2D Imager Scanner

- MS852P -

User's Manual

Version 1.0

Revision History

Date	Change Description	Version
20221202	First Published Version	1.0

Preface

About This Manual

Thank you for purchasing the Unitech product.
This manual explains how to install, operate and maintain our product.
No part of this publication may be reproduced or used in any form, or by any electrical or mechanical means, such as photocopying, recording, or information storage and retrieval systems, without permission in writing from the manufacturer. The material in this manual is subject to change without notice.

Regulatory Compliance Statements

FCC Warning Statement

This device has been tested and found to comply with the limits for a Class B digital device, 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 with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with 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/TV technician for help.

1. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. To maintain compliance with FCC RF exposure requirements, avoid direct contact to the transmitting antenna during transmitting.
3. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

FCC Label Statement

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

RF Radiation Exposure Statement

For body contact during operation, this device has been tested and meets FCC RF exposure guidelines when used with an accessory that contains no metal and that positions the handset a minimum of 1.0 cm from the body.
Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

European Conformity Statement

Unitech Electronics co., Ltd herewith declares that the Unitech product is in compliance with the essential requirements and all other provisions of the RED 2014/53/EU directive.
The declaration of conformity is available for download at :
https://portal.Unitech.eu/public/Safetyregulatorystatement

CE RF Exposure Compliance

For body-worn operation, this device has been tested and meets the ICNIRP guidelines and the European Standard EN 62209-2, for use with dedicated accessories, SAR is measured with this device at a separation of 0.5 cm to the body, while transmitting at the highest certified output power level in all frequency bands of this device. Use of other accessories which contain metals may not ensure compliance with ICNIRP exposure guidelines.

CE Mark Warning

RoHS Statement

This device conforms to RoHS (Restriction Of Hazardous Substances) European Union regulations that set maximum concentration limits on hazardous materials used in electrical and electronic equipment.

Waste electrical and electronic equipment (WEEE)

Unitech has set up a policy and process to meet the 2012/19/EU concerning electronic waste disposal.

For more detailed information of the electronic waste disposal of the products you have purchased from Unitech directly or via Unitech's resellers, you shall either contact your local supplier or visit us at : https://portal.Unitech.eu/public/WEEE

Taiwan NCC Warning Statement

NCC 警語

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。應避免影響附近雷達系統之操作。高增益指向性天線只得應用於固定式點對點系統。

注意事項:

1. 使用過度恐傷害視力。
2. 使用30分鐘請休息10分鐘；2歲以下幼兒不看螢幕，2歲以上每天看螢幕不要超過1小時。
3. 減少電磁波影響，請妥適使用。

Note:

Within the 5.25-5.35 GHz band, U-NII devices will be restricted to indoor operations to reduce any potential for harmful interference to co-channel MSS operations.

Laser Information

The Unitech product is certified in the U.S. to conform to the requirements of DHHS/CDRH 21CFR Subchapter J and to the requirements of IEC 60825-1. Class II and Class 2 products are not considered to be hazardous. The Unitech product contains internally a Visible Laser Diode (VLD) whose emissions do not exceed the maximum limits as set forth in the above regulations. The scanner is designed so that there is no human access to harmful laser light during normal operation, user maintenance or prescribed service operations.

The laser safety warning label required by the DHHS/IEC for the Unitech product's optional laser scanner module is located on the memory compartment cover, on the back of the unit.

* Laser information only applies to the products with laser components.

CAUTION! Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light. Use of optical instruments with the scanner, including binoculars, microscopes, and magnifying glasses, with will increase eye damage. This does not include eyeglasses worn by the user.

LED Information

The Unitech product contains LED indicator(s) or LED ring whose luminance is not harmful to human eyes during normal operation, user maintenance or prescribed service operations.

*LED information only applies to the products with LED components.

Battery Notice

1. To guarantee optimal performance, it is recommended that rechargeable batteries be replaced every year, or after 500 charging cycles are completed. It is normal for the battery to balloon or expand after one year or 500 cycles. Although it does not cause damage, it cannot be used again and must be disposed of according to the location's safe battery disposal procedures.
2. If a battery performance decreases more than 20%, the battery is at the end of its life cycle. Stop use and ensure the battery is disposed of properly.
3. The length of time that a battery lasts depends on the battery type and how the device is used. Conserve the battery life by doing the following:
   - Avoid fully uncharging the battery because this places additional strain on it. Several partial uncharges with frequent charges are better than a fully uncharged battery. Charging a partially charged battery does not cause harm to the unit.
   - Keep the battery cool. Avoid hot vehicles. For prolonged storage, keep the battery at a 40% charge level.
   - Do not leave the battery uncharged and unused for an extended period of time, the battery will wear out and the longevity of the battery will be at least half of one with frequent charges.
4. Protect battery life by not over or under charging the battery.
5. Please do not leave battery unused for long time without charging it. Despite Unitech’s safety precautions, the battery pack may begin to change shape. If so, stop using it immediately. Please check to see if you are using a proper power adapter to charge the battery or contact your service provider for service.
6. If you cannot charge the battery after it has been idle for an extended period of time and it begins to heat up, please do not try to charge it. It may not be functional anymore.
7. Please only use the original battery from Unitech. Using a third party battery can damage our products. Please note that when such damage occurs, it is not covered by Unitech’s warranty policy.

CAUTION!

- RISK OF EXPLOSION IF BATTERY IS REPLACED INCORRECTLY.
  DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
- 電池若未正確更換，可能會爆炸。請原廠建議之同款電池或同等級的電池來更換。請依原廠指示處理廢電池。
- 如果更换不正确之电池行事会有爆炸的风险
  请依制造商说明书处理用过之电池

Battery charge notice

It is important to consider temperature when the battery pack is charging. Charging is most efficient at normal room temperature or in a slightly cooler environment. It is essential that batteries are charged within the stated range of 0˚C to 40˚C. Charging batteries outside of the specified range could damage the batteries and shorten their life cycle.

CAUTION! Do not charge batteries at a temperature lower than 0˚C. This will make the batteries unstable and dangerous. Please use a battery temperature detecting device for a charger to ensure a safe charging temperature range.

CAUTION! To ensure the unit working properly, please keep all connectors away from the contaminants staying inside of them such as dust, grease, mud, and water. The negligence may cause the unit with no communication, short circuited, overheated and so on.

CAUTION! If the connector is damaged, please ensure the connector is being fully repaired before use the unit to avoid causing short circuited.

Storage and safety notice

Although charged batteries may be left unused for several months, their capacity may be depleted due to build up of internal resistance. If this happens, they will require recharging prior to use. Batteries may be stored at temperatures between -20°C to 60°C, however they may deplete more rapidly at higher temperatures. It is recommended to store batteries at room temperature.

** The message above only applies to the usage of the removable batteries. For the products with non-removable batteries / without batteries, please refer to the specification of each product.*

Product Operation and Storage Notice

The Unitech product has applicable operation and storage temperature conditions. Please follow the limitation of suggested temperature conditions to avoid failure, damage or malfunction.

**For applicable temperature conditions, please refer to the specification of each product.*

Adapter Notice

1. Please do not leave the power adapter in the socket when it is not connected to your Unitech product for charging.
2. Please remove the power adapter when the battery is fully recharged.
3. The bundled power adapter that comes with your Unitech product is not meant to be used outdoors. An adapter exposed to water or rain, or a very humid environment can cause damage to both the adapter and the product.
4. Please only use the bundled power adapter or same specification of adapter to charge your Unitech product. Using the wrong power adapter can damage your Unitech product.

** The message above only applies to the product connected to the adapter. For the products without using the adapters, please refer to the specification of each product.*

Hearing Damage Warning

To prevent possible hearing damage, do not listen at high volume levels for long periods.

Figure 1 – Warning label (IEC 60417-6044)

Worldwide Support

Unitech's professional support team is available to quickly answer questions or assist with technical-related issues. Should an equipment problem occur, please contact the nearest Unitech regional service representative.
For complete contact information please visit the Web sites listed below:

Taipei, Taiwan – Headquarters		Europe	
Tel:	+886-2-89121122	**Tel:**	+31-13-4609292
E-mail:	info@hq.ute.com	**E-mail:**	info@eu.ute.com
Address:	5F, No. 136, Lane 235, Baoqiao Road, Xindian District, New Taipei City 231, Taiwan (R.O.C.)	**Address:**	Kapitein Hatterasstraat 19, 5015 BB, Tilburg, the Netherlands
Website:	http://www.ute.com	**Website:**	http://eu.ute.com
China		**Japan**	
Tel:	+86-59-2310-9966	**Tel:**	+81-3-62310896
E-mail:	info@cn.ute.com	**E-mail:**	info@jp.ute.com
Address:	Room401C, 4F, RIHUA International Mansion, Xinfeng 3nd Road, Huoju Hi-tech District, Xiamen, Fujan , China	**Address:**	Tosei Building 3F., 1-8-10 Nihonbashi-Hakozakicho, Cyuouku, Tokyo, 103-0015, Japan
Website:	http://cn.ute.com	**Website:**	http://jp.ute.com
Asia & Pacific / Middle East		**Latin America**	
Tel:	+886-2-27911556	**Tel:**	+52-55-5171-0528
E-mail:	info@apac.ute.com info@india.ute.com info@mideast.ute.com	**E-mail:**	info@latin.ute.com
Address:	4F., No. 236, ShinHu 2nd Rd., NeiHu Chiu, 114, Taipei,Taiwan	**Address:**	17171 Park Row, Suite 210 Houston, TX 77084USA (Rep.)
Website:	http://apac.ute.com / http://mideast.ute.com	**Website:**	http://latin.ute.com
North America		**Please scan QR Code to visit us :**	
Tel:	+1-714-8916400		
E-mail:	info@us.ute.com / info@can.ute.com		
Address:	6182 Katella Ave, Cypress, CA 90630, USA		
Website:	http://us.ute.com		

Warranty Policy

The following items covered under the Unitech Limited Warranty are free from defects during normal use:

The warranty period is varied from each country. Please consult with your supplier or Unitech local office for actual length of warranty period to your purchased product.

Warranty becomes void if equipment is modified, improperly installed or used, damaged by accident or neglect, or if any parts are improperly installed or replaced by the user.

Table of Contents

Chapter 1 - Overview

1.1 Package

Please make sure the following contents are in the MS852P gift box.
If something is missing or damaged, please contact your Unitech representative.

The Package Contents

- Dongle
- MS852P with battery
- USB Cable for cradle
- Quick Start Guide
- Cradle
- Power Adaptor

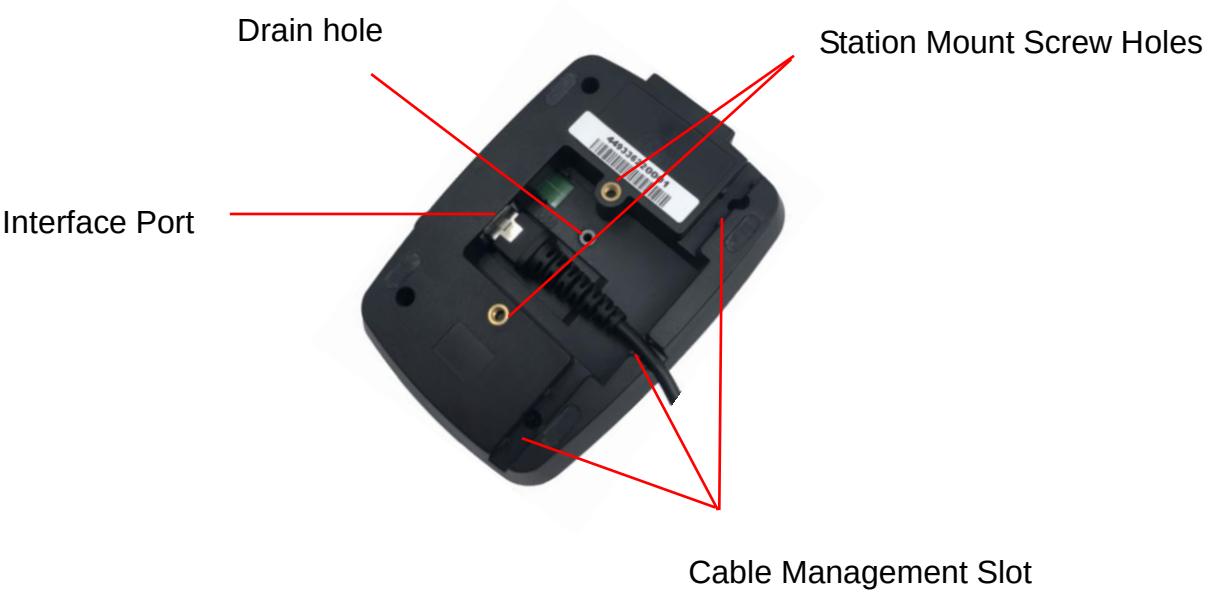
Optional Accessories

- Dongle
- Battery pack
- USB Cable for cradle

1.2 Product Detail

1.2.1 MS852P Product View

1.2.2 Cradle details



1.3 Specifications

Optical & Performance	
Sensor	CMOS Sensor, 1280 x 800 pixels
Aiming Element	655 nm Laser
Illumination	One (1) Hyper Red 660 nm LED
Skew Angle	± 60°
Pitch Angle Sensor	± 60°
Roll Angle	360°
Optical Resolution	3 mil (code 39), 5 mil (code128), 5 mil (PDF417)
Depth of Field	Symbology/Resolution Near/Far Code 39: 3 mil 7.6 cm to / 14.7 cm Code 128: 5 mil / 5.8 cm to / 24.9 cm PDF417: 5 mil / 7.6 cm to / 20.1 cm PDF 417: 6.67 mil / 6.3 cm to/ 25.7 cm DataMatrix: 10 mil / 5.3 cm to / 27.8 cm UPCA (100%) / 4.1 cm to / 63.2 cm Code 128: 15 mil / 6.1 cm to/ 70.6 cm Code 39: 20 mil / 4.1 cm to / 91.7 cm QR Code: 20 mil / 2.8 cm to / 44.5 cm
Electrical	
Operation Voltage	DC 3V to 5V
Current Consumption	Operation mode:80.6mA , Standby mode:14.6mA
Indicator	LED & Beeper & Vibrator
Symbologies	
1D	Code 39, Code 128, Code 93, Codebar/NW7, Code 11, MSI, UPC/EAN, I 2 of 5, Korean 3 of 5, GSI DataBar, Base 32 Italian Pharma)
2D	PDF417, Micro PDF417, Composite Codes, TLC-39, Aztec, DataMatrix, MaxiCode, QR Code, Micro QR, Chinese Sensible (Han Xin), Postal Codes Supported OCR Symbologies: OCR-A, OCR-B

Data Formatting	Prefix, Suffix, Code ID, Reformatting Date
Regulatory Approvals	
CE, FCC, BSMI, VCCI	
Communication	
Radio	Unlicensed 2.4GHz
Wireless Coverage	10M(line of sight)
Interface/ Profile	Wireless,SPP & HID profiles
Host Interface Supported	USB (HID; CDC)
Mechanical	
Dimensions	87.8 L x 71.6 W x 177.7 H (mm)
Weight	213g
Trigger Switch Life	10 million times
Cradle Dimension	120.6 L x 88.7 W x 86.0 H (mm)
Environmental	
ESD Protection	Functional after 8K Contact and 15K Air
Mechanical Shock	2.1M onto concrete (scanner only)
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Storage Temperature	-40°C to +70°C (-40°F to +158°F)
Relative Humidity	95% non-condensing
IP Rating	IP42
Accessories	
• Dongle Battery pack	• Battery pack

Note:

The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

	AT	BE	BG	HR	CY	CZ	DK
	EE	FI	FR	DE	EL	HU	IE
	IT	LV	LT	LU	MT	NL	PL
	PT	RO	SK	SI	ES	SE	UK
	IS	LI	NO	CH	TR		

1.4 Getting Started

Scanner Turn on : Long press the trigger key for 2 seconds until you hear a long beep sound.

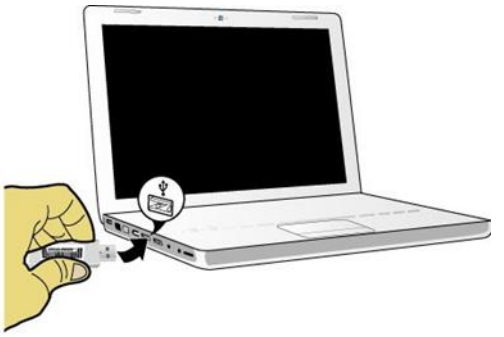
Scanner Turn off : Long press the trigger key for about 7 seconds until you hear a short beep sound.

1.4.1 How to pair the scanner with the receiver

1. Long press the trigger key for 2 seconds until you hear a long beep sound to turn on the MS852P.

2. Scan the MAC address on the dongle with MS852P.

3. Insert a dongle into a USB port of the computer or laptop PC.



4. When being successfully connected to the dongle, the scanner will beep with low-medium-high sound.

1.4.2 Cradle Function & Operation

1. Charging
2. Update scanner firmware

- Cradle button is for updating MS852P firmware
- Connect cradle to PC or an adaptor and plug in the socket.
- Place the MS852P scanner into the cradle under power off condition. Press and hold the cradle button and MS852P trigger key for around 2 seconds, release after you hear beeper sound. It means MS852P scanner has enter firmware update process.

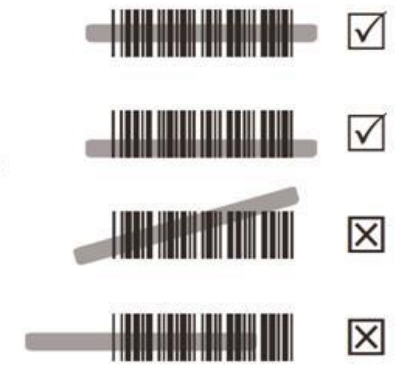
Cradle Button

1.4.3 Test

Open a word processing program such as Microsoft Word or Notepad, and scan the following barcode:

If the word "Unitech" appears on the screen, you have successfully installed your scanner.

Note: To scan a barcode, make sure the aiming beam crosses every bar and space of the barcode.

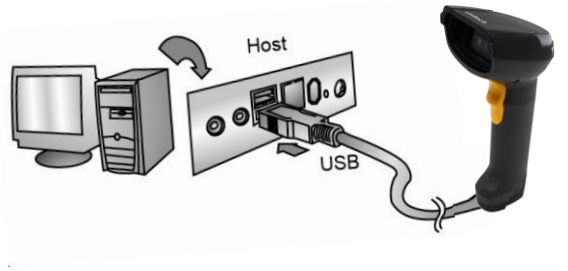


1.5 Battery Charging

Before you use the MS852P for the first time, we strongly recommend charging the battery. It takes approximately 5 hours to fully charge the battery. To charge the scanner with / without a cradle, please follow the instructions below. Please only use the USB type C cable which came with the package.

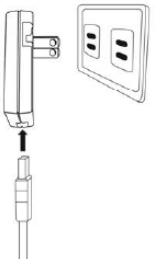
- **Charging through USB type C cable**

  To charge MS852P, please connect scanner with host PC through USB type C cable.



- Charging with the cradle

  Please charge your scanner with the cradle by connecting the cradle with host PC, or the USB cable connect to AC power adapter into the electrical outlet.



(A)

or

(B)

1.6 How to Replace Battery

Please follow the below instruction to replace the scanner battery.

