CipherLab

User Guide

1662/1664 Barcode Scanner

Setup barcodes included.

Version 2.21

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CIPHERLAB CO., LTD.
Website: http://www.cipherlab.com

IMPORTANT NOTICES

FOR USA

This equipment 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 to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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

FOR CANADA

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of Industry Canada. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil numerique respecte les limites de bruits radioelectriques applicables aux appareils numeriques de Classe B prescrites dans la norme sur le material brouilleur: "Appareils Numeriques," NMB-003 edictee par l'Industrie.

FOR HAND-HELD PRODUCT WITH RF FUNCTIONS

The 1662/1664 unit (FCC ID: Q3N-1662/1664) complies with FCC radiation exposure limits set forth for uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65. The unit has very low level of RF energy that it is deemed to comply without testing of specific absorption ratio (SAR).

The 3610 unit (FCC ID: Q3N-3610) complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & body. It only operated in hand-held used. If only transfer data to the host cordless, please keep the minimum distance 20 cm between machine & body.

FOR PRODUCT WITH LASER

CAUTION

This laser component emits FDA / IEC Class 2 laser light at the exit port. Do not stare into beam.

SAFETY PRECAUTIONS

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

- The use of any batteries or charging devices, which are not originally sold or manufactured by CipherLab, will void your warranty and may cause damage to human body or the product itself.
- DO NOT disassemble, incinerate or short circuit the battery.
- DO NOT expose the scanner or the battery to any flammable sources.
- For green-environment issue, it's important that batteries should be recycled in a proper way.
- Under no circumstances, internal components are self-serviceable.

CARE & MAINTENANCE

- Use a clean cloth to wipe dust off the scanning window and the body of the scanner as well as the charging device. DO NOT use/mix any bleach or cleaner.
- If you want to put away the scanner for a period of time, download the collected data to a host computer when in the memory mode, and then take out the battery. Store the scanner and battery separately.
- When the scanner resumes its work, make sure the battery is fully charged before use.
- Keep the scanner away from any magnets and magnetic fields to prevent the laser engine from malfunctioning.
- If you shall find the scanner malfunctioning, write down the specific scenario and consult your local sales representative.

DECLARATION CONFORMITY

CIPHERLAB

Declaration of Conformity

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Type of Equipment

BT Barcode Scanner

Model(s) Declared

1662 L

Initial Year of Manufacture **2014**

Reference to the specification under which conformity is declared in accordance with Council Directive- 2004/108/EC (EMC), 1999/5/EC (R&TTE), 2006/95/EC (LVD), 2011/65/EU (RoHS), 1999/519/EC (EMF).

EN 55024:2010
EN 300328 V1.7.1
EN 301489-17 V2.2.1
EN 62479:2010
EN61000-3-3 :2013

EN 55022: 2010 / AC:2011
EN 301489-1 V1.9.2
EN 60950-1：2006+A11+A1+A12:2011
EN61000-3-2 :2006/A1:2009/A2:2009

I the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Signature

Full Name *Herbie Jiang*
Title *Manager*

2014/Aug./22

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Manufacturer

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I the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Signature

Full Name *Herbie Jiang*
Title *Manager*

2014/Aug./22

RELEASE NOTES

Version	Date	Notes
2.21	Jul. 26, 2017	▸ Modified: **1.11** – change Addon Security Level for UPC/EAN default to 10 ▸ Modified: **2.1.1 Activate BT HID & Select Keyboard Type** – (87) Brazilian Portuguese added for PC & Apple ▸ New: **2.4.7 USB HID via 3610 Auto-Rconnection** ▸ New: **2.5.5 USB VCOM via 3610 Auto-Rconnection** ▸ Modified: **2.6.1 Activate USB HID & Select Keyboard Type** – (87) Brazilian Portuguese added for PC & Apple ▸ Modified: **Chapter 4** – setting barcodes for disabling/enabling all symbologies added ▸ New: **Appendix VI Keyboard Type One-Scan Barcode**
2.20	Jun. 24, 2016	▸ Modified: **1.3** – LED indicator descriptions appended (flashing red for indicating battery capacity running low and low battery voltage) ▸ Modified: **2.1.1** – 80 PCAT (Dutch) keyboard type added ▸ Modified: **2.1.1** – 65,66,67,68,69,72,73,75,76,78,79,80~86 keyboard types support Apple keyboard ▸ Modified: **2.1.6** – note for turning off iOS Auto-Correction added ▸ Modified: **2.1.8** – setting barcodes for toggling Apple keyboard over BT HID connection added ▸ Modified: **2.3.1** – a single 1D barcode for connecting to a target device ▸ Modified: **2.6.1** – 80 PCAT (Dutch) keyboard type added
2.19	Sep. 07, 2015	▸ Modified: descriptions relating to CD-ROM removed ▸ New: **2.3.5 BT SPP Master Hardware Flow Control** ▸ New: **2.3.6 BT SPP Master Auto-Rconnection** ▸ New: **4.16.1 EAN-13 Addon Modes**
2.18	Nov. 05, 2014	▸ New: **1.2.4 Record Count of Memory** added ▸ Modified: **1.11** – range of Security Level (2~30 times) ▸ Modified: **Appendix II** – "#@RDBATCAP" serial command added

2.17	May 09, 2014	▸ New: **1.20** – Serial Number Stamp ▸ New: **1.20.1** – Separator between Serial Number and Data ▸ New: **2.1.10** – BT HID Slave/Master Switching ▸ New: **2.1.11** – BT HID Auto-Reconnection ▸ New: **2.5.2** – Activate USB Virtual COM_CDC ▸ New: **2.6.7** – USB Polling Interval ▸ Modified: **3.2.2** – length of device name changed to 13 bytes (max.) ▸ New: **4.11.3** – GS1 Formatting, Application ID Mark ▸ Modified: **4.13.2** – add GS1 formatting (Omnidirectional) barcodes ▸ Modified: **4.13.3** – add GS1 formatting (Expanded) barcodes ▸ Modified: **4.13.4** – add GS1 formatting (Limited) barcodes ▸ New: **4.13.6** – Field Separator ▸ New: **4.13.7** – Application ID Mark ▸ New: **4.21.1** – add GS1 formatting (Composite CC-A/B) barcodes ▸ New: **4.21.2** – add GS1 formatting (Composite CC-C) barcodes ▸ New: **4.21.6** – Field Separator ▸ New: **4.21.7** – Application ID Mark ▸ Modified: **Appendix I** – Notes for upgrading 3610 CPU/Bridge firmware added
2.16	Mar. 06, 2014	▸ Modified: **Care & Maintenance** – "Keep the scanner away from any magnets and magnetic fields to prevent the laser engine from malfunctioning." added ▸ Modified: **1.1.2** - Enable/Disable the [Delete] key barcodes added ▸ Modified: **1.17.3** – Illumination Brightness setup barcode added ▸ Modified: **3.2.2** – Changing Device Name barcode added ▸ Modified: **Appendix II** – #$ShowScanner, #$SelectScannerN, #@BEEP,xx, #@RLED,xx, #@GLED,xx, #@VIBR,xx added ▸ Modified: **Appendix III** – remove "Send" from "CR*/Send/ENTER*"
2.15	Jul. 19, 2013	▸ Added: **1.18.3 Disable Hardware Reset** (setting barcodes)
2.14	Jun. 10, 2013	▸ Added: **1.19 Mobile Phone/Display Mode** ▸ Added: **2.1.9 Transmit Speed** ▸ Added: **3.2.4 Secure Simple Pairing** (2.1.9 Simple Pairing for iPhone/iPad removed) ▸ Added: **4.15.1 EAN-8** – Check Digit function barcode added ▸ Added: **4.16.3 EAN-13** – Check Digit function barcode added
2.13	Mar. 20, 2013	▸ Add: **2.3.1 Activate Bluetooth SPP Master Mode** – 2D barcode for connecting to a target device ▸ Add: **3.1.1 Connect to 3610** – 2D barcode for connecting to 3610

2.12	Dec. 24, 2012	▸ New: Quick Start – Create 2D One-Scan Barcode ▸ Modified: 1.12 Negative Barcodes (1664 Only) ▸ Modified: 1.13.2 Disable Direct USB Interface barcode number ▸ Modified: 4.16.1 Convert to ISBN (support for 979 prefix removed) ▸ Modified: 4.16.2 Convert to ISSN (1664 Only) ▸ Modified: 2.5.1/2.7/3.1 Required USB Virtual COM Driver version 5.4 ▸ New: 2.7.2 Activate USB Virtual COM_CDC barcode (100010) added ▸ Modified: Appendix I Firmware Upgrade – Direct USB Virtual COM_CDC barcode (100010) added
2.11	July 04, 2012	Add: 5.8 AIM Code ID
2.10	Jun. 18, 2012	Add: List the Current Settings: Simple Pairing Status, Code Type Add: 4.18.1 UPC-A Convert to EAN-13 Add: 1.1.1 Power Level and 1.2.3 Free Memory Add: 2.1.1/2.4.1/2.6.1 HID for PCAT (Swiss German) and PCAT (Danish) Add: 2.1.7/2.4.6/2.6.6 Special Keyboard Feature Add: 2.1.9 Simple Pairing for iPhone/iPad Add: Appendix V Family Name/First Name/ Middle Name Truncation and check the file type of ANSI
2.01	Apr. 10, 2012	Modified: 1.10 remove Reading Redundancy – Three times
2.00	Mar. 20, 2012	Add: 1662 model and Set Up Drivers License
1.03	Feb. 06, 2012	Add: Chapter 6 Fields of Time Stamp
1.02	Jan. 11, 2012	Modified: Specifications: Dimension and Weight description
1.01	Dec. 28, 2011	Add: 1.1.2 add delay note for activating the scanner from power off mode
1.00	Nov. 30, 2011	Initial release

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INTRODUCTION

CipherLab's small-form-factor 1600 Series Barcode Scanners are specifically designed to answer the mobile demands. The palm-sized scanners are designed to help accelerate productivity while lowering the total cost of ownership. Intensive data collection jobs are made easier with fast, accurate barcode scanning in various working environments, especially in small businesses. Integrating short-distance cordless technology to small-form-factor scanners, the scanners are ideal for carrying as in pocket, and thus give workers tether-free mobility anytime anywhere and get job done more efficiently. This line of scanners deliver data over a cordless personal network at a range of up to 10 meters and a prolonged battery life to keep business running. 1662/1664 is a new ordering option provided for adapting a advanced scan engine to read both 1D and 2D barcodes.

Owing to the compact design, extremely low power consumption, and powerful decoding capability, the 1600 Series Barcode Scanners are the best choice for the following applications –

- Receiving in Retail
- Product labeling & Tracking
- Shelf Product Replenishment
- Mobile Point of Sale (POS)
- Mobile Inventory Management
- Order Picking & Staging
- Work-In-Process Tracking
- Material Flow Control
- Transportation & Distribution
- Warehousing
- Asset Management

This manual contains information on operating the scanner and using its features. We recommend you to keep one copy of the manual at hand for quick reference or maintenance purposes. To avoid any improper disposal or operation, please read the manual thoroughly before use.

Thank you for choosing CipherLab products!

Update

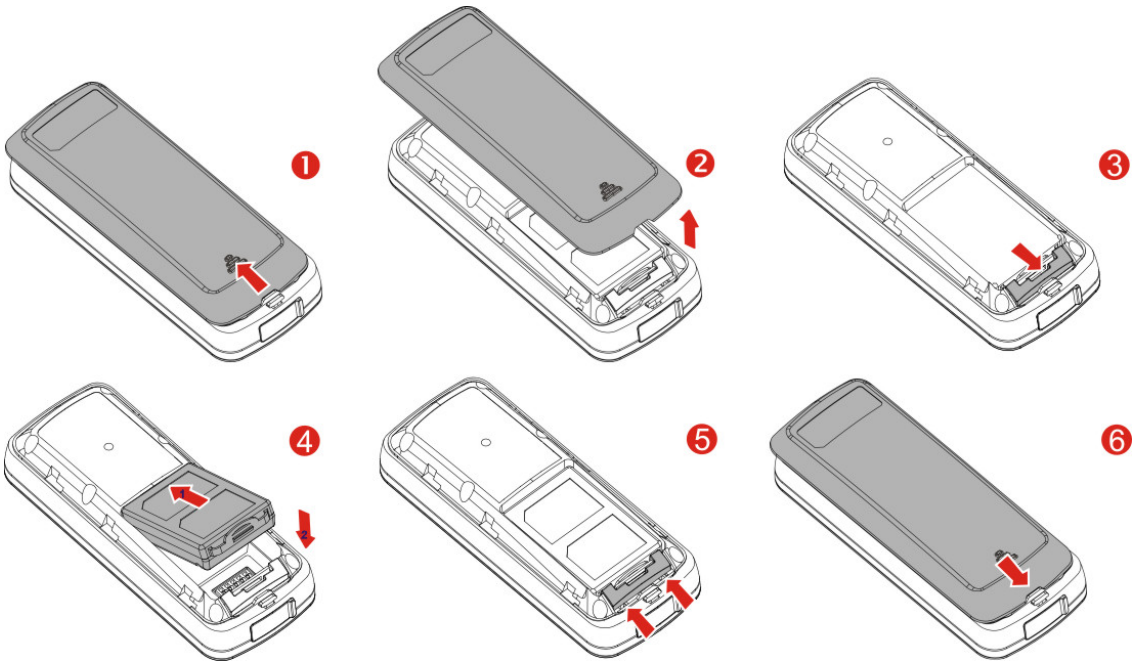
GET FAMILIARIZED WITH 1662/1664 AND 3610

INSTALL THE BATTERY INTO 1662/1664

I) Hold the scanner face down in one hand, press the battery cover, and slide the battery cover.

2) Remove the battery cover.

3) Push battery lock to unlocked position.



4) Insert the battery into the battery compartment.

- Install the supplied 3.7V/850mAh Li-ion battery into the battery compartment.

5) Push battery lock to lock the battery firmly.

6) Replace the battery cover.

7) Hold down the [Power/Delete] key for about 2 seconds to turn on the scanner.

The scanner will respond with a long beep (high tone) and its LED indicator will become solid red and go off.

Enter Setup

Note: (1) To turn off the scanner, press the [Power/Delete] key for 2 seconds. The scanner will respond with two short beeps (high tone) and the LED will become solid red. Release the key. Otherwise, let the scanner turn off automatically in specific circumstances. Refer to settings of "Auto Power Off".
(2) For shipping and storage purposes, remove the battery from the scanner. This will keep the batteries in good condition for future use.

CHARGE THE BATTERY

The battery may not be fully charged for shipment. For initial use, it is recommended to fully charge the battery before using the scanner. You can use the Direct USB cable to connect the scanner to PC for charging. It takes approximately 4 hours to fully charge the battery. Refer to 1.13 Use Direct USB Cable.

Note: Battery charging stops when the temperature drops below 0°C or exceeds 40°C. It is recommended to charge the battery at room temperature (18°C to 25°C) for optimal performance.

1) Install the battery to 1662/1664.
2) Connect 1662/1664 to host computer or notebook via the USB cable.
3) The scanner LED will flash red during charging.

   When the charging is complete, the LED will turn off.

   When charging errors occur, the LED will turn solid red.

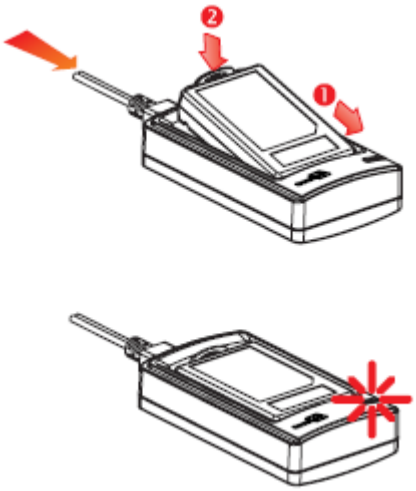
Update

CHARGE THE BATTERY VIA CHARGER

The battery charger is provided for charging the battery outside of the scanner. You may purchase the charger separately. It takes approximately 3 hours to charge the battery to full.

Note: Battery charging stops when the temperature drops below 0°C or exceeds 40°C. It is recommended to charge the battery at room temperature (18°C to 25°C) for optimal performance.

1) Insert the battery.
2) Connect the power supply cord to the charger.
3) Connect the other end of the power cord to a suitable power outlet.

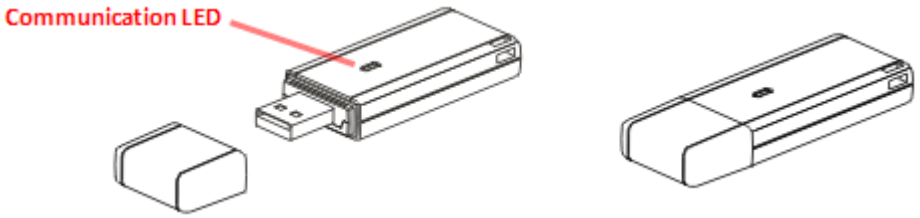


Status LED		Meaning
Red, solid	---	Charger power ON (LED on for 0.5 second)
Red, solid	---	Charging battery
---	Green, solid	Charging done
---	---	Power or battery not ready

Enter Setup

USE 3610

The CipherLab Dongle (3610) is specifically designed for the scanner to communicate with a host computer cordless. The connection between the scanners and 3610 is made easy and reliable. Refer to 3.1.1 Connect to 3610.



There is one LED indicator provided for communications status.

Communication LED		Meaning
---	Blue, solid	Initialize
Red, solid	---	Failed to establish a USB connection
Red, solid	Blue, flashing	Serial command mode with USB Virtual COM: wait 3 seconds for starting a serial command
Red, flashing	Blue, flashing	Serial command mode with USB HID: wait 3 seconds for pressing [Num Lock] or [Caps Lock] 5 times via keyboard
---	Blue, flashing	Wait for connection request from the scanner (Slow flash at 0.5 Hz)
---	Blue, flashing	Connected with the scanner (Fast flash at 1 Hz)
Red, solid	Blue, flashing	Failed to send data to host via USB Virtual COM (Fast flash at 1 Hz)
Red, flashing	---	Enter Download Mode

Update

INSIDE THE PACKAGE

The items included in the package may be different, depending on your order. Save the box and packaging material for future use in case you need to store or ship the scanner.

- 1662/1664 Scanner
- CipherLab Dongle (3610) Optional
- Rechargeable Li-ion Battery Pack
- Direct USB Cable
- Wristband
- Setup Cards
- Quick Start Guide

PRODUCT HIGHLIGHTS

- Small-form-factor and built tough to survive drop test.
- Extremely low power consumption.
- Firmware upgradeable.
- Support most popular barcode 1D/2D symbologies, including GS1-128 (EAN-128), GS1 DataBar (RSS), etc (2D is for 1664 only).
- Support negative barcodes.
- Support US driver license decode (1664 only).
- Support a variety of 2D symbologies, Time Stamp and Paging function.
- Support different scan modes, including Aiming Mode (1664 only), Alternate Mode (1662 only) and Multi-Barcode Mode [Note].
- User feedback via LED indicator, beeper and vibrator.
- Beeping tone and duration programmable for Good Read.
- 4MB flash memory for Memory Mode operation, storing over 240,000 scans based on EAN-13 barcodes.
- Provides up to 10 KB SRAM for reserve buffer while getting out of range over a wireless personal area network (WPAN), storing up to 640 scans based on EAN-13 barcodes.
- Capable of transmitting scanned data, emulating a serial cable (*Bluetooth*® SPP) or as keyboard input (*Bluetooth*® HID), to a notebook computer or PDA with *Bluetooth*® wireless technology.
- Programmable parameters include data output format, editing format, symbologies.
- Easy configuration through ScanMaster.
- Easy connection through CipherConnect, available via online marketplace for mobile devices running on Android 2.x, BlackBerry 5.x, or Windows Mobile 6.x.

Enter Setup

SYMBOLOGIES SUPPORTED

Most of the popular barcode symbologies are supported, as listed below. Each can be individually enabled or disabled. The scanner will automatically discriminate and recognize all the symbologies that are enabled. Refer to Chapter 4 Change Symbology Settings for details of each symbology.

Symbologies Supported: Enable/Disable		1D Laser (1662)	2D (1664)
Codabar		Enabled	Enabled
Code 11		Disabled	Disabled
Code 93		Enabled	Enabled
MSI		Disabled	Disabled
Code 128	Code 128	Enabled	Enabled
	GS1-128 (EAN-128)	Enabled	Enabled
	ISBT 128	Enabled	Enabled
Code 2 of 5	Industrial 25 (Discrete 25)	Enabled	Enabled
	Interleaved 25	Enabled	Enabled
	Matrix 25		Disabled
	Chinese 25	Disabled	Disabled
Code 3 of 9	Code 39	Enabled	Enabled
	Italian Pharmacode (Code 32)	Disabled	Disabled
	Trioptic Code 39	Disabled	Disabled
EAN / UPC	EAN-8	Enabled	Enabled
	EAN-8 Addon 2	Disabled	Disabled
	EAN-8 Addon 5	Disabled	Disabled
	EAN-13	Enabled	Enabled
	EAN-13 & UPC-A Addon 2	Disabled	Disabled
	EAN-13 & UPC-A Addon 5	Disabled	Disabled
	Bookland EAN (ISBN)	Disabled	Disabled
	UPC-E0	Enabled	Enabled
	UPC-E1	Disabled	Disabled
	UPC-E Addon 2	Disabled	Disabled
	UPC-E Addon 5	Disabled	Disabled
	UPC-A	Enabled	Enabled
GS1 DataBar (RSS)	GS1 DataBar Omnidirectional (RSS-14)	Disabled	Disabled
	GS1 DataBar Truncated	Disabled	Disabled
	GS1 DataBar Stacked		Disabled

Update

	GS1 DataBar Stacked Omnidirectional		Disabled
	GS1 DataBar Limited (RSS Limited)	Disabled	Disabled
	GS1 DataBar Expanded (RSS Expanded)	Disabled	Disabled
	GS1 DataBar Expanded Stacked		Disabled
Composite Code	Composite CC-A/B		Disabled
	Composite CC-C		Disabled
	Composite TLC-39		Disabled
Postal Code	US Postnet		Enabled
	US Planet		Enabled
	UK Postal		Enabled
	Japan Postal		Enabled
	Australian Postal		Enabled
	Dutch Postal		Enabled
	USPS 4CB/One Code/Intelligent Mail		Disabled
	UPU FICS Postal		Disabled
2D Symbologies	PDF417		Enabled
	MicroPDF417		Disabled
	Data Matrix		Enabled
	Maxicode		Enabled
	QR Code		Enabled
	MicroQR		Enabled
	Aztec		Enabled

Enter Setup

QUICK START

The configuration of the scanner can be done by reading the setup barcodes contained in this manual or via the *ScanMaster* software.

This section describes the procedure of configuring the scanner by reading the setup barcodes and provides some examples for demonstration.

Configuration Mode

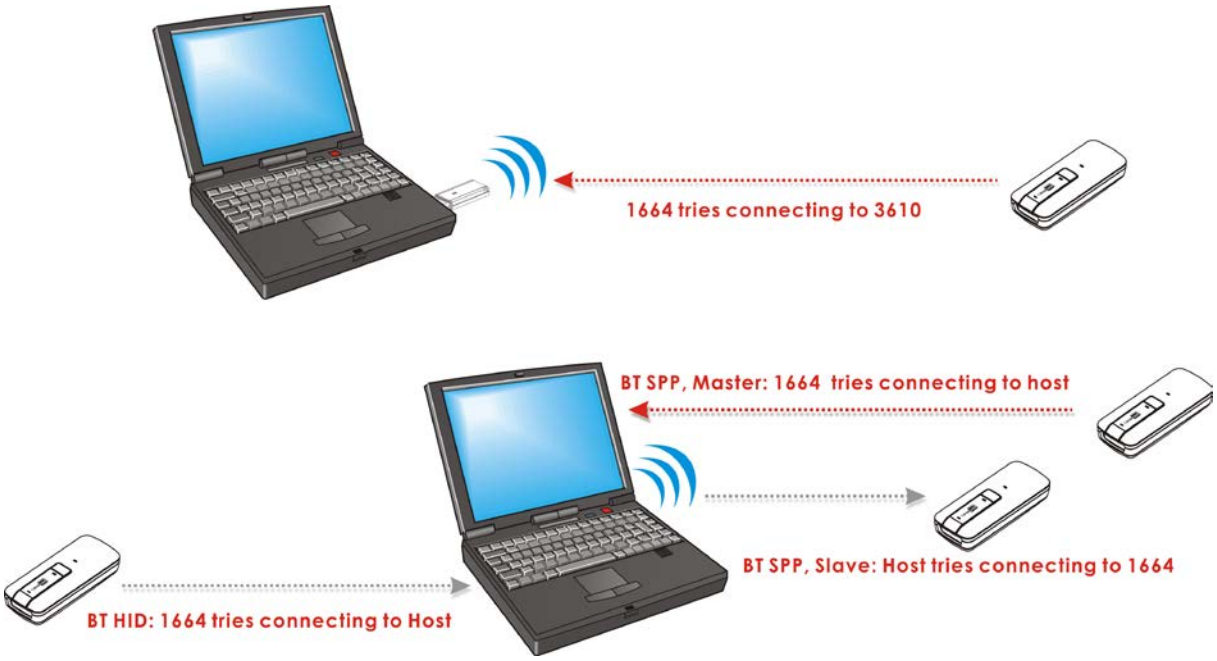
1) Hold down the [Power/Delete] key for 2 seconds to turn on the scanner. It will respond with a long beep and its LED will come on-off.
2) Read the "Enter Setup" barcode. It will respond with six beeps and its LED indicator will become flashing red after reading the barcode.
3) Read more setup barcodes… Most of the setup barcodes are normal, and the scanner will respond with two beeps (low-high tone). For special setup barcodes, it requires reading more than one setup barcode to complete the setting.
4) Read the "Update" or "Abort" barcode. It will respond with six beeps and its LED indicator will become flashing red after reading the barcode.
5) The scanner will restart automatically upon reading the "Update" or "Abort" barcode. It will respond with a long beep and its LED will come on-off.

Note: Refer to Appendix II Host Serial Commands for how to configure the 3610 dongle by having the scanner read 3610-related setup barcodes or using serial commands.

Update

Working Mode

Upon powering up, the scanner will try to establish a connection with 3610 or a computer with *Bluetooth*® wireless technology. Refer to Chapter 3 - Set up a WPAN Connection for details. The connection between the scanners and 3610 is made easy and reliable. Now, it also supports *Bluetooth*® SPP Master Mode as an alternative. Refer to 2.3 *Bluetooth*® SPP Master.



Note: If USB Virtual COM or *Bluetooth*® SPP is selected for output interface, the host can directly send serial commands to configure the scanner. For example, run HyperTerminal.exe and type the 6-digit command located under each setup barcode. Refer to Appendix II Host Serial Commands.

Enter Setup

ENTER CONFIGURATION MODE

For the scanner to enter the configuration mode, read the "Enter Setup" barcode, which can be located at the bottom of almost every even page of this manual.

- The scanner will respond with six beeps and its LED indicator will become flashing red after reading the barcode.

Enter Setup

For configuring scanner parameters, see “Read a Setup Barcode” below.

EXIT CONFIGURATION MODE

For the scanner to save settings and exit the configuration mode, read the “Update” barcode, which can be located at the bottom of almost every odd page of this manual. Exit the configuration mode without saving any changes; read the “Abort” barcode instead.

- Just like reading the “Enter Setup” barcode, the scanner will respond with six beeps and its LED indicator will become flashing red after reading the barcode. Wait for a few seconds for the scanner to restart itself.

Update

109999

Abort

109998

Update

DEFAULT SETTINGS

SAVE USER SETTINGS AS DEFAULTS

For the scanner to keep the customized settings as user defaults, you must read the "Save as User Defaults" barcode. This is a normal setup barcode, and the scanner will respond with two beeps (low-high tone).

- After reading the "Update" barcode, the current settings will be saved as user defaults.

Save as User Defaults

RESTORE USER DEFAULTS

For the scanner to restore the user defaults, which you have saved earlier, you must read the "Restore User Defaults" barcode. This is a normal setup barcode, and the scanner will respond with two beeps (low-high tone).

- After reading the "Update" barcode, all the parameters of the scanner will return to their customized values.

Restore User Defaults

RESTORE SYSTEM DEFAULTS

For the scanner to restore the factory defaults, read the "Restore System Defaults" barcode. This is a normal setup barcode, and the scanner will respond with two beeps (low-high tone). After reading the "Update" barcode, all the parameters of the scanner will return to their default values. The current connection record will be cleared as well. Refer to 1.18.1 Restore System Defaults for the key combination used to restore defaults during operation.

For 3610 to restore factory defaults, refer to 3610 Setup Barcodes & Serial Commands.

Restore System Defaults

Note: The system default value (if there is one) for each setting is indicated by an asterisk "*".

Enter Setup

READ A SETUP BARCODE

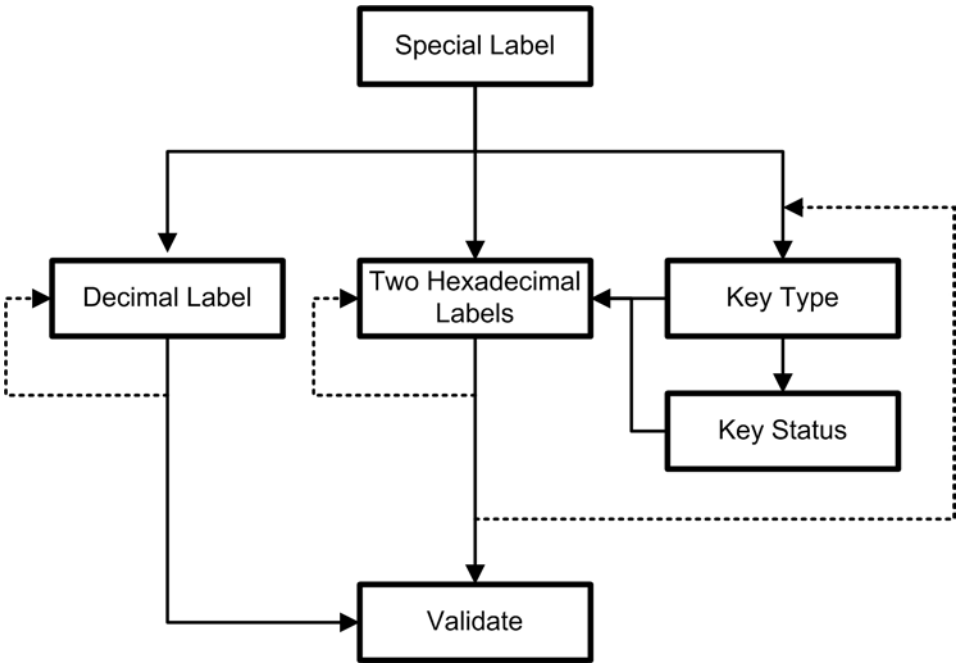
CONFIGURE PARAMETERS

For most of the scanner parameters, only one read is required to set them to new values. The scanner will respond with two beeps (low-high tone) when each parameter is set successfully. Refer to Create One-Scan Setup Barcodes.

But for a number of special parameters, multiple reads are required to complete the setting. In this case, the scanner will respond with a short beep to indicate it needs to read more setup barcodes. These special parameters may require reading one or more setup barcodes, such as

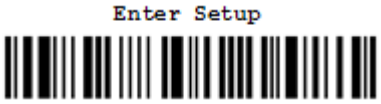
- Numeric barcodes, say, for keyboard type, inter-character delay, length qualification
- Hexadecimal barcodes, say, for character strings as prefix, suffix, etc.
- When "*Bluetooth*® HID" or "USB HID" is configured for interface, Key Type and Key Status will then become applicable. Decide whether to change key status when "Normal Key" is selected for Key Type.

To complete the configuration of these special parameters, it requires reading the "Validate" barcode, and the scanner will respond with two beeps (low-high tone) to indicate the input values are validated.



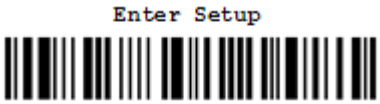
Update

The example below shows how to save your settings as “User Default” so that you may restore user defaults at a later time:

Steps	Action	User Feedback if Successful
1)	Power on the scanner…	The scanner will respond with a long beep (high tone) and its LED indicator will become solid red and go off.
2)	Enter the Configuration Mode… 	The scanner will respond with six beeps (high-low tone repeats three times), and its LED indicator will be flashing red.
3)	Read a Setup barcode… For example,	The scanner will respond with two beeps (low-high tone) if reading a normal setup barcode.
4)	Exit the Configuration Mode…	Same as for *Enter the Configuration Mode*.
5)	The scanner will automatically restart itself…	Same as for *Power on the scanner*.
*	When any configuration error occurs…	The scanner will respond with one long beep (low tone).

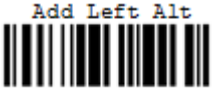
Enter Setup

The example below shows how to set numeric parameters:

Steps	Action	User Feedback if Successful
1)	Power on the scanner…	The scanner will respond with a long beep (high tone) and its LED indicator will become solid red and go off.
2)	Enter the Configuration Mode… 	The scanner will respond with six beeps (high-low tone repeats three times), and its LED indicator will become flashing red.
3)	Read a Setup barcode… For example, **Normal setup barcode** **Normal setup barcode** **Special setup barcode** **Decimal barcodes**	Read the “Decimal Value” barcode(s). ▸ Refer to Appendix IV “Decimal System” The scanner will respond with two beeps (low-high tone) when the input values are validated.
4)	Exit the Configuration Mode…	Same as for *Enter the Configuration Mode*.
5)	The scanner will automatically restart itself…	Same as for *Power on the scanner*.

Update

The example below shows how to set string parameters:

Steps	Action	User Feedback if Successful
1)	Power on the scanner…	The scanner will respond with a long beep (high tone) and its LED indicator will become solid red and go off.
2)	Enter the Configuration Mode… Enter Setup 	The scanner will respond with six beeps (high-low tone repeats three times), and its LED indicator will become flashing red.
3)	Read a Setup barcode… For example, **Special setup barcodes** Configure Prefix 101230	The scanner will respond with one short beep if reading a special setup barcode such as “Prefix Code”, indicating the setup requires reading more barcodes.
	*Normal 109926	When “*Bluetooth*® HID” or “USB HID” is configured for interface, Key Type and Key Status will then become applicable. You may decide whether or not to change key status when “Normal Key” is selected for Key Type. ▸ Refer to Appendix III
	Add Left Alt  109932	
	Hexadecimal barcodes 2 109902	Read the “Hexadecimal Value” barcodes for the desired character string. For example, read “2” and “B” for the scanner to prefix the character “+”. ▸ Refer to Appendix IV “Hexadecimal System”
	B 109911	
	Validate 109994	The scanner will respond with two beeps (low-high tone) when the input values are validated.
4)	Exit the Configuration Mode… Update 109999 OR Abort 109998	Same as for *Enter the Configuration Mode*.
5)	The scanner will automatically restart itself…	Same as for *Power on the scanner*.

Enter Setup

LIST THE CURRENT SETTINGS

The current settings of all scanner parameters can be sent to the host computer for user inspection. The listing includes pages as shown below. You can select the page of interest by having the scanner read the “List Page x” barcode. The scanner will respond with two beeps (low-high tone) and send the selected page to the host immediately.

