Colibri
série 6

CONCEPT TO RESULT
C2R
TECHNOLOGIE

USER'S GUIDE

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Product Agency Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

FCC Part 15 Subpart B Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution: Any changes or modifications made to this equipment not expressly approved by C2R, Inc. may void the FCC authorization to operate this equipment.

Note: To maintain compliance with FCC Rules and Regulations, cables connected to this device must be shielded cables.

Europe

CE The CE mark indicates compliance to 2004/108/EC EMC Directive with Standards EN55022 CLASS A, EN55024, EN61000-3-2, EN61000-3-3. In addition, complies to 2006/95/EC Low Voltage Directive, when shipped with recommended power supply.
For further information please contact:
C2R Technologie
26 Bis rue du Calvaire
35410 Domloup
France

C2R, Inc. shall not be liable for use of our product with equipment (i.e., power supplies, personal computers, etc.) that is not CE marked and does not comply with the Low Voltage Directive.

Waste Electrical and Electronic Equipment Information

C2R complies with Directive 2002/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on waste electrical and electronic equipment (WEEE).

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This product has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment, if not properly disposed.
In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems for product disposal. Those systems will reuse or recycle most of the materials of the product you are disposing in a sound way.

The crossed out wheeled bin symbol informs you that the product should not be disposed of along with municipal waste and invites you to use the appropriate separate take-back systems for product disposal.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You may also contact your supplier for more information on the environmental performances of this product.

LED Eye Safety Statement

This device has been tested in accordance with IEC60825-1 LED safety, and has been certified to be within the limits of a Class 1 LED device.

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Colibri serie 6 : User's guide

Chapter 1 - Getting Started

Introduction

The fixed mount 2D Imager is an economical, durable solution for a wide variety of data collection applications. The Imager features the following:

- A tough, ergonomic aluminium housing for comfort and durability.
- Omni-directional reading of a variety of printed symbols, including the most popular linear and 2D matrix symbologies.
- RS-232 or USB and laser emulation communication outputs.
- The ability to capture and download images to a PC for signature capture software applications, and PC-based decoding.

For software updates and additional information, visit the C2R Technologie Web site at www.c2r-technologie.com.

About This Manual

This User's Guide provides demonstration, installation, and programming instructions for the engine. Product specifications, dimensions, warranty, and customer support information are also included.
C2R Technologie bar code engines are factory programmed for the most common terminal and communications settings. If you need to change these settings, programming is accomplished by scanning the bar codes in this guide.
An asterisk (*) next to an option indicates the default setting.

Unpacking the Colibri

After you open the shipping carton containing the OEM Engine, take the following steps:

- Check to make sure everything you ordered is present.
- Save the shipping container for later storage or shipping.
- Check for damage during shipment. Report damage immediately to the carrier who delivered the carton.

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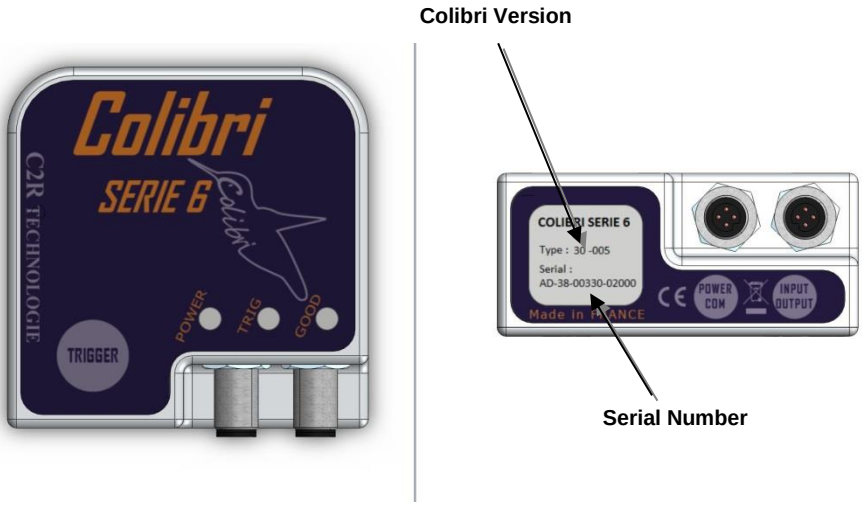
Imager Models

The chart below lists the interfaces that can be used with your imager. Refer to Chapter 2 for programming information.

Models	Type	Power	Interface
30-005	HD	5 V	USB keyboard, USB COM port emulation Trigger Input and Good Read Output
30-006	SR	5V	USB keyboard, USB COM port emulation Trigger Input and Good Read Output
30-007	ER	5V	USB keyboard, USB COM port emulation Trigger Input and Good Read Output
30-008	HD	5 – 24V	True RS232 Trigger Input and Good Read Output
30-009	SR	5 – 24V	True RS232 Trigger Input and Good Read Output
30-010	ER	5 – 24V	True RS232 Trigger Input and Good Read Output

Imager Identification



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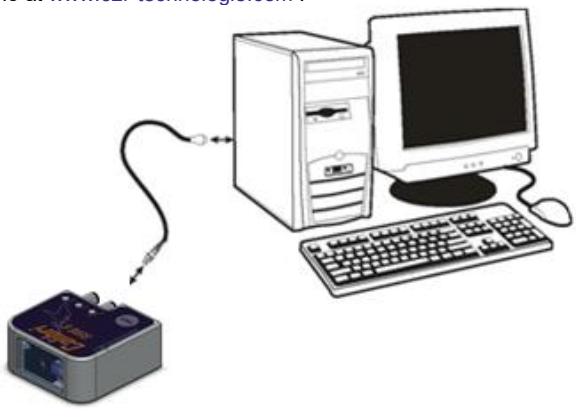
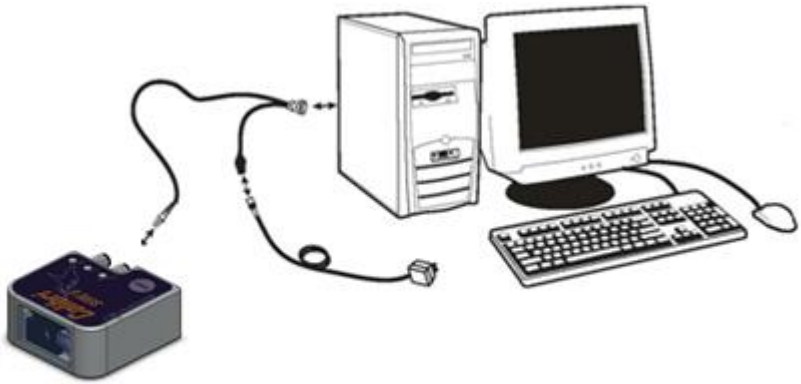
Connecting the Scanner

1 Turn off power to the terminal/computer.
2 If using a USB connection, connect the included interface cable to the scanner and to the matching USB port on the back of the computer. Skip to step 5.

Note: For additional USB programming and technical information,refer to "USB Application Note," available at www.c2r-technologie.com .



3 If using an RS-232 connection, connect the serial interface cable to the scanner and to the matching port on the back of the computer.



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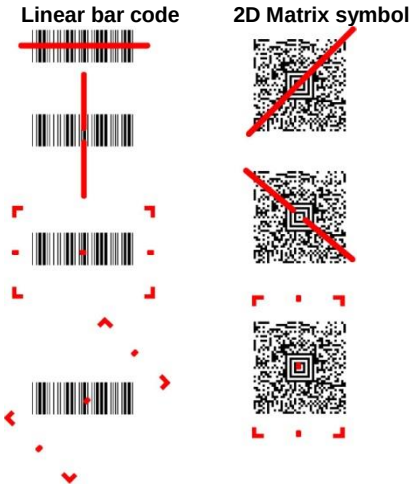
4 Connect the power supply connector to the serial interface cable. Plug in the power supply.
5 Turn the terminal/computer power back on. The engine beeps.
6 If connecting the Engine using an RS-232 interface, all communication parameters between the imager and terminal must match for correct data transfer through the serial port using RS-232 protocol. Scan the RS-232 interface bar code below. This programs the Engine for an RS-232 interface at 115,200 baud, parity–none, 8 data bits, 1 stop bit, and adds a suffix of a CR LF.

PAP232.

7 Verify the engine operation by scanning a bar code from the Sample Symbols in the back of this manual. The engine beeps once when a bar code is successfully decoded.

Reading Techniques

The engine has a view finder that projects a bright red or green aiming beam that corresponds to the engine's horizontal field of view. The aiming beam should be centered over the bar code, but it can be positioned in any direction for a good read.



The aiming beam is smaller when the engine is closer to the code and larger when it is farther from the code. Symbologies with smaller bars or elements (mil size) should be read closer to the unit. Symbologies with larger bars or elements(mil size) should be read farther from the unit. To read single or multiple symbols (on a page or on an object), hold the engine at an appropriate distance from the target, send a trigger command, and center the aiming beam on the symbol. If the code being scanned is highly reflective (e.g., laminated), it may be necessary to tilt the code ±5° to prevent unwanted reflection.

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Menu Bar Code Security Settings

C2R scanners are programmed by scanning menu bar codes or by sending serial commands to the scanner. If you want to restrict the ability to scan menu codes, you can use the Menu Bar Code Security settings. Please contact the nearest technical support office for further information.

Setting Custom Defaults

You have the ability to create a set of menu commands as your own, custom defaults. To do so, scan the **Set Custom Defaults** bar code below before each menu command or sequence you want saved. If your command requires scanning numeric codes from the back cover, then a **Save** code, that entire sequence will be saved to your custom defaults. Scan the **Set Custom Defaults** code again before the next command you want saved to your custom defaults.

When you have entered all the commands you want to save for your custom defaults, scan the **Save Custom Defaults** bar code.

Set Custom Defaults

Save Custom Defaults

You may have a series of custom settings and want to correct a single setting. To do so, just scan the new setting to overwrite the old one. For example, if you had previously saved the setting for Beeper Volume at Low to your custom defaults, and decide you want the beeper volume set to High, just scan the **Set Custom Defaults** bar code, then scan the Beeper Volume High menu code, and then **Save Custom Defaults**. The rest of the custom defaults will remain, but the beeper volume settiing will be updated.

Resetting the Custom Defaults

If you want the custom default settings restored to your scanner, scan the **Activate Custom Defaults** bar code below. This is the recommended default bar code for most users. It resets the scanner to the custom default settings. If there are no custom defaults, it will reset the scanner to the factory default settings. Any settings that have not been specified through the custom defaults will be defaulted to the factory default settings.

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Activate Custom Defaults

Resetting the Factory Defaults

This selection erases all your settings and resets the scanner to the original factory defaults. It also disables all plugins.

If you aren't sure what programming options are in your scanner, or you've changed some options and want tto restore the scanner to factory default settings, first scan the **Remove Custom Defaults** bar code, then scan **Activate Defaults**. This resets the scanner to the factory default settings.

For C2R only

Remove Custom Defaults

Activate Defaults

The Menu Commands, beginning on list the factory default settings for each of the commands (indicated by an asterisk (*) on the programming pages).

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Chapter 2 - Getting Connected

Plug and Play

Plug and Play bar codes provide instant engine set up for commonly used interfaces.
Note: After you scan one of the codes, power cycle the host terminal to have the interface in effect.

RS-232 Serial Port

The **RS232 Interface** bar code is used when connecting to the serial port of a PC or terminal. The following **RS232 Interface** bar code also programs a carriage return (CR) and a line feed (LF) suffix, baud rate, and data format as indicated below. It also changes the trigger mode to manual.

Option	Setting
Baud Rate	115,200 bps
Data Format	8 data bits, no parity bit, 1 stop bit

PAP232.
RS232 Interface

USB PC or Macintosh Keyboard

Scan one of the following codes to program the scanner for USB PC Keyboard or USB Macintosh Keyboard. Scanning these codes also adds a CR and LF.

PAP124.
USB Keyboard (PC)

PAP125.
USB Keyboard (Mac)

TRMUSB134.
USB Japanese Keyboard (PC)

USB HID

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Scan the following code to program the OEM Engine for USB HID bar code imagers. Scanning this code changes the terminal ID to 131.

PAP131.

USB HID Bar Code Scanner

USB Serial (COM Port Emulation)

Scan the following code to program the Colibri to emulate a regular RS232-based COM port. If you are using a Microsoft® Windows® PC, you will need to download a driver from the C2R Technologie website (www.c2r-technologie.com) The driver will use the next available COM port number. Apple® Macintosh computers recognize the engine as a USB CDC class device and automatically use a class driver.

TRMUSB130.

USB Serial

Note: No extra configuration (e.g., baud rate) is necessary.

CTS/RTS Emulation

USBCTS1.

On

USBCTS0.

* Off

ACK/NAK Mode

USBACK1.

On

USBACK0.

* Off

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Chapter 3 - Terminal Interfaces

Keyboard Country

Scan the appropriate country code below to program the keyboard for your country. As a general rule, the following characters are supported, but need special care for countries other than the United States: @ | $ # { } [ ] = / ' \ < > ~

KBDCTY0.
*** United States**

KBDCTY87.
United States (Dvorak)

KBDCTY88.
United States (Dvorak left)

KBDCTY89.
United States (Dvorak right)

KBDCTY30.
United States (International)

KBDCTY35.
Albania

KBDCTY81.
Azeri (Cyrillic)

KBDCTY80.
Azeri (Latin)

KBDCTY82.
Belarus

KBDCTY1.
Belgium

KBDCTY33.
Bosnia

KBDCTY16.
Brazil

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KBDCTY52.
Bulgaria (Cyrillic)

KBDCTY54.
Canada (French legacy)

KBDCTY55.
Canada (Multilingual)

KBDCTY15.
Czech

KBDCTY39.
Czech (QWERTY)

KBDCTY8.
Denmark

KBDCTY59.
Brazil (MS)

KBDCTY53.
Bulgaria (Latin)

KBDCTY18.
Canada (French)

KBDCTY32.
Croatia

KBDCTY40.
Czech (Programmers)

KBDCTY38.
Czech (QWERTZ)

KBDCTY11.
Dutch (Netherlands)

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KBDCTY83.
Faeroese

KBDCTY3.
France

KBDCTY4.
Germany

KBDCTY64.
Greek (220 Latin)

KBDCTY65.
Greek (319 Latin)

KBDCTY63.
Greek (Latin)

KBDCTY41.
Estonia

KBDCTY2.
Finland

KBDCTY84.
Gaelic

KBDCTY17.
Greek

KBDCTY61.
Greek (220)

KBDCTY62.
Greek (319)

KBDCTY66.
Greek (MS)

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KBDCTY12.
Hebrew

KBDCTY19.
Hungary

KBDCTY73.
Irish

KBDCTY5.
Italy

KBDCTY78.
Kazakh

KBDCTY14.
Latin America

KBDCTY60.
Greek (Polytonic)

KBDCTY50.
Hungarian (101 key)

KBDCTY75.
Iceland

KBDCTY56.
Italian (142)

KBDCTY28.
Japan ASCII

KBDCTY79.
Kyrgyz (Cyrillic)

KBDCTY42.
Latvia

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KBDCTY44.
Lithuania

KBDCTY34.
Macedonia

KBDCTY86.
Mongolian (Cyrillic)

KBDCTY20.
Poland

KBDCTY58.
Polish (Programmers)

KBDCTY25.
Romania

KBDCTY43.
Latvia (QWERTY)

KBDCTY45.
Lithuania (IBM)

KBDCTY74.
Malta

KBDCTY9.
Norway

KBDCTY57.
Polish (214)

KBDCTY13.
Portugal

KBDCTY26.
Russia

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KBDCTY68.
Russian (Typewriter)

KBDCTY37.
Serbia (Cyrillic)

KBDCTY22.
Slovakia

KBDCTY48.
Slovakia (QWERTZ)

KBDCTY10.
Spain

KBDCTY23.
Sweden

KBDCTY67.
Russian (MS)

KBDCTY21.
SCS

KBDCTY36.
Serbia (Latin)

KBDCTY49.
Slovakia (QWERTY)

KBDCTY31.
Slovenia

KBDCTY51.
Spanish variation

KBDCTY29.
Switzerland (French)

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KBDCTY85.
Tatar

KBDCTY6.
Switzerland (German)

KBDCTY24.
Turkey Q

KBDCTY27.
Turkey F

KBDCTY7.
United Kingdom

KBDCTY76.
Ukrainian

KBDCTY88.
United States (Dvorak left)

KBDCTY89.
United Stated (Dvorak right)

KBDCTY30.
United States (International)

KBDCTY87.
United States (Dvorak)

KBDCTY77.
Uzbek (Cyrillic)

Refer to the Honeywell website (www.honeywell.com/aidc) for complete keyboard country support information and applicable interfaces. If you need to program a keyboard for a country other than one listed above, scan the Program Keyboard Country barcode below, then scan the numeric barcode(s) for the appropriate country from the inside back cover, then the Save barcode.

Program Keyboard Country

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Keyboard Style

This programs keyboard styles, such as Caps Lock and Shift Lock. Default = Regular.
Regular is used when you normally have the Caps Lock key off.

* Regular **Caps Lock** is used when you normally have the Caps Lock key on.

Shift Lock is used when you normally have the Shift Lock key on (not common to U.S. keyboards).

Automatic Caps Lock is used if you change the Caps Lock key on and off. The software tracks and reflects if you have Caps Lock on or off (AT and PS/2 only). This selection can only be used with systems that have an LED which notes the Caps Lock status.

Auto caps via NumLock barcode should be scanned in countries (e.g., Germany, France) where the Caps Lock key cannot be used to toggle Caps Lock. The NumLock option works similarly to the regular Autocrats, but uses the NumLock key to retrieve the current state of the Caps Lock.

Emulate External Keyboard should be scanned if you do not have an external keyboard (IBM AT or equivalent).

Note: After scanning the Emulate External Keyboard barcode, you must power cycle your computer.

Keyboard Conversion

Alphabetic keyboard characters can be forced to be all upper case or all lowercase. So if you have the following bar code: "abc569GK," you can make the output "ABC569GK" by scanning **Convert All Characters to Upper Case**, or to "abc569gk" by scanning **Convert All Characters to Lower Case**.
These settings override Keyboard Style selections.
Note: If your interface is a keyboard wedge, first scan the menu code for Automatic Caps Lock. Otherwise, your ouput may not be as expected.

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Default = Keyboard Conversion Off.

KBDCNV0.

*** Keyboard Conversion Off**

KBDCNV1.

Convert All Characters to Upper Case

KBDCNV2.

Convert All Characters to Lower Case

Control Character Output

This selection sends a text string instead of a control character. For example, when the control character for a carriage return is expected, the output would display [CR] instead of the ASCII code of 0D. Refer to ASCII Conversion Chart (Code Page 1252) on page A-4. Only codes 00 through 1F are converted (the first column of the chart).
Note: Control + ASCII Mode overrides this mode.

Default = Off.

KBDNPE1.

Control Character Output On

KBDNPE0.

*** Control Character Output Off**

Keyboard Modifiers

This modifies special keyboard features, such as CTRL+ ASCII codes and Turbo Mode.

Control + ASCII Mode On: The scanner sends key combinations for ASCII control characters for values 00-1F. Windows is the preferred mode. All keyboard country codes are supported. DOS mode is a legacy mode, and it does not support all keyboard country codes. New users should use the Windows mode. Refer to Keyboard Function Relationships, for CTRL+ ASCII Values.

Windows Mode Prefix/Suffix Off: The scanner sends key combinations for ASCII control characters for values 00-1F, but it does not transmit any prefix or suffix information.

Default = Control + ASCII Mode Off.

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KBDCAS2.

Windows Mode Control + ASCII Mode On

KBDCAS0.

*** Control + ASCII Mode Off**

KBDCAS1.

DOS Mode Control + ASCII Mode On

KBDCAS3.

Windows Mode Prefix/Suffix Off

Turbo Mode: The imager sends characters to a terminal faster. If the terminal drops characters, do not use Turbo Mode.
Default = Off

KBDTMD1.

Turbo Mode On

KBDTMD0.

*** Turbo Mode Off**

Numeric Keypad Mode: Sends numeric characters as if entered from a numeric keypad.
Default = Off

KBDNPS1.

Numeric Keypad Mode On

KBDNPS0.

*** Numeric Keypad Mode Off**

Automatic Direct Connect Mode: This selection can be used if you have an IBM AT style terminal and the system is dropping characters.
Default = Off

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KBDADC1.

Automatic Direct Connect Mode On

KBDADC0.

*** Automatic Direct Connect Mode Off**

Terminal ID Table

Terminal	Model(s)	Terminal ID
IBM	PC/AT and compatibles	003
	USB SurePOS Handheld Scanner	128
	USB SurePOS Tabletop Scanner	129
RS232	True	000
	TTL	000
RS485		051
USB	Serial	130
	PC Keyboard	124
	Mac Keyboard	125
	Japanese Keyboard (PC)	134
	HID POS	131

RS-232 Baud Rate

Baud Rate sends the data from the imager to the terminal at the specified rate. The host terminal must be set for the same baud rate as the imager.
Default :115 200

300

232BAD0.

600

232BAD1.

1 200

232BAD2.

2 400

232BAD3.

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4 800

9 600

19 200

38 400

57 600

115 200

RS-232 Word Length: Data Bits, Stop Bits, and Parity

Data Bits sets the word length at 7 or 8 bits of data per character. If an application requires only ASCII Hex characters 0 through 7F decimal (text, digits, and punctuation), select 7 data bits. For applications which require use of the full ASCII set, select 8 data bits per character.
Default : 8.
Stop Bits sets the stop bits at 1 or 2.
Default :1.
Parity provides a means of checking character bit patterns for validity.
Default :None.

7 Data, 1 Stop, Parity None

7 Data, 2 Stop Parity None

8 Data, 1 Stop, Parity None

7 Data, 1 Stop, Parity Even

7 Data, 2 Stop, Parity Even

8 Data, 1 Stop, Parity Even

7 Data, 1 Stop, Parity Odd

7 Data, 2 Stop, Parity Odd

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8 Data, 1 Stop, Parity Odd

RS-232 Receiver Time-Out

The unit stays awake to receive data until the RS-232 Receiver Time-Out expires. A trigger command resets the time-out. When an RS-232 receiver is sleeping, a character may be sent to wake up the receiver and reset the time-out. A transaction on the CTS line will also wake up the receiver. The receiver takes 300 milliseconds to completely come up. Change the RS-232 receiver time-out by scanning the bar code below, then scanning digits from the inside back cover of this manual, then scanning **Save**. The range is 0 to 300 seconds.
Default = 0 seconds (no time-out - always on)

RS232 Receiver Time Out

RS-232 Handshaking

RS232 Handshaking allows control of data transmission from the scanner using software commands from the host device. When RTS/CTS is turned **Off**, no data flow control is used.
Flow Control, No Timeout: The scanner asserts RTS when it has data to send, and will wait indefinitely for CTS to be asserted by the host.

Two-Direction Flow Control: The scanner asserts RTS when it is OK for the host to transmit. The host asserts CTS when it is OK for the device to transmit.

Flow Control with Timeout: The scanner asserts RTS when it has data to send and waits for a delay (see RS232 Timeout) for CTS to be asserted by the host. If the delay time expires and CTS is not asserted, the device transmit buffer is cleared and scanning may resume.
Default = RTS/CTS Off.

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232CTS1.

Flow Control, No Timeout

232CTS2.

Two-Direction Flow Control

232CTS3.

Flow Control with Timeout

232CTS0.

*** RTS/CTS Off**

RS232 Timeout

When using Flow Control with Timeout, you must program the length of the delay you want to wait for CTS from the host. Set the length (in milliseconds) for a timeout by scanning the bar code below, then setting the timeout (from 1-5100 milliseconds) by scanning digits from the inside back cover, then scanning **Save**.

232DEL.

RS232 Timeout

Xon / Xoff

Standard ASCII control characters can be used to tell the scanner to start sending data (**XON/XOFF On**) or to stop sending data (**XON/XOFF Off**). When the host sends the XOFF character (DC3, hex 13) to the scanner, data transmission stops. To resume transmission, the host sends the XON character (DC1, hex 11). Data transmission continues where it left off when XOFF was sent.
Default = XON/XOFF Off.

232XON1.

XON/XOFF On

232XON0.

*** XON/XOFF Off**

ACK/NAK

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After transmitting data, the scanner waits for an ACK character (hex 06) or a NAK character (hex 15) response from the host. If ACK is received, the communications cycle is completed and the scanner looks for more bar codes. If NAK is received, the last set of bar code data is retransmitted and the scanner waits for ACK/NAK again. Turn on the ACK/NAK protocol by scanning the **ACK/NAK On** bar code below. To turn off the protocol, scan **ACK/NAK Off**.
Default = ACK/NAK Off.

232ACK1.

ACK/NAK On

232ACK0.