1. Loosen the screw with a screwdriver, and take the screw out.

2. Remove the battery cap

3. Take out the battery

4.Place the new battery into the scanner.

5. Lock the battery cap with a screw tightly using a screwdriver.

1.7 LED / Beeper Indicator

1.7.1 Scanner LED indicator

Description	Indication
Battery charging	Solid Red Light **(LED is in the center of housing)**
Battery Low < 10%	Red LED blinking every 2 seconds **(LED is in the outer ring)**
Battery Low < 5%	Red LED blinking fast with all other LED indicators disabled **(LED is in the outer ring)**
System Warning /Error	Red LED toggling every second for 5 seconds or until trigger key pressed
USB dongle is paired and disconnected to the host	Solid Green Light
Scanner in Auto Presentation Mode	Green LED blinking every 2 seconds
System busy with data scanning disabled	Green LED toggling every second
USB dongle is connected to the host / cradle & ready to send data.	Solid Blue Light
Good read	Green LED flashing once
USB dongle in pairing mode	Blue LED toggling every second
USB dongle is connected to the host / cradle but its signal is too weak to send data Blue LED blinking fast	Blue LED blinking fast
In scanner Firmware Update Mode	White LED

1.7.2 Scanner Beeper indicator

Beeper Description	Indication
Scanner in Auto Operation Mode	Power On with 1 Beep
Scanner in Wedge Operation Mode	Power On with 2 Beeps
Scanner in Batch Operation Mode	Power On with 3 Beeps
Auto Power Off Alarm	3 short beeps at 15 seconds before power off
Power Off	Short beep
Good Read with USB dongle Connected	Beep with medium sound
Good Read with USB dongle Disconnected	Beep with short medium-high sound
USB dongle Connection	Beep with low-medium-high sound

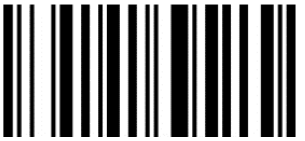
1.7.3 Cradle LED indicator

Description	Indication
Power is on but host is not connected	Solid Red Light
Host is connected, USB dongle is paired and disconnected	Solid Green Light
System busy with data sending/receiving disabled	Green LED toggling every second
Host is connected, USB dongle is connected and cradle is ready to send/receive data	Solid Blue Light
USB dongle in pairing mode	Blue LED toggling every second
In cradle Firmware Update Mode	White Light on
In scanner Firmware Update Mode	White LED toggling every second

Chapter 2 – Command Settings

2.1 System Reset

Factory Defalult



Firmware Version

Reset Setting

Note: Reset Setting will restore default settings except Scanner Type, Operation Mode and Dongle pairing.

2.2 Wireless Communication Mode

HID *

SPP

Un-pair with dongle

2.3 Operation Mode

Auto *

Batch

Wedge

2.4 Save Buffer When Power Off

Save

Don't Save *

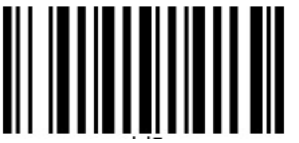
2.5 Data & Memory

Send Batch

Free Buffer / Drive Space

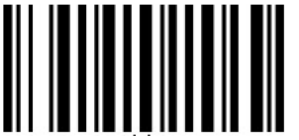
Erase Last Data Entry

Enter Auto Buffer Erase



Enter Batch File Erase

Erase



Note: To erase buffer, scan 'Enter Auto Buffer Erase' and then scan 'Erase'. To erase batch file, scan 'Enter Batch File' and then scan 'Erase'.

2.6 End of Batch Sending Message

Send

Don't Send *

Note: If 'Send' is selected, MS852P will send message "# End of File Total=Number CS=0xHHHH #" before the end of batch file sending. Number is total entries in decimal format and 0xHHHH is 32-bit checksum in hex format.

2.7 Control Character in Barcode

Send

Partial Send *

Don't Send

Note: Partial Send only sends characters BS (0x08), TAB (0x09), CR (0x0D) and ESC (0x1B).

2.8 Data Terminator

None/ Null

CR *

LF

CRLF

TAB

2.9 Encoding

ASCII *

UTF-8

Big 5

2.10 Auto Power Off After Idle

5 Minutes

15 Minutes*

30 Minutes

1 Hour

2 Hours

4 Hours

8 Hours

Disable

2.11 Beeper Control

High Volume

Medium Volume *

Low Volume

Mute

2.12 Vibrator Control

Enable Vibrator *

Disable Vibrator

2.13 Good Read Indicator

None

Beeper *

Vibrator

Beeper & Vibrator

2.14 Connection Indicator

None

Beeper *

Vibrator

Beeper & Vibrator

2.15 System Setting Indicator

None

Beeper *

Vibrator

Beeper & Vibrator

2.16 System Warning/Error Indicator

None

Beeper *

Vibrator

Beeper & Vibrator

2.17 Power On Indicator

None

Beeper *

Vibrator

Beeper & Vibrator

2.18 Power Off Alarm & Power Off Indicator

None

Beeper *

Vibrator

Beeper & Vibrator

2.19 LED On/Off

LED On *

LED Off

2.20 GS Replacement

GS Replacement OFF*

GS Replacement " ? "

2.21 GS1 AI

No *

Apply

Apply with Separator *

2.22 Setting Barcodes Enable /Disable

Enable *

Disable

2.23 Data Sending Inter Block Delay

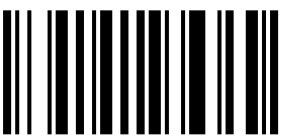
10 ms *

50 ms

100 ms

500 ms

1 Sec.



3 Sec.

2.24 HID Keyboard Inter Character Delay

1 ms *

5 ms

10 ms

20 ms

50 ms

100 ms

2.25 HID Keyboard Case

Auto Trace *

To Lower

To Upper

2.26 HID Keyboard Language

US English *

UK English

Swiss

Swedish

Spanish

Norwegian

Italian

German

French

Partial ALT

Danish

Japanese (OADG109)

ALT Mode

2.27 Country Keyboard Types (Country Codes)

Scan the barcode corresponding to the keyboard type. This setting applies only to the Bluetooth Keyboard (HID) device.

IMPORTANT: Some country keyboard barcode types are specific to certain Windows Operating Systems (i.e., XP, and Win 7 or higher). Barcodes requiring a specific Windows OS are noted so in their barcode captions. Use the **French International** barcode for Belgian French keyboards.

US English (North American) *

US English (Mac)

Albanian

Arabic (101)

Arabic (102)

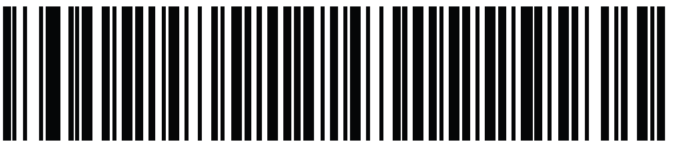
Arabic (102) AZERTY

Azeri (Latin)

Azeri (Cyrillic)

Belarusian

Bosnian (Latin)



Bosnian (Cyrillic)

Bulgarian (Latin)

Bulgarian Cyrillic (Typewriter) (Bulgarian -Windows XP Typewriter - Win 7 or higher)

Canadian French Win7

Canadian French (Legacy)

Canadian Multilingual Standard

Chinese (ASCII)

Chinese (Simplified)*

Chinese (Traditional)*

*For CJK keyboard types, see CKJ Decode Control.

Croatian

Czech

Czech (Programmer)

Czech (QWERTY)

Danish

Dutch (Netherlands)

Estonian

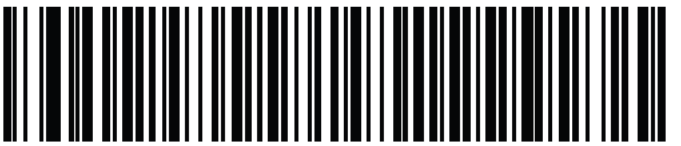
Faeroese

Finnish

French (France)

French International (Belgian French)

French (Canada) 95/98



*Note that there is also a country code barcode for Canadian Multilingual Standard. Be sure to select the appropriate barcode for your host system.

Greek

Greek (220)

Greek (319)

Greek Polytonic

Hebrew Israel

Hungarian

Hungarian_101KEY

Icelandic

Irish

Italian

Italian (142)

Japanese (ASCII)

Japanese (SHIFT-JIS)*

*For CJK keyboard types, see CKJ Decode Control.

Kazakh

Korean (ASCII)

Korean (Hangul)*

*For CJK keyboard types, see CKJ Decode Control.

Kyrgyz

Latin American

Latvian

Latvian (QWERTY)

Lithuanian

Lithuanian (IBM)

Macedonian (FYROM)

Maltese_47KEY

Mongolian

Norwegian

Polish (214)

Polish (Programmer)

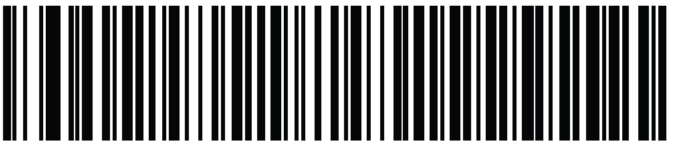
Portuguese (Brazil) (Windows XP)

Portuguese (Brazilian ABNT)

Portuguese (Brazilian ABNT2)

Portuguese (Portugal)

Romanian (Windows XP)



Romanian (Legacy) (Win 7 or higher)

Romanian (Standard) (Win 7 or higher)

Romanian (Programmer) (Win 7 or higher)

Russian

Russian (Typewriter)

Serbian (Latin)

Serbian (Cyrillic)

Slovak

Slovak (QWERTY)

Slovenian

Spanish

Spanish (Variation)

Swedish

Swiss French

Swiss German

Tatar

Thai (Kedmanee)

Turkish F

Turkish Q

UK English

Ukrainian

US Dvorak

US Dvorak Left

US Dvorak Right

US International

Uzbek

\Vietnamese

2.28 Trigger Mode

Scan one of the following barcodes to select a trigger mode for the decoder:

- ***Standard (Level)** - A trigger press activates decode processing. Decode processing continues until the barcode decodes, you release the trigger, or the Decode Session Timeout occurs.
- **Presentation (Blink)** - The decoder activates decode processing when it detects a barcode in its field of view. After a period of non-use, the LEDs turn off until the decoder senses motion.
- **Host** - A host command issues the decode signal. The decoder interprets an actual trigger pull as a Level triggering option.
- **Auto Aim** - The decoder projects the aiming pattern when the decoder senses motion. A trigger press activates decode processing. After a period of inactivity the aiming pattern shuts off.
- **Auto Aim with Illumination** - The decoder projects the aiming pattern and internal illumination LEDs when the decoder senses motion. A trigger pull activates decode processing. After 2 seconds of inactivity the aiming pattern and internal illumination LEDs automatically shut off.

Standard (Level) *

Presentation (Blink)

Host

Auto Aim

Auto Aim with Illumination

2.29 Decode Aiming Pattern

NOTE: With Picklist Mode enabled, the decode aiming pattern flashes even if you disable the **Decode Aiming Pattern**.

Scan one of the following barcodes to select when to project the aiming pattern in hand-held mode:

- **Enable Decode Aiming Pattern** - This projects the aiming pattern during barcode capture.
- **Disable Decode Aiming Pattern** - This turns the aiming pattern off.
- **Enable Decode Aiming Pattern on PDF** - This projects the aiming pattern when the decoder detects a PDF barcode.

Enable Decode Aiming Pattern *

Disable Decode Aiming Pattern

Enable Decode Aiming Pattern on PDF

2.30 Picklist Mode

Scan one of the following barcodes to select a enable or disable Picklist Mode. In this mode, you can pick out and decode a barcode from a group of barcodes that are printed close together by placing the aiming pattern on the barcode you want to decode.

NOTE: Enabling Picklist Mode overrides the Disable Decode Aiming Pattern options. You cannot disable the decode aiming pattern when Picklist Mode is enabled.
Enabling Picklist Mode can slow decode speed and hinder the ability to decode longer barcodes.

- **Enable Picklist Mode Always** - Picklist Mode is always enabled.
- **Disable Picklist Mode Always** - Picklist Mode is always disabled.

Enable Picklist Mode Always

Disable Picklist Mode Always *

2.31 Continuous Barcode Read

Scan **Enable Continuous Barcode Read** to report every barcode while the trigger is pressed.

Enable Continuous Barcode Read

Disable Continuous Barcode Read *

2.32 Unique Barcode Reporting

Scan **Enable Continuous Barcode Read Uniqueness** to report only unique barcodes while the trigger is pressed. This option only applies when Continuous Barcode Read above is enabled.

Enable Unique Barcode Reporting

Disable Unique Barcode Reporting *

2.33 Decode Session Timeout

This parameter sets the maximum time decode processing continues during a scan attempt. It is programmable in 0.1 second increments from 0.5 to 9.9 seconds. The default timeout is 9.9 seconds.
To set a Decode Session Timeout, scan the following barcode, and then scan two barcodes from Numeric Barcodes that correspond to the desired on time. Enter a leading zero for single digit numbers. For example, to set a Decode Session Timeout of 0.5 seconds, scan this barcode, and then scan the **0** and **5** barcodes. To correct an error or change the selection, scan Cancel.

Decode Session Timeout

2.33.1 Timeout Between Decodes, Same Symbol

Use this option in presentation mode or Continuous Barcode Read mode to prevent the decoder from continuously decoding the same barcode when it is left in the decoder's field of view. The barcode must be out of the field of view for the timeout period before the decoder reads the same consecutive symbol. It is programmable in 0.1 second increments from 0.0 to 9.9 seconds. The default interval is 0.6 seconds.

To select the timeout between decodes for the same symbol, scan the following barcode, and then scan two barcodes from Numeric Barcodes that correspond to the desired interval, in 0.1 second increments.

Timeout Between Decodes, Same Symbol

2.33.2 Timeout Between Decodes, Different Symbol

Use this option in presentation mode or Continuous Barcode Read to control the time the decoder waits before decoding a different symbol. It is programmable in 0.1 second increments from 0.1 to 9.9 seconds.
The default is 0.2 seconds.

To select the timeout between decodes for different symbols, scan the following barcode, and then scan two barcodes from Numeric Barcodes that correspond to the desired interval, in 0.1 second increments.

NOTE: Timeout Between Decodes, Different Symbols cannot be greater than or equal to the Decode Session Timeout.

Timeout Between Decodes, Different Symbols

2.33.3 Triggered Timeout, Same Symbol

NOTE: This feature does not apply to Timeout Between Decodes, Different Symbols.
Scan **Enable Triggered Timeout, Same Symbol** below to apply Timeout Between Decodes, Same Symbol in hand-held trigger mode. Subsequent scans of **Enable Triggered Timeout, Same Symbol** are ignored until **Timeout Between Decodes, Same Symbol** expires.

Enable Triggered Timeout, Same Symbol

Disable Triggered Timeout, Same Symbol *

2.34 Presentation Mode Field of View

In **Presentation Mode**, the decoder searches for a barcode in the region around the aiming pattern's center.
To search for a barcode in a smaller region around the aiming pattern in order to speed search time, select **Small Field of View**, or to search a larger area, select **Full Field of View**.

Small Field of View

Medium Field of View *

Full Field of View

2.35 Mirrored Image

Enable this to scan images in reverse, or mirrored, as if seen through a mirror. This mode is useful in applications requiring scanning through a mirror and using symbologies that do not decode in reverse.
Enabling this mode when using snapshot, video, or video viewfinder mode transmits images as mirrored images.

Disable Mirrored Image *

Enable Mirrored Image

2.36 Validate Concatenated Parameter Barcodes

The decoder can encounter invalid parameters when using concatenated parameter barcodes intended for different scanner models or different versions of a scanner. This parameter determines how to process concatenated parameter barcodes when the decoder encounters an invalid parameter setting in the barcode.
Disable this to ignore invalid parameters and configure valid parameters.
Enable this to ignore all parameters if one or more are invalid.

Disable Validate Concatenated Parameter Barcodes *

Enable Validate Concatenated Parameter Barcodes

2.37 Mobile Phone/Display Mode

This mode improves barcode reading performance off mobile phones and electronic displays. Scan one of the following barcodes to select the desired mode.

Disable Mobile Phone/Display Mode *

Enable Mobile Phone/Display Mode

2.38 PDF Prioritization

Scan **Enable PDF Prioritization** to delay decoding certain 1D barcodes (see Note below) by the value specified in PDF Prioritization Timeout. During that time the decoder attempts to decode a PDF417 symbol (e.g., on a US driver's license), and if successful, reports this only. If it does not decode (cannot find) a PDF417 symbol, it reports the 1D symbol after the timeout. The 1D symbol must be in the device's field of view for the decoder to report it. This parameter does not affect decoding other symbologies.

NOTE: The 1D Code 128 barcode lengths include the following:

- 7 to 10 characters
- 14 to 22 characters
- 27 to 28 characters

In addition, a Code 39 barcode with the following lengths are considered to potentially be part of a US driver's license:

- 8 characters
- 12 characters

Enable PDF Prioritization

Disable PDF Prioritization *

2.38.1 PDF Prioritization Timeout

If you enabled PDF Prioritization, set this timeout to indicate how long the decoder attempts to decode a PDF417 symbol before reporting the 1D barcode in the field of view.

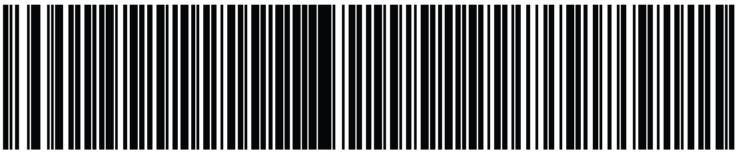
Scan the following barcode, and then scan four barcodes from Numeric Barcodes that specify the timeout in milliseconds. For example, to enter 400 ms, scan the following barcode, and then scan 0400. The range is 0 to 5000 ms, and the default is 200 ms.

PDF Prioritization Timeout

2.39 Enter Key

Scan the following barcode to add an Enter key (carriage return/line feed) after scanned data.
To program other prefixes and/or suffixes, see Prefix/Suffix Values.

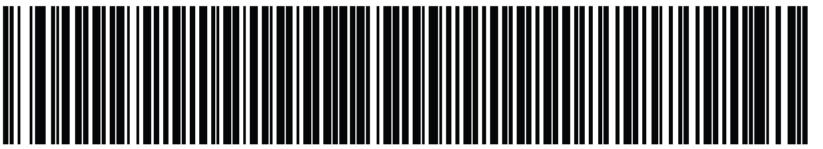
Add Enter Key (Carriage Return/Line Feed)



2.40 Tab Key

Scan the following barcode to add a Tab key after scanned data.

Tab Key



2.41 Transmit Code ID Character

A Code ID character identifies the code type of a scanned barcode. This is useful when decoding more than one code type. In addition to any single character prefix selected, the Code ID character is inserted between the prefix and the decoded symbol.

Select no Code ID character, a Symbol Code ID character, or an AIM Code ID character. For Code ID characters, see Symbol Code Characters and Aim Code Characters.

NOTE: If you enable Symbol Code ID Character or AIM Code ID Character, and enable Transmit "No Read" Message, the decoder appends the code ID for Code 39 to the NR message.

Symbol Code ID Character

AIM Code ID Character

None *

2.42 Prefix/Suffix Values

NOTE: To use Prefix/Suffix values, first set the Scan Data Transmission Format.

