FLEXPOINT® HS-1E
HANDHELD BARCODE SCANNER
USER MANUAL

JADAK
A Novanta Company

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Introduction

The flexpoint™ HS-1E from JADAK® is a hand held bar code scanner that utilizes area imaging technology to read popular linear (1D), stacked linear, and matrix (2D) bar codes.
With a small ergonomic shape, the HS-1E can be used in a wide variety of applications, but is especially designed for Healthcare applications and environments. The HS-1E has a sealed housing that protects it from day to day debris and spills and is built with medical grade plastics that are compatible with popular medical cleansers and disinfectants.

About This Manual

This User's Guide provides installation and programming instructions for the flexpoint™ HS-1E hand scanner.
Product specifications, dimensions, warranty and customer support information is also included.
JADAK's bar code scanners 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 or by sending the commands below them.

Note: An asterisk (*) next to an option indicates the default setting.

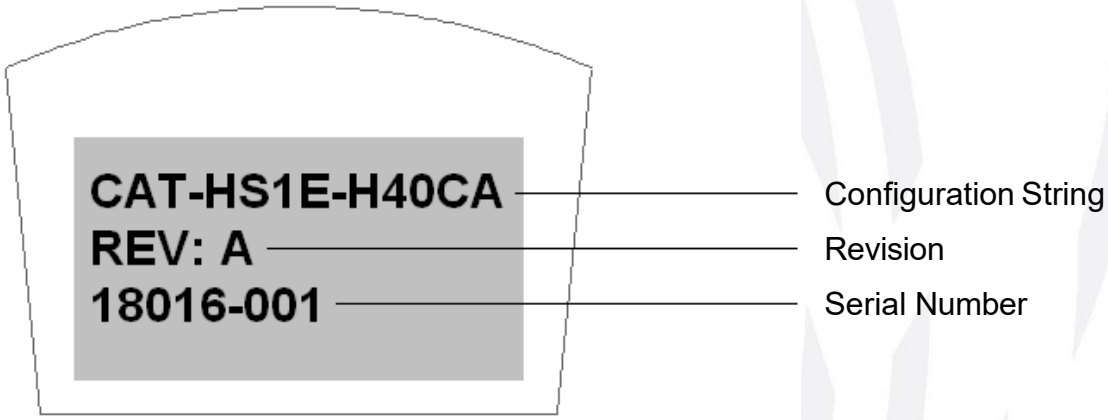
JADAK® HS-1E Models

There are two main models of the HS-1E Hand scanner.
Refer to the chart below to determine which models can be used with your interface.

Model	Interface Options	Aimer	2D Image Size
CAT-HS1E-H30CA	TTL RS-232	LED	640 x 480 pixels
CAT-HS1E-H40CA	USB 1.1 HID Keyboard Emulation, USB 1.1 COM Emulation	LED	640 x 480 pixels

JADAK® flexpoint™ HS-1E Identification

On the bottom of your HS-1E hand scanner you will see a label as shown below:



Configuration String:
The configuration string is an 12 digit string with the last 5 digits being a factory configuration number.
Please consult JADAK for configuration information.

Note: Instead of a configuration string, this line can also contain a customer specific JDK product number, in the format: **JDK-xxxx**.

Revision:
This shows the revision of the configuration.

Serial Number:
The serial number format is as follows: YYMMDD-NNN

Where:
YY = Year
MM = Month
DD = Day
NNN = Number of unit

Reading Techniques

The HS-1E has a view finder or aimer that projects a bright red dot that corresponds to the imager's horizontal/vertical field of view. The aimer should be centered over the bar code, but it can be positioned in any direction for a good read.

Linear bar code

2D Matrix symbol

The aiming beam is smaller when the HS-1E is closer to the code and larger when it is farther from the code.

Symbologies with smaller bars or elements (lower mil size) should be read closer to the unit. Symbologies with larger bars or elements (higher mil size) as well as 1D barcodes with a lot of data in general should be read farther from the unit.

To read single or multiple symbols (on a page or on an object), hold the HS-1E at an appropriate distance from the target, pull the trigger, 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 up 15° to 20° to prevent unwanted reflections that would hamper the HS-1E's performance.

Chapter 2 - Interface Settings

Connecting the HS-1E with USB Port

Note: *These instructions are for use with the USB (JADAK CBL-0080) cable.*

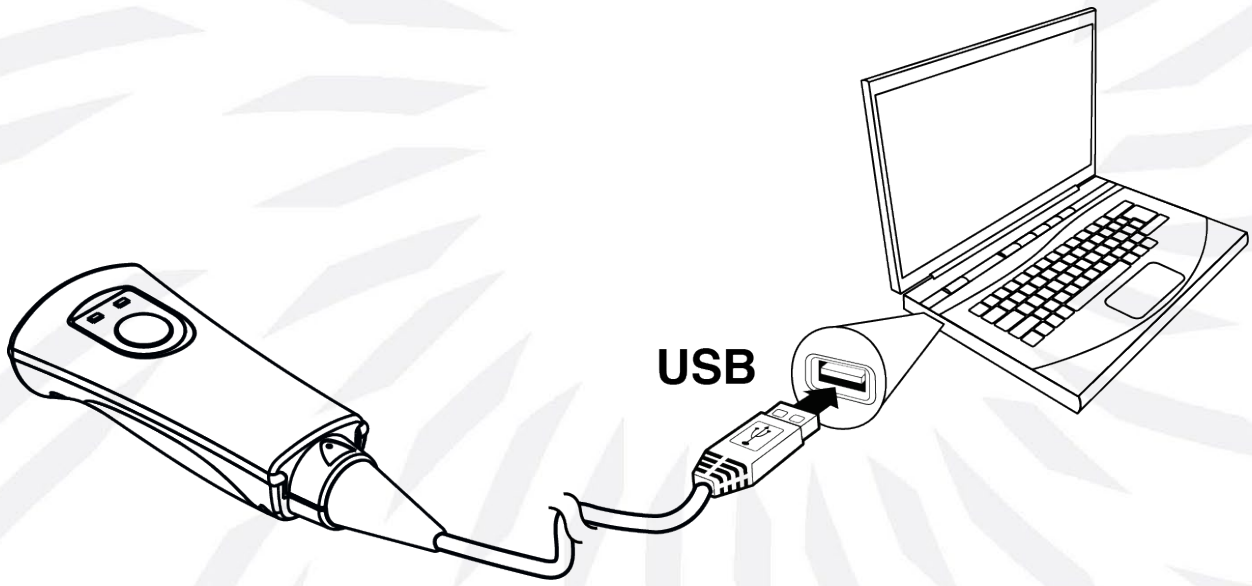
1. If you are using USB Serial COM Port Emulation interface, you must first load the driver for that interface onto your computer. The driver is available from your JADAK technical support contact.

   No driver is required when using the USB HID Keyboard interface.

2. Turn off power to the terminal/computer.

3. Connect the appropriate interface cable to the HS-1E hand scanner.

   Note: *For the HS-1E to work properly, you must have the correct cable for your type of terminal/computer.*



4. Plug the USB-A connector into a free USB port on your computer.

5. Once the HS-1E has been fully connected, power up the computer.

USB Interface Options

USB HID Keyboard Emulation

Scan the following code to program the HS-1E for USB HID Keyboard mode.

Note: The HS-1E **must** be power cycled after programming this interface!

HOSTCFG 1

USB HID Keyboard

USB COM Port Emulation

Scan the following code to program the HS-1E to emulate a regular RS-232-based COM port.

Note: The HS-1E **must** be power cycled after programming this interface!

HOSTCFG 0

USB COM Emulation

Keyboard Country Layout

When the HS-1E is set to USB HID Keyboard Emulation, use the following **KBD_CTY** commands or programming barcodes to set the specific Keyboard layout for your language. Default = United States. ***Note:*** *These commands are not applicable for RS-232 HS-1E's.*

*** United States:**

KBD_CTY 0

United Kingdom:

KBD_CTY 1

Belgium:

KBD_CTY 21

Denmark:

KBD_CTY 30

Finland / Sweden

KBD_CTY 26

France:

KBD_CTY 20

Germany:

KBD_CTY 15

Italy:

KBD_CTY 35

Netherlands:

KBD_CTY 31

Norway:

KBD_CTY 28

Portugal:

KBD_CTY 33

Spain:

KBD_CTY 36

Keyboard Control Character Output

Use these commands to enable or disable sending a text string instead of a control character. For instance, instead of sending out an actual Carriage Return (hex: 0D), it will send [CR] as readable ASCII text. Default = Disabled.

Note: *These commands are not applicable for RS-232 HS-1E's.*

KBD_NPE 1

Enable

KBD_NPE 0

** Disable*

Numeric Keypad Mode

Use these commands to send the data as if it were entered on a numerical keypad. This of course only applies to numbers 0 to 9. Default = Disabled.

Note: *These commands are not applicable for RS-232 HS-1E's.*

KBDNMPS 1

Enable

KBDNMPS 0

** Disable*

Default Options

Custom Default Settings

Scan the following code revert the unit to its custom default settings.

Note: The HS-1E **must** be power cycled after programming this command!

DEFAULT

Note: To (re-)set custom defaults, please contact JADAK.

Good Read Indicators

LED – LED on Good Read

The LED indicator can be enabled or disabled in response to a good read. Default = Enabled.

LEDGDRD 1

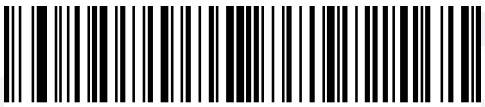
* *Enable*

LEDGDRD 0

Disable

Beeper - Good Read

The beeper may be programmed On or Off in response to a good read. Turning this option off only turns off the beeper's response to a good read indication. All error and menu beeps are still audible. Default = Enabled.



BEPGDRD 1

* *Enable*

BEPGDRD 0

Disable

Beeper Volume - Good Read

The beeper volume codes modify the volume of the beep the HS-1E emits on a good read. When set to off, error and menu beeps are still audible. Default = High.

