MICROSCAN.
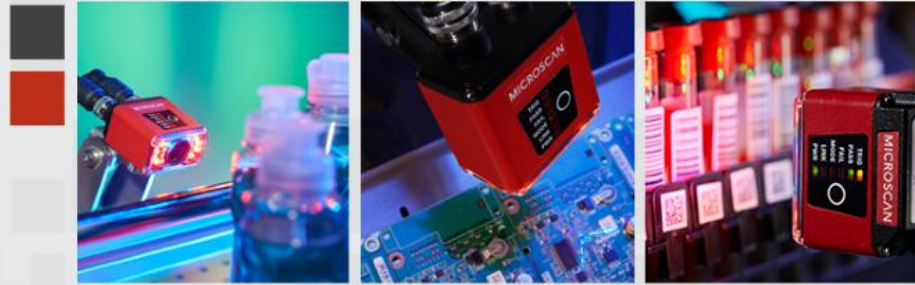
MicroHAWK®
Simply Incredible Barcode Readers

Presenter: Nico Hooiveld

Date: June 7th 2016

Contents

- MicroHAWK Platform Introduction

- MicroHAWK one size fits all

- MicroHAWK competitive line up

- WebLink hands on training

MICROSCAN.

MicroHAWK® Introduction

MicroHAWK is a **modular** set of auto ID and machine vision products built around a **small**, **easy-to-manufacture**, **high-performance, modular** imaging engine.

By designing MicroHAWK from the ground up, Microscan can leverage the Engine in multiple packaged products that solve any **auto ID** and **MV** task for **OEM** and **factory automation** customers.

MicroHAWK® Introduction

MicroHAWK®
One Incredible Platform

FROM AUTO ID TO MACHINE VISION

You Choose Your Camera and Hardware.
You Decide What Your Camera Can Do.

MicroHAWK Advantages

- **Incredibly Small**
  - Designed around the smallest high-performance engine on the market

- **Incredibly Intuitive**
  - Easy set up without software install
  - WebLink

- **Incredibly Powerful**
  - Reads right out of the box
  - X-Mode 4.0 decoding

- **Incredibly Agile**
  - Value/Performance in Configurations
  - Define hardware configuration from hundreds of sensor-, optics-, speed- and lighting combinations
  - No other platform offers the same level of custom capability

MicroHAWK Camera Hardware

Variant	Core Functionality	
Engine	Serial USB Fixed focus	5V
ID-20 MV-20	Plastic Enclosure IP40 USB Fixed focus	5V
ID-30 MV-30	Aluminum Enclosure IP54 Serial/USB Fixed or **Autofocus**	5V Add-on LEDs
ID-40 MV-40	Aluminum Enclosure IP65/67 Serial/Ethernet Fixed or **Autofocus**	5-30V Opto I/O Add-on LEDs

No compromise: adapt MicroHAWK, not your application !

MicroHAWK Software Scalability

- **Auto ID**
  - Read any code with the latest X-Mode decoding
  - Web based setup & configuration. No software!
  - Unprecedented out of the box reading
  - **You already know how to use it!**

- **AutoVISION**
  - Intuitive setup for common vision applications
  - 12 machine vision tools
  - Includes Intellifind locator and Symbol verification
  - **No machine vision expertise required!**

- **Visionscape**
  - Complete control for complex applications
  - Full machine vision suite with over 50 machine vision tools
  - .NET library for easy integration
  - One software for the entire machine vision line
  - **Powerful machine vision on the world smallest platform!**

MICROSCAN ®
ⵔWEBLINK

Microscan WebLink

- "No Software" setup tool for MicroHAWK

- 100% web-browser-based: just enter the IP address

- Simple, intuitive configuration: no training required

- Fast, responsive design

- Auto adjustment right out of the box

- Your link to Industry 4.0!

Incredibly Intuitive

MicroHAWK will read anything

- **Superior decoding with X-Mode 4.0**
  - Any code, any surface, at any speed

- **Best-in-class decoding of 1D/2D/DPM out of the box**

- **New Train Mode**
  - Optimizes camera settings for speed and readability

- **New Optimize Mode**
  - Saves information of the target symbol to allow it to be processed quicker and more consistently

- **New Damaged Mode**
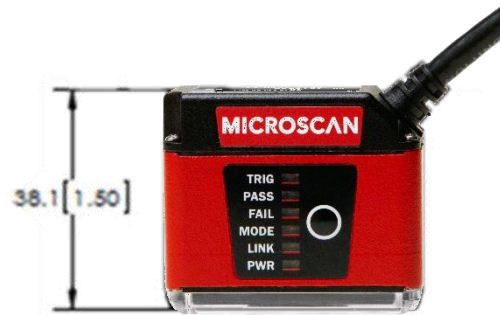 - Ideal for decoding when physical damage is present
  - High-density and out-of-focus codes
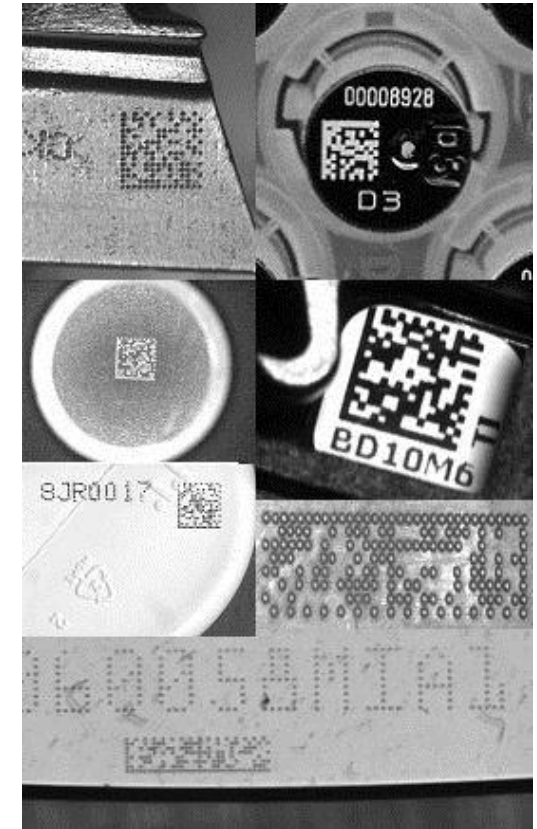
Incredibly Powerful

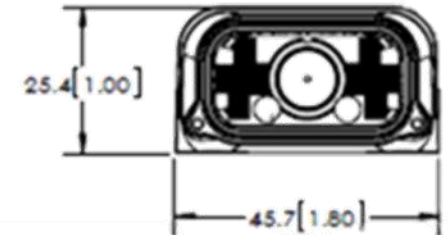# MicroHAWK Size Comparison
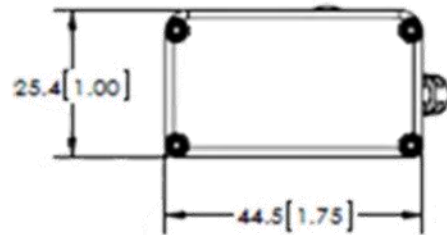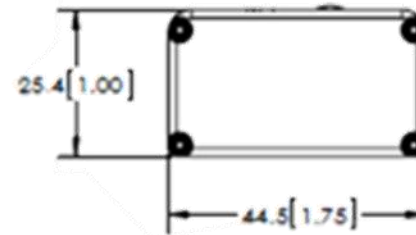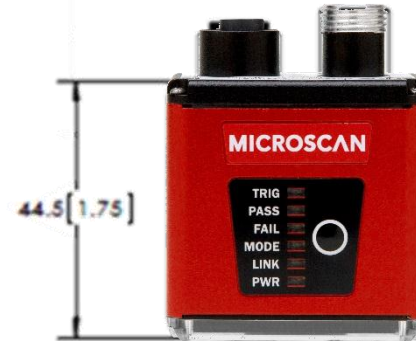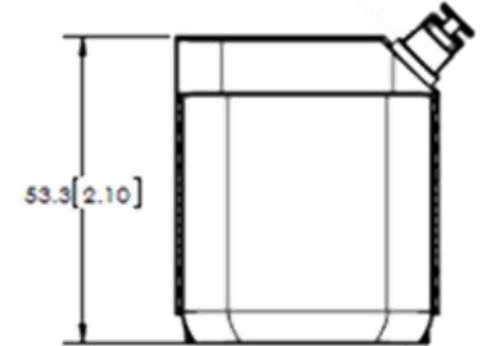
ID-20   ID-30   ID-40   MINI HAWK