List settings regarding Firmware Version, Serial Number, Interface, Buzzer, Simple Pairing Status and Other Scanner Parameters	**List Page 1**	109950
List settings regarding Prefix, Suffix, Code Type and Length Code Setting (1/2)	**List Page 2**	109951
List settings regarding Prefix, Suffix, and Length Code Setting (2/2)	**List Page 3**	109952
List settings regarding Code ID	**List Page 4**	109953
List settings regarding Readable Symbologies (1/2)	**List Page 5**	109954
List settings regarding Readable Symbologies (2/2)	**List Page 6**	109955
List settings regarding Symbology Parameters (1/3)	**List Page 7**	109956
List settings regarding Symbology Parameters (2/3)	**List Page 8**	109957
List settings regarding Symbology Parameters (3/3)	**List Page 9**	109958
Reserved	**List Page 10**	109959

Update

List settings regarding Editing Format 1 (1/2)

List Page 11

List settings regarding Editing Format 1 (2/2)

List Page 12

List settings regarding Editing Format 2 (1/2)

List Page 13

List settings regarding Editing Format 2 (2/2)

List Page 14

List settings regarding Editing Format 3 (1/2)

List Page 15

List settings regarding Editing Format 3 (2/2)

List Page 16

List settings regarding Editing Format 4 (1/2)

List Page 17

List settings regarding Editing Format 4 (2/2)

List Page 18

List settings regarding Editing Format 5 (1/2)

List Page 19

List settings regarding Editing Format 5 (2/2)

List Page 20

List current settings

List Page 21

List information regarding Driver License

List Page 22

Enter Setup

CREATE ONE-SCAN SETUP BARCODES

The fact is most of the scanner parameters require only one read for setting new values. To facilitate configuring the scanner, you may create One-Scan setup barcodes for use.

1D ONE-SCAN BARCODE

The requirements of a 1D One-Scan setup barcode are:

- a prefix of the "#@" characters
- the six digits of command parameters
- a suffix of the "#"character

For example, the scanner needs the reading of three setup barcodes for the command parameter "109952" to take effect:

Enter Setup

List Page 3

Update

Now, it requires only one read:

One-Scan Setup Barcode for 109952

Note: The scanner will restart automatically upon reading the One-Scan setup barcode for (1) changing the interface or (2) setting memory mode, enable or disable. It will respond with a long beep and its LED will come on-off.

Update

2D ONE-SCAN BARCODE

Users can also scan a single 2D barcode combining with a series of serial commands to configure the scanner. For example, if you want to change the suffix character to '#', you will need to input the serial commands in sequence as follows (underlining the digits is to make them more readable):

#@CipherLab101231109902109903109994

Command	Purpose
#@CipherLab	Enter Setup
101231	Configure suffix
109902	Give the first hexadecimal digit of 0x23
109903	Give the second hexadecimal digit of 0x23 for taking '#' as the suffix
109994	Validate the settings

2D One-Scan Setup Barcode for configuring suffix

Enter Setup

Chapter 1

UNDERSTANDING THE BARCODE SCANNER

This chapter explains the features and usage of the barcode scanner.

IN THIS CHAPTER

1.1 Battery 21
1.2 Memory 26
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1.4 Beeper 32
1.5 Vibrator 35
1.6 Send “NR” to Host 36
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1.8 Scanning Timeout 41
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1.10 Read Redundancy for All Symblogies 43
1.11 Addon Security for UPC/EAN Barcodes 44
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1.13 Use Direct USB Cable 45
1.14 Picklist Mode 46
1.15 Pager Beep Duration 46
1.16 Time Stamp 47
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1.18 Hardware Reset 52
1.19 Mobile Phone/Display Mode 53
1.20 Serial Number Stamp 53

1.1 BATTERY

The scanner is battery-powered: Use a rechargeable 3.7 V/850 mAh Li-ion battery. For intensive data collection, please prepare spare battery or batteries for non-stop operation.

Note: (1) The rechargeable battery for 1662/1664 may not be fully charged when shipped. We suggest charging it to full before use.
(2) The scanner can be configured to save battery power. Refer to settings of “Auto Power Off & Power-Saving”, “Sniff Mode”, as well as “Low Battery Alarm”.

Update

1.1.1 POWER LEVEL

Scan the barcode below to get the battery capacity information with each increment of 20 in percentage terms.

Remaining Battery Capacity

109930

1.1.2 HOW TO OPERATE THE SCANNER

Turn on the scanner...

Press the [Power/Delete] key for 2 seconds. The scanner will respond with a long beep (high tone), and its LED indicator will become solid red and go off.

Turn off the scanner...

Press the [Power/Delete] key for 2 seconds. The scanner will respond with two short beeps (high tone) and the LED will become solid red. Release the key then. Otherwise, let the scanner turn off automatically in specific circumstances.

Delete the last collected data when in memory mode ...

Press the [Power/Delete] key. The scanner will respond with two short beeps (high tone) and the LED will become solid red. Before the LED goes off (within 1 second), press the [Power/Delete] key again to confirm the deletion.

Enable/Disable the [Delete] key function

Scan the barcode below to enable/disable the [Delete] key. By default, users can press the [Power/Delete] key to delete data. If the function is disabled, pressing the key to delete data is not allowed.

***Enable**

101030

Disable

101031

Enter Setup

1.1.3 AUTO POWER OFF & POWER-SAVING

The scanner will stay active at power-on, which may be followed by a transition from full CPU speed to low CPU speed (Power-Saving) to auto shutdown (Auto Power Off).

- Power-Saving (1~254 min.; 0= Disable): By default, it is set to stand by at full-speed for 2 minutes before it enters low-speed mode. If this feature is not desired, set it to 0.
- Auto Power Off (1~254 min.; 0= Disable): By default, it is set to automatically shut down after 10 minutes. If this feature is not desired, set it to 0.

Note: 1. The Power-Saving setting will still take effect once a connection has been established successfully, via *Bluetooth*® HID or SPP. 2. There will be a time delay to reactivate 2D scan engine when scanner comes back from power off mode.

Before establishing a WPAN connection successfully...

1) The scanner will stay active for a specified period of time (2 minutes by default) for the following scenarios. Its CPU is running at full speed, and the LED is flashing blue (On/Off ratio 0.5 s: 0.5 s).

   (a) waiting for a connection request from the host (*Bluetooth*® SPP Slave Mode)

   (b) trying to connect to the host (*Bluetooth*® HID or *Bluetooth*® SPP Master Mode)

   (c) trying to connect to 3610

2) If it fails to connect within 2 minutes, the scanner will become inactive to save power for the remaining period of time (the specified value minus 2 minutes). Its CPU is running at low speed, and the LED is flashing red (On/Off ratio 0.3 s: 2.5 s).

   Press the [Trigger] key to wake up the scanner when it becomes inactive, and the scanner will stay active again.

3) If it fails to connect again and again, and finally stays inactive until the specified time interval for Auto Power Off has elapsed, the scanner will automatically turn off in order to conserve battery power.

   Hold down the [Power/Delete] key for 2 seconds to turn it on.

Note: For scenarios (a) and (b) in step 1, on your computer you may need to search for the scanner again.

Update

After establishing a WPAN connection successfully...

1) Once a WPAN connection is established successfully, the scanner will stay active for a specified period of time (2 minutes by default) for data transmission. Its CPU is running at full speed, and the LED is flashing blue (On/Off ratio 0.02 s: 3 s).

2) If it is idle within 2 minutes, the scanner will become inactive to save power for the remaining period of time (the specified value minus 2 minutes). Its CPU is running at low speed, and the LED is flashing red (On/Off ratio 0.3 s: 2.5 s).

   Press the [Trigger] key to wake up the scanner when it becomes inactive, and the scanner will stay active again.

3) If it is idle and finally stays inactive until the specified time interval for Auto Power Off has elapsed, the scanner will automatically turn off in order to conserve battery power. The three short beeps will ring out, with tone descending from high to low.

   Hold down the [Power/Delete] key for 2 seconds to turn it on.

   - For *Bluetooth*® HID, the scanner will resume connection with the host upon powering on again, as long as the host application is running. The three short beeps will ring out, with tone ascending from low to high. If the scanner fails to resume connection, it will try every 5 seconds to re-connect to the host unless the “Reset Connection” barcode has been scanned.
   - For *Bluetooth*® SPP Slave Mode, the scanner must wait for the host to re-connect.
   - For *Bluetooth*® SPP Master Mode, the scanner will resume connection with the host upon powering on again, as long as the host application is running. The three short beeps will ring out, with tone ascending from low to high. If the scanner fails to resume connection, it will try every 5 seconds to re-connect to the host unless the “Reset Connection” or “Restore System Defaults” barcode has been scanned.
   - With the use of 3610, the scanner will try re-connecting to 3610 whilst the scanner is active.

Enter Setup

Auto Off after 0~254 min. (*10)

1) Read the barcode above to specify the time interval in minutes before the scanner automatically turns off.
2) Read the "Decimal Value" barcode on page 265. For example, read "1" and "5" for the scanner to automatically turn off after being idle for 15 minutes.
3) Read the "Validate" barcode on the same page to complete this setting.

Note: Auto Power Off will not take effect when the scanner is in the configuration mode.

Power-Saving after 0~254 min. (*2)

1) Read the barcode above to specify the time interval in minutes before the scanner enters low-speed mode.
2) Read the "Decimal Value" barcode on page 265. For example, read "5" for the scanner to enter low-speed mode after being idle for 5 minutes.
3) Read the "Validate" barcode on the same page to complete this setting.

Note: Power-Saving will not take effect when one of the following conditions is met:
(1) The scanner is in the configuration mode.
(2) The Power-Saving value is set to 0.
(3) The scan mode is set to Continuous or Alternate Mode.
(4) The setting value of Power-Saving is greater than that of Auto Power Off.

Update

1.2 MEMORY

The scanned data can be sent to a host computer immediately via the WPAN connection or stored in flash memory when the scanner is set to Memory mode.

1.2.1 TRANSMIT BUFFER

By default, the transmit buffer is enabled and ready for use when the scanner is out of range. Upon reading a barcode successfully within range, the scanner responds with one short beep (high tone) and its LED indicator becomes solid green and goes off. However, the host computer may not receive the data immediately if the scanner is out of range. With the 10 KB transmit buffer, the scanner can ignore the transmission status and keep on reading barcodes until the buffer is full.

When transmit buffer is enabled...

If the scanner is out of range, it will respond with two short beeps, high-low tone, upon reading a barcode successfully.

When transmit buffer is full, the scanner will respond with one long beep (low tone) and its LED indicator will become solid red and go off. You are advised to get back into range.

When transmit buffer is disabled...

If the scanner is out of range, it will respond with one long beep (low tone) and its LED indicator will become solid red and go off. You are advised to get back into range.

***Enable**

Disable

Note: The 10 KB transmit buffer on the scanner can hold as many as 640 scans based on EAN-13 barcodes. Data will be cleared out once the scanner is turned off or running out of battery power!

Enter Setup

1.2.2 MEMORY MODE

When the scanner is in memory mode, it means any real-time connection established with the host is disabled. 1662/1664 scanner keeps 4MB flash memory for memory mode operation, which can store over 240,000 scans based on EAN-13 barcodes.

Enable

100237

***Disable**

100236

Warning: No real-time connection is allowed unless the memory mode is disabled.

Memory Data Delay

You may set a delay between each data record while transmitting data back to the host.

***None**

100238

250 ms

100239

500 ms

100240

1 sec

100241

2 sec

100242

3 sec

100243

5 sec

100244

Update

8 sec

100245

Send Data

When the memory is used up, the scanner will respond with two short beeps (high-low tone) as a warning. It is advised to send data to the host immediately by having the scanner read the "Send Data" barcode below.

1662/1664 can send data via "Direct USB" interface once the computer has found the USB connection. Refer to 1.13 Use Direct USB Cable. Because the time-out value is set to 0 by default, connect the cable before having the scanner read the "Send Data" barcode. Otherwise, the scanner will try to temporarily resume the previous WPAN connection with the host, if there is any.

During transmission of data collected in memory mode, if the transmission fails, the scanner will flash red (On/Off ratio 0.2 s: 0.2 s) after responding with two short beeps (high-low tone) and go back to previous working mode. Press trigger or power key to stop flashing.

Send Data

109918

Send Data Time-out

If a time-out value other than zero is given, it will first try to send data via "Direct USB" interface within the specified period of time. Connect the cable before it times out. When the attempt fails, it will try to temporarily resume the previous WPAN connection with the host, if there is any.

If 1662/1664 has never been connected to the host cordless, it will not be able to send data until it is connected using the Direct USB cable!

Send Data Time-Out after 0~15 sec. (*0)

101024

Clear Data & Confirm

Even though data has been sent to the host, the flash memory is still occupied unless you erase the memory by reading two barcodes – "Clear Data" and "Confirm".

1) Read the "Clear Data" barcode to clear the flash memory.

2) Read the "Confirm" barcode to confirm the action.

Clear Data

109916

Confirm

109917

Enter Setup

1.2.3 FREE MEMORY

You can scan the barcode below to show the available capacity of the flash memory in percentage terms.

Available Memory

1.2.4 RECORD COUNT OF MEMORY

You can scan the barcode below to show the data record count of the flash memory.

Data Record Count of Memory

Update

1.3 LED INDICATOR

The triple-color LED on top of the scanner is used to provide user feedback. For example, the LED becomes solid red and goes off upon powering on or running out of transmit buffer. You may tell the difference by the beeps – you will hear a long beep of high tone when powering on the scanner, and a long beep of low tone when the transmit buffer becomes full.

Scanner LED			Meaning
Red, on-off	---	---	▸ Power on, with one long beep (high tone, LED on for 1 second) ▸ Data saved to buffer when transmit buffer is enabled and the scanner is out of range, with two short beeps (high-low tone) ▸ Transmit buffer full, with one long beep (low tone) ▸ Transmit buffer disabled, with one long beep (low tone) ▸ Delete the last collected data in memory mode, with two short beeps (high tone, LED on for 1 second) ▸ Memory full in memory mode, with two short beeps (high-low tone)
Red, flashing	---	---	▸ Flashing red (On/Off ratio 0.3 s: 2.5 s) indicates the scanner is inactive and its CPU running at low speed to save power (because no WPAN connection is established after waiting for two minutes) ▸ Configuration Mode (On/Off ratio 0.5 s: 0.5 s)
---	---	Green, on-off	Good Read, with one short beep (high tone) and beeper pitch and duration programmable
---	Blue, flashing	---	First, flashing blue (On/Off ratio 0.5 s: 0.5 s) for two minutes indicates the scanner is waiting for connection, and goes off if no connection is established, then flashing red (On/Off ratio 0.3 s: 2.5 s) indicates the scanner is inactive. It is ready for connection only while the LED is flashing blue — ▸ SPP Slave: waiting host to connect ▸ HID or SPP Master: trying to connect to host ▸ Using 3610: trying to connect to 3610
---	Blue, flashing	---	Flashing blue (On/Off ratio 0.1 s: 0.1 s) indicates the scanner receives a PIN code request from host (flashing more quickly than waiting connection).
---	Blue, flashing	---	Flashing blue (On/Off ratio 0.02 s: 3 s) indicates the scanner has established a WPAN connection successfully.
---	Blue, flashing	Green, flashing	Flashing blue and green (On/Off ratio 0.1 s: 0.1 s) indicates an error occurs while entering the PIN code. Press the [Trigger] key to try and re-connect.
Red, flashing	---	---	Flashing red (On/Off ratio 0.2 s: 0.2 s) indicates the scanner has failed to transmit data stored in memory. Press any key to stop flashing.

Enter Setup

Red, flashing	---	---	Accompanied with beeping, flashing red for three times indicates the present scanner battery capacity is running low. This happens at one-minute intervals.
Red, flashing	---	---	After a good read, flashing red for three times indicates the present scanner battery capacity is running low.
Red, flashing	---	---	When scanning the "Download" barcode, flashing red for five times indicates the present scanner battery voltage is below 3.7v and the scanner won't get into Download mode.

1.3.1 GOOD READ LED

***Enable Good Read LED**

Disable Good Read LED

1.3.2 GOOD READ LED DURATION

By default, the Good Read LED stays on for 40 milliseconds. Specify a value, ranging from 1 to 254 in units of 10 milliseconds.

Good Read LED Time-out after 0.01~2.54 sec. (*40 ms)

1) Read the barcode above to specify the time interval before the Good Read LED goes off.
2) Read the "Decimal Value" barcode on page 265. For example, read "1" and "5" for the LED to go off after 150 milliseconds.
3) Read the "Validate" barcode on the same page to complete this setting.

Update

1.4 BEEPER

The scanner has a buzzer to provide user feedback in various operating conditions.

Beeping	Meaning
One long beep, high tone	Power on, with red LED on (1 second) and off quickly
One long beep, low tone	▸ Transmit buffer full, with red LED on-off ▸ Transmit buffer disabled, with red LED on-off ▸ Configuration error (Wrong barcode…) ▸ PIN code input error ▸ Reject random PIN request ▸ Failed to send data in memory mode
One short beep, high tone ▸ Programmable, default to 4 KHz	Good Read, with green LED on-off
One short beep, high tone	▸ More setup barcodes required ▸ Input PIN code ▸ Clear PIN code
One short beep, low tone	More barcodes required to complete the “output sequence” requirements of Multi-Barcode Editor, with green LED on-off (Upon completion, same as Good Read.)
Six short beeps ▸ High-low tone repeats three times	▸ Enter Configuration Mode, with red LED flashing ▸ Exit Configuration Mode
Two short beeps, low-high tone	Setup barcode read successfully
Two short beeps, high tone	▸ Low Battery Alarm ▸ Power off, with red LED on (until the key is released) ▸ Delete the last collected data in memory mode, with red LED on (1 second) and off ▸ Waking up the scanner depends on the paging setting value until the power key is pressed or the sleeping time out is reached
Two short beeps, high-low tone	▸ Data saved to buffer when transmit buffer is enabled and the scanner is out of range, with red LED on-off ▸ Memory Mode – Memory full, with red LED on-off ▸ Memory Mode – Transmission failed, with red LED flashing
Two long beeps, high-low tone	Multi-Barcode Mode – Buffer full
Three short beeps, tone descending from high to low	WPAN connection out of range or suspended
Three short beeps, tone ascending from low to high	▸ WPAN connection established, with blue LED flashing ▸ WPAN connection resumed, with blue LED flashing

Enter Setup

1.4.1 BEEPER VOLUME

Mute

Minimum Volume

Medium Volume

***Maximum Volume**

Update

1.4.2 GOOD READ BEEP

Frequency

8 kHz

***4 kHz**

2 kHz

1 kHz

Duration

***Shortest**

Shorter

Longer

Longest

Enter Setup

1.4.3 LOW BATTERY ALARM

By default, the built-in battery alarm will sound when the battery charge gets low. In order to prevent data loss, it is advised to replace the battery immediately when hearing two short beeps (high tone).

Disable

***Enable**

1.5 VIBRATOR

1.5.1 GOOD READ VIBRATOR

Enable Good Read Vibrator

***Disable Good Read Vibrator**

1.5.2 GOOD READ VIBRATOR DURATION

By default, the Good Read Vibrator stays on for 1 second. Specify a value, ranging from 1 to 254 in units of 100 milliseconds.

Good Read Vibrator Time-out after 0.1~25.4 sec. (*1 s)

1) Read the barcode above to specify the time interval, in tenths of seconds before the Good Read Vibrator goes off.
2) Read the "Decimal Value" barcode on page 265. For example, read "1" and "5" for the vibrator to vibrate after 1.5 seconds good read.
3) Read the "Validate" barcode on the same page to complete this setting.

Update

1.6 SEND “NR” TO HOST

The scanner can send a “NR” string to the host to notify a No Read event.

Enable

***Disable**

Enter Setup

1.7 SCAN MODES

Different scan modes are supported – select the scan mode that best suits the requirements of a specific application. Refer to the comparison table below.

Scan Mode	Start to Scan				Stop Scanning			
	Always	Press trigger once	Hold trigger	Press trigger twice	Release trigger	Press trigger once	Barcode being read	Timeout
Laser mode			✓		✓		✓	✓
Auto Off mode		✓					✓	✓
Auto Power Off mode		✓						✓
Aiming mode (1664 only)				✓			✓	✓
Multi-Barcode mode			✓		✓			
Continuous mode (1662 only)	✓							
Alternate mode (1662 only)	✓							

Note: By default, the scan mode is set to Laser mode.

Update

1.7.1 LASER MODE

The scanner will start scanning once the trigger is held down.

- The scanning won't stop until (1) a barcode is decoded, (2) the pre-set timeout expires, or (3) you release the trigger.

Note: Refer to “Scanning Timeout”.

***Laser Mode**

1.7.2 AUTO OFF MODE

The scanner will start scanning once the trigger is pressed.

- The scanning won't stop until (1) a barcode is decoded, and (2) the pre-set timeout expires.

Note: Refer to “Scanning Timeout”.

Auto Off Mode

1.7.3 AUTO POWER OFF MODE

The scanner will start scanning once the trigger is pressed.

- The scanning won't stop until the pre-set timeout expires, and, the pre-set timeout period re-counts after each successful decoding.

Note: Refer to “Delay between Re-read” and “Scanning Timeout”.

Auto Power Off Mode

Enter Setup

1.7.4 AIMING MODE (1664 ONLY)

The scanner will aim at a barcode once the trigger is pressed, and start scanning when the trigger is pressed again within one second.

- The scanning won't stop until (1) a barcode is decoded, and (2) the pre-set timeout expires.

Aiming Mode

Aiming Timeout

You can limit the aiming time interval (1~15). By default, the scanner time-out is set to 1 second.

Aiming Time-out after 1~15 sec. (*1)

1) Read the barcode above to specify the time interval in seconds before aiming ends. (It is set to 1 by default.)
2) Read the "Decimal Value" barcode on page 265. For example, read "1" and "0" for the scanner to automatically shut down after being idle for 10 seconds.
3) Read the "Validate" barcode on the same page to complete this setting.

1.7.5 MULTI-BARCODE MODE

The scanner will be scanning as long as the trigger is held down, capable of decoding one single barcode, as well as multiple unique barcodes one at a time. While decoding a bunch of unique barcodes, if a barcode is decoded twice, its subsequent decoding will be ignored and the scanner is expecting another unique barcode.

- The scanning won't stop until you release the trigger.

Multi-Barcode Mode

Note: (1) A barcode is considered unique when its Code Type or data is different from others.
(2) Multi-Barcode Mode is not related to the Multi-Barcode Editor.

Update

1.7.6 CONTINUOUS MODE (1662 ONLY)

The scanner is always scanning.

- After a successful decoding, the removal of barcode is required. It is not allowed to proceed to decode until the decoding delay time has passed.
- To decode the same barcode repeatedly, move away the barcode and put it back again and again for scanning.

Note: Refer to “Delay between Re-read”.

Continuous Mode

Decoding Delay

Set the time interval between each decoding.

***Disable**

0.5 sec

1 sec

2 sec

1.7.7 ALTERNATE MODE (1662 ONLY)

The scanner will start scanning once the trigger is pressed

- The scanning won't stop until you press the trigger again.

Alternate Mode

Enter Setup

1.8 SCANNING TIMEOUT

Specify the scanning time interval (1~254 sec.; 0= Disable) when the scan mode is set to any of the following –

- Laser mode
- Auto Off mode
- Auto Power Off mode
- Aiming mode (1664 Only)

Scanner Time-out after 0~254 sec. (*10)

1) Read the barcode above to specify the time interval in seconds before the scan engine times out.
2) Read the "Decimal Value" barcode on page 265. For example, read "1" and "5" for the scanner to shut down automatically after being idle for 15 seconds.
3) Read the "Validate" barcode on the same page to complete this setting.

Update

1.9 DELAY BETWEEN RE-READ

This is also referred to as the “Blocking Time”, which is used to prevent the scanner from accidentally reading the same barcode twice when the scan mode is set to any of the following –

- Auto Power Off mode
- Continuous mode (1662 only)
- Alternate mode (1662 only)

100 ms

200 ms

***400 ms**

800 ms

1 sec

2 sec

3 sec

5 sec

Enter Setup

1.10 READ REDUNDANCY FOR ALL SYMBLOGIES

Select the level of reading security. For example,

- If "No Redundancy" is selected, one successful decoding will make the reading valid and induce the "READER Event".
- If "Two Times" is selected, it will take a total of three consecutive successful decoding of the same barcode to make the reading valid. The higher the reading security is (that is, the more redundancy the user selects), the slower the reading speed gets.

It is obvious that the more redundancy selected, the higher the reading security is, and thus, the slower the reading speed becomes. It has to compromise between reading security and decoding speed.

***No Redundancy**

One Time

Two Times

Update

1.11 ADDON SECURITY FOR UPC/EAN BARCODES

The scanner is capable of decoding a mix of UPC/EAN barcodes with or without addons. The read redundancy (2~30 times) allows changing the number of times to decode a UPC/EAN barcode before transmission. The more redundancy selected, the higher the reading security is, and thus, the slower the reading speed becomes.

Note: UPC/EAN Addon 2 and Addon 5 must be enabled individually for this setting to take effect.

Addon Security Level (2~30; default 10)

1) Read the barcode above to specify the read redundancy for UPC/EAN barcodes.
2) Read the "Decimal Value" barcode on page 265. For example, read "1" and "2" for the scanner to re-read the barcode for 12 times.
3) Read the "Validate" barcode on the same page to complete this setting.

1.12 NEGATIVE BARCODES (1664 ONLY)

Normally, barcodes are printed with the color of the bars darker than that of the spaces. But for negative barcodes, they are printed in the opposite sense just like negative films. The spaces of negative barcodes are printed with a color darker than that of the bars. Configure the scanner to be able to read negative barcodes if required.

Enable

***Disable**

Enter Setup

1.13 USE DIRECT USB CABLE

1662/1664 supports Direct USB interface for charging the battery and/or sending data to the host in memory mode. Refer to 1.2.2 Memory Mode.

Note: The scanner will not function when it is solely on USB power and without a battery loaded.

1.13.1 DIRECT USB INTERFACE

When it is set to Memory Mode and connected to computer via the Direct USB cable, the default output interface becomes “Direct USB Virtual COM”, change it to “Direct USB HID” if required.

For details on configuring the interface settings, refer to the following sections:

- 2.6 Direct USB HID
- 2.7 Direct USB Virtual COM

***Activate Direct USB Virtual COM**

Activate Direct USB HID

1.13.2 DISABLE DIRECT USB INTERFACE

When connecting the USB cable to the scanner for charging the battery, ensure the “Disable Direct USB” barcode has been scanned to avoid sending data to the host in memory mode. In this mode the USB cable function will be charging the battery only.

Disable Direct USB

Update

1.14 PICKLIST MODE (1664 ONLY)

Picklist mode enables the decoder to decode only the barcodes aligned under the center of the laser aiming pattern.

Enable

***Disable**

1.15 PAGER BEEP DURATION

Paging function is only activated when 1662/1664 is in Power-Saving mode. 1662/1664 can be woken up via receiving any *Bluetooth*® status command by pressing a key on the host keyboard. The buzzer will continuously sound two short high tone beeps until the power key is pressed on the scanner or the timeout is reached, and the scanner re-enters power saving mode.

By default, the pager beep duration is 5 seconds. Specify a value, ranging from 0 to 15. (0~15 sec.; 0= Disable)

- *Bluetooth*® HID profile: Press any one of the following keys “Scroll Lock”, “Number Lock” or “Caps Lock” on the host computer to trigger the waking up of 1662/1664.
- *Bluetooth*® SPP Profile: Any command sent using *Bluetooth*® SPP will trigger the waking up of 1662/1664.

Pager Beep Duration
0~15 sec.
(*5 s)

1) Read the barcode above to specify the desired beep active time.
2) Read the “Decimal Value” barcode on page 265. For example, read “1” and “5” for the pager beep function to be activated each 15 seconds after entering Power-Saving mode.
3) Read the “Validate” barcode on the same page to complete this setting.

Enter Setup

1.16 TIME STAMP

Specify time stamp format added to the prefix or suffix of a data. Up to three settings can be configured:

- No Time Stamp
- Add Time Stamp in front of data
- Add Time Stamp to the end of data

If added in front of data, it means prior to the prefix field. Alternatively, to the end of data.

No Time Stamp
***Disable**

101315

Add Time Stamp
in front of Data

101316

Add Time Stamp
to the end of Data

101317

1.16.1 DATE AND TIME SETTINGS

Read the barcode below to enable/disable Date and Time function.

Year Output
***Enable**

101321

Year Output
Disable

101322

Month Output
***Enable**

101323

Month Output
Disable

101324

Update

Date Output
***Enable**

101325

Date Output
Disable

101326

Hour Output
***Enable**

101327

Hour Output
Diable

101328

Minute Output
***Enable**

101329

Minute Output
Disalbe

101330

Second Output
***Enable**

101331

Second Output
Diable

101332

Enter Setup

Decoding Data and Time

Year Setup

Date Setup

Time Setup

1) Read the barcode above to apply time or date code separately, and follow steps 2~3.
2) Read the "Decimal Value" barcode on page 265 for the desired character string. For example:

   Year: Read "2", "0", "1", "1" for the year setting as year=2011.

   Date: Read "1", "1", "2", "0" for the date setting as date=Nov.20.

   Time: Read "1", "8", "5", "9" for the time setting as time=18:59.
3) Read the "Validate" barcode for each setting on the same page.

1.16.2 SEPARATOR FOR DATE AND TIME

The Date and Time can be split with a pre-selected separator, for example, "/" as YYYY/MM/DD or ":" as HH:MM:SS

Separator for Date/Time
***"-"**

Separator for Month/Date
***"/"**

Separator for Hour/Minute
***":"**

1) Read the barcode above to apply separator to date or time separately, and follow steps 2~3.
2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string. For example, read "3" and "A" for the separator to split the data with character [:].
3) Read the "Validate" barcode on the same page to complete this setting.

Update

1.16.3 DATE FORMAT

The date format includes year, month and day. There are three kinds of combinations can be configured to specify Year, Month and Day:

- Year/Month/Day (YYYY/MM/DD) or (YY/MM/DD)
- Month/Day/Year (MM/DD/YYYY) or (MM/DD/YY)
- Day/Month/Year (DD/MM/YYYY) or (DD/MM/YY)

***Year/Month/Day**

Month/Day/Year

Day/Month/Year

About Year Format:

Year format can be pre-selected as 2-digit or 4-digit. For example, if year format is YYYY, the output year is 2011 for 4-digit, alternatively is 11 for 2-digit.

***Year for 4-digit**

Year for 2-digit

Enter Setup

1.17 2D DECODE SETTING (1664 ONLY)

1.17.1 AIMING PATTERN

Enable/Disable the aiming pattern during scanning.

***Enable**

102131

Disable

102130

1.17.2 DECODING ILLUMINATION

Enable/Disable illumination during scanning.

- Enabling illumination usually results in superior images. The effectiveness of the illumination decreases as the distance to the target increases.

***Enable**

102129

Disable

102128

1.17.3 ILLUMINATION BRIGHTNESS

Specify the illumination brightness level ranging from 1 to 10 for the 2D reader. The default value is 10 which represents 100% illumination brightness.

Set Illumination Brightness Level for 2D Reader 1~10 (*10)

102256

1) Read the barcode above to configure the illumination brightness.
2) Read the "Decimal Value" barcode on page 265 for the desired setting value.
3) Read the "Validate" barcode to complete this setting.

Update

1.18 HARDWARE RESET

1.18.1 RESTORE SYSTEM DEFAULTS

In addition to scanning the “Restore System Defaults” barcode, the following procedure using key combinations, can be used to restore the system defaults during operation.

I) Hold down the [Power/Delete] key.

2) When the scanner responds with two short beeps (high tone), press the [Trigger] key for 5 seconds. The scanner LED indicator becomes solid red and then goes off.

3) When the scanner responds with a long beep (high tone), release the keys. Its LED indicator becomes solid red and goes off.

Note: The scanner will restart itself automatically.

1.18.2 RESET CONNECTION

When the output interface is *Bluetooth*® HID or *Bluetooth*® SPP Master, the scanner will attempt to maintain an established connection. To stop such re-connection, read the “Reset Connection” or “Restore System Defaults” barcode to clear the current connection record. Alternatively, use the key combination as described below to reset connection during operation.

I) Hold down the [Trigger] key, and then press the [Power/Delete] key for at least 5 seconds.

2) The scanner will respond with two short beeps (high tone). Wait until the scanner responds with a long beep (high tone), and then release the keys.

Note: After resetting connection by hardware, the scanner will not restart itself automatically. It will resume to its previous operation except no connection.

1.18.3 DISABLE HARDWARE RESET

By default, the key combination for hardware reset (including system defaults restoration and connection reset) is enabled. Users can decide whether to enable/disable the key combination.

***Enable**

Disable

Enter Setup

1.19 MOBILE PHONE/DISPLAY MODE

By default this mode is disabled. There is a big improvement in reading barcodes displayed on mobile phones and electronic displays when this mode is enabled.

Enable

***Disable**

1.20 SERIAL NUMBER STAMP

Decide whether to add the device serial number in front of the data transmitted.

Add serial number in front of data

***Disable**

1.20.1 SEPARATOR BETWEEN SERIAL NUMBER STAMP AND DATA

Scan the barcode below to specify the separator character between device serial number and the accompanying data. By default, the separator is a comma symbol.

Specify the separator character

1) Read the barcode above to specify a separator character.
2) Read the "Hexadecimal Value" barcode on page 266 for the desired character.
3) Read the "Validate" barcode to complete this setting.

Update

Enter Setup

Chapter 2

SELECTING OUTPUT INTERFACE

In order to establish a proper connection between host computer and the scanner, we suggest following these instructions –

1) Install battery and hold down the [Power/Delete] key for 2 seconds to turn on the scanner.
2) Read the “Enter Setup” barcode to enter the configuration mode.
3) Read the associated barcodes to activate the desired interface.
4) See the following sections for output interfaces supported.
5) Read the barcodes for related settings.
6) Read the “Update” barcode to exit the configuration mode.
7) Turn on host computer or laptop and establish a WPAN connection with the scanner.

   Refer to Chapter 3 – Setting up a WPAN Connection.

Note: (1) By default, the output interface is set to “*Bluetooth*® HID”.
(2) When set to Memory Mode and connected to computer via the Direct USB cable, the default output interface becomes “Direct USB Virtual COM”.

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Update

2.1 *BLUETOOTH*® HID

For *Bluetooth*® HID, refer to Chapter 3 – Setting up a WPAN Connection for related connection settings. The scanned data will be transmitted to the computer. To capture the data run any text editor on your computer.

HID Settings	Defaults
Keyboard Type	PCAT (US)
Alphabet Layout	Normal
Numeric Layout	Normal
Capital Lock Type	Normal
Capital Lock State	Off
Alphabet Transmission	Case-sensitive
Numeric Transmission	Alphanumeric keypad
Kanji Transmission	Disable
Inter-Character Delay	0 (ms)
Inter-Function Delay	0 (ms)

Enter Setup

2.1.1 ACTIVATE *BLUETOOTH*® HID & SELECT KEYBOARD TYPE

When *Bluetooth*® HID interface is activated, you will have to select a keyboard type to complete this setting. By default, *Bluetooth*® HID is activated on the scanner, and the keyboard type is set to PCAT (US).