BEPLEVL 0

Off

BEPLEVL 1

Low

BEPLEVL 2

Medium

BEPLEVL 3

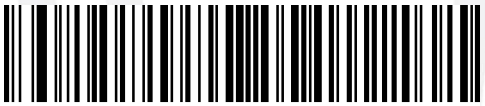
* *High*

Beeper Tone - Good Read

Scan one of the following codes to set the tone or pitch of the Good Read beep.
Default = Medium.

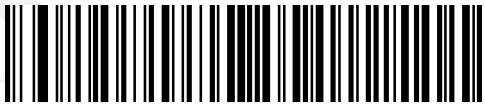
BEPTONE 0

Low



BEPTONE 2

High



BEPTONE 1

** Medium*

Beeper Time - Good Read

Scan one of the following codes to set the duration of the Good Read beep.
Default = Medium.

BEPTIME 0

Short

BEPTIME 2

Long

BEPTIME 1

** Medium*

No Reads

Not every trigger event will result in a successful barcode read. When there is no barcode read after a trigger release, the engine may return a no read signer in the form of the characters **NR** (which can be customized).
Scan one of the following codes to enable or disable the NR message.
Default = Disable No Read.


NO_READ 1

Enable No Read


NO_READ 0

** Disable No Read*

No Read Message

The Aforementioned No Read signer (NR) can be changed if you require a custom message. By using the command **NORDMSG** with ASCII text (up to a 100 characters) you can customize this message. Several typical No Read Message menu command barcodes are included below.
Default = NR.


NORDMSG

No Read Message

Setting Examples:


NORDMSG NR

** No Read Message: NR*


NORDMSG No BC

No Read Message: No BC


NORDMSG NoRead

No Read Message: NoRead


NORDMSG <NR>

No Read Message: <NR>

Miscellaneous Indicators

Beeper – Beep on [BEL]

Scan one of the following codes to enable or disable a beep sound on when a [BEL] is sent from the host to the scanner. Default = Disabled.

BEEPBEL 1

Enable

BEEPBEL 0

** Disable*

Beeper – Power Up Beep

Scan one of the following codes to enable or disable the power-up beep cycle of the scanner. Default = Enabled.

BEEPPWR 1

** Enable*

BEEPPWR 0

Disable

Error LED Duration

The HS-1E is equipped with a red LED that usually functions as an indication for errors. These commands set the Error LED Duration Time in steps of 1 millisecond from 1ms up to 1 second. Default = 100 milliseconds.
If a different duration other than those provided is needed, it can be set either by sending the serial command **ELEDDUR x** (where 'x' is a value between 0 (Off) and 1000), or by scanning the top barcode below and then set the time by scanning the digit codes and the SAVE barcode in **Appendix B**. Please contact JADAK if assistance is needed.

ELEDDUR

Sample settings:

ELEDDUR 100

** Error LED duration = 100ms*

ELEDDUR 500

Error LED duration = 500ms

Aimer Mode

The HS-1E's imager engine is equipped with an aimer that can help with positioning barcodes for quicker decoding. Scan one of the following codes to enable or disable the aimer of the scanner, during decode attempts. Default = Enabled.

AIMMODE 1

** Enable*

AIMMODE 0

Disable

Aimer Delay

The HS-1E's aimer allows a delay time for the user to aim the engine before actual scanning begins. During this delay, the aiming light will appear, but the scanner's illumination won't show, until the delay time has passed.

This command sets the Aimer Delay Time in steps of 1 millisecond from 1ms up to 4000ms (4 seconds). Default = Off.

Several commonly used Aimer Delay menu command barcodes are included below.

If a different delay time other than those provided is needed, it can be set either by sending the serial command **AIM_DLY x** (where 'x' is a value between 0 and 4000), or by scanning the top barcode below and then set the time by scanning the digit codes and the SAVE barcode in **Appendix B**. Please contact JADAK if assistance is needed.

AIM_DLY

Sample settings:

AIM_DLY 0

** Aimer Delay Off*

AIM_DLY 500

Aimer Delay = 500ms

AIM_DLY 1000

Aimer Delay = 1000ms

AIM_DLY 2000

Aimer Delay = 2000ms

Vibration

The HS-1E has an optional internal Vibration motor function that can be used to indicate errors, reads / no reads, etc. This can be very helpful in an environment where an audible beep would be unwanted; for instance in a patient ward at night in a hospital, where patients are sleeping.

Vibration Modes

The HS-1E can use its vibration engine to vibrate in different situations.
Use one of the codes below to set the vibration mode of the HS-1E. Default = Disabled.

VIBMODE 0

** Don't vibrate*

VIBMODE 4

Vibrate on good read

VIBMODE 3

Vibrate on No Read

VIBMODE 1

Vibrate on BEL (from host)

VIBMODE 2

Vibrate on error

Vibration Pulse Count

Set the Vibration Pulse count (i.e. number of vibrations) between 1 and 5 pulses. Each pulse's duration will be determined by the vibration time setting (see next page).
Default = 1 pulse.

VIBNUMB 1

**1 Vibration pulse*

VIBNUMB 2

2 Vibration pulses

VIBNUMB 3

3 Vibration pulses

VIBNUMB 4

4 Vibration pulses

VIBNUMB 5

5 Vibration pulses

Vibration Time

Sets the Vibration (and Pulse) Time in steps of 1 millisecond from 1ms up to 1 second.
Default = 100 milliseconds.
Several commonly used Vibration Time menu command barcodes are included below.

Sample settings:

VIBTIME 100

** Vibration time = 100ms*

VIBTIME 200

Vibration time = 200ms

VIBTIME 300

Vibration time = 300ms

VIBTIME 500

Vibration time = 500ms

If a different vibration time other than those provided is needed, it can be set either by sending the serial command **VIBTIME x**, *(where 'x' is a value between 0 and 1000)* or by scanning the barcode below and then set the time by scanning the digit codes and the SAVE barcode in **Appendix B**. Please contact JADAK if assistance is needed.

VIBTIME

Trigger Commands

In order to scan barcodes, you need to send a trigger command. This can be done in various ways. You can activate the HS-1E by sending the trigger command **TRGON,** pressing the physical trigger button or by using the trigger line/pin of the cable.

Several supporting commands are provided to set the allowed trigger time-out (e.g. the maximum time that the scanner will take to keep looking for a barcode) on the next page.

TRGON This command turns the trigger ON.

TRGOFF This command turns the trigger OFF.

Trigger Modes

Manual Trigger (level)

You can activate the HS-1E by pressing the trigger or sending the serial trigger command **TRGON**. When in manual trigger mode, the HS-1E scans until a bar code is read, until the trigger is released, or the trigger time-out occurs.
Use the command below to enable Manual Trigger Mode.

** Manual (level) Trigger*

Presentation Mode

Presentation mode is a hands free mode of operation in which the HS-1E will automatically trigger on when an object is moved into the field of view.
The HS-1E will not enter low power mode while in presentation mode.
Use the command below to enable Presentation Mode.

Presentation Mode

Trigger Time Out

This sets the maximum time how long the trigger procession continues during a scan attempt. This command is not valid in Presentation Trigger Mode.
Several commonly used Trigger Time Out menu command barcodes are included below.
Use the command **TRGTIME x** *(where 'x' is a value between 0 and 300.000 in milliseconds)* to set the time between 1ms and 300 seconds. Default = 9900 (9.9 Seconds).
Alternatively, you can scan the TRGTIME menu barcode below and then scan the value barcodes and the SAVE code in **Appendix B** consecutively to set a custom Trigger Time.
Note: *'TRGTIME 0' sets an infinite Trigger Time Out.*


TRGTIME

Sample settings:


TRGTIME 0

Infinite Trigger Time Out


TRGTIME 1000

Trigger Time Out 1.0 seconds


TRGTIME 5000

Trigger Time Out 5.0 seconds


TRGTIME 9900

** Trigger Time Out 9.9 seconds*

Multiple Symbols Mode

This sets the option to allow you to read multiple symbols with a single pull of the trigger. If you press and hold the trigger, aiming at a series of symbols, it will read unique symbols once, beeping (if turned on) for each read. The engine attempts to find and decode new symbols as long as the trigger is pulled, and the same symbol will not be read more than once. When Multiple Symbols Mode is turned off, the engine will only read the symbol closest to the aiming beam. Default = Off.


MULTSYM 1

Multiple Symbol Mode On


MULTSYM 0

** Multiple Symbol Mode Off*

Good Read Delay

This sets the time period before the scanner can read another bar code.
Several commonly used good read delay menu command barcodes are included below.
Default time = 0 Seconds.
Note: *Good Read Delay is most effective when in Presentation Mode or when Multiple Symbol Mode is turned on in combination with another Trigger Mode.*

Setting examples:

DLYGDRD 0

** No Good Read delay*

DLYGDRD 200

Good Read delay 0.2 seconds

DLYGDRD 500

Good Read delay 0.5 seconds

DLYGDRD 1000

Good Read delay 1.0 seconds

DLYGDRD 2000

Good Read delay 2.0 seconds

DLYGDRD 5000

Good Read delay 5.0 seconds

If a different delay time other than those provided is needed, it can either be set by sending the serial command **DLYGDRD x** *(where 'x' is a value between 0 and 30000)*, to set the time between 0 (no delay) and 30000 (=30 sec.) in steps of 1millisecond, or by scanning the barcode below, then set the delay by scanning the digit codes and the SAVE barcode in **Appendix B**. Please contact JADAK if assistance is needed.

DLYGDRD

User Specified Good-read Delay

Re-read Delay

This sets the time period before the HS-1E can read the same bar code a second time. Setting a proper re-read delay time protects against accidental re-reads 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.
Several commonly used reread delay menu command barcodes are included below.
Default time = 600 milliseconds.
Note: *Re-read Delay only works when the HS-1E is in* ***Presentation Mode****.*

Setting examples:

No Re-read delay

Re-read delay 0.1 seconds

** Re-read delay 0.6 seconds*

Re-read delay 1.0 seconds

Re-read delay 2.0 seconds

Re-read delay 5.0 seconds

If a different delay time other than those provided is needed, it can either be set by sending the serial command **DLYRERD x** *(where 'x' is a value between 0 and 30000)*, to set the time between 0 (no delay) and 30000 (=30 sec.) in steps of 1millisecond, or by scanning the barcode below and then set the time by scanning the digit codes and the SAVE barcode in **Appendix B**. Please contact JADAK if assistance is needed.

