InData Systems Hawkeye 2020 Setup Guide

The InData Systems Hawkeye 2020 unit is a high speed, self-contained illumination scanner designed to read "invisible" fluorescing bar codes. The specific wavelength of the illumination and the integral filtering of the reflected or fluoresced light are designed to detect and read covert bar codes that are printed by inkjet, thermal transfer or similar printing methods.

InData Systems has calibrated and tested your unit to optimally read samples submitted by you or samples similar to your description.

Set up your scanner in the manner described below, and try to read your codes before attempting to make changes to the settings.

Unpack the kit and make sure it contains the following items:

> InData Systems Hawkeye 2020 with integral illumination
> RAM mounting ball kit – with threaded screw for rapid mounting
> 25 foot (7.6 meter) Interface cable – 15 pin
> 25 foot (7.6 meter) Network (Ethernet) communications cable
> Serial communications cable
> Hawkeye Power Supply

The RAM Mounting ball kit can be either screwed down or clamped in place. The threaded protrusion from the round ball end screws into the center threaded hole in the mounting plate on the back of the Hawkeye 2020 unit.

Visit our website www.uvreaders.com and from the software section in the Downloads page, download the Readrunner software for viewing and configuring your Hawkeye 2020 unit.

Also on our website are: Hawkeye 2020 User Manual, Advanced Reference and Programmer Manual, and the Hawkeye Verification Manual for those that purchased the optional Bar Code Verification License.

Hawkeye 2020 units are calibrated to function best at approximately 2" (5 cm) from the end of the illumination housing to the target (label). Most units are shipped in Power Strobe mode, which allows maximum illumination power. Maximum illumination is on only for the brief instant that the imager requires illumination. This is both the most efficient, as well as the safest method of operation. Some units use ultraviolet illumination or other (Infrared) illumination and with Power Strobe, while it is not advisable to stare at for hours on end, the

light exposure to the human eye is brief enough to provide safe operator environments.

Settings to optimize reading your sample codes or type of codes described by your team have been saved in the camera, with automatic re-triggering enabled for simplest setup and test.

To set up the Hawkeye:

Note – it is important to do the next steps in the following order:

1. Plug in the network cable to connect it to a network hub or switch to obtain a network address via DHCP. (Consult your network communications team for assistance if necessary). It may take several minutes for the Hawkeye 2020 to obtain a network address after power is applied.

2. Connect the Hawkeye to the Power Supply provided in the kit. This power supply contains international power pins. The power supply plugs into the back of the Hawkeye with a small 3 pin D style power connector. A clip with a longer screw is included to ensure the power connection stays in place after final installation.

3. Install the ReadRunner software on a PC that will be used in the test setup of the Hawkeye 2020 scanner. After installing the software, run the program. If both the PC and the Hawkeye 2020 are on the same network then you should be able to click on the Network Button **(Figure 1)** on the lower right of the ReadRunner application. The Hawkeye unit should show as an available device. (**Figure 2)**
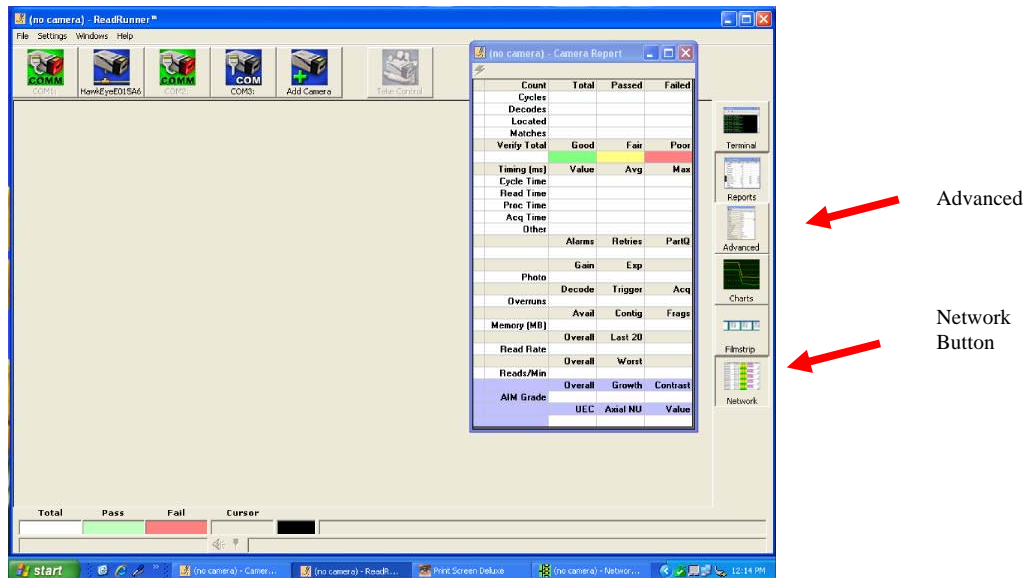