Incredibly Small

# Right Product, Right Configuration, Right Price

Decoder
1D Only (Standard)
1D/2D (Plus)
DPM (X-Mode)

Speed
Standard (10 FPS)
High (Max sensor FPS)
Speed 3x MiniHAWK

Software
Auto ID
AutoVISION
Visionscape

Connectivity
USB/Serial
Ethernet TCP/IP
ProfiNET
Ethernet/IP

Enclosure
IP40 (ID-20)
IP54 (ID-30)
IP65(ID-40)

List pricing
€450-€3500

Image Sensor
WVGA (Global)
SXGA (Global)
QSXGA (5 MP, Rolling)

Optics
Standard-Density
High-Density
Custom

Focus
Autofocus
Fixed Focus
(50-300 mm)

Optional Outer Illumination
Red
White

Licensing
Field upgradable
licenses

Incredibly Agile

MicroHAWK ID License Options

- **Speed**
  - Standard (10 frames per second (FPS))
  - High (limited only by the sensor)
    - ✓ Up to 60 FPS
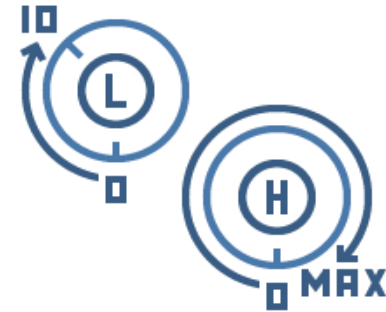
- **Decoder**
  - Standard (1D Omnidirectional)
  - Plus (1D/2D Omnidirectional)
  - X-Mode (All of the above plus damaged codes and direct part marks (DPM))

Available on All MicroHAWK Products

MicroHAWK pricing structure

Model

- ID-20 + €450
- ID-30 + €632
- ID-40 + €905

Standard Configuration
- WVGA Sensor
- 1D Only Decoder
- Standard Speed 10 Frames/Sec

Sensors

- WVGA + €0
- SXGA + €273
- QSXGA +€91

Optics

Optics
- SD + €0
- HD + €0
- Custom + €91

Focus
- Fixed + €0
- Auto (+ €270

- Standard Focus:

50mm
64mm
81mm
102mm
133mm
190mm
300mm

Added light

- White + €91
- Red + €91

Speed

- Std + €0
- High + €364

Decoder

- Std (1D) + €0
- Plus (1D/2D) + €91
- X-MODE + €364

MicroHAWK product configurator

Sales and Marketing Tools

- ## MicroHAWK Builder (Mobile phone shortcut)

   Android:
   1. Open Chrome and browse to: https://oms.microscan.net/oms/publicoms/MicroHawkSelector.aspx
   2. Select the ellipse menu:

   3. Select "add to home screen"

   iOS:
   1. Open Safari and browse to: https://oms.microscan.net/oms/publicoms/MicroHawkSelector.aspx
   2. Select the following icon:

   3. Select "add to home screen"

How do I manage all this variety?

The MicroHAWK ID-40: One size fits all

- Highest performance

- Smallest industrial reader with Ethernet

- Liquid lens autofocus

- SXGA 1.3MP sensor with global shutter
  - High resolution AND high speed

- No software required with WebLink
  - You already know how to use it

- Unprecedented out of box performance
  - Full automatic setup
  - X-Mode 4.0 decoding

- 7412-2000-1005 ID-40, AF HD SXGA

The right reader for any application

The MicroHAWK ID-40: Competitive Lineup

		Micro HAWK ID-40	Keyence SR-1000	Cognex DM-26x X	Datalogic Matrix 300
Size	✓	45 x 25 x 45mm	47 x 74 x 48mm	43 x 22 x 64mm	54 x 95 x 43 mm
Configuration software to install	✓	No, WebLink	Yes, AutoID Navigator	Yes, Dataman setup tool	Yes, Visiset software
Focus	✓	<u>Liquid lens AF</u> Fixed optional	Stepper motor AF	Liquid lens AF Fixed optional	Liquid lens AF Fixed optional
Supply voltage	✓	5-30 VDC Passive POE	24VDC	24VDC POE	10 to 30 VDC POE
Sensor	✓	0,4MP 60fps <u>1,3MP 45fps</u> 5MP 5fps	1,3MP	0,4MP 60fps 1,2MP 45fps	1,3MP 60fps
Interface	✓	RS-232, Ethernet TCP/IP, ProfiNET, EIP	USB, RS-232, Ethernet TCP/IP, ProfiNET, EIP, OMRON PLO	RS-232, Ethernet TCP/IP, ProfiNET, EIP	RS-232, RS-485, Ethernet TCP/IP, ProfiNET, UDP, Modbus TCP

