# IG-300

**2D Imager Barcode Scanner**

# User's Manual

**Contents**

# 1. Introduction

Thank you for purchasing this brand-new designed 2D imager hand held barcode scanner.

This is a cutting-edge gun-type Area Imaging barcode scanner which is designed specifically for retailer, entertainment coupons, medical environment, shipping industry and etc. That adds on more user friendly functions and has replaceable cable that makes it more easily to be operated by the customers.

This high performance gun-type scanner provides the customer with the most cost effective solution in the market. It is perfectly suitable and definitely the best choice for you.

## 1.1 Safety & Caution

1) Please read the following safety statement carefully.
2) Please preserve this user manual for reference sometime.
3) Before cleaning the device, the users must cut off all AC power. Do not use liquid or spray type of detersive to clean the device. Please use dampish cotton cloth to clean the device.
4) The outlet must set nearby the device for connecting power easily.
5) Keep the device dry to avoid short circuit.
6) During installation you must fix the equipment at solid table to avoid damage caused by falling.
7) Before inserting power please ensure the voltage is healthy to the equipment.
8) For safety please tie wire well and don't put anything on the wire.
9) If you don't use this equipment for long time, please cut off the power to avoid damage from surge power.
10) Don't spray any liquid on this scanner because it may cause a fire or short circuit.
11) Please do not open the equipment. For safety only the qualified serviceman can open the equipment.

12) If there are the following situations please contact with the qualified serviceman to check this equipment.
13) The damage of wire or pin of power supply.
14) Some Liquid infiltrate into the equipment.
15) The equipment has been exposed to wet environment.
16) The equipment can't work well.
17) The equipment has any obvious damage, making the device working abnormally.
18) Don't storage the device at the temperature lower than -20°C (-4°F) or higher than +70°C (158°F) to avoid any damage.

## 1.2 FCC Warning

This equipment complies with the requirements in Part 15 of FCC.

Any operation must comply with the conditions below:

1) The equipment will not cause any severe interference.
2) The equipment can avoid any interference from environment.


Statement:
This product is classified as B class product.
In environment this product may cause some interference. In this situation the user may do something to avoid interference.

# 2. General Description

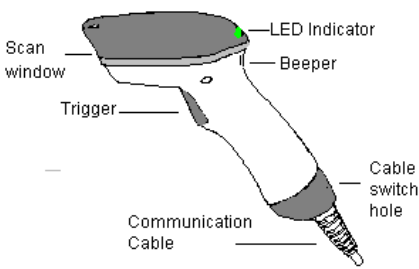
## 2.1 Product Description

IG-300 is a high performance wire 2D imager barcode scanner supporting liner, area imager barcode scanning and picture capture.

This device is very easy to configure by this manual, you can set up by scanning all necessary programming codes one time that meet applications, the settings are directly saved permanently, and all settings can be disabled after scan reset factory default.

## 2.2 Illustration

**IG-300 Series**



# 3. Installation

## 3.1 Unpacking

1) Take device and its accessories out of the box.
2) Remove the packing material.
3) Check the standard shipment packing list to make sure you have received all of the items ordered.

**IG-300 series**

- 2D Imager Scanner
- Power Adaptor (if applied)
- Communication Cable
- User Manual

4) Visually inspect the device and accessories for any evidence of physical damage.
5) If anything is missing or appears to be damaged, immediately contact your dealer.

**ATTENTION:**
Store the packing material and boxes: it should be used whenever the device is transported for servicing.

## 3.2 Mounting

Once you have unpacked all components, you can start installing the device as below steps:

### IG-300 2D Imager Barcode Scanner

1) Connect the supplied communication cable at the bottom side of the scanner and you will hear a “click” when the connection is made.
2) Turn off the host system.
3) Connect the communication cable to Host system.
4) Connect the Power supply (if needed) to Power cable inlet. And plug the power supply into the AC outlet.
5) Turn on the host system.

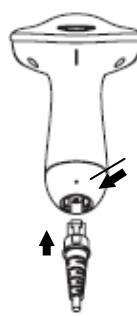
## 3.3 USB Driver

In case you will use the device with USB Virtual COM port emulation, please contact with your dealer and download the correct USB driver for Virtual COM port. Since it is necessary to install the USB driver on your Host system and operate correctly between the device and your system.

