

ΚΟΛΜΤΑΣ

KDC User Manual

Rev 2.85.R8 / 2.86.R8 / 3.05.R8

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May be covered under the patent laws of the US and other countries. For patent information in the US, see <http://www.koamtac.com/corpVis.html>. There is a patent pending in the UK as GB2492615.

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TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO ANY TYPE OF MOISTURE. DO NOT LOOK DIRECTLY INTO LASER OR POINT THE LASER INTO ANOTHER PERSON'S EYES. EXPOSURE TO THE BEAM MAY CAUSE EYE DAMAGE.

CAUTION:

Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

Regulatory Compliance

US



FCC ID: VH9KDC20, VH9KDC100, VH9KDC200, VH9KDC250, VH9KDC300,
VH9KDC350, VH9KDC400, VH9KDC450

This equipment has been tested and found to comply with the limits of 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. It may cause harmful interference to radio communications if not installed and used in accordance with the instructions. 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 with one or more of the following measures:

1. Reorient / Relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a different circuit than the receiver.
4. Consult with the dealer or an experienced radio/TV technician for help.

WARNING:

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.

Europe

CE 2200 CE 0983

Certificate No.: EMC15688-07-01

Products intended for sale within the European Union are marked with a CE Mark which indicates compliance to applicable Directives and European Normes (EN), as follows. Amendments to these Directives or ENs are included: Normes (EN), as follows:

KDC User Manual

Applicable Directives:

- Radio and Telecommunications Terminal Equipment Directive 1999/5/EC

Scope of Opinion (Essential Requirements)	Applied Specifications/Standards	TCF Identification	Results
Article 3.1(a) – Health	EN 62311:2008	Statement	Complies
Article 3.1(a) - Safety	EN 60950-1:2006+A11:2009	ESTCS1101-002	Complies
Article 3.1(b) – EMC	EN 55022:2006+A1:2007 EN 55024:1998+A1:2001+A2:2003 ETSI EN 301 489-1 V1.8.1 (2008-04) ETSI EN 301 489-17 V2.1.1 (2009-05)	ESTCE0712-007(1)	Complies
Article 3.2 – Radio Spectrum Use	ETSI EN 300 328:V1.7.1 (2006-10)	ESTR0801-018(1)	Complies

Japan



R

003WWA080049, 003WWA090274, 208-120048, 208WW110041,
208-130029, 208-140011

Article 2-1-19, 2.4GHz Wide Band low power data communication system

Korea



MSIP-CMM-A13-KDC20, A13-KDC100, A13-KDC200, MSIP-CMM-A13-KDC250,
MSIP-CMM-A13-KDC350, MSIP-CMM-A13-KDC350, MSIP-CMM-A13-KDC400,
MSIP-CMM-A13-KDC450

Laser Compliance

KDC20/100/200/250/350L/410/415/430



Complies with US 21 CFR 1040.10 and 1040.11 except for deviations pursuant to laser notice no. 50, dated June 24, 2007 and IEC 60825-1 (Ed. 2.0)

Complies with IEC60825-1:1993 + A1:1997 + A2:2001

Battery Warning

- This device contains a rechargeable NiMH. Never throw the battery into a fire, as that could cause the battery to explode.

- Never short-circuit the battery by bringing the terminals in contact with another metal object. This could cause personal injury, a fire, and/or damage to the battery.
- Never dispose of used batteries with other ordinary solid wastes. Batteries contain toxic substances.
- Dispose of used batteries in accordance with the prevailing community regulations that apply to the disposal of batteries. Cover the metal terminals with insulating tape (this is to prevent accidental short-circuiting).
- Never expose the battery to any liquid.
- Always keep the battery out of reach of infants or small children.
- Never shock the battery by dropping it or throwing it.
- Dispose of a spent or damaged battery promptly.

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

Product Disposal

This device should not be placed in municipal waste. Please check local regulations for disposal of electronic products.

Bluetooth

Core Specification: 2.1+EDR

Apple

Made for iPhone, Made for iPod, Made for iPad

Samsung

Compatible with Galaxy Series

1. Introduction

Congratulations on purchasing KoamTac's revolutionary barcode scanner and data collector. Lightweight and compact, with a user-friendly design and superior functionality, KoamTac's KDC works in a variety of portable applications. Use it independently or as an accessory to a PC, PDA, or smartphone. To find out more about KoamTac, Inc. and our family of products, visit us at www.koamtac.com.

FEATURES	KDC20	KDC30	KDC100	KDC200	KDC250	KDC300	KDC350	KDC400	KDC450
USB CONNECTIONS	1	1	2	1	1	1	1	2	2
RECHARGEABLE BATTERY	YES	YES	YES	YES	YES	YES	YES	YES	YES
SCAN ENGINE	Laser	Imager	Laser	Laser	Laser	Imager	Laser/Imager	Laser/Imager	Imager
AUTOMATIC DATA UPLOAD	YES	YES	YES	YES	YES	YES	YES	YES	YES
STORES 10,000+ BARCODES	YES	YES	YES	YES	YES	YES	YES	No	No
KTSYNC® SOFTWARE	YES	YES	YES	YES	YES	YES	YES	YES	YES
SDK	YES	YES	YES	YES	YES	YES	YES	YES	YES
SUPPORTS WINDOWS XP, 7, 8 & MOBILE 5.0+	YES	YES	YES	YES	YES	YES	YES	YES	YES
ANDROID, BLACKBERRY, IOS	YES	YES	NO	YES	YES	YES	YES	YES	YES
BLUETOOTH	YES	YES	NO	YES	YES	YES	YES	YES	YES
GPS	NO	NO	NO	NO	YES	NO	YES	NO	NO
NFC/RFID	NO	NO	NO	NO	NO	NO	YES	YES	YES
MSR	NO	NO	NO	NO	NO	NO	NO	YES	NO
USB DISK	NO	NO	YES	YES	YES	YES	YES	NO	NO

Table 1 - Features of KDC

1.1 KDC Package

The standard KDC package contains:

1. One KDC Barcode Data Collector
2. One USB Cable
3. One Lanyard (KDC20/30/100/200/250/300/350) or One Hand Strap (KDC400/450)
4. KoamTac Installation CD with
 - KTSync® for Microsoft Windows XP, Vista 7 and Mobile 5.0+
 - KDC Device Driver
 - User Manual
5. One KDC Protective Rubber Boot (KDC100/200/250/300) or One Smartphone Protective Silicon Case (KDC200/300/400)

Note

Depending on the region or distributor, package contents may vary.



KDC20/30



KDC100/200/250/300



KDC350



KDC400/450

Figure 1- KDC Package

1.2 KDC Characteristics

Before starting to use the KDC, the user should become familiar with its physical characteristics. Refer to Figure 2, Figure 3, Figure 4, and Figure 5 below that indicate the placement of SCAN, UP, and DOWN buttons, OLED display, LEDs, and ports on the KDC. Although KDC models consist of similar buttons, LEDs, and so on, each model has different characteristics for its own purpose of use. The KDC20/30/100 include a swing-out USB connector; the KDC350 a keypad. The KDC20/30 and KDC 400 series do not include a LCD screen, since the KDC20/30 are designed to be simple and easy-to-use barcode scanners without a LCD screen, and the KDC400 series are designed to be used in combination with smartphones or tablets.

KDC20/30 Barcode Reader and Data Collector

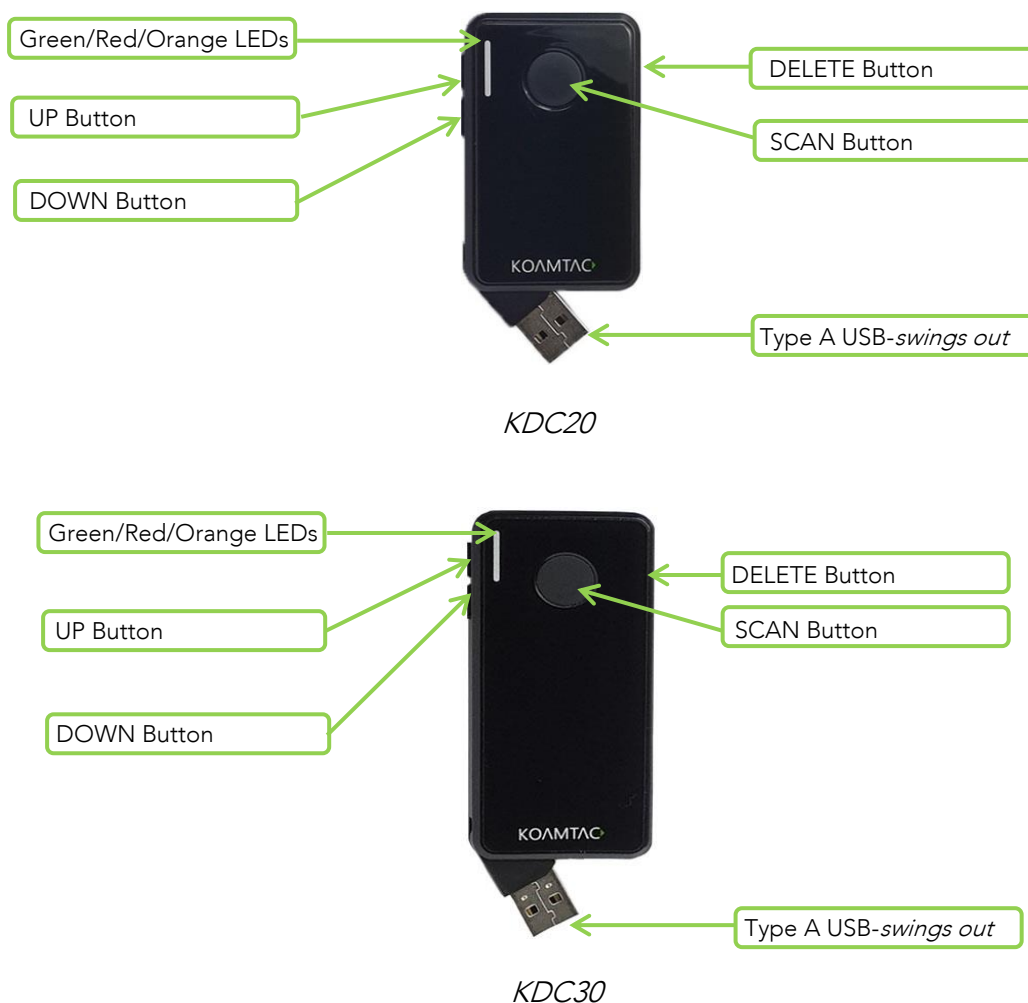


Figure 2 - Characteristics of KDC20/30

KDC100 Barcode Reader and Data Collector



KDC100

Figure 3 - Characteristics of KDC100

KDC200/250/300/350 Barcode Reader and Data Collector



KDC200



KDC250/300



KDC350

Figure 4 - Characteristics of KDC200/250/300/350






KDC400/450 Barcode Reader and Data Collector



KDC400 /450

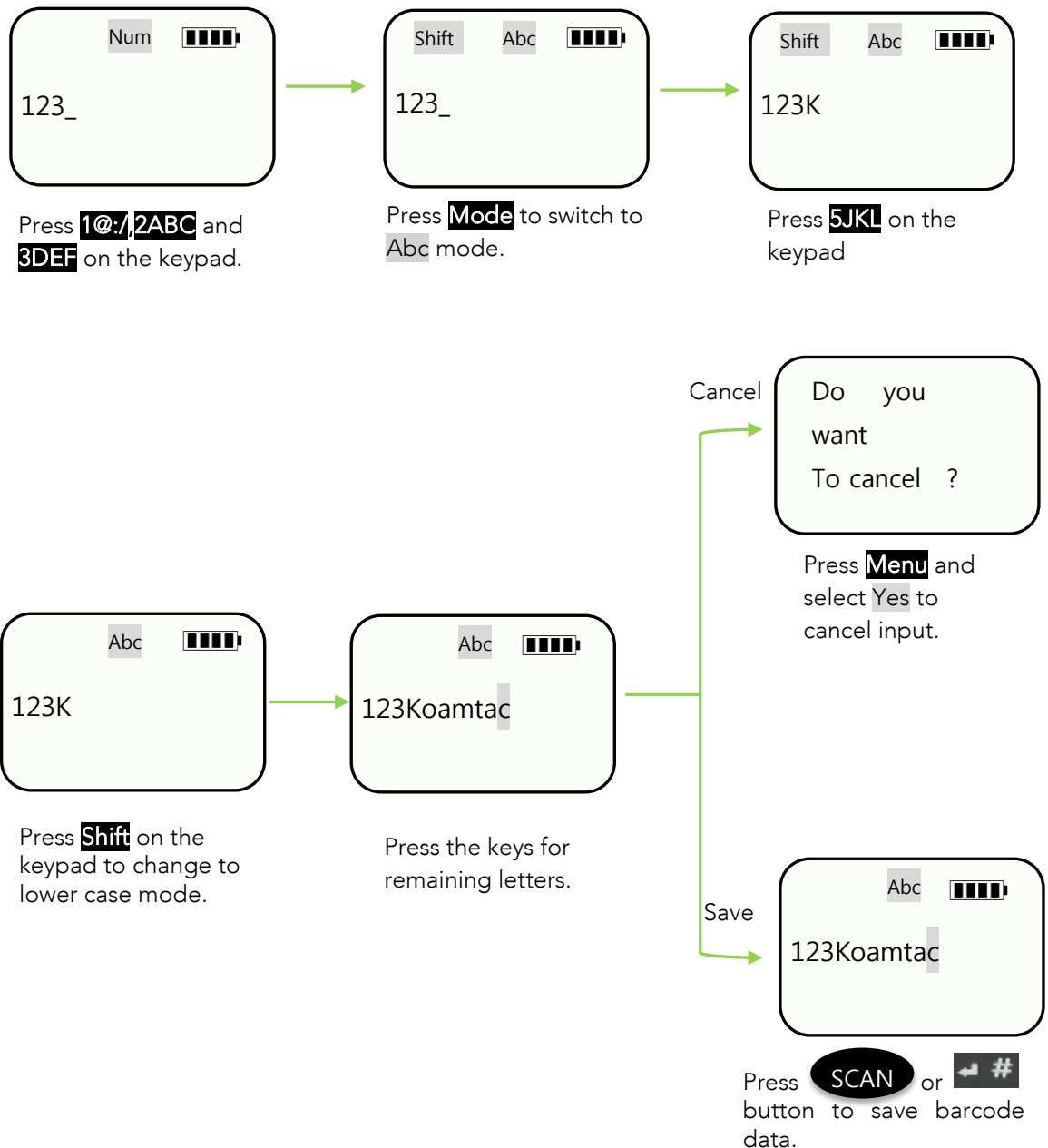
Figure 5 - Characteristics of KDC400

1.3 Keypad (KDC350)

Menu (Menu button)	Allows the user to enter or exit the KDC Menu. While in menu mode, press once to exit.														
Shift (Shift button)	Allows the user to change character input mode from capital letters to small letters, and vice versa.														
Mode (Mode button)	Allows the user to switch between ABC and number input mode.														
 (Up button)	While in the KDC menu, press this button to go up on the selection bar. While on the main screen, press this button and the KDC will try to connect to a BT host device.														
 (Down button)	While in the KDC menu, press this button to go down on the selection bar. While on the main screen, press this button to toggle the iOS soft keyboard (if the KDC is connected in HID-iOS mode).														
 (Number button)	Input numbers or characters														
 (Enter button)	Press to finish data input (if "Enter Key" option is disabled). Press to finish data input and move cursor to next line (if "Enter Key" option is enabled).														
 (Delete button)	Press to delete the last character or number input														
Fn (Function button)	<p>This button can be used in conjunction with a number key to control the KDC settings shown below.</p> <table border="1"> <tbody> <tr> <td>FN + 1</td><td>Keypad light On/Off</td></tr> <tr> <td>FN + 2</td><td>GPS Power On/Off (KDC350 G series only)</td></tr> <tr> <td>FN + 3</td><td>NFC Power On/Off (KDC350 N series only)</td></tr> <tr> <td>FN + 4</td><td>Enter Bluetooth Pairing Mode</td></tr> <tr> <td>FN + 5</td><td>Bluetooth Power On/Off</td></tr> <tr> <td>FN + 6</td><td>Change Bluetooth profile</td></tr> <tr> <td>FN + 0</td><td>Factory Default</td></tr> </tbody> </table>	FN + 1	Keypad light On/Off	FN + 2	GPS Power On/Off (KDC350 G series only)	FN + 3	NFC Power On/Off (KDC350 N series only)	FN + 4	Enter Bluetooth Pairing Mode	FN + 5	Bluetooth Power On/Off	FN + 6	Change Bluetooth profile	FN + 0	Factory Default
FN + 1	Keypad light On/Off														
FN + 2	GPS Power On/Off (KDC350 G series only)														
FN + 3	NFC Power On/Off (KDC350 N series only)														
FN + 4	Enter Bluetooth Pairing Mode														
FN + 5	Bluetooth Power On/Off														
FN + 6	Change Bluetooth profile														
FN + 0	Factory Default														

1.4 Input data by using a keypad (KDC350)

- When the KDC350 shows a blank main screen, you can start pressing numbers or characters of the barcode data that needs to be input.
- See an example below: How to save the barcode data "123Koamtac".



2. Installation

2.1 Bluetooth Pairing

The KDC can read and store barcode data independently, but it can also be used in combination with a PC, PDA, smartphone, or tablet.

To use the KDC to read barcodes while it is paired with another device, the user should first set up a pairing between the KDC and smart device via Bluetooth. If no changes have been made in the smart device's Bluetooth settings, the smart device will always recognize the KDC that has previously been paired. However, if changes have been made, the user will need to go through the pairing process again. The user can also refer to **Chapter 4. Bluetooth** for more information about Bluetooth pairing.

Preparing for Pairing

1. If using the KDC20/30/400, first turn on the power.

KDC20/30

Press SCAN and DOWN buttons simultaneously for 5 seconds. The user will hear a beep sound when it is turned on.

SCAN Button



DOWN Button

KDC400



Press POWER button.

Figure 6 - How to turn on the power in KDC20/30/400

2. Select a Bluetooth profile. There are two ways to set up a Bluetooth profile.
 - Select and scan the needed Bluetooth profile barcode from the following barcodes.

KDC 20/100/200/250/350L/410/415 (1D)

Bluetooth Profile HID



6A000

Bluetooth Profile IPHONE



6A001

iOS Bluetooth SPP



6A002

Bluetooth Profile SPP2.0



6A003

Bluetooth Profile HID normal



6A004

KDC30/300/350C/420/425/450 (2D)

Bluetooth Profile SPP



┐MKDC6A000.

Bluetooth Profile HID iOS



┐MKDC6A001.

Bluetooth Profile IPHONE



┐MKDC6A002.

Bluetooth Profile SPP2.0



┐MKDC6A003.

Bluetooth Profile HID normal



┐MKDC6A004.

- Or, for KDCs equipped with an LCD screen (KDC100/200/250/300/350), the user can select a Bluetooth device type from the **ConnectDevice** menu as shown below.



Figure 7 - Selecting a Bluetooth device type from the KDC menu

Pairing

Option One: Connect the KDC from a host (PC, Smartphone, Tablet)

This method is recommended for first-time users or when the user is only connecting a few KDCs.

1. Put the KDC into **Pairing** mode

- Select and scan the correct pairing barcode below for your KDC model, or

KDC 20/100/200/250/350L/410/415(1D)



KDC30/300/350C/420/425(2D)



Pairing

- Select **Pairing** from the KDC menu.



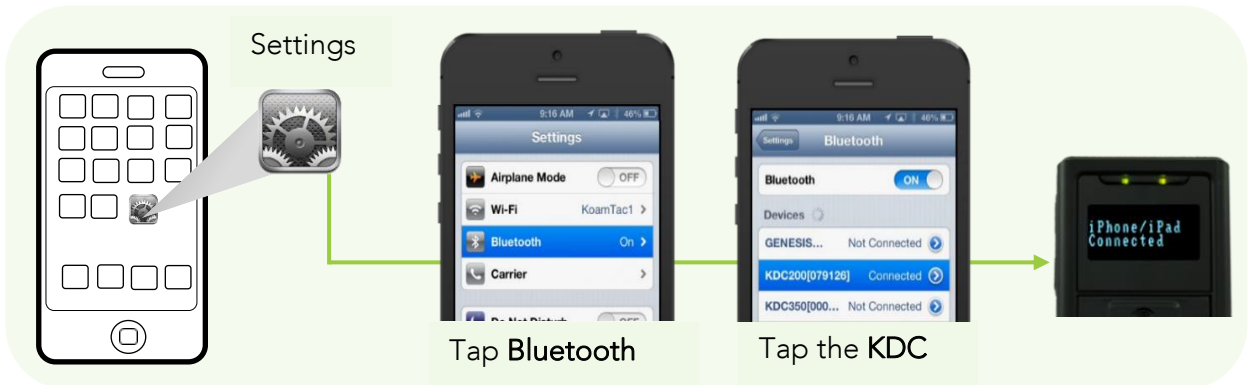
Figure 8 - Selecting Pairing mode in KDC

- For the KDC20/30, press the Scan button for three seconds in order to enter into Pairing mode. For the KDC 400, press the Up button immediately after turning the power on in order to enter into Pairing mode.



Figure 9 - Pairing mode button in KDC20/30/400

2. On the host device, go to **Settings -> Bluetooth**, and select the KDC that needs to be paired. The KDC and host device will now communicate with each other.



3. After it has been installed, open KTSync and it will automatically find and connect to the KDC. (Refer to **2.2 KoamTac Installation Wizard** for more information about installing KTSync)

Option Two: Connect the host device from the KDC by scanning a Special Bluetooth MAC Address barcode

This method is recommended for advanced users or when the application or process requires the pairing of multiple KDCs to multiple host devices on a regular basis.

1. Find the **Bluetooth MAC Address** of the host device.



Figure 10 - Finding Bluetooth MAC Address

2. Create the **Bluetooth MAC Address Barcode** according to the format below.

Bluetooth MAC Address: **1234567890AB**

Barcode Type (Symbology): **Code 128**

Contents: For KDC20/200/250/410/415, type **^FNC3651234567890AB**

For KDC30/300/420/425, type **SYNMCRKDC651234567890AB**

Options: **includetext parsefnc**

3. Print the **Bluetooth MAC Address**

Note: 2D image-based barcode readers such as the KDC30, KDC300, KDC350C, and KDC420 series models can read barcodes that have been printed OR barcodes that are on a LCD screen.

Laser scanners such as the KDC20, KDC100, KDC200, KDC350L, and KDC410 series models are not designed to read barcodes from a LCD screen and will only read printed barcodes.

4. Connect the KDC to the host device by scanning the Bluetooth MAC Address Barcode.

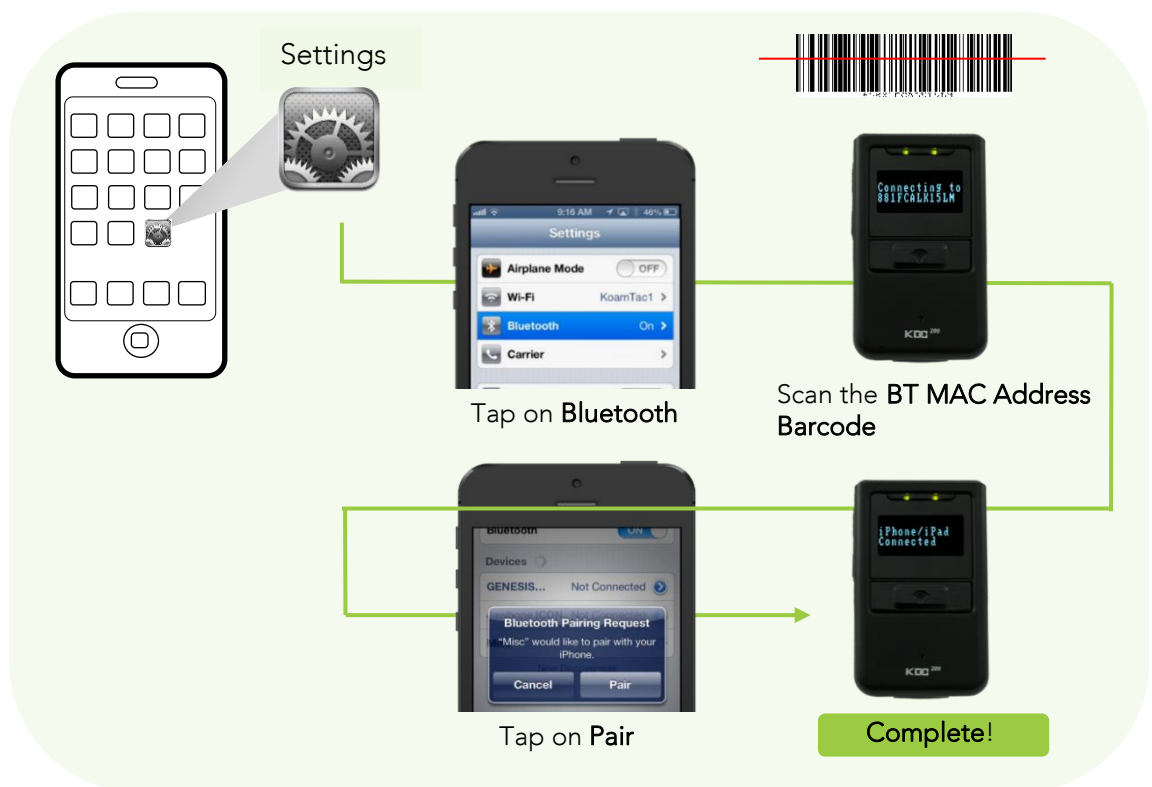


Figure 11 - Connecting KDC with a smart phone by scanning Bluetooth MAC Address Barcode

5. Open KTSync after it has been installed, and it will automatically find the KDC and connect. (Refer to 2.2 **KoamTac Installation Wizard** for more information about installing KTSync)

2.2 KoamTac Installation Wizard

Windows 7 and 8

WARNING: DO NOT CONNECT KDC TO USB PORT PRIOR TO INSTALLATION

1. Insert KoamTac Installation CD into the computer's CD drive.
2. Click **Start** icon then **My Computer** icon. A list of devices on the computer will be displayed, including the disk drive containing the KoamTac Installation CD.
3. Click on the KoamTac Installation CD icon, then the Setup directory. Click on the PC_Setup.exe file, which will execute the KTSync Setup Wizard.

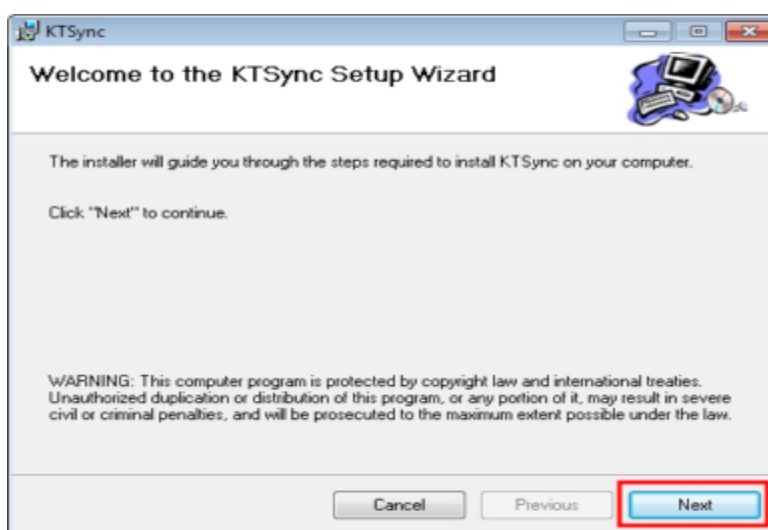
Note

- If the KTSync Setup Wizard locates an older version of KTSync on the computer, the user will be prompted to remove the older program before installing the new version. Select Remove KTSync then click Finish. When removal is complete, click Close. Go to Step 2 to run KTSync Setup Wizard.
- If there are any problems, please refer to [2.3 Manual Installation](#).

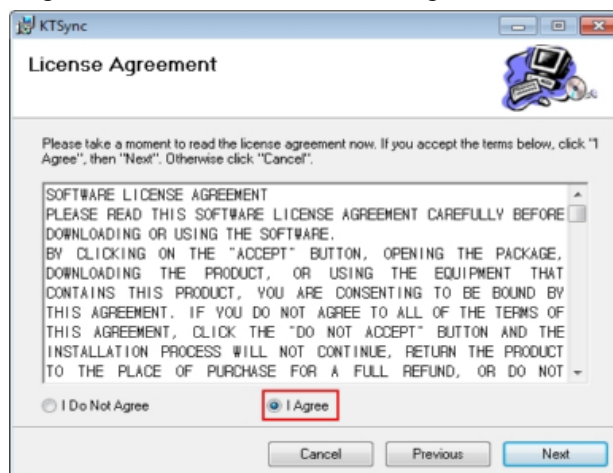
KTSync Setup Wizard

To install KTSync, follow the steps shown in the images below.

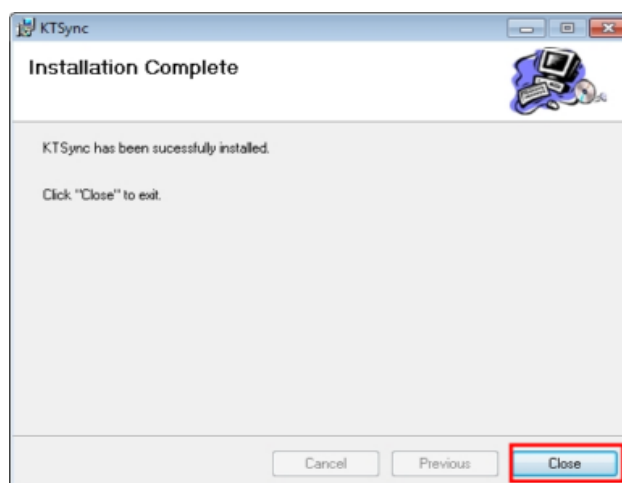
1. In the KTSync Setup Wizard window, click **Next**.