The MicroHAWK ID-40: Competitive Lineup

MicroHAWK ID
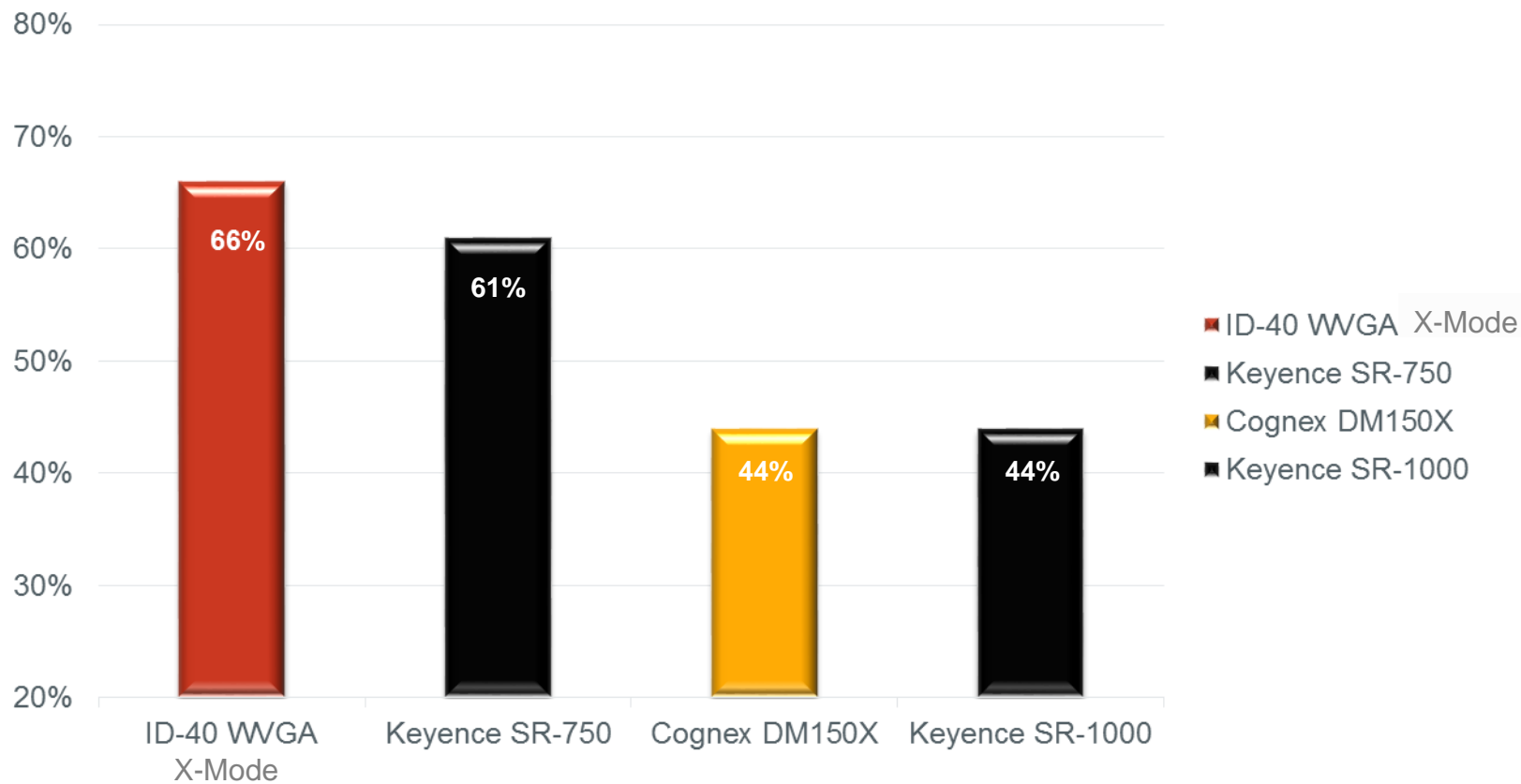
Datalogic

Keyence

Cognex

"Horrible 100" Read Performance Test
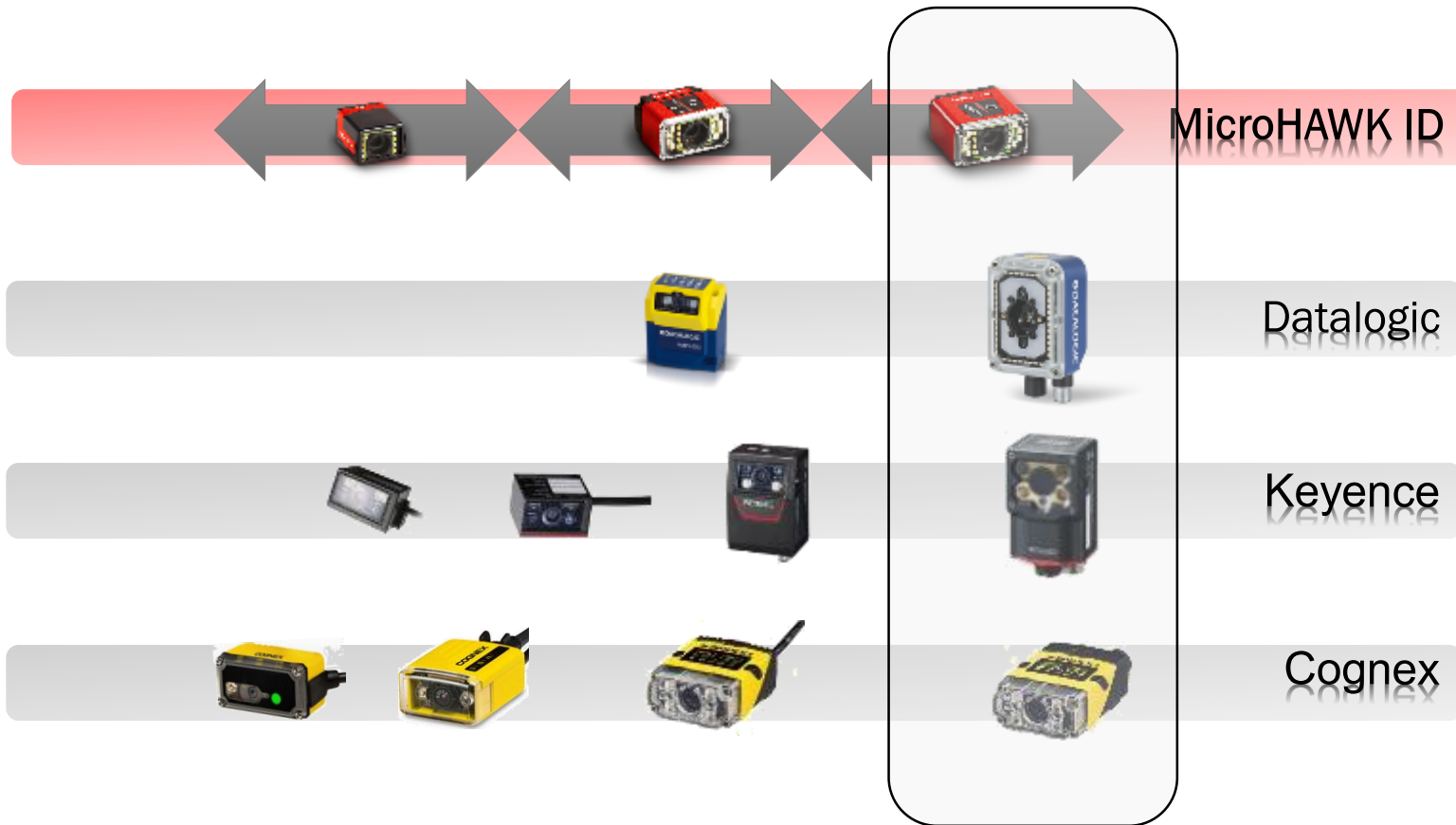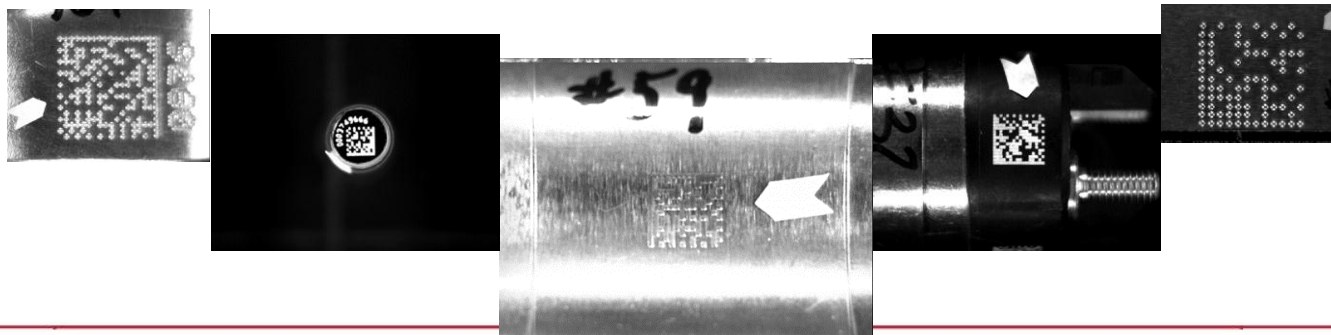
The MicroHAWK ID-40: Competitive Performance

Horrible 100 Out of Box Results

- ID-40 WVGA X-Mode — 66%
- Keyence SR-750 — 61%
- Cognex DM150X — 44%
- Keyence SR-1000 — 44%

The MicroHAWK ID-40: Competitive Performance

The MicroHAWK will read anything

Total Passed Ranking

Legend:
- ID-40 WVGA X-Mode
- Keyence SR-750
- Cognex DM150X
- Keyence SR-1000

Bar values:
- ID-40 WVGA X-Mode: 84%
- Keyence SR-750: 74%
- Cognex DM150X: 73%
- Keyence SR-1000: 45%

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The MicroHAWK ID-40: Competitive Ease of Use

WebLink 1.1

- No software
- Continuous auto focus
- Continuous auto photometry
- Continuous feedback

You already know how to use it

The MicroHAWK ID-40: Competitive Ease of Use

Keyence

- Windows program

- Focus button

- Auto photometry available

- Needs manual tuning

- Test modes for feedback

Do you know how to use it?

