KDC Reference Manual

Rev 0.90

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Patents:
Certain KDC Products may be covered by the following issued US patents numbers 7769917, 7954710, 8126399, 8295368, 8346979, 8347366, 8371506, 8483614, 8832323, 9411366; Korea patents numbers 101383407, 101354252; UK patents numbers GB2492615, GB2514746.

CAUTION:

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.

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, VH9KDC30, VH9KDC100, VH9KDC200, VH9KDC250, VH9KDC270, VH9KDC300, VH9KDC350WA, VH9KDC350A, VH9KDC400, VH9KDC450, VH9KDC470, VH9KDCSLED-HF, VH9-KDCUHF05, VH9-KDCUHF10, VH9KDC500, VH9KDC180, VH9KDC180U, VH9KDC185, VH9KDC80

FCC Compliance Statement:

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

Caution: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE:

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

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

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.

RED Compliance Statement

This product is CE marked according to the provision of the RED (2014/53/EU).
Hereby KOAMTAC, INC. declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU

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+A1:2010+A12:2011+A2:2013 EN62479:2010	ESTCS1101-002 ETLS180307.0036	Complies
Article 3.1(b) – EMC	EN 55022:2006+A1:2007 EN 55022:2010/AC:2011, EN 55024:2010 EN 55024:1998+A1:2001+A2:2003 ETSI EN 301 489-1 V1.8.1 (2008-04) ETSI EN 301 489-a V1.9.2 ETSI EN 301 489-1 V2.2.0 (2017) ETSI EN 301 489-3 V2.1.1 (2017) ETSI EN 301 489-17 V2.1.1 (2009-05)	ESTCE0712-007(1) ETLE 180306.0210	Complies
Article 3.2 – Radio Spectrum Use	ETSI EN 300 328:V1.7.1 (2006-10) ETSI EN 300 330 V2.1.1 (2017) EN 50364:2010	ESTR0801-018(1) ETLT180307.0037	Complies

Japan

R
003WWA080049, 003WWA090274, 208-120048, 208WW110041, 208-130029, 208-140011, 208-140049
Article 2-1-19, 2.4GHz Wide Band low power data communication system

2014026493, 2014027753

Korea

MSIP-CMM-A13-KDC20, MSIP-CMM-A13-KDC30, AI3-KDC100, AI3-KDC200, MSIP-CMM-A13-KDC250, MSIP-CMM-A13-KDC270, MSIP-CMM-A13-KDC300, MSIP-CMM-A13-KDC350, MSIP-CMM-A13-KDC400, MSIP-CMM-A13-KDC450, MSIP-CMM-A13-KDC470, KDCSLED-HF, MSIP-CMM-A13-KDC500A

Laser Compliance

KDC20/100/200/250/270L/350L/410/411/415/470L

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.

Maintaining Water and Dust Resistance

Whenever your device gets wet, dry it thoroughly with a clean, soft cloth. If your device has gotten wet, you should dry the inside of the charging port before inserting a power connector to charge your device. If the charging port is not fully dry, your device may operate abnormally. For example, it may charge more slowly or overheat.

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
Bluetooth Low Energy V4.1

Apple®

Made for iPhone, Made for iPod, Made for iPad

Samsung®

Compatible with Galaxy and Gear Series

Warranty Policy

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.

KOAMTAC ONE YEAR LIMITED WARRANTY

KOAMTAC products are warranted to be free from defects in materials or workmanship for one (1) year from the date of purchase from an authorized dealer of KOAMTAC products. Within this period, we will, at our sole discretion, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to you for parts and/or labor, provided that you shall be responsible for any transportation charges. Replacement products may be new or refurbished at our discretion.

This warranty does not apply to: (i) cosmetic damage, such as scratches, nicks, stains and dents; (ii) consumable parts, such as batteries, unless product damage has occurred due to a defect in materials or workmanship; (iii) damage caused by accident, abuse, misuse, water (in excess of specifications), flood, fire, or other acts of nature or external causes; (iv) damage caused by service performed by anyone who is not an authorized service provider of KOAMTAC; or (v) damage to a product that has been modified or altered without the prior written permission of KOAMTAC.

Repairs have a ninety (90) day warranty. If the unit sent in is still under its original warranty, then the new warranty will be the longer of ninety (90) days or the balance of the original one year warranty.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS, IMPLIED, OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. Subject to applicable law, in no event shall our liability exceed the purchase price of the Hardware.

RETURN

For warranty returns, you must pack your KOAMTAC product in its original packaging and include all accessories and documentation. We reserve the right to charge for any damage to the KOAMTAC product, and missing part fees may apply.

Please contact Customer Service prior to returning any product to receive a return authorization form and RMA number. You will be responsible for, and pre-pay, all return shipping charges and shall assume all risk of loss or damage to product while in transit to us. We recommend that you use a traceable method of shipping for your protection. We will pay for shipping to return any product to you.

Email us at rma@koamtac.com to obtain an RMA number. Once you have obtained the RMA number, please send us your purchased KOAMTAC product with the RMA number clearly marked on the outside of the package and on the shipping slip if you choose to use traceable carriers such as UPS or FEDEX. Shipping fees for returns are your responsibility. Return shipping instructions and return address will be included in your RMA document provided by KOAMTAC.

1 Introduction

Congratulations on purchasing a revolutionary KOAMTAC KDC. KOAMTAC's KDC works with a wide variety of portable applications. Use it independently or as a PC, PDA, Smart Watch, Smart Glass, smartphone, and tablet accessory.

FEATURES	KDC20	KDC30	KDC100	KDC200	KDC250	KDC270	KDC280	KDC300	KDC350	KDC400	KDC450	KDC470	KDC500
USB CONNECTIONS	1	1	2	1	1	1	1	1	1	2	2	1	1
RECHARGEABLE BATTERY	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SCAN ENGINE	Laser/ CCD	Imager	Laser	Laser	Laser	Laser/ CCD/ Imager	Imager	Imager	Laser/ CCD/ Imager	Laser/ Imager	Imager	Laser/ CCD/ Imager	CCD/ Imager
AUTOMATIC DATA UPLOAD	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
MAX STORED BARCODE (EAN13)	6650	7160	409,600	409,600	409,600	409,600	409,600	409,600	409,600	4,096	409,600	409,600	153,600
KTSync® SOFTWARE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SDK	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SUPPORTS WINDOWS XP, 7, 8 & 10	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
ANDROID, IOS, WINDOWS PHONE 8.1 & 10	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
TIZEN	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO
BLUETOOTH	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
BLUETOOTH LE	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO
NFC (OPTIONAL)	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	YES
HF (OPTIONAL)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO
UHF (OPTIONAL)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO
MSR (OPTIONAL)	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES
IC CARD (OPTIONA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES
USB DISK	NO	NO	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO
USB HID	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO
WIFI (OPTIONAL)	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO

Table 1 - Features of KDC

1.1 KDC Package Contents

The standard KDC package contains:

1. One KDC
2. USB Cable
   - KDC20/30 (N/A)
   - KDC100/200/250/300/350 (8pin Ultra-mini USB Cable)
   - KDC180/270/280/400/450/470/475/500 (5pin Micro USB Cable)
   - KDC80/185/280NA/180NA/SKX (USB Type-C Cable)
3. One Lanyard (KDC20/30/80/100/180/185/200/250/270/280/300/350) or One Hand Strap (KDC400/450/470/480/475/485/500/SKX)
4. One KDC Protective Rubber Boot for KDC80/100/180/185/200/250/270/280/300/SKX. This is optional for KDC20/30/350.
5. Quick Manual

The following KDC accessories are available to purchase at store.koamtac.com or galaxyaccessory.com or by contacting a local reseller.

- Protective Rubber Boots for KDC20/30/80/100/185/200/250/270/280/300/350/SKX
- SmartSled® cases for KDC400/450/470/475/500
- Charging Cradles for KDC20/30/100/180/185/200/250/270/280/300/350/411/421/430/450/470/475/500/SKX
- Finger Trigger Gloves for KDC180/200/250/270/280/300/350
- Finger Trigger Glove Adaptor for KDC200/250/300
- ezCharging Adaptor for KDC350
- Ring Scanner for KDC180/200/270/280
- Hardpack Battery Charging Adaptor for KDC180/350/470/475/500
- KDC500 SmartSled® Adaptor
- KDC Batteries

Note Depending on the distributor, package contents may vary.

KDC20/30
Package Contents

KDC80/185
Package Contents

KDC100/200/250/300
Package Contents

KDC180/270/KDC280/KDC350
Package Contents

KDC400/450/470/475
Package Contents

KDC500
Package Contents

KDC180
Package Contents

Figure 1 – KDC Contents

1.2 KDC Characteristics

Before using the KDC, the user should become familiar with its physical characteristics. Refer to the figures below. These figures indicate the placement of the SCAN, UP, DOWN and DELETE buttons, OLED display, LED, and ports on the KDC.

Although KDC models consist of similar buttons and LEDs, each model has different characteristics for its own purpose of use. The KDC20/30/100 includes a swing-out USB connector and the KDC350/500 has a keypad.

KDC20/30 Barcode Reader and Data Collector

KDC20

KDC30

KDC100 Barcode Reader and Data Collector

KDC100

KDC200/250/270/280/300/350 Barcode Reader and Data Collector

KDC200

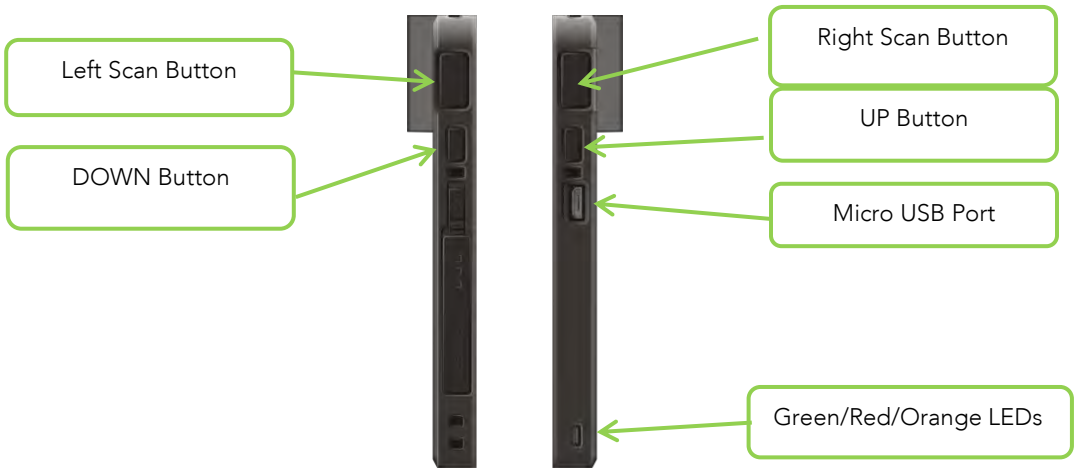
KDC250/300

KDC80/180/185/270/280

KDC350

KDC400/450/470 Barcode Reader and Data Collector

KDC400/450



KDC470/475

KDC500 Mobile POS

KDC500

Figure 2 – KDC Characteristics

1.3 Keypad Functionality for KDC350

Menu	Enables the user to enter or exit the KDC Menu. While in menu mode, press once to exit.
Shift	Enables the user to change character input mode from capital letters to small letters, and vice versa.
Mode	Enables 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).
1 2ABC 3DEF (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
Scan + (Power On/Off button)	Press both Scan button and Down button for more than 5 seconds at the same time to turn KDC350 power on and off.

Fn

(Function button)

This button may be used in conjunction with a number key to control the KDC settings shown below.

FN + 1	Keypad light On/Off
FN + 2	Reserved
FN + 3	NFC Power On/Off (KDC350N series only)
FN + 4	Bluetooth Power On/Off
FN + 5	Enter Bluetooth Pairing Mode
FN + 6	Change Bluetooth profile
FN + 0	Factory Default

1.4 Keypad Functionality for KDC500

 (Menu/Down button)	While in the KDC500 menu, press this button to scroll down the selection bar. While on the main screen, press this button for 5 seconds then the KDC500 will enter the KDC500 menu mode.
 (FN/Up button)	While in the KDC500 menu, press this button to scroll up the selection bar. While on the main screen, press this button for 5 seconds then the KDC500 will enter the KDC500 BT Service menu. While the KDC500 waits for Alpha-Numeric key entry, this button allows the user to switch between ABC and number input mode.
 (Number button)	Input numbers or characters
 (Enter button)	Press to finish data input.
 (Delete button)	Press to delete the last character or number input.
 (Cancel button)	If cancel is pressed while menu is active it should return to the parent menu directory

1.5 Input data by using a keypad (KDC350)

- When the KDC350 shows a blank main screen, you may 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".

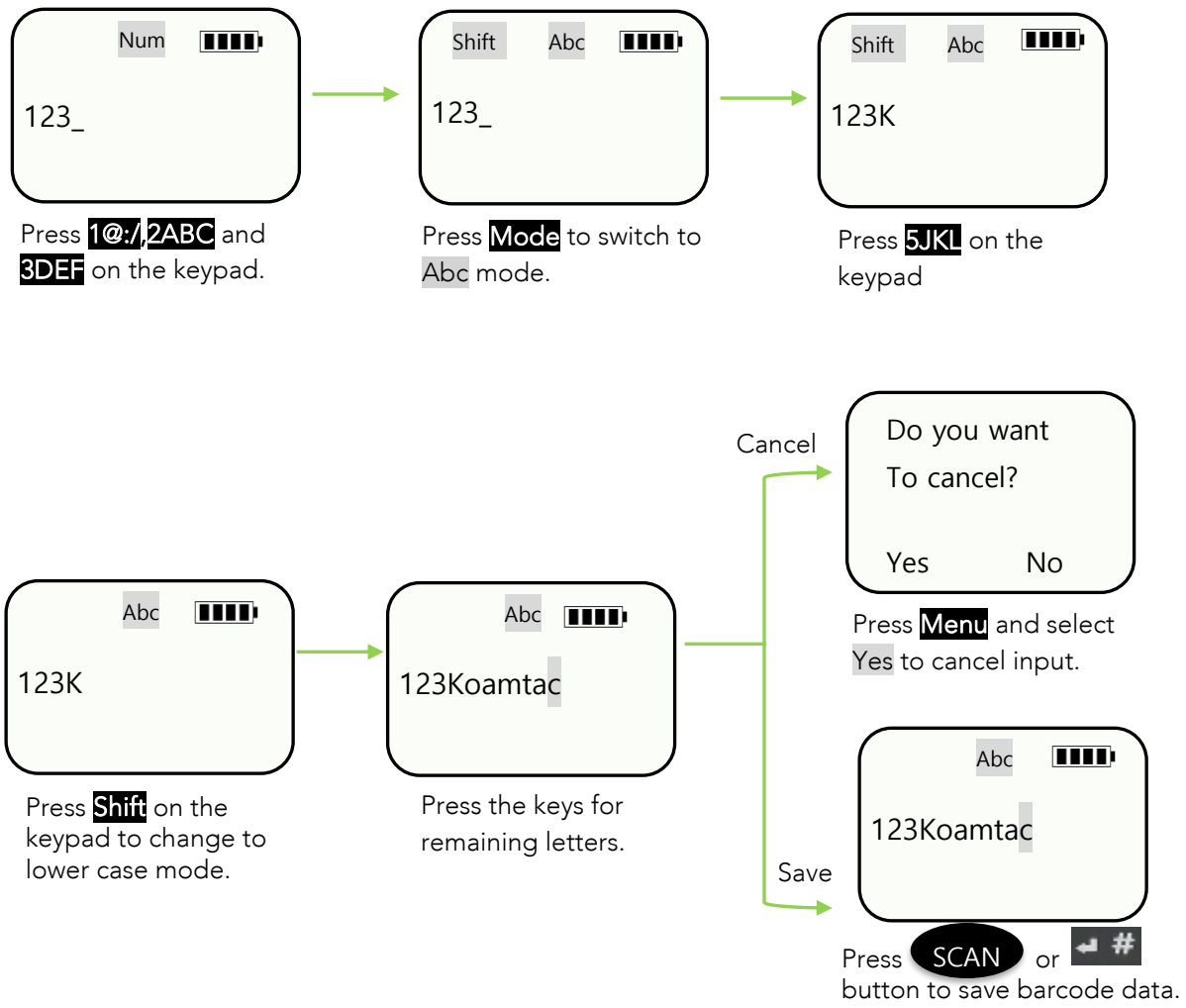


Figure 3 – KDC350 Keypad Input

1.6 Turn ON/OFF KDC20/30/270/280/350/400/470/475/500 power

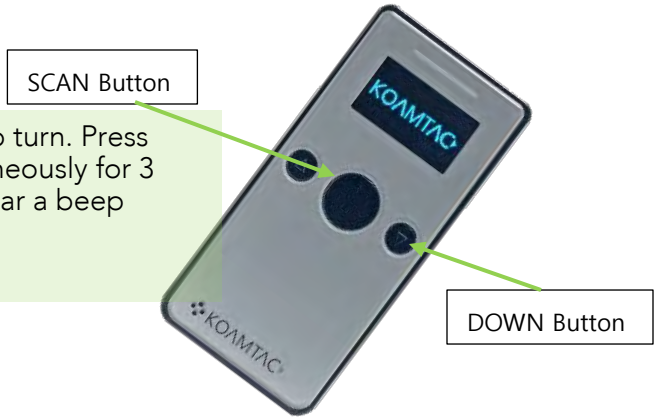
KDC20/30/270/350/400/470/500 have power on/off switch. Please turn on the power first before using the device.

KDC20/30/350/180

Press SCAN and DOWN buttons simultaneously for 3 seconds. The user will hear a beep sound when it is turned ON or OFF

KDC270/280

Press SCAN button for 3 seconds to turn. Press SCAN and DOWN buttons simultaneously for 3 seconds to turn off. The user will hear a beep sound when it is turned ON.



KDC400

Slide POWER switch to the right.

KDC470/480/475/485

Press any SCAN and DOWN buttons for 3 seconds. The user will hear a beep sound when it is turned ON

KDC500

Press Left and Right SCAN buttons simultaneously for 3 seconds. The user will see a KOAMTAC logo in the display and hear a beep sound when it is turned on.

Press Left and Right SCAN buttons simultaneously for 3 seconds to power OFF.

Figure 4 - How to turn on the power in KDC20/30/270/280/350/400/470/475/500

2 Installation

2.1 Bluetooth Pairing

The KDC may read and store barcode data independently, but it may also be used in conjunction with a PC, PDA, or smart device.

In order to read barcode data with your KDC wirelessly, the user must first pair the KDC and smart device via Bluetooth. If previously paired and 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 may need to go through the pairing process again. The user may also refer to Chapter 4. Bluetooth for more information about Bluetooth pairing. Please refer Chapter 20 Appendix J for KDC280C.

2.1.1 Preparing for Pairing

Select a Bluetooth profile. There are two ways to set up a Bluetooth profile. The user may establish a Bluetooth profile manually (on the scanner) or by scanning a programming barcode as shown below. (iOS and MFi are for Apple products and others are for Android products).

User needs to disable MFi mode ("i" models) in the system config model first to enable HID mode.

KDC 20/100/200/250/270L/270D/350L/410/411/415/470L/470D/475S/500L (1D)

Bluetooth Profile SPP

Bluetooth Profile HID iOS

Bluetooth Profile MFi

Bluetooth Profile SPP2.0

Bluetooth Profile HID normal

Note For PCI PTS compliance, KDC500L supports only Bluetooth Profile SPP and MFi.

KDC30/180/185/300/270C/350C/420/421/425/450/470C/475C/475H/500C (2D)

Bluetooth Profile SPP

Bluetooth Profile HID iOS

Bluetooth Profile MFi

Bluetooth Profile SPP2.0

Bluetooth Profile HID normal

Note For PCI PTS compliance, KDC500C supports only Bluetooth Profile SPP and MFi.

BLE Devices KDC80/180/185/280/470-BLE/480/475-BLE/485

Bluetooth LE Profile SPP

Bluetooth LE Profile HID

Bluetooth LE Profile HID Windows

Some KDCs are equipped with an LCD screen (KDC100/200/250/270/280/300/350/500), the user may select a Bluetooth profile from the **ConnectDevice** menu as shown below.

Figure 5 - Selecting a Bluetooth device type from the KDC menu

2.1.2 Pairing

First Option: Connect the KDC from a host (PC or Smart Device)

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

KDC 20/100/200/250/270L/270D/350L/410/411/415/470L/470D/475L/475D/475S/500L (1D)

KDC30/300/270C/350C/420/421/425/470C/475C/475H/500C (2D)

Pairing Special Barcode

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

Figure 6 - Selecting Pairing mode in KDC

- Press the Scan button for five seconds in order to enter into Pairing mode.

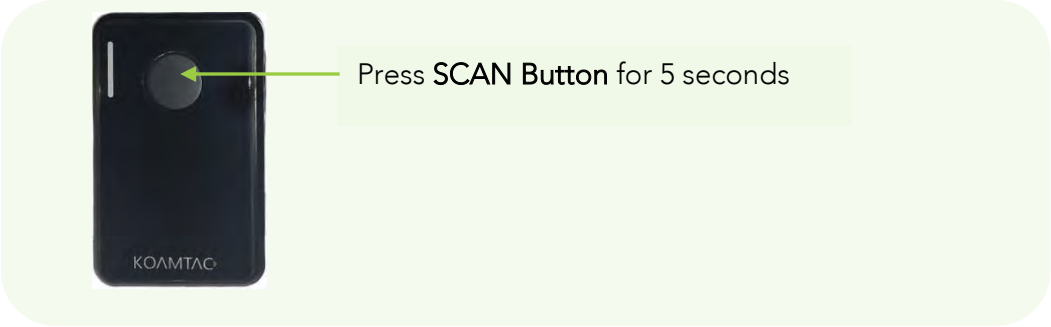


Figure 7 - Pairing mode button

For the KDC500, press the FN button for five seconds in order to directly enter the BT Service menu while it is not in the sleep mode.

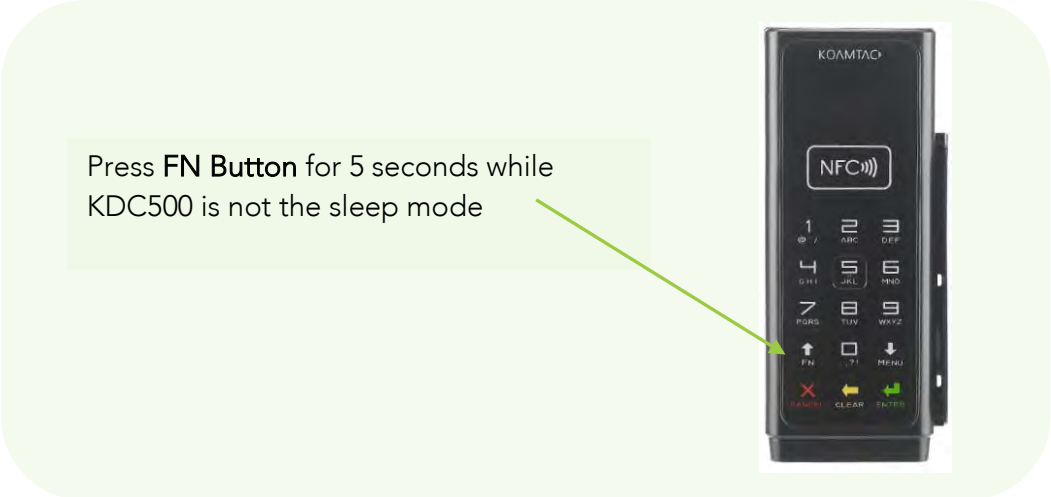
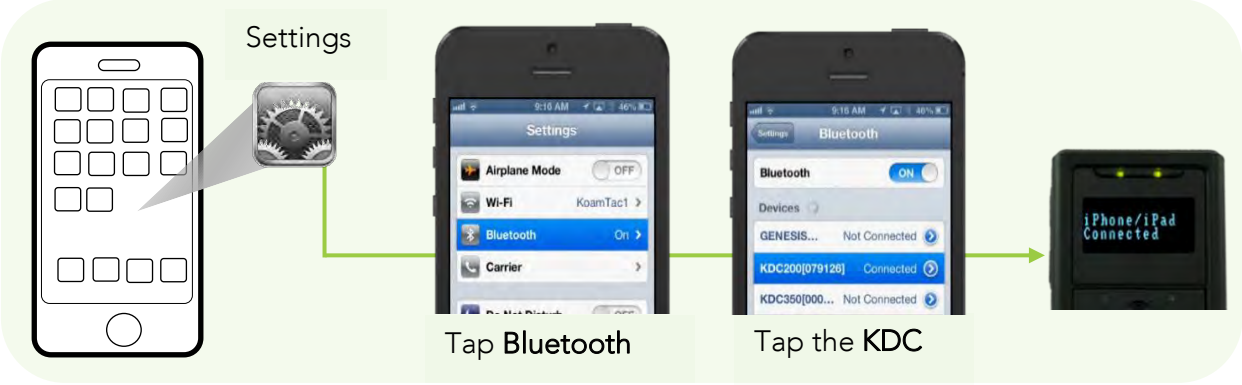


Figure 8 - Pairing menu shortcut button in KDC500

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.



Note For PCI PTS compliance, KDC500 requires Numeric Comparison method.

If the host device and KDC500 shows the same 6digit number, press Pair/YES button on each device.

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).

Second Option: 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.
(KDC280C-BLE and KDC470/475-BLE do not support this MAC Pairing feature.)

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

Figure 9 - Finding Bluetooth MAC Address

2. Create the **Bluetooth MAC Address Barcode** according to the format below as an example based on "http://www.terryburton.co.uk/barcodewriter/generator/".

For 1D scanners like KDC20/200/250/270L/270D/350L/410/411/415/470L/470D/475L/475D/475S/500L,

Bluetooth MAC Address: 1234567890AB
Barcode Type (Symbology): **Code 128**
Contents: **^FNC365**1234567890AB
Options: **parsefnc**

For 2D scanners like KDC30/300/270C/350C/420/421/425/450/470C/475C/475H/500C,

Bluetooth MAC Address: 1234567890AB
Barcode Type (Symbology): **QR Code**
Contents: **^022M^013KDC65**1234567890AB.
Options: **eclevel=M parse**

3. Print the **Bluetooth MAC Address**

Note:

2D barcode scanners such as the KDC30/270C/300/350C/420/421/425/450/470C/500C models may read barcodes that have been printed QR barcodes that are on a LCD screen.

1D CCD barcode scanners may read barcodes that have been printed barcodes that are on a LCD screen.

1D laser barcode scanners such as the KDC20/100/200/250/270L/270D/350L/410/411/415/470L/470D/500L 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.

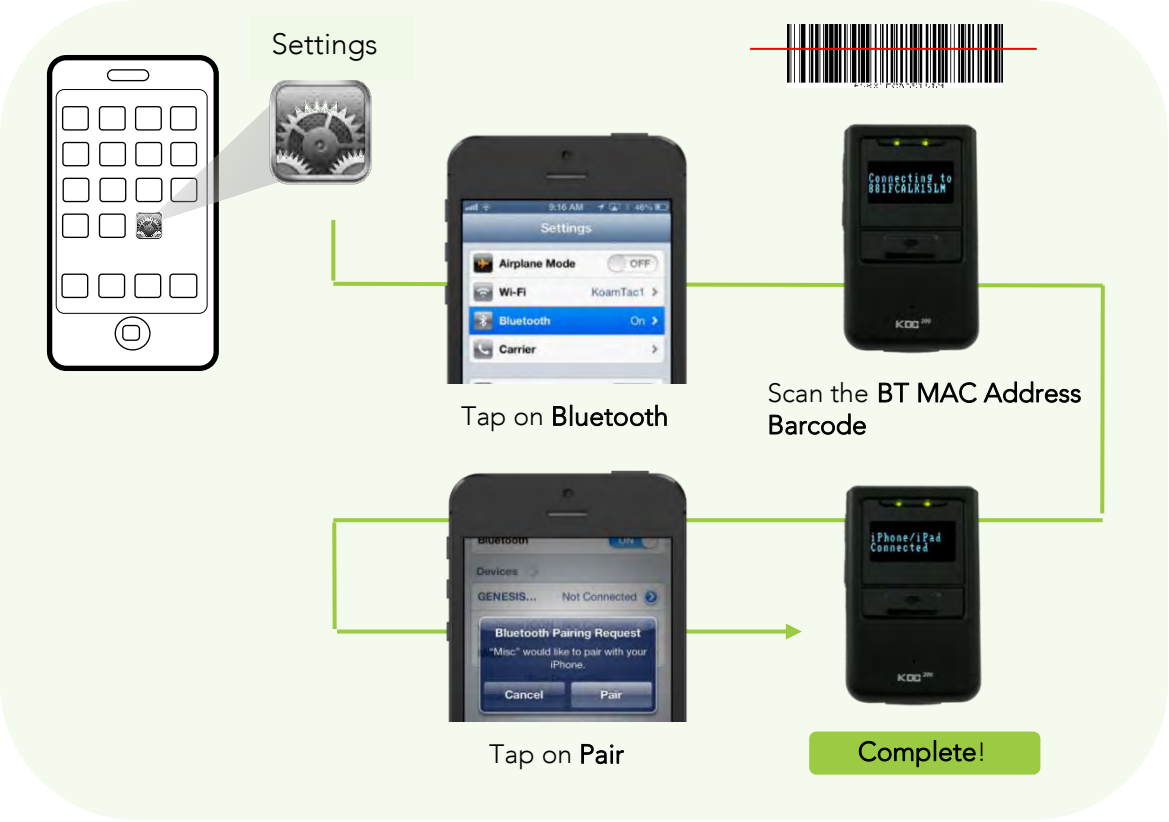


Figure 10 - Connecting KDC with a smart phone by scanning Bluetooth MAC Address Barcode

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

2.2 KTSync Setup Wizard

2.2.1 Windows 7, 8 & 10

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

1. Download KTSync from https://koamtac.com/downloads/applications/.
2. Extract the zip folder.
3. Run Setup.exe which will execute the KTSync Setup Wizard.

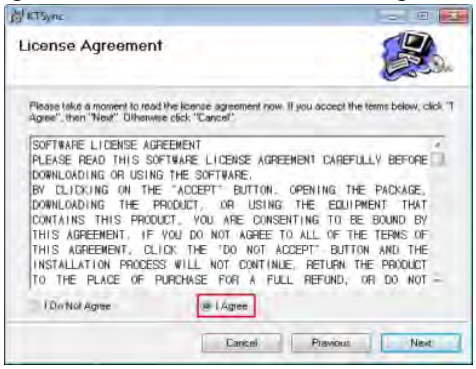
Note If the KTSync Setup Wizard locates an older version of KTSync on the computer, the user will be prompted to remove the older program before installing the new version. Select Remove KTSync then click Finish. When removal is complete, click Close. Go to Step 2 to run KTSync Setup Wizard.

KTSync Setup Wizard

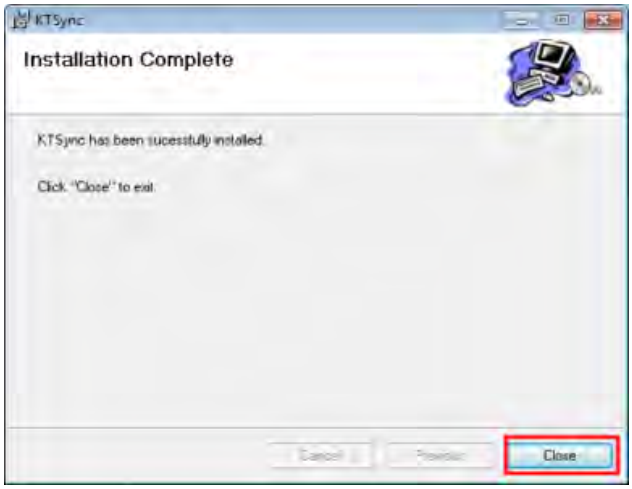
To install the KTSync, follow the steps shown in the images below.

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

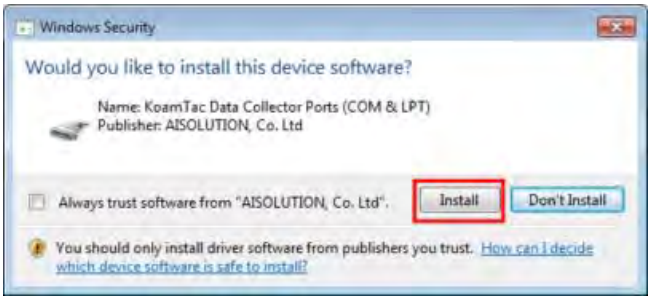
2. In the License Agreement window, select “I Agree” and click **Next**.



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

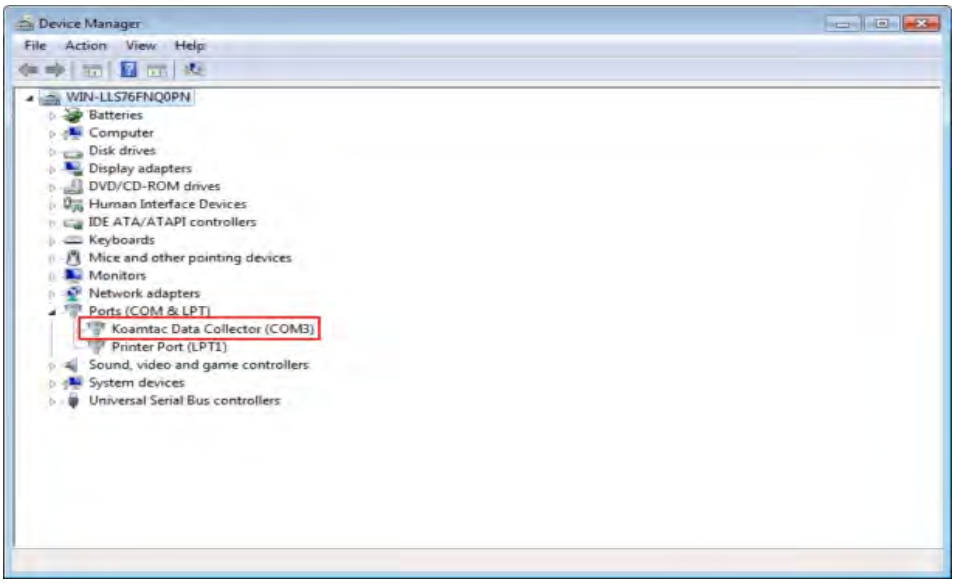
Using the USB cable included with the KDC or built-in swing out USB connector, follow the directions below.

1. Connect KDC to PC.

2. Wait until the computer beeps and/or displays the message *Found New Hardware.*

Verify COM Port Address

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



2.2.2 Android

- Download and install KTSync from the Android Play Store.

https://play.google.com/store/apps/details?id=com.koamtac.ktsync&hl

2.2.3 iPad/iPhone/iPod Touch

- Download and install KTSync from the Apple App Store.

http://itunes.apple.com/us/app/ktsync/id372916602?mt=8

3 Operating your KDC

3.1 Getting Started

3.1.1 Attaching a Lanyard or Hand Strap to a KDC

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

To attach a lanyard/hand strap:

	KDC20/30	KDC100/200/270/280/300/350/400/470	KDC500
1 Fit the thin end of the lanyard through the pillar of the KDC.			
2 Guide the thick end of strap through the thin loop.			
3 Pull the strap tight to secure.			

How to Attach a Hand Strap to Tablet Sled Case

1 **Identify your mounting location, located on the four corners of the sled case.**

Identify corners A, B, C & D.

2 **Detach both clasps from your hand strap.**

3 **Choose which hand you would like to use with your hand strap.**

To hold with your **RIGHT** hand, insert the detached elastic bands into corners B & C.

To hold with your **LEFT** hand, insert the detached elastic bands into corners A & D.

After making your selection and inserting the detached elastic bands, pull the clasps through the elastic band to make a knot around the small hole.

4 **Reinsert the hand strap to both clasps.**

Place your hand through the strap and adjust accordingly.

3.1.2 Charge KDC Battery

Prior to using the KDC, the user should charge the battery. Follow the instructions below.

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 (three LEDs in case of KDC500) on the front panel will illuminate orange. When the battery is fully charged, the LEDs will illuminate green.

KDC100	KDC20/200	KDC270/280	KDC30/180/250/300/350	KDC400/470	KDC500
2 Hours	2 Hours	3 Hours	4 Hours	4 Hours	4 Hours

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

3.1.3 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 may be configured by using three different methods, which are explained in Section 3.5 – KDC Menus, Chapter 6 –Synchronization, and Appendix C/D – Special Barcodes.

CONFIGURATION METHODS FOR THE KDC80/100/180/185/200/250/270/280/300/350/500

- KDC Menu
- KTSync Software
- Special Barcodes

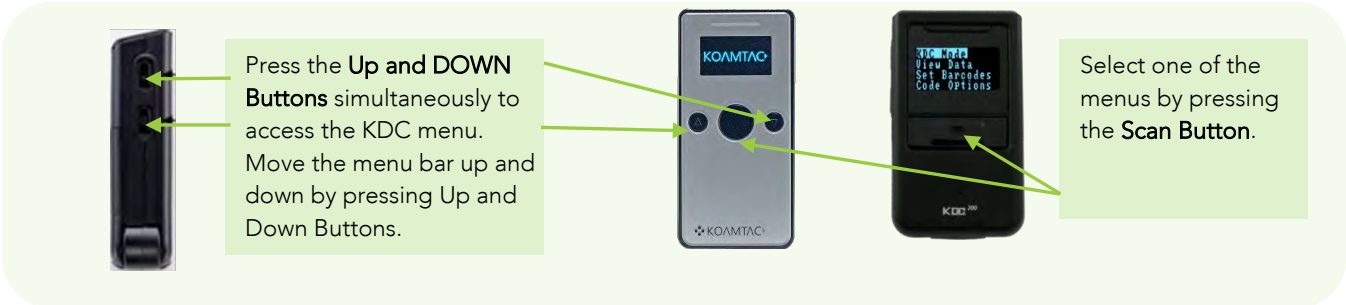


Figure 11 – Entering KDC Menu (KDC100/200/250/270/280/300)

Press the **Menu** **Button** to access the KDC menu. Move the menu bar up and down by pressing the ⟨^ and ^⟩ Buttons, and configure the KDC by pressing the SCAN Button to select a menu.

Figure 12 - Entering KDC Menu on a keypad (KDC350)

Press the MENU **Button for 5 seconds** to access the KDC menu. Move the menu bar up and down by pressing the FN and MENU Buttons, and configure the KDC by pressing the SCAN Button to select a menu.

Figure 13 - Entering KDC Menu on a keypad (KDC500)

CONFIGURATION METHODS FOR KDC20/30/400/470/475/480/485

- KTSync Software
- Special Barcodes

3.1.4 Abbreviation

ABBR.	CODE	DESCRIPTION
i	MFi - Made For iPhone/iPod/iPad	Used for two-way Bluetooth communication on iOS devices (KTSync or app integrated with SDK)
M	8MB flash memory	Storage space for bar codes and application database
SR	Standard range	(2D) Honeywell Gen5 scan engine for reading standard bar code sizes
SF	Special focus	(2D) Honeywell Gen5 scan engine for reading very small bar codes
L	Laser	Laser for reading 1D bar codes
D	CCD Engine	Charged Coupled Device, for reading 1D bar codes
MO or S	Zebra (Motorola)'s laser scan engine	Better performance than the OP engine
OP	Opticon's laser scan engine	Found in most KDC 1D scanners
G6SR-R2 or H	Honeywell Gen6 scan engine	(2D) Improved performance compared to Gen5
C	Camera	Imager scan engine for reading 2D and 1D bar codes
F	WiFi	Transmit data over WiFi via TCP, UDP, HTTP GET/POST protocols
N	NFC	Near Field Communication for reading RFID tags (13.56 MHz)
3K	3 Key	3-key, no full keypad
T	MSR track	For reading card swipes
U	Ultra High Frequency	For reading Ultra-High Frequency RFID tags (900Mhz)

Note Both the laser and CCD engine can only read 1D barcodes
CCD can read off of an LCD screen, while the laser cannot.
Following KDC Abbrebiations are used in this manual.