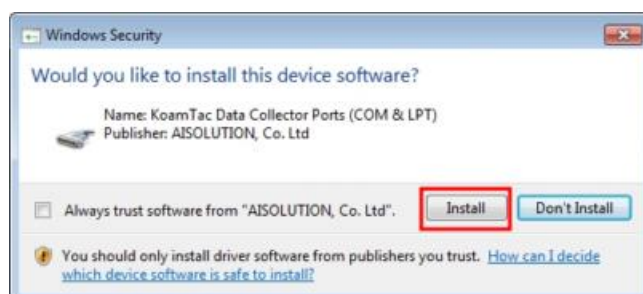
2. In the License Agreement window, select "I Agree" and click **Next**.



3. In the KTSync Installation Complete window, click **Close** and wait for the Device Driver Installation Wizard.



4. In the Windows Security window, click **Install** to complete installation.



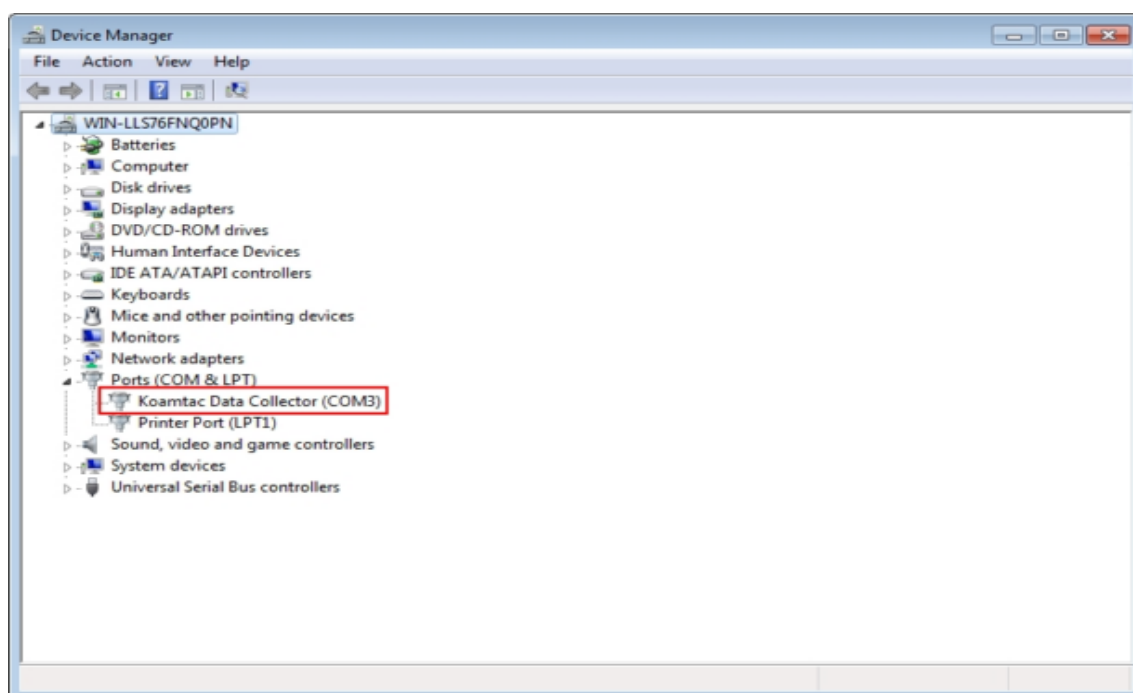
Connect KDC to Computer

Using the USB cable included with the KDC, follow the directions below.

1. Connect mini USB connector to the KDC.
2. Connect Type A USB connector to the PC.
3. Wait until the computer beeps and/or displays the message *Found New Hardware*.

Verify COM Port Address

- The installed COM Port can be verified in Device Manager.



Windows Mobile 5.0+

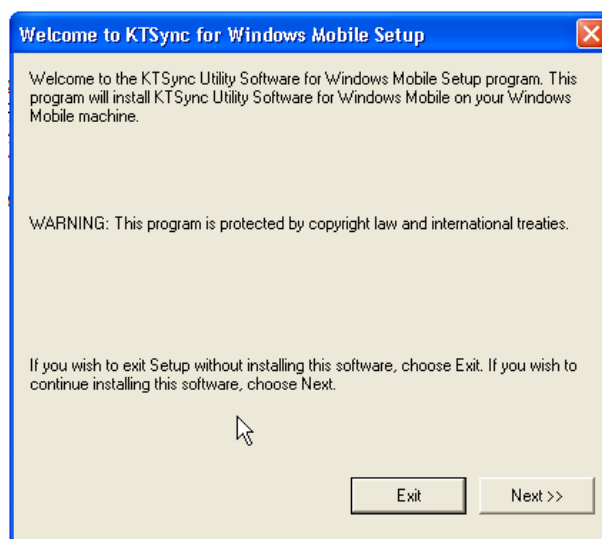
WARNING: PLEASE CONNECT PDA TO PC PRIOR TO INSTALLATION

1. PC_Setup.exe creates Mobile_Setup.exe file under
C:\Program Files\KoamTac\KTSync\Windows.Mobile directory.
2. Execute Mobile_Setup.exe

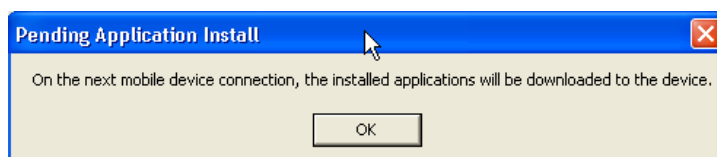
3. Select the Windows Mobile version to install.



4. Click Next.



5. In the Pending Application Install window, click OK.



6. Follow the instructions on the PDA screen.

COM port Assignment

- The user should assign a COM port for the KDC before using pKTSync.
- The user should pair the KDC and PDA by using the PDA *Bluetooth* manager, and should assign a COM port for *Bluetooth* communication.
- Please refer to the PDA manual for details on how to assign a COM port.

Android

- Download and install aKTSync from the Android Play Store.
<https://play.google.com/store/apps/details?id=com.koamtac.ktsync&hl>

Blackberry

- Download and install bKTSync from the Blackberry App World.
<http://appworld.blackberry.com/webstore/content/16861?lang=en>

iPad/iPhone/iPod touch

- Download and install iKTSync from the Apple App Store.
<http://itunes.apple.com/us/app/ktsync/id372916602?mt=8>



2.3 Manual Installation

Windows XP/Vista/7/8

1. Insert the KoamTac Installation CD into the computer's disk drive.
2. Create a directory named KoamTac on the computer.
3. Copy **XP.Vista.7 directory** from the KoamTac CD to the KoamTac directory. **XP.Vista.7 directory** contains KTSync® programs for Microsoft® Windows XP, Vista, Windows 7, and user manuals.
4. Connect the KDC cable to the ultra mini USB connector on the KDC.
5. Connect the KDC cable to the Type A USB connector on the computer. Wait until the computer beeps and/or displays the message *New Hardware Found*. The user will be prompted to search for a device driver for the KDC.
6. Browse and select the **KTReader.inf** file from the KoamTac directory (created in Step 2). Follow screen prompts to continue with the device driver installation.

Note

KTReader.inf is the device driver for 32bit Microsoft® Windows XP, Vista, and Windows 7. If the user has a 64bit computer, use the KTReader.inf file from the XP.Vista.64bit folder in the KoamTac directory.

Windows Mobile 5.0+

Connect the Windows Mobile PDA with the computer to install the KTSync program.

1. Create a KoamTac folder in the PDA.
2. Copy the **Mobile5.0_6.0** folder from the KoamTac CD and paste it into the PDA KoamTac folder that was created in My Computer.
3. In the **Mobile5.0_6.0** folder, the user will find KTSync® Programs for Microsoft® Windows Pocket PC 2003, Mobile 5.0, Mobile 6.0 Standard, and Mobile6.0 Professional, as well as the KDC User Manual.

3. Operating your KDC

3.1 Getting Started

Attach Lanyard/Hand Strap to KDC

To prevent possible damage to the KDC, we STRONGLY recommend wearing it around the neck or hand, using the included Lanyard/Hand Strap. In addition, the user should not swing the KDC by its Lanyard/Hand Strap. Impact with another object may cause the KDC to malfunction or become damaged.

To attach the Lanyard:

	KDC20/30	KDC100/200/300/350/400
<p>1</p> <p>Fit the thin end of the Lanyard through the pillar of the KDC.</p>		
<p>2</p> <p>Guide the thick end of strap through the thin loop.</p>		
<p>3</p> <p>Pull the strap tight to secure.</p>		

Charge KDC Battery

Prior to using the KDC, the user should charge its battery by following the below instructions.

1. Connect the KDC cable to the mini USB connector on the KDC.
2. Connect the KDC cable to the Type A USB connector on the computer.
3. The KDC battery will begin charging. Within a few minutes, the two small LEDs on the front panel will illuminate orange. When the battery is fully charged, the LEDs will illuminate green.

KDC100	KDC20/200	KDC30/250/300	KDC350	KDC400
2 Hours	2 Hours	4 Hours	5 Hours	5 Hours

Table 2 - Number of hours required to fully charge a KDC Battery

Configure KDC

The KDC is designed to meet the data collection requirements of many different industries in a variety of dynamic situations. To deliver the best performance in these diverse environments, the KDC is designed to be configured quickly and easily.

However, to perform at its optimum level, the KDC must be configured properly. Until the user is familiar with the KDC configuration settings, it is recommended that the user DOES NOT modify the KDC settings. The KDC can be configured by using three different methods, which are explained in [Section 3.3 – KDC Menus](#), [Chapter 5 – Synchronization](#), and [Appendix C/D – Special Barcodes](#).

CONFIGURATION METHODS FOR THE KDC100/200/250/300/350

- KDC Menu
- KTSync® Software
- Special Barcodes



Figure 12 - Location of KDC Menu and use of buttons (KDC100/200/250/300)

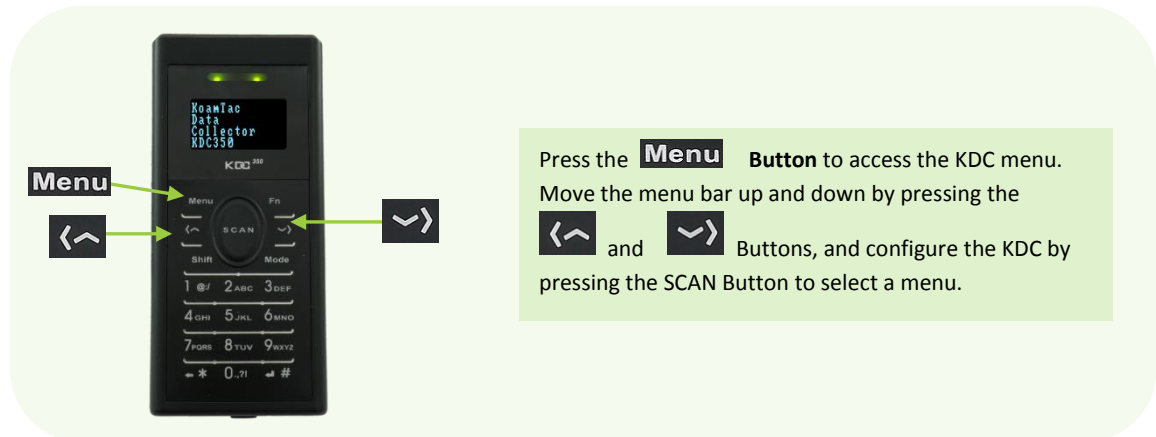


Figure 13 - Location and use of buttons on a keypad (KDC350)

CONFIGURATION METHODS FOR THE KDC20/30/400

- KTSync® Software
- Special Barcodes

3.2 Basics

Read barcodes

To read a barcode using the KDC, simply point the KDC at a barcode and press the scan button. Be sure to point the scan engine window at the barcode, not at the user's face, and make sure to position the light beam on the barcode.

If a barcode has been successfully scanned, the user will hear one short beep and the LEDs will illuminate green. The scanned barcode data will be displayed on the KDC screen, along with the scan time and battery level. *Depending on the configuration of the KDC, other information may also be displayed.*

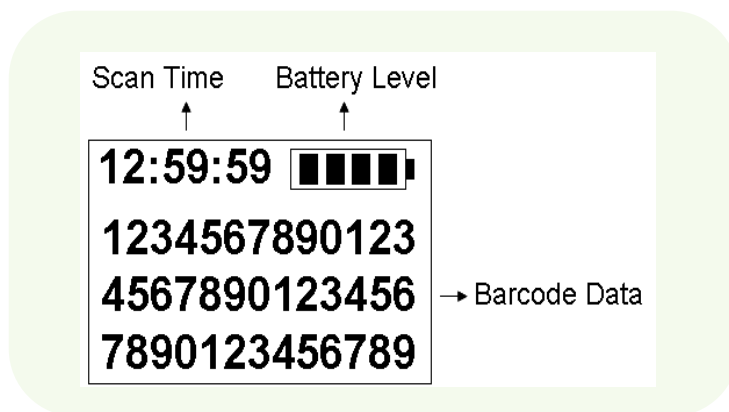


Figure 14 - KDC Display

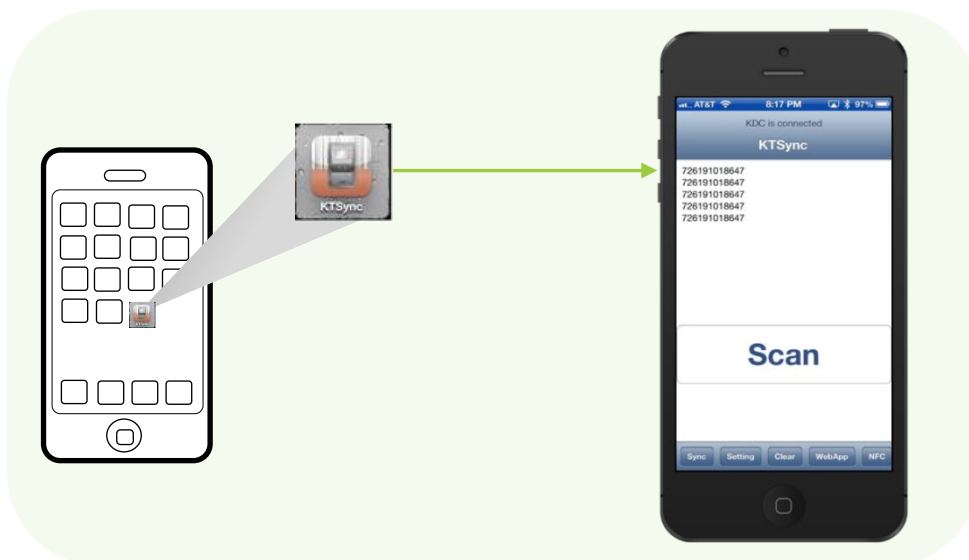


Figure 15 - Scanning barcodes using KTSync

If scanning was unsuccessful, the user will hear two short beeps, the LEDs will illuminate red, and the message *Failed reading...* will display. If this is the case, the user should point the KDC at the barcode and press the scan button while trying the following suggestions:

- Modify the angle of the KDC in relation to the barcode, making the angle more wide or narrow as needed.
- Modify the distance between the barcode and the KDC, moving closer or further away as needed.
- Check the option settings defined in the KDC menu section and change options as needed.
- Check to see that the barcode's width does not exceed the light beam's width, and vice versa.

Read barcodes with GPS coordinates (KDC350G)

The KDC350G can add GPS coordinates after the barcode data. To do so, the user can follow the below instructions.

Note

Because of the characteristics of GPS, this function is only available when outdoors.

1. Go to **GPS Power** in GPS Menu and select **Enable**.
2. Check to see if the KDC is successfully acquiring GPS data by selecting **Acquire Test** in GPS Menu.

When the user selects the Acquire Test, an 'Acquiring' message will appear on the screen. If this is the first test, check to make sure the 'Acquired' message appears within 90 seconds of acquiring GPS signal.

3. Go to **System Config** in the KDC Menu and select **GPS data** in **Display Format**.
4. After finishing the configuration, scan a barcode as explained in **3.2.1 Reading Barcodes**.

When the user has successfully scanned a barcode, the barcode data and GPS coordinate will appear on the KDC screen.

For more information, refer to 3.3 Menu - **GPS Config (350G)**.

Read NFC Tag (KDC350N/400N)

1. Enable the **NFC Power** option in the **NFC Config** menu.
2. Touch the NFC tag to the back of the KDC350N/450N case, and make sure the tag and case are within 5cm of each other.



Figure 16 - Location for reading NFC Tag

3. The KDC will show the NFC tag UID and the user will hear a short beep if it has been read successfully.
4. The KDC350N/450N can process “Mifare Ultra Light” and “Mifare Ultra Light C” data only. Other types of tags should be processed in the host application.

Read HF RFID Tag (KDC450)

The KDC450 can virtually read any ISO/IEC 14443 A or B compliant smartcards, or ISO/IEC 15693 compliant HF RFID tags.

To read a HF RFID tag, touch the RFID card to the back of the KDC450 case, and make sure the tag and case are within 5cm of each other. The user will hear a short beep if it has been read successfully.

Input data by using a keypad (KDC350)

The KDC350 allows users to input barcode data by using its keypad. The user can switch between Num mode and Abc mode by using the Mode button.

To switch between uppercase and lowercase letters, the user can press the Shift button while in Abc mode. To save the data input, press the Enter or SCAN button. To cancel the data input, press the Menu button. Refer to [1.4 Input data by using a keypad \(KDC350\)](#) for more detailed information about the process.

Synchronizing data to the host device

Use the KTSync® program to synchronize barcode data from the KDC to the host device. Please refer to [Chapter 6. Synchronization](#) for details.

3.3 KDC Menu

Top Menu	Sub Menu	Options	KDC350
<i>KDC Mode</i>	Normal		Default
	Application		Custom Application
<i>View Data</i>	View/Delete		View/Delete Data
<i>Set Barcodes (350L)</i>	EAN13	Enabled/Disabled	Enabled
	EAN8	Enabled/Disabled	Enabled
	UPCA	Enabled/Disabled	Enabled
	UPCE	Enabled/Disabled	Enabled
	CODE39	Enabled/Disabled	Enabled
	ITF14	Enabled/Disabled	Enabled
	CODE128	Enabled/Disabled	Enabled
	I2of5	Enabled/Disabled	Enabled
	CODABAR	Enabled/Disabled	Enabled
	GS1-128	Enabled/Disabled	Enabled
	CODE93	Enabled/Disabled	Enabled
	CODE35	Enabled/Disabled	Enabled
	BooklandEAN	Enabled/Disabled	Disabled
	EAN13withAddon	Enabled/Disabled	Disabled
	EAN8withAddon	Enabled/Disabled	Disabled
	UPCAwithAddon	Enabled/Disabled	Disabled
	UPCEwithAddon	Enabled/Disabled	Disabled
<i>Set Barcodes (350C)</i>	1D Symbology	Codabar	N/A
		Code 11	N/A
		Code 32	N/A
		Code 39	N/A
		Code 93	N/A
		Code 128	N/A
		EAN-8	N/A
		EAN-13	N/A
		GS1 Composite	N/A
		I2of5	N/A
		Matrix 2of5	N/A
		MSI	N/A
		Plessey	N/A
		PosiCode	N/A
		GS1 Omni	N/A
		GS1 Limited	N/A
		GS1 Expanded	N/A
		S2of5 Ind	N/A
		S2of5 IATA	N/A
		TCL39	N/A
		Telepen	N/A
		Trioptic	N/A
		UPCA	N/A
		UPCE0	N/A
		UPCE1	N/A
	2D Symbology	AztecCode	N/A
		AztecRunes	N/A
		CodablockF	N/A
		Code16K	N/A

		Code49	N/A
		DataMatrix	N/A
		MaxiCode	N/A
		MicroPDF	N/A
		PDF417	N/A
		QRCode	N/A
		HanXin Code	N/A
	Postal Codes	Postnet	N/A
		PlanetCode	N/A
		UK Post	N/A
		Canada Post	N/A
		Kix Post	N/A
		Australia Post	N/A
		Japan Post	N/A
		China Post	N/A
		Korea Post	N/A
	OCR	OCR Off	N/A
		OCR A	N/A
		OCR B	N/A
		OCR USC	N/A
		OCR MICR	N/A
		OCR SEMI	N/A
Barcode Options (350L)	CodaBar_NoStartStopChars	Enabled/Disabled	Disabled
	UPCE_as_UPCA	Enabled/Disabled	Disabled
	EAN8_as_EAN13	Enabled/Disabled	Disabled
	UPCE_as_EAN13	Enabled/Disabled	Disabled
	ReturnCheckDigit	Enabled/Disabled	Disabled
	VerifyCheckDigit	Enabled/Disabled	Disabled
	UPCA_as_EAN13	Enabled/Disabled	Disabled
	I2of5_VerifyCheckDigit	Enabled/Disabled	Disabled
	Code39_VerifyCheckDigit	Enabled/Disabled	Disabled
	I2of5_ReturnCheckDigit	Enabled/Disabled	Disabled
	Code39_ReturnCheckDigit	Enabled/Disabled	Disabled
	UPCE_ReturnCheckDigit	Enabled/Disabled	Enabled
	UPCA_ReturnCheckDigit	Enabled/Disabled	Enabled
	EAN8_ReturnCheckDigit	Enabled/Disabled	Enabled
	EAN13_ReturnCheckDigit	Enabled/Disabled	Enabled
Barcode Options (350C)	Codabar	Tx StartStop(Enabled/disabled)	N/A
		Check Digit (DoNotVerify/VerifyDONotTX/Verify DoTx)	N/A
		Concatenate (Disabled/Enabled/Required)	N/A
	Code39	Tx StartStop(Enabled/disabled)	N/A
		Check Digit (DoNotVerify/VerifyDONotTX/Verify DoTx)	N/A
		Append(Enabled/Disabled)	N/A
		Full ASCII(Enabled/Disabled)	N/A
	I2of5	Check Digit (DoNotVerify/VerifyDONotTX/Verify DoTx)	N/A
	Code11	Check Digit(2 digits/1 digit)	N/A

	Code128	Concatenate(Disabled/Enabled)	N/A
	Telepen	Output(Original/AIM)	N/A
	UPCA	VerifyChkDgt(Enabled/Disabled)	N/A
		NumberSys(Enabled/Disabled)	N/A
		2DgtAddenda(Enabled/Disabled)	N/A
		5DgtAddenda(Enabled/Disabled)	N/A
		Req. Addenda(Enabled/Disabled)	N/A
		Sep. Addenda(Enabled/Disabled)	N/A
		Coupon Code(Enabled/Disabled)	N/A
	UPCE	Expand(Enabled/Disabled)	N/A
		Req. Addenda(Enabled/Disabled)	N/A
		Sep. Addenda(Enabled/Disabled)	N/A
		Check Digit(Enabled/Disabled)	N/A
		NumberSys(Enabled/Disabled)	N/A
		2DgtAddenda(Enabled/Disabled)	N/A
		5DgtAddenda(Enabled/Disabled)	N/A
	EAN-13	VerifyChkDgt(Enabled/Disabled)	N/A
		2DgtAddenda(Enabled/Disabled)	N/A
		5DgtAddenda(Enabled/Disabled)	N/A
		Req. Addenda(Enabled/Disabled)	N/A
		Sep. Addenda(Enabled/Disabled)	N/A
		ISBN Trans.(Enabled/Disabled)	N/A
	EAN-8	VerifyChkDgt(Enabled/Disabled)	N/A
		2DgtAddenda(Enabled/Disabled)	N/A
		5DgtAddenda(Enabled/Disabled)	N/A
		Req. Addenda(Enabled/Disabled)	N/A
		Sep. Addenda(Enabled/Disabled)	N/A
	MSI	Tx CheckChar(Enabled/Disabled)	N/A
	PosiCode	A and B/A&B LimitedA/A&B LimitedB	N/A
	GS1	UPCEAN Ver.(Enabled/Disabled)	N/A
		GS1 Emulation(No Emulate/GS1 128 Emul/GS1 Emulate)	N/A
	PostNet	Tx CheckChar(Enabled/Disabled)	N/A
	PlanetCode	Tx CheckChar(Enabled/Disabled)	N/A
Scan Options	Scan Angle(KDC350L)	Narrow/Wide (Opticon Model Only)	Wide
	Filter(KDC350L)	Normal/High (Opticon Model Only)	Normal
	Time Out	.5 seconds to 10 seconds	2 second(s)
	Min. Barcode Length (KDC350L)	2 to 36 characters	4 chars
	Min. Barcode Length (KDC350C)	2 to 48 characters	4 chars
	Security Level(KDC350L)	1 to 4 level	2 level
	Image Capture(KDC350C)	Enabled/Disabled	N/A
	Auto Trigger	Enabled/Disabled	Disabled
	Reread Delay	Continuous, Short, Medium, Long, Extra Long	Medium

	Finger Trigger	Enabled/Disabled	Enabled
	Partial Display	Start Position	1
		No. of Char(s)	0 chars
		Action	Select
Data Process	Wedge / Store	Wedge Only	
		Wedge & Store Always	Default
		Store Only	
		Save if Sent	
		Save if Not Sent	
	Data Format	Barcode only	Default
		Packet Data	
	Data Editor/Prefix	Delete	Delete
	Data Editor/Suffix	Delete	Delete
	Data Editor/AIM ID	None/In Prefix/In Suffix	None
	Data Editor/Partial Data	Start Position	1
		No. of Char(s)	0 chars
		Action	Select
	Handshake	Enabled/Disabled	Disabled
	Terminator	None, CR, LF, CR+LF, Tab	CR+LF
	Chk Duplicate	Enabled/Disabled	Disabled
	Enter Key(KDC350 Only)	Enabled/Disabled	Disabled
BT Config	ConnectDevice (20/30/200/250/300/350/400)	SPP	Default
		HID iOS	
		SPP2.0	
		HID normal	
	ConnectDevice (20i/30i/200i/250i/300i/350i/ 400i)	SPP	
		iPhone	Default
	Auto Connect	Enabled/Disabled	Disabled
	Auto Reconnect	Enabled/Disabled	Disabled
	Auto Power On	Enabled/Disabled	Disabled
	Auto Power On/Power On Time	Disabled, 1sec to 10second(s)	Disabled
	Auto Power Off	Enabled/Disabled	Disabled
	Auto Power Off/Power Off Time	1 to 30 minutes	5 minutes
	PowerOff Msg	Enabled/Disabled	Disabled
	MAC Address	12 Characters Bluetooth MAC Address	
	BT FW Version	Bluetooth Firmware Version	
	Wakeup Nulls	Enabled/Disabled	Disabled
	BT Toggle		Enabled
	BT Disconnect button	Enabled/Disabled	Enabled(KDC20/200/250/300/350L/350C) Disabled(KDC410/415/ 420/425/430/450)
	HID AutoLock	Disabled, 1,2,3,4,5,10,15 minutes	1 minutes
	HID Keyboard	English, German, French, Italian, Spanish	US
	HID Delay/Initial	Disabled, 1,2,3,5,10 secs	Disabled
	HID Delay/Inter char	Disabled, 10, 20, 30, 50, 100msec	Disabled
	HID Ctrl Char	Disabled, Alt+Numpad, ^+Character	Disabled
BT Service	Power	Enabled/Disabled	Enabled
	Pairing	Pairing neighboring Bluetooth devices	

	Discovering	Discovering neighboring <i>Bluetooth</i> devices	
	Connecting to	View Connect to <i>Bluetooth</i> device	
	HID Sync		
<i>USB Config (USB Serial Mode)</i>	USB Mode	USB Serial/USB Disk	USB Serial
<i>USB Config (USB Disk Mode)</i>	USB Mode	USB Serial/USB Disk	USB Disk
	Disk Format	Format KDC USB Disk	
	Data Format	Data,DataTime, DataType,DateTimeType	Data
<i>NFC Config (350N/400N)</i>	NFC Power	Enabled/Disabled	Enabled
	Data Format	Data Only/Packet data	Packet data
<i>GPS Config (350G)</i>	GPS Power	Enabled/Disabled	Disabled
	Power Mode	Normal/Power Save	Normal
	Bypass Data	Enabled/Disabled	Disabled
	Acquire Test		
	Reset GPS		
<i>System Config</i>	Memory Size	0.5/3.5, 1/3, 2/2, 3/1, 4/0	0.5/3.5
	Memory Status	No. of Stored Barcodes	
		Free Memory Available	
	Reset Memory	Memory(Empties Data)	
		Application Memory	
		BT Registry(KDC100 Not use)	
	Auto Erase	Enabled/Disabled	Disabled
	Sleep Timeout	Disabled, 1sec to 10minute(s)	5 second(s)
	Auto PowerOff	Bluetooth, GPS, Pwr Off Time	Disabled/ Disabled/ 1 hour
	Date / Time	YYYY:MM:DD &	
		HH:MM:SS	
	Battery	% of Battery Charge Available	
	Version	Firmware Version & Serial No.	
	Button Lock	Enabled/Disabled	Disabled
	Beep Sound	Enabled/Disabled	Enabled
	Power On Beep	Enabled/Disabled	Enabled
	Beep On Connect	Enabled/Disabled	Enabled
	Beep On Scan	Enabled/Disabled	Enabled
	Beep Volume	Low/High	Low
	MFi Mode	Enabled/Disabled	Enabled
	Vibrator	Enabled/Disabled	Enabled
	Auto Exit	Enabled/Disabled	Enabled
	Port Status	Enabled/Disabled	Enabled
	Display Format	Time & Battery / Type & Time / Type & Battery / Memory Status / GPS Data(KDC250/350)/Barcode Only	Time & Battery
	Menu Barcode	Enabled/ Disabled	Disabled
	Scrolling	Enabled/Disabled	Enabled
	Brightness	1 to 15 level(8 level)	8 level
	Factory Default	Restores Default Settings	

Table 3 - KDC Menu

KDC Mode Menu

The KDC Mode Menu has two options – Normal mode and Application mode.

Normal

This is the default mode that provides basic barcode scanning. In Normal mode, barcode data can be manipulated directly through the KDC or through KTSync® during the synchronization process.

Application

This mode allows you to run the user application created by the Application Generation Tool, as described in [Chapter 7 Application Generation](#).

View Data Menu

This menu option allows you to view and/or delete barcodes stored in the KDC. In the case of the KDC20/30, you can delete the last scanned barcode by pressing the DELETE button on the right side of the unit.