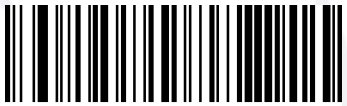
User Specified Re-read Delay

Chapter 4 - Utilities

This chapter describes some utilities that can tell more about certain aspects of the HS-1E hand scanner.

Report the list of available Programming Commands

All of the supported serial commands of the HS-1E, along with a short description and the current setting value will be serially output when this barcode is scanned.



HELP

Report Detailed Scan Engine Info

REV_ALL

Revision

Show Software Revision

REVSOFT

Show Revision Time

REVTIME

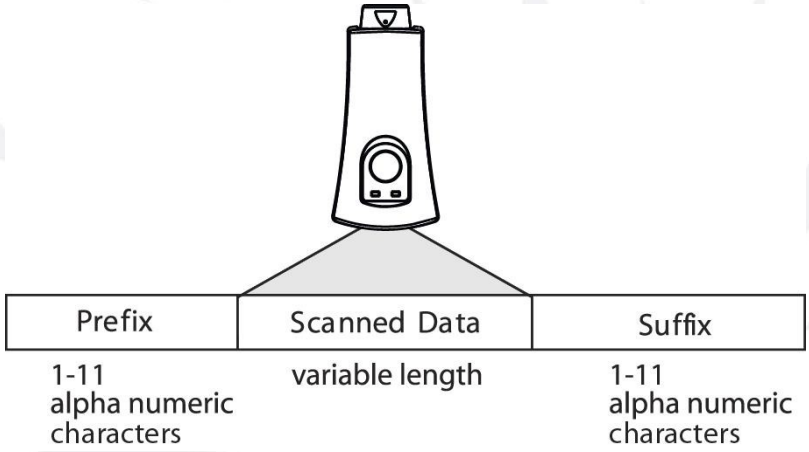
Show Device Serial Number

DEVSERN ?

Chapter 5 - Data Editing

Data Editing 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.
The following illustration shows the breakdown of a message string:



Transmit AIM ID Character

Use the following codes to transmit an AIM ID or Symbol ID Character before a possible prefix.
Default = Don't Transmit AIM ID.
See **Appendix C** for a chart of supported barcodes and their corresponding AIM ID characters.

XMITCID 1

Transmit AIM ID

XMITCID 0

** Don't Transmit AIM ID*

XMITCID 2

Transmit Symbol ID

Prefixes

The Prefix character(s) is/are user-definable data characters that can be sent before the scanned data. To enable or disable prefixes, scan the appropriate code below. Default = disabled.

PREENAB 1

Enable

PREENAB 0

** Disable*

To set all prefix parameters to their default values, use the following code:

PREDEFA

Prefix Block String

Use the command **PREBLOK** in combination with two (or more) hexadecimal digits to define a specific ASCII character as Prefix or by scanning the barcode below and then set the ASCII character by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.
Look at the ASCII conversion chart in **Appendix D** to see what hex digits convert to specific ASCII characters.
For instance, if all the scanned barcodes need to have an “A” added to them in front of the data string, enable Prefixes and send the command **PREBLOK 41**.
It’s also possible to program multiple prefixes like **PREBLOK 4229**; this will add “B)” to a code.
Default Prefix Block= Carriage Return (hex: 0D).

PREBLOK

Prefix Clear

To clear all prefixes, use the following code:

PRECLAL

Suffixes

The Suffix character(s) is/are user-definable data characters that can be sent after the scanned data. To enable or disable suffixes, scan the appropriate code below. Default = Disabled.

SUFENAB 1

Enable Suffixes

SUFENAB 0

** Disable Suffixes*

To set the suffix parameters to their default values, use the following code:

SUFDEFA

Suffix Block String

Use the command **SUFBLOK** in combination with one or more sets of two hexadecimal digits to define a specific ASCII character or set of characters as Suffix or by scanning the barcode below and then set the ASCII character by scanning the digit codes and the SAVE barcode in **Appendix B**. Please contact JADAK if assistance is needed.

Look at the ASCII conversion chart in **Appendix D** to see what hex digits convert to specific ASCII characters. You can also program more than one character as a suffix.
For example; **SUFBLOK 410A** results in adding an A and a Line Feed (LF) behind each scanned barcode. Default Setting *(Carriage Return (hex: 0D) as Suffix)*:

SUFBLOK

Suffix Clear

To clear all suffixes, use the following code:

SUFCLAL

Chapter 6 - Imaging

The HS-1E can be used to capture images in addition to decoding barcodes, as it behaves like a digital camera.
This can be very helpful in applications such as patient identity verification, signature capture, or any other situation where you need to take an image. This chapter describes some of the functions that are related to image capturing.

Illumination Brightness

Use the command **LEDSPWR** to set the Illumination (LEDs Power) between 'Off' and 100% with a value between 0 (=Off) and 2 (=100%).
Note that this setting also is in place when scanning barcodes.
All illumination brightness menu command barcodes are included below. Default = 2 (High)

Illumination Off

Illumination Brightness Low

** Illumination Brightness High*

Snap an Image

Use the command **IMGSNAP** to snap/take an image to with the HS-1E.

You can add arguments for specific usage:
L=1 = use illumination
P=0 = Picture Type (0=decoding, 1=photo, 2=manual)
G=x = Gain value (x=1|2|4|8) (note: only works when P=2)
B=1 = beep on when snapping an image (0=off)
T=1 = wait for trigger (0=off).
More details and additional arguments for **IMGSNAP** can be found in the **HELP** dump list.

Send an Image (to Host)

Use the command **IMGGETX** to get or send an image from the device to the host.

You can add arguments to this command for specific usage:
xm = sets the send-protocol to X Modem.
jpg = sends the image as jpeg format (default = bmp)
q=xx = sets the quality of the image, where xx is a value between 1 and 100 (highest quality)

Example**: IMGGETX xm jpg q=30** sends the image as a jpg file via X Modem with a quality of 30 percent.

More details and additional arguments for **IMGGETX** can be found in the **HELP** dump list.

Image Width and Height

Use these commands to show the image's maximum width and height in pixels.

Maximum Width of Image

Maximum Height of Image

Decode Window

Decode Windowing is a functionality which allows defining a limited area within the scanner's Field of View, where to look for a barcode, to improve performance.
The idea is that instead of having to search the whole full-sized image for a bar code, the decoder only has to focus on a smaller area, thereby increasing the performance.

As long as the barcode or barcodes are within the boundaries of the Decode Window, they can be decoded, when Decode Windowing is enabled.
If the barcode is partially outside the Decode Window, it will not be decoded.
Scan one of the codes below to enable or disable Decode Windowing. Default = Disabled.

Enable Decode Windowing

** Disable Decode Windowing*

To define the Decode Window, one needs to set the boundaries for Top, Bottom, Left and Right. These boundaries are defined by pixel values within the full frame (e.g. 640 x 480 pixels).

Note: There are automated restrictions to prohibit a 'negative' Decode Window size. This means that the Bottom value cannot be 'above' Top and likewise for the values for Left and Right.

Decode Window Top/Bottom

The Top and Bottom boundaries for the decode window can be set either by sending the serial command shown under the barcodes below with a value between 0 and 479, or by scanning one of the barcodes below and then set the boundary pixel value by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.

Default Top boundary = **WINDECT 192**. Default Bottom boundary = **WINDECB 288**.

Decode Window Top

Decode Window Bottom

Decode Window Left/Right

The Left and Right boundaries for the decode window can be set either by sending the serial command shown under the barcodes below with a value between 0 and 639, or by scanning one of the barcodes below and then set the boundary pixel value by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.
Default Left boundary = **WINDECL 256**. Default Right boundary = **WINDECR 384**.

WINDECL

Decode Window Left

WINDECR

Decode Window Right

Decode Window Defaults

Set all Decode Window settings to their default configuration and values.

WINDEFA

This is a screenshot of an example where a Decode Window with T=190, B=300, L=20, R=130 was used to speed up decoding a Data Matrix code that was offset to the left in the Field of View.

Chapter 7 – Symbologies

This programming section contains menu selections for the following symbologies.

- All Symbologies
- Aztec Code
- Codabar
- Code 11
- Code 128
- Code 39
- Code 93
- Composite Code
- Data Matrix
- EAN/JAN-13
- EAN/JAN-8
- GS1-128
- GS-1 Databar (RSS-14)
- GS-1 Databar Limited (RSS Limited)
- GS-1 Databar Expanded (RSS Expanded)
- Interleaved 2 of 5
- Matrix 2 of 5
- Maxi Code
- MicroPDF417
- MSI
- PDF417
- QR Code
- UPC-A
- UPC-E
- UPC-E1

Note: Please contact JADAK if you're looking to scan a symbology that's not listed here.

All Symbologies

If you want to decode all the symbologies allowable for your HS-1E, scan the **All Symbologies On** code (Enable All). If on the other hand, you want to decode only a particular symbology, scan **All Symbologies Off** (Disable All) followed by the On symbol for that particular symbology.

Note: Enabling All Symbologies can have a negative effect on the reading performance, as the decoder has to process more information and determine a found symbology from a larger list.

ALLENAB 0

Disable All

ALLENAB 1

Enable All

Linear Symbologies

Codabar

Codabar Defaults

Set all Codabar settings to their default configuration with this code.

CBRDEFA

Codabar On/Off

Scan one of the codes below to enable or disable Codabar. Default = Enabled.

CBRENAB 1

** Enable*

CBRENAB 0

Disable

Codabar Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed Codabar barcodes.
Default minimum length = 4. Default maximum length = 55.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 2 and 55, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.

CBRMINL

Codabar Minimum length

CBRMAXL

Codabar Maximum length

Code 11

Code 11 Defaults

Set all Code 11 settings to their default configuration with this code/command.


C11DEFA

Code 11 On/Off

Scan one of the codes below to enable or disable Code 11. Default = Disabled.