Activate *Bluetooth*® HID & Select Keyboard Type…

1) Read the barcode above to activate *Bluetooth*® HID and select a keyboard type.
2) Read the "Decimal Value" barcode on page 265. Refer to the table below for the number of desired keyboard type.
3) Read the "Validate" barcode on the same page to complete this setting.

Note: If this interface is not activated, you can also simply have the scanner read the one-scan setting barcode to activate BT HID and select keyboard type. Please refer to Appendix VI - Bluetooth HID.

Bluetooth® HID

By default, the keyboard type is set to PCAT (US). The following keyboard types are supported for PC —

No.	Keyboard Type (PCAT)	No.	Keyboard Type (PCAT)
64	PCAT (US)	73	PCAT (Portuguese)
65	PCAT (French)	74	PS55 A01-2 (Japanese)
66	PCAT (German)	75	User-defined table
67	PCAT (Italian)	76	PCAT (Turkish)
68	PCAT (Swedish)	77	PCAT (Hungarian)
69	PCAT (Norwegian)	78	PCAT (Swiss German)
70	PCAT (UK)	79	PCAT (Danish)
71	PCAT (Belgium)	80	PCAT (Dutch)
72	PCAT (Spanish)	87	PCAT (Brazilian Portuguese)

Update

The following keyboard types are supported for Apple —

No.	Keyboard Type (Apple)	No.	Keyboard Type (Apple)
64	Apple (US)	78	Apple (Swiss German)
65	Apple (French)	79	Apple (Danish)
66	Apple (German)	80	Apple (Dutch)
67	Apple (Italian)	81	Apple (Greek)
68	Apple (Swedish)	82	Apple (Hebrew)
69	Apple (Norwegian)	83	Apple (Russian)
72	Apple (Spanish)	84	Apple (Flemish)
73	Apple (Portuguese)	85	Apple (Arabic)
75	User-defined table	86	Apple (Austria German)
76	Apple (Turkish)	87	Apple (Brazilian Portuguese)

Note: 81/82/83/85 keyboard types don't support English input.

2.1.2 RESET CONNECTION

For *Bluetooth*® HID, you can only have the scanner connected to one computer at a time. If you want to connect the scanner to another host, you must read the "Reset Connection" barcode so that the current connection record will be cleared. Then, the scanner will restart itself automatically. Go through the process in 3.2.3 Connect to Dongle to establish a new connection.

Refer to 1.18 Hardware Reset.

Reset Connection

Note: The "Restore System Defaults" barcode will also clear the current connection record.

Enter Setup

2.1.3 KEYBOARD SETTINGS

- Alphabet Layout
- Numeric Layout
- Capital Lock Type
- Capital Lock Setting
- Alphabet Transmission
- Numeric Transmission
- Kanji Transmission

Note: *Bluetooth*® HID does not support these functions on PDAs – (1) Capital Lock Setting: Auto Detection (2) Numeric Transmission: Numeric Keys

Alphabet Layout

By default, the alphabet layout is set to normal mode, also known as the standard English layout. Select French or German keyboard layout if necessary. The scanner will make adjustments when sending the "A", "Q", "W", "Z", "Y", and "M" characters according to this setting.

***Normal**

AZERTY

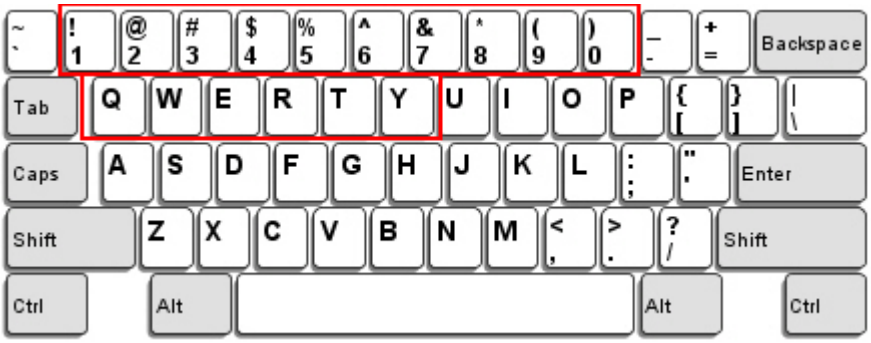
QWERTZ

Note: This setting only works when the keyboard type selected is US keyboard, such as PCAT (US). The Alphabet Layout and Numeric Layout setting must match your keyboard.

Update

US Keyboard Style – Normal

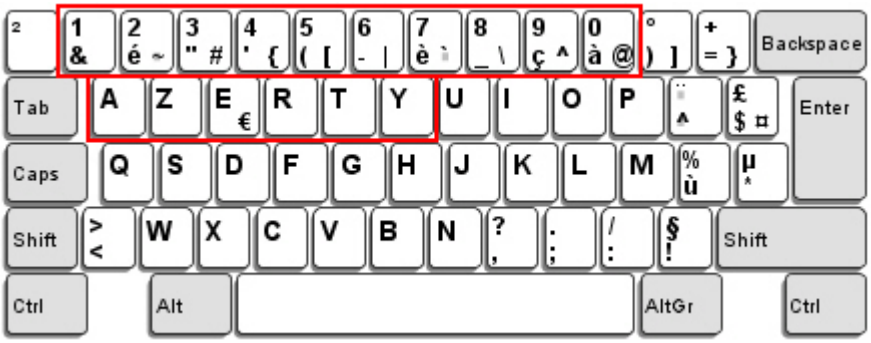
QWERTY layout, which is normally used in western countries.



- Select “Lower Row” for the “Numeric Layout” setting because the upper row is for special characters.

French Keyboard Style – AZERTY

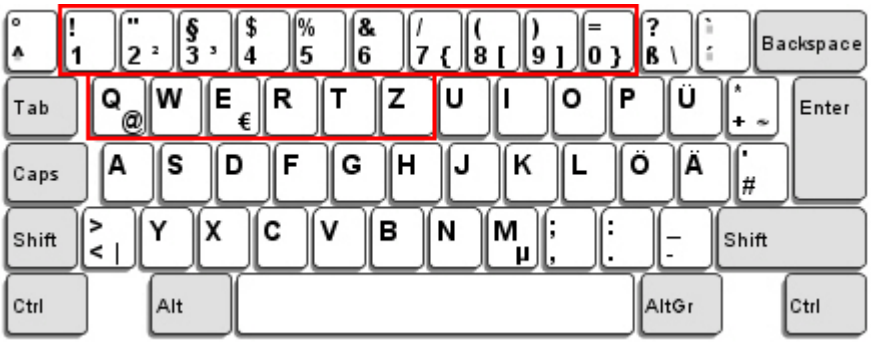
French layout; see below for French Keyboard Style.



- Select “Upper Row” for the “Numeric Layout” setting because the lower row is for special characters.

German Keyboard Layout – QWERTZ

German layout; see below for German Keyboard Style.



- Select “Lower Row” for the “Numeric Layout” setting because the upper row is for special characters.

Enter Setup

Numeric Layout

Select a proper layout that matches the alphabet layout. The scanner will make adjustments according to this setting.

Options	Description
Normal	Depends on the [Shift] key or [Shift Lock] setting
Lower Row	For QWERTY or QWERTZ keyboard
Upper Row	For AZERTY keyboard

***Normal**

Upper Row

Lower Row

Note: This setting is to be used with the Character Substitution setting when support for certain keyboard types (languages) is unavailable but required.

Capital Lock Type & Setting

In order to send the alphabet with correct case, the scanner needs to know the status of Caps Lock on the keyboard. Incorrect settings may result in reversed case of the alphabet being transmitted.

Cap Lock Type	Description
Normal	Normal type
Capital Lock	When enabled, the keys of alphabetic characters will be interpreted as capital letters. However, this does not affect the number or punctuation keys.
Shift Lock	When enabled, the keys of alphabetic characters will be interpreted as capital letters. In addition, this affects the number or punctuation keys.

***Normal**

Shift Lock

Update

Capital Lock

100044

Capital Lock State	Description
Capital Lock OFF	Assuming that the status of Caps Lock on the keyboard is OFF, transmitted characters are exactly the same as in the barcode (when "case-sensitive" is selected for Alphabet Transmission).
Capital Lock ON	Assuming that the status of Caps Lock on the keyboard is ON, transmitted characters are exactly the same as in the barcode (when "case-sensitive" is selected for Alphabet Transmission). ▸ Refer to the Capital Lock Type above.
Auto Detection (Suggested use for most applications)	The scanner will automatically detect the status of Caps Lock on the keyboard before data is transmitted; transmitted characters are exactly the same as in the barcode (when "case-sensitive" is selected for Alphabet Transmission). ▸ This setting is not supported on PDAs.

Auto Detect

100054

Capital Lock ON

100053

***Capital Lock OFF**

100052

Enter Setup

Alphabet Transmission

By default, the alphabet transmission is case-sensitive, meaning that the alphabet will be transmitted according to the original case, the status of Caps Lock on the keyboard, as well as the Capital Lock setting. Select [Ignore Case] to have alphabet transmitted according to the status of Caps Lock on the keyboard only.

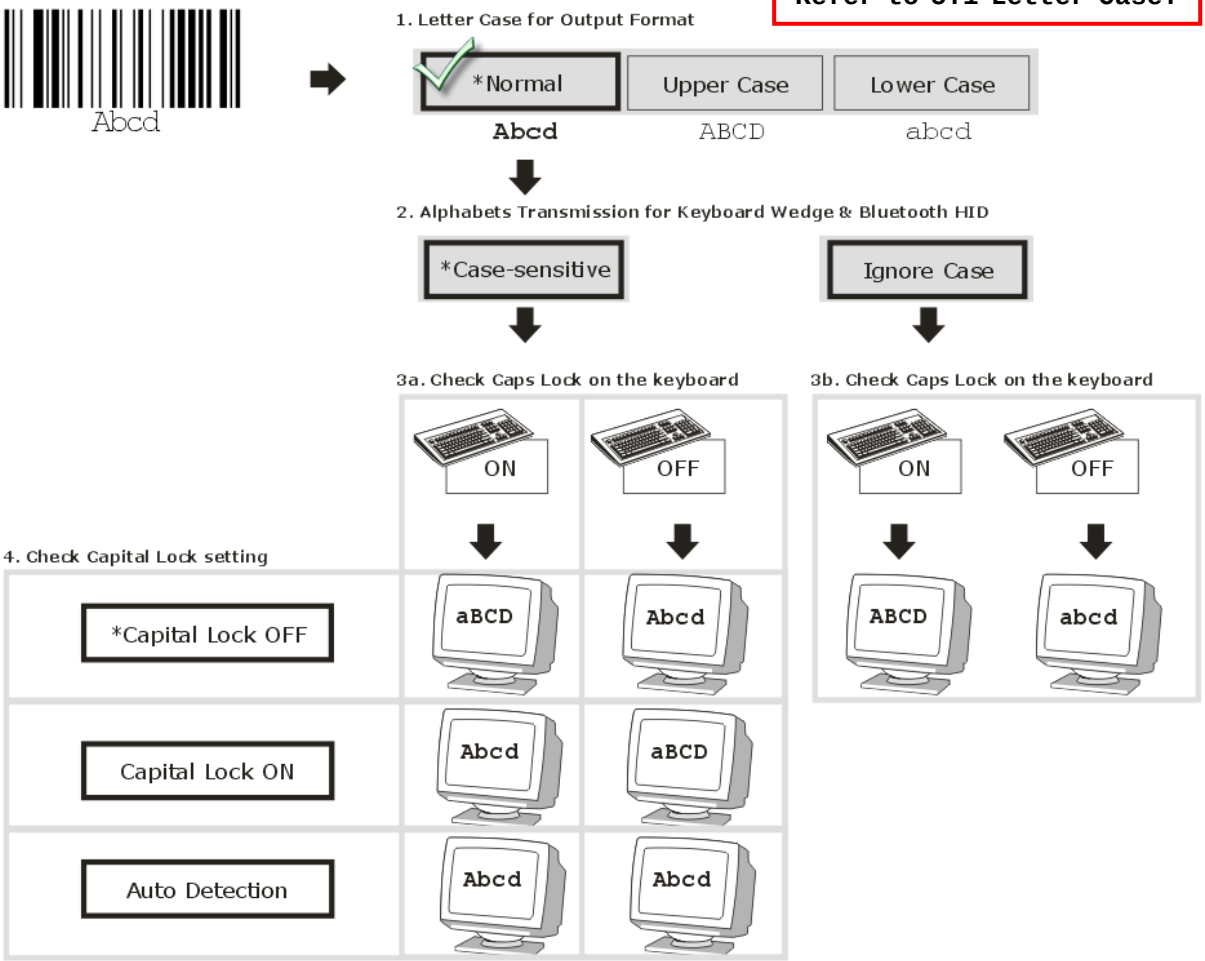
Ignore Case

100051

***Case-sensitive**

100050

Refer to 5.1 Letter Case.



Update

Numeric Transmission

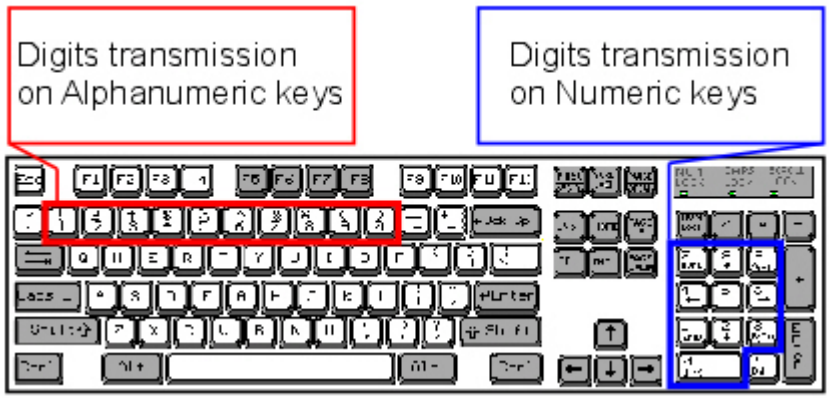
By default, the alphanumeric keypad is used for transmitting digits. Select “Numeric Keypad” if you wish to use the keys on the numeric keypad.

Numeric Key

100041

***Alphanumeric Key**

100040



Note: If you select “Numeric Keypad”, the Num Lock status of the physical keyboard should be “ON”. This setting is not supported on PDAs.

Kanji Transmission

Kanji Transmission is supported by the scanner when either *Bluetooth*® HID or USB HID via 3610 is selected for the output interface. By Kanji Transmission, when the host computer is running on Japanese Windows O.S., the scanner is able to transmit Japanese characters including the Chinese characters used in modern Japanese writing system.

Kanji Transmission is disabled by default. Enable/disable scanner’s Kanji Transmission by reading the following barcodes:

Enable

100067

***Disable**

100066

Enter Setup

2.1.4 INTER-CHARACTER DELAY

By default, the inter-character delay is set to zero. Specify a value, ranging from 0 to 254 in units of milliseconds, to match the computer response time of the keyboard interface. Such delay time is inserted between every character being transmitted. The longer the delay time is, the slower the transmission speed will be.

Inter-Character Delay… (*0~254)

100011

1) Read the barcode above to specify the inter-character delay.
2) Read the "Decimal Value" barcode on page 265 for the desired inter-character delay (in milliseconds).
3) Read the "Validate" barcode on the same page to complete this setting.

2.1.5 INTER-FUNCTION DELAY

By default, the inter-function delay is set to zero. Specify a value, ranging from 0 to 254 in units of milliseconds, to match the computer response time of the keyboard interface. Such delay time is inserted between every function code (0x01 ~ 0x1F) being transmitted. The longer the delay time is, the slower the transmission speed will be.

Inter-Function Delay… (*0~254)

100012

1) Read the barcode above to specify the inter-function delay.
2) Read the "Decimal Value" barcode on page 265 for the desired inter-function delay (in milliseconds).
3) Read the "Validate" barcode on the same page to complete this setting.

Update

2.1.6 HID CHARACTER TRANSMIT MODE

By default, HID interface sends data to the host in batch. You may read the "By Character" barcode to process data one character at a time.

***Batch Processing**

By Character

Note: "By Character" transmit mode is required when working with iPhone or iPad. It's recommended that the Auto-Correction function on your iOS keyboard should be turned off.

2.1.7 SPECIAL KEYBOARD FEATURE

By default, the special keyboard feature is based on the factory definition. You can decide whether to apply the special keyboard feature. Refer to Keyboard Wedge Table.

***Apply**

Bypass

2.1.8 KEYPAD SUPPORT FOR IPHONE/IPAD

By default, the scanner uses non-Apple keyboard layout. Read the following barcodes to toggle between Apple and non-Apple keyboard layouts.

Toggle to Apple Keyboard Layout

***Non-Apple Keyboard Layout**

Enter Setup

When the scanner has been successfully connected to iPhone or iPad for data collection, the onscreen keypad of iPhone or iPad will disappear. Read the “Use POWER Key to Show or Hide Keypad” barcode in advance. Then, it will allow pressing the [Power/Delete] key to show or hide the onscreen keypad.

***Normal**

Use POWER Key to Show or Hide Keypad

In addition to using the [Power/Delete] key, you may also show or hide the keypad by reading the following barcode.

Show or Hide Keypad

Note: This function only works for
(1) iPhone 4 and 3GS version 4.1 or later, and (2) iPad version 4.2 or later.

2.1.9 TRANSMIT SPEED

By default, the BT HID transmit speed is set to normal. Users can have the scanner work in quicker transmit speed by reading the Fast barcode.

***Normal**

Fast

2.1.10 BT HID SLAVE/MASTER SWITCHING

By default, the BT HID role is set to slave. Users can have the scanner switch between slave and master by reading the barcodes below.

Update

***Slave**

Master

2.1.11 BT HID AUTO-RECONNECTION

Users can decide whether to have the scanner automatically reconnect to a paired device after disconnection, and the occasion for reconnecting.

***Auto reconnect immediately**

Auto reconnect on data being scanned

Auto reconnect off

2.2 *BLUETOOTH*® SPP SLAVE

For *Bluetooth*® SPP Slave, refer to Chapter 3 – Setting up a WPAN Connection for related connection settings.

2.2.1 ACTIVATE *BLUETOOTH*® SPP SLAVE MODE

This is SPP Slave Mode.

Activate *Bluetooth*® SPP, Slave Mode

2.2.2 INTER-FUNCTION DELAY

Enter Setup

By default, the inter-function delay is set to zero. Specify a value, ranging from 0 to 254 in units of milliseconds, to match the computer response time of the keyboard interface. Such delay time is inserted between every function code (0x01 ~ 0x1F) being transmitted. The longer the delay time is, the slower the transmission speed will be.

Inter-Function Delay… (*0~254)

1) Read the barcode above to specify the inter-function delay.
2) Read the "Decimal Value" barcode on page 265 for the desired inter-function delay (in milliseconds).
3) Read the "Validate" barcode on the same page to complete this setting.

2.2.3 ACK/NAK TIMEOUT

By default, the scanner sends data to the host without waiting for an ACK/NAK response before sending more data. Specify a value, ranging from 1 to 99 in units of 0.1 second. If no response within the specified period of time, the scanner will attempt to send the same data two more times. If all attempts fail without any notification, data loss will occur.

ACK/NAK Time-out after … (*0~99)

1) Read the barcode above to specify the time interval for the scanner to send data and wait for a response from the host.
2) Read the "Decimal Value" barcode on page 265. For example, read "1" and "0" for the scanner to automatically shut down after being idle for 1 second.
3) Read the "Validate" barcode on the same page to complete this setting.

Update

ACK/NAK Error Beep

Enable Error Beep

***Disable Error Beep**

Note: We suggest enabling the error beep so that you will be notified of such data loss and have the scanner re-read data.

Enter Setup

2.3 *BLUETOOTH*® SPP MASTER

As a SPP master device, the scanner will be able to resume connection with the host upon powering on again, as long as the host application is running. If the scanner fails to resume connection, it will try every 5 seconds to re-connect to the host unless you read the "Reset Connection" or "Restore System Defaults" barcode.

For *Bluetooth*® SPP Master, refer 3.2.2 Configure Related Settings for related connection settings.

Note: In SPP Master Mode, scanner has to connect to the host within the specified period of time (2 minutes by default). During the connection, the scanner will enter into idle mode to save power. It will automatically turn off when the time is up. Refer to 1.1.3 Auto Power Off & Power-Saving.

2.3.1 ACTIVATE *BLUETOOTH*® SPP MASTER MODE

This is SPP Master Mode.

Activate *Bluetooth*® SPP, Master Mode

100007

Connect with the target device by scanning two setting barcodes in sequence

Produce two setup barcodes for the target SPP slave device, just like what we do for 3610.

- "Set Connection"
- "MAC ID"

Note: The "MAC ID" barcode must have a prefix of two characters, either "0x" or "0X", followed by the real MAC address of the target device.

Usage:

1) Read the "Activate *Bluetooth*® SPP, Master Mode" barcode above and barcodes for connection settings, such as authentication and preset PIN. Skip this step if no connection settings are desired.
2) Read the "Set Connection" and "MAC ID" barcodes. The scanner will respond with one beep upon reading each of the barcodes.

Set Connection

88686471166254

Prefix "0X" to target MAC address

0X00D0176F0030

Update

Note: Read the “Set Connection” barcode first, and then the “MAC ID” barcode within 10 seconds.

Instead of producing the “MAC ID” barcode, you may read the setup barcodes for entering the MAC address.

- Read the “Abort” barcode to cancel the operation at any time while reading setup barcodes for the MAC address. If the MAC address has not been completed yet, reading the “Validate” barcode can cancel the operation as well.

Enter MAC ID in Hexadecimal…

Usage:

1) Read the barcode above.
2) Read the “Hexadecimal Value” barcode on page 266 for the desired MAC address.
3) Read the “Validate” barcode on the same page to complete this setting.

Connect with the target device by scanning a single 1D setting barcode

Users can produce a single 1D setup barcode that combines the “Set Connection” and “MAC ID” setup barcodes to connect with the target device. While producing the barcode, be aware the letter upper/lower case “SeTcOn” and the barcode must be the Code 128 symbology.

Usage:

1) Read the “Activate *Bluetooth*® SPP, Master Mode” barcode above and barcodes for connection settings, such as authentication and preset PIN. Skip this step if no connection settings are desired.
2) Read the “SeTcOnxxxxxxxxxxxxx” 1D single barcode below. The scanner will respond with one beep upon reading the barcode.

Connect with the target device by scanning a single 2D setting barcode

Users can also scan a single 2D barcode that combines the “Set Connection” and “MAC ID” setup barcodes to connect with the target device. The example below is a 2D barcode containing codes ‘#@CipherLab’, ‘88686471166254’ (Set Connection), ‘0x’ (Prefix to the target MAC ID), and ‘00D0176F0030’ (MAC ID of the target device). Underlining the digits is to make them more readable.

#@CipherLab88686471166254<u>0X</u><u>00D0176F0030</u>

Command	Purpose
#@CipherLab	Enter Setup
88686471166254	Set connection
0X	Prefix to the target MAC ID
00d0176f0030	MAC address ID of the target device

Enter Setup

The concatenation of setup barcodes can be combined to create a single 2D barcode as below:

2D One-Scan Setup Barcode for connecting with a target device

Exit SPP Master Mode

To stop such re-connection, read “Reset Connection” or “Restore System Defaults” barcode so that the current connection record (= MAC ID) will be cleared. Then, the scanner will restart itself automatically. Go through the process in 3.2.3 Connect to Dongle to establish a new WPAN connection.

Reset Connection

2.3.2 INTER-FUNCTION DELAY

By default, the inter-function delay is set to zero. Specify a value, ranging from 0 to 254 in units of milliseconds, to match the computer response time of the keyboard interface. Such delay time is inserted between every function code (0x01 ~ 0x1F) being transmitted. The longer the delay time is, the slower the transmission speed will be.

Inter-Function Delay… (*0~254)

1) Read the barcode above to specify the inter-function delay.
2) Read the “Decimal Value” barcode on page 265 for the desired inter-function delay (in milliseconds).
3) Read the “Validate” barcode on the same page to complete this setting.

Update

2.3.3 ACK/NAK TIMEOUT

By default, the scanner sends data to the host without waiting for an ACK/NAK response before sending more data. Specify a value, ranging from 1 to 99 in units of 0.1 second. If no response within the specified period of time, the scanner will attempt to send the same data two more times. If all attempts fail without any notification, data loss will occur.

ACK/NAK Time-out after … (*0~99)

1) Read the barcode above to specify the time interval for the scanner to send data and wait for a response from the host.
2) Read the "Decimal Value" barcode on page 265. For example, read "1" and "0" for the scanner to automatically shut down after being idle for 1 second.
3) Read the "Validate" barcode on the same page to complete this setting.

ACK/NAK Error Beep

Enable Error Beep

***Disable Error Beep**

Note: We suggest enabling the error beep so that you will be notified of such data loss and have the scanner re-read data.

2.3.4 SWITCH BETWEEN MASTER/SLAVE MODE

After the scanner has established a connection as a SPP slave device, you may read the "Activate *Bluetooth*® SPP, Master Mode" setup barcode to switch to SPP Master Mode. This will result in easy and reliable re-connection, just like connecting with 3610.

Enter Setup

2.3.5 BT SPP MASTER HARDWARE FLOW CONTROL

By default, the data sending via Bluetooth SPP doesn't employ hardware flow control. In some cases users may want to enable hardware flow control to prevent data loss during transmission. Please scan the barcode below to enable/disable it.

Enable

100174

***Disable**

100173

2.3.6 BT SPP MASTER AUTO-RECONNECTION

Users can decide whether to have the scanner automatically reconnect to a paired device after disconnection, and the occasion for reconnecting.

***Auto reconnect immediately**

100168

Auto reconnect on data being scanned

100169

Auto reconnect off

100170

Update

2.4 USB HID VIA 3610

For USB HID, connect 3610 to the USB port of PC, and then connect the scanner to 3610. The scanned data will be transmitted to the computer. To capture the data run any text editor on your computer.

HID Settings	Defaults
Keyboard Type	PCAT (US)
Numeric Layout	Normal
Capital Lock Type	Normal
Capital Lock State	Off
Alphabet Transmission	Case-sensitive
Numeric Transmission	Alphanumeric keypad
Kanji Transmission	Disable
Inter-Character Delay	0 (ms)
Inter-Function Delay	0 (ms)

Enter Setup

2.4.1 ACTIVATE USB HID & SELECT KEYBOARD TYPE

When USB HID interface is activated, you will have to select a keyboard type to complete this setting.

Activate 3610 USB HID & Select Keyboard Type…

1) Read the barcode above to activate USB HID and select a keyboard type.
2) Read the "Decimal Value" barcode on page 265. Refer to the table below for the number of desired keyboard type.
3) Read the "Validate" barcode on the same page to complete this setting.

Note: If this interface is not activated, you can also simply have the scanner read the one-scan setting barcode to activate BT HID and select keyboard type. Please refer to Appendix VI - Remote USB HID (via 3610).

USB HID

By default, the keyboard type is set to PCAT (US). The following keyboard types are supported —

No.	Keyboard Type	No.	Keyboard Type
64	PCAT (US)	72	PCAT (Spanish)
65	PCAT (French)	73	PCAT (Portuguese)
66	PCAT (German)	74	PS55 A01-2 (Japanese)
67	PCAT (Italian)	75	User-defined table
68	PCAT (Swedish)	76	PCAT (Turkish)
69	PCAT (Norwegian)	77	PCAT (Hungarian)
70	PCAT (UK)	78	PCAT (Swiss German)
71	PCAT (Belgium)	79	PCAT (Danish)

Update

2.4.2 KEYBOARD SETTINGS

- Alphabet Layout
- Numeric Layout
- Capital Lock Type
- Capital Lock Setting
- Alphabet Transmission
- Numeric Transmission
- Kanji Transmission

Alphabet Layout

By default, the alphabet layout is set to normal mode, also known as the standard English layout. Select French or German keyboard layout if necessary. The scanner will make adjustments when sending the "A", "Q", "W", "Z", "Y", and "M" characters according to this setting.

***Normal**

AZERTY

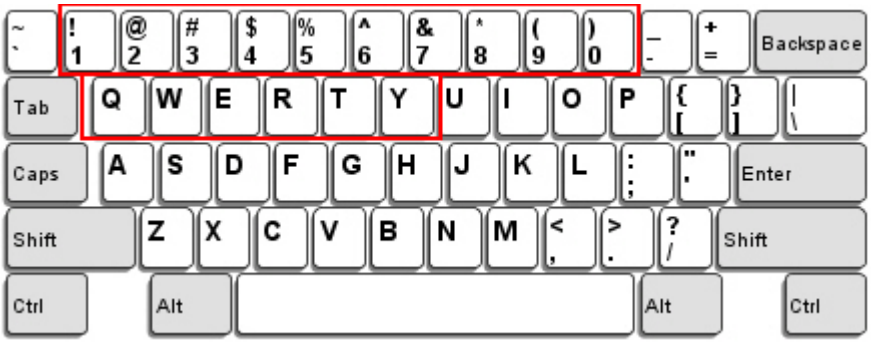
QWERTZ

Note: This setting only works when the keyboard type selected is US keyboard, such as PCAT (US). The Alphabet Layout and Numeric Layout setting must match your keyboard.

Enter Setup

US Keyboard Style – Normal

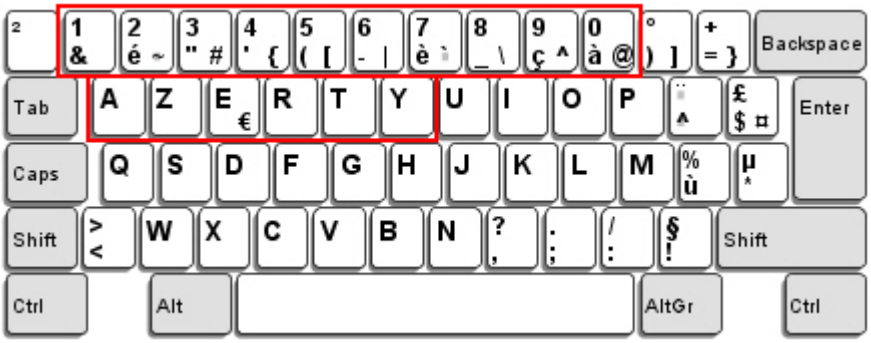
QWERTY layout, which is normally used in western countries.



- Select “Lower Row” for the “Numeric Layout” setting because the upper row is for special characters.

French Keyboard Style – AZERTY

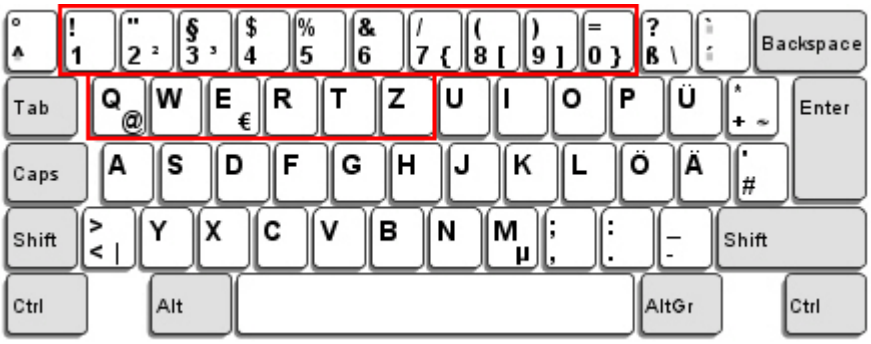
French layout; see below for French Keyboard Style.



- Select “Upper Row” for the “Numeric Layout” setting because the lower row is for special characters.

German Keyboard Layout – QWERTZ

German layout; see below for German Keyboard Style.



- Select “Lower Row” for the “Numeric Layout” setting because the upper row is for special characters.

Numeric Layout

Select a proper layout that matches the alphabet layout. The scanner will make adjustments according to this setting.

Options	Description
Normal	Depends on the [Shift] key or [Shift Lock] setting
Lower Row	For QWERTY or QWERTZ keyboard
Upper Row	For AZERTY keyboard

***Normal**

Upper Row

Lower Row

Note: This setting is to be used with the Character Substitution setting when support for certain keyboard types (languages) is unavailable but required.

Capital Lock Type & Setting

In order to send the alphabet with correct case, the scanner needs to know the status of Caps Lock on the keyboard. Incorrect settings may result in reversed case of the alphabet being transmitted.

Cap Lock Type	Description
Normal	Normal type
Capital Lock	When enabled, the keys of alphabetic characters will be interpreted as capital letters. However, this does not affect the number or punctuation keys.
Shift Lock	When enabled, the keys of alphabetic characters will be interpreted as capital letters. In addition, this affects the number or punctuation keys.

***Normal**

Shift Lock

Enter Setup

Capital Lock

100044

Capital Lock State	Description
Capital Lock OFF	Assuming that the status of Caps Lock on the keyboard is OFF, transmitted characters are exactly the same as in the barcode (when "case-sensitive" is selected for Alphabet Transmission).
Capital Lock ON	Assuming that the status of Caps Lock on the keyboard is ON, transmitted characters are exactly the same as in the barcode (when "case-sensitive" is selected for Alphabet Transmission). ▸ Refer to the Capital Lock Type above.
Auto Detection (suggested use for most applications)	The scanner will automatically detect the status of Caps Lock on the keyboard before data is transmitted; transmitted characters are exactly the same as in the barcode (when "case-sensitive" is selected for Alphabet Transmission).

Auto Detect

100054

Capital Lock ON

100053

***Capital Lock OFF**

100052

Update

Alphabet Transmission

By default, the alphabet transmission is case-sensitive, meaning that the alphabet will be transmitted according to the original case, the status of Caps Lock on the keyboard, as well as the Capital Lock setting. Select [Ignore Case] to have alphabet transmitted according to the status of Caps Lock on the keyboard only.