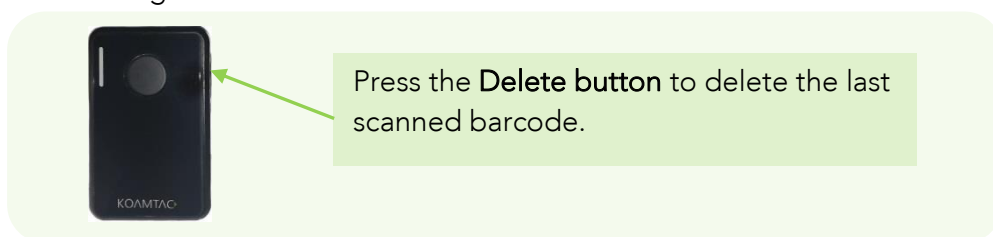


Figure 17 - Delete Function in KDC20/30

Set Barcodes Menu

This menu lists all the barcode symbologies supported by the KDC and allows you to select the barcode symbologies to be scanned. For maximum scan performance, you should select only the symbologies that you will be scanning. Please refer to [11. Appendix – 11.1 Symbologies](#) for a detailed listing of symbologies supported by the KDC.

Code Options Menu

The KDC supports various Code Options, including Transmission of Start and Stop Characters, Symbology Conversion, Verification of Optional Check Character, and Transmission of Check Digit. Please refer to [11. Appendix A – 11.2 Code Options](#) for a detailed explanation of each option.

Scan Options Menu

Scan Angle (Opticon model only)

This option allows you to configure the laser beam angle to the barcode. There are two options for scan angle: Wide and Narrow. Wide is 54° and Narrow is 27°. The default is Wide.

Filter (Opticon model only)

This menu allows you to change the Filter mode from Normal to High for poor quality barcodes. The default is Normal.

Timeout

In this menu, you can set the interval between scans. The timeout options are from 5 seconds up to 10 seconds. The default is 2 seconds.

Minimum Barcode Length

This option allows you to set a barcode length from 2 characters to 36 characters (KDC20/100/200/250/350L/410/415) or 2 characters to 48 characters (KDC30/300/350C/420/450). It is strongly recommended that you maximize the minimum barcode length setting to prevent possible errors.

- The default minimum barcode length of KDC20/100/200/250/350L/410/415 is 4 characters.
- The default minimum barcode length of KDC30/300/350C/420/450 is as follows:

		Minimum (Default)	Maximum (Default)
1D Symbology	Codabar	2(4)	60(60)
	Code 11	1(4)	80(80)
	Code 32		
	Code 39	0(0)	48(48)
	Code 93	0(0)	80(80)
	Code 128	0(0)	80(80)
	EAN-8		
	EAN-13		
	GS1 Composite		
	I2of5	2(4)	80(80)
	Matrix 2of5	1(4)	80(80)
	MSI	4(4)	48(48)
	Plessey	4(4)	48(48)
	PosiCode	2(4)	80(48)
	GS1 Omni		
	GS1 Limited		
	GS1 Expanded	4(4)	74(74)
	S2of5 Ind	1(4)	48(48)
	S2of5 IATA	1(4)	48(48)
	TCL39		
	Telepen	1(1)	60(60)
	Trioptic		
	UPCA		
	UPCE0		
	UPCE1		

2D Symbology	AztecCode	1(1)	3750(3750)
	AztecRunes		
	CodablockF	1(1)	2048(2048)
	Code16K	0(1)	160(160)
	Code49	1(1)	81(81)
	DataMatrix	1(1)	1500(1500)
	MaxiCode	1(1)	150(150)
	MicroPDF	1(1)	366(366)
	PDF417	1(1)	2750(2750)
	QRCode	1(1)	3500(3500)
	HanXin Code		
Postal Codes	Postnet		
	PlanetCode		
	UK Post		
	Canada Post		
	Kix Post		
	Australia Post		
	Japan Post		
	China Post	2(4)	80(80)
	Korea Post	2(4)	80(48)
OCR	OCR Off		
	OCR A		
	OCR B		
	OCR USC		
	OCR MICR		
	OCR SEMI		

Table 4 - KDC350C Minimum Barcode Length

Image Capture (KDC30/300/350C/420/425/450)

This option allows you to capture an image in JPEG format in C:\myData folder. You should enable the image capture option first, and then press the Scan button to start the aiming. A green aiming light will illuminate and an image will be taken upon release of the Scan button. KDC350C will disable the image capture option if the user presses the scan button for 10 seconds.

Security Level (KDC20/100/200/250/350L/410/415)

This menu allows you to ensure an accurate barcode reading by setting the number of times the KDC will read a barcode. Security Level is set from 1 up to 4. The higher security level means readings are more reliable; however, some performance degradation is likely. For poor quality barcodes, we recommend increasing the security level. The default is 2.

Auto Trigger

Once enabled, Auto Trigger allows users to scan a barcode automatically. You can adjust Reread delay from Continuous to Extra Long. Auto Trigger mode always enables the duplicate check option.

Note

- *USB cable insertion requirement is removed from FW2.85/86.0 and FW 3.02.*
- *You can exit the auto trigger mode by pressing the scan button for 3 seconds.*

Reread Delay

You can adjust the Reread delay from Continuous to Extra Long. Auto Trigger mode always enables the duplicate check option.

Partial Display

This option allows you to display partial data. You can define the start position and number of characters to be displayed.

Data Process Menu

Wedge/Store

The KDC provides five modes of data transmission in keyboard wedging mode.

- **Wedge Only:** Barcode data is NOT stored in memory but transmitted to the host.
- **Wedge & Store Only:** Barcode data is stored in memory and transmitted to the host.
- **Store Only:** Barcode data is stored in memory but NOT transmitted to the host.
- **Save if Sent:** If data transmission is successful, barcode data is stored in memory.
- **Save if Not Sent:** If data transmission is NOT successful, barcode data is stored in memory.

Data Format

The KDC provides two data formats, Barcode Only and Packet Data.

- **Barcode Only:** The KDC transmits scanned barcodes only. You may incorporate appropriate data transmission error detection and correction mechanisms in this mode. KDC supports a selection of various termination characters for Barcode Only format. You can select <NONE>, <CR>, <LF>, <CR+LF> or <TAB> as the termination character.

- **Packet Data:** KDC transmits packet data with checksum to minimize transmission errors. KTSync® sets Data Format to Packet Data format upon execution.
 - You may change **Data Format** to **Barcode Only** if you would prefer to use the Barcode Only mode. However, the KDC would stay in Packet Data mode if KTSync is aborted abnormally. If this is the case, you may have to change the KDC back to Barcode Only mode manually.

Note

- **Barcode Index:** KDC20i/30i/200i/250i/300i/350i/400i add 4 bytes barcode index to maintain last synchronized barcode information.
 - This optional index would be added if data format is "Packet Data".
 - 4 bytes index would be added before "@" when responding to "p" command.
 - 4 bytes index plus "@" character would be added after checksum byte if the user scans a barcode and wedges to the host.

Data Editor

KDC provides various data editing options.

- **Prefix** - Allows you to add a prefix to scanned data, that can then be stored in the KDC or wedged to the host. The Prefix format must be defined in the Data Format menu of KTSync. The maximum length for a Prefix is 11 characters.

Note

- This Prefix option is different from the Prefix option in KTSync, which attaches the prefix to data during synchronization.

Note

- The user can also define the prefix by scanning characters defined in Appendix C. between the following special barcodes.

➔ KDC 20/100/200/250/300/350L/410/415

Prefix Enter Start



Prefix/Suffix Enter Finish



➔ KDC30/350C/420/425

Prefix Enter Start



┐MKDC83000.

Prefix/Suffix Enter Finish



┐MKDC83002.

Note

Users can also delete or display current prefixes by scanning the following special barcodes.

➔ KDC20/100/200/250/300/350L/410/415

Delete Prefix



83004

Display Prefix



83006

➔ KDC30/350C/420/425

Delete Prefix



┐MKDC83004.

Display Prefix



┐MKDC83006.

- **Suffix** - Allows you to add a suffix to scanned data, which can then be stored in the KDC or wedged to the host. The suffix must be defined in the Data Format menu of KTSync. The maximum length for a suffix is 11 characters.

Note

- This Suffix option is different from the Suffix option in KTSync, which appends the suffix to data during synchronization.

Note

- The user can also define a suffix by scanning characters defined in Appendix C.27 ~ C.28 (KDC350L) and Appendix D.27 ~ D.28 (KDC350C) by scanning the following special barcodes:

➔ KDC20/100/200/250/300/350L/410/415

Suffix Enter Start



Prefix/Suffix Enter Finish



➔ KDC30/350C/420/425

Suffix Enter Start



Prefix/Suffix Enter Finish

**Note**

The user can also delete or display a current suffix by scanning the following special barcodes.

➔ KDC20/100/200/250/300/350L/410/415

Delete Suffix



Display Suffix

➔ KDC30/350C/420/425

Delete Suffix



Display Suffix



- **AIM ID** - Allows you to add AIM ID to scanned data, which can then be stored in the KDC or wedged to the host. AIM ID must be defined in the Data Format menu of KTSync. AIM ID is added to the end of either a Prefix or Suffix.
- **Partial Data**: Allows you to store and/or transfer partial data. The user defines the start position and number of characters to be stored and/or transferred.
 - Select the *x* characters from *y* position
 - ◆ Set Partial Data Start Position to *y*, Partial Data Length to *x*, Partial Data Action to Select
 - ◆ Partial Data Length *0* selects all characters from *y* position.
 - Erase the *x* characters from *y* position
 - ◆ Set Partial Data Start Position to *y*, Partial Data Length to *x*, Partial Data Action to Erase
 - ◆ Partial Data Length *0* erases all characters from *y* position.

Handshake

KDC provides Handshake mode when Data Format is set to Packet Data.

- Handshake Mode will increase the reliability of barcode data transmission.
- The default mode for Handshake is Disabled.
- Data transmission speed is slower when Handshake Mode is Enabled.

Terminator

The KDC supports various termination characters when the Data Format mode is set to Barcode Only. This option allows you to select <NONE>, <CR>, <LF>, <CR+LF>, or <TAB> as the termination character. The default terminator is <CR+LF>. The Up/Down/Left/Right arrow terminator is also available for HID mode.

Chk Duplicate

This option prevents you from collecting duplicate data.

Enter Key (KDC350 Only)

This option determines the behavior of the '#' key on the KDC350 keypad.

- If this option is enabled, the '#' key acts as a keyboard enter key.
 - The '#' key finishes the current data input, and stores/sends input data according to the menu settings of **Wedge/Store**.
 - The cursor moves to next line after the current data input is complete, regardless of whether there is an data input or not.
 - The screen is scrolled up one line if the '#' key is pressed on the last line of KDC screen.
 - If 'Shift' is enabled, remember that the '#' key will input the '#' character.
 - When the KDC sends input data to the host, it attaches a terminator selected in the menu "**Data Process → Terminator**". This option can be enabled by scanning a special barcode, as shown in 13.8(KDC350L) and 14.8(KDC350C)
 - If this option is disabled, the '#' key acts as a scan button (when 'Shift' is not enabled).

BT Config Menu – KDC20/30/200/250/300/400

The KDC supports *Bluetooth* Ver2.1+EDR. Before utilizing the advantages of Bluetooth functionality with the KDC, the user should become familiar with Bluetooth connectivity and its impact on the host environment.

To configure your KDC for Bluetooth functionality, you can use the KDC Menus. To access the menus, simultaneously press the UP and DOWN buttons on the side of the KDC. Use the DOWN button to scroll to Bluetooth, then press SCAN button.

Below is a listing of the Bluetooth options and their settings. The default settings for these options have been set to increase the usability of Bluetooth technology without compromising the KDC battery usage.

IMPORTANT: We strongly recommend NOT changing these settings until the user has fully tested the Bluetooth connection between the KDC and the host device.

For more detailed information regarding Bluetooth functionality with the KDC, please refer to [Chapter 4. BLUETOOTH](#).

ConnectDevice

You can choose the Bluetooth device type in this option.

- HID normal (KDC20/30/200/250/300/350/400)
- HID iOS (KDC20/30/200/250/300/350/400)

- SPP2.0 (KDC20/30/200/250/300/350/400)
- SPP (KDC20i/30i/200/200i/250/250i/300/300i/350/350i/400/400i)
- iPhone (KDC20i/30i/200i/250i/300i/350i/400i)

Auto Connect

Enabled or Disabled

Auto Reconnect

Enabled or Disabled (iPhone, HID iOS, HID normal mode)

Auto Power On

Enabled or Disabled

PWR On Time

Disabled, 1 to 10 seconds

Auto Power Off

Enabled or Disabled (KDC250/350 should use option in system menu)

Beep Warning

Enabled or Disabled

PWR Off Time

1 to 30 Minutes

PowerOff Msg

Enabled or Disabled

MAC Address

When users select this option, KDC displays 12 characters *Bluetooth* MAC Address.

FW Version

This option displays *Bluetooth* Firmware Version

Wakeup Nulls

Enabled or Disabled

Autolock Time

0, 1, 2, 3, 4, 5, 10, 15 minutes

BT Toggle

Enable or Disable HID soft keyboard or iPhone mode connection On/Off toggle.

BT Disconnect Button

Enable or Disable Bluetooth disconnection by pressing down button for 3 seconds.

HID AutoLock

Disabled, 1, 2, 3, 4, 5, 10, 15 minutes

HID Keyboard

Users can select a keyboard language in HID mode. KDC supports five languages: English, German, French, Spanish, and Italian.

HID Initial Delay

In this menu, users can define the initial delay between 1 second to 10 seconds before data transmission in HID mode

HID Inter-character Delay

This option allows users to define the inter-character delay between 10msec to 100msec in HID mode

HID Control Character

This option helps users to map control characters to either **ALT+Numlock** or **^+Character**.

BT Service – KDC20/30/200/250/300/350/400

Power

Users can choose to turn Bluetooth Power on or off. Select between Enable and Disable.

Pairing Mode

This option allows user to enter pairing mode by simply selecting this menu.

- The KDC enters into pairing mode so that the host *Bluetooth* device can search for it.
- The KDC can exit pairing mode if the user presses the SCAN button or if it fails to pair with the *Bluetooth* host device within 90 seconds.

Discovering

When users choose this menu, KDC searches for nearby *Bluetooth* devices.

Connecting To

This option allows user to Inquire to registered *Bluetooth* devices.

HID Sync

KDC transmits all stored data to the host over HID profile if HID Sync option is enabled.

GPS Config - 350G

Barcode and GPS data format

The KDC350 adds the GPS coordinate after the barcode data, if GPS data is available. The GPS data starts with "<G|P/S|" and ends with ":". For example, the KDC250 would record barcode "1234567890" , GPS coordinate "4354.45275,N;07925.81993,W" and Altitude data "208.7,M" as "1234567890<G|P/S|4354.45275,N;07925.81993,W ,208.7,M:" in the barcode data field.

GPS Menu

- **GPS Power:** Turning GPS Power on or off
 - Users can enable or disable the GPS Power.
 - The GPS module consumes extensive battery power. To conserve battery power, it is strongly recommended to turn off the GPS option when the KDC350 is not being used for an extended period of time.
 - It is also recommended to use the GPS Auto Power Off option in the System menu. This option automatically turns off the GPS power if a barcode is not scanned for a period of time.
- **Power Mode:** The user can choose the type power consumption for the GPS function.
 - Users can extend the battery life of the KDC350 in Power Save mode.
 - Users should use normal mode if accurate GPS data is required.
 - The KDC350 will last about 15 hours in normal non-bypass data mode and 18 hours in power save non-bypass data mode.
 - The KDC350 will last about 7 hours in normal bypass data mode and 8 hours in power save bypass data mode.
- **Bypass Data:** Enabled or Disabled
 - This option should be disabled if users wish to record the GPS data with a scanned barcode data.
 - The KDC350 will bypass GPS data to the host if the bypass option is enabled.
 - The KDC350 becomes a Bluetooth GPS receiver if this bypass data option is selected.
- **Acquire Test:** Time test to see how long it takes to acquire GPS signal.
- **Reset GPS:** Reset GPS parameters

GPS Hot Key

The KDC350 provides the following hot keys for convenient GPS operations:

- **GPS Power Enable**
 - If Auto Power Off is enabled and GPS power is disabled, users can turn on the GPS power by pressing the SCAN button.
 - Users should hold the SCAN button for more than 3 seconds to turn on the

GPS power.

- **GPS Bypass mode Enable/Disable**
 - If GPS power is enabled, users can toggle GPS Bypass mode by pressing the SCAN button.
 - Users should hold the SCAN button for more than 3 seconds to toggle GPS bypass mode.
- **GPS Acquire test cancellation**
 - Users can cancel the GPS acquire test by pressing the SCAN button during the test.
- **GPS Data append cancellation**
 - Users can cancel GPS data append by pressing SCAN button if GPS data is not available immediately.
 - Users should hold the SCAN button for more than 3 seconds to cancel GPS data append.

USB DISK - 100M/200M/250M/300M/350

USB Mode

KDC100M/200M/250M/300M/350 can be used as USB Disk with 4MB space.

USB Serial

When this option is enabled, KDC enters into USB Serial mode.

USB Disk

This option allows user to change to USB Disk mode and barcode data that KDC scanned is stored into a file in flash disk when this option is selected.

Disk Format

This option is available in USB Disk mode and allows users to format KDC USB Disk.

Data Format

This option is available in USB Disk mode.

- Data
- Data Time
- Data Type
- Data Time Type

Note

- Changing the "USB Mode" option will erase all data in KDC memory. Make sure to back up your data before changing this option.
- KTSync cannot recognize the KDC if the KDC is in "USB DISK" mode.
- It is required for the user to run "Verify Disk" on Disk Utility before using it.

NFC Config – KDC350N/KDC400N

NFC Power

- Turning NFC Power on or off
- Options: Enable/Disable

Data Format

- Options: Data only/Packet data

UID Only

- Enable or Disable UID Only menu
- The KDC only sends UID data to the host device when the KDC is in UID Only mode. If Data format is 'Data Only' or HID mode, the KDC changes the UID hex values to ascii string and sends this data to the host device. If Data format is 'Packet Data', the KDC only sends UID hexa values with NFC/RFID packet format.

Note

- KDC350N/400N supports the following card types.
 - 1) Mifare Desfire read.
 - 2) Mifare 1K read.
 - 3) Mifare Ultralight / Ultralight C
 - 4) ISO 15693

System Menu

Memory Size (3.0 version only)

The user can select how much memory to divide between normal data memory and application database memory.

- The KDC will erase all stored data upon changing the partition size.
- The user should enter the following key sequence to change the partition.
- UP button + UP button + DOWN button + DOWN button + SCAN button

Memory Status

In this option, users can check the number of stored barcodes and memory usage.

Reset Memory

In this option, users can reset KDC memory by erasing all stored barcodes, applications, and BT registry.

Auto Erase

If enabled, this feature erases stored barcodes on the KDC once the 'Buffer Full' condition is reached.

Sleep Timeout

This option allows users to set the amount of time the KDC waits before going to *sleep* (when not being used).

Auto Power Off (KDC250/350)

- **Bluetooth:** Enabled/Disabled
- **GPS:** Enabled/Disabled
- **Power Off Time:** 0(Never), 5, 10, 20, 30, 60, 120 minutes

Date/Time

In this option, users can set the date and time of the KDC, which can also be set using KTSync®.

Battery

This option shows the current status of battery power level.

Version

This option shows the KDC firmware version and serial number.

Button Lock

This option allows users to lock or unlock the KDC scan and scroll buttons.

Beep Alert

- **Beep Sound:** Enables or disables KDC beep sound.
- **Power On Beep:** Enables or disables beep sound when KDC power is on.
- **Beep On Connect:** Enables or disables beep sound when KDC is connected to the host.
- **Beep On Scan:** Enables or disables beep sound when KDC is scanning.

Beep Volume

This option allows user to adjust the beep volume from High to Low.

MFi Mode (KDC20i, 30i, 200i, 250i, 300i, 350i, 400i)

This option allows user to enable or disable MFi mode. MFi mode supports SPP and iPhone Bluetooth profiles. Non-MFi mode supports SPP, SPP2.0, HID iOS and HID normal.

Vibrator

Enables or disables KDC vibrator.

Auto Exit

This option enables KDC to automatically exit KDC Menus.

Port Status

This option allows users to enable or disable KDC port messages.

Display Format

There are various selection of display format; Time & Battery, Type & Time, Type & Battery, Memory Status and Barcode only.

Menu Barcode

This option allows users to enable or disable Honeywell special barcodes (KDC300/350C only).

Scrolling

This option allows users to enable or disable display scrolling for a barcode with more than 40 characters.

Brightness

This option allows users to adjust brightness of display.

Factory Default

By selecting this option, users can reset KDC options to factory default settings.

Pair and connect KDC20i/30i/200i/250i/300i/350i/400i and iOS4.0+ in HID iOS mode

Note

- Users have to disable the MFi option in System > MFi menu to use HID Bluetooth profiles.
- Users have to RESET the iPhone/iPad/iPod touch in order to change HID to iPhone mode, and vice versa, after removing a previous KDC connection.
- KDC with Bluetooth Spec2.1+EDR does not prompt Pin code entry menu.
- KDC with Bluetooth Spec. 2.1+EDR stack does not require 4 or 6 digits PIN digits entry

Follow the below steps in order to pair and connect KDC models for MFi and iOS4.0 in HID mode.

1. Go to the KDC System > MFi menu.
2. Change MFi option to Disabled.
3. Change KDC to Pairing mode.
4. The iPhone/iPad/iPod touch will find a new device as *Keyboard*.
5. Click *Keyboard* device.

Note

Please skip the following steps if the iPhone/iPad/iPod touch does not ask for the PIN number.

6. Click **Keyboard** device: The iPhone/iPad/iPod touch will ask for the PIN number. The iPad will ask for 6 digits and the iPhone/iPod touch will ask for 4 digits.
7. As soon as the iPhone/iPad/iPod touch asks for the PIN number, the KDC will display the PIN digits selection menu. By default, it is 6 digits.
8. Press the SCAN button to select the 6 digit PIN code for the iPad. Press the DOWN button and then the SCAN button to select the 4 digit PIN code for the iPhone/iPod touch.
9. The iPhone/iPad/iPod touch will display the PIN code that users should enter into the KDC.
10. By default, the KDC displays pin codes 555555(5555). Users can change the PIN code by using UP button on the side of the KDC unit to increase numbers, DOWN button to decrease numbers, and SCAN button to confirm and move to the next digit.
11. Once the last PIN number has been entered, press and hold the SCAN button for a few seconds. The KDC will display a **HID connected** message and the iPad/iPhone/iPod touch will display a **Connected** message if paired successfully.

iOS Soft Keyboard toggling using BT Toggle option

Users need to select the option to use this feature in **BT Config > BT Toggle**.

1. Press the DOWN button to disconnect the HID connection and display a soft keyboard (If DisconnectBTN option is enabled).
2. Press the UP button to connect via HID.
3. The BT toggle is a useful feature if users wish to use both the KDC and soft keyboard.

3.4 LED Status

KDC100/200/250/300/350

LED Color	Status
Green	<ul style="list-style-type: none"> • Successful Reading • USB is connected and battery is fully charged.
Orange	<ul style="list-style-type: none"> • Low battery • USB is connected and battery is charging.
Red	<ul style="list-style-type: none"> • No reading • Empty battery

KDC20/30/400

LED Color	Status
Green	<ul style="list-style-type: none"> • Successful Reading • ⁷ USB is connected and battery is fully charged. • iPhone mode in pairing mode.
Orange	<ul style="list-style-type: none"> • Low battery • USB is connected and battery is charging • HID mode is in pairing mode.
Red	<ul style="list-style-type: none"> • No reading • SPP mode is in pairing mode.

Table 5 - Explanation of LEDs

3.5 Empty Battery

KDC100/200/250/300/350

The KDC will display the message *Empty Battery Connect USB* when the battery is empty. Please charge the KDC IMMEDIATELY to prevent any interruptions while it is collecting data.

KDC20/30/400

- Under 30% - Orange LED flickers at 1-second-intervals for 5 seconds every minute.
- Under 20% - Orange LED flickers at 1-second-intervals for 10 seconds every minute.
- Under 10% - Red LED flickers in 1- second-interval for 10 seconds every minute, and the user will hear a beeping sound.

3.6 Buffer Full

The KDC will display the message *Buffer Full* when the size of collected data reaches 160KB (85 version) / 60KB (86 version) or the number of collected barcodes reaches 10,240. To prevent the loss of data, you should synchronize the data then reset the memory when this message is displayed.

The 4MB version KDC reaches the Buffer Full condition in the following situations:

- 0.5MB Partition - Collected data size reaches 0.5MB or collected number is 25,600
- 1MB Partition - Collected data size reaches 1MB or collected number is 51,200
- 2MB Partition - Collected data size reaches 2MB or collected number is 102,400
- 3MB Partition - Collected data size reaches 3MB or collected number is 153,600
- 4MB Partition - Collected data size reaches 4MB or collected number is 204,800

3.7 Reset Feature(100/200/250/300/350) or Power-on/off (KDC20/30)

The Reset feature allows you to restart the KDC100/200/250/300/350/400 if necessary, without losing any stored barcode data or option settings. To reset the KDC, follow the below steps.

1. Press the DOWN and SCAN buttons simultaneously for 5 seconds.
2. When the LEDs illuminate orange, release the buttons.
3. The KDC initial screen, **KoamTac Data Collector KDC**, displays when reset is complete.

Note

The KDC stores collected data into flash memory and will not lose data nor the KDC settings during the reset process.

However, if you are using the KDC20/30, you can turn the power on and off by pressing the DOWN and SCAN button simultaneously for 5 seconds. When the LED light is green, you can release the buttons and the power will be on. When you turn off the KDC20/30, you will hear a beep sound after pressing the DOWN and SCAN buttons simultaneously.

3.8 Replace Battery

Each KDC comes with a rechargeable, Lithium-polymer (KDC20/30/100/200) or Lithium-ion (KDC300/350/400) battery. The battery can be recharged from any USB port or KDC charging cradle, and can be recharged about 300 times before it needs to be replaced. KoamTac recommends replacing the battery annually, as a declining battery will cause noticeable performance degradation in the KDC. Replacement batteries can be purchased from a KDC reseller. Batteries should be disposed of properly as according to the WEEE regulation. The steps for replacing a battery are as follows.

1. Disassemble the KDC back cover by unscrewing the middle screw.
2. Remove the old battery and replace with a new battery.
3. Reassemble the back cover.

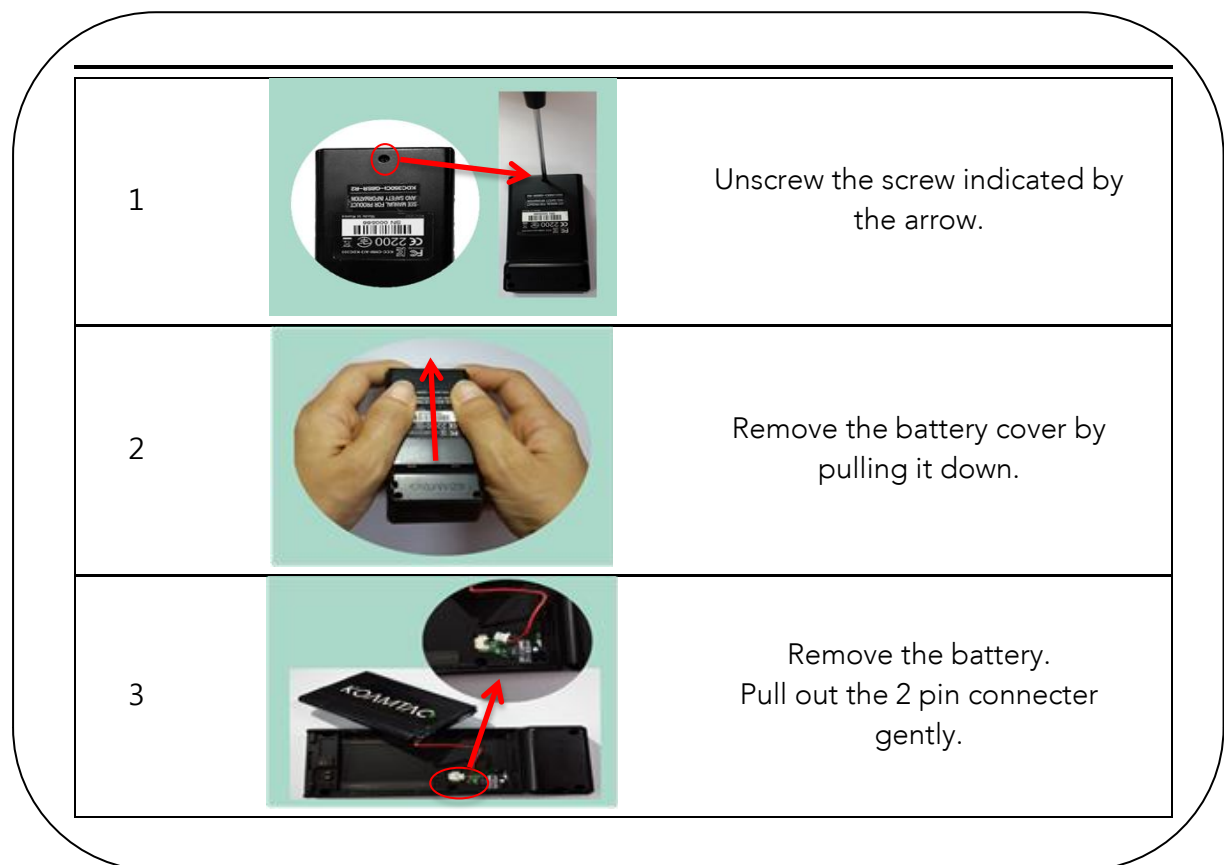


Figure 18 - Replacing a Battery

4. Bluetooth –

KDC20/30/200/250/300/350/400

The KDC20/30/200/250/300/350/400 supports HID (Human Interface Device) normal, HID iOS, SPP (Serial Port Profile) and SPP2.0 profiles. The KDC20i/30i/200i/250i/300i/350i/400i supports SPP and iPhone (Made for iPhone) profiles. They are compatible with the following Bluetooth stacks:

- BlueSoleil
- Broadcom (Widcomm)
- Microsoft Windows XP, Vista, 7, and Mobile5.0+
- Toshiba

The KDC200/250/300/350's *Bluetooth* options can be configured by using the KDC menu and special barcodes. The KDC20/30/400's Bluetooth options can be configured by using the PC KTSync and special barcodes.