The MicroHAWK ID-40: Competitive Ease of Use

Cognex

- Windows program
- Focus button
- Auto photometry available
- Test modes for feedback

Do you know how to use it?

MicroHAWK Advantages

You already know
how to use it

You already know
how to sell it

Let MicroHAWK
convince you

- **Incredibly Small**
  - Smallest industrial barcode readers on the market

  MICRO HAWK

- **Incredibly Intuitive**
  - Easy to set up; no software to install or upgrade

  MICROSCAN WEBLINK

- **Incredibly Powerful**
  - No training required; no configuration necessary
  - Read any 1D/2D code or mark out of the box

  X-Mode 4.0

- **Incredibly Agile**
  - Modular, flexible, scalable platform

Let's try!
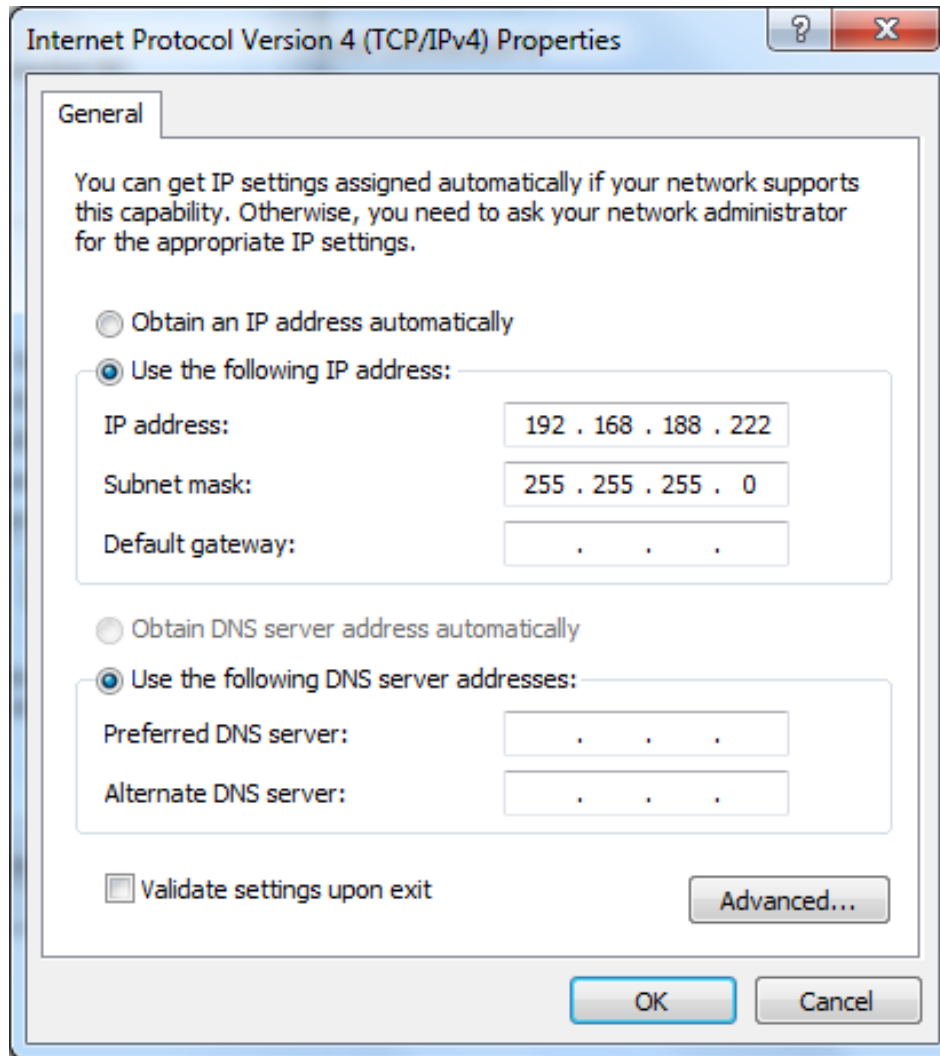
IP Setup

- Camera IP: 192.168.188.2
- Subnet: 255.255.255.0

WebLink hands on training

MicroHAWK Accessories

- Outer Illumination

KIT, **RED** LED,
MICROHAWK 30, 40
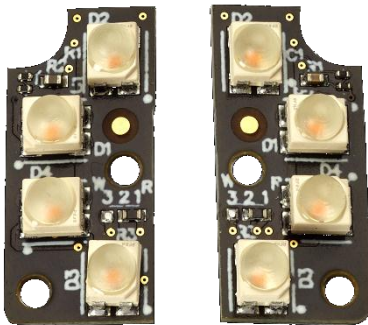
PN: 98-9000045-01
€114

KIT, **WHITE** LED,
MICROHAWK 30, 40
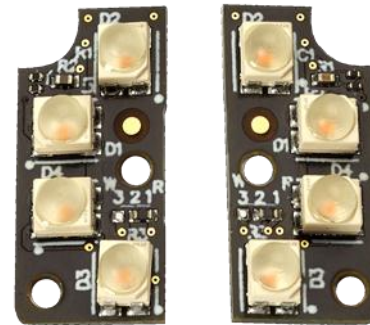
PN: 98-9000046-01
€114

MicroHAWK Accessories

- **Diffuser and Polarizer**

KIT, DIFFUSER,
MICROHAWK 30,40

KIT, POLARIZER,
MICROHAWK 30,40

PN: 98-9000043-01
€68

PN: 98-9000044-01
€114

MicroHAWK Accessories

- **Mounting Blocks**

MS-4 to MicroHAWK 20	MS-4 to MicroHAWK 20,30,40	¼" - 20 MicroHAWK 20, 30, 40
PN: 98-9000034-01 €41	PN: 98-9000059-01 €41	PN: 98-9000047-01 €23

- ## Mounting Kits

KIT, L BRACKET
MICROHAWK 20, 30, 40

PN: 98-9000041-01

KIT, MOUNTING, APG
MS-4, MINI,
MICROHAWK 20, 30, 40

PN: 98-9000054-01
€181

MicroHAWK Accessories

- Right Angle Mirrors

KIT, RA MIRROR, MICROHAWK 20

KIT, RA MIRROR, MICROHAWK 30, 40

PN: 98-9000057-01
€109

PN: 98-9000058-01
€109

MicroHAWK ID-20 Cables

NOTE: 6' cable included with purchase of ID-20

- ## P/N: 61-9000034-01
  - CABLE, USB A to MicroB, 6FT, MICROHAWK-20
  - Basic comms only applications
  - List price €18