3.2 Basics

3.2.1 Reading 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.*

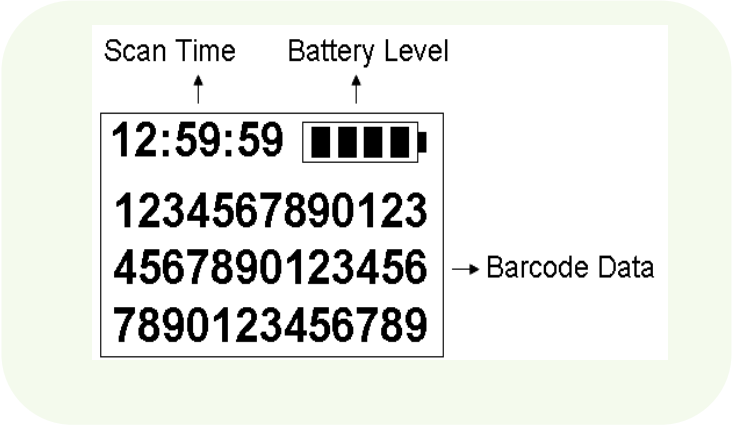


Figure 14 - KDC Display

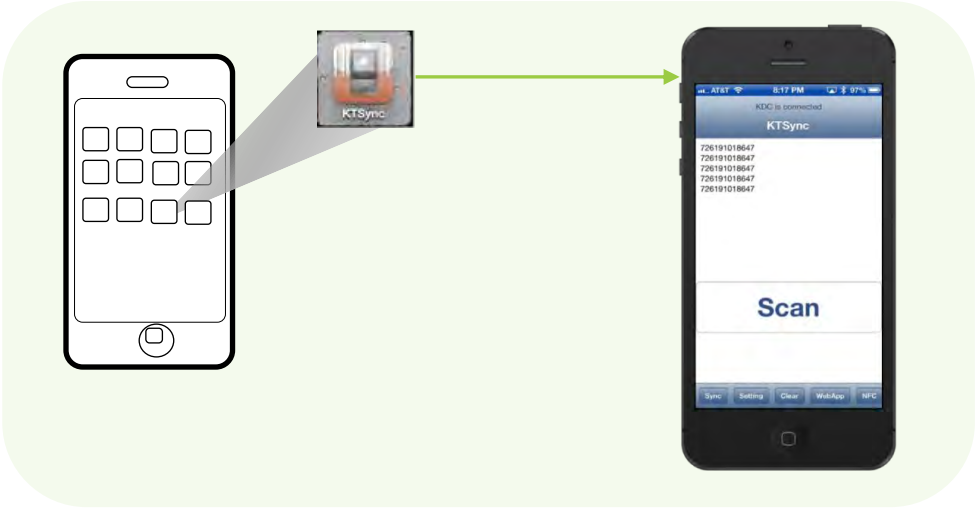


Figure 15 - Scanning barcodes using KTSync

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. (Laser Model)
- 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.

3.2.2 Reading NFC Tags (KDC350N/400N/KDC500)

1. Enable the **NFC Power** option in the **NFC Config** menu.

2. Touch the NFC tag to the back of the KDC350N/400N case (or NFC logo on the front of the KDC500 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.

3.2.3 Reading HF RFID Tags (KDC450/470/475/480/485)

The KDC450/470/475 may 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 KDC450/470/475/480/485 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.

3.2.4 Inputting Data by Using a Keypad (KDC350/380)

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

To switch between uppercase and lowercase letters, the user may press the Shift button while in **Abc** mode. To save the data input, press the Enter or SCAN button. For data input, press the Menu button. Refer to 1.5 Input data by using a keypad (KDC350/380) for more detailed information about the process.

3.2.5 Read Magnetic-Stripe (MS) Card (KDC500)

1. The paired host application sends a command to enable the MS Card Reader.

2. Swipe MS Card either top to bottom or bottom to top. Make sure the magnetic stripe of the

card face to the KDC500.

3. The KDC500 will send the MS card data to the paired host application and the user will hear a short beep if it has been read successfully.

3.2.6 Read Integrated Chip (IC) Card (KDC500)

1. The paired host application sends a command to enable the IC Card Reader.

2. Insert IC Card into the IC Card slot located in the left side of KDC500. Make sure the IC of the card face to up.

3. The KDC500 will send the IC card data read to the paired host application.

3.2.7 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 Device Driver and Firmware

3.3.1 Upgrading KDC Firmware

Requires: Windows PC, USB cable, KDC driver, KDC firmware application.

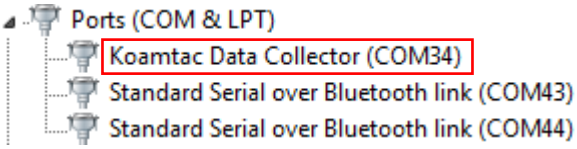
1. Download KDC driver at: https://www.koamtac.com/downloads/drivers/
   - Extract the folder, run Setup.exe only.
   - Follow the instructions on the installation wizard.

   Note: Once it is installed before, you can skip this step.

2. Download KDC Firmware at: https://koamtac.com/downloads/firmware/
   - Choose your KDC model & its KDC firmware.
   - Extract the folder, open the KDC firmware upgrade application.

   NOTE: Or download the KDC firmware from the link that Koamtac provides.

3. Confirm the KDC Driver installed properly.
   - Plug in KDC to PC via USB.
   - Navigate to Device Manager [Start > Control Panel > System and Security > System > Device Manager].
   - Click on Ports (COM & LPT). The KDC should be listed as Koamtac Data Collector.



4. In the upgrade application, click 'Step 1: Select Serial Port'
   - Make sure all programs are closed & KDC is not connected to any device via Bluetooth.
   - This should automatically detect the COM port the KDC is using.
   - If a blank dropdown appears, plug the KDC into a different USB port.

5. Click 'Step 2: Check KDC'

- This will verify the current firmware of the KDC as well as ensure compatibility with the new firmware to be downloaded.

6. Click 'Step 3: Download New F/W'
   - Do NOT remove KDC during this process.
   - Once the 'Firmware Updated Successfully' notification appears, the KDC is safe to remove.

7. Factory Default the scanner

1D Laser/CCD Models

2D Imager Models

3.3.2 Firmware Version

- 2.85 firmware refers to scanners without memory for the application database.
- 2.86 firmware refers to scanners with memory for the application database.
- 3.0x firmware refers to scanners with 4 MB or 8 MB of external flash memory.
- 2.8x firmware cannot be upgraded to 3.0x firmware.

3.3.3 Upgrading BLE (Bluetooth Low Energy) Firmware (KDC280C only)

Requires: Windows PC, USB cable, KDC driver, BLE firmware application.

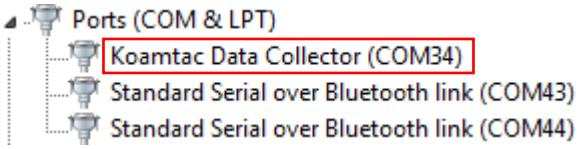
1. Download KDC driver at: https://www.koamtac.com/downloads/drivers/
   - Extract the folder, run Setup.exe only.
   - Follow the instructions on the installation wizard.

     Note: Once it is installed before, you can skip this step.

2. Download BLE Firmware at: https://koamtac.com/downloads/firmware/
   - Choose your KDC model & its BLE firmware.
   - Extract the folder, open the BLE firmware upgrade application.

   NOTE: Or download the BLE firmware from the link that Koamtac provides.

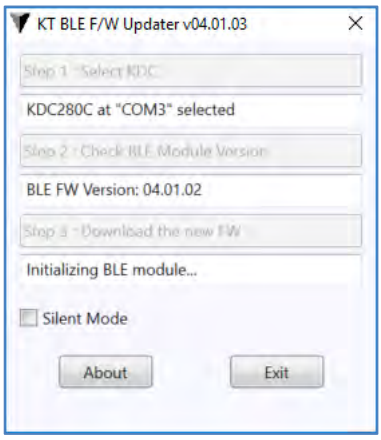
3. Confirm the KDC Driver installed properly.
   - Plug in KDC to PC via USB.
   - Navigate to Device Manager [Start > Control Panel > System and Security > System > Device Manager].
   - Click on Ports (COM & LPT). The KDC should be listed as Koamtac Data Collector.

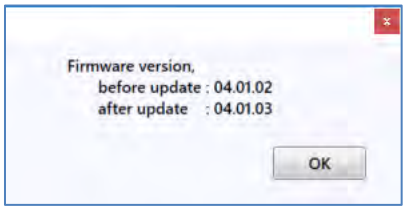


4. In the upgrade application, click 'Step 1: Select KDC'
   - Make sure all programs are closed & KDC is not connected to any device via Bluetooth.
   - This should automatically detect the COM port the KDC is using.
   - If no device is connected, it will display "No KDC device found!".

5. Click 'Step 2: Check BLE Module Version'
   - This will verify the current BLE firmware version of the KDC.

6. Click 'Step 3: Download the new FW'
    - Do NOT remove KDC during this process.
    - Once the upgrade is successful, you'll see the popup message saying the old version and the new version and the KDC will power cycle.





3.4 KDC Beep Sounds

The KDC beep sound can be change using a special bar code, using the KDC menu, or using KTSync.

The beep sound can be turned off entirely by disabling the **Beep Sound**.

- KDC Menu > System Config > Beep Alert > Beep Sound > Disable > Save & Exit.

Alternatively, beeps can be toggled individually for the following:

- Beep on powering up
- Beep on connection to host device
- Beep on scanning (success & failure)
- (MSR) Beep on card swipe
- (RFID) Beep on RFID tag reading

The beep pitch can be toggled using the Beep Volume(Tone) settings.

- Set to *Low* by default, can be changed to *Low, High*.
- Set to *High* by default for KDC500 only, can be set to *Low, High*.

For the KDC350 and KDC500, the **Key Tone** refers to the sound from a keypad press.

- KDC350: Set to *Disabled* by default, can be changed to *Disabled, Low, Medium, High*.
- KDC500: Set to *High* by default, can be changed to *Disabled, Low, Medium, High*.

3.5 KDC Menu

Top Menu	Sub Menu	Options	KDC20	KDC30	KDC100	KDC200	KDC250	KDC300	KDC350L	KDC350C
KDC Mode	Normal		Default	Default	Default	Default	Default	Default	Default	Default
	Application		N/A	N/A	Custom Application	Custom Application	Custom Application	Custom Application	Custom Application	Custom Application
View Data	View/Delete		N/A	N/A	View/Delete Data	View/Delete Data	View/Delete Data	View/Delete Data	View/Delete Data	View/Delete Data
Set Barcodes (20/ 100/ 200/ 250/ 350L)	EAN13	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	EAN8	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	UPCA	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	UPCE	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	CODE39	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	ITF14	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	CODE128	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	I2of5	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	CODABAR	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	GS1-128	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	CODE93	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	CODE35	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	BooklandEAN	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	EAN13withAddon	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	EAN8withAddon	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	UPCAwithAddon	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	UPCEwithAddon	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	GS1 Omni	Enable/ Disable	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	GS1 Limited	Enable/ Disable	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	GS1 Expanded	Enable/ Disable	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
Set Barcodes (30/300/ 350C)	1D Symbology	Codabar	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Code 11	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Code 32	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Code 39	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Code 93	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Code 128	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		EAN-8	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		EAN-13	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		GS1 Composit	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		I2of5	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Matrix 2of5	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		MSI	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Plessey	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		PosiCode	N/A	Enable	N/A	N/A	N/A	Enabled	N/A	Enabled
		GS1 Omni	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		GS1 Limited	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		GS1 Expanded	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		S2of5 Ind	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		S2of5 IATA	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		TLC39	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Telepen	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Trioptic	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		UPCA	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		UPCE0	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		UPCE1	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
	2D Symbology	AztecCode	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		AztecRunes	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Codablock F	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled

		Code16K	N/A	N/A	N/A	N/A	N/A	Enabled	N/A	Enabled
		Code49	N/A	N/A	N/A	N/A	N/A	Enabled	N/A	Enabled
		DataMatrix	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		MaxiCode	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		MicroPDF	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		PDF417	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		QRCode	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		HanXin Code	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
	Postal Codes	Postnet	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		PlanetCode	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		UK Post	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Mayada Post	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Kix Post	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Australia Post	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Japan Post	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		China Post	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		Korea Post	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
	OCR	OCR Off	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		OCR A	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		OCR B	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		OCR Passport	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		OCR MICR	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		OCR SEMI	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
Barcode Options (20/100 /200/250 /350L)	CodaBar_NoStartStop Chars	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	UPCE_as_UPCA	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	EAN8_as_EAN13	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	UPCE_as_EAN13	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	ReturnCheckDigit	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	VerifyCheckDigit	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	UPCA_as_EAN13	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	I2of5_VerifyCheckDigit	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	Code39_VerifyCheckDigit	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	I2of5_ReturnCheckDigit	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	Code39_ReturnCheck Digit	Enabled/ Disabled	Disabled	N/A	Disabled	Disabled	Disabled	N/A	Disabled	N/A
	UPCE_ReturnCheckDigit	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	UPCA_ReturnCheckDigit	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	EAN8_ReturnCheckDigit	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	EAN13_ReturnCheckDigit	Enabled/ Disabled	Enabled	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
Barcode Options (30/300/ 350C)	Codabar	Tx StartStop (Enabled/ Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		Check Digit (DoNotVerify/VerfyDO NotTX/VerifyDoTx)	N/A	DoNotVerify	N/A	N/A	N/A	DoNotVerify	N/A	DoNotVerify
		Concatenate(Disabled/ Enabled/Required)	N/A	N/A	N/A	N/A	N/A	Enabled	N/A	Enabled
	Code39	Tx StartStop (Enabled/ Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		Check Digit(DoNotVerify/VerfyDONotTX/ VerifyDoTx)	N/A	DoNotVerify	N/A	N/A	N/A	DoNotVerify	N/A	DoNotVerify
		Append (Enabled/ Disabled)	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Disabled
		Full ASCII(Enabled/Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
	I2of5	Check Digit (DoNotVerify/VerfyDO NotTX/VerifyDoTx)	N/A	DoNotVerify	N/A	N/A	N/A	DoNotVerify	N/A	DoNotVerify

	Code11	Check Digit (2 digits/1 digit)	N/A	2 digits	N/A	N/A	N/A	2 digits	N/A	2 digits
	Code128	Concatenate(Disabled/ Enabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
	Telepen	Output(Original/AIM)	N/A	Always AIM	N/A	N/A	N/A	AIM	N/A	AIM
	UPCA	VerifyChkDgt(Enabled/ Disabled)	N/A	Always Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		NumberSys (Enabled/ Disabled)	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		2DgtAddenda(Enabled /Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		5DgtAddenda(Enabled /Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	N/A	N/A	N/A	N/A	Enabled	N/A	Enabled
		Coupon Code (Enabled/ Disabled)	N/A	N/A	N/A	N/A	N/A	Enabled	N/A	Enabled
	UPCE	Expand (Enabled/ Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	N/A	N/A	N/A	N/A	Enabled	N/A	Enabled
		Check Digit (Enabled/ Disabled)	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		NumberSys (Enabled/ Disabled)	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		2DgtAddenda(Enabled /Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		5DgtAddenda(Enabled /Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
	EAN-13 EAN-8	VerifyChkDgt(Enabled/ Disabled)	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		2DgtAddenda(Enabled /Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		5DgtAddenda(Enabled /Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	N/A	N/A	N/A	N/A	Enabled	N/A	Enabled
		ISBN Trans. (Enabled/ Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		VerifyChkDgt(Enabled/ Disabled)	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
		2DgtAddenda(Enabled /Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		5DgtAddenda(Enabled /Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	Enabled	N/A	N/A	N/A	Enabled	N/A	Enabled
	MSI	Tx CheckChar (Enabled/ Disabled)	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
	PosiCode	A and B/A&B LimitedA/A&B LimitedB	N/A	N/A	N/A	N/A	N/A	A&B LimitedB	N/A	A&B LimitedB
	GS1	UPCEAN Ver.(Enabled/Disabled)	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Disabled
		GS1 Emulation	N/A	N/A	N/A	N/A	N/A	No Emulate	N/A	No Emulate

		(No Emulate/ GS1 128 Emul/GS1 Emulate)								
	PostNet	Tx CheckChar(Enabled/Di sabled)	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Disabled
	PlanetCode	Tx CheckChar(Enabled/Di sabled)	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Disabled
Scan Options	Scan Angle	Narrow/ Wide	Wide (Laser only)	N/A	Wide	Wide	Wide	N/A	Wide (Opticon Laser only)	N/A
	Filter	Normal/ High	Normal (Laser only)	N/A	Normal	Normal	Normal	N/A	Normal (Opticon Laser only)	N/A
	Time Out	.5 seconds to 10 seconds	2 second(s)	2 second(s)	2 second(s)	2 second(s)	2 second(s)	2 second(s)	2 second(s)	2 second(s)
	Min. Barcode Length	2 to 36 characters	4 chars	N/A	4 chars	4 chars	4 chars	N/A	4 chars	N/A
	Min. Barcode Length	2 to 48 characters	N/A	N/A	N/A	N/A	N/A	4 chars	N/A	4 chars
	Security Level	1 to 4 level	2 level	N/A	2 level	2 level	2 level	N/A	2 level	N/A
	Image Capture	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Disabled
	Auto Trigger	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Reread Delay	Continuous, Short, Medium, Long, Extra Long	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
	Finger Trigger	Enabled/Di sabled	N/A	N/A	Enabled	Enabled	Enabled	N/A	Enabled	N/A
	Partial Display	Start Position	1	1	1	1	1	1	1	1
		No. of Char(s)	0 chars	0 chars	0 chars	0 chars	0 chars	0 chars	0 chars	0 chars
		Action	Select	Select	Select	Select	Select	Select	Select	Select
Data Process	Wedge / Store	Wedge Onl y								
		Wedge & Store Always	Default	Default	Default	Default	Default	Default	Default	Default
		Store Only								
		Save if Sent								
		Save if Not Sent								
	Data Format	Barcode only	Default	Default	Default	Default	Default	Default	Default	Default
		Packet Data								
	Data Editor/ Prefix									
	Data Editor/ Suffix									
	Data Editor/ AIM ID	None/In Prefix/In Suffix	None	None	None	None	None	None	None	None
	Data Editor/ Partial Data	Start Position	1	1	1	1	1	1	1	1
		No. of Char(s)	0 chars	0 chars	0 chars	0 chars	0 chars	0 chars	0 chars	0 chars
		Action	Select	Select	Select	Select	Select	Select	Select	Select
	Handshake	Enable/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Terminator	None, CR, LF, CR+LF, Tab, Right Arrow, Left Arrow,Dow n Arrow, Up Arrow	CR+LF	CR+LF	CR+LF	CR+LF	CR+LF	CR+LF	CR+LF	CR+LF
	Chk Duplicate	Enabled/Di sabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Enter Key	Enabled/Di sabled	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	Extend Key	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	Age Verify	Verification Enabled/ Disabled	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
		Age Default	N/A	21	N/A	N/A	N/A	21	N/A	21
BT Config	Connect Device (Non Mfi mode)	SPP	Default	Default	N/A	Default	Default	Default	Default	Default
		HID iOS			N/A					
		SPP2.0			N/A					
		HID normal			N/A					
	Connect Device (Mfi mode)	SPP			N/A					
		MFi	Default	Default	N/A	Default	Default	Default	Default	Default
	Auto Connect	Enabled /Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled

	Auto Reconnect	Enabled/ Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Power On	Enabled/ Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Power On/Power On Time	disabled, 1sec to 10second(s)	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Power Off	Enabled/ Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Power Off/Beep Warning	Enabled/ Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Power Off/Power Off Time	1 to 30 minutes	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
	PowerOff Msg	Enabled/Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
	MAC Address	12 Characters *Bluetooth* MAC Address			N/A					
	BT FW Version	v1..2.xrt Bluetooth Firmware Version			N/A					
	Wakeup Nulls	Enabled/Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
	Connect Alert	Enabled/Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
	BT Toggle	Enabled/Disabled	Enabled	Enabled	N/A	Enabled	Enabled	Enabled	Enabled	Enabled
	DisconnectBtn	Enabled/Disabled	Enabled	Enabled	N/A	Enabled	Enabled	Enabled	Enabled	Enabled
	HID AutoLock	disabled,1,2,3,4,5,10,15 minutes	1 minutes	1 minutes	N/A	1 minutes	1 minutes	1 minutes	1 minutes	1 minutes
	HID Keyboard	US,German, French ,Italian,Spanish	US	US	N/A	US	US	US	US	US
	HID Delay/Initial	Disabled, 1,2,3,5,10 secs	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
	HID Delay/Inter char	Disabled,10, 20, 30, 50, 100msec	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
	HID Ctrl Char	Disabled, Alt+Numpad, ^+Character, Replace to |	Disabled	Disabled	N/A	Disabled	Disabled	Disabled	Disabled	Disabled
BT Service	Power	Enabled/ Disabled	Enabled	Enabled	N/A	Enabled	Enabled	Enabled	Enabled	Enabled
	Pairing	Pairing neighboring Bluetooth devices			N/A					
	Discovering	Discovering neighboring *Bluetooth* devices			N/A					
	Connecting to	View Connect to *Bluetooth* device			N/A					
	HID Sync				N/A					
	Auto Pairing	Enabled/Disabled	Enabled	Enabled	N/A	Enabled	Enabled	Enabled	Enabled	Enabled
USB Config (M model)	USB Mode	Disabled/ USB Disk/ USB HID	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
NFC Config (N model)	NFC Power	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Enabled	Enabled
	Data Format	Barcode only/Packet Data	N/A	N/A	N/A	N/A	N/A	N/A	Packet Data	Packet Data
	UID Only	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
~~***GPS Config (G model)***~~	~~GPS Power~~	~~Disabled~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~Disabled~~	~~N/A~~	~~Disabled~~	~~Disabled~~
	~~Power Mode~~	~~Normal/Power Save~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~Normal~~	~~N/A~~	~~Normal~~	~~Normal~~
	~~Bypass Data~~	~~Enabled/ Disabled~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~Disabled~~	~~N/A~~	~~Disabled~~	~~Disabled~~
	~~Acquire Test~~		~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~		~~N/A~~		
	~~Reset GPS~~		~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~		~~N/A~~		
System Config	Memory Size(3.0+ only)	0.5/6.5, 1/6, 2/5, 3/4, 4/3, 5/2, 6/1, 70	N/A	N/A	0.5M/6.5M	0.5M/6.5M	0.5M/6.5M	0.5M/6.5M	0.5M/6.5M	0.5M/6.5M
	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	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Sleep Timeout	Disabled, 1sec to 10minute(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)
	Date / Time	YYYY:MM:DD & HH:MM:SS								
	Battery	% of Battery Charge Available								
	Version	Firmware Version & Serial No.								
	Button Lock	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Beep Alert /Beep Sound	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Alert /Power On Beep	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Alert /Beep On Connect	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Alert /Beep On Scan	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Volume	Low/High	Low	Low	Low	Low	Low	Low	Low	Low
	Mfi (i-chip installed)	Enabled/Disabled	Enabled	Enabled	N/A	Enabled	Enabled	Enabled	Enabled	Enabled
	Vibrator	Enabled/ Disabled/ Config	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	Disabled
	Auto Exit	Enabled/ Disabled	N/A	N/A	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Port Status	Enabled/ Disabled	N/A	N/A	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Display Format	Time & Battery / Type & Time / Type & Battery / Memory Status / Barcode Only/ Graphic	N/A	N/A	Time & Battery	Time & Battery	Time & Battery	Time & Battery	Time & Battery	Time & Battery
	Menu Barcode	Enabled/ Disabled	N/A	Disabled	N/A	N/A	N/A	Disabled	N/A	Disabled
	Scrolling	Enabled/ Disabled	N/A	N/A	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Brightness	1 to 15 level(8 level)	N/A	N/A	8 level	8 level	8 level	8 level	8 level	8 level
	Keypad	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Enabled	Enabled
	Language (FW Version 3.x only)	None/ US(English)/ French/ Italian/ Spanish/ Korean/ Japanese	N/A	N/A	None	None	None	None	None	None
	Factory Default	Restores Default Settings								
MSR Config	Data Format	MSR Data Only	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Packet Data	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Use Track1	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Use Track2	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	UseTrack3	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Beep on error reading	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Encrypt MSR Data	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	AES Key Length	128bit/192bit/256bit	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Card Type	ISO/OTHER 1/AAMVA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Track Separator	None/Space/Comma/Semicolon/CR/LF/CR&LF/Tab	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Attach Start/End Sentinel		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Partial Data Start Position		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Partial Data Length		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Partial Data Action	Erase/ Select	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WIFI Config	Power		N/A	N/A	N/A	N/A	N/A	N/A	Enable	Enable
	AP	SSID	N/A	N/A	N/A	N/A	N/A	N/A	Empty	Empty
		Passcode	N/A	N/A	N/A	N/A	N/A	N/A	Empty	Empty

	Server	IP Address	N/A	N/A	N/A	N/A	N/A	N/A	0.0.0.0	0.0.0.0
	Server	URL Address	N/A	N/A	N/A	N/A	N/A	N/A	Empty	Empty
	Server	Port Number	N/A	N/A	N/A	N/A	N/A	N/A	80	80
	Server > Protocol	UDP/TCP/ HTTP GET/ HTTP Post	N/A	N/A	N/A	N/A	N/A	N/A	HTTP Post	HTTP Post
	Server > SSL	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	Server	Server Page	N/A	N/A	N/A	N/A	N/A	N/A	Empty	Empty
	Resp. Timeout	1/2/3/4/5/6/ 7/8/9/10 sec	N/A	N/A	N/A	N/A	N/A	N/A	10 sec	10 sec
	Connect	Connecting to AP	N/A	N/A	N/A	N/A	N/A	N/A		
	Auto Connect	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	Send Stored	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Enabled	Enabled
	Version	APP MAC	N/A	N/A	N/A	N/A	N/A	N/A		

Top Menu	Sub Menu	Options	KDC410/ 411	KDC415	KDC420/ 421	KDC425	KDC430	KDC450	KDC500L	KDC500C
KDC Mode	Normal		Default	Default	Default	Default	Default	Default	N/A	N/A
	Application		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
View Data	View/Delete		N/A	N/A	N/A	N/A	N/A	N/A	View/Delete Data	View/Delete Data
Set Barcodes (410/411/415/500L)	EAN13	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	EAN8	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	UPCA	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	UPCE	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	CODE39	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	ITF14	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	CODE128	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	I2of5	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	CODABAR	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	GS1-128	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	CODE93	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	CODE35	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	BooklandEAN	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	EAN13withAddon	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	EAN8withAddon	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	UPCAwithAddon	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	UPCEwithAddon	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
Set Barcodes (420/421/425/450/500C)	1D Symbology	Codabar	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Code 11	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Code 32	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Code 39	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Code 93	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Code 128	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		EAN-8	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		EAN-13	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		GS1 Composit	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		I2of5	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Matrix 2of5	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		MSI	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Plessey	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		PosiCode	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		GS1 Omni	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		GS1 Limited	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		GS1 Expanded	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		S2of5 Ind	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		S2of5 IATA	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		TLC39	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Telepen	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Trioptic	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		UPCA	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		UPCE0	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		UPCE1	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
	2D Symbology	AztecCode	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		AztecRunes	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Codablock F	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Code16K	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Code49	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		DataMatrix	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		MaxiCode	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		MicroPDF	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		PDF417	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled

		QRCode	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		HanXin Code	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
	Postal Codes	Postnet	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		PlanetCode	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		UK Post	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Mayada Post	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Kix Post	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Australia Post	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Japan Post	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		China Post	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Korea Post	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
	OCR	OCR Off	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		OCR A	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		OCR B	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		OCR USC	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		OCR MICR	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		OCR SEMI	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
Barcode Options (410/411/415/500L)	CodaBar_NoStartStopChars	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	UPCE_as_UPCA	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	EAN8_as_EAN13	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	UPCE_as_EAN13	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	ReturnCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	VerifyCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	UPCA_as_EAN13	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	I2of5_VerifyCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	Code39_VerifyCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	I2of5_ReturnCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	Code39_ReturnCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	N/A	N/A	Disabled	N/A
	UPCE_ReturnCheckDigit	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	UPCA_ReturnCheckDigit	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	EAN8_ReturnCheckDigit	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
	EAN13_ReturnCheckDigit	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	N/A	N/A	Enabled	N/A
Barcode Options (KDC420/425/450/500C)	Codabar	Tx StartStop (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		Check Digit (DoNotVerify/VerfyDONotTX/VerifyDoTx)	N/A	N/A	DoNotVerify	DoNotVerify	N/A	DoNotVerify	N/A	DoNotVerify
		Concatenate(Disabled/ Enabled/Required)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
	Code39	Tx StartStop (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		Check Digit(DoNotVerify/VerfyDONotTX/VerifyDoTx)	N/A	N/A	DoNotVerify	DoNotVerify	N/A	DoNotVerify	N/A	DoNotVerify
		Append (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		Full ASCII(Enabled/Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
	I2of5	Check Digit (DoNotVerify/VerfyDONotTX/VerifyDoTx)	N/A	N/A	DoNotVerify	DoNotVerify	N/A	DoNotVerify	N/A	DoNotVerify
	Code11	Check Digit (2 digits/1 digit)	N/A	N/A	2 digits	2 digits	N/A	2 digits	N/A	2 digits
	Code128	Concatenate(Disabled/ Enabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
	Telepen	Output(Original/AIM)	N/A	N/A	AIM	AIM	N/A	AIM	N/A	AIM
	UPCA	VerifyChkDgt(Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled

		NumberSys (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		2DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		5DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Coupon Code (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
	UPCE	Expand (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		Check Digit (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		NumberSys (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		2DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		5DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
	EAN-13	VerifyChkD gt(Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		2DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		5DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		ISBN Trans. (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
	EAN-8	VerifyChkD gt(Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
		2DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		5DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	Enabled	N/A	Enabled
	MSI	Tx CheckChar (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
	PosiCode	A and B/A&B LimitedA/A &B LimitedB	N/A	N/A	A&B LimitedB	A&B LimitedB	N/A	A&B LimitedB	N/A	A&B LimitedB
	GS1	UPCEAN Ver.(Enable d/Disabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
		GS1 Emulation (No Emulate/ GS1 128 Emul/GS1 Emulate)	N/A	N/A	No Emulate	No Emulate	N/A	No Emulate	N/A	No Emulate
	PostNet	Tx CheckChar(Enabled/Di sabled)	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled
	PlanetCode	Tx CheckChar(Enabled/Di	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	Disabled

		sabled)								
Scan Options	Power	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	Scan Angle	Narrow/ Wide	Wide	Wide	N/A	N/A	N/A	N/A	N/A	N/A
	Filter	Normal/ High	Normal	Normal	N/A	N/A	N/A	N/A	N/A	N/A
	Time Out	.5 seconds to 10 seconds	2 second(s)	2 second(s)	2 second(s)	2 second(s)	N/A	2 second(s)	2 second(s)	2 second(s)
	Min. Barcode Length	2 to 36 characters	4 chars	4 chars	N/A	N/A	N/A	N/A	4 chars	N/A
	Min. Barcode Length	2 to 48 characters	N/A	N/A	4 chars	4 chars	N/A	4 chars	N/A	4 chars
	Security Level	1 to 4 level	2 level	2 level	N/A	N/A	N/A	N/A	N/A	N/A
	Image Capture	Enabled/ Disabled	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	N/A
	Auto Trigger	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled
	Reread Delay	Continuous, Short, Medium, Long, Extra Long	Medium	Medium	Medium	Medium	N/A	Medium	Medium	Medium
	Finger Trigger	Enabled/Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Partial Display	Start Position	N/A	N/A	N/A	N/A	N/A	N/A	1	1
		No. of Char(s)	N/A	N/A	N/A	N/A	N/A	N/A	0 chars	0 chars
		Action	N/A	N/A	N/A	N/A	N/A	N/A	Select	Select
Data Process	Wedge / Store	Wedge Only								
		Wedge & Store Always	Default	Default	Default	Default	Default	Default	Default	Default
		Store Only								
		Save if Sent								
		Save if Not Sent								
	Data Format	Barcode only	Default	Default	Default	Default	N/A	Default		
		Packet Data							Default	Default
	Data Editor/Prefix									
	Data Editor/Suffix									
	Data Editor/AIM ID	None/In Prefix/In Suffix	None	None	None	None	N/A	None	None	None
	Data Editor/Partial Data	Start Position	1	1	1	1	N/A	1	1	1
		No. of Char(s)	0 chars	0 chars	0 chars	0 chars	N/A	0 chars	0 chars	0 chars
		Action	Select	Select	Select	Select	N/A	Select	Select	Select
	Handshake	Enable/ Disabled	Disabled	Disabled	Disabled	Disabled	N/A	Disabled	N/A	N/A
	Terminator	None, CR, LF, CR+LF, Tab, Right Arrow, Left Arrow,Down Arrow, Up Arrow	CR+LF	CR+LF	CR+LF	CR+LF	CR+LF	CR+LF	CR+LF	CR+LF
	Chk Duplicate	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled
	Enter Key	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	Extend Key	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	Age Verify	Verification Enabled/ Disabled	N/A	N/A	Disabled	Disabled	N/A	Disabled	N/A	N/A
		Age Default	N/A	N/A	21	21	N/A	21	N/A	N/A
BT Config	ConnectDevice (Non Mfi mode)	SPP	Default	Default	Default	Default	Default	Default	N/A	N/A
		HID iOS							N/A	N/A
		SPP2.0							N/A	N/A
		HID normal							N/A	N/A
	ConnectDevice (Mfi mode)	SPP								
		MFi	Default	Default	Default	Default	Default	Default	Default	Default
	Auto Connect	Enabled /Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	N/A	N/A
	Auto Reconnect	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Power On	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Power On/Power On Time	disabled, 1sec to 10second(s)	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	N/A	N/A
	Auto Power Off	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	N/A	N/A
	Auto Power Off/Beep Warning	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	N/A	N/A

	Auto Power Off/Power Off Time	1 to 30 minutes	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	N/A	N/A
	PowerOff Msg	Enabled/Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	N/A	N/A
	MAC Address	12 Characters *Bluetooth* MAC Address								
	BT FW Version	v1.2.xrt Bluetooth Firmware Version								
	Wakeup Nulls	Enabled/Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	N/A	N/A
	Connect Alert	Enabled/Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	BT Toggle	Enabled/Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	N/A	N/A
	DisconnectBtn	Enabled/Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	N/A	N/A
	HID AutoLock	disabled,1,2,3,4,5,10,15 minutes	1 minutes	1 minutes	1 minutes	1 minutes	1 minutes	1 minutes	N/A	N/A
	HID Keyboard	US,German, French ,Italian,Spanish	US	US	US	US	US	US	N/A	N/A
	HID Delay/Initial	Disabled, 1,2,3,5,10 secs	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	N/A	N/A
	HID Delay/Inter char	Disabled,10, 20, 30, 50, 100msec	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	N/A	N/A
	HID Ctrl Char	Disabled, Alt+Numpad, ^+Character, Replace to |	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	N/A	N/A
BT Service	Power	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Pairing	Pairing neighboring Bluetooth devices								
	Discovering	Discovering neighboring *Bluetooth* devices							N/A	N/A
	Connecting to	View Connect to *Bluetooth* device								
	Disconnect		N/A	N/A	N/A	N/A	N/A	N/A		
	HID Sync								N/A	N/A
	Auto Pairing	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
USB Config (M model)	USB Mode	Disabled/ USB Disk/ USB HID	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NFC Config (N model)	NFC Power	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	N/A	N/A	Disabled	Disabled
	Data Format	Barcode only/Packet Data	Packet Data	Packet Data	Packet Data	Packet Data	N/A	N/A	N/A	N/A
	UID Only	Enabled/ Disabled	N/A	N/A	N/A	Disabled	N/A	N/A	N/A	N/A
~~***GPS Config (G model)***~~	~~GPS Power~~	~~Disabled~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
	~~Power Mode~~	~~Normal/Power Save~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
	~~Bypass Data~~	~~Enabled/ Disabled~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
	~~Acquire Test~~		~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
	~~Reset GPS~~		~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
System Config	Memory Size(KDC500)	0.5/2.5, 1/2, 2/1, 3/0	N/A	N/A	N/A	N/A	N/A	N/A	0.5/2.5	0.5/2.5
	Memory Status	No. of Stored Barcodes	N/A	N/A	N/A	N/A	N/A	N/A		
		Free Memory Available	N/A	N/A	N/A	N/A	N/A	N/A		
	Reset Memory	Memory (Empties Data)	N/A	N/A	N/A	N/A	N/A	N/A		
		Application Memory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		BT Registry (KDC100 Not use)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Auto Erase	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Sleep Timeout	Disabled, 1sec to 10minute(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)
	Date / Time	YYYY:MM:DD & HH:MM:SS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

	Battery	% of Battery Charge Available	N/A	N/A	N/A	N/A	N/A	N/A		
	Version	Firmware Version & Serial No.	N/A	N/A	N/A	N/A	N/A	N/A		
	Button Lock	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Beep Alert /Beep Sound	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Alert /Power On Beep	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Alert /Beep On Connect	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Alert /Beep On Scan	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Alert /BeepOnMSCard	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Enabled	Enabled
	Beep Alert /BeepOnICCard	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Enabled	Enabled
	Beep Alert /BeepOnNFCCard	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Enabled	Enabled
	Beep Volume	Low/High	Low	Low	Low	Low	Low	Low	Low	Low
	Mfi (i-chip installed)	Enabled/Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	N/A	N/A
	Auto Exit	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Enabled	Enabled
	Port Status	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Enabled	Enabled
	Display Format	Time & Battery / Type & Time / Type & Battery / Memory Status /Barcode Only	N/A	N/A	N/A	N/A	N/A	N/A	Time & Battery	Time & Battery
	Menu Barcode	Enabled/ Disabled	N/A	N/A	Disabled	Disabled	N/A	Disabled	Disabled	Disabled
	Scrolling	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Brightness	1 to 15 level(8 level)	N/A	N/A	N/A	N/A	N/A	N/A	8	8
	Keypad	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	Language	US(English)/ Korean/ Japanese	N/A	N/A	N/A	N/A	N/A	N/A	US(English)	US(English)
	Factory Default	Restores Default Settings								
MSR Config	Power	Enabled/ Disabled /	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	Data Format	MSR Data Only	N/A	Default	N/A	Default	Default	N/A	N/A	N/A
		Packet Data	N/A		N/A			N/A	N/A	N/A
	Use Track1	Enabled/ Disabled	N/A	Enabled	N/A	Enabled	Enabled	N/A	Enabled	Enabled
	Use Track2	Enabled/ Disabled	N/A	Enabled	N/A	Enabled	Enabled	N/A	Enabled	Enabled
	Use Track3	Enabled/ Disabled	N/A	Enabled	N/A	Enabled	Enabled	N/A	Enabled	Enabled
	Null Check Track1	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	Null Check Track2	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Enabled	Enabled
	Null Check Track3	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	Beep on error reading	Enabled/ Disabled	N/A	Disabled	N/A	Disabled	Disabled	N/A	Enabled	Enabled
	Encrypt MSR Data	Enabled/ Disabled	N/A	Disabled	N/A	Disabled	Disabled	N/A	N/A	N/A
	AES Key Length	128bit/192bit/256bit	N/A	128bit	N/A	128bit	N/A	N/A	N/A	N/A
	Card Type	ISO/OTHER 1/AAMVA	N/A	ISO	N/A	ISO	ISO	N/A	ISO	ISO
	Track Separator	None/Space/Comma/Semicolon/CR/LF/CR&LF/Tab	N/A	None	N/A	None	None	N/A	N/A	N/A
	Attach Start/End Sentinel		N/A	Enabled	N/A	Enabled	Enabled	N/A	Enabled	Enabled
	Partial Data Start Position		N/A	1	N/A	1	1	N/A	N/A	N/A
	Partial Data Length		N/A	0	N/A	0	0	N/A	N/A	N/A
	Partial Data Action	Erase/ Select	N/A	Select	N/A	Select	Select	N/A	N/A	N/A
ICCR Config	Power	Enabled/ Disabled /	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	Disabled
	IFD Number		N/A	N/A	N/A	N/A	N/A	N/A		
	Config Number		N/A	N/A	N/A	N/A	N/A	N/A		
Key Mgmt	Stored Keys		N/A	N/A	N/A	N/A	N/A	N/A		
	Inject Keys		N/A	N/A	N/A	N/A	N/A	N/A		
Sensitive/	Date		N/A	N/A	N/A	N/A	N/A	N/A		