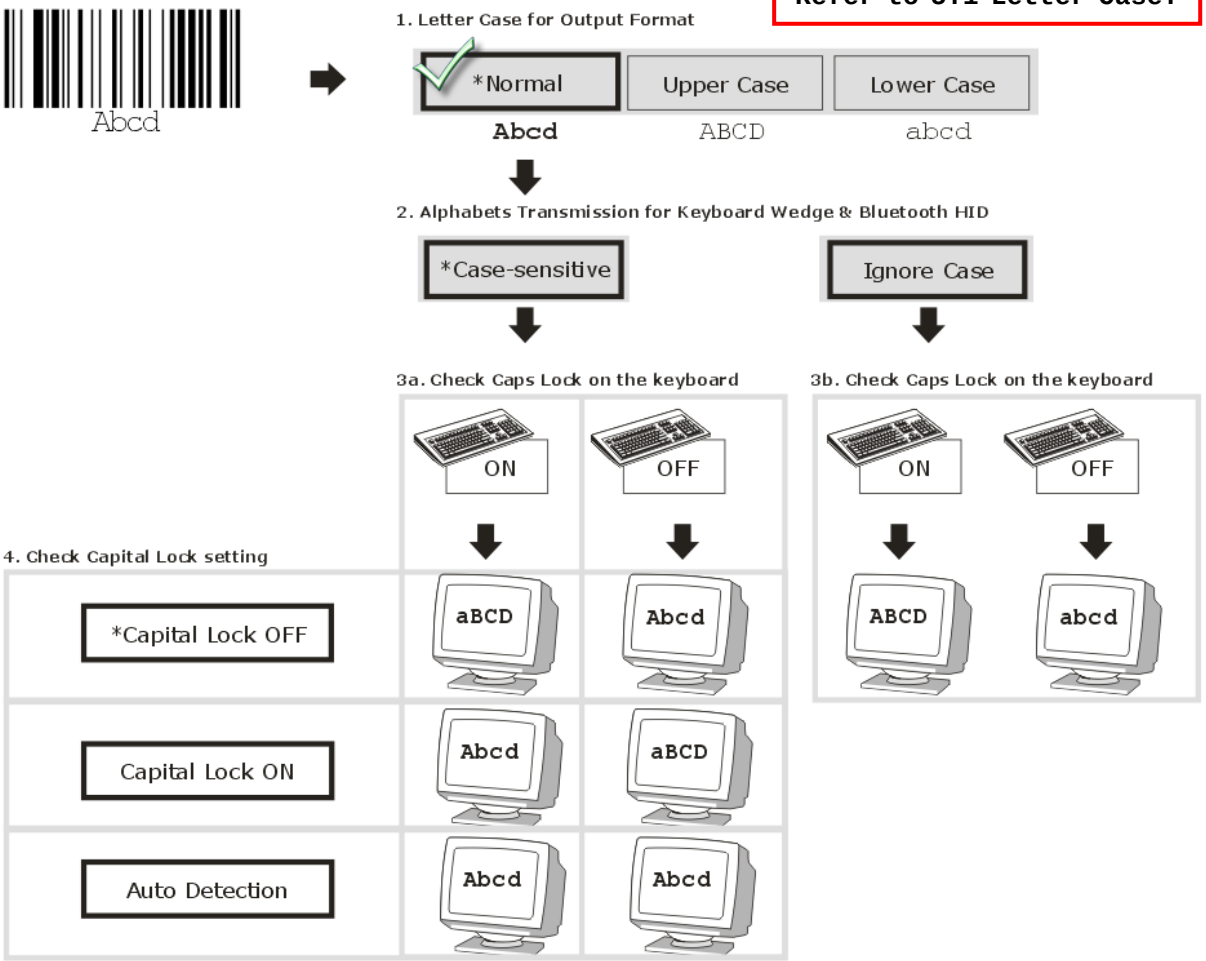
Ignore Case

100051

***Case-sensitive**

100050

Refer to 5.1 Letter Case.



Enter Setup

Numeric Transmission

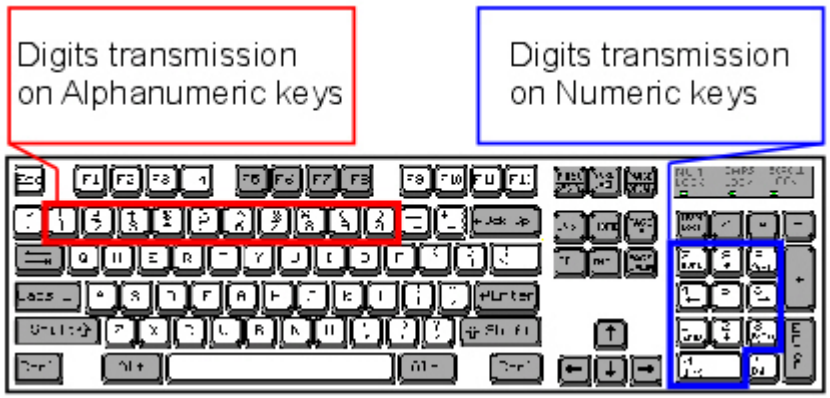
By default, the alphanumeric keypad is used for transmitting digits. Select “Numeric Keypad” if you wish to use the keys on the numeric keypad.

Numeric Key

100041

***Alphanumeric Key**

100040



Note: If you select “Numeric Keypad”, the Num Lock status of the physical keyboard should be "ON".

Kanji Transmission

Kanji Transmission is supported by the scanner when either *Bluetooth*® HID or USB HID via 3610 is selected for the output interface. By Kanji Transmission, when the host computer is running on Japanese Windows O.S., the scanner is able to transmit Japanese characters including the Chinese characters used in modern Japanese writing system.

Kanji Transmission is disabled by default. Enable/disable scanner’s Kanji Transmission by reading the following barcodes:

Enable

100067

***Disable**

100066

Update

2.4.3 INTER-CHARACTER DELAY

By default, the inter-character delay is set to zero. Specify a value, ranging from 0 to 254 in units of milliseconds, to match the computer response time of the keyboard interface. Such delay time is inserted between every character being transmitted. The longer the delay time is, the slower the transmission speed will be.

Inter-Character Delay… (*0~254)

100011

1) Read the barcode above to specify the inter-character delay.
2) Read the "Decimal Value" barcode on page 265 for the desired inter-character delay (in milliseconds).
3) Read the "Validate" barcode on the same page to complete this setting.

2.4.4 INTER-FUNCTION DELAY

By default, the inter-function delay is set to zero. Specify a value, ranging from 0 to 254 in units of milliseconds, to match the computer response time of the keyboard interface. Such delay time is inserted between every function code (0x01 ~ 0x1F) being transmitted. The longer the delay time is, the slower the transmission speed will be.

Inter-Function Delay… (*0~254)

100012

1) Read the barcode above to specify the inter-function delay.
2) Read the "Decimal Value" barcode on page 265 for the desired inter-function delay (in milliseconds).
3) Read the "Validate" barcode on the same page to complete this setting.

Enter Setup

2.4.5 HID CHARACTER TRANSMIT MODE

By default, HID interface sends data to the host in batch. Read the “By Character” barcode will send the data one character at a time.

***Batch Processing**

By Character

2.4.6 SPECIAL KEYBOARD FEATURE

By default, the special keyboard feature is based on the factory definition. You can decide whether to apply the special keyboard feature. Refer to Keyboard Wedge Table.

***Apply**

Bypass

2.4.7 USB HID VIA 3610 AUTO-RECONNECTION

Users can decide whether to have the scanner automatically reconnect to a paired device after disconnection, and the occasion for reconnecting.

***Auto reconnect immediately**

Auto reconnect on data being scanned

Auto reconnect off

Update

2.5 USB VIRTUAL COM VIA 3610

Connect 3610 to the USB port of PC, and then connect the scanner to 3610. You may run HyperTerminal.exe on the computer to view and capture the data transmission from the scanner.

2.5.1 ACTIVATE USB VIRTUAL COM

Activate 3610 USB Virtual COM

100004

Note: If using USB Virtual COM for the first time, you must install its driver beforehand. Driver version 5.4 or later is required. Please remove older versions before installing new ones!

2.5.2 ACTIVATE USB VIRTUAL COM_CDC

Activate 3610 USB Virtual COM_CDC

100031

Note: 3610 with firmware version 2.0 or later supports this function.

2.5.3 INTER-FUNCTION DELAY

By default, the inter-function delay is set to zero. Specify a value, ranging from 0 to 254 in units of milliseconds, to match the computer response time of the keyboard interface. Such delay time is inserted between every function code (0x01 ~ 0x1F) being transmitted. The longer the delay time is, the slower the transmission speed will be.

Inter-Function Delay… (*0~254)

100012

1) Read the barcode above to specify the inter-function delay.
2) Read the "Decimal Value" barcode on page 265 for the desired inter-function delay (in milliseconds).
3) Read the "Validate" barcode on the same page to complete this setting.

Enter Setup

2.5.4 ACK/NAK TIMEOUT

By default, the scanner sends data to the host without waiting for an ACK/NAK response before sending more data. Specify a value, ranging from 1 to 99 in units of 0.1 second. If no response within the specified period of time, the scanner will attempt to send the same data two more times. If all attempts fail without any notification, data loss will occur.

ACK/NAK Time-out after … (*0~99)

1) Read the barcode above to specify the time interval for the scanner to send data and wait for a response from the host.
2) Read the "Decimal Value" barcode on page 265. For example, read "1" and "0" for the scanner to automatically shut down after being idle for 1 second.
3) Read the "Validate" barcode on the same page to complete this setting.

ACK/NAK Error Beep

Enable Error Beep

***Disable Error Beep**

Note: We suggest enabling the error beep so that you will be notified of such data loss and have the scanner re-read data.

Update

2.5.5 USB VCOM VIA 3610 AUTO-RECONNECTION

Users can decide whether to have the scanner automatically reconnect to a paired device after disconnection, and the occasion for reconnecting.

***Auto reconnect immediately**

Auto reconnect on data being scanned

Auto reconnect off

Enter Setup

2.6 DIRECT USB HID

1662/1664 supports “Direct” USB HID interface for memory mode. Use the provided USB cable to connect 1662/1664 to the USB port of PC. Run any text editor on a computer to view and capture the scanned data being transmitted to the computer. Refer to 1.2.2 Memory Mode.

HID Settings	Defaults
Keyboard Type	HID PCAT (US)
Numeric Layout	Normal
Capital Lock Type	Normal
Capital Lock State	OFF
Alphabet Transmission	Case Sensitive
Numeric Transmission	Alphanumeric Keypad
Kanji Transmission	Disable
Alphabet Layout	Normal
Inter-Character Delay	0 (ms)
Inter-Function Delay	0 (ms)

2.6.1 ACTIVATE USB HID & SELECT KEYBOARD TYPE

When USB HID interface is activated, please select a keyboard type to complete this setting.

Activate Direct USB HID & Select Keyboard Type…

1) Read the barcode above to activate USB HID and select a keyboard type.
2) Read the "Decimal Value" barcode page 265 . Refer to the table below for the number of desired keyboard type.
3) Read the "Validate" barcode on the same page to complete this setting.

USB HID

By default, the keyboard type is set to PCAT (US). The following keyboard types are supported for PC —

No.	Keyboard Type (PCAT)	No.	Keyboard Type (PCAT)
64	PCAT (US)	73	PCAT (Portuguese)
65	PCAT (French)	74	PS55 A01-2 (Japanese)
66	PCAT (German)	75	User-defined table
67	PCAT (Italian)	76	PCAT (Turkish)
68	PCAT (Swedish)	77	PCAT (Hungarian)
69	PCAT (Norwegian)	78	PCAT (Swiss German)
70	PCAT (UK)	79	PCAT (Danish)
71	PCAT (Belgium)	80	PCAT (Dutch)
72	PCAT (Spanish)	87	PCAT (Brazilian Portuguese)

Enter Setup

The following keyboard types are supported for Apple —

No.	Keyboard Type (Apple)	No.	Keyboard Type (Apple)
64	Apple (US)	78	Apple (Swiss German)
65	Apple (French)	79	Apple (Danish)
66	Apple (German)	80	Apple (Dutch)
67	Apple (Italian)	81	Apple (Greek)
68	Apple (Swedish)	82	Apple (Hebrew)
69	Apple (Norwegian)	83	Apple (Russian)
72	Apple (Spanish)	84	Apple (Flemish)
73	Apple (Portuguese)	85	Apple (Arabic)
75	User-defined table	86	Apple (Austria German)
76	Apple (Turkish)	87	Apple (Brazilian Portuguese)

Note: 81/82/83/85 keyboard types don't support English input.

Update

2.6.2 KEYBOARD SETTINGS

- Alphabet Layout
- Numeric Layout
- Capital Lock Type
- Capital Lock Setting
- Alphabet Transmission
- Numeric Transmission
- Kanji Transmission

Alphabet Layout

By default, the alphabet layout is set to normal mode, also known as the standard English layout. Select French or German keyboard layout if necessary. The scanner will make adjustments when sending the "A", "Q", "W", "Z", "Y", and "M" characters according to this setting.

***Normal**

AZERTY

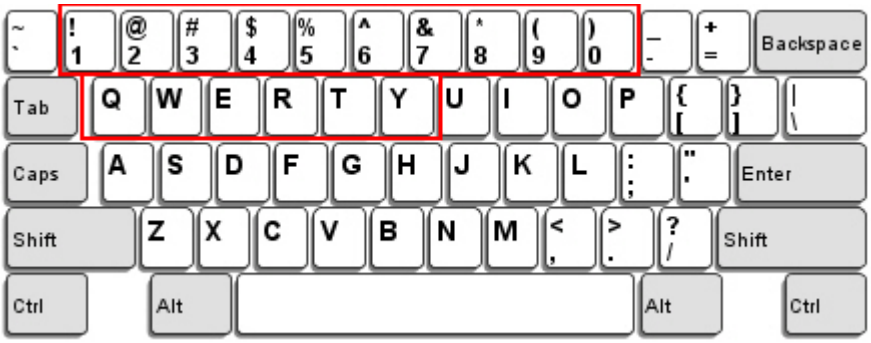
QWERTZ

Note: This setting only works when the keyboard type selected is US keyboard, such as PCAT (US). The Alphabet Layout and Numeric Layout setting must match using keyboard.

Enter Setup

US Keyboard Style – Normal

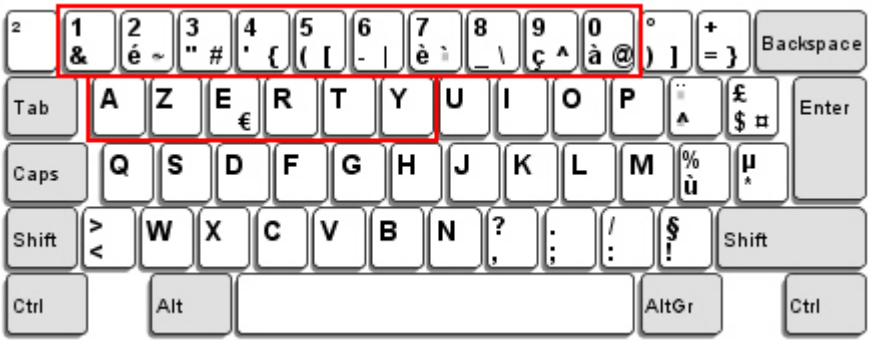
QWERTY layout, which is normally used in western countries.



- Select “Lower Row” for the “Numeric Layout” setting because the upper row is for special characters.

French Keyboard Style – AZERTY

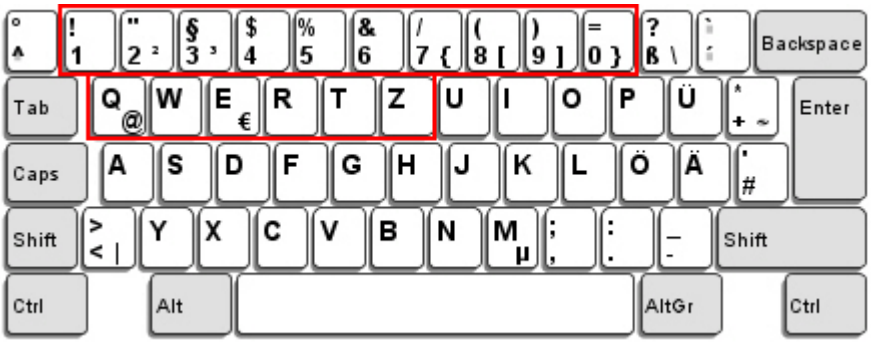
French layout; see below for French Keyboard Style.



- Select “Upper Row” for the “Numeric Layout” setting because the lower row is for special characters.

German Keyboard Layout – QWERTZ

German layout; see below for German Keyboard Style.



- Select “Lower Row” for the “Numeric Layout” setting because the upper row is for special characters.

Numeric Layout

Select a proper layout that matches the alphabet layout. The scanner will make adjustments according to this setting.

Options	Description
Normal	Depends on the [Shift] key or [Shift Lock] setting
Lower Row	For QWERTY or QWERTZ keyboard
Upper Row	For AZERTY keyboard

***Normal**

100046

Upper Row

100049

Lower Row

100048

Note: This setting is to be used with the Character Substitution setting when support for certain keyboard types (languages) is unavailable but required.

Capital Lock Type & Setting

In order to send the alphabet with correct case, the scanner needs to know the status of Caps Lock on the keyboard. Incorrect settings may result in reversed case of the alphabet being transmitted.

Cap Lock Type	Description
Normal	Normal type
Capital Lock	When enabled, the keys of alphabetic characters will be interpreted as capital letters. However, this does not affect the number or punctuation keys.
Shift Lock	When enabled, the keys of alphabetic characters will be interpreted as capital letters. In addition, this affects the number or punctuation keys.

***Normal**

100042

Shift Lock

100045

Enter Setup

Capital Lock

Capital Lock State	Description
Capital Lock OFF	Assuming that the status of Caps Lock on the keyboard is OFF, transmitted characters are exactly the same as in the barcode (when "case-sensitive" is selected for Alphabet Transmission).
Capital Lock ON	Assuming that the status of Caps Lock on the keyboard is ON, transmitted characters are exactly the same as in the barcode (when "case-sensitive" is selected for Alphabet Transmission). ▸ Refer to the Capital Lock Type above.
Auto Detection (suggested use for most applications)	The scanner will automatically detect the status of Caps Lock on the keyboard before data is transmitted; transmitted characters are exactly the same as in the barcode (when "case-sensitive" is selected for Alphabet Transmission).

Auto Detect

Capital Lock ON

***Capital Lock OFF**

Update

Alphabet Transmission

By default, the alphabet transmission is case-sensitive, meaning that the alphabet will be transmitted according to the original case, the status of Caps Lock on the keyboard, as well as the Capital Lock setting. Select [Ignore Case] to have alphabet transmitted according to the status of Caps Lock on the keyboard only.

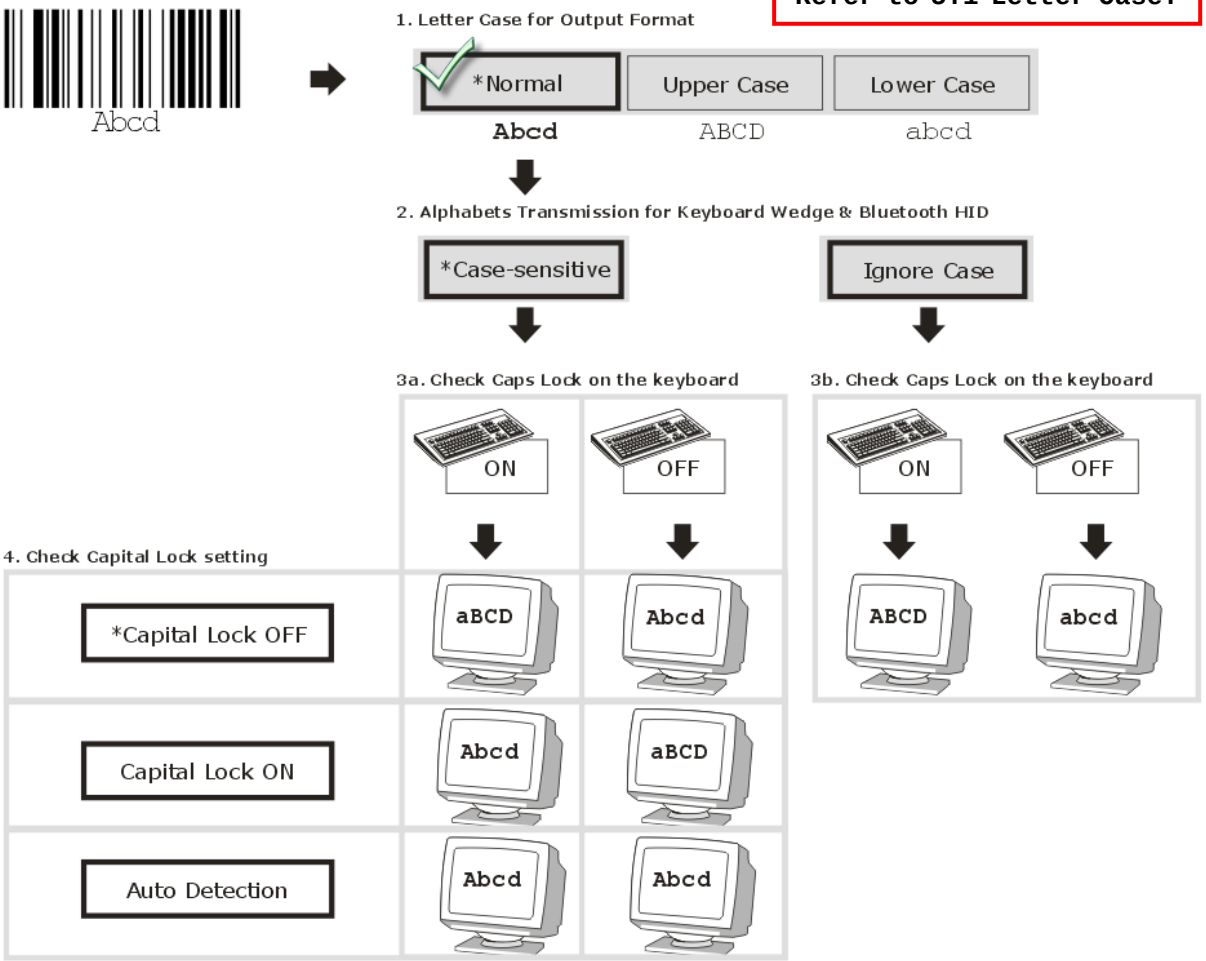
Ignore Case

100051

***Case-sensitive**

100050

Refer to 5.1 Letter Case.



Enter Setup

Numeric Transmission

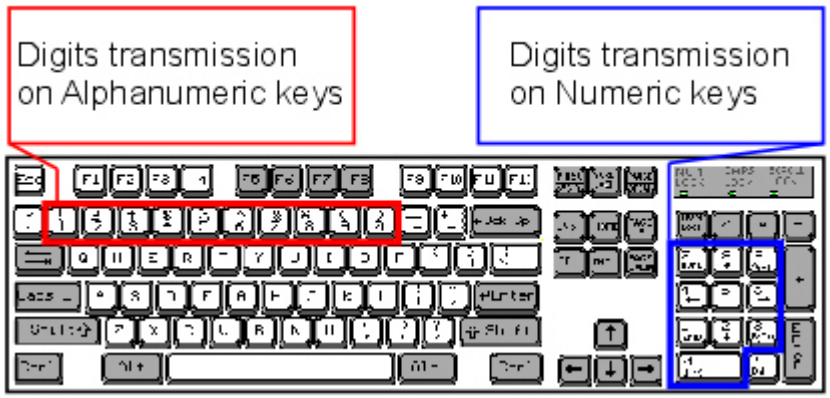
By default, the alphanumeric keypad is used for transmitting numerics. Select “Numeric Keypad” if want to use the keys on the numeric keypad.

Numeric Key

100041

***Alphanumeric Key**

100040



Note: If selecting “Numeric Keypad”, the Num Lock status of the physical keyboard should be "ON".

Kanji Transmission

Kanji Transmission is supported by the scanner when either *Bluetooth*® HID or USB HID is selected for the output interface. By Kanji Transmission, when the host computer is running on Japanese Windows O.S., the scanner is able to transmit Japanese characters including the Chinese characters used in modern Japanese writing system.

Kanji Transmission is disabled by default. Enable/disable scanner’s Kanji Transmission by reading the following barcodes:

Enable

100067

***Disable**

100066

Update

2.6.3 INTER-CHARACTER DELAY

By default, the inter-character delay is set to zero. Specify a value, ranging from 0 to 254 in units of milliseconds, to match the computer response time of the keyboard interface. Such delay time is inserted between every character being transmitted. The longer the delay time is, the slower the transmission speed will be.

Inter-Character Delay… (*0~254)

1) Read the barcode above to specify the inter-character delay.
2) Read the "Decimal Value" barcode on page 265 for the desired inter-character delay (in milliseconds).
3) Read the "Validate" barcode on the same page to complete this setting.

2.6.4 INTER-FUNCTION DELAY

By default, the inter-function delay is set to zero. Specify a value, ranging from 0 to 254 in units of milliseconds, to match the computer response time of the keyboard interface. Such delay time is inserted between every function code (0x01 ~ 0x1F) being transmitted. The longer the delay time is, the slower the transmission speed will be.

Inter-Function Delay… (*0~254)

1) Read the barcode above to specify the inter-function delay.
2) Read the "Decimal Value" barcode on page 265 for the desired inter-function delay (in milliseconds).
3) Read the "Validate" barcode on the same page to complete this setting.

Enter Setup

2.6.5 HID CHARACTER TRANSMIT MODE

By default, HID interface sends data to the host in batch, or use the scanner to read the "By Character" barcode to process data one character at a time.

***Batch Processing**

By Character

2.6.6 SPECIAL KEYBOARD FEATURE

By default, the special keyboard feature is based on the factory definition. You can decide whether to apply the special keyboard feature. Refer to Keyboard Wedge Table.

***Apply**

Bypass

2.6.7 USB POLLING INTERVAL

Scan the barcodes below to specify the USB polling interval ranging from 1 to 15ms. It's set to 10ms by default.

Set USB polling interval 1~15 ms (*10)

1) Read the barcode above to specify the USB polling interval.
2) Read the "Decimal Value" barcode on page 265 for the desired time period (in milliseconds).
3) Read the "Validate" barcode on the same page to complete this setting.

Update

2.7 DIRECT USB VIRTUAL COM

1662/1664 supports “Direct” USB Virtual COM interface for memory mode. Use the provided USB cable to connect 1662/1664 to the USB port of PC. You may run HyperTerminal.exe on a computer to view and capture the scanned data being transmitted to the computer. Refer to 1.2.2 Memory Mode.

2.7.1 ACTIVATE USB VIRTUAL COM

***Activate Direct USB Virtual COM**

100008

Note: If using USB Virtual COM for the first time, you must install its driver beforehand. Driver version 5.4 or later is required. Please remove older versions before installing new ones!

2.7.2 ACTIVATE USB VIRTUAL COM_CDC

***Activate Direct USB Virtual COM_CDC**

100010

Note: If using USB Virtual COM_CDC for the first time, you must install its driver beforehand.

2.7.3 INTER-FUNCTION DELAY

By default, the inter-function delay is set to zero. Specify a value, ranging from 0 to 254 in units of milliseconds, to match the computer response time of the keyboard interface. Such delay time is inserted between every function code (0x01 ~ 0x1F) being transmitted. The longer the delay time is, the slower the transmission speed will be.

Inter-Function Delay… (*0~254)

100012

1) Read the barcode above to specify the inter-function delay.
2) Read the “Decimal Value” barcode on page 265 for the desired inter-function delay (in milliseconds).
3) Read the “Validate” barcode on the same page to complete this setting.

Enter Setup

2.7.3 ACK/NAK TIMEOUT

By default, the scanner sends data to the host without waiting for an ACK/NAK response before sending more data. Specify a value, ranging from 1 to 99 in units of 0.1 second. If no response within the specified period of time, the scanner will attempt to send the same data two more times. If all attempts fail without any notification, data loss will occur.

ACK/NAK Time-out after … (*0~99)

1) Read the barcode above to specify the time interval for the scanner to send data and wait for a response from the host.
2) Read the "Decimal Value" barcode on page 265. For example, read "1" and "0" for the scanner to automatically shut down after being idle for 1 second.
3) Read the "Validate" barcode on the same page to complete this setting.

ACK/NAK Error Beep

Enable Error Beep

***Disable Error Beep**

Note: We suggest enabling the error beep so that data loss is notified and the scanner re-read data.

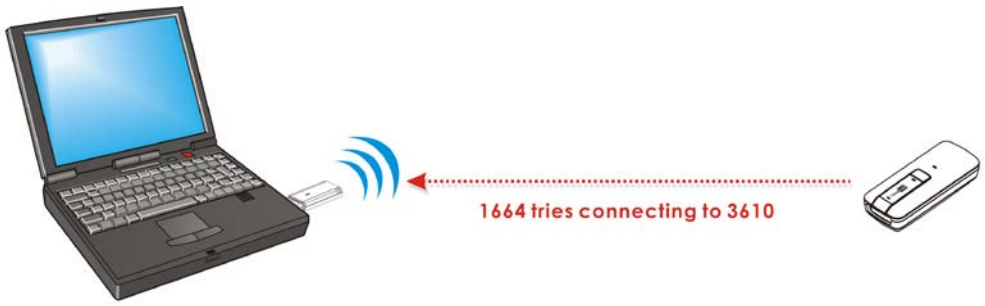
Update

Chapter 3

SET UP A WPAN CONNECTION

The scanner can be configured to send data to a host computer wirelessly via the 3610 dongle, or to a notebook computer or PDA with *Bluetooth*® wireless technology. Upon powering up, the scanner will be ready to establish a WPAN connection.

To establish a connection via 3610 after reading "Set Connection" and "Serial No." labels ...



Interface Option	Reference
USB HID	2.4 USB HID via 3610
USB Virtual COM	2.5 USB Virtual COM via 3610

To establish a connection via *Bluetooth*® dongle after pairing...

Interface Option	Reference
Bluetooth® HID	2.1 Bluetooth® HID
Bluetooth® SPP	2.2 Bluetooth® SPP Slave, 2.3 Bluetooth® SPP Master

IN THIS CHAPTER

3.1 Connecting via 3610..... 103
3.2 Connecting via *Bluetooth*® Dongle..... 106

3.1 CONNECTING VIA 3610

USB HID and USB Virtual COM are alternative interfaces between 3610 and the host it connects. By default, the interface of 3610 is set to USB HID. You can have up to seven scanners connected to one computer at the same time.

Note: If using USB Virtual COM for the first time, you must install its driver beforehand. Driver version 5.4 or later is required. Please remove older versions!

3.1.1 CONNECT TO 3610

By scanning two setting barcodes in sequence

Connect any scanner to 3610 by reading the two labels at the back of 3610. The scanner will respond with one beep upon reading each of the labels.

- "Set Connection" label
- "Serial Number" label

After reading these labels, the scanner will stay active for a specified period of time (2 minutes by default) trying to connect to the 3610 while its LED is flashing blue (On/Off ratio 0.5 s: 0.5 s). Once connected, the scanner will respond with three beeps (tone ascending from low to high), and the LED flashes blue (On/Off ratio 0.02 s: 3 s). When out of range, the scanner will respond with three short beeps (tone descending from high to low).

Usage:

Read the "Set Connection" barcode first, and then the "Serial Number" barcode. If the "Set Connection" barcode on 3610 is illegible, try this one —

Set Connection

Note: The 3610 settings will overwrite the interface-related settings on the scanners that are currently connected to 3610.

By scanning a single 1D setting barcode

Users can produce a single 1D setup barcode that combines the "Set Connection" and "3610 Serial Number" setup commands to connect with 3610. While producing the barcode, be aware the letter upper/lower case "SeTcOn" and the barcode must be the Code 128 symbology.

Usage:

Read the "SeTcOnxxxxxxxxxx" single 1D barcode ('xxxxxxxxx' represents the 3610 serial number). The scanner will respond with one beep upon reading the barcode.

By scanning a single 2D setting barcode

Users can also scan a single 2D barcode that combines the "Set Connection" and "Serial Number" setup barcodes to connect to 3610. The example below is a 2D barcode containing codes '#@CipherLab', '88686471166254' (Set Connection) and 'BS6065535' (Serial Number of 3610).

Update

Underlining the digits is to make them more readable.

#@CipherLab88686471166254BS6065535

Command	Purpose
#@CipherLab	Enter setup
88686471166254	Set connection
BS6065535	Serial number of 3610

The concatenation of setup barcodes can be combined to create a single 2D barcode as below:

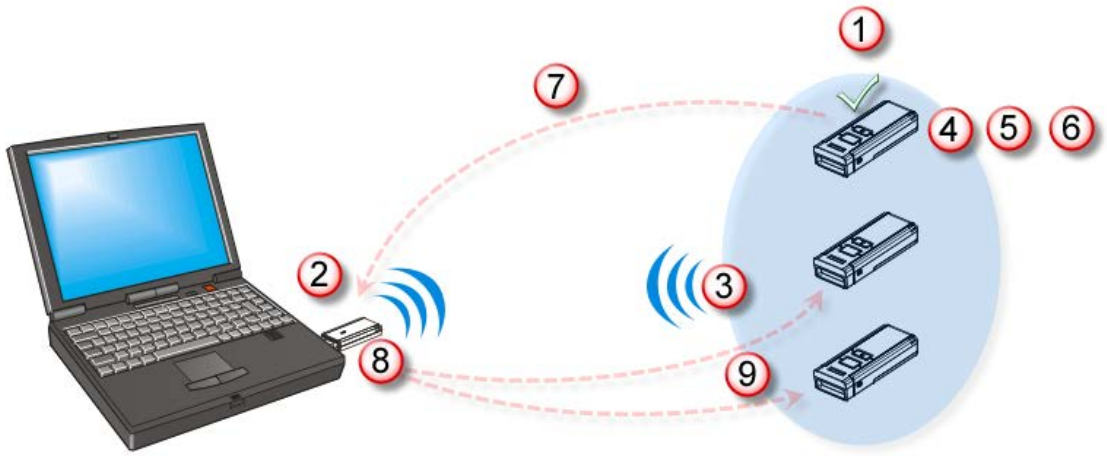
2D One-Scan Setup Barcode for connecting to 3610

Enter Setup

3.1.2 CHANGE INTERFACE

If you want to change the interface of 3610, use one of the connected scanners to configure the interface-related settings and it will pass the new settings to 3610, which will then initialize and pass the settings to any other connected scanners.

1) Read the “Set Connection” and “Serial Number” labels at the back of 3610.
2) Within two minutes, connect 3610 to the USB port of PC. For USB Virtual COM, you will need to install its driver first!
3) The scanners will connect to the computer via 3610.
4) Read the “Enter Setup” barcode to enter the configuration mode.
5) Read the desired interface barcode and configure its related settings –
   - “Activate USB HID & Select Keyboard Type”
   - “Activate USB Virtual COM”
6) Read the “Update” barcode to exit the configuration mode.
7) After the scanner resumes connection with 3610, it will pass the interface-related settings to 3610.
8) Upon receipt of the new settings, 3610 will initialize itself.
9) Updated with new settings, 3610 will pass the settings to other connected scanners.



Update

3.1.3 CONFIGURE RELATED SETTINGS

Sniff Mode (Power-saving)

By default, this feature is enabled, meaning the scanner will listen to the wireless network at a reduced rate.

***Enable**

Disable

3.2 CONNECTING VIA *BLUETOOTH*® DONGLE

3.2.1 CHANGE INTERFACE

Below is the procedure to configure the scanner before establishing a WPAN connection via *Bluetooth*® dongle.

1) Read the "Enter Setup" barcode to enter the configuration mode.
2) Read the desired interface barcode –
   - "Activate Bluetooth® HID & Select Keyboard Type"
   - "Activate Bluetooth® SPP Slave Mode"
   - "Activate Bluetooth® SPP Master Mode"
3) Read the barcodes related to WPAN settings, such as Device Name Broadcasting, Authentication & PIN Code, etc.
4) Read the "Update" barcode to exit the configuration mode.
5) The scanner will stay active for a specified period of time (2 minutes by default) waiting for a connection request from the host (SPP Slave Mode) or trying to connect to the host (HID or SPP Master Mode). Its CPU is running at full speed, and the LED is flashing blue (On/Off ratio 0.5 s: 0.5 s).

   Once connected, when out of range, the scanner will respond with three short beeps (tone descending from high to low).

Enter Setup

3.2.2 CONFIGURE RELATED SETTINGS

Sniff Mode (Power-saving)

By default, this feature is enabled, meaning the scanner will listen to the wireless network at a reduced rate.

***Enable**

Disable

Note: When connecting more than two scanners to a notebook computer or PDA with *Bluetooth*® wireless technology, we suggest that you disable the power-saving setting for a more reliable connection.