C11ENAB 1

Enable


C11ENAB 0

** Disable*

Code 11 Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed Code 11 barcodes.
Default minimum length = 4. Default maximum length = 55.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 1 and 55, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.


C11MINL

Code 11 Minimum length


C11MAXL

Code 11 Maximum length

Code 11 Check Digit

The scanner may look for a check digit to decide if the code is valid.

Code 11 usually has 1 check digit and some codes have 2 check digits. Either option can be chosen to be just validated, or validated and transmitted.
Default = 1 Check Digit Validate.

** 1 Check Digit Validate*

2 Check Digits Validate

Code 128

Code 128 Defaults


128DEFA

Code 128 On/Off

Scan one of the codes below to enable or disable Code 128 decoding. Default = Enabled.


128ENAB 1

** Enable*


128ENAB 0

Disable

Code 128 Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length. Default minimum length = 0. Default maximum length = 55.
The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 0 and 55, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**. Please contact JADAK if assistance is needed.


128MINL

Code 128 Minimum length


128MAXL

Code 128 Maximum length

ISBT 128 On/Off

ISBT 128 is a variant of Code 128 used in the blood bank industry. Scan the appropriate bar code below to enable or disable ISBT 128 concatenation. Default = Disabled.


ISBT128 1


ISBT128 0

Code 39

Code 39 Defaults


C39DEFA

Code 39 On/Off

Scan one of the codes below to enable or disable Code 39. Default = Enabled.


C39ENAB 1

** Enable*


C39ENAB 0

Disable

Code 39 Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed Code 39 barcodes.
Default minimum length = 0. Default maximum length = 48.
The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 0 and 48, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**. Please contact JADAK if assistance is needed.


C39MINL

Code 39 Minimum length


C39MAXL

Code 39 Maximum length

Code 39 Full ASCII Conversion

Code 39 Full ASCII is a variant of Code 39 that pairs certain characters so it can include the entire ASCII set. Default = Disabled.


C39ASCI 1


C39ASCI 0

Code 39 Check Digit

Use the following bar codes to allow scanning of all Code 39's (No Check Digits) or only allow codes with a Check Digit. Default = No Check Digits.

C39CHEC 0

** Disable*

C39CHEC 1

Enable, but don't transmit

C39CHEC 2

Enable and transmit

Code 39 Convert to Code 32 / Pharmacode

Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry. Scan the appropriate bar code below to enable or disable converting Code 39 to Code 32. Default = Disabled.

Note: *In order for this parameter to work, Code 39 must be enabled.*

C39CONV 1

Enable

C39CONV 0

** Disable*

Code 93

Code 93 Defaults

Set all Code 93 settings to their default configuration with this code.


C93DEFA

Code 93 On/Off

Scan one of the codes below to enable or disable Code 93. Default = Enabled.


C93ENAB 1

** Enable*


C93ENAB 0

Disable

Code 93 Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed Code 93 barcodes.
Default minimum length = 0. Default maximum length = 55.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 0 and 55, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.


C93MINL

Code 93 Minimum length


C93MAXL

Code 93 Maximum length

Composite Code

GS 1 Composite Code

Linear codes are combined with a unique 2D composite component to form a new class called GS1 Composite symbology. GS1 Composite symbologies allow for the co-existence of symbologies already in use.

Scan one of the codes below to enable or disable Composite Code. Default = Disabled.


COMENAB 1

Enable


COMENAB 0

** Disable*

Composite Code Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed Composite Code barcodes.
Default minimum length = 1. Default maximum length = 2435.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 1 and 2435, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.


COMMINL

Composite Code Minimum length


COMMAXL

Composite Code Maximum length

EAN-8/JAN 8

EAN-8/JAN 8 Defaults

Set the EAN-8 settings to their default configuration with this code.

EA8DEFA

EAN-8/JAN 8 On/Off

Scan one of the codes below to enable or disable EAN-8. Default = Enabled.

EA8ENAB 1

** Enable*

EA8ENAB 0

Disable

EAN-13/JAN 13

EAN-13/JAN 13 Defaults

Set the EAN-13 settings to their default configuration with this code.

E13DEFA

EAN-13/JAN 13 On/Off

Scan one of the codes below to enable or disable EAN-13. Default = Enabled.

E13ENAB 1

** Enable*

E13ENAB 0

Disable

GS1-128 (Formerly UCC-EAN128)

Scan one of the codes below to enable or disable GS1-128 Decoding. Default = Enabled.

GS1ENAB 1

* *Enable*

GS1ENAB 0

Disable

GS1 DataBar (Formerly RSS-14)

GS-1 DataBar Defaults

Set the GS-1 Databar settings to their default configuration by scanning this code.

RSSDEFA

GS-1 DataBar On/Off

Scan one of the codes below to enable or disable GS1 DataBar. Default = Enabled.

RSSENAB 1

** Enable*

RSSENAB 0

Disable

GS1 DataBar Limited (Formerly RSS-Limited)

GS-1 DataBar Limited Defaults

Set the GS-1 Databar settings to their default configuration by scanning this code.

RSLDEFA

GS-1 DataBar Limited On/Off

Scan one of the codes below to enable or disable GS1 DataBar Limited.
Default = Enabled.

RSLENAB 1

** Enable*

RSLENAB 0

Disable

GS1 DataBar Expanded (Formerly RSS-Expanded)

GS-1 DataBar Expanded Defaults

Set the GS-1 Databar settings to their default configuration by scanning this code.

RSEDEFA

GS-1 DataBar Expanded On/Off

Scan one of the codes below to enable or disable GS1 DataBar Expanded.
Default = Enabled.

RSEENAB 1

** Enable*

RSEENAB 0

Disable

GS-1 Databar Expanded Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed GS-1 Databar Expanded (RSS-Expanded) barcodes. Default minimum length = 4. Default maximum length = 74.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 4 and 74, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.

RSEMINL

RSS-E Minimum length

RSEMAXL

RSS-E Maximum length

Interleaved 2 of 5

Interleaved 2 of 5 Defaults

Set all Interleaved 2 of 5 settings to their default configuration with this command.


I25DEFA

Interleaved 2 of 5 On/Off

Scan one of the codes below to enable or disable Interleaved 2 of 5.
Default = Enabled.


I25ENAB 1

** Enable*


I25ENAB 0

Disable

Interleaved 2 of 5 Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed Interleaved 2 of 5 barcodes.
Default minimum length = 6. Default maximum length = 30.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 2 and 55, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.


I25MINL

Interleaved 2 of 5 Minimum Length


I25MAXL

Interleaved 2 of 5 Maximum Length

Interleaved 2 of 5 Check Digit

The scanner may look for a check digit to decide if the code is valid.

Interleaved 2 of 5's USS (Uniform Symbology Specification) Check digit can be validated and if desired, transmitted too.

Default = Disabled.

** Disabled*

USS Check validate

USS Check validate & transmit

Matrix 2 of 5

Matrix 2 of 5 Defaults

Set all Matrix 2 of 5 settings to their default configuration with this command.


M25DEFA

Matrix 2 of 5 On/Off

Scan one of the codes below to enable or disable Matrix 2 of 5. Default = Disabled.


M25ENAB 1

Enable


M25ENAB 0

** Disable*

Matrix 2 of 5 Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed Matrix 2 of 5 barcodes.
Default minimum length = 4. Default maximum length = 55.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 1 and 55, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.


M25MINL

Matrix 2 of 5 Minimum Length


M25MAXL

Matrix 2 of 5 Maximum Length

MSI

MSI Defaults

Set all MSI settings to their default configuration with this command.

MSIDEFA

MSI On/Off

Scan one of the codes below to enable or disable MSI. Default = Disabled.

MSIENAB 1

Enable

MSIENAB 0

** Disable*

MSI Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed MSI barcodes.
Default minimum length = 4. Default maximum length = 48.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 4 and 48, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.

MSIMINL

MSI Minimum length

MSIMAXL

MSI Maximum length

MSI Check Digits

With MSI symbols, one check digit is mandatory and always verified by the reader. The second check digit is optional.
If the MSI codes include two check digits, scan the Two MSI Check Digits bar code to enable verification of the second check digit.

Default = Enable One Check Digit, but don't transmit.


MSICHEC 0

Disable MSI Check Digits


MSICHEC 1

** Enable One Check Digit, but don't transmit*


MSICHEC 2

Enable One Check Digit and transmit


MSICHEC 3

Enable Two Check Digits, but don't transmit


MSICHEC 4

Enable Two Check Digits and transmit

UPC-A

UPC-A Defaults

Set the UPC-A settings to their default configuration with this command.


UPADEFA

UPC-A On/Off

Scan one of the codes below to enable or disable UPC-A. Default = Enabled.


UPAENAB 1

** Enable*


UPAENAB 0

Disable

UPC-A Check Digit

The check digit is the last character and is used to verify data integrity. This digit is always checked but it may be chosen whether or not to transmit it. Default=Transmit Check Digit.


UPAXMIT 1

** Transmit UPC-A Check*


UPAXMIT 0

Do Not Transmit UPC-A Check

UPC-E1

Scan one of the codes below to enable or disable UPC-E(1). Default = Disabled.


UE1ENAB 1

Enable


UE1ENAB 0

** Disable*

UPC-E(0)

UPC-E(0) Defaults

Set the UPC-E(0) settings to their default configuration with this code.

UPEDEFA

UPC-E On/Off

Scan one of the codes below to enable or disable UPC-E(0). Default = Enabled.

UPEENAB 1

** Enable*

UPEENAB 0

Disable

UPC-E(0) Check Digit

The check digit is the last character and is used to verify data integrity. This digit is always checked but it may be chosen whether or not to transmit it. Default=Transmit Check Digit.

UPEXMIT 1

** Transmit UPC-E Check*

UPEXMIT 0

Do Not Transmit UPC-E Check

UPC-E(0) Expanded Mode On/Off

UPC-E(0) Expanded Mode expands the UPC-E(0) code to the 12 digit, UPC-A format. Scan one of the codes below to enable or disable UPC-E(0) Expanded Mode. Default = Disabled.