72.0"
6.0'
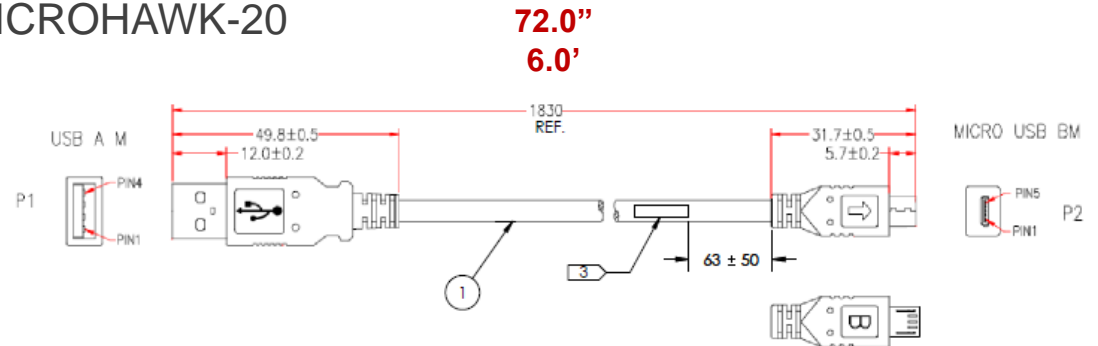
- ## P/N: 61-9000045-01
  - CABLE, USB A to MicroB, 3FT, MICROHAWK-20
  - Basic comms only applications
  - List price €18

36.0"
3.0'
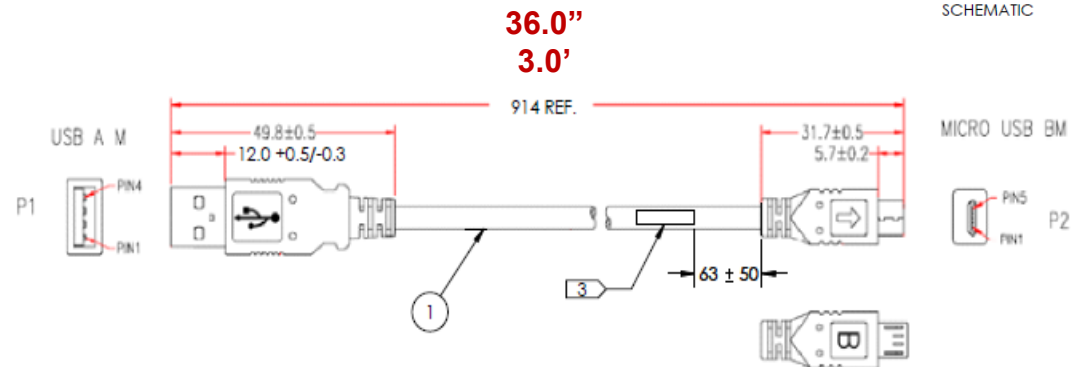
MicroHAWK ID-30 Cables

- **P/N: 61-9000043-01**
  - CABLE, DB15 to BUS PWR USB
  - Basic comms applications that require more light, higher speed applications
  - List price €59
  Note: Reduces external lighting by 30%

- **P/N: 98-9000049-01**
  - KIT, CABLE, DB15 to EXT PWR/USB, W/PWR SUPPLY, MICROHAWK-30
  - INCLUDES
    - ✓ PN: 61-9000038-01 (Cable Only) €68
    - ✓ PN: 97-9000006-01 (PWR Supply) €32
  - Basic comms applications that require more light, higher speed applications
  - List price €95
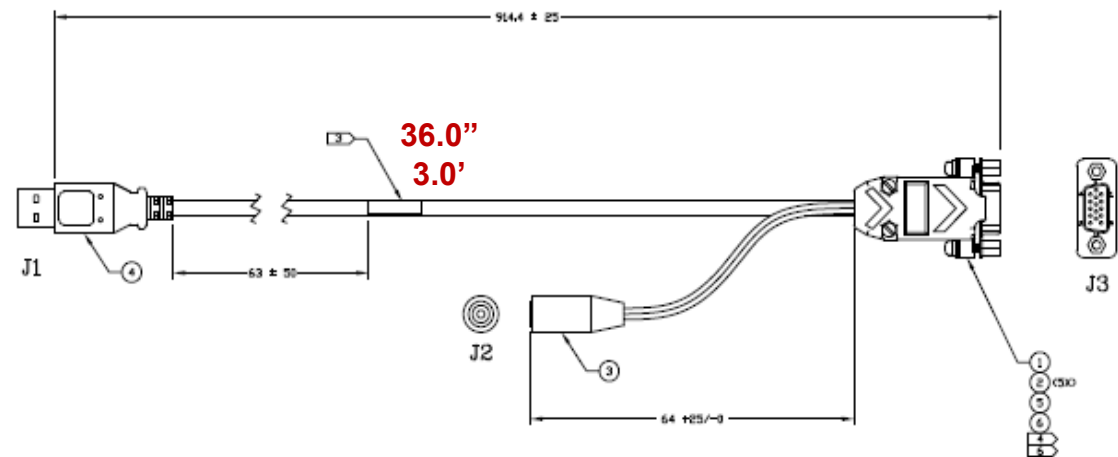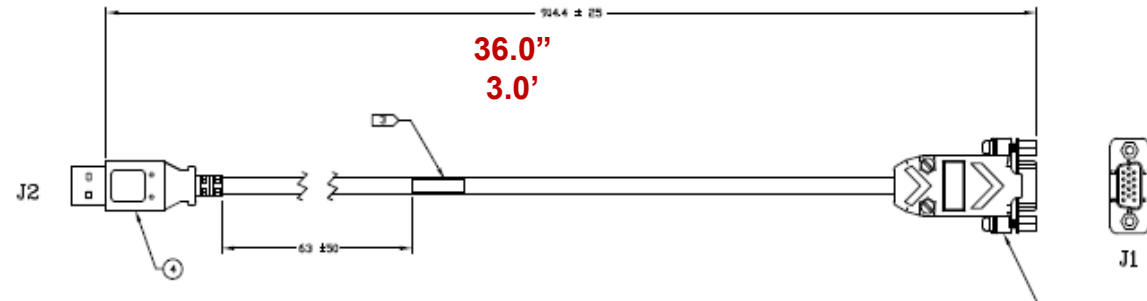
MicroHAWK ID-30 Cables

- ## P/N: 98-9000050-01

  - KIT, CABLE, DB15 to EXT PWR/USB, I/O, W/PWR SUPPLY, MICROHAWK-30
  - INCLUDES
    - ✓ PN: 61-9000039-01 (Cable Only) €87
    - ✓ PN: 97-000011-02 (PWR Supply) €97
  - RECOMMENDED TO PURCHASE SEPARATELY:
    - ✓ PN: 99-000019-01, PHOTO SENSOR, VIS, NPN, 5VDC, LIGHT ON €193
    - ✓ PN: 61-000151-01, FLYING LEAD CABLE €33
  - Virtual LAN or RS232 with I/O applications
    Any speed with line stop or result indication.
  - List price €168,-

PN: 61-000151-01, FLYING LEAD CABLE
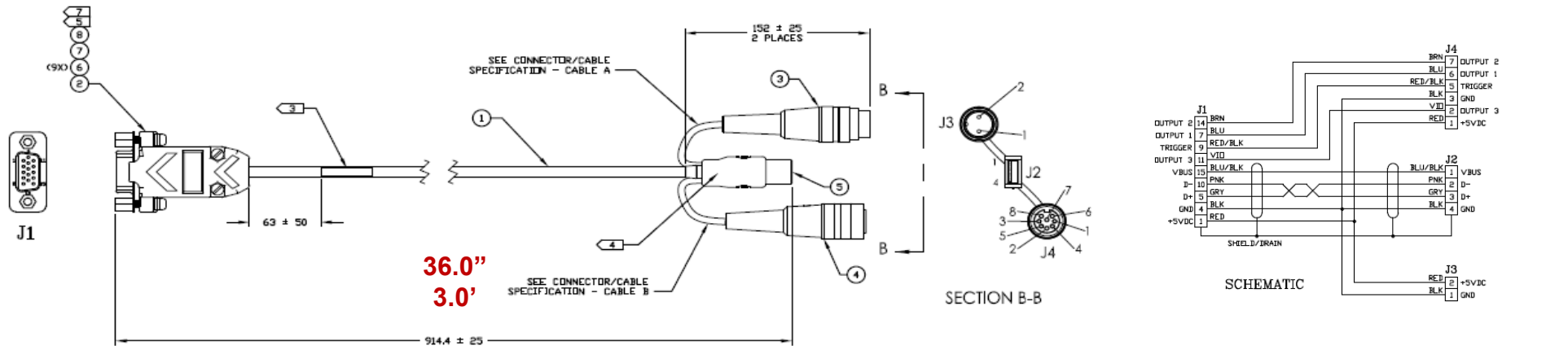
MicroHAWK ID-30 Cables