Device Name Broadcasting

The scanner can be configured to hide itself from other devices equipped with *Bluetooth*® wireless technology. Simply disable the device name broadcasting setting so that it won't be discovered by any other computer or PDA. However, broadcasting must be enabled for establishing an initial connection with the scanner. For example, disable device name broadcasting after successfully connecting the scanner to WorkStation1. Such connection will be maintained automatically unless the scanner is removed from the paired device list (called unpairing) by WorkStation1 or any changes made to authentication and the PIN code. If you want WorkStation2 to connect to the scanner, you have to enable device name broadcasting first.

***Enable**

Disable

Note: By default, device name broadcasting is enabled (which is required for initial connection).

Changing Device Name

By default, the device name (local hostname) combines the model name with serial number (for example, 1664AS2000001). Users are allowed to configure the device name with length up to 13 bytes.

Update

Change Bluetooth Local Hostname

100140

1) Read the barcode above to configure the device name.
2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string.
3) Read the "Validate" barcode to complete this setting.

Enter Setup

Authentication

When any changes are made to authentication and PIN code on the scanner side, you will have to remove the scanner from the paired device list (called unpairing) and go through the whole process to re-establish the connection.

The scanner allows up to 16 characters for a PIN code and provides two options for authentication:

Enable Authentication with Preset PIN

Read the "Use preset PIN" barcode, and change the preset PIN if necessary. This means you will have to enter exactly the same string for your computer or PDA to connect to the scanner. If the PIN or passkey is incorrect, any connection attempt will be turned down by the scanner. See step 8 in 3.2.3 Connect to Dongle.

1) Read the "Use preset PIN" barcode to enable authentication with a preset PIN.

Use Preset PIN

2) Read one of the barcodes to specify the PIN code, in decimal or hexadecimal.

By default, the PIN code is set to "0000". Maximum 16 characters are allowed.

Enter PIN in Hexadecimal …

Enter PIN in Decimal…

3) Read the "Decimal Value" barcode on page 265 or the "Hexadecimal Value" barcode on page 266 for the desired digits or character string.

Read the "Clear PIN Code" barcode first if you need to re-input the PIN code.

Clear PIN Code

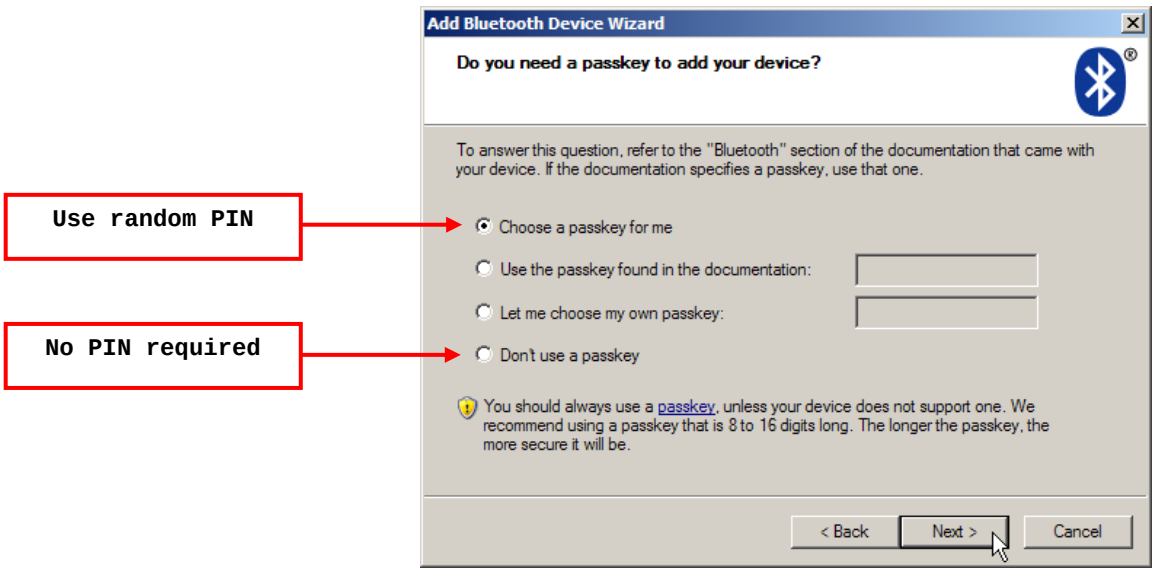
4) Read the "Validate" barcode to complete this setting.

Enable Authentication with Random PIN or No Authentication

By default, it is set to "No PIN or use random PIN", which depends on the setting of the target device. (No PIN = No authentication.)

***No PIN or use random PIN**

Update



Note: When using *Bluetooth*® HID, some device driver may not support pre-defined PIN code for authentication. In this case, make sure you have the scanner set to “No PIN or use random PIN” before pairing. While pairing, the host PIN code will be displayed on the computer screen. Have the scanner read the setup barcode “Enter PIN Code in Decimal” or “Enter PIN Code in Hexadecimal” to input the matching PIN code. Refer to Disable Authentication or Use Random PIN.

Enter Setup

3.2.3 CONNECT TO DONGLE

The procedure goes through associating devices for establishing a WPAN connection, which is pretty much the same except for the software you are using. If your computer is running Microsoft® Windows® XP (SP1 to SP3), Windows Vista® Service Pack 1 (SP1) and Windows 7, you can use the software support that Windows® includes, or you can use the driver that the device manufacturer provides. Now, let's try using the software support that Windows® XP Service Pack 2 includes.

Bluetooth® HID Procedure

By default, *Bluetooth*® HID is activated on the scanner, and the keyboard type is set to PCAT (US). When *Bluetooth*® HID is re-activated, you will have to select a keyboard type to complete this setting.

The procedure is the same as for *Bluetooth*® SPP. Refer to steps 1~11 below.

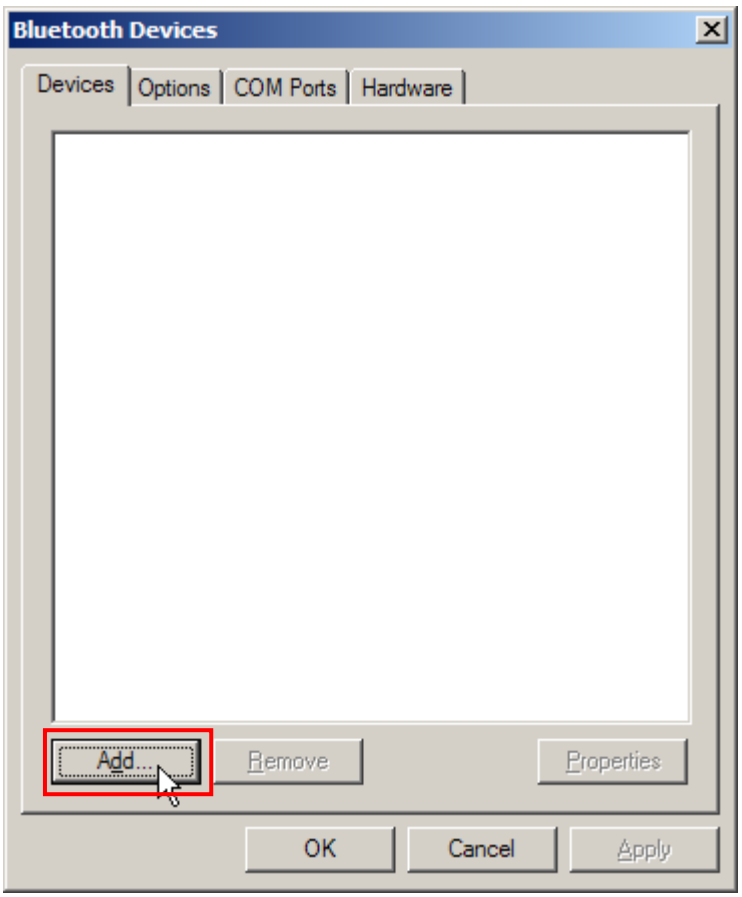
Bluetooth® SPP Procedure

1) Turn on the *Bluetooth*® function on your computer running Windows XP SP2.

2) Double-click the *Bluetooth*® icon from the lower right of the taskbar.

Alternatively, you may go to **Control Panel** > ***Bluetooth* Devices**.

3) Click [Add] to search devices nearby.



Update

4) Turn on the scanner with correct WPAN settings, such as select *Bluetooth*® SPP or *Bluetooth*® HID, broadcasting enabled, authentication enabled, and PIN code specified, etc. Select the check box of [My device is set up and ready to be found] on your computer.

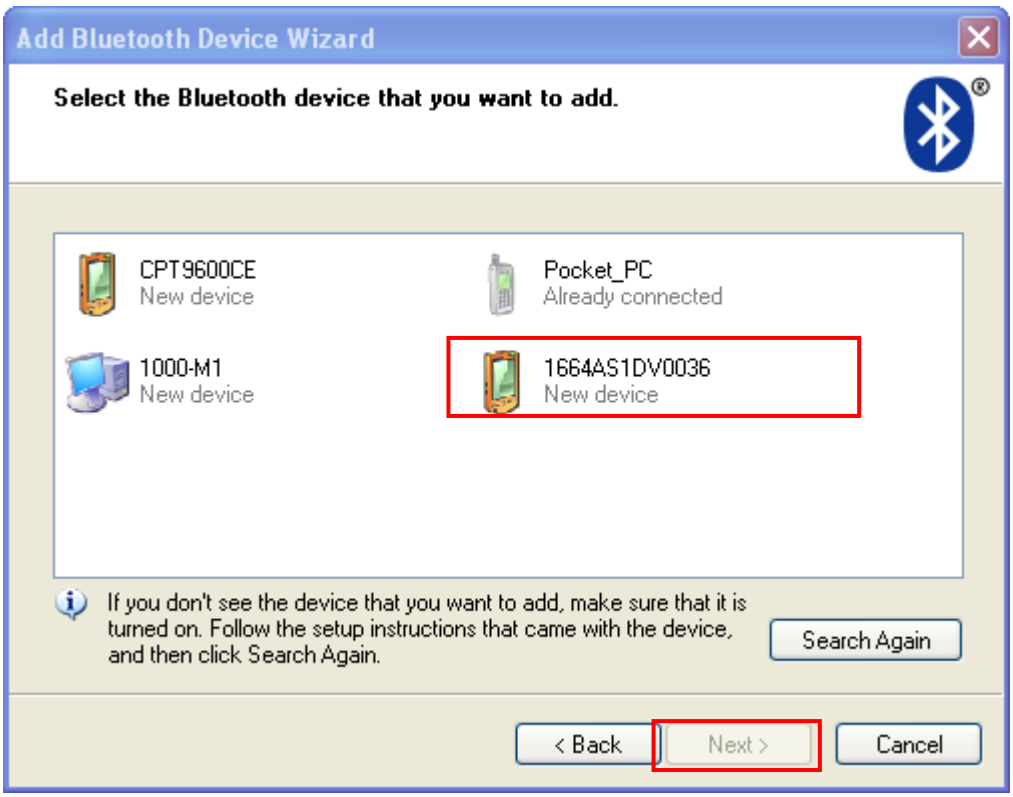
5) Click [Next].

6) Wait for a few seconds for the Wizard to search available devices nearby.

The scanner will appear with its “serial number” as the device name. You may double-check the “Serial Number” label on the scanner to ensure connecting with the correct scanner. Select the target scanner. If the target scanner does not appear on the list, click [Search Again] to refresh the list. The scanner might enter Suspend Mode now, and you can press the trigger to have it active again (=discoverable). It will then stay active for a specified period of time (2 minutes by default) and wait for PC to establish a connection.

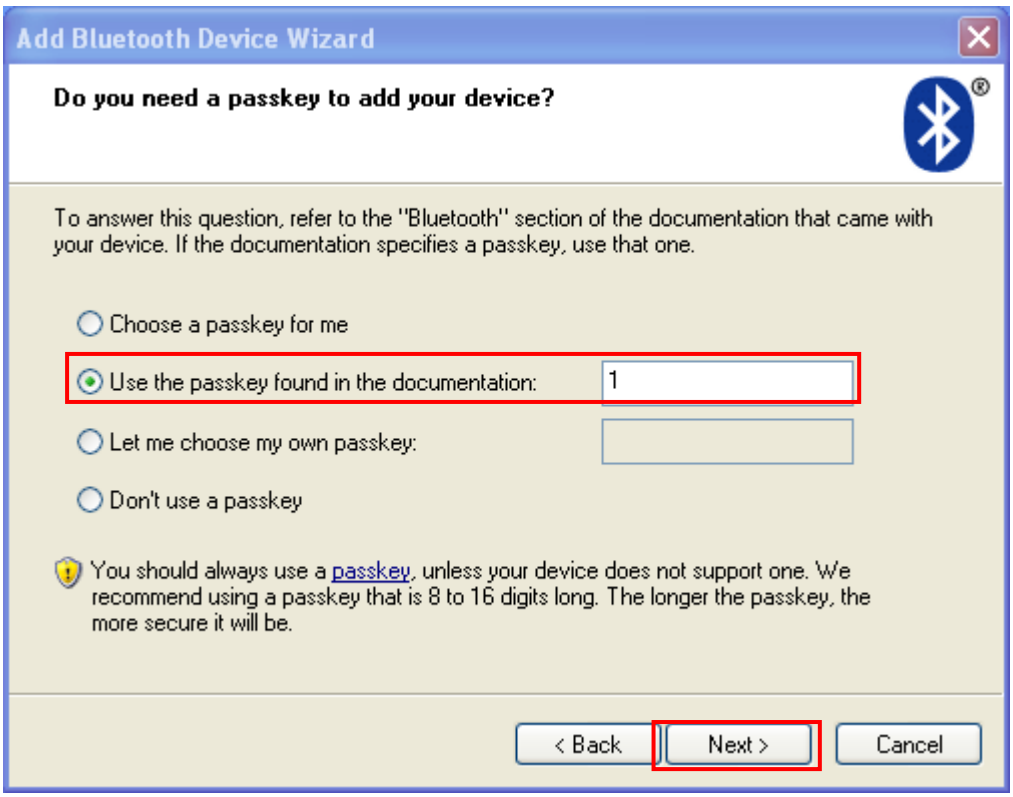
Enter Setup

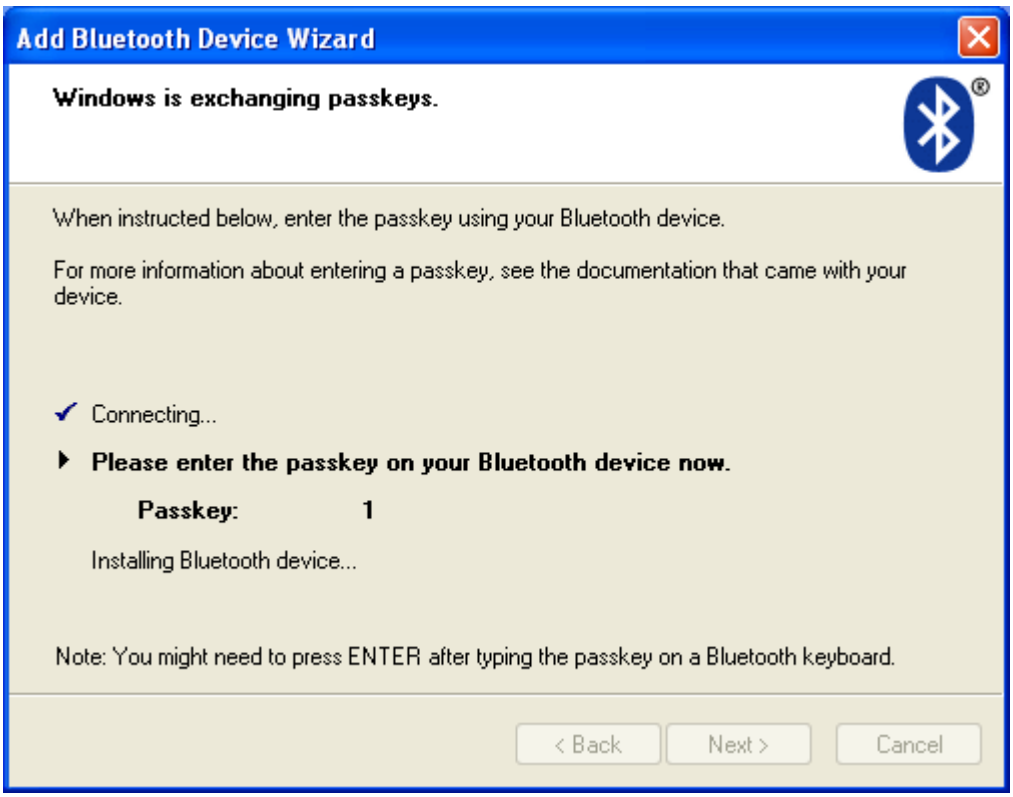
7) Click [Next].



8) Enter the passkey for authentication, which must be exactly the same as configured for the scanner.

9) Click [Next]. Wait for a few seconds for Windows to exchange passkeys.

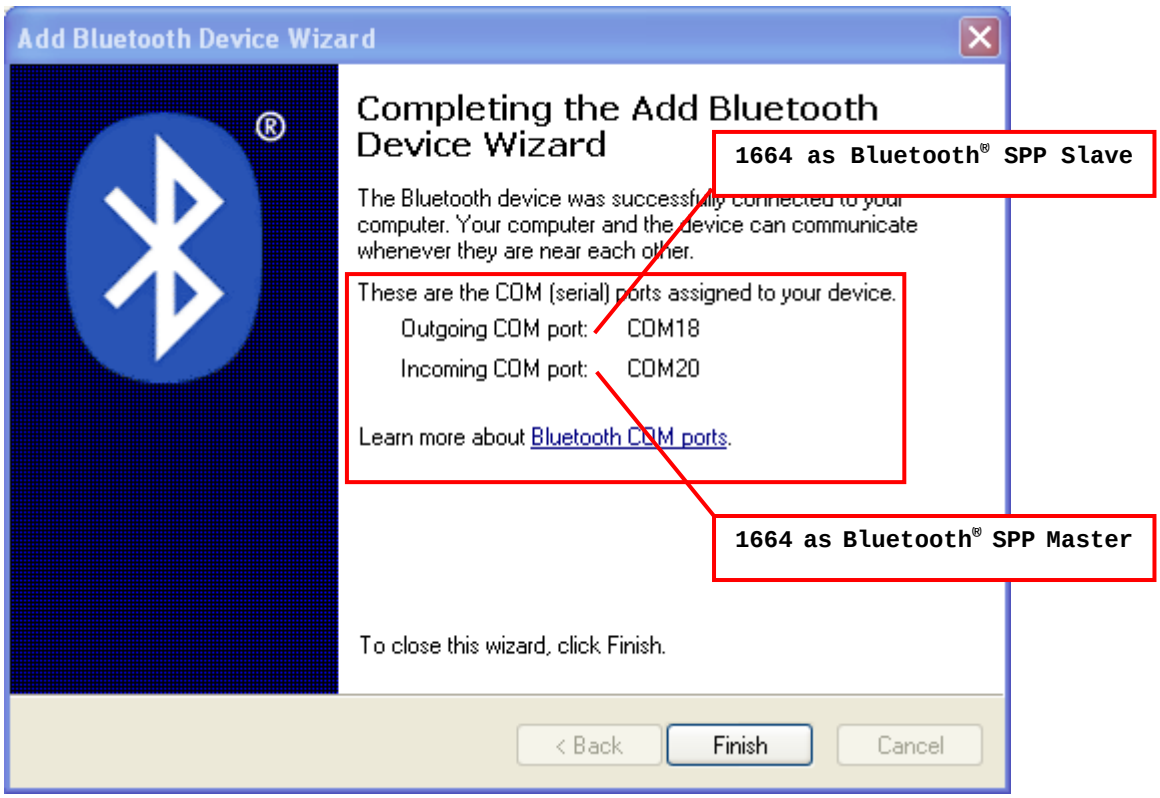




Enter Setup

Note: When *Bluetooth* security is enabled without providing a pre-set PIN code, dynamic input of PIN code is supported.

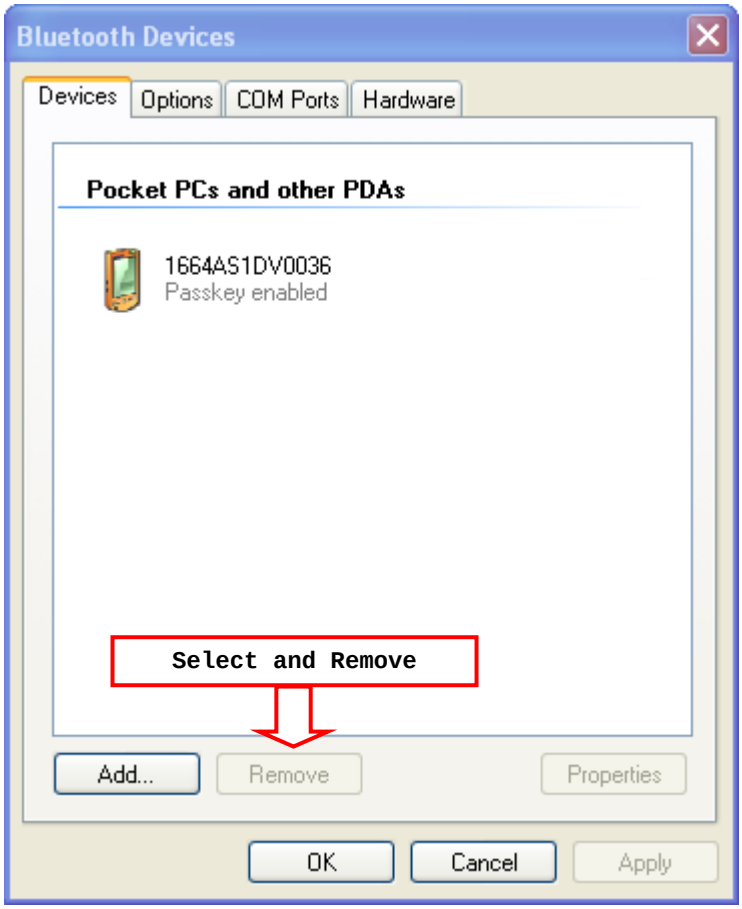
10) Click [Finish].



Update

11) Now the target scanner will be listed as shown below.

You can have up to seven scanners connected to one computer at the same time.



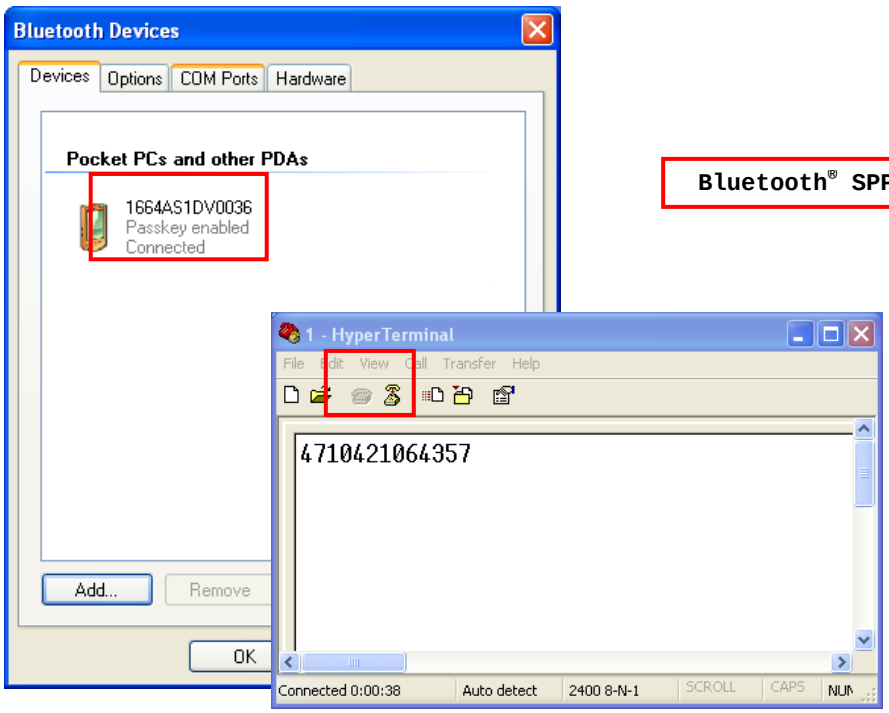
Note: When any changes are made to authentication and PIN code on the scanner side, or you want to change to use *Bluetooth*® HID, it is suggested that you remove the scanner from the paired device list (called unpairing) and go through the whole process to re-establish the connection.

12) Run the desired application on your computer, such as HyperTerminal.exe if using *Bluetooth*® SPP or Notepad.exe if using *Bluetooth*® HID.

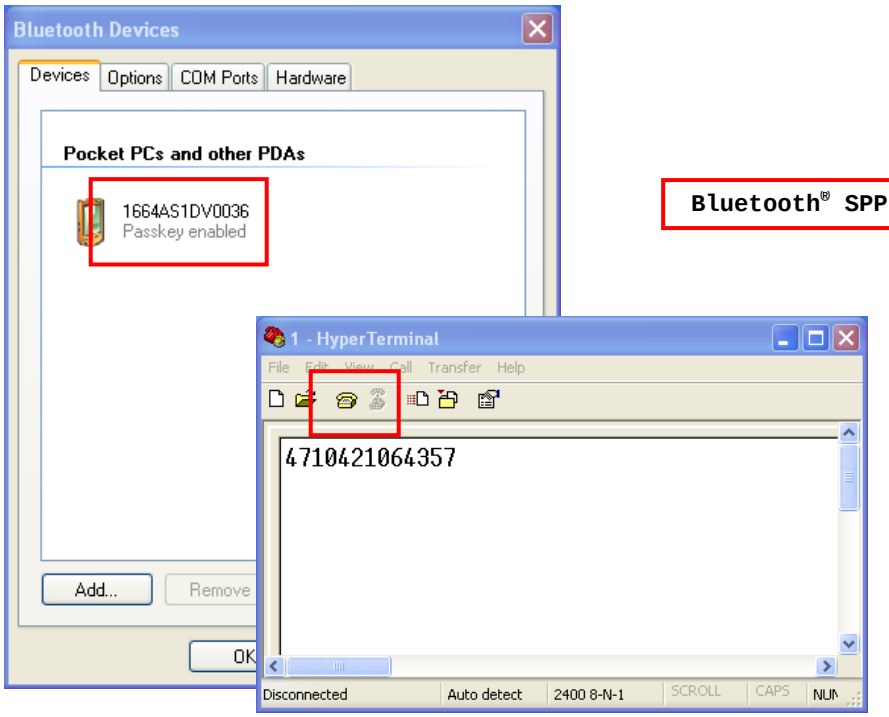
The status of the scanner listed on the device list will be updated to "Connected", indicating the WPAN connection is established successfully via the outgoing COM port if using *Bluetooth*® SPP.

Note: Even though the scanner is connected to the host with authentication disabled (= no PIN code required), the host may still request a PIN code while the application is opening COM port. Dynamic input of PIN code is supported so that you may input a matching PIN code on the scanner. Refer to Disable Authentication or Use Random PIN.

Enter Setup



Bluetooth® SPP Connected



Bluetooth® SPP Disconnected

3.2.4 SECURE SIMPLE PAIRING (SSP)

Secure Simple Pairing (SSP), introduced in *Bluetooth*® Core Specification 2.1 + EDR, is a new feature designed to ease the pairing process while keeping up the communication security level. This function is disabled by default. When connecting to a *Bluetooth*® host that supports *Bluetooth*® HID or *Bluetooth*® SPP profile, you can implement the secure simple pairing process. By scanning the Enable barcode below, the password dialog box won't show up during the pairing process.

***Disable**

Enable

Note: Secure Simple Pairing only supports to devices with *Bluetooth*® v2.1 or later.

Enter Setup

Chapter 4

CHANGE SYMBOLOGY SETTINGS

In this chapter, a brief on the symbology settings is provided for your reference.

For users' convenience, the two setting barcodes below allows disabling/enabling supported symbologies all at once.

Enable All Symbologies

Disable All Symbologies

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Update

4.1 CODABAR

***Enable**

Disable

4.1.1 START/STOP TRANSMISSION

Decide whether to include the start/stop characters in the data being transmitted.

Transmit Start/Stop Characters

***Do Not Transmit**

4.1.2 CLSI CONVERSION

When enabled, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode.

Apply CLSI Editing

***Do Not Apply**

Note: The 14-character barcode length does not include start/stop characters.

Enter Setup

4.1.3 CODE LENGTH QUALIFICATION

To prevent the "short scan" error, define the "Length Qualification" settings to ensure that the correct barcode is read by qualifying the allowable code length.

- If "Max/Min Length" is selected, the maximum length and the minimum length must be specified. It only accepts those barcodes with lengths that fall between max/min lengths specified.
- If “Fixed Length” is selected, up to 2 fixed lengths can be specified.

Note: The specified length(s) must include the check digit(s) the barcode contains.

1) Read the barcode to enable either Max. /Min. Length qualification or Fixed Length(s) qualification.

***Enable Max./Min. Length (1~55)…**

102222

Enable Fixed Length(s)…

102221

2) Read the barcode for Max. Length or Fixed Length 1, and follow steps 3~4.

Repeat steps 2~4 for Min. Length or Fixed Length 2.

Max. Length (*55) or Fixed Length 1

102223

Min. Length (*4) or Fixed Length 2

102224

3) Read the “Decimal Value” barcode on page 265 for the desired length.

4) Read the “Validate” barcode on the same page to complete this setting.

Update

4.2 CODE 25 – INDUSTRIAL 25

***Enable**

Disable

Enter Setup

4.2.1 CODE LENGTH QUALIFICATION

To prevent the "short scan" error, define the "Length Qualification" settings to ensure that the correct barcode is read by qualifying the allowable code length.

- If "Max/Min Length" is selected, the maximum length and the minimum length must be specified. It only accepts those barcodes with lengths that fall between max/min lengths specified.
- If “Fixed Length” is selected, up to 2 fixed lengths can be specified.

Note: The specified length(s) must include the check digit(s) the barcode contains.

1) Read the barcode to enable either Max. /Min. Length qualification or Fixed Length(s) qualification.

***Enable Max./Min. Length (1~55)…**

100601

Enable Fixed Length(s)…

100600

2) Read the barcode for Max. Length or Fixed Length 1, and follow steps 3~4.

Repeat steps 2~4 for Min. Length or Fixed Length 2.

Max. Length (*55) or Fixed Length 1

100602

Min. Length (*4) or Fixed Length 2

100603

3) Read the “Decimal Value” barcode on page 265 for the desired length.

4) Read the “Validate” barcode on the same page to complete this setting.

Update

4.3 CODE 25 – INTERLEAVED 25

***Enable**

Disable

4.3.1 VERIFY CHECK DIGIT

Decide whether to verify the check digit. When desired, select one of the algorithms, USS or OPCC. If incorrect, the barcode will not be accepted.

***Do Not Verify**

USS Check Digit

OPCC Check Digit

4.3.2 TRANSMIT CHECK DIGIT

Decide whether to include the check digit in the data being transmitted.

***Transmit Interleaved 25 Check Digit**

Do Not Transmit

Enter Setup

4.3.3 CONVERT TO EAN-13

Decide whether to convert a 14-character barcode into EAN-13 if the following requirements are met:

- The barcode must have a leading 0 and a valid EAN-13 check digit.
- "Verify Check Digit" must be disabled.

Convert to EAN-13

102101

***Do Not Convert**

102100

Update

4.3.4 CODE LENGTH QUALIFICATION

To prevent the "short scan" error, define the "Length Qualification" settings to ensure that the correct barcode is read by qualifying the allowable code length.

- If "Max/Min Length" is selected, the maximum length and the minimum length must be specified. It only accepts those barcodes with lengths that fall between max/min lengths specified.
- If “Fixed Length” is selected, up to 2 fixed lengths can be specified.

Note: The specified length(s) must include the check digit(s) the barcode contains.

1) Read the barcode to enable either Max. /Min. Length qualification or Fixed Length(s) qualification.

***Enable Max./Min. Length (1~55)…**

Enable Fixed Length(s)…

2) Read the barcode for Max. Length or Fixed Length 1, and follow steps 3~4.

Repeat steps 2~4 for Min. Length or Fixed Length 2.

Max. Length (*55) or Fixed Length 1

Min. Length (*4) or Fixed Length 2

3) Read the “Decimal Value” barcode on page 265 for the desired length.

4) Read the “Validate” barcode on the same page to complete this setting.

Enter Setup

4.4 CODE 25 – MATRIX 25

Enable

100311

***Disable**

100310

4.4.1 VERIFY CHECK DIGIT

Decide whether to verify the check digit. If incorrect, the barcode will not be accepted.

Verify Matrix 25 Check Digit

100433

***Do Not Verify**

100432

4.4.2 TRANSMIT CHECK DIGIT

Decide whether to include the check digit in the data being transmitted.

***Transmit Matrix 25 Check Digit**

100435

Do Not Transmit

100434

Update

4.4.3 CODE LENGTH QUALIFICATION

To prevent the "short scan" error, define the "Length Qualification" settings to ensure that the correct barcode is read by qualifying the allowable code length.

- If "Max/Min Length" is selected, the maximum length and the minimum length must be specified. It only accepts those barcodes with lengths that fall between max/min lengths specified.
- If “Fixed Length” is selected, up to 2 fixed lengths can be specified.

Note: The specified length(s) must include the check digit(s) the barcode contains.

1) Read the barcode to enable either Max. /Min. Length qualification or Fixed Length(s) qualification.

***Enable Max./Min. Length (1~55)…**

Enable Fixed Length(s)…

2) Read the barcode for Max. Length or Fixed Length 1, and follow steps 3~4.

Repeat steps 2~4 for Min. Length or Fixed Length 2.

Max. Length (*55) or Fixed Length 1

Min. Length (*4) or Fixed Length 2

3) Read the “Decimal Value” barcode on page 265 for the desired length.

4) Read the “Validate” barcode on the same page to complete this setting.

Enter Setup

4.5 CODE 25 – CHINESE 25

Enable

***Disable**

Update

4.6 ITALIAN PHARMACODE (CODE 32)

Enable

100303

***Disable**

100302

Note: Code 39 must be enabled first.

Enter Setup

4.7 CODE 39

***Enable**

Disable

4.7.1 VERIFY CHECK DIGIT

Decide whether to verify the check digit. If incorrect, the barcode will not be accepted.

Verify Code 39 Check Digit

***Do Not Verify**

4.7.2 TRANSMIT CHECK DIGIT

Decide whether to include the check digit in the data being transmitted.

***Transmit Code 39 Check Digit**

Do Not Transmit

Update

4.7.3 STANDARD/FULL ASCII CODE 39

Decide whether to support Code 39 Full ASCII that includes all the alphanumeric and special characters.

Code 39 Full ASCII

***Standard Code 39**

Note: Trioptic Code 39 and Code 39 Full ASCII cannot be enabled at the same time.

Enter Setup

4.7.4 CODE LENGTH QUALIFICATION

To prevent the "short scan" error, define the "Length Qualification" settings to ensure that the correct barcode is read by qualifying the allowable code length.

- If "Max/Min Length" is selected, the maximum length and the minimum length must be specified. It only accepts those barcodes with lengths that fall between max/min lengths specified.
- If “Fixed Length” is selected, up to 2 fixed lengths can be specified.

Note: The specified length(s) must include the check digit(s) the barcode contains.

1) Read the barcode to enable either Max. /Min. Length qualification or Fixed Length(s) qualification.