## 3.4 Switching Cable

Before removing the cable from the scanner, it's recommended to turn off the power of the host system and the power supply has been disconnected from unit.

1) Find the small "Pin-hole" on the bottom of the unit.
2) Use a bended regular paperclip and insert the tip into the hole.
3) You will hear a "click", then gentle on the strain-relief of the cable and it will slide out of the scanner.



# 4. Configuring

## 4.1 Preface

How to configure this device: The Barcode Programming Feature gives the possibility to change the scanner settings with use programming codes.

## 4.2 Scanner Settings with Programming Codes

You can setup your device by scanning all necessary programming codes for parameters that meet applications. After these scans, the device will save directly and permanently. To go back to the factory default settings, just scans the programming code factory default.

In order to change the scanner settings please follow the sequence below:

1) Power-up the scanner.
2) Change scanner settings by scanning any of the programming code that meet applications.

An Example:
For changing the Baud rate to 38400 only scan the programming code that represents this.

After reading a valid programming code the scanner will give a High beep and the green led indicator will lights on.

At any moment, you can stop your programming and read programming code factory default to go back to default.

## 4.3 Scanner Settings with Utility Tool

Manufacturer has setup this scanner with the most common used programming codes, it could be possible that you need more advanced settings to use the scanner without any problems into your application.

In this case you can setup your scanner by using the advanced Utility Tool. This tool can be used with the following operation systems: Windows98, Windows2000, Windows XP en Windows Vista.

This Utility Tool can be delivered on request. Please contact your dealer

## 4.4 Factory Default Settings

The factory default settings are shown with * and bold in the followings sections

The readable and default enable symbologies list, please see Appendixes C.

# 5. Operating Settings

## 5.1 Scanning Triggering

**<Level>**

A reading session begins (lighting and decode processing on) when beam is activated and stops when beam is deactivated.

**Continuous Scanning**

When the scanner is turned on a continuous reading session begins (lighting and decode processing on).

**Pulse**

A reading session begins when beam is activated and stays on until a period of inactivity lasting the time specified by the timeout.
After the timeout, the scan engine turns off.

**Flashing**

Flashing mode allows power up the lighting and decoding are on (no need to activate the trigger line) and after a period of inactivity lasting the time specified by the trigger timeout, the scanner starts flashing, checking for a bar code to be read.
When a bar code is detected, the lighting and decoding automatically turn on and stay on until another period of inactivity (timeout), after the timeout the scanner starts flashing again.

**Autostand**

This mode allows you to switch from Flashing trigger mode to Level trigger mode.
Autostand begins in flashing mode: At power up the lighting and decoding are on (no need to activate the trigger line) and after a period of inactivity lasting the time specified by the trigger timeout, the scanner starts flashing.
To switch to Level trigger mode activate the trigger line (press the trigger).
When in Level trigger mode, after a period of inactivity lasting the time specified by the trigger timeout, the scanner switches back to flashing mode.

**Toggle**

This mode allows lighting and decoding toggle when the trigger line is activated.

First trigger activation = lighting and decoding on, second trigger activation = lighting and decoding off.

**Presentation**

This mode allows power up lighting and decoding are on. After a period of inactivity lasting the time specified by the trigger timeout, the lighting turns off or is dimmed. When a new bar code is presented the lighting and decoding restart and stay on until another period inactivity.

## 5.2 Time Out

**<2 sec>**

4 sec

6 sec

## 5.3 Good Read Mode

When active, the scan engine stops the reading session after a successful decoding.

Note: This parameter is NOT used with continuous and continuous + flashing modes.

**<Active >**

Not Active

## 5.4 Buzzer Beep Tone

### 5.4.1 Beep Tone Setup

**<High>**

Medium

Low

### 5.4.2 Good Read Beeps

**<One Beep>**

Two Beeps

None

### 5.4.3 Beep Duration

60 msec

**<80 msec>**

200 msec

Off

### 5.4.4 Timing

**<During Transmission>**

Before Transmission

After Transmission

## 5.5 Good Read Duration

### 5.5.1 Good Read Led Duration

**<80 msec>**

0.5 sec

1 sec

Off

### 5.5.2 Error Beep

**<On>**

Off

### 5.5.3 Setup Beep

**<On>**

Off

## 5.6 Bad Read Message Settings

**<Default = "NOREAD">**

Active

**<Not Active >**

# 6. Imager Settings

## 6.1 Imager Mode

You can set the best reading performance depends on the environment, your used application and type of barcodes.

