How to Flash an Isaac Leak Tester

Abstract

This document is to be used by controls engineers and other technical personal responsible for maintaining the firmware on the Isaac Leak Tester produced by Zaxis Inc. The document assumes the reader is well acquainted with the Isaac Leak Tester and Ethernet protocols, cables and proper safety procedures.

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Introduction

Zaxis's Isaac multi-tester is a high-performance air leak tester with unparalleled test stability and repeatability. The Leak Tester contains a microprocessor to control the internal hardware and communications to other devices. The microprocessor has an imbedded flash drive which contains an image of the firmware used by the microprocessor to run the tester as well as the different setup and program parameters.

This document explains how the flash drive can be updated, allowing a new version of the firmware to be install on site using a windows personal computer. It is assumed the reader is familiar TCP/IP and other Local Area Network (LAN) protocol's and the necessary precautions working with these protocols.

Cautions

Please read the *Isaac User Manual* for proper handling and safety instruction before proceeding.

An updated binary image, often referred to as a "bin image" can be written to the teser using the flash utility provided by Zaxis Inc. Both the bin image and flash utility should be provided by a Zaxis technical support individual. The bin image is a binary image of the program that is executed by the microprocessor contained within the tester. If this image becomes corrupted or is modified in anyway the flashing process with fail.

Once the writing process or flashing of the bin image has started do not turn off the power, disconnect the network cable or abort or close the windows program. Doing so may render the microprocessor unusable.

Unzip the provide files

After the zip file provided by Zaxis Support personal, has been unzipped, there should be a folder that contains the binary (BIN) files and folder (DownLoader) that contains the downloader utility (UPDownload.exe). The UPDownload.exe file uses the UDP/IP protocol to download a flash utility (PDL-Generic.bin) which is automatically started after downloading and reads the Zaxis provided Bin file.

Writing a new Binary Image

Please use the following steps to write (or flash) a new binary image to the microprocessor.

1. Determine the current I/P address of the leak tester. This can be done using the TSi, or by resetting the leak testers to use the default I/P address of 192.168.2.130.
2. With the power disconnected remove the network or LAN cable from the rear of the leak tester.
3. Connect a Network or LAN cable between the leak tester and a personal computer running Windows. Typically, this does not need to be a crossover cable because most modern personal computers are able to detect the transmit and receive lines of the network cable automatically.
4. Set the I/P address of the personal computer to a value that is on the same I/P network class as the leak tester. For example, if the leak tester has an I/P address of 192.168.2.130 set the I/P address of the personal computer to 192.168.2.1. As shown in Figure 1 below.

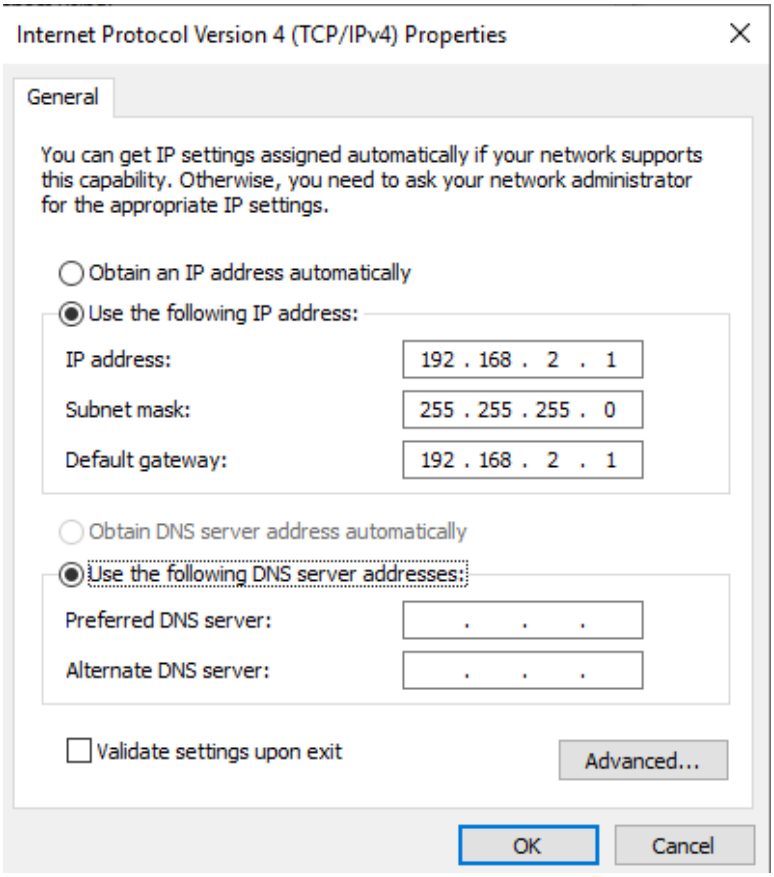

Figure 1 - Static Windows I/P Address

5. Reestablish the power to the tester.
6. Using a command or DOS window on the personal computer, use the *ping* utility to ensure successful network communications between the leak tester and the computer as shown in Figure 2 below.