UPEEXPN 1

Enable

UPEEXPN 0

** Disable*

1D Stacked Symbologies

PDF417

PDF417 Defaults

To set the default values for PDF417, scan this code:

PDFDEFA

PDF417 On/Off

Scan one of the codes below to enable or disable PDF417. Default = Enabled.

PDFENAB 1

** Enable*

PDFENAB 0

Disable

PDF417 Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed PDF417 barcodes.
Default minimum length = 1. Default maximum length = 2750.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 1 and 2750, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.

PDFMINL

PDF417 Minimum length

PDFMAXL

PDF417 Maximum length

MicroPDF417

MicroPDF417 Defaults

To set the default values for Micro PDF417, scan this code:

MPDDEFA

MicroPDF417 On/Off

Scan one of the codes below to enable or disable Micro PDF417. Default = Disabled.

MPDENAB 1

Enable

MPDENAB 0

** Disable*

MicroPDF417 Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed MicroPDF417 barcodes.
Default minimum length = 1. Default maximum length = 366.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 1 and 366, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.

MPDMINL

MicroPDF Minimum length

MPDMAXL

MicroPDF Maximum length

2D Matrix Symbologies

Aztec Code

Aztec Code Defaults

To set the default values for Aztec Code, scan this code:

AZTDEFA

Aztec Code On/Off

Scan one of the codes below to enable or disable Aztec Code. Default = Enabled.

AZTENAB 1

** Enable*

AZTENAB 0

Disable

Aztec Code Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed Aztec barcodes.
Default minimum length = 1. Default maximum length = 3832.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 1 and 3832, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.

AZTMINL

Aztec Code Minimum length

AZTMAXL

Aztec Code Maximum length

Data Matrix

Data Matrix Defaults

To set the default values for Data Matrix, scan this code:

DMXDEFA

Data Matrix On/Off

Scan one of the codes below to enable or disable Data Matrix. Default = Enabled.

DMXENAB 1

** Enable*

DMXENAB 0

Disable

Data Matrix Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed Data Matrix barcodes.
Default minimum length = 1. Default maximum length = 3116.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 1 and 3116, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.

DMXMINL

Data Matrix Minimum length

DMXMAXL

Data Matrix Maximum length

Maxi Code

Maxi Code Defaults

To set the default values for Maxi Code, scan this code:

MAXDEFA

Maxi Code On/Off

Scan one of the codes below to enable or disable Maxi Code. Default = Disabled.

MAXENAB 1

Enable

MAXENAB 0

** Disable*

Maxi Code Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed Maxi Code barcodes.
Default minimum length = 1. Default maximum length = 150.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 1 and 150, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.

MAXMINL

Maxi Code Minimum length

MAXMAXL

Maxi Code Maximum length

QR Code

QR Code Defaults

To set the default values for QR Code, scan this code:


QRCDEFA

QR Code On/Off

Scan one of the codes below to enable or disable QR Code. Default = Enabled.


QRCENAB 1

** Enable*


QRCENAB 0

Disable

QR Code Minimum and Maximum Length

Use the following commands in combination with numerical values to set the minimum and maximum length for allowed QR Code barcodes.
Default minimum length = 1. Default maximum length = 7089.

The minimum and maximum length for this symbology can be set either by sending the serial command shown under the barcodes below with a value between 1 and 7089, or by scanning one of the barcodes below and then set the length by scanning the digit codes and the SAVE barcode in **Appendix B**.
Please contact JADAK if assistance is needed.


QRCMINL

QR Code Minimum length


QRCMAXL

QR Code Maximum length

Chapter 8 – Product Specifications

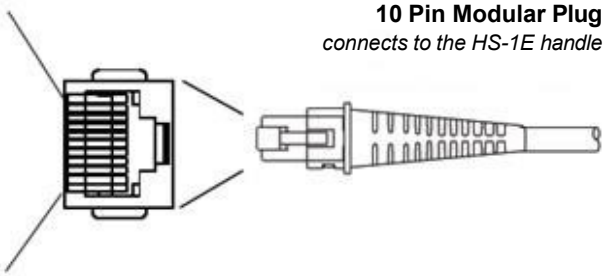
HS-1E Product Specifications

Parameter	*Specification*		
Dimensions (Typical)			
Height	1.3 inches (33.1 mm)		
Length	4.3 inches (109.2 mm)		
Width	2.1 inches (53.3 mm)		
Weight	5.5 ounces (155g)		
Aimer & Illumination			
Illumination LEDs	Multispectrum White LEDs CCT 5000k		
Aiming LED	640 nm Hyper red LED dot		
Image	VGA, 640 x 480 pixels. Binary, TIFF or JPEG output		
Field of View	Horizontal: 37.8°, Vertical: 28.8°		
Scan Angles	Tilt: 360°, Pitch: ± 45°, Skew: ± 45°		
Scan Contrast	35% minimum print contrast ratio		
Motion Tolerance	Up to 100cm/s (40 in/s) for 13 mil UPC-A at optimal focus		
Voltage Requirements	4.75 – 5.25VDC at imager		
Current Draw (Max)			
@ 5VDC	**Scanning**	**Idle**	**Inrush**
Normal:	450mA	60mA	625mA
Temperature Ranges			
Operating:	14°F to +104°F (-10°C to +40°C)		
Storage:	-40°F to +140°F (-40°C to +60°C)		
Humidity	0 to 95% non-condensing, at 104°F (40°C)		
Mechanical Drop	Operational after 50 drops from 6 feet (1.8 m) to concrete		
ESD Sensitivity	± 8kV Air, ± 4kV contact discharge to any external surface		
Agency Compliance	FCC Class B, CE EMC Class B, CE Low Voltage Directive, IEC60825-1 LED Safety: Class 1, ENG60950		

Standard Cable Pin out

USB

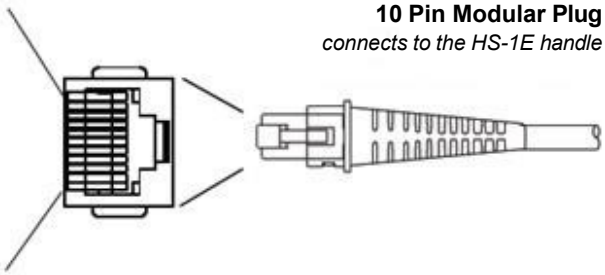
1	
2	Data +
3	Tied to 5 Volt power
4	Supply Ground
5	
6	
7	+5 Volt power connection
8	
9	
10	Data -



10 Pin Modular Plug
connects to the HS-1E handle

RS-232

1	Trigger Line
2	Shield GND
3	
4	(Supply) Ground
5	RxD - In
6	TxD - Out
7	+5 Volt power connection
8	RTS - Out
9	CTS - In
10	



10 Pin Modular Plug
connects to the HS-1E handle

Reference for the signal direction is the scanner.

Chapter 9 - Maintenance

Repairs

Repairs and/or upgrades are not to be performed on this product by the (end-)user. These services are to be performed by JADAK only. Please contact JADAK for your service needs.

Maintenance

The HS-1E provides reliable and efficient operation with a minimum of care. Although specific maintenance is not required, the following periodic checks ensure dependable product operation:

Cleaning the Scanning Window
Reading performance may degrade if the scanner's window is not clean. If the window is visibly dirty, or if the scanner is not 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.

Cleaning the Scanner Housing
In normal use, liquids and dusts will not penetrate into the housing.
However, the scanner should not be submerged in water or other liquids. It is also good practice to dampen the cleansing cloth vs. spraying the scanner directly.

The HS-1E housing is compatible with the following medical grade cleaners:

Sani-Cloth® HB
Sani-Cloth® Plus
Hydrogen Peroxide
CaviWipes™
409® Glass and Surface Cleaner
Windex® Blue
Clorox® Bleach (100%)
Isopropyl Alcohol
Gentle dish soap and water

Caution!

Do not submerge the HS-1E in water.
Do not use abrasive wipes or tissues on the HS-1E'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.

Interface Cable

Inspect the HS-1E's interface cable and connector for wear or other signs of damage. A badly worn cable or damaged connector may interfere with scanner operation.

Should the cable be damaged, the cable can be replaced in the field.

NOTE: The use of non-JADAK cables voids the warranty.

Replacing the Interface Cable

To Replace the JADAK HS-1E Interface Cable:

1. Turn the power to the host system OFF.
2. Disconnect the HS-1E's cable from the terminal or computer.
3. Locate the small triangular label that covers a hole on the bottom of the HS-1E near the cable connection point. This hole is the cable release.
4. Straighten one end of a paper clip.
5. Insert the straight end of the paper clip into the small hole and press in. This depresses the retention tab, releasing the connector. Pull the connector out while maintaining pressure on the paper clip. When the connector is free, remove the paper clip.
6. Replace with the new cable. Insert the connector into the opening and press firmly. The connector is keyed to go in only one way, and will click into place.

Chapter 10 - Customer Support

Obtaining Technical Assistance or Factory Service

JADAK provides assistance and service for all its products. To obtain warranty or non-warranty service, return the unit to JADAK (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.

If you need assistance installing or troubleshooting your scanner, please contact the JADAK office in your area.

North America

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Telephone +86 512-6283-7080
Fax: +86 512-6283-7087
E-mail: info@jadaktech.com

Limited Warranty

Novanta Corporation (hereafter referred to as “JADAK”) warrants the HS-1E to be free from defects in materials and workmanship and to conform to JADAK’s published specifications applicable to the products purchased at the time of shipment. This warranty does not cover the interface cable and does not include any JADAK product which is (i) improperly installed or used; (ii) damaged by accident or negligence, including failure to follow the proper maintenance, service, and cleaning schedule; or (iii) damaged as a result of: (A) Modification or alteration by the purchaser or other party, (B) Excessive voltage or current supplied to or drawn from the interface connections, (C) Static electricity or electro-static discharge, (D) Operation under conditions beyond the specified operating parameters, or (E) Repair or service of the product by anyone other than JADAK or its authorized representatives.