Figure 1

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On some networks the unit will initially display with a local IP address such as 169.254.x.x. This means that the Hawkeye has not yet been assigned a valid IP address from the DHCP server. In some environments, obtaining a valid IP address can take up to 5 minutes. Once the Hawkeye has a valid IP address (the original IP address will turn red) it will display green **(Figure 2)**. From that point on, whenever the ReadRunner software is used, the valid IP address should immediately show. Powering off the Hawkeye unit may cause delays in re-obtaining the valid IP address.

4. Double click the valid IP address to add the camera to the selection in the ReadRunner Software **(Figure 2)**.

When a fluorescing bar code is placed in front of the Hawkeye 2020 unit at 2" or 5 cm from the front, you should see an image **(Figure 2)** of the fluoresced bar code on the screen, and the camera will beep each time it decodes the bar code.
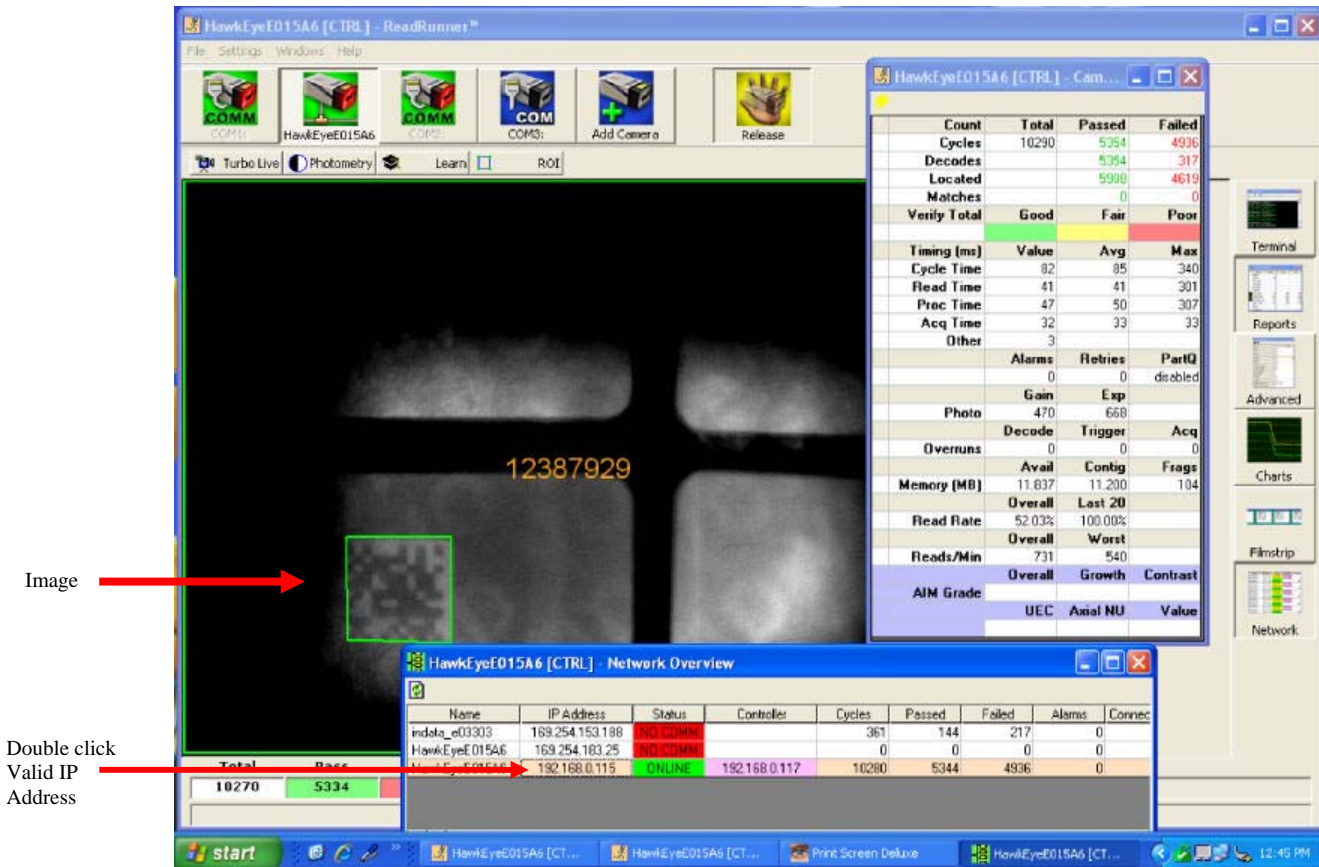

Figure 2

It may be necessary to tip the Hawkeye 2020 as much as 10-15 degrees off perpendicular to the surface of the label material to reduce possible specular reflections.