4.1 Bluetooth Config

ConnectDevice

The KDC supports both Serial Port Profile (SPP) and Human Interface Device Profile (HID). The user can choose amongst SPP2.0, SPP(2.1), HID normal, or HID iOS profiles to communicate with the host device. An additional iPhone (Made for iPhone) option is available for KDC20i/30i/200i/250i/300i/350i/400i models.

If the **BT Toggle** option in **BT Config** is enabled, the user can connect and disconnect the Bluetooth connection with the host device by pressing the UP and DOWN buttons. It normally takes 3 seconds to connect and 1 second to disconnect. This is a very useful feature for iPhone and iPad applications.

The user can also enable and disable the iPhone and iPad soft keyboard instantly by using this BT Toggle option.

The UP button shows the Bluetooth connection status and the DOWN button shows the time when the KDC is connected via SPP profile.

Note

The user should first unpair the KDC from the Bluetooth host to change the Connect Device setting on the scanner to a different Bluetooth profile.

Auto Connect

This feature allows the KDC to automatically connect to the host device when the KDC is powered on.

IMPORTANT: Until the host device and KDC have been fully tested, it is strongly recommended that this feature be set to 'Disable', because a host device that does not support this feature could cause problems, such as power loss or upload delays.

Note

The KDC automatically tries to connect to the host 10 times within the duration of two minutes when *Bluetooth* power is ON, *Bluetooth* is disconnected, Auto Connect is enabled, and system Sleep Timeout is set to 5 seconds.

Auto Reconnect

This feature allows the KDC to automatically connect to the host device when the KDC is disconnected from a host.

IMPORTANT: This feature is available when KDC "Connect Device" options are "iPhone", "HID iOS", or "HID Normal".

Note

The KDC tries to connect automatically to the host 10 times within the duration of two minutes if Bluetooth is disconnected.

Auto Power On

The Auto Power On option allows the KDC to automatically power on Bluetooth when the SCAN button is pressed. The default setting is Disabled.

Note

Users should press the scan button for the duration defined in the **BT Config** Power-on time option. The host program may have to open the COM port again in order to be reconnected with the KDC.

PWR ON Time

The PWR On Time option works in conjunction with the Auto Power On option. The default value is Disabled. If the KDC Bluetooth power is off, you can turn on the Bluetooth power by pressing the SCAN button for the PWR On Time option value.

Auto Power Off

The Auto Power Off option works in conjunction with the PWR Off Time option. This option allows the KDC to power off Bluetooth automatically when the KDC is NOT CONNECTED to the host for the time duration specified in the PWR Off Time option.

The default for this option is Disabled. It is strongly recommended to keep it enabled to maximize the operation time of the KDC. If Auto Power Off is Enabled, Bluetooth can be manually powered off before the specified time in the PWR Off Time option.

Beep Warning

The KDC beeps to acknowledge the status of the Bluetooth connection as follows:

1. One high short beep when Bluetooth is connected.
2. One low short when Bluetooth is disconnected.
3. Five short beeps if:
 - "Beep Warning is ENABLED"
 - "Auto Power Off is DISABLED"
 - "KDC20/30/200/250/300/400 is DISCONNECTED from HOST"
 - "Bluetooth power is ON"

PWR OFF Time

The PWR Off Time option works in conjunction with the Auto Power Off option. If Auto Power Off is Enabled, the KDC powers off Bluetooth when the duration of time specified in the PWR Off Time option is met and the KDC is NOT CONNECTED to the host. The time setting for this option is from one (1) minute to 30 minutes. The default is five (5) minutes.

PowerOFF Msg

The KDC sends a Bluetooth power off message "BTOFF" to the host if the PowerOFF message option is enabled.

MAC Address

The user can verify the KDC Bluetooth MAC Address.

FW Version

The user can verify the KDC Bluetooth firmware version in BT FW menu.

Wakeup Nulls

The KDC sends three leading Null bytes to wake up the *Bluetooth* connected device. This feature can be disabled if the *Bluetooth* connected device does not require additional bytes to wake up.

Autolock Time

The iPhone/iPad/iPod touch loses incoming Bluetooth data while in sleep mode. To prevent data loss, you can set the KDC Autolock time to the same Autolock time of your iPhone/iPad/iPod touch, to use the automatic wakeup feature in HID mode.

If the Autolock time is set to more than one minute and the barcode scan interval is larger than the auto-lock time, there will be a one second delay of barcode transmission. The auto-lock time would be set as 0, 1, 2, 3, 4, 5, 10, 15 minutes. 0 means the iPhone/iPad/iPod touch never enters sleep mode.

HID Keyboard

The user can select an international keyboard – English, German, French, Spanish, or Italian.

HID Initial and Inter-Character Delay

Certain applications cannot process HID input fast enough and may lose some characters during transmission. Users should increase initial and inter-character delay to prevent data loss during HID transmission.

- HID Initial Delay: Defines the initial delay between 1 sec to 10 sec before data transmission in HID mode.
- HID Inter-character Delay: Defines the inter-character delay between 10msec to 100msec in HID mode.

Control character transmission in HID mode

Control characters between ASCII values 0x00 and 0x1F can be replaced by the ALT+Numpad or ^+Character.

- Disabled ➔ Transmit the original control character.

- Alt+Numpad → Transmit Alt+ ASCII value from Numpad.
- ^+Character → Control characters would be substituted as shown in the following table.
- Replacement to | → Control characters would be substituted as "|".

Control Char	Transmit Chars	Control Char	Transmit Chars	Control Char	Transmit Chars	Control Char	Transmit Chars
0x01	^A	0x0B	^K	0x14	^T	0x1D	^]
0x02	^B	0x0C	^L	0x15	^U	0x1E	^^
0x03	^C	0x0E	^N	0x16	^V	0x1F	^_
0x04	^D	0x0F	^O	0x17	^W		
0x05	^E	0x10	^P	0x18	^X		
0x06	^F	0x11	^Q	0x19	^Y		
0x07	^G	0x12	^R	0x1A	^Z		
0x09	^I	0x13	^S	0x1C	^\		

Function key transmission in HID mode

The user can send F1 to F12 function keys by scanning special barcodes in HID mode.

Disconnect/Reconnect/BT(HID) Toggle

The user can disconnect or reconnect the Bluetooth connection, and toggle the soft keyboard using side buttons.

Bluetooth Profile	UP Key	DOWN Key (DisconnectBTN disabled)	DOWN Key (DisconnectBTN enabled)
SPP	Does nothing	Does nothing	Releases BT connection
HID iOS	Reconnect	Soft Keyboard Toggle if pressing less than 3sec	Soft Keyboard Toggle if pressing less than 3sec, Releases BT connection
iPhone	Reconnect	Does nothing	Releases BT connection
SPP 2.0	Does nothing	Does nothing	Releases BT connection
HID normal	Reconnect	Does nothing	Releases BT connection

4.2 Bluetooth Service

Power

The POWER option allows you to Enable or Disable the Bluetooth functionality of the KDC. To use Bluetooth, this option must be set to Enable.

However, like all devices enabled for Bluetooth, the KDC will constantly search to connect with a Bluetooth host when set to Enable. Constant searching for Bluetooth devices increases power consumption.

Unless you are using Bluetooth with your KDC, this option should be set to Disable.

IMPORTANT: To prevent unnecessary power problems, it is strongly recommended that the POWER option be set to Disable if the KDC is idle for an extended period of time.

Pairing

Before you are able to use Bluetooth, the KDC must be paired with the host device. This pairing process needs to be completed only once with each host device. After pairing, the host device will always recognize the KDC as a Bluetooth device, unless the Bluetooth configuration is modified. If it is modified, you may need to pair the devices again.

IMPORTANT: The host device must be configured for Bluetooth before it can be paired to the KDC.

Note

KDC with Bluetooth Spec2.1+EDR does not prompt Pin code entry menu.

To pair the KDC with the host, follow these instructions:

1. Select Pairing from the Bluetooth menu. The message "**Pairing started...**" will be displayed.
 2. When prompted by the host device, enter the Security PIN "0000".
 3. The "**Pairing success**" message will display when the Bluetooth connection is successfully established. The connection must be established before the pairing timeout of 60 seconds.
- If "**Pairing failed...**" message displays, the Bluetooth connection with the host device failed. If the message "**Connected**" displays, a Bluetooth connection is established.
 - It is possible for the message "**Pairing failed...**" to display on the KDC while the host device displays the "**Connected**" message. If this occurs, a Bluetooth connection has been established.

Discovering

KDC20/30/200/250/300/350/400 starts to search for neighboring *Bluetooth* devices if the Discovering menu is executed. It will take about 30 seconds to finish searching and to list available neighboring *Bluetooth* devices. Another option is to enter the corresponding Bluetooth MAC address in the KTSync Bluetooth menu, instead of waiting for the KDC to search for neighborhood *Bluetooth* devices.

Connect To

This option lets you easily connect the KDC to *Bluetooth* devices that have been either previously registered in KTSync under the File Menu or discovered/connected from the KDC *Bluetooth Service* menu.

Note

There could be an interoperability issue depending on the corresponding device Bluetooth stack. The master Bluetooth device may request that you to follow the master Bluetooth device's security procedures, if the KDC tries to connect to the master Bluetooth device.

HID Sync

The user can synchronize stored barcode data over HID using the HID Sync option. The KDC will start to transmit all stored barcode data upon execution of the HID Sync option. This option is available when KDC MFi Mode option is disabled.

5. Synchronization

When barcode data is collected, it must be uploaded to your application. KTSync®, which is bundled with the KDC, is a software that allows barcode data to be uploaded to any PC, PDA, or smartphone running Android 2.1+, Apple iOS3.1.3+, Blackberry, Mac and Windows XP/Vista/7/Mobile 5.0+. It has three major functions. (Windows XP/Vista/7 version supports all of the following features. Tablet, PDA and Smartphone versions support only limited features of PC KTSync.)

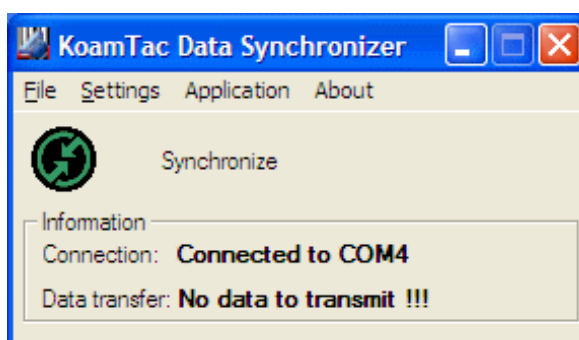
- Synchronization - Provides data upload functionality to your applications.
- Keyboard Emulator - Allows scanned data to be uploaded directly into your application as if the data were being entered manually with a keyboard.
- Application Generation - Allows users to create custom applications or download predefined applications such as Master-Slave, Pick/Bin, DB Lookup and Inventory.

Additional functions include:

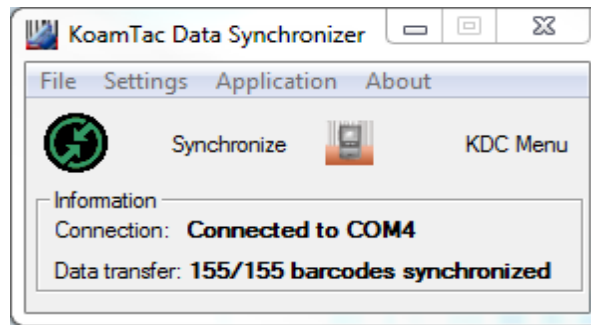
- Prefix and Suffix add-ons to eliminate manual data entry.
- Symbology and Scan Option selections.
- Barcode Wedging options.

5.1 KTSync Menu

KTSync® was installed on your PC during the initial installation process. Before data can be uploaded to any host device, KTSync® must be launched on the host and configured to recognize the KDC. The following screen displays when KTSync® is launched:



KDC100/200/250/300/350



KDC20/30/400

Figure 19 - KTSync® Synchronizer Menu

File Menu

- **Connect:** This option displays the Serial port (COM#) assigned to KDC. You can also use this option to manually assign the Serial port. The Serial port assigned to KDC can be found under Windows Device Manager. The port assignment is used by KTSync® for synchronizing data from the KDC to the host.
- **Synchronize:** This option manually tells the KDC to synchronize data with the host. While data is being synchronized, KTSync menu options are unavailable.

Note

Please do not use your computer during data synchronization.

- **Bluetooth:** This option is not available on KDC100. Users can register a MAC address to be directly connected by KDC20/30/200/250/300/350/400.
- **Configuration:** This option allows users to set different KDCs with same settings by exporting and importing settings from one KDC to the other.
- **Exit:** This option ends the KTSync program. You must re-run KTSync before you can synchronize data on the KDC.

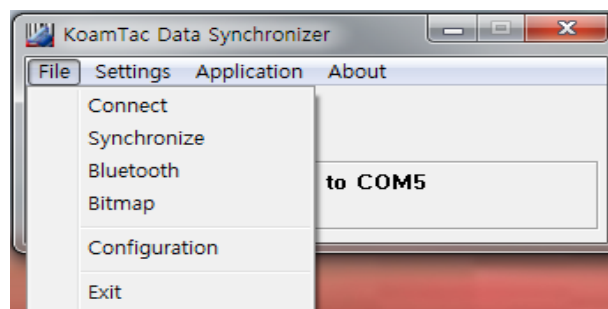


Figure 20 - File Menu

Settings Menu

- **Synchronization:** Select Synchronize options.
- **Barcode & KDC:** Select Barcode and KDC options.
- **Others:** Select Auto Connection and/or Synchronization Confirmation options.



Figure 21 – Setting Menu

Application Menu

- Generation: Create user application or download predefined application.
- DB Lookup: Allows users to download DB into KDC and display barcode description field.
- Master/Slave: The user defines a master barcode for comparison with one or more slave barcodes.
- Pick/BIN: The user defines Pick ID and the barcode symbology for comparison with a defined Bin.
- Inventory: Users can count inventories. Inventory description will be displayed if inventory DB is downloaded into the KDC.

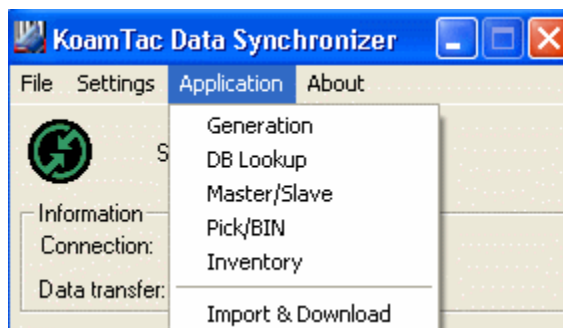


Figure 22 - Application Menu

About Menu - KTSync® - Version Information

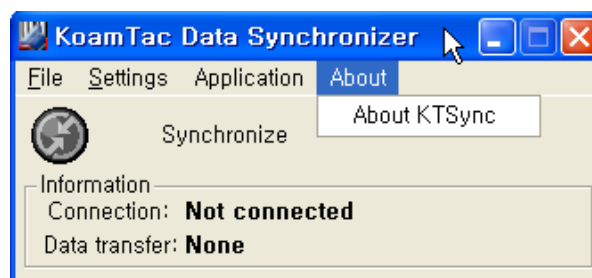


Figure 23 - About Menu

5.2 File Menu

Connect to KDC

The KDC automatically connects to a COM port when connected to the PC's USB port. If needed, the user can manually assign the KDC COM port by using the KTSync® Connection submenu under the File menu.

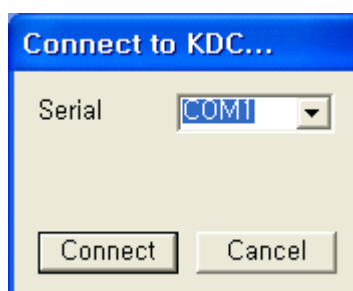


Figure 24 - COM Port Selection for KDC

- The COM port assignment is found in the Windows Device Manager.
- KTSync® will not connect to the KDC if it is in the KDC Menus. You must EXIT from the KDC Menus.
- If KTSync® fails to connect automatically to the KDC, please follow these steps:
 1. Exit KTSync®.
 2. Check to make sure that you have connected the KDC to a USB port on your PC.
 3. Make sure that the user is using the cable provided with the KDC.
 4. Check to make sure that the KDC is not in KDC Mode Menu.
 5. Restart KTSync®.

Note

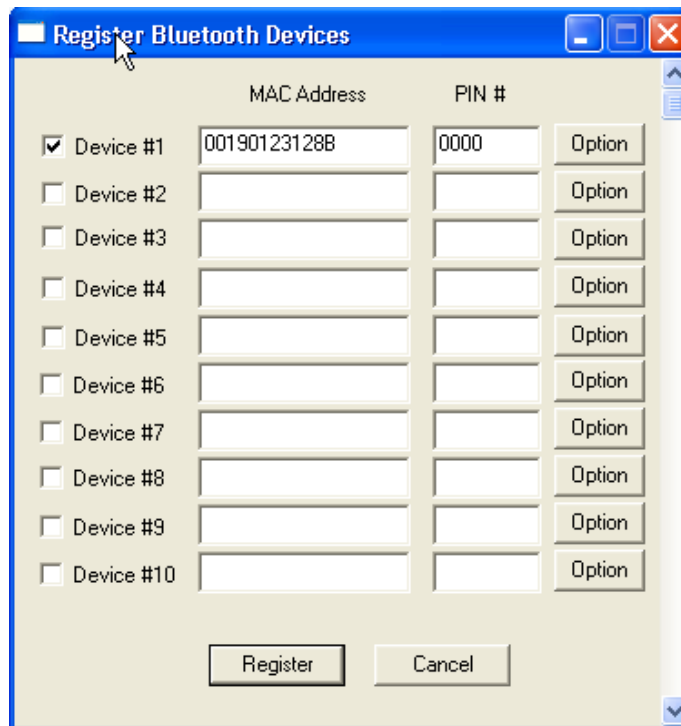
You can manually assign the COM port using KTSync® Connect option under the File menu.

Synchronize

Located under the File Menu, this option allows the user to manually synchronize data on KDC with the host. This option is similar to clicking on the Synchronize button in the KoamTac Data Synchronizer box.

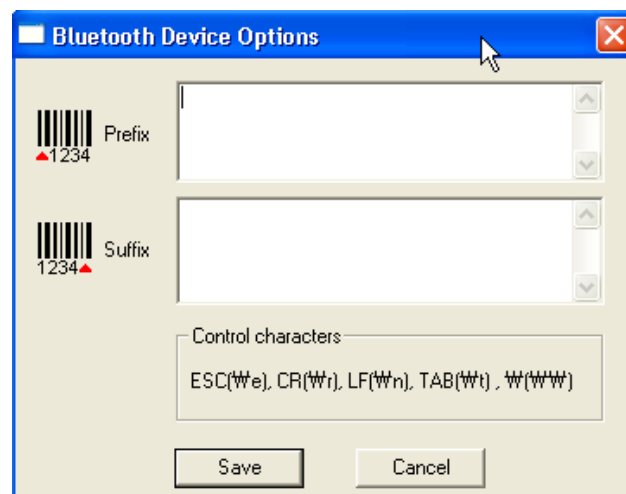
Bluetooth

This menu option allows the user to register up to ten Bluetooth devices, including their MAC address, PIN #, and optional prefixes or suffixes. This option enables direct Bluetooth connection between KDC and other Bluetooth devices, such as a *Bluetooth* printer. The user should choose a *Bluetooth* device to be connected in "Connect to" menu in KDC *Bluetooth* Service menu.



The "Register Bluetooth Devices" dialog box contains a table with 10 rows for Device #1 through Device #10. Each row has a checkbox, a MAC Address field, a PIN # field, and an Option button. Device #1 is selected, showing MAC Address 00190123128B and PIN # 0000. At the bottom are Register and Cancel buttons.

	MAC Address	PIN #	
<input checked="" type="checkbox"/> Device #1	00190123128B	0000	Option
<input type="checkbox"/> Device #2			Option
<input type="checkbox"/> Device #3			Option
<input type="checkbox"/> Device #4			Option
<input type="checkbox"/> Device #5			Option
<input type="checkbox"/> Device #6			Option
<input type="checkbox"/> Device #7			Option
<input type="checkbox"/> Device #8			Option
<input type="checkbox"/> Device #9			Option
<input type="checkbox"/> Device #10			Option



The "Bluetooth Device Options" dialog box has two sections: Prefix and Suffix, each with a barcode icon and a text field. Below these is a "Control characters" section with a text field containing ESC(We), CR(Wr), LF(Wn), TAB(Wt), W(WW). At the bottom are Save and Cancel buttons.

Prefix: [Barcode icon] 1234 [Text field]

Suffix: [Barcode icon] 1234 [Text field]

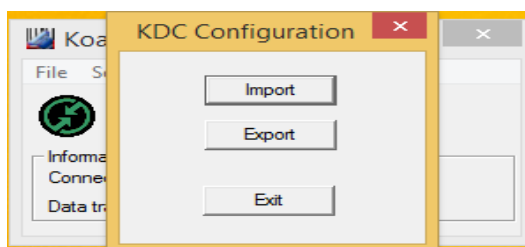
Control characters:
ESC(We), CR(Wr), LF(Wn), TAB(Wt), W(WW)

Figure 25 - Bluetooth Device Registry

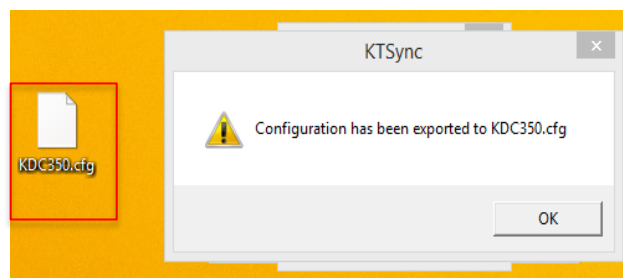
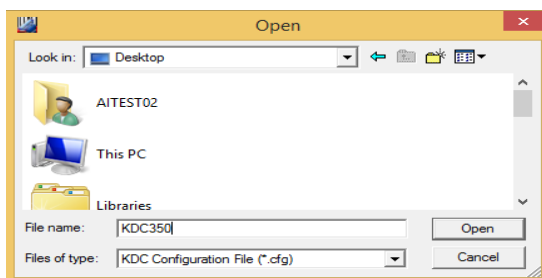
Configuration

This menu is useful for the users who need to configure different KDCs with same settings. In this menu, you can export settings from a KDC to your computer and import it to other KDCs.

When you select **Configuration** in File menu, you will need to choose either **Export** or **Import**. First, select Export. You name the settings file, press **Open**, and it is exported to your computer. Second, connect a different KDC to your computer and import the settings file to the KDC by selecting **Import** in the Configuration menu. Once configuration has been finished, KDC will restart.



- Export



- Import

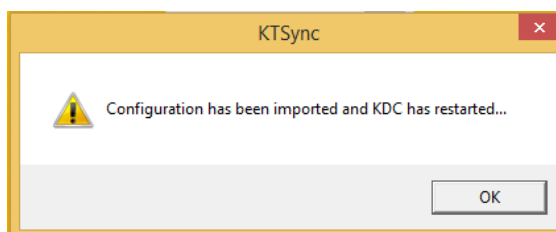
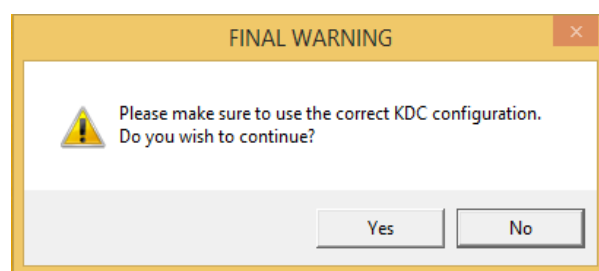
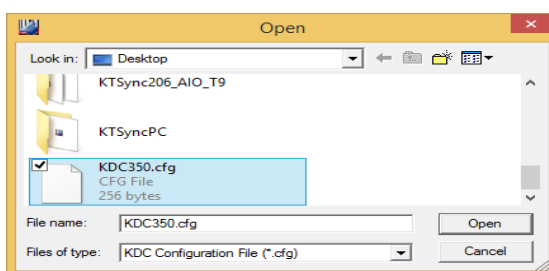


Figure 26 – Configuration

5.3 Synchronization Settings

KTSync® provides several synchronization options for synchronizing data from your KDC to host devices such as your PC, PDA, or smartphone running Windows XP, Vista, Windows 7, or Mobile 5.0+.

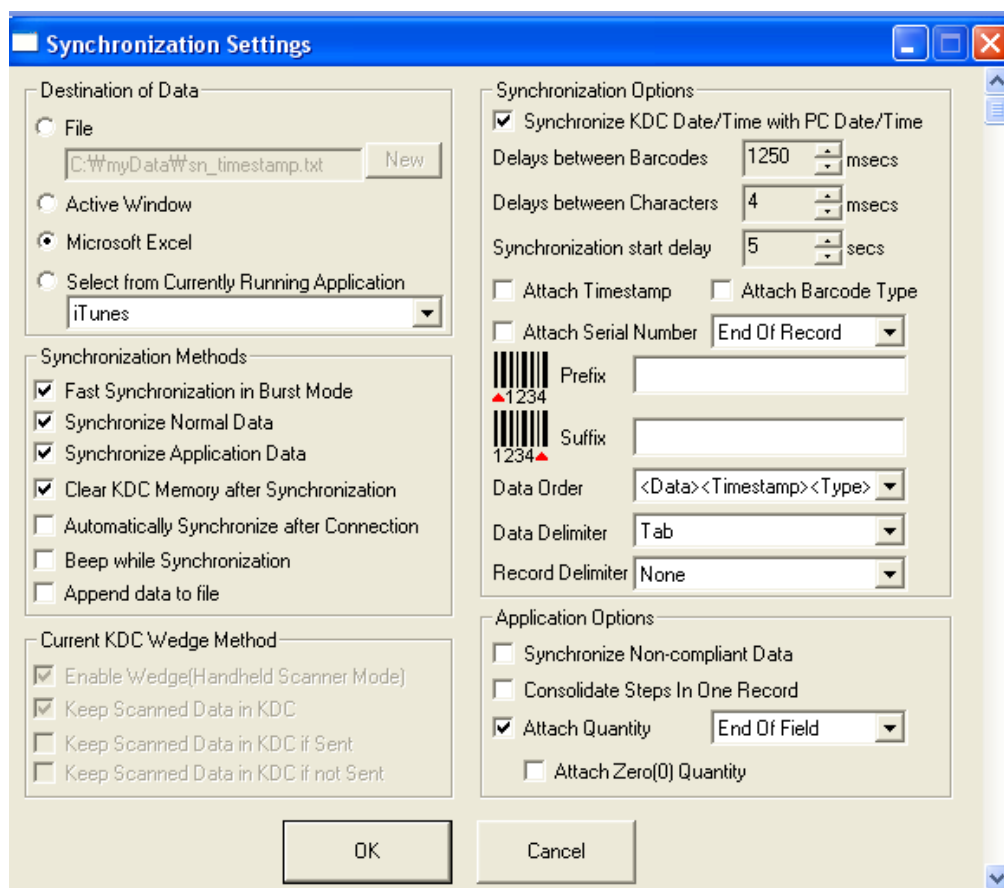


Figure 27 - KTSync® Synchronization Settings

Destination of Data

When barcode data is uploaded to the host device, you must assign a destination for the data. Destination of Data options include:

- **File** - This option means data will be saved in the assigned filename. You can select a different target directory by clicking the New icon. The default directory is C:\MyData\sn_timestamp.txt. If this directory is not created, you will be prompted to create it before data can be uploaded to a file.
- **Active Window** - This option means scanned barcode data is sent directly to the active program running on your device as if the data is being entered directly from a keyboard.
- **Microsoft Excel** - This option means barcode data is being imported directly into Microsoft's Excel. Various parameters can be set when uploading data to Excel.

- Select from Current Running Application – This option allows you to select a currently running application for data synchronization.

Note

- Data synchronization begins immediately if Automatically After Connection is selected. If not selected, data synchronization is started manually by the user.
- Users **SHOULD NOT** operate the PC during the synchronization process. It can interrupt the process causing unreliable results.

Synchronization Methods

Fast Synchronization in Burst Mode

The KDC can synchronize data to a host device in Burst mode or Sequential mode. Burst mode provides the fastest synchronization process but could result in error in a poor *Bluetooth* environment. Fast synchronization in Burst mode is only recommended with USB connection.

Synchronize Normal Data

If Synchronize Normal Data option is selected, the KDC will synchronize only Normal Data in KDC memory. If the user wants all data in KDC memory synchronized, the user should select Synchronize Normal Data **and** Synchronize Application Data.

Synchronize Application Data

If Synchronize Application Data option is selected, the KDC will synchronize only Application Data in KDC memory. If the user want all data in KDC memory synchronized, the user should select Synchronize Normal Data **and** Synchronize Application Data.

Clear KDC Memory after Synchronization

If this option is selected, the stored barcode data is cleared from the KDC memory after synchronization. The KDC20/30/100/200/250 can store a total of 10,240 barcodes or 60KB (86 version)/160KB (85 version) of barcode data.

- It is important to clear the KDC memory periodically to prevent a Buffer Full message. Buffer Full prevents the KDC from storing additional data. Stored barcode data can also be deleted using the Reset Memory feature on the KDC.

Automatically Synchronize after Connection

This option lets the user automatically synchronize collected data immediately to the computer when the KDC is connected to the host.

- **IMPORTANT:** Before selecting this option, remember to configure all options properly.

- Data synchronization can be done manually by clicking the synchronize icon if this option is not selected.

Beep while Synchronization

The user can enable or disable the beep tone during the synchronization process. If this option is selected, a beep is sounded every time barcode data is synchronized. The KDC beeps 5 times when the synchronization process is complete.

Append data to File

If the user has specified a file name and Append data to File option is enabled, KTSync will append data to the existing file instead of creating a new file.

Current KDC Wedge Method

The KDC can be configured in one of five Wedge/Store modes:

- Wedge Only - Scanned data is transmitted to the host. The KDC does not store scanned data.
- Wedge & Store - Scanned data is stored in the KDC and transmitted to the host.
- Store Only - Scanned data is stored in the KDC but NOT transmitted to the host.
- Save if Sent - Scanned data is stored in the KDC ONLY if transmission to the host is successful.
- Save if Not Sent - Scanned data is stored in the KDC ONLY if transmission to the host is unsuccessful.