You can append a prefix and/or one or two suffixes to scan data for use in data editing. To set a value for a prefix or suffix, scan one of the following barcodes, and then scan four barcodes from Numeric Barcodes that correspond to that value. See ASCII Character Sets for the four-digit codes.

When using host commands to set the prefix or suffix, set the key category parameter to 1, and then set the 3-digit decimal value. See ASCII Character Sets for the four-digit codes.

The default prefix and suffix value is 7013 <CR><LF> (Enter key). To correct an error or change a selection, scan Cancel.

Scan Prefix

Scan Suffix 1

Scan Suffix 2

Data Format Cancel

2.43 Scan Data Transmission Format

NOTE: If using this parameter do not use ADF rules to set the prefix/suffix. To change the scan data format, scan one of the following barcodes corresponding to the desired format.

To set values for the prefix and/or suffix, see Prefix/Suffix Values.

Data As Is *

<DATA> <SUFFIX 1>

<DATA> <SUFFIX 2>

<DATA> <SUFFIX 1> <SUFFIX 2>

<PREFIX> <DATA >

<PREFIX> <DATA> <SUFFIX 1>

<PREFIX> <DATA> <SUFFIX 2>

<PREFIX> <DATA> <SUFFIX 1> <SUFFIX 2>

2.44 FN1 Substitution Values

Keyboard wedge and USB HID keyboard hosts support a FN1 substitution feature. Enabling this substitutes any FN1 character (0x1b) in an EAN128 barcode with a value. This value defaults to 7013 <CR><LF> (Enter key). When using host commands to set the FN1 substitution value, set the key category parameter to 1, and then set the 3-digit keystroke value. See the ASCII Character Set table for the current host interface for the desired value.
To select a FN1 substitution value via barcode menus:
1. Scan the following barcode.

Set FN1 Substitution Value

2. Locate the keystroke desired for FN1 Substitution in the ASCII Character Set table for the current host interface, and enter the 4-digit ASCII value by scanning four barcodes from Numeric Barcodes.
To correct an error or change the selection, scan **Cancel**.

2.45 FN1 Substitution Values

Keyboard wedge and USB HID keyboard hosts support a FN1 substitution feature. Enabling this substitutes any FN1 character (0x1b) in an EAN128 barcode with a value. This value defaults to 7013 <CR><LF> (Enter key). When using host commands to set the FN1 substitution value, set the key category parameter to 1, and then set the 3-digit keystroke value. See the ASCII Character Set table for the current host interface for the desired value.

To select a FN1 substitution value via barcode menus:

1. Scan the following barcode.

Set FN1 Substitution Value

2. Locate the keystroke desired for FN1 Substitution in the ASCII Character Set table for the current host interface, and enter the 4-digit ASCII value by scanning four barcodes from Numeric Barcodes.

   To correct an error or change the selection, scan Cancel.

2.46 Transmit "No Read" Message

Scan one of the following barcodes to set an option for transmitting the No Read (NR) characters.

NOTE: If you enable **Transmit No Read**, and also enable Symbol Code ID Character or AIM Code ID Character for Transmit Code ID Character, the decoder appends the code ID for Code 39 to the NR message.

NOTE: This does not apply in presentation mode.

• **Enable No Read** - This transmits the characters NR when a successful decode does not occur before trigger release or the **Decode Session Timeout** expires. See Decode Session Timeout.

• **Disable No Read** - This sends nothing to the host if a symbol does not decode.

Enable No Read

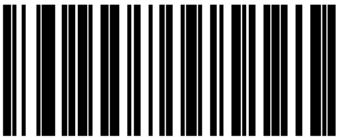
Disable No Read *

2.47 Report Version

Report Version

Scan the barcode below to report the version of software currently installed in the decoder.

Report Software Version



2.48 Report Decoder Manufacturing Information

Scan the barcode below to report the part number, serial number, and manufacture date of the decoder.

Report Decoder Manufacturing Information

2.49 Report Decoder Manufacturing Information

Scan the barcode below to report the part number, serial number, and manufacture date of the scan engine.

NOTE: For DP configurations use the Data Matrix barcode below to select this feature.

Report Engine Manufacturing Information

Report Engine Manufacturing Information

Chapter 3 - Symbology

3.1 Enable/Disable All Code Types

To disable all symbologies, scan **Disable All Code Types** below. This is useful when enabling only a few code types.

Scan **Enable All Code Types** to turn on (enable) all code types. This is useful when you want to read all codes, or when you want to disable only a few code types.

Disable All Code Types

Enable All Code Types

Note: For all symbplogi defaults, please refer to Appendix F - Symbology Parameter Defaults.

3.2 UPC-A

To enable or disable UPC-A, scan the appropriate barcode below.

Enable *

Disable

3.2.1 UPC-A Preamble

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-A preamble to the host device: transmit System Character only, transmit System Character and Country Code, and transmit no preamble. Select the appropriate option to match the host system.

No Preamble (<DATA>)

System Character

(<SYSTEM CHARACTER><DATA>) *

System Character & Country Code

(< COUNTRY CODE> <SYSTEM CHARACTER><DATA>)

3.2.2 Transmit UPC-A Check Digit

The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate barcode below to transmit the barcode data with or without the UPC-A check digit. It is always verified to guarantee the integrity of the data.

Transmit UPC-A Check Digit *

Do Not Transmit UPC-A Check Digit

3.3 UPC-E

To enable or disable UPC-E, scan the appropriate barcode below.

Enable UPC-E *

Disable UPC-E

3.3.1 UPC-E Preamble

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-E preamble to the host device: transmit System Character only, transmit System Character and Country Code, and transmit no preamble. Select the appropriate option to match the host system.

No Preamble (<DATA>)

System Character
(<SYSTEM CHARACTER><DATA>) *

System Character & Country Code
(< COUNTRY CODE> <SYSTEM CHARACTER><DATA>)

3.3.2 Transmit UPC-E Check Digit

The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate barcode below to transmit the barcode data with or without the UPC-A check digit. It is always verified to guarantee the integrity of the data.

Transmit UPC-E Check Digit *

Do Not Transmit UPC-E Check Digit

3.3.3 Convert UPC-E to UPC-A

Enable this to convert UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).
Disable this to transmit UPC-E decoded data as UPC-E data, without conversion.

Convert UPC-E to UPC-A

Disable conversion *

3.3.4 Enable/Disable UPC-E1

UPC-E1 is disabled by default.
To enable or disable UPC-E1, scan the appropriate barcode below.
NOTE: UPC-E1 is not a UCC (Uniform Code Council) approved symbology.

Enable

Disable*

3.3.5 Transmit UPC-E1 Check Digit

The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate barcode below to transmit the barcode data with or without the UPC-E1 check digit. It is always verified to guarantee the integrity of the data.

Transmit UPC-E1 Check Digit *

Do Not Transmit UPC-E1 Check Digit

3.3.6 UPC-E1 Preamble

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-E1 preamble to the host device: transmit System Character only, transmit System Character and Country Code, and transmit no preamble. Select the appropriate option to match the host system.

No Preamble (<DATA>)

System Character
(<SYSTEM CHARACTER><DATA>) *

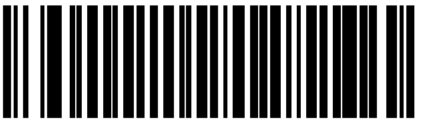
System Character & Country Code
(< COUNTRY CODE> <SYSTEM CHARACTER><DATA>)

3.3.7 Convert UPC-E1 to UPC-A

Enable this to convert UPC-E1 decoded data to UPC-A format before transmission. After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).
Disable this to transmit UPC-E1 decoded data as UPC-E1 data, without conversion.

Convert UPC-E1 to UPC-A (Enable)

Do Not Convert UPC-E1 to UPC-A (Disable) *



3.4 EAN-8

To enable or disable EAN-8, scan the appropriate barcode below.

Enable EAN-8 *

Disable EAN-8

3.4.1 Transmit EAN-8 Check Digit

The check digit is the last character of the symbol used to verify the integrity of the data. Scan one of the following barcodes to transmit the barcode data with or without the EAN-8 check digit. It is always verified to guarantee the integrity of the data.

Transmit EAN-8 Check Digit *

Do Not Transmit EAN-8 Check Digit

3.5 EAN-13

To enable or disable EAN-13, scan the appropriate barcode below.

Enable EAN-13 *

Disable EAN-13

3.5.1 Transmit EAN-13 Check Digit

The check digit is the last character of the symbol used to verify the integrity of the data. Scan one of the following barcodes to transmit the barcode data with or without the EAN-13 check digit. It is always verified to guarantee the integrity of the data.

Transmit EAN-13 Check Digit *

Do Not Transmit EAN-13 Check Digit

3.5.2 Bookland EAN

To enable or disable Bookland EAN, scan the appropriate barcode below

Enable Bookland EAN

Disable Bookland EAN *

If you enable Bookland EAN, select a Bookland ISBN Format. Also select either Decode UPC/EAN Supplementals, Autodiscriminate UPC/EAN Supplementals, or Enable 978/979 Supplemental Mode in Decode UPC/EAN/JAN Supplementals.

3.5.3 Bookland ISBN Format

If you enabled Bookland EAN using Enable/Disable Bookland EAN, select one of the following formats for Bookland data:

• **Bookland ISBN-10** - The MS852P reports Bookland data starting with 978 in traditional 10-digit format with the special Bookland check digit for backward-compatibility. Data starting with 979 is not considered Bookland in this mode.

• **Bookland ISBN-13** - The MS852P reports Bookland data (starting with either 978 or 979) as EAN-13 in 13-digit format to meet the 2007 ISBN-13 protocol.

Bookland ISBN-10 *

Bookland ISBN-13

NOTE: For Bookland EAN to function properly, first enable Bookland EAN using Enable/Disable Bookland EAN, then select either Decode UPC/EAN Supplementals, Autodiscriminate UPC/EAN Supplementals, or Enable 978/979 Supplemental Mode in Decode UPC/EAN/JAN Supplementals.

3.5.4 UCC Coupon Extended Code

Enable this parameter to decode UPC-A barcodes starting with digit '5', EAN-13 barcodes starting with digit '99', and UPC-A/GS1-128 Coupon Codes. UPCA, EAN-13, and GS1-128 must be enabled to scan all types of Coupon Codes.

Enable UCC Coupon Extended Code

Disable UCC Coupon Extended Code *

NOTE: See 3.5.9 UPC/EAN/JAN Supplemental Redundancy to control autodiscrimination of the GS1-128 (right half) of a coupon code.

3.5.5 Coupon Report

Select an option to determine which type of coupon format to support.

- Select **Old Coupon Format** to support UPC-A/GS1-128 and EAN-13/GS1-128.
- Select **New Coupon Format** as an interim format to support UPC-A/GS1-DataBar and EAN-13/GS1-DataBar.
- If you select **Autodiscriminate Format**, the MS852P supports both **Old Coupon Format** and **New Coupon Format.**

Old Coupon Format

New Coupon Format *

Autodiscriminate Coupon Format

3.5.6 ISSN EAN

To enable or disable ISSN EAN, scan the appropriate barcode below

Enable ISSN EAN

Disable ISSN EAN *

3.5.7 Decode UPC/EAN/JAN Supplementals

Supplementals are barcodes appended according to specific format conventions (e.g., UPC A+2, UPC E+2, EAN 13+2). The following options are available:

• If you select **Ignore UPC/EAN with Supplementals**, and the MS852P is presented with a UPC/EAN plus supplemental symbol, the MS852P decodes UPC/EAN and ignores the supplemental characters.

• If you select **Decode UPC/EAN with Supplementals**, the MS852P only decodes UPC/EAN symbols with supplemental characters, and ignores symbols without supplementals.

• If you select **Autodiscriminate UPC/EAN Supplementals**, the MS852P decodes UPC/EAN symbols with supplemental characters immediately. If the symbol does not have a supplemental, the MS852P must decode the barcode the number of times set via UPC/EAN/JAN Supplemental Redundancy before transmitting its data to confirm that there is no supplemental.

• If you select one of the following **Supplemental Mode** options, the MS852P immediately transmits EAN-13 barcodes starting with that prefix that have supplemental characters. If the symbol does not have a supplemental, the MS852P must decode the barcode the number of times set via UPC/EAN/JAN Supplemental Redundancy before transmitting its data to confirm that there is no supplemental. The MS852P transmits UPC/EAN barcodes that do not have that prefix immediately.

• Enable 378/379 Supplemental Mode
• Enable 978/979 Supplemental Mode
• Enable 977 Supplemental Mode
• Enable 414/419/434/439 Supplemental Mode
• Enable 491 Supplemental Mode
• **Enable Smart Supplemental Mode** - applies to EAN-13 barcodes starting with any prefix listed previously.
• **Supplemental User-Programmable Type 1** - applies to EAN-13 barcodes starting with a 3-digit user-defined prefix. Set this 3-digit prefix using

User-Programmable Supplementals.

- **Supplemental User-Programmable Type 1 and 2 -** applies to EAN-13 barcodes starting with either of two 3-digit user-defined prefixes. Set the 3-digit prefixes using User-Programmable Supplementals**.**
- **Smart Supplemental Plus User-Programmable 1** - applies to EAN-13 barcodes starting with any prefix listed previously or the user-defined prefix set using User-Programmable Supplementals.
- **Smart Supplemental Plus User-Programmable 1 and 2 -** applies to EAN-13 barcodes starting with any prefix listed previously or one of the two user-defined prefixes set using User-Programmable Supplementals.

  NOTE: If you select 978/979 Supplemental Mode and are scanning Bookland EAN barcodes, see Enable/Disable Bookland EAN to enable Bookland EAN, and select a format using Bookland ISBN Format.

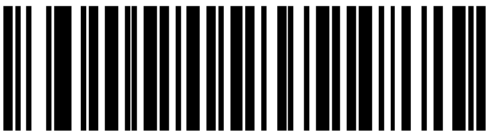
Decode UPC/EAN/JAN Only With Supplementals

Ignore Supplementals *

Autodiscriminate UPC/EAN/JAN Supplementals

Enable 378/379 Supplemental Mode

Enable 978/979 Supplemental Mode



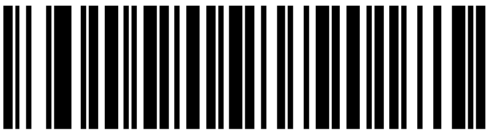
Enable 977 Supplemental Mode

Enable 414/419/434/439 Supplemental Mode

Enable 491 Supplemental Mode

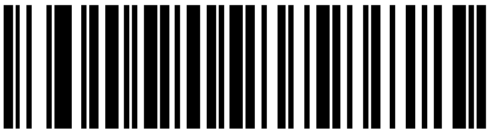
Enable Smart Supplemental Mode

Supplemental User-Programmable Type 1



Supplemental User-Programmable Type 1 and 2

Smart Supplemental Plus User-Programmable 1



Smart Supplemental Plus User-Programmable 1 and 2

3.5.8 User-Programmable Supplementals

If you selected a Supplemental User-Programmable option from Decode UPC/EAN/JAN Supplementals, select **User-Programmable Supplemental 1** to set the 3-digit prefix. Then select the 3 digits using the numeric barcodes. Select **User-Programmable Supplemental 2** to set a second 3-digit prefix. Then select the 3 digits using the numeric barcodes. The default is 000 (zeroes).

User-Programmable Supplemental 1

User-Programmable Supplemental 2

3.5.9 UPC/EAN/JAN Supplemental Redundancy

If you selected **Autodiscriminate UPC/EAN/JAN Supplementals**, this option adjusts the number of times to decode a symbol without supplementals before transmission. The range is from two to thirty times. Five or above is recommended when decoding a mix of UPC/EAN/JAN symbols with and without supplementals. The default is 10.

Scan the barcode below to set a decode redundancy value. Next, scan two numeric barcodes in Alphanumeric and Numeric Barcodes. Enter a leading zero for single digit numbers. To correct an error or change a selection, scan Cancel.

UPC/EAN/JAN Supplemental Redundancy

3.5.10 UPC/EAN/JAN Supplemental AIM ID Format

Select an output format when reporting UPC/EAN/JAN barcodes with Supplementals with Transmit Code ID Character set to **AIM Code ID Character**:

• **Separate** - transmit UPC/EAN with supplementals with separate AIM IDs but one transmission, i.e.:
]E<0 or 4><data>]E<1 or 2>[supplemental data]

• **Combined** – transmit UPC/EAN with supplementals with one AIM ID and one transmission, i.e.:
]E3<data+supplemental data>

• **Separate Transmissions** - transmit UPC/EAN with supplementals with separate AIM IDs and separate
transmissions, i.e.:
]E<0 or 4><data>
]E<1 or 2>[supplemental data]

Separate

Combined *

Separate Transmissions

3.5.11 UPC Reduced Quiet Zone

To enable or disable Bookland EAN, scan the appropriate barcode below Scan one of the following barcodes to enable or disable decoding UPC barcodes with reduced quiet zones. If you select **Enable**, select a 1D Quiet Zone Level.

Enable UPC Reduced Quiet Zone

Disable UPC Reduced Quiet Zone *

3.5.12 EAN/JAN Zero Extend

Scan **Enable EAN/JAN Zero Extend** to add five leading zeros to decoded EAN-8 symbols to make them compatible in length to EAN-13 symbols. Scan **Disable EAN/JAN Zero Extend** to transmit EAN-8 symbols as is.

Enable EAN/JAN Zero Extend

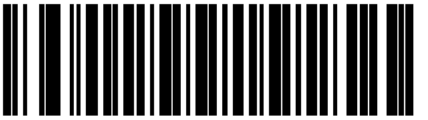
Disable EAN/JAN Zero Extend *

3.6 Code 128

To enable or disable Code 128, scan the appropriate barcode below.

Enable Code 128*

Disable Code 128



3.6.1 Set Lengths for Code 128

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 128 to any length, one or two discrete lengths, or lengths within a specific range. The default is 1 to 55.

NOTE: When setting lengths for different barcode types, enter a leading zero for single digit numbers.

One Discrete Length:

Select this option to decode only Code 128 symbols containing a selected length.

Select the length using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Code 128 symbols with 14 characters, scan **Code 128 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or change the selection, scan Cancel.

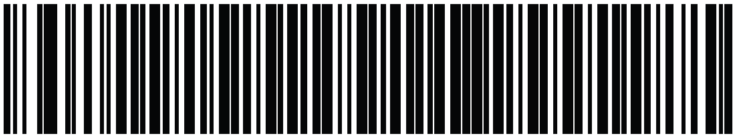
Two Discrete Lengths:

Select this option to decode only Code 128 symbols containing either of two selected lengths. Select lengths using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Code 128 symbols containing either 2 or 14 characters, select **Code 128 – Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or change the selection, scan Cancel.

Length Within Range:
Select this option to decode a Code 128 symbol with a specific length range. Select lengths using numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode Code 128 symbols containing between 4 and 12 characters, first scan **Code 128 – Length Within Range**. Then scan **0**, **4**, **1,** and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan Cancel.

Any Length:
Select this option to decode Code 128 symbols containing any number of characters within the scanner's capability.

One Discrete Length



Two Discrete Lengths

Length Within Range

Any Length *

3.6.2 Enable/Disable GS1-128

To enable or disable GS1-128, scan the appropriate barcode below.