***Enable Max./Min. Length (1~55)…**

102218

Enable Fixed Length(s)…

102217

2) Read the barcode for Max. Length or Fixed Length 1, and follow steps 3~4.

Repeat steps 2~4 for Min. Length or Fixed Length 2.

Max. Length (*55) or Fixed Length 1

102219

Min. Length (*4) or Fixed Length 2

102220

3) Read the “Decimal Value” barcode on page 265 for the desired length.

4) Read the “Validate” barcode on the same page to complete this setting.

Update

4.8 TRIOPTIC CODE 39

Decide whether to decode Trioptic Code 39.

- Trioptic Code 39 is a variant of Code 39 used in the marking of computer tap cartridges. It always contains six characters.

Enable

***Disable**

Note: Trioptic Code 39 and Code 39 Full ASCII cannot be enabled at the same time.

Enter Setup

4.9 CODE 93

***Enable**

Disable

Update

4.9.1 CODE LENGTH QUALIFICATION

To prevent the "short scan" error, define the "Length Qualification" settings to ensure that the correct barcode is read by qualifying the allowable code length.

- If "Max/Min Length" is selected, the maximum length and the minimum length must be specified. It only accepts those barcodes with lengths that fall between max/min lengths specified.
- If “Fixed Length” is selected, up to 2 fixed lengths can be specified.

Note: The specified length(s) must include the check digit(s) the barcode contains.

1) Read the barcode to enable either Max. /Min. Length qualification or Fixed Length(s) qualification.

***Enable Max./Min. Length (1~55)…**

102226

Enable Fixed Length(s)…

102225

2) Read the barcode for Max. Length or Fixed Length 1, and follow steps 3~4.

Repeat steps 2~4 for Min. Length or Fixed Length 2.

Max. Length (*55) or Fixed Length 1

102227

Min. Length (*4) or Fixed Length 2

102228

3) Read the “Decimal Value” barcode on page 265 for the desired length.

4) Read the “Validate” barcode on the same page to complete this setting.

Enter Setup

4.10 CODE 128

***Enable**

Disable

Update

4.11 GS1-128 (EAN-128)

***Enable**

Disable

Note: GS1-128 barcodes can be decoded only when this setting is enabled.

4.11.1 TRANSMIT CODE ID

Decide whether to include the Code ID ("]C1") in the data being transmitted.

Transmit GS1-128 Code ID

***Do Not Transmit**

4.11.2 FIELD SEPARATOR (GS CHARACTER)

Decide whether to apply a field separator (to convert the FNC1 control character to human readable character).

Specify Field Separator…

1) Read the barcode above to specify field separator.
2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string.
3) Read the "Validate" barcode to complete this setting.

Note: GS1-128 barcodes start with the FNC1 control character to distinguish themselves from other uses of Code 128. FNC1 is also used to separate data fields in the GS1-128 barcodes.

Enter Setup

4.11.3 GS1 FORMATTING

Decide whether to enable GS1 formatting for GS1-128. When enabled, code ID transmitting will be disabled; however, the field separator and application ID mark characters will be automatically added to the output data.

Enable

***Disable**

You may want to add an application ID mark (1 character long) to the left (AIMark1) or right (AIMark2) of an application ID (AI) for the purpose of labeling it when formatting the GS1 data.

AIMark1

AIMark2

1) Read the barcode above to add a mark to the left (AIMark1)/right (AIMark2) of an application ID.
2) Read the "Hexadecimal Value" barcode on page 266 for the desired character. Read '00' if you want to remove the AI mark.
3) Read the "Validate" barcode to complete this setting.

Update

4.12 ISBT 128

***Enable**

100355

Disable

100354

4.12.1 ISBT CONCATENATION (1664 ONLY)

Decide whether to decode and concatenate pairs of ISBT barcodes.

- Disable ISBT Concatenation

  It will not concatenate pairs of ISBT barcodes it encounters. Only one single ISBT 128 barcode outputs.

- Enable ISBT Concatenation

  There must be two ISBT barcodes in order for the scanner to decode and perform concatenation. It does not decode single ISBT barcodes.

- Auto-discriminate ISBT Concatenation

  It decodes and concatenates pairs of ISBT barcodes immediately. If only a single ISBT barcode is present, the scanner must decode 10 times before transmitting its data to confirm that there is no additional ISBT barcode.

Disable

102237

Enable

102238

***Auto-discriminate**

102239

Enter Setup

4.12.2 ISBT CONCATENATION REDUNDANCY (1664 ONLY)

Specify the concatenation redundancy (2~20 times) when ISBT concatenation is enabled.

ISBT Concatenation Redundancy 2~20 (*10)

1) Read the barcode above to specify the concatenation redundancy.
2) Read the "Decimal Value" barcode on page 265 for the desired redundancy.
3) Read the "Validate" barcode on the same page to complete this setting.

Update

4.13 GS1 DATABAR (RSS FAMILY)

It is categorized into three groups:

Group I – GS1 DataBar Omnidirectional (RSS-14)

This group consists of the following:

- GS1 DataBar Omnidirectional
- GS1 DataBar Truncated
- GS1 DataBar Stacked
- GS1 DataBar Stacked Omnidirectional

Group II – GS1 DataBar Expanded (RSS Expanded)

This group consists of the following:

- GS1 DataBar Expanded
- GS1 DataBar Expanded Stacked

Group III – GS1 DataBar Limited (RSS Limited)

This group consists of the following:

- GS1 DataBar Limited

4.13.1 SELECT CODE ID

Select a desired Code ID to use:

- "]e0" (GS1 DataBar Code ID)
- "]C1" (GS1-128 Code ID)

Use "]C1"

***Use "]e0"**

Enter Setup

4.13.2 GS1 DATABAR OMNIDIRECTIONAL (RSS-14)

Enable RSS-14 & RSS Expanded (Groups I, II)

100349

***Disable**

100348

When GS1 formatting for GS1 DataBar Omnidirectional is enabled, code ID transmitting will be disabled; however, application ID transmitting will be enabled automatically.

The settings below apply to Group I symbologies only:

- GS1 DataBar Omnidirectional
- GS1 DataBar Truncated
- GS1 DataBar Stacked
- GS1 DataBar Stacked Omnidirectional

Transmit Code ID

Decide whether to include the Code ID in the data being transmitted.

***Transmit RSS-14 Code ID**

100523

Do Not Transmit

100522

Transmit Application ID

Decide whether to include the Application ID ("01") in the data being transmitted.

***Transmit RSS-14 Application ID**

100529

Do Not Transmit

100528

GS1 Formatting for GS1 DataBar Omnidirectional

Decide whether to enable GS1 formatting for GS1 DataBar Omnidirectional. When enabled, the field separator and application ID mark characters will be automatically added to the output data.

Update

Enable

***Disable**

4.13.3 GS1 DATABAR EXPANDED (RSS EXPANDED)

Enable RSS-14 & RSS Expanded (Groups I, II)

***Disable**

When GS1 formatting for GS1 DataBar Expanded is enabled, code ID transmitting will be disabled.

The settings below apply to Group II symbologies only:

- GS1 DataBar Expanded
- GS1 DataBar Expanded Stacked

Transmit Code ID

Decide whether to include the Code ID in the data being transmitted.

***Transmit RSS Expanded Code ID**

Do Not Transmit

GS1 Formatting for GS1 DataBar Expanded

Decide whether to enable GS1 formatting for GS1 DataBar Expanded. When enabled, the field separator and application ID mark characters will be automatically added to the output data.

Enable

Enter Setup

***Disable**

101489

4.13.4 GS1 DATABAR LIMITED (RSS LIMITED)

Enable RSS Limited (Group III)

100351

***Disable**

100350

When GS1 formatting for GS1 DataBar Limited is enabled, code ID transmitting will be disabled; however, application ID transmitting will be enabled automatically.

Transmit Code ID

Decide whether to include the Code ID in the data being transmitted.

***Transmit RSS Limited Code ID**

100525

Do Not Transmit

100524

Transmit Application ID

Decide whether to include the Application ID ("01") in the data being transmitted.

***Transmit RSS Limited Application ID**

100531

Do Not Transmit

100530

GS1 Formatting for GS1 DataBar Limited

Decide whether to enable GS1 formatting for GS1 DataBar Limited. When enabled, the field separator and application ID mark characters will be automatically added to the output data.

Enable

101488

Update

***Disable**

101487

4.13.5 CONVERT TO UPC/EAN

This only applies to GS1 DataBar Omnidirectional and GS1 DataBar Limited barcodes not decoded as part of a Composite barcode.

- Convert to EAN-13: It will strip the leading “010” from barcodes.

  “01” is the Application ID and must be followed by a single zero (the first digit encoded).
- Convert to UPC-A: It will strip the leading “0100” from barcodes.

  “01” is the Application ID and must be followed by two or more zeros (but not six zeros).

Convert to UPC/EAN

102103

***Do Not Convert**

102102

4.13.6 FIELD SEPARATOR (GS CHARACTER)

Decide whether to apply a field separator (to convert the GS control character to human readable character). The field separator is automatically added to the data when GS1 formatting is enabled.

Specify Field Separator…

100616

1) Read the barcode above to specify field separator.
2) Read the “Hexadecimal Value” barcode on page 266 for the desired character string.
3) Read the “Validate” barcode to complete this setting.

Enter Setup

4.13.7 APPLICATION ID MARK

You may want to add an application ID mark (1 character long) to the left (AIMark1) or right (AIMark2) of an application ID (AI) for the purpose of labeling it when formatting the GS1 data. The application ID mark is automatically added to the data when GS1 formatting is enabled.

AIMark1

AIMark2

1) Read the barcode above to add a mark to the left (AIMark1)/right (AIMark2) of an application ID.
2) Read the "Hexadecimal System" barcode on page 266 for the desired character. Read '00' if you want to remove the AI mark.
3) Read the "Validate" barcode to complete this setting.

Update

4.14 MSI

Enable

100345

***Disable**

100344

4.14.1 VERIFY CHECK DIGIT

Select one of the three calculations to verify check digit(s) when decoding barcodes. If incorrect, the barcode will not be accepted.

***Single Modulo 10**

100448

Double Modulo 10

100449

Modulo 10 & 11

100450

4.14.2 TRANSMIT CHECK DIGIT

Decide whether to include the check digit(s) in the data being transmitted.

***Last Digit Not Transmitted**

100452

Both Digits Transmitted

100453

Both Digits Not Transmitted

100454

Enter Setup

4.14.3 CODE LENGTH QUALIFICATION

To prevent the "short scan" error, define the "Length Qualification" settings to ensure that the correct barcode is read by qualifying the allowable code length.

- If "Max/Min Length" is selected, the maximum length and the minimum length must be specified. It only accepts those barcodes with lengths that fall between max/min lengths specified.
- If “Fixed Length” is selected, up to 2 fixed lengths can be specified.

Note: The specified length(s) must include the check digit(s) the barcode contains.

1) Read the barcode to enable either Max. /Min. Length qualification or Fixed Length(s) qualification.

***Enable Max./Min. Length (1~55)…**

Enable Fixed Length(s)…

2) Read the barcode for Max. Length or Fixed Length 1, and follow steps 3~4.

Repeat steps 2~4 for Min. Length or Fixed Length 2.

Max. Length (*55) or Fixed Length 1

Min. Length (*4) or Fixed Length 2

3) Read the “Decimal Value” barcode on page 265 for the desired length.

4) Read the “Validate” barcode on the same page to complete this setting.

Update

4.15 EAN-8

EAN-8

***Enable EAN-8 (No Addon)**

Disable

EAN-8 Addon 2

Enable EAN-8 Addon 2

***Disable**

EAN-8 Addon 5

Enable EAN-8 Addon 5

***Disable**

4.15.1 TRANSMIT CHECK DIGIT

Decide whether to include the check digit in the data being transmitted.

***Transmit EAN-8 Check Digit**

Do Not Transmit

Enter Setup

4.16 EAN-13

EAN-13

***Enable EAN-13 (No Addon)**

Disable

Decide whether to read EAN-13 barcodes ending with Addon 2.

EAN-13 Addon 2

Enable EAN-13 Addon 2

***Disable**

Decide whether to read EAN-13 barcodes ending with Addon 5.

EAN-13 Addon 5

Enable EAN-13 Addon 5

***Disable**

Update

4.16.1 EAN-13 ADDON MODES

Decide whether to enable EAN-13 414/419/434/439 Addon Mode. When enabled, barcodes starting with 414/419/434/439 won't be decoded if the scanned barcodes do not have the Addon 2 or Addon 5 suffix.

EAN-13 414/419/434/439 Addon Mode

Enable

***Disable**

Decide whether to enable EAN-13 378/379 Addon Mode. When enabled, barcodes starting with 378/379 won't be decoded if the scanned barcodes do not have the Addon 2 or Addon 5 suffix.

EAN-13 378/379 Addon Mode

Enable

***Disable**

Decide whether to enable EAN-13 977 Addon Mode. When enabled, barcodes starting with 977 won't be decoded if the scanned barcodes do not have the Addon 2 or Addon 5 suffix.

EAN-13 977 Addon Mode

Enable

***Disable**

Enter Setup

Decide whether to enable EAN-13 978 Addon Mode. When enabled, barcodes starting with 978 won't be decoded if the scanned barcodes do not have the Addon 2 or Addon 5 suffix.

EAN-13 978 Addon Mode

Enable

***Disable**

Decide whether to enable EAN-13 979 Addon Mode. When enabled, barcodes starting with 979 won't be decoded if the scanned barcodes do not have the Addon 2 or Addon 5 suffix.

EAN-13 979 Addon Mode

Enable

***Disable**

Decide whether to enable EAN-13 491 Addon Mode. When enabled, barcodes starting with 491 won't be decoded if the scanned barcodes do not have the Addon 2 or Addon 5 suffix.

EAN-13 491 Addon Mode

Enable

***Disable**

Update

Decide whether to enable EAN-13 529 Addon Mode. When enabled, barcodes starting with 529 won't be decoded if the scanned barcodes do not have the Addon 2 or Addon 5 suffix.

EAN-13 529 Addon Mode

Enable

***Disable**

Decide whether to have the scanner buzzer sound two beeps (with tones descending from high to low) when decoding the scanned barcode that doesn't have the Addon 2 or Addon 5 suffix.

EAN-13 Addon Mode Buzzer

Enable

***Disable**

Enter Setup

4.16.2 CONVERT TO ISBN

Decide whether to convert the EAN-13 barcode, starting with 978, to ISBN.

Convert EAN-13 to ISBN

***Do Not Convert**

4.16.3 CONVERT TO ISSN (1664 ONLY)

Decide whether to convert the EAN-13 barcode, starting with 977 to ISSN.

Convert EAN-13 to ISSN

***Do Not Convert**

4.16.4 TRANSMIT CHECK DIGIT

Decide whether to include the check digit in the data being transmitted.

***Transmit EAN-13 Check Digit**

Do Not Transmit

Update

4.17 UCC COUPON EXTENDED CODE

Decide whether to decode the following barcodes as Coupon Code.

- UPC-A barcodes starting with digit “5”
- EAN-13 barcodes starting with digits “99”
- UPC-A/EAN-128 Coupon Codes

Enable

***Disable**

Note: Depending on your requirements, UPC-A, EAN-13 and EAN-128 must be enabled first!

Enter Setup

4.18 UPC-A

UPC-A

***Enable UPC-A (No Addon)**

100339

Disable

100338

UPC-A Addon 2

Enable UPC-A Addon 2

100341

***Disable**

100340

UPC-A Addon 5

Enable UPC-A Addon 5

100343

***Disable**

100342

Update

4.18.1 CONVERT TO EAN-13

Decide whether to expand the read UPC-A barcode, as well as its addons, into EAN-13.

- After conversion, the data follows EAN-13 format and is affected by EAN-13 programming selections (e.g. Check Digit).

Convert UPC-A to EAN-13

***Do Not Convert**

4.18.2 TRANSMIT SYSTEM NUMBER

Decide whether to include the system number in the data being transmitted.

***Transmit UPC-A System Number**

Do Not Transmit

4.18.3 TRANSMIT CHECK DIGIT

Decide whether to include the check digit in the data being transmitted.

***Transmit UPC-A Check Digit**

Do Not Transmit

Enter Setup

4.19 UPC-E

UPC-E

***Enable UPC-E (No Addon)**

Disable

UPC-E Addon 2

Enable UPC-E Addon 2

***Disable**

UPC-E Addon 5

Enable UPC-E Addon 5

***Disable**

Update

4.19.1 SELECT SYSTEM NUMBER

Decide whether to decode the ordinary UPC-E barcodes only or both UPC-E0 and UPC-E1 barcodes.

- System number `0` enabled for decoding UPC-E0 barcodes.
- System number `1` enabled for decoding UPC-E1 barcodes.

System Number 0 & 1

***System Number 0 Only**

Warning: Because of the way system number 1 is encoded, if both system numbers are enabled, the user might suffer from short scanning UPC-A or EAN-13 barcodes into UPC-E1 barcodes.

4.19.2 CONVERT TO UPC-A

Decide whether to expand the read UPC-E barcode, as well as its addons, into UPC-A.

- After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (e.g. System Number, Check Digit).

Convert UPC-E to UPC-A

***Do Not Convert**

Enter Setup

4.19.3 TRANSMIT SYSTEM NUMBER

Decide whether to include the system number in the data being transmitted.

Transmit UPC-E System Number

***Do Not Transmit**

4.19.4 TRANSMIT CHECK DIGIT

Decide whether to include the check digit in the data being transmitted.

***Transmit UPC-E Check Digit**

Do Not Transmit

Update

4.20 CODE 11

Enable

***Disable**

4.20.1 VERIFY CHECK DIGIT

Decide whether to verify the check digit(s). If incorrect, the barcode will not be accepted.

Verify One Check Digit

Verify Two Check Digit

***Do Not Verify**

4.20.2 TRANSMIT CHECK DIGIT

Decide whether to include the check digit(s) in the data being transmitted.

Transmit Code 11 Check Digit

***Do Not Transmit**

Note: "Verify Check Digit" must be enabled first.

Enter Setup

4.20.3 CODE LENGTH QUALIFICATION

To prevent the "short scan" error, define the "Length Qualification" settings to ensure that the correct barcode is read by qualifying the allowable code length.

- If "Max/Min Length" is selected, the maximum length and the minimum length must be specified. It only accepts those barcodes with lengths that fall between max/min lengths specified.
- If “Fixed Length” is selected, up to 2 fixed lengths can be specified.

Note: The specified length(s) must include the check digit(s) the barcode contains.

1) Read the barcode to enable either Max. /Min. Length qualification or Fixed Length(s) qualification.

***Enable Max./Min. Length (1~55)…**

Enable Fixed Length(s)…

2) Read the barcode for Max. Length or Fixed Length 1, and follow steps 3~4.

Repeat steps 2~4 for Min. Length or Fixed Length 2.

Max. Length (*55) or Fixed Length 1

Min. Length (*4) or Fixed Length 2

3) Read the “Decimal Value” barcode on page 265 for the desired length.

4) Read the “Validate” barcode on the same page to complete this setting.

Update

4.21 COMPOSITE CODE

4.21.1 COMPOSITE CC-A/B

Decide whether to enable Composite CC-A/B.

Enable Composite CC-A/B

102009

***Disable**

102008

Decide whether to enable GS1 formatting for Composite CC-A/B. When enabled, the field separator and application ID mark will be automatically added to the output data.

Enable

101492

***Disable**

101491

4.21.2 COMPOSITE CC-C

Decide whether to enable Composite CC-C.

Enable Composite CC-C

102011

***Disable**

102010

Decide whether to enable GS1 formatting for Composite CC-C. When enabled, the field separator and application ID mark will be automatically added to the output data.

Enable

101494

***Disable**

101493

Enter Setup

4.21.3 COMPOSITE TLC-39

Enable Composite TLC-39

102013

***Disable**

102012

4.21.4 UPC COMPOSITE MODE

UPC barcodes can be “linked” with a 2D barcode during transmission as if they were one barcode.

- UPC Never Linked

  Transmit UPC barcodes regardless of whether a 2D barcode is detected.

- UPC Always Linked

  Transmit UPC barcodes and the 2D portion. If the 2D portion is not detected, the UPC barcode will not be transmitted.

Note: CC-A/B or CC-C must be enabled!

- Auto-discriminate UPC Composites

  Transmit UPC barcodes as well as the 2D portion if present.

UPC Never Linked

102112

***UPC Always Linked**

102113

Auto-discriminate

102114

Update

4.21.5 GS1-128 EMULATION MODE FOR UCC/EAN COMPOSITE CODES

Decide whether to transmit UCC/EAN Composite Code data as if it was encoded in GS1-128 barcodes.

Enable GS1-128 Emulation Mode

***Disable**

4.21.6 FIELD SEPARATOR (GS CHARACTER)

Decide whether to apply a field separator (to convert the GS control character to human readable character). The field separator is automatically added to the data when GS1 formatting is enabled.

Specify Field Separator…

1) Read the barcode above to specify field separator.
2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string.
3) Read the "Validate" barcode to complete this setting.

Enter Setup

4.21.7 APPLICATION ID MARK

You may want to add an application ID mark (1 character long) to the left (AIMark1) or right (AIMark2) of an application ID (AI) for the purpose of labeling it when formatting the GS1 data. The application ID mark is automatically added to the data when GS1 formatting is enabled.

AIMark1

AIMark2

1) Read the barcode above to add a mark to the left (AIMark1)/right (AIMark2) of an application ID.
2) Read the "Hexadecimal System" barcode on page 266 for the desired character. Read '00' if you want to remove the AI mark.
3) Read the "Validate" barcode to complete this setting.

Update

4.22 US POSTAL CODE

4.22.1 US POSTNET

***Enable US Postnet**

Disable

4.22.2 US PLANET

***Enable US Planet**

Disable

4.22.3 TRANSMIT CHECK DIGIT

Decide whether to include the check digit in the data being transmitted.

***Transmit US Postal Check Digit**

Do Not Transmit

Enter Setup

4.23 UK POSTAL CODE

4.23.1 UK POSTAL

***Enable UK Postal**

Disable

4.23.2 TRANSMIT CHECK DIGIT

Decide whether to include the check digit in the data being transmitted.

***Transmit UK Postal Check Digit**

Do Not Transmit

Update

4.24 MORE POSTAL CODE

4.24.1 JAPAN POSTAL

***Enable Japan Postal**

102023

Disable

102022

4.24.2 AUSTRALIAN POSTAL

***Enable Australian Postal**

102025

Disable

102024

4.24.3 DUTCH POSTAL

***Enable Dutch Postal**

102027

Disable

102026

4.24.4 USPS 4CB/ONE CODE/INTELLIGENT MAIL

Enable USPS 4CB/ One Code/ Intelligent Mail

102029

***Disable**

102028

Enter Setup

4.24.5 UPU FICS POSTAL

Enable UPU FICS Postal

102031

***Disable**

102030

Update

4.25 2D SYMBOLOGIES

4.25.1 PDF417

***Enable PDF417**

Disable

4.25.2 MicroPDF417

Enable MicroPDF417

***Disable**

Enter Setup

4.25.3 DATA MATRIX

***Enable Data Matrix**

Disable

Data Matrix Mirror

Decide whether to decode 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 barcoes.

***Never**

Always

Auto

Update

4.25.4 MAXICODE

***Enable Maxicode**

102039

Disable

102038

4.25.5 QR CODE

***Enable QR Code**

102041

Disable

102040

4.25.6 MicroQR

***Enable MicroQR**

102043

Disable

102042

4.25.7 AZTEC

***Enable Aztec**

102045

Disable

102044

Enter Setup

4.26 MACRO PDF

Macro PDF is a special feature for concatenating multiple PDF barcodes into one file, known as Macro PDF417 or Macro MicroPDF417.

Note: When printing barcodes, keep each Macro PDF sequence separate, as each has a unique identifier. Do not mix barcodes from several Macro PDF sequences, even if they encode the same data. When you scan Macro PDF sequences, scan the entire Macro PDF sequence without interruption!

4.26.1 TRANSMIT/DECODE MODE

Decide how to handle Macro PDF decoding.

- Buffer All Symbols / Transmit Macro PDF When Complete

  Transmit all decoded data from an entire Macro PDF sequence only when the entire sequence is scanned and decoded. If the decoded data exceeds the limit of 50 symbols, no transmission because the entire sequence was not scanned!

- Transmit Any Symbol in Set / No Particular Order

  Transmit data from each Macro PDF symbol as decoded, regardless of the sequence.

- Passthrough All Symbols

  Transmit and decode all Macro PDF symbols and perform no processing. In this mode, the host is responsible for detecting and parsing the Macro PDF sequences.

Buffer All Symbols / Transmit When Complete

Transmit Any Symbol in Set / No Particular Order

***Passthrough All Symbols**

Update

4.26.2 ESCAPE CHARACTERS

When enabled, it uses the backslash "\" as an Escape character for systems that can process transmissions containing special data sequences. It will format special data according to the Global Label Identifier (GLI) protocol, which only affects the data portion of a Macro PDF symbol transmission. The Control Header, if enabled, is always sent with GLI formatting.

GLI Protocol

***None**

4.26.3 TRANSMIT CONTROL HEADER

The control header contains the segment index and file ID. 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”.
- Disable this when selecting “Buffer All Symbols/Transmit Macro PDF When Complete”.
- This option has no effect when selecting "Passthrough All Symbols".

Transmit Control Header

***Do Not Transmit**

Enter Setup

Chapter 5

DEFINING OUTPUT FORMAT

You may configure the format of the collected data output to the host computer. Barcodes read by the scanner will be processed in the following sequence –

1) Perform character substitution on the data scanned.
2) Add Code ID and Length Code to the front of the data:`[Code ID][Length Code][Data]`
3) Process the whole data in step 2 with user formats. Data is now divided into fields by user specified rules. Refer to Chapter 6 Applying Formats for Data Editing.
4) Add Prefix Code and Suffix Code before transmission:`[Prefix Code][Processed Data][Suffix Code]`

IN THIS CHAPTER

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5.2 Character Substitution 178
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5.4 Code ID 191
5.5 Length Code 198
5.6 Multi-Barcode Editor 206
5.7 Removal of Special Character 210
5.8 AIM Code ID 210

5.1 LETTER CASE

By default, the alphabetics transmission is case-sensitive, meaning that the alphabet will be transmitted according to their original case. Ignoring the original letter case, select [Upper Case] to output data in upper case only; otherwise, select [Lower Case] to output data in lower case only.

***Normal**

Upper Case

Lower Case

Update

5.2 CHARACTER SUBSTITUTION

Character substitution is performed on every occurrence of the first character specified. If only one character is specified, every occurrence of that character in the barcode will be taken away.

- The first character will be replaced by the second character(s).
- Up to three sets of character substitution can be configured.
- If "*Bluetooth*® HID" or "USB HID" is configured for interface, Key Type and Key Status will then become applicable. You may decide whether or not to apply Key Status when "Normal Key" is selected for Key Type.

Key Type		Key Status
Scan Code	Only 1 scan code value is allowed. Refer to 5.2.1 Select a Set for Character Substituion.	N/A
Normal Key	Up to 3 character strings are allowed.	▸ Add Shift ▸ Add Left Ctrl ▸ Add Left Alt ▸ Add Right Ctrl ▸ Add Right Alt Refer to Keyboard Wedge Table.

Note: The character substitution is performed only on the barcode itself and before the processing of editing formats. It is not applicable to the Prefix/Suffix Code, Code ID, Length Code, or any Additional Field.

Enter Setup

5.2.1 SELECT A SET FOR CHARACTER SUBSTITUION

Configure Set 1

Configure Set 2

Configure Set 3

1) Read the barcode above to enable character substitution by set.

   For example, read the "Set 1" barcode to configure the first set of character substitution. The scanner will respond with one short beep, high tone, to indicate more setup barcodes are required.

2) Read the "Hexadecimal Value" barcode on page 266 for the desired character substitution. For example,

KEY TYPE = NORMAL

- Read "3", "0", "2", and "D" to replace the character "0" with a dash "-".
- Read "3", "0", "2", "D", "3", and "0" to replace the character "0" with a dash "-0".

KEY TYPE = SCAN CODE

If you want to replace the character "0" with "a" (= "1C" on the scan code table):

1. Read "3" and "0".
2. Read the "Scan Code" barcode.
3. Read "1" and "C".

KEY TYPE = NORMAL + KEY STATUS = SHIFT

If you want to replace the character "0" with "!" (= "Shift" + "1" on keyboard):

1. Read "3" and "0".
2. Read the "Add Shift" barcode.
3. Read "3" and "1".

3) Read the "Validate" barcode to complete this setting. (The defined set or sets will be applied to all symbologies by default.)

5.2.2 SYMBOLOGIES FOR CHARACTER SUBSTITUTION (ALL 3 SETS)

By default character substitution will be performed on all symbologies. If the character substitution is not desired with one or more symbologies, read the "Do Not Apply" barcode for each undesired symbologies and all the three sets will be ignored for them.

Character Substitution for Codabar

***Apply**

Do Not Apply

Character Substitution for Code 39

***Apply**

Do Not Apply

Character Substitution for Trioptic Code 39

***Apply**

Do Not Apply

Character Substitution for Code 93

***Apply**

Do Not Apply

Enter Setup

Character Substitution for Code 128

***Apply**

101257

Do Not Apply

101256

Character Substitution for GS1-128

***Apply**

101259

Do Not Apply

101258

Character Substitution for ISBT 128

***Apply**

101293

Do Not Apply

101292

Character Substitution for EAN-8 (No Addon)

***Apply**

101267

Do Not Apply

101266

Character Substitution for EAN-8 Addon 2

***Apply**

101269

Do Not Apply

101268

Update

Character Substitution for EAN-8 Addon 5

*Apply

Do Not Apply

Character Substitution for EAN-13 (No Addon)

*Apply

Do Not Apply

Character Substitution for EAN-13 Addon 2

*Apply

Do Not Apply

Character Substitution for EAN-13 Addon 5

*Apply

Do Not Apply

Character Substitution for Italian Pharmacode

*Apply

Do Not Apply

Enter Setup

Character Substitution for Industrial 25

*Apply

101247

Do Not Apply

101246

Character Substitution for Interleaved 25

*Apply

101249

Do Not Apply

101248

Character Substitution for Matrix 25

*Apply

101251

Do Not Apply

101250

Character Substitution for Chinese 25

*Apply

102617

Do Not Apply

102616

Character Substitution for MSI

*Apply

101285

Do Not Apply

101284

Update

Character Substitution for GS1 DataBar

*Apply

Do Not Apply

Character Substitution for UPC-A (No Addon)

*Apply

Do Not Apply

Character Substitution for UPC-A Addon 2

*Apply

Do Not Apply

Character Substitution for UPC-A Addon 5

*Apply

Do Not Apply

Character Substitution for UPC-E (No Addon)

*Apply

Do Not Apply

Enter Setup

Character Substitution for UPC-E Addon 2

***Apply**

101263

Do Not Apply

101262

Character Substitution for UPC-E Addon 5

***Apply**

101265

Do Not Apply

101264

Character Substitution for UCC Coupon Extended Code

***Apply**

102605

Do Not Apply

102604

Character Substitution for Code 11

***Apply**

102609

Do Not Apply

102608

Character Substitution for Composite CC-A/B

***Apply**

102611

Do Not Apply

102610

Update

Character Substitution for Composite CC-C

***Apply**

Do Not Apply

Character Substitution for Composite TLC-39

***Apply**

Do Not Apply

Character Substitution for US Postnet

***Apply**

Do Not Apply

Character Substitution for US Planet

***Apply**

Do Not Apply

Character Substitution for UK Postal

***Apply**

Do Not Apply

Enter Setup

Character Substitution for Japan Postal

*Apply

102625

Do Not Apply

102624

Character Substitution for Australian Postal

*Apply

102627

Do Not Apply

102626

Character Substitution for Dutch Postal

*Apply

102629

Do Not Apply

102628

Character Substitution for USPS 4CB/One Code/Intelligent Mail

*Apply

102631

Do Not Apply

102630

Character Substitution for UPU FICS Postal

*Apply

102633

Do Not Apply

102632

Update

Character Substitution for PDF417

***Apply**

Do Not Apply

Character Substitution for MicroPDF417

***Apply**

Do Not Apply

Character Substitution for Data Matrix

***Apply**

Do Not Apply

Character Substitution for Maxicode

***Apply**

Do Not Apply

Character Substitution for QR Code

***Apply**

Do Not Apply

Enter Setup

Character Substitution for MicroQR

***Apply**

Do Not Apply

Character Substitution for Aztec

***Apply**

Do Not Apply

Update

5.3 PREFIX/SUFFIX CODE

By default, there is no prefix code, and [ENTER] or [CR] (Carriage Return) is configured to be suffix code. Up to 8 characters can be configured, for example, “Barcode_”, and you will have the string appear in front of the barcode read, like this – “Barcode_1234567890”.

- If “*Bluetooth*® HID” or “USB HID” is configured for interface, Key Type and Key Status will then become applicable. You may decide whether or not to apply Key Status when “Normal Key” is selected for Key Type.

Key Type		Key Status
Scan Code	Up to 4 scan code values are allowed.	N/A
Normal Key	Up to 8 character strings are allowed.	▸ Add Shift ▸ Add Left Ctrl ▸ Add Left Alt ▸ Add Right Ctrl ▸ Add Right Alt Refer to Keyboard Wedge Table.

Configure Prefix

Configure Suffix

1) Read the barcode above to apply prefix code or suffix code separately, and follow steps 2~3. (Max. 8 characters each)

2) Read the “Hexadecimal Value” barcode on page 266 for the desired character string. For example, read “2” and “B” for the scanner to prefix or suffix the character [+].

3) Read the “Validate” barcode to complete this setting.

Enter Setup

5.4 CODE ID

Up to two characters for Code ID can be configured for each symbology. To make the Code ID configuration easier, the scanner provides five pre-defined Code ID sets that you can select one and make necessary changes on it.

- If "*Bluetooth*® HID" or "USB HID" is configured for interface, Key Type and Key Status will then become applicable. You may decide whether or not to apply Key Status when "Normal Key" is selected for Key Type.

Key Type		Key Status
Scan Code	Only 1 scan code value is allowed.	N/A
Normal Key	Up to 2 character strings are allowed.	▸ Add Shift ▸ Add Left Ctrl ▸ Add Left Alt ▸ Add Right Ctrl ▸ Add Right Alt Refer to Keyboard Wedge Table.

Note: "]C1" is the Code ID of GS1-128 (EAN-128) barcodes; "]e0" is the default Code ID of GS1 DataBar (RSS) barcodes.