Set Date/Time	Time		N/A	N/A	N/A	N/A	N/A	N/A		
Sensitive/ Set Self-Test			N/A	N/A	N/A	N/A	N/A	N/A		
Sensitive/ Set Passwords	1st Password		N/A	N/A	N/A	N/A	N/A	N/A		
	2nd Password		N/A	N/A	N/A	N/A	N/A	N/A		
Sensitive/ Key Mgmt	Stored Keys		N/A	N/A	N/A	N/A	N/A	N/A		
	Inject Keys		N/A	N/A	N/A	N/A	N/A	N/A		
	Clear Keys		N/A	N/A	N/A	N/A	N/A	N/A		
Sensitive/ Card Encrypt		Plaintext / TDES / AES	N/A	N/A	N/A	N/A	N/A	N/A	AES	AES
UHF Configuration (UHF model)	UHF Power	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	N/A
	Power On Time	500ms/1sec /1.5sec/2sec/3sec/3.5sec/4sec/4.5sec/5sec	N/A	N/A	N/A	N/A	N/A	1 second	N/A	N/A
	Power Off Time	500ms/1sec /1.5sec/2sec/3sec/3.5sec/4sec/4.5sec/5sec	N/A	N/A	N/A	N/A	N/A	1.5 second	N/A	N/A
	Power Level	0/1/2/3/4/5/6/7	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A
	Data Format	Hexa Decimal / Binary	N/A	N/A	N/A	N/A	N/A	Hexa Decimal	N/A	N/A

Top Menu	Sub Menu	Options	KDC270L	KDC270D	KDC270C	KDC280C	KDC470L/ 475L/475S	KDC470D/ 475D	KDC470C/ 475C/475H
KDC Mode	Normal		Default	Default	Default	Default	Default	Default	Default
	Application		Custom Application	Custom Application	Custom Application	Custom Application	N/A	N/A	N/A
View Data	View/Delete		View/ Delete Data	View/ Delete Data	View/ Delete Data	View/ Delete Data	N/A	N/A	N/A
Set Barcodes (270L/270D/ 470L/470D)	EAN13	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	EAN8	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	UPCA	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	UPCE	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	CODE39	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	ITF14	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	CODE128	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	I2of5	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	CODABAR	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	GS1-128	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	CODE93	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	CODE35	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	BooklandEAN	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	EAN13withAddon	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	EAN8withAddon	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	UPCAwithAddon	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	UPCEwithAddon	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
Set Barcodes (270C/280C/ 470C)	1D Symbology	Codabar	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Code 11	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Code 32	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Code 39	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Code 93	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Code 128	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		EAN-8	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		EAN-13	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		GS1 Composit	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		I2of5	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Matrix 2of5	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		MSI	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Plessey	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		PosiCode	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		GS1 Omni	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		GS1 Limited	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		GS1 Expanded	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		S2of5 Ind	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		S2of5 IATA	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		TLC39	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Telepen	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Trioptic	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		UPCA	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		UPCE0	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		UPCE1	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
	2D Symbology	AztecCode	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		AztecRunes	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Codablock F	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Code16K	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Code49	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		DataMatrix	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		MaxiCode	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		MicroPDF	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		PDF417	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled

		QRCode	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		HanXin Code	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
	Postal Codes	Postnet	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		PlanetCode	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		UK Post	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Mayada Post	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Kix Post	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Australia Post	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Japan Post	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		China Post	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Korea Post	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
	OCR	OCR Off	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		OCR A	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		OCR B	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		OCR USC	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		OCR MICR	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		OCR SEMI	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
Barcode Options (270L/270D/ 470L/470D)	CodaBar_NoStartStopChars	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	UPCE_as_UPCA	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	EAN8_as_EAN13	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	UPCE_as_EAN13	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	ReturnCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	VerifyCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	UPCA_as_EAN13	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	I2of5_VerifyCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	Code39_VerifyCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	I2of5_ReturnCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	Code39_ReturnCheckDigit	Enabled/ Disabled	Disabled	Disabled	N/A	N/A	Disabled	Disabled	N/A
	UPCE_ReturnCheckDigit	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	UPCA_ReturnCheckDigit	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	EAN8_ReturnCheckDigit	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
	EAN13_ReturnCheckDigit	Enabled/ Disabled	Enabled	Enabled	N/A	N/A	Enabled	Enabled	N/A
Barcode Options (270C/280C/ 470C)	Codabar	Tx StartStop (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Check Digit (DoNotVerify/VerfyDO NotTX/VerifyDoTx)	N/A	N/A	DoNotVerify	DoNotVerify	N/A	N/A	DoNotVerify
		Concatenate(Disabled/ Enabled/Required)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
	Code39	Tx StartStop (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Check Digit(DoNotVerify/VerfyDONotTX/ VerifyDoTx)	N/A	N/A	DoNotVerify	DoNotVerify	N/A	N/A	DoNotVerify
		Append (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Full ASCII(Enabled/Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
	I2of5	Check Digit (DoNotVerify/VerfyDO NotTX/VerifyDoTx)	N/A	N/A	DoNotVerify	DoNotVerify	N/A	N/A	DoNotVerify
	Code11	Check Digit (2 digits/1 digit)	N/A	N/A	2 digits	2 digits	N/A	N/A	2 digits
	Code128	Concatenate(Disabled/ Enabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
	Telepen	Output(Original/AIM)	N/A	N/A	AIM	AIM	N/A	N/A	AIM
	UPCA	VerifyChkDgt(Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled

		NumberSys (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		2DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		5DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Coupon Code (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
	UPCE	Expand (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		Check Digit (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		NumberSys (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		2DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		5DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
	EAN-13	VerifyChkD gt(Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		2DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		5DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		ISBN Trans. (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
	EAN-8	VerifyChkD gt(Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
		2DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		5DgtAdden da(Enabled /Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Req. Addenda (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Sep. Addenda (Enabled/ Disabled)	N/A	N/A	Enabled	Enabled	N/A	N/A	Enabled
	MSI	Tx CheckChar (Enabled/ Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
	PosiCode	A and B/A&B LimitedA/A &B LimitedB	N/A	N/A	A&B LimitedB	A&B LimitedB	N/A	N/A	A&B LimitedB
	GS1	UPCEAN Ver.(Enable d/Disabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		GS1 Emulation (No Emulate/ GS1 128 Emul/GS1 Emulate)	N/A	N/A	No Emulate	No Emulate	N/A	N/A	No Emulate
	PostNet	Tx CheckChar(Enabled/Di sabled)	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
	PlanetCode	Tx CheckChar(Enabled/Di	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled

		sabled)							
Scan Options	Power	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Scan Angle	Narrow/ Wide	Wide	N/A	N/A	N/A	Wide	N/A	N/A
	Filter	Normal/ High	Normal	N/A	N/A	N/A	Normal	N/A	N/A
	Time Out	.5 seconds to 10 seconds	2 second(s)	2 second(s)	2 second(s)	2 second(s)	2 second(s)	2 second(s)	2 second(s)
	Min. Barcode Length	2 to 36 characters	4 chars	4 chars	N/A	N/A	4 chars	4 chars	N/A
	Min. Barcode Length	2 to 48 characters	N/A	N/A	4 chars	4 chars	N/A	N/A	4 chars
	Security Level	1 to 4 level	2 level	N/A	N/A	N/A	2 level	N/A	N/A
	Image Capture	Enabled/ Disabled	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
	Auto Trigger	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Reread Delay	Continuous, Short, Medium, Long, Extra Long	Medium	Medium	Medium	Medium	Medium	Medium	Medium
	Finger Trigger	Enabled/Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Partial Display	Start Position	1	1	1	1	N/A	N/A	N/A
		No. of Char(s)	0 chars	0 chars	0 chars	0 chars	N/A	N/A	N/A
		Action	Select	Select	Select	Select	N/A	N/A	N/A
Data Process	Wedge / Store	Wedge Only							
		Wedge & Store Always	Default	Default	Default	Default	Default	Default	Default
		Store Only							
		Save if Sent							
		Save if Not Sent							
	Data Format	Barcode only	Default	Default	Default	Default	Default	Default	Default
		Packet Data							
	Data Editor/Prefix								
	Data Editor/Suffix								
	Data Editor/AIM ID	None/In Prefix/In Suffix	None	None	None	None	None	None	None
	Data Editor/Partial Data	Start Position	1	1	1	1	1	1	1
		No. of Char(s)	0 chars	0 chars	0 chars	0 chars	0 chars	0 chars	0 chars
		Action	Select	Select	Select	Select	Select	Select	Select
	Handshake	Enable/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Terminator	None, CR, LF, CR+LF, Tab, Right Arrow, Left Arrow,Down Arrow, Up Arrow	CR+LF	CR+LF	CR+LF	CR+LF	CR+LF	CR+LF	CR+LF
	Chk Duplicate	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Enter Key	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Extend Key	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Age Verify	Verification Enabled/ Disabled	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
		Age Default	N/A	N/A	21	21	N/A	N/A	21
BT Config	ConnectDevice (Non Mfi mode)	SPP	Default	Default	Default	Default	Default	Default	Default
		HID iOS				N/A			
		SPP2.0				N/A			
		HID normal				N/A			
		HID	N/A	N/A	N/A		N/A	N/A	N/A
	ConnectDevice (Mfi mode)	SPP				N/A			
		MFi	Default	Default	Default	N/A	Default	Default	Default
	Auto Connect	Enabled /Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Reconnect	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Power On	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Power On/Power On Time	disabled, 1sec to 10second(s)	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Power Off	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled

	Auto Power Off/Beep Warning	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Auto Power Off/Power Off Time	1 to 30 minutes	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	PowerOff Msg	Enabled/Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	MAC Address	12 Characters *Bluetooth* MAC Address							
	BT FW Version	v1.2.xrt Bluetooth Firmware Version							
	Wakeup Nulls	Enabled/Disabled	Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled
	Connect Alert	Enabled/Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	BT Toggle	Enabled/Disabled	Enabled	Enabled	Enabled	Enabled	Disabled	Disabled	Disabled
	DisconnectBtn	Enabled/Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	HID AutoLock	disabled,1,2,3,4,5,10,15 minutes	1 minutes	1 minutes	1 minutes	N/A	1 minutes	1 minutes	1 minutes
	HID Keyboard	US, German, French ,Italian, Spanish	US	US	US	US	US	US	US
	HID Delay/Initial	Disabled, 1,2,3,5,10 secs	Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled
	HID Delay/Inter char	Disabled,10, 20, 30, 50, 100msec	Disabled	Disabled	Disabled	N/A	Disabled	Disabled	Disabled
	HID Ctrl Char	Disabled, Alt+Numpad, ^+Character, Replace to |	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
BT Service	Power	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Pairing	Pairing neighboring Bluetooth devices							
	Discovering	Discovering neighboring *Bluetooth* devices				N/A			
	Connecting to	View Connect to *Bluetooth* device				N/A			
	Disconnect		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	HID Sync								
	Auto Pairing	Enabled/ Disabled	Enabled	Enabled	Enabled	N/A	Enabled	Enabled	Enabled
USB Config (M model)	USB Mode	Disabled/ USB Disk/ USB HID	Disabled	Disabled	Disabled	Disabled	N/A	N/A	N/A
NFC Config (N model)	NFC Power	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Data Format	Barcode only/Packet Data	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	UID Only	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
~~***GPS Config (G model)***~~	~~GPS Power~~	~~Disabled~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
	~~Power Mode~~	~~Normal/Power Save~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
	~~Bypass Data~~	~~Enabled/ Disabled~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
	~~Acquire Test~~		~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
	~~Reset GPS~~		~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
System Config	Memory Size	0.5/6.5, 1/6, 2/5,3 /4, 4/3, 5/2, 6/1, 7/0	0.5/6.5	0.5/6.5	0.5/6.5	0.5/6.5	0.5/6.5	0.5/6.5	0.5/6.5
	Memory Status	No. of Stored Barcodes							
		Free Memory Available							
	Reset Memory	Memory (Empties Data)							
		Application Memory					N/A	N/A	N/A
		BT Registry							
	Auto Erase	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled

	Sleep Timeout	Disabled, 1sec to 10minute(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)
	Date / Time	YYYY:MM:DD & HH:MM:SS							
	Battery	% of Battery Charge Available							
	Version	Firmware Version & Serial No.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Button Lock	Enabled/ Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	Beep Alert /Beep Sound	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Alert /Power On Beep	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Alert /Beep On Connect	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Alert /Beep On Scan	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
	Beep Alert /BeepOnMSCard	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Beep Alert /BeepOnICCard	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Beep Alert /BeepOnNFCCard	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Beep Volume	Low/High	Low	Low	Low	Low	Low	Low	Low
	Mfi (i-chip installed)	Enabled/Disabled	Enabled	Enabled	Enabled	N/A	Enabled	Enabled	Enabled
	Auto Exit	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	N/A	N/A	N/A
	Port Status	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	N/A	N/A	N/A
	Display Format	Time & Battery / Type & Time / Type & Battery / Memory Status /Barcode Only	Time & Battery	Time & Battery	Time & Battery	Time & Battery	N/A	N/A	N/A
	Menu Barcode	Enabled/ Disabled	N/A	N/A	Disabled	Disabled	N/A	N/A	Disabled
	Scrolling	Enabled/ Disabled	Enabled	Enabled	Enabled	Enabled	N/A	N/A	N/A
	Brightness	1 to 15 level(8 level)	8	8	8	8	N/A	N/A	N/A
	Keypad	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Language	None/ US(English)/ French/ Italian/ Spanish/ Korean/ Japanese	None	None	None	None	N/A	N/A	N/A
	Factory Default	Restores Default Settings							
MSR Config	Power	Enabled/ Disabled /	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Data Format	MSR Data Only	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Packet Data	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Use Track1	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Use Track2	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Use Track3	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Null Check Track1	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Null Check Track2	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Null Check Track3	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Beep on error reading	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Encrypt MSR Data	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	AES Key Length	128bit/192bit/256bit	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Card Type	ISO/OTHER 1/AAMVA	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Track Separator	None/Space/Comma/Semicolon/CR/LF/CR&LF/Tab	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Attach Start/End Sentinel		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Partial Data Start Position		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Partial Data Length		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Partial Data Action	Erase/ Select	N/A	N/A	N/A	N/A	N/A	N/A	N/A

ICCR Config	Power	Enabled/ Disabled /	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	IFD Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Config Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Key Mgmt	Stored Keys		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Inject Keys		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sensitive/ Set Date/Time	Date		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Time		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sensitive/ Set Self-Test			N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sensitive/ Set Passwords	1st Password		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2nd Password		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sensitive/ Key Mgmt	Stored Keys		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Inject Keys		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Clear Keys		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sensitive/ Card Encrypt		Plaintext / TDES / AES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
UHF Configuration (UHF model)	UHF Power	Enabled/ Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Power On Time	500ms/1sec /1.5sec/2sec/2.5sec/3sec/3.5sec/4sec/4.5sec/5sec	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Power Off Time	500ms/1sec /1.5sec/2sec/2.5sec/3sec/3.5sec/4sec/4.5sec/5sec	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Power Level	0/1/2/3/4/5/6/7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Data Format	Hexa Decimal / Binary	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3 - KDC Menu

3.5.1 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 may be manipulated directly through the KDC or through KTSync during the synchronization process.

Application

This mode enables the user to run the user application created by the Application Generation Tool, as described in Chapter 7 Application Generation.

3.5.2 View Data Menu

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

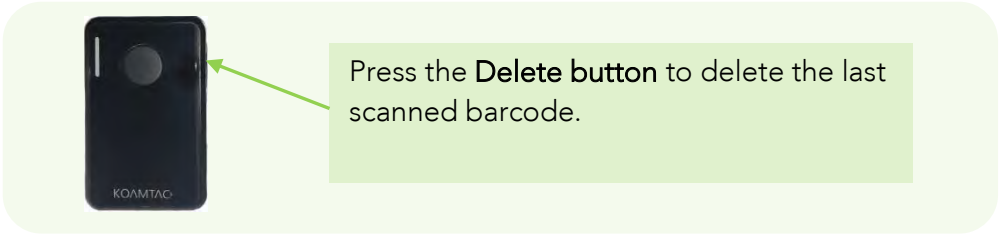


Figure 17 - Delete Function in KDC20/30

3.5.3 Set Barcodes Menu

This menu lists all the barcode symbologies supported by the KDC and enables the user 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 10. Appendix A – 10.1 Symbologies for a detailed listing of symbologies supported by the KDC.

3.5.4 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 10. Appendix A – 10.2 Code Options for a detailed explanation of each option.

3.5.5 Scan Options Menu

Power(KDC500 only)

Users may choose to turn the Scan Engine Power on or off. Select between Enable and Disable.

Scan Angle (Opticon laser model only)

This option enables the user 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 laser model only)

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

Timeout

In this menu, you may set the scan timeout. The timeout options are from 500ms up to 10 seconds. The default is 2 seconds.

Minimum Barcode Length

This option enables the user to set a barcode length from 2 characters to 36 characters (KDC20/100/200/250/270L/270D/350L/410/411/415/470L/470D/475L/475D/475S/500L) or 2 characters to 48 characters (KDC30/270C/280C/300/350C/420/421/425/450/470C/475C/475H/500C). It is strongly recommended that you maximize the minimum barcode length setting to prevent possible errors.

- The default minimum barcode length of KDC20/100/200/250/270L/270D/350L/410/411/415/470L/470D/475L/475D/475S/500L is 4 characters.
- The default minimum barcode length of KDC30/270C/280C/300/350C/420/421/450/470C/475C/475H/500C 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	-	-
	Mayada 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 Passport	-	-
	OCR MICR	-	-
	OCR SEMI	-	-

Table 4 - KDC30/270C/280C/300/350C/420/450/470C/475C/475H/500C Minimum Barcode Length

Image Capture (KDC30/270C/280C/300/350C/420/421/425/450/470C)

This option enables the user 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. KDC will disable the image capture option if the user presses the scan button for 5 seconds.

Security Level (Laser Model only)

This menu enables the user 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 enables the user to scan a barcode automatically. You may adjust reread delay from continuous to extra-long. Auto Trigger mode always enables the duplicate check option.(1D Model only)

Note

- *USB cable insertion requirement is removed from FW2.85/86.O and FW 3.02.*
- *You may exit the auto trigger mode by pressing the scan button for 3 seconds.*

Reread Delay

You may adjust the reread delay from continuous to extra-long.

Partial Display

This option enables the user to display partial data. You may define the start position and number of characters to be displayed.

3.5.6 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 may 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.
    - Barcode Index: KDC20i/30i/200i/250i/300i/270i/350i/400i/470i/500i add 4 bytes barcode index to maintain last synchronized barcode information.

Note

- 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

The KDC provides various data editing options.

- Prefix - Enables user to add a prefix to scanned data that may then be wedged to the host. The Prefix must be defined in the 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 may also define the prefix by scanning characters defined in Appendix C&D(E&F for KDC500). as shown below in the special barcodes.

➢ KDC20/100/200/250/270L/270D/350L/410/411/415/470L/470D/475L/475D/475S/500L

Prefix Enter Start

Prefix/Suffix Enter Finish

- KDC30/270C/280C/300/350C/420/421/425/450/470C/475C/475H/500C

Prefix Enter Start

Prefix/Suffix Enter Finish

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

- KDC20/100/200/250/270L/270D/350L/410/411/415/470L/470D/475L/475D/475S/500L

Delete Prefix

Display Prefix

KDC30/270C/280C/300/350C/420/421/425/450/470C/475C/475H/500C

Delete Prefix

Display Prefix

- Suffix - Enables the user to add a suffix to scanned data, which may then be wedged to the host. The suffix must be defined in the 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 may also define the suffix by scanning characters defined in Appendix C&D(E&F for KDC500). as shown below in the special barcodes.

20/100/200/250/270L/270D/350L/410/411/415/470L/470D/475L/475D/475S/500L

Suffix Enter Start

Prefix/Suffix Enter Finish

KDC30/270C/280C/300/350C/420/421/425/450/470C/475C/475H/500C

Suffix Enter Start

Prefix/Suffix Enter Finish

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

- KDC20/100/200/250/270L/270D/350L/410/411/415/470L/470D/475L/475D/475S/500L

Delete Suffix

Display Suffix

- KDC30/270C/280C/300/350C/420/421/425/450/470C/475C/475H/500C

Delete Suffix

Display Suffix

- AIM ID - Enables the user to add AIM ID to scanned data, which may then be wedged to the host. AIM ID can be added to the end of a Prefix or Suffix.
- Partial Data: Enables the user to store and/or transfer partial data. The user defines the start position and number of characters to be stored and/or transferred. The user also can select if taking or erasing the characters selected with Start position and No of char(s).
  - Start position
    - This option specifies the start position of data.
  - No of char(s)
    - This option specifies the length of data. The '0' means all data.

- Action
  - This option selects if erasing or taking the specified data.

Handshake(Deprecated)

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. 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 (KDC350/500 only)

This option determines the behavior of the '#' key on the 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 a 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.

Extend Key (KDC350/500 only)

This option enables users to enter more symbols by using keypad.

Age Verification (KDC30/270C/280C/300/350C/420/421/425/450/470C)

This option enables to verify age by reading driver license.

3.5.7 BT Config Menu – KDC20/30/200/250/270/300/350/400/470/500

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 may use the KDC Menus.

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 may choose the Bluetooth device type in this option.

- HID normal - KDC20(i)/30(i)/200(i)/250(i)/270(i)/300(i)/350(i)/400(i)/470(i)/475(i)
- HID iOS - KDC20(i)/30(i)/200(i)/250(i)/270(i)/300(i)/350(i)/400(i)/470(i)/475(i)
- SPP2.0 - KDC20(i)/30(i)/200(i)/250(i)/270(i)/300(i)/350(i)/400(i)/470(i)/475(i)
- SPP - KDC20(i)/30(i)/200(i)/250(i)/270(i)/300(i)/350(i)/400(i)/470(i)/475(i)/500(i)
- MFi - KDC20i/30i/200i/250i/270i/300i/350i/400i/470i/475i/500i

Auto Connect

Enabled or Disabled(KDC500 doesn't support)

Auto Reconnect

Enabled or Disabled

Auto Power On

Enabled or Disabled(KDC500 doesn't support)

PWR On Time

Disabled, 1 to 10 seconds(KDC500 doesn't support)

Auto Power Off

Enabled or Disabled
(KDC500 doesn't support)

Beep Warning

Enabled or Disabled(KDC500 doesn't support)

PWR Off Time

1 to 30 Minutes(KDC500 doesn't support)

PowerOff Msg

Enabled or Disabled(KDC500 doesn't support)

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(KDC500 doesn't support)

BT Toggle

Enable or Disable iOS device soft keyboard or Connect/Disconnect Bluetooth. (KDC500 doesn't support)

BT Disconnect Button

Enable or Disable Bluetooth disconnection by pressing down button for 3 seconds. (KDC500 doesn't support)

HID AutoLock

Disabled, 1, 2, 3, 4, 5, 10, 15 minutes(KDC500 doesn't support)

HID Keyboard

Users may select a keyboard language in HID mode. KDC supports five languages: English, German, French, Spanish, Danish, and Italian. (KDC500 doesn't support)

HID Initial Delay

In this menu, users may define the initial delay between 1 second to 10 seconds before data transmission in HID mode(KDC500 doesn't support)

HID Inter-character Delay

This option enables users to define the inter-character delay between 10msec to 100msec in HID mode(KDC500 doesn't support)

HID Control Character

This option helps users to map control characters to ALT+Numlock or ^+Character_or '|'. (KDC500 doesn't support)

3.5.8 BT Service Menu – KDC20/30/200/250/270/300/350/400/470/475/500

Power

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

Pairing Mode

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

- The KDC enters into pairing mode so that the host *Bluetooth* device may search for it.
- The KDC may 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. (KDC500 doesn't support)

Connecting To

This option enables the user to inquire to a registered *Bluetooth* device. (KDC500 doesn't support)

Disconnect

This option enables the user to disconnect KDC from the paired *Bluetooth* device. (KDC500 only)

HID Sync

KDC transmits all stored data to the host over HID profile if HID Sync option is enabled. (KDC500 doesn't support)

Auto Pairing

Enables or Disable the automatic Host Bluetooth type detection (SPP or MFi).(i Model only)

3.5.9 USB Mode Menu– 100M/200M/250M/270/280/300M/350

Disabled

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

USB Disk

This option enables the 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.

KDC100M/200M/250M/300M/350 may be used as USB Disk with 4MB or 8MB space and KDC270/280 may be used as USB Disk with 8MB space.

USB HID

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

Disk Format

This option is available in USB Disk mode and Enables 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 may not recognize the KDC if the KDC is in "USB DISK" mode or "USB HID" mode.

3.5.10 NFC Config Menu – KDC350N/411N/415N/421N/425N/470/475/500

NFC Power

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

Data Format

- Options: Data only/Packet data.(KDC500 doesn't support)

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.
- (KDC500 doesn't support)

3.5.11 UHF Config Menu – KDC450U

UHF Power

- Turning UHF Module Power On or Off
- Options: Enable/Disable

Power On Time

Specify the power on time duration of UHF module.

- Options: 500ms/1sec/1.5sec/2sec/2.5sec/3sec/3.5sec/4sec/4.5sec/5sec

Power Off Time

Specify the power off time duration of UHF module.

- Options: 500ms/1sec/1.5sec/2sec/2.5sec/3sec/3.5sec/4sec/4.5sec/5sec

Power Level

Specify the UHF module power level to determine the power strength of antenna. 7 means the most power strength.

- Options: 0/1/2/3/4/5/6/7

Data Format

Specify the data format of UHF data when it is transmitted from KDC to Host.

- Options: Binary / Hexa Decimal

Smart Hopping

It enables KDC450U to find an optimized UHF channel and can be initiated by reading a special barcode.

3.5.12 WIFI Config Menu (KDC350F)

KDC350F WiFi model can send and receive data to/from host by using the following protocols.

- UDP
- TCP
- HTTP_GET
- HTTP_POST

In UDP/TCP mode, KDC350F will support full duplex mode, meaning is the KDC350F will be ready to get data from host all the time.

Power

- Turns the Wi-Fi Module Power ON and OFF.

AP

- Set AP SSID.
- Set AP Passcode.

Server

- Configure the following server information
  - IP Address
  - URL Address
  - Port Number
  - Protocol (UDP/TCP/HTTP-GET/HTTP-POST)
  - SSL(Security)

- Server Page

Connect

- Connect to AP and server.

Auto Connect

- Enable/Disable KDC to reconnect to AP & Server when it detects disconnection from AP and Server.

Send Stored

- Enable/Disable KDC to send stored data when sending a new read data.

3.5.13 MSR Config Menu – KDC415/425/430/500

Power(KDC500 only)

- Turning MSR(Magnetic-Stripe Card Reader) on or off
- Options: Enabled/Disabled

Data Format(KDC415/425/430 only)

- Enables/Disables whether KDC415/425/430 sends with packet data or not.
- Options: Enabled/Disabled

Use Track

The user may select which track(1/2/3) data to read from the MS Card.

- Track 1 : Enabled/Disabled
- Track 2 : Enabled/Disabled
- Track 3 : Enabled/Disabled

Null Check(KDC500 only)

The user may select which track(1/2/3) data should not be null. When this option is enabled for a Track and the read data is null, MS Card read fail occurs.

- Track 1 : Enabled/Disabled
- Track 2 : Enabled/Disabled
- Track 3 : Enabled/Disabled

Beep On Error

When this option is enabled, KDC makes a beep sound when it fails to read a MS card.

Encrypt MSR Data(KDC415/425/430 only)

- If enabled, KDC415/425/430 sends MSR data with AES encrypted.
- Options: Enabled/Disabled

AES Key length(KDC415/425/430 only)

- Specify the AES key length.
- Options: 128bits/192bits/256bits

Card Type

The user may select which type of MS card to read.

- ISO
- OTHER 1
- AAMVA
- JIS(KDC500 only)

Track Separator(KDC415/425/430 only)

- Specify the separator which will be added between track data
- Options: None, Space, Comma, Semicolon, CR, LF, CR&LF, Tab

Attach SS/ES

When this option is enabled, KDC does not exclude the Start Sentinal(SS) and End Sentinal(ES) control characters in the track data when it sends the card data to the connected Host device.

Partial Data(KDC415/425/430 only)

Enables the user to transfer partial MSR data. The user defines the start position and number of characters to be transferred.

- Start position
  - This option specifies the start position of data.
- No of char(s)
  - This option specifies the length of data. The '0' means all data.
- Action
  - This option selects if erasing or taking the specified data.

3.5.14 ICCR Config Menu – KDC500

Power

- Turning ICCR(IC Card Reader) on or off
- Options: Enable/Disable

IFD Number

This option shows the EMV IFD(Interface Device) number.

Config Number

The option shows the stored EMV Contact Configuration number.

3.5.15 SystemConfig Menu

Memory Size *(3.0+ version only, KDC500 doesn't support)*

The user may 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 may checks the number of stored barcodes and memory usage.

Reset Memory

In this option, users may reset KDC memory by erasing all stored barcodes, applications, and BT registry. KDC500 only erase all stored barcodes.

Auto Erase

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

Sleep Timeout

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

Auto Power Off

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

Date/Time

In this option, users may set the date and time of the KDC, which may also be set using KTSync.(except KDC500)

Battery

This option shows the current status of battery power level.

Version

This option shows the KDC firmware version and serial number.

KDC500 displays only firmware version.

Serial Number(KDC500 only)

KDC500 displays the serial number

Button Lock

This option enables the user to lock or unlock the KDC scan and scroll buttons. (KDC400 and KDC500 do not support)

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 On MS Card (KDC500 only) : Enables or disables beep sound when KDC reads a MS Card.
- Beep On IC Card (KDC500 only) : Enables or disables beep sound when KDC reads an EMV Contact Card.
- Beep On NFC Card (KDC500 only) : Enables or disables beep sound when KDC reads an NFC Tag or EMV Contactless Card.

Beep Volume

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

MFi Mode (KDC20i/30i/200i/250i/270i/300i/350i/400i/470i)

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

Vibrator(KDC20/30/270/280/350)

Enables, disables and configure KDC vibrator.

- There are two additional options for KDC vibrator configuration.
    - Scan Success ➔ Specify the number of vibration when scan successfully.
    - Scan Failure ➔ Specify the number of vibration when scan failed.

Auto Exit

This option enables KDC to automatically exit KDC Menus.

Port Status

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

Display Format

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

The Graphics option enables to display 'O' for scan success and 'X' for scan failure.

Menu Barcode

This option enables users to enable or disable Honeywell special barcodes (KDC300/350C/500C only).

Scrolling

This option enables users to enable or disable display scrolling for a barcode with more than 40 characters.(KDC500 doesn't support)

Brightness

This option enables users to adjust brightness of display.

Keypad(KDC350/500)

This option enables users to enter data by using keypad.

Language(Version 3.0+, KDC500)

This option enables users to select KDC display languages.

The supported languages are as following.

- None – Languages is not supported. Default is an English.
- US(English)
- French
- Italian
- Spanish
- Korean
- Japanese

KDC500 only supports US(English), Korean and Japanese.

Factory Default

By selecting this option, users may reset KDC options to factory default settings. (No powercycling)

3.5.16 Key Mgmt Menu– KDC500

- Stored Keys : Displays all the encryption keys stored in the KDC500.

- Inject Keys : In this menu, the user can inject the necessary encryption keys via Key Loader device.

3.5.17 Sensitive Menu – KDC500

KDC500 Sensitive menu has sub menus which can impact on the KDC500 security services. KDC500 requires two passwords for the Sensitive menu group access in order to ensure only authorized people can utilize the sensitive services. The default passwords are 0000000 and 11111111.

Note

- For PCI PTS compliance, the default passwords should be changed prior to use. Without the default passwords change, KDC500 declines all the payment related service requests; such as MS Card Read, IC Card Insertion, PIN Entry, etc.

Set Date/Time

In this menu, the user can set the date and time of the KDC500.

Set Self-Test

The user can set the time for the Self-Test in this menu. In PCI PTS, it requires to perform the Self-Test(Firmware and stored key authentication) at least once in 24 hours.

Set Passwords

In this menu, the user can change the current passwords to access the Sensitive Menu.

Key Mgmt

- Stored Keys : Displays all the encryption keys stored in the KDC500.
- Inject Keys : In this menu, the user can inject the necessary encryption keys via Key Loader device.
- Clear Keys : In this menu, the user can clear all the encryption keys stored in the KDC500 except the Firmware Update Authentication key which is loaded during the manufacturing process.

Card Encrypt

This menu allows user to choose the encryption algorithm for the sensitive card data from the list below.

- Plaintext
- T-DES
- AES

3.6 LED Status

LED Color	Status
Green	• Successful Reading • USB is connected and battery is fully charged. • MFi mode in pairing mode.
Orange	• Low battery • USB is connected and battery is charging • HID mode is in pairing mode. (except KDC500)
Red	• No reading • SPP mode is in pairing mode.

Table 5 - Explanation of LEDs

3.7 Empty Battery

3.7.1 KDC80/100/180/185/200/250/270/280/300/350/380

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.

3.7.2 KDC20/30/400/470

- 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.

3.7.3 KDC500

- Under 10% (Low) Displays the message *Low Battery Please Charge*. KDC500 is still functional, but charge the KDC500 IMMEDIATELY to prevent any interruptions while it is collecting data.
- Under 5% (Empty) - Displays the message *Empty Battery Please Charge*. KDC500 is not functional any longer.

3.8 Buffer(Memory) Full

The KDC will display the message ***Buffer Full*** when there is no more space in the flash memory or the number of collected barcodes reaches the maximum number of stored barcode. To prevent the loss of data, you should synchronize the data then reset the memory when this message is displayed.

The 4MB/8MB 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
- 5MB Partition - Collected data size reaches 5MB or collected number is 256,000
- 6MB Partition - Collected data size reaches 6MB or collected number is 307,200
- 7MB Partition - Collected data size reaches 7MB or collected number is 358,400
- 8MB Partition - Collected data size reaches 8MB or collected number is 409,600

3.9 Reset Feature (100/200/250/300) or Power-on/off (KDC20/30/80/180/185/270/280/350/380/400/470/475/480/485/500)

The Reset feature enables the user to restart the KDC100/200/250/300 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.

If you are using the KDC20/30/270/280/350/470/475, you may turn the power on and off by pressing the DOWN and SCAN button simultaneously for 5 seconds. When the LED light is green, you may release the buttons and the power will be on. When you turn off the KDC20/30/270/280/350/470/475, you will hear a beep sound after pressing the DOWN and SCAN buttons simultaneously.

If you are using the KDC400 (except KDC470/475) you may turn the power on and off by sliding the power switch.

If you are using the KDC500, you can turn the power on and off by pressing the left and right SCAN buttons simultaneously for 5 seconds. When the display shows KOAMTAC logo, you may release the buttons and the power will be on. When you turn off the KDC500, you will see the display shows blank after pressing the left and right SCAN buttons simultaneously.

3.10 Replace Battery

Each KDC comes with a rechargeable, Lithium-polymer (KDC20/100/200) or Lithium-ion (KDC30/250/270/280/300/350/400/470/475/500) battery. The battery may be recharged from any USB port or KDC charging cradle, and may 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 may 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.

1		Unscrew the screw indicated by the arrow.
2		Remove the battery cover by pulling it down.
3		Remove the battery. Pull out the 2pin connecter gently.

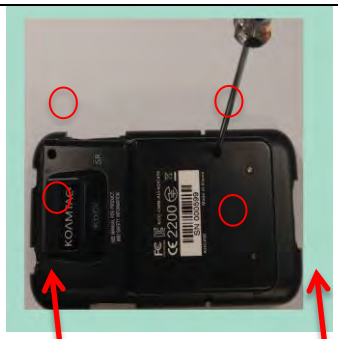
KDC20/30/100/200/250/270/280/300/350-R1

1		Check the hole of KDC270/280 and the hook of the battery cover.
2		Position the hook of the battery cover in the direction of the hole of KDC270/280.
3		Slide battery cover hook in to the hole of the KDC270/280.
4		Press down battery cover.
5		Push the battery cover firmly in the direction of the hole of KDC270/280.

To insert the battery cover for KDC270/280

1		Unscrew the screw indicated by the arrow.
2		Remove the battery cover by pulling it down.
3		Remove the battery by pulling the bottom part of the battery gently.

KDC350-R2/500

1		Unscrew the screw indicated by the arrow.
2		Remove the battery cover by pulling it up gently.
3		Remove the battery. Pull out the 2 pin connecter gently.

KDC400 Series

1		Unlock the battery cover by sliding the lock switch right.
2		Open the cover as shown in the picture.
3		For easy removal, use a paperclip or similar tool to pull on folded sticker. Hold the sticker and remove battery.
4		<Insert the battery> Before inserting battery, fold sticker over battery lengthwise.
5		Slide the lock switch up, open the battery cover and slide in the battery slowly.
6		Close the battery cover and slide the lock switch down

KDC470/475

Figure 18 - Replacing a Battery

3.11 KDC470/475 Extended Battery

KDC470/475 support 2000mAh extended battery option which is used to charge KDC470/475 1130mAh internal battery and Smartphone battery.

3.11.1 Operating mode

KDC470/475 extended battery charge smartphone and KDC470 internal batteries when no power source exists (no USB cable plugged in or not in charging cradle). Extended battery would be changed to extended battery charging mode if power source is connected

3.11.2 LED

KDC470/475 extended battery has two LEDs and working as below table. In low battery mode, KDC470 extended battery enters sleep mode after one minute.

Battery Label	Charging	Discharging
Low battery	Red	Red with blinking
Charging/Discharging	Orange	Orange with blinking
Full charged	Green	Green with blinking

3.11.3 Custom iOS and Android case detection issue and operation

KDC470/475 can take up to one minute to detect cradle insertion and removal when custom iOS case is attached. Android custom case can be detected in real time.

- KDC470/475 extended battery LED stops blinking upon place on the charging cradle
- KDC470/475 extended battery starts to charge smartphone upon removing from charging cradle.

4 Bluetooth - KDC20/30/200/250/270/280/300/350/400/470/475/500

The KDC20/30/200/250/270/300/350/400/470/475 supports HID (Human Interface Device) normal, HID iOS, SPP (Serial Port Profile) and SPP2.0 profiles. The KDC500 supports SPP only. The KDC20i/30i/200i/250i/270i/300i/350i/400i/470i/475i/500i supports MFi (Made for iPhone/iPad/iPod touch) profiles. KDC280C is BLE4.1 device and supports HID, and SPP profiles.

Note For PCI PTS compliance, KDC500 can support only SPP and MFi profiles.

The KDC200/250/270/280/300/350/500's *Bluetooth* options may be configured by using the KDC menu, PC KTSync and special barcodes. The KDC20/30/400/470/475's Bluetooth options may be configured by using the PC KTSync and special barcodes.

4.1 Bluetooth Config

4.1.1 Connect Device

The KDC supports both Serial Port Profile (SPP) and Human Interface Device Profile (HID). The user may choose amongst SPP2.0, SPP (2.1), HID normal, or HID iOS profiles to communicate with the host device. An additional MFi (Made for iPhone/iPad/iPod touch) option is available for KDC20i/30i/200i/250i/270i/300i/350i/400i/470i/475i/500i models when MFi mode is enabled.(SystemConfig Menu). KDC500i doesn't have MFi mode option and supports MFi by default.

If the **BT Toggle** option(KDC500 doesn't support) in **BT Config** is enabled, the user may 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.

Keyboard does not appear on iPhone/iPad/iPod touch when KDC is connected in **HID iOS mode**, the user can press the DOWN button to **toggle** the **onscreen keyboard**. For the KDC400/470/475 it is the small button located on the left side of the KDC.

The UP button shows the Bluetooth connection status and the DOWN button shows the time when this option is disabled.

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

4.1.2 Auto Connect

This feature enables the KDC to automatically connect to the host device when the KDC is powered on. KDC500 doesn't support Auto Connect.

IMPORTANT: Until the host device and the KDC have been fully tested, it is strongly recommended that this feature be set to 'Disabled', 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.

4.1.3 Auto Reconnect

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

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

4.1.4 Auto Power On

The Auto Power On option Enables the KDC to automatically power on Bluetooth when the SCAN button is pressed. The default setting is Disabled. KDC500 doesn't support this option.

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.

4.1.5 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 may turn on the Bluetooth power by pressing the SCAN button for the PWR On Time option value. KDC500 doesn't support this option.

4.1.6 Auto Power Off

The Auto Power Off option works in conjunction with the PWR Off Time option. This option Enables 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. KDC500 doesn't support this 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 may be manually powered off before the specified time in the PWR off time option.