*** ACK/NAK Off**

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Chapter 4 – Output

Power Up Beeper

The scanner can be programmed to beep when it's powered up. If you are using a cordless system, the base can also be programmed to beep when it is powered up. Scan the **Off** bar code(s) if you don't want a power up beep.
Default = Power Up Beeper On - Scanner.

BEPPWR0.
Power Up Beeper Off - Scanner

BEPPWR1.
*** Power Up Beeper On - Scanner**

Beep on BEL Character

You may wish to force the scanner to beep upon a command sent from the host. If you scan the **Beep on BEL On** bar code below, the scanner will beep every time a BEL character is received from the host.
Default = Beep on BEL Off.

BELBEP0.
***Beep on BEL Off**

BELBEP1.
Beep on BEL On

Trigger Click

To hear an audible click every time the scanner trigger is pressed, scan the **Trigger Click On** bar code below. Scan the **Trigger Click Off** code if you don't wish to hear the click. (This feature has no effect on serial or automatic triggering.)
Default = Trigger Click Off.

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BEPTRG0.

*Trigger Click Off

BEPTRG1.

Trigger Click On

Image VGA

If you have applications that expect an image ship to return exactly 640x480 pixels, scan the Force VGA Resolution bar code.
Default = Native Resolution

IMGVGA1.

Force VGA Resolution

IMGVGA0.

* Native Resolution

Good Read Indicators

The beeper may be programmed **On** or **Off** in response to a good read. Turning this option off, only turns off the beeper response to a good read indication. All error and menu beeps are still audible.
Default = Beeper -Good Read On.

BEPBEP0.

Beeper - Good Read Off

BEPBEP1.

* Beeper - Good Read On

Beeper Volume – Good Read

The beeper volume codes modify the volume of the beep the scanner emits on a good read.
Default = High.

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BEPLVL1.
Low

BEPLVL2.
Medium

BEPLVL3.
*** High**

BEPLVL0.
Off

Beeper Pitch – Good Read

The beeper pitch codes modify the pitch (frequency) of the beep the imager emits on a good read. Default = Medium.

BEPFQ11600.
Low (1600 Hz)

BEPFQ12700.
*** Medium (2700 Hz)**

BEPFQ14200.
High (4200 Hz)

Beeper Pitch – Error

The beeper pitch codes modify the pitch (frequency) of the sound the scanner emits when there is a bad read or error.
Default = Razz.

BEPFQ2250.
*** Razz (250 Hz)**

BEPFQ23250.
Medium (3250 Hz)

BEPFQ24200.
High (4200 Hz)

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Beeper Duration – Good Read

The beeper duration codes modify the length of the beep the imager emits on a good read. Default = Normal.

BEPBIP0.

*** Normal Beep**

BEPBIP1.

Short Beep

LED – Good Read

The LED indicator can be programmed **On** or **Off** in response to a good read
Default = Normal.

BEPBIP0.

*** Normal Beep**

BEPBIP1.

Short Beep

LED Good Read Polarity

LED Good Read Polarity sets the idle and active states of the LED signal. When set to Active High, the LEDs turn on when the signal shifts from low to high. When set to Active Low, the LEDs turn on when the signal shifts from high to low.
If the LED is enabled for a good read (see LED – Good Read), the polarity change takes effect after the next successful decode or a power cycle. If the LED is disabled, a polarity change only takes effect after a power cycle. Default = Active Low.
Note: LED Good Read Polarity sets the LED signal voltage level to either high (Active Low) or low (Active High). This will affect LED-Good Read setting. If the LED has been disabled, make sure it is not turned on accidentally by a polarity change.

GRDINV1.

Active High

GRDINV0.

* Active Low

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Number of Beeps – Good Read

The number of beeps of a good read can be programmed from 1 - 9. The same number of beeps will be applied to the beeper and LED in response to a good read. For example, if you program this option to have five beeps, there will be five beeps and five LED flashes in response to a good read. The beeps and LED flashes are in sync with one another. To change the number of beeps, scan the bar code below and then scan a digit (1-9) bar code and the **Save** bar code on the Programming Chart inside the back
Default = 1.

BEPRPT.

Number of Good Read Beeps/LED Flashes

Number of Beeps – Error

The number of beeps and LED flashes emitted by the scanner for a badread or error can be programmed from 1 - 9. For example, if you program this option to have five error beeps, there will be five error beeps and five LED flashes in response to an error. To change the number of error beeps, scan the bar code below and then scan a digit (1-9) bar code and the **Save** bar code on the Programming Chart inside the back cover of this manual.
Default = 1.

BEPERR.

Number of Error Beeps/LED Flashes

Beep Polarity

Beep Polarity sets the idle and active states of the beeper signal. When set to **Active High**, the beeper sounds when the signal shifts from low to high. When set to **Active Low**, the beeper sounds when the signal shifts from high to low.
If the beeper is enabled for a good read (see Beeper – Good Read),the polarity change takes effect after the next successful decode or a power cycle. If the beeper is disabled, a polarity change only takes effect after a power cycle. Default = Active Low.
Note: Beep Polarity sets the beeper signal voltage level to either high (Active Low) or low (Active High). This will affect Beeper-Good Read settings. If the beeper has been disabled, make sure it is not turned on accidentally by a polarity change.

BEPINV1.

Active High

BEPINV0.

Good Read Delay

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This sets the minimum amount of time before the imager can read another bar code.
Default = No Delay.

DLYGRD0.

*** No Delay**

DLYGRD500.

Short Delay (500 ms)

DLYGRD1000.

Medium Delay (1,000 ms)

DLYGRD1500.

Long Delay (1,500 ms)

User-Specified Good Read Delay

If you want to set your own length for the good read delay, scan the bar code below, then set the delay (from 0-30,000 milliseconds) by scanning digits from the inside back cover, then scanning **Save**.

DLYGRD.

User-Specified Good Read Delay

Manual/Serial Trigger Modes

Manual Trigger

When in manual trigger mode, the scanner scans until a bar code is read, or until the trigger is released. Two modes are available, **Normal** and **Enhanced**. Normal mode offers good scan speed and the longest working ranges (depth of field). Enhanced mode will give you the highest possi ble scan speed but slightly less range than Normal mode. Enhanced mode is best used when you require a very fast scan speed and don't require a long working range.

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PAPHHF.

*** Manual Trigger - Normal**

PAPHHS.

Manual Trigger - Enhanced

Serial Trigger

You can activate the scanner either by pressing the trigger, or using a serial trigger command (see Trigger Commands). When in serial mode, the scanner scans until a bar code has been read or until the deactivate command is sent. The scanner can also be set to turn itself off after a specified time has elapsed (see Read Time-Out, which follows).

Read Time-Out

Use this selection to set a time-out (in milliseconds) of the imager's trigger when using serial commands to trigger the imager, or if the imager is in manual trigger mode. Once the imager has timed out, you can activate the imager either by pressing the trigger or using a serial trigger command. After scanning the Read Time-Out bar code, set the time-out duration (from 0-300,000 milliseconds) by scanning digits from the inside back cover, then scanning Save. Default = 30 000 ms.

TRGSTO.

Read Time-Out

Manual Trigger, Low Power

Note: For RS-232 mode only.
The imager powers down until the trigger is pulled. When the trigger is pulled, the imager powers up and operates until there is no triggering for the time set with the **Low Power Time-Out** bar code below. There is a delay of up to one second in operation when the imager is first triggered, but there is no delay when operating in low power time-out mode.

TRGMOD2.

Low Power Time-Out Timer

Note: For RS-232 mode only.
Scan the Low Power Time-Out bar code to change the time-out duration (in seconds). Then

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scan the time-out duration (from 0-300 seconds) from the inside back cover, and Save. Default = 120 seconds.
If the unit remains idle during the low power time-out interval, the unit goes into low power mode. Whenever the trigger is enabled, the low power time-out timer is reset.

TRGLPT.

Note: This time-out does not begin until the imager time-out setting has expired.

Presentation Mode

This programs the imager to work in Presentation mode. The LEDs are either off or at the lowest power for ambient conditions until a bar code is presented to the imager. Then the LEDs turn on automatically to read the code. Presentation Mode uses ambient light to detect the bar codes. If the light level in the room is not high enough, Presentation Mode may not work properly.

TRGMOD3.

Presentation LED Behavior after Decode

When an imager is in presentation mode, the LEDs remain on and continue scanning for a short time after a bar code is decoded. If you wish to turn the LEDs off immediately after a bar code is decoded, scan the LEDs Off bar code, below. (If you want the LEDs to remain off for a length of time after the decode, use Presentation LED Time-Out, below.) Default = LEDs On.

TRGPCK1.

* LEDs On

TRGPCK0.

LEDs Off

Presentation LED Time-Out

When using Presentation LED Behavior after Decode (above), you may want to set the time the LEDs remain off after a decode. To set the duration of this delay, scan the bar code below, then set the time-out by scanning digits (0 - 9,999 ms) from the Programming Chart on the inside the back cover of this manual, then scanning **Save.** Once the unit has completed this time-out, it will immediately resume scanning.

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TRGOTO.

Presentation Sensitivity

Presentation Sensitivity is a numeric range that increases or decreases the imager's reaction time to bar code presentation. To set the sensitivity, scan the **Sensitivity** bar code, then scan the degree of sensitivity (from 0-20) from the inside back cover, and **Save**. 0 is the most sensitive setting, and 20 is the least sensitive. Default = 1.

TRGPMS.

In-Stand Sensor Mode

This feature senses when the scanner is removed from the stand and tells it to begin manual triggering. When **Sensor On** is enabled, the scanner defaults to Streaming Presentation Mode when it is in the stand, and to Manual Trigger Mode when it is removed from the stand.
Default = Sensor On.

TRGSSW1.
*** Sensor On**

TRGSSW0.
Sensor Off

Note: If you are taking images (see Imaging Commands), you must set the In-Stand Sensor to **Off**.

You may program a Streaming Presentation Mode (Normal, Enhanced, or Mobile Phone) you wish to use for in-stand scanning, and a Manual Trigger mode (Normal, Enhanced, or Mobile Phone) you wish to use for out-of-stand scanning. To do this, you must first scan the preferred Streaming Presentation mode (see below), then scan the Manual Trigger mode you want to use**.**

Streaming Presentation Mode

When in Streaming Presentation mode, the scanner's aimer goes out after a short time, but the scan illumination remains on all the time to continuously search for bar codes. Two modes are available, **Normal** and **Enhanced**. Normal mode offers good scan speed and the longest

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working ranges (depth of field). Enhanced mode will give you the highest possible scan speed but slightly less range than Normal mode. Enhanced mode is best used when you require a very fast scan speed and don't require a long working range.

PAPSPN.
Streaming Presentation Mode - Normal

PAPSPE.
Streaming Presentation Mode - Enhanced

When using Preferred Symbology, a lower priority symbol must be centered on the aiming pattern to be read in Streaming Presentation Mode.
You cannot take images when in Streaming Presentation Mode. To take images, scan Image Snap and Ship.
Note: If you are using a cordless charge base, it must have an external power supply plugged into the aux port for Streaming Presentation to work properly.

Streaming Presentation In-Stand Programming
This option is available when using In-Stand Sensor Mode. You may program a specific Streaming Presentation Mode for in-stand scanning, and a Manual Trigger mode for out-of-stand scanning. To do this, you must first scan the preferred Streaming Presentation mode (Normal, Enhanced, or Mobile Phone), then scan the Manual Trigger mode (Normal, Enhanced, or Mobile Phone) you want to use.

Mobile Phone Read Mode

When this mode is selected, your scanner is optimized to read bar codes from mobile phone or other LED displays. However, the speed of scanning printed bar codes may be slightly lower when this mode is enabled. You can enable Mobile Phone Reading for either a hand held device, or for a hands-free (presentation) application.
Note: To turn off Mobil Phone Read Mode, scan a Manual or Serial Trigger Mode bar code.

PAPHHC.
Hand Held Scanning - Mobile Phone

PAPSPC.
Streaming Presentation - Mobile Phone

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Hands Free Time-Out

The Scan Stand and Presentation Modes are referred to as "hands free" modes. If a trigger command is sent, or the hardware trigger is pulled when using a hands free mode, the imager changes to manual trigger mode. You can set the time the imager should remain in manual trigger mode by setting the Hands Free Time-Out. Once the time-out value is reached, (if there have been no further trigger pulls) the imager reverts to the original hands free mode.
Scan the **Hands Free Time-Out** bar code, then scan the time-out duration (from0-300,000 milliseconds) from the inside back cover, and **Save**. Default = 5,000 ms.

Reread Delay

This sets the time period before the imager can read the same bar code a second time. Setting a reread delay protects against accidental rereads of the same bar code. Longer delays are effective in minimizing accidental rereads at POS (point of sale). Use shorter delays in applications where repetitive bar code scanning is required. Default = Medium.
Reread Delay only works when in Presentation Mode.

DLYRRD500
Short (500 ms)

DLYRRD750
***** Medium (750 ms)

DLYRRD1000
Long (1000 ms)

DLYRRD2000
Extra Long (2000 ms)

User-Specified Reread Delay

If you want to set your own length for the reread delay, scan the bar code below, then set the delay (from 0-30,000 milliseconds) by scanning digits from the inside back cover, then scanning **Save**.

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LED Power Level

This selection allows you to adjust LED and aimer brightness. **Off** is used when no illumination is needed. **Low** is used if low illumination is sufficient. **High** the default is the brightest setting.
If you have an aimer delay programmed (see Aimer Delay), the aimer will be at 100% power during the delay, regardless of the LED Power Level.
Note: If you scan the **Off** bar code, both the aimer and illumination lights turn off, making it difficult to scan bar codes in low light. To turn the LED Power Level back on, move to a brightly lit area and scan either the **Low** or the **High** bar code below.

Off

Low (50%)

Illumination Lights

If you want the illumination lights on while reading a bar code, scan the **Lights On** bar code, below. However, if you want to turn just the lights off, scan the **Lights Off** bar code.
Note: This setting does not affect the aimer light. The aiming light can be set using Aimer Modes.

* Lights On

Lights Off

Imager Time-Out

Imager Time-Out powers down the imager after the unit has been idle for the specified time. To prevent the imager from powering down, set this time-out to 0. Scan the bar code below, then set the time-out by scanning digits (from 0 - 999,999 ms) from the inside back cover, then

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scanning **Save.** Default = 1 ms.

SDRTIM.

Aimer Delay

The aimer delay allows a delay time for the operator to aim the imager before the picture is taken. Use these codes to set the time between when the trigger is activated and when the picture is taken. During the delay time, the aiming light will appear, but the LEDs won't turn on until the delay time is over.

SCNDLY200.

200 milliseconds

SCNDLY400.

400 milliseconds

SCNDLY0.

* Off *(no delay)*

User-Specified Aimer Delay

If you want to set your own length for the duration of the delay, scan the bar code below, then set the time-out by scanning digits (0 - 4,000 ms) from the Programming Chart inside the back cover of this manual, then scan **Save**.

SCNDLY.

Aimer Modes

Interlaced

In interlaced mode, the illumination and aiming timing is automatically synchronized to the imager exposure period by the Image Engine. The engine turns illumination on while the image is being exposed, and it turns the aiming off at all other times. The interlaced mode provides the lowest overall current draw and is recommended for most applications. It also provides the brightest aimer in most applications. The Image Engine software automatically maintains an approximate 25% aimer duty cycle, even when the imager exposure time is at its maximum in dark operating environments.

Select Off if you don't want to use either aimer mode

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SCNAIM0.
Off

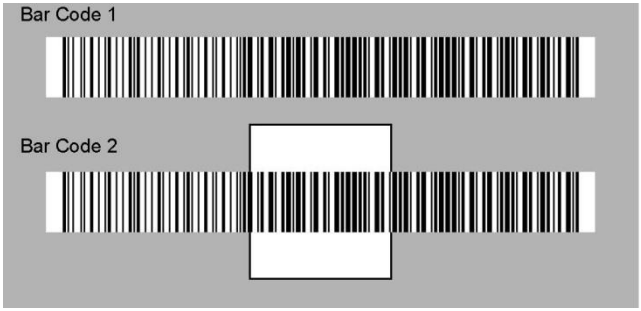
SCNAIM2.
* Interlaced

Thermal Considerations

Care must be taken when designing the Image Engine into any system. Internal heating of the Image Engine can occur in high duty cycle scanning applications in several ways. The high visibility aimer dissipates a significant amount of power as heat. The illumination and aiming LEDs also release heat, and are a major contributor to thermal increases in high use or in presentation mode.
An increase in temperature around an Image Engine can cause noise levels on the imager, degrading image quality. The thermal rise can also affect the laser diode. In a continuous scanning or high use environment, the Image Engine temperature can rise 15° to 20°C. Under high ambient temperature conditions, the laser diode is at risk of thermal breakdown and possible failure. The image quality and decode performance will also degrade
The Power Control PWM can be used to reduce the effect of the illumination LEDs on thermal rise, however, this also reduces the intensity of the illumination. Reducing the intensity of the illumination reduces total power used but can also reduce the depth of field in low light environments.

Centering

Use Centering to narrow the scanner's field of view to make sure the scanner reads only those bar codes intended by the user. For instance, if multiple codes are placed closely together, centering will insure that only the desired codes are read. (Centering can be used in conjunction with Aimer Delay, for the most error-free operation in applications where multiple codes are spaced closely together. Using the Aimer Delay and Centering features, the scanner can emulate the operation of older systems, such as linear laser bar code scanners.) In the example below, the gray area is the full scanner field of view and the white area is the centering window. Bar Code 1 will not be read, while Bar Code 2 will be.



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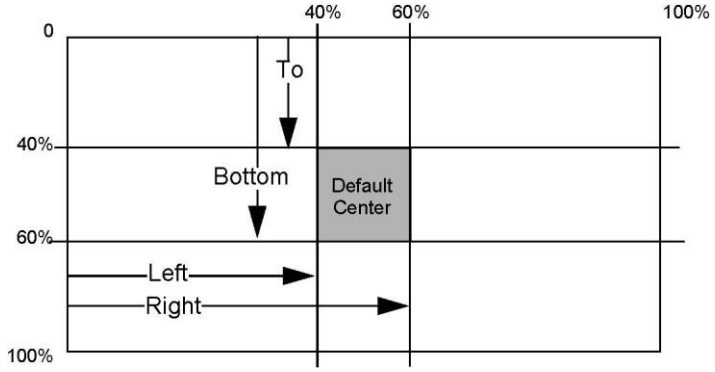
The default centering window is a 169x128 pixel area in the center of the scanner's field of view. The following diagram illustrates the default top, bottom, left, and right pixel positions, measured from the top and the left side of the scanner's field of view, which is 844 by 640 pixels.



If a bar code is not within the predefined window, it will not be decoded or output by the imager. If centering is turned on by scanning Centering On, the imager only reads codes that intersect the centering window you specify using the Top, Bottom, Left, or Right bar codes.
Scan Centering On, then scan one of the following bar codes to change the top, bottom, left, or right of the centering window. Then scan the percent you want to shift the centering window using digits on the inside back cover of this manual. Scan Save.
Default Centering = 40% for Top and Left, 60% for Bottom and Right.

DECWIN1.
Centering On

DECWIN0.
* Centering Off

DECTOP.
Top of Centering Window

DECBOT.
Bottom of Centering Window

DECLFT.
Left of Centering Window

DECRGT.

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Decode Search Mode

There are three selectable decode (scanning) modes:

Full Omni directional - Searches for bar code features beginning at the center of an image, and searches to the image's limits. This mode reads all symbologies (including OCR), in any orientation. The Full Omni directional search is very thorough which may slow performance time.
Note: This search mode is the default setting for the 2D OEM Engines.

DECMOD0.

Quick Omni directional - This is an abbreviated search for bar code features around the center region of an image. This mode quickly reads all symbologies in any orientation. The Quick Omni directional mode may miss some off-center symbols, as well as larger Data Matrix and QR Code symbols.

DECMOD1.

Advanced Linear Decoding - Performs quick horizontal linear scans in a center band of the image. This mode is not unidirectional, but does quickly read linear and stacked bar codes. Advanced Linear Decoding cannot read 2D, OCR, or Postal symbols.
Note: This search mode is the default setting for the point-and-shoot PDF OEM Engines.

DECMOD2.

Preferred Symbology

Note: This selection does not apply to OCR.

The imager can be programmed to specify one symbology as a higher priority over other symbologies in situations where both barcode symbologies appear on the same label, but the lower priority symbology cannot be disabled.
For example, you may be using the imager in a retail setting to read UPC symbols, but have occasional need to read a code on a drivers license. Since some licenses have a Code 39 symbol as well as the PDF417 symbol, you can use Preferred Symbology to specify that the PDF417 symbol be read instead of the Code 39.
Preferred Symbology classifies each symbology as **high priority**, **low priority**, or as an **unspecified type**. When a low priority symbology is presented, the imager ignores it for a set period of time (see Preferred Symbology Time-out) while it searches for the high priority symbology. If a high priority symbology is located during this period, then that data is read immediately.

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If the time-out period expires before a high priority symbology is read, the imager will read any barcode in its view (low priority or unspecified). If there is no barcode in the imager's view after the time-out period expires, then no data is reported.
Note: A low priority symbol must be centered on the aiming pattern to be read
Scan a barcode below to enable or disable Preferred Symbology.

Preferred Symbology On

* Preferred Symbology Off

High Priority Symbology

To specify the high priority symbology, scan the High Priority Symbology barcode below. On the Symbology Chart, find the symbology you want to set as high priority. Locate the Hex value for that symbology and scan the 2 digit hex value from the Programming Chart (inside back cover). Scan **Save** to save your selection. Default = None

High Priority Symbology

Low Priority Symbology

To specify the low priority symbology, scan the Low Priority Symbology barcode below. On the Symbology Chart, find the symbology you want to set as low priority. Locate the Hex value for that symbology and scan the 2 digit hex value from the Programming Chart (inside back cover).
If you want to set additional low priority symbologies, scan **FF**, then scan the 2 digit hex value from the Programming Chart for the next symbology. You can program up to 5 low priority symbologies. Scan **Save** to save your selection. Default = None

Low Priority Symbology

Preferred Symbology Time-out

Once you have enabled Preferred Symbology and entered the high and low priority symbologies, you must set the time-out period. This is the period of time the imager will search for a high priority barcode after a low priority barcode has been encountered. Scan the barcode below, then set the delay (from 100-3,000 milliseconds) by scanning digits from the inside back cover, then scanning **Save**. Default = 500 ms.

Preferred Symbology Time-out

Preferred Symbology Default

Scan the barcode below to set all Preferred Symbology entries to their default values.

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Preferred Symbology Default

Output Sequence Overview

Require Output Sequence
When turned off, the bar code data will be output to the host as the Imager decodes it. When turned on, all output data must conform to an edited sequence or the Imager will not transmit the output data to the host device.
Note: This selection is unavailable when the Multiple Symbols Selection is turned on.

Output Sequence Editor
This programming selection allows you to program the Imager to output data (when scanning more than one symbol) in whatever order your application requires, regardless of the order in which the bar codes are scanned. Reading the **Default Sequence** symbol programs the Imager to the Universal values, shown below. These are the defaults. Be **certain** you want to delete or clear all formats before you read the **Default Sequence** symbol.
Note: To make Output Sequence Editor selections, you'll need to know the code I.D., code length, and character match(es) your application requires. Use the Alphanumeric symbols (inside back cover) to read these options.
Note: You must hold the trigger while reading each bar code in the sequence.

To Add an Output Sequence

1. Scan the **Enter Sequence** symbol (see Require Output Sequence.

2. **Code I.D.** On the Symbology Chart, find the symbology to which you want to apply the output sequence format. Locate the Hex value for that symbology and scan the 2 digit hex value from the Programming Chart (inside back cover).

3. **Length** Specify what length (up to 9999 characters) of data output will be acceptable for this symbology. Scan the four digit data length from the Programming Chart. (Note: 50 characters is entered as 0050. 9999 is a universal number, indicating all lengths.) When calculating the length, you must count any programmed prefixes, suffixes, or formatted characters as part of the length (unless using 9999).

4. **Character Match Sequences** On the ASCII Conversion Chart (Code Page 1252), find the Hex value that represents the character(s) you want to match. Use the Programming Chart to read the alphanumeric combination that represents the ASCII characters. (99 is the Universal number, indicating all characters.)

5. End Output Sequence Editor Scan F F to enter an Output Sequence for an additional symbology, or Save to save your entries

Other Programming Selections

•Discard
This exits without saving any Output Sequence changes.

Output Sequence Example

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In this example, you are scanning Code 93, Code 128, and Code 39 bar codes, but you want the imager to output Code 39 1st, Code 128 2nd, and Code 93 3rd, as shown below.
Note: Code 93 must be enabled to use this example.