Enable GS1-128 *

Disable GS1-128

3.6.3 Enable/Disable ISBT 128

ISBT 128 is a variant of Code 128 used in the blood bank industry. Scan a barcode below to enable or disable ISBT 128. If necessary, the host must perform concatenation of the ISBT data.

Enable ISBT 128 *

Disable ISBT 128

3.6.4 ISBT Concatenation

Select an option for concatenating pairs of ISBT code types:

• If you select **Disable ISBT Concatenation**, the MS852P does not concatenate pairs of ISBT codes it encounters.

• If you select **Enable ISBT Concatenation**, there must be two ISBT codes in order for the MS852P to decode and perform concatenation. The MS852P does not decode single ISBT symbols.

• If you select **Autodiscriminate ISBT Concatenation**, the MS852P decodes and concatenates pairs of ISBT codes immediately. If only a single ISBT symbol is present, the MS852P must decode the symbol the number of times set via ISBT Concatenation Redundancy before transmitting its data to confirm that there is no additional ISBT symbol.

Disable ISBT Concatenation

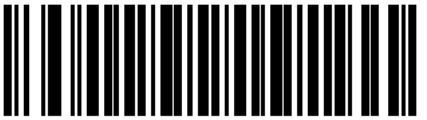
Enable ISBT Concatenation

Autodiscriminate ISBT Concatenation *

3.6.5 Check ISBT Table

The ISBT specification includes a table that lists several types of ISBT barcodes that are commonly used in pairs. If you set **ISBT Concatenation** to **Enable**, enable **Check ISBT Table** to concatenate only those pairs found in this table. Other types of ISBT codes are not concatenated.

Enable Check ISBT Table *



Disable Check ISBT Table

3.6.6 ISBT Concatenation Redundancy

If you set **ISBT Concatenation** to **Autodiscriminate,** use this parameter to set the number of times the MS852P must decode an ISBT symbol before determining that there is no additional symbol.

Scan the barcode below, then scan two numeric barcodes in Alphanumeric and Numeric Barcodes to set a value between 2 and 20. Enter a leading zero for single digit numbers. To correct an error or change a selection, scan Cancel. The default is 10.

ISBT Concatenation Redundancy

3.6.7 Code 128 Security Level

Code 128 barcodes are vulnerable to misdecodes, particularly when Code 128 Lengths is set to **Any Length**. The MS852P offers four levels of decode security for Code 128 barcodes. There is an inverse relationship between security and MS852P aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary.

• **Code 128 Security Level 0:** This setting allows the MS852P to operate in its most aggressive state, while providing sufficient security in decoding most in-spec barcodes.

• **Code 128 Security Level 1:** A barcode must be successfully read twice, and satisfy certain safety requirements before being decoded. This default setting eliminates most misdecodes.

• **Code 128 Security Level 2:** Select this option with greater barcode security requirements if **Security Level 1** fails to eliminate misdecodes.

• **Code 128Security Level 3:** If you selected **Security Level 2**, and misdecodes still occur, select this security level to apply the highest safety requirements. A barcode must be successfully read three times before being decoded.

NOTE: Selecting this option is an extreme measure against mis-decoding severely out-of-spec barcodes.
Selecting this level of security significantly impairs the decoding ability of the MS852P. If this level of security is required, try to improve the quality of the barcodes.

Code 128 Security Level 0

Code 128 Security Level 1 *

Code 128 Security Level 2

Code 128 Security Level 3

3.6.8 Code 128 Reduced Quiet Zone

Scan one of the following barcodes to enable or disable decoding Code 128 barcodes with reduced quiet zones. If you select **Enable**, select a 1D Quiet Zone Level.

Enable Code 128 Reduced Quiet Zone

Disable Code 128 Reduced Quiet Zone *

3.6.9 Ignore Code 128 <FNC4>

This feature applies to Code 128 barcodes with an embedded <FNC4> character. Enable this to strip the <FNC4> character from the decode data. The remaining characters are sent to the host unchanged. When disabled, the <FNC4> character is processed normally as per Code 128 standard.

Enable Ignore Code 128 <FNC4>

Disable Ignore Code 128 <FNC4> *

3.7 Code 39

To enable or disable Code 39, scan the appropriate barcode below.

Enable Code 39 *

Disable Code 39

3.7.1 Enable/Disable Trioptic Code 39

Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. Trioptic Code 39 symbols always contain six characters. To enable or disable Trioptic Code 39, scan the appropriate barcode below.

Enable Trioptic Code 39

Disable Trioptic Code 39 *

NOTE: You cannot enable Trioptic Code 39 and Code 39 Full ASCII simultaneously.

3.7.2 Convert Code 39 to Code 32

Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry. Scan the appropriate barcode below to enable or disable converting Code 39 to Code 32.

NOTE: Code 39 must be enabled for this parameter to function.

Enable Convert Code 39 to Code 32

Disable Convert Code 39 to Code 32 *

3.7.3 Code 32 Prefix

Scan the appropriate barcode below to enable or disable adding the prefix character "A" to all Code 32 barcodes.

NOTE: Convert Code 39 to Code 32 must be enabled for this parameter to function.

Enable Code 32 Prefix

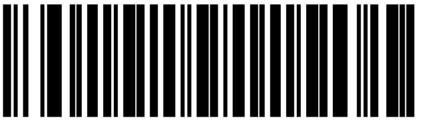
Disable Code 32 Prefix *

3.7.4 Code 39 Full ASCII Conversion

Code 39 Full ASCII is a variant of Code 39 which pairs characters to encode the full ASCII character set. To enable or disable Code 39 Full ASCII, scan the appropriate barcode below.

Enable Code 39 Full ASCII

Disable Code 39 Full ASCII *



NOTE: You cannot enable Trioptic Code 39 and Code 39 Full ASCII simultaneously.
Code 39 Full ASCII to Full ASCII Correlation is host-dependent, and is therefore described in the ASCII Character Set Table for the appropriate interface. See the ASCII Character Sets.

3.7.5 Code 39 Check Digit Verification

Scan **Enable Code 39 Check Digit** to check the integrity of all Code 39 symbols to verify that the data complies with specified check digit algorithm. Only Code 39 symbols which include a modulo 43 check digit are decoded. Enable this feature if the Code 39 symbols contain a Modulo 43 check digit.

Enable Code 39 Check Digit

Disable Code 39 Check Digit *

3.7.6 Transmit Code 39 Check Digit

Scan a barcode below to transmit Code 39 data with or without the check digit.

Enable Code 39 Check Digit

Disable Code 39 Check Digit *

Transmit Code 39 Check Digit (Enable)

Do Not Transmit Code 39 Check Digit (Disable) *

NOTE: Code 39 Check Digit Verification must be enabled for this parameter to function.

3.7.7 Set Lengths for Code 39

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 39 to any length, one or two discrete lengths, or lengths within a specific range. If Code 39 Full ASCII is enabled, **Length Within a Range** or **Any Length** are the preferred options. The default is 1 to 55.

NOTE: When setting lengths for different barcode types, enter a leading zero for single digit numbers.

One Discrete Length - Select this option to decode only Code 39 symbols containing a selected length. Select the length using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Code 39 symbols with 14 characters, scan **Code 39 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or change the selection, scan Cancel.

• **Two Discrete Lengths** - Select this option to decode only Code 39 symbols containing either of two selected lengths. Select lengths using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Code 39 symbols containing either 2 or 14 characters, select **Code 39 – Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or change the selection, scan Cancel.

• **Length Within Range** - Select this option to decode a Code 39 symbol with a specific length range. Select lengths using numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode Code 39 symbols containing between 4 and 12 characters, first scan **Code 39 - Length Within Range**. Then scan **0**, **4**, **1,** and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan Cancel.

• **Any Length** - Select this option to decode Code 39 symbols containing any number of characters within the MS852P's capability.

One Discrete Length

Two Discrete Lengths

Length Within Range

Any Length

3.7.8 Code 39 Security Level

The MS852P offers four levels of decode security for Code 39 barcodes. There is an inverse relationship between security and MS852P aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary.

- **Code 39 Security Level 0:** This setting allows the MS852P to operate in its most aggressive state, while providing sufficient security in decoding most in-spec barcodes.
- **Code 39 Security Level 1:** This default setting eliminates most misdecodes.
- **Code 39 Security Level 2:** Select this option with greater barcode security requirements if **Security Level 1** fails to eliminate misdecodes.
- **Code 39 Level 3:** If you selected **Security Level 2**, and misdecodes still occur, select this security level to apply the highest safety requirements.

NOTE: Selecting this option is an extreme measure against mis-decoding severely out-of-spec barcodes. Selecting this level of security significantly impairs the decoding ability of the MS852P. If this level of security is required,

try to improve the quality of the barcodes.

Code 39 Security Level 0

Code 39 Security Level 1 *

Code 39 Security Level 2

Code 39 Security Level 3

3.7.9 Code 39 Reduced Quiet Zone

Scan one of the following barcodes to enable or disable decoding Code 39 barcodes with reduced quiet zones. If you select **Enable**, select a 1D Quiet Zone Level.

Enable Code 39 Reduced Quiet Zone

Disable Code 39 Reduced Quiet Zone (0) *

3.8 Code 93

To enable or disable Code 93, scan the appropriate barcode below.

Enable Code 93 *

Disable Code 93

3.8.1 Set Lengths for Code 93

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 93 to any length, one or two discrete lengths, or lengths within a specific range. The default is 1 to 55.

- **One Discrete Length** - Select this option to decode only Code 93 symbols containing a selected length. Select the length using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Code 93 symbols with 14 characters, scan **Code 93 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan Cancel.

- **Two Discrete Lengths** - Select this option to decode only Code 93 symbols containing either of two selected lengths. Select lengths using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Code 93 symbols containing either 2 or 14 characters, select **Code 93 – Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan Cancel.

- **Length Within Range** - Select this option to decode a Code 93 symbol with a specific length range. Select lengths using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode Code 93 symbols containing between 4 and 12 characters, first scan **Code 93 -**

Length Within Range. Then scan **0**, **4**, **1,** and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan Cancel.

- **Any Length** - Scan this option to decode Code 93 symbols containing any number of characters within the MS852P's capability.

One Discrete Length

Two Discrete Lengths

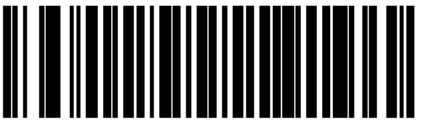
Length Within Range

Any Length *

3.9 Codabar

To enable or disable Codabar, scan the appropriate barcode below.

Enable Codabar *



Disable Codabar (0)

3.9.1 Set Lengths for Codabar

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Codabar to any length, one or two discrete lengths, or lengths within a specific range. The default is 4 to 55.

- **One Discrete Length** - Select this option to decode only Codabar symbols containing a selected length. Select the length using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Codabar symbols with 14 characters, scan **Codabar - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan Cancel.

- **Two Discrete Lengths** - Select this option to decode only Codabar symbols containing either of two selected lengths. Select lengths using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Codabar symbols containing either 2 or 14 characters, select **Codabar – Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan Cancel.

• **Length Within Range** - Select this option to decode a Codabar symbol with a specific length range. Select lengths using numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode Codabar symbols containing between 4 and 12 characters, first scan **Codabar - Length Within Range**. Then scan **0**, **4**, **1,** and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan Cancel.

• **Any Length** - Scan this option to decode Codabar symbols containing any number of characters within the MS852P's capability.

One Discrete Length

Two Discrete Lengths

Codabar - Length Within Range

Codabar - Any Length

3.9.2 CLSI Editing

Enable this parameter to strip the start and stop characters and insert a space after the first, fifth, and tenth characters of a 14-character Codabar symbol. Enable this feature if the host system requires this data format.

NOTE: Symbol length does not include start and stop characters.

Enable CLSI Editing

Disable CLSI Editing *

3.9.3 NOTIS Editing

Enable this parameter to strip the start and stop characters from a decoded Codabar symbol. Enable this feature if the host system requires this data format.

Enable NOTIS Editing

Disable NOTIS Editing *

3.9.4 Codabar Upper or Lower Case Start/Stop Characters Detection

Select whether to detect upper case or lower case Codabar start/stop characters.

Lower Case

Upper Case *

3.9.5 Codabar Mod 16 Check Digit Verification

Enable this feature to check the Codabar Mod 16 Check Digit to verify that the data complies with the specified check digit algorithm.

Enable Codabar Mod 16 Checkdigit

Disable Codabar Mod 16 Checkdigit *

3.9.6 Codabar Security Level

The decoder offers four levels of decode security for Codabar barcodes. There is an inverse relationship between security and decoder aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary.

- **Codabar Security Level 0:** This setting allows the decoder to operate in its most aggressive state, while providing sufficient security in decoding most in-spec barcodes.
- **Codabar Security Level 1:** This default setting eliminates most misdecodes.
- **Codabar Security Level 2:** Select this option with greater barcode security requirements if **Security Level 1** fails to eliminate misdecodes.
- **Codabar Security Level 3:** If you selected **Security Level 2**, and misdecodes still occur, select this security level to apply the highest safety requirements.

NOTE: Selecting this option is an extreme measure against mis-decoding severely out-of-spec barcodes, and significantly impairs the decoding ability of the decoder. If this level of security is required, try to improve the quality of the barcodes.

Codabar Security Level 0

Codabar Security Level 1 *

Codabar Security Level 2

Codabar Security Level 3

3.9.7 Transmit Codabar Check Digit

Scan one of the following barcodes to select whether or not to transmit the Codabar check digit(s).

NOTE: Codabar Mod 16 Check Digit Verification must be enabled for this parameter to function.

Enable Codabar Mod 16 Check Digit

Disable Codabar Mod 16 Check Digit *

3.10 MSI

To enable or disable MSI, scan the appropriate barcode below.

Enable MSI

Disable MSI *

3.10.1 MSI Check Digit(s)

0 - Doesn't check MSI check digit. Decodes MSI with no check digit.

1 - MSI barcodes with 1 check digit. This is the default.

2 - MSI barcodes with 2 check digits.

See MSI Check Digit Algorithm for the selection of second digit algorithms.

None

One MSI Check Digit *

Two MSI Check Digits

3.10.2 Transmit MSI Check Digit(s)

Scan a barcode below to transmit MSI data with or without the check digit.

Transmit MSI Check Digit(s) *

Do Not Transmit MSI Check Digit (s)

3.10.3 MSI Check Digit Algorithm

Two algorithms are possible for the verification of the second MSI check digit. Select the barcode below corresponding to the algorithm used to encode the check digit.

MOD 10/MOD 11

MOD 10/MOD 10 *

3.10.4 Set Lengths for MSI

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for MSI to any length, one or two discrete lengths, or lengths within a specific range. The default is 4 to 55.

- **One Discrete Length** - Select this option to decode only MSI symbols containing a selected length. Select the length using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only MSI symbols with 14 characters, scan **MSI - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan Cancel.

- **Two Discrete Lengths** - Select this option to decode only MSI symbols containing either of two selected lengths. Select lengths using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only MSI symbols containing either 2 or 14 characters, select **MSI - Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan Cancel.

- **Length Within Range** - Select this option to decode a MSI symbol with a specific length range. Select lengths using numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode MSI symbols containing between 4 and 12 characters, first scan **MSI - Length Within Range**.
  Then scan **0**, **4**, **1,** and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan Cancel.

- **Any Length** - Scan this option to decode MSI symbols containing any number of characters within the MS852P's capability.

NOTE: Due to the construction of the MSI symbology, it is possible for a scan line covering only a portion of the code to transmit as a complete scan, yielding less data than is encoded in the barcode. To prevent this, select specific lengths (**MSI - One Discrete Length, Two Discrete Lengths**) for MSI applications.

One Discrete Length

Two Discrete Lengths

Length Within Range

Any Length *

3.10.5 MSI Reduced Quiet Zone

Scan one of the following barcodes to enable or disable decoding MSI barcodes with reduced quiet zones. If you select **Enable**, select a 1D Quiet Zone Level.

Disable MSI Reduced Quiet Zone *

Enable MSI Reduced Quiet Zone

3.11 Interleaved 2 of 5

To enable or disable Interleaved 2 of 5, scan the appropriate barcode below. and select an Interleaved 2 of 5 length from the following pages.

Enable Interleaved 2 of 5

Disable Interleaved 2 of 5 *

3.11.1 Check Digit Verification

Enable this feature to check the integrity of all I 2 of 5 symbols to verify the data complies with either the specified Uniform Symbology Specification (USS), or the Optical Product Code Council (OPCC) check digit algorithm.

Disable *

USS Check Digit

OPCC Check Digit

3.11.2 Transmit I 2 of 5 Check Digit

Scan the appropriate barcode below to transmit I 2 of 5 data with or without the check digit.

Transmit I 2 of 5 Check Digit (Enable)

Do Not Transmit I 2 of 5 Check Digit (Disable) *

3.11.3 Convert I 2 of 5 to EAN-13

Enable this parameter to convert 14-character I 2 of 5 codes to EAN-13, and transmit to the host as EAN-13. To accomplish this, the I 2 of 5 code must be enabled, and the code must have a leading zero and a valid EAN-13 check digit.

Convert I 2 of 5 to EAN-13 (Enable)

Do Not Convert I 2 of 5 to EAN-13 (Disable) *

3.11.4 I 2 of 5 Security Level

Interleaved 2 of 5 barcodes are vulnerable to misdecodes, particularly when I 2 of 5 Lengths is set to **Any Length**.
The MS852P offers four levels of decode security for Interleaved 2 of 5 barcodes. There is an inverse relationship between security and MS852P aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary.

• **I 2 of 5 Security Level 0:** This setting allows the MS852P to operate in its most aggressive state, while providing sufficient security in decoding most in-spec barcodes.

• **I 2 of 5 Security Level 1:** A barcode must be successfully read twice, and satisfy certain safety requirements before being decoded. This default setting eliminates most misdecodes.

• **I 2 of 5 Security Level 2:** Select this option with greater barcode security requirements if **Security Level 1** fails to eliminate misdecodes.

• **I 2 of 5 Security Level 3:** If you selected **Security Level 2**, and misdecodes still occur, select this security level. The highest safety requirements are applied. A barcode must be successfully read three times before being decoded.
NOTE: Selecting this option is an extreme measure against mis-decoding severely out-of-spec barcodes. Selecting this level of security significantly impairs the decoding ability of the MS852P. If this level of security is required, try to improve the quality of the barcodes.

I 2 of 5 Security Level 0

I 2 of 5 Security Level 1 *

I 2 of 5 Security Level 2

I 2 of 5 Security Level 3 *

3.11.5 I 2 of 5 Reduced Quiet Zone

Scan one of the following barcodes to enable or disable decoding I 2 of 5 barcodes with reduced quiet zones. If you select **Enable**, select a 1D Quiet Zone Level.

Enable I 2 of 5 Reduced Quiet Zone

Disable I 2 of 5 Reduced Quiet Zone *

3.11.6 Set Lengths for Interleaved 2 of 5

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for I 2 of 5 to any length, one or two discrete lengths, or lengths within a specific range. The range for Interleaved 2 of 5 lengths is 0 - 55. The default is 6 to 55.

- **One Discrete Length** - Select this option to decode only I 2 of 5 symbols containing a selected length. Select the length using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only I 2 of 5 symbols with 14 characters, scan **I 2 of 5 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan Cancel.