If samples were not provided to InData Systems prior to our shipment to you, then some adjustments may be necessary. If the code seems focused and clear, then the photometry and lighting settings are good.

If adjustments are necessary, click the Take Control Button **(Figure 3)** on the top right of the screen. This enables you to make adjustments to optimize the image capture and other features of the Hawkeye 2020 scanner.
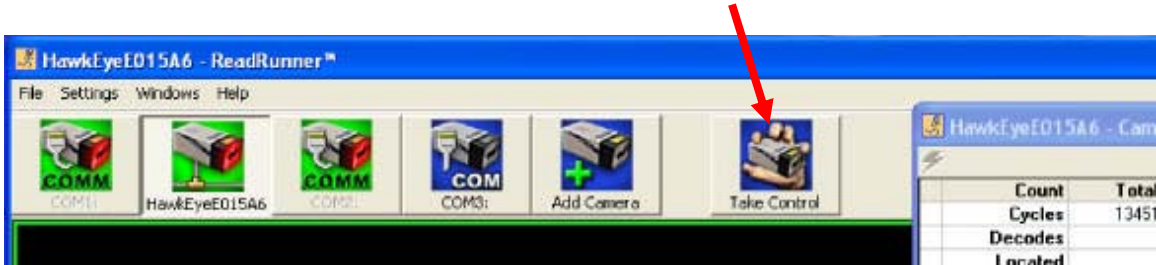

Figure 3

Figure 4

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If no image (totally black) is present, or, to fine tune the image, click the Photometry Button **(Figure 4).** Adjusting the exposure (slider left and right) allows a longer time to acquire the image, but, it likewise slows the maximum rate of speed that the target can be moving in later "in-motion" reading application. Learn, Decode Only, **(Figure 4)** allows the scanner to recognize the size and orientation of the bar code for maximum performance. However, if a bar code of different number of bars or orientation is presented after Learn is invoked, it may not be recognized. Select Unlearn to set it back to automatically recognize any size or orientation.

Further fine tuning of the optimized decoding can be identified in the main manual. For a report of the current data matrix optimization, click on the button on the right of the screen labeled Advanced **(Figure 1).**

When the code is properly fluoresced, and no additional adjustments are necessary, the best reading rate can be obtained using the I/O cable provided and tied into either a photocell or other trigger signal from your equipment to tell the Hawkeye precisely when it should expect to see the fluoresced code each time. See the attached Appendix of Field I/O Wiring Examples.

Once a trigger has been attached in the manner described, go to the menu item Settings, and select Application Mode. Click the check box Use Trigger on Opto in 1. Click the Apply and OK to set optimized triggering.

Figure 5

Typically speeds of the target moving in excess of 500 Feet per minute (150 meters per minute) can be obtained when the settings of exposure are below 300 on the Photometry, Exposure window and the external triggering through this Opto interface is used.

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To save any setting changes that you have made to the camera, click on File, Save Parameters to Camera.
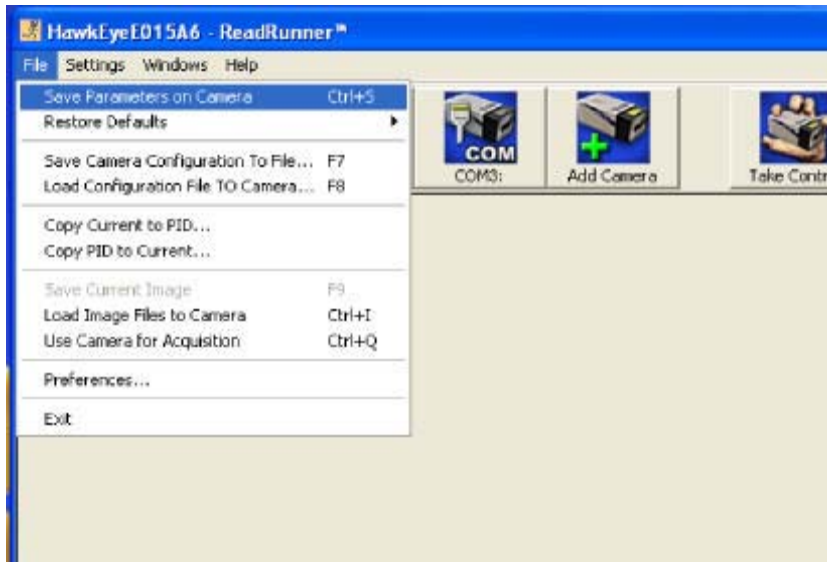
Appendix