This warranty shall extend from the time of shipment for the duration published by JADAK for the product at the time of purchase (“Warranty Period”). Any defective product must be returned (at purchaser’s expense) during the Warranty Period to JADAK factory for inspection.
No product will be accepted by JADAK without a Return Materials Authorization, which may be obtained by contacting JADAK. In the event that the product is returned to JADAK within the Warranty Period and JADAK determines to its satisfaction that the product is defective due to defects in materials or workmanship, JADAK, at its sole option, will either repair or replace the product without charge, except for return shipping to JADAK.

EXCEPT AS MAY BE OTHERWISE PROVIDED BY APPLICABLE LAW, THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER COVENANTS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, ORAL OR WRITTEN, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
JADAK’S RESPONSIBILITY AND PURCHASER’S EXCLUSIVE REMEDY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT WITH NEW OR REFURBISHED PARTS. IN NO EVENT SHALL JADAK BE LIABLE FOR INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, AND, IN NO EVENT, SHALL ANY LIABILITY OF JADAK ARISING IN CONNECTION WITH ANY PRODUCT SOLD HEREUNDER (WHETHER SUCH LIABILITY ARISES FROM A CLAIM BASED ON CONTRACT, WARRANTY, TORT, OR OTHERWISE) EXCEED THE ACTUAL AMOUNT PAID TO JADAK FOR THE PRODUCT. THESE LIMITATIONS ON LIABILITY SHALL REMAIN IN FULL FORCE AND EFFECT EVEN WHEN JADAK MAY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH INJURIES, LOSSES, OR DAMAGES. SOME STATES, PROVINCES, OR COUNTRIES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

All provisions of this Limited Warranty are separate and severable, which means that if any provision is held invalid and unenforceable, such determination shall not affect the validity of enforceability of the other provisions hereof. Use of any peripherals not provided by the manufacturer may result in damage not covered by this warranty. This includes but is not limited to: cables, power supplies, cradles, and docking stations. JADAK extends these warranties only to the first end users of the products. These warranties are non-transferable. The duration of the limited warranty for the HS-1E is for one (1) year.

Statement of Agency Compliance

This HS-1E complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this HS-1E may not cause harmful interference and (2) this HS-1E must accept any interference received, including interference that may cause undesired operation.

FCC Class B Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital HS-1E pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Caution: Any changes or modifications made to this HS-1E, which are not expressly approved by Novanta Corporation, may void the user's authority to operate the equipment.

Note: To maintain compliance with FCC Rules and Regulations, cables connected to this HS-1E must be shielded cables, in which the cable's shield wire(s) have been grounded (tied) to the connector shell.

flexpoint™ HS-1E Declaration of Conformity

CAT-HS1E-H4xx, CAT-HS1E-H3xx or any JDK-XXXX variant of the base CAT models.

Manufacturer	Novanta Corporation
Address –	7279 William Barry Blvd, North Syracuse NY 13212
Product Description	Barcode Scanner

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of this declaration conforms with the relevant Union harmonization Legislation:

LOW VOLTAGE DIRECTIVE **2014/35/EU as amended**

Council Directive of February 26, 2014 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

EMC DIRECTIVE **2014/30/EU as amended**

Council Directive of February 26, 2014 on the approximation of the laws of the Member States relating to electromagnetic compatibility

RADIO EQUIPMENT DIRECTIVE **N/A**

ROHS DIRECTIVE **2011/65/EU**

Directive 2011/65/EU of the European Parliament and of the Council of 8th June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

FIRST YEAR OF THE CE MARKING **2017**

Conformity of the product with the requirements of EU directives is established through full compliance with the following standards:

Harmonized European Norms

Standard	Year + Amendments	Description
EN 60950-1	2006+A11:2009+A1:2010+A12:2011+ A2:2013	Product Safety
EN 55024	2010	Immunity
EN 55032	2012	EME
EN 61000-3-2	2014	Harmonics (current < 16A)
EN 61000-3-3	2013	Flicker (current < 16A)
CFR47 Part 15 Subpart B		Radiated Emissions

Authorized on behalf of JADAK:

Name Eva Gravius

Function VP Engineering

Address North Syracuse, New York

Date June 22, 2017

Signature

Operating Characteristics

Parameter	Range
Operating Voltage	4.75V DC – 5.25V DC
Operating Current	Idle – 60mA typical. Scanning – 450mA typical, 500mA max.
Major component operating frequencies	Crystal – 24kHz. Microprocessor core – 400Mhz. Memory Interface – 133Mhz. Switching power supplies – 1Mhz, 2Mhz. Imaging sensor – 24Mhz

Warning Labels and Markings

Symbol	Meaning	Warning Description & Abbreviations
	**Warning**	Consult product documents for additional information on this topic.
	**CE Mark**	Indicates compliance with the Council Directive 93/68/EEC for the European Union.
	**WEEE**	Indicates that electrical and electronic equipment should be disposed of properly and separate from other types of waste. Looking to recycle your JADAK parts or products? JADAK is a participant in the WEEE Directive. For more information email us at weee@jadaktech.com
	**RoHS**	Indicates the restriction of hazardous substances commonly used in electrical and electronic equipment. The symbol indicates the device is compliant with the limits set forth by the directive.

Appendix A - Command Format

The HS-1E accepts a wide range of configuration commands. Commands can be sent to the HS-1E whether by scanning a menu barcode symbol or via Serial commands sent from the host machine.

The HS-1E command format is:

Send Command: #<parameter><space><argument><specifier>[Carriage Return]

Where:
Parameter: Command
Argument: Value to be set, if applicable
Specifier: Character to designate action to be taken.

Specifier	Action
!	*Save value to RAM*
.	*Save value to ROM*
@	*Save all current settings to custom defaults*
?	*Query current value (use without argument)*
*	*Query range (use without argument)*

All available commands are listed on the following pages as well as a brief description of what the parameter choices mean. Some commands require further elaboration that can be found in the relevant sections in this manual.

For example, the command to enable reading of Code 128 barcode symbols is "128ENAB 1". The full command to apply this setting to ROM is:

#128ENAB 1. [CR]

Throughout this manual, the serial command for each setting is shown directly below the corresponding barcode menu symbol. Additionally, all commands are shown in table A1-2.

Upon reception of the special command "**HELP**", the HS-1E will output all of its commands serially to the host computer, in the format shown in table A1-1. This is a very helpful way to see what commands and ranges are supported by the firmware version that you are using, and to archive the HS-1E configuration.

Query Commands

This section will describe in more detail how to use the query commands.

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

^ What is the default value for the setting?

? What is the device's current ROM value for the setting?

% What is the device's current RAM value for the setting?

***** What is the range of possible values for the setting?

Examples:

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

Query Goal: What is the range of possible values for the Code 128 Max Length?

Send: #128MAXL *[CR]

Response: #0-55[CR]

Query Goal: What is the default value for the Code 128 Max Length?

Send: #128MAXL ^[CR]

Response: #55[CR]

Menu Bar Code Scanning

As the JADAK HS-1E can be programmed by scanning menu bar codes or by sending serial commands to the engine, there is an option to restrict the ability to scan menu codes.
By setting **MNUENAB 0**, you can no longer scan menu programming barcodes.
The only command or scannable menu barcode to revert this will be **MNUENAB 1**.
Default = Enabled.

MNUENAB 1

** Enable*

MNUENAB 0

Disable

Table A1-1: Example Output part from the “HELP” command

#Cmds	Description	RAM	ROM	Default	Range
#HELP	Display command list	N/A	N/A	N/A	N/A
#DEFAULT	Restore All Settings To Custom Defaults	N/A	N/A	N/A	N/A
#DEFFACT	Restore All Settings To Factory Defaults	N/A	N/A	N/A	N/A
#DNLDAPP	Download a firmware (*.moc) file via XModem	N/A	N/A	N/A	N/A
#HOSTCFG	Host Interface Types	N/A	N/A	N/A	N/A
#REVSOFT	Request Firmware revision information	N/A	N/A	N/A	N/A
#REVTIME	Request Time and Date of build information	N/A	N/A	N/A	N/A
#REV_ALL	Report detailed scan engine info	N/A	N/A	N/A	N/A
#ALLENAB	Enable all Symbologies	N/A	N/A	N/A	N/A
#COMENAB	Enable Composite Code	0	0	0	0-1
#COMMAXL	Composite Code Max Symbol Length	2435	2435	2435	1-2435
#COMMINL	Composite Code Min Symbol Length	1	1	1	1-2435
#128DEFA	Default Code 128 Parameters	N/A	N/A	N/A	N/A
#128ENAB	Enable Decoding Code 128	1	1	1	0-1
#128MAXL	Max Code 128 Symbol Length	55	55	55	0-55
#128MINL	Min Code 128 Symbol Length	0	0	0	0-55
#ISBT128	Enable ISBT-128	0	0	0	0-1
#C39DEFA	Default Code 39 Parameters	N/A	N/A	N/A	N/A
#C39ASCI	Code 39 Full ASCII Mode	0	0	0	0-1
#C39CHEC	Code 39 Check Digit 0=none 1=req 2=req+xmit	0	0	0	0|1|2
#C39ENAB	Enable Code 39 Decoding	1	1	1	0-1
#C39MAXL	Max Code 39 Symbol Length	48	48	48	0-48
#C39MINL	Min Code 39 Symbol Length	0	0	0	0-48
#C39CONV	convert C39 to C32 Pharmacode	0	0	0	0-1
#CBRDEFA	Default Codabar Parameters	N/A	N/A	N/A	N/A
#CBRENAB	Enable Decoding Codabar	1	1	1	0-1
#CBRMAXL	Max Codabar Symbol Length	55	55	55	2-55
#CBRMINL	Min Codabar Symbol Length	4	4	4	2-55
#I25DEFA	Default I25 Parameters	N/A	N/A	N/A	N/A
#I25CHEC	I25 Check Digit 0=none 1=req 2=req+xmit	0	0	0	0|1|2
#I25ENAB	Enable Decoding I25	1	1	1	0-1
#I25MAXL	Max I25 Symbol Length	30	30	30	2-55
#I25MINL	Min I25 Symbol Length	6	6	6	2-55
#C11DEFA	Default Code 11 Parameters	N/A	N/A	N/A	N/A
#C11CHEC	Code 11 2-Char Check Digit	0	0	0	0-1
#C11ENAB	Enable Decoding Code 11	0	0	0	0-1
#C11MAXL	Code 11 Max Symbol Length	55	55	55	1-55
#C11MINL	Code 11 Min Symbol Length	4	4	4	1-55
#C93DEFA	Default Code 93 Parameters	N/A	N/A	N/A	N/A
#C93ENAB	Enable Decoding Code 93	1	1	1	0-1
#C93MAXL	Max Code 93 Symbol Length	55	55	55	0-55
#C93MINL	Min Code 93 Symbol Length	0	0	0	0-55

...