5.4.1 SELECT PRE-DEFINED CODE ID

Apply Code ID Set 1

109961

Apply Code ID Set 2

109962

Apply Code ID Set 3

109963

Apply Code ID Set 4

109964

Apply Code ID Set 5

109965

Update

Code ID options	Set 1	Set 2	Set 3	Set 4	Set 5
Code 39	A	C	Y	M	A
Trioptic Code 39	A	C	Y	M	X
Italian Pharmacode	A	C	Y	M	A
Industrial 25	C	H	H	H	S
Interleaved 25	D	I	Z	I	S
Matrix 25	E	G	G	G	S
Chinese 25	Q	M	P	S	X
Codabar	F	N	X	N	F
Code 93	I	L	L	L	G
Code 128	H	K	K	K	C
ISBT 128	H	K	K	K	C
UPC-E	S	E	C	E	E
EAN-8	P	B	B	FF	E
EAN-13	M	A	A	F	E
UPC-A	J	A	A	A	E
MSI	V	V	D	P	M
UCC Coupon Code	G	F	I	C	C
Code 11	K	J	J	D	H
Composite CC-A/B	L	X	M	J	La
Composite CC-C	N	Y	N	O	Lc
Composite TLC-39	O	Z	O	R	L2
US Postnet	h	a	s	i	X
US Planet	i	b	t	j	X
UK Postal	j	c	u	k	X
Japan Postal	k	d	v	l	X
Australian Postal	l	e	w	m	X
Dutch Postal	m	f	x	n	X
USPS 4 CB / One Code / Intelligent Mail	n	g	y	o	X
UPU FICS Postal	o	h	z	p	X
PDF417	a	O	W	T	L
MicroPDF417	b	P	V	U	L
Data Matrix	c	Q	U	V	d
Maxicode	d	R	T	W	U
QR Code	e	S	S	X	Q

Enter Setup

MicroQR	f	T	R	Y	Q
Aztec	g	U	Q	Z	z
IATA	z	z	r	h	S
Macro PDF417	p	i	a	q	L
Macro MicroPDF417	q	j	b	r	L

Update

5.4.2 CHANGE CODE ID

1) Read the barcode below to change code ID of a specific symbology.
2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string. For example, read "4" and "4" for applying the character [D] for Code ID.
3) Read the "Validate" barcode to complete this setting.

Configure Code ID for Codabar

101456

Configure Code ID for Code 39

101450

Configure Code ID for Trioptic Code 39

102566

Configure Code ID for Code 93

101457

Configure Code ID for Code 128

101458

Configure Code ID for ISBT 128

101466

Configure Code ID for EAN-8

101460

Configure Code ID for EAN-13

101461

Configure Code ID for Italian Pharmacode

101451

Configure Code ID for Industrial 25

101453

Enter Setup

Configure Code ID for Interleaved 25

101454

Configure Code ID for Matrix 25

101455

Configure Code ID for Chinese 25

102571

Configure Code ID for MSI

101463

Configure Code ID for UPC-A

101462

Configure Code ID for UPC-E

101459

Configure Code ID for UCC Coupon Code

102565

Configure Code ID for Code 11

102567

Configure Code ID for Composite CC-A/B

102568

Configure Code ID for Composite CC-C

102569

Configure Code ID for Composite TLC-39

102570

Configure Code ID for US Postnet

102572

Update

Configure Code ID for US Planet

102573

Configure Code ID for UK Postal

102574

Configure Code ID for Japan Postal

102575

Configure Code ID for Australian Postal

102576

Configure Code ID for Dutch Postal

102577

Configure Code ID for USPS 4CB / One Code / Intelligent Mail

102578

Configure Code ID for UPU FICS Postal

102579

Configure Code ID for PDF417

102580

Configure Code ID for MicroPDF417

102581

Configure Code ID for Data Matrix

102582

Configure Code ID for Maxicode

102583

Configure Code ID for QR Code

102584

Enter Setup

Configure Code ID for MicroQR

102585

Configure Code ID for Aztec

102586

Configure Code ID for IATA

102587

Configure Code ID for Macro PDF417

102588

Configure Code ID for Macro MicroPDF417

102589

5.4.3 CLEAR CODE ID SETTINGS

Clear All Code ID Settings

109960

Update

5.5 LENGTH CODE

A 4-digit code representing the length of barcode data (character count) can be inserted in front of data being transmitted. Such "Length" code can be individually enabled or disabled for each symbology.

Length Code for Codabar

Apply

101413

***Do Not Apply**

101412

Length Code for Code 39

Apply

101401

***Do Not Apply**

101400

Length Code for Trioptic Code 39

Apply

102505

***Do Not Apply**

102504

Length Code for Code 93

Apply

101415

***Do Not Apply**

101414

Enter Setup

Length Code for Code 128

Apply

***Do Not Apply**

Length Code for GS1-128 & GS1 DataBar

Apply

***Do Not Apply**

Length Code for ISBT 128

Apply

***Do Not Apply**

Length Code for EAN-8

Apply

***Do Not Apply**

Length Code for EAN-13

Apply

***Do Not Apply**

Update

Length Code for Italian Pharmacode

Apply

101403

***Do Not Apply**

101402

Length Code for Industrial 25

Apply

101407

***Do Not Apply**

101406

Length Code for Interleaved 25

Apply

101409

***Do Not Apply**

101408

Length Code for Matrix 25

Apply

101411

***Do Not Apply**

101410

Length Code for Chinese 25

Apply

102515

***Do Not Apply**

102514

Enter Setup

Length Code for MSI

Apply

***Do Not Apply**

Length Code for UPC-A

Apply

***Do Not Apply**

Length Code for UPC-E

Apply

***Do Not Apply**

Length Code for UCC Coupon Extended Code

Apply

***Do Not Apply**

Length Code for Code 11

Apply

***Do Not Apply**

Update

Length Code for Composite CC-A/B

Apply

***Do Not Apply**

Length Code for Composite CC-C

Apply

***Do Not Apply**

Length Code for Composite TLC-39

Apply

***Do Not Apply**

Length Code for US Postnet

Apply

***Do Not Apply**

Length Code for US Planet

Apply

***Do Not Apply**

Enter Setup

Length Code for UK Postal

Apply

102521

***Do Not Apply**

102520

Length Code for Japan Postal

Apply

102523

***Do Not Apply**

102522

Length Code for Australian Postal

Apply

102525

***Do Not Apply**

102524

Length Code for Dutch Postal

Apply

102527

***Do Not Apply**

102526

Length Code for USPS 4CB/One Code/Intelligent Mail

Apply

102529

***Do Not Apply**

102528

Update

Length Code for UPU FICS Postal

Apply

102531

***Do Not Apply**

102530

Length Code for PDF417

Apply

102533

***Do Not Apply**

102532

Length Code for MicroPDF417

Apply

102535

***Do Not Apply**

102534

Length Code for Data Matrix

Apply

102537

***Do Not Apply**

102536

Length Code for Maxicode

Apply

102539

***Do Not Apply**

102538

Enter Setup

Length Code for QR Code

Apply

***Do Not Apply**

Length Code for MicroQR

Apply

***Do Not Apply**

Length Code for Aztec

Apply

***Do Not Apply**

Update

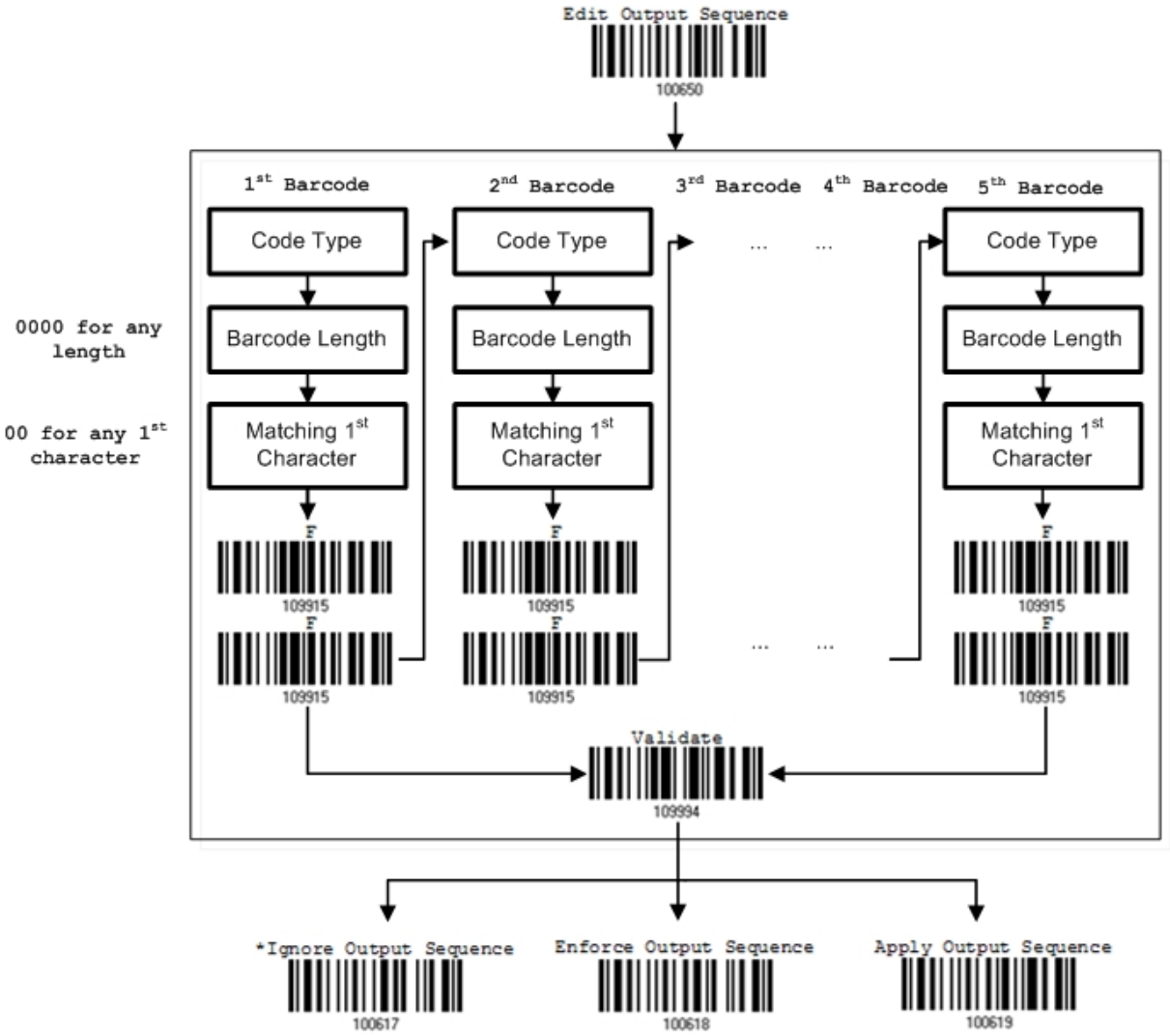
5.6 MULTI-BARCODE EDITOR

The Multi-Barcode Editor allows deciding the output sequence of a concatenation of barcodes. Up to five barcodes can be specified. Enabling this function will force the scanner to apply Laser mode as the scan mode.

Note: The Multi-Barcode Editor has nothing to do with Multi-Barcode Mode.

The barcodes that are found meeting the specified criteria below will be arranged in the desired sequence.

- Code Type
- 4-digit barcode length, excluding prefix, suffix, length code, etc.
- Matching the first character of barcode data



Enter Setup

5.6.1 EDIT A CONCATENATION OF BARCODES

Edit Output Sequence

1) Read the barcode above to start editing a concatenation of barcodes.

2) Code Type setting – read the "Hexadecimal Value" barcode on page 266 for Code Type of the (first) barcode. For example, read "4" and "1" for Code 39.

Code Type	Symbology	Code Type	Symbology
40 (@)	ISBT 128		
41 (A)	Code 39		
42 (B)	Italian Pharmacode		
43 (C)	N/A		
44 (D)	Industrial 25	64 (d)	TLC-39 (TCIF Linked Code 39)
45 (E)	Interleaved 25	65 (e)	Trioptic Code 39
46 (F)	Matrix 25		
47 (G)	Codabar (NW7)	67 (g)	Code 11
48 (H)	Code 93		
49 (I)	Code 128		
4A (J)	UPC-E0 / UPC-E1	6A (j)	Composite CC-C
4B (K)	UPC-E with Addon 2	6B (k)	PDF417
4C (L)	UPC-E with Addon 5	6C (l)	MicroPDF417
4D (M)	EAN-8	6D (m)	Data Matrix
4E (N)	EAN-8 with Addon 2	6E (n)	Maxicode
4F (O)	EAN-8 with Addon 5	6F (o)	QR Code
50 (P)	EAN-13	70 (p)	US Postnet
51 (Q)	EAN-13 with Addon 2	71 (q)	US Planet
52 (R)	EAN-13 with Addon 5	72 (r)	UK Postal
53 (S)	MSI	73 (s)	Japan Postal
54 (T)	N/A	74 (t)	Australian Postal
55 (U)	GS1-128 (EAN-128)	75 (u)	Dutch Postal
56 (V)	UPC-A	76 (v)	Composite CC-A/B
57 (W)	UPC-A with Addon 2	77 (w)	Macro PDF417
58 (X)	UPC-A with Addon 5	78 (x)	Macro MicroPDF417

Update

		79 (y)	Chinese 25
5A (Z)	N/A	7A (z)	Aztec
5B ([ )	GS1 DataBar (RSS)	7B ({)	Micro QR
		7C (|)	USPS 4CB / One Code / Intelligent Mail
		7D (})	UPU FICS Postal
		7E (~)	UCC Coupon Extended Code

3) Barcode Length setting – read the "Decimal Value" barcode on page 265 for the 4-digit length of the (first) barcode. For example, read "0065" for barcode length of 65 characters or read "0000" for any length.

Note: If not reading 0000 for any length, the 4-digit length must exclude prefix, suffix (0x0d by default), length code, etc.

4) Matching Character setting – read the "Hexadecimal Value" barcode on page 266 for the 1st character that must be found matching in the (first) barcode. For example, read "4" and "1" for matching character "A" as the first character in the barcode or read "00" for any character.

5) Read twice the "F" barcode on page 266 ("FF") to complete the setting of each barcode.

6) Read the "Validate" barcode to end the editing of the barcode set.

Enter Setup

5.6.2 ACTIVATE THE CONCATENATION OF BARCODES

By default, the output sequence editing of the concatenation of barcodes is not applied.

When “Enforce Output Sequence” is enabled, all barcodes read by the scanner must meet with the criteria for the concatenation. If data is found excluded from all output sequence sets (= not meeting with the criteria), the scanner will not accept the reading, and therefore, data will not be transmitted.

When “Apply Output Sequence” is enabled, only barcodes found meeting with the criteria are counted for the concatenation. Those found not meeting with the criteria are processed normally and individually.

Note: When it requires reading more barcodes to complete the “output sequence” requirements, the scanner will respond with one short beep (low tone). After reading an acceptable barcode, its LED indicator will become solid green and go off (= Good Read).
Upon completion of reading acceptable barcodes, the scanner will respond with one short beep (high tone) and its LED indicator will become solid green and go off (= Good Read).

***Ignore Output Sequence**

Enforce Output Sequence

Apply Output Sequence

Warning: When you disable the Multi-Barcode Editor later, the scan mode remains unchanged. If Laser mode is not desired, proceed to select a scan mode that best suits your application.

Update

5.7 REMOVAL OF SPECIAL CHARACTER

You can only specify 1 character, but it will remove every matching character encountered from the starting position of barcode data until a different character is met. For example, if it is configured to remove the character "0" (hex value is "30"), one or more zeros will be stripped off the barcode data "012345" and "00012345". However, for barcode data "010333", only the first zero will be stripped off.

Remove Special Character

1) Read the barcode above to remove the specified character.
2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string. For example, read "3" and "0" for the scanner to remove the character "0".
3) Read the "Validate" barcode to complete this setting.

5.8 AIM CODE ID

You can add an AIM (Automatic Identification and Mobility) code ID in front of the barcode that share the common purpose of identifying, tracking, recording, storing and communicating essential business, personal or product data. Enabling this function can have the scanner be capable of fast and accurate data collection and search.

Enable

***Disable**

Enter Setup

Chapter 6

APPLYING FORMATS FOR DATA EDITING

The scanner allows advanced data editing by applying user-configured editing formats. The whole processed data can be divided into fields by user-specified rules. These fields together with the user-configurable additional fields consist of the data actually sent to the host computer.

For 1662/1664 to apply any editing format, the maximum output data length of a barcode is 7 KB after configuration. When the data length exceeds 7 KB, editing format will not take effect.

[Time Stamp]	[Prefix Code]	[Code ID]	[Length Code]	[Data]	Additional Field(s)	[Time Stamp]	[Suffix Code]
None by default	None by default	None by default	None by default	Barcode itself	None by default	None by default	0x0d by default

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6.1 ACTIVATING EDITING FORMATS

6.1.1 ACTIVATE EDITING FORMATS

If you have already configured any editing format before, you may directly apply the editing format. If not, you must start with configuring an editing format first, and then, activate the editing format when it is desired in use.

Editing Format 1

Enable

***Disable**

Editing Format 2

Enable

***Disable**

Editing Format 3

Enable

***Disable**

Editing Format 4

Enable

***Disable**

End Programming Format

Editing Format 5

Enable

***Disable**

6.1.2 EXCLUSIVE DATA EDITING

By default, only barcodes found meeting with the criteria are processed by the editing formats. Those found not meeting with the criteria are processed normally.

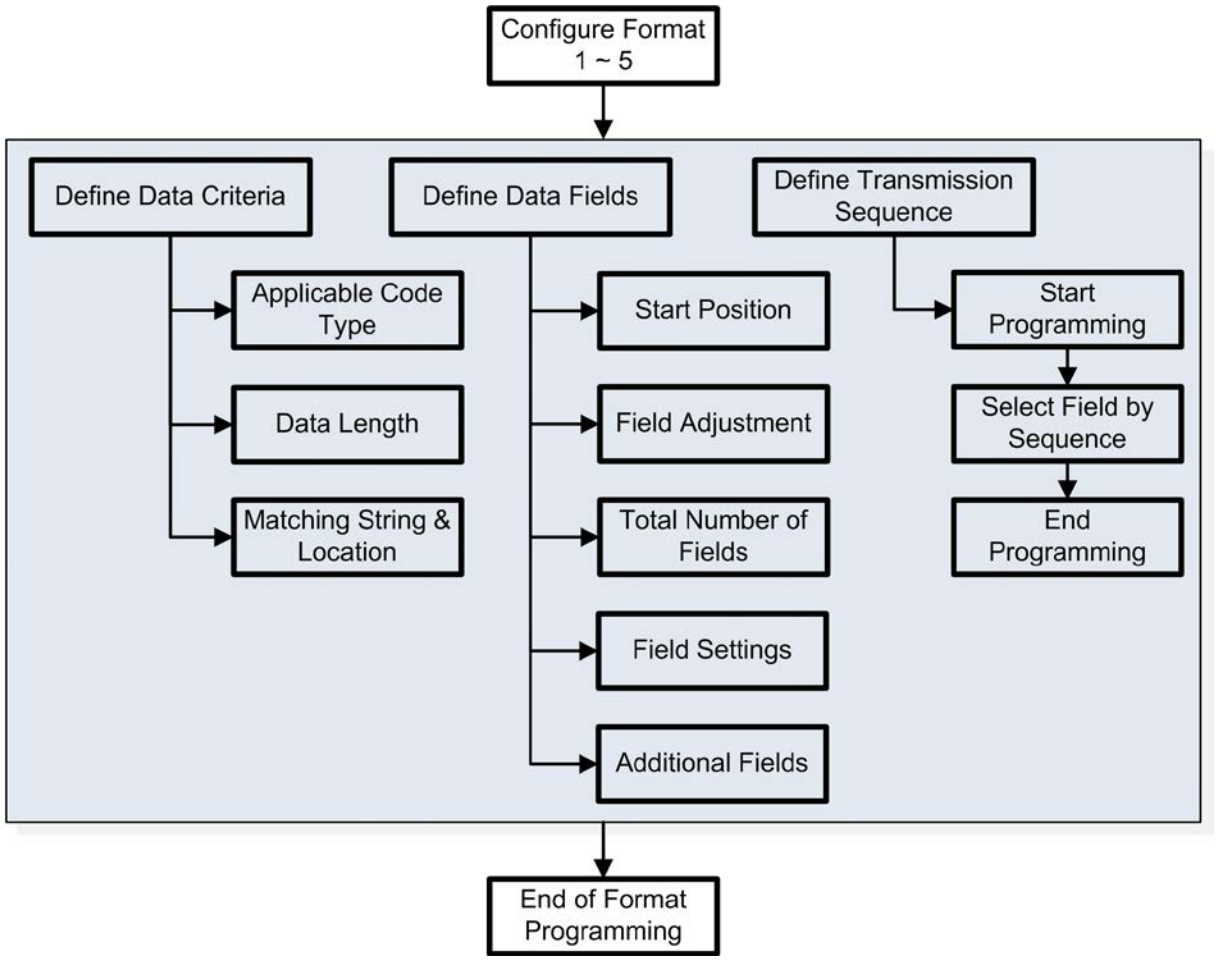
When “Exclusive Data Editing” is enabled, all barcodes read by the scanner must be processed by the editing formats. If data is found excluded from all enabled editing formats (= not meeting with the specified criteria), the scanner will not accept the reading, and therefore, data will not be transmitted.

Yes

***No**

Update

6.2 HOW TO CONFIGURE EDITING FORMATS



End Programming Format

6.2.1 SELECT FORMAT TO CONFIGURE

Start Programming Format

Select one editing format (Format 1~5) and the parameters pertaining to the editing format can then be configured – applicable code type, data length, matching string & location, start position, field adjustment, total number of fields, field settings (field-dividing rule), additional fields, and field transmission sequence.

- Up to five different formats can be specified.

Configure Format 1

109981

Configure Format 2

109982

Configure Format 3

109983

Configure Format 4

109984

Configure Format 5

109985

Note: Before completing the programming of an editing format, if any barcode for parameters other than those pertaining to the editing format is read, the programming process will be automatically aborted.

End Programming Format

After having configured all the desired parameters, you must read the “End Programming Format” barcode, which can be located at the bottom of every even page in this chapter.

End Programming Format

109980

Update

6.2.2 RESTORE DEFAULT FORMAT

You may select an existing editing format and have the defaults restored. The default settings of an editing format are listed below.

Editing format	Defaults
Applicable Code Type	All
Data Length	0 (No qualification)
Matching String	Disable
Matching String Location	None
Start Position	From head
Field Adjustment	No adjustment
Total Number of Fields	1
Field Setting – field-dividing rule	Not configured
Additional Fields	None
Field Transmission Sequence	F1

Restore Default Format

End Programming Format

6.3 CONFIGURE FORMAT — DEFINE DATA CRITERIA

Three applicable conditions can be configured to check whether the data read by the scanner can be processed by the particular editing format.

Note: Data editing cannot be performed unless the three conditions are all met.

6.3.1 APPLICABLE CODE TYPE

By default, barcodes of all the supported symbologies will be processed by any editing format, if having been configured and enabled. For quick configuration, you may first clear all, and then select the desired symbologies.

Note: You must have at least one symbology selected.

***Apply to All**

Clear All

Update

Editing Format for Codabar

***Apply**

Do Not Apply

Editing Format for Code 39

***Apply**

Do Not Apply

Editing Format for Trioptic Code 39

***Apply**

Do Not Apply

Editing Format for Code 93

***Apply**

Do Not Apply

Editing Format for Code 128

***Apply**

Do Not Apply

End Programming Format

Editing Format for GS1-128 & GS1 DataBar

***Apply**

Do Not Apply

Editing Format for ISBT 128

***Apply**

Do Not Apply

Editing Format for EAN-8

***Apply**

Do Not Apply

Editing Format for EAN-8 Addon 2

***Apply**

Do Not Apply

Editing Format for EAN-8 Addon 5

***Apply**

Do Not Apply

Update

Editing Format for EAN-13

***Apply**

Do Not Apply

Editing Format for EAN-13 Addon 2

***Apply**

Do Not Apply

Editing Format for EAN-13 Addon 5

***Apply**

Do Not Apply

Editing Format for Italian Pharmacode

***Apply**

Do Not Apply

Editing Format for Industrial 25

***Apply**

Do Not Apply

End Programming Format

Editing Format for Interleaved 25

***Apply**

Do Not Apply

Editing Format for Matrix 25

***Apply**

Do Not Apply

Editing Format for Chinese 25

***Apply**

Do Not Apply

Editing Format for MSI

***Apply**

Do Not Apply

Editing Format for UPC-A

***Apply**

Do Not Apply

Update

Editing Format for UPC-A Addon 2

***Apply**

Do Not Apply

Editing Format for UPC-A Addon 5

***Apply**

Do Not Apply

Editing Format for UPC-E

***Apply**

Do Not Apply

Editing Format for UPC-E Addon 2

***Apply**

Do Not Apply

Editing Format for UPC-E Addon 5

***Apply**

Do Not Apply

End Programming Format

Editing Format for UCC Coupon Extended Code

*Apply

101623

Do Not Apply

101622

Editing Format for Code 11

*Apply

101627

Do Not Apply

101626

Editing Format for Composite CC-A/B

*Apply

101629

Do Not Apply

101628

Editing Format for Composite CC-C

*Apply

101631

Do Not Apply

101630

Editing Format for Composite TLC-39

*Apply

101633

Do Not Apply

101632

Update

Editing Format for US Postnet

***Apply**

Do Not Apply

Editing Format for US Planet

***Apply**

Do Not Apply

Editing Format for UK Postal

***Apply**

Do Not Apply

Editing Format for Japan Postal

***Apply**

Do Not Apply

Editing Format for Australian Postal

***Apply**

Do Not Apply

End Programming Format

Editing Format for Dutch Postal

***Apply**

101647

Do Not Apply

101646

Editing Format for USPS 4CB/One Code/Intelligent Mail

***Apply**

101649

Do Not Apply

101648

Editing Format for UPU FICS Postal

***Apply**

101651

Do Not Apply

101650

Editing Format for PDF417

***Apply**

101653

Do Not Apply

101652

Editing Format for MicroPDF417

***Apply**

101655

Do Not Apply

101654

Update

Editing Format for Data Matrix

***Apply**

Do Not Apply

Editing Format for Maxicode

***Apply**

Do Not Apply

Editing Format for QR Code

***Apply**

Do Not Apply

Editing Format for MicroQR

***Apply**

Do Not Apply

Editing Format for Aztec

***Apply**

Do Not Apply

End Programming Format

6.3.2 DATA LENGTH

The length must include prefix, suffix (0x0d by default), length code, etc. By default, barcodes of any length (character count) are eligible for data editing.

- A value from 0 to 254 can be specified.
- When zero is given to both, the scanner will not perform the length qualification.

1) Read the barcode below to specify Max. Length or Min. Length separately, and follow steps 2~3.

Max. Length

Min. Length

2) Read the "Decimal Value" barcode on page 265 for the desired length.

3) Read the "Validate" barcode on the same page to complete this setting.

Update

6.3.3 MATCHING STRING & LOCATION

By default, no matching string is specified, and therefore, it is disabled. You may enable this feature by specifying a matching string; up to four characters are allowed.

- When the Matching String Location is zero, the scanner will only check for the existence of the matching string in the barcode data.
- Specify a value from 1 to 254 to indicate where the matching string starts in the barcode data.

1) Read the barcode to specify a matching string.

Matching String…

2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string.
3) Read the "Validate" barcode to complete this setting.
4) Read the barcode to specify the location of the matching string.

Location of Matching String…

5) Read the "Decimal Value" barcode on page 265 for the desired location.
6) Read the "Validate" barcode on the same page to complete this setting.

End Programming Format

6.4 CONFIGURE FORMAT — DEFINE DATA FIELD

6.4.1 START POSITION

Data can be divided into fields in one of the following direction –

- from head (F1) to tail (F5)
- from tail (F1) to head (F5)

***From Head**

From Tail

6.4.2 FIELD ADJUSTMENT

You may apply equal length to all fields, if necessary. If data is found longer than specified, it will be truncated automatically. When data is found shorter, it will add "Space" (0x20) to field.

***No adjustment**

Set length to adjust fields… (*0)

1) Read the barcode above to adjust field by length.
2) Read the "Decimal Value" barcode on page 265 for the desired field length.
3) Read the "Validate" barcode on the same page to complete this setting.

Update

6.4.3 TOTAL NUMBER OF FIELDS

Data can be divided into at most 6 fields; each of them is numbered from F1 to F6 accordingly. However, only F1~F5 can be configured.

- The total number of fields must be specified correctly. If three fields are configured for the editing format, the data characters after F3 will be assigned to F4 automatically. This feature is quite useful especially when data of variable lengths is processed by editing formats.

***One Field**

Two Fields

Three Fields

Four Fields

Five Fields

Six Fields

Note: The number of configurable fields is always one less than the total number of fields specified. The extra data characters beyond the last field configured will be automatically assigned to the next field.

End Programming Format

6.4.4 FIELD SETTINGS

Data eligible for editing formats is divided into fields by user-specified rules – either using the field terminating string or specified field length.

By Terminating String

Specify the field terminating string. Up to two characters are allowed. The scanner will search for the occurrence of this particular string in the data.

- By default, this string will be included in the field. You may discard it.

By Length

Alternatively, you may simply specify the field length. The scanner will assign the next specified number of characters into the field.

Field 1 Setting

1) Read the barcode below to divide field 1 by a specified terminating string.

Select Field Separator to Divide Field 1…

2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string.

3) Read the "Validate" barcode to complete this setting.

4) Read the "Discard Separator" barcode if the field separator is not desired in the field.

***Include Separator**

Discard Separator

If not dividing the field by a specific separator, you may divide it by a specified length.

1) Read the barcode below to divide field 1 by length.

Divide Field 1 by Length

2) Read the "Decimal Value" barcode on page 265 for the desired field length.

3) Read the "Validate" barcode on the same page to complete this setting.

Update

Field 2 Setting

1) Read the barcode below to divide field 2 by a specified terminating string.

Select Field Separator to Divide Field 2…

2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string.

3) Read the "Validate" barcode to complete this setting.

4) Read the "Discard Separator" barcode if the field separator is not desired in the field.

***Include Separator**

Discard Separator

If not dividing the field by a specific separator, you may divide it by a specified length.

1) Read the barcode below to divide field 2 by length.

Divide Field 2 by Length

2) Read the "Decimal Value" barcode on page 265 for the desired field length.

3) Read the "Validate" barcode on the same page to complete this setting.

End Programming Format

Field 3 Setting

1) Read the barcode below to divide field 3 by a specified terminating string.

Select Field Separator to Divide Field 3…

2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string.

3) Read the "Validate" barcode to complete this setting.

4) Read the "Discard Separator" barcode if the field separator is not desired in the field.

***Include Separator**

Discard Separator

If not dividing the field by a specific separator, you may divide it by a specified length.

1) Read the barcode below to divide field 3 by length.

Divide Field 3 by Length

2) Read the "Decimal Value" barcode on page 265 for the desired field length.

3) Read the "Validate" barcode on the same page to complete this setting.

Update

Field 4 Setting

1) Read the barcode below to divide field 4 by a specified terminating string.

Select Field Separator to Divide Field 4…

2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string.

3) Read the "Validate" barcode to complete this setting.

4) Read the "Discard Separator" barcode if the field separator is not desired in the field.

***Include Separator**

Discard Separator

If not dividing the field by a specific separator, you may divide it by a specified length.

1) Read the barcode below to divide field 4 by length.

Divide Field 4 by Length

2) Read the "Decimal Value" barcode on page 265 for the desired field length.

3) Read the "Validate" barcode on the same page to complete this setting.

End Programming Format

Field 5 Setting

1) Read the barcode below to divide field 5 by a specified terminating string.

Select Field Separator to Divide Field 5…

2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string.

3) Read the "Validate" barcode to complete this setting.

4) Read the "Discard Separator" barcode if the field separator is not desired in the field.

***Include Separator**

Discard Separator

If not dividing the field by a specific separator, you may divide it by a specified length.

1) Read the barcode below to divide field 5 by length.

Divide Field 5 by Length

2) Read the "Decimal Value" barcode on page 265 for the desired field length.

3) Read the "Validate" barcode on the same page to complete this setting.

Update

Additional Fields

Up to five additional fields can be created for each editing format; each of them is numbered from AF1 to AF5 accordingly.

- If "*Bluetooth*® HID" or "USB HID" is configured for interface, Key Type and Key Status will then become applicable. You may decide whether or not to apply Key Status when "Normal Key" is selected for Key Type.

Key Type		Key Status
Scan Code	Up to 2 scan code values are allowed.	N/A
Normal Key	Up to 4 character strings are allowed.	▸ Add Shift ▸ Add Left Ctrl ▸ Add Left Alt ▸ Add Right Ctrl ▸ Add Right Alt Refer to Keyboard Wedge Table.

1) Read the barcode below to specify an additional field, one at a time.

Additional Field 1… 101584

Additional Field 2… 101585

Additional Field 3… 101586

Additional Field 4… 101587

Additional Field 5… 101588

2) Read the "Hexadecimal Value" barcode on page 266 for the desired additional field.

3) Read the "Validate" barcode to complete this setting.

End Programming Format

6.4.5 PAUSE FIELD SETTING

Pause Field Time

You can limit the pause time interval (1~16). By default, it is set to 1 second.

Pause Field Time
1~16 sec.
(*1)

1) Read the barcode above to specify the time interval for the Pause Field. (It is set to 1 by default.)

2) Read the "Decimal Value" barcode on page 265. For example, read "1" and "0" for setting the Pause Field Time to 10 seconds.

3) Read the "Validate" barcode on the same page to complete this setting.

Update

6.5 CONFIGURE FORMAT – DEFINE TRANSMISSION SEQUENCE

After configuring the data fields and additional fields, you must now program the transmission sequence of these fields that comprise the final data. This field transmission sequence can be assigned in any desired order and fields can be assigned multiple times as well.

Note: Up to twelve fields can be assigned.

1) Read the "Start" barcode to begin with programming the field transmission sequence.

Start Programming…

101589

2) Program the transmission sequence by reading the desired fields as well as additional fields.

Field 1

109901

Field 2

109902

Field 3

109903

Field 4

109904

Field 5

109905

Field 6

109906

Additional Field 1

109907

End Programming Format

Additional Field 2

Additional Field 3

Additional Field 4

Additional Field 5

Pause Field

Null Character Field

3) Read the “End” barcode to complete this setting.

End Programming…

Update

6.6 PROGRAMMING EXAMPLES

6.6.1 EXAMPLE I

Extract data from the 10th character to the 19th character...

The editing format should be configured as follows:

1) Read the “Enter Setup” barcode to enter the Configuration Mode.
2) Read the “Configure Format 1” barcode.
3) Read the “Clear All” and “Code 128” barcodes for applicable code type.
4) Read the “Three Fields” barcode.
5) Read the “Divide Field 1 by Length” barcode, and set length to 9.
   Field 1 data starts from the 1st character to the 9th character.
6) Read the “Divide Field 2 by Length” barcode, and set length to 10.
   Field 2 data starts from the 10th character to the 19th character.
7) Read the “Start (Programming)” barcode to program the transmission sequence.
8) Read the “Field 2” barcode.
9) Read the “End” barcode to complete the transmission sequence setting.
10) Read the “End Programming Format” barcode to complete the setting of Editing Format 1.
11) Read the “Enable Format 1” barcode to apply Editing Format 1 to Code 128.
12) Read the “Update” barcode to exit the Configuration Mode.

End Programming Format

6.6.2 EXAMPLE II

Extract the date code, item number, and quantity information from barcodes.

Data in a barcode is encoded like this:

- From the 1st character to the 6th character is the date code.
- From the 7th character to the dash '-' character is the item number.
- After the dash '-' character is the quantity information.

Data will be transmitted like this:

- The item number goes first, then a TAB character, followed by the date code, then another TAB character, and finally the quantity information.