It is recommended to enable 'Auto Power On' option if this option is enabled. User doesn't need to turn on the Bluetooth power manually with this configuration.

4.1.7 Beep Warning

The KDC beeps to warn user to power off the Bluetooth if this option is enabled with five short beeps when the following condition meets..

1. Bluetooth power is ON
2. KDC is disconnected
3. Auto Power Off is DISABLED

KDC500 doesn't support this option.

4.1.8 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. KDC500 doesn't support this option.

4.1.9 PowerOFF Msg

The KDC sends a Bluetooth power off message "BTOFF" to the host when KDC is connected from host if this option is enabled. KDC500 doesn't support this option.

4.1.10 MAC Address

The user may verify the KDC Bluetooth MAC Address.

4.1.11 FW Version

The user may verify the KDC Bluetooth firmware version in this menu.

4.1.12 Wakeup Nulls

The KDC sends three leading Null bytes to wake up the *Bluetooth* connected device. This feature may be disabled if the *Bluetooth* connected device does not require additional bytes to wake up. KDC500 doesn't support this option.

4.1.13 Autolock Time

The iPhone/iPad/iPod touch loses incoming Bluetooth data while in sleep mode. To prevent data loss, you may 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. KDC500 doesn't support this option.

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. This option may not need from iOS 5.x.

4.1.14 HID Keyboard

The user may select an international keyboard – English, German, French, Spanish, Danish, or Italian. It is also required to set the host keyboard with the same keyboard as selected in this menu. KDC500 doesn't support this option.

4.1.15 HID Initial and Inter-Character Delay

Certain applications may not 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. KDC500 doesn't support this option.

- 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.

4.1.16 Control Character Transmission in HID mode

Control characters between ASCII values 0x00 and 0x1F may be replaced by the ALT+Numpad or ^+Character or replaced with '|'. KDC500 doesn't support this option.

- 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	^\		

4.1.17 Function Key Transmission in HID mode

The user may send F1 to F12 function keys by scanning special barcodes in HID mode. KDC500 doesn't support this option.

4.1.18 Disconnect/Reconnect/BT(HID) Toggle

The user may disconnect or reconnect the Bluetooth connection, and toggle the soft keyboard using side buttons. KDC500 doesn't support this option.

Bluetooth Profile	UP Key	DOWN Key (DisconnectBTN disabled)	DOWN Key (DisconnectBTN enabled)
SPP	Reconnect	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
MFi	Reconnect	Does nothing	Releases BT connection
SPP 2.0	Reconnect	Does nothing	Releases BT connection
HID normal	Reconnect	Does nothing	Releases BT connection

Note Some SPP host doesn't support Reconnection from KDC.

4.1.19 Character dropping in web browser on iOS

When the KDC is connected to an iOS device in the HID iOS Bluetooth profile, scanning into a web browser will sometimes prematurely execute the 'CR + LF' (enter) terminator and result in a few characters dropping. The KDC will scan perfectly fine in native apps such as Notes.

Workaround #1 - Using KTSync

If the KDC is an "i" model and has the MFi Bluetooth profile, KTSync can be used for keyboard wedging, similar to HID. In this mode, the data transmission is much faster and more reliable. KTSync must be open with the KDC connected and the KTSync Keyboard needs to be selected before scanning. The HID character delay settings do not have any impact on transmission times when connecting in MFi/SPP.

Workaround #2 - Using HID Transmission Delays

User can adjust initial delay and inter-character delay such as 1 second Initial Delay and 30 millisecond Inter-Character delay.

- Scan the appropriate special bar codes on the back of the user manual.
- Alternatively, these settings can be set in KTSync by going to KDC Menu > Bluetooth > and changing the Initial and Inter-Character Delays.

4.2 Bluetooth Service

4.2.1 Power

The POWER option enables the user 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.

4.2.2 Pairing

Before you use Bluetooth connection, 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 may be paired to the KDC.

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

To pair the KDC20/30/200/250/270/300/350/400/470/475 with the host, follow these instructions:

1. Select Pairing from the Bluetooth menu. The message "**Pairing started…"** will be displayed.
2. The **"Pairing Done"** message will display when the Bluetooth connection is successfully established. The connection must be established before the pairing timeout of 90 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.

For KDC500 paring with the host, Numeric Comparions pairing method is required for PCI PTS complicance. See the section 2.1 Bluetooth Paring for the details.

4.2.3 Discovering

KDC200/250/270/300/350 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. KDC20/30/400/470 only supports via KTSync configuration. KDC500 doesn't support this feature.

4.2.4 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. KDC20/30/400/470 only supports via KTSync configuration. KDC500 doesn't support this feature.

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.

4.2.5 HID Sync

The user may 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. KDC500 doesn't support this feature.

4.2.6 Tips

Pair and connect KDC20i/30i/200i/250i/270i/300i/350i/400i/470i and iOS4.0+ in HID iOS mode

Note

- Users have to disable the MFi option in System > MFi menu and change the Bluetooth profile to HID-iOS to use HID Bluetooth profiles.
- Users have to RESET the iPhone/iPad/iPod touch in order to change HID to MFi 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 MFi menu of KDC SystemConfig Menu
2. Change MFi option to Disabled
3. Change ConnectDevice to HID iOS mode
4. Remove previous KDC connection and RESET the device
5. Change KDC to Pairing mode
6. The iPhone/iPad/iPod touch will find a new device as ***Keyboard***
7. Click ***Keyboard*** device

iOS Soft Keyboard Toggling using BT Toggle Option.
Users need to select the option to use this feature in **BT Config**>**BT Toggle**. Press the DOWN button to toggle a soft keyboard.

4.2.7 Auto Pairing

For SPP and MFi mode, user used to select host profile before pairing. However, user doesn't need to select host device profile if this option is enabled. KDC automatically detects if host device is a SPP or MFi mode. This option is supported from KDC Bluetooth firmware version 2.2.O.

4.3 BLE (Bluetooth Low Energy)

4.3.1 BLE vs. Classic

KOAMTAC BLE models support BLE4.1 or BLE5.0 : KDC280C (BLE4.1), KDC470-BLE/KDC475-BLE (BLE4.0), and KDC180 (BLE5.0) and other KDCs models support Classic 2.1+EDR.
Here is key difference between KDC BLE and Classic Bluetooth technology.

	Classic	BLE
Profiles	SPP, SPP2.0, MFi, HID iOS, HID normal	SPP, HID, HID windows
Scan key	Entering pairing mode with pressing 5 seconds	Entering pairing mode with pressing 5 seconds
Down key	iOS Soft keyboard toggle	Not supported
	Disconnect with pressing 5 seconds	
Up key	Reconnect to host	Display connection status

Here is the KDC menu difference.

- KDC BLE doesn't support MFI, SPP2.0.
- KDC BLE consolidated HID iOS and HID normal into a HID.
- KDC BEL doesn't support Auto connect/reconnect.
- KDC BLE doesn't support Disconnect button.
- KDC BLE doesn't support Discovering and connecting to.
- KDC BLE doesn't support Auto Pairing.
- KDC BLE doesn't support MFi mode.

Menu			Classic	BLE
BT Config	**ConnectDevice**	**SPP**	Yes	Yes
		MFi	Yes	No
		HID iOS	Yes	No
		HID normal	Yes	No
		SPP 2.0	Yes	No
		HID	No	Yes
	Auto Connect	**Enable/Disable**	Yes	No
	Auto Reconnect	**Enable/Disable**	Yes	No
	Auto Power On	**Enable/Disable**	Yes	Yes
	PWR On Time	**Disabled, 1 -10 seconds**	Yes	Yes
	Auto PowerOff	**Enable/Disable**	Yes	Yes
	Beep Warning	**Enable/Disable**	Yes	Yes
	PWR OFF Time	**1-30 minutes**	Yes	Yes
	PowerOff Msg	**Enable/Disable**	Yes	Yes
	MAC Address		Yes	Yes
	FW Version		Yes	Yes
	Wakeup Nulls	**Enable/Disable**	Yes	Yes
	BT Toggle	**Enable/Disable**	Yes	No
	Disconnect Button	**Enable/Disable**	Yes	No
	HID AutoLock	**1,2,3,4,5,10,15**	Yes	Yes
	HID Keyboard	**US, German, French, Italian, Spanish, Japan**	Yes	Yes
	HID Delay	**Initial Delay**	Yes	Yes
		Char. Delay	Yes	Yes
	HID Ctrl Char	**Disabled**	Yes	Yes
		Alt+Numpad	Yes	Yes
		^+Character	Yes	Yes
		Replace to |	Yes	Yes
BT Service	**Power**	**Enable/Disable**	Yes	Yes
	Pairing		Yes	Yes
	Discovering		Yes	No
	Connecting to		Yes	No
	HID Sync		Yes	Yes
	Auto Pairing	**Enable/Disable**	Yes	No
	Guest mode		No	Yes
System Config	**MFI**	**Enable/Disable**	Yes	No

Here is the table for the reconnection feature for Bluetooth Classic and BLE.

OS	Profile	Reconnection from KDC		Reconnection from Host (Phone)	
		BT Classic	BLE	BT Classic	BLE
Android	SPP	Yes	No	Yes	Yes
	HID	Yes	No	Yes	Yes (Automatically)
iOS	MFi/SPP	Yes	No	Yes	Yes
	HID	Yes	No	Yes	Yes (Automatically)
Windows	SPP	Yes (Need to accept by user)	No	Yes	Yes
	HID	Yes	No	Yes	Yes (Automatically)

4.3.2 BLE Profiles

KDC BLE models support below two profiles:

①. SPP – It is a Koamtac specific customized profile which provides bi-directional communication in the paired mode.
②. HID – It is a Bluetooth Low Energy standard profile which support Human Interface Device as like a keyboard or a mouse. It is required to be paired first.

➢ Selecting a profile

There are two ways to set up a BLE profile:

①. By scanning a programming (special) barcode as shown below

i. SPP

ii. HID

②. Or, by navigating the MENU from KDC

i. Press Up & Down button at the same time
ii. Navigate to BT Config
iii. Select ConnectDeivce
iv. Select a profile

➢ Pairing Mode

There are three ways to put KDC into a pairing mode.

①. Scan below **Pairing barcode**

② Select Pairing from KDC MENU

i. Press Up & Down button at the same time
ii. Navigate to BT Service
iii. Select Pairing

③ Press the Scan button for five (5) seconds then it goes to a pairing mode

➢ Pairing completion from the host device

On the host device, go to Settings → Bluetooth, and select the KDC[Serial Number] that needs to be paired. The KDC and the host device will now communicate with each other.

Figure 19 – KDC BLE Pairing

➢ Connection of KDC280C-BLE and the host device

After it has been paired, open application and select a paired device, then it connects to the KDC.

4.4 KDC BLE and Samsung Tizen

Free SDK for KDC provides a sample demo application for Tizen, especially Samsung Gear S3. This document explains how to install and use the demo application on Samsung Gear S3.

KDC180 and KDC280 have BLE (Bluetooth® Low Energy) V5.0 and V4.1 each instead of Bluetooth V2.1 and support the below two profiles:

- SPP – It is a KOAMTAC-specific custom profile which provides bi-directional communication in the paired mode.
- HID – It is a Bluetooth Low Energy standard profile which supports Human Interface Device like a keyboard or mouse. It is required to be paired first.

To connect with Gear S3 for the current demo application from KOAMTAC, you should use SPP profile because Gear S3 does not support HID:

4.4.1 Connect the phone to Gear S3 and Install the demo application

- Download Galaxy Wearable (Samsung Gear) application from Play Store. (Please make sure your phone supports Galaxy Gear S3.)
- Connect the Samsung Gear to your smartphone. (You can refer to the link to learn how to connect: http://www.samsung.com/ca/support/skp/faq/1119975)
- On the Gear press the home button and scroll to settings. Scroll down and select Connect to a New Phone. On the phone, open the Samsung Gear application and search for nearby Gear devices. Select your Gear from the list and confirm the passcode on both devices.
- From Galaxy Apps, search Koamtac apps, which is "**Koamtac Simple Web Demo**" App and install it on Gear S3.

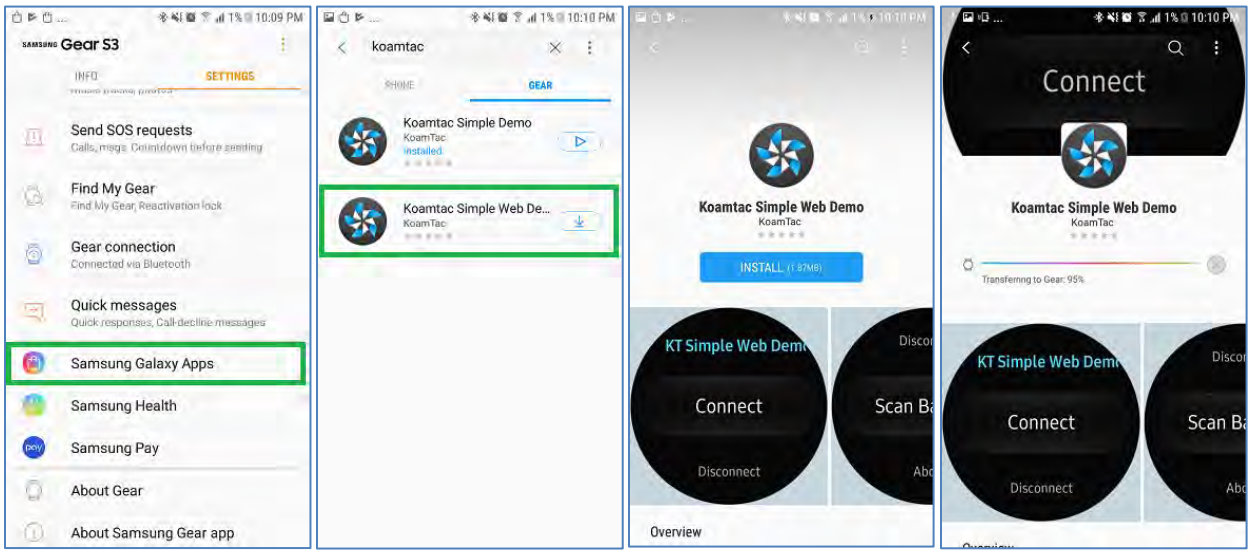


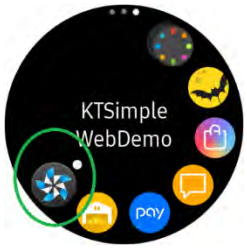
Figure 20 – KDC BLE and Gear S3

4.4.2 Pair/Connect KDC with Gear S3

- Put KDC180/KDC280 into SPP mode and start pairing.

Bluetooth Profile & Pairing
#3. SPP & Pairing

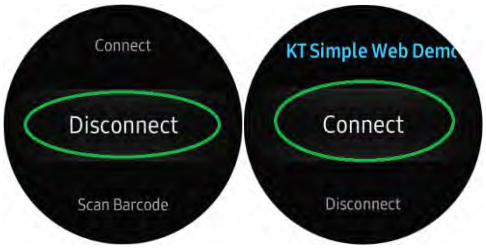
- Run KTSimpleWebDemo on your Gear S3.



- Tap "Connect" and the available devices will be listed on your Gear S3. Tap the KDC from the list of available devices to connect. The number between the brackets refers to the serial number located on the back of the KDC.

- Now you can trigger the KDC scanner via the demo application or the KDC itself. Any scanned barcode will be displayed on the Gear S3. There are also many commands that can be used to view or set the configuration of the KDC.

- If the KDC becomes disconnected or if you disconnect the current KDC, you can reconnect it later by selecting Connect from the Gear S3.



4.4.3 How to Get Tizen SDK for KDC280C-BLE

- You can request free SDK from our website:
  ①. Go to www.koamtac.com
  ②. Navigate to SUPPORT > Downloads > SDK
  ③. And fill the form below and submit it.

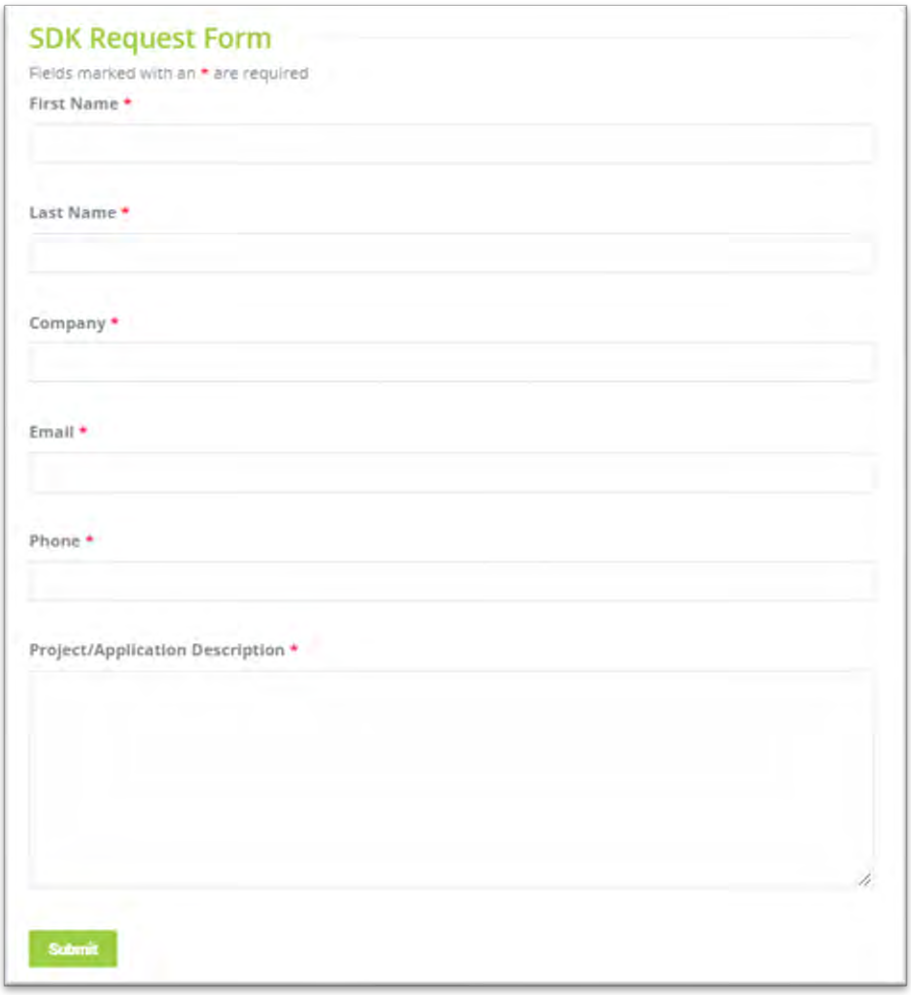


Figure 21 – SDK Request Form

- You'll get a response in 1 ~ 2 business days and receive the SDK package if approved.
- The SDK Package consists of 3 subfolders:

① Document

- This explains KDC SDK architecture and all the procedures to use the SDK for KDC.
- There is one more folder (KDCReaderAPI.zip) which explains all the API's using the hyperlinks so that you can easily look up any class information that you want to see. (see the screenshot below)

② Library/KoamacService

- It has the actual library file that you should use.

③ Samples

- This has a sample demo application and its source codes.

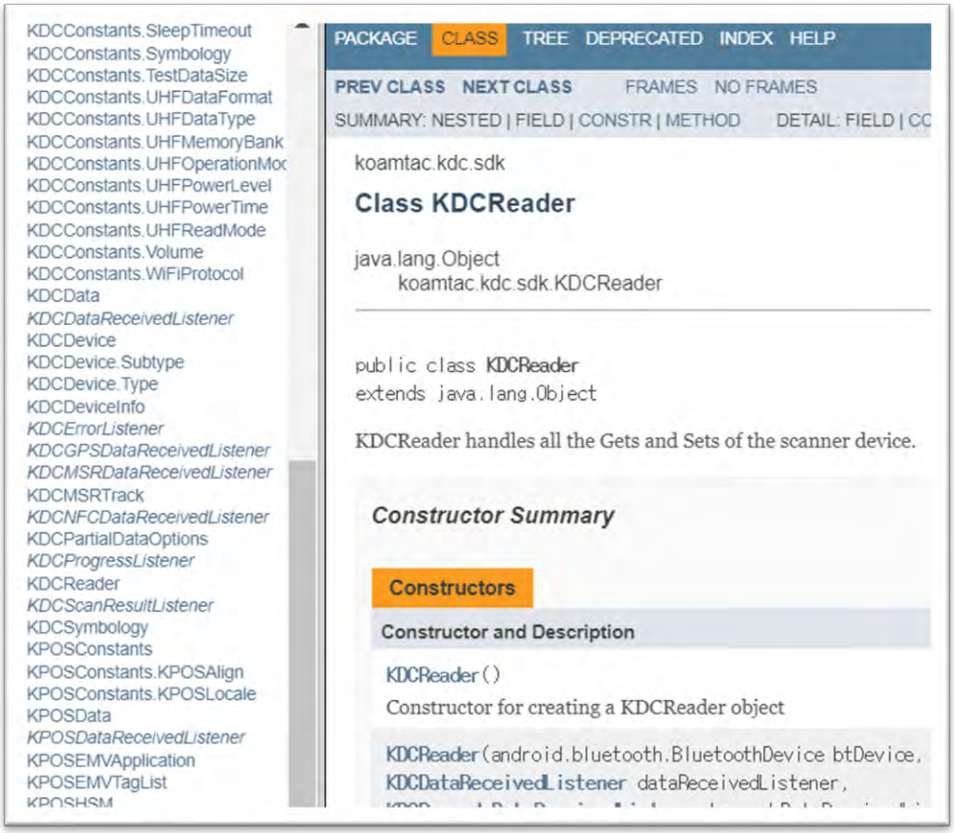


Figure 22 – SDK Package

5 WiFi (KDC350), NFC (KDC350/470/475), UHF (KDC470/475), Serial/OTG (KDC470/475)

5.1 KDC350 WiFi

5.1.1 WiFi Config Menu

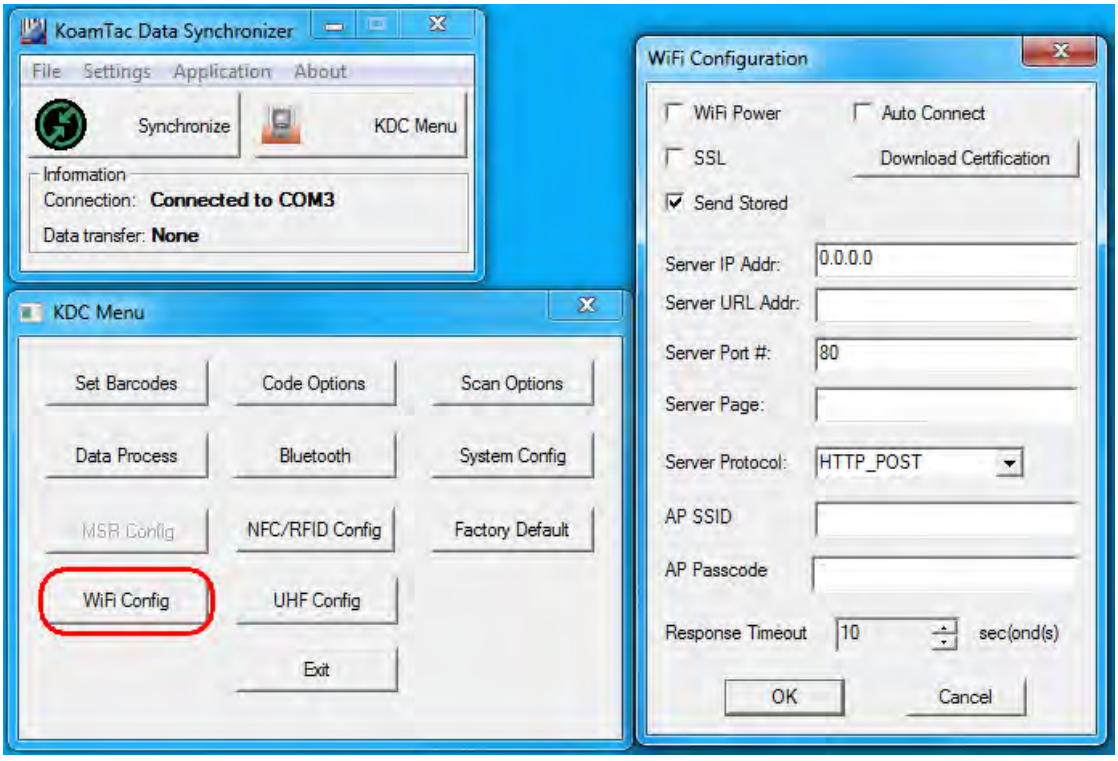
	Screen	Comment
1	Power	Turn the Wi-Fi Module Power ON/OFF.
2	AP	Configure the AP
3	Server	Configure the server
4	Connect	Connect to the AP and server
5	Auto Connect	Enable/Disable auto reconnection
6	Send Stored	Enable/Disable sending stored data
7	Version	Shows WiFi module version and MAC address
8	Exit Menu	Return to previous menu

- All configuration is stored in the KDC350
- (Note) when both WiFi and Bluetooth are connected, WiFi has a higher priority, meaning that the scanned data is transmitted only via WiFi.

5.1.2 How to use KTSync to configure WiFi

It is possible to configure the following WiFi options by using KTSync.

- WiFi Power
- Auto connect
- SSL
- Download Certification
- Send Stored
- Server IP
- Server URL
- Server Port Number
- Server Page
- Server Protocol
- AP SSID
- AP Passcode
- Response Timeout



5.1.3 How to test data transmission

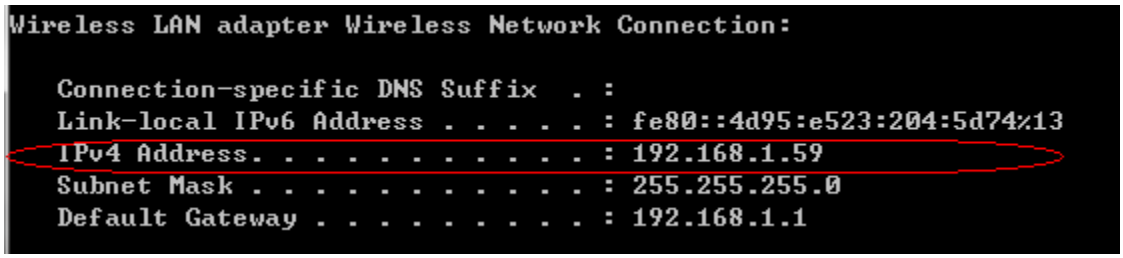
➢ TCP

Step 1. Wi-Fi Module Power ON

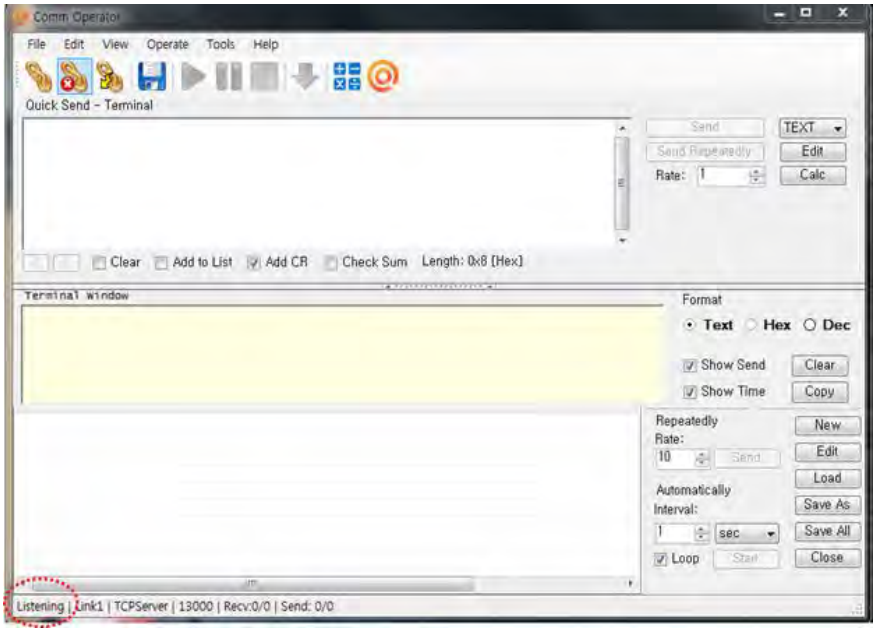
- Turn on the Wi-Fi module's power with "WIFI Config"→"Power"→"Enable".

Step 2. Configure server information

- "WIFI Config" → "Server" → "IP Address" → "XXX.XXX.X.XX"
- "WIFI Config" → "Server" → "Port Number" → "XXXXX".
- "WIFI Config" → "Server" → "Protocol" → "TCP".
- Obtain the PC's IP address by opening the command prompt in the windows and searching "ipconfig".



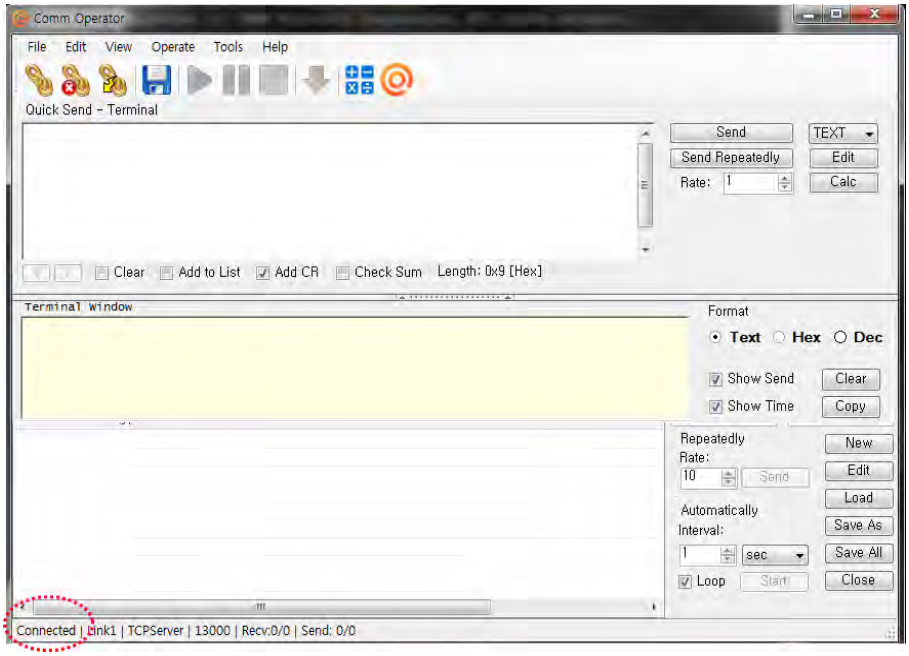
- The port address is defined in the following test application called "CommOp".
  - 30 day free trial can be downloaded from http://www.serialporttool.com/download/CommOperator/CommOperator.zip



Step 3. Connect to server

- Run the test application "CommOp.exe" with TCP server listening mode. Be sure the status is in "Listening" as shown below.

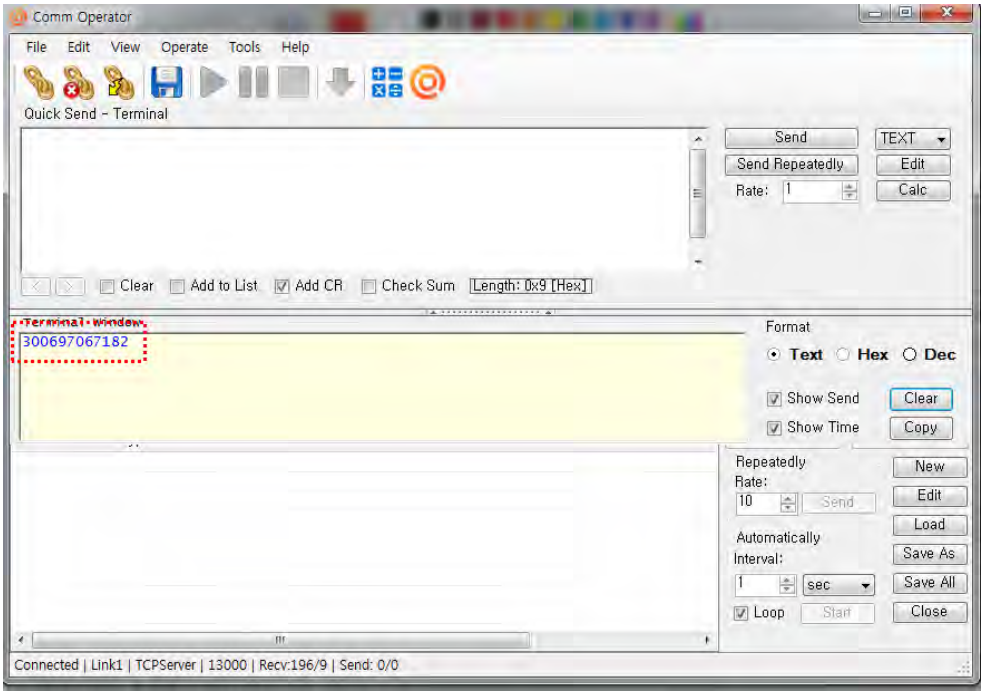
- Connect the KDC to the server in "WIFI Config"→"Connect"



- The status will be changed from “Listening” to “Connected” as shown above once the KDC is connected to the server.

Step 4. Send Barcode Data to server

- Scan a barcode.



- The barcode sent from the KDC is displayed on the test application as shown above.

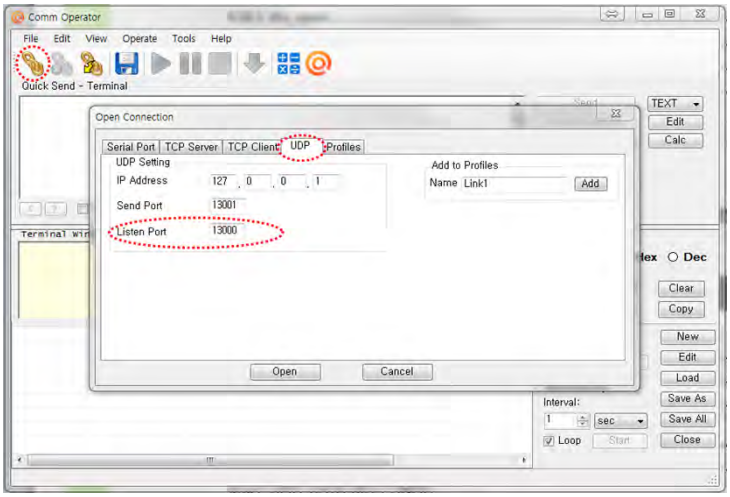
➢ UDP

Step 1. Wi-Fi Module Power ON

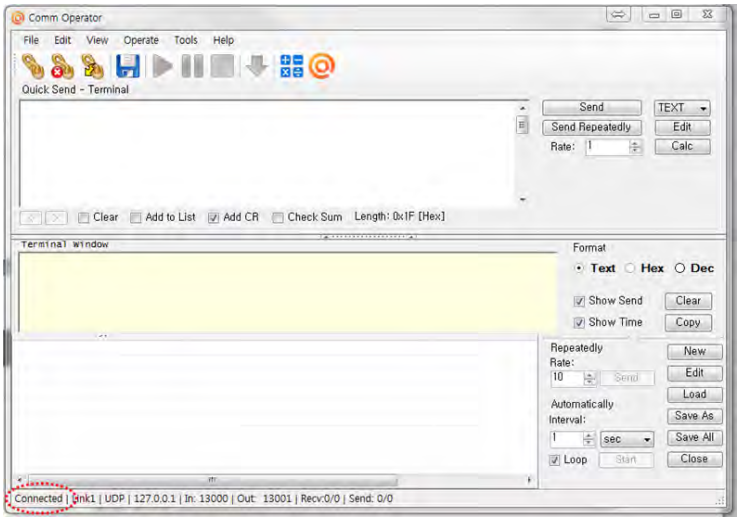
- Turn on the Wi-Fi power module with "WIFI Config" → "Power" → "Enable".

Step 2. Configure server information

- "WIFI Config" → "Server" → "IP Address" → "XXX.XXX.X.XX".
- "WIFI Config" → "Server" → "Port Number" → "13000".
- "WIFI Config" → "Server" → "Protocol" → "UDP".



- The port address is defined in the test application as following

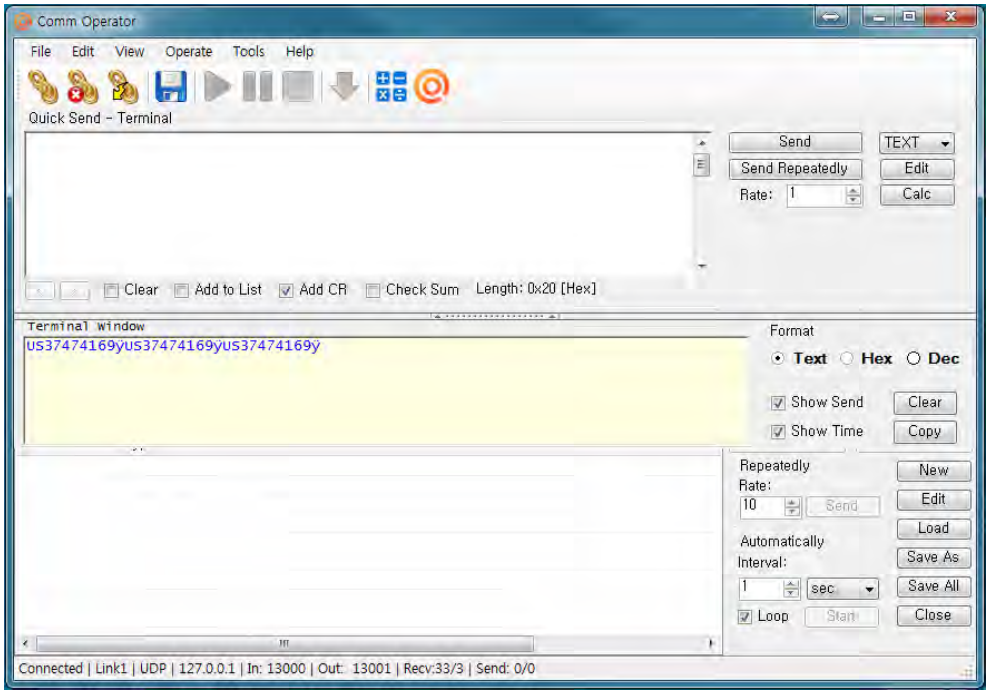


Step 3. Connect to server

- Run the tester application "CommOp.exe" with UDP mode chosen.
- Connect the KDC to the server in "WIFI Config" → "Connect".

Step 4. Send barcode data to server

- Scan barcode and the barcode will be displayed as following screen.



5.1.4 HTTP GET&POST

Step 1. Install Apache Server (XAMPP)

- Download the installer from http:www.apachefriends.org/en/xampp-windows.html

Version		Checksum			Size
5.5.24 / PHP 5.5.24	What's Included?	md5	sha1	Download (32 bit)	104 Mb

Step 2. Run XAMPP Control Panel

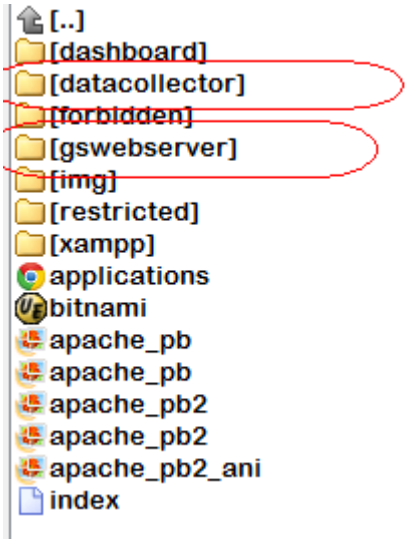
- Run the XAMPP Control Panel and make sure both Apache and MySQL can be started as shown on the following screen. If it is unable to start, terminate all other online programs, such as skype.