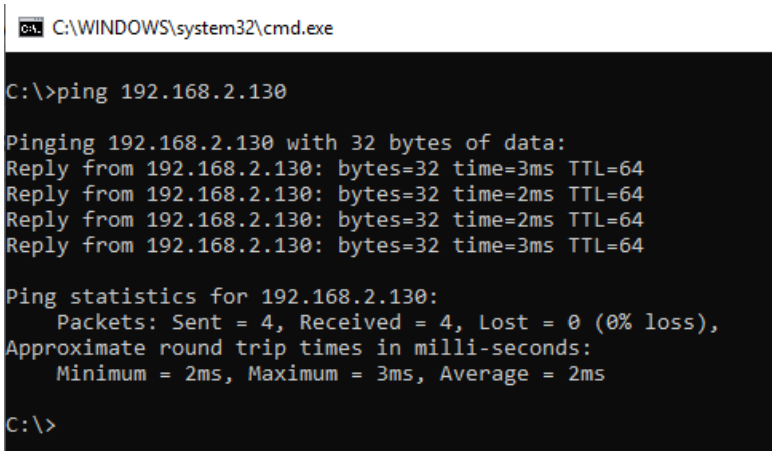

Figure 2 - Pinging the Leak Tester

7. After a successful ping has been received start the firmware down load utility (UDPDownloader.exe) and select the appropriate options as shown Figure 3 below.

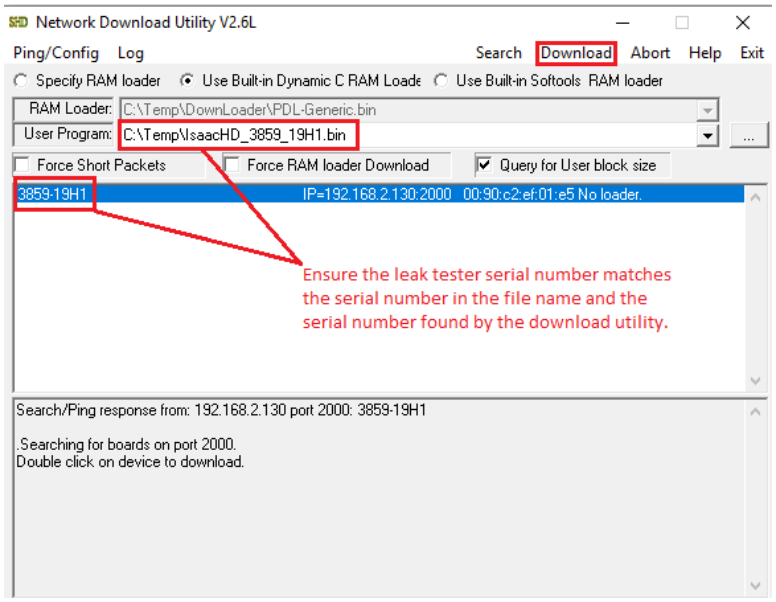

Figure 3 – Running the download utility

8. Ensure the serial number in the file name and the serial number found by the download utility match the serial number of the leak tester.
9. Highlight the leak tester entry (shown highlighted in blue) by clicking on the entry once.
10. Click on the ***Download*** button to start the update process.

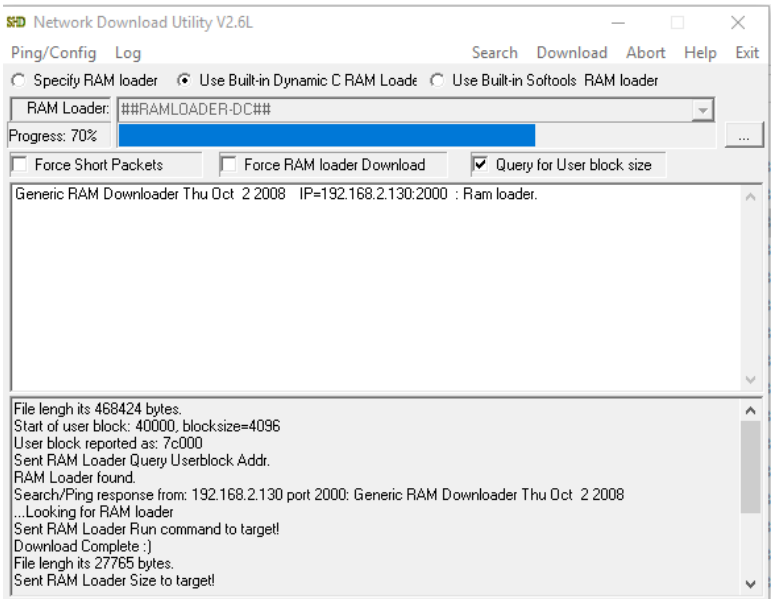

Figure 4 - Download process running

11. After the download has completed, wait 10 seconds to turn the leak tester off, disconnect the network cable and reconnect the original network cable.
12. Verify a successful update by doing the following:
    a. Verify the serial number using the TSi About screen.
    b. Verify the correct I/P address is set under the TSi Options -> Ethernet Settings screen.
    c. Review the current program settings etc. using the TSi.
    d. Preform a couple of tests to ensure all is working.

Figure 5 - Micro-switch position

If any problems are encountered please contact a technical support individual at Zaxis, Inc by emailing: dharding@zaxisinc.com or by calling 801.264.1000 ext 106.