Field I/O Wiring Examples

Input Opto Wiring

Sample wiring diagrams for trigger inputs A and B (opto inputs) are located on terminal block TB1 positions 1 and 11 (see Figure 2–25 and Figure 2–26):

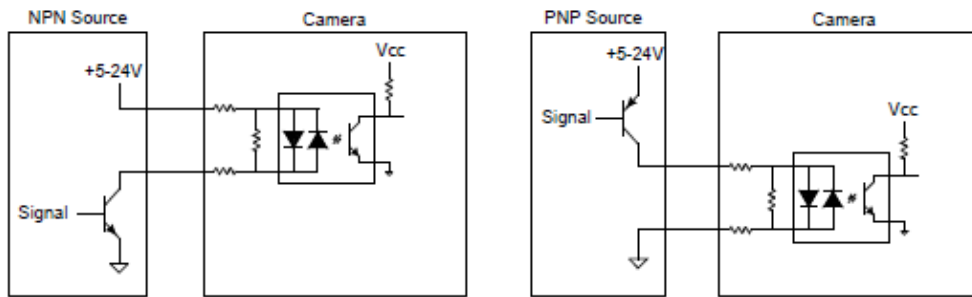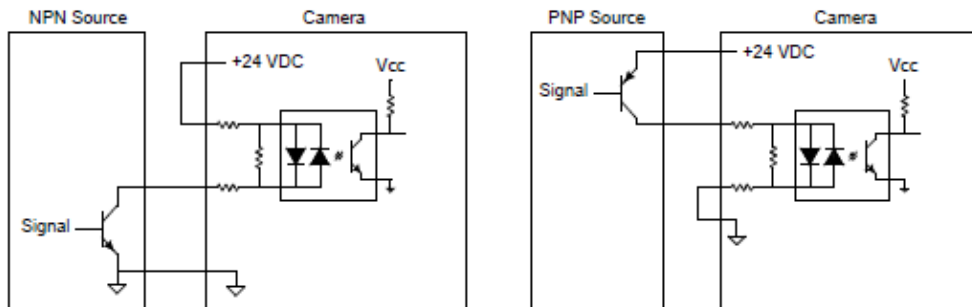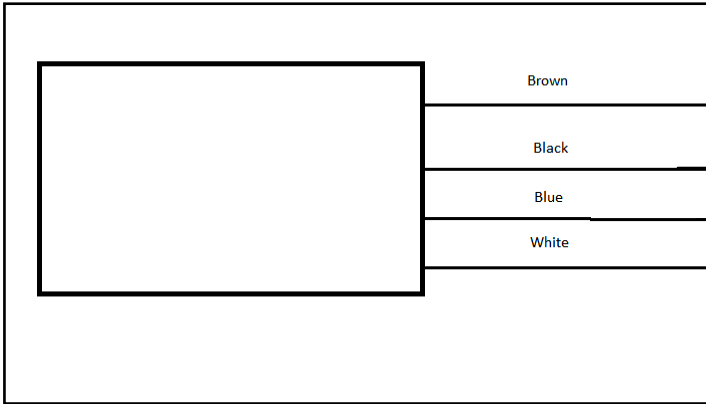FIGURE 2–25. Input Opto Wiring (Isolated NPN and PNP Sources)

FIGURE 2–26. Input Opto Wiring (Non-Isolated NPN and PNP Sources)

Appendix - continued

Typical Photocell Wiring

Brown

Black

Blue

White

Pin	Description
1	Sensor Input A
2	Opto Output 1 A
3	Opto Output 2 A
4	Opto Output 3 A
5	General Purpose I/O 1 or Strobe
6	+24 volts
7	General Purpose I/O 2
8	General Purpose I/O 3
9	General Purpose I/O 4
10	24 volt return (Ground)
11	Sensor Input B
12	Opto Output 1 B
13	Opto Output 2 B
14	Opto Output 3 B
15	I/O Return (Ground)
Shell	Chassis Ground