The editing format should be configured as follows:

1) Read the "Enter Setup" barcode to enter the Configuration Mode.
2) Read the "Configure Format 2" barcode.
3) Read the "Three Fields" barcode.
4) Read the "Divide Field 1 by Length" barcode, and set length to 6.
   Field 1 data starts from the 1st character to the 6th character.
5) Read the "Select Field Separator to Divide Field 2" barcode, and use a dash '-' character.
   Field 2 data starts from the 7th character until the dash '-' character is met.
6) Read the "Additional Field 1" barcode, and use a tab character for the field.
7) Read the "Start (Programming)" barcode to program the transmission sequence.
8) Read the "Field 2", "Additional Field 1", "Field 1", "Additional Field 1", "Field 3" barcodes.
9) Read the "End" barcode to complete the transmission sequence (F2 A1 F1 A1 F3) setting.
10) Read the "End Programming Format" barcode to complete the setting of Editing Format 1.
11) Read the "Enable Format 2" barcode to apply Editing Format 2 to all code types.
12) Read the "Update" barcode to exit the Configuration Mode.

Update

End Programming Format

SPECIFICATIONS

Optical Characteristics	1662	1664
Scan Engine	1D Laser	2D Imager
Light Source	Visible Laser Diode	Visible Red LED
RF Characteristics		
WPAN Module	*Bluetooth*® Class 2 compliance	
Coverage (line-of-sight)	20 meters with 3610	
Interface Supported	▸ Serial Port Profile (*Bluetooth*® SPP) ▸ Human Interface Device Profile (*Bluetooth*® HID) ▸ 3610 ▸ Direct USB HID ▸ Direct USB Virtual COM	
Physical Characteristics		
Memory	▸ 10 KB for transmit buffer ▸ 4MB flash for memory mode	
Switch	Push-button switch for [Trigger] key, plus [Power/Delete] key	
Indication	Triple-color LED (Red/Green/Blue) and beeper	
Dimensions	113 x 44.9 x 29.9 mm	
Weight	106g (With Battery) 83g (Without Battery)	

Update

Electrical Characteristics		
Battery		Rechargeable Li-ion battery — 3.7 V, 850 mAh
Power Adaptor		
Input		AC 100~240 V (50/60 Hz)
Output		DC 5V 2A (Battery Charger)
Operating Temperature		0 °C to 40 °C
Environmental Characteristics		
Temperature	Operating Storage	0 °C to 50 °C -20 °C to 60 °C
Humidity (Non-condensing)	Operating Storage	10% to 90% 5% to 95%
Resistance		
Electrostatic Discharge		± 15 kV air discharge, ± 8 kV contact discharge
Programming Support		
Configuration		Use setup barcodes or host serial commands.
Software		Windows®-based ScanMaster
Firmware upgradeable		Download firmware updates via the download utility.
Accessories (√ means "supported")		
CipherLab Dongle(3610)		√
Rechargeable Li-ion Battery		√
Direct USB Cable		√
Wristband		√
Protective Cover (Pouch)		√
Single Battery Charger		√

Enter Setup

Appendix I

FIRMWARE UPGRADE

Upgrade firmware to one scanner at a time. For example, turn off each of the rest scanners when there is more than one scanner connected to host computer.

Note: 1. Ensure the scanner has a fully charged battery prior to attempting a firmware upgrade.
2. In order to avoid data loss during firmware upgrade. Please save or upload all the data from the flash memory before beginning firmware upgrade.

HOW TO UPGRADE 1662/1664 FIRMWARE

USING 3610

1) Connect 3610 to the USB port of PC after installing its driver.
2) Refer to 3.1.1 Connect to 3610 for connecting to 3610.

   Read the “Set Connection” label first, and then the “Serial Number” label. Both labels can be located at the back of 3610.
3) Read the following barcodes in sequence to configure the scanner to use USB Virtual COM as the download interface.

Enter Setup

Activate 3610 USB Virtual COM

100004

Update

109999

Note: For 1662/1664, also choose to use “Direct” USB Virtual COM interface.

4) Read the following barcodes in sequence for the scanner to enter download mode. The scanner will respond with beeps to indicate it is ready for downloading.

Update

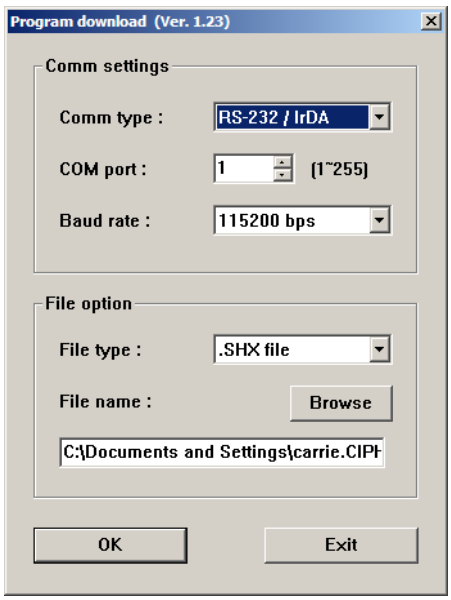
Enter Setup

Download

109997

5) Run the download utility “ProgLoad.exe” on your computer.

Kernel Program	User Program
K1664_V*.shx	STD1664_V*.shx



- For the communication settings, select “RS-232” and the correct COM port for USB Virtual COM interface.
- Ignore the baud rate setting.
- For the file option, click [Browse] to select the target file for firmware update.
- Click [OK].

6) After upgrading kernel, you will need to manually restart the scanner.

After upgrading the user program, the scanner will automatically restart itself once the download is completed successfully.

Note: The output interface remains unchanged as specified in step 3 (= USB Virtual COM).

Enter Setup

USE DIRECT USB VIRTUAL COM

1) Use the provided USB cable to connect 1662/1664 to the USB port of PC. You will need to install its driver first!

2) Read the following barcodes in sequence to configure 1662/1664 to use Direct USB Virtual COM as the download interface (read either barcode label '100008' or '100010').

Enter Setup

Activate Direct USB Virtual COM

100008

Or

Activate Direct USB Virtual COM_CDC

100010

Update

109999

3) And then read the following barcodes in sequence for the scanner to enter download mode. The scanner will respond with beeps to indicate it is ready for downloading.

Enter Setup

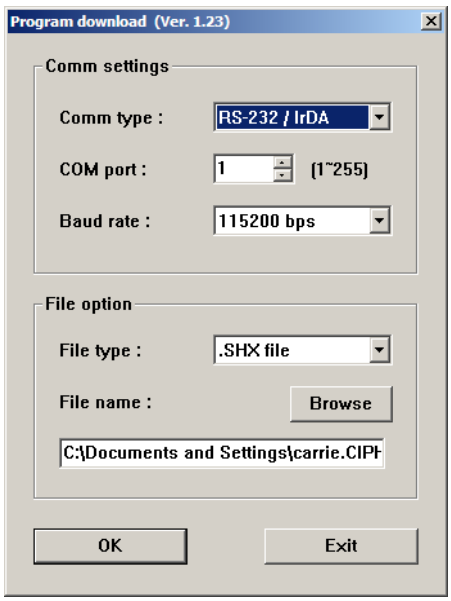
Download

109979

4) Run the download utility "ProgLoad.exe" on host computer.

Kernel Program	User Program
K1664_V*.shx	STD1664_V*.shx

Update



- For the communication settings, select "RS-232" and the correct COM port for Direct USB Virtual COM interface.
- Ignore the baud rate setting.
- For the file option, click [Browse] to select the target file for firmware update.
- Click [OK].

5) After upgrading kernel, you will need to restart the scanner manually.

After upgrading the user program, the scanner will restart itself automatically once the download is completely.

Note: Because 1662/1664 supports the downloading of firmware via Direct USB Virtual COM interface, the output interface will be set to the previously used one upon completion of firmware upgrade.

USE *BLUETOOTH*® DONGLE

1) Refer to 3.2.3 Connect to Dongle for the target scanner to accept the connection request from your computer.

2) Read the following barcodes in sequence to configure the scanner to use *Bluetooth*® SPP as download interface.

Enter Setup

Activate *Bluetooth*® SPP

100003

Update

109999

Enter Setup

3) Read the following barcodes in sequence for the scanner to enter the download mode. The scanner will respond with beeps to indicate it is ready for downloading.

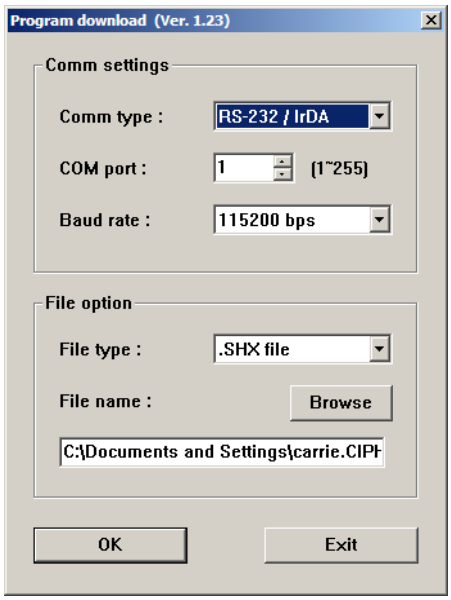
Enter Setup

Download

109997

4) Run the download utility “ProgLoad.exe” on your computer.

Kernel Program	User Program
K1664_V*.shx	STD1664_V*.shx



- For the communication settings, select “RS-232” and the correct COM port for *Bluetooth*® SPP interface.
- Ignore the baud rate setting.
- For the file option, click [Browse] to select the target file for firmware update.
- Click [OK].

5) After upgrading kernel, you will need to manually restart the scanner.

After upgrading the user program, the scanner will automatically restart itself once the download is completed successfully.

Note: The output interface remains unchanged as specified in step 2 (=*Bluetooth*® SPP).

Update

HOW TO UPGRADE 3610 FIRMWARE

Connect 3610 to the USB port of PC after installing its driver. Refer to 3.1.1 Connect to 3610 for the target scanner to connect to 3610.

Note: While upgrading 3610 firmware, the system automatically uses the VCOM_CDC driver if the current connection interface is HID. Make sure the VCOM_CDC driver has been installed on your computer (for firmware 2.0 or later).

UPGRADE 3610 CPU FIRMWARE

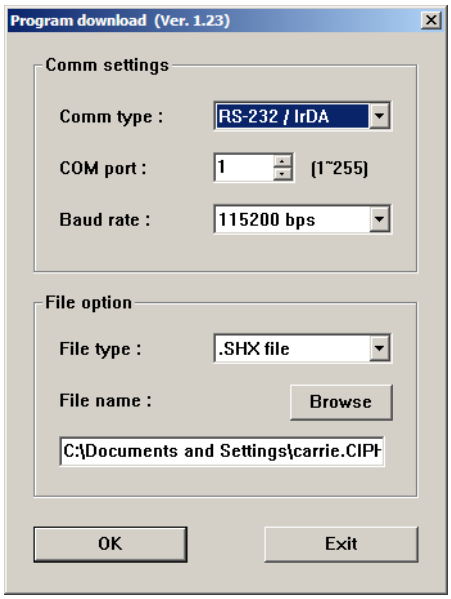
1) Read the following barcodes in sequence for 3610 to enter the download mode. The Communication LED on 3610 will be flashing red to indicate it is ready for downloading.

Enter Setup

Download 3610 CPU Firmware

2) Run the download utility “ProgLoad.exe” on your computer.

Kernel Program	User Program
K3610_V*.shx	STD3610_V*.shx



- For the communication settings, select “RS-232” and the correct COM port for USB Virtual COM interface.
- Ignore the baud rate setting.
- For the file option, click [Browse] to select the target file for firmware update.
- Click [OK].

Enter Setup

3) The 3610 will automatically restart itself when upgrading firmware is completed successfully.

4) Read the "Update" barcode for the scanner to resume its operation (exit the configuration mode).

Update

UPGRADE 3610 USB BRIDGE FIRMWARE

Note: Upgrade USB bridge firmware only for elder firmware versions. There's no need for 3610 firmware version 2.0 or later to upgrade USB bridge firmware.

I) Read the following barcodes in sequence for 3610 to enter the download mode. The Communication LED on 3610 will be flashing red to indicate it is ready for downloading.

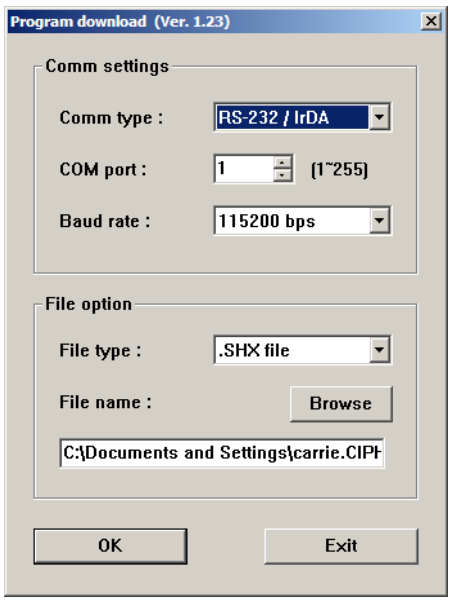
Enter Setup

Download 3610 USB Bridge Firmware

2) Run the download utility "ProgLoad.exe" on your computer.

Kernel Program	User Program
K3610Bridge_V*.shx	STD3610Bridge_V*.shx

Update



- For the communication settings, select "RS-232" and the correct COM port for USB Virtual COM interface.
- Ignore the baud rate setting.
- For the file option, click [Browse] to select the target file for firmware update.
- Click [OK].

3) The 3610 will automatically restart itself when upgrading firmware is completed successfully.

4) Read the "Update" barcode for the scanner to resume its operation (exit the configuration mode).

Update

109999

Enter Setup

Appendix II

HOST SERIAL COMMANDS

SERIAL COMMANDS

D

Purpose	To disable the scanner.
Remarks	"D"

E

Purpose	To enable the scanner.
Remarks	"E"

#@nnnnnn<CR>

Purpose	To configure the scanner.
Remarks	nnnnnn – the six digits of command parameters.
	For example, "109952" is to list the current Code ID settings.

List Page 3

Serial Command

"0x23" + "0x40" + "0x31" + "0x30" + "0x39" + "0x39" + "0x35" + "0x32" + "0x0d"

Note: After configuring the scanner, you may send the serial command "#@109999" to save the settings.

#@----<CR>

Purpose	To halt the scanner.
Remarks	"0x23" + "0x40" + "0x2d" + "0x2d" + "0x2d" + "0x2d" + "0x0d"

#@....<CR>

Purpose	To resume operation.
Remarks	"0x23" + "0x40" + "0x2e" + "0x2e" + "0x2e" + "0x2e" + "0x0d"

#@////<CR>

Purpose	To respond with a beep.
Remarks	"0x23" + "0x40" + "0x2f" + "0x2f" + "0x2f" + "0x2f" + "0x0d"

Update

#@TRIGOFF<CR>

Purpose	To disable the software trigger
Remarks	"0x23" + "0x40" + "0x54" + "0x52" + "0x49" + "0x47" + "0x4f" + "0x46" + "0x46" + "0x0d"

#@TRIGON<CR>

Purpose	To enable the software trigger
Remarks	"0x23" + "0x40" + "0x54" + "0x52" + "0x49" + "0x47" + "0x4f" + "0x4e" + "0x0d"

#@RDSN<CR>

Purpose	To read serial number
Remarks	"0x23" + "0x40" + "0x52" + "0x44" + "0x53" + "0x4E" + "0x0D"

#@BEEP,nn<CR>

Purpose	Have the scanner beep as many times as you specified ranging from 00 to 99 times (00 is to stop the work). The length of beep time is based on the duration of Good Read Beep setting and the constant interval between two beeps is 100ms.
Remarks	nn – the two digits of command parameters For example, '#@BEEP,09' is to have the scanner beep for 9 times. "0x23" + "0x40" + "0x42" + "0x45" + "0x45" + "0x50" + "0x2c" + "0x30" + "0x39" + "0x0d"

#@RLED,nn<CR>

Purpose	Have the scanner's red LED indicator blink as many times as you specified ranging from 00 to 99 (00 is to stop the work). The length of blinking time is based on the Good Read LED Duration setting and the constant interval between two flashes is 200ms.
Remarks	nn –the two digits of command parameters For example, '#@RLED,09' is to have the scanner blink for 9 times. "0x23" + "0x40" + "0x52" + "0x4c" + "0x45" + "0x44" + "0x2c" + "0x30" + "0x39" + "0x0d"

#@GLED,nn<CR>

Purpose	Have the scanner's green LED indicator blink as many times as you specified ranging from 00 to 99 (00 is to stop the work). The length of blinking time is based on the Good Read LED Duration setting and the constant interval between two flashes is 200ms.
Remarks	nn – the two digits of command parameters

Enter Setup

For example, '#@GLED,09' is to have the scanner blink for 9 times.

"0x23" + "0x40" + "0x47" + "0x4c" + "0x45" + "0x44" + "0x2c" + "0x30" + "0x39" + "0x0d"

#@VIBR,nn<CR>

Purpose	Have the scanner vibrate as many times as you specified ranging from 00 to 99 (00 is to stop the work). The length of vibrating time is based on the Good Read Vibrator Duration setting and the constant interval between two shakes is 500ms.
Remarks	nn – the two digits of command parameters For example, '#@VIBR,09' is to have the scanner blink for 9 times. "0x23" + "0x40" + "0x56" + "0x49" + "0x42" + "0x52" + "0x2c" + "0x30" + "0x39" + "0x0d"

#@RDBATCAP<CR>

Purpose	Get battery capacity information.
Remarks	"0x23" + "0x40" + "0x52" + "0x44" + "0x42" + "0x41" + "0x54" + "0x43" + "0x41" + "0x50" + "0x0d"

EXAMPLE

You may run HyperTerminal.exe on the host computer to send serial commands to the scanner via USB Virtual COM or *Bluetooth*® SPP.

- For the scanner to stop immediately –

  D

- For the scanner to resume working –

  E

- For the scanner to change the beeper to medium volume and beep –

  #@101011<CR>

  #@////<CR>

- For the scanner to change the beeper to minimal volume and beep –

  #@101010<CR>

  #@////<CR>

- For the scanner to change the beeper frequency to 8 kHz (for Good Read Beep only) and beep –

  #@101001<CR>

  #@////<CR>

- For the scanner to change the beeper length to longest (for Good Read Beep only) and beep –

  #@101008<CR>

Update

#@////<CR>

- For the scanner to save the settings, send the serial command "#@109999" –
  #@101011<CR>
  #@109999<CR>
- For the scanner to read the serial number and beep -
  #@RDSN<CR>
  #@////<CR>
- For the scanner to beep for nine times -
  #@BEEP,09<CR>
- For the scanner's LED indicator to blink in red for nine times -
  #@RLED,09<CR>
- For the scanner's LED indicator to blink in green for nine times -
  #@GLED,09<CR>
- For the scanner to shake for nine times -
  #@VIBR,09<CR>
- Get the battery capacity information -
  #@RDBATCAP<CR>

Note: (1) For USB Virtual COM, only configure the first scanner that connects to 3610. To identify the scanner, send the serial command to have it respond with a beep. (2) For *Bluetooth*® SPP, allows configuring up to seven scanners at the same time.

Enter Setup

3610 SETUP BARCODES & SERIAL COMMANDS

Normally, configure the 3610 dongle by having a connected scanner read 3610-related setup barcodes.

1) Connect 3610 to the USB port of PC. You will need to install its driver first!
2) Refer to 3.1.1 Connect to 3610 for the target scanner to connect to 3610.

   Read the “Set Connection” label first, and then the “Serial Number” label. Both labels can be located at the back of 3610.
3) Read the following barcodes in sequence to configure 3610.

Enter Setup

Update

For 3610-related setup barcodes, refer to the Setup Barcodes list below. Note that for the “Version” and “GetID” barcodes, you must run HyperTerminal.exe or any text editor to receive or view the information.

- If the output interface is USB Virtual COM, run HyperTerminal.exe on the host computer to receive the information.
- If the output interface is USB HID, run any text editor to receive the information.

Update

3610 SERIAL COMMANDS AND EQUIVALENT SETUP BARCODES

Config<CR>

Purpose To configure 3610.

Here is the setup barcode for this serial command:

Config

Remarks A list of the current settings will be displayed. Run HyperTerminal.exe on your computer and change the settings one by one.

DefaultSetting<CR>

Purpose To restore the default settings.

Here is the setup barcode for this serial command:

DefaultSetting

SingleConnection<CR>

Purpose To allow only one scanner connecting to 3610.

Here is the setup barcode for this serial command:

SingleConnection

MultiConnection<CR>

Purpose To allow up to seven scanners connecting to 3610.

Here is the setup barcode for this serial command:

MultiConnection

UseOnePortforAll<CR>

Purpose To use one Virtual COM port for all whenever connecting 3610 to PC via USB. This setting requires to connect one 3610 at a time, and will facilitate configuring multiple 3610 via the same Virtual COM port (for administrators' or factory use).

Here is the setup barcode for this serial command:

UseOnePortforAll

Enter Setup

UseVariablePort<CR>

Purpose To use variable Virtual COM port when connecting more than one 3610 to PC via USB.

Here is the setup barcode for this serial command:

UseVariablePort

Version<CR>

Purpose To get the firmware versions (CPU+USB Bridge).

Here is the setup barcode for this serial command:

Version

GetID<CR>

Purpose To get MAC ID.

Here is the setup barcode for this serial command:

GetID

Download<CR>

Purpose To download CPU firmware to 3610.

Here is the setup barcode for this serial command:

Download

LoadBridge<CR>

Purpose To download USB Bridge firmware to 3610.

Here is the setup barcode for this serial command:

LoadBridge

Update

EXAMPLE

Without using the scanner to read the above setup barcodes for configuring the 3610 dongle, run HyperTerminal.exe on the host computer to send serial commands to 3610 via USB Virtual COM.

I) Connect 3610 to the USB port of PC.

2) The Communication LED will indicate when 3610 can accept serial commands after initializing. Refer to the table below.

- If the output interface is USB Virtual COM, run HyperTerminal.exe on the host computer. While the Communication LED on 3610 is purple (red with flashing blue), type the serial command within 3 seconds.
- If the output interface is USB HID, press the “Num Lock” or “Caps Lock” key via the keyboard 5 times within 3 seconds while the Communication LED on 3610 is flashing red and blue. This will change the interface from USB HID to USB Virtual COM and the Communication LED will become purple (red with flashing blue). Then, run HyperTerminal.exe on the host computer. While the Communication LED on 3610 is purple (red with flashing blue), type the serial command within 3 seconds. After configuring via serial commands, the interface will reset to USB HID after re-connecting 3610.

Communication LED		Meaning
---	Blue, solid	Initialize
Red, solid	Blue, flashing	Serial command mode with USB Virtual COM: wait 3 seconds for starting a serial command
Red, flashing	Blue, flashing	Serial command mode with USB HID changed to USB Virtual COM first: wait 3 seconds for pressing [Num Lock] or [Caps Lock] 5 times via keyboard

The serial commands mentioned above have to be typed within 3 seconds. However, the commands below can be typed freely without any time limit.

#$ShowScanner<CR>

Purpose	To list the scanner devices connecting with 3610

#$SelectScannerN<CR>

Purpose	To select a scanner device from the list for configuring
Remarks	N – the scanner ID in numerals representing the scanner device in the list

Enter Setup

Appendix III

KEYBOARD WEDGE TABLE

	0	1	2	3	4	5	6	7	8
0		F2	SP	0	@	P	`	p	⓪
1	INS	F3	!	1	A	Q	a	q	①
2	DLT	F4	"	2	B	R	b	r	②
3	Home	F5	#	3	C	S	c	s	③
4	End	F6	$	4	D	T	d	t	④
5	Up	F7	%	5	E	U	e	u	⑤
6	Down	F8	&	6	F	V	f	v	⑥
7	Left	F9	'	7	G	W	g	w	⑦
8	BS	F10	(	8	H	X	h	x	⑧
9	HT	F11	)	9	I	Y	i	y	⑨
A	LF	F12	*	:	J	Z	j	z	
B	Right	ESC	+	;	K	[	k	{	
C	PgUp	Exec	,	<	L	\	l	|	
D	CR	CR*	-	=	M	]	m	}	
E	PgDn		.	>	N	^	n	~	
F	F1		/	?	O	_	o	Dly	ENTER*

Note: (1) ⓪~⑨: Digits of numeric keypad.
(2) CR*/ENTER*: ENTER key on the numeric keypad.

Update

KEY TYPE & STATUS

KEY TYPE

If "*Bluetooth*® HID" or "USB HID" is configured for interface, Key Type and Key Status will then become applicable.

***Normal**

109926

Scan Code

109936

KEY STATUS

Decide whether or not to change key status when "Normal Key" is selected for Key Type.

Add Shift

109930

Add Left Ctrl

109931

Add Right Ctrl

109933

Add Left Alt

109932

Add Right Alt

109934

Enter Setup

EXAMPLE

KEY TYPE = NORMAL

For example, if you want to program the character "!" as the prefix code:

1) Read the "Configure Prefix" barcode.
2) Read the "Hexadecimal Value" barcode on page 266 for "2" and "1".
3) Read the "Validate" barcode to complete this setting.

KEY TYPE = SCAN CODE

For example, if you want to program the character "a" (= "1C" on the scan code table) as the prefix code:

1) Read the "Configure Prefix" barcode.
2) Read the "Scan Code" barcode.
3) Read the "Hexadecimal Value" barcode on page 266 for "1" and "C".
4) Read the "Validate" barcode to complete this setting.

KEY TYPE = NORMAL + KEY STATUS = SHIFT

For example, if you want to program the character "!" (= "Shift" + "1" on keyboard) as the prefix code:

1) Read the "Configure Prefix" barcode.
2) Read the "Add Shift" barcode.
3) Read the "Hexadecimal Value" barcode on page 266 for "3" and "1".
4) Read the "Validate" barcode to complete this setting.

KEY TYPE = NORMAL + KEY STATUS = CTRL

For example, if you want to program "Ctrl+A" and "Ctrl+$" as the prefix code:

1) Read the "Configure Prefix" barcode.
2) Read the "Add Left Ctrl" barcode.
3) Read the "Hexadecimal Value" barcode on page 266 for "4", "1" (= "A").
4) Read the "Add Left Ctrl" barcode.
5) Read the "Hexadecimal Value" barcode on page 266 for "2", "4" (= "$").
6) Read the "Validate" barcode to complete this setting.

Update

Enter Setup

Appendix IV

NUMERAL SYSTEMS

DECIMAL SYSTEM

Decimal

0

109900

1

109901

2

109902

3

109903

4

109904

5

109905

6

109906

7

109907

8

109908

9

109909

Validate the Values

Validate

109994

Update

Abort

HEXADECIMAL SYSTEM

Hexadecimal

0

109900

1

109901

2

109902

3

109903

4

109904

5

109905

6

109906

7

109907

8

109908

9

109909

A

109910

B

109911

C

109912

D

109913

E

109914

F

109915

Enter Setup

Validate the Values

Validate

109994

ASCII TABLE

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

Update

Abort

ENTERING PIN CODE FOR AUTHENTICATION

USE PRESET PIN

1) In the configuration mode, read the barcode below to use a preset PIN for authentication.

Use Preset PIN

100155

2) Read one of the barcodes to specify the PIN code, in decimal or hexadecimal.

By default, the PIN code is set to "0000". Maximum 16 characters are allowed.

Enter PIN in Hexadecimal…

100150

Enter PIN in Decimal…

100151

3) Read the "Decimal Value" barcode on page 265 or the "Hexadecimal Value" barcode on page 266 for the desired digits or character string.

Read the "Clear PIN Code" barcode first if you need to re-input the PIN code.

Clear PIN Code

109973

4) Read the "Validate" barcode to complete this setting.

Enter Setup

DISABLE AUTHENTICATION OR USE RANDOM PIN

In the configuration mode, read the barcode below to disable authentication (= No PIN) or use a random PIN for authentication.

***No PIN or use random PIN**

Note: When using *Bluetooth*® HID, some device drivers may not support pre-defined PIN code for authentication. In this case, make sure you have the scanner set to "No PIN or use random PIN" before pairing. While pairing, the host PIN code will be displayed on the computer screen.

Use Random PIN

When the target device is set to use a random PIN for authentication, wait until the random PIN is displayed on the target device while pairing, and then input the matching PIN code on the scanner.

Note: Follow the steps below to enter the matching PIN on the scanner. There is no need to enter the configuration mode!

1) Read one of the barcodes to specify the PIN code, in decimal or hexadecimal.

Enter PIN in Hexadecimal…

Enter PIN in Decimal…

2) Read the "Decimal Value" barcode on page 265 or the "Hexadecimal Value" barcode on page 266 for the desired digits or character string.

   Read the "Clear PIN Code" barcode first if you need to re-input the PIN.

Clear PIN Code

Update

Abort

3) Read the “Validate” barcode to complete this setting.

Reject Random PIN Request

When the random PIN is displayed on the target device while pairing, you can reject the PIN request by having the scanner read the “Validate” barcode.

Enter Setup

Appendix V

SET UP DRIVER LICENSE (1664 ONLY)

1664 has the capable of reading 2D driver's licenses and other American Association of Motor Vehicle Administrators (AAMVA) compliant ID cards. For compliant 2D licensed card scanning, it can decode the information embedded in the ID cards to a formatted data. Combine with ScanMaster utility, it also supports user an arranged and easy-to-use interface.

Note: The configured settings will be saved into the Flash memory and applied when using next time.

LICENSE PARSING

***Parse Disable**

Parse Enable

Parse Field Clear

FILE TYPE

You can check the file type of ANSI by scanning the barcode as below.

***Enable**

Disable

Update

Abort

LICENSE DATA

1664 allows you to arrange the sequences of license embedded data via separators and fields. In order to present data in a consistent format, some barcodes (ex. First Name, Middle Name/Initial, Last Name, Name suffix, Name Prefix, Birth Date and so on) will return data based on the calculated actual data contained in the ID bar code.

Full Name

Last Name

First Name

Middle Name/Initial

Name Suffix

Name Prefix

Mailing Address Line1

Mailing Address Line2

Mailing Address City

Mailing Address State

Enter Setup

Mailing Address Postal Code

103021

Home Address Line1

103022

Home Address Line2

103023

Home Address City

103024

Home Address State

103025

Home Address Postal Code

103026

License ID Number

103027

License Class

103028

License Restrictions

103029

License Endorsements

103030

Height (Feet and/or Inches)

103031

Height (Centimeters)

103032

Update

Abort

Weight (Pounds)

Weight (Kilograms)

Eye Color

Hair Color

License Expiration Date

Birth Date

Gender

License Issue Date

Issue Timestamp

Number of Duplicates

Medical Codes

Organ Donor

Enter Setup

Nonresident

Customer ID

Social Security Number

AKA Birth Date

AKA Social Security Name

AKA Full Name

AKA Last Name

AKA First Name

AKA Middle Name/Initial

AKA Name Suffix

AKA Name Prefix

Weight Range

Update

Abort

Document Discriminator

103057

Country

103058

Federal Commission Codes

103059

Place of Birth

103060

Audit Information

103061

Inventory Control

103062

Race/Ethnicity

103063

Std Vehicle Class

103064

Std Restrictions

103065

Std Endorsements

103066

Class Description

103067

Endorsement Description

103068

Enter Setup

Restrictions Description

103069

Permit Class

103070

Permit Expiration Date

103071

Permit ID Number

103072

Permit Issue Date

103073

Permit Restrictions

103074

Permit Endorsements

103075

Issuer ID Number

103076

Family Name Truncation

103077

First Name Truncation

103078

Middle Name Truncation

103079

SEPARATORS AND FIELDS

You can define the separators to separate Fields during the transmission sequence of data scanning. In addition to the built-in data elements, you can also specify up to 5 Additional Fields with 4 bytes characters. Program the transmission sequence by reading the desired fields as additional fields.

Note: Up to 5 separators can be assigned.

Separator 1
(1 byte)
***"Space"**

103128

Separator 2
(1 byte)
***"Enter"**

103129

Separator 3
(1 byte)
***","**

103130

Separator 4
(1 byte)
***"."**

103131

Separator 5
(1 byte)
***"-"**

103132

Additional Field 1
(4 bytes)

103133

Additional Field 2
(4 bytes)

103134

Additional Field 3
(4 bytes)

103135

Additional Field 4
(4 bytes)

103136

Additional Field 5
(4 bytes)

103137

Enter Setup

EDIT SEPARATORS

All of the driver license fields can be split with a pre-selected separator, for example, "-" as First Name-Last Name or ":" as First Name:Last Name.

Edit Separator 1

Edit Separator 2

Edit Separator 3

Edit Separator 4

Edit Separator 5

1) Read the barcode above to apply separator to driver license information separately, and follow steps 2~3.
2) Read the "Hexadecimal Value" barcode on page 266 for the desired character string. For example, read "3" and "A" for the separator to split the data with character [:].
3) Read the "Validate" barcode on the same page to complete this setting.

Update

Abort

EDIT FIELDS

Up to five additional fields can be created for each editing format; each of them is numbered from Additional 1 to Additional 5 accordingly.

- If "*Bluetooth*® HID" or "USB HID" is configured for interface, Key Type and Key Status will then become applicable. You may decide whether or not to apply Key Status when "Normal Key" is selected for Key Type.

Key Type		Key Status
Scan Code	Up to 2 scan code values are allowed.	N/A
Normal Key	Up to 4 character strings are allowed.	▸ Add Shift ▸ Add Left Ctrl ▸ Add Left Alt ▸ Add Right Ctrl ▸ Add Right Alt Refer to Keyboard Wedge Table.

Edit Additional Field 1

103143

Edit Additional Field 2

103144

Edit Additional Field 3

103145

Edit Additional Field 4

103146

Edit Additional Field 5

103147

1) Read the barcode above to specify an additional field, one at a time.
2) Read the "Hexadecimal Value" barcode on page 266 for the desired additional field.
3) Read the "Validate" barcode on the same page to complete this setting.

Enter Setup

Appendix VI

KEYBOARD TYPE ONE-SCAN BARCODE

REMOTE USB HID (VIA 3610)

PCAT (US)

PCAT (French)

PCAT (German)

PCAT (Italian)

PCAT (Swedish)

PCAT (Norwegian)

PCAT (UK)

PCAT (Belgium)

PCAT (Spanish)

#@RH0072#

PCAT (Portuguese)

#@RH0073#

PS55 A01-2 (Japanese)

#@RH0074#

User-defined table

#@RH0075#

PCAT (Turkish)

#@RH0076#

PCAT (Hungarian)

#@DH0077#

PCAT (Swiss German)

#@RH0078#

PCAT (Danish)

#@RH0079#

BLUETOOTH HID

PCAT (US)

#@BH0064#

PCAT (French)

#@BH0065#

PCAT (German)

#@BH0066#

PCAT (Italian)

#@BH0067#

PCAT (Swedish)

#@BH0068#

PCAT (Norwegian)

#@BH0069#

PCAT (UK)

#@BH0070#

PCAT (Belgium)

#@BH0071#

PCAT (Spanish)

#@BH0072#

PCAT (Portuguese)

#@BH0073#

PS55 A01-2 (Japanese)

#@BH0074#

User-defined table

#@BH0075#

PCAT (Turkish)

#@BH0076#

PCAT (Hungarian)

#@BH0077#

PCAT (Swiss German)

#@BH0078#

PCAT (Danish)

#@BH0079#

PCAT (Dutch)

#@BH0080#

PCAT (Brazilian Portuguese)

#@BH0087#