- Linear mode for decode 1D Barcodes.
- Area mode for decode 1D and 2D barcodes.

Area mode allows you to set the position of the VEGA in any direction regardless of the orientation of the barcode, and perform a good read on 1D and 2D barcodes.

Linear mode allows you to increase your decoding speed while scanning 1D barcodes. But, you need to position the beam across all bars in the 1D barcode.

Linear imager

**<Area imager>**

Area imager
Bright Environment

Area imager with
Reflective Surface

## 6.2 Firmware Version

Display the firmware version of the scanner, please scan below barcode.

Engine Firmware Version

Scanner Decoder Firmware Version

# 7. Programming Codes

## 7.1 Factory Default

The factory default settings are shown with bold **< >** in the following pages.

**To set the scanner parameters to factory default**

Set factory default

Reset all configuration parameters to their factory default setting. After this reset you must select all required parameters that meet applications.

### 7.1.1 Interface Selection

**<Keyboard mode>**

RS232 Serial Mode

**<USB HID Mode>**

USB Com Port Mode

## 7.2 RS232 Parameters Baud Rate

1200

2400

4800

9600

**<19200>**

38400

### 7.2.1 Data Bits

Data Bits 7

**<Data Bits 8>**

### 7.2.2 Stop Bits

**<Stop Bits 1>**

Stop Bits 2

### 7.2.3 Parity

**<None>**

Even

Odd

Mark

Space

### 7.2.4 Handshaking

RTS/CTS Enable

**<RTS/CTS Disable>**

ACK/NAK Enable

**<ACK/NAK Disable>**

XON/XOFF Enable

**<XON/XOFF Disable>**

### 7.2.5 Keyboard Wedge Mode Parameter

**1) Terminal Type**

**<IBM PC/AT,PS/2>**

IBM PC/XT

IBM PS/2 25, 30

**2) Capslock Detection**

Enable

**<Disable>**

3) **Upper/Lower Case**

**<No change>**

Upper Case

Lower Case

4) **Send Character by ALT Method**

Enable

**<Disable>**

5) **Select Numerical Pad**

ON

**<OFF>**

6) **Time out Between Characters**

**<0 ms>**

5 ms

10 ms

25 ms

50ms

100ms

7) **Language Selection**

**<US English>**

UK English

Italian

Spanish

French

German

Swedish

Switzerland

Hungarian

Japanese

Belgium

Portuguese

Denmark

Netherlands

Turkey

Reserved 1

## 7.3 Decoding Selection

### 7.3.1 Symbologies Selection

Australian Post ON

**<Australian Post OFF>**

AZTEC ON

**<AZTEC OFF>**

BPO ON

**<BPO OFF>**

Canada Post ON

**<Canada Post OFF>**

CODABAR ON

**<CODABAR OFF>**

Codablock A ON

**<Codablock A OFF >**

Codablock F ON

**<Codablock F OFF >**

CODE 11 ON

**<CODE 11 OFF>**

**<CODE 39 ON>**

CODE 39 OFF

CODE 93 ON

**<CODE 93 OFF>**

**<CODE 128 ON>**

CODE 128 OFF

**<GS1-128 ON>**

GS1-128 OFF

**<DATAMATRIX ON>**

DATAMATRIX OFF

DATAMATRIX - MIRROR ON

**<DATAMATRIX - MIRROR OFF>**

Dutch Post ON

**<Dutch Post OFF>**

**<EAN-8 ON>**

EAN-8 OFF

**<EAN-13 ON>**

EAN-13 OFF

**<EAN 128 ON>**

EAN 128 OFF

GS1 CC-A/B ON

**<GS1 CC-A/B OFF>**

GS1 CC-C ON

**<GS1 CC-C OFF>**

GS1 DataBar-Omni ON