A - Code 39

B - Code 128

C - Code 93

You would set up the sequence editor with the following command line:

SEQBLK62999941FF6A999942FF69999943FF

breakdown of the command line is shown below:

SEQBLK sequence editor start command

62 code identifier for **Code 39**
9999 code length that must match for Code 39, 9999 = all lengths
41 start character match for Code 39, 41h = "A"
FF termination string for first code
6A code identifier for **Code 128**
9999 code length that must match for Code 128, 9999 = all lengths
42 start character match for Code 128, 42h = "B"
FF termination string for second code
69 code identifier for **Code 93**
9999 code length that must match for Code 93, 9999 = all lengths
43 start character match for Code 93, 43h = "C"
FF termination string for third code

To program the previous example using specific lengths, you would have to count any programmed prefixes, suffixes, or formatted characters as part of the length. If you use the example, but assume a <CR> suffix and specific code lengths, you would use the following command line:

SEQBLK62001241FF6A001342FF69001243FF

The breakdown of the command line is shown below:

SEQBLK sequence editor start command

62 code identifier for **Code 39**

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0012 A - Code 39 sample length (11) plus CR suffix (1) = 12
41 start character match for Code 39, 41h = "A"
FF termination string for first code
6A code identifier for **Code 128**
0013 B - Code 128 sample length (12) plus CR suffix (1) = 13
42 start character match for Code 128, 42h = "B"
FF termination string for second code
69 code identifier for **Code 93**
0012 C - Code 93 sample length (11) plus CR suffix (1) = 12
43 start character match for Code 93, 43h = "C"
FF termination string for third code

Output Sequence Editor

Enter Sequence

SEQBLK.

Default Sequence

SEQDFT.

Partial Sequence

If an output sequence operation is terminated before all your output sequence criteria are met, the bar code data acquired to that point is a "partial sequence."
Scan **Discard Partial Sequence** to discard partial sequences when the output sequence operation is terminated before completion. Scan **Transmit Partial Sequence** to transmit partial sequences. (Any fields in the sequence where no data match occurred will be skipped in the output.)

SEQTTS1.

Transmit Partial Sequence

SEQTTS0.

*** Discard Partial Sequence**

Require Output Sequence

When an output sequence is **Required**, all output data must conform to an edited sequence or the imager will not transmit the output data to the host device. When it's **On/Not Required**, the imager will attempt to get the output data to conform to an edited sequence, but if it cannot, the imager transmits all output data to the host device as is.
When the output sequence is **Off**, the bar code data is output to the host as the imager decodes it.
Note: This selection is unavailable when the Multiple Symbols Selection is turned on.

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SEQ_EN2.

Required

SEQ_EN1.

On/Not Required

SEQ_EN0.

*Off

Multiple Symbols

Note: This feature does not work when the Imager is in Low Power mode.
When this programming selection is turned **On**, it allows you to read multiple symbols when the trigger is activated. If you press and hold the trigger, aiming the Image r at a series of symbols, it reads unique symbols once, beeping (if turned on) for each read. The imager attempts to find and decode new symbols as long as the trigger is activated. When this programming selection is turned **Off**, the Imager will only read the symbol closest to the aiming beam.

SHOTGN1.

On

SHOTGN0.

* Off

No Read

With No Read turned **On**, the Imager notifies you if a code cannot be read. If using a Quick*View Scan Data Window, an "NR" appears when a code cannot be read. If No Read is turned **Off**, the "NR" will not appear.

SHWNRD1.

On

SHWNRD0.

* Off

If you want a different notation than "NR," for example, "Error," or "Bad Code," you can edit the output message using the Data Formatter. The hex code for the No Read symbol is 9C.

Print Weight

Print Weight is used to adjust the way the imager reads Matrix symbols. If a imager will be seeing consistently heavily printed matrix symbols, then a print weight of 6 may improve the

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reading performance. For consistently light printing, a print weight of 2 may help. After scanning the **Set Print Weight** bar code, set the print weight (from 1-7) by scanning digits from the inside back cover, then scanning **Save**. Default = 4.

Video Reverse

Video Reverse is used to allow the scanner to read bar codes that are inverted. The **Video Reverse Off** bar code below is an example of this type of bar code. Scan **Video Reverse Only** to read only inverted bar codes. Scan **Video Reverse and Standard Bar Codes** to read both types of codes.
Note: After scanning **Video Reverse Only**, menu bar codes cannot be read. You must scan **Video Reverse Off** or **Video Reverse and Standard Bar Codes** in order to read menu bar codes.
Note: Images downloaded from the unit are not reversed. This is a setting for decoding only.

Video Reverse Only

*** Video Reverse Off**

Video Reverse and Standard Bar Codes

Working Orientation

Some bar codes are direction-sensitive. For example, Kix codes and OCR can misread when scanned sideways or upside down. Use the working orientation settings if your direction-sensitive codes will not usually be presented upright to the scanner. Default = Upright.

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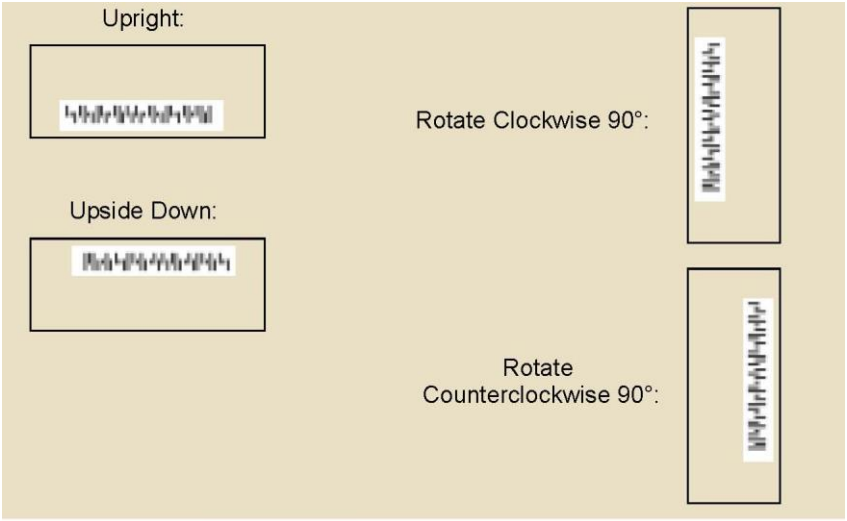

ROTATN0.
* Upright

ROTATN1.
Rotate Clockwise 90°

ROTATN2.
Upside Down

ROTATN3.

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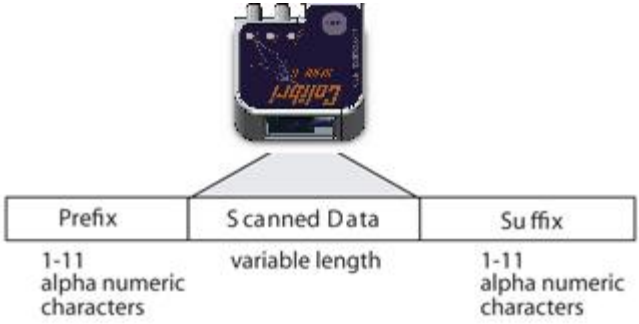
Chapter 5 - Data Editing

Prefix/Suffix Overview

When a bar code is scanned, additional information is sent to the host computer along with the bar code data. This group of bar code data and additional, user-defined data is called a "message string." The selections in this section are used to build the user-defined data into the message string.
Prefix and Suffix characters are data characters that can be sent before and after scanned data. You can specify if they should be sent with all symbologies, or only with specific symbologies. The following illustration shows the breakdown of a message string:



Points to Keep In Mind

- It is not necessary to build a message string. The selections in this chapter are only used if you wish to alter the default settings. Default prefix = None. Default suffix = None.
- A prefix or suffix may be added or cleared from one symbology or all symbologies.
- You can add any prefix or suffix from the ASCII Conversion Chart (Code Page1252), plus Code I.D. and AIM I.D.
- You can string together several entries for several symbologies at one time.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.
- When Setting up for specific symbologies, instead of All Symbologies, the symbology ID value counts as an added prefix or suffix character.
- The maximum size of a prefix or suffix configuration is 200 characters, which includes header information.

To Add a Prefix or Suffix:

Step 1. Scan the **Add Prefix** or **Add Suffix** symbol.

Step 2. Determine the 2 digit Hex value from the Symbology Chart (included in Appendix A) for the symbology to which you want to apply the prefix or suffix. For example, for Code 128, Code ID is "j" and Hex ID is "6A".

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Step 3. Scan the 2 hex digits from the Programming Chart inside the back cover of this manual or scan **9**, **9** for all symbologies.

Step 4. Determine the hex value from the ASCII Conversion Chart (Code Page 1252), for the prefix or suffix you wish to enter.

Step 5. Scan the 2 digit hex value from the Programming Chart inside the back cover of this manual.

Step 6. Repeat Steps 4 and 5 for every prefix or suffix character

Step 7. To add the Code I.D., scan **5**, **C**, **8**, **0**.
To add AIM I.D., scan **5**, **C**, **8**, **1**.
To add a backslash (\), scan **5**, **C**, **5**, **C**.

Note: To add a backslash (\) as in Step 7, you must scan 5C twice – once to create the leading backslash and then to create the backslash itself.

Step 8. Scan **Save** to exit and save, or scan **Discard** to exit without saving.

Repeat Steps 1-6 to add a prefix or suffix for another symbology.

Example: Add a Suffix to a specific symbology

To send a CR (carriage return)Suffix for UPC only:
Step 1. Scan **Add Suffix**.
Step 2. Determine the 2 digit hex value from the Symbology Chart (included in Appendix A) for UPC.
Step 3. Scan 6, 3 from the Programming Chart inside the back cover of this manual.
Step 4. Determine the hex value from the ASCII Conversion Chart (Code Page 1252), for the CR (carriage return).
Step 5. Scan **0**, **D** from the Programming Chart inside the back cover of this manual.
Step 6. Scan **Save**, or scan **Discard** to exit without saving.

To Clear One or All Prefixes or Suffixes:

You can clear a single prefix or suffix, or clear all prefixes/suffixes for a symbology. When you Clear One Prefix (Suffix), the specific character you select is deleted from the symbology you want. When you Clear All Prefixes (Suffixes), all the prefixes or suffixes for a symbology are deleted.

Step 1. Scan the Clear One Prefix or Clear One Suffix symbol.

Step 2. Determine the 2 digit Hex value from the Symbology Chart (included in Appendix A) for the symbology from which you want to clear the prefix or suffix.

Step 3. Scan the 2 digit hex value from the Programming Chart inside the back cover of this manual or scan **9**, **9** for all symbologies.

Your change is automatically saved.

To Add a Carriage Return Suffix to all Symbologies

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Scan the following bar code if you wish to add a carriage return suffix to all symbologies at once. This action first clears all current suffixes, then programs a carriage return suffix for all symbologies.

VSUFCR.

Prefix Selections

PREBK2.

Add Prefix

PRECL2.

Clear One Prefix

PRECA2.

Clear All Prefixes

Suffix Selections

SUFBK2.

Add Suffix

SUFCL2.

Clear One Suffix

SUFCA2.

Clear All Suffixes

Function Code Transmit

When this selection is enabled and function codes are contained within the scanned data, the imager transmits the function code to the terminal. Default = Enable.

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RMVFNC0.
* Enable

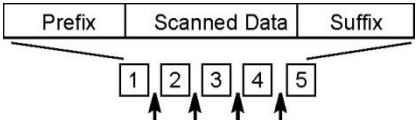
RMVFNC1.
Disable

Intercharacter, Interfunction, and Intermessage Delays

Some terminals drop information (characters) if data comes through too quickly. Intercharacter, interfunction, and intermessage delays slow the transmission of data, increasing data integrity.
Each delay is composed of a 5 millisecond step. You can program up to 99 steps(of 5 ms each) for a range of 0-495 ms.

Intercharacter Delay

An intercharacter delay of up to 495 milliseconds may be placed between the transmission of each character of scanned data. Scan the Intercharacter Delay bar code below, then scan the number of milliseconds and the SAVE bar code using the Programming Chart inside the back cover of this manual.



DLYCHR.

To remove this delay, scan the **Intercharacter Delay** bar code, then set the number of steps to 0. Scan the **SAVE** bar code using the Programming Chart inside the back cover of this manual.
Note: Intercharacter delays are not supported in USB serial emulation.

User Specified Intercharacter Delay

An intercharacter delay of up to 495 milliseconds may be placed after the transmission of a particular character of scanned data. Scan the Delay Length bar code below, then scan the number of milliseconds and the SAVE bar code using the Programming Chart inside the back cover of this manual.
Next, scan the Character to Trigger Delay bar code, then the 2-digit hex value for the ASCII character that will trigger the delay ASCII Conversion Chart (Codepage 1252).

Delay Length

Character to Trigger Delay

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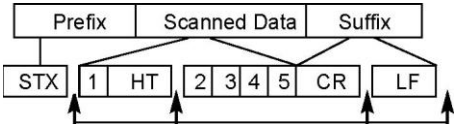
DLYCRX.

DLY_XX.

To remove this delay, scan the **Delay Length** bar code, and set the number of steps to 0. Scan the **SAVE** bar code using the Programming Chart inside the back cover of this manual.

Interfunction Delay

An interfunction delay of up to 495 milliseconds may be placed between the transmission of each segment of the message string. Scan the **Interfunction Delay** bar code below, then scan the number of milliseconds and the **SAVE** bar code using the Programming Chart inside the back cover of this manual.

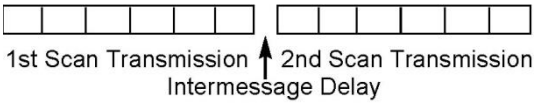


DLYFNC.

To remove this delay, scan the **Interfunction Delay** bar code, then set the number of steps to 0. Scan the **SAVE** bar code using the Programming Chart inside the back cover of this manual.

Intermessage Delay

An intermessage delay of up to 495 milliseconds may be placed between each scan transmission. Scan the **Intermessage Delay** bar code below, then scan the number of milliseconds and the **SAVE** bar code using the Programming Chart inside the back cover of this manual.



DLYMSG.

To remove this delay, scan the **Intermessage Delay** bar code, then set the number of steps to 0. Scan the **SAVE** bar code using the Programming Chart inside the back cover of this manual.

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Chapter 6 - Data Formatting

Data Format Editor Introduction

You may use the Data Format Editor to change the imager's output. For example, you can use the Data Format Editor to insert characters at certain points in bar code data as it is scanned. The selections in the following pages are used only if you wish to alter the output. Default Data Format setting = None.
Normally, when you scan a bar code, it gets outputted automatically; however when you do a format, you must use a "send" command (see Send Commands) within the format program to output data.
Multiple formats may be programmed into the imager. They are stacked in the order in which they are entered. However, the following list presents the order in which formats are applied:

1) Specific Term ID, Actual Code ID, Actual Length
2) Specific Term ID, Actual Code ID, Universal Length
3) Specific Term ID, Universal Code ID, Actual Length
4) Specific Term ID, Universal Code ID, Universal Length
5) Universal Term ID, Actual Code ID, Actual Length
6) Universal Term ID, Actual Code ID, Universal Length
7) Universal Term ID, Universal Code ID, Actual Length
8) Universal Term ID, Universal Code ID, Universal Length

The maximum size of a data format configuration is 2000 bytes, which includes header information.
If you have changed data format settings, and wish to clear all formats and return to the factory defaults, scan the **Default Data Format** code below.

*** Default Data Format**

To Add a Data Format

Step 1. Scan the **Enter Data Format** symbol.

Step 2. Primary/Alternate Format
Determine if this will be your primary data format, or one of 3 alternate formats. (Alternate formats allow you "single shot" capability to scan one bar code using a different data format. After the one bar code has been read, the imager reverts to the primary data format. If you are programming the primary format, scan **0** using the Programming Chart inside the back cover of this manual. If you are programming an alternate format, scan **1**, **2**, or **3**, depending on the alternate format you are programming.

Step 3. Terminal Type
Refer to Supported Terminals and locate the Terminal ID number for your PC. Scan three numeric bar codes on the inside back
cover to program the imager for your terminal ID (you must enter 3 digits). For example, scan **0 0 0** for RS-232.

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Note: The wildcard for all terminal types is 099.
Step 4. Code I.D. In Appendix A, find the symbology to which you want to apply the data format. Locate the Hex value for that symbology and scan the 2 digit hex value from the Programming Chart inside the back cover of this manual.

Step 5. Length Specify what length (up to 9999 characters) of data will be acceptable for this symbology. Scan the four digit data length from the Programming Chart inside the back cover of this manual. (Note: 50 characters is entered as 0050. 9999 is a universal number, indicating all lengths.)

Step 6. Editor Commands Refer to Data Format Editor Commands. Scan the symbols that represent the command you want to enter. 94 alphanumeric characters may be entered for each symbology data format.

Step 7. Scan **Save** from the Programming Chart inside the back cover of this manual to save your entries.

Other Programming Selections

- **Clear One Data Format**
  This deletes one data format for one symbology. If you are clearing the primary format, scan 0 from the Programming Chart inside the back cover of this manual. If you are clearing an alternate format, scan **1**, **2**, or **3**, depending on the alternate format you are clearing. Scan the Terminal Type and Code I.D. (see Supported Terminals, and the bar code data length for the specific data format that you want to delete. All other formats remain unaffected.

- **Save** from the Programming Chart inside the back cover of this manual This exits, saving any Data Format changes.

- **Discard** from the Programming Chart inside the back cover of this manual This exits without saving any Data Format changes.

Data Format Editor Commands

Send Commands

- F1 Send all characters followed by "xx" key or function code, starting from current cursor position. **Syntax = F1xx** (xx stands for the hex value for an ASCII code, see ASCII Conversion Chart (Code Page 1252).

- F2 Send "nn" characters followed by "xx" key or function code, starting from current cursor position. **Syntax = F2nnxx** (nn stands for the numeric value (00-99) for the number of characters and xx stands for the hex value for an ASCII code. See ASCII Conversion Chart (Code Page 1252).

- F3 Send up to but not including "ss" character (Search and Send) starting from current cursor position, leaving cursor pointing to "ss" character followed by "xx" key or function code. **Syntax = F3ssxx** (ss and xx both stand for the hex values for ASCII codes, see ASCII Conversion Chart (Code Page1252).

- F4 Send "xx" character "nn" times (Insert) leaving cursor in current cursor position. **Syntax = F4xxnn** (xx stands for the hex value for an ASCII code, see ASCII

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Conversion Chart (Code Page 1252), and nn is the numeric value (00-99) for the number of times it should be sent.)

- E9 Send all but the last "nn" characters, starting from the current cursor position. **Syntax = E9nn** (nn is the numeric value (00-99) for the number of characters that will not be sent at the end of the message.)

- B3 Insert the name of the bar code's symbology in the output message, without moving the cursor. Only symbologies with a Honeywell ID are included (see Symbology Chart. Refer to the ASCII Conversion Chart (Code Page 1252) on page A-4 for decimal, hex and character codes.

- B4 Insert the bar code's length in the output message, without moving the cursor. The length is expressed as a numeric string and does not include leading zeroes.

Move Commands

- F5 Move the cursor ahead "nn" characters from current cursor position. **Syntax = F5nn** (nn stands for the numeric value (00-99) for the number of characters the cursor should be moved ahead.)

- F6 Move the cursor back "nn" characters from current cursor position. **Syntax = F6nn** (nn stands for the numeric value (00-99) for the number of characters the cursor should be moved back.)

- F7 Move the cursor to the beginning of the data string. **Syntax = F7**.

- Move the cursor to the end of the data string. **Syntax = EA**

Search Commands

- F8 Search ahead for "xx" character from current cursor position, leaving cursor pointing to "xx" character. **Syntax = F8xx** (xx stands for the hex value for an ASCII code, see ASCII Conversion Chart (Code Page 1252).

- F9 Search back for "xx" character from current cursor position, leaving cursor pointing to "xx" character. **Syntax = F9xx** (xx stands for the hex value for an ASCII code, see ASCII Conversion Chart (Code Page 1252).

- B0 Search forward for "s" string from the current cursor position, leaving cursor pointing to "s" string. Syntax = B0nnnnS where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B0000454657374 will search forward for the first occurrence of the 4 character string "Test." Refer to the ASCII Conversion Chart (Code Page 1252) on page A-4 for decimal, hex and character codes.

- B1 Search backward for "s" string from the current cursor position, leaving cursor pointing to "s" string. Syntax = B1nnnnS where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B1000454657374 will search backward for the first occurrence of the 4 character string "Test." Refer to the ASCII Conversion Chart (Code Page 1252) on page A-4 for decimal, hex and character codes.

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- E6 Search ahead for the first non "xx" character from the current cursor position, leaving cursor pointing to non "xx" character. **Syntax = E6xx** (xx stands for the hex value for an ASCII code, see ASCII Conversion Chart (Code Page 1252).

- E7 Search back for the first non "xx" character from the current cursor position, leaving cursor pointing to non "xx" character. **Syntax = E7xx** (xx stands for the hex value for an ASCII code, see ASCII Conversion Chart (Code Page1252))

Miscellaneous Commands

- FB Suppress all occurrences of up to 15 different characters, starting at the current cursor position, as the cursor is advanced by other commands. When the FC command is encountered, the suppress function is terminated. The cursor is not moved by the FB command. **Syntax = FBnnxxyy . .zz** where nn is a count of the number of suppressed characters in the list and xxyy .. zz is the list of characters to be suppressed. (xx stands for the hex value for an ASCII code, see ASCII Conversion Chart (Code Page 1252).

- FC Disables suppress filter and clear all suppressed characters. **Syntax = FC**.

- E4 Replaces up to 15 characters in the data string with user specified characters. Replacement continues until the E5 command is encountered. **Syntax = E4nnxx$_1$xx$_2$yy$_1$yy$_2$...zz$_1$zz$_2$** where nn is the total count of both characters to be replaced plus replacement characters; xx$_1$ defines characters to be replaced and xx$_2$ defines replacement characters, continuing through zz$_1$ and zz$_2$.

- E5 Terminates character replacement. **Syntax = E5**.

- FE Compare character in current cursor position to the character "xx." If characters are equal, increment cursor. If characters are not equal, no format match. **Syntax = FExx** (xx stands for the hex value for an ASCII code, see ASCII Conversion Chart (Code Page 1252).

- B2 Compare the string in the input message to the string "s." If the strings are equal, move the cursor forward past the end of the string. Syntax = B2nnnnS where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B2000454657374 will compare the string at the current cursor position with the 4 character string "Test.". Refer to the ASCII Conversion Chart (Code Page 1252) on page A-4 for decimal, hex and character codes.

- EC Check to make sure there is an ASCII number at the current cursor position. If character is not numeric, format is aborted. **Syntax = EC**.

- ED Check to make sure there is a non-numeric ASCII character at the current cursor position. If character is numeric, format is aborted. **Syntax = ED**.

- EF Inserts a delay of up to 49,995 milliseconds (in multiples of 5), starting from the

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current cursor position. Syntax = EFnnnn where nnnn stands for the delay in 5ms increments, up to 9999. This command can only be used with keyboard wedge interfaces.

Data Format Editor

DFMBK3.

Enter Data Format

DFMDF3.

* Default Data Format

DFMCL3.

Clear One Data Format

DFMCA3.

Clear All Data Formats

MNUSAV.

Save

MNUABT.

Discard

Data Formatter

When Data Formatter is turned Off, the bar code data is output to the host as read, including prefixes and suffixes.

DFM_EN0.

Data Formatter Off

You may wish to require the data to conform to a data format you have created and saved. The following settings can be applied to your data format:

Data Formatter On, Not Required, Keep Prefix/Suffix

Scanned data is modified according to your data format, and prefixes and suffixes are transmitted.

Data Formatter On, Not Required, Drop Prefix/Suffix

Scanned data is modified according to your data format. If a data format is found for a particular symbol, those prefixes and suffixes are not transmitted.

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Data Format Required, Keep Prefix/Suffix

Scanned data is modified according to your data format, and prefixes and suffixes are transmitted. Any data that does not match your data format requirements generates an error tone and the data in that bar code is not transmitted. If you wish to process this type of bar code without generating an error tone, see Data Format Non-Match Error Tone.

Data Format Required, Drop Prefix/Suffix

Scanned data is modified according to your data format. If a data format is found for a particular symbol, those prefixes and suffixes are not transmitted. Any data that does not match your data format requirements generates an error tone. If you wish to process this type of bar code without generating an error tone, see Data Format Non-Match Error Tone. Choose one of the following options.
Default = Data Formatter On, Not Required, Keep Prefix/Suffix.

DFM_EN1.
*** Data Formatter On, Not Required, Keep Prefix/Suffix**

DFM_EN3.
Data Formatter On, Not Required, Drop Prefix/Suffix

DFM_EN2.
Data Format Required, Keep Prefix/Suffix

DFM_EN4.
Data Format Required, Drop Prefix/Suffix

Data Format Non-Match Error Tone

When a bar code is encountered that doesn't match your required data format, the scanner normally generates an error tone. However, you may want to continue scanning bar codes without hearing the error tone. If you scan the **Data Format Non-Match Error Tone Off** bar code, data that doesn't conform to your data format is not transmitted, and no error tone will sound. If you wish to hear the error tone when a non-matching bar code is found, scan the **Data Format Non-Match Error Tone On** bar code.
Default = Data Format Non-Match Error Tone On.

