

Commands

KA<cr> : keeps USB connection alive

VER<cr> : query firmware version

STATUS<cr> : display status message with LTS-3 installed

RESET<cr> : resets LD-350

DEFAULTS<cr> : restores LD-350 to factory default settings

FT<cr> : sends a forced trigger signal to LD-350

RAW<cr> : query raw data state

RAW <0,1><cr> : disable (0) or enable (1) raw data to be sent through USB

NB<cr> : query noise beep state

NB<0,1><cr> : disable (0) or enable (1) noise beeps when signal is detected

SQ<cr> : query squelch level

SQ<value 0-100><cr> : set squelch level

CAD<cr> : query close alarm distance

CAD<distance 0-250><cr> : set close alarm distance

SAR<cr> : query severe alarm rate

SAR<0-999><cr> : set severe alarm rate

SAVE<cr> : saves current configuration to LD-350

READ<cr> : reads current LD-350 configuration

CHAPTER 2 - CONFIGURATION UTILITY

LDNSERVER1<cr> : query LDN server 1
LDNSERVER1 <URL or IP address><cr> : set address of LDN server 1

LDNPORT1<cr> : query LDN server 1 port
LDNPORT1 <port number><cr> : set LDN server 1 port number

LDNPASSWORD1 <password><cr> : set password of LDN server 1

D1<cr> : Disconnect LDN server 1

LDNSERVER2<cr> : query LDN server 2
LDNSERVER2 <URL or IP address><cr> : set address of LDN server 2

LDNPORT2<cr> : query LDN server 2 port
LDNPORT2 <port number><cr> : set LDN server 2 port number

LDNPASSWORD2 <password><cr> : set password of LDN server 2

D2<cr> : Disconnect LDN server 2

MAC<cr> : query MAC address

DHCP<cr> : query DHCP state
DHCP <0,1><cr> : set DHCP off (0) or on (1)

MYIPADDRESS<cr> : query current IP address of LD-350 (could be dhcp assigned)

Note: the following commands should be used when DHCP is set to 0

IPADDRESS <cr> : query static IP address of LD-350
IPADDRESS <xxx.xxx.xxx.xxx><cr> : set IP address of LD-350

IPNETMASK<cr> : query subnet mask
IPNETMASK <xxx.xxx.xxx.xxx><cr> : set subnet mask

IPGATEWAY<cr> : query gateway address
IPGATEWAY <xxx.xxx.xxx.xxx><cr> : set gateway IP address

IPDNS1<cr>: query DNS server 1
IPDNS1<xxx.xxx.xxx.xxx><cr> : set DNS server 1 address

IPDNS2<cr> : query DNS server 2
IPDNS2 <xxx.xxx.xxx.xxx><cr> : set DNS server 2 address