**<GS1 DataBar Omni OFF>**

GS1 DataBar Limited ON

**<GS1 DataBar Limited OFF>**

GS1 DataBar Expanded ON

**<GS1 DataBar Expanded>**

Infomail ON

**<Infomail OFF>**

Interleaved 2 of 5 ON

**<Interleaved 2 of 5 OFF>**

Japan Post ON

**<Japan Post OFF>**

Matrix 2 of 5 ON

**<Matrix 2 of 5 OFF>**

MaxiCode ON

**<MaxiCode OFF>**

MicroPDF417 ON

**<MicroPDF417 OFF>**

MSI ON

**<MSI OFF>**

**<PDF417 ON>**

PDF417 OFF

Planet ON

**<Planet OFF>**

PLESSEY ON

**<PLESSEY OFF>**

Postnet ON

**<Postnet OFF>**

QR Code ON

**<QR Code OFF>**

Standard 2 of 5 ON

**<Standard 2 of 5 OFF>**

Sweden Post ON

**<Sweden Post OFF>**

Telepen ON

**<Telepen OFF>**

TLC 39 ON

**<TLC 39 OFF>**

**<UPC-A ON>**

UPC-A OFF

**<UPC-E ON>**

UPC-E OFF

### 7.3.2 Multi Code

The multicode function is used configure the scanner to read a series of bar codes and then transmit them all at once.

**<Not active>**

Active

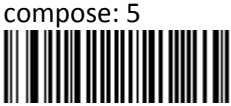
Active exclusive

Number of bar codes – compose: 2

Number of bar codes – compose: 3

Number of bar codes - compose: 4

Number of bar codes – compose: 5



Number of bar codes - compose: 6

### 7.3.3 Postambles

The scanner can be programmed to output Barcode data according to the following format: [BAR CODE DATA] [POSTAMBLE STRING]
Example:
To send a <ETX> after the Barcode, scan only programming code <ETX>.
As a result, the scanner will give the following barcode data output:
[BAR CODE DATA] [<ETX>]

Postamble None

**<CR+LF >**

CR

LF

TAB

SP

# Appendixes

## A. Decimal Value Table

| | |
|---|---|
| **0** |  |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |
| **6** |  |
| **7** |  |
| **8** |  |
| **9** |  |

## B. ASCII Table

| | | | | | |
|---|---|---|---|---|---|
| A |  | B |  | C |  |
| D |  | E |  | F |  |
| G |  | H |  | I |  |
| J |  | K |  | L |  |
| M |  | N |  | O |  |
| P |  | Q |  | R |  |
| S |  | T |  | U |  |
| V |  | W |  | X |  |
| Y |  | Z |  | | |

## C. Readable Symbologies

### 1D Symbologies

| Symbologies | Readable | Default Enable |
|---|---|---|
| EAN/UPC | ◯ | ◯ |
| UCC/EAN128 | ◯ | ◯ |
| ISBN | ◯ | |
| ISBT | ◯ | |
| Code 11 | ◯ | |
| Code 39 | ◯ | ◯ |
| Code 93/93i | ◯ | |
| Code 128 | ◯ | ◯ |
| Interleaved 2 of 5 | ◯ | |
| Matrix 2 of 5 | ◯ | |
| Instustrial 2 of 5 | ◯ | |
| Standard 2 of 5 | ◯ | |
| Codabar | ◯ | |
| MSI | ◯ | |
| Plessey | ◯ | |
| Telepen | ◯ | |
| BPO | ◯ | |
| Codablock | ◯ | |
| Informail | ◯ | |
| Planet | ◯ | |
| TLC 39 | ◯ | |
| Postnet | ◯ | |
| Postal codes | ◯ | |
| GS1-128 | | ◯ |
| GS1 CC-A/B/C | ◯ | |
| GS1 DataBar Omnidirectional | ◯ | |
| GS1 DataBar Limited | ◯ | |
| GS1 DataBar Expanded | ◯ | |

### 2D Symbologies

| Symbologies | Readable | Default Enable |
|---|---|---|
| Data Matrix | ◯ | |
| PDF417 | ◯ | ◯ |
| MicroPDF417 | ◯ | |
| MaxiCode | ◯ | |
| QR code | ◯ | |
| Aztec | ◯ | |
| EAN.UCC composite | ◯ | |