Step 3. Copy web server program into XAMPP

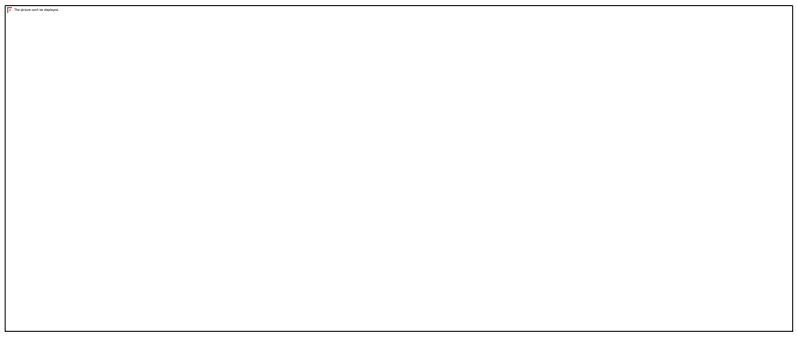
- Unzip the two files below and copy them into c:/xampp/htdocs

1. Gswebserver.zip
2. Datacollector.zip

- Be sure the directory list looks like the following



- Make sure that the Apache server has been installed correctly by accessing http://localhost/gswebserver/index.html. You should see the following screen.



Step 4. Setup SSL

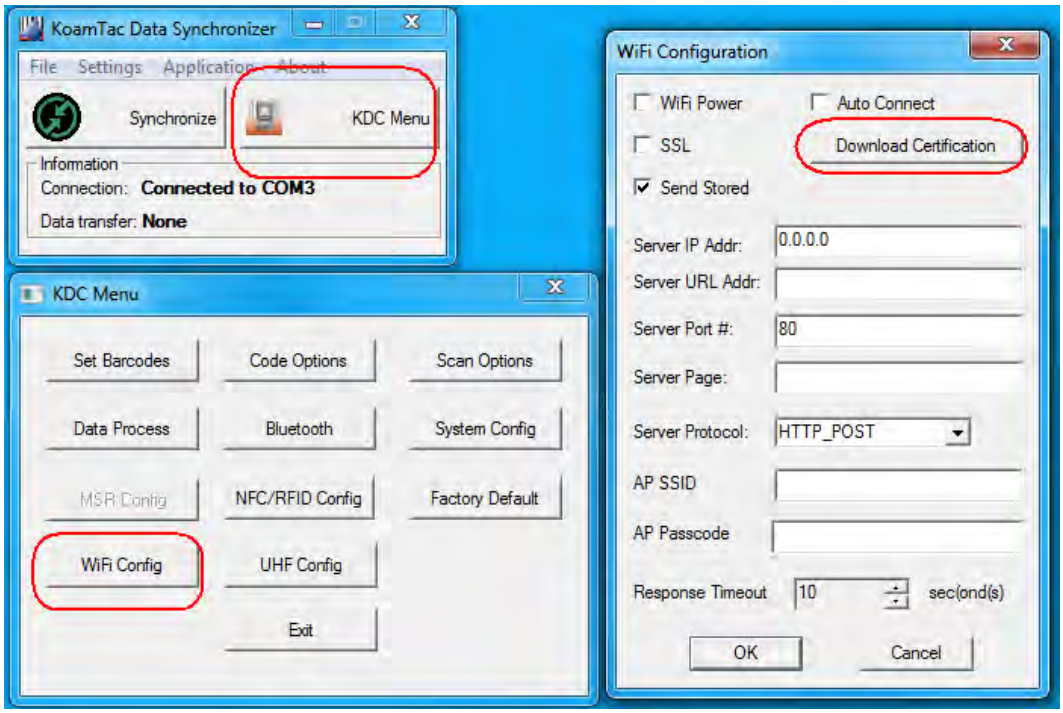
- Unzip the certificates.zip and
  1. Copy 'server.crt' into /xampp/apache/conf/ssl.crt
  2. Copy 'server.key' into /xampp/apache/conf/ssl.key
  3. Make sure the following 3 lines are in /xampp/apache/conf/extra/httpd-ssl.conf.

 # SSL Engine Switch:

 # Enable/Disable SSL for this virtual host.

SSLEngine on

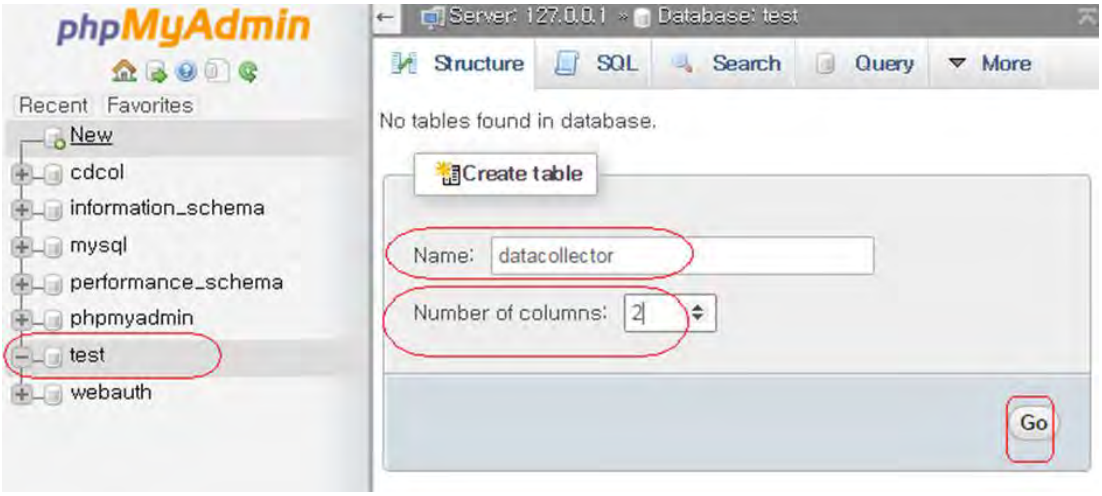
- Download 'cacert.der' into KDC using KTSync
  1. Open KDC Menu and enter WiFi Config.
  2. Select "Download certification" to download certification data into KDC.
  3. KTSync will display "Download is done".



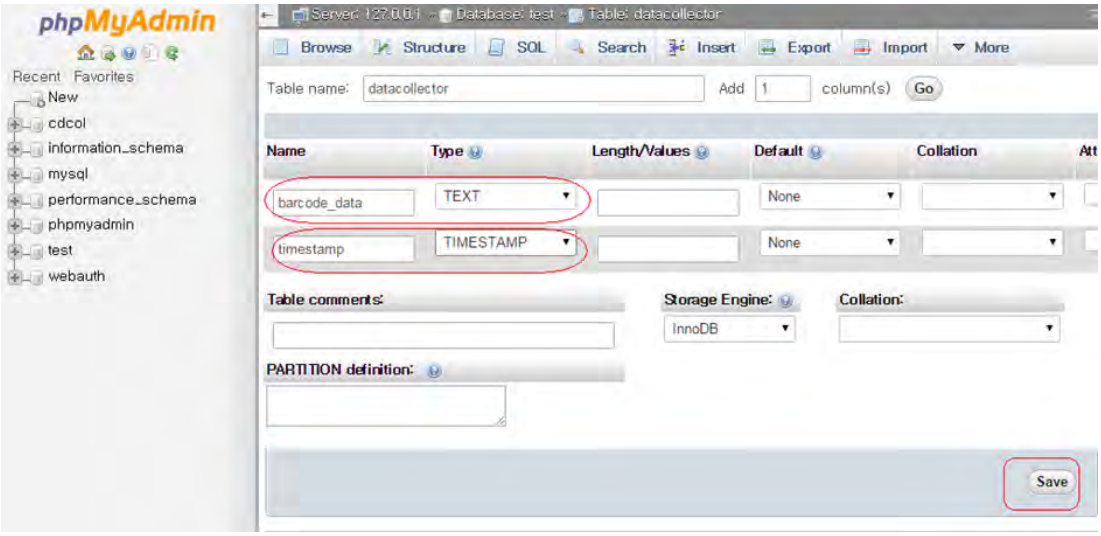
Step 5. Setup SQL DB

- Enter the MqSQL configuration by pressing "Admin" in XAMPP as shown

- Select "test" and press 'Go" button after entering "datacollector" in Name, and "2" in the Number of columns in the following screen.

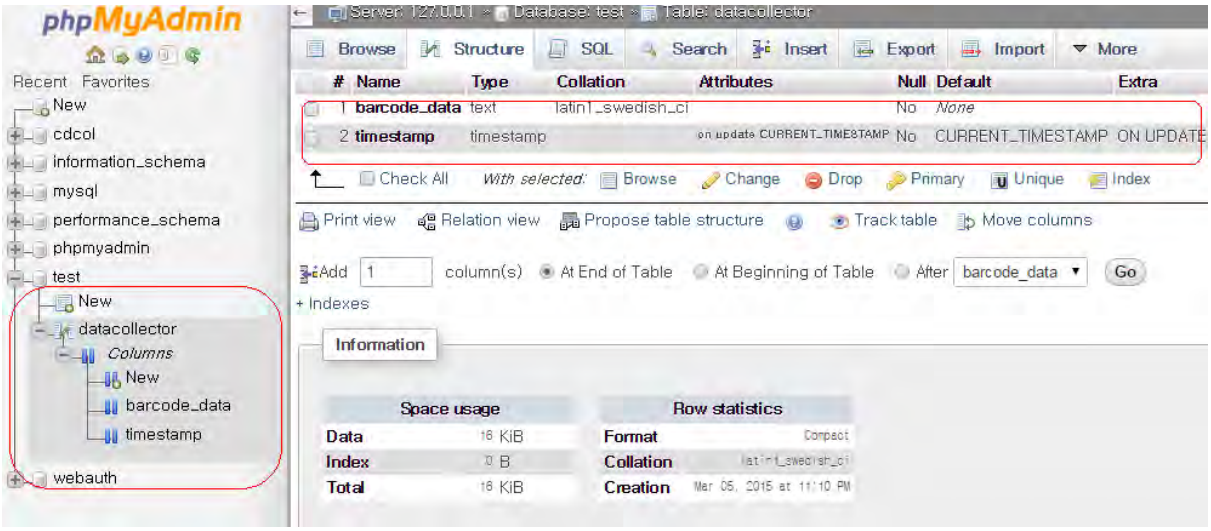


- Enter the following name and type as shown below, then click "Save".



- Once Save is completed, the following screen will display.

- If everything is installed properly, the following screen will display while opening: http://localhost/datacollector/CheckUpdateData.php.



Step 6. Send data from KDC to server

- Configure the KDC350 settings as follows:

  IP Address: Server IP address

  Port: 80(HTTP) if SSL is disabled, 443(HTTPS) if SSL is enabled.

  Server page: /datacollector/InsertData.php?data=

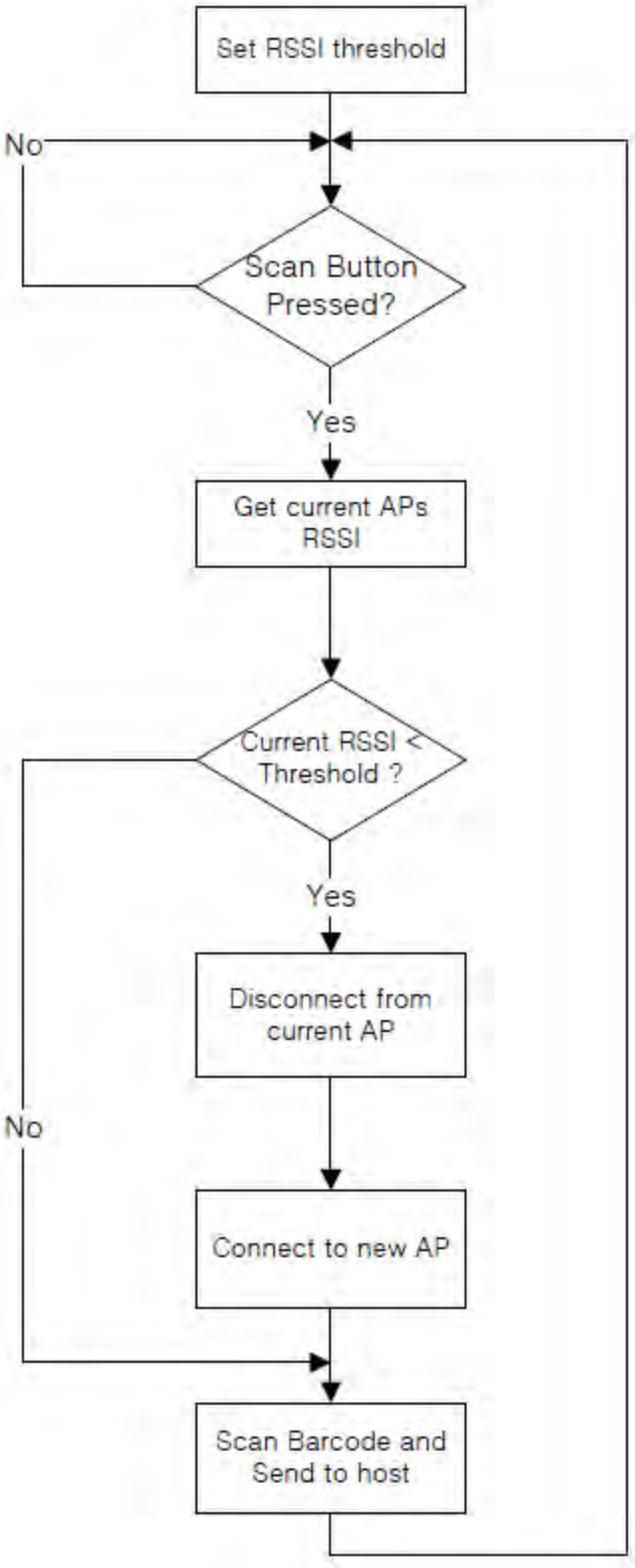
[Note]

- Set the KDC date to current date when using provided certificates.
- Rename InsertData.php.GET when using HTTP GET method.
- Rename InsertData.php.POST when using HTTP POST method.

5.1.5 WiFi Roaming

KDC does support roaming between APs which has the same SSID. When user presses Scan button, KDC checks current APs signal strength. If the signal strength is lower than pre-defined threshold, KDC disconnects from current connected AP and connect to new AP which has strongest signal strength. Usually it takes about 3-4 seconds. KDC provides a way to set the signal strength(RSSI) threshold and user can set it from -30 to -90.

The overall work flow is as following.


Set RSSI threshold
No
Scan Button Pressed?
Yes
Get current APs RSSI
Current RSSI < Threshold ?
Yes
Disconnect from current AP
No
Connect to new AP
Scan Barcode and Send to host

5.2 KDC470 HF (NFC)

5.2.1 NFC and RFID Supported by KDC

Near Field Communication (NFC) and Radio Frequency Identification (RFID) Supported by KDC

This guide explains how to use NFC and RFID functions on KDC models equipped with these options.

NFC		RFID
1D LASER models:	**2D IMAGER** models:	**2D IMAGER** models:
KDC 350LN	KDC 350CN	KDC 450
KDC 411N	KDC 421N	
KDC 415N	KDC 425N	

The KDC has TWO Special Bar Code sets: one for 1D Laser scanner models and one for 2D imager models. Be sure to follow the instructions for your scanner type.

Table: RFID and NFC Tag Compatibility

Item	ID	KDC 350N KDC 411N KDC 415N KDC 421N KDC 425N	KDC 450
Tag RFID	0x72		Yes
Tag Calypso	0x73		Yes
Tag Mifare 4K	0x74		Yes
Tag Type A	0x75		
Tag Type B	0x76		
Tag Felica	0x77		
Tag Jewel	0x78		Yes
Tag Mifare 1K	0x79	Yes	Yes
Tag Mifare Utralight C	0x7a	Yes	Yes
Tag Mifare Ultralight	0x7b	Yes	Yes
Tag Mifare Desfire	0x7c		Yes
Tag ISO15693	0x7d	Yes	Yes

5.2.2 Enabling and Disabling the NFC Reader

Enabling and Disabling The NFC Reader

There are TWO ways to enable/disable the NFC reader across all NFC-equipped KDC models. The KDC350N provides an additional two.

Way ONE	Scanning Special Bar Codes	(All NFC models)
Way TWO	Using Commands	(All NFC models)
Way THREE	Using the On-Board Menu System	(KDC350)
Way FOUR	Using the Function Key	(KDC350)

Way ONE Scanning Special Bar Codes (All NFC models)

1D LASER models: KDC350LN / KDC411N / KDC 415N	2D IMAGER models: KDC350CN / KDC 421N / KDC 425N
NFC Power Enable	NFC Power Enable
N0001	₸MKDCN0001.
NFC Power Disable	NFC Power Disable
N0010	₸MKDCN0010.

Enabling and Disabling The NFC Reader (cont'd)

Way TWO Using Commands (All NFC models)

The KDC NFC function is enabled/disabled with the following commands.

GRNS	0	@	NFC is disabled. 0 means '0'(0x30)
	1	@	NFC is enabled. 1 means '1'(0x31)

The following command is used to retrieve the current status of the KDC NFC function.

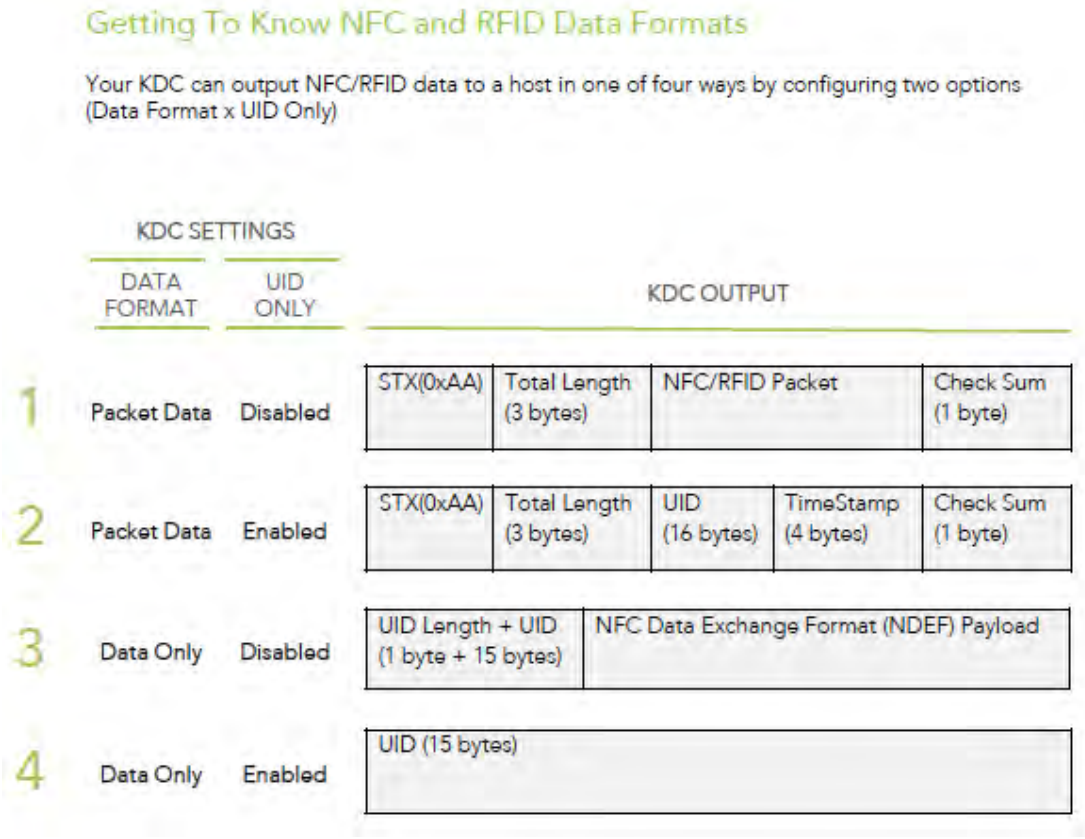
GRNG	value#	@ or !	Return status of NFC 0(0x00): NFC is disabled 1(0x01): NFC is enabled

Way THREE Using the On-Board Menu System (KDC350)

Way FOUR Using the Function Key (KDC350)

On the KDC350N, NFC power can be toggled by pressing <Fn>+<3> simultaneously on the keypad.

5.2.3 Getting to Know NFC and RFID Data Formats



Getting To Know NFC and RFID Data Formats

Your KDC can output NFC/RFID data to a host in one of four ways by configuring two options (Data Format x UID Only)

	KDC SETTINGS		KDC OUTPUT				
	DATA FORMAT	UID ONLY					
1	Packet Data	Disabled	STX(0xAA)	Total Length (3 bytes)	NFC/RFID Packet		Check Sum (1 byte)
2	Packet Data	Enabled	STX(0xAA)	Total Length (3 bytes)	UID (16 bytes)	TimeStamp (4 bytes)	Check Sum (1 byte)
3	Data Only	Disabled	UID Length + UID (1 byte + 15 bytes)	NFC Data Exchange Format (NDEF) Payload			
4	Data Only	Enabled	UID (15 bytes)				

5.2.4 NFC/RFID Tag Read

KDC default mode is **Read** mode when NFC/RFID power is enabled.

In this mode, KDC reads NFC/RFID data when an NFC/RFID tag is positioned near the back of the KDC; users receive the following audible and visible (KDC350) indications of a successful tag read:

l- Single Beep

l- Display UID on KDC screen (KDC350)

Tag data is transmitted to the host via Bluetooth or USB according to the selected NFC data format (as taught in this guide).

When reading NFC tags, the 3rd party host software application must parse the NDEF payload to get the corresponding message.

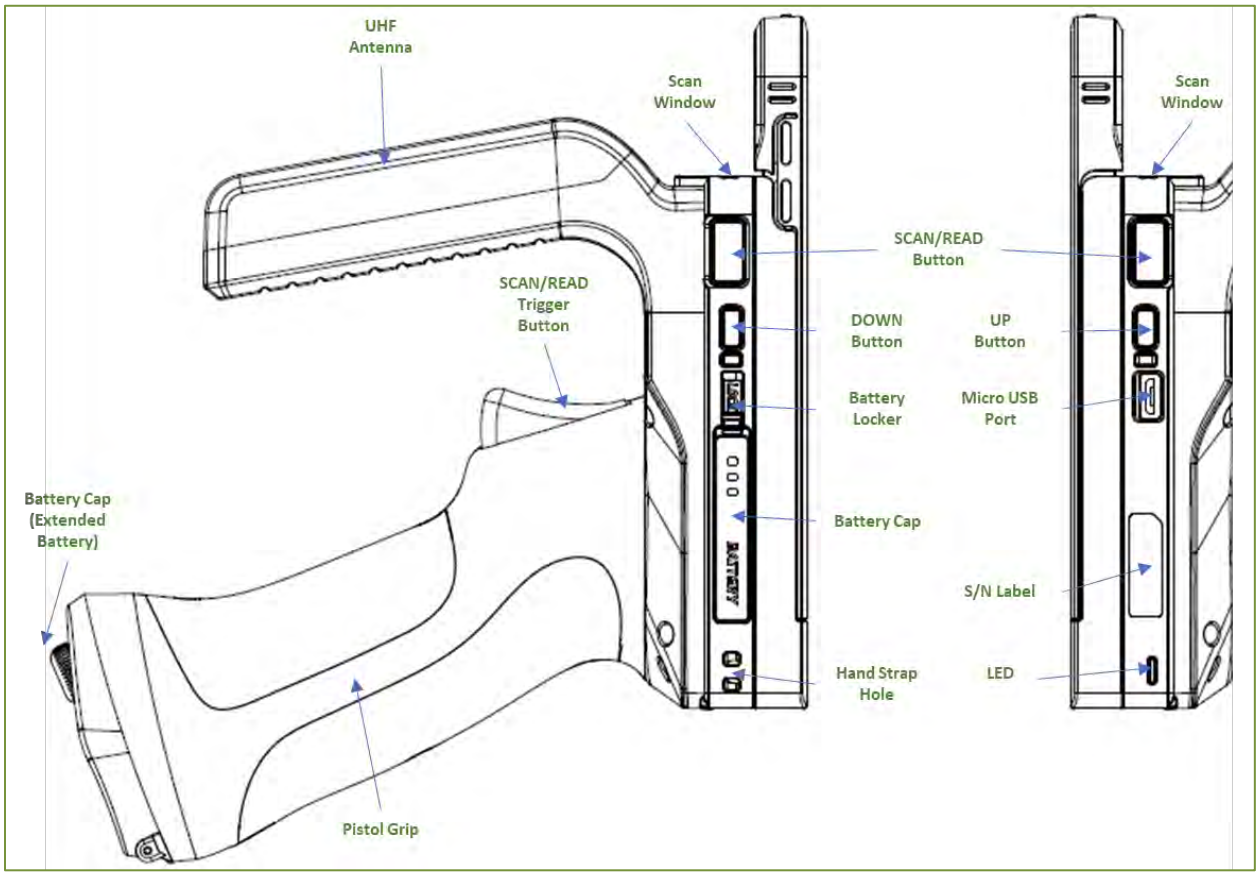
5.2.5 NFC/RFID Tag Write

NFC tag **Write** function works with Mifare Ultralight and Ultralight C tags

KDC will change to **Write** mode only when it receives the write command from the host.

5.3 KDC470/475 UHF

5.3.1 KDC470 UHF Diagram



5.3.2 Trigger Mode: Read RFID tag and Barcode with a trigger

In the trigger mode, with the trigger on the pistol grip, you can read barcodes and UHF tags. If you pull trigger once, then KDC470/475 reads RFID tag. If you pull trigger twice very shortly then KDC470/475 reads barcodes.

The following are barcodes to enable/disable Trigger mode.

Trigger Mode (Enable)	Trigger Mode (Disable)
┬MKDCNU701.	┬MKDCNU700.

5.3.3 Read Mode

KDC470/475 UHF reader is in barcode mode upon booting the device. To read UHF tag, it is required to change to UHF mode. By keep pressing UP button for 3 seconds, the read mode is toggled between barcode mode and UHF mode. Application also can select barcode mode or UHF mode via SDK.

KDC470/475 generates one (1) long and two (2) short beeps when changing to UHF mode and one (1) long and one (1) short beep when returning to barcode mode.

UHF Mode: 1 long and 2 short beeps

Barcode Mode: 1 long and 1 short beep

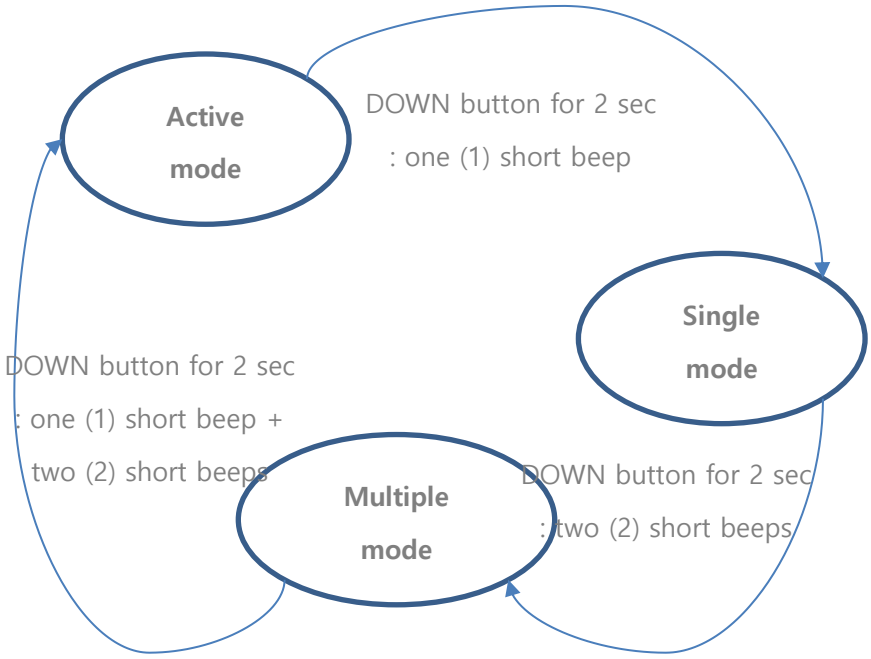
5.3.4 Read Tag Mode

There are three (3) Read Tag Modes: Single mode, Multiple mode, and Active mode. These options are only available in UHF mode (read mode).

- **In Single mode**, by pressing and releasing the SCAN button, it reads just one tag, whichever comes first.
- **In Multiple mode**, by pressing and releasing the SCAN button, it keeps reading multiple tags until the timeout value is expired. If the timeout value is set to 0, then press the SCAN button to stop reading.
- **In Active mode**, while the SCAN button is pressed, it keeps reading multiple tags until the SCAN button is released. If the timeout value is set to 0, then press the SCAN button to stop reading.

Application can also change to single, multiple, or active mode via SDK.

By default, the read mode is set to an active mode. These modes can be changed by pressing the DOWN button for 2 seconds.



Alternatively, you can scan the special barcodes to change the mode instead. (To change from active mode to another mode, you should disable the active mode first)

Single Mode

TMKDCN6010.

Multiple Mode

TMKDCN6001.

Active Mode (Enable)	Active Mode (Disable)
TMKDCN6201.	TMKDCN6210.

(NOTE) In this Active Mode, if the SCAN button or Trigger button stayed pressed more than 10 minutes, the read mode changes automatically from UHF Mode to Barcode Mode to avoid the battery drain due to the unwanted button press. This option is enabled by default, but it can be also disabled.

This is the option: Stop Active Read (10min Timeout)

Enabled (Default)	Disabled
┬MKDCN6301.	┬MKDCN6310.

5.3.5 UHF Tag Counting (BeepCount)

By setting the number of beeps, you can get the ballpark on how many tags are read.

- Count = 0: it beeps once only when you start reading
- Count = 5: it beeps once every 5-tag read. So, if you hear 2 beeps, it means you read 10~14 tags.
- Count = 10: it beeps once every 10-tag read. So, if you hear 2 beeps, it means you read 20~29 tags.
- Count = 20: it beeps once every 20-tag read. So, if you hear 2 beeps, it means you read 40~59 tags.
- Count = 50: it beeps once every 50-tag read. So, if you hear 2 beeps, it means you read 100~149 tags.

Here are the barcodes for tag counting:

Count = 0

TMKDCN6400.

Count = 5

TMKDCN6405.

Count = 10

TMKDCN640A.

Count = 20

TMKDCN6414.

Count = 50

TMKDCN6432.

5.3.6 Phone Charging Option (Only for 1.0W UHF Reader)

This option enables to charge the phone from the extended battery inside the pistol grip of 1.0W UHF Reader to the phone to give more battery capacity to the phone.

- Enabled (Default): Phone charging from the extended battery is enabled.
- Disabled: Phone charging from the extended battery is disabled.

Enabled (Default)	Disabled

5.4 KDC470/475 Communication Protocols

KDC470/475 supports various communication protocols include

- Serial (Apple iOS devices)
- OTG (Android USB port)
- Bluetooth (Classic or BLE)

KDC470/475 with custom iOS device case operates in Serial mode only. KDC470 with custom Android case opiates in both Bluetooth and OTG mode. Before using OTG mode on the Android custom case, it is strongly recommended to pair KDC470/475 with Android smartphone case in the Bluetooth mode. KDC470 doesn't perform paring when it is in the OTG mode.

5.4.1 How to start OTG mode

KDC470/475 starts to communicate with Android phone via USB when

1. Android phone case is configured for OTG mode, or
2. By scanning below barcode.

- Once OTG is configured, it will be stored in the KDC NVRAM and KDC470/475 will run as an OTG mode whenever it restarts.
- By scanning below barcode, user can change KDC470/475 operating mode to Bluetooth anytime.

5.4.2 Automatic operation mode changes

Because it is not possible to charge the smartphone while in OTG mode, KDC470/475 automatically switches to Bluetooth mode to charge phone when

1. User plugs USB cable to KDC470/475 USB port
2. User puts KDC470/475 in the charging cradle

All transitions between OTG and Bluetooth modes are performed automatically.

5.4.3 OTG and Extended battery

The KDC470/475 extended battery is disabled when KDC470/475 is in OTG mode and enabled when

1. KDC470/475 is configured as a Bluetooth mode, or
2. KDC470/475 is connected/charged via USB cable, or
3. KDC470/475 is in the charging cradle

5.4.4 Serial interface for iOS device

KDC470/475 communicates with iOS device via Serial interface with custom iOS case is attached. There is no operation difference between Bluetooth and Serial communication from iOS device perspective.

6 Synchronization

When barcode data is collected, it must be uploaded to your application. KTSync, which is bundled with the KDC, is a software that Enables 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/7/8/10/Mobile 5.0+. It has three major functions. (Windows XP/Vista/7/8/10 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 - Enables scanned data to be uploaded directly into your application as if the data were being entered manually with a keyboard.
- Application Generation - Enables 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.
- KDC Menu configurations.

6.1 KTSync Menu

KTSync was installed on your PC during the initial installation process. Before data may 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:

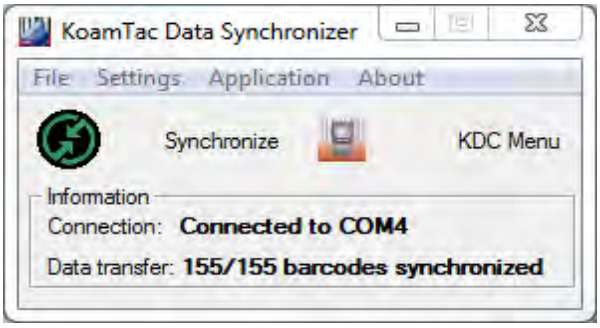


Figure 23 - KTSync® Synchronizer Initial Screen

File Menu

- Connect: This option displays the Serial port (COM#) assigned to KDC. You may also use this option to manually assign the Serial port. The Serial port assigned to KDC may 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/KDC500. Users may register a MAC address to be directly connected by KDC20/30/200/250/270/300/350/400/470.
- Configuration: This option Enables 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 may synchronize data on the KDC.

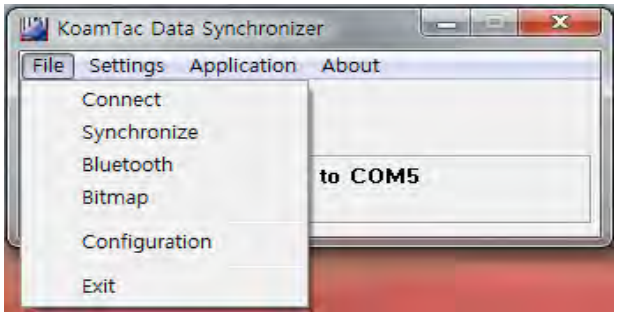


Figure 24 - File Menu

Settings Menu

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

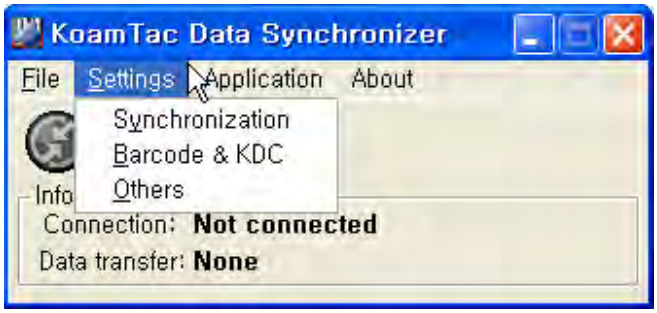


Figure 25 – Setting Menu

Application Menu(KDC500 doesn't support Application)

- Generation: Create user application or download predefined application.
- DB Lookup: Enables 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 may count inventories. Inventory description will be displayed if inventory DB is downloaded into the KDC.

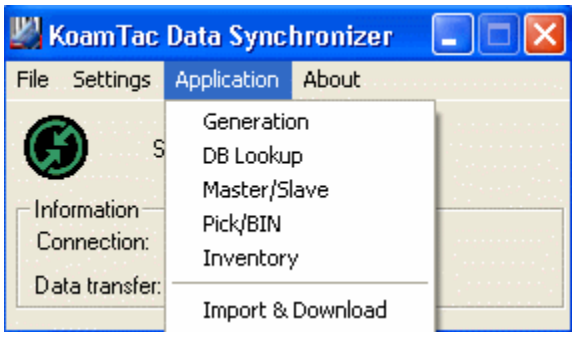


Figure 26 - Application Menu

About Menu - KTSync - Version Information

Figure 27 - About Menu

6.2 File Menu

6.2.1 Connect to KDC

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

Figure 28 - 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 may manually assign the COM port using KTSync Connect option under the File menu.

6.2.2 Synchronize

Located under the File Menu, this option enables 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.

6.2.3 Erase KDC Memory

Erase all stored data in the KDC internal memory.

6.2.4 Bluetooth

This menu option enables 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. (KDC500 doesn't support this feature. This menu is supported only on KDC devices that use Bluetooth Classic.)

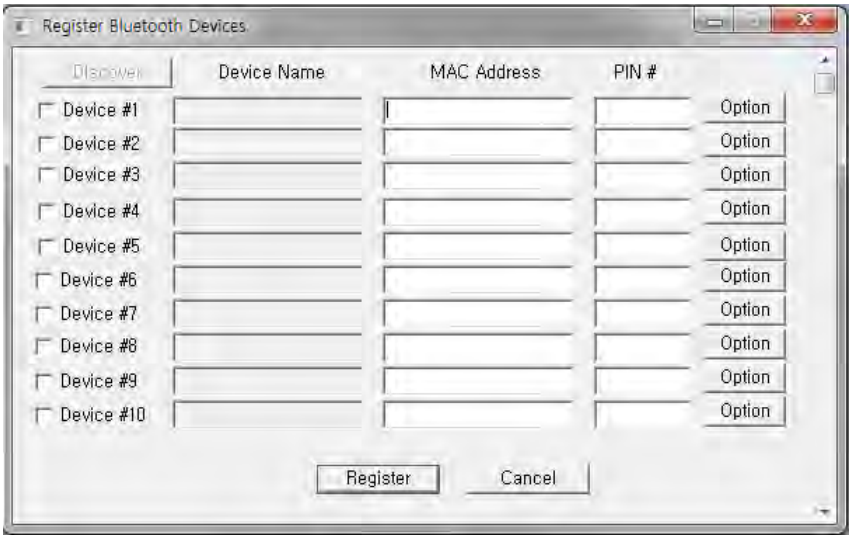


Figure 29 – Bluetooth Device Registration

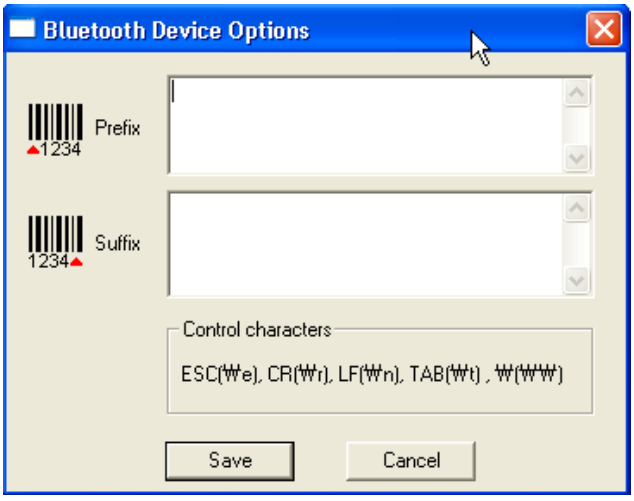


Figure 30 – Bluetooth Device Prefix/Suffix

6.2.5 Configuration

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

When you select **Configuration** in File menu, you will need to choose either **Export** or **Import**. First, select Export. 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 finished, the KDC will restart.