DFMDEC0.
*** Data Format Non-Match Error Tone On**

DFMDEC1.
Data Format Non-Match Error Tone Off

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Alternate Data Formats

You can save up to four data formats, and switch between these formats. Your primary data format is saved under **0**. Your other three formats are saved under **1**, **2**, and **3**. To set your device to use one of these formats, scan one of the bar codes below.

ALTFNM0.
Primary Data Format

ALTFNM1.
Data Format 1

ALTFNM2.
Data Format 2

ALTFNM3.
Data Format 3

Single Scan Data Format Change

You can also switch between data formats for a single scan. The next bar code is scanned using an alternate data format, then reverts to the format you have selected above (either Primary, 1, 2, or 3).
For example, you may have set your device to the data format you saved as Data Format 3. You can switch to Data Format 1 for a single trigger pull by scanning the **Single Scan-Data Format 1** bar code below. The next bar code that is scanned uses Data Format 1, then reverts back to Data Format 3.

VSAF_0.
Single Scan-Primary Data Format

VSAF_1.
Single Scan-Data Format 1

VSAF_2.
Single Scan-Data Format 2

VSAF_3.
Single Scan-Data Format 3

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Chapter 7 - Symbologies

This programming section contains the following menu selections. Refer to Chapter 11 for settings and defaults.

- All Symbologies
- Aztec Code
- China Post (Hong Kong 2 of 5)
- Chinese Sensible (Han Xin) Code
- Codabar
- Codablock A
- Codablock F
- Code 11
- Code 128
- Code 32 Pharmaceutical (PARAF)
- Code 39
- Code 93
- Data Matrix
- EAN/JAN-13
- EAN/JAN-8
- GS1 Composite Codes
- GS1 DataBar Expanded
- GS1 DataBar Limited
- GS1 DataBar Omnidirectional
- GS1 Emulation
- GS1-128
- Interleaved 2 of 5
- Korea Post
- Matrix 2 of 5
- MaxiCode
- MicroPDF417
- MSI
- NEC 2 of 5
- Postal Codes - 2D
- Postal Codes - Linear
- PDF417
- GS1 DataBar Omnidirectional
- QR Code
- Straight 2 of 5 IATA (two-bar start/stop)
- Straight 2 of 5 Industrial (three-bar start/stop)
- TCIF Linked Code 39 (TLC39)
- Telepen
- Trioptic Code
- UPC-A
- UPC-A/EAN-13 with Extended Coupon Code
- UPC-E0
- UPC-E1

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Linear Symbologies

All Symbologies

If you want to decode all the symbologies allowable for your imager, scan the **All Symbologies On** code. If on the other hand, you want to decode only a particular symbology, scan All Symbologies Off followed by the On symbol for that particular symbology.

All Symbologies On

All Symbologies Off

Note: When All Symbologies On is scanned, 2D Postal Codes are not enabled. 2D Postal Codes must be enabled separately.

Message Length Description

You are able to set the valid reading length of some of the bar code symbologies. If the data length of the scanned bar code doesn't match the valid reading length, the imager will issue an error beep. You may wish to set the same value for minimum and maximum length to force the imager to read fixed length bar code data. This helps reduce the chances of a misread.

EXAMPLE: Decode only those bar codes with a count of 9-20 characters.
Min. length = 09 Max. length = 20
EXAMPLE: Decode only those bar codes with a count of 15 characters.
Min. length = 15 Max. length = 15

For a value other than the minimum and maximum message length defaults, scan the bar codes included in the explanation of the symbology, then scan the digit value of the message length and **Save** bar codes on the Programming Chart inside the back cover of this manual. The minimum and maximum lengths and the defaults are included with the respective symbologies.

Codabar

Default

Codabar Enabled

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CBRENA1.
* On

CBRENA0.
Off

Codabar Start/Stop Characters

Start/Stop characters identify the leading and trailing ends of the bar code. You may either transmit, or not transmit Start/Stop characters. Default = Don't Transmit.

CBRSSX1.
Transmit

CBRSSX0.
* Don't Transmit

Codabar Check Character

Codabar check characters are created using different "modulos." You can program the imager to read only Codabar bar codes with Modulo 16 check characters. Default = No Check Character.
No Check Character indicates that the imager reads and transmits bar code data with or without a check character.
When Check Character is set to **Validate and Transmit**, the imager will only read Codabar bar codes printed with a check character, and will transmit this character at the end of the scanned data.
When Check Character is set to **Validate, but Don't Transmit**, the unit will only read Codabar bar codes printed **with** a check character, but will not transmit the check character with the scanned data.

CBRCK20.
* No Check Character

CBRCK21.
Validate Modulo 16, but
Don't Transmit

CBRCK22.
Validate Modulo 16
and Transmit

Codabar Concatenation

Codabar supports symbol concatenation. When you enable concatenation, the imager looks

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for a Codabar symbol having a "D" start character, adjacent to a symbol having a "D" stop character. In this case the two messages are concatenated into one with the "D" characters omitted. Default = On.

Select Require to prevent the imager from decoding a single "D" Codabar symbol without its companion. This selection has no effect on Codabar symbols without Stop/Start D characters.

* On

Off

Require

Codabar Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 2-60. Minimum Default = 4, Maximum Default = 60.

Minimum Message Length

Maximum Message Length

Code 39

Default

Code 39 Enabled

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C39ENA1.

* On

C39ENA0.

Off

Code 39 Start/Stop Characters

Start/Stop characters identify the leading and trailing ends of the bar code. You may either transmit, or not transmit Start/Stop characters. Default = Don't Transmit.

C39SSX1.

Transmit

C39SSX0.

* Don't Transmit

Code 39 Check Character

No Check Character indicates that the imager reads and transmits bar code data with or without a check character.
When Check Character is set to **Validate, but Don't Transmit**, the unit only reads Code 39 bar codes printed with a check character, but will not transmit the check character with the scanned data.
When Check Character is set to **Validate and Transmit**, the imager only reads Code 39 bar codes printed with a check character, and will transmit this character at the end of the scanned data. Default = No Check Character.

C39CK20.

* No Check Character

C39CK21.

Validate, but Don't Transmit

C39CK22.

Validate and Transmit

Code 39 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 0-48. Minimum

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Default = 0, Maximum Default = 48.

C39MIN.

Minimum Message Length

C39MAX.

Maximum Message Length

Code 39 Append

This function allows the imager to append the data from several Code 39 bar codes together before transmitting them to the host computer. When this function is enabled, the imager stores those Code 39 bar codes that start with a space (excluding the start and stop symbols), and does not immediately transmit the data. The imager stores the data in the order in which the bar codes are read, deleting the first space from each. The imager transmits the appended data when it reads a Code 39 bar code that starts with a character other than a space. Default = Off.

C39APP1.

On

C39APP0.

* Off

Code 32 Pharmaceutical (PARAF)

Code 32 Pharmaceutical is a form of the Code 39 symbology used by Italian pharmacies. This symbology is also known as PARAF.
Note: Trioptic Code must be turned off while scanning Code 32 Pharmaceutical codes.

C39B321.

On

C39B320.

* Off

Full ASCII

If Full ASCII Code 39 decoding is enabled, certain character pairs within the bar code symbol will be interpreted as a single character. For example: $V will be decoded as the ASCII character SYN, and /C will be decoded as the ASCII character #. Default = On.

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NUL	%U	DLE	$P	SP	SPACE	0	0	@	%V	P	P	'	%W	p	+P
SOH	$A	DC1	$Q	!	/A	1	1	A	A	Q	Q	a	+A	q	+Q
STX	$B	DC2	$R	"	/B	2	2	B	B	R	R	b	+B	r	+R
ETX	$C	DC3	$S	#	/C	3	3	C	C	S	S	c	+C	s	+S
EOT	$D	DC4	$T	$	/D	4	4	D	D	T	T	d	+D	t	+T
ENQ	$E	NAK	$U	%	/E	5	5	E	E	U	U	e	+E	u	+U
ACK	$F	SYN	$V	&	/F	6	6	F	F	V	V	f	+F	v	+V
BEL	$G	ETB	$W	'	/G	7	7	G	G	W	W	g	+G	w	+W
BS	$H	CAN	$X	(	/H	8	8	H	H	X	X	h	+H	x	+X
HT	$I	EM	$Y	)	/I	9	9	I	I	Y	Y	i	+I	y	+Y
LF	$J	SUB	$Z	*	/J	:	/Z	J	J	Z	Z	j	+J	z	+Z
VT	$K	ESC	%A	+	/K	;	%F	K	K	[	%K	k	+K	{	%P
FF	$L	FS	%B	,	/L	<	%G	L	L	\	%L	l	+L	|	%Q
CR	$M	GS	%C	-	-	=	%H	M	M	]	%M	m	+M	}	%R
SO	$N	RS	%D	.	.	>	%I	N	N	^	%N	n	+N	~	%S
SI	$O	US	%E	/	/O	?	%J	O	O	_	%O	o	+O	DEL	%T

Character pairs /M and /N decode as a minus sign and period respectively. Character pairs /P through /Y decode as 0 through 9.

C39ASC1.

Full ASCII On

C39ASC0.

* Full ASCII Off

Code 39 Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see Code Page Mapping of Printed Bar Codes), and scan the value and the **Save** bar code from the Programming Chart on the inside the back cover of this manual. The data characters should then appear properly.

C39DCP.

Interleaved 2 of 5

Default

I25DFT.

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Interleaved 2 of 5 Enabled

I25ENA1.

* On

I25ENA0.

Off

Check Digit

No Check Digit indicates that the imager reads and transmits bar code data with or without a check digit.
When Check Digit is set to **Validate, but Don't Transmit**, the unit only reads Interleaved 2 of 5 bar codes printed with a check digit, but will not transmit the check digit with the scanned data.
When Check Digit is set to Validate and Transmit, the imager only reads Interleaved 2 of 5 bar codes printed with a check digit, and will transmit this digit at the end of the scanned data. Default = No Check Digit.

I25CK20.

* No Check Digit

I25CK21.

Validate, but Don't Transmit

I25CK22.

Validate and Transmit

Interleaved 2 of 5 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.

I25MIN.

Minimum Message Length

I25MAX.

Maximum Message Length

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NEC 2 of 5

< Default All NEC 2 of 5 Settings >

N25DFT.

NEC 2 of 5 On/Off

N25ENA1.
*** On**

N25ENA0.
Off

Check Digit

No Check Digit indicates that the scanner reads and transmits bar code data with or without a check digit.
When Check Digit is set to **Validate, but Don't Transmit**, the unit only reads NEC 2 of 5 bar codes printed with a check digit, but will not transmit the check digit with the scanned data.
When Check Digit is set to **Validate and Transmit**, the scanner only reads NEC 2 of 5 bar codes printed with a check digit, and will transmit this digit at the end of the scanned data.
Default = No Check Digit.

N25CK20.
*** No Check Digit**

N25CK21.
Validate, but Don't Transmit

N25CK22.
Validate and Transmit

NEC 2 of 5 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum
Default = 80.

N25MIN.
Minimum Message Length

N25MAX.
Maximum Message Length

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Code 93

Default

C93DFT.

Code 93 Enabled

C93ENA1.

* On

C93ENA0.

Off

Code 93 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.

C93MIN.

Minimum Message Length

C93MAX.

Maximum Message Length

Code 93 Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see Code Page Mapping of Printed Bar Codes), and scan the value and the **Save** bar code from the Programming Chart on the inside the back cover of this manual. The data characters should then appear properly.

C93DCP.

Straight 2 of 5 Industrial (three-bar start/stop)

Default

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R25DFT.

Straight 2 of 5 Industrial Enabled

R25ENA1.

On

R25ENA0.

* Off

Straight 2 of 5 Industrial Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-48. Minimum Default = 4, Maximum Default = 48.

R25MIN.

Minimum Message Length

R25MAX.

Maximum Message Length

Straight 2 of 5 IATA (two-bar start/stop)

Default

A25DFT.

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Straight 2 of 5 IATA Enabled

A25ENA1.

On

A25ENA0.

* Off

Straight 2 of 5 IATA Message Length

A25MIN.

Minimum Message Length

A25MAX.

Maximum Message Length

Matrix 2 of 5

Default

X25DFT.

Matrix 2 of 5 Enabled

X25ENA1.

On

X25ENA0.

* Off

Matrix 2 of 5 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 4, Maximum Default = 80.

X25MIN.

Minimum Message Length

X25MAX.

Maximum Message Length

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Code 11

Default

C11DFT.

Code 11 Enabled

C11ENA1.

On

C11ENA0.

* Off

Check Digits Required

This option sets whether 1 or 2 check digits are required with Code 11 bar codes. Default = Two Check Digits.

C11CK20.

One Check Digit

C11CK21.

* Two Check Digits

Code 11 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 4, Maximum Default = 80.

C11MIN.

C11MAX.

Code 128

Default

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Code 128 Enabled

* On

Off

ISBT 128 Concatenation

In 1994 the International Society of Blood Transfusion (ISBT) ratified a standard for communicating critical blood information in a uniform manner. The use of ISBT formats requires a paid license. The ISBT 128 Application Specification describes 1) the critical data elements for labeling blood products, 2) the current recommendation to use Code 128 due to its high degree of security and its space-efficient design, 3) a variation of Code 128 that supports concatenation of neighboring symbols, and 4) the standard layout for bar codes on a blood product label. Use the bar codes below to turn concatenation on or off. Default =Off.

On

* Off

Code 128 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.

Minimum Message Length

Maximum Message Length

Code 128 Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was

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created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see Code Page Mapping of Printed Bar Codes), and scan the value and the **Save** bar code from the Programming Chart on the inside the back cover of this manual. The data characters should then appear properly. Default = 2.

128DCP.

GS1-128

<Default All GS1-128 Settings>

GS1DFT.

GS1-128 On/Off

GS1ENA1.
*** On**

GS1ENA0.
Off

GS1-128 Message Length

GS1MIN.
Minimum Message Length

GS1MAX.
Maximum Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 1, Maximum
Default = 80.

Telepen

Default

TELDFT.

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Telepen Enabled

TELENA1.

On

TELENA0.

* Off

Telepen Output

Using AIM Telepen Output, the imager reads symbols with start/stop pattern 1 and decodes them as standard full ASCII (start/stop pattern 1). When Original Telepen Output is selected, the imager reads symbols with start/stop pattern 1 and decodes them as compressed numeric with optional full ASCII (start/stop pattern 2). Default = AIM Telepen Output.

TELOLD0.

* AIM Telepen Output

TELOLD1.

Original Telepen Output

Telepen Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-60. Minimum Default = 1, Maximum Default = 60.

TELMIN.

Minimum Message Length

TELMAX.

Maximum Message Length

UPC-A

Default

UPADFT.

UPC-A Enabled

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UPAENA1.
* On

UPAENA0.
Off

UPC-A Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. Default = On.

UPACKX1.
* On

UPACKX0.
Off

UPC-A Number System

The numeric system digit of a U.P.C. symbol is normally transmitted at the beginning of the scanned data, but the unit can be programmed so it will not transmit it. Default = On.

UPANSX1.
* On

UPANSX0.
Off

UPC-A Addenda

This selection adds 2 or 5 digits to the end of all scanned UPC-A data. Default = Off for both 2 Digit and 5 Digit Addenda.

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UPAAD21.

2 Digit Addenda On

UPAAD20.

* 2 Digit Addenda Off

UPAAD51.

5 Digit Addenda On

UPAAD50.

UPC-A Addenda Required

When **Required** is scanned, the imager will only read UPC-A bar codes that have addenda. You must then turn on a 2 or 5 digit addenda listed Default = Not Required.

UPAARQ1.

Required

UPAARQ0.

* Not Required

UPC-A Addenda Separator

When this feature is on, there is a space between the data from the bar code and the data from the addenda. When turned off, there is no space. Default = On.

UPAADS1.

* On

UPAADS0.

Off

UPC-A/EAN-13 with Extended Coupon Code

Use the following codes to enable or disable UPC-A **and** EAN-13 with Extended Coupon Code. When left on the default setting (**Off**), the scanner treats Coupon Codes and Extended Coupon Codes as single bar codes.

If you scan the **Allow Concatenation** code, when the scanner sees the coupon code and the extended coupon code in a single scan, it transmits both as separate symbologies. Otherwise, it transmits the first coupon code it reads.

If you scan the **Require Concatenation** code, the scanner must see and read the coupon code and extended coupon code in a single read to transmit the data. No data is output unless

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both codes are read.
Default = Off.

CPNENA0.
* Off

CPNENA1.
Allow Concatenation

CPNENA2.
Require Concatenation

UPC-E0

Default

UPEDFT.

UPC-E0 Enabled

Most U.P.C. bar codes lead with the 0 number system. For these codes, use the UPC-E0 selection. If you need to read codes that lead with the 1 number system, use UPC-E1.
Default = On.

UPEEN01.
* UPC-E0 On

UPEEN00.
UPC-E0 Off

UPC-E0 Expand

UPC-E Expand expands the UPC-E code to the 12 digit, UPC-A format. Default = Off.

UPEEXP1.
On

UPEEXP0.
* Off

E0 Addenda Required

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When Addenda Required is set to on, the imager will only read UPC-E bar codes that have addenda. Default = Not Required.

UPEARQ1.

Required

UPEARQ0.

* Not Required

UPC-E0 Addenda Separator

When this feature is on, there is a space between the data from the bar code and the data from the addenda. When turned off, there is no space. Default = On.

UPEADS1.

* On

UPEADS0.

Off

UPC-E0 Check Digit

Check Digit specifies whether the check digit should be transmitted at the end of the scanned data or not. Default = On.

UPECKX1.

* On

UPECKX0.

Off

UPC-E0 Number System

The numeric system digit of a U.P.C. symbol is normally transmitted at the beginning of the scanned data, but the unit can be programmed so it will not transmit it. Default = On.

UPENSX1.

* On

UPENSX0.

Off

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UPC-E0 Addenda

This selection adds 2 or 5 digits to the end of all scanned UPC-E data. Default = Off for both 2 Digit and 5 Digit Addenda.

UPEAD21.
2 Digit Addenda On

UPEAD20.
* 2 Digit Addenda Off

UPEAD51.
5 Digit Addenda On

UPEAD50.

UPC-E1

Most U.P.C. bar codes lead with the 0 number system. For these codes, use UPC-E0. If you need to read codes that lead with the 1 number system, use the UPC-E1 selection. Default = Off.

UPEEN11.
UPC-E1 On

UPEEN10.
* UPC-E1 Off

EAN/JAN-13

Default

E13DFT.

EAN/JAN-13 Enabled

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E13ENA1.

* On

E13ENA0.

Off

EAN/JAN-13 Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. Default = On.

E13CKX1.

* On

E13CKX0.

Off

EAN/JAN-13 Addenda

This selection adds 2 or 5 digits to the end of all scanned EAN/JAN-13 data. Default = Off for both 2 Digit and 5 Digit Addenda.

E13AD21.

2 Digit Addenda On

E13AD20.

* 2 Digit Addenda Off

E13AD51.

5 Digit Addenda On

E13AD50.

* 5 Digit Addenda Off

EAN/JAN-13 Addenda Required

When Addenda Required is set to on, the imager will only read EAN/JAN-13 bar codes that have addenda. Default = Not Required.

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E13ARQ1.

Required

E13ARQ0.

* Not Required

EAN/JAN-13 Addenda Separator

When this feature is on, there is a space between the data from the bar code and the data from the addenda. When turned off, there is no space. Default = On.

E13ADS1.

* On

E13ADS0.

Off

Note: If you want to enable or disable EAN13 with Extended Coupon Code, refer to UPC-A/EAN-13 with Extended Coupon Code.

ISBN Translate

This selection causes EAN-13 Book land symbols to be translated into their equivalent ISBN number format. Default = Off.

E13ISB1.

On

E13ISB0.

* Off

EAN/JAN-8

Default

EA8DFT.

EAN/JAN-8 Enabled

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EA8ENA1.

* On

EA8ENA0.

Off

EAN/JAN-8 Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. Default = On.

EA8CKX1.

* On

EA8CKX0.

Off

EAN/JAN-8 Addenda

This selection adds 2 or 5 digits to the end of all scanned EAN/JAN-8 data. Default = Off for both 2 Digit and 5 Digit Addenda.

EA8AD21.

2 Digit Addenda On

EA8AD20.

* 2 Digit Addenda Off

EA8AD51.

5 Digit Addenda On

EA8AD50.

* 5 Digit Addenda Off

EAN/JAN-8 Addenda Required

When Addenda Required is set to on, the imager will only read EAN/JAN-8 bar codes that have addenda. Default = Not Required.

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EA8ARQ1.
Required

EA8ARQ0.
* Not Required

EAN/JAN-8 Addenda Separator

When this feature is on, there is a space between the data from the bar code and the data from the addenda. When turned off, there is no space. Default = On.

EA8ADS1.
* On

EA8ADS0.
Off

MSI

Default
MSIDFT.

MSI Enabled

MSIENA1.
On

MSIENA0.
* Off

MSI Check Character

Different types of check characters are used with MSI bar codes. You can program the scanner to read MSI bar codes with Type 10 check characters.
Default = Validate Type 10, but Don't Transmit.
When Check Character is set to **Validate Type 10/11 and Transmit**, the scanner will only read MSI bar codes printed with the specified type check character(s), and will transmit the character(s) at the end of the scanned data.
When Check Character is set to Validate Type 10/11, but Don't Transmit, the unit will only read MSI bar codes printed with the specified type check character(s), but will not transmit the check character(s) with the scanned data.

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MSICHK0.

*** Validate Type 10, but Don't Transmit**

MSICHK1.

Validate Type 10 and Transmit

MSICHK2.

Validate 2 Type 10 Characters, but Don't Transmit

MSICHK3.

Validate 2 Type 10 Characters and Transmit

MSICHK4.

Validate Type 10 then Type 11 Character, but Don't Transmit

MSICHK5.

Validate Type 10 then Type 11 Character and Transmit

MSICHK6.

Disable MSI Check Characters

MSI Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 4-48. Minimum Default = 4, Maximum Default = 48.

MSIMIN.

Minimum Message Length

MSIMAX.

Maximum Message Length

GS1 DataBar Omni directional

Default

RSSDFT.

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GS1 DataBar Omni directional Enabled

RSSENA1.
* On

RSSENA0.
Off

GS1 DataBar Limited

Default

RSLDFT.

GS1 DataBar Limited Enabled

RSLENA1.
* On

RSLENA0.
Off

GS1 DataBar Expanded

Default

RSEDFT.

GS1 DataBar Expanded Enabled

RSEENA1.
* On

RSEENA0.
Off

GS1 DataBar Expanded Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 4-74. Minimum Default = 4, Maximum Default = 74.

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RSEMIN.

Minimum Message Length

RSEMAX.

Maximum Message Length

Trioptic Code

Note: If you are going to scan Code 32 Pharmaceutical codes, Trioptic Code must be off. Trioptic Code is used for labeling magnetic storage media.

TRIENA1.

On

TRIENA0.

* Off

Codablock A

<Default All Codablock A Settings>

CBADFT.

Codablock A On/Off

CBAENA1.

On

CBAENA0.

*** Off**

Codablock A Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-600. Minimum Default = 1, Maximum Default = 600.

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Minimum Message Length

Maximum Message Length

Codablock F

Default

Codablock F Enabled

On

* Off

Codablock F Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-2048. Minimum Default = 1, Maximum Default = 2048.

Minimum Message Length

Maximum Message Length

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Stacked Symbologies

PDF417

Default

PDFDFT.

PDF417 Enabled

PDFENA1.

* On

PDFENA0.

Off

PDF417 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-2750. Minimum Default = 1, Maximum Default = 2750.

PDFMIN.

Minimum Message Length

PDFMAX.

Maximum Message Length

MicroPDF417

Default

MPDDFT.

MicroPDF417 enabled

MPDENA1.

* On

MPDENA0.

Off

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MicroPDF417 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-366. Minimum Default = 1, Maximum Default = 366.

MPDMIN.
Minimum Message Length

MPDMAX.
Maximum Message Length

GS1 Composite Codes

linear codes are combined with a unique 2D composite component to form a new class called EAN•UCC Composite symbology. EAN•UCC Composite symbologies allow for the co-existence of symbologies already in use.

COMENA1.
On

COMENA0.
* Off

UPC/EAN Version

Scan the UPC/EAN Version On bar code to decode EAN•UCC Composite symbols that have a UPC or EAN linear component. (This does not affect EAN•UCC Composite symbols with a UCC/EAN-128 or RSS linear component.)

COMUPC1.
UPC/EAN Version On

COMUPC0.
* UPC/EAN Version Off

GS1 Composite Code Message Length

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COMMIN.

Minimum Message Length

COMMAX.