Appendix A1-2 Command List and Standard Default Parameters

Command	Range (if applicable)	Default Value	Description
128DEFA			*Default Code 128 Parameters*
128ENAB	*0 to 1*	*1*	*Enable Decoding Code 128*
128MAXL	*0 to 55*	*55*	*Max Code 128 Symbol Length*
128MINL	*0 to 55*	*0*	*Min Code 128 Symbol Length*
1D_POOR	*0 to 1*	*0*	*Enable Poor Quality 1D Reading*
AIM_DLY	*0 to 4000*	*0*	*Aimer Delay (in milliseconds)*
AIMMODE	*0 to 3*	*3*	*Aimer Mode. 0=off, 1=altern., 2=both, 3=interl.*
ALLENAB	*0 to 1*	*0*	*Enable all Symbologies*
AZTDEFA			*Default Aztec Parameters*
AZTENAB	*0 to 1*	*1*	*Enable Aztec Decoding*
AZTMAXL	*1 to 3832*	*3832*	*Max Aztec Symbol Length*
AZTMINL	*1 to 3832*	*1*	*Min Aztec Symbol Length*
BEEPBEL	*0 to 1*	*0*	*Enable Beep on [BEL]*
BEEPPWR	*0 to 1*	*0*	*Enable power up beep*
BEPGDRD	*0 to 1*	*1*	*Enable good read beeper*
BEPLEVL	*0 to 3*	*3*	*Beeper level (0=Off,1=Low, 2=Medium, 3=High)*
BEPTIME	*0 to 2*	*1*	*Beeper duration (0=short, 1=medium, 2=long)*
BEPTONE	*0 to 2*	*1*	*Beeper pitch (0=Low, 1=medium, 2=high)*
C11CHEC	*0 to 2*	*0*	*Enable Code 11 2-Character Check Digit*
C11DEFA			*Default Code 11 Parameters*
C11ENAB	*0 to 1*	*0*	*Enable Decoding Code 11*
C11MAXL	*1 to 55*	*55*	*Code 11 Max Symbol Length*
C11MINL	*1 to 55*	*4*	*Code 11 Min Symbol Length*
C39ASCI	*0 to 1*	*0*	*Enable Code 39 full ASCII Mode*
C39CHEC	*0 to 1*	*0*	*Enable Code 39 Check Digit*
C39CONV	*0 to 1*	*0*	*convert C39 to C32 Pharmacode*
C39DEFA			*Default Code 39 Parameters*
C39ENAB	*0 to 1*	*1*	*Enable Code 39 Decoding*
C39MAXL	*0 to 48*	*48*	*Max Code 39 Symbol Length*
C39MINL	*0 to 48*	*0*	*Min Code 39 Symbol Length*
C93DEFA			*Default Code 93 Parameters*
C93ENAB	*0 to 1*	*1*	*Enable Decoding Code 93*
C93MAXL	*0 to 55*	*55*	*Max Code 93 Symbol Length*
C93MINL	*0 to 55*	*0*	*Min Code 93 Symbol Length*
CBRDEFA			*Default Codabar Parameters*
CBRENAB	*0 to 1*	*1*	*Enable Codabar Decoding*
CBRMAXL	*2 to 55*	*55*	*Max Codabar Symbol Length*
CBRMINL	*2 to 55*	*5*	*Min Codabar Symbol Length*

Command	Range (if applicable)	Default Value	Description
CODEGTE	*0 to 1*	*0*	*Enable CodeGate*
COMENAB	*0 to 1*	*0*	*Enable Composite Code*
COMMAXL	*1 to 2435*	*2435*	*Composite Code Max Symbol Length*
COMMINL	*1 to 2435*	*1*	*Composite Code Min Symbol Length*
DEFFACT			*Restore All Settings to Factory Defaults*
DEFAULT			*Restore All Settings to Custom Defaults*
DEVSERN			*Device Serial Number*
DLYGDRD	*0 to 30000*	*0*	*Good Read Delay (in milliseconds)*
DLYRERD	*0 to 30000*	*600*	*Re-read Delay (in milliseconds)*
DMXDEFA			*Default Data Matrix Parameters*
DMXENAB	*0 to 1*	*1*	*Enable Data Matrix Decoding*
DMXMAXL	*1 to 3116*	*3116*	*Max Data Matrix Symbol Length*
DMXMINL	*1 to 3116*	*1*	*Min Data Matrix Symbol Length*
DNLDAPP			*Download a firmware (*.moc) file via XModem*
E13DEFA			*Default EAN13 Parameters*
E13ENAB	*0 to 1*	*1*	*Enable Decoding EAN13*
EA8DEFA			*Default EAN8 Parameters*
EA8ENAB	*0 to 1*	*1*	*Enable EAN8 Decoding*
ELEDDUR	*0 to 1000*	*1*	*Error LED duration (in milliseconds)*
EXP_MAX	*13400 to 1500000*	*13400*	*Max Exposure*
EXPMODE	*0, 4*	*0*	*Exposure Mode (0 = Manual, 4 = Auto)*
EXPTARG	*48 to 212*	*90*	*Target White Value*
GS1ENAB	*0 to 1*	*1*	*Enable GS1 Code 128*
HELP			*Display command list and settings*
HOSTCFG	*0 to 1*	*0*	*0 = CDC (COM Emulation), 1 = HID Keyboard*
I25CHEC	*0 to 2*	*0*	*Enable I 2of5 Check Digit*
I25DEFA			*Default I 2of5 Parameters*
I25ENAB	*0 to 1*	*0*	*Enable Decoding I 2of5*
I25MAXL	*2 to 55*	*30*	*Max I 2of5 symbol length*
I25MINL	*2 to 55*	*6*	*Min I 2of5 symbol length*
IMGGETX			*Ships last image to host*
IMGMAXX		*640*	*Get Image Width*
IMGMAXY		*480*	*Get Image Height*
IMGSNAP			*Gets an image*
ISBT128	*0 to 1*	*0*	*Enable ISBT-128 Decoding*
KBD_NPE	*0 to 1*	*0*	*Keyboard control char out (Function Key Map)*
KBD_CTY	*0 to 36*	*0*	*Keyboard Country Layout*
KBDNMPS	*0 to 1*	*0*	*Numeric Keypad Mode (for digits 0-9)*
LEDGDRD	*0 to 1*	*1*	*LED on good read*
LEDSPWR	*0 to 2*	*2*	*Set illumination brightness*

Command	Range (if applicable)	Default Value	Description
M25DEFA			*Default M2of5 parameters*
M25ENAB	*0 to 1*	*0*	*Enable Code m2of5 Decoding*
M25MAXL	*1 to 55*	*55*	*Max M 2of5 Symbol Length*
M25MINL	*1 to 55*	*4*	*Min M 2of5 Symbol Length*
MAXDEFA			*Default MaxiCode Parameters*
MAXENAB	*0 to 1*	*0*	*Enable MaxiCode Decoding*
MAXMAXL	*1 to 150*	*150*	*Maxicode Max Symbol Length*
MAXMINL	*1 to 150*	*1*	*Maxicode Min Symbol Length*
MNUENAB	*0 to 1*	*1*	*Enable Menu Commands*
MPDDEFA			*Default Micro PDF Parameters*
MPDENAB	*0 to 1*	*0*	*Enable Micro PDF Decoding*
MPDMAXL	*1 to 366*	*366*	*Micro PDF Max Symbol Length*
MPDMINL	*1 to 366*	*1*	*Micro PDF Min Symbol Length*
MSICHEC	*0 to 4*	*0*	*MSI Enable Check Digit*
MSIENAB	*0 to 1*	*0*	*Enable Decoding MSI*
MSIMAXL	*4 to 48*	*48*	*Max MSI Symbol Length*
MSIMINL	*4 to 48*	*4*	*Min MSI Symbol Length*
MULTSYM	*0 to 1*	*0*	*Multiple Symbol mode*
NO_READ	*0 to 1*	*0*	*Enable no read output*
NORDMSG			*Message output by the scanner for NO READ*
PDFDEFA			*Default PDF417 Parameters*
PDFENAB	*0 to 1*	*1*	*Enable Decoding PDF417*
PDFMAXL	*1 to 2750*	*2750*	*PDF417 Max Symbol Length*
PDFMINL	*1 to 2750*	*1*	*PDF417 Min Symbol Length*
PDFPOOR	*0 to 65535*	*0*	*Enable Poor Quality PDF Reading*
PREBLOK		*0D*	*Set prefix block string*
PRECLAL			*Clear all prefixes*
PREDEFA			*Default all prefixes*
PREENAB	*0 to 1*	*0*	*Enable prefixes*
QRCDEFA			*Default QR Code Parameters*
QRCENAB	*0 to 1*	*1*	*Enable QR Code Decoding*
QRCMAXL	*1 to 7089*	*7089*	*QR Code Max Symbol Length*
QRCMINL	*1 to 7089*	*1*	*QR Code Min Symbol Length*
REV_ALL			*Report detailed scan engine info*
REVSOFT			*Request Firmware revision information*
REVTIME			*Request Time and Date of build information*
RSEDEFA			*Default RSS-Expanded Parameters*
RSEENAB	*0 to 1*	*1*	*Enable RSS-expanded (GS1 Databar Exp.)*
RSEMAXL	*4 to 74*	*74*	*RSE-Expanded Max Symbol Length*
RSEMINL	*4 to 74*	*4*	*RSE-Expanded Min Symbol Length*