- **P/N: 98-9000048-01**
  - KIT, ASSY, CABLE, EXT POWER/RS232 TO DB15, W/PWR SUPPLY, MICROHAWK-30
  - Includes
    - ✓ P/N: 61-9000037-01 (Cable Only) €68
    - ✓ P/N: 97-9000006-01, PWR Wall Plug Required €32
  - Basic RS232 only communication applications
  - List price €95
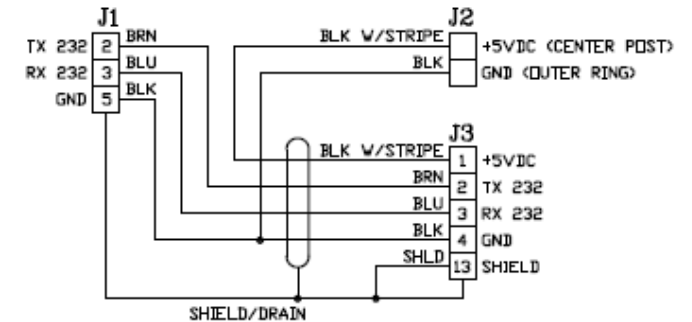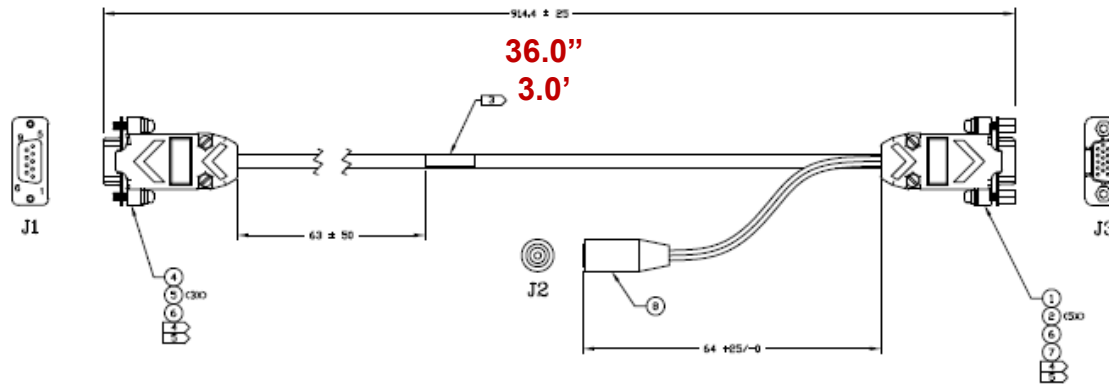
MicroHAWK ID-30 Cables

- ## P/N: 61-9000102-01
  - CABLE, DB15 to USB/RS232, TRIGGERED, MICROHAWK-30 (Cable only)
    - ✓ PN: 97-000011-02 (PWR Supply required) €97
  - RS232 applications with WebLink simultaneously plus I/O for line stop or result indications
  - List price €350

36.0"
3.0'
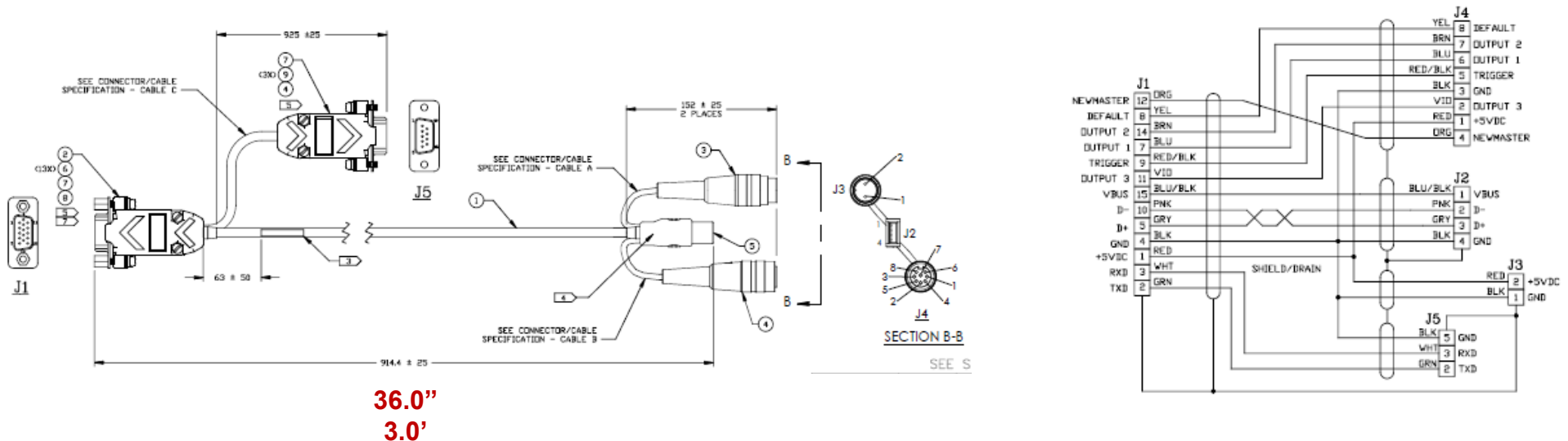
MicroHAWK ID-40 Cable

- **P/N: 61-9000054-01**
  - CABLE, M12 12 PIN SOC TO 9 PIN SOC, MICROHAWK-40 / ALL QX-SERIES
  - Replaces common cord set, QX-1 and RS232 cable with single cable option. For using both RS232 and WebLink simultaneously.
  - List price TBD

MICROSCAN.
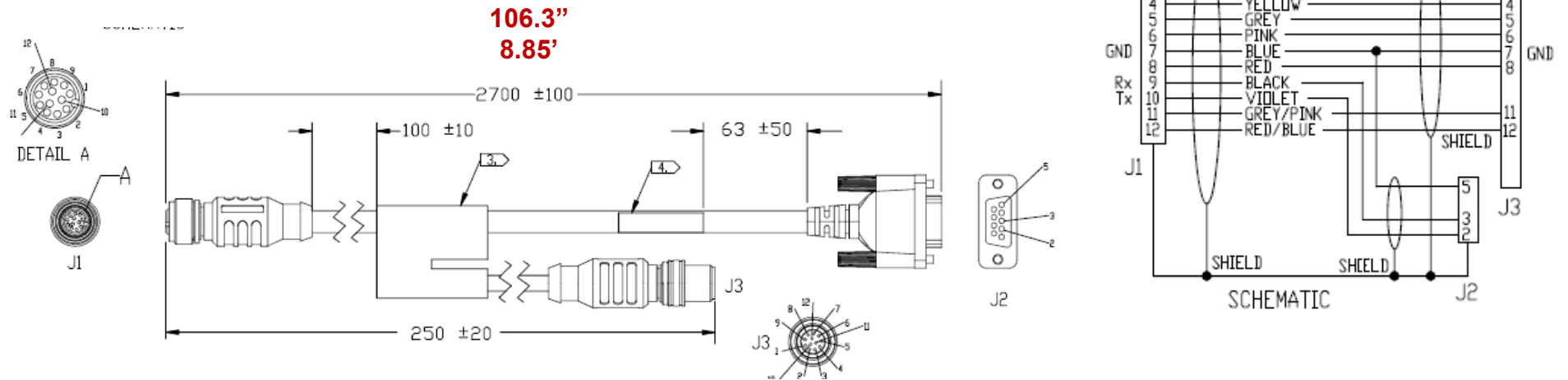
MicroHAWK Common Applications