## D. Technical Specifications

### D-1 Physical Characteristics

| | |
|---|---|
| Weight | |
| Scanner | Approx. 135g |
| Accessory | |
| KBW cable | Approx. 75g |
| RS232 Cable | Approx. 123g |
| USB Cable | Approx. 67g |
| AC adaptor | Approx. 125g |
| Material | ABS Plastic |
| Connector | RJ 45C 10Pins |
| Cable Length | 5Ft. (150mm) |
| Dimension | |
| Scanner | 193x90x72mm |

### D-2 Performance Scanner Characteristics

| | |
|---|---|
| Light source | Visible Red light 650nm ± 10nm |
| Scan rate | 200scans/sec auto adaptive in linear mode<br>56 images/sec auto adaptive in area mode |
| Optical resolution | 752 Horizontal x 480 Vertical pixels, 256 gray levels |
| Scan angle | Horizontal 70°±10% (Forward: 20°/ Backward: 50°)<br>Vertical 80°±10% (Left 40°/ Right 40°) |
| Interface<br>IG-300 | <br>RS232, USB (HID KBW and Virtual COM Port) |

## D-3 Indicator LED Status
## Scanner

| Light | Signal | Status |
|---|---|---|
| **Green** | 1 blink and 1 beep | good read<br>and transmitted |

## D-4 Electrical Characteristics

| | |
|---|---|
| Operation Voltage | 5 VDC ±5% |
| Current Operating | 450 mA (max) @ 5 VDC |
| Current Standby | 37 mA typical @ 5 VDC |
| AC transformers | 5.2 VDC @ 650 mA<br>Input AC 100-240V |

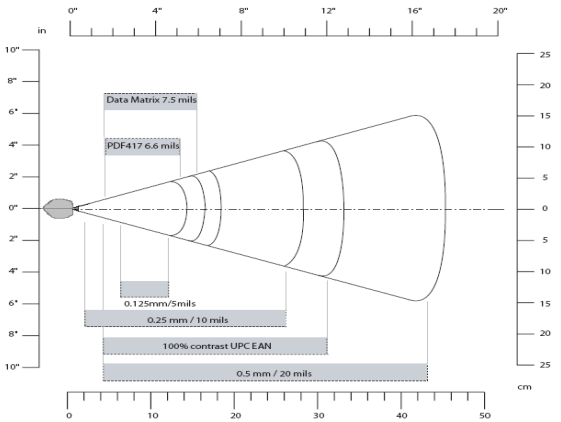
## D-5 Environmental

| | |
|---|---|
| Operating Temp | 0°C to 50°C |
| Storage Temp. | -20°C to 70°C |
| Relative Humidity | 0 to 95% non-condensing |
| Ambient light | 100,000 Lux (direct sunlight) |

## D-6 Regulatory of Compliance

| |
|---|
| FCC, CE, RoHs |

## E. Scan Map




| Symbology | Density | Minimum Distance (+/- 10%) | Maximum Distance (+/- 10%) |
|---|---|---|---|
| **Code 39** | 0.125 mm | 5.2 cm | 12.1 cm |
| | 0.20mm | 2.0 cm | 21.5 cm |
| | 0.25mm | 2.4 cm | 26 cm |
| | 0.5mm | 4 cm | 44 cm |
| | 1mm | 7 cm | 82 cm |
| **UPC / EAN** | 0.33 mm | 4 cm | 31 cm |
| **Data matrix** | 0.191 mm | 5.3 cm | 16.2 cm |
| | 0.254 mm | 3.8 cm | 21 cm |
| | 0.381 mm | * | 28 cm |
| **PDF417** | 0.16 mm | 5.2 cm | 14.4 cm |
| | 0.254 mm | 3.5 cm | 22 cm |
| | 0.381 mm | 3 cm | 36 cm |

## F. Test Symbologies

Scan one or more of these barcodes to test barcode symbologies you enabled.

Codabar

Code 39

Code 93

Code 128

DataMatrix

EAN 8


EAN13


EAN 128

Interleaved 2 of 5

MSI code

PDF417

GS1 DataBar Omnidirectional

GS1 DataBar Omni Stacked

GS1 DataBar Expanded

GS1DataBar Expanded Stacked

GS1 DataBar Limited

UPC A


UPC E

**Set factory default**

**Engine Firmware Version**

**Scanner Decoder Firmware Version**

Due to Champtek's / Scantech ID's continuing product improvement programs, specifications and features are subject to change without notice.

**0145-88E0091**
**V00**