Maximum Message Length

GS1 Emulation

The scanner can automatically format the output from any GS1 data carrier to emulate what would be encoded in an equivalent GS1-128 or GS1 DataBar symbol. GS1 data carriers include UPC-A and UPC-E, EAN-13 and EAN-8, ITF-14, GS1-128, and GS1-128 DataBar and GS1 Composites. (Any application that accepts GS1 data can be simplified since it only needs to recognize one data carrier type.)

If **GS1-128 Emulation** is scanned, all retail codes (U.P.C., UPC-E, EAN8, EAN13) are expanded out to 16 digits. If the AIM ID is enabled, the value will be the GS1-128 AIM ID,]C1 (see Symbology Chart on page A-1).

If **GS1 DataBar Emulation** is scanned, all retail codes (U.P.C., UPC-E, EAN8, EAN13) are expanded out to 16 digits. If the AIM ID is enabled, the value will be the GS1-DataBar AIM ID,]em (see Symbology Chart on page A-1).

If **GS1 Code Expansion Off** is scanned, retail code expansion is disabled, and UPC-E expansion is controlled by the UPC-E0 Expand setting. If the AIM ID is enabled, the value will be the GS1-128 AIM ID,]C1 (see Symbology Chart on page A-1).

If **EAN8 to EAN13 Conversion** is scanned, all EAN8 bar codes are converted to EAN13 format.

Default = GS1 Emulation Off.

EANEMU1.

GS1-128 Emulation

EANEMU2.

GS1 DataBar Emulation

EANEMU3.

GS1 Code Expansion Off

EANEMU4.

EAN8 to EAN13 Conversion

EANEMU0.

*** GS1 Emulation Off**

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TCIF Linked Code 39 (TLC39)

This code is a composite code since it has a Code 39 linear component and a MicroPDF417 stacked code component. All bar code readers are capable of reading the Code 39 linear component. The MicroPDF417 component can only be decoded if **TLC39 On** is selected. The linear component may be decoded as Code 39 even if TLC39 is off.

T39ENA1.

On

T39ENA0.

* Off

Postal Symbologies

Postal Codes Linear

Note: For best performance when reading a postal symbology, all other postal symbologies should be turned off. The following postal codes can only be read by a 2D Imager.

4-CB (4-State Customer Barcode)

Note: You may enable the 4-CB (4-State Customer Barcode) if you have firmware with a base number of 31205480. Refer to the Show Software Revision for information on determining the firmware revision in your unit.

On

* Off

ID-tag (UPU 4-State)

Note: You may enable the ID-tag (UPU 4-State) if you have firmware with a base number of 31205480. Refer to the Show Software Revision for information on determining the firmware revision in your unit.

On

* Off

Postnet

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NETENA1.

On

NETENA0.

* Off

Postnet Check Digit

NETCKX1.

Transmit Check Digit

NETCKX0.

* Don't Transmit Check Digit

Planet Code

PLNENA1.

On

PLNENA0.

* Off

Planet Code Check Digit

PLNCKX1.

Transmit Check Digit

PLNCKX0.

* Don't Transmit Check Digit

British Post

BPOENA1.

On

BPOENA0.

* Off

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Canadian Post

CANENA1.

On

CANENA0.

* Off

Kix (Netherlands) Post

Note: Kix code can misread when scanned sideways or upside down. Use Working Orientation, if your Kix codes will not usually be presented upright to the scanner.

KIXENA1.

On

KIXENA0.

* Off

Australian Post

AUSENA1.

On

AUSENA0.

* Off

Japanese Post

JAPENA1.

On

JAPENA0.

* Off

China Post (Hong Kong 2 of 5)

Default

CPCDFT.

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China Post Enabled

On

* Off

China Post Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.

Minimum Message Length

Maximum Message Length

Korea Post

Default

Korea Post Enabled

On

* Off

Korea Post Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 48.

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KPCMIN.

Minimum Message Length

KPCMAX.

Maximum Message Length

Postal Codes 2D

The following lists the possible 2D postal codes, and 2D postal code combinations that are allowed. Only one 2D postal code selection can be active at a time. If you scan a second 2D postal code selection, the first selection is overwritten.
Default = 2D Postal Codes Off.

POSTAL0.

*** 2D Postal Codes Off**

Single 2D Postal Codes

POSTAL1.

Australian Post On

POSTAL7.

British Post On

POSTAL30.

Canadian Post On

POSTAL10.

Intelligent Mail Bar Code On

POSTAL3.

Japanese Post On

POSTAL4.

KIX Post On

POSTAL5.

Planet Code On

Also see Planet Code Check Digit,

POSTAL9.

Postal-4i On

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POSTAL6.

Postnet On

Also see Postnet Check Digit, page 7-54.

POSTAL11.

Postnet with B and B' Fields On

POSTAL2.

InfoMail On

Combination 2D Postal Codes

POSTAL8.

InfoMail and British Post On

POSTAL20.

Intelligent Mail Bar Code and Postnet with B and B' Fields On

POSTAL14.

Postnet and Postal-4i On

POSTAL16.

Postnet and Intelligent Mail Bar Code On

POSTAL17.

Postal-4i and Intelligent Mail Bar Code On

POSTAL19.

Postal-4i and Postnet with B and B' Fields On

POSTAL12.

Planet Code and Postnet On

POSTAL18.

Planet Code and Postnet with B and B' Fields On

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POSTAL15.

Planet Code and Intelligent Mail Bar Code On

POSTAL22.

Planet Code, Postnet, and Intelligent Mail Bar Code On

POSTAL24.

Postnet, Postal-4i, and Intelligent Mail Bar Code On

POSTAL26.

Planet Code, Intelligent Mail Bar Code, and Postnet with B and B' Fields On

POSTAL28.

Planet Code, Postal-4i, Intelligent Mail Bar Code, and Postnet On

POSTAL13.

Planet Code and Postal-4i On

POSTAL21.

Planet Code, Postnet, and Postal-4i On

POSTAL23.

Planet Code, Postal-4i, and Intelligent Mail Bar Code On

POSTAL25.

Planet Code, Postal-4i, and Postnet with B and B' Fields On

POSTAL27.

Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On

POSTAL29.

Planet Code, Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On

Planet Code Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of Planet Code data. Default = Don't Transmit.

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PLNCKX1.

Transmit Check Digit

PLNCKX0.

*** Don't Transmit Check Digit**

Postnet Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of Postnet data. Default = Don't Transmit.

NETCKX1.

Transmit Check Digit

NETCKX0.

*** Don't Transmit Check Digit**

2D Symbologies

QR Code

Default

QRCDFT.

QR Code Enabled

This selection applies to both QR Code and Micro QR Code.

QRCENA1.

* On

QRCENA0.

Off

QR Code Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-3500. Minimum Default = 1, Maximum Default = 3500.

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QRCMIN.

Minimum Message Length

QRCMAX.

Maximum Message Length

Data Matrix

Default

IDMDFT.

Data Matrix Enabled

IDMENA1.

* On

IDMENA0.

Off

Data Matrix Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-3116. Minimum Default = 1, Maximum Default = 3116.

IDMMIN.

Minimum Message Length

IDMMAX.

Maximum Message Length

MaxiCode

Default

MAXDFT.

MaxiCode Enabled

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* On

Off

MaxiCode Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-150. Minimum Default = 1, Maximum Default = 150.

Minimum Message Length

Maximum Message Length

Aztec Code

Default

Aztec Code Enabled

* On

Off

Aztec Code Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-3832. Minimum Default = 1, Maximum Default = 3832.

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AZTMIN.

Minimum Message Length

AZTMAX.

Maximum Message Length

Chinese Sensible (Han Xin) Code

< Default All Han Xin Settings >

HX_DFT.

Han Xin Code On/Off

HX_ENA1.

On

HX_ENA0.

*** Off**

Han Xin Code Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-7833. Minimum Default = 1, Maximum
Default = 7833.

HX_MIN.

Minimum Message Length

HX_MAX.

Maximum Message Length

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Chapter 8 - Imaging Commands

The scanner is like a digital camera in the way it captures, manipulates, and transfers images. The following commands allow you to alter the way the scanner performs these functions.
Note: If you are using the scanner in a stand, you must set the In-Stand Sensor Mode to Off in order to take images (see In-Stand Sensor Mode).

Single-Use Basic

Imaging Commands with their modifiers send instructions to the scanner on a single-use basis, and take effect for a single image capture. Once that capture is complete, the scanner reverts to its imaging default settings. If you want to permanently change a setting, you must use the serial default commands (see Chapter 11). When the serial default command is used, that selection becomes the new, permanent setting for the scanner.

Command Syntax

Multiple modifiers and commands can be issued within one sequence. If additional modifiers are to be applied to the same command, just add the modifiers to that command. For example, to add 2 modifiers to the Image Snap command, such as setting the Imaging Style to 1P and the Wait for Trigger to 1T, you would enter **IMGSNP1P1T.**

Note: After processing an image capture command (IMGSNP or IMGBOX), you must follow it with an IMGSHP command if you want to see it on your terminal.

To add a command to a sequence, each new command is separated with a semicolon. For example, to add the Image Ship command to the above sequence, you would enter **IMGSNP1P1T;IMGSHP.**

The imaging commands are:

Image Snap - IMGSNP
Image Ship - IMGSHP
Intelligent Signature Capture - IMGBOX

The modifiers for each of these commands follow the command description.

Note: The images included with each command description are examples only. The results you achieve may be different from those included in this manual. The quality of the output you receive will vary depending on lighting, quality of the initial image/object being captured, and distance of the scanner from the image/object. To achieve a high quality image, it is recommended that you position your scanner 4-6" (10.2-15.2 cm) away from the image/object you are capturing.

Image Snap - IMGSNP

An image is taken whenever a trigger command is sent, or when the Image Snap (IMGSNP) command is processed. Image Snap is the command processor for image capture, or taking a picture.
The image snap command has many different modifiers that can be used to change the look of the image in memory. Modifiers always begin with numbers and end with a letter (case insensitive). Any number of modifiers may be appended to the IMGSNP command. For

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example, you can use the following command to snap an image, increase the gain, and have the beeper sound once the snap is complete:

IMGSNP2G1B

IMGSNP Modifiers

P - Imaging Style: Sets the Image Snap style.

- 0P **Decoding Style**. This is similar to the current format for decoding, however, this processing allows a few frames to be taken until the exposure parameters are met. Then the last frame is available for further use.
- 1P **Photo Style (default)**. This attempts to mimic a simple digital camera, and results in a visually optimized image.
- 2P **Manual Style**. This is an advanced style, and should not normally be used. It allows you the most freedom to set up the imager, and has no auto-exposure.

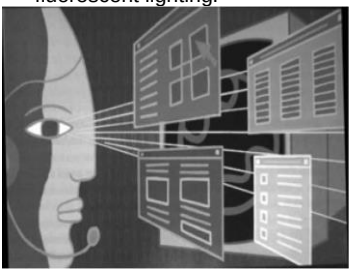
B - Beeper: Causes a beep to sound after an image is snapped.

- 0B No beep (default)
- 1B Sounds a beep when the image is captured, notifying the user that the imager can be moved.

E - Exposure: This allows you to set the exposure time. Units are 127 microseconds. For example, an exposure setting of 50 x .000127ms = 6.35ms exposure time. Exposure is used in Manual Style only. (Default = 7874)

- nE Range: 0 - 7874

Example of Exposure at 7874E with fluorescent lighting:



Example of Exposure at 100E with fluorescent lighting:

G - Gain: This modifier boosts the signal and multiplies the pixel value. The range is 1-8.

- 1G No gain (default)
- 2G Medium gain
- 4G Heavy gain
- 8G Maximum gain

Example of Gain at 1G:

Example of Gain at 4G:

Example of Gain at 8G:

D - Delta for Acceptance: This sets the allowable range for the white value setting (see W -

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Target White Value). Delta is only available when using Photo Style. (Default = 25

- nD Range: 0 - 255

L - LED State: Determines if the LEDs should be on or off, and when. Ambient illumination (0L) is preferred for taking pictures of color documents, such as ID cards, especially when the imager is in a stand. LED illumination (1L) is preferred when the imager is handheld. LED State is not available when using Decoding Style.

- 0L LEDs off (default)
- 1L LEDs on

T - Wait for Trigger: Waits for a hardware trigger pull before taking the image.

- 0T Takes image immediately (default)
- 1T Waits for a trigger pull, then takes the image

U - Update Tries: The maximum number of frames the imager should take to reach the Delta for Acceptance. Update Tries is only available when using Photo Style. (Default = 6)

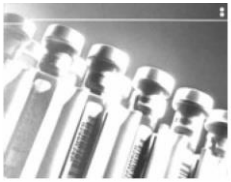
- nU Range: 0 – 10

W - Target White Value: Sets the target for the median grayscale value in the captured image. For capturing close-up images of high contrast documents, a lower setting, such as 75, is recommended. Higher settings result in longer exposure times and brighter images, but if the setting is too high, the image may be overexposed. Target White Value is only available when using Photo Style. (Default = 125)

- nW Range: 0 - 255

Example of White Value at 75W:

Example of White Value at 125W:

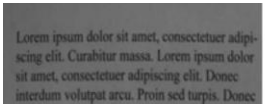


Example of White Value at 200W:

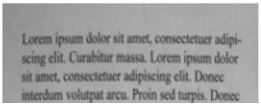
% - Target Set Point Percentage: Sets the target point for the light and dark values in the captured image. 1 indicates that more pixels at the light end of a range should be used, and 99 indicates that more pixels at the dark end should be used. We do not recommend altering this setting from the default. To alter grayscale values, Target White Value should be used. (Default = 50)

- n% Range: 1 - 99

Example of Target Set Point Percentage at 97%:



Example of Target Set Point Percentage at 50%:



Example of Target Set Point Percentage at 40%:

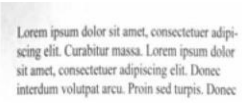


Image Ship - IMGSHP

An image is taken whenever the Image Snap (IMGSNP) command is processed. The last image is always stored in memory. You may "ship" the image by using the IMGSHP command.

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The image ship command has many different modifiers that can be used to change the look of the image output by the scanner. Modifiers affect the image that is transmitted, but do not affect the image in memory. Modifiers always begin with numbers and end with a letter (case insensitive). Any number of modifiers may be appended to the IMGSHP command. For example, you can use the following command to ship a bitmap image with gamma correction and document image filtering:

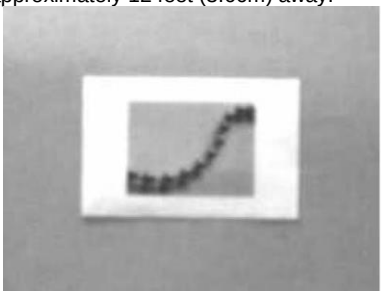
IMGSNP;IMGSHP8F75K26U

IMGSHP Modifiers

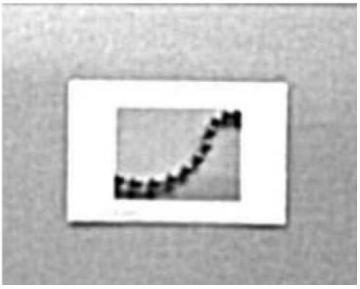
A - Infinity Filter: Enhances pictures taken from very long distances (greater than 10 feet or 3 m).

- 0A Infinity filter off (default)
- 1A Infinity filter on

Example of Infinity Filter off (0A) from approximately 12 feet (3.66m) away:



Example of Infinity Filter on (1A) from approximately 12 feet (3.66m) away:



C - Compensation: Flattens the image to account for variations in illumination across the image.

- 0C Compensation disabled (default)
- 1C Compensation enabled

Example of Compensation at 0C

Example of Compensation at 1C:

D - Pixel Depth: Indicates the number of bits per pixel in the transmitted image (KIM or BMP format only).

- 8D 8 bits per pixel, grayscale image (default)
- 1D 1 bit per pixel, black and white image

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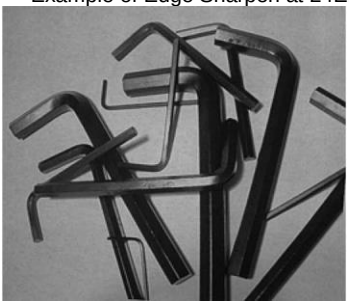
E - Edge Sharpen: Causes the transmitted image to be convolved with edge sharpening filter. Entering a 23E gives the sharpest edges, but increases noise in the image.

- 0E Don't sharpen image (default)
- 14E Apply edge sharpen for typical image
- ne Apply edge sharpen using strength n (n = 1-24)

Example of Edge Sharpen at 0E:

Example of Edge Sharpen at 24E:



F - File Format: Indicates the desired format for the image.

- 0F KIM format
- 1F TIFF binary
- 2F TIFF binary group 4, compressed
- 3F TIFF grayscale
- 4F Uncompressed binary (upper left to lower right, 1 pixel/bit, 0 padded end of line)
- 5F Uncompressed grayscale (upper left to lower right, bitmap format)
- 6F JPEG image (default)
- 8F BMP format (lower right to upper left, uncompressed)

H - Histogram Stretch: Increases the contrast of the transmitted image. Not available with some image formats.

- 0H No stretch (default)
- 1H Histogram stretch
-

Example of Histogram Stretch at 0H:

Example of Histogram Stretch at 1H:

I - Invert Image: Used to rotate the image around the X or Y axis in fixed mount applications where the imager is mounted upside down.

- 1IX Invert around the X axis (flips picture upside down)
- 1IY Invert around the Y axis (flips picture left to right)

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Example of image with not inverted

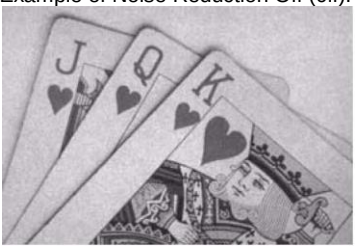
Invert Image set to 1ix:

Invert Image set to 1iy:

IF - Fly Spec (Noise Reduction): Used to reduce salt and pepper noise in the image.

- 0IF No fly spec noise reduction
- 1IF Apply fly spec noise reduction

Example of Noise Reduction Off (0if):



Example of Noise Reduction On (1if):

IR - Image Rotate:

- 0IR Image as snapped (rightside uo) (default)
- 1IR Rotate image 90 degrees to the right
- 2IR Rotate image 180 degrees (upside down)
- 3IR Rotate image 90 degrees to the left

Example of Image Rotate set to 0ir:

Rotate set to 2ir:

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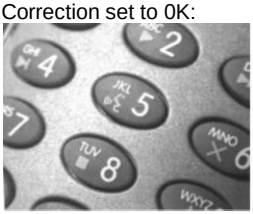
J - JPEG Image Quality: Sets the desired quality when the JPEG image format is selected. Higher numbers result in higher quality. Smaller numbers result in greater amounts of lossy compression, faster transmission times, and lower quality. (Default = 50)

- nJ Image is compressed as much as possible while preserving quality factor of n (n = 0 - 100)
- 0J worst quality
- 100J best quality

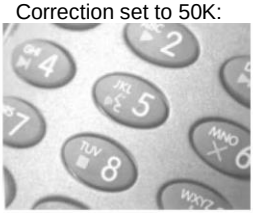
K - Gamma Correction: Gamma measures the brightness of midtone values produced by the image. You can brighten or darken an image using gamma correction. A higher gamma correction yields an overall brighter image. The lower the setting, the darker the image. A setting of 100 results in no adjustment to the image. The optimal setting is 50K. (This selection should only be used for text images.)

- 0K Gamma correction off (default
- 60K Apply gamma correction for brightening typical document image
- nK Apply gamma correction factor n (n = 1-255)

Correction set to 0K:



Correction set to 50K:



Correction set to 255K:

L, R, T, B, M - Image Cropping: Ship a window of the image by specifying the left, right, top, and bottom pixel coordinates. Device columns are numbered 0 through 640 or 752, depending on the Image VGA setting (see Image VGA. Device rows are numbered 0 through 480.

- nL The left edge of the shipped image corresponds to column n of the image in memory. Range: 000 - 640 when Image VGA is On, 000 -752 when Image VGA is Off. (Default = 0)
- nR The right edge of the shipped image corresponds to column n - 1 of the image in memory. Range: 000 - 640 when Image VGA is On, 000 - 752 when Image VGA is Off. (Default = all columns)
- nT The top edge of the shipped image corresponds to row n of the image in memory. Range: 000 - 480. (Default = 0)
- nB The bottom edge of the shipped image corresponds to row n - 1 of the image in memory. Range: 000 - 480. (Default = all rows)

Uncropped Image:

Example of Image

Crop set to 300R: Crop set to 300L:

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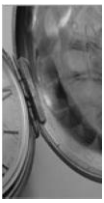

Example of Image

Crop set to 200B:

Crop set to 200T

Alternately, specify the number of pixels to cut from the outside margin of the image; thus only the center pixels are transmitted.

- nM Margin: cut n columns from the left, n + 1 columns from the right, n rows from the top, and n + 1 rows from the bottom of the image. Ship the remaining center pixels. Range: 1 - 238. (Default = 0, or full image)

Example of Image

Crop set to 238M:

P - Protocol: Used for shipping an image. Protocol covers two features of the image data being sent to the host. It addresses the protocol used to send the data (Hmodem, which is an xmodem 1K variant that has additional header information), and the format of the image data that is sent.

- 0P None (raw data)
- 2P None (default for USB)
- 3P Hmodem compressed (default for RS-232)
- 4P Hmodem

S - Pixel Ship: Can be used to decimate the image by shipping only certain, regularly spaced pixels. For example, **4S** would transmit every fourth pixel from every fourth line. The smaller number of pixels shipped, the smaller the image. However, after a certain point, the image becomes unusable.

- 1S ship every pixel (default)
- 2S ship every 2nd pixel, both horizontally and vertically (default)
- 3S ship every 3rd pixel, both horizontally and vertically

Example of Pixel Ship

set to 1S: set to 2S: set to 3S:

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U - Document Image Filter: Sharpens the edges and smoothes the area between the edges of the transmitted text image. The Document Image Filter enhances images of documents such as ID cards and prescriptions. This filter should be used with gamma correction, with the imager in a stand, and the image captured using the command:

IMGSNP1P0L168W90%32D

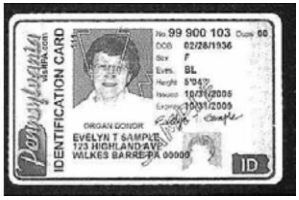
This filter typically provides better JPEG compression than the standard E - Edge Sharpen command. This filter also works well when shipping pure black and white images (1 bit per pixel). The optimal setting is 26U.

- 0U Document image filter off (default)
- 26U Apply document image filter for typical document image
- nU Apply document image filter using grayscale threshold n. Use lower numbers when the image contrast is lower. 1U will have a similar effect to 22e. Range: 0-255.

Example of Document Image

Filter set to 0U:

Filter set to 26U:



V - Blur Image: Smoothes transitions by averaging the pixels next to the hard edges of defined lines and shaded areas in an image.

- 0V Don't blur (default)
- 1V Blur

Example of Blur Image Off (0V):

Blur Image On (1V):

W - Histogram Ship: A histogram gives a quick picture of the tonal range of an image, or key

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type. A low-key image has detail concentrated in the shadows; a high-key image has detail concentrated in the highlights; and an average-key image has detail concentrated in the midtones. This modifier ships the histogram for an image.

- 0W Don't ship histogram (default)
- 1W Ship histogram

Image used for histogram:

Histogram of image at left:

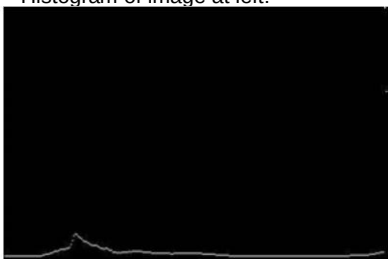

Image Size Compatibility

If you have applications that expect an image ship to return exactly 640x480 pixels, scan the Force VGA Resolution bar code.
Default = Native Resolution

IMGVGA0.
Off

IMGVGA1.
* On

Intelligent Signature Capture - IMGBOX

IMGBOX allows you to configure the size and location of a signature capture area relative to its proximity to a bar code. This allows you to tailor a signature capture area to a specific form. In order to use IMGBOX, you need a set form where the signature box location is in a known location relative to a bar code. You can input the overall size of the signature area, as well as specify how far the signature area is from the bar code, vertically and horizontally. You can also set the resolution and file format for the final output of the signature capture image.

Note: IMGBOX commands can only be triggered by one of the following types of bar codes: PDF417, Code 39, Code 128, Aztec, Codabar, and Interleaved 2 of 5. Once one of these symbologies has been read, the image is retained for a possible IMGBOX command.

Signature Capture Optimize

If you will be using your scanner to capture signatures frequently, youshould optimize it for this purpose. However, the speed of scanning barcodes may be slowed when this mode is enabled.

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Default = Off.

DECBND1.

Optimize On

DECBND0.