- **Two Discrete Lengths** - Select this option to decode only I 2 of 5 symbols containing either of two selected lengths. Select lengths using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only I 2 of 5 symbols containing either 2 or 14 characters, select **I 2 of 5 – Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan Cancel.

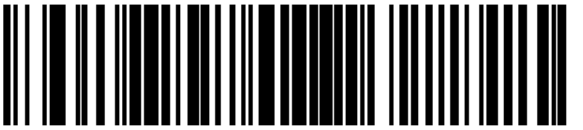
- **Length Within Range** - Select this option to decode an I 2 of 5 symbol with specific length range. Select lengths using numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode I 2 of 5 symbols containing between 4 and 12 characters, first scan **I 2 of 5 - Length Within Range**. Then scan **0**, **4**, **1,** and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan Cancel.

- **Any Length** - Scan this option to decode I 2 of 5 symbols containing any number of characters within the MS852P's capability.

  NOTE: Due to the construction of the I 2 of 5 symbology, it is possible for a scan line covering only a portion of the code to transmit as a complete scan, yielding less data than is encoded in the barcode. To prevent this, select specific lengths (I 2 of 5 - One Discrete Length, Two Discrete Lengths) for I 2 of 5 applications.

One Discrete Length

Two Discrete Lengths



Length Within Range

Any Length *

3.11.7 Febraban

Febraban is an I 2 of 5 barcode of length 44 that requires special check characters to be inserted in the transmitted data stream. When enabled, the I 2 of 5 internal check digit calculation and transmission is disabled. When disabled, all I 2 of 5 functionality works as usual.

Recommendations for Length Setting

I 2 of 5 Length 1: Larger of the fixed length and the FEBRABAN length (==44).
I 2 of 5 Length 2: Smaller of the fixed length and the FEBRABAN length (==44).

Enable Febraban

Disable Febraban *

3.12 Matrix 2 of 5

Enable/Disable Matrix 2 of 5

To enable or disable Matrix 2 of 5, scan the appropriate barcode below.

Enable Matrix 2 of 5

Disable Matrix 2 of 5 *

3.12.1 Set Lengths for Matrix 2 of 5

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Matrix 2 of 5 to any length, one or two discrete lengths, or lengths within a specific range. The default is 4 to 55.

- **One Discrete Length** - Select this option to decode only Matrix 2 of 5 symbols containing a selected length. Select the length using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Matrix 2 of 5 symbols with 14 characters, scan **Matrix 2 of 5 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan Cancel.

- **Two Discrete Lengths** - Select this option to decode only Matrix 2 of 5 symbols containing either of two selected lengths. Select lengths using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Matrix 2 of 5 symbols containing either 2 or 14 characters, select **Matrix 2 of 5 - Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan Cancel.

- **Length Within Range** - Select this option to decode a Matrix 2 of 5 symbol with a specific length range. Select lengths using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode Matrix 2 of 5 symbols containing between 4 and 12 characters, first scan **Matrix 2 of 5 - Length Within Range**. Then scan **0**, **4**, **1,** and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan Cancel.

- **Any Length** - Scan this option to decode Matrix 2 of 5 symbols containing any number of characters within the MS852P's capability.

Matrix 2 of 5 - One Discrete Length *

Matrix 2 of 5 - Two Discrete Lengths

Matrix 2 of 5 - Length Within Range

Matrix 2 of 5 - Any Length

3.12.2 Matrix 2 of 5 Check Digit

The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate barcode below to transmit the barcode data with or without the Matrix 2 of 5 check digit.

Enable Matrix 2 of 5 Check Digit

Disable Matrix 2 of 5 Check Digit *

3.12.3 Transmit Matrix 2 of 5 Check Digit

Scan a barcode below to transmit Matrix 2 of 5 data with or without the check digit.

Transmit Matrix 2 of 5 Check Digit

Do Not Transmit Matrix 2 of 5 Check Digit *

3.13 Chinese 2 of 5

Enable/Disable Chinese 2 of 5

To enable or disable Chinese 2 of 5, scan the appropriate barcode below.

Enable Chinese 2 of 5

Disable Chinese 2 of 5 *

3.14 Discrete 2 of 5 (DTF)

Enable/Disable Discrete 2 of 5

To enable or disable Discrete 2 of 5, scan the appropriate barcode below.

Enable Discrete 2 of 5

Disable Discrete 2 of 5 *

3.14.1 Set Lengths for Discrete 2 of 5

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for D 2 of 5 to any length, one or two discrete lengths, or lengths within a specific range. The range for Discrete 2 of 5 lengths is 1 - 55.

- **One Discrete Length** - Select this option to decode only D 2 of 5 symbols containing a selected length. Select the length using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only D 2 of 5 symbols with 14 characters, scan **D 2 of 5 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan Cancel.

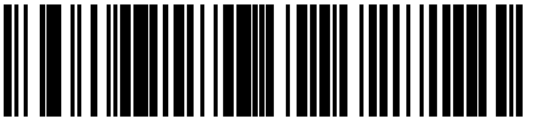
- **Two Discrete Lengths** - Select this option to decode only D 2 of 5 symbols containing either of two selected lengths. Select lengths using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only D 2 of 5 symbols containing either 2 or 14 characters, select **D 2 of 5 – Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan Cancel.

- **Length Within Range** - Select this option to decode a D 2 of 5 symbol with a specific length range. Select lengths using numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode D 2 of 5 symbols containing between 4 and 12 characters, first scan **D 2 of 5 - Length Within Range**. Then scan **0**, **4**, **1,** and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan Cancel.

- **Any Length** - Scan this option to decode D 2 of 5 symbols containing any number of characters within the MS852P's capability.
  NOTE: Due to the construction of the D 2 of 5 symbology, it is possible for a scan line covering only a portion of the code to transmit as a complete scan, yielding less data than is encoded in the barcode. To prevent this, select specific lengths (**D 2 of 5 - One Discrete Length, Two Discrete Lengths**) for D 2 of 5 applications.

D 2 of 5 - One Discrete Length

D 2 of 5 - Two Discrete Lengths



D 2 of 5 - Length Within Range

D 2 of 5 - Any Length

3.15 Code 11

To enable or disable Code 11, scan the appropriate barcode below.

Enable Code 11

Disable Code 11 *

3.15.1 Set Lengths for Code 11

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 11 to any length, one or two discrete lengths, or lengths within a specific range. The default is 4 to 55.

One Discrete Length - Select this option to decode only Code 11 symbols containing a selected length. Select the length using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Code 11 symbols with 14 characters, scan **Code 11 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan Cancel.

• **Two Discrete Lengths** - Select this option to decode only Code 11 symbols containing either of two selected lengths. Select lengths using the numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode only Code 11 symbols containing either 2 or 14 characters, select **Code 11 – Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan Cancel.

• **Length Within Range** - Select this option to decode a Code 11 symbol with a specific length range. Select lengths using numeric barcodes in Alphanumeric and Numeric Barcodes. For example, to decode Code 11 symbols containing between 4 and 12 characters, first scan **Code 11 - Length Within Range**. Then scan **0**, **4**, **1,** and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan Cancel.

• **Any Length** - Scan this option to decode Code 11 symbols containing any number of characters within the MS852P's capability.

Code 11 - One Discrete Length

Code 11 - Two Discrete Lengths

Code 11 - Length Within Range

Code 11 - Any Length

3.15.2 Check Digit Verification

This feature allows the MS852P to check the integrity of all Code 11 symbols to verify that the data complies with the specified check digit algorithm. This selects the check digit mechanism for the decoded Code 11 barcode. The options are to check for one check digit, check for two check digits, or disable the feature.

To enable this feature, scan the barcode below corresponding to the number of check digits encoded in the Code 11 symbols.

Disable *

One Check Digit

Two Check Digits

3.15.3 Transmit Code 11 Check Digits

This feature selects whether or not to transmit the Code 11 check digit(s).

Transmit Code 11 Check Digit(s) (Enable)

Do Not Transmit Code 11 Check Digit(s) (Disable) *

NOTE: Code 11 Check Digit Verification must be enabled for this parameter to function.

3.16 Data Matrix

To enable or disable Data Matrix, scan the appropriate barcode below.

Enable Data Matrix *

Disable Data Matrix

3.16.1 GS1 Data Matrix

To enable or disable GS1 Data Matrix, scan the appropriate barcode below.

Disable GS1 Data Matrix *

Enable GS1 Data Matrix

3.16.2 Data Matrix Inverse

This parameter sets the Data Matrix inverse decoder setting. Options are:

- **Regular Only** - the MS852P decodes regular Data Matrix barcodes only.
- **Inverse Only** - the MS852P decodes inverse Data Matrix barcodes only.
- **Inverse Autodetect** - the MS852P decodes both regular and inverse Data Matrix barcodes.

Regular

Inverse Only

Inverse Autodetect (2) *

3.16.3 Decode Data Matrix Mirror Images

Scan one of the following barcodes to select an option for decoding mirror image Data Matrix barcodes:

- **Never** - Do not decode Data Matrix barcodes that are mirror images.
- **Always** - Decode only Data Matrix barcodes that are mirror images.
- **Auto** - Decode both mirrored and unmirrored Data Matrix barcodes.

Never

Always

Auto *

3.17 Maxicode

To enable or disable Maxicode, scan the appropriate barcode below.

Enable Maxicode

Disable Maxicode *

3.18 QR Code

NOTE: Inverse QR barcodes decode if **QR Code** is enabled.

To enable or disable QR, scan the appropriate barcode below.

Enable QR Code *

Disable QR Code

3.19 GS1 QR Code

To enable or disable GS1 QR, scan the appropriate barcode below.

Disable GS1 QR *

Enable GS1 QR

3.20 Micro QR Code

To enable or disable Micro QR Code, scan the appropriate barcode below.

Enable Micro QR Code *

Disable Micro QR Code

3.21 Linked QR Code

Scan one of the following barcodes to select a linked QR mode.

- **Linked QR Only** - Does not decode individual QRs from a set of linked QR codes.
- **Individual QR With Headers** - Decodes individual QRs from a set of linked QR codes and keeps the header information and data.
- **Individual QR No Headers** - Decodes individual QRs from a set of linked QR codes and just transmits data without header information.

Linked QR Only *

Individual QR With Headers

Individual QR No Headers

3.22 PDF 417

To enable or disable PDF417, scan the appropriate barcode below.

Enable PDF417 *

Disable PDF417

3.23 Micro PDF 417

To enable or disable MicroPDF417, scan the appropriate barcode below.

Enable MicroPDF417

Disable MicroPDF417 *

3.24 Code 128 Emulation

Enable this parameter to transmit data from certain MicroPDF417 symbols as Code 128. AIM Code ID Character must be enabled for this parameter to work. Enable Code 128 Emulation to transmit these MicroPDF417 symbols with one of the following prefixes:

]C1 if the first codeword is 903-905

]C2 if the first codeword is 908 or 909

]C0 if the first codeword is 910 or 911

Disable Code 128 Emulation to transmit these MicroPDF417 symbols with one of the following prefixes:

]L3 if the first codeword is 903-905

]L4 if the first codeword is 908 or 909

]L5 if the first codeword is 910 or 911

Scan a barcode below to enable or disable Code 128 Emulation.

NOTE: Linked MicroPDF codewords 906, 907, 912, 914, and 915 are not supported. Use GS1 Composites instead.

Enable Code 128 Emulation

Disable Code 128 Emulation *

3.25 Inverse 1D

This parameter sets the 1D inverse decoder setting. Options are:

- **Regular Only** - the MS852P decodes regular 1D barcodes only.
- **Inverse Only** - the MS852P decodes inverse 1D barcodes only.
- **Inverse Autodetect** - the MS852P decodes both regular and inverse 1D barcodes.

Regular *

Inverse Only

Inverse Autodetect

3.26 GS1 DataBar

The variants of GS1 DataBar are DataBar-14, DataBar Expanded, and DataBar Limited. The limited and expanded versions have stacked variants. Scan the appropriate barcodes to enable or disable each variant of GS1 DataBar.

3.26.1 GS1 DataBar-14

Enable GS1 DataBar-14 *

Disable GS1 DataBar-14

3.26.2 DataBar Limited

Enable GS1 DataBar Limited *

Disable GS1 DataBar Limited

3.26.3 DataBar Expanded

Enable GS1 DataBar Expanded *

Disable GS1 DataBar Expanded

3.26.4 Convert GS1 DataBar to UPC/EAN

This parameter only applies to GS1 DataBar-14 and GS1 DataBar Limited symbols not decoded as part of a Composite symbol. Enable this to strip the leading '010' from DataBar-14 and DataBar Limited symbols encoding a single zero as the first digit, and report the barcode as EAN-13.
For barcodes beginning with two or more zeros but not six zeros, this parameter strips the leading '0100' and reports the barcode as UPC-A. The UPC-A Preamble parameter that transmits the system character and country code applies to converted barcodes. Note that neither the system character nor the check digit can be stripped.

Enable Convert GS1 DataBar to UPC/EAN

Disable Convert GS1 DataBar to UPC/EAN *

3.26.5 GS1 DataBar Security Level

The MS852P offers four levels of decode security for GS1 DataBar Limited barcodes. There is an inverse relationship between security and MS852P aggressiveness. Increasing the level of security may result in reduced aggressiveness in scanning, so choose only that level of security necessary.

• Level 1 – No clear margin required. This complies with the original GS1 standard, yet might result in erroneous decoding of the DataBar Limited barcode when scanning some UPC symbols that start with digits "9" and "7"

• Level 2 – Automatic risk detection. This level of security may result in erroneous decoding of DataBar Limited barcodes when scanning some UPC symbols. The MS852P defaults to Level 3, otherwise to Level 1.

• Level 3 – Security level reflects newly proposed GS1 standard that requires a 5 times trailing clear margin.

• Level 4 – Security level extends beyond the standard required by GS1. This level of security requires a 5 times leading and trailing clear margin.

GS1 DataBar Security Level 1

GS1 DataBar Security Level 2

GS1 DataBar Security Level 3

GS1 DataBar Security Level 4

3.26.6 GS1 DataBar Limited Margin Check

The decoder offers four levels of decode security for GS1 DataBar Limited barcodes. There is an inverse relationship between the level of margin check and decoder aggressiveness. Increasing the level of margin check can reduce scanning aggressiveness, so select only the level of margin check necessary.

• **Margin Check Level 1** – No clear margin required. This complies with the original GS1 standard, yet can result in erroneous decoding of a DataBar Limited barcode when scanning some UPC symbols that start with digits **9** and **7**.

• **Margin Check Level 2** – Automatic risk detection. This level of margin check can result in erroneous decoding of DataBar Limited barcodes when scanning some UPC symbols. If a misdecode is detected, the decoder operates in Level 3 or Level 1.

• **Margin Check Level 3** – Margin check level reflects the newly proposed GS1 standard that requires a five times trailing clear margin.

• **Margin Check Level 4** – Security level extends beyond the standard required by GS1. This level of margin check requires a five times leading and trailing clear margin.

GS1 DataBar Limited Margin Check Level 1

GS1 DataBar Limited Margin Check Level 2

GS1 DataBar Limited Margin Check Level 3 *

GS1 DataBar Limited Margin Check Level 4

3.27 Composite

Composite CC-C

Scan a barcode below to enable or disable Composite barcodes of type CC-C.

Enable CC-C

Disable CC-C *

3.27.1 Composite CC-A/B

Scan a barcode below to enable or disable Composite barcodes of type CC-A/B.

Enable CC-A/B

Disable CC-A/B *

3.27.2 Composite TLC-39

Scan a barcode below to enable or disable Composite barcodes of type TLC-39.

Enable TLC39

Disable TLC39 *

3.27.3 Composite Inverse

Select an option to set Composite for either regular decode or inverse decode. This mode only supports Composite Inverse that includes DataBar combined with CCAB, and does not support other 1D/2D combinations.
For this parameter to function, first enable Composite CC-A/B.

• **Regular Only** - The decoder decodes regular Composite barcodes only. Before selecting this, set Inverse 1D to **Regular Only** or **Inverse Autodetect**.

• **Inverse Only** - The decoder decodes inverse Composite barcodes only. Before selecting this, set Inverse 1D to **Inverse Only** or **Inverse Autodetect.**

Regular Only *

Inverse Only

3.27.4 UPC Composite Mode

Select an option for linking UPC symbols with a 2D symbol during transmission as if they were one symbol:

- Select **UPC Never Linked** to transmit UPC barcodes regardless of whether a 2D symbol is detected.
- Select **UPC Always Linked** to transmit UPC barcodes and the 2D portion. If 2D is not present, the UPC barcode does not transmit.
- If you select **Autodiscriminate UPC Composites**, the MS852P determines if there is a 2D portion, then transmits the UPC, as well as the 2D portion if present.

UPC Never Linked *

UPC Always Linked

Autodiscriminate UPC Composites

3.27.5 Composite Beep Mode

To select the number of decode beeps when a composite barcode is decoded, scan the appropriate barcode.

Single Beep after both are decoded

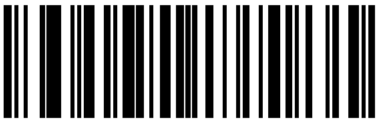
Beep as each code type is decoded *

Double Beep after both are decoded

3.27.6 GS1-128 Emulation Mode for UCC/EAN Composite Codes

Select whether to enable or disable this mode.

Enable GS1-128 Emulation Mode for UCC/EAN Composite Codes



Disable GS1-128 Emulation Mode for UCC/EAN Composite Codes *

3.28 Aztec

To enable or disable Aztec, scan the appropriate barcode below.

Enable Aztec *

Disable Aztec

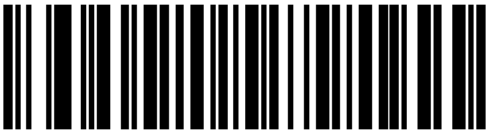
3.28.1 Aztec Inverse

This parameter sets the Aztec inverse decoder setting. Options are:

- **Regular Only** - the MS852P decodes regular Aztec barcodes only.
- **Inverse Only** - the MS852P decodes inverse Aztec barcodes only.
- **Inverse Autodetect** - the MS852P decodes both regular and inverse Aztec barcodes.

Regular

Inverse Only



Inverse Autodetect *

3.29 Han Xin

To enable or disable Han Xin, scan the appropriate barcode below.

Enable Han Xin

Disable Han Xin *

3.29.1 Han Xin Inverse

Select a Han Xin inverse decoder setting:

- **Regular Only** - the decoder decodes Han Xin barcodes with normal reflectance only.
- **Inverse Only** - the decoder decodes Han Xin barcodes with inverse reflectance only.
- **Inverse Autodetect** - the decoder decodes both regular and inverse Han Xin barcodes.

Regular *

Inverse Only

Inverse Autodetect

3.30 Grid Matrix

Scan one of the following barcodes to enable or disable Grid Matrix.

Enable

Disable *

3.30.1 Grid Matrix Inverse

Scan one of the following barcodes to select a Grid Matrix inverse decoder setting:

- **Regular Only** - The decoder decodes regular Grid Matrix barcodes only.
- **Inverse Only** - The decoder decodes inverse Grid Matrix barcodes only.
- **Autodiscriminate** - The decoder decodes both regular and inverse Grid Matrix barcodes.