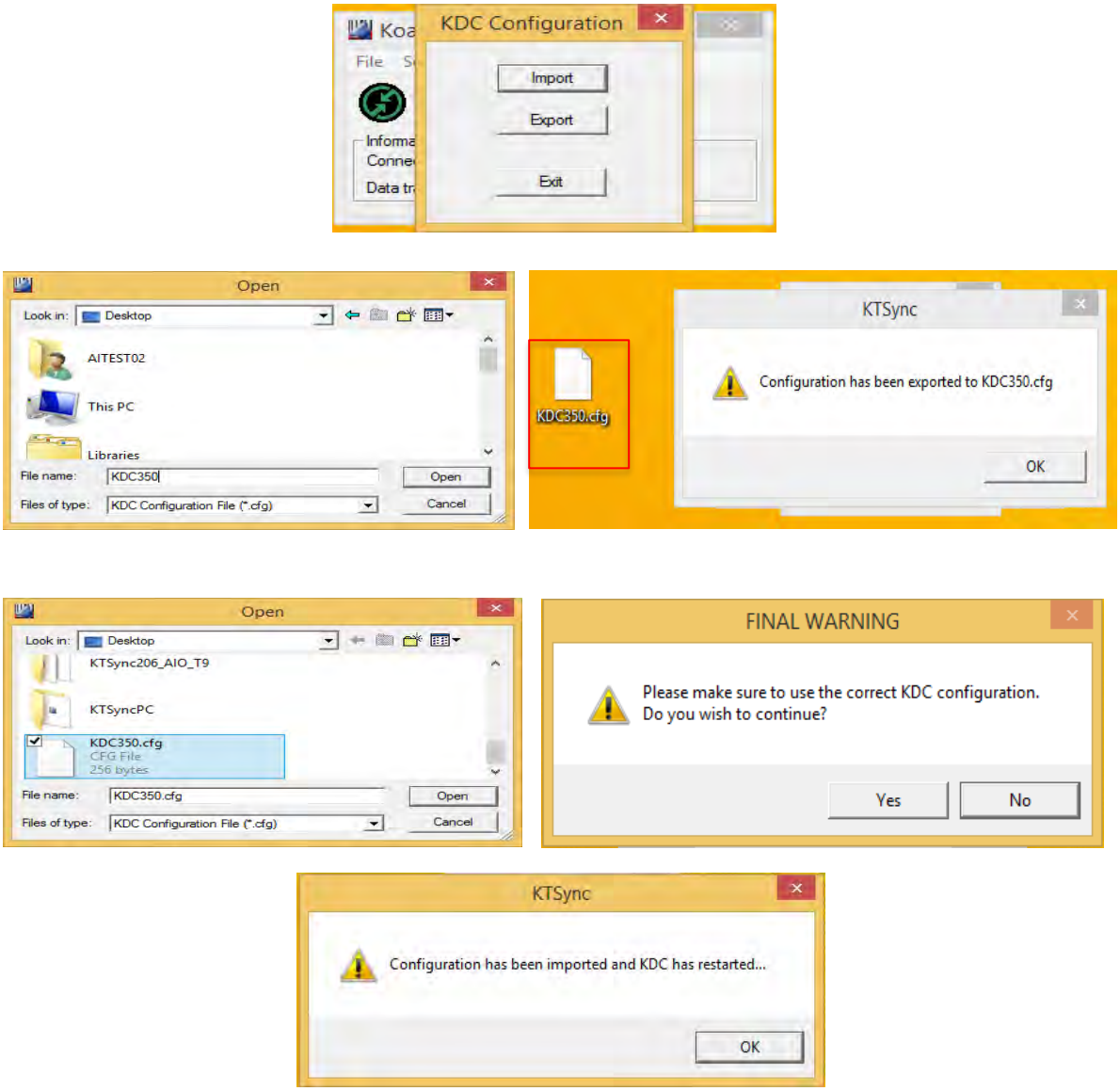


Figure 31 – KDC Configuration Import/Export

6.3 Synchronization Settings

KTSync provides several synchronization options for synchronizing data from your KDC to host devices.

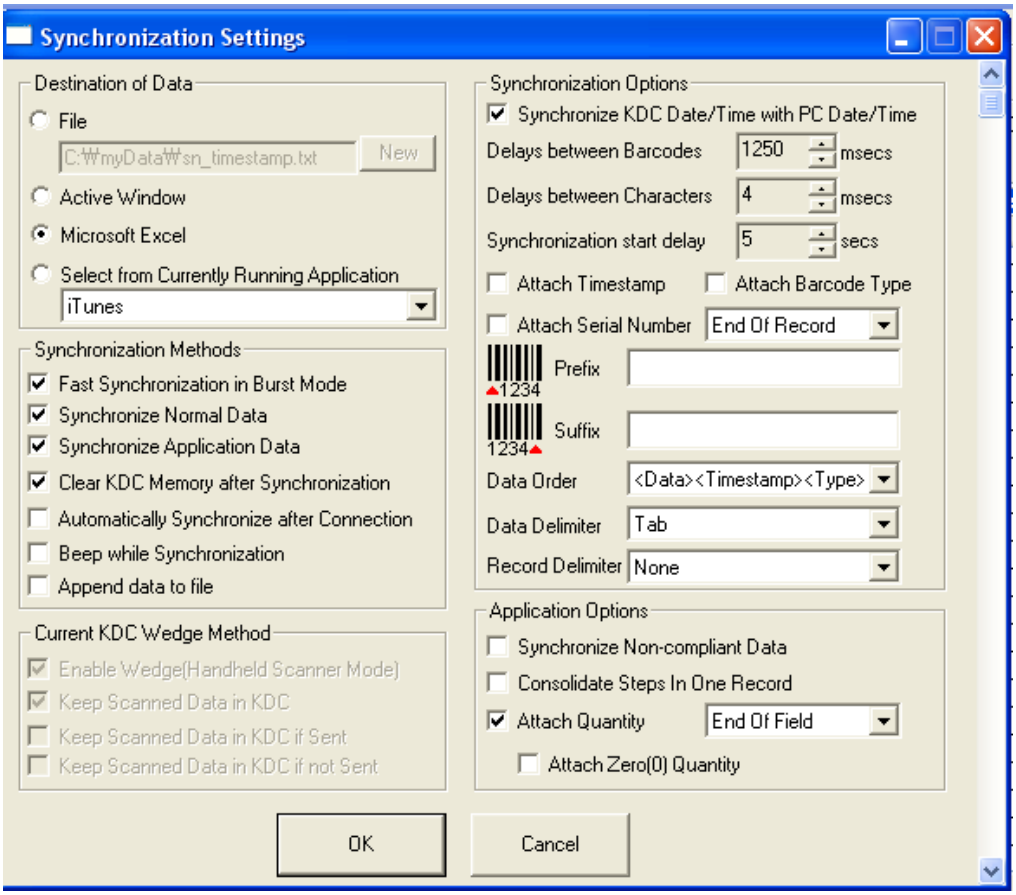


Figure 32 - KTSync Synchronization Settings

6.3.1 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:(This option is applied to only Windows XP/Vista/7/8/10)

- File - This option means data will be saved in the assigned file. You may select a different target directory by clicking the 'New' button. The default directory is C:\MyData\sn_timestamp.txt. If this directory does not exist, you will be prompted to create it before data may 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 Excel. Various parameters may be set when uploading data to Excel.
- Select from Current Running Application – This option enables the user to select a currently running application for data synchronization.

Note

- Data synchronization begins immediately if "Automatically Synchronize 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 may interrupt the process causing unreliable results.

6.3.2 Synchronization Methods

Fast Synchronization in Burst Mode

The KDC may synchronize data to a host device in Burst mode or Sequential mode. Burst mode provides the fastest synchronization process but could result in errors 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 only synchronize Normal Data in the KDC memory. If the user wants all data in the 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 only synchronize Application Data in the 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.

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

Beep while Synchronization

The user may 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.

6.3.3 Current KDC Wedge Method

The KDC may 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.

6.3.4 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 may 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 may be attached to the scanned barcode by selecting these options. The Serial Number of the KDC may 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>

6.3.5 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.

6.4 Barcode & KDC Settings

KTSync enables 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.

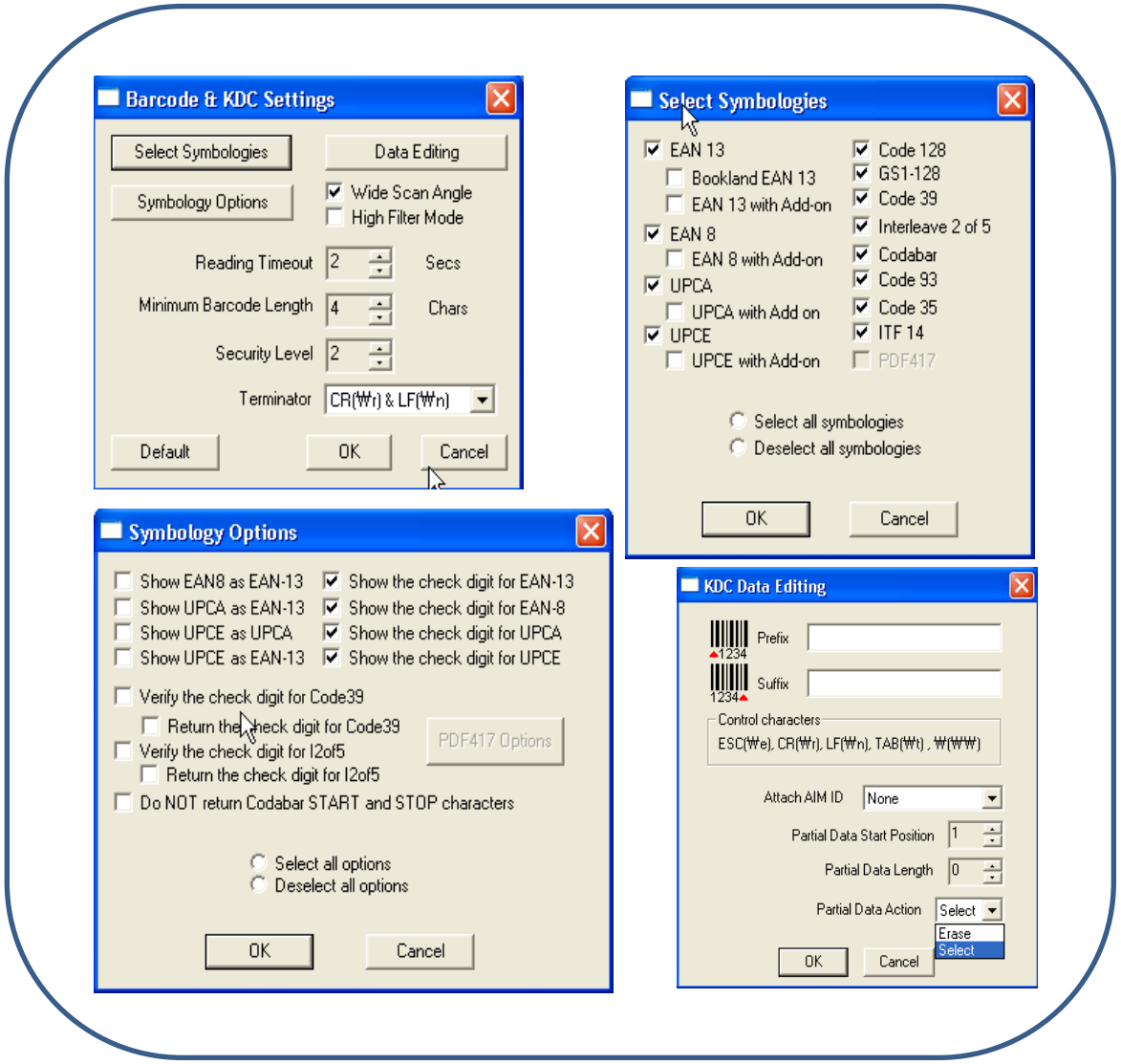


Figure 33 - Barcode & KDC Settings, Symbologies, Data Editing and Scan Options

6.4.1 Select Symbologies 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.

6.4.2 Data Editing Option

Prefix - Enables the user to add a prefix to scanned data that may 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 - Enables the user to add a suffix to scanned data, which may 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 - Enables the user to add AIM ID to scanned data, which may 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: Enables 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.

6.5 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** Enables reconnection of the KDC once the *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 enters 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.

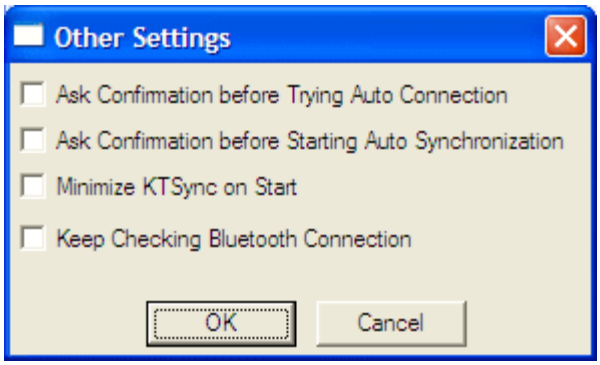


Figure 34 - KTSync® Confirmation Settings

KDC Menu in KTSync

After connecting KDC 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 may configure your KDC in KDC Menu window, as shown below.

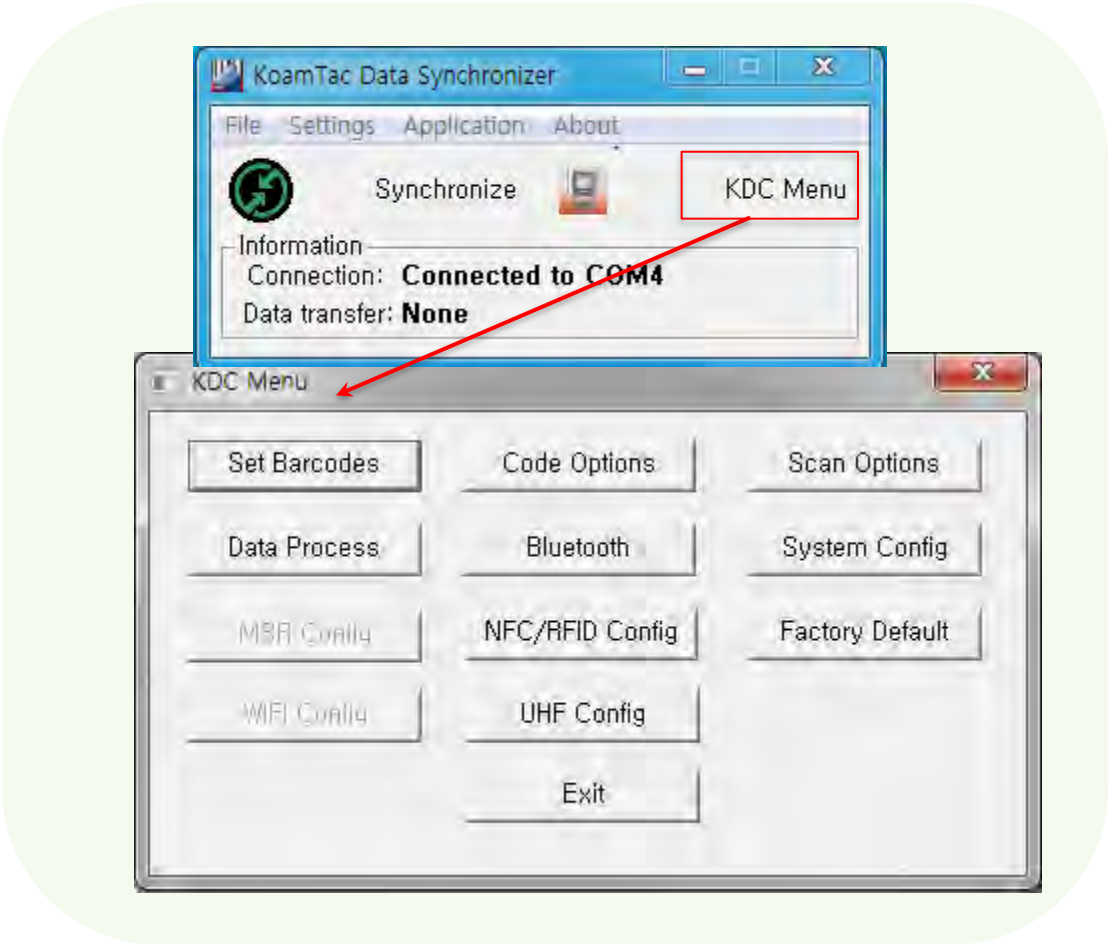


Figure 35 - KDC Menu in KTSync

6.6 Bitmap Display

Users can download bitmap to be displayed on KDC using KTSync.

Download Bitmap and upload up to 50 bitmap images. KDC can display 128x48 black and white and is supported with firmware version 3.05 and above. KTSync will only accept bitmap files using the following name:
Example: Bxxx.bmp
****xxx will specify bitmap index in KDC memory and may be set from 000 to 049**

Please refer to KDC programming manual to display downloaded bitmap on KDC.

6.7 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 - Enables 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.

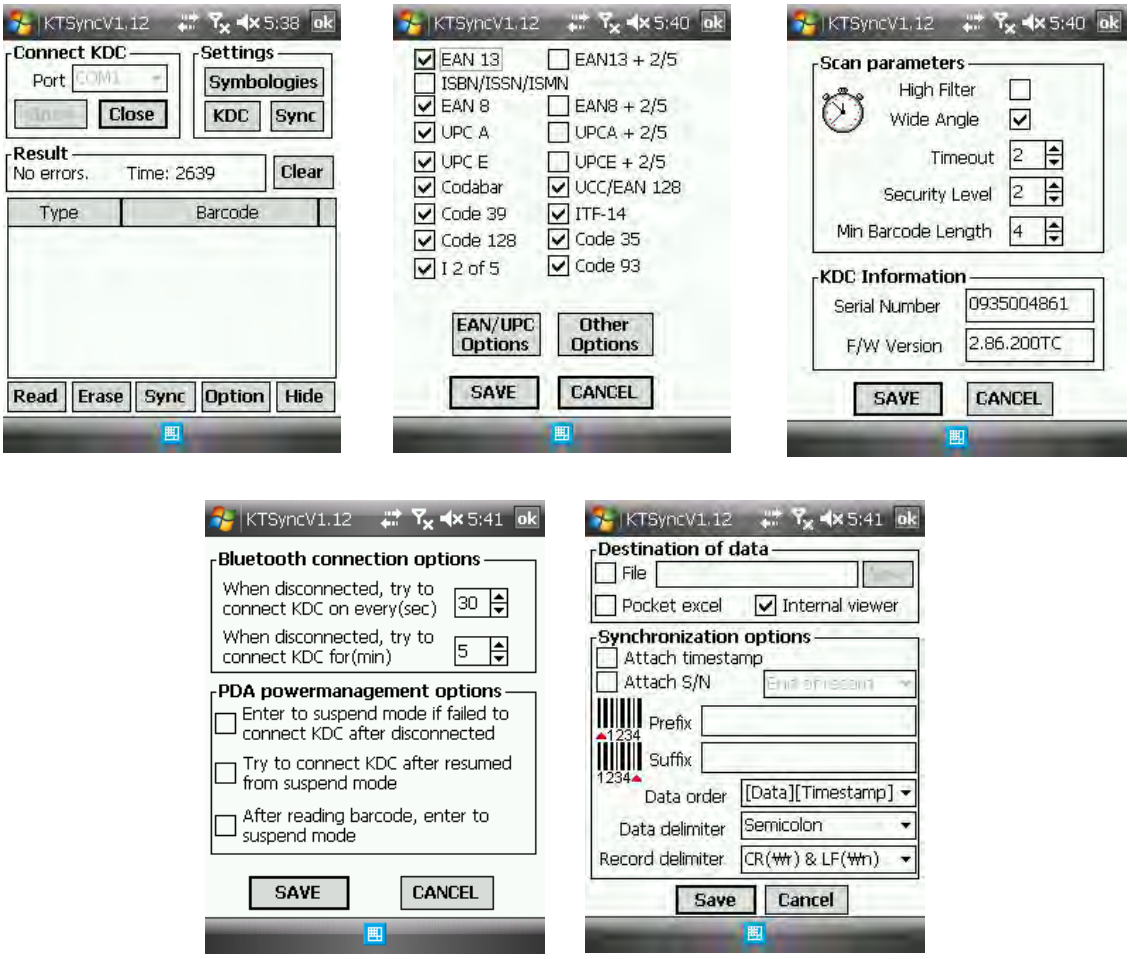


Figure 36 - Mobile pKTSync

6.8 Android aKTSync

The KTSync provides limited functionality of PC aKTSync 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.

6.8.1 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 may change various Synchronization options in the settings menu.
5. Wedging: The user may wedge barcode data to any Android application. Press the home key and launch the target application.

6.8.2 Launch KTSync

1. Download and install aKTSync from the Android Play Store.
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 KTSync setting.

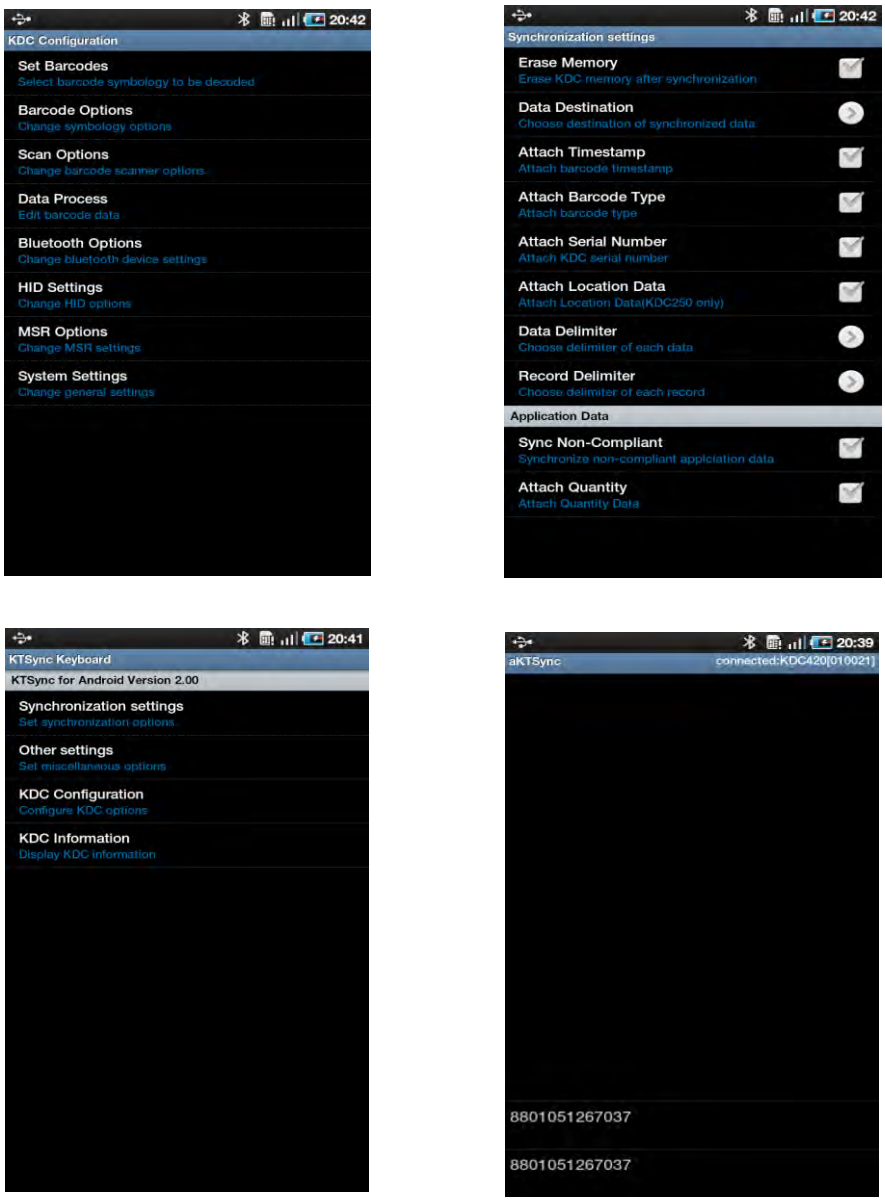


Figure 37 - Android aKTSync

6.8.3 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.

6.9 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 **MFi** Bluetooth profiles.
2. The iPhone/iPad/iPod touch should use **MFi** Bluetooth profiles. **MFi** 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 MFi mode" or "vice versa" after removing previous KDC connection.

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

6.9.1 KDC20i/30i/200i/250i/270i/270i/350i/400i/470i/475i/500i connection using MFi mode

1. Download and install KTSync from the Apple App Store.
   http://itunes.apple.com/us/app/ktsync/id372916602?mt=8
2. Pair KDC and iOS Device
3. Launch KTSync and configure Settings.

6.9.2 iKTSync Settings

iKTSync provides following Settings menu.

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

Figure 38 - iPad/iPhone/iPod touch KTSync

6.9.3 How to Connect and Reconnect MFi 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.

6.9.4 How to use Keyboard Wedge with iKTSync

1. Navigate to the iPhone/iPad/iPod Settings > General > Keyboard > Keyboards > Add New Keyboard... > Select the KTSync keyboard to be added.

2. Select the KTSync Keyboard > Allow Full Access.

3. Open up the application you want to scan into, and tap on the screen so the on-screen keyboard appears. Tap and hold on the globe icon located to the left of the spacebar. Select the KTSync Keyboard & begin scanning!

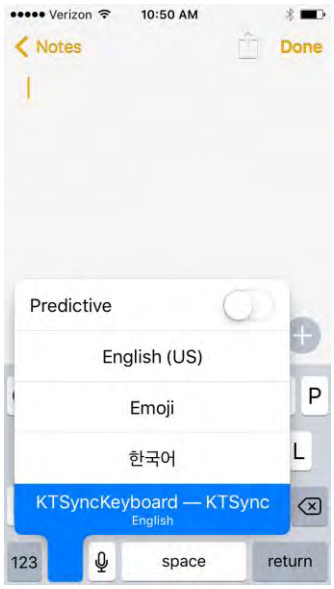


Figure 39 – iKTSync Keyboard Wedge

Note The KDC must be connected to KTSync & the KTSync keyboard must be selected in order for this to work.

6.10 KTSync for Mac OS X

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

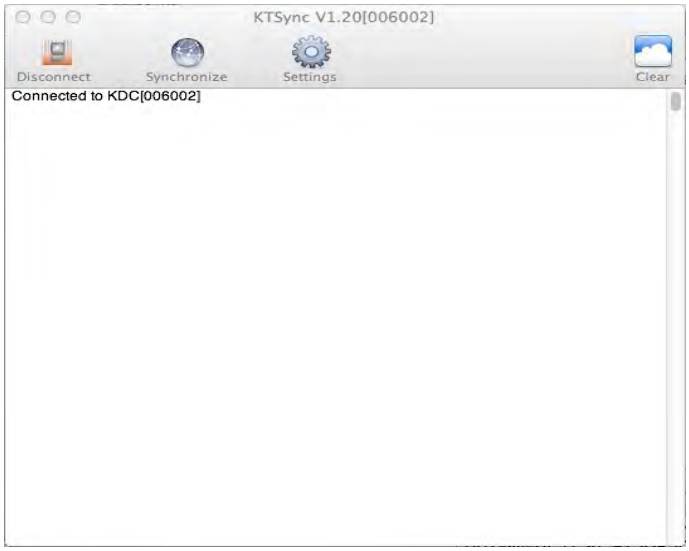
Note

- 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.

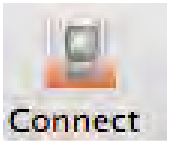
KTSync Mac OS X version supports the following features:

- 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.

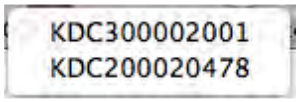
The user will see the following initial KTSync screen upon launching the program. KTSync will connect automatically if KDC is plugged in a USB port or if KDC is paired.



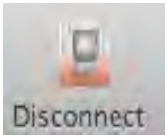
6.10.1 Connect Button



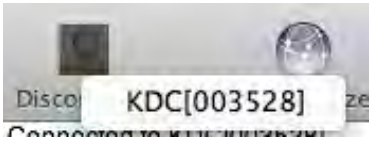
The user may connect the Mac with the KDC that is paired or plugged into the USB port by clicking the Connect button. The following screen will be displayed when this button is pressed, and KTSync will start to connect to the selected KDC.



6.10.2 Disconnect Button



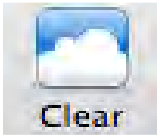
KTSync changes Connect button to Disconnect button once the KDC is connected. The user may disconnect the KDC manually by selecting connected KDC on the following screen.



6.10.3 Synchronize Button

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

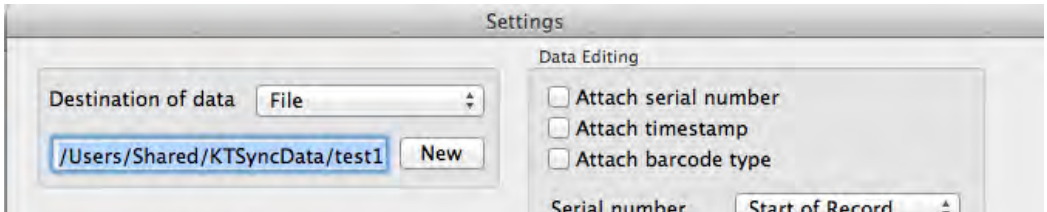
6.10.4 Clear Button



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

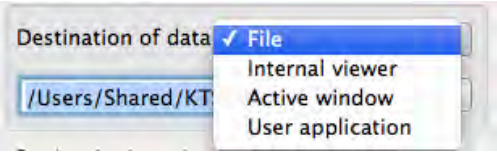
6.10.5 Settings Button

The user may 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 may 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 may 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 maynot 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 maynot be disabled.

- Attach Time Stamp

  The KTSync would add timestamp to barcode data. This option is enabled by default and maynot be disabled.

- Attached Barcode Type

  The KTSync would add barcode type to barcode data. This option is enabled by default and maynot 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 may 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 may 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.

7 Application Generation

Note KDC FW2.85 does not support the Application Generation feature. Users should upgrade FW2.85 to FW2.86 or FW3.0+ to use Application Generation feature.

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

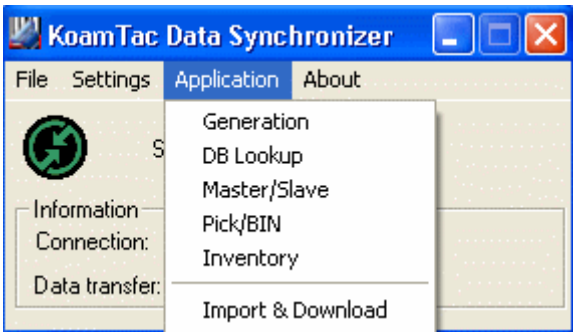


Figure 40 - Application Menu

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.

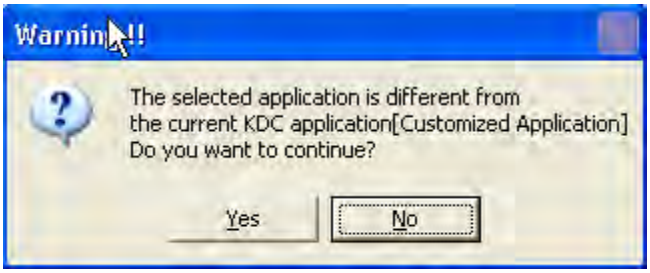


Figure 41 - Application Warning Window

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 or 3.0+.

7.1 Application Generation

The KDC Application Generation tool is a robust feature that enables the user 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®.

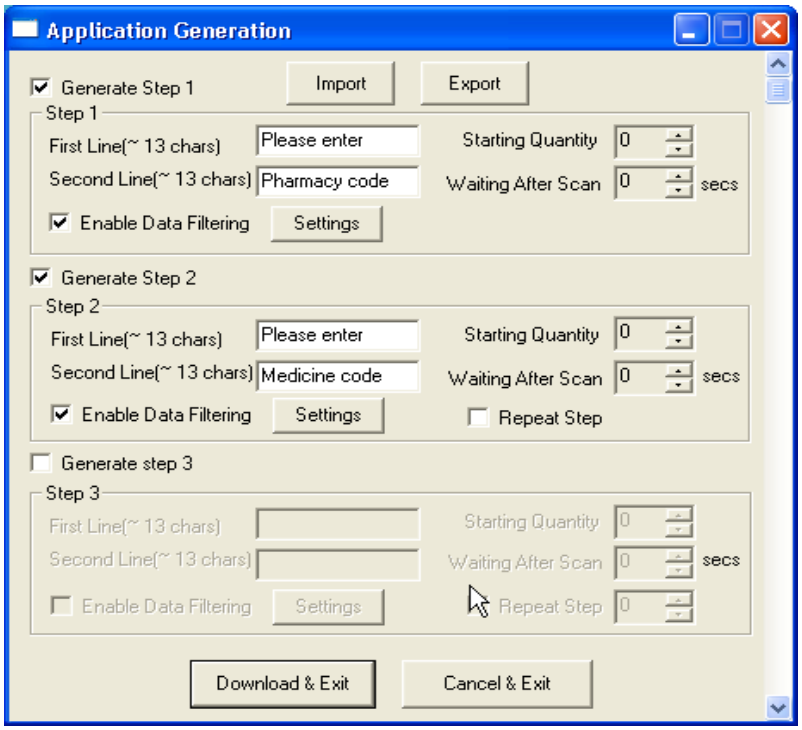


Figure 42 - Application Generation Menu

7.1.1 Generate Application

*7.1.1.1*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 may 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 may be defined from 1 to 128. Use the up or down 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 may modify the quantity. If this field is set to zero, the quantity field may not be adjusted. This field may 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 enables the user to predefine different aspects of the barcode data being collecting.

7.1.2 Data Filter Settings

When the user selects 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.

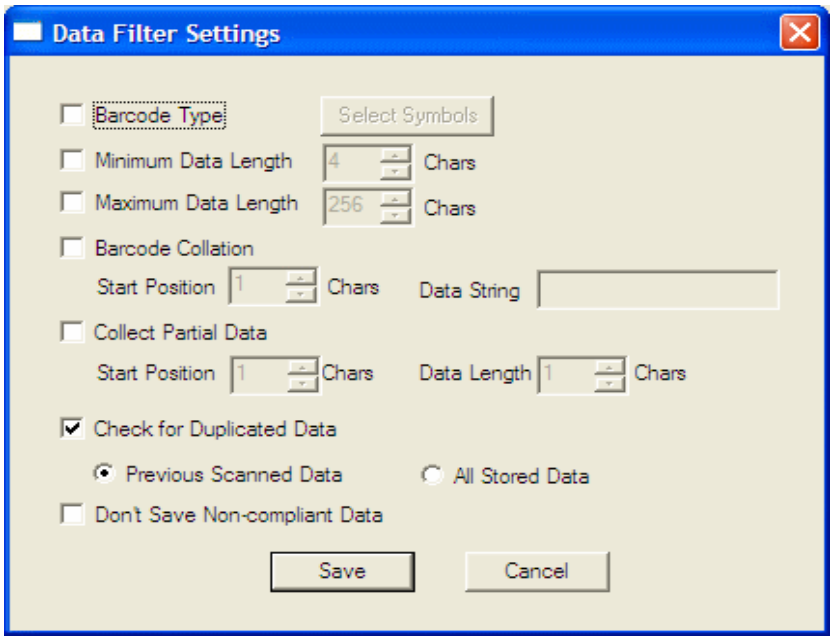


Figure 43 - Data Filter Settings

- Barcode Type
  This field enables 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 enables the user to define the minimum length of the scanned barcode. The length may be between 2 and 36 (1D models), 2 and 48 (2D models) 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 enables the user to define the maximum length of a scanned barcode. The defined length may 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 may be up to 32 characters.

- Collect Partial Data

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

- Previous Scanned Data – This option enables 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 enables 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.

7.1.3 Application Download and Execution

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

1. Click the "Download" icon from the Application Generation Window.
2. Change the KDC from Normal mode to Application mode.
   A. Press both side buttons simultaneously to enter menu mode.
   B. Select KDC mode and press the scan button.
   C. Change to Application mode.
   D. Save and exit from menu mode.
3. The 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.

7.2 Predefined Applications

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

7.2.1 Master/Slave

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

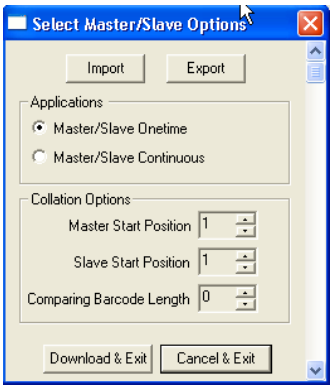


Figure 44 - Master/Slave Application Settings

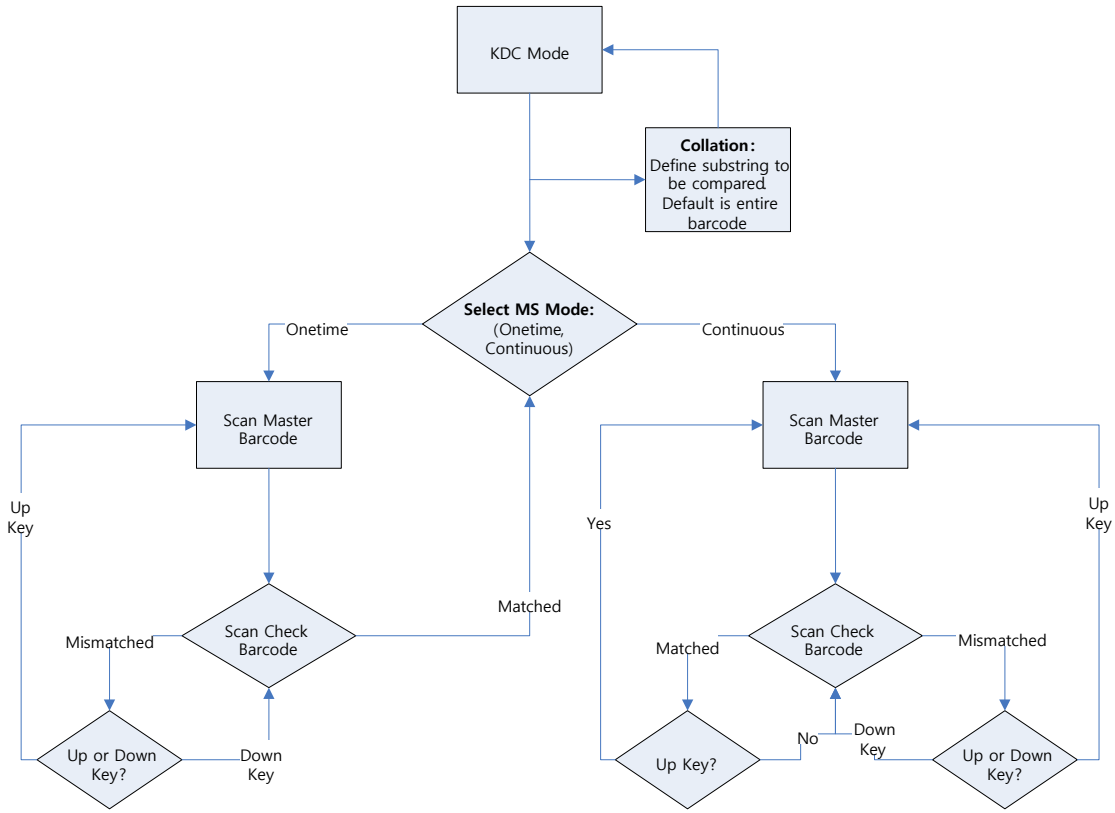


Figure 45 - Master/Slave Application Flow Chart

7.2.2 Pick/Bin

The Pick/Bin predefined application is a special version of the Master/Slave predefined application. The Pick/Bin application enables 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.