*** Optimize Off**

The following IMGBOX example was executed and viewed using QuickView software. This software is available at www.honeywellaidc.com. Click on **Software Downloads**. Select **4600r** from the Products list, then select **QuickView Software Utility**.
Below is an example of a signature capture application. In this example, the aimer is centered over the signature capture area and the trigger is pressed. A single beep is emitted, indicating that the scanner has read a Code 128 bar code and the data has been transferred to the host. An IMGBOX command may now be sent from the host to specify the coordinates of the signature capture area below that code, and indicating that only that area containing the signature should be transferred as an image to the host.
To see this example, align the aimer with the signature area (not with the bar code), then press the trigger.

The following image is captured:

The IMGBOX commands have many different modifiers that can be used to change the size and appearance of the signature image output by the scanner. Modifiers affect the image that is transmitted, but do not affect the image in memory. Modifiers always begin with a number and end with a letter (case insensitive). Any number of modifiers may be appended to the IMGBOX command.
Note: The IMGBOX command will return a NAK unless a window size (width and height) are specified. See H - Height of Signature Capture Area and W - Width of Signature Capture Area.

IMGBOX40S0X70Y190W100H1R0F

IMGBOX Modifiers

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D - Pixel Depth: Indicates the number of bits per pixel in the transmitted image.

- 8D 8 bits per pixel, grayscale image
- 1D 1 bit per pixel, black and white image

F - File Format: Indicates the type of file format in which to save the image.

- 0F KIM format
- 1F TIFF binary
- 2F TIFF binary group 4, compressed
- 3F TIFF grayscale
- 4F Uncompressed Binary
- 5F Uncompressed grayscale
- 6F JPEG image (default)
- 7F Outlined image
- 8F BMP format

H - Height of Signature Capture Area: In the example, the height of the area to be captured is 1 inch, resulting in a value of H = 1/0.01 = 100. The value for H is slightly larger, to accommodate some extra image capture area outside of the signature capture box.

K - Gamma Correction: Gamma measures the brightness of midtone values produced by the image. You can brighten or darken an image using gamma correction. A higher gamma correction yields an overall brighter image. The lower the setting, the darker the image. A setting of 100 results in no adjustment to the image. (Default = 50K)

- 0K Gamma correction off
- 50K Apply gamma correction for brightening typical document image
- nK Apply gamma correction factor n (n = 1-255)

R - Resolution of Signature Capture Area: The number of pixels that the imager outputs per each minimum bar width. The higher the value for R, the higher the quality of the image, but also the larger the file size.

S - Bar Code Aspect Ratio: The ratio of the bar code height to the narrow element width. In the example, the narrow element width is .010 inches and the bar code height is 0.400 inches, resulting in a value of S = 0.4/0.01 = 40.

W - Width of Signature Capture Area: In the example, the width of the area to be captured is 1.90 inches, resulting in a value of W = 1.9/0.01 = 190. The value for W is slightly larger, to accommodate some extra image capture area outside of the signature capture box.

X - Horizontal Bar Code Offset: The horizontal ratio offset of the center of the signature capture area, in multiples of the minimum bar width. In the example, the horizontal offset is 0.

Y - Vertical Bar Code Offset: The vertical offset of the center of the signature capture area, in multiples of the minimum bar width. Negative numbers indicate that the signature capture is above the bar code, and positive numbers indicate that the area is below the bar code. In the example, the horizontal offset is 0.70 inches, resulting in a value for Y = 0.7/0.01 = 70.

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Chapter 9 - Interface Keys

Keyboard Function Relationships

The following Keyboard Function Code, Hex/ASCII Value, and Full ASCII "CTRL"+ relationships apply to all terminals that can be used with the imager. Refer to enable Control + ASCII mode.

Function Code	HEX/ASCII Value	Full ASCII "CTRL" +
NUL	00	@
SOH	01	A
STX	02	B
ETX	03	C
EOT	04	D
ENQ	05	E
ACK	06	F
BEL	07	G
BS	08	H
HT	09	I
LF	0A	J
VT	0B	K
FF	0C	L
CR	0D	M
SO	0E	N
SI	0F	O
DLE	10	P
DC1	11	Q
DC2	12	R
DC3	13	S
DC4	14	T
NAK	15	U
SYN	16	V
ETB	17	W
CAN	18	X
EM	19	Y
SUB	1A	Z
ESC	1B	[
FS	1C	\
GS	1D	]
RS	1E	^
US	1F	_

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The last five characters in the Full ASCII "CTRL"+ column ([\ ] 6 -), apply to US only. The following chart indicates the equivalents of these five characters for different countries.

United States	[	\	]	6	-
Belgium	[	<	]	6	-
Scandinavia	8	<	9	6	-
France	^	8	$	6	=
Germany		Ã	+	6	-
Italy		\	+	6	-
Switzerland		<	. .	6	-
United Kingdom	[	¢	]	6	-
Denmark	8	\	9	6	-
Norway	8	\	9	6	-
Spain	[	\	]	6	-

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ASCII	HEX	IBM AT/XT and PS/2 Compatibles, WYSE PC/AT Supported Keys	IBM XTs and Compatibles Supported Keys	IBM, DDC, Memorex Telex, Harris* Supported Keys
NUL	00	Reserved	Reserved	Reserved
SOH	01	Enter (KP)	CR/Enter	Enter
STX	02	Cap Lock	Caps Lock	F11
ETX	03	ALT make	Reserved	F12
EOT	04	ALT break	Reserved	F13
ENQ	05	CTRL make	Reserved	F14
ACK	06	CTRL break	Reserved	F15
BEL	07	CR/Enter	CR/Enter	New Line
BS	08	Reserved	Reserved	F16
HT	09	Tab	Tab	F17
LF	0A	Reserved	Reserved	F18
VT	0B	Tab	Tab	Tab/Field Forward
FF	0C	Delete	Delete	Delete
CR	0D	CR/Enter	CR/Enter	Field Exit/New Line
SO	0E	Insert	Insert	Insert
SI	0F	Escape	Escape	F19
DLE	10	F11	Reserved	Error Reset
DC1	11	Home	Home	Home
DC2	12	Print	Print	F20
DC3	13	Back Space	Back Space	Back Space
DC4	14	Back Tab	Back Tab	Backfield/Back Tab
NAK	15	F12	Reserved	F21
SYN	16	F1	F1	F1
ETB	17	F2	F2	F2
CAN	18	F3	F3	F3
EM	19	F4	F4	F4
SUB	1A	F5	F5	F5
ESC	1B	F6	F6	F6
FS	1C	F7	F7	F7
GS	1D	F8	F8	F8
RS	1E	F9	F9	F9

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US	1F	F10	F10	F10

Supported Interface Keys (Memorex Telex)

ASCII	HEX	IBM, Memorex Telex (102)* Supported Keys	Memorex Telex (88)** Supported Keys
NUL	00	Reserved	Reserved
SOH	01	Enter	Enter
STX	02	F11	PF10
ETX	03	F12	PF11
EOT	04	F13	PF12
ENQ	05	F14	Reserved
ACK	06	F15	Reserved
BEL	07	New Line	New Line
BS	08	F16	Field Forward
HT	09	F17	Field Forward
LF	0A	F18	Reserved
VT	0B	Tab/Field Forward	Field Forward
FF	0C	Delete	Delete
CR	0D	Field Exit	New Line
SO	0E	Insert	Insert
SI	0F	Clear	Erase
DLE	10	Error Reset	Error Reset
DC1	11	Home	Reserved
DC2	12	Print	Print
DC3	13	Back Space	Back Space
DC4	14	Back Tab	Back Field
NAK	15	F19	Reserved
SYN	16	F1	PF1
ETB	17	F2	PF2
CAN	18	F3	PF3
EM	19	F4	PF4
SUB	1A	F5	PF5
ESC	1B	F6	PF6
FS	1C	F7	PF7
GS	1D	F8	PF8
RS	1E	F9	PF9
US	1F	F10	Home

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* IBM 3196/97, 3476/77, 3191/92, 3471/72, Memorex Telex (all models) with 102 key keyboards
** Memorex Telex with 88 key keyboards

Supported Interface Keys (Esprit)

ASCII	HEX	Esprit 200, 400 ANSI Supported Keys	Esprit 200, 400 ASCII Supported Keys	Esprit 200, 400 PC Supported Keys
NUL	00	Reserved	Reserved	Reserved
SOH	01	New Line	New Line	New Line
STX	02	N/A	N/A	N/A
ETX	03	N/A	N/A	N/A
EOT	04	N/A	N/A	N/A
ENQ	05	N/A	N/A	N/A
ACK	06	N/A	N/A	N/A
BEL	07	New Line	New Line	New Line
BS	08	N/A	N/A	N/A
HT	09	Tab	Tab	Tab
LF	0A	N/A	N/A	N/A
VT	0B	Tab	Tab	Tab
FF	0C	N/A	N/A	Delete
CR	0D	New Line	New Line	New Line
SO	0E	N/A	N/A	Insert
SI	0F	Escape	Escape	Escape
DLE	10	F11	F11	F11
DC1	11	Insert	Insert	Home
DC2	12	F13	F13	Print
DC3	13	Back Space	Back Space	Back Space
DC4	14	Back Tab	Back Tab	Back Tab
NAK	15	F12	F12	F12
SYN	16	F1	F1	F1
ETB	17	F2	F2	F2
CAN	18	F3	F3	F3
EM	19	F4	F4	F4
SUB	1A	F5	F5	F5
ESC	1B	F6	F6	F6
FS	1C	F7	F7	F7
GS	1D	F8	F8	F8

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RS	1E	F9	F9	F9
US	1F	F10	F10	F10

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Supported Interface Keys (Apple)

ASCII	HEX	Apple Mac/iMac Supported Keys
NUL	00	Reserved
SOH	01	Enter/Numpad Enter
STX	02	CAPS
ETX	03	ALT make
EOT	04	ALT break
ENQ	05	CNTRL make
ACK	06	CNTRL break
BEL	07	RETURN
BS	08	APPLE make
HT	09	TAB
LF	0A	APPLE break
VT	0B	TAB
FF	0C	Del
CR	0D	RETURN
SO	0E	Ins Help
SI	0F	ESC
DLE	10	F11
DC1	11	Home
DC2	12	Prnt Scrn
DC3	13	BACKSPACE
DC4	14	LSHIFT TAB
NAK	15	F12
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	F6
FS	1C	F7
GS	1D	F8
RS	1E	F9
US	1F	F10
DEL	7F	BACKSPACE

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Chapter 10 – Utilities

To Add a Test Code I.D. Prefix to All Symbologies

This selection allows you to turn on transmission of a Code I.D. before the decoded symbology. (See the Symbology Chart, included in the Appendix A) for the single character code that identifies each symbology.) This action first clears all current prefixes, then programs a Code I.D. prefix for all symbologies. This is a temporary setting that will be removed when the unit is power cycled.

Add Code I.D. Prefix to All Symbologies (Temporary)

PRECA2,BK2995C80!

Show Decoder Revision

Scan the bar code below to output the decoder revision.

REV_DR.

Show Decoder Revision

Show Scan Driver Revision

Scan the bar code below to output the scan driver revision. The scan driver controls image capture.

REV_SD.

Show Scan Driver Revision

Show Software Revision

Scan the bar code below to output the current software revision, unit serial number, and other product information.

Show Revision

REVINF.

Show Data Format

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Scan the bar code below to show current data format settings.

Data Format Settings

DFMBK3?.

Resetting the Standard Product Default

If you aren't sure what programming options are in your imager, or you've changed some options and want the standard product default settings restored, scan the **Standard Product Default Settings** bar code below.

DEFALT.

The Menu Commands starting lists the standard product default settings for each of the commands (indicated by an asterisk (*) on the programming pages).

Test Menu

When you scan the Test Menu **On** code, then scan a programming code in this manual, the imager displays the content of a programming code. The programming function will still occur, but in addition, the content of that programming code is output to the terminal.
Note: This feature should not be used during normal imager operation.

TSTMNU1.

On

TSTMNU0.

* Off

TotalFreedom

TotalFreedom is an open system architecture that makes it possible for you create applications that reside on your scanner. Three types of appls can be created using TotalFreedom: Image Processing, Decoding, and Data Formatting.

For further information about TotalFreedom, go to our website at www.honeywellaidc.com.

Application Plug-Ins (Apps)

Any apps that you are using can be turned off or on by scanning the following bar codes. Apps are stored in groups: Imaging, Decoding, and Formatting. You can enable and disable these groups of apps by scanning that group's **On** or **Off** bar code below. You can also scan the **List**

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Apps bar code to output a list of all your apps.

PLGIPE1.
*** Imaging Apps On**

PLGIPE0.
Imaging Apps Off

PLGDCE1.
*** Decoding Apps On**

PLGDCE0.
Decoding Apps Off

PLGFOE1.
*** Formatting Apps On**

PLGFOE0.
Formatting Apps Off

PLGINF.
List Apps

Note: You must reset your device in order for the apps setting to take effect.

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Chapter 11 - Serial Programming Commands

The serial programming commands can be used in place of the programming bar codes. Both the serial commands and the programming bar codes will program the Colibri Engine. For complete descriptions and examples of each serial programming command, refer to the corresponding programming bar code in this manual.
The device must be set to an RS-232 interface. The following commands can be sent via a PC COM port using terminal emulation software.

Conventions

The following conventions are used for menu and query command descriptions: parameter
A label representing the actual value you should send as part of a command.

- [option] An optional part of a command.
- {Data} Alternatives in a command.
- **Bold** Names of menus, menu commands, buttons, dialog boxes, and windows that appear on the screen.

Menu Command Syntax

Menu commands have the following syntax (spaces have been used for clarity only):
Prefix Tag SubTag {Data} [, SubTag {Data}] [; Tag SubTag {Data}] […] Storage

Prefix	Three ASCII characters: **SYN M CR** (ASCII 22,77,13).
Tag	A 3 character case-insensitive field that identifies the desired menu command group. For example, all RS-232 configuration settings are identified with a Tag of **232**.
SubTag	A 3 character case-insensitive field that identifies the desired menu command within the tag group. For example, the SubTag for the RS-232 baud rate is **BAD**.
Data	The new value for a menu setting, identified by the Tag and Sub-Tag.
Storage	A single character that specifies the storage table to which the command is applied. An exclamation point (**!**) performs the command's operation on the device's volatile menu configuration table. A period (**.**) performs the command's operation on the device's non-volatile menu configuration table. Use the non-volatile table only for semi-permanent changes you want saved through a power cycle.

Query Commands

Several special characters can be used to query the device about its settings.

- **^** What is the default value for the setting(s).
- **?** What is the device's current value for the setting(s).
- ***** What is the range of possible values for the setting(s). (The device's response

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uses a dash (**-**) to indicate a continuous range of values. A pipe (**|**) separates items in a list of non-continuous values.)

Tag Field Usage
When a query is used in place of a Tag field, the query applies to the entire set of commands available for the particular storage table indicated by the Storage field of the command. In this case, the SubTag and Data fields should not be used because they are ignored by the device.

SubTag Field Usage
When a query is used in place of a SubTag field, the query applies only to the subset of commands available that match the Tag field. In this case, the Data field should not be used because it is ignored by the device.

Data Field Usage
When a query is used in place of the Data field, the query applies only to the specific command identified by the Tag and SubTag fields.

Concatenation of Multiple Commands

Multiple commands can be issued within one Prefix/Storage sequence. Only the Tag, SubTag, and Data fields must be repeated for each command in the sequence. If additional commands are to be applied to the same Tag, then the new command sequence is separated with a comma (**,**) and only the SubTag and Data fields of the additional command are issued. If the additional command requires a different Tag field, the command is separated from previous commands by a semicolon (**;**).

Responses

The device responds to serial commands with one of three responses:

ACK	Indicates a good command which has been processed.
ENQ	Indicates an invalid Tag or SubTag command.
NAK	Indicates the command was good, but the Data field entry was out of the allowable range for this Tag and SubTag combination, e.g., an entry for a minimum message length of 100 when the field will only accept 2 characters. When responding, the device echoes back the command sequence with the status character inserted directly before each of the punctuation marks (the period, exclamation point, comma, or semicolon) in the command.

Examples of Query Commands

In the following examples, a bracketed notation [ ] depicts a non-displayable response.

Example: Example #1:What is the range of possible values for Codabar Coding Enable?

- **Enter : cbrena*.**
- **Response : CBRENA0-1[ACK]**

This response indicates that Codabar Coding Enable (CBRENA) has a range of values from 0 to 1 (off and on).

Example: Example #2: What is the default value for Codabar Coding Enable?

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- **Enter : cbrena^.**
- **Response : CBRENA1[ACK]**

This response indicates that the default setting for Codabar Coding Enable (CBRENA) is 1, or on.

Example: Example #3: What is the device's current setting for Codabar Coding Enable?

- **Enter : cbrena?.**
- **Response : CBRENA1[ACK]**

This response indicates that the device's Codabar Coding Enable (CBRENA) is set to 1, or on.

Example: Example #4: What are the device's settings for all Codabar selections?

- **Enter : cbr?.**
- **Response : CBRENA1[ACK], SSX0[ACK], CK20[ACK], CCT1[ACK], MIN2[ACK], MAX60[ACK], DFT[ACK].**

This response indicates that the device's Codabar Coding Enable (CBRENA) is set to 1, or on; the Start/Stop Character (SSX) is set to 0, or Don't Transmit; the Check Character (CK2) is set to 0, or Not Required; concatenation (CCT) is set to 1, or Enabled; the Minimum Message Length (MIN) is set to 2 characters; the Maximum Message Length (MAX) is set to 60 characters; and the Default setting (DFT) has no value.

Trigger Commands

You can activate and deactivate the imager with serial trigger commands. First, the imager must be put in Manual/Serial Trigger Mode either by scanning the Manual/Serial Trigger Mode bar code, or by sending the Manual/Serial Menu Command. Once the imager is in serial trigger mode, the trigger is activated and deactivated by sending the following commands:

Activate: **SYN T CR**
ASCII : CHR$(22) + CHR$(84) + CHR$(13)
HEX : 16 – 54 - 0D

Deactivate: **SYN U CR**
ASCII : CHR$(22) + CHR$(85) + CHR$(13)
HEX : 16 – 55 - 0D

The imager scans until a bar code has been read, until the deactivate command is sent, or until the serial time-out has been reached (see "Read Time-Out" for a description, and the serial command).

Resetting the Custom Defaults

If you aren't sure what programming options are in your imager, or you've changed some options and want the factory settings restored, scan the **Standard Product Default Settings** bar code below.

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The chart on the following pages lists the factory default settings for each of the menu commands (indicated by an asterisk (*) on the programming pages).

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Menu Commands

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Product Default Settings			
Settings Custom Defaults	Set Custom Defaults	MNUCDF	19
	Save Custom Defaults	MNUCDS	19
Resetting the Custom Defaults	Activate Custom Defaults	DEFALT	20
Resetting the Factory Defaults	Remove Custom Defaults		20
	Activate Defaults	DEFALT	20
Terminal Interfaces			
Terminal ID		TERMID###	33
Program Keyboard	*U.S.A.	KBDCTY0	23
	USA (Dvorak)	KBDCTY87	23
	USA (Dvorak left)	KBDCTY88	23
	USA (Dvorak right)	KBDCTY89	23
	USA (International)	KBDCTY30	23
	Albania	KBDCTY35	23
	Azeri (Latin)	KBDCTY80	23
	Azeri (Cyrillic)	KBDCTY81	23
	Belarus	KBDCTY82	23
	Belgium	KBDCTY1	23
	Bosnia	KBDCTY33	23
	Brazil	KBDCTY16	23
	Brazil (MS)	KBDCTY59	24
	Bulgaria (Cyrillic)	KBDCTY52	24
	Bulgaria (Latin)	KBDCTY53	24
	Canada (French legacy)	KBDCTY54	24
	Canada (French)	KBDCTY18	24
	Canada (Multilingual)	KBDCTY55	24
	Croatia	KBDCTY32	24
	Czech	KBDCTY15	24
	Czech (Programmer)	KBDCTY40	24
	Czech (QWERTY)	KBDCTY39	24

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Program Keyboard	Czech (QWERTZ)	KBDCTY38	24
	Denmark	KBDCTY8	24
	Dutch (Netherlands)	KBDCTY11	24
	Estonia	KBDCTY41	25
	Faeroese	KBDCTY83	25
	Finland (Sweden)	KBDCTY2	25
	France	KBDCTY3	25
	Gaelic	KBDCTY84	25
	Germany/Austria	KBDCTY4	25
	Greek	KBDCTY17	25
	Greek (320 Latin)	KBDCTY64	25
	Greek (320)	KBDCTY61	25
	Greek (319 Latin)	KBDCTY65	25
	Greek (319)	KBDCTY62	25
	Greek (Latin)	KBDCTY63	25
	Greek (MS)	KBDCTY66	25
	Greek (Polytonic)	KBDCTY60	26
	Hebrew	KBDCTY12	26
	Hungarian (101 key)	KBDCTY50	26
	Hungary	KBDCTY19	26
	Iceland	KBDCTY75	26
	Irish	KBDCTY73	26
	Italian (142)	KBDCTY56	26
	Italy	KBDCTY5	26
	Japan (ASCII)	KBDCTY28	26
	Kazakh	KBDCTY78	26
	Kyrgyz (Cyrillic)	KBDCTY79	26
	Latin America	KBDCTY14	26
	Latavia	KBDCTY42	26
	Latavia (QWERTY)	KBDCTY43	27
	Lithuania	KBDCTY44	27
	Lithuania (IBM)	KBDCTY45	27
	Macedonia	KBDCTY34	27

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Program Keyboard	Malta	KBDCTY74	27
	Mongolian (Cyrillic)	KBDCTY86	27
	Norway	KBDCTY9	27
	Poland	KBDCTY20	27
	Polish (214)	KBDCTY57	27
	Polish (Programmer)	KBDCTY58	27
	Portugal	KBDCTY13	27
	Romania	KBDCTY25	27
	Russia	KBDCTY26	27
	Russian (MS)	KBDCTY67	28
	Russian (Typewriter)	KBDCTY68	28
	SCS	KBDCTY21	28
	Serbia (Cyrillic)	KBDCTY37	28
	Serbia (Latin)	KBDCTY36	28
	Slovakia	KBDCTY22	28
	Slovakia (QWERTY)	KBDCTY49	28
	Slovakia (QWERTZ)	KBDCTY48	28
	Slovania	KBDCTY31	28
	Spain	KBDCTY10	28
	Spanish variation	KBDCTY51	28
	Sweden	KBDCTY23	28
	Switzerland (French)	KBDCTY29	28
	Switzerland (German)	KBDCTY6	29
	Tatar	KBDCTY85	29
	Turkey F	KBDCTY27	29
	Turkey Q	KBDCTY24	29
	Ukrainian	KBDCTY76	29
	U.K.	KBDCTY7	29
	Uzbek (Cyrillic)	KBDCTY77	29
Keyboard Style	*Regular	KBDSTY0	30
	Caps Lock	KBDSTY1	30
	Shift Lock	KBDSTY2	30
	Automatic Caps Lock	KBDSTY6	30

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Keyboard Style	Automatic Caps via NumLock	KBDSTY7	30
	Emulate External Keyboard	KBDSTY5	30
Keyboard Conversion	Off	KBDCNV0	31
	All characters to upper case	KBDCNV1	31
	All characters to lower case	KBDCNV2	31
Control Character Output	Off	KBDNPE0	31
	On	KBDNPE1	31
Keyboard Modifiers	*Control + ASCII Off	KBDCAS0	32
	DOS Mode Control + ASCII	KBDCAS1	32
	Windows Mode Control + ASCII	KBDCAS2	32
	Windows Mode Prefix/Suffix Off	KBDCAS3	32
	*Turbo Mode Off	KBDTMD0	32
	Turbo Mode On	KBDTMD1	32
	*Numeric Keypad Off	KBDNPS0	32
	Numeric Keypad On	KBDNPS1	32
	*Auto Direct Conn. Off	KBDADC0	33
	Auto Direct Conn. On	KBDADC1	33
Baud Rate	300 BPS	232BAD0	33
	600 BPS	232BAD1	33
	1200 BPS	232BAD2	33
	2400 BPS	232BAD3	33
	4800 BPS	232BAD4	34
	9600 BPS	232BAD5	34
	19200 BPS	232BAD6	34
	38400 BPS	232BAD7	34
	57600 BPS	232BAD8	34
	*115200 BPS	232BAD9	34
Word Length: Data Bits, Stop Bits, and Parity	7 Data, 1 Stop, Parity Even	232WRD3	34
	7 Data, 1 Stop, Parity None	232WRD0	34
	7 Data, 1 Stop, Parity Odd	232WRD6	35
	7 Data, 2 Stop, Parity Even	232WRD4	34
	7 Data, 2 Stop, Parity None	232WRD1	34
	7 Data, 2 Stop, Parity Odd	232WRD7	35