Regular Only *

Inverse Only

Autodiscriminate

3.30.2 Grid Matrix Mirror

Scan one of the following barcodes to select a Grid Matrix mirror decoder setting:

- **Regular Only** - The decoder decodes regular Grid Matrix barcodes only.
- **Mirrored Only** - The decoder decodes mirrored Grid Matrix barcodes only.
- **Auto-discriminate** - The decoder decodes both regular and mirrored Grid Matrix barcodes.

Regular Only *

Mirrored Only

Autodiscriminate

3.31 Korean 3 of 5

To enable or disable Korean 3 of 5, scan the appropriate barcode below.

NOTE: The length for Korean 3 of 5 is fixed at 6.

Enable Korean 3 of 5

Disable Korean 3 of 5 *

3.32 DotCode

NOTE: This parameter is only supported on the SR and HD configurations.

Scan one of the following barcodes to enable or disable DotCode.

Disable DotCode *

Enable DotCode

3.32.1 DotCode Inverse

NOTE: This parameter is only supported on the SR and HD configurations.

• **Regular Only** - Decoder decodes DotCode barcodes with normal reflectance only.
• **Inverse Only** - Decoder decodes DotCode barcodes with inverse reflectance only.
• **Inverse Autodetect** - Decoder decodes both regular and inverse DotCode barcodes.

Regular

Inverse Only

Autodetect *

3.32.2 DotCode Mirrored

NOTE: This parameter is only supported on the SR and HD configurations. Scan one of the following barcodes to select a DotCode Mirror decoder setting:

• **Non-Mirrored Only** - Digital scanner decodes non-mirrored DotCode barcodes only.

• **Mirrored Only** - Digital scanner decodes mirrored DotCode barcodes only.

• **Autodetect** - Digital scanner decodes both mirrored and non-mirrored DotCode barcodes.

Never

Always

Autodetect *

3.32.3 DotCode Prioritize

NOTE: This parameter is only supported on the SR and HD configurations.

Enable DotCode Prioritize to give priority to DotCode decoding as compared to other symbologies.

Disable *

Enable

3.33 US Postnet

To enable or disable US Postnet, scan the appropriate barcode below.

Enable US Postnet

Disable US Postnet *

3.33.1 US Planet

To enable or disable US Planet, scan the appropriate barcode below.

Enable US Planet

Disable US Planet*

3.33.2 Transmit US Postal Check Digit

Select whether to transmit US Postal data, which includes both US Postnet and US Planet, with or without the check digit.

Transmit US Postal Check Digit *

Do Not Transmit US Postal Check Digit

3.34 UK Postal

To enable or disable UK Postal, scan the appropriate barcode below.

Enable UK Postal

Disable UK Postal *

3.34.1 Transmit UK Postal Check Digit

Select whether to transmit UK Postal data with or without the check digit.

Transmit UK Postal Check Digit *

Do Not Transmit UK Postal Check Digit

3.35 Japan Postal

To enable or disable Japan Postal, scan the appropriate barcode below.

Enable Japan Postal

Disable Japan Postal *

3.36 Australia Post

To enable or disable Australia Post, scan the appropriate barcode below.

Enable Australia Post

Disable Australia Post *

3.36.1 Australia Post Format

To select one of the following formats for Australia Post, scan the appropriate barcode below:

- **Autodiscriminate** (or Smart mode) - Attempt to decode the Customer Information Field using the N and C Encoding Tables.
- **Raw Format** - Output raw bar patterns as a series of numbers 0 through 3.
- **Alphanumeric Encoding** - Decode the Customer Information Field using the C Encoding Table.
- **Numeric Encoding** - Decode the Customer Information Field using the N Encoding Table.

For more information on Australia Post Encoding Tables, refer to the Australia Post Customer Barcoding Technical Specifications available at auspost.com.au.

NOTE: This option increases the risk of misdecodes because the encoded data format does not specify the Encoding Table used for encoding.

Autodiscriminate *

Raw Format

Alphanumeric Encoding

Numeric Encoding

3.37 Netherlands KIX Code

To enable or disable Netherlands KIX Code, scan the appropriate barcode below.

Enable Netherlands KIX Code

Disable Netherlands KIX Code *

3.38 USPS 4CB/One Code/Intelligent Mail

To enable or disable USPS 4CB/One Code/Intelligent Mail, scan the appropriate barcode below.

Enable USPS 4CB/One Code/Intelligent Mail

Disable USPS 4CB/One Code/Intelligent Mail *

3.39 UPU FICS Postal

To enable or disable UPU FICS Postal, scan the appropriate barcode below.

Enable UPU FICS Postal

Disable UPU FICS Postal *

3.40 Mailmark

To enable or disable Mailmark, scan the appropriate barcode below.

Disable Mailmark *

Enable Mailmark

3.41 Symbology-Specific Security Levels

The MS852P offers four levels of decode redundancy. Select higher redundancy levels for decreasing levels of barcode quality. As redundancy levels increase, the MS852P's aggressiveness decreases.
Select the redundancy level appropriate for the barcode quality.

3.41.1 Redundancy Level

Redundancy Level 1

The following code types must be successfully read twice before being decoded:

Table 1 Redundancy Level 1 Codes

Code Type	Code Length
Codabar	8 characters or less
MSI	4 characters or less
D 2 of 5	8 characters or less
I 2 of 5	8 characters or less

Redundancy Level 2

The following code types must be successfully read twice before being decoded:

Table 2 Redundancy Level 2 Codes

Code Type	Code Length
All	All

Redundancy Level 3

Code types other than the following must be successfully read twice before being decoded. The following codes must be read three times:

Table 3 Redundancy Level 3 Codes

Code Type	Code Length
MSI 4 characters or less	4 characters or less
D 2 of 5 8 characters or less	8 characters or less
I 2 of 5 8 characters or less	8 characters or less
Codabar 8 characters or less	8 characters or less

Redundancy Level 4

The following code types must be successfully read three times before being decoded:

Table 4 Redundancy Level 4 Codes

Code Type	Code Type
All	All

Redundancy Level 1 *

Redundancy Level 2

Redundancy Level 3

Redundancy Level 4

3.41.2 Security Level

The MS852P offers four levels of decode security for delta barcodes, which include the Code 128 family, UPC/EAN, and Code 93. Select increasing levels of security for decreasing levels of barcode quality. There is an inverse relationship between security and MS852P aggressiveness, so choose only that level of security necessary for any given application.

- **Security Level 0:** This setting allows the MS852P to operate in its most aggressive state, while providing sufficient security in decoding most "in-spec" barcodes.
- **Security Level 1:** This default setting eliminates most misdecodes.
- **Security Level 2:** Select this option if Security level 1 fails to eliminate misdecodes.
- **Security Level 3:** If you selected Security Level 2 and misdecodes still occur, select this security level. Be advised, selecting this option is an extreme measure against mis-decoding severely out of spec barcodes.
  Selecting this level of security significantly impairs the decoding ability of the MS852P. If you need this level of security, try to improve the quality of the barcodes.

Security Level 0

Security Level 1 *

Security Level 2

Security Level 3

3.41.3 1D Quiet Zone Level

This feature sets the level of aggressiveness in decoding barcodes with a reduced quiet zone (the area in front of and at the end of a barcode), and applies to symbologies enabled by a Reduced Quiet Zone parameter. Because higher levels increase the decoding time and risk of misdecodes, Symbol Technologies strongly recommends enabling only the symbologies which require higher quiet zone levels, and leaving Reduced Quiet Zone disabled for all other symbologies. Options are:

• 0 - The MS852P performs normally in terms of quiet zone.

• 1 - The MS852P performs more aggressively in terms of quiet zone.

• 2 - The MS852P only requires one side EB (end of barcode) for decoding.

• 3 - The MS852P decodes anything in terms of quiet zone or end of barcode.

1D Quiet Zone Level 0

1D Quiet Zone Level 1 *

1D Quiet Zone Level 2

1D Quiet Zone Level 3

3.41.4 Intercharacter Gap Size

The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various barcode-printing technologies, this gap can grow larger than the maximum size allowed, preventing the MS852P from decoding the symbol. If this problem occurs, scan the **Large Intercharacter Gaps** parameter to tolerate these out-of-specification barcodes.

Normal Intercharacter Gaps *

Large Intercharacter Gaps

3.42 Macro PDF Features

Macro PDF is a special feature for concatenating multiple PDF symbols into one file. The MS852P can decode symbols that are encoded with this feature, and can store more than 64 Kb of decoded data stored in up to 50 Macro PDF symbols.

CAUTION: When printing, keep each Macro PDF sequence separate, as each sequence has unique identifiers. Do not mix barcodes from several Macro PDF sequences, even if they encode the same data. When scanning Macro PDF sequences, scan the entire Macro PDF sequence without interruption. If, when scanning a mixed sequence, the MS852P emits two long low beeps (Low/Low) this indicates an inconsistent file ID or inconsistent symbology error.

3.42.1 Macro PDF Transmit / Decode Mode Symbols

Select one of the following options for handling Macro PDF decoding. In **Buffer All Symbols** the decoder can handle sets of up to 50 maximum-sized Macro PDF symbols. In all other modes there is no limit to the size of the MacroPDF set.

• **Buffer All Symbols / Transmit Macro PDF When Complete**: This transmits all decode data from an entire Macro PDF sequence only when the entire sequence is scanned and decoded. If the decode data exceeds the limit of 50 symbols, there is no transmission because the entire sequence was not scanned. Use the parameter Flush Macro Buffer to purge the buffer.

• **Transmit Any Symbol in Set / No Particular Order**: This transmits data from each Macro PDF symbol as decoded, regardless of the sequence (although some error handling is performed. When selecting this mode, enable Transmit Macro PDF Control Header.

• **Passthrough All Symbols**: This transmits and decodes all Macro PDF symbols and performs no processing. In this mode the host is responsible for detecting and parsing the Macro PDF sequences.
In the other modes, some Macro PDF scanning sequences provide audible feedback only, so if BEEPER_ON is not used no user feedback is provided. By using **Passthrough All Symbols** mode every user decode is transmitted to the host where the host software can provide the appropriate feedback.

Buffer All Symbols / Transmit Macro PDF When Complete

Passthrough All Symbols *

Transmit Any Symbol in Set / No Particular Order

3.42.2 Transmit Macro PDF Control Header

When enabled, this activates transmission of the control header, which contains the segment index and the file ID, in Macro PDF symbols. For example, the field may be: \92800000\725\120\343. The five digits after the \928 are the segment index (or block index), and \725\120\343 is the file ID.

Enable this when selecting **Transmit Any Symbol in Set / No Particular Order** for the Macro PDF Transmit / Decode Mode Symbols, and disable this when selecting **Buffer All Symbols / Transmit Macro PDF When Complete**. This parameter has no effect when **Passthrough All Symbols** is selected.

Enable Macro PDF Control Header Transmit *

Disable Macro PDF Control Header Transmit

3.42.3 Escape Characters

This enables the backslash (\) character as an Escape character for systems that can process transmissions containing special data sequences. Scan one of the following barcodes to either format special data according to the GLI (Global Label Identifier) protocol, or to disable this parameter. This parameter only affects the data portion of a Macro PDF symbol transmission; the Macro PDF Control Header (if enabled) is always sent with GLI formatting.

GLI Protocol

None *

3.42.4 Flush Macro Buffer

This flushes the buffer of all decoded Macro PDF data stored to that point, transmits it to the host device, and aborts from Macro PDF mode.

Flush Macro PDF Buffer

3.42.5 Abort Macro PDF Entry

This clears all currently-stored Macro PDF data in the buffer without transmission and aborts from Macro PDF mode.

Abort Macro PDF Entry

3.43 OCR Programming

Table 5 OCR Programming Default Table

Parameter	Default
OCR-A	Disable
OCR-A Variant	Full ASCII
OCR-B	Disable
OCR-B Variant	Full ASCII
MICR E13B	Disable
US Currency	Disable
OCR Orientation	0º
OCR Lines	1
OCR Minimum Characters	3
OCR Maximum Characters	100
OCR Subset	Selected font variant
OCR Quiet Zone	50
OCR Template	99999999
OCR Check Digit Modulus	1
OCR Check Digit Multiplier	121212121212
OCR Check Digit Validation	None
Inverse OCR	Regular
OCR Redundancy	Level 1

3.43.1 Enable/Disable OCR-A

To enable or disable OCR-A, scan one of the following barcodes.

NOTE: OCR is not as secure as a barcode. To decrease OCR misdecodes and speed OCR reading, set an accurate OCR template and character subset, and use a check digit. See OCR Subset and OCR Template.

NOTE: All OCR fonts are disabled by default. Enabling OCR can slow barcode decoding. Enabling more than one OCR font could also slow OCR decoding and impact OCR decoding accuracy.

Enable OCR-A

Disable OCR-A*

3.43.2 OCR-A Variant

Font variant sets a processing algorithm and default character subset for the given font. To choose a variant, scan one of the following barcodes. Selecting the most appropriate font variant optimizes performance and accuracy.

OCR-A supports the following variants:

• OCR-A Full ASCII
!"#$()*+,-./0123456789<>ABCDEFGHIJKLMNOPQRSTUVWXYZ\^

• OCR-A Reserved 1
$*+-./0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ

• OCR-A Reserved 2
$*+-./0123456789<>ABCDEFGHIJKLMNOPQRSTUVWXYZ

• OCR-A Banking
-0123456789<>

Special banking characters output as the following representative characters:

outputs as f

outputs as c

outputs as h

NOTE: Enable OCR-A before setting this parameter. If disabling OCR-A, set the variant to its default (OCR-A Full ASCII).

OCR-A Full ASCII *

OCR-A Reserved 1

OCR-A Reserved 2

OCR-A Banking

3.43.3 Enable/Disable OCR-B

To enable or disable OCR-B, scan one of the following barcodes.

NOTE: OCR is not as secure as a barcode. To decrease OCR misdecodes and speed OCR reading, set an accurate OCR template and character subset, and use a check digit. See OCR Subset and OCR Template.

NOTE: All OCR fonts are disabled by default. Enabling OCR can slow barcode decoding. Enabling more than one OCR font could also slow OCR decoding and impact OCR decoding accuracy.

Enable OCR-B

Disable OCR-B *

3.43.4 OCR-B Variant

OCR-B has the following variants. Selecting the most appropriate font variant affects performance and accuracy.

• OCR-B Full ASCII
!#$%()*+,-./0123456789<>ABCDEFGHIJKLMNOPQRSTUVWXYZ^|Ñ

• OCR-B Banking
#+-0123456789<>JNP|

• OCR-B Limited
+,-./0123456789<>ACENPSTVX

• OCR-B ISBN 10-Digit Book Numbers
-0123456789>BCEINPSXz

• OCR-B ISBN 10 or 13-Digit Book Numbers

-0123456789>BCEINPSXz

• OCR-B Travel Document Version 1 (TD1) 3-Line ID Cards
-0123456789<ABCDEFGHIJKLMNOPQRSTUVWXYZ

• OCR-B Travel Document Version 2 (TD2) 2-Line ID Cards
-0123456789<ABCDEFGHIJKLMNOPQRSTUVWXYZ

• OCR-B Travel Document 2 or 3-Line ID Cards Auto-Detect
!#$%()*+,-./0123456789<>ABCDEFGHIJKLMNOPQRSTUVWXYZ^|Ñ

• OCR-B Passport
-0123456789<ABCDEFGHIJKLMNOPQRSTUVWXYZÑ

• OCR-B Visa Type A
-0123456789<ABCDEFGHIJKLMNOPQRSTUVWXYZ

• OCR-B Visa Type B
-0123456789<ABCDEFGHIJKLMNOPQRSTUVWXYZÑ

• OCR-B ICAO Travel Documents
This allows reading either TD1, TD2, Passport, Visa Type A, or Visa Type B without switching between these options. It automatically recognizes the travel document read.

To choose a variant, scan one of the following barcodes. Selecting the following OCR-B variants automatically sets the appropriate OCR Lines. These five variants invoke extensive special algorithms and checking for that particular document type:

VariantOCR Lines Setting
Passport2
TD1 ID Cards3
TD2 ID Cards2
Visa Type A2
Visa Type B2

Selecting one of the ISBN Book Numbers automatically applies the appropriate ISBN checksum, so you do not
need to set this.

For the best performance in passport reading, fix the target passport and the decoder in place (6.5 - 7.5").

NOTE: Enable OCR-B before setting this parameter. If disabling OCR-B, set the variant to its default (OCR-B Full ASCII).

OCR-B Full ASCII *

OCR-B Banking

OCR-B Limited

OCR-B ISBN 10-Digit Book Numbers

OCR-B ISBN 10 or 13-Digit Book Numbers

OCR-B Travel Document Version 1 (TD1)
3 Line ID Cards

OCR-B Travel Document Version 2 (TD2)
2-Line ID Cards

Travel Document 2 or 3-Line ID Cards Auto-Detect

OCR-B Passport

OCR-B Visa Type A

OCR-B Visa Type B

OCR-B ICAO Travel Documents

3.43.5 Enable/Disable MICR E13B

To enable or disable MICR E13B, scan one of the following barcodes.
MICR E13B uses the following characters:

TOAD characters (Transit, On Us, Amount, and Dash) output as the following representative characters:

 outputs as **t**

 outputs as **a**

 outputs as **o**

 outputs as **d**

NOTE: OCR is not as secure as a barcode. To decrease OCR misdecodes and speed OCR reading, set an accurate OCR template and character subset, and use a check digit. See OCR Subset and OCR Template.

NOTE: All OCR fonts are disabled by default. Enabling OCR can slow barcode decoding. Enabling more than one OCR font could also slow OCR decoding and impact OCR decoding accuracy.

Enable MICR E13B

Disable MICR E13B *

3.43.6 Enable/Disable US Currency Serial Number

To enable or disable US Currency Serial Number, scan one of the following barcodes.

NOTE: OCR is not as secure as a barcode. To decrease OCR misdecodes and speed OCR reading, set an accurate OCR template and character subset, and use a check digit. See OCR Subset and OCR Template.

NOTE: All OCR fonts are disabled by default. Enabling OCR can slow barcode decoding. Enabling more than one OCR font could also slow OCR decoding and impact OCR decoding accuracy.

Enable US Currency

Disable US Currency *

3.43.7 OCR Orientation

Select one of five options to specify the orientation of an OCR string to be read:

- 0º to the imaging engine (default)
- 270º clockwise (or 90o counterclockwise) to the imaging engine
- 180º (upside down) to the imaging engine
- 90º clockwise to the imaging engine
- Omnidirectional

Setting an incorrect orientation can cause misdecodes.

OCR Orientation 0º *

OCR Orientation 270º Clockwise

OCR Orientation 180º Clockwise

OCR Orientation 90º Clockwise

OCR Orientation Omnidirectional

3.43.8 OCR Lines

To select the number of OCR lines to decode, scan one of the following barcodes. Selecting Visas, TD1, or TD2 ID cards automatically sets the appropriate **OCR Lines**. Also see OCR-B Variant.

OCR 1 Line *

OCR 2 Lines

OCR 3 Lines

3.43.9 OCR Minimum Characters

To select the minimum number of OCR characters (not including spaces) per line to decode, scan the following barcode, then scan a three-digit number between 003 and 100 using the barcodes in Alphanumeric and Numeric Barcodes representing the number of OCR characters to decode. Strings of OCR characters less than the minimum are ignored. The default is 003.