- Electronics
  - Component and PCB traceability

- Packaging
  - Track, Trace & Control (TTC), serialization, regulatory labeling mandates

- Medical Devices
  - Unit level traceability, FDA UDI regulatory mandates

- Clinical/Lab Automation
  - OEM embedded applications in diagnostics/ lab automation instrumentation

- Automotive and general manufacturing
  - Track, Trace & Control (TTC) applications in powertrain and assembly lines

- Document handling
  - High-speed OEM embedded applications
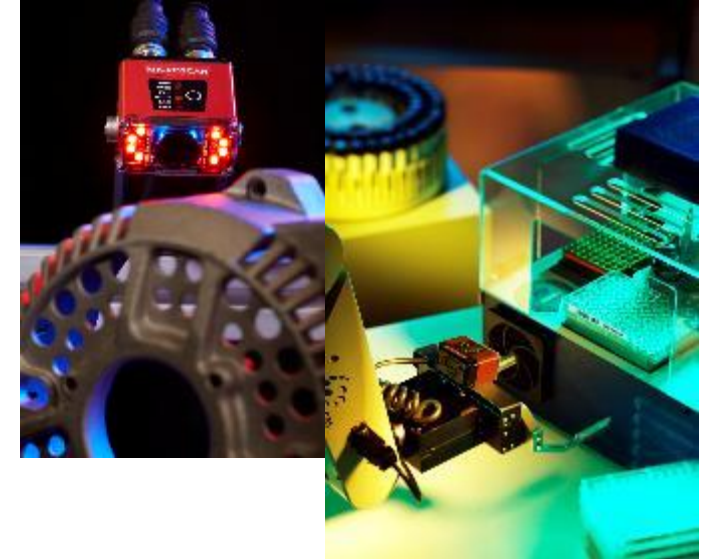
MicroHAWK ID Update

Liquid Lens Auto Focus

- **Greatly simplifies product selection!**

- **True autofocus right out of the box**
  - No setup required to read
  - Refocus after 5 noreads

- **Simple Weblink interface**
  - Fixed focus calibration available
  - Point & click to identify focus area
  - < 2s calibration cycle

- **Available on the ID-40 and ID-30**

- **Auto Focus Specifications**
  - Focal Distance 50mm – 300mm
  - Reaction Time 60-70ms
  - ~10X Faster than QX System

- **Pricing Adder**
  - €270 EU
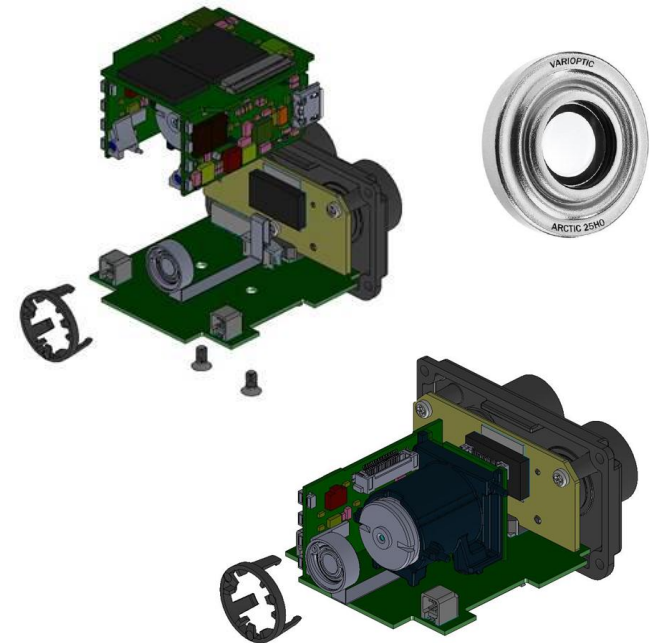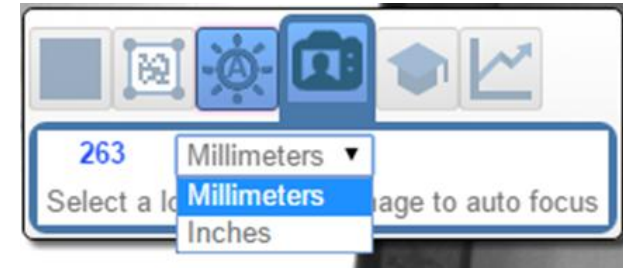
USB Keyboard & HID interface

- Supported on the ID-20 and ID-30

- Operates the same as the MS-4 HID/Keyboard Wedge

- Ability to define Keyboard Layout by setting Country code type

- English, Spanish – Currently ready

- French, German, Italian, Korean, Japanese, Chinese (Simplified), Portuguese (Brazil) TBD

WebLink 1.1
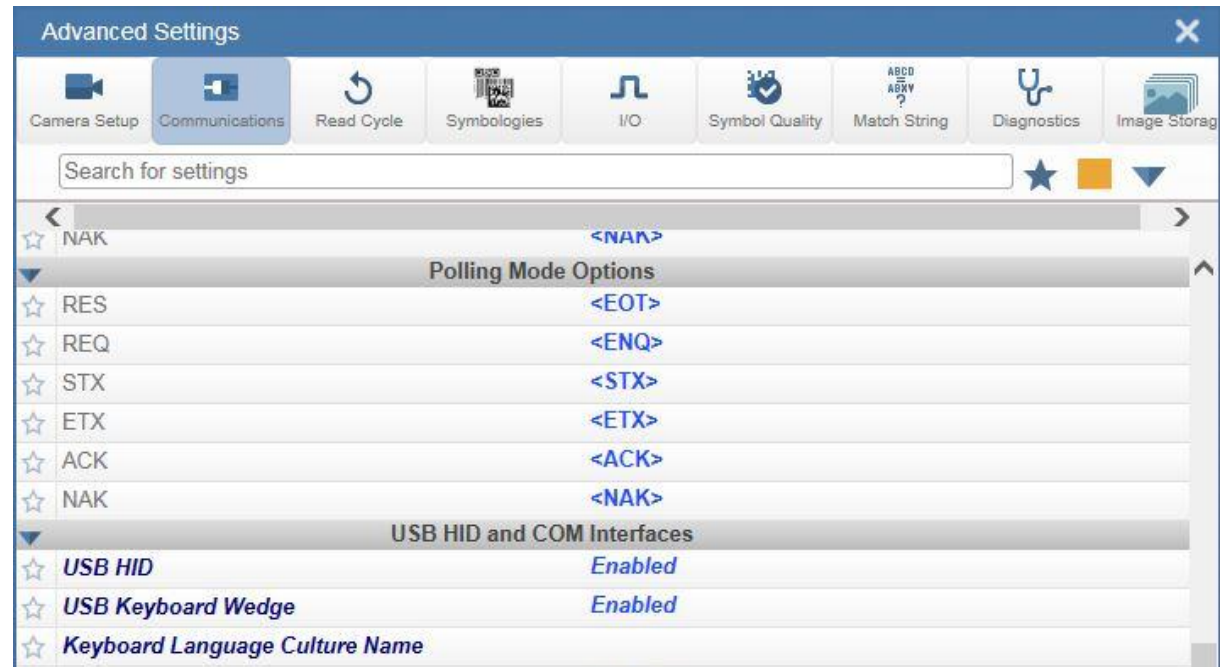
- Image Storage FTP
  - LOG Read/No Read Images
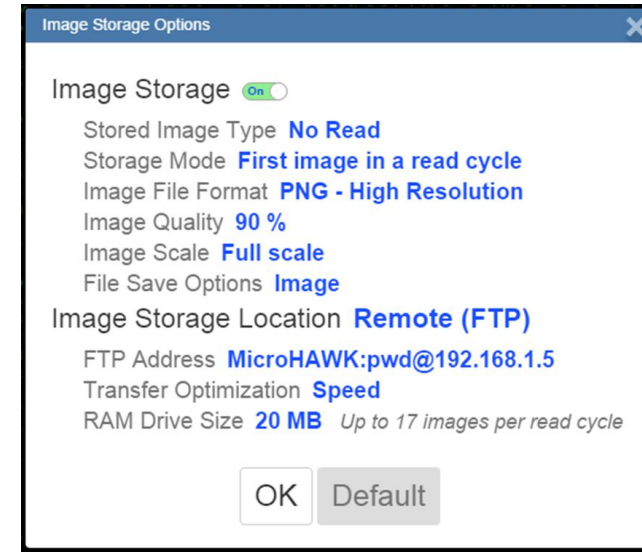   - ✓ Define which image will get stored into image storage within a read cycle.
    - ✓ GOODREAD/MATCH/MISMATCH => First qualified image or all qualified images.
    - ✓ NOREAD => First image or all images that have an IP report.
  - Image Storage Location
    - ✓ Send to FTP server
    - ✓ Send to RAM
      - Store 1 read cycle worth of images + cycle reports
      - Limited to the actual available RAM space on the system
    - ✓ Set to Flash
      - Store images + cycle reports up to 80% available space on Flash
    - ✓ Limited to the maximum available Flash or RAM storage space