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Word Length: Data Bits, Stop Bits, and Parity	8 Data, 1 Stop, Parity Even	232WRD5	34
	*8 Data, 1 Stop, Parity None	232WRD2	34
	8 Data, 1 Stop, Parity Odd	232WRD8	35
RS-232 Receiver Time-Out	Range 0 -300 seconds	232LPT###	35
RS-232 Handshaking	*RTS/CTS Off	232CTS0	36
	Flow Control, No timeout	232CTS1	36
	Two direction Flow Control	232CTS2	36
	Flow Control with timeout	232CTS3	36
	RS232 TimeOut	232DEL###	36
	*XON/XOFF Off	232XON0	36
	XON/XOFF On	232XON1	36
	*ACK/NAK Off	232ACK0	37
	ACK/NAK On	232ACK1	37

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Output Selections			
Power Up Beeper	Off	BEPPWR0	38
	*On	BEPPWR1	38
Beep on BEL Character	*Off	BELBEP0	38
	On	BELBEP1	38
Trigger Click	*Off	BEPTRG0	39
	On	BEPTRG1	39
Image VGA	Force VGA Resolution	IMGVGA1	39
	Native Resolution	IMGVGA0	39
Beeper - Good Read	Off	BEPBEP0	39
	*On	BEPBEP1	39
Beeper Volume - Good Read	Off	BEPLVL0	40
	Low	BEPLVL1	40
	Medium	BEPLVL2	40
	*High	BEPLVL3	40
Beeper Pitch - Good Read (Frequency)	Low (1600 Hz)	BEPFQ11600	40
	*Medium (2700 Hz)	BEPFQ12700	40
	High (4200 Hz)	BEPFQ14200	40
Beeper Pitch - Error	*Razz (250 Hz)	BEPFQ2250	40
	Medium (3250 Hz)	BEPFQ23250	40
	High (4200 Hz)	BEPFQ24200	40
Beeper Duration - Good Read	*Normal Beep	BEPBIP0	41
	Short Beep	BEPBIP1	41
LED - Good Read	* Normal Beep	BEPLED0	41
	Short Beep	BEPLED1	41
LED Good Read Polarity	Active High	GRDINV1	41
	*Active Low	GRDINV0	41
Number of Beeps - Good Read	Number of Good Read Beeps / LED Flashes	BEPRPT#	42
Number of Beeps - Error	Number of Error Beeps / LED Flashes	BEPERR#	42
Beep Polarity	Active High	BEPINV1	42
	*Active Low	BEPINV0	42

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Good Read Delay	*No Delay	DLYGRD0	43
	Short Delay (500 ms)	DLYGRD500	43
	Medium Delay (1000 ms)	DLYGRD1000	43
	Long Delay (1500 ms)	DLYGRD1500	43
User-Specified Good Read Delay	Range 0 - 30,000 ms	DLYGRD#####	43
Trigger Mode	*Manual/Serial Trigger - Normal	PAPHHF	44
	Manual/Serial Trigger - Enhanced	PAPHHS	44
	Read Time-Out (0 - 300,000 ms) *0	TRGSTO####	44
	Manual Trigger, Low Power	TRGMOD2	44
	Low Power Time-Out Timer (0 - 300 seconds) *120	TRGLPT.	45
	Presentation Mode	TRGMOD3	45
Presentation LED Behavior after Decode	*LEDs On	TRGPCK1	45
	LEDs Off	TRGPCK0	45
Presentation LED Time-Out	LED Time-Out Duration	TRGOTO	46
Presentation Sensitivity	Range 0-20 (*1)	TRGPMS##	46
In-stand Sensor Mode	*On	TRGSSW1	46
	Off	TRGSSW0	46
Streaming Presentation Mode	Normal	PAPSPN	47
	Enhanced	PAPSPE	47
Mobile Phone Read More	Hand Held Scanning	PAPHHC	47
	Streaming Presentation	PAPSPC	47
Hands Free Time-Out	Range 0 – 300.000 ms	TRGPTO######	48
Reread Delay	Short (500 ms)	DLYRRD500	48
	*Medium (750 ms)	DLYRR750	48
	Long (1000 ms)	DLYRRD1000	48
	Extra Long (2000 ms)	DLYRRD2000	48
User-Specified Reread Delay	Range 0 - 30,000 ms	DLYRRD#####	49
LED Power Level	Off	PWRLDC0	49
	Low (50%)	PWRLDC50	49
	High (100%)	PWRLDC100	49

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Section	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Illumination Lights	*Lights On	SCNLED1	49
	Lights Off	SCNLED0	49
Imager Time-Out	Range 0 - 999,999 ms (*1 ms)	SDRTIM	50
Aimer Delay	200 milliseconds	SCNDLY200	50
	400 milliseconds	SCNDLY400	50
	*Off (no delay)	SCNDLY0	50
User-Specified Aimer Delay	Range 0 - 4,000 ms	SCNDLY####	50
Aimer Modes	Off	SCNAIM0	51
	*Interlaced	SCNAIM2	51
Centering Window	Centering On	DECWIN1	52
	*Centering Off	DECWIN0	52
	Left of Centering Window (*40%)	DECLFT###	52
	Right of Centering Window (*60%)	DECRGT###	52
	Top of Centering Window (*40%)	DECTOP###	52
	Bottom of Centering Window (*60%)	DECBOT	52
Decode Search Mode	Full Omni directional (Default for 2D imagers)	DECMOD0	53
	Quick Omni directional	DECMOD1	53
	Advanced Linear Decoding (Default for PDF imagers)	DECMOD2	53
Preferred Symbology	On	PRFENA1	54
	*Off	PRFENA0	54
	High Priority Symbology	PRFCOD##	54
	Low Priority Symbology	PRFBLK##	54
	Preferred Symbology Timeout	PRFPTO####	54
	Preferred Symbology Default	PRFDFT	55
Output Sequence Editor	Enter Sequence	SEQBLK	57
	Default Sequence	SEQDFT	57
Partial Sequence	Transmit Partial Sequence	SEQTTS1	57
	*Discard Partial Sequence	SEQTTS0	57
Require Output Sequence	Required	SEQ_EN2	58
	On/Not Required	SEQ_EN1	58
	*Off	SEQ_EN0	58

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Multiple Symbols	On	SHOTGN1	58
	*Off	SHOTGN0	58
No Read	On	SHWNRD1	58
	*Off	SHWNRD0	58
Print Weight	Set Print Weight (1-7)	PRTWGT	59
	*Default (4)	PRTWGT4	59
Video Reverse	Video Heverse Only	VIDREV1	59
	Video Reverse and Standard Bar Codes	VIDREV2	59
	*Off	VIDREV0	59
Working Orientation	*Upright	ROTATN0	60
	Rotate Clockwise 90°	ROTATN1	60
	Upside Down	ROTATN2	60
	Rotate Counterclockwise 90°	ROTATN3	60
Prefix/Suffix Selections			
Add CR Suffix to All Symbologies		VSUFCR	63
Prefix Selections	Add Prefix	PREBK2##	63
	Clear One Prefix	PRECL2	63
	Clear All Prefixes	PRECA2	63
Suffix Selections	Add Suffix	SUFBK2##	63
	Clear One Suffix	SUFCL2	63
	Clear All Suffixes	SUFCA2	63
Function Code Transmit	*Enable	RMVFNC0	64
	Disable	RMVFNC1	64
Intercharacter Delay	Range 0 - 495 ms	DLYCHR##	64
User Specified Intercharacter Delay	Delay Length (0 - 495 ms)	DLYCRX##	65
	Character to Trigger Delay	DLY_XX##	65
Interfunction Delay	Range 0 - 495 ms	DLYFNC##	65
Intermessage Delay	Range 0 - 495 ms	DLYMSG##	65

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Data Formatter Selections			
Data Format Editor	*Default Data Format (None)	DFMDF3	70
	Enter Data Format	DFMBK3##	70
	Clear One Data Format	DFMCL3	70
	Clear All Data Formats	DFMCA3	70
	Save	MNUSAV	70
	Discard	MNUABT	70
Data Formatter	Off	DFM_EN0	70
	*On, Not Required. Keep Prefix/Suffix	DFM_EN1	71
	On, Not Required. Drop Prefix/Suffix	DFM_EN3	71
	Data Format Required. Keep Prefix/Suffix	DFM_EN2	71
	Data Format Required. Drop Prefix/Suffix	DFM_EN4	71
Data Format Non-Match Error Tone	Off	DFMDEC1	71
	*On	DFMDEC0	71
Alternate Data Formats	Primary Data Format	ALTFNM0	72
	1	ALTFNM1	72
	2	ALTFNM2	72
	3	ALTFNM3	72
Single Scan Data Format Change	Primary Data Format	VSAF_0	72
	1	VSAF_1	72
	2	VSAF_2	72
	3	VSAF_3	72
Symbologies			
All Symbologies	Off	ALLENA0	74
	On	ALLENA1	74
Codabar	Default All Codabar Settings	CBRDFT	74
Codabar	Off	CBRENA0	75
	*On	CBRENA1	75
Codabar Start/Stop Char.	*Don't Transmit	CBRSSX0	75
	Transmit	CBRSSX1	75

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Codabar Check Char.	*No Check Char.	CBRCK20	75
	Validate, But Don't Transmit	CBRCK21	75
	Validate, and Transmit	CBRCK22	75
Codabar Concatenation	Off	CBRCCT0	76
	*On	CBRCCT1	76
	Require	CBRCCT2	76
Codabar Message Length	Minimum (2 - 60) *4	CBRMIN##	76
	Maximum (2 - 60) *60	CBRMAX##	76
Code 39	Default All Code 39 Settings	C39DFT	76
	Off	C39ENA0	77
	*On	C39ENA1	77
Code 39 Start/Stop Char.	*Don't Transmit	C39SSX0	77
	Transmit	C39SSX1	77
Code 39 Check Char.	*No Check Char.	C39CK20	77
	Validate, But Don't Transmit	C39CK21	77
	Validate, and Transmit	C39CK22	77
Code 39 Message Length	Minimum (0 - 48) *0	C39MIN##	78
	Maximum (0 - 48) *48	C39MAX##	78
Code 39 Append	*Off	C39APP0	78
	On	C39APP1	78
Code 32 Pharmaceutical	*Off	C39B320	78
	On	C39B321	78
Code 39 Full ASCII	*Off	C39ASC0	79
	On	C39ASC1	79
	Code 39 Code Page	C39DCP	79
Interleaved 2 of 5	Default All Interleaved 2 of 5 Settings	I25DFT	79
Interleaved 2 of 5 Enable	Off	I25ENA0	80
	*On	I25ENA1	80
Interleaved 2 of 5 Check Digit	*No Check Digit.	I25CK20	80
	Validate, But Don't Transmit	I25CK21	80
	Validate, and Transmit	I25CK22	80

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Interleaved 2 of 5 Message Length	Minimum (2 - 80) *4	I25MIN##	80
	Maximum (2 - 80) *80	I25MAX##	80
NEC 2 of 5	Default All NEC 2 of 5 Settings	N25DFT	81
	*On	N25ENA1	81
	Off	N25ENA0	81
NEC 2 of 5 Check Digit	*No Check Digit	N25CK20	81
	Validate and Transmit	N25CK22	81
	Validate, but Don't Transmit	N25CK21	81
NEC 2 of 5 Message Lengh	Minimum	N25MIN##	81
	Maximum	N25MAX##	81
Code 93	Off	C93ENA0	82
	*On	C93ENA1	82
Code 93 Message Length	Minimum (0 - 80) *0	C93MIN	82
	Maximum (0 - 80) *80	C93MAX	82
	Code 93 Code Page	C93DCP	82
Straight 2 of 5 Industrial	Default All Straight 2 of 5 Industrial Settings	R25DFT	83
Straight 2 of 5 Industrial	*Off	R25ENA0	83
	On	R25ENA1	83
Straight 2 of 5 Industrial Message Length	Minimum (1 - 48) *4	R25MIN##	83
	Maximum (1 - 48) *48	R25MAX##	83
Straight 2 of 5 IATA	Default All Straight 2 of 5 IATA Settings	A25DFT	83
Straight 2 of 5 IATA	*Off	A25ENA0	84
	On	A25ENA1	84
Straight 2 of 5 IATA Message Length	Minimum (1 - 48) *4	A25MIN##	84
	Maximum (1 - 48) *48	A25MAX##	84
Matrix 2 of 5	Default All Matrix 2 of 5 Settings	X25DFT	84
Matrix 2 of 5	*Off	X25ENA0	84
	On	X25ENA1	84
Matrix 2 of 5 Message Length	Minimum (1 - 80) *4	X25MIN##	84
	Maximum (1 - 80) *80	X25MAX##	84
Code 11	Default All Code 11 Settings	C11DFT	85

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Code 11	*Off	C11ENA0	85
	On	C11ENA1	85
Code 11 Check Digits Required	1 Check Digit	C11CK20	85
	*2 Check Digits	C11CK21	85
Code 11 Message Length	Minimum (1 - 80) *4	C11MIN##	85
	Maximum (1 - 80) *80	C11MAX##	85
Code 128	Default All Code 128 Settings	128DFT	86
Code 128	Off	128ENA0	86
	*On	128ENA1	86
ISBT Concatenation	*Off	ISBENA0	86
	On	ISBENA1	86
Code 128 Message Length	Minimum (0 - 80) *0	128MIN##	86
	Maximum (0 - 80) *80	128MAX##	86
Code 128 Code Page	Code 128 Code Page (*2)	128DCP##	87
GS1 - 128	Default All GS1 – 128 Settings	GS1DFT	87
	*On	GS1ENA1	87
	Off	GS1ENA0	87
GS1 – 128 Message Lengh	Minimum	GS1MIN	87
	Maximum	GS1MAX	87
Telepen	Default All Telepen Settings	TELDFT	87
Telepen	*Off	TELENA0	88
	On	TELENA1	88
Telepen Output	*AIM Telepen Output	TELOLD0	88
	Original Telepen Output	TELOLD1	88
Telepen Message Length	Minimum (1 - 60) *1	TELMIN##	88
	Maximum (1 - 60) *60	TELMAX##	88
UPC-A	Default All UPC-A Settings	UPADFT	88
UPC-A Enable	Off	UPAENA0	89
	*On	UPAENA1	89
UPC-A Check Digit	Off	UPACKX0	89
	*On	UPACKX1	89

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
UPC-A Number System	Off	UPANSX0	89
	*On	UPANSX1	89
UPC-A 2 Digit Addenda	*Off	UPAAD20	90
	On	UPAAD21	90
UPC-A 5 Digit Addenda	*Off	UPAAD50	90
	On	UPAAD51	90
UPC-A Addenda Required	*Not Required	UPAARQ0	90
	Required	UPAARQ1	90
UPC-A Addenda Separator	Off	UPAADS0	90
	*On	UPAADS1	90
UPC-A/EAN-13 with Extended Coupon Code	Allow Concatenation	CPNENA1	91
	*Off	CPNENA0	91
	Require Concatenation	CPENA2	91
UPC-E0	Default All UPC-E Settings	UPEDFT	91
UPC-E0	Off	UPEEN00	91
	*On	UPEEN01	91
UPC-E0 Expand	*Off	UPEEXP0	91
	On	UPEEXP1	91
UPC-E0 Addenda Required	Required	UPEARQ1	92
	*Not Required	UPEARQ0	92
UPC-E0 Addenda Separator	*On	UPEADS1	92
	Off	UPEADS0	92
UPC-E0 Check Digit	Off	UPECKX0	92
	*On	UPECKX1	92
UPC-E0 Number System	Off	UPENSX0	92
	*On	UPENSX1	92
UPC-E0 Addenda	2 Digit Addenda On	UPEAD21	93
	*2 Digit Addenda Off	UPEAD20	93
	5 Digit Addenda On	UPEAD51	93
	*5 Digit Addenda Off	UPEAD50	93
UPC-E1	*Off	UPEEN10	93
	On	UPEEN11	93
EAN/JAN-13	Default All EAN/ JAN Settings	E13DFT	93

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
EAN/JAN-13	Off	E13ENA0	94
	*On	E13ENA1	94
EAN/JAN-13 Check Digit	Off	E13CKX0	94
	*On	E13CKX1	94
EAN/JAN-13 2 Digit Addenda	2 Digit Addenda On	E13AD21	94
	*2 Digit Addenda Off	E13AD20	94
	5 Digit Addenda On	E13AD51	94
	*5 Digit Addenda Off	E13AD50	94
EAN/JAN-13 Addenda Required	*Not Required	E13ARQ0	95
	Required	E13ARQ1	95
EAN/JAN-13 Addenda Separator	Off	E13ADS0	95
	*On	E13ADS1	95
ISBN Translate	*Off	E13ISB0	95
	On	E13ISB1	95
EAN/JAN-8	Default All EAN/ JAN 8 Settings	EA8DFT	95
EAN/JAN-8	Off	EA8ENA0	96
	*On	EA8ENA1	96
EAN/JAN-8 Check Digit	Off	EA8CKX0	96
	*On	EA8CKX1	96
EAN/JAN-8 Addenda	*2 Digit Addenda Off	EA8AD20	96
	2 Digit Addenda On	EA8AD21	96
	*5 Digit Addenda Off	EA8AD50	96
	5 Digit Addenda On	EA8AD51	96
EAN/JAN-8 Addenda Required	*Not Required	EA8ARQ0	97
	Required	EA8ARQ1	97
EAN/JAN-8 Addenda Separator	Off	EA8ADS0	97
	*On	EA8ADS1	97
MSI	Default All MSI Settings	MSIDFT	97
	*Off	MSIENA0	97
	On	MSIENA1	97
MSI Check Character	*Validate Type 10, but Don't Transmit	MSICHK0	98
	Validate Type 10 and Transmit	MSICHK1	98

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
MSI Check Character	Validate 2 Type 10 Characters, but Don'tTransmit	MSICHK2	98
	Validate 2 Type 10 Characters and Transmit	MSICHK3	98
	Validate Type 10 then Type 11 Char. , but Don't Transmit	MSICHK4	98
	Validate Type 10 then Type 11 Char. And Transmit	MSICHK5	98
	Disable MSI Check Characters	MSICHK6	98
MSI Message Length	Minimum (4 - 48) *4	MSIMIN##	98
	Maximum (4 - 48) *48	MSIMAX##	98
GS1 DataBar Omni directional	Default	RSSDFT	98
	*On	RSSENA1	99
	Off	RSSENA0	99
GS1 DataBar Limited	Default	RSLDFT	99
	*On	RSLENA1	99
	Off	RSLENA0	99
GS1 DataBar Expanded	Default	RSEDFT	99
	*On	RSEENA1	99
	Off	RSEENA0	99
GS1 DataBar Expanded Message Length	Minimum	RSEMIN##	100
	Maximum	RSEMAX##	100
Trioptic Code	On	TRIENA1	100
	*Off	TRIENA0	100
Codablock A	Default All Codablock A Setting	CBADFT	100
	On	CBAENA1	100
	Off	CBAENA0	100
Codablock A Message Length	Minimum (1 – 600) *1	CBAMIN####	101
	Maximum (1 – 600) *600	CBAMAX####	101
Codablock F	Default	CBFDFT	101
	On	CBFENA1	101
	*Off	CBFENA0	101
Codablock F Message Length	Minimum	CBFMIN####	101
	Maximum	CBFMAX####	101
PDF417	Default	PDFDFT	102

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
PDF417	*On	PDFENA1	102
	Off	PDFENA0	102
PDF417 Message Length	Minimum (1 – 2750) *1	PDFMIN	102
	Maximum (1 – 2750) *2750	PDFMAX	102
MicroPDF417	Default	MPDFDFT	102
	*On	MPDFENA1	102
	Off	MPDFENA0	102
MicroPDF417 Message Length	Minimum (1 – 366) *1	MPDMIN	103
	Maximum (1 – 366) *366	MPDMAX	103
GS1 Composite Codes	On	COMENA1	103
	*Off	COMENA0	103
UPC/EAN Version	On	COMUPC1	103
	*Off	COMUPC0	103
GS1 Composite Code Message Length	Minimum (1 – 2435) *1	COMMIN	104
	Maximum (1 – 2435) *2435	COMMAX	104
GS1 Emulation	Default = GS1 Emulation Off	EANEMU1	104
	GS1 DataBar Emulation	EANEMU2	104
	GS1 Code Expansion Off	EANEMU3	104
	EAN8 to EAN13 Conversion	EANEMU4	104
	*GS1 Emulation Off	EANEMU0	104
TCIF Linked Code 39 (TLC39)	Off	T39ENA0	105
	*On	T39ENA0	105
Postnet	On	NETENA1	106
	*Off	NETENA0	106
Postnet Check Digit	Transmit Check Digit	NETCKX1	106
	*Don't Transmit Check Digit	NETCKX0	106
Planet Code	On	PLNENA1	106
	*Off	PLNENA0	106
Planet Code Check Digit	Transmit	PLNCKX1	106
	*Don't Transmit	PLNCKX0	106
British Post	On	BPOENA1	106
	*Off	BPOENA0	106

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Canadian Post	On	CANENA1	107
	*Off	CANENA0	107
Kix (Netherlands) Post	On	KIXENA1	107
	*Off	KIXENA0	107
Australian Post	On	AUSENA1	107
	*Off	AUSENA0	107
Japanese Post	On	JAPENA1	107
	*Off	JAPENA0	107
China Post	Default All China Post Settings	CPCDFT	107
China Post	*Off	CPCENA0	108
	On	CPCENA1	108
China Post Msg. Length	Minimum (2 - 80) *4	CPCMIN##	108
	Maximum (2 - 80) *80	CPCMAX##	108
Korea Post	Default All Korea Post Settings	KPCDFT	108
Korea Post	*Off	KPCENA0	108
	On	KPCENA1	108
Korea Post Msg. Length	Minimum (2 - 80) *4	KPCMIN##	109
	Maximum (2 - 80) *48	KPCMAX##	109
Postal Codes 2D	*2D Postal Codes Off	POSTAL0	109
Single 2D Postal Codes	Australian Post On	POSTAL1	109
	British Post On	POSTAL7	109
	Canadian Post On	POSTAL30	109
	Intelligent Mail Bar Code On	POSTAL10	109
	Japanese Post On	POSTAL3	109
	KIX Post On	POSTAL4	109
	Planet Code On	POSTAL5	109
	Postal 4i On	POSTAL9	109
	Postnet On (also see Postnet Check Digit)	POSTAL6	110
	Postnet with B and B Fields On	POSTAL11	110
	InfoMail On	POSTAL2	110
Combination 2D Postal Codes	InfoMail and British Post On	POSTAL8	110

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Combination 2D Postal Codes	Intelligent Mail BarCode and Postnet wit B and B' Fields On	POSTAL20	110
	Postnet and Postal-4i On	POSTAL14	110
	Postnet and Intelligent Mail BarCode On	POSTAL16	110
	Postal-4i and Intelligent Mail Bar Code On	POSTAL17	110
	Postal-4i and Postnet with B and B' Fields On	POSTAL19	110
	Planet Code and Postnet On	POSTAL12	110
	Planet Code and Postnet with B and B' Fields On	POSTAL18	110
	Planet Code and Postal-4i On	POSTAL13	111
	Planet Code and Intelligent Mail Bar Code On	POSTAL15	111
	Planet Code, Postnet and Postal-4i On	POSTAL21	111
	Planet Code, Postnet and Intelligent Mail Bar Code On	POSTAL22	111
	Planet Code, Postal-4i, and Intelligent Mail Bar Code On	POSTAL23	111
	Postnet, Postal-4i, and intelligent Mail Bar Code On	POSTAL24	111
	Planet Code, Postal-4i, and Postnet with B and B' Fields On	POSTAL27	111
	Planet Code, Postal-4i, Intelligent Mail Bar Code, and Postnet On	POSTAL28	111
	Planet Code, Postal-4i, Intelligent Mail Bar Code and Postnet with B and B' Fields On	POSTAL29	111
Planet Code Check Digit	Transmit Check Digit	PLNCKX1	112
	*Don't Transmit Check Digit	PLNCKX0	112
Postnet Check Digit	Transmit Check Digit	NETCKX1	112
	*Don't Transmit Check Digit	NETCKX0	112
QR Code	Default All QR Code Settings	QRCDFT	112
QR Code	*On	QRCENA1	112
	Off	QRCENA0	112
QR Code Msg. Length	Minimum (1-3500) *1	QRCMIN	113
	Maximum (1-3500) *3500	QRCMAX	113
Data Matrix	Default All Data Matrix Settings	IDMDFT	113
Data Matrix	*On	IDMENA1	113
	Off	IDMENA0	113