OCR Minimum Characters

3.43.10 OCR Maximum Characters

To select the maximum number of OCR characters (including spaces) per line to decode, scan the following barcode, then scan a three-digit number between 003 and 100 using the barcodes in Alphanumeric and Numeric Barcodes representing the number of OCR characters to decode. Strings of OCR characters greater than the maximum are ignored. The default is 100.

OCR Maximum Characters

3.43.11 OCR Subset

Set an OCR subset to define a custom group of characters in place of a preset font variant. For example, if scanning only numbers and the letters A, B, and C, create a subset of just these characters to speed decoding. This applies a designated OCR Subset across all enabled OCR fonts.

To set or modify the OCR font subset, first enable the appropriate OCR font(s). Next, scan the following barcode, then scan numbers and letters to form the OCR Subset from the alphanumeric keyboard in the Advanced Data Formatting Guide. Then scan **End of Message** in the Advanced Data Formatting Guide.

OCR Subset

To cancel an OCR subset, for OCR-A or OCR-B, set OCR-A variant **Full ASCII**, or OCR-B variant **Full ASCII, and set subset to NULL string**.
For MICR E13B or US Currency Serial Number, create a subset which includes all allowed characters in that character set.

3.43.12 OCR Quiet Zone

This option sets the OCR quiet zone. The digital scanner stops scanning a field when it detects a sufficiently wide blank space. The width of this space is defined by the End of Field option. Used with parsers that tolerate slanted characters, the End of Field count is roughly a count of 8 for a character width. For example if set to 15, then two character widths are an end of line indicator for the parser. Larger end of field numbers require bigger quiet zones at each end of text line.

To set a quiet zone, scan the following barcode, then scan a two-digit number using the numeric keypad in the Advanced Data Formatting Guide. The range of the quiet zone is 20 - 99 and the default is 50, indicating a six character width quiet zone.

OCR Quiet Zone

3.43.13 OCR Template

This option creates a template for precisely matching scanned OCR characters to a desired input format. Carefully constructing an OCR template eliminates scanning errors.

To set or modify the OCR decode template, scan the OCR Template barcode, then barcodes corresponding to numbers and letters on the following pages to form the template expression. Then scan **End of Message** in the Advanced Data Formatting Guide. The default is **99999999** which accepts OCR strings only containing eight digits.

OCR Template

End of Message

Required Digit (9)

9

Only a numeric character is allowed in this position.

Template	Valid data	Valid data	Invalid data
99999	12987	30517	123AB

Required Alpha (A)

A

Only an alpha character is allowed in this position.

Template	Valid data	Valid data	Invalid data
AAA	ABC	WXY	12F

Optional Alphanumeric (1)

1

When this option appears in the template string, the data validator accepts an alphanumeric character if present. Optional characters are not allowed as the first character(s) in a field of like characters.

Template	Valid data	Valid data	Invalid data
99991	1234A	12345	1234<

Optional Alpha (2)

2

When this option appears in the template string, the data validator accepts an alpha character if present. Optional characters are not allowed as the first character(s) in a field of like characters.

Template	Valid data	Valid data	Invalid data
AAAA2	ABCDE	WXYZ	ABCD6

Alpha or Digit (3)

3

The data validator requires an alphanumeric character in this position to validate the incoming data.

Template	Valid data	Valid data	Invalid data
33333	12ABC	WXY34	12AB<

Any Including Space & Reject (4)

4

The template accepts any character in this position, including space and reject. Rejects are represented as an underscore (_) in the output. This is a good selection for troubleshooting.

Template	Valid data	Valid data
99499	12$34	34_98

Any except Space & Reject (5)

5

The template accepts any character in this position except a space or reject.

Template	Valid data	Valid data	Invalid data
55999	A.123	*Z456	A BCD

Optional Digit (7)

7

When this option appears in the template string, the template accepts a numeric character if present. Optional characters are not allowed as the first character(s) in a field of like characters.

Template	Valid data	Valid data	Invalid data
99977	12345	789	789AB

Digit or Fill (8)

8

The data validator accepts any numeric or fill character in this position.

Template	Valid data	Valid data	Valid data
88899	12345	>>789	<<789

Alpha or Fill (F)

F

The data validator accepts any alpha or fill character in this position.

Template	Valid data	Valid data	Valid data
AAAFF	ABCXY	LMN>>	ABC<5

Optional Space ( )

Space

When this option appears in the template string, the template accepts a space if present. Optional characters are not allowed as the first character(s) in a field of like characters.

Template	Valid data	Valid data	Invalid data
99 99	12 34	1234	67891

Optional Small Special (.)

.

When this option appears in the template string, the data validator accepts a special character if present. Optional characters are not allowed as the first character(s) in a field of like characters. Small special characters are **-** , and **.**

Template	Valid data	Valid data	Invalid data
AA.99	MN.35	XY98	XYZ12

Other Template Operators

These template operators assist in capturing, delimiting, and formatting scanned OCR data.

Literal String (" and +)

"

+

Use either of these delimiting characters surrounding characters from the alphanumeric keyboard in the Advanced Data Formatting Guide to define a literal string within a template that must be present in scanned OCR data. There are two characters used to delimit required literal strings; if one of the delimiter characters is present in the desired literal string, use the other delimiter.

Template	Valid data	Invalid data
"35+BC"	35+BC	AB+22

New Line (E)

E

To create a template of multiple lines, add **E** between the template of each single line.

Template	Valid data	Valid data	Invalid data
999EAAAA	321	987	XYZW
	BCAD	ZXYW	12

String Extract (C)

C

This operator combined with others defines a string of characters to extract from the scanned data. The string extract is structured as follows:

CbPe

Where:

- C is the string extract operator
- b is the string begin delimiter
- P is the category (one or more numeric or alpha characters) describing the string representation
- e is the string end delimiter

Values for b and e can be any scannable character. They are included in the output stream.

Template	Incoming data	Output

C>A>	XQ3>ABCDE>	>ABCDE>
	->ATHRUZ>123	>ATHRUZ>
	1ABCZXYZ	No Output

Ignore to End of Field (D)

D

This operator causes all characters after a template to be ignored. Use this as the last character in a template expression. Examples for the template 999D:

Template	Incoming data	Output
999D	123-PED	123
	357298	357
	193	193

Skip Until (P1)

P

1

This operator allows skipping over characters until a specific character type or a literal string is detected. It can be used in two ways:

P1ct

Where:

- P1 is the Skip Until operator
- c is the type of character that triggers the start of output

• t is one or more template characters

P1″s″t

Where:

• P1 is the Skip Until operator

• ″s″ is one or more literal string characters (see Literal String (" and +)) that trigger the start of Output

• t is one or more template characters

The trigger character or literal string is included in output from a Skip Until operator, and the first character in the template should accommodate this trigger.

Template	Incoming data	Output
P1″PN″AA9999	123PN9876	PN9876
	PN1234	PN1234
	X-PN3592	PN3592

Skip Until Not (P0)

P

0

This operator allows skipping over characters until a specific character type or a literal string is not matched in the output stream. It can be used in two ways:

P0ct

Where:

- P0 is the Skip Until Not operator
- c is the type of character that triggers the start of output
- t is one or more template characters

P0"s"t

Where:

- P0 is the Skip Until Not operator
- "s" is one or more literal string characters (see Literal String (" and +)) that trigger the start of output
- t is one or more template characters

The trigger character or literal string is not included in output from a Skip Until Not operator.

Template	Incoming data	Output
P0A9999	BPN3456	3456
	PN1234	1234
	5341	No output

Template	Incoming data	Output
P0"PN"9999	PN3456	3456
	5341	No output
	PNPN7654	7654

Repeat Previous (R)

R

This operator allows a template character to repeat one or more times, allowing the capture of variable-length scanned data. The following examples capture two required alpha characters followed by one or more required digits:

Template	Incoming data	Output
AA9R	AB3	AB3
	PN12345	PN12345
	32RM52700	No output

Scroll Until Match (S)

S

This operator steps through scanned data one character at a time until the data matches the template.

Template	Incoming data	Output
S99999	AB3	No Output
	PN12345	12345
	32RM52700	52700

Multiple Templates

This feature sets up multiple templates for OCR decoding. To do this, follow the procedure described in OCR Template (scan the OCR Template barcode, then barcodes corresponding to numbers and letters to form the template expression, then **End of Message**) for each template in the multiple template string, using a capital letter **X** as a separator between the templates.
For example, set the OCR Template as **99999XAAAAA** to decode OCR

strings of either **12345** or **ABCDE**.

Template Examples

Following are sample templates with descriptions of valid data for each definition.

Field Definition Description

"M"99977 **M** followed by three digits and two optional digits.

"X"997777"X" **X** followed by two digits, four optional digits, and an X.

9959775599 Two digits followed by any character, a digit, two optional digits, any two characters, and two digits.

A55"-"999"-"99 A letter followed by two characters, a dash, three digits, a dash, and two digits.

33A"."99 Two alphanumeric characters followed by a letter, a period, and two digits.

999992991Five digits followed by an optional alpha, two digits, and an optional alphanumeric.

"PN98" Literal field - **PN98**

3.43.14 OCR Check Digit Modulus

This option sets OCR module check digit calculation. The check digit is the last digit (in the right most position) in an OCR string and improves the accuracy of the collected data. The check digit is the end product of a calculation made on the incoming data. For check digit calculation, for example Modulus 10, alpha and numeric characters are assigned numeric weights (see OCR Check Digit Multiplier). The calculation is applied to the character weights and the resulting check digit is added to the end of the data. If the incoming data does not match the check digit, the data is considered corrupt.

The selected check digit option does not take effect until you set **OCR Check Digit Validation**.

To choose the Check Digit Modulus, such as 10 for modulo 10, scan the following barcode, then scan a three-digit number from 001 to 099 representing the check digit using the numeric keypad in the Advanced Data Formatting Guide. The default is **1**.

OCR Check Digit

3.43.15 OCR Check Digit Multiplier

This option sets OCR check digit multipliers for the character positions. For check digit validation, each character in
scanned data has an equivalent weight used in the check digit calculation. DS36X8 OCR ships with the following
weight equivalents:
0 = 0 A = 10 K = 20 U = 30

1 = 1 B = 11 L = 21 V = 31
2 = 2 C = 12 M = 22 W = 32
3 = 3 D = 13 N = 23 X = 33
4 = 4 E = 14 O = 24 Y = 34
5 = 5 F = 15 P = 25 Z = 35
6 = 6 G = 16Q = 26 Space = 0
7 = 7 H = 17R = 27
8 = 8 I = 18 S = 28
9 = 9 J = 19 T = 29
All other characters are equivalent to one (1).
You can define the multiplier string if it is different from the default.
121212121212 (default)
123456789A (for ISBN, Product Add Right to Left. See OCR Check Digit Validation.
For example:
ISBN 0 2 0 1 1 8 3 9 9 4
Multiplier 10 9 8 7 6 5 4 3 2 1
Product 0 18 0 7 6 40 12 27 18 4
Product add 0+ 18+ 0+ 7+ 6+ 40+ 12+ 27+ 18+ 4= 132
ISBN uses modulo 11 for its check digit. In this case, 132 is divisible by 11, so it passes the check digit.
To set the check digit multiplier, scan the following barcode, then scan numbers and letters to form the multiplier
string from the alphanumeric keyboard in the Advanced Data Formatting Guide. Then scan **End of Message** in the Advanced Data Formatting Guide.

OCR Check Digit Multiplier

3.43.16 OCR Check Digit Validation

Use **OCR Check Digit Validation** to protect against scanning errors by applying a check digit validation scheme. The following is a list of options.

None

No check digit validation, indicating no check digit is applied. This is the default.

No Check Digit *

Product Add Left to Right

Each character in the scanned data is assigned a numeric value (see OCR Check Digit Multiplier).

Each digit representing a character in the scanned data is multiplied by its corresponding digit in the multiplier, and the sum of these products is computed. The check digit passes if this sum modulo Check Digit Modulus is zero.

Example:

Scanned data numeric value is 132456 (check digit is 6)

Check digit multiplier string is 123456

Digit 1 3 2 4 5 6

Multiplier 1 2 3 4 5 6

Product 1 6 6 16 25 36

Product add 1+ 6+ 6+ 16+ 25+ 36= 90

The Check Digit Modulus is 10. It passes because 90 is divisible by 10 (the remainder is zero).

Product Add Left to Right

Product Add Right to Left

Each character in the scanned data is assigned a numeric value (see OCR Check Digit Multiplier).

The check digit multiplier is reversed in order. Each value representing a character in the scanned data is multiplied by its corresponding digit in the reversed multiplier, resulting in a product for each character in the scanned data. The sum of these products is computed. The check digit passes if this sum modulo Check Digit Modulus is zero.

Example:

Scanned data numeric value is 132459 (check digit is 9)

Check digit multiplier string is 123456

Digit 1 3 2 4 5 9

Multiplier 6 5 4 3 2 1

Product 6 15 8 12 10 9

Product add 6+ 15+ 8+ 12+ 10+ 9= 60

The Check Digit Modulus is 10. It passes because 60 is divisible by 10 (the remainder is 0).

Product Add Right to Left

Digit Add Left to Right

Each character in the scanned data is assigned a numeric value (see OCR Check Digit Multiplier).

Each value representing a character in the scanned data is multiplied by its corresponding digit in the multiplier,

resulting in a product for each character in the scanned data. The sum of each individual digit in all of the products

is then calculated. The check digit passes if this sum modulo Check Digit Modulus is zero.

Example:

Scanned data numeric value is 132456 (check digit is 6)

Check digit multiplier string is 123456

Digit 1 3 2 4 5 6

Multiplier 1 2 3 4 5 6

Product 1 6 6 16 25 36

Digit add 1+ 6+ 6+ 1+6+ 2+5+ 3+6= 36

The Check Digit Modulus is 12. It passes because 36 is divisible by 12 (the remainder is 0).

Digit Add Left to Right

Digit Add Left to Right

Each character in the scanned data is assigned a numeric value (see OCR Check Digit Multiplier).

The check digit multiplier is reversed in order. Each value representing a character in the scanned data is multiplied by its corresponding digit in the reversed multiplier, resulting in a product for each character in the scanned data. The sum of each individual digit in all of the products is then calculated. The check digit passes if this sum modulo Check Digit Modulus is zero.

Example:

Scanned data numeric value is 132456 (check digit is 6)

Check digit multiplier string is 123456

Digit 1 3 2 4 5 6

Multiplier 6 5 4 3 2 1

Product 6 15 8 12 10 6

Digit add 6+ 1+5+ 8+ 1+2+ 1+0+ 6= 30

The Check Digit Modulus is 10. It passes because 30 is divisible by 10 (the remainder is 0).

Digit Add Right to Left

Product Add Right to Left Simple Remainder

Each character in the scanned data is assigned a numeric value (see OCR Check Digit Multiplier).

The check digit multiplier is reversed in order. Each value representing a character in the scanned data is multiplied by its corresponding digit in the reversed multiplier, resulting in a product for each character in the scanned data. The sum of these products **except for the check digit's product** is computed. The check digit passes if this sum modulo Check Digit Modulus is equal to the check digit's product.

Example:

Scanned data numeric value is 122456 (check digit is 6)

Check digit multiplier string is 123456

Digit 1 2 2 4 5 6

Multiplier 6 5 4 3 2 1

Product 6 10 8 12 10 6

Product add 6+ 10+ 8+ 12+ 10= 466

The Check Digit Modulus is 10. It passes because 46 divided by 10 leaves a remainder of 6.

Product Add Right to Left Simple Remainder

Digit Add Right To Left Simple Remainder

Each character in the scanned data is assigned a numeric value (see OCR Check Digit Multiplier).

The check digit multiplier is reversed in order. Each value representing a character in the scanned data is multiplied by its corresponding digit in the reversed multiplier, resulting in a product for each character in the scanned data. The sum of each individual digit in all of the products **except for the check digit's product** is then calculated. The check digit passes if this sum modulo Check Digit Modulus is equal to the check digit's product.

Example:

Scanned data numeric value is 122459 (check digit is 6)

Check digit multiplier string is 123456

Digit 1 2 2 4 5 9

Multiplier 6 5 4 3 2 1

Product 6 10 8 12 10 9

Digit add 6+ 1+0+ 8+ 1+2+ 1+0= 199

The Check Digit Modulus is 10. It passes because 19 divided by 10 leaves a remainder of 9.

Digit Add Right to Left Simple Remainder

Health Industry - HIBCC43

This is the health industry module 43 check digit standard. The check digit is the modulus 43 sum of all the character values in a given message, and is printed as the last character in a given message.

Example:

Supplier Labeling Data Structure: + A 1 2 3 B J C 5 D 6 E 7 1

Sum of values: 41+10+1+2+3+11+19+12+5+13+6+14+7+1 = 145

Divide 145 by 43. The quotient is 3 with a remainder of 16. The check digit is the character corresponding to the value of the remainder (see Table 6), which in this example is 16, or **G**. The complete Supplier Labeling Data Structure, including the check digit, therefore is:

A 1 2 3 B J C 5 D 6 E 7 1 G

Table 6 Table of Numeric Value Assignments for Computing HIBC LIC Data Format Check Digit

0 = 0	9 = 9	I = 18	R = 27 6	- = 36
1 = 1	A = 10	J = 19	S = 28	. = 37
2 = 2	B = 11	K = 20	T = 29	Space = 38
3 = 3	C = 12	L = 21	U =30	$ = 39
4 = 4	D = 13	M = 22	V = 31	/ = 40
5 = 5	E = 14	N = 23	W = 32	+ = 41
6 = 6	F = 15	O = 24	X = 33	% = 42
7 = 7	G = 16	P = 25	Y = 34	
8 = 8	H = 17	Q = 26	Z = 35	

3.43.17 Inverse OCR

Inverse OCR is white or light words on a black or dark background. Select an option for decoding inverse OCR:

- **Regular Only** - decode regular OCR (black on white) strings only.
- **Inverse Only** - decode inverse OCR (white on black) strings only.
- **Autodiscriminate** - decodes both regular and inverse OCR strings.

Regular Only *

Inverse Only

Autodiscriminate

3.43.18 OCR Redundancy

This option adjusts the number of times to decode an OCR text string before transmission. There are three levels of OCR decode redundancy. There is an inverse relationship between the redundancy level and OCR decoding aggressiveness. Increasing the level of the redundancy can reduce OCR scanning aggressiveness, so select only the level of redundancy necessary.

- **OCR Redundancy Level 1**: This default setting allows the scanner to o perate in its most aggressive state while providing sufficient accuracy in decoding most in-spec OCR text strings.
- **OCR Redundancy Level 2**: This setting eliminates most misdecodes while maintaining reasonable aggressiveness.
- **OCR Redundancy Level 3**: Select this option with greater redundancy requirements if OCR Redundancy Level 2 fails to eliminate misdecodes.