Command	Range (if applicable)	Default Value	Description
RSLDEFA			*Default RSS-Limited Parameters*
RSLENAB	*0 to 1*	*0*	*Enable RSS-limited (GS1 Databar Limited)*
RSSDEFA			*Default RSS-14 Parameters*
RSSENAB	*0 to 1*	*1*	*Enable RSS-14 (GS1 Databar)*
SUFBLOK		*0D*	*Suffix Block*
SUFCLAL			*Clear all Suffixes*
SUFDEFA			*Default All Suffixes*
SUFENAB	*0 to 1*	*0*	*Enable Suffixes*
TRGMODE	*0 to 1*	*0*	*Trigger Mode 0=Manual, 1=Presentation*
TRGOFF			*Software trigger off*
TRGON			*Software trigger on*
TRGTIME	*0 to 300000*	*9900*	*Trigger Time Out (in milliseconds)*
UE1ENAB	*0 to 1*	*0*	*Enable UPC-E1 Decoding*
UPADEFA			*Default UPC-A parameters*
UPAENAB	*0 to 1*	*1*	*Enable UPC-A Decoding*
UPAXMIT	*0 to 1*	*1*	*Transmit UPC-A Enable Check digit*
UPEDEFA			*Default UPC-E parameters*
UPEENAB	*0 to 1*	*1*	*Enable UPC-E (0) Decoding*
UPEEXPN	*0 to 1*	*0*	*Enable UPC-E Expanded Decoding*
UPEXMIT	*0 to 1*	*1*	*Transmit UPC-E(0) Check digit*
VIBMODE	*0 to 4*	*0*	*Vibration Mode*
VIBNUMB	*1 to 5*	*1*	*Vibration Pulse Count*
VIBTIME	*1 to 1000*	*100*	*Vibration Time Duration (in milliseconds)*
WINDECB	*0 to 479*	*288*	*Set Bottom boundary of decode window*
WINDECE	*0 to 1*	*0*	*Enable Decode Windowing*
WINDECL	*0 to 639*	*256*	*Set Left boundary of decode window*
WINDECR	*0 to 639*	*384*	*Set Right boundary of decode window*
WINDECT	*0 to 479*	*192*	*Set Top boundary of decode window*
WINDEFA			*Resets all the window values back to default*
XMITCID	*0 to 2*	*0*	*Transmit code IDs: Off = 0, AIM = 1, Symbol=2*

Appendix B – Programming Chart


1


2


3


4


5


6


7


8


9


0


A


B


C


D


E


F

After you are done with setting the value with the barcodes above, finish with scanning SAVE:


SAVE

Appendix C - AIM IDs

Barcode	AIM ID	AIM ID Modifiers
Code 39, Code 39 Full ASCII, Code 32	A	0 No check character or Full ASCII processing.
		1 Reader has checked one check character.
		3 Reader has checked and stripped check character.
		4 Reader has performed Full ASCII character conversion.
		5 Reader has performed Full ASCII character conversion and checked one check character.
		7 Reader has performed Full ASCII character conversion and checked and stripped check character.
		Example: A Full ASCII bar code with check character W, **A+I+MI+DW**, is transmitted as **]A7**AIMID where 7 = (3+4).
Code 128, ISBT 128, ISBT 128 Concatenated, GS1-128, Coupon (Code 128 portion)	C	0 Standard data packet, no Function code 1 in first symbol position.
		1 Function code 1 in first symbol character position.
		2 Function code 1 in second symbol character position.
		Example: A Code (EAN) 128 bar code with Function 1 character FNC1 in the first position, AIMID is transmitted as **]C1**AIMID
Data Matrix	d	0 ECC 000-140, not supported.
		1 ECC 200.
		2 ECC 200, FNC1 in first or fifth position.
		3 ECC 200, FNC1 in second or sixth position.
		4 ECC 200, ECI protocol implemented.
		5 ECC 200, FNC1 in first or fifth position, ECI protocol implemented.
		6 ECC 200, FNC1 in second or sixth position, ECI protocol implemented.
UPC/EAN, Coupon (UPC portion)	E	0 Standard data packet in full EAN format, i.e. 13 digits for UPC-A, UPC-E, and EAN-13 (not including supplemental data).
		1 Two digit supplemental data only.
		2 Five digit supplemental data only.
		3 Combined data packet comprising 13 digits from EAN-13, UPC-A or UPC-E symbol and 2 or 5 digits from supplemental symbol.
		4 EAN-8 data packet.
		Example: A UPC-A bar code 012345678905 is transmitted as **]E0**0012345678905

Barcode	AIM ID	AIM ID Modifiers
GS1 DataBar Family	e	No option specified at this time. Always transmit 0. GS1 DataBar and GS1 DataBar Limited transmit with an Application Identifier "01". ***Note:*** In GS1-128 emulation mode, GS1 DataBar is transmitted using Code 128 rules (i.e.,]C1).
		Example: A GS1 DataBar bar code 0110012345678902 is transmitted as **]e**00110012345678902.
Codabar	F	0 No check digit processing.
		1 Reader has checked check digit.
		3 Reader has stripped check digit before transmission.
		Example: A Codabar bar code without check digit, 4123, is transmitted as **]F0**4123
Code 93	G	0 No options specified at this time. Always transmit 0.
		Example: A Code 93 bar code 012345678905 is transmitted as **]G0**012345678905
Code 11	H	0 Single check digit
		1 Two check digits
		3 Check characters validated but not transmitted.
Interleaved 2 of 5	I	0 No check digit processing.
		1 Reader has validated check digit.
		3 Reader has validated and stripped check digit.
		Example: An I 2 of 5 bar code without check digit, 4123, is transmitted as **]I0**4123
PDF417, Macro PDF417, Micro PDF417	L	0 Reader set to conform to protocol defined in 1994 PDF417 Symbology specifications. **Note:** When this option is transmitted, the receiver cannot reliably determine whether ECIs have been invoked or whether data byte 92_{DEC} has been doubled in transmission.
		1 Reader set to follow the ECI protocol (Extended Channel Interpretation). All data characters 92_{DEC} are doubled.
		2 Reader set for Basic Channel operation (no escape character transmission protocol). Data characters 92_{DEC} are not doubled. ***Note:*** When decoders are set to this mode, unbuffered Macro symbols and symbols requiring the decoder to convey ECI escape sequences cannot be transmitted.
		3 The bar code contains a GS1-128 symbol, and the first codeword is 903-907, 912, 914, 915.
		4 The bar code contains a GS1-128 symbol, and the first codeword is in the range 908-909.
		5 The bar code contains a GS1-128 symbol, and the first codeword is in the range 910-911.
		Example: A PDF417 bar code ABCD, with no transmission protocol enabled, is transmitted as]L2ABCD.

Barcode	AIM ID	AIM ID Modifiers
TLC 39	L2	
MSI	M	0 Check digits are sent.
		1 No check digit is sent.
		Example: An MSI bar code 4123, with a single check digit checked, is transmitted as**]M1**4123
QR Code, MicroQR	Q	0 Model 1 symbol.
		1 Model 2 / MicroQR symbol, ECI protocol not implemented.
		2 Model 2 symbol, ECI protocol implemented.
		3 Model 2 symbol, ECI protocol not implemented, FNC1 implied in first position.
		4 Model 2 symbol, ECI protocol implemented, FNC1 implied in first position.
		5 Model 2 symbol, ECI protocol not implemented, FNC1 implied in second position.
		6 Model 2 symbol, ECI protocol implemented, FNC1 implied in second position.
Discrete 2 of 5, IATA 2 of 5	S	0 No options specified at this time. Always transmit 0.
		Example: A D 2 of 5 bar code 4123, is transmitted as **]S0**4123
Maxicode	U	0 Symbol in Mode 4 or 5.
		1 Symbol in Mode 2 or 3.
		2 Symbol in Mode 4 or 5, ECI protocol implemented.
		3 Symbol in Mode 2 or 3,
Aztec, Aztec Rune	z	0 Aztec symbol.
		C Aztec Rune symbol.
Trioptic Code 39	X	0 No option specified at this time. Always transmit 0.
		Example: A Trioptic bar code 412356 is transmitted as **]X0**412356
Bookland EAN	X	0 No options specified at this time. Always transmit 0.
		Example: A Bookland EAN bar code 123456789X is transmitted as **]X0**123456789X
ISSN EAN	X	0 No options specified at this time. Always transmit 0.
		Example: An ISSN EAN bar code 123456789X is transmitted as **]X0**123456789X
Chinese 2 of 5, Matrix 2 of 5, Korean 3 of 5, US Postnet, US Planet, UK Postal, Japan Postal, Australia Post, Netherlands KIX Code, USPS 4CB/One Code/ Intelligent Mail, UPU FICS Postal	X	

Appendix D - ASCII Conversion Chart

For the HS-1E hand scanner, use the 2 digit Hex values to create an ASCII character.
E.g., to create an F, use '46' and to create an f, use '66'. The first 32 characters are unprintable.

Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char
0	00	NUL	32	20	*Space*	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	19	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	DEL

Appendix D – Extended ASCII Conversion Chart

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	ª	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	Đ	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	º	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

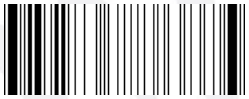
Appendix E - Sample Bar Codes

UPC-A

Codabar

Code 128

Code 39



Code 93

Interleaved 2 of 5

PDF-417

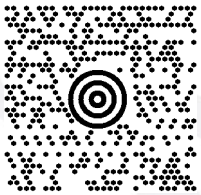
Composite Code

MicroPDF

Aztec

Data Matrix

QR Code



MaxiCode

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JADAK, a business unit of Novanta, is a market leader in machine vision, RFID, barcode, printing, and color and light measurement products and services for original equipment manufacturers. The business designs and manufactures custom embedded detection and analysis solutions that help customers solve unique inspection, tracking, scanning and documenting challenges. JADAK is based in Syracuse, New York, with sales and technical locations across the globe. For more information, visit www.jadaktech.com. ThingMagic is JADAK's RFID line of products.

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