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Data Matrix Msg. Length	Minimum (1-1500) *1	IDMMIN	113
	Maximum (1-1500) *1500	IDMMAX	113
MaxiCode	Default All MaxiCode Settings	MAXDFT	113
MaxiCode	*On	MAXENA1	114
	Off	MAXENA0	114
MaxiCode Msg. Length	Minimum (1-150) *1	MAXMIN	114
	Maximum (1-150) *150	MAXMAX	114
Aztec Code	Default All Aztec Code Settings	AZTDFT	114
Aztec Code	*On	AZTENA1	114
	Off	AZTENA0	114
Aztec Code Msg. Length	Minimum (1-3750) *1	AZTMIN	115
	Maximum (1-3750) *3750	AZTMAX	115
Chinese Sensible (Han Xin) Code	Default All Han Xin Settings	HX_DFT	115
	*Off	HX_ENA0	115
	On	HX_ENA1	115
Han Xin Code Message Length	Minimum	HX_MIN	115
	Maximum	HX_MAX	115
Imaging Default Commands			
	Default all Imaging Commands	IMGDFT	116
Image Snap	Imaging Style - Decoding	SNPSTY0	117
	*Imaging Style - Photo	SNPSTY1	117
	Imaging Style - Manual	SNPSTY2	117
	Beeper On	SNPBEP1	117
	*Beeper Off	SNPBEP0	117
	Exposure	SNPEXP	117
	Frame Rate (0-30) *30	SNPFRM##	117
	*Gain - Light	SNPGAN1	117
	Gain - Medium	SNPGAN2	117
	Gain - Heavy	SNPGAN4	117
	Gain - Maximum	SNPGAN8	117
	Delta for Acceptance (0-255) *10	SNPDEL###	117
	*LED State - Off	SNPLED0	118

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Image Snap	LED State - On	SNPLED1	118
	*Wait for Trigger Off	SNPTRG0	118
	Wait for Trigger On	SNPTRG1	118
	Update Tries (0-10) *6	SNPTRY##	118
	Target White Value (0-255) *125	SNPWHT###	118
	Target Set Point Percentage (1-99) *50	SNPPCT##	118
Image Ship	*Infinity Filter - Off	IMGINF0	119
	Infinity Filter - On	IMGINF1	119
	*Compensation Off	IMGCOR0	119
	Compensation On	IMGCOR1	119
	*Pixel Depth - 8 bits/pixel (grayscale)	IMGBPP8	119
	Pixel Depth - 1 bit/pixel (B&W)	IMGBPP1	119
	*Don't Sharpen Edges	IMGEDG0	120
	Sharpen Edges (0-23)	IMGEDG##	120
	*File Format - JPEG	IMGFMT6	120
	File Format - KIM	IMGFMT0	120
	File Format - TIFF binary	IMGFMT1	120
	File Format - TIFF binary group 4, compressed	IMGFMT2	120
	File Format - TIFF grayscale	IMGFMT3	120
	File Format - Uncompressed binary	IMGFMT4	120
	File Format - Uncompressed grayscale	IMGFMT5	120
	File Format - BMP	IMGFMT8	120
	*Histogram Stretch Off	IMGHIS0	120
	Histogram Stretch On	IMGHIS1	120
	Invert Image around X axis	IMGNVX1	120
	Invert Image around Y axis	IMGNVY1	120
	*Fly Spec (Noise Reduction) Off	IMGFSP0	121
	Fly Spec (Noise Reduction) On	IMGFSP1	121
	Rotate Image 90° right	IMGROT1	121
	Rotate Image 180° right	IMGROT2	121
	Rotate Image 90° left	IMGROT3	121

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Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Image Ship	JPEG Image Quality (0-100) *50	IMGJQF###	122
	*Gamma Correction Off	IMGGAM0	122
	Gamma Correction On (1-1000)	IMGGAM###	122
	Image Crop - Left (0-640) *0	IMGWNL###	122
	Image Crop – Right (0 – 640) *639	IMGWNR###	122
	Image Crop – Top (0-480) *0	IMGWNT###	122
	Image Crop - Bottom (0-480) *479	IMGWNB###	122
	Image Crop - Margin (1-238) *0	IMGMAR###	122
	Protocol - None (raw)	IMGXFR0	123
	Protocol - None (default USB)	IMGXFR2	123
	Protocol - Hmodem	IMGXFR3	123
	Protocol - Hmodem Compressed	IMGXFR4	123
	Ship Every Pixel	IMGSUB1	123
	Ship Every 2nd Pixel	IMGSUB2	123
	Ship Every 3rd Pixel	IMGSUB3	123
	*Document Image Filter Off	IMGUSH0	124
	Document Image Filter On (0255)	IMGUSH###	124
	*Don't Ship Histogram	IMGHST0	124
	Ship Histogram	IMGHST1	125

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Chapter 12 – Product Specifications & Pin Outs

Specifications

Caractéristiques mécaniques		
Dimensions (LxlxH)		41 x 41 x 18,8 mm
Poids		42 g
Caractéristiques électriques		
Tension d'entrée		4 - 25 Vcc suivant câble
Consommation en marche		450 mA sous 5 Vcc
Consommation en veille		90 mA sous 5 Vcc
Interfaces avec le système hôte		USB, RS232 suivant modèle
Conditions ambiantes		
Température de fonctionnement		0 à 50°C
Humidité		0 à 95 % d'humidité relative sans condensation
Chutes		Conçu pour résister à 50 chutes de 1,8 m sur béton
Etanchéité		IP 54
Luminosité		0 à 100 000 lux
Performances de lecture		
Mode de lecture		Image matricielle (838 x 640 pixels)
Tolérance au mouvement		Jusqu'à 0,6 m/s pour des codes UPC (0,33 mm) à une distance focale optimale
Angle de balayage	Focale HD :	horizontal : 41,4° ; vertical : 32,2°
	Focale SR :	horizontal : 42,4° ; vertical : 33°
	Focale ER :	horizontal : 31,6° ; vertical : 24,4°
Résolution max. 1D Code 39	Focale HD :	3 mil (0,076 mm)
	Focale SR :	5 mil (0,127 mm)
	Focale ER :	5 mil (0,127 mm)
Résolution max. 2D Datamatrix	Focale HD :	5 mil (0,127 mm)
	Focale SR :	6,7 mil (0,170 mm)
	Focale ER :	7,5 mil (0,191 mm)
Contraste de symbole		20 % d'écart de réflexion minimale
Angle d'attaque/d'inclinaison		45°/65°
Décodage		Lit les symbiologies 1D, PDF, 2D, postales et OCR standard *Remarque : Les fonctionnalités de décodage dépendent de la configuration du kit
Garantie		12 mois

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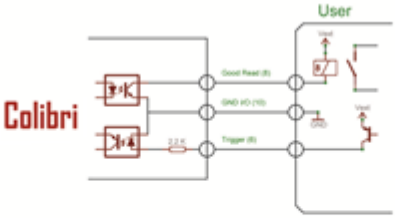
Input /Output Pin Out



31-008

Pin	Name
1	NC
2	TX
3	RX
4	NC
5	GND
6	VCC
7	NC
8	NC
9	NC

Cable

31-010

Pin	Name
2	TX
3	RX
6	External Trigger
7	Signal GND
8	Output Good Read
10	GND I/O
13	Power 24V
22 23 24	Output 12V
25	Power GND

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Chapter 13 - Maintenance & Troubleshooting

Repairs

Repairs and/or upgrades are not to be performed on this product. These services are to be performed only by an authorized service center. See "Customer Support" for further information.

Maintenance

The Colibri provides reliable and efficient operation with a minimum of care. Although specific maintenance is not required, the following periodic checks ensure dependable imager operation:

Cleaning the Imager's Window

Reading performance may degrade if the imager's window is not clean. If the window is visibly dirty, or if the imager isn't operating well, clean the window with a soft cloth or lens tissue dampened with water (or a mild detergent- water solution). If a detergent solution is used, rinse with a clean lens tissue dampened with water only.
The imager's housing may also be cleaned the same way.

⚠ Caution:

Do not submerge the imager in water. Do not use abrasive wipes or tissues on the imager's window – abrasive wipes may scratch the window.
Never use solvents (e.g., acetone, benzene, ether, or phenol-based agents) on the housing or window – solvents may damage the finish or the window.

Inspecting Cords and Connectors

Inspect the imager's interface cable and connector for wear or other signs of damage. A badly worn cable or damaged connector may interfere with imager operation. Contact your C2R Technologie distributor for information about cable replacement.

Troubleshooting

The imager automatically performs self-tests whenever you turn it on. If your imager is not functioning properly, review the following Troubleshooting Guide to try to isolate the problem.

Is the power on? Is the red or green aiming illumination line on?
If the red or green aiming illumination line doesn't appear, check that:

- The cable is connected properly.
- The host system power is on (if external power isn't used).

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Colibri serie 6 : User's guide

Is the imager having trouble reading your symbols?
If the imager isn't reading symbols well, check that the symbols:

- Aren't smeared, rough, scratched, or exhibiting voids.
- Aren't coated with frost or water droplets on the surface.
- Are enabled in the imager or in the decoder to which the imager connects.

Is the bar code displayed but not entered?
The bar code is displayed on the host device correctly, but you still have to press a key to enter it (the Enter/Return key or the Tab key, for example).
You need to program a suffix. Programming a suffix enables the imager to output the bar code data plus the key you need (such as "CR") to enter the data into your application. Refer to "Prefix/Suffix Overview" for further information.

Does the imager read the bar code incorrectly?
If the imager reads a bar code, but the data is not displayed correctly on the host screen:

- The imager may not be programmed for the appropriate terminal interface. For example, you scan "12345" and the host displays "@es%."

Reprogram the imager with the correct Plug and Play or Terminal selection bar code. See Chapter 2 and Chapter 3

- The imager may not be programmed to output your bar code data properly. For example, you scan "12345" and the host displays "A12345B."

Reprogram the imager with the proper symbology selections. See Chapter 7.

The imager won't read your bar code at all.

- Scan the sample bar codes in the back of this manual. If the imager reads the sample bar codes, check that your bar code is readable. Verify that your bar code symbology is enabled (see Chapter 7).
- If the imager still can't read the sample bar codes, scan "All Symbologies".

If you aren't sure what programming options have been set in the imager, or if you want the factory default settings restored, scan Standard Product Default Settings.

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Chapter 14 – Customer Support

Product Service and Repair

C2R Technologie provides service for all its products through service centers throughout the world. To obtain warranty or non-warranty service, return the unit to C2R Technologie (postage paid) with a copy of the dated purchase record attached. Contact the appropriate location below to obtain a Return Material Authorization number (RMA #) before returning the product.

Europe, Middle East, and Africa

C2R Technologie Corporate Offices
Telephone: + 33 (0)2 99 37 76 76
Fax: + 33 (0)2 99 37 23 25
E-mail: technique@c2r-technologie.com

Online Product Service and Repair Assistance

You can also access product service and repair assistance online at www.c2r-technologie.com.

Technical Assistance

If you need assistance installing or troubleshooting your scanner, please call your Distributor or the nearest
C2R Technologie technical support office:
Telephone: + 33 (0)2 99 37 76 76
Fax: + 33 (0)2 99 37 23 25
E-mail: technique@c2r-technologie.com

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Online Technical Assistance

You can also access technical assistance online at www.c2r-technologie.com

Limited Warranty

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The limited duration of the warranty for the Colibri is for one (1) year.

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Index A - Symbology Chart

Symbology	AIM ID	Possible AIM ID Modifiers (m)	C2R Code ID (hex)
All Symbologies			(0x99)
Australian Post	]X0		A (0x41)
Aztec Code	]zm	0-9, A-C	z (0x7A)
British Post	]X0		B (0x42)
Canadian Post	]X0		C (0x43)
China Post	]X0		Q (0x51)
Codabar	]Fm	0-1	a (0x61)
Codablock F	]Om	0, 1, 4, 5, 6	q (0x71)
Code 11	]H3		h (0x68)
Code 128	]Cm	0, 1, 2, 4	j (0x6A)
Code 16K	]Km	0, 1, 2, 4	o (0x6F)
Code 32 Pharmaceutical (PARAF)	]X0		< (0x3C)
Code 39	]Am	0, 1, 3, 4, 5, 7	b (0x62)
Code 49	]Tm	0, 1, 2, 4	l (0x6C
Code 93 and 93i	]Gm	0-9, A-Z, a-m	i (0x69
Data Matrix	]dm	0-6	w (0x77)
EAN-13	]E0		d (0x64)
EAN-8	]E4		D (0x44)
EAN•UCC Composite	]em	0-3	y (0x79)
EAN-13 with Extended Coupon Code	]E3		d (0x64)
Interleaved 2 of 5	]Im	0, 1, 3	e (0x65)
Japanese Post	]X0		J (0x4A)
KIX (Netherlands) Post	]X0		K (0x4B)
Korea Post	]X0		? (0x3F)
Matrix 2 of 5	]X0		m (0x6D)
MaxiCode	]Um	0-3	x (0x78)
MicroPDF417	]Lm	3-5	R (0x52)

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Symbology	AIM ID	Possible AIM ID Modifiers (m)	C2R Code ID (hex)
MSI	]Mm	0	g (0x67)
No Read			(0x9C)
OCR-A	]o1		O (0x4F)
OCR-B	]o2		O (0x4F)
OCR MICR E-13B	]ZE		O (0x4F)
OCR US Money Font	]o3		O (0x4F)
SEMI Font	]o3		O (0x4F)
PDF417	]Lm	0-2	r (0x72)
Planet Code	]X0		L (0x4C)
Plessey Code	]P0		n (0x6E)
PosiCode	]pm	0, 1, 2	W (0x57)
Postnet	]X0		P (0x50)
QR/Micro QR Code	]Qm	0-6	s (0x73)
Reduced Space Symbology (RSS14, RSS Limited, RSS Expanded)	]em	0	y (0x79)
Straight 2 of 5 IATA (two-bar start/stop)	]Rm	0, 1, 3	f (0x66)
TCIF Linked Code 39 (TLC39)	]L2		T (0x54)
Telepen	]Bm	0, 1, 2, 4	t (0x74)
Trioptic Code	]X0		= (0x3D)
UCC/EAN-128	]C1		I (0x49)
UPC-A	]E0		c (0x63)
UPC-A with Extended Coupon Code	]E3		c (0x63)
UPC-E	]E0		E (0x45)
VeriCode*	]X0		v (0x76)

Note: "m" represents the AIM modifier character. Refer to International Technical Specification, Symbology Identifiers, for AIM modifier character details.
Note: Prefix/Suffix entries for specific symbologies override the universal (All Symbologies, 99) entry.
Refer to Data Editing beginning and Data Formatting beginning for information about using Code ID and AIM ID.

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Index B - ASCII Conversion Chart

(CODE PAGE 1252)

Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char
0	00	NUL	32	20		64	40	@	96	60	‘
1	01	SOH	33	21	!	65	41	A	97	61	a
2	02	STX	34	22	”	66	42	B	98	62	b
3	03	ETX	35	23	#	67	43	C	99	63	c
4	04	EOT	36	24	$	68	44	D	100	64	d
5	05	ENQ	37	25	%	69	45	E	101	65	e
6	06	ACK	38	26	&	70	46	F	102	66	f
7	07	BEL	39	27	‘	71	47	G	103	67	g
8	08	BS	40	28	(	72	48	H	104	68	h
9	09	HT	41	29	)	73	49	I	105	69	i
10	0A	LF	42	2A	*	74	4A	J	106	6A	j
11	0B	VT	43	2B	+	75	4B	K	107	6B	k
12	0C	FF	44	2C	,	76	4C	L	108	6C	l
13	0D	CR	45	2D	-	77	4D	M	109	6D	m
14	0E	SO	46	2E	.	78	4E	N	110	6E	n
15	0F	SI	47	2F	/	79	4F	O	111	6F	o
16	10	DLE	48	30	0	80	50	P	112	70	p
17	11	DC1	49	31	1	81	51	Q	113	71	q
18	12	DC2	50	32	2	82	52	R	114	72	r
19	13	DC3	51	33	3	83	53	S	115	73	s
20	14	DC4	52	34	4	84	54	T	116	74	t
21	15	NAK	53	35	5	85	55	U	117	75	u
22	16	SYN	54	36	6	86	56	V	118	76	v
23	17	ETB	55	37	7	87	57	W	119	77	w
24	18	CAN	56	38	8	88	58	X	120	78	x
25	19	EM	57	39	9	89	59	Y	121	79	y
26	1A	SUB	58	3A	:	90	5A	Z	122	7A	z
27	1B	ESC	59	3B	;	91	5B	[	123	7B	{
28	1C	FS	60	3C	<	92	5C	\	124	7C	|
29	1D	GS	61	3D	=	93	5D	]	125	7D	}
30	1E	RS	62	3E	>	94	5E	^	126	7E	~
31	1F	US	63	3F	?	95	5F	_	127	7F	

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Colibri serie 6 : User's guide

Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char
128	80	€	160	A0		192	C0	À	224	E0	à
129	81	□	161	A1	¡	193	C1	Á	225	E1	á
130	82	‚	162	A2	¢	194	C2	Â	226	E2	â
131	83	ƒ	163	A3	£	195	C3	Ã	227	E3	ã
132	84	„	164	A4	¤	196	C4	Ä	228	E4	ä
133	85	…	165	A5	¥	197	C5	Å	229	E5	å
134	86	†	166	A6	¦	198	C6	Æ	230	E6	æ
135	87	‡	167	A7	§	199	C7	Ç	231	E7	ç
136	88	ˆ	168	A8	¨	200	C8	È	232	E8	è
137	89	‰	169	A9	©	201	C9	É	233	E9	é
138	8A	Š	170	AA		202	CA	Ê	234	EA	ê
139	8B	‹	171	AB	«	203	CB	Ë	235	EB	ë
140	8C	Œ	172	AC	¬	204	CC	Ì	236	EC	ì
141	8D	□	173	AD	-	205	CD	Í	237	ED	í
142	8E	Ž	174	AE	®	206	CE	Î	238	EE	î
143	8F	□	175	AF	¯	207	CF	Ï	239	EF	ï
144	90	□	176	B0	°	208	D0	Ð	240	F0	ð
145	91	‘	177	B1	±	209	D1	Ñ	241	F1	ñ
146	92	’	178	B2	²	210	D2	Ò	242	F2	ò
147	93	“	179	B3	³	211	D3	Ó	243	F3	ó
148	94	”	180	B4	´	212	D4	Ô	244	F4	ô
149	95	•	181	B5	µ	213	D5	Õ	245	F5	õ
150	96	–	182	B6	¶	214	D6	Ö	246	F6	ö
151	97	—	183	B7	·	215	D7	×	247	F7	÷
152	98	˜	184	B8	¸	216	D8	Ø	248	F8	ø
153	99	™	185	B9	¹	217	D9	Ù	249	F9	ù
154	9A	š	186	BA		218	DA	Ú	250	FA	ú
155	9B	›	187	BB	»	219	DB	Û	251	FB	û
156	9C	œ	188	BC	¼	220	DC	Ü	252	FC	ü
157	9D	□	189	BD	½	221	DD	Ý	253	FD	ý
158	9E	ž	190	BE	¾	222	DE	Þ	254	FE	þ
159	9F	Ÿ	191	BF	¿	223	DF	ß	255	FF	ÿ

Note: This table applies to U.S. style keyboards. Certain characters may differ depending on your Country Code/PC regional settings.

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Code Page Mapping of Printed Bar Codes

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, select the code page with which the bar codes were created. The data characters should then appear properly.
Note: The Code Page option is available for Code 39, Code 93, and Code 128.

Code Page	Standard	Description
1	CP ISO646	
2 (Default)	ISO 2022	Automatic National Replacement Characters
3	CP Binary	
82	ISO 2022 11 Swe	Swedish Replacement Characters
83	ISO 2022 69 Fra	French/Belgium Replacement Characters
81	ISO 2022 25 Fra	French/Belgium Replacement Characters
84	ISO 2022 11 Ger	German Replacement Characters
85	ISO 2022 11 Ita	Italian Replacement Characters
86	ISO 2022 11 Swi	Swiss Replacement Characters
87	ISO 2022 11 UK	British Replacement Characters
88	ISO 2022 11 Dan	Danish Replacement Characters
89	ISO 2022 11 Nor	Norwegian Replacement Characters
90	ISO 2022 11 Spa	Spanish Replacement Characters

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Sample Symbols

UPC-A

0 123456 7890

Interleaved 2 of 5

1234567890

Code 128

Code 128

EAN-13

9 780330 290951

Code 39

BC321

Codabar

A13579B

Code 93

123456-9$

Straight 2 of 5 Industrial

123456

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Sample Symbols

Matrix 2 of 5

6543210

RSS-14

(01)00123456789012

PDF417

Car Registration

Postnet

Zip Code

Code 49

1234567890

Data Matrix

Test Symbol

QR Code

Numbers

4-CB (4-State Customer Barcode)

01,234,567094,98765 4321,01234567891

ID-tag (UPU 4-State)

J18CUSA8E6N062315014880T

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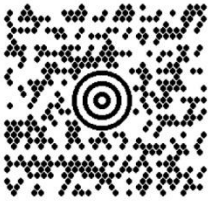
Sample Symbols

Aztec

Package Label

MaxiCode



Test Message

Micro PDF417

Test Message

OCR-B with Modulo 10 check character

5324277

OCR-A with Modulo 36 check character

532427D

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OCR Programming Chart

a

c

d

e

g

h

l

r

t

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OCR Programming Chart

T

O

A

D

Discard

Save

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Programming Chart

A

B

C

D

E

F

0

1

2

3

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Programming Chart

4

5

6

7

8

9

Save

Discard

Note: If you make an error while scanning the letters or digits (before scanning Save), scan Discard, scan the correct letters or digits, and Save *again.*

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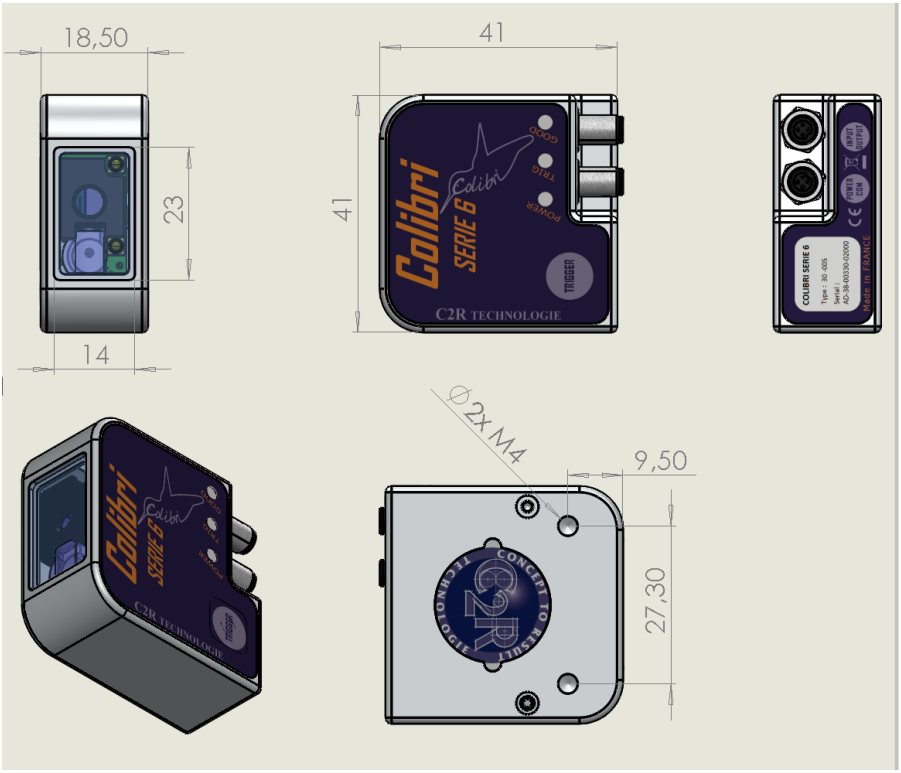
Integration



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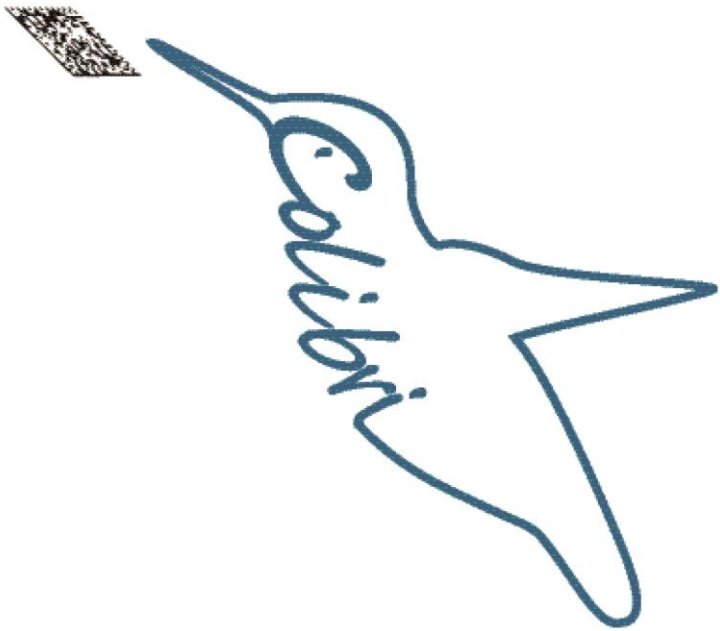

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