OCR Redundancy Level 1 *

OCR Redundancy Level 2

OCR Redundancy Level 3

Appendix A – Programming Reference

A.1 Symbol Code Identifiers

A	A UPC-A, UPC-E, UPC-E1, EAN-8, EAN-13
B	B Code 39, Code 32
C	C Codabar
D	D Code 128
E	E Code 93
F	F Interleaved 2 of 5
G	G Discrete 2 of 5, or Discrete 2 of 5 IATA
H	H Code 11
J	J MSI
K	K GS1-128
L	L Bookland EAN
M	M Trioptic Code 39
N	N Coupon Code
R	R GS1 DataBar Family
T	T UCC Composite, TLC 39
X	X PDF417, Macro PDF417, Micro PDF417
z	z Aztec, Aztec Rune
P00	P00 Data Matrix
P01	P01 QR Code, MicroQR
P02	P02 Maxicode
P03	P03 US Postnet
P04	P04 US Planet
P05	P05 Japan Postal
P06	P06 UK Postal
P08	P08 Netherlands KIX Code
P09	P09 Australian Postal
P0A	P0A USPS 4CB/One Code/Intelligent Mail
P0B	P0B UPU FICS Postal

A.2 AIM Code Identifiers

Each AIM Code Identifier contains the three-character string **]cm** where:
] = Flag Character (ASCII 93)
c = Code Character (see table 7 below)
m = Modifier Character (see the table 8 on the next page)

Table 7 Aim Code Characters

A	Code 39, Code 39 Full ASCII, Code 32
C	Code 128, Coupon (Code 128 portion)
d	Data Matrix
E	UPC/EAN, Coupon (UPC portion)
e	GS1 DataBar Family
F	Codabar
G	Code 93
H	Code 11
I	Interleaved 2 of 5
L	PDF417, Macro PDF417, Micro PDF417
M	MSI
Q	QR Code, MicroQR
S	Discrete 2 of 5, IATA 2 of 5
U	Maxicode
A	Code 39, Code 39 Full ASCII, Code 32
z	Aztec, Aztec Rune
X	Bookland EAN, Trioptic Code 39, US Postnet, US Planet,

The modifier character is the sum of the applicable option values based on the table next page.

Table 8 Modifier Characters

Code Type	Option Value	Option
Code 39	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 barcode with check character W, **A+I+MI+DW**, is transmitted as **]A7**AIMID where 7 = (3+4).	
Trioptic Code 39	0	No option specified at this time. Always transmit 0.
	Example: A Trioptic barcode 412356 is transmitted as **]X0**412356	
Code 128	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 barcode with Function 1 character FNC1 in the first position, AIMID is transmitted as **]C1**AIMID	

Code Type	Option Value	Option
I 2 of 5	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 barcode without check digit, 4123, is transmitted as **]I0**4123	
Codabar	0	No check digit processing.
	1	Reader has validated check digit.
	3	Reader has stripped check digit before transmission.
	Example: A Codabar barcode without check digit, 4123, is transmitted as **]F0**4123	
Code 93	0	No options specified at this time. Always transmit 0.
	Example: A Code 93 barcode 012345678905 is transmitted as **]G0**012345678905	
MSI	0	Check digits are sent.
	1	No check digit is sent.
	Example: An MSI barcode 4123, with a single check digit checked, is transmitted as **]M**14123	
D 2 of 5	0	No options specified at this time. Always transmit 0.
	Example: A D 2 of 5 barcode 4123, is transmitted as **]S0**4123	
UPC/EAN	0	Standard data packet in full EAN format, i.e. 13 digits for UPC-A, UPC-E, and EAN-13 (no 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 barcode 012345678905 is transmitted as **]E0**0012345678905	
Bookland EAN	0	No options specified at this time. Always transmit 0.
	Example: A Bookland EAN barcode 123456789X is transmitted as **]X0**123456789X	
Code 11	0	Single check digit
	1	Two check digits
	3	Check characters validated but not transmitted.
GS1 DataBar Family		No option specified at this time. Always transmit 0. GS1 DataBar-14 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-14 barcode 100123456788902 is transmitted as **]e0**01100123456788902.	
EAN.UCC Composites (GS1 DataBar, GS1-128, 2D portion of UPC composite)		Native mode transmission. Note: UPC portion of composite is transmitted using UPC rules.
	0	Standard data packet.
	1	Data packet containing the data following an encoded symbol separator character.
	2	Data packet containing the data following an escape mechanism character. The data packet does not support the ECI protocol.
	3	Data packet containing the data

		following an escape mechanism character. The data packet supports the ECI protocol.
		GS1-128 emulation **Note:** UPC portion of composite is transmitted using UPC rules.
	1	Data packet is a GS1-128 symbol (i.e., data is preceded with]JC1).
PDF417, Micro PDF417	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 92DEC has been doubled in transmission.
	1	Reader set to follow the ECI protocol (Extended Channel Interpretation). All data characters 92DEC are doubled.
	2	Reader set for Basic Channel operation (no escape character transmission protocol). Data characters 92DEC 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 barcode contains a GS1-128 symbol, and the first codeword is 903-907, 912, 914, 915.
	4	The barcode contains a GS1-128

		symbol, and the first codeword is in the range 908-909.
	5	The barcode contains a GS1-128 symbol, and the first codeword is in the range 910-911.
	Example: A PDF417 barcode ABCD, with no transmission protocol enabled, is transmitted as]L2ABCD.	
	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.
MaxiCode	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, ECI protocol implemented in secondary message.

QR Code	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.
Aztec	0	Aztec symbol.
	C	Aztec Rune symbol.

Appendix B - Alphanumeric & Numemric Barcodes

B.1 Numeric Barcodes

For parameters requiring specific numeric values, scan the appropriately numbered barcode(s).

0

1

2

3

4

5

6

7

8

9

B.2 Cancel

To correct an error or change a selection, scan the barcode below.

Cancel

B.3 Alphanumeric Barcodes

Space

#

$

%

*

+

-

.

/

!

“

&

‘

(

)

:

;

<

=

>

?

@

[

/

]

^

_

`

NOTE: The barcodes that follow should not be confused with those on the numeric keypad.

0

1

2

3

4

5

6

7

8

9

End of Message

Cancel

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

a

b

c

d

e

f

g

h

i

j

k

l

m

n

o

p

q

r

s

t

u

v

w

x

y

z

{

|

}

~

Appendix C - Sample Barcodes

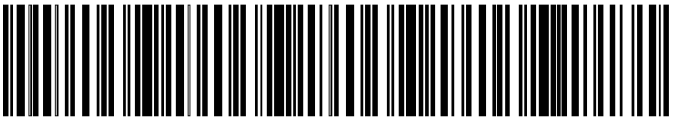
Code 39

UPC/EAN

UPC-A, 100%

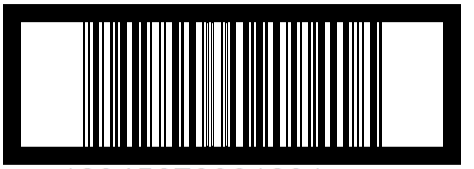
EAN-13, 100%

Code 128



12345678901234567890123456789012345678901234

Interleaved 2 of 5



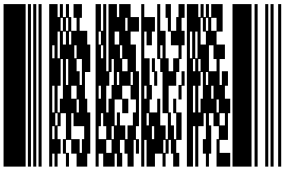
12345678901231

GS1 DataBar-14

NOTE: DataBar-14 must be enabled to read the barcode below.

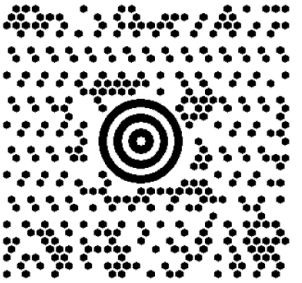
7612341562341

PDF417



Data Matrix

Maxicode



QR Code

US Postnet

UK Postal

Appendix D - ASCII Character Sets

Table 9 ASCII Character Set

ASCII Value	Full ASCII Code 39 Encode Char	Keystroke
1000	%U	CTRL 2
1001	$A	CTRL A
1002	$B	CTRL B
1003	$C	CTRL C
1004	$D	CTRL D
1005	$E	CTRL E
1006	$F	CTRL F
1007	$G	CTRL G
1008	$H	CTRL H/**BACKSPACE**[1]
1009	$I	CTRL I/**HORIZONTAL TAB**[1]
1010	$J	CTRL J
1011	$K	CTRL K
1012	$L	CTRL L
1013	$M	CTRL M/**ENTER**[1]
1014	$N	CTRL N
1015	$O	CTRL O
1016	$P	CTRL P
1017	$Q	CTRL Q
1018	$R	CTRL R
1019	$S	CTRL S
1020	$T	CTRL T
1021	$U	CTRL U
1022	$V	CTRL V
1023	$W	CTRL W
1024	$X	CTRL X
1025	$Y	CTRL Y
1026	$Z	CTRL Z

The keystroke in bold transmits only if you enabled Function Key Mapping. Otherwise, the unbold keystroke

ASCII Value	Full ASCII Code 39 Encode Char	Keystroke
1027	%A	CTRL [
1028	%B	CTRL \
1029	%C	CTRL]
1030	%D	CTRL 6
1031	%E	CTRL -
1032	Space	Space
1033	/A	!
1034	/B	“
1035	/C	#
1036	/D	$
1037	/E	%
1038	/F	&
1039	/G	‘
1040	/H	(
1041	/I	)
1042	/J	*
1043	/K	+
1044	/L	,
1045	-	-
1046	.	.
1047	/o	/
1048	0	0
1049	1	1
1050	2	2
1051	3	3
1052	4	4
1053	5	5
1054	6	6
1055	7	7
1056	8	8
1057	9	9

ASCII Value	Full ASCII Code 39 Encode Char	Keystroke
1058	/Z	:
1059	%F	;
1060	%G	<
1061	%H	=
1062	%I	>
1063	%J	?
1064	%V	@
1065	A	A
1066	B	B
1067	C	C
1068	D	D
1069	E	E
1070	F	F
1071	G	G
1072	H	H
1073	I	I
1074	J	J
1075	K	K
1076	L	L
1077	M	M
1078	N	N
1079	O	O
1080	P	P
1081	Q	Q
1082	R	R
1083	S	S
1084	T	T
1085	U	U
1086	V	V
1087	W	W
1088	X	X
1089	Y	Y

ASCII Value	Full ASCII Code 39 Encode Char	Keystroke
1090	Z	Z
1091	%K	[
1092	%L	\
1093	%M	]
1094	%N	^
1095	%O	_
1096	%W	‘
1097	+A	a
1098	+B	b
1099	+C	c
1100	+D	d
1101	+E	e
1102	+F	f
1103	+G	g
1104	+H	h
1105	+I	i
1106	+J	j
1107	+K	k
1108	+L	l
1109	+M	m
1110	+N	n
1111	+O	o
1112	+P	p
1113	+Q	q
1114	+R	r
1115	+S	s
1116	+T	t
1117	+U	u
1118	+V	v
1119	+W	w
1120	+X	x
1121	+Y	y

ASCII Value	Full ASCII Code 39 Encode Char	Keystroke
1122	+Z	z
1123	%P	{
1124	%Q	I
1125	%R	}
1126	%S	~

Table 10 ALT Key Character Set

ALT Keys Keystroke	ALT Keys Keystroke
2064	ALT 2
2065	ALT A
2066	ALT B
2067	ALT C
2068	ALT D
2069	ALT E
2070	ALT F
2071	ALT
2072	ALT H
2073	ALT I
2074	ALT J
2075	ALT K
2076	ALT L
2077	ALT M
2078	ALT N
2079	ALT O
2080	ALT P
2081	ALT Q
2082	ALT R
2083	ALT S
2084	ALT T
2085	ALT U
2086	ALT V
2087	ALT W
2088	ALT X
2089	ALT Y
2090	ALT Z

Table 11 GUI Key Character Set

GUI Key Keystroke	GUI Key Keystroke
3000	Right Control Key
3048	GUI 0
3049	GUI 1
3050	GUI 2
3051	GUI 3
3052	GUI 4
3053	GUI 5
3054	GUI 6
3055	GUI 7
3056	GUI 8
3057	GUI 9
3065	GUI A
3066	GUI B
3067	GUI C
3068	GUI D
3069	GUI E
3070	GUI F
3071	GUI G
3072	GUI H
3073	GUI I
3074	GUI J
3075	GUI K
3076	GUI L
3077	GUI M
3078	GUI N
3079	GUI O
3080	GUI P
3081	GUI Q
3082	GUI R

Note: GUI Shift Keys - The Apple ™ iMac keyboard has an apple key on either side of the space bar. Windows-based systems have a GUI key to the left of the left ALT key, and to the right of the right ALT key.

GUI Key Keystroke	GUI Key Keystroke
3083	GUI S
3084	GUI T
3085	GUI U
3086	GUI V
3087	GUI W
3088	GUI X
3089	GUI Y
3090	GUI Z

Table 12 PF Key Character Set

PF Keys	Keystroke
4001	PF 1
4002	PF 2
4003	PF 3
4004	PF 4
4005	PF 5
4006	PF 6
4007	PF 7
4008	PF 8
4009	PF 9
4010	PF 10
4011	PF 11
4012	PF 12
4013	PF 13
4014	PF 14
4015	PF 15
4016	PF 16

Table 13 F key Character Set

F Keys	Keystroke
5001	F 1
5002	F 2
5003	F 3
5004	F 4
5005	F 5
5006	F 6
5007	F 7
5008	F 8
5009	F 9
5010	F 10
5011	F 11
5012	F 12
5013	F 13
5014	F 14
5015	F 15
5016	F 16
5017	F 17
5018	F 18
5019	F 19
5020	F 20
5021	F 21
5022	F 22
5023	F 23
5024	F 24

Table 14 Numeric Key Standard Default Table

Numeric Keypad Keystroke	Numeric Keypad Keystroke
6042	*
6043	+
6044	Undefined
6045	-
6046	.
6047	/
6048	0
6049	1
6050	2
6051	3
6052	4
6053	5
6054	6
6055	7
6056	8
6057	9
6058	Enter
6059	Num Lock

Table 15 Extended Keypad Standard Default Table

Extended Keypad Keystroke	Extended Keypad Keystroke
7001	Break
7002	Delete
7003	Pg Up
7004	End
7005	Pg Dn
7006	Pause
7007	Scroll Lock
7008	Backspace
7009	Tab
7010	Print Screen
7011	Insert
7012	Home
7013	Enter
7014	Escape
7015	Up Arrow
7016	Dn Arrow
7017	Left Arrow
7018	Right Arrow

Appendix E - Symbology Parameter Defaults

The table below lists the defaults for all symbology parameters. To change the default values, scan the appropriate barcodes in this guide. These new values replace the standard default values in memory.

Parameter	Default
UPC-A	Enable
UPC-E	Enable
UPC-E1	Disable
EAN-8/JAN 8	Enable
EAN-13/JAN 13	Enable
Bookland EAN	Disable
Decode UPC/EAN/JAN Supplementals (2 and 5 digits)	Ignore
User-Programmable Supplementals Supplemental 1: Supplemental 2:	000
UPC/EAN/JAN Supplemental Redundancy	10
Decode UPC/EAN/JAN Supplemental AIM ID	Combined
UPC Reduced Quiet Zone	Disable
Transmit UPC-A Check Digit	Enable
Transmit UPC-E Check Digit	Enable
Transmit UPC-E1 Check Digit	Enable
UPC-A Preamble	System Character
UPC-E Preamble	System Character
UPC-E1 Preamble	System Character
Convert UPC-E to A	Disable
Convert UPC-E1 to A	Disable
EAN-8/JAN-8 Extend	ISBN-10

Bookland ISBN Format	Disable
UCC Coupon Extended Code	New Coupon Format
Coupon Report	Disable
ISSN EAN	Enable
Code 128	Enable
Set Length(s) for Code 128	1 to 55
GS1-128 (formerly UCC/EAN-128)	Enable
ISBT 128	Enable
ISBT Concatenation	Autodiscriminate
Check ISBT Table	Enable
ISBT Concatenation Redundancy	10
Code 128 Security Level	Security Level 1
Code 128 Reduced Quiet Zone	Disable
Ignore Code 128 <FNC4>	Disable
Code 128 Exclusive	Disable
Code 39	Enable
Trioptic Code 39	Disable
Convert Code 39 to Code 32 (Italian Pharmacy Code)	Disable
Code 32 Prefix	Disable
Set Length(s) for Code 39	1 to 55
Code 39 Check Digit Verification	Disable
Transmit Code 39 Check Digit	Disable
Code 39 Full ASCII Conversion	Disable
Code 39 Security Level	Security Level 1
Code 39 Reduced Quiet Zone	Disable
Code 39 Buffering - Scan and Store	Disable
Code 93	Enable
Set Length(s) for Code 93	1 to 55
Code 11	Disable
Set Lengths for Code 11	4 to 55
Code 11 Check Digit Verification	Disable
Transmit Code 11 Check Digit(s)	Disable
Interleaved 2 of 5 (ITF)	Disable

Set Lengths for I 2 of 5	6 to 55
I 2 of 5 Check Digit Verification	Disable
Transmit I 2 of 5 Check Digit	Disable
Convert I 2 of 5 to EAN 13	Disable
I 2 of 5 Security Level	Security Level 1
I 2 of 5 Reduced Quiet Zone	Disable
Discrete 2 of 5	Disable
Set Length(s) for D 2 of 5	1 to 55
Codabar	Enable
Set Lengths for Codabar	4 to 55
CLSI Editing	Disable
NOTIS Editing	Disable
Codabar Upper or Lower Case Start/ Stop Characters Detection	Upper Case
Codabar Mod 16 Check Digit Verification	Disable
MSI	Disable
Set Length(s) for MSI	4 to 55
MSI Check Digits	One
Transmit MSI Check Digit	Disable
MSI Check Digit Algorithm	Mod 10/Mod 10
Chinese 2 of 5	Disable
Matrix 2 of 5	Disable
Matrix 2 of 5 Lengths	4 to 55
Matrix 2 of 5 Check Digit	Disable
Transmit Matrix 2 of 5 Check Digit	Disable
Korean 3 of 5	Disable
Inverse 1D	Regular
GS1 DataBar-14	Enable
GS1 DataBar Limited	Enable
GS1 DataBar Expanded	Enable
Convert GS1 DataBar to UPC/EAN	Disable
GS1 DataBar Limited Security Level	Level 3
Composite CC-C	Disable
Composite CC-A/B	Disable

Composite TLC-39	Disable
UPC Composite Mode	UPC Never Linked
Composite Beep Mode	Beep As Each Code Type is Decoded
GS1-128 Emulation Mode for UCC/EAN Composite Codes	Disable
PDF417	Enable
MicroPDF417	Disable
Code 128 Emulation	Disable
Data Matrix	Enable
GS1 Data Matrix	Disable
Data Matrix Inverse	Inverse Autodetect
Maxicode	Disable
QR Code	Enable
GS1 QR	Disable
MicroQR	Enable
Aztec	Enable
Aztec Inverse	Inverse Autodetect
Han Xin	Disable
Han Xin Inverse	Regular
DotCode	Disable
DotCode Inverse	Autodetect
DotCode Mirrored	Autodetect
DotCode Prioritize	Disable
US Postnet	Disable
US Planet	Disable
Transmit US Postal Check Digit	Enable
UK Postal	Disable
Transmit UK Postal Check Digit	Enable
Japan Postal	Disable
Australia Post	Disable
Australia Post Format	Autodiscriminate
Netherlands KIX Code	Disable
USPS 4CB/One Code/Intelligent Mail	Disable

UPU FICS Postal	Disable
Mailmark	Disable
Canada Post	Disable
Digimarc Barcode	Disable
Posti LAPA 4-State Code	Disable
Redundancy Level	1
Security Level	1
1D Quiet Zone Level	1
Intercharacter Gap Size	Normal
Flush Macro PDF Buffer	N/A
Abort Macro PDF Entry	N/A