Image Storage Options ✕

Image Storage On ⬤

Stored Image Type **No Read**
Storage Mode **First image in a read cycle**
Image File Format **PNG - High Resolution**
Image Quality **90 %**
Image Scale **Full scale**
File Save Options **Image**

Image Storage Location **Remote (FTP)**

FTP Address **MicroHAWK:pwd@192.168.1.5**
Transfer Optimization **Speed**
RAM Drive Size **20 MB** *Up to 17 images per read cycle*

[OK] [Default]

Keep track of what the MicroHAWK sees

WebLink 1.1

- ## Software Development Kit (SDK)
  - SDK.NET provides services that can be consumed by .NET controls. The API is simple which allows more flexibility in your application use of the SDK.
    1. Native .NET access to Read Cycle output data
    2. Native .NET image objects
    3. REST API
    - ✓ File Service - Retrieves a directory listing for the web server directory or sub directory of the web server using a GET request. It also allows for uploading of files via a POST request. If the file uploaded ends with the extension .zip the file will be unzipped in the specified folder.
    - ✓ Image Service - The image buffer can be either from an index or most recent. Image is a minimum 640x480 resolution. This API retrieves an image with a default type of PNG. Buffer can be either from an index or most recent.
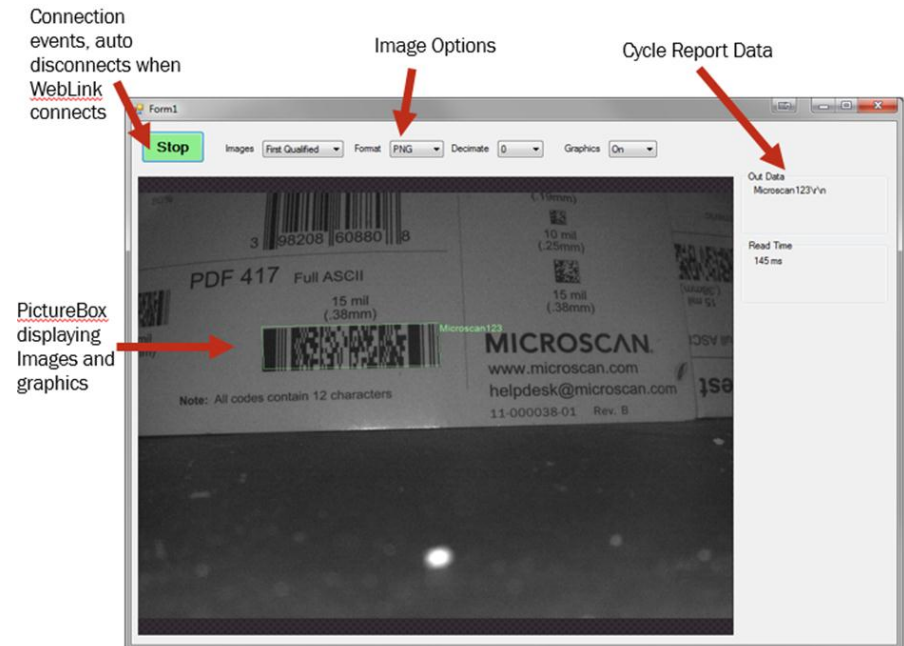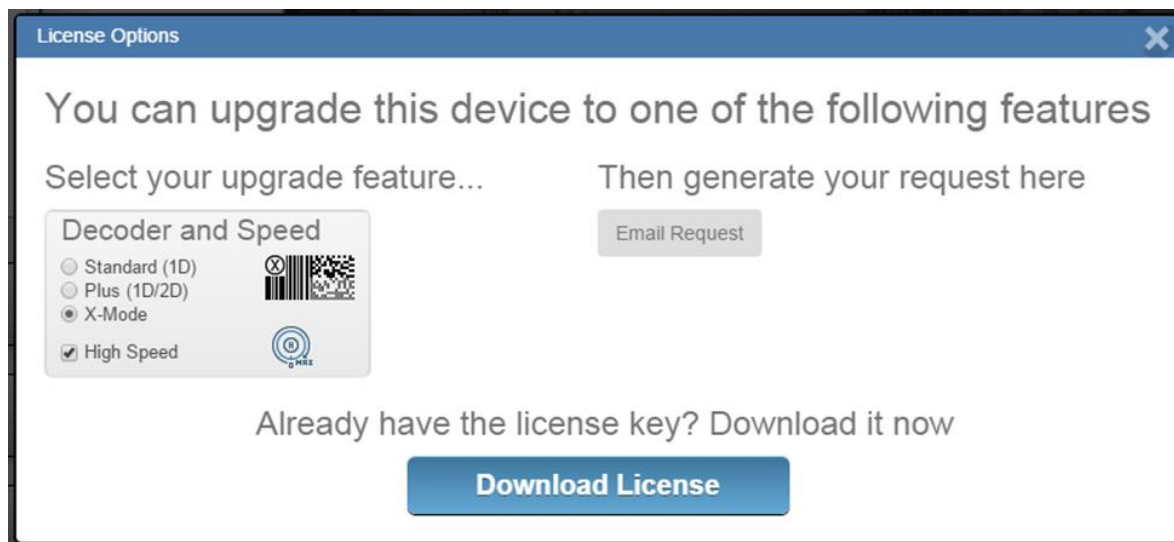

SDK.NET Example was created using Visual Studio 2010 along with .NET 4.0 using C#. It is a simple application which exercises most of the available SDK functionality.

Add the MicroHAWK UI to your software

WebLink 1.1

- **Field Upgradeable License**
  - High speed
  - X-Mode and Plus-Mode decoding
- **Works the same as vision license upgrades**

Performance is field upgradeable