Enable Wedge (Handheld Scanner Mode)

This option will be checked if Wedge Only or Wedge & Store option is selected.

Keep Scan Data in KDC

This option will be checked if Store Only or Wedge & Store option is selected.

Synchronization Options

Synchronize KDC Time with PC Time when Connected

This option enables the user to synchronize the KDC date and time with the host date and time. Synchronization of date and time occurs after the data is uploaded to the host device.

Delays

The user can set transmission delays between barcodes and characters during the synchronization process. It is important to set proper delays to prevent errors during the

transmission of collected barcodes. Some Windows applications, such as Excel, require longer delay times.

Attachments

Timestamp, Barcode Type, and Serial Number can be attached to the scanned barcode by selecting these options. The Serial Number of the KDC can be attached to the Start or End of Record.

Prefix and Suffix

- Enter the characters the user wants to attach to the front (Prefix) or back (Suffix) of the barcode in the Prefix and Suffix fields.
- The character set is any combination of ASCII characters including alphanumeric, line feed ("\\n"), and carriage return ("\\r").

Order and Delimiter

- Select Order of Data – Type, Data, and Timestamp
- Select the Delimiter between Data – Tab, Space, Comma, and Semicolon
- Select the Delimiter between Records – None, LF, CR, Tab, and <LF & CR>

Application Options

Synchronize Non-Compliant Data

The KDC will synchronize both compliant and non-compliant data (filtered data) if Synchronize Non-Compliant Data option is Enabled.

Consolidate Steps in One Record

KTSync will consolidate the data collected in Step 1 with the data collected in Step 2 and/or Step 3. When Consolidate Steps in One Record is Enabled, data will be consolidated into one record instead of individual data records for each step. If this option is Enabled, non-complete records, i.e. three steps were defined but data was only collected for two steps, will be discarded.

Attach Quantity

If this option is Enabled, quantity will be attached to the left or right of the data.

5.4 Barcode & KDC Settings

KTSync® allows the user to configure the KDC Scan Options and Barcode Settings. The configuration options for the KDC using KTSync® are similar to the Set Barcodes, Code Options, Data Editing and Scan Options on the KDC Menu. Please refer to [11. Appendix A – Barcode & Scan Options](#) for proper barcode settings for the application.

Note

The user must configure barcode and scan options properly for optimal KDC performance.

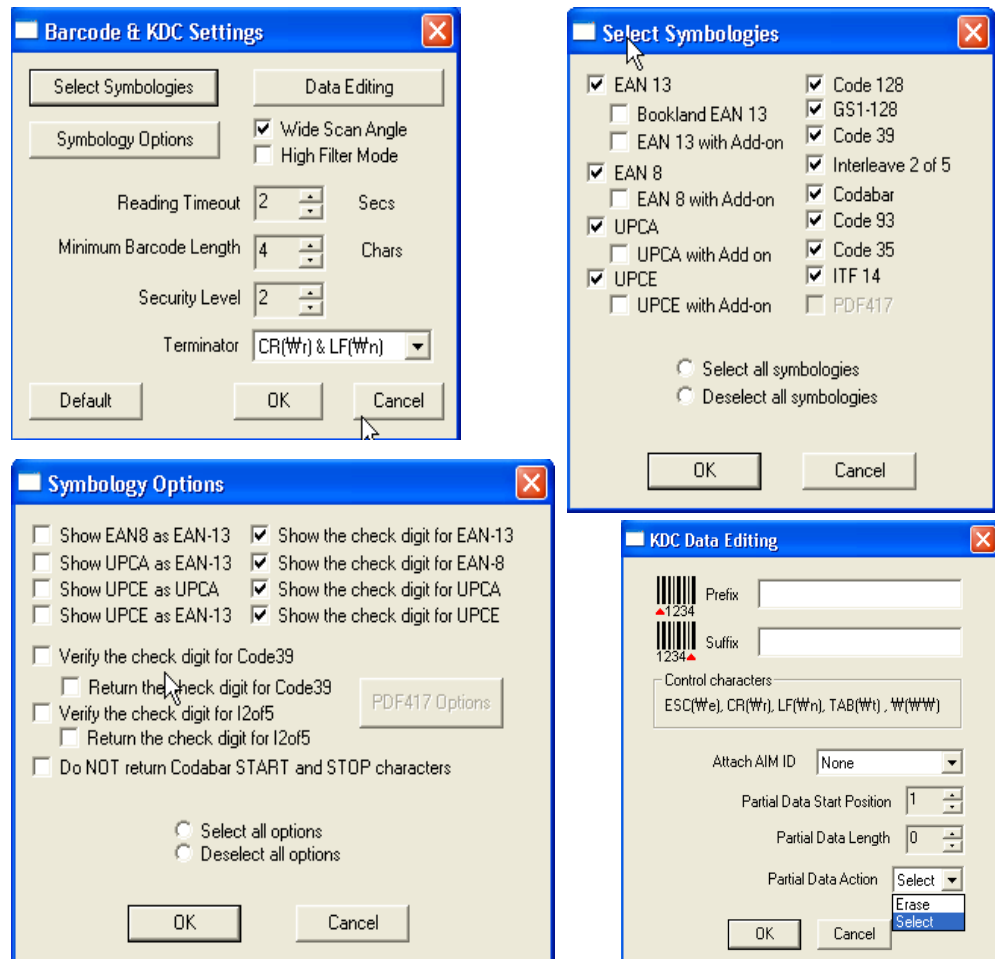


Figure 28 - Barcode & KDC Settings, Symbolologies, Data Editing and Scan Options

Select Symbolologies and Symbology Options

The process for scanning and reading barcodes is delicate and complicated. Although your KDC is equipped with a high performance scan engine, if configured incorrectly it may not perform at its peak performance level. To ensure its high performance, the KDC comes configured to optimize its scan engine technology. Unless you clearly understand the impact of your changes to the KDC settings, please do not change factory default settings. Please refer to Appendix A for details. Pressing the Default icon will reset all symbology related options to factory default settings.

Data Editing Option

Prefix - Allows the user to add a prefix to scanned data that can then be stored in KDC or wedged to the host. The Prefix format must be defined in the data format menu of KTSync. The maximum length for a Prefix is 11 characters.

Note

This Prefix option is different from the Prefix option in KTSync that appends the prefix to data during synchronization.

Suffix - Allows the user to add a suffix to scanned data, which can then be stored in KDC or wedged to the host. The Suffix must be defined in the data format menu of KTSync. The maximum length for a Suffix is 11 characters.

Note

This Suffix option is different from the Suffix option in KTSync that appends the suffix to data during synchronization.

AIM ID - Allows the user to add AIM ID to scanned data, which can then be stored in KDC or wedged to the host. AIM ID must be defined in data format menu of KTSync. AIM ID is either added to the end of Prefix or Suffix.

Partial Data: Allows the user to display and store partial data. The user defines the start position and number of characters to be displayed and stored.

- Select the *x* characters from *y* position
 - Set Partial Data Start Position to *y*, Partial Data Length to *x*, Partial Data Action to Select.
 - Partial Data Length *0* selects all characters from *y* position.
- Erase the *x* characters from *y* position
 - Set Partial Data Start Position to *y*, Partial Data Length to *x*, Partial Data Action to Erase.
 - Partial Data Length *0* erases all characters from *y* position.

5.5 Other Settings

Other options under the Settings menu allow the user to select four additional settings:

- **Ask Confirmation before Trying Auto Connection** prevents unintentional launch of KTSync.
- **Ask Confirmation before Starting Auto Synchronization** prevents unintentional synchronization of data.
- **Minimize KTSync on Start** will minimize KTSync and send it to the tray upon execution.
- **Keep Checking *Bluetooth* Connection** allows reconnection of KDC once *Bluetooth* signal is detected. This feature is useful when moving to or from *Bluetooth* host device frequently. KTSync will automatically reconnect *Bluetooth* connection when the user enter an effective *Bluetooth* network range. *(Not Available on KDC100)*

To select any of these settings, click on the box to the left of the setting. A check mark (✓) will display next to the setting to indicate that it is selected.

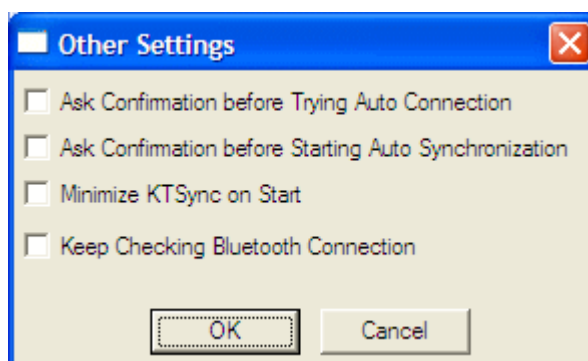


Figure 29 - KTSync® Confirmation Settings

5.6 KDC Menu in KTSync (KDC20/30/400)

After connecting KDC 20/30/400 to PC with a USB cable, run KTSync on your PC and you will see **KDC Menu** on the right side of KTSync window. Click **KDC Menu**, and you can configure your KDC20/30/400 in KDC Menu window, as shown below.

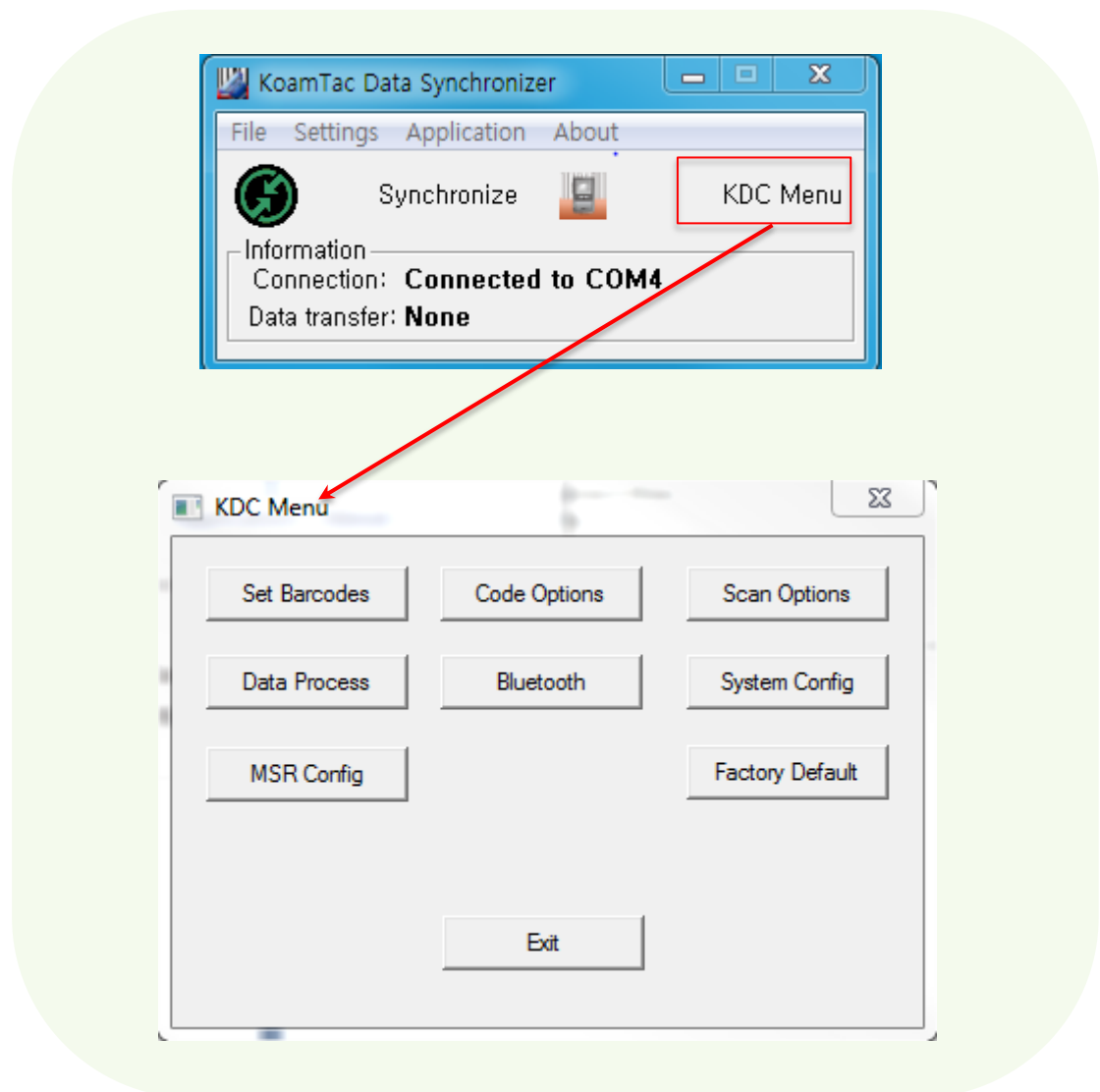


Figure 30 - KDC Menu in KTSync (KDC20/30/400)

5.7 Mobile pKTSync

pKTSync provides limited functionality for Pocket PC 2003 and Mobile 5.0+ users.

1. Synchronization - Provides data upload functionality to your applications.
2. Keyboard Emulator - Allows scanned data to be uploaded directly into your application as if the data were being entered manually on a keyboard.

For detailed explanations of these functions, please refer to earlier sections of this chapter.

WARNING: The user must assign the correct COM port to KDC before using pKTSync. Please refer to the mobile device manual for details on Bluetooth pairing and COM port assignment methods.

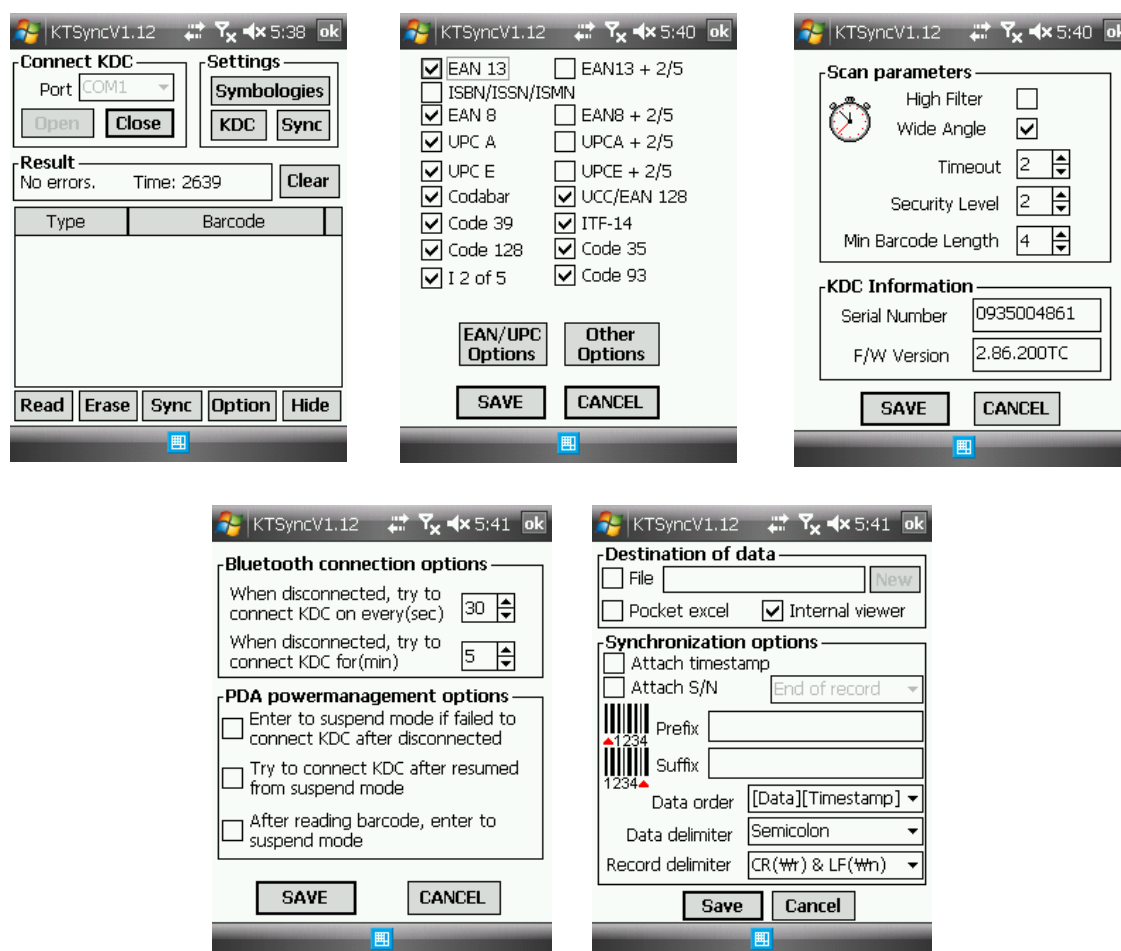


Figure 31 - Mobile pKTSync

5.8 Android aKTSync

The aKTSync provides limited functionality of PC KTSync to Android users.

Note

- aKTSync only supports Android devices with 2.1+ OS version and that are compatible with BluetoothChat application.
- KDC with Bluetooth Spec2.1+EDR doesn't prompt Pin code entry menu.

KDC and Android Pairing

1. Pairing
 - Select **SPP** Bluetooth profile from the KDC **ConnectDevice** submenu in **BT Config** menu.
 - Search KDCxxx from Android and pair the two devices.
 - If SPP2.0 is selected, KDCxxx PIN code is "0000".
2. Connection
 - Click **Connect** icon in aKTSync.
 - Android will list paired *Bluetooth* devices and the user should select the target KDC.
3. Synchronization: Provides data upload functionality to the applications.
4. Settings: The user can change various Synchronization options in the settings menu.
5. Wedging: The user can wedge barcode data to any Android application. Press the home key and launch the target application.

Launch KTSync

1. Download and install aKTSync from the Android Play Store.
http://www.androidzoom.com/android_applications/productivity/ktsync_luxv.html
2. Change KDC Bluetooth **ConnectDevice** option to *SPP*.
3. Execute Android *Bluetooth* device scan option and KDC *Bluetooth* pairing option.
 - A. Execute KDC *Bluetooth Pairing* option.
 - B. Launch **Settings** on the Android device.
 - C. Select **Wireless and Networks**.
 - D. Click on **Bluetooth Settings**.
 - E. Click on **Scan devices**.
 - F. The Android device will display the KDC model and 6 digits of the serial number.

4. Press the KDC list entry, enter "0000" PIN code, and press OK.
5. When paired, the Android device will display "*Paired but not connected*".
6. Launch aKTSync program.
 - A. Press menu key and select the **Connect** option on the top left.
 - B. From the list of paired devices, choose the KDC to use.
 - C. On the top menu bar of aKTSync, you will see a message "*connecting*", and then "*connected*".
 - D. On the KDC display, you will see "Pairing Succeeded!!!" and then "Bluetooth Connected".
 - E. Select **Settings** option on the bottom left to change aKTSync setting.

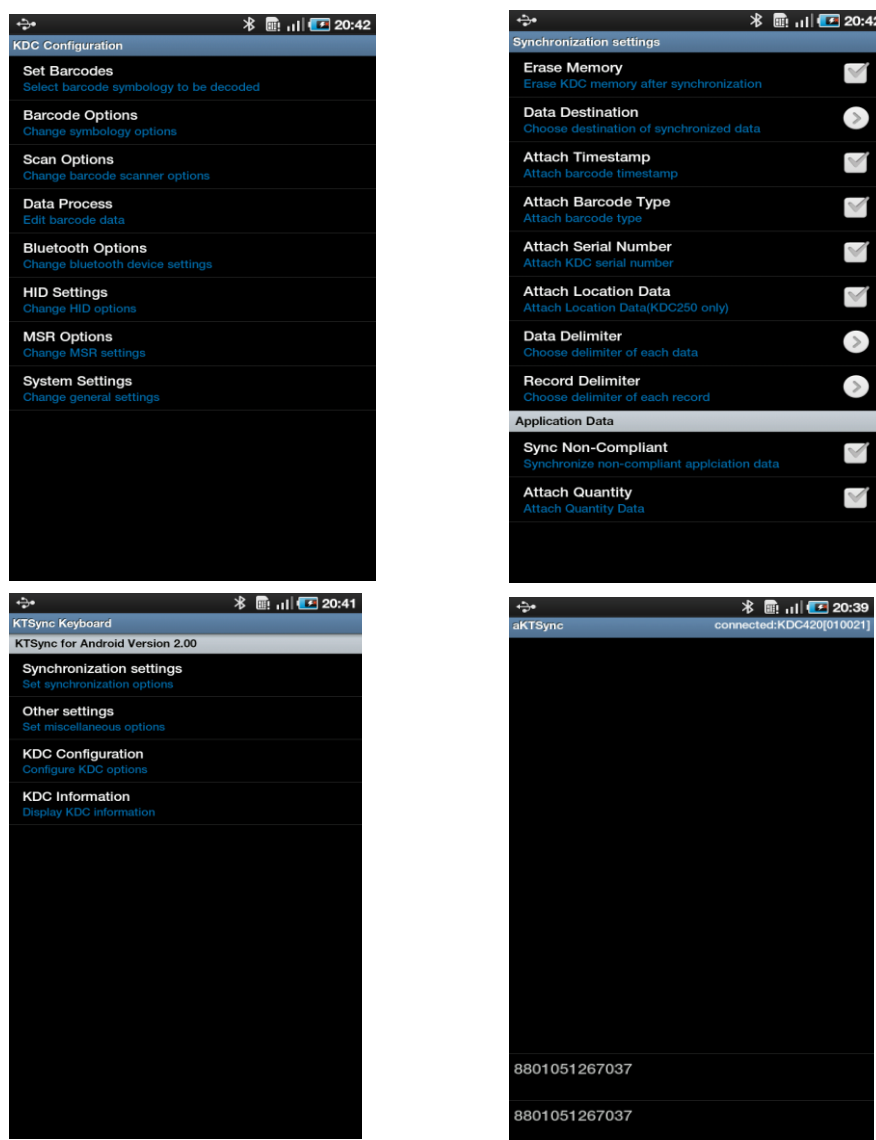


Figure 32 - Android aKTSync

Keyboard Wedge

1. Launch **Settings** on the Android device.
2. Select **Language and Keyboard** (or **Input method**).
3. Select **KTSync Keyboard**.
4. Launch the application and touch the input box to focus.
5. The barcode will be wedged to the input box upon scanning a barcode.

5.9 iPad/iPhone/iPod touch KTSync

The KTSync for iPad/iPhone/iPod touch provides limited functionality of PC KTSync for iPad, iPhone and iPod touch users.

1. The KDC supports **SPP** and **iPhone** Bluetooth profiles.
2. The iPhone/iPad/iPod touch should use **iPhone** Bluetooth profiles. **iPhone** is the default profile of KDCi models.
3. Download the KTSync program from the App Store.
4. Enable the iPhone/iPad/iPod touch Bluetooth power from the **Setting > General > Bluetooth** menu.

Note

- Users have to disable MFi option in System > MFi menu to use HID Bluetooth profiles.
- Users have to RESET the iPhone/iPad/iPod touch to change "HID to iPhone mode" or "vice versa" after removing previous KDC connection. KDC with Bluetooth Spec2.1+EDR does not prompt Pin code entry menu.

KDC20i/30i/200i/250i/300i/350i/400i connection using iPhone mode

1. Download and install iKTSync from the Apple App Store.
<http://itunes.apple.com/us/app/ktsync/id372916602?mt=8>
2. Press the two KDC side buttons simultaneously to enter menu mode.
3. Scroll down to **Bluetooth** menu using KDC Down button.
4. Press the front middle scan button.
5. Scroll down to **Discovering** and press the front middle scan button.
 - a. "**Discovering Started ...**" message will be displayed on KDC screen.
 - b. Discovering will take about 30 seconds.
6. Select discovered iPhone/iPod touch device name and press the front middle scan button.
 - a. [Pin Code] User Default/Enter PinCode will be displayed.
 - b. Press the front middle scan button to select the **Use Default** option.
 - c. The message "Connecting to iPhone/iPod touch device name" will be displayed.
 - d. iPhone/iPad/iPod touch will ask for the PIN number.
 - f. Please enter "0000" and hit "connect" icon.
 - g. "iPhone Connected" message will be displayed.
7. Launch KTSync and configure Settings.

iKTSync Settings

iKTSync provides following Settings menu.

- Synchronization - The user can configure Synchronization options, such as destination of data, data formation and delimiters.
- Other settings - Users can configure KDC350 GPS module, disconnection options and soft trigger button.

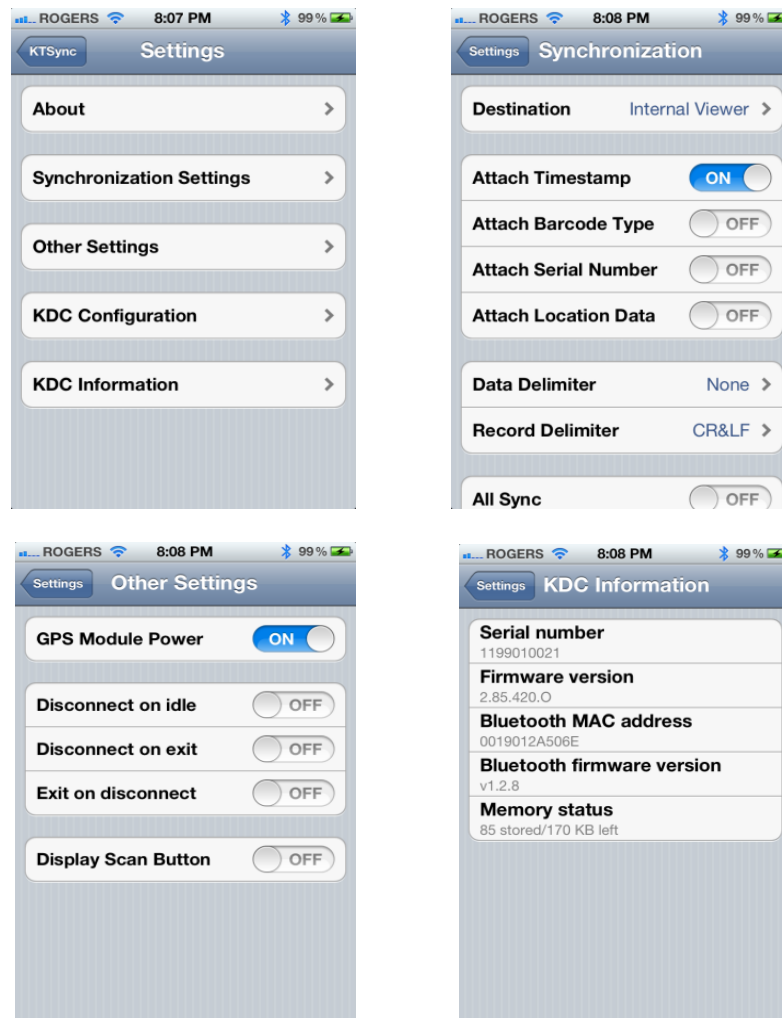


Figure 33 - iPad/iPhone/iPod touch KTSync

How to connect and reconnect iPhone mode using UP keys

1. The user needs to select the option to use this feature in the BT Config > BT Toggle.
2. Press the UP button to connect or reconnect to the iPhone/iPad/iPod touch.

5.10 Blackberry bKTSync

The bKTSync provides limited functionality of PC KTSync for Blackberry users.

Note

KDC with Bluetooth Spec2.1+EDR does not prompt Pin code entry menu.

1. Download and install bKTSync from the Blackberry App World.
<http://appworld.blackberry.com/webstore/search/ktsync?lang=en>
2. Go to **Blackberry Options > Applications** menu and enable **Input Simulation** option.
3. Change KDC Bluetooth profile in **ConnectDevice** option to **SPP**.
4. Execute Blackberry *Bluetooth* manager and KDC *Bluetooth* pairing option:
 - A. Execute KDC *Bluetooth Pairing* option.
 - B. Launch the Blackberry *Bluetooth* manager and select "Search". The KDC model and 6 digits of the serial number will be displayed.
 - C. Highlight the KDC and press the Enter or Select Key.
 - D. Enter "0000" PIN code and press the Enter or Select Key.
 - E. The Blackberry will display "*Pairing with KDC*" and then "*complete.*"
 - F. Close the Blackberry Bluetooth manager.
5. Go to Downloads folder and execute KTSync.
6. The user can configure KDC options in KDC settings and Symbologies Settings menu.
7. Go to KTSync Synchronization Settings and select Destination. To send collected barcode data as an email attachment, choose **Email Attachment** as destination and enter in the email address, subject, and body message that the user want to send. The user can enter multiple email addresses using the semicolon (;) separator.
8. To scan barcodes into any application (like email, notes, worksheet or web browser), press the menu key and select **Running in the background** option. bKTSync will maintain the connection and place the scanned barcode data wherever the cursor is flashing.