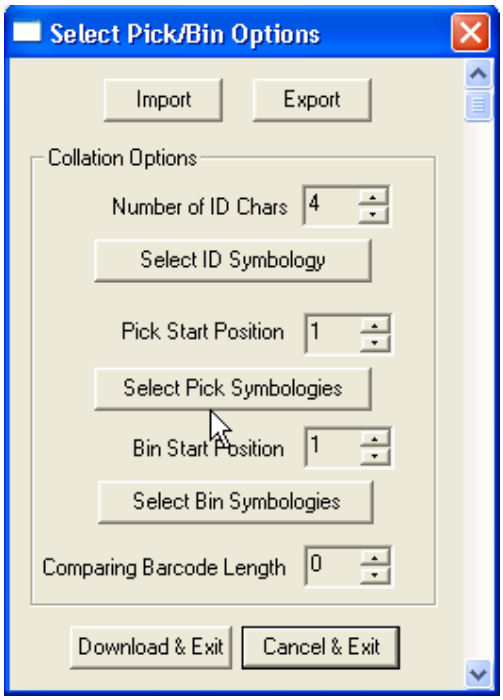


Figure 46 - Pick/BIN Application Menu

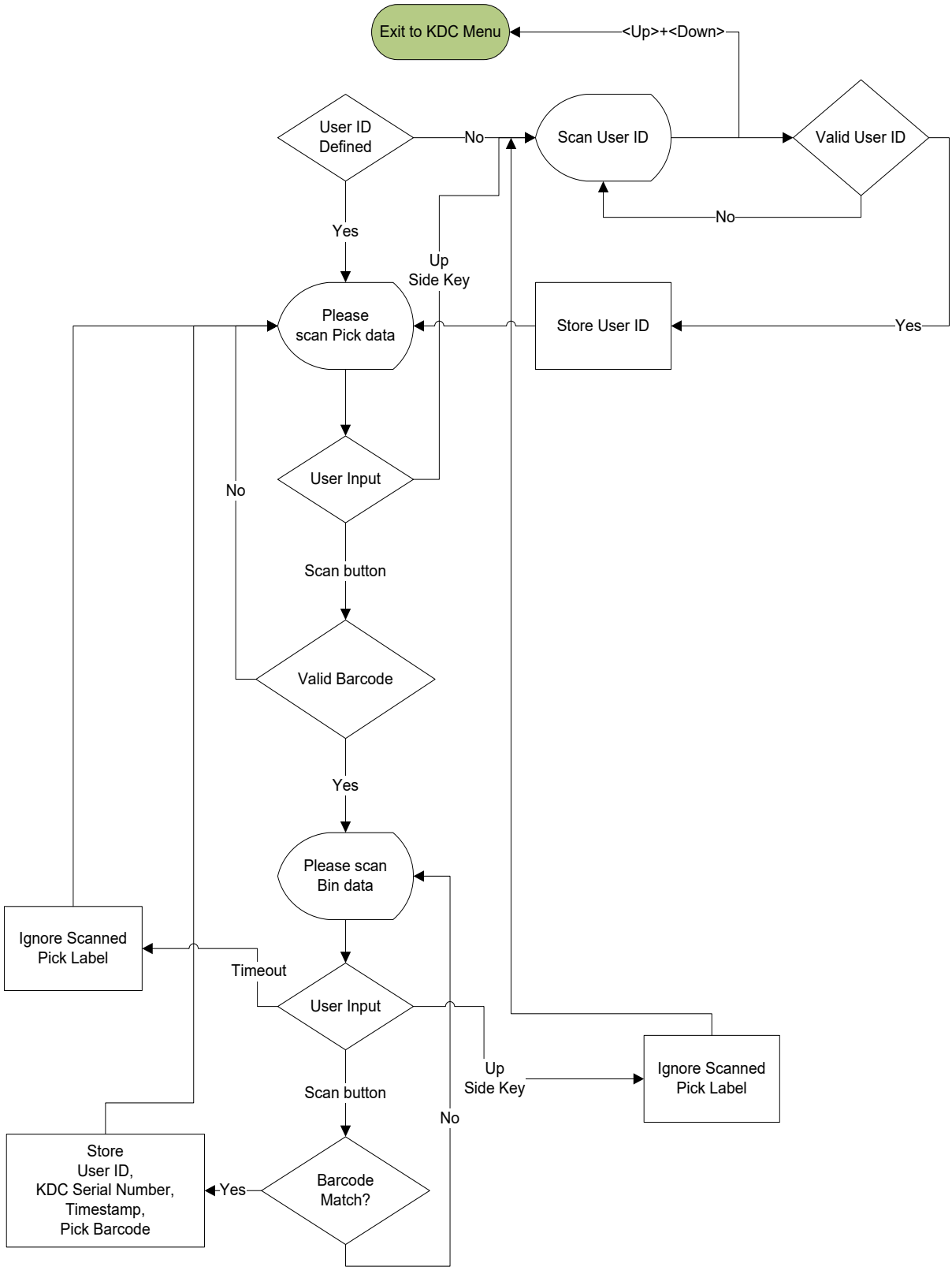


Figure 47 - Pick/BIN Application Flow Chart

7.2.3 DB Lookup Application

The DB Lookup application enables the user to download a database to the KDC that may 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 may download a product database including information such as description, price, and stock quantity. With the advanced data functionality built-in to the KDC, you may easily display product price, description, and stock level after the product's barcode is scanned.

Functionality of DB Lookup Application (based on the firmware version v2.86 and v3.0+)

- The database size may not exceed 800 records (v2.86) / 61,440 records (v3.0+).
- The maximum record size is 128 bytes.
- Each record may have up to 4 fields, including the barcode, which is the primary key.
- The maximum field size is 39 characters.
- Quantities may be entered by pressing the UP or DOWN scroll buttons after DB fields are displayed.
- Quantity may be 1 to 128.
- The user may 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.

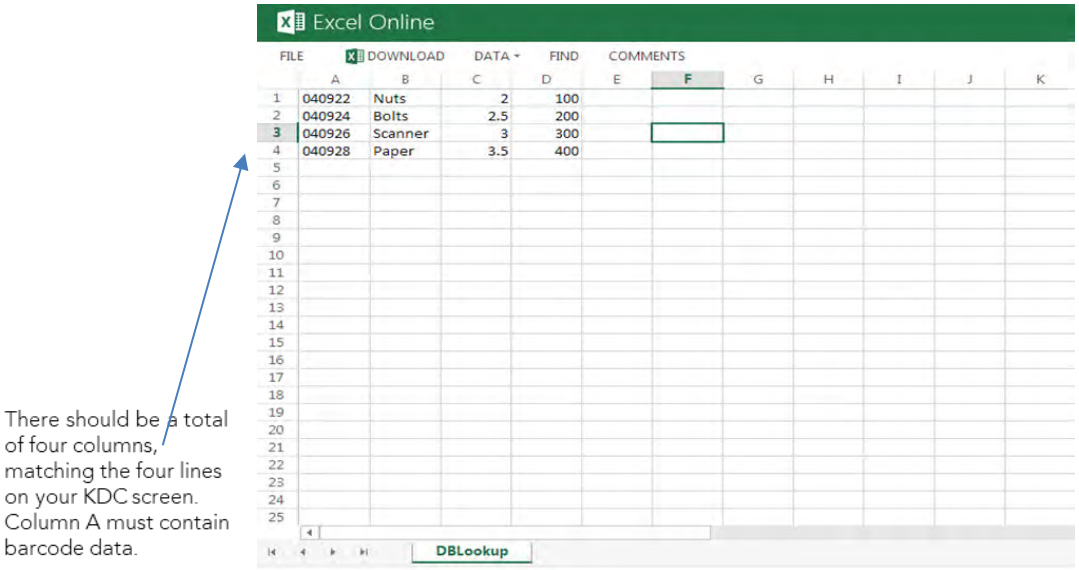
DB Lookup Fields and Settings (based on the firmware version v2.86 and v3.0+)

- Download DB to KDC - Downloads user created database to the KDC.
- Starting Quantity - Enter the predefined start quantity for each scanned barcode. The start quantity may be defined from 1 to 128 and may be adjusted using the UP or DOWN buttons.
- Barcode Field - Select the position of the 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 may display one to three fields. KDC will display one field in two or three lines, if same field is specified in line entering option.

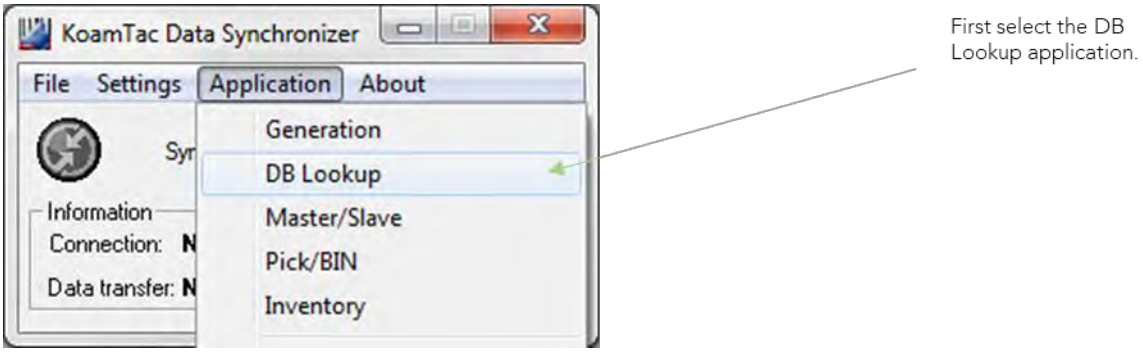
Formatting Database

You must first create a database in order to use the DB Lookup Application. If you need to create one, follow the steps below. We recommend using Microsoft Excel when creating a database for formatting purposes. Copy & paste from Excel into a text document, such as, Microsoft Word. Save the Word document as a .txt file.



Creating an application

Connect your KDC to your PC. Open KTSync>Application>DB Lookup



Import the application to your KDC

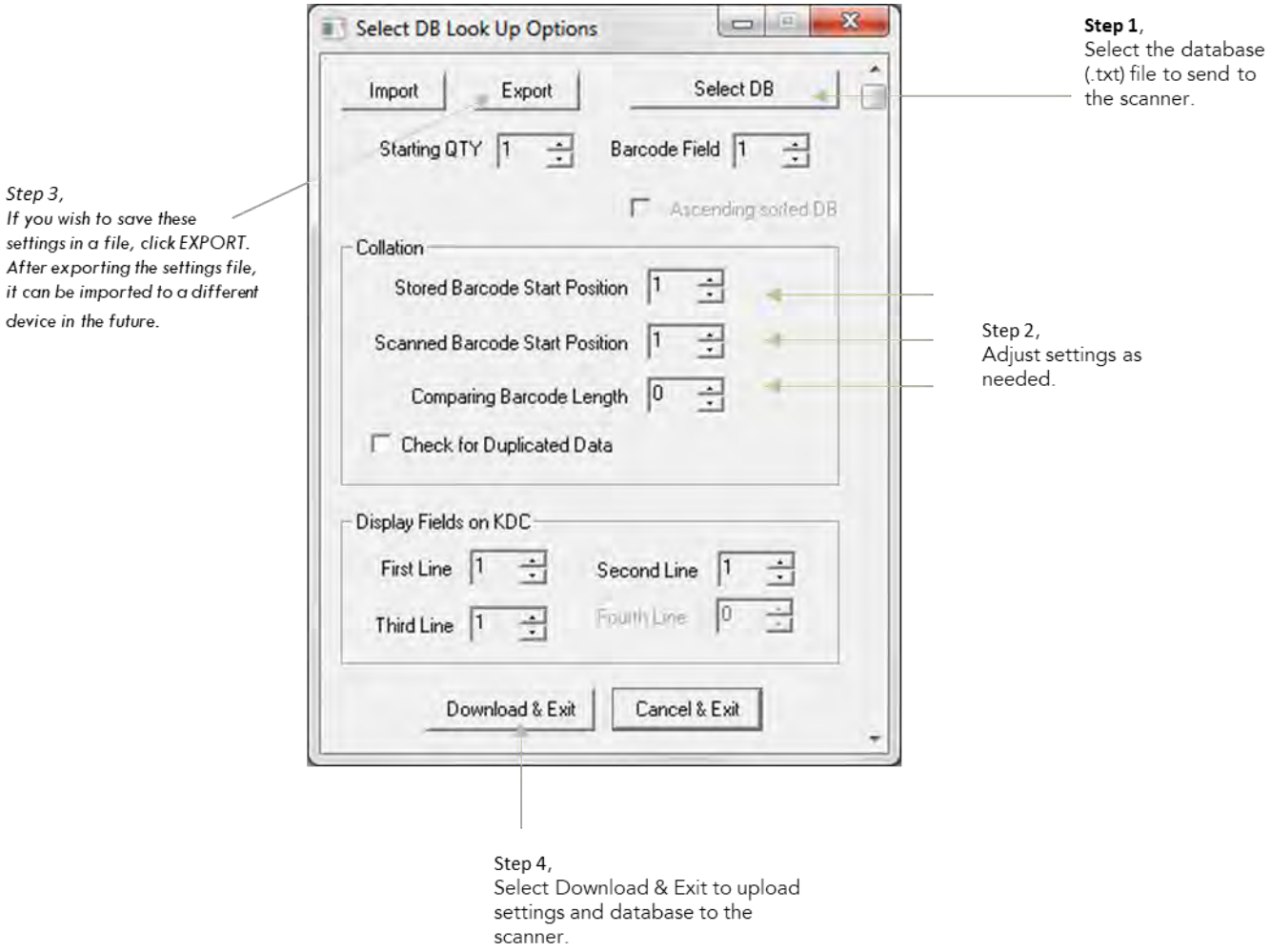


Figure 48 - DB Lookup Application

7.2.4 Inventory Application

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

Functionality of Inventory Application (based on the firmware version v2.86 and v3.0+)

- Inventory may not exceed 800 items (v2.86) / 61,440 items (v3.0+).
- The maximum record size is 128 bytes.
- Each record may have up to 4 fields, including the barcode, which is the primary key.
- The maximum field size is 39 characters.
- Quantities 1 to 32786 may be entered by pressing the UP or DOWN buttons after inventory is scanned.
- Starting Quantity may be 1 to 128.
- Min/Max. Data Length is between 2 to 256 (1D models) or 4 to 256 (2D models).
- 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 may create an inventory database using Microsoft Excel.
  - Excel file must be saved as .txt.
  - Click the **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.

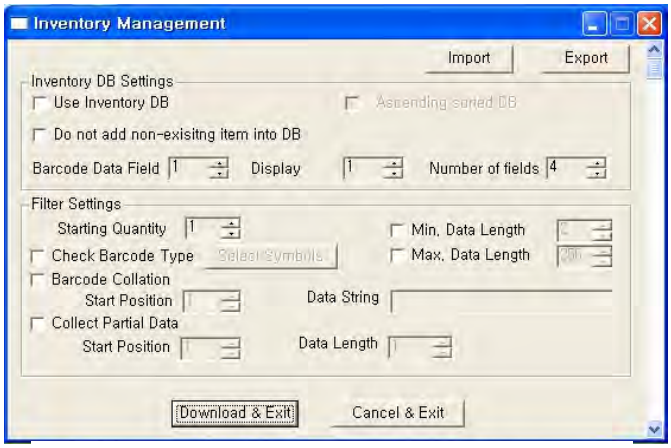


Figure 49 – Inventory Application

7.2.5 Special barcodes for Application Mode and Normal Mode (1D)

KDC Mode = Normal	KDC Mode = Application
5C000	5C001

7.2.6 Special barcodes for Application Mode and Normal Mode (2D)

KDC Mode = Normal	KDC Mode = Application
M KDC5C000.	M KDC5C001.

8 Troubleshooting

KDC not working	Dead Battery: No scan light, beep sound, LED light, and display.	Charge battery by connecting KDC to power source using included cable. KDC may take up to 20 minutes to power on from dead battery.
	Hardware failure • Laser scan engine appears as a dot or not emitted at all. • OLED – display screen is distorted or no display. • USB – KDC does not charge at all. KDC display toggles between messages 'USB Port Connected' and 'USB Port Disconnected' when KDC is plugged into power source.	Contact distributor for technical support
KDC not charging	Bad battery	Recommends replacing KDC battery annually.
	Bad USB port	Power source does not supply proper current to KDC. Try first using another USB port or power source. If problem persists the issue may be hardware damage to the USB port or charging cable.
Failed reading	Failed Reading – KDC is out of scan range or incorrect angle	Try scanning at a closer distance or changing the angle of the scan.
	Failed Reading – Scan window is dirty or damaged	Clean the scan window and make sure there are is no dirt or cracks impacting the scan light. Contact distributor for support if damaged.
	Barcode settings - Symbology not enabled or supported	Check barcode settings to make sure Symbology is enabled or contact
	Barcode settings – does not meet minimum length	Check scan options. Min. length for laser models is 4 characters and can be lowered to 2. Imager models min. length is 2 and can be lowered to 1.
	Failed Reading – poor bar code quality or damage barcode	Try scanning a different bar code.
	Failed Reading – KDC is out of scan	Try scanning at a closer distance or

	range or incorrect angle	changing the angle of the scan.
KDC reads wrong barcode	Dirty scan window	Clean scan window
	Damaged scan window	Replace scan window
	Poor quality barcode	Select only necessary barcodes, increase minimum barcode length, increase security level.
KDC unable to connect with host device.	Smartphone – Make sure correct Bluetooth profile is selected. Use HID iOS or MFi for iOS devices and HID Normal/SPP for Android devices.	Unpair KDC and scan appropriate pairing bar code on quick manual. Once scanned the LED lights on the KDC will blink Orange indicating HID mode, Red indicating SPP mode, or Green indicating MFi mode.
	PC (wired) – Make sure USB cable is connected properly and USB port or cable is not damaged. PC (Bluetooth) – Make sure SPP profile is used and KDC is unplugged from USB cable	Try reinstalling KDC driver, restarting PC and using different USB ports and USB cables. Unplug KDC from USB and repair using Bluetooth.
Buffer Full Message	Barcode storage is full.	First, synchronize data using KTSync to save data to PC then clear memory using Memory Reset bar code on the quick manual.
Abnormal KTSync Operation on DELL PC	Quickset Utility	Disable Quickset Utility before using KTSync. Dell Quickset utility interrupts normal KTSync operation
KDC500 touch keypad not working	WSED Utility	Disable WSED Wireless enable/disable utility. 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/CurrentVersion/Run/WSED
	Foreign object detected	Clear any foreign object (including your finger) placed on the touch keypad and reset KDC.
KDC500 Compromise message displayed	Hardware failure	Contact distributor for technical support.
	Security Attack detected	Contact distributor for technical support.

Table 6 - Troubleshooting Techniques

9 Contact Information

KOAMTAC

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 Symbologies

KOAMTAC's KDC products support most major barcode symbologies including 1D, 2D, Postal, and OCR-Fonts. Below is the list of the barcode symbologies 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 symbologies.

	KDC20/100/200/250/270L/270D/350L/ 410/411/415/470L/470D/500L	*KDC30/270C/280C/300/350C/420/42 1/425/450/470C/500C*
1D Barcodes	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
2D Barcodes	*N/A*	AztecCode, AztecRunes, CodablockF,Code 16K, Code49, DataMatrix, MaxiCode, MicroPDF, PDF417, & QRCode and HanXin Code
Postal Barcodes	*N/A*	AusPost, MayadaPost, ChinaPost, JapanPost, KoreaPost, KixPost, Planet Code, Postnet (US), & UKPost
OCR Fonts	*N/A*	OCR-A, OCR-B, OCRUSCurrency, OCRMICRE13B, & OCRSEMIFONT

Table 7 - Symbologies Supported by KDC

10.1.1 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.

10.1.2 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 (KDC20/100/200/250/270L/270D/410/411/415/470L/470D/475L/475D/475S)

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 may 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.

10.2.1 Reverse Direction

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

10.2.2 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 may 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

10.2.3 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 may enable their verification, or the user may enable the verification for individual symbologies. If the check digit verification fails, the barcode is not transmitted.

10.2.4 Transmission of "Check Digit"

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"

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

Option Selected	Is the check digit returned?					
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"

10.2.5 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

10.3.1 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.

10.3.2 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.

10.3.3 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 may 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.

10.3.4 Equation to Determining Potential Number of Stored Barcodes

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

Example: *In case of EAN-13, it takes up 20 bytes. The maximum number of EAN-13 barcodes that may be saved is STORAGE_SIZE/20. For example, in case of 4MB, it may store maximum 204,800 barcodes and in case of 8MB, it may store maximum 409,600 barcodes.*

10.3.5 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 KDC20/100/200/250/270L/270D/350L/410/411/415/470L/470D/500L support 1D barcode only. KDC30/270C/280C/300/350C/420/421/425/450/470C/475C/500C support most major 1D, 2D barcode symbologies and OCR.

KDC30/270C/280C/300/350C/420/421/425/450/470C/475C/475H/500C	***KDC20/100/200/250/270L/270D/350L/410/411/415/470L/470D/475L/475D/475S/500L***
2D Barcodes	***1D Barcodes***
AztecCode, AztecRunes, CodablockF, Code16K, Code49, DataMatrix, MaxiCode, MicroPDF, PDF417, QRCode, and HanXin Code	EAN13
	EAN8
	UPCA
1D Barcodes	UPCE
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	Bookland EAN
	EAN13 with Add-on
	EAN8 with Add-on
	UPCA with Add-on
	UPCE with Add-on
	Interleave 2 of 5
	ITF14
Postal Barcodes	Code128
AusPost, CanadaPost, ChinaPost, JapanPost, KoreaPost, KixPost, Planet Code, Postnet (US), and UKPost	Codabar
	GS1-128
	Code39
OCR Fonts	Code93
OCR-A, OCR-B, OCRPassport, OCRMICRE13B, and OCRSEMIFONT	Code35

Table 14 – Symbologies supported by KDC

11.2 Host Interface

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(except KDC470/475) have one Ultra-mini USB port that supports USB to Serial protocol and Bluetooth that supports HID/SPP/MFi *Bluetooth* profiles. KDC270 and KDC470/475 have one Micro USB port 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. KDC500 has one micro USB port that supports USB to Serial protocol and Bluetooth that supports SPP/MFi *Bluetooth* profile. KDC280 has one Micro USB port and Bluetooth Low Energy that supports HID, and SPP profiles.

Q: Can KDC470/475 transfer the scanned data to a computer?

A: Yes.

There are two ways to send the scanned data to a computer:

1) **On a Mobile Device**
    a. Download KTSync from the Google Play Store or Apple App Store.
    b. Select the data destination to be "File" or "Email"
    c. Synchronize. The data will be stored on the mobile device and the file can be sent to the computer using a cable or as an email attachment.

2) **On a Windows or Mac Computer**
    a. Download KTSync from the Google Play Store or Apple App Store.
    b. Make sure app is closed.
    c. Plug in USB cable to KDC470 and computer
    d. Run KTSync
    e. Synchronization will transfer the stored data to the destination selected in KTSync settings.

    If KDC and KTSync do not connect to the computer, press and hold the DOWN button on your KDC470 or KDC475 (by the battery door) for 3 seconds. It will toggle the connectivity among Phone/PC connection, PC/KDC connection, and KDC/Phone connection. KDC/Phone connection should be selected.

11.3 Battery

Q: How long will the KDC battery last before it needs to be replaced?
A: The battery on the KDC may 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 KDC30/250/300/270/280/350/400/470/475/500.

Q: How many barcodes may a fully charged KDC scan?
A: If the user scans a barcode every 1 seconds, KDC100/30 scans more than 12,000 barcodes, KDC20 scans more than 11,000 barcodes, KDC200 scans more than 8,500 barcodes, KDC250/270L/270D scans more than 33,000 scans, KDC270C/280C/300 scans more than 22,000 scans and 2D models of KDC350/400/470/475/500 scan more than 40,000.

Q: How long will the KDC battery lasts in the sleep mode?
A: KDC100 lasts more than 75 days. KDC20/200 lasts more than 2 days while connected in Bluetooth and 60 days if not connected in Bluetooth. KDC250/270L/270D lasts 7 days while connected in Bluetooth and 120 days if not connected in Bluetooth. KDC30/270C/280C/300 last more than 25 days while connected in Bluetooth and 5 days if not connected in Bluetooth. KDC350 lasts more than 7 hours while Bluetooth is connected, and 20 days while Bluetooth is not connected. KDC410/415/420/425/430/470/475 last more than 8 days while connected in Bluetooth and 20 days while if not connected in Bluetooth. KDC450/470/475 lasts more than 4 hours while reading RFiD tag continuously every second and Bluetooth is connected, 5 days if reading RFiD tag casually and Bluetooth is connected. KDC500 lasts more 7 days while connected in Bluetooth and 10 days if not connected in Bluetooth.

Q: May I replace the KDC battery?
A: Yes. The KDC has a separate compartment for the battery that may be opened easily with a driver. KDC batteries may be purchased at store.koamtac.com or from local KDC reseller.

11.4 Memory

Q: How many barcodes may be stored in the KDC?
A: 4MB version of KDC100M/200M/250M/300M/350 may store maximum of 204,800 barcodes and 8MB version and KDC270/280/470 may store maximum of 409,600 barcodes . KDC20/30 have 150KB data memory which may store maximum 7,680 barcodes. KDC41x/42x has 80KB data memory and may store maximum 4,096 barcodes. KDC500 has 3MB data memory which may store maximum 153,600 barcodes.

Q: May 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 KDC200/250/270/280/300/350, which supports host devices running on Android®, iPhone/iPad/iPod touch, Blackberry®, Windows® XP/Vista/7/8/10/Mobile 5.0+. KTSync® provides keyboard wedging program only for KDC20/30/400/470. KDC100 and KDC500 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.

11.5 Programming

Q: May 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 may 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 may 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: May a partner develop a PC or Smartphone application for the KDC?
A: A software development kit for Windows® XP/Vista/7/8/10/Mobile 5.0+ 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 (KDC20/100/200/250/270L/270D/350L/410/415/470L/470D/475L/475D/475S)

12.1 Set Symbologies

Enable EAN13 2000001	Disable EAN13 2100001
Enable EAN8 2000002	Disable EAN8 2100002
Enable UPCA 2000004	Disable UPCA 2100004
Enable UPCE 2000008	Disable UPCE 2100008
Enable Code39 2000010	Disable Code39 2100010

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 GS1-128 2000200	Disable GS1-128 2100200
Enable 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
Enable GS1 Omni 2020000	Disable GS1 Omni 2120000
Enable GS1 Limited 2040000	Disable GS1 Limited 2140000

Enable GS1 Expanded	Disable GS1 Expanded
2080000	2180000

12.2 Barcode Options

Codabar - do NOT transmit start/stop 3000000001	Codabar - transmit start/stop 3100000001
Convert UPCE to UPCA 3000000200	Do NOT convert UPCE to UPCA 3100000200
Convert EAN8 to EAN13 3000000400	Do NOT convert EAN8 to EAN13 3100000400
Convert UPCE to EAN13 3000000800	Do NOT convert UPCE to EAN13 3100000800
Return Check Digit 3000001000	Do NOT Return Check Digit 3100001000
Verify Check Digit 3000002000	Do NOT Verify Check Digit 3100002000
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	Do NOT return check digit for EAN8 3140000000

Return check digit for EAN13	Do NOT return check digit for EAN13
3080000000	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
Enable Auto Trigger 5A001	Disable Auto Trigger 5A010
Reread Delay = Continuous 5B000	Reread Delay = Short 5B001
Reread Delay = Medium 5B002	Reread Delay = Long 5B003
Reread Delay = Extra Long 5B004	

*Opticon laser only

12.5 Scan Timeout

Scan Timeout = 500msec 101F4	Scan Timeout = 1sec 103E8
Scan Timeout = 2sec 107D0	Scan Timeout = 3sec 10BB8
Scan Timeout = 4sec 10FA0	Scan Timeout = 5sec 11388
Scan Timeout = 6sec 11770	Scan Timeout = 7sec 11B58
Scan Timeout = 8sec 11F40	Scan Timeout = 9sec 12328
Scan 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 ScanIfConnect

ScanIfConnect = Enable	ScanIfConnect = Disable
5I001	5I010

12.8 Security Level(Laser model only)

Security level = 1 41	Security level = 2 42
Security level = 3 43	Security level = 4 44

12.9 Data Process - Wedge/Store, Enter Key, Extend Key

Wedge Only 82000	Wedge & Store Always 82001
Store Only 82002	Save if Sent 82003
Save if Not Sent 82004	
Enable Enter Key (KDC350L/D Only) 8E001	Disable Enter Key (KDC350L/D Only) 8E000
Enable Extend Key (KDC350L/D Only) 8X001	Disable Extend Key (KDC350L/D Only) 8X000

12.10 Data Process - Data Edit

Start Prefix Enter 83000	Start Suffix Enter 83001
Finish Prefix/Suffix Enter 83002	Cancel Prefix/Suffix Enter 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	

12.11 Data Process - Data Format and Handshake

Data format = Barcode only 84001	Data format = Packet data 84010
Enable Handshake 86001	Disable Handshake 86010

12.12 Data Process - Termination Character & Duplicate Check

Termination Character = None 88000	Termination Character = CR 88001
Termination Character = LF 88002	Termination Character = CR+LF 88003
Termination Character = Tab 88004	
Enable Duplicate Check 89001	Disable Duplicate Check 89010

12.13 Bluetooth

Enable Bluetooth Power 60001	Disable Bluetooth Power 60010
Enter Pairing Mode 61001	
Enable Discovering 61101	Disable Discovering 61110
Connect To Last 61201	Connecting to 61301
Disconnect 6D000	
HID Sync 6E000	SPP Sync 6E001
Bluetooth Profile = SPP 6A000	Bluetooth Profile = HID iOS 6A001

Bluetooth Profile = MFi 6A002	Bluetooth Profile = SPP2.0 6A003
Bluetooth Profile = 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
Display BT MAC Address 63100	Display BT FW Version 63200
Enable Wakeup Nulls 63401	Disable Wakeup Nulls 63410
Enable BT Toggle 6B001	Disable BT Toggle 6B010
Enable BT Disconnect Button 6B101	Disable BT Disconnect Button 6B110
Enable Auto Pairing 6N001	Disable Auto Pairing 6N010

12.14 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	

12.15 Bluetooth Power Off Time

BT Power Off Time = 1min 69001	BT Power Off Time = 2min 69002
BT Power Off Time = 3min 69003	BT Power Off Time = 4min 69004
BT Power Off Time = 5min 69005	BT Power Off Time = 6min 69006
BT Power Off Time = 7min 69007	BT Power Off Time = 8min 69008
BT Power Off Time = 9min 69009	BT Power Off Time = 10min 6900A
BT Power Off Time = 11min 6900B	BT Power Off Time = 12min 6900C
BT Power Off Time = 13min 6900D	BT Power Off Time = 14min 6900E

BT Power Off Time = 15min 6900F	BT Power Off Time = 16min 69010
BT Power Off Time = 17min 69011	BT Power Off Time = 18min 69012
BT Power Off Time = 19min 69013	BT Power Off Time = 20min 69014
BT Power Off Time = 21min 69015	BT Power Off Time = 22min 69016
BT Power Off Time = 23min 69017	BT Power Off Time = 24min 69018
BT Power Off Time = 25min 69019	BT Power Off Time = 26min 6901A
BT Power Off Time = 27min 6901B	BT Power Off Time = 28min 6901C

BT Power Off Time = 29min	BT Power Off Time = 30min
 6901D	 6901E

12.16 HID Auto Lock Time

HID Auto Lock Time = 0min (Never) 6C000	HID Auto Lock Time = 1min 6C001
HID Auto Lock Time = 2min 6C002	HID Auto Lock Time = 3min 6C003
HID Auto Lock Time = 4min 6C004	HID Auto Lock Time = 5min 6C005
HID Auto Lock Time = 10min 6C00A	HID Auto Lock Time = 15min 6C00F

12.17 HID Keyboard

HID Keyboard = US 6F000	HID Keyboard = German 6F001
HID Keyboard = French 6F002	HID Keyboard = Italian 6F003
HID Keyboard = Spanish 6F004	

12.18 HID Initial Delay

HID Initial Delay = Disabled H0000	HID Initial Delay = 1second H0001
HID Initial Delay = 2seconds H0002	HID Initial Delay = 3seconds H0003
HID Initial Delay = 5seconds H0005	HID Initial Delay = 10seconds H000A

12.19 HID Character Delay

HID Character Delay = Disabled H1000	HID Character Delay = 10msec H100A
HID Character Delay = 20msec H1014	HID Character Delay = 30msec H101E
HID Character Delay = 50msec H1032	HID Character Delay = 100msec H1064

12.20 HID Terminator Delay

HID Terminator Delay = Disabled (0ms) H4000	HID Terminator Delay = 500msec H41F4
HID Terminator Delay = 1000msec H43E8	HID Terminator Delay = 2000msec H47D0

12.21 HID Control Character

HID Control Character = Disabled H2000	HID Control Character = Alt+Numpad H2001
HID Control Character = ^+Character H2002	HID Control Character = Replace with '|' H2003

12.22 System

※ Note 1. 4M Model Only

※ Note 2. 8M Model Only

Memory Size = 0.5M / 3.5M Note1,2 5E000	Memory Size = 1M / 3M Note1,2 5E001
Memory Size = 2M / 2M Note1,2 5E002	Memory Size = 3M / 1M Note1,2 5E003
Memory Size = 4M / 0M Note1,2 5E004	Confirm Memory Size Change Note1,2 5E100
Memory Size = 5M / 3M Note2 5E005	Memory Size = 6M / 2M Note2 5E006
Memory Size = 7M / 1M Note2 5E007	Memory Size = 8M / 0M Note2 5E008
Memory Status 50001	Reset Memory 50002

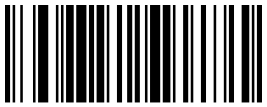
Erase Memory 50003	Reset App data 50004
Reset BT Registry 50005	
Enable Auto Erase 5F001	Disable Auto Erase 5F010
Date/Time 52001	Battery 53001
Display Version 54001	
Lock Button 55001	Unlock Button 55010
Enable Beep Sound 56001	Disable Beep Sound 56010

High Beep Volume 5D001	Low Beep Volume 5D010
Enable Auto Menu Exit 58001	Disable Auto Menu Exit 58010
Enable MFi Mode 6M001	Disable MFi Mode 6M010
Enable Vibrator 5G001	Disable Vibrator 5G010
Scan Success = No vibration 5S000	Scan Success = 1 vibration 5S001
Scan Success = 2 vibrations 5S002	Scan Success = 3 vibrations 5S003
Scan Success = 4 vibrations 5S004	Scan Success = 5 vibrations 5S005

Scan Failure = No vibration 5S200	Scan Failure = 1 vibration 5S201
Scan Failure = 2 vibrations 5S202	Scan Failure = 3 vibrations 5S203
Scan Failure = 4 vibrations 5S204	Scan Failure = 5 vibrations 5S205
Enable Port Status 58101	Disable Port Status 58100
Display Format = Time & Battery 58200	Display Format = Type & Time 58201
Display Format = Type & Battery 58202	Display Format = Memory Status 58203
	Display Format = Barcode Only 58205

Display Format = Graphic 58206	
Enable Scrolling 59001	Disable Scrolling 59010
Factory Default 57001	KDC Reset A0000
Enable Backup Battery (KDC20/20D Only) 5R001	Disable Backup Battery (KDC20/20D Only) 5R010

12.23 Sleep Timeout

Sleep Timeout = Disable 51000	Sleep Timeout = 1sec 51001
Sleep Timeout = 2sec 51002	Sleep Timeout = 3sec 51003
Sleep Timeout = 4sec 51004	Sleep Timeout = 5sec 51005
Sleep Timeout = 10sec 5100A	Sleep Timeout = 20sec 51014
Sleep Timeout = 30sec  5101E	Sleep Timeout = 1min 5103C
Sleep Timeout = 2min 51078	Sleep Timeout = 5min 5112C
Sleep Timeout = 10min 51258	

12.24 ETC

Enable Reverse Direction 3000000002	Disable Reverse Direction 3100000002
Enable Verify check digit 3002000000	Disable Verify check digit 3102000000
Enable Return check digit 3001000000	Disable Return check digit 3101000000

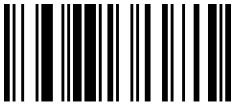
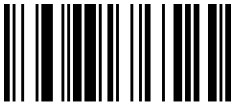
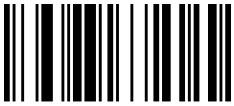
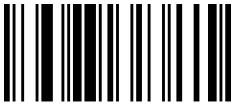
12.25 Function

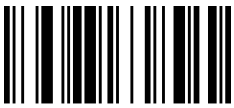
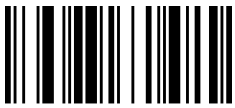
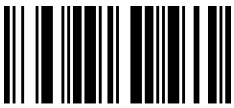
F1 7001	F2 7002
F3 7003	F4 7004
F5 7005	F6 7006
F7 7007	F8 7008
F9 7009	F10 700A
F11 700B	F12 700C

12.26 Number

0 7130	1 7131
2 7132	3 7133
4 7134	5 7135
6 7136	7 7137
8 7138	9 7139

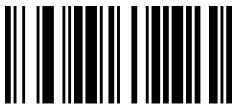
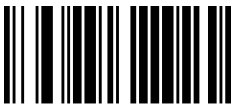
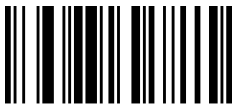
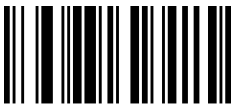
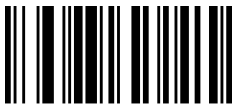
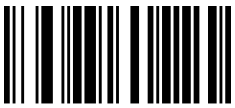
12.27 Lower Case Alphabet

a 7161	b 7162
c  7163	d 7164
e  7165	f 7166
g 7167	h  7168
i  7169	j 716A
k 716B	l 716C
m 716D	n 716E

o 716E	p 7170
q 7171	r 7172
s  7173	t  7174
u 7175	v 7176
w  7177	x 7178
y 7179	z 717A

12.28 Upper Case Alphabet

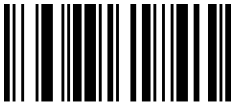
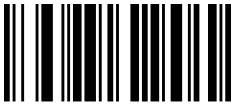
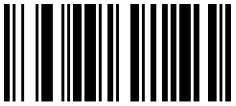
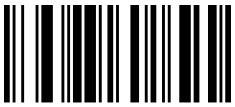
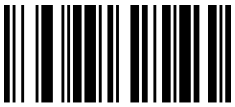
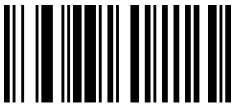
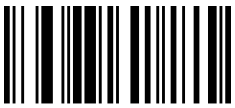
A 7141	B 7142
C 7143	D 7144
E 7145	F 7146
G 7147	H 7148
I 7149	J 714A
K 714B	L 714C
M 714D	N 714E

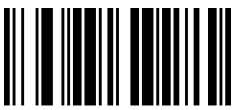
O 714F	P  7150
Q 7151	R 7152
S  7153	T  7154
U 7155	V 7156
W  7157	X  7158
Y  7159	Z 715A

12.29 Control Character

BS 7108	TAB 7109
LF 710A	VT 710B
CR 710D	ESC 711B
Space 7120	DEL 717F
Shift + Tab 7111	

12.30 Symbol Character

! 7121	"  7122
#  7123	$  7124
%  7125	& 7126
'  7127	( 7128
)  7129	* 712A
+ 712B	, 712C
- 712D	. 712E

/ 712F	: 713A
; 713B	< 713C
= 713D	> 713E
? 713F	@ 7140
[715B	\ 715C
] 715D	^ 715E
_ 715F	`  7160

{ 717B	| 717C
} 717D	~ 717E
Start String 7201	Stop String 7210

- The user may 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.

12.31 BT Auto Power Off Timeout

Auto Power Off = 0min (Disabled) G4000	Auto Power Off = 5min G4005
Auto Power Off = 10min G400A	Auto Power Off = 20min G4014
Auto Power Off = 30min G401E	Auto Power Off = 60min G403C
Auto Power Off = 120min G4078	

12.32 NFC (NFC Model Only)

Enable NFC Power N0001	Disable NFC Power N0010
NFC Data Format = Data only N1001	NFC Data Format = Packet data N1000
UID Only = Enable N3001	UID Only = Disable N3000
New Data Format = Enable N4001	New Data Format = Disable N4010

12.33 USB Disk (M Model Only)

USB Serial Mode U0000	USB Disk Mode U0001
USB HID Mode U0002	Format USB Disk U1000
Data Format = Data U2000	Data Format = Data, Time U2001
Data Format = Data, Type U2002	Data Format = Data, Time, Type U2003

12.34 USB DM Button(KDC20/20D Only)

USB DM Button = Enable	USB DM Button = Disable
5U001	5U010

12.35 WiFi (WiFi Model Only)

Enable WiFi Power S0001	Disable WiFi Power S0010
Provisioning S1000	Protocol = UDP S2000
Protocol = TCP S2001	Protocol = HTTP_GET S2002
Protocol = HTTP_POST S2003	Server URL S4
Port Number S5	Server Page S6
Enable SSL S7001	Disable SSL S7010

Enable AutoConnect S8001	Disable AutoConnect S8010
AP SSID S9	AP Passcode SA
Connect SB	Server IP S3
Enable Send Stored SC001	Disable Send Stored SC010

12.36 Multilanguage

Disable(English Only) 5L000	English 5L001
	French 5L003
Italian 5L004	Spanish 5L005
Korean 5L006	Japanese 5L007

13 Appendix D – 2D Special Barcodes (KDC30/270C/280C/300/350C/420/425/450/470C/475C/475H)

13.1 Set Symbologies

For KDC300/350C/420/425/450, please refer to Honeywell Adaptus® Technology enabled scanner user manual, such as 4600 or 4820.

1D Symbology

Enable CODABAR ┬MKDC2200000001.	Disable CODABAR ┬MKDC2300000001.
Enable CODE11 ┬MKDC2200000002.	Disable CODE11 ┬MKDC2300000002.
Enable CODE32 ┬MKDC2200000004.	Disable CODE32 ┬MKDC2300000004.
Enable CODE39 ┬MKDC2200000008.	Disable CODE39 ┬MKDC2300000008.

Enable CODE93 ┬MKDC2200000010.	Disable CODE93 ┬MKDC2300000010.
Enable CODE128 ┬MKDC2200000020.	Disable CODE128 ┬MKDC2300000020.
Enable EAN8 ┬MKDC2200000040.	Disable EAN8 ┬MKDC2300000040.
Enable EAN13 ┬MKDC2200000080.	Disable EAN13 ┬MKDC2300000080.
Enable EANUCC ┬MKDC2200000100.	Disable EANUCC ┬MKDC2300000100.
Enable I2o5 ┬MKDC2200000200.	Disable I2o5 ┬MKDC2300000200.
Enable Matrix2of5 ┬MKDC2200000400.	Disable Matrix2of5 ┬MKDC2300000400.

Enable MSI ┬MKDC2200000800.	Disable MSI ┬MKDC2300000800.
Enable Plessey ┬MKDC2200001000.	Disable Plessey ┬MKDC2300001000.
Enable Posicode ┬MKDC2200002000.	Disable Posicode ┬MKDC2300002000.
Enable RSS14 ┬MKDC2200004000.	Disable RSS14 ┬MKDC2300004000.
Enable RSSLimit ┬MKDC2200008000.	Disable RSSLimit ┬MKDC2300008000.
Enable RSSExpand ┬MKDC2200010000.	Disable RSSExpand ┬MKDC2300010000.
Enable S2of5ID ┬MKDC2200020000.	Disable S2of5ID ┬MKDC2300020000.

Enable TLC39 ┬MKDC2200080000.	Disable TLC39 ┬MKDC2300080000.
Enable Telepen ┬MKDC2200100000.	Disable Telepen ┬MKDC2300100000.
Enable Trioptic ┬MKDC2200200000.	Disable Trioptic ┬MKDC2300200000.
Enable UPCA ┬MKDC2200400000.	Disable UPCA ┬MKDC2300400000.
Enable UPCE0 ┬MKDC2200800000.	Disable UPCE0 ┬MKDC2300800000.
Enable UPCE1 ┬MKDC2201000000.	Disable UPCE1 ┬MKDC2301000000.

2D Symbology

Enable AZTECCODE ┬MKDC2400000001.	Disable AZTECCODE ┬MKDC2500000001.
Enable AZTECRUNES ┬MKDC2400000002.	Disable AZTECRUNES ┬MKDC2500000002.
Enable CodaBlockF ┬MKDC2400000004.	Disable CodaBlockF ┬MKDC2500000004.
Enable Code16K ┬MKDC2400000008.	Disable Code16K ┬MKDC2500000008.
Enable Code49 ┬MKDC2400000010.	Disable Code49 ┬MKDC2500000010.
Enable DataMatrix ┬MKDC2400000020.	Disable DataMatrix ┬MKDC2500000020.
Enable MaxiCode ┬MKDC2400000040.	Disable MaxiCode ┬MKDC2500000040.

Enable MicroPDF ┬MKDC2400000080.	Disable MicroPDF ┬MKDC2500000080.
Enable PDF417 ┬MKDC2400000100.	Disable PDF417 ┬MKDC2500000100.
Enable QRCode ┬MKDC2400000200.	Disable QRCode ┬MKDC2500000200.
Enable Hanxin ┬MKDC2400000400.	Disable Hanxin ┬MKDC2500000400.
Enable Postnet ┬MKDC2400001000.	Disable Postnet ┬MKDC2500001000.
Enable Planet ┬MKDC2400002000.	Disable Planet ┬MKDC2500002000.
Enable UKPost ┬MKDC2400004000.	Disable UKPost ┬MKDC2500004000.

Enable CanadaPost ┬MKDC2400008000.	Disable CanadaPost ┬MKDC2500008000.
Enable KIXPost ┬MKDC2400010000.	Disable KIXPost ┬MKDC2500010000.
Enable AUSPost ┬MKDC2400020000.	Disable AUSPost ┬MKDC2500020000.
Enable JapanPost ┬MKDC2400040000.	Disable JapanPost ┬MKDC2500040000.
Enable ChinaPost ┬MKDC2400080000.	Disable ChinaPost ┬MKDC2500080000.
Enable KoreaPost ┬MKDC2400100000.	Disable KoreaPost ┬MKDC2500100000.
Enable OCRA/MRZ ┬MKDC2401000000.	Disable OCRA/MRZ ┬MKDC2400000000.

Enable OCRB ┬MKDC2402000000.	Enable OCRUSC ┬MKDC2403000000.
Enable OCRMICR ┬MKDC2404000000.	Enable OCRSEMI ┬MKDC2405000000.

13.2 Barcode Options

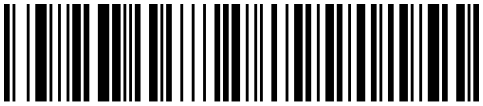
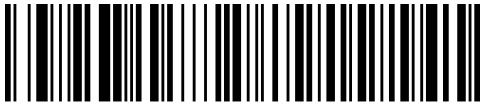
For KDC300/350C/420/425/450, please refer to Honeywell Adaptus® Technology enabled scanner user manual, such as 4600 or 4820.

EAN8 to EAN13 (Enable) ┬MKDC3000000400.	EAN8 to EAN13 (Disable) ┬MKDC3100000400.
UPCA to EAN13 (Enable) ┬MKDC3000080000.	UPCA to EAN13 (Disable) ┬MKDC3100080000.
UPCE to UPCA (Enable) ┬MKDC3000000200.	UPCE to UPCA (Disable) ┬MKDC3100000200.
UPCE to EAN13 (Enable) ┬MKDC3000000800.	UPCE to EAN13 (Disable) ┬MKDC3100000800.

13.3 Delete Last Scanned Barcode

Delete Last Scanned Barcode   ┬MKDC80001.

13.4 Scan Options

Enable Auto Trigger  ┬MKDC5A001.	Disable Auto Trigger  ┬MKDC5A010.
Reread Delay = Continuous ┬MKDC5B000.	Reread Delay = Short ┬MKDC5B001.
Reread Delay = Medium ┬MKDC5B002.	Reread Delay = Long ┬MKDC5B003.
Reread Delay = Extra Long ┬MKDC5B004.	

13.5 Scan Timeout

Scan Timeout = 500msec ┬MKDC101F4.	Scan Timeout = 1sec ┬MKDC103E8.
Scan Timeout = 2sec ┬MKDC107D0.	Scan Timeout = 3sec ┬MKDC10BB8.

Scan Timeout = 4sec TMKDC10FA0.	Scan Timeout = 5sec TMKDC11388.
Scan Timeout = 6sec TMKDC11770.	Scan Timeout = 7sec TMKDC11B58.
Scan Timeout = 8sec TMKDC11F40.	Scan Timeout = 9sec TMKDC12328.
Scan Timeout = 10sec TMKDC12710.	

13.6 Minimum Barcode Length (except KDC30)

Minimum Length = 2 ┬MKDC002.	Minimum Length = 3 ┬MKDC003.
Minimum Length = 4 ┬MKDC004.	Minimum Length = 5 ┬MKDC005.
Minimum Length = 6 ┬MKDC006.	Minimum Length = 7 ┬MKDC007.
Minimum Length = 8 ┬MKDC008.	Minimum Length = 9 ┬MKDC009.
Minimum Length = 10 ┬MKDC00A.	Minimum Length = 11 ┬MKDC00B.
Minimum Length = 12 ┬MKDC00C.	Minimum Length = 13 ┬MKDC00D.
Minimum Length = 14 ┬MKDC00E.	Minimum Length = 15 ┬MKDC00F.

Minimum Length = 16 TMKDC010.	Minimum Length = 17 TMKDC011.
Minimum Length = 18 TMKDC012.	Minimum Length = 19 TMKDC013.
Minimum Length = 20 TMKDC014.	Minimum Length = 21 TMKDC015.
Minimum Length = 22 TMKDC016.	Minimum Length = 23 TMKDC017.
Minimum Length = 24 TMKDC018.	Minimum Length = 25 TMKDC019.
Minimum Length = 26 TMKDC01A.	Minimum Length = 27 TMKDC01B.
Minimum Length = 28 TMKDC01C.	Minimum Length = 29 TMKDC01D.

Minimum Length = 30 ┬MKDC01E.	Minimum Length = 31 ┬MKDC01F.
Minimum Length = 32 ┬MKDC020.	Minimum Length = 33 ┬MKDC021.
Minimum Length = 34 ┬MKDC022.	Minimum Length = 35 ┬MKDC023.
Minimum Length = 36 ┬MKDC024.	Minimum Length = 1 ┬MKDC001.

13.7 Image Capture (except KDC30)

Capture Now ┬MKDC90000.	Enable Image Capture ┬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 ScanIfConnect

ScanIfConnect = Enable	ScanIfConnect = Disable
┬MKDC5I001.	┬MKDC5I010.

13.9 Data Process - Wedge/Store, Enter Key & Extend Key

Wedge Only ┬MKDC82000.	Wedge & Store Always ┬MKDC82001.
Store Only ┬MKDC82002.	Save if Sent ┬MKDC82003.
Save if Not Sent ┬MKDC82004.	
Enable Enter Key (KDC350C Only) ┬MKDC8E001.	Disable Enter Key (KDC350C Only) ┬MKDC8E000.
Enable Extend Key (KDC350C Only) ┬MKDC8X001.	Disable Extend Key (KDC350C Only) ┬MKDC8X000.
Enable Age Verification ┬MKDC8V001.	Disable Age Verification ┬MKDC8V000.

13.10 Data Process - Data Edit

Start Prefix Enter ┬MKDC83000.	Start Suffix Enter ┬MKDC83001.
Finish Prefix / Suffix Enter ┬MKDC83002.	Cancel Prefix / Suffix Enter ┬MKDC83003.
Delete Prefix ┬MKDC83004.	Delete Suffix ┬MKDC83005.
Display Prefix ┬MKDC83006.	Display Suffix ┬MKDC83007.
AIM ID None ┬MKDC8B000.	AIM ID In Prefix ┬MKDC8B001.
AIM ID In Suffix ┬MKDC8B002.	

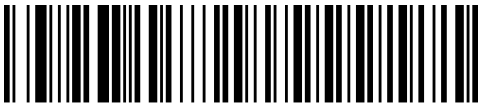
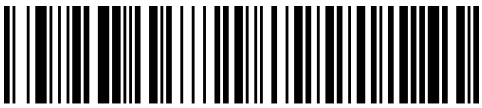
13.11 Data Process – Data Format & Handshake

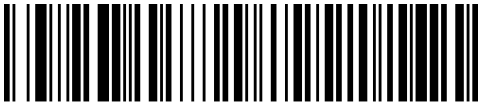
Data format = Barcode only TMKDC84001.	Data format = Packet data TMKDC84010.
Enable Handshake TMKDC86001.	Disable Handshake TMKDC86010.

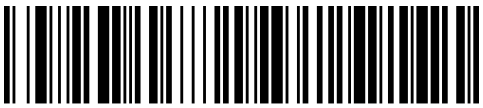
13.12 Data Process - Termination Character & Duplicate Check

Termination Character = None TMKDC88000.	Termination Character = CR TMKDC88001.
Termination Character = LF TMKDC88002.	Termination Character = CR+LF TMKDC88003.
Termination Character = Tab TMKDC88004.	
Enable Duplicate Check TMKDC89001.	Disable Duplicate Check TMKDC89010.

13.13 Bluetooth

Enable Bluetooth Power ┬MKDC60001.	Disable Bluetooth Power ┬MKDC60010.
Enter Pairing Mode ┬MKDC61001.	
Enable Discovering ┬MKDC61101.	Disable Discovering ┬MKDC61110.
Connect To Last ┬MKDC61201.	Connect To ┬MKDC61301.
Disconnect ┬MKDC6D000.	
HID Sync  ┬MKDC6E000.	SPP Sync ┬MKDC6E001.
Bluetooth Profile = SPP ┬MKDC6A000.	Bluetooth Profile = HID iOS  ┬MKDC6A001.

Bluetooth Profile = MFi  ┬MKDC6A002.	Bluetooth Profile = SPP2.0 ┬MKDC6A003.
Bluetooth Profile = 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 Beep Warning ┬MKDC68001.	Disable Beep Warning ┬MKDC68010.

Enable Power Off Msg ┬MKDC63001.	Disable Power Off Msg ┬MKDC63010.
Display BT Mac Address ┬MKDC63100.	Display BT FW Version ┬MKDC63200.
Enable Wakeup Nulls  ┬MKDC63401.	Disable Wakeup Nulls ┬MKDC63410.
Enable BT Toggle ┬MKDC6B001.	Disable BT Toggle ┬MKDC6B010.
Enable BT Disconnect Button ┬MKDC6B101.	Disable BT Disconnect Button ┬MKDC6B110.
Enable Auto Pairing ┬MKDC6N001.	Disable Auto Pairing ┬MKDC6N010.

13.14 Bluetooth Auto Power On Time

Auto Power On Time = Disabled *MKDC67000.	Auto Power On Time = 1sec *MKDC67001.
Auto Power On Time = 2sec *MKDC67002.	Auto Power On Time = 3sec *MKDC67003.
Auto Power On Time = 4sec *MKDC67004.	Auto Power On Time = 5sec *MKDC67005.
Auto Power On Time = 6sec *MKDC67006.	Auto Power On Time = 7sec *MKDC67007.
Auto Power On Time = 8sec *MKDC67008.	Auto Power On Time = 9sec *MKDC67009.
Auto Power On Time = 10sec *MKDC6700A.	

13.15 Bluetooth Power Off Time

BT Power Off Time = 1min ┬MKDC69001.	BT Power Off Time = 2min ┬MKDC69002.
BT Power Off Time = 3min ┬MKDC69003.	BT Power Off Time = 4min ┬MKDC69004.
BT Power Off Time = 5min ┬MKDC69005.	BT Power Off Time = 6min ┬MKDC69006.
BT Power Off Time = 7min ┬MKDC69007.	BT Power Off Time = 8min ┬MKDC69008.
BT Power Off Time = 9min ┬MKDC69009.	BT Power Off Time = 10min ┬MKDC6900A.
BT Power Off Time = 11min ┬MKDC6900B.	BT Power Off Time = 12min ┬MKDC6900C.
BT Power Off Time = 13min ┬MKDC6900D.	BT Power Off Time = 14min ┬MKDC6900E.

BT Power Off Time = 15min ┬MKDC6900F.	BT Power Off Time = 16min ┬MKDC69010.
BT Power Off Time = 17min ┬MKDC69011.	BT Power Off Time = 18min ┬MKDC69012.
BT Power Off Time = 19min ┬MKDC69013.	BT Power Off Time = 20min ┬MKDC69014.
BT Power Off Time = 21min ┬MKDC69015.	BT Power Off Time = 22min ┬MKDC69016.
BT Power Off Time = 23min ┬MKDC69017.	BT Power Off Time = 24min ┬MKDC69018.
BT Power Off Time = 25min ┬MKDC69019.	BT Power Off Time = 26min ┬MKDC6901A.
BT Power Off Time = 27min ┬MKDC6901B.	BT Power Off Time = 28min ┬MKDC6901C.

BT Power Off Time = 29min	BT Power Off Time = 30min
₸MKDC6901D.	₸MKDC6901E.

13.16 HID Auto Lock Time

HID Auto Lock Time = 0min (Never) ┬MKDC6C000.	HID Auto Lock Time = 1min ┬MKDC6C001.
HID Auto Lock Time = 2min ┬MKDC6C002.	HID Auto Lock Time = 3min ┬MKDC6C003.
HID Auto Lock Time = 4min ┬MKDC6C004.	HID Auto Lock Time = 5min ┬MKDC6C005.
HID Auto Lock Time = 10min ┬MKDC6C00A.	HID Auto Lock Time = 15min ┬MKDC6C00F.

13.17 HID Keyboard

HID Keyboard = US ┬MKDC6F000.	HID Keyboard = German ┬MKDC6F001.
HID Keyboard = French ┬MKDC6F002.	HID Keyboard = Italian ┬MKDC6F003.
HID Keyboard = Spanish ┬MKDC6F004.	HID Keyboard = Japanese ┬MKDC6F005.
HID Keyboard = Danish «SYN»MKDC6F006.	

13.18 HID Initial Delay

HID Initial Delay = Disabled ┬MKDCH0000.	HID Initial Delay = 1second ┬MKDCH0001.
HID Initial Delay = 2seconds ┬MKDCH0002.	HID Initial Delay = 3seconds ┬MKDCH0003.
HID Initial Delay = 5seconds ┬MKDCH0005.	HID Initial Delay = 10seconds ┬MKDCH000A.

13.19 HID Character Delay

HID Character Delay = Disabled *MKDCH1000.	HID Character Delay = 10msec *MKDCH100A.
HID Character Delay = 20msec *MKDCH1014.	HID Character Delay = 30msec *MKDCH101E.
HID Character Delay = 50msec *MKDCH1032.	HID Character Delay = 100msec *MKDCH1064.

13.20 HID Control Character

HID Control Character = Disabled ┬MKDCH2000.	HID Control Character = Alt+Numpad ┬MKDCH2001.
HID Control Character = ^+Character ┬MKDCH2002.	HID Control Character = Replace with '|' ┬MKDCH2003.

13.21 HID Terminator Delay

HID Terminator Delay = Disabled (0ms) ┬MKDCH4000.	HID Terminator Delay = 500msec ┬MKDCH41F4.
HID Terminator Delay = 1000msec ┬MKDCH43E8.	HID Terminator Delay = 2000msec ┬MKDCH47D0.

13.22 System

Memory Size = 0.5M / 3.5M [Note1,2] ┬MKDC5E000.	Memory Size = 1M / 3M [Note1,2] ┬MKDC5E001.
Memory Size = 2M / 2M [Note1,2] ┬MKDC5E002.	Memory Size = 3M / 1M [Note1,2] ┬MKDC5E003.
Memory Size = 4M / 0M [Note1,2] ┬MKDC5E004.	Confirm memory size [Note1,2] ┬MKDC5E100.
Memory Size = 5M / 3M [Note2] ┬MKDC5E005.	Memory Size = 6M / 2M [Note2] ┬MKDC5E006.
Memory Size = 7M / 1M [Note2] ┬MKDC5E007.	Memory Size = 8M / 0M [Note2] ┬MKDC5E008.
Memory Status ┬MKDC50001.	Reset Memory ┬MKDC50002.
Erase Memory ┬MKDC50003.	Reset App data ┬MKDC50004.

※ Note 1. 4M Model Only

※ Note 2. 8M Model Only

Reset BT Registry TMKDC50005.	
Enable Auto Erase TMKDC5F001.	Disable Auto Erase TMKDC5F010.
Date/Time TMKDC52001.	Battery TMKDC53001.
Display Version TMKDC54001.	
Lock Button TMKDC55001.	Unlock Button TMKDC55010.
Enable Beep Sound TMKDC56001.	Disable Beep Sound TMKDC56010.
High Beep Volume TMKDC5D001.	Low Beep Volume TMKDC5D010.

Enable Failed Beep ┬MKDC56D01.	Disable Failed Beep ┬MKDC56D10.
Enable MFi Mode ┬MKDC6M001.	Disable MFi Mode ┬MKDC6M010.
Enable Vibrator ┬MKDC5G001.	Disable Vibrator ┬MKDC5G010.
Scan Success = No vibration ┬MKDC5S000.	Scan Success = 1 vibration ┬MKDC5S001.
Scan Success = 2 vibrations ┬MKDC5S002.	Scan Success = 3 vibrations ┬MKDC5S003.
Scan Success = 4 vibrations ┬MKDC5S004.	Scan Success = 5 vibrations ┬MKDC5S005.
Scan Failure = No vibration ┬MKDC5S200.	Scan Failure = 1 vibration ┬MKDC5S201.

Scan Failure = 2 vibrations ┬MKDC5S202.	Scan Failure = 3 vibrations ┬MKDC5S203.
Scan Failure = 4 vibrations ┬MKDC5S204.	Scan Failure = 5 vibrations ┬MKDC5S205.
Enable Auto Menu Exit ┬MKDC58001.	Disable Auto Menu Exit ┬MKDC58010.
Enable Port Status ┬MKDC58101.	Disable Port Status ┬MKDC58100.
Display Format = Time & Battery ┬MKDC58200.	Display Format = Type & Time ┬MKDC58201.
Display Format = Type & Battery ┬MKDC58202.	Display Format = Memory Status ┬MKDC58203.
Display Format = Graphic ┬MKDC58206.	Display Format = Barcode Only ┬MKDC58205.

Enable Menu Barcode ┬MKDC52401.	Disable Menu Barcode ┬MKDC52410.
Enable Scrolling ┬MKDC59001.	Disable Scrolling ┬MKDC59010.
Factory Default ┬MKDC57001.	KDC Reset ┬MKDCA0000.

13.23 Sleep Timeout

Sleep Timeout = Disable ┬MKDC51000.	Sleep Timeout = 1sec ┬MKDC51001.
Sleep Timeout = 2sec ┬MKDC51002.	Sleep Timeout = 3sec ┬MKDC51003.
Sleep Timeout = 4sec ┬MKDC51004.	Sleep Timeout = 5sec ┬MKDC51005.
Sleep Timeout = 10sec ┬MKDC5100A.	Sleep Timeout = 20sec ┬MKDC51014.
Sleep Timeout = 30sec ┬MKDC5101E.	Sleep Timeout = 1min ┬MKDC5103C.
Sleep Timeout = 2min ┬MKDC51078.	Sleep Timeout = 5min ┬MKDC5112C.
Sleep Timeout = 10min ┬MKDC51258.	

13.24 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.

13.25 Number

0 TMKDC7130.	1 TMKDC7131.
2 TMKDC7132.	3 TMKDC7133.
4 TMKDC7134.	5 TMKDC7135.
6 TMKDC7136.	7 TMKDC7137.
8 TMKDC7138.	9 TMKDC7139.

13.26 Lower Case Alphabet

a TMKDC7161.	b TMKDC7162.
c TMKDC7163.	d TMKDC7164.
e TMKDC7165.	f TMKDC7166.
g TMKDC7167.	h TMKDC7168.
i TMKDC7169.	j TMKDC716A.
k TMKDC716B.	l TMKDC716C.
m TMKDC716D.	n TMKDC716E.

o TMKDC716F.	p TMKDC7170.
q TMKDC7171.	r TMKDC7172.
s TMKDC7173.	t TMKDC7174.
u TMKDC7175.	v TMKDC7176.
w TMKDC7177.	x TMKDC7178.
y TMKDC7179.	z TMKDC717A.

13.27 Upper Case Alphabet

A TMKDC7141.	B TMKDC7142.
C TMKDC7143.	D TMKDC7144.
E TMKDC7145.	F TMKDC7146.
G TMKDC7147.	H TMKDC7148.
I TMKDC7149.	J TMKDC714A.
K TMKDC714B.	L TMKDC714C.
M TMKDC714D.	N TMKDC714E.

O TMKDC714F.	P TMKDC7150.
Q TMKDC7151.	R TMKDC7152.
S TMKDC7153.	T TMKDC7154.
U TMKDC7155.	V TMKDC7156.
W TMKDC7157.	X TMKDC7158.
Y TMKDC7159.	Z TMKDC715A.

13.28 Control Character

BS TMKDC7108.	TAB TMKDC7109.
LF TMKDC710A.	VT TMKDC710B.
CR TMKDC710D.	ESC TMKDC711B.
Space TMKDC7120.	DEL TMKDC717F.
Shift + Tab TMKDC7111.	

13.29 Symbol Character

! ┬MKDC7121.	" ┬MKDC7122.
# ┬MKDC7123.	$ ┬MKDC7124.
% ┬MKDC7125.	& ┬MKDC7126.
' ┬MKDC7127.	(┬MKDC7128.
) ┬MKDC7129.	* ┬MKDC712A.
+ ┬MKDC712B.	, ┬MKDC712C.
- ┬MKDC712D.	. ┬MKDC712E.

/ ┬MKDC712F.	: ┬MKDC713A.
; ┬MKDC713B.	< ┬MKDC713C.
= ┬MKDC713D.	> ┬MKDC713E.
? ┬MKDC713F.	@ ┬MKDC7140.
[┬MKDC715B.	\ ┬MKDC715C.
] ┬MKDC715D.	^ ┬MKDC715E.
_ ┬MKDC715F.	` ┬MKDC7160.

{ ┬MKDC717B.	| ┬MKDC717C.
} ┬MKDC717D.	~ ┬MKDC717E.
Start String ┬MKDC7201.	Stop String ┬MKDC7210.

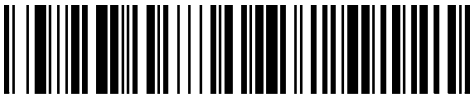
Note

- The user may 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.

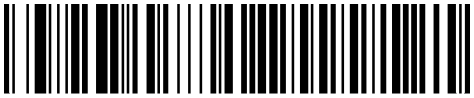
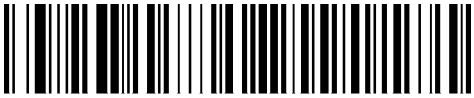
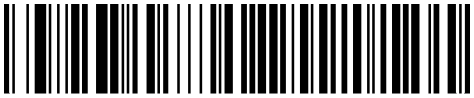
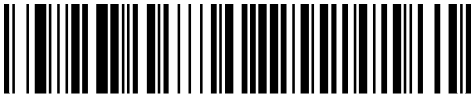
13.30 BT Auto Power Off Timeout

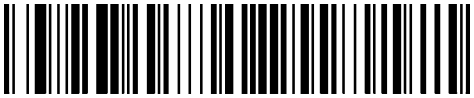
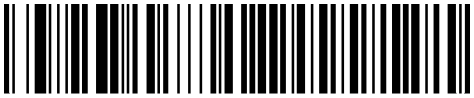
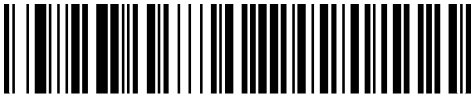
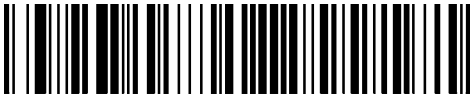
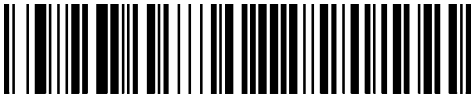
Auto Power Off = 0min (Disabled) ┬MKDCG4000.	Auto Power Off = 5min ┬MKDCG4005.
Auto Power Off = 10min ┬MKDCG400A.	Auto Power Off = 20min ┬MKDCG4014.
Auto Power Off = 30min ┬MKDCG401E.	Auto Power Off = 60min ┬MKDCG403C.
Auto Power Off = 120min ┬MKDCG4078.	

13.31 NFC (NFC Model Only)

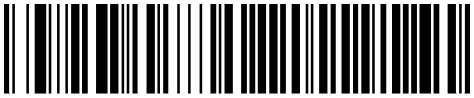
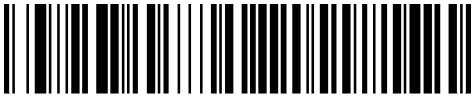
Enable NFC Power MKDCN0001.	Disable NFC Power MKDCN0010.
NFC Data Format = Data only MKDCN1001.	NFC Data Format = Packet data MKDCN1000.
UID Only = Enable MKDCN3001.	UID Only = Disable MKDCN3000.
New Data Format = Enable  MKDCN4001.	New Data Format = Disable MKDCN4010.

13.32 UHF (KDC450U UHF Model Only)

Enable UHF Power ┬MKDCNU001.	Disable UHF Power ┬MKDCNU000.
Power Level = 0 (18)  ┬MKDCNU400.	Power Level = 1 (19)  ┬MKDCNU401.
Power Level = 2 (20)  ┬MKDCNU402.	Power Level = 3 (21)  ┬MKDCNU403.
Power Level = 4 (22) ┬MKDCNU404.	Power Level = 5 (23) ┬MKDCNU405.
Power Level = 6 (24) ┬MKDCNU406.	Power Level = 7 (25) ┬MKDCNU407.
Power Level = 8 (26) ┬MKDCNU408.	Power Level = 9 (27) ┬MKDCNU409.
Power Level = 10 (28) ┬MKDCNU40A.	Power Level = 11 (29) ┬MKDCNU40B.

Power Level = 12 (30)  ┬MKDCNU40C.	
UHF Set Region = US ┬MKDCNU8001.	UHF Set Region = KR ┬MKDCNU8002.
UHF Set Region = JP ┬MKDCNU8003.	UHF Set Region = EU ┬MKDCNU8004.
Packet Data Format = Binary  ┬MKDCNU300.	Packet Data Format = Hex Decimal  ┬MKDCNU301.
Smart Hopping ┬MKDCNUH.	
Send Data Type = EPC  ┬MKDCNU500.	Send Data Type = PC+EPC  ┬MKDCNU501.

Power On Time = 500ms ┬MKDCNU101.	Power On Time = 1 sec ┬MKDCNU102.
Power On Time = 1.5 sec ┬MKDCNU103.	Power On Time = 2 sec ┬MKDCNU104.
Power On Time = 2.5 sec ┬MKDCNU105.	Power On Time = 3 sec ┬MKDCNU106.
Power On Time = 3.5 sec ┬MKDCNU107.	Power On Time = 4 sec ┬MKDCNU108.
Power On Time = 4.5 sec ┬MKDCNU109.	Power On Time = 5 sec ┬MKDCNU10A.
Power Off Time = 500ms ┬MKDCNU201.	Power Off Time = 1 sec ┬MKDCNU202.
Power Off Time = 1.5 sec ┬MKDCNU203.	Power Off Time = 2 sec ┬MKDCNU204.

Power Off Time = 2.5 sec ┬MKDCNU205.	Power Off Time = 3 sec ┬MKDCNU206.
Power Off Time = 3.5 sec  ┬MKDCNU207.	Power Off Time = 4 sec  ┬MKDCNU208.
Power Off Time = 4.5 sec ┬MKDCNU209.	Power Off Time = 5 sec ┬MKDCNU20A.

13.33 USB Disk (M Model Only)

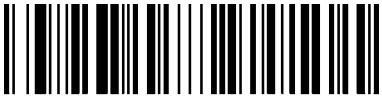
USB Serial Mode ┬MKDCU0000.	USB Disk Mode ┬MKDCU0001.
USB HID Mode ┬MKDCU0002.	Format USB Disk ┬MKDCU1000.
Data Format = Data ┬MKDCU2000.	Data Format = Data,Time ┬MKDCU2001.
Data Format = Data,Type ┬MKDCU2002.	Data Format = Data,Time,Type ┬MKDCU2003.

13.34 USB DM Button(KDC30 only)

USB DM Button = Enable	USB DM Button = Disable

13.35 WiFi (WiFi Model Only)

Enable WiFi Power ┬MKDCS0001.	Disable WiFi Power ┬MKDCS0010.
Provisioning ┬MKDCS1000.	Protocol = UDP ┬MKDCS2000.
Protocol = TCP ┬MKDCS2001.	Protocol = HTTP_GET ┬MKDCS2002.
Protocol = HTTP_POST ┬MKDCS2003.	Server URL ┬MKDCS4.
Port Number ┬MKDCS5.	Server Page ┬MKDCS6.
Enable SSL ┬MKDCS7001.	Disable SSL ┬MKDCS7010.
Enable AutoConnect ┬MKDCS8001.	Disable AutoConnect ┬MKDCS8010.

AP SSID ┬MKDCS9.	AP Passcode ┬MKDCSA.
Connect ┬MKDCSB.	Server IP  ┬MKDCS3.
Enable Send Stored ┬MKDCSC001.	Disable Send Stored ┬MKDCSC010.

13.36 Multilanguage

Disable(English Only) ┬MKDC5L000.	English ┬MKDC5L001.
	French ┬MKDC5L003.
Italian ┬MKDC5L004.	Spanish ┬MKDC5L005.
Korean ┬MKDC5L006.	Japanese ┬MKDC5L007.

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
Enable Track	
Enable Track1 M3001	Enable Track2 M3002

Enable Track3 M3004	
Disable Track	
Disable Track1 M4001	Disable Track2 M4002
Disable Track3 M4004	
Track Separator	
Track Separator = None M5000	Track Separator = Space M5001
Track Separator = Comma M5002	Track Separator = Semi Colon M5003
Track Separator = CR M5004	Track Separator = LF M5005

Track Separator = CR+LF M5006	Track Separator = Tab M5007
AES Key Length	
AES Key Length = 128 bits M8000	AES Key Length = 192 bits M8001
AES Key Length = 256 bits M8002	
MSR 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 TMKDCM6000.	Beep On Error TMKDCM6001.
Data Format	
MSR Data Only TMKDCM1000.	Packet data TMKDCM1001.
Encrypt Mode	
Disabled TMKDCM2000.	AES TMKDCM2001.
Enable Track	
Enable Track1 TMKDCM3001.	Enable Track2 TMKDCM3002.
Enable Track3 TMKDCM3004.	
Disable Track	

Disable Track1 TMKDCM4001.	Disable Track2 TMKDCM4002.
Disable Track3 TMKDCM4004.	
Track Separator	
Track Separator = None TMKDCM5000.	Track Separator = Space TMKDCM5001.
Track Separator = Comma TMKDCM5002.	Track Separator = Semi Colon TMKDCM5003.
Track Separator = CR TMKDCM5004.	Track Separator = LF TMKDCM5005.
Track Separator = CR+LF TMKDCM5006.	Track Separator = Tab TMKDCM5007.
AES Key Length	

AES Key Length = 128 bits TMKDCM8000.	AES Key Length = 192 bits TMKDCM8001.
AES Key Length = 256 bits TMKDCM8002.	
MSR Card Type	
MSR Card Type = ISO TMKDCMA000.	MSR Card Type = Other 1 TMKDCMA001.
MSR Card Type = AAMVA TMKDCMA002.	

15 Appendix F – 1D Special Barcodes (500L)

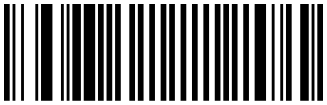
15.1 Set Symbologies

Enable EAN13 2000001	Disable EAN13 2100001
Enable EAN8 2000002	Disable EAN8 2100002
Enable UPCA 2000004	Disable UPCA 2100004
Enable UPCE 2000008	Disable UPCE 2100008
Enable Code39 2000010	Disable Code39 2100010
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 GS1-128 2000200	Disable GS1-128 2100200
Enable 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
Enable GS1 Omni 2020000	Disable GS1 Omni 2120000
Enable GS1 Limited 2040000	Disable GS1 Limited 2140000
Enable GS1 Expanded 2080000	Disable GS1 Expanded 2180000

15.2 Barcode Options

Codabar - do NOT transmit start/stop 3000000001	Codabar - transmit start/stop 3100000001
Convert UPCE to UPCA  3000000200	Do NOT convert UPCE to UPCA 3100000200
Convert EAN8 to EAN13 3000000400	Do NOT convert EAN8 to EAN13 3100000400
Convert UPCE to EAN13 3000000800	Do NOT convert UPCE to EAN13 3100000800
Return Check Digit 3000001000	Do NOT Return Check Digit 3100001000
Verify Check Digit 3000002000	Do NOT Verify Check Digit 3100002000
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	Do NOT return check digit for EAN8 3140000000

Return check digit for EAN13	Do NOT return check digit for EAN13
3080000000	3180000000

15.3 Delete Last Scanned Barcode

Delete Last Scanned Barcode

80001

15.4 Scan Options

Enable Auto Trigger 5A001	Disable Auto Trigger 5A010
Reread Delay = Continuous 5B000	Reread Delay = Short 5B001
Reread Delay = Medium 5B002	Reread Delay = Long 5B003
Reread Delay = Extra Long 5B004	

15.5 Scan Timeout

Scan Timeout = 500msec 101F4	Scan Timeout = 1sec 103E8
Scan Timeout = 2sec 107D0	Scan Timeout = 3sec 10BB8
Scan Timeout = 4sec 10FA0	Scan Timeout = 5sec 11388
Scan Timeout = 6sec 11770	Scan Timeout = 7sec 11B58
Scan Timeout = 8sec 11F40	Scan Timeout = 9sec 12328
Scan Timeout = 10sec 12710	

15.6 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	

15.7 ScanIfConnect

ScanIfConnect = Enable	ScanIfConnect = Disable
5I001	5I010

15.8 Data Process - Wedge/Store, Enter Key & Extend Key

Wedge Only 82000	Wedge & Store Always 82001
Store Only 82002	Save if Sent 82003
Save if Not Sent 82004	
Enable Enter Key 8E001	Disable Enter Key 8E000
Enable Extend Key 8X001	Disable Extend Key 8X000

15.9 Data Process - Data Edit

Start Prefix Enter 83000	Start Suffix Enter 83001
Finish Prefix/Suffix Enter 83002	Cancel Prefix/Suffix Enter 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	

15.10 Data Process - Data Format

Data format = Barcode only	Data format = Packet data
84001	84010

15.11 Data Process - Termination Character & Duplicate Check

Termination Character = None 88000	Termination Character = CR 88001
Termination Character = LF 88002	Termination Character = CR+LF 88003
Termination Character = Tab 88004	
Enable Duplicate Check 89001	Disable Duplicate Check 89010

15.12 Bluetooth

Enable Bluetooth Power 60001	Disable Bluetooth Power 60010
Enter Pairing Mode 61001	
Disconnect 6D000	
Enable Auto Pairing 6N001	Disable Auto Pairing 6N010
Bluetooth Profile = SPP 6A000	Bluetooth Profile = MFi 6A002
Enable Auto Reconnect 6R001	Disable Auto Reconnect 6R010
Display BT MAC Address 63100	Display BT FW Version 63200

15.13 System

Memory Status 50001	Reset Memory 50002
Enable Auto Erase 5F001	Disable Auto Erase 5F010
Battery 53001	
Display Version 54001	Serial Number 54002
Enable Beep Sound 56001	Disable Beep Sound 56010
Enable Power On Beep 56101	Disable Power On Beep 56110
Enable BeepOnConnect 56201	Disable BeepOnConnect 56210

Enable Beep On Scan 56301	Disable Beep On Scan 56310
Enable BeepOnMSCard 56401	Disable BeepOnMSCard 56410
Enable BeepOnICCard 56501	Disable BeepOnICCard 56510
Enable BeepOnNFCCard 56601	Disable BeepOnNFCCard 56610
High Beep Volume 5D001	Low Beep Volume 5D010
Enable Auto Menu Exit 58001	Disable Auto Menu Exit 58010
Enable Port Status 58101	Disable Port Status 58100

Display Format = Time & Battery 58200	Display Format = Type & Time 58201
Display Format = Type & Battery 58202	Display Format = Memory Status 58203
Display Format = Barcode Only 58205	
Factory Default 57001	KDC Reset A0000

15.14 Sleep Timeout

Sleep Timeout = Disable 51000	Sleep Timeout = 5sec 51005
Sleep Timeout = 10sec 5100A	Sleep Timeout = 20sec 51014
Sleep Timeout = 30sec 5101E	Sleep Timeout = 1min 5103C
Sleep Timeout = 2min 51078	Sleep Timeout = 5min 5112C
Sleep Timeout = 10min 51258	

15.15 NFC

Enable NFC Power	Disable NFC Power
N0001	N0010

15.16 MSR

Enable MSR Power MB001	Disable MSR Power MB010
No Beep On Error M6000	Beep On Error M6001
Enable Use Track1 M3001	Disable Use Track1 M4001
Enable Use Track2 M3002	Disable Use Track2 M4002
Enable Use Track3 M3004	Disable Use Track3 M4004
Enable Null Check Track1 M3101	Disable Null Check Track1 M4101
Enable Null Check Track2 M3102	Disable Null Check Track2 M4102

Enable Null Check Track3 M3104	Disable Null Check Track3 M4104
Enable Attach SS/ES M9001	Disable Attach SS/ES M9000
MSR Card Type = ISO MA000	MSR Card Type = Other 1 MA001
MSR Card Type = AAMVA MA002	MSR Card Type = JIS 2 MA003

15.17 