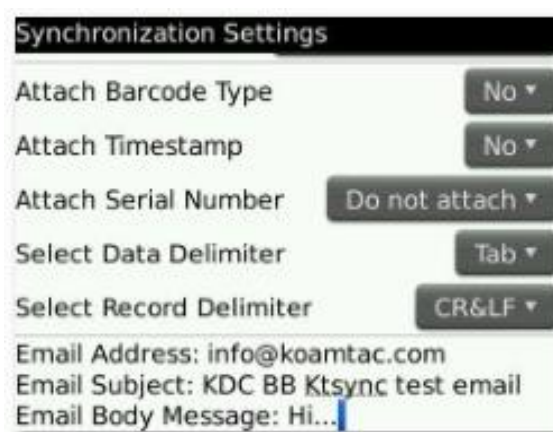
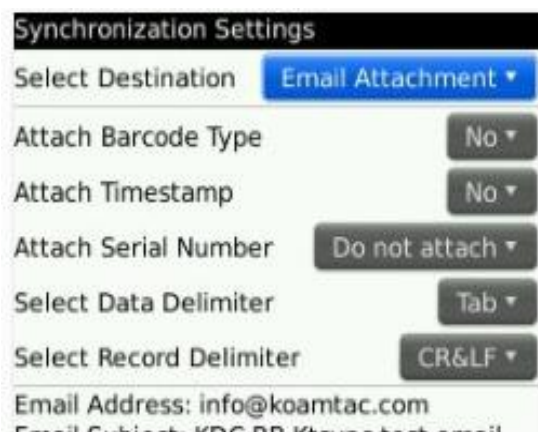
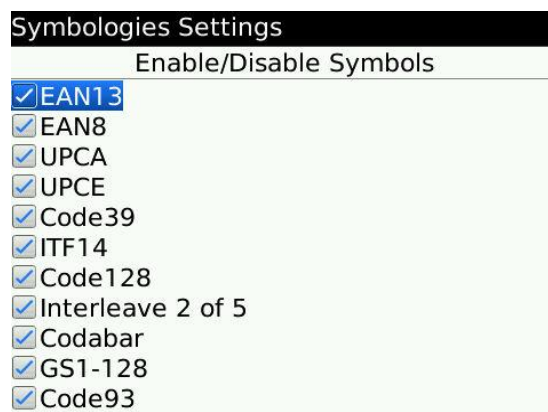
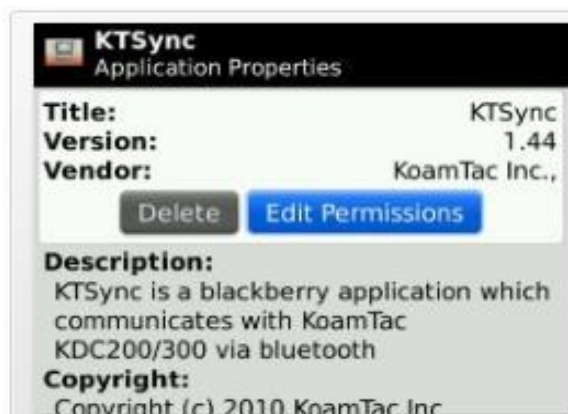


Figure 34 - Blackberry bKTSync

5.11 KTSync for Mac OS X

The KTSync Mac OS X version provides limited functionality of PC Windows KTSync for Mac OS X users.

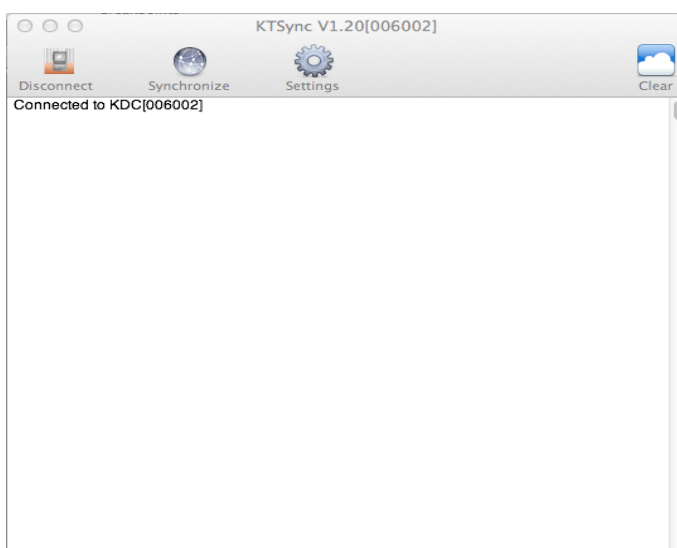
Note

- KTSync for Mac OS X version supports both Bluetooth SPP profile and USB connection. The user should pair KDC with Mac before using the KTSync program via Bluetooth connection.
- Mac OS X version KTSync is built as a X86 binary application and works with the Intel-based Mac. It is verified on Mac PC running Mac OS X 10.6.5 and later versions.

KTSync Mac OS X version supports the following features:

- ✓ Keyboard wedge function to a file, internal viewer, active window, and user application.
- ✓ Synchronization to a file, internal viewer, active window, and user application.
- ✓ Automatic connection and disconnection on USB port.

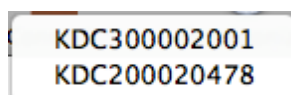
The user will see the following initial KTSync screen upon launching the program. KTSync will connect automatically if KDC is plugged in a USB port or if KDC is paired.



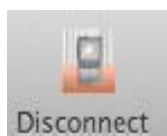
Connect Button



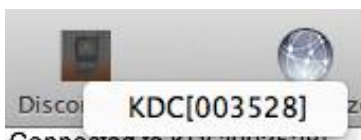
The user can connect the Mac with the KDC that is paired or plugged into the USB port by clicking the Connect button. The following screen will be displayed when this button is pressed, and KTSync will start to connect to the selected KDC.



Disconnect Button



KTSync changes Connect button to Disconnect button once the KDC is connected. The user can disconnect the KDC manually by selecting connected KDC on the following screen.



Synchronize Button



The user can start the synchronization process by pressing the Synchronize button. The user can select the destination of barcode data in the settings menu. There are 4 selectable destinations: File, Internal viewer, Active window, and User application.

Clear Button

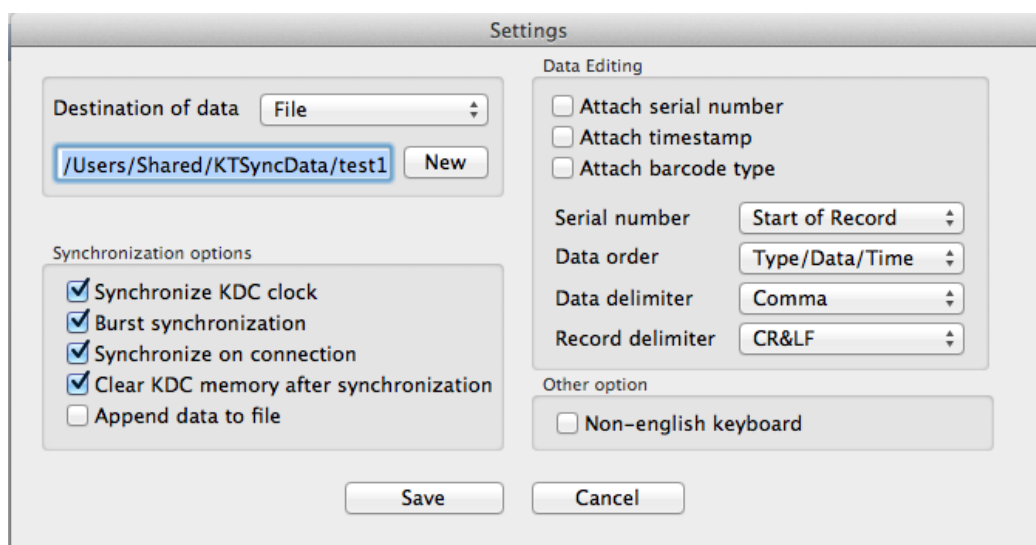


The user may press this button to clear the KTSync internal viewer.

Settings Button

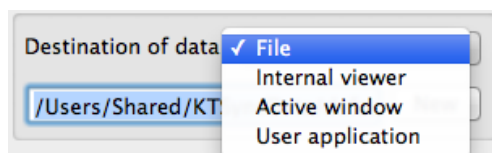


The user can configure synchronization options on the following screen by pressing the Settings button.



Destination of data

The KTSync program wedges or downloads barcode data to one of the following four destinations:



- **File:** The KTSync makes a file name based on 3.11 if file name is specified as an "sn_timestamp.txt". The default directory is /Users/Shared/KTSyncData directory. The user can define another directory or another filename by clicking the "New" button. The maximum file path length is 128 characters.
- **Internal viewer:** The KTSync displays barcode data in KTSync internal text viewer.
- **Active window:** The KTSync sends barcode data to current active window if Active window option is selected.
- **User application:** The user can define the target application by pressing the "New" button. The maximum application name path length is 128 characters.

Synchronization Options

- **Synchronize KDC clock**
KTSync will set the KDC's date and time with Mac PC date and time when the KDC is connected to Mac, if this option is enabled.
- **Burst synchronization**
KTSync will synchronize barcode data from KDC in burst mode. Otherwise, KTSync would synchronize barcode data one by one. This option is enabled by default and cannot be disabled.
- **Synchronization on connection**
KTSync will automatically synchronize barcode data from the KDC when the KDC is connected, if this option is enabled.
- **Clear KDC memory after synchronization**
KTSync clears barcode data stored in the KDC's memory once synchronization has finished, if this option is enabled.
- **Append data to file**
KTSync appends synchronized data to existing file specified on destination. If file does not exist then KTSync creates a new file.

Data Edition

- **Attach serial number**
The KTSync will add a KDC serial number to barcode data. This option is enabled by default and cannot be disabled.

- **Attach time stamp**
The KTSync would add timestamp to barcode data. This option is enabled by default and cannot be disabled.
- **Attached barcode type**
The KTSync would add barcode type to barcode data. This option is enabled by default and cannot be disabled.
- **Serial number**
When **Attach serial number** is enabled, this option determines when to attach serial number. "Start of record" means to attach at the front of record and "End of record" means to attach to the end of record.
- **Data order**
This option specifies the order of data (Barcode Type, Barcode Data and Timestamp) in the record.
- **Data delimiter**
This option is used to select a character to be added between barcode data, serial number and timestamp and/or barcode type. User can select one of the following: **None**, **Tab**, **Space**, **Comma** and **Semicolon** as the data delimiter. The **Comma** is selected as the data delimiter by default.
- **Record delimiter**
This option is used to select a character to be added at the end of the barcode record. The user can select one of **None**, **CR**, **LF**, **TAB**, and **CR&LF** as the record delimiter. The **CR&LF** is selected as the record delimiter by default.

Other Options

- **Non-English keyboard**
This option is used when the barcode data has non-English characters and a non-English keyboard.

6. Application Generation

Note

KDC FW2.85.200.x does not support the Application Generation feature. Users should upgrade FW2.85.200.x to FW2.86.200.x to use Application Generation feature.

When you select the Application menu from the KTSync, youthe user can choose from the following five Applications: Generation, DB Lookup, Master/Slave, Pick/BIN, and Inventory. Users can also download saved programs using the Import & Download option.

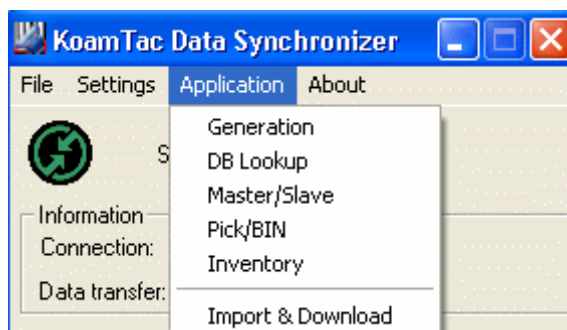


Figure 35 - Application Menu

When the Application tool is selected, the KDC will beep once to acknowledge a connection between the KDC and the Application tool. The following KTSync warning window will pop up if the downloaded application in KDC does not match with KTSync application tool.

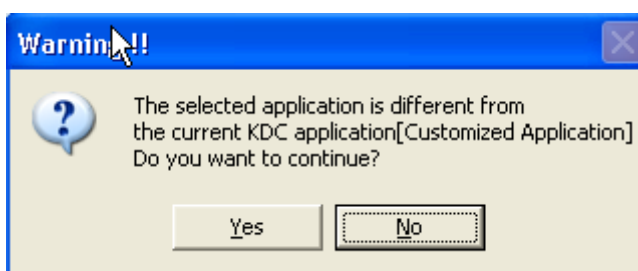


Figure 36 - Application Warning Window

Note

KDC will wedge barcode data to the host in application mode if "wedge and store always" option in data process menu is selected and KDC firmware version is higher than 2.86.xxx.G.

6.1 Application Generation

KDC Application Generation tool is a robust feature that allows you to create custom applications for collecting and managing barcode data. To create a custom application, select the Generation submenu from the Application menu in KTSync®.

Figure 37 - Application Generation Menu

Generate Application

Generate step 1 - To generate a custom application, click on the **Generate Step 1** box. This enables the user to define the user prompts and data collection settings for Step 1 of the custom application. Below is a description of each field. These prompts are the same when selecting **Generate step 2** and **Generate step 3**.

Note The custom application can include only Step 1.

- **First line**
Enter up to 13 characters; these will display on the first line of the KDC.
- **Second line**
Enter up to 13 characters; these will display on the second line of the KDC.
- **Starting quantity**
Enter a predefined start quantity for each scanned barcode. The start quantity

can be defined from 1 to 128. Use the up or down side key to choose the desired quantity.

- **Waiting to scan**

Enter the number of seconds the KDC pauses before the user prompts display. During this timeout period, the user can modify the quantity. If this field is set to zero, the quantity field cannot be adjusted. This field can be defined from "-1" to "30" seconds. "-1" second enables infinite waiting of user quantity input.

- **Enable data filter**

Check this box to enable the data filtering option. Data filtering allows the user to predefine different aspects of the barcode data the user are collecting.

Data Filter Settings

When the user select Enable data filtering, the user must click on the Settings button to select the Data filter setting. The options for the Data filter settings are the same for Step1, Step 2, and Step 3.

The screenshot shows a 'Data Filter Settings' dialog box. It includes the following controls:

- ☐ **Barcode Type**: Disabled, with a 'Select Symbols' button next to it.
- ☐ **Minimum Data Length**: Disabled, value is 4 Chars.
- ☐ **Maximum Data Length**: Disabled, value is 256 Chars.
- ☐ **Barcode Collation**: Disabled.
- ☐ **Collect Partial Data**: Disabled. Sub-controls include 'Start Position' (1 Chars) and 'Data Length' (1 Chars).
- ☒ **Check for Duplicated Data**: Enabled. Sub-controls include 'Previous Scanned Data' (selected radio button) and 'All Stored Data' (unselected radio button).
- ☐ **Don't Save Non-compliant Data**: Disabled.
- Save** and **Cancel** buttons at the bottom.

Figure 38 - Data Filter Settings

- **Barcode Type**

This field allows the user to select the type of barcodes the KDC will collect. When the user clicks on the box, Select Symbols is enabled. A listing of the

symbologies supported by the KDC will display. To select a barcode symbology, click on the box associated with the symbology.

- **Minimum Data Length**

This field allows the user to define the minimum length of the scanned barcode. The length can be between 2 and 36(KDC350L), 2 and 48(KDC350C) characters. If the user scans a barcode that has a length of less than the defined length, the barcode data is not collected.

Note

The default KDC minimum barcode length defined in scan option is 4. Therefore, users should change KDC minimum barcode length to 2 or 3 to define minimum data length to 2 or 3.

- **Maximum Data Length**

This field allows the user to define the maximum length of a scanned barcode. The defined length can be between 2 and 256 characters. If the user scans a barcode that has a length is greater than the defined length, the barcode data is not collected.

- **Barcode Collation**

This option enables the user to define a data string that the KDC will use to compare scanned barcodes.

- Starting Position – This is the start position of the scanned barcode data to be compared with the defined data string.
- Data String – This is the defined value to be compared with scanned barcode data. This value can be up to 32 characters.

- **Collect Partial Data**

This option allows the user to define partial barcode data to be collected when a barcode is scanned. Only the partial data will be stored in the KDC.

- Start position – This is the starting position that the KDC will use when collecting scanned barcode data.
- Data Length – This is the length of partial data to be stored by the KDC.

- **Check for Duplicated Data**

This option allows the user to prevent the collection of duplicate data.

- Previous Scanned Data – This option allows the user to compare the scanned barcode with the previously scanned barcode and treat it as non-compliant data if the user scanned the same barcode twice.
- All Stored Data – This option allows the user to compare the scanned barcode with stored barcode data and treat it as non-compliant data if the same barcode already scanned and stored.

- **Do not Save Non-Compliant Data**

This field tells the KDC how to manage non-compliant data based on the defined data filtering fields. If this field is enabled, non-compliant data is NOT stored in the KDC. If this option is not enabled, non-compliant data is stored.

Generate step 2

To include another step in the data collection process, click the box, Generate step 2. This step has the same options as Step 1. In this step, the user have the option of repeating step 2 by clicking the box, Repeat Step.

Note

This field is disabled when the application has three steps.

Generate step 3

To include a third step, click the box, Generate step 3. This step has the same options as step 1 and 2. In this step, the user has the option to repeat steps 2 or 3.

Application Download and Execution

Before running your application, it must be downloaded to KDC.

1. Click the "Download" icon from Application Generation Window.
2. Change KDC from Normal mode to Application mode.
 - A. Press two side buttons simultaneously to enter menu mode.
 - B. Select KDC mode and enter scan button.
 - C. Change to Application mode.
 - D. Save and exit from menu mode.
3. KDC will run in normal mode if you do not change to Application mode after downloading the application.
4. If you want to delete the downloaded application in your KDC, select App. Data in Reset Memory after you go to System Config in KDC Menu.

6.2 Predefined Applications

KTSync provides four Predefined Applications: Master/Slave, Pick/Bin, DB Lookup and Inventory.

Master/Slave

Master/Slave predefined application allows you to define a *master* barcode for comparison with one or more *slave* barcodes. The predefined application can be run once or continuously. Within either setting, you can define a substring for comparison of master and slave barcodes.

Master/Slave Onetime

Define one *master* barcode and compare it with one *slave* barcode.

Master/Slave Continuous

Define one *master* barcode and compare it with multiple *slave* barcodes.

Collation Options

Works in either Onetime or Continuous Mode to compare a substring within the master and slave barcodes.

- **Master start position** - Select the numeric position of start substring character in Pick barcode, 1 to 255.
- **Slave start position** - Select the numeric position of start substring character in Pick barcode, 1 to 255.
- **Comparing Barcode Length** - Number of characters to be compared, 0 to 255. 0 means all characters.

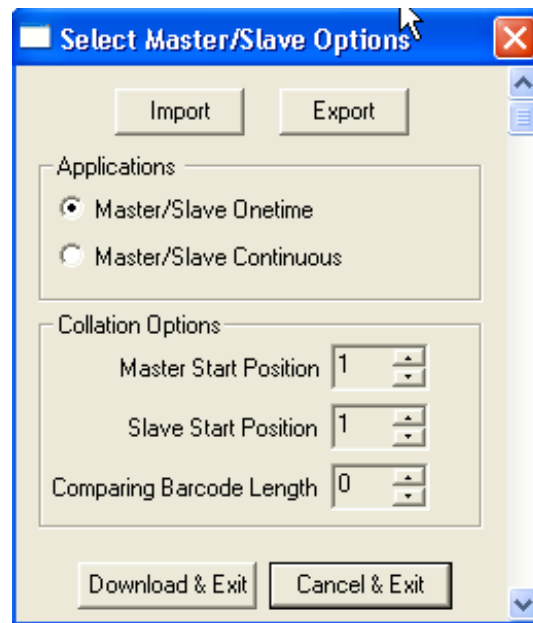


Figure 39 - Master/Slave Application Settings

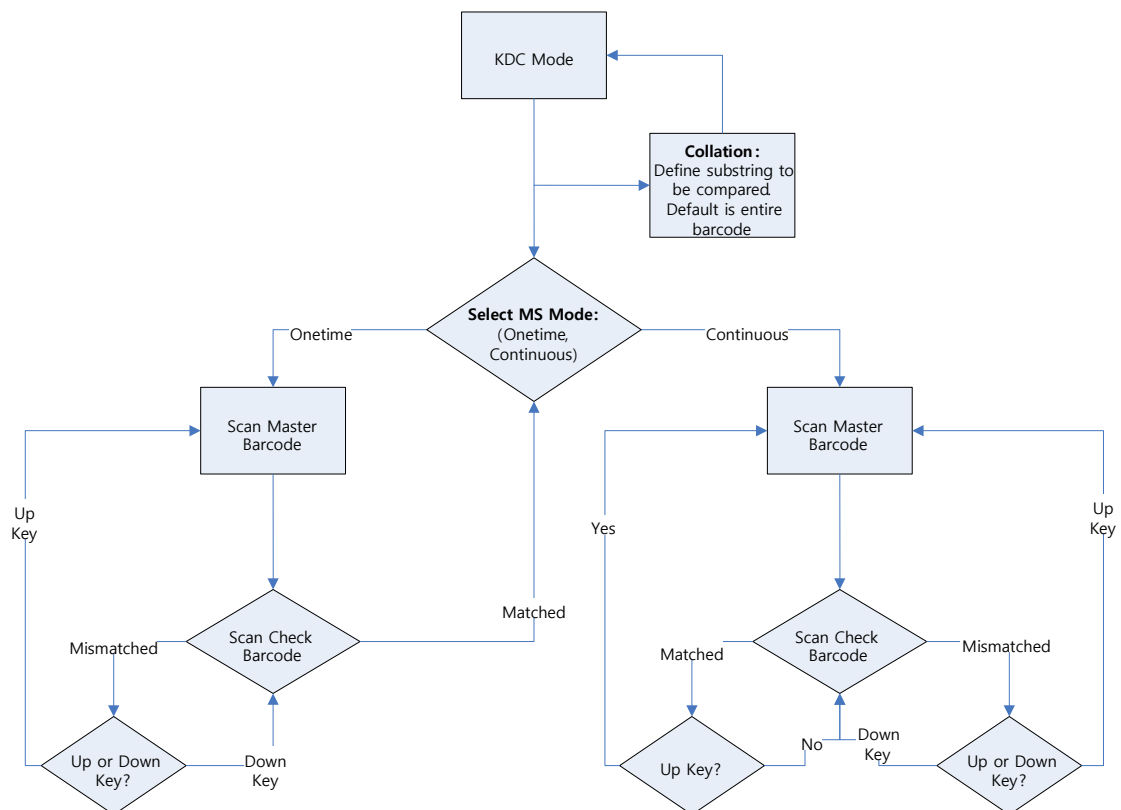


Figure 40 - Master/Slave Application Flow Chart

Pick/Bin

The Pick/Bin predefined application is a special version of the Master/Slave predefined application. The Pick/Bin application allows you to define the Pick ID and the barcode symbology for comparison with a defined Bin.

- **Number of ID and Symbology**
Define Pick ID characters from 1 to 32 and the barcode symbology.
- **Pick Start Position and Symbology**
Select numeric position of start substring character in Pick barcode from 1 to 255 and the barcode symbology.
- **Bin Start Position and Symbology**
Select the numeric position of start substring character in Bin barcode from 1 to 255 and the barcode symbology.
- **Comparing Barcode Length**
Select the number of characters to be compared from 0 to 255. 0 means all characters.

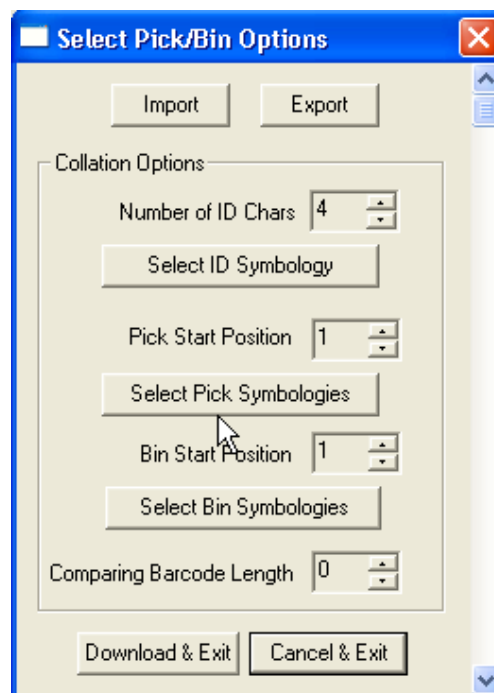


Figure 41 - Pick/BIN Application Menu

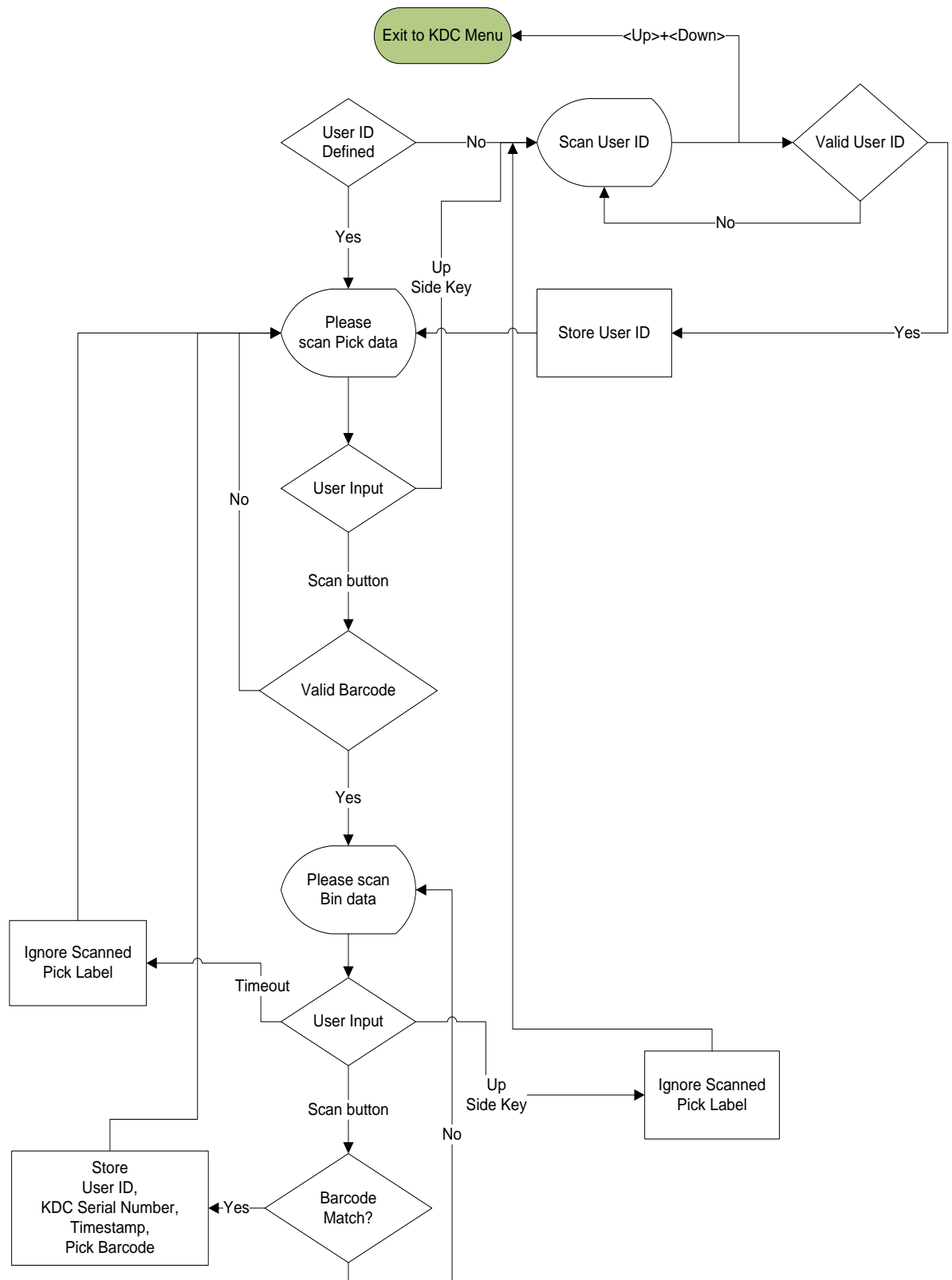


Figure 42 - Pick/BIN Application Flow Chart

DB Lookup Application

The DB Lookup application allows you to download a database to the KDC that can then be utilized for advanced AUTO-ID applications, such as displaying additional data after scanning a barcode. For example, using our DB Lookup application, you can download a product database including information such as description, price, and stock quantity. With the advanced data functionality built-in to the KDC, you can easily display product price, description, and stock level after the product's barcode is scanned.

Functionality of DB Lookup Application

- The database size cannot exceed 800 records.
- The maximum record size is 128 bytes.
- Each record can have up to 4 fields, including the barcode, which is the primary key.
- The maximum field size is 39 characters.
- Quantities can be entered by pressing the UP or DOWN scroll buttons after DB fields are displayed.
- Quantity can be 1 to 128.
- The user can create a database using Microsoft Excel.
 1. Excel file must be saved as .txt.
 2. Records should be separated by CR/LF.
 3. Fields should be separated by TAB.
 4. Database should end with CR/LF.
 5. Last 4 bytes of database should be CR/LF/CR/LF.

DB Lookup Fields and Settings

- **Download DB to KDC** - Downloads user created database to KDC.
- **Starting Quantity** - Enter predefined start quantity for each scanned barcode.
The start quantity can be defined from 1 to 128 and can be adjusted using UP or DOWN buttons.
- **Barcode Field** - Select the position of barcode field in database from 1 to 4.
- **Stored Barcode Start Position** - Select the numeric position of start substring character of barcode in database from 1 to 39.
- **Scanned Barcode Start Position** - Select the numeric position of start substring character of scanned barcode from 1 to 39.

- **Comparing Barcode Length** - Number of characters to be compared from 0 to 255 where 0 is all characters.
- **Display on KDC** - Define database fields to be displayed on KDC. KDC can display one to three fields. KDC will display one field in two or three lines, if same field is specified in line entering option.

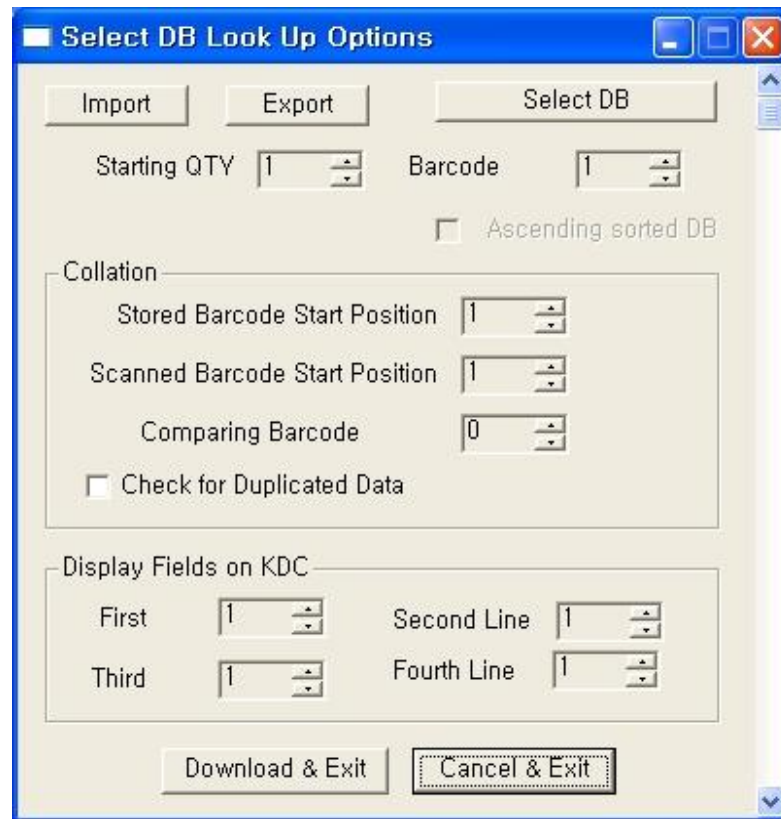


Figure 43 - DB Lookup Application Menu

Inventory Application

The Inventory application allows the user to count inventories by scanning inventory barcodes. This application will increase inventory item count if the same item is scanned. Users can also download an inventory database to the KDC. If inventory DB is downloaded, KDC will display inventory description after scanning a barcode.

Functionality of Inventory Application

- The inventory cannot exceed 800 items.
- The maximum record size is 128 bytes.
- Each record can have up to 4 fields, including the barcode, which is the primary key.
- The maximum field size is 39 characters.
- Quantities 1 to 32786 can be entered by pressing the UP or DOWN buttons after inventory is scanned.
- Starting Quantity can be 1 to 128.
- Min/Max. Data Length is between 2 to 256 (KDC100/200/250/350L) or 4 to 256 (KDC300/350C).
- Barcode Collation Start Position is between 1 to 256.
- The length of Collation Data String is between 1 to 30.
- Collect Partial Data Start Position is between 1 to 256.
- Collect Partial Data Length is between 1 to 256.
- Users can create an inventory database using Microsoft Excel.
 - Excel file must be saved as .txt.
 - Click **User Inventory DB** option to display inventory description.
 - Click **Do not add non-existing item into DB** if one do not wish to add new items into inventory DB.
 - The number of Barcode Data Field is between 1 to 4.
 - The position of Display Filed is between 1 to 4.

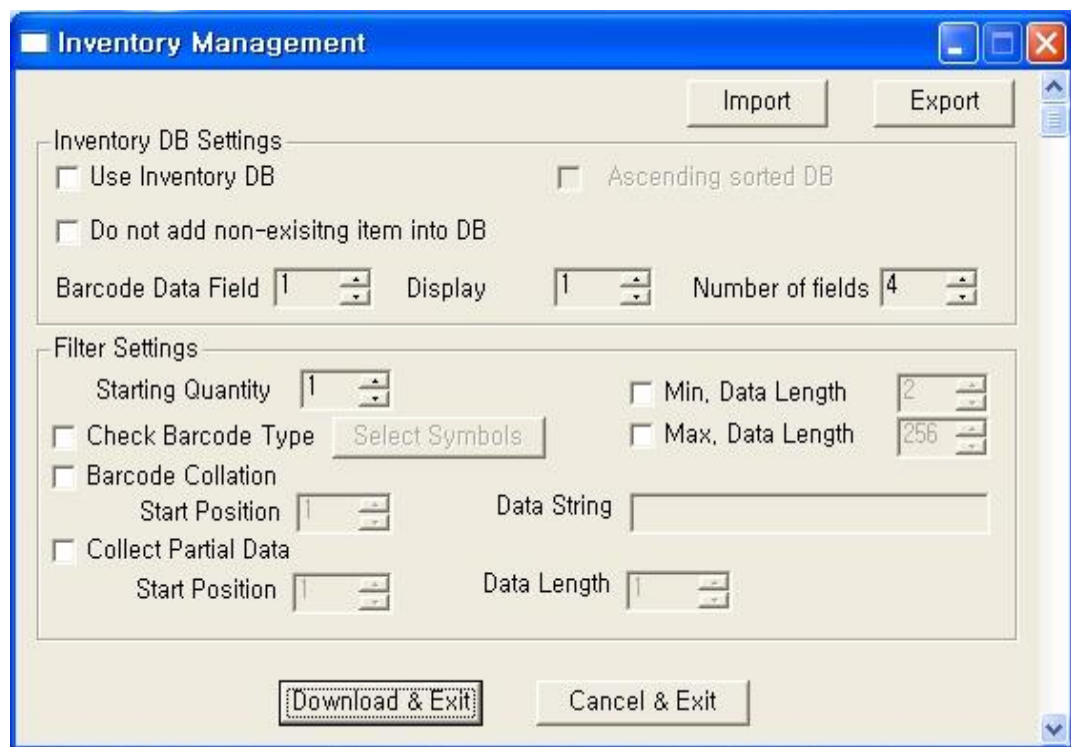


Figure 44 - Inventory Application

7. Troubleshooting

PROBLEM	CAUSE	SOLUTION
KDC not working	Dead battery	<ul style="list-style-type: none"> Charge battery by connecting KDC to your PC using the included cable
	Hardware failure	<ul style="list-style-type: none"> Contact distributor for technical support
KDC not charging	Bad battery	<ul style="list-style-type: none"> Replace battery – Contact Local Distributor
	Poor USB port	<ul style="list-style-type: none"> USB port doesn't supply proper current to KDC <ul style="list-style-type: none"> - Charge KDC using a different USB port on your PC
Failed reading	Damaged barcode	<ul style="list-style-type: none"> Scan a different barcode
	Out of scan range	<ul style="list-style-type: none"> Move the scanner closer to barcode Move scanner farther from the barcode
	Incorrect angle	<ul style="list-style-type: none"> Change the angle of scanner to barcode
	Symbology not supported	<ul style="list-style-type: none"> Contact KoamTac - www.koamtac.com for possibility of custom symbology support
	Scan options	<ul style="list-style-type: none"> Check scan option settings
	Dirty scan window	<ul style="list-style-type: none"> Clean scan window
	Damaged scan window	<ul style="list-style-type: none"> Replace scan window
KDC reads wrong barcode	Dirty scan window	<ul style="list-style-type: none"> Clean scan window
	Damaged scan window	<ul style="list-style-type: none"> Replace scan window
	Poor quality barcode	<ul style="list-style-type: none"> Select only necessary barcodes Increase minimum barcode length Increase security level
Can't communicate with PC, PDA, or smartphone	USB cable is not connected properly	<ul style="list-style-type: none"> Check cable connection between KDC and host device
	Software is not working properly	<ul style="list-style-type: none"> Reload the software
	COM configuration	<ul style="list-style-type: none"> Check COM port configurations
LED blinks yellow	Low battery power	<ul style="list-style-type: none"> Charge the battery by connecting KDC to PC. KDC will lose collected data if the battery is empty.
Buffer Full Message	Full Memory	<ul style="list-style-type: none"> Clear the Memory using Synchronization program
Empty Battery Message	Empty battery	<ul style="list-style-type: none"> Connect USB immediately. Synchronize the collected data and charge KDC
Abnormal KTSync Operation on DELL PC	Quickset Utility	<ul style="list-style-type: none"> Disable Quickset Utility before using KTSync. Dell Quickset utility interrupts normal KTSync operation
	WSED Utility	<ul style="list-style-type: none"> Disable WSED Wireless enable/disable utility

		<ul style="list-style-type: none">• delete the folder C:\Program Files\WSED, which contains a file WSED.exe, with the same icon as in the taskbar• Delete the registry entry KEY_LOCAL_MACHINE \SOFTWARE\Microsoft\Windows\Current Version\Run\WSED
--	--	--

Table 6 - Troubleshooting Techniques

8. Warranty

LIMITED WARRANTY AND DISCLAIMERS

BY OPENING THE PACKAGE OF THIS PRODUCT YOU AGREE TO BECOME BOUND BY THE LIABILITY AND WARRANTY CONDITIONS AS DESCRIBED BELOW.

UNDER ALL CIRCUMSTANCES, THIS MANUAL SHOULD BE READ ATTENTIVELY, BEFORE INSTALLING AND OR USING THE PRODUCT.

Serial Number

A serial number appears on the KDC label. This official registration number is strictly related to the device purchased. Make sure that the serial number appearing on your KDC is not removed. Removing the serial number will affect the warranty conditions and liability disadvantageously, so please maintain the label with serial number on the KDC. Units with the serial number label removed should not be operated.

Warranty/Warranty Period/Liability

KoamTac, Inc. ("KoamTac") manufactures its hardware products in accordance with industry-standard practices. Unless otherwise agreed in a contract, KDC is warranted for a period of one year after purchase, covering defects in material and workmanship except rechargeable battery. KoamTac will repair or, at its opinion, replace products that prove to be defective in material or workmanship under proper use during the warranty period. KoamTac will not be liable in cases (i) in which the unit has been repaired or altered unless done or approved by KoamTac, (ii) in which the unit has not been maintained in accordance with any operating or handling instructions supplied by KoamTac, (iii) in which the unit has been subjected to unusual physical or electrical stress, misuse, abuse, power shortage, negligence or accident or (iv) in which the unit has been used other than in accordance with the product operating and handling instructions. Preventive maintenance is the responsibility of the customer and is not covered under this warranty. Under no circumstance will KoamTac be liable for any direct, indirect, consequential or incidental damages arising out of use or inability to use either the hardware or software, even if KoamTac has been informed about the possibility of such damages.

Warranty Coverage and Procedure

During the warranty period, KoamTac will repair or replace defective products returned to KoamTac warehouse. International customers should contact the local KoamTac office or support center. If warranty service is required, KoamTac will issue a Return Material Authorization Number. Products must be shipped in the original or comparable package, shipping and insurance charges prepaid. KoamTac will ship the repaired or replacement product freight and insurance prepaid. Customer accepts full responsibility for its software and data including the appropriate backup thereof. Repair or replacement of a product during warranty will not extend the original warranty term.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

9. Contact Information



CORPORATE HEADQUARTERS

116 Village Blvd., Suite 305

Princeton, NJ 08540, USA

Phone: 609-256-4700, FAX: 609-228-4373

Email: support@koamtac.com

For more information, visit our website - www.koamtac.com

10. Appendix A – Barcode & Scan Options

The process for scanning and reading barcodes is delicate and complicated. Although the KDC is equipped with a high performance scan engine, if configured incorrectly, it may not perform at its peak performance level. To ensure its high performance, the KDC comes configured to optimize its scan engine technology. Unless you clearly understand the impact of your changes to the KDC settings, please do not change factory default settings.

10.1 Symbolologies

KoamTac's KDC products support most major barcode symbolologies including 1D, 2D, Postal, and OCR-Fonts. Below is the list of the barcode symbolologies supported by the KDC with respect to each model's particular area of support. To ensure superior scan performance, remember to select only the required symbolologies.

	<i>KDC20/100/200/250/350L/ 410/415</i>	<i>KDC30/300/350C/420/425/450</i>
<i>1D Barcodes</i>	EAN13, EAN8, UPCA, UPCE, Bookland EAN, EAN13 with Addon, EAN8 with Add-on, UPCA with Add-on, UPCE with Add-on, Interleave 2 of 5, ITF14, Code128, Codabar, GS1-128, Code39, Code93, & Code35	Codabar, Code11, Code32, Code39, Code128, EAN8, EAN13, GS1-128, I2of5, MSI, Plessey, PosiCode, GS1 DATABAR OMNI, GS1 Limited, GS1 Expanded, S2of5IA, S2of5ID, TLC39, Telepen, Trioptic, UPCA, & UPCE
<i>2D Barcodes</i>	N/A	AztecCode, AztecRunes, CodablockF, Code 16K, Code49, DataMatrix, MaxiCode, MicroPDF, PDF417, & QRCode and HanXin Code
<i>Postal Barcodes</i>	N/A	AusPost, CanadaPost, ChinaPost, JapanPost, KoreaPost, KixPost, Planet Code, Postnet (US), & UKPost
<i>OCR Fonts</i>	N/A	OCR-A, OCR-B, OCRUSCurrency, OCRMICRE13B, & OCRSEMIFONT

Table 7 - Symbolologies Supported by KDC

Bookland EAN vs. EAN-13

Bookland EAN, which includes ISBN, ISSN, and ISMN, is supported by the KDC. This group of symbologies is essentially an EAN-13 barcode with fixed prefixes; 977 for ISSN, 978 for ISBN, and 979 for ISMN. If EAN-13 and Bookland EAN are both enabled, Bookland EAN takes precedence. Bookland EAN does not have any options. The Bookland EAN barcode does not contain any groupings – that is, there are no hyphens or separators. Thus, the ISBN 957-630-239-0 is transmitted as 9576302390.

Add-on Symbologies

By default, the 2 or 5 digit add-on symbols with a UPCE, UPCA, EAN-8, and EAN-13 barcode are neither decoded nor transmitted. Transmission for these specific symbologies is enabled by setting the appropriate *withAddon* options. There are 4 *withAddon* options, one for each symbology:

- UPCEwithAddon
- UPCAwithAddon
- EAN8withAddon
- EAN13withAddon

The decoding of add-on symbols are defined by the following table, which explains the process for EAN-13 symbols.

Mode	Behavior	Value of flags	
Auto-discrimination	If add-on symbol is present, then it is also decoded; otherwise, only the EAN-13 symbol is decoded.	true	true
With add-on	Only EAN-13 barcodes with 2 or 5 add-on symbols are decoded.	false	true
Without add-on	The add-on symbol is ignored.	true	false

Table 8 - Add-on for EAN-13 Symbology

The add-on symbol is appended to the EAN-13 barcode. The process is similar for UPCE, UPCA, and EAN-8 barcodes. Note that all the UPCE, UPCA, EAN-8, and EAN-13 formatting and conversion options are in effect. The following table should help explain the effect of various options for EAN-8 barcode 12345670 + 12.

Barcode	EAN8_as_EAN13	EAN8_Return CheckDigit	EAN13_ReturnCh eckDigit
1234567012	False	True	N/A
123456712		False	
00000123456712	True	N/A	False
000001234567012			True

Table 9 - Add-on for EAN-8 Symbology

The add-on symbol contains neither a check digit nor a terminating guard band. Every effort has been made to reduce the decoding error; however, it is likely to decode a partial scan of a 5-digit add-on symbol as a 2-digit add-on symbol. It is strongly recommended that the minimum security level be set at 2 while decoding add-on symbols. Since the decoder takes a conservative view on the add-on symbols, it is likely that the add-on symbol will be missed in the auto-discrimination mode. Auto-discrimination mode should then be avoided.

10.2 Code Options (KDC20/30/100/200/250/410/415)

The KDC supports the following barcode options:

- Transmission of start and stop characters
- Reverse direction
- Symbology conversion
- Verification of optional check character
- Transmission of check digit
- Transmission of Start and Stop Characters

For Codabar symbols, the user can choose not to transmit the start and stop symbols, the NOTIS Editing. By default, they are transmitted. Setting the field **CodaBar_NoStartStopChars** to true disables the transmission.

Reverse Direction

This option may be selected if direction oriented symbolologies are designated, such as Code35.

Symbology Conversion

By default the EAN-8, UPCE, and UPCA symbols are transmitted in their native format. However, it is possible to show them in a different format. The user can choose to display UPCE symbols as either UPC-A or EAN-13 symbols, EAN-8 symbols as EAN-13 symbols, or UPC-A symbols as EAN-13 symbols. The following table shows the effect of setting various options.

Option	EAN-8	UPC-A	UPC-E	All others
EAN8_as_EAN13	Converted to EAN-13	No effect	No effect	No effect
UPCA_as_EAN13	No effect	Converted to EAN-13	No effect	
UPCE_as_EAN13	No effect	No effect	Converted to EAN-13	
UPCE_as_UPCA	No effect	No effect	Converted to UPC-A	

Table 10 - Symbology Conversion

Verification of Optional "Check Digit"

Code39 and Interleave 2 of 5 have an optional check digit, which, by default, is not verified. Changing the option **VerifyCheckDigit** to true can enable their verification, or the user can enable the verification for individual symbologies. If the check digit verification fails, the barcode is not transmitted.

Option Selected	Verify Code39 check digit	Verify I2of5 check digit
VerifyCheckDigit	Yes	Yes
Code39_VerifyCheckDigit	Yes	No effect
I2of5_VerifyCheckDigit	No effect	Yes

Table 11 - Verification of Optional "Check Digit"

Transmission of "Check Digit"

By default, the check digit – optional or mandatory – is not transmitted. Its transmission can be enabled for all symbologies by enabling **ReturnCheckDigit** option.

Option Selected	Is the check digit returned?					
	Yes	Yes	Yes	Yes	Yes	Yes
ReturnCheckDigit	Yes	Yes	Yes	Yes	Yes	Yes
EAN13_ReturnCheckDigit	Yes	No effect	No effect	No effect	No effect	No effect
EAN8_ReturnCheckDigit	No effect	Yes	No effect	No effect	No effect	No effect
UPCA_ReturnCheckDigit	No effect	No effect	Yes	No effect	No effect	No effect
UPCE_ReturnCheckDigit	No effect	No effect	No effect	Yes	No effect	No effect
Code39_ReturnCheckDigit	No effect	No effect	No effect	No effect	Yes	No effect
I2of5_ReturnCheckDigit	No effect	No effect	No effect	No effect	No effect	Yes

Table 12 - Transmission of "Check Digit"

Resolution of Inconsistencies

Three types of inconsistencies could arise in the assignment of symbology options. The decoder has pre-defined strategies to resolve these inconsistencies: If **UPCE_as_EAN13** is true, then **UPCE_as_UPCA** is ignored.

If symbology conversion is selected but the target symbology is not enabled, then the decoder still outputs the symbol in the target symbology. For example, suppose UPC-E is enabled and **UPCE_as_EAN13** is true but EAN-13 is disabled. All UPC-E symbols will be shown as EAN-13 and EAN-13 options (if specified) will be applied. For the two symbologies that have optional check digits, Code39 and Interleave 2 of 5, the decoder will always transmit the check digit if the verification is disabled.

Verify Check Digit	Return Check Digit	Description
Disabled	Enabled or Disabled	Check digit is not verified but is transmitted
Enabled	Disabled	Check digit is verified but is not transmitted
Enabled	Enabled	Check digit is verified and is transmitted

Table 13 - Resolution of Inconsistencies

10.3 Miscellaneous Barcode Information

Height of a Linear Barcode

Industry standards suggest a height of either 6.5mm or 15% of the symbol length, whichever is greater. Symbols of less than recommended heights may cause recognition problems.

Check Characters

Yes, we recommend the use of check-characters in barcodes. Operating without check-characters is not safe and will lead to errors that are costly to correct. Using check-characters positively affects data integrity, especially when character density is at the limits and/or image quality is not at its best.

Prevent Interleave 2 of 5 Partial Reading

A partial scan of an Interleave 2 of 5 symbols may decode and cause incorrect data to be read. To prevent partial scans on long symbols, the user should include bearer bars. These bars run along the top and bottom edges of the barcode in the scanning direction. If a partial scan of the barcode occurs, the scanning beam will hit the bearer bar and will not decode. The bearer bar must touch the top and bottom of all the bars and must be at least 3 times as wide.

Another solution for the short scanning problem is to fix all Interleave 2 of 5 symbols to a set number of digits. Zeros can be used to pad the data to the set number of digits. The application program would then be set to only accept scans of the correct number of digits.

Finally, a check digit may be used. The Interleave 2 of 5 symbology has an optional check character that uses a weighted Modulo 10 scheme. The check character is the last character in the symbol and should be checked by the decoder and then transmitted with the data. Since Interleave 2 of 5 must always have an even number of digits, the leftmost character may need to be a zero when the check character is added. The standard check digit is calculated by assigning alternating 3,1,3,1... weights to respective data digits. These weights are then multiplied by their respective data digits and the products are summed. The check digit is the digit that needs to be added to the sum to make it an even multiple of 10. An example would be if the sum of the products was 37, then the check digit would be 3.

Equation to Determining Potential Number of Stored Barcodes

The number of barcodes that can be stored in the KDC memory depends on the size of the barcodes.

***Example:** If only UPCA barcodes are scanned and the check digit is not transmitted, then each barcode takes up 11 (barcode data) + 2 (added bytes) + 2 (length and type) + 4 (time stamp) = 19 bytes. The maximum number of UPCA barcodes that can be saved is $204,800/19 = 10,778$. However, KDC has limited the maximum number of barcode to 10,240 and users cannot store more than 10,240 barcodes in 2.85/86 version. 3.0x version allows the user to store maximum 204,800 barcodes.*

Data Buffer Full

When the data buffer is full, the KDC displays a message, **Buffer Full**, ignoring any command to scan barcodes. The user must reset the data buffer to continue data collection.

11. Appendix B –FAQ

11.1 Symbology

Q: What barcode symbologies are supported by the KDC?

A: The KDC20/100/200/250/350L/410/415 support 1D barcode only.

KDC30/300/350C/420/425/450 support most major 1D, 2D barcode symbologies and OCR.

<i>KDC30/300/420/425</i>	<i>KDC20/100/200/250/410/415</i>
<u>2D Barcodes</u>	<u>1D Barcodes</u>
AztecCode, AztecRunes, CodablockF, Code16K, Code49, DataMatrix, MaxiCode, MicroPDF, PDF417, QRCode, and HanXin Code	EAN13 EAN8 UPCA UPCE Bookland EAN EAN13 with Add-on EAN8 with Add-on UPCA with Add-on UPCE with Add-on Interleave 2 of 5 ITF14 Code128 Codabar GS1-128 Code39 Code93 Code35
<u>1D Barcodes</u>	
Codabar, Code11, Code32, Code39, Code128, EAN8, EAN13, GS1-128, I2of5, MSI, Plessey, PosiCode, GS1 DATABAR OMNI, GS1 Limited, GS1 Expanded, S2of5IA, S2of5ID, TLC39, Telepen, Trioptic, UPCA, and UPCE	
<u>Postal Barcodes</u>	
AusPost, CanadaPost, ChinaPost, JapanPost, KoreaPost, KixPost, Planet Code, Postnet (US), and UKPost	
<u>OCR Fonts</u>	
OCR-A, OCR-B, OCRUSCurrency, OCRMICRE13B, and OCRSEMIFONT	

Table 14 – Symbologies supported by KDC

Q: What interface ports are supported by the KDC?

A: The KDC100 has two USB ports: Swing-out Type A and ultra mini USB ports that support USB to Serial protocol. KDC200/250/300/350/400 have one ultra mini USB port that supports USB to Serial protocol and Bluetooth that supports HID/SPP/MFi *Bluetooth* profiles. KDC20/30 have one Swing-out Type A USB port which supports USB to Serial protocol and Bluetooth with HID, SPP and MFi *Bluetooth* profiles.

11.2 Battery

Q: How long will the KDC battery last before it needs to be replaced?

A: The battery on the KDC can be charged at least 300 times before it needs to be replaced.

Q: How long does it take to charge the KDC?

A: It takes about 2 hours to charge the KDC20/100/200, 4 hours to charge the KDC30/250/300, and 5 hours to charge the KDC350/400.

Q: How many barcodes can a fully charged KDC scan?

A: If the user scans a barcode every 5 seconds, KDC100 scans more than 5,000 barcodes, KDC20/200 scans more than 3,500 barcodes, KDC250 scans more than 10,000 scans, KDC30/300 scans more than 8,000 scans and KDC350 scans more than 10,000 and KDC410/415 scans more than 20,000 scans and KDC420/425 scans more than 15,000 scans.

Q: How long will the KDC battery lasts in the sleep mode?

A: KDC100 lasts more than 1,200 hours, KDC20/200 lasts more than 48 hours while connected in Bluetooth, KDC250/350 lasts more than 12/16 hours while GPS is power on and Bluetooth is connected, KDC30/300 lasts more than 100 hours while connected in Bluetooth, and KDC400 lasts more than 200 hours while connected in Bluetooth.

Q: Can I replace the KDC350 battery?

A: Yes. The KDC has a separate compartment for the battery that can be opened easily with a torque driver. Contact the distributor for a replacement battery.

11.3 Memory

Q: How many barcodes can be stored in the KDC?

A: KDC350 has 4MB memory. 4MB can store a maximum of 204,800 barcodes.

Q: Can I download stored barcodes or wedge barcodes to my application?

A: Yes. KTSync® is keyboard wedging, application generation, DB look up, and inventory program bundled with the KDC200/250/300/350, which supports host devices running on Android®, iPhone/iPad/iPod touch, Blackberry®, Windows® XP/Vista/7/Mobile5.0+. KTSync® provides keyboard wedging program only for KDC20/30/400 and KDC100 only supports Windows XP/Vista/7 version.

Q: Does the KDC support *Android®*, *iPhone/iPad/iPod touch®*, *Blackberry®*, *Mac®* and *Windows®* devices?

A: KTSync® currently supports Android®, iPhone/iPad/iPod touch, Blackberry®, Mac® and Windows® devices.

11.4 Programming

Q: Can the KDC be programmed by a KoamTac partner?

A: Yes. KoamTac's Application Generation tool provides an enhanced programming environment for developing custom applications for the KDC.

1. KDC supports, at most, three step data collection processes, including the ability to perform various data functionality features.
2. KDC's database lookup function provides enhanced data processes, enabling the KDC to display database results with or without scanned barcode data.
3. KDC can display a message from the Host by enabling two-way communications and a messaging application.

Q: Does KoamTac provide customization services for the KDC?

A: Yes. Custom applications or projects can be developed by KoamTac engineers. This service is provided for an additional fee to KoamTac. For more information regarding this service, please contact KoamTac.

Q: Can a partner develop a PC or Smartphone application for the KDC?

A: A software development kit for Windows® XP/Vista/7/Mobile5.0+ and Android is available on KoamTac support page. Android®, iPhone/iPad/iPod touch, Blackberry®, and Mac® SDK are available through KoamTac authorized distributors.

12. Appendix C – 1D Special Barcodes (KDC20/100/200/250/350L/410/415)

12.1 Set Symbolologies

Enable EAN13



Disable EAN13



Enable EAN8



Disable EAN8



Enable UPCA



Disable UPCA



Enable UPCE



Disable UPCE



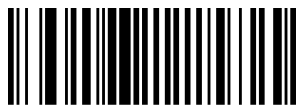
Enable Code39



Disable Code39

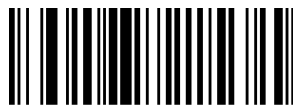


Enable ITF14



2000020

Disable ITF14



2100020

Enable Code128



2000040

Disable Code128



2100040

Enable I2 of 5



2000080

Disable I2 of 5



2100080

Enable Codabar



2000100

Disable Codabar



2100100

Enable EAN128



2000200

Disable EAN128



2100200

Code93



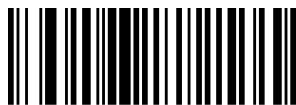
2000400

Disable Code93



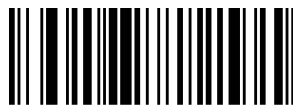
2100400

Enable Code35



2000800

Disable Code35



2100800

Enable Bookland EAN



2001000

Disable Bookland EAN



2101000

Enable EAN13 with Addon



2002000

Disable EAN13 with Addon



2102000

Enable EAN8 with Addon



2004000

Disable EAN8 with Addon



2104000

Enable UPCA with Addon



2008000

Disable UPCA with Addon



2108000

Enable UPCE with Addon



2010000

Disable UPCE with Addon



2110000

12.2 Barcode Options

Codabar - do NOT transmit start/stop



Codabar - transmit start/stop



Convert UPCE to UPCA



Do NOT convert UPCE to UPCA



Convert EAN8 to EAN13



Do NOT Return Check Digit



Convert UPCE to EAN13



Do NOT Verify Check Digit



Return Check Digit



Do NOT convert EAN8 to EAN13



Verify Check Digit



Do NOT convert UPCE to EAN13



Convert UPCA to EAN13



3000080000

Do NOT Convert UPCA to EAN13



3100080000

Verify check digit for I2of5



3000400000

Do NOT verify check digit for I2of5



3100400000

Verify check digit for Code39



3000800000

Do NOT verify check digit for Code39



3100800000

Return check digit for I2of5



3004000000

Do NOT return check digit for I2of5



3104000000

Return check digit for Code39



3008000000

Do NOT return check digit for Code39



3108000000

Return check digit for UPCE



3010000000

Do NOT return check digit for UPCE



3110000000

Return check digit for UPCA



3020000000

Do NOT return check digit for UPCA



3120000000

Return check digit for EAN8



3040000000

Return check digit for EAN13



3080000000

Do NOT return check digit for EAN8



3140000000

Do NOT return check digit for EAN13



3180000000

12.3 Delete Last Scanned Barcode

Delete Last Scanned Barcode



80001

12.4 Scan Options

Wide scan angle



3000004000

Narrow scan angle



3100004000

Normal filter mode



3100008000

High filter mode



3000008000

Auto Trigger Enable



5A001

Auto Trigger Disable



5A010

Continuous



5B000

Short



5B001

Medium



5B002

Long



5B003

Extra Long



5B004

12.5 Scan Timeout

Timeout = 500msec



101F4

Timeout = 1sec



103E8

Timeout = 2sec



107D0

Timeout = 3sec



10BB8

Timeout = 4sec



10FA0

Timeout = 5sec



11388

Timeout = 6sec



11770

Timeout = 7sec



11B58

Timeout = 8sec



11F40

Timeout = 9sec



12328

Timeout = 10sec



12710

12.6 Minimum Barcode Length

Minimum Length = 2



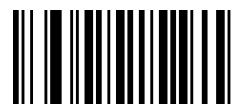
002

Minimum Length = 3



003

Minimum Length = 4



004

Minimum Length = 5



005

Minimum Length = 6



006

Minimum Length = 7



007

Minimum Length = 8



008

Minimum Length = 9



009

Minimum Length = 10



00A

Minimum Length = 11



00B

Minimum Length = 12



00C

Minimum Length = 13



00D

Minimum Length = 14



00E

Minimum Length = 15



00F

Minimum Length = 16



010

Minimum Length = 17



011

Minimum Length = 18



012

Minimum Length = 19



013

Minimum Length = 20



014

Minimum Length = 21



015

Minimum Length = 22



016

Minimum Length = 23



017

Minimum Length = 24



018

Minimum Length = 25



019

Minimum Length = 26



01A

Minimum Length = 27



01B

Minimum Length = 28



01C

Minimum Length = 29



01D

Minimum Length = 30



01E

Minimum Length = 31



01F

Minimum Length = 32



020

Minimum Length = 33



021

Minimum Length = 34



022

Minimum Length = 35



023

Minimum Length = 36



024

12.7 Security Level

Security level = 1



41

Security level = 2



42

Security level = 3



43

Security level = 4



44

12.8 Data Process - Wedge/Store & Enter Key

Wedge Only



82000

Wedge & Store



82001

Store Only



82002

Wedge & Store if Sent



82003

Wedge & Store if Not Sent



82004

Enable Enter Key



8E001

Disable Enter Key



8E000

12.9 Data Process – Data Edit

Prefix Enter Start



83000

Suffix Enter Start



83001

Prefix/Suffix Enter Finish



83002

Prefix/Suffix Enter Cancel



83003

Delete Prefix



83004

Delete Suffix



83005

Display Prefix



83006

Display Suffix



83007

AIM ID None



8B000

AIM ID In Prefix



8B001

AIM ID In Suffix



8B002

12.10 Data Process - Data Format – Handshake

Data format - Barcode only



84001

Data format - Packet data



84010

Enable Handshake



86001

Disable Handshake



86010

12.11 Data Process - Termination Character & Duplicate Check

None



CR



LF



CR+LF



Tab



Check Duplicate Enabled



Check Duplicate Disabled



12.12 Bluetooth

Enable Bluetooth Power



60001

Disable Bluetooth Power



60010

Enter Pairing Mode



61001

Discovering Enable



61101

Discovering Disable



61110

Connect To Last



61201

Connecting to



61301

Disconnect



6D000

HID Sync



6E000

Bluetooth Device type SPP



6A000

Bluetooth Device type HID iOS



6A001

Bluetooth Device type IPHONE



6A002

Bluetooth Device type SPP2.0



6A003

Bluetooth Device type HID Normal



6A004

Enable Auto Connect



62001

Disable Auto Connect



62010

Enable Auto Reconnect



6R001

Disable Auto Reconnect



6R010

Enable Auto Power On



66001

Disable Auto Power On



66010

Enable Auto Power Off



64001

Disable Auto Power Off



64010

Enable Beep Warning



68001

Disable Beep Warning



68010

Enable Power Off Msg



63001

Disable Power Off Msg



63010

BT MAC Address



63100

BT FW Version



63200

Enable Wakeup Nulls



63401

Disable Wakeup Nulls



63410

Confirm To Send Enabled



63501

Confirm To Send Disabled



63510

BT Toggle Enable



6B001

BT Toggle Disable



6B010

Enable BT Disconnect Button



6B101

Disable BT Disconnect Button



6B110

12.13 Bluetooth Auto Power On Time

Auto Power On Time Disabled



67000

Auto Power On Time 1sec



67001

Auto Power On Time 2sec



67002

Auto Power On Time 3sec



67003

Auto Power On Time 4sec



67004

Auto Power On Time 5sec



67005

Auto Power On Time 6sec



67006

Auto Power On Time 7sec



67007

Auto Power On Time 8sec



67008

Auto Power On Time 9sec



67009

Auto Power On Time 10sec



6700A

12.14 Bluetooth PWR Off Time

1min



2min



3min



4min



5min



6min



7min



8min



9min



10min



11min



12min



13min



6900D

14min



6900E

15min



6900F

16min



69010

17min



69011

18min



69012

19min



69013

20min



69014

21min



69015

22min



69016

23min



69017

24min



69018

25min



69019

26min



6901A

27min



6901B

28min



6901C

29min



6901D

30min



6901E

12.15 Auto Lock Time

0 min (Never)



1 min



2 min



3 min



4 min



5 min



10 min



15 min



12.16 HID Keyboard Layout

US



6F000

German



6F001

French



6F002

Italian



6F003

Spanish



6F004

12.17 HID Initial Delay

Disabled



H0000

1 second



H0001

2 seconds



H0002

3 seconds



H0003

5 seconds



H0005

10 seconds



H000A

12.18 HID Character Delay

Disabled



H1000

10 msec



H100A

20 msec



H1014

30 msec



H101E

50 msec



H1032

100 msec



H1064

12.19 HID Control Character

Disabled



H2000

Alt+Numpad



H2001

^+Character



H2002

Replace with '|'



H2003

12.20 System

0.5M / 3.5M



1M / 3M



2M / 2M



3M / 1M



4M / 0M



Confirm Memory size change



Memory Status



Reset Memory



Erase Memory



Reset App data



Reset BT Registry



SPP Sync



Auto Erase Enable



Auto Erase Disable



Date/Time



52001

Battery



53001

Version



54001

Button Lock



55001

Button Unlock



55010

Enable Beep Sound



56001

Disable Beep Sound



56010

High Beep Volume



5D001

Low Beep Volume



5D010

Enable Auto Menu Exit



58001

Disable Auto Menu Exit



58010

MFi Mode Enable



6M001

MFi Mode Disable



6M010

Vibrator Enable



5G001

Vibrator Disable



5G010

Enable Port Status



58101

Disable Port Status



58100

Time & Battery



58200

Type & Time



58201

Type & Battery



58202

Memory Status



50001

GPS Data (KDC250/350)



58205

Barcode Only



58204

Enable Scrolling



59001

Disable Scrolling



59010

Factory Default



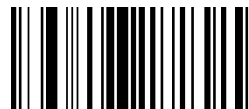
57001

Disable Buttons



A0004

Enter Menu



A0005

12.21 Sleep Timeout

Disable



1sec



2sec



3sec



4sec



5sec



10sec



20sec



30sec



1min



2min



5min

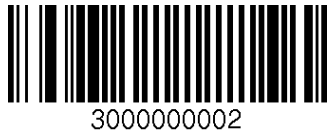


10min



12.22 ETC

Reverse Direction Enable



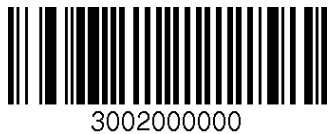
3000000002

Return check digit Enable



3001000000

Verify check digit Enable



3002000000

Reverse Direction Disable



3100000002

Return check digit Disable



3101000000

Verify check digit Disable



3102000000

12.23 Function

F1



F2



F3



F4



F5



F6



F7



F8



F9



F10



F11



F12



12.24 Number

0



2



4



6



8



1



3



5



7



9



12.25 Lower Case Alphabet

a



b



c



d



e



f



g



h



i



j



k



l



m



716D

n



716E

o



716F

p



7170

q



7171

r



7172

s



7173

t



7174

u



7175

v



7176

w



7177

x



7178

y



7179

z



717A

12.26 Upper Case Alphabet

A



B



C



D



E



F



G



H



I



J



K



L



M



N



O



Q



S



U



W



Y



P



R



T



V



X



Z



12.27 Control Character

BS



7108

TAB



7109

LF



710A

VT



710B

CR



710D

ESC



711B

Space



7120

DEL



717F

Shift + Tab



7111

12.28 Symbol Character

!



7121

#



7123

%



7125

'



7127

)



7129

+



712B

-



712D

"



7122

\$



7124

&



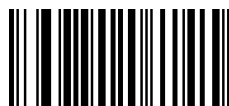
7126

(



7128

*



712A

,



712C

.



712E

/



712F

:



713A

;



713B

<



713C

=



713D

>



713E

?



713F

@



7140

[



715B

\



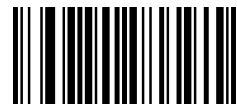
715C

]



715D

^



715E

-



715F

`



7160

**Note**

- The user can compose a string up to 16 characters.
- A string would be composed by scanning the "Start-String", number/alphabet/special characters, and "Stop-String" special barcodes.
- The KDC will abort string composition if the user do not scan "Stop-String" in one minute after scanning "Start-String" and number/alphabet/special characters.

12.29 GPS (KDC350LG)

GPS Power Enabled



G0001

GPS Power Disabled



G0010

GPS Bypass Data Enabled



G1001

GPS Bypass Data Disabled



G1010

Reset GPS Module



G2000

GPS Acquire Test



G2001

GPS Power Save Mode (Normal)



G2002

GPS Power Save Mode (Power Saving)



G2003

GPS Auto Power Off Enabled



G3001

GPS Auto Power Off Disabled



G3010

12.30 Auto Power Off Timeout

0 min (Disabled)



G4000

5 min



G4005

10 min



G400A

20 min



G4014

30 min



G401E

60 min



G403C

120 min



G4078

Display Format = GPS Data



58204

12.31 NFC Config (KDC350LN/410N/415N)

NFC Power Enable



N0001

NFC Power Disable



N0010

NFC Data Format = Data only



N1001

NFC Data Format = Packet data



N1000

UID Only = Disable



N3000

UID Only = Enable



N3001

12.32 USB DISK (M Model Only)

USB Serial Mode



USB Disk Mode



Format USB Disk



Data Format - Data



Data Format – Data,Time



Data Format – Data,Type



Data Format – Data,Time,Type



13. Appendix D – 2D Special Barcodes (KDC30/300/350C/420/425/450)

13.1 Set Symbolologies

Please refer to Honeywell Adaptus® Technology enabled scanner user manual, such as 4600 or 4820.

13.2 Barcode Options

Please refer to Honeywell Adaptus® Technology enabled scanner user manual, such as 4600 or 4820.

13.3 Delete Last Scanned Barcode



13.4 Scan Options

Auto trigger Enable



┘MKDC5A001.

Auto trigger Disable



┘MKDC5A010.

Reread Delay Continuous



┘MKDC5B000.

Reread Delay Short



┘MKDC5B001.

Reread Delay Medium



┘MKDC5B002.

Reread Delay Long



┘MKDC5B003.

Extra Long



┘MKDC5B004.

13.5 Scan Timeout

Timeout = 500msec



Timeout = 1sec



Timeout = 2sec



Timeout = 3sec



Timeout = 4sec



Timeout = 5sec



Timeout = 6sec



Timeout = 7sec



Timeout = 8sec



Timeout = 9sec



Timeout = 10sec



13.6 Minimum Barcode Length

Minimum Length = 2



Minimum Length = 3



Minimum Length = 4



Minimum Length = 5



Minimum Length = 6



Minimum Length = 7



Minimum Length = 8



Minimum Length = 9



Minimum Length = 10



Minimum Length = 11



Minimum Length = 12



Minimum Length = 13



Minimum Length = 14



MKDC00E.

Minimum Length = 15



MKDC00F.

Minimum Length = 16



MKDC010.

Minimum Length = 17



MKDC011.

Minimum Length = 18



MKDC012.

Minimum Length = 19



MKDC013.

Minimum Length = 20



MKDC014.

Minimum Length = 21



MKDC015.

Minimum Length = 22



MKDC016.

Minimum Length = 23



MKDC017.

Minimum Length = 24



MKDC018.

Minimum Length = 25



MKDC019.

Minimum Length = 26



MKDC01A.

Minimum Length = 27



MKDC01B.

Minimum Length = 28



Minimum Length = 29



Minimum Length = 30



Minimum Length = 31



Minimum Length = 32



Minimum Length = 33



Minimum Length = 34



Minimum Length = 35



Minimum Length = 36



13.7 Image Capture

Capture Now



┐MKDC90000.

Image Capture Enabled



┐MKDC91001.

Image Format JPEG



┐MKDC92006.

Image Format BMP



┐MKDC92008.

Pixel Depth (1 bit per pixel)



┐MKDC93001.

Pixel Depth (8 bit per pixel)



┐MKDC93008.

13.8 Data Process - Wedge/Store & Enter Key

Wedge Only



┘MKDC82000.

Wedge & Store



┘MKDC82001.

Store Only



┘MKDC82002.

Wedge & Store if Sent



┘MKDC82003.

Wedge & Store if Not Sent



┘MKDC82004.

Enable Enter Key



┘MKDC8E001.

Disable Enter Key



┘MKDC8E000.

13.9 Data Process - Data Edit

Prefix Enter Start



Suffix Enter Start



Prefix / Suffix Enter Finish



Prefix / Suffix Enter Cancel



Delete Prefix



Delete Suffix



Display Prefix



Display Suffix



AIM ID None



AIM ID In Prefix



AIM ID In Suffix



13.10 Data Process – Data Format, Handshake and Duplicate Check

Data format - Barcode only



┘MKDC84001.

Data format - Packet data



┘MKDC84010.

Enable Handshake



┘MKDC86001.

Disable Handshake



┘MKDC86010.

13.11 Data Process - Termination Character

None



┘MKDC88000.

CR



┘MKDC88001.

LF



┘MKDC88002.

CR+LF



┘MKDC88003.

Tab



┘MKDC88004.

13.12 Data Process – Check Duplicate

Enable Check Duplicate



┘MKDC89001.

Disable Check Duplicate



┘MKDC89010.

13.13 Bluetooth

Enable Bluetooth Power



┐MKDC60001.

Disable Bluetooth Power



┐MKDC60010.

Enter Pairing Mode



┐MKDC61001.

Enable Discovering



┐MKDC61101.

Discovering Disable



┐MKDC61110.

Connect To Last



┐MKDC61201.

Connect To



┐MKDC61301.

Disconnect



┐MKDC6D000.

HID Sync



┐MKDC6E000.

Bluetooth Device Type SPP



┐MKDC6A000.

Bluetooth Device Type HID iOS



┐MKDC6A001.

Bluetooth Device Type IPHONE



┘MKDC6A002.

Bluetooth Device Type SPP2.0



┘MKDC6A003.

Bluetooth Device Type HID Normal



┘MKDC6A004.

Enable Auto Connect



┘MKDC62001.

Disable Auto Connect



┘MKDC62010.

Enable Auto Reconnect



┘MKDC6R001.

Disable Auto Reconnect



┘MKDC6R010.

Enable Auto Power Off



┘MKDC64001.

Disable Auto Power Off



┘MKDC64010.

Enable Auto Power On



┘MKDC66001.

Disable Auto Power On



┘MKDC66010.

Enable Power Off Msg



┘MKDC63001.

Disable Power Off Msg



┘MKDC63010.

Enable Beep Warning



┐MKDC68001.

Disable Beep Warning



┐MKDC68010.

Mac Address



┐MKDC63100.

BT FW Version



┐MKDC63200.

Enable Wakeup Null



┐MKDC63401.

Disable Wakeup Null



┐MKDC63410.

Confirm To Send Enabled



┐MKDC63501.

Confirm To Send Disabled



┐MKDC63510.

BT Toggle Enabled



┐MKDC6B001.

BT Toggle Disabled



┐MKDC6B010.

Enable BT Disconnect Button



┐ M KDC6B101.

Disable BT Disconnect Button



┐ M KDC6B110.

13.14 Bluetooth Auto Power On Time

Disable



┐MKDC67000.

1 sec.



┐MKDC67001.

2 sec.



┐MKDC67002.

3 sec.



┐MKDC67003.

4 sec.



┐MKDC67004.

5 sec.



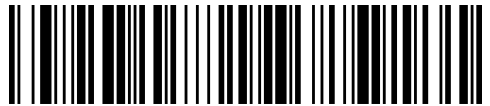
┐MKDC67005.

6 sec.



┐MKDC67006.

7 sec.



┐MKDC67007.

8 sec.



┐MKDC67008.

9 sec.



┐MKDC67009.

10 sec.



┐MKDC6700A.

13.15 Bluetooth Power Off Time

1min



┐MKDC69001.

2min



┐MKDC69002.

3min



┐MKDC69003.

4min



┐MKDC69004.

5min



┐MKDC69005.

6min



┐MKDC69006.

7min



┐MKDC69007.

8min



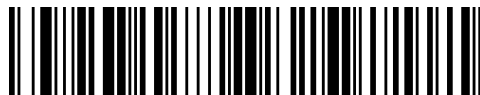
┐MKDC69008.

9min



┐MKDC69009.

10min



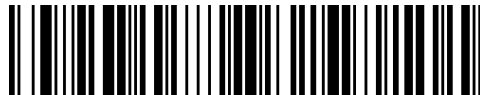
┐MKDC6900A.

11min



┐MKDC6900B.

12min



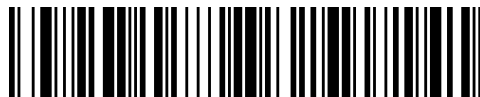
┐MKDC6900C.

13min



┐MKDC6900D.

14min



┐MKDC6900E.

15min



┐MKDC6900F.

16min



┐MKDC69010.

17min



┐MKDC69011.

18min



┐MKDC69012.

19min



┐MKDC69013.

20min



┐MKDC69014.

21min



┐MKDC69015.

22min



┐MKDC69016.

23min



┐MKDC69017.

24min



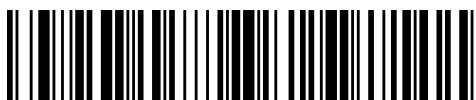
┐MKDC69018.

25min



┐MKDC69019.

26min



┐MKDC6901A.

27min



┐MKDC6901B.

28min



┐MKDC6901C.

29min



T MKDC6901D.

30min



T MKDC6901E.

13.16 HID Autolock Time

0 min (Never)



┐MKDC6C000.

1 min



┐MKDC6C001.

2 min



┐MKDC6C002.

3 min



┐MKDC6C003.

4 min



┐MKDC6C004.

5 min



┐MKDC6C005.

10 min



┐MKDC6C00A.

15 min



┐MKDC6C00F.

Disconnect



┐MKDC6D000.

13.17 HID Keyboard layout

US



German



French



Italian



Spanish



13.18 HID Initial Delay

Disabled



┘MKDCH0000.

1 second



┘MKDCH0001.

2 seconds



┘MKDCH0002.

3 seconds



┘MKDCH0003.

5 seconds



┘MKDCH0005.

10 seconds



┘MKDCH000A.

13.19 HID Character Delay

Disabled



10 msec



20 msec



30 msec



50 msec



100 msec



13.20 HID Control Character

Disabled



Alt+Numpad



^+Character



Replace with '|'



13.21 System

0.5M / 3.5M



1M / 3M



2M / 2M



3M / 1M



4M / 0M



Confirm memory size



Memory Status



Reset Memory



Erase Memory



Reset App data



Reset BT Registry



SPP Sync



Auto Erase Enable



Auto Erase Disable



Disable Buttons



┐MKDCA0004.

Enter Menu



┐MKDCA0005.

Date/Time



┐MKDC52001.

Battery



┐MKDC53001.

Version



┐MKDC54001.

Button Lock



┐MKDC55001.

Button Unlock



┐MKDC55010.

Enable Beep Sound



┐MKDC56001.

Disable Beep Sound



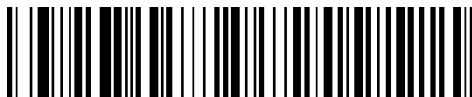
┐MKDC56010.

High Beep Volume



┐MKDC5D001.

Low Beep Volume



┐MKDC5D010.

MFi Mode Enable



┐MKDC6M001.

MFi Mode Disable



┐MKDC6M010.

Vibrator Enable



┐MKDC5G001.

Vibrator Disable



┐MKDC5G010.

Enable Auto Menu Exit



┐MKDC58001.

Disable Auto Menu Exit



┐MKDC58010.

Enable Port Status



┐MKDC58101.

Disable Port Status



┐MKDC58100.

Time & Battery



┐MKDC58200.

Type & Time



┐MKDC58201.

Type & Battery



┐MKDC58202.

Memory Status



┐MKDC58203.

Barcode Only



┐MKDC58205.

Display Format = GPS Data



┐MKDC58204.

Menu Barcode Enable



┐MKDC52401.

Menu Barcode Disable



┐MKDC52410.

Enable Scrolling



Disable Scrolling



Factory Default



KDC Reset



13.22 Sleep Timeout

Disable



┘MKDC51000.

1sec



┘MKDC51001.

2sec



┘MKDC51002.

3sec



┘MKDC51003.

4sec



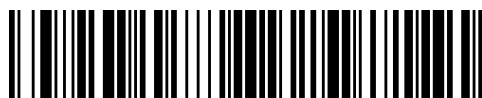
┘MKDC51004.

5sec



┘MKDC51005.

10sec



┘MKDC5100A.

20sec



┘MKDC51014.

30sec



┘MKDC5101E.

1min



┘MKDC5103C.

2min



┘MKDC51078.

5min



┘MKDC5112C.

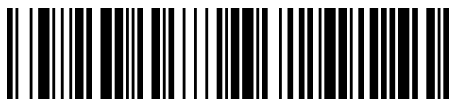
10min



┘MKDC51258.

13.23 Function

F1



┐MKDC7001.

F2



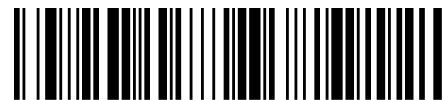
┐MKDC7002.

F3



┐MKDC7003.

F4



┐MKDC7004.

F5



┐MKDC7005.

F6



┐MKDC7006.

F7



┐MKDC7007.

F8



┐MKDC7008.

F9



┐MKDC7009.

F10



┐MKDC700A.

F11



┐MKDC700B.

F12



┐MKDC700C.

13.24 Number

0



┐MKDC7130.

1



┐MKDC7131.

2



┐MKDC7132.

3



┐MKDC7133.

4



┐MKDC7134.

5



┐MKDC7135.

6



┐MKDC7136.

7



┐MKDC7137.

8



┐MKDC7138.

9



┐MKDC7139.

13.25 Lower Case Alphabet

a



┐MKDC7161.

b



┐MKDC7162.

c



┐MKDC7163.

d



┐MKDC7164.

e



┐MKDC7165.

f



┐MKDC7166.

g



┐MKDC7167.

h



┐MKDC7168.

i



┐MKDC7169.

j



┐MKDC716A.

k



┐MKDC716B.

l



┐MKDC716C.

m



┐MKDC716D.

n



┐MKDC716E.

o



┐MKDC716F.

p



┐MKDC7170.

q



┐MKDC7171.

r



┐MKDC7172.

s



┐MKDC7173.

t



┐MKDC7174.

u



┐MKDC7175.

v



┐MKDC7176.

w



┐MKDC7177.

x



┐MKDC7178.

y



┐MKDC7179.

z



┐MKDC717A.

13.26 Upper Case Alphabet

A



┐MKDC7141.

B



┐MKDC7142.

C



┐MKDC7143.

D



┐MKDC7144.

E



┐MKDC7145.

F



┐MKDC7146.

G



┐MKDC7147.

H



┐MKDC7148.

I



┐MKDC7149.

J



┐MKDC714A.

K



┐MKDC714B.

L



┐MKDC714C.

M



┐MKDC714D.

N



┐MKDC714E.

O



┐MKDC714F.

P



┐MKDC7150.

Q



┐MKDC7151.

R



┐MKDC7152.

S



┐MKDC7153.

T



┐MKDC7154.

U



┐MKDC7155.

V



┐MKDC7156.

W



┐MKDC7157.

X



┐MKDC7158.

Y



┐MKDC7159.

Z



┐MKDC715A.

13.27 Control Character

BS



┐MKDC7108.

TAB



┐MKDC7109.

LF



┐MKDC710A.

VT



┐MKDC710B.

CR



┐MKDC710D.

ESC



┐MKDC711B.

Space



┐MKDC7120.

DEL



┐MKDC717F.

Shift + Tab



┐MKDC7111.

13.28 Symbol Character

!



┐MKDC7121.

"



┐MKDC7122.

#



┐MKDC7123.

\$



┐MKDC7124.

%



┐MKDC7125.

&



┐MKDC7126.

'



┐MKDC7127.

(



┐MKDC7128.

)



┐MKDC7129.

*



┐MKDC712A.

+



┐MKDC712B.

,



┐MKDC712C.

-



┐MKDC712D.

.



┐MKDC712E.



**Note**

- The user can compose a string up to 16 characters.
- A string would be composed by scanning the "Start-String", number/alphabet/special characters, and "Stop-String" special barcodes.
- The KDC will abort string composition if the user do not scan "Stop-String" in one minute after scanning "Start-String" and number/alphabet/special characters.

13.29 GPS (KDC350C)

GPS Power Enabled



┘MKDCG0001.

GPS Power Disabled



┘MKDCG0010.

GPS Bypass Data Enabled



┘MKDCG1001.

GPS Bypass Data Disabled



┘MKDCG1010.

Reset GPS Module



┘MKDCG2000.

GPS Acquire Test



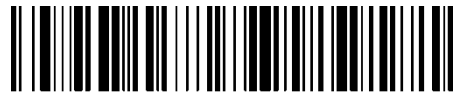
┘MKDCG2001.

GPS Power Save Mode(Normal)



┘MKDCG2002.

GPS Auto Power Off Disabled



┘MKDCG2003.

GPS Auto Power Off Enabled



┘MKDCG3001.

GPS Auto Power Off Disabled



┘MKDCG3010.

13.30 Auto Power Off Timeout (KDC350C)

0 min (Disabled)



5 min



10min



20 min



30 min



60 min

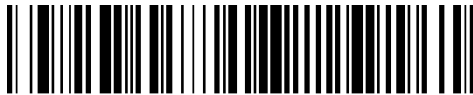


120 min



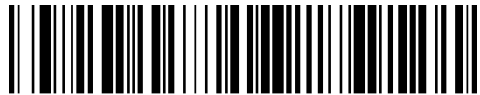
13.31 NFC Config (KDC350CN/420N/425N)

NFC Power Enable



┐MKDCN0001.

NFC Power Disable



┐MKDCN0010.

NFC Data Format = Data only



┐MKDCN1001.

NFC Data Format = Packet data



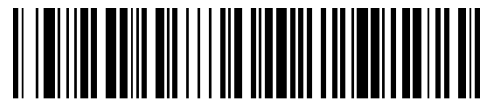
┐MKDCN1000.

UID Only = Disable



┐ M KDCN3000.

UID Only = Enable



┐ M KDCN3001.

13.32 USB Disk

USB Serial Mode



USB Disk Mode



Format USB Disk



Data Format - Data



Data Format – Data,Time



Data Format – Data,Type



Data Format – Data,Time,Type



14. APPENDIX E - MSR Special Barcodes (KDC415/425MSR)

14.1 KDC415MSR

Beep On Error

No Beep On Error



M6000

Beep On Error



M6001

Data Format

MSR Data Only



M1000

Packet data



M1001

Encrypt Mode

Disabled



M2000

AES



M2001

Track Selection

Track1



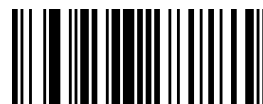
M3001

Track2



M3002

Track3



M3004

Track Unselection

Track1



M4001

Track2



M4002

Track3



M4004

Track Separator

None



M5000

Space



M5001

Comma



M5002

Semi Colon



M5003

CR



M5004

LF



M5005

CR_LF



M5006

Tab



M5007

AES Key Length

AES key length 128 bits



M8000

AES key length 192 bits



M8001

AES key length 256 bits



M8002

Card Type

MSR Card type ISO



MA000

MSR Card type Other 1



MA001

MSR Card type AAMVA



MA002

14.2 KDC425MSR

Beep On Error

No Beep On Error



┐MKDCM6000.

Beep On Error



┐MKDCM6001.

Data Format

MSR Data Only



┐MKDCM1000.

Packet data



┐MKDCM1001.

Encrypt Mode

Disabled



┐MKDCM2000.

AES



┐MKDCM2001.

Track Selection

Track1



┐MKDCM3001.

Track2



┐MKDCM3002.

Track3



┐MKDCM3004.

Track Unselection

Track1



┐MKDCM4001.

Track2



┐MKDCM4002.

Track3



┐MKDCM4004.

Track Separator

None



┐MKDCM5000.

Space



┐MKDCM5001.

Comma



┐MKDCM5002.

Semi Colon



┐MKDCM5003.

CR



┐MKDCM5004.

LF



┐MKDCM5005.

CR_LF



┐MKDCM5006.

Tab



┐MKDCM5007.

AES Key Length

AES key length 128 bits



AES key length 192 bits



AES key length 256 bits



Card Type

MSR Card type ISO



MSR Card type Other 1



MSR Card type AAMVA



15. Appendix F – Multiple Special Barcodes

This chapter explains how to make a multiple configuration barcode for the KDC to configure multiple KDC settings by scanning one barcode. The KDC provides special barcodes that enable changes to the KDC configuration; but, this current barcode changes only one configuration. New KDC firmware Version R_305 introduces a feature to enable the user to make one special barcode to change multiple KDC configurations.

15.1 KDC350L

- Barcode type Code128 is used to make a single special barcode and its format is as follows:

<FNC3><Barcode String>

Here, the <FNC3> is a Code 128 control character and the <Barcode String> is an ASCII string for each KDC configuration.

- The multiple configuration Code128 barcode format is as follows and has a control character and series of barcode strings.

<FNC3><Barcode String 1>;;;;<Barcode String N>

Here, the <FNC3> is a Code 128 control character and the <Barcode String 1> and <Barcode String N> are an ASCII string for each KDC configuration. The ';' is a separator for each configuration's barcode string. Please see user manual for the <Barcode String> for KDC configuration.

- Example: Assume the user is changing the following configurations with one barcode.
 - Change Wedge/Store to "Wedge Only" ➔ <FNC3>82000
 - Change Termination Character to "None" ➔ <FNC3>88000
 - Change Bluetooth "Auto PowerOff" to "Disabled" ➔ <FNC3>64010

<FNC3>82000;88000;64010

15.2 KDC350C

- The following format is for a single configuration barcode format:

<SYN> M <CR> KDC <Barcode String>.

- <SYN> is a control character 0x16 in hex format.
- M is an ASCII character 0x4D in hex format.
- <CR> is a control character 0x0d in hex format.
- KDC is an ASCII string 0x4B 0x44 0x43 in hex format.
- <Barcode String> is an ASCII string for each configuration
- . is an ASCII string 0x2E in hex format that indicates the end of barcode.
- The multiple configuration barcode string uses a repeated barcode string of each configuration in the following format:

<SYN>M<CR>KDC<Barcode String 1> ;;;;; <Barcode String N> .

- <SYN> is a control character 0x16 in hex format.
- M is an ASCII character 0x4D in hex format.
- <CR> is a control character 0x0d in hex format.
- KDC is an ASCII string 0x4B 0x44 0x43 in hex format.
- <Barcode String 1> and <Barcode String N> are an ASCII string for each configuration
- ; is a separator between each barcode strings.
- . is an ASCII string 0x2E in hex format that indicates the end of barcode.

- Example: Assume the user is changing the following configurations with one barcode.

- Change Wedge/Store to "Wedge Only" ➔ <SYN>M<CR>KDC82000.
- Change Termination Character to "None" ➔ <SYN>M<CR>KDC 88000.
- Change Bluetooth "Auto PowerOff" to "Disabled" ➔ <SYN>M<CR>KDC 64010.

<SYN>M<CR>KDC82000;88000;64010.

- Code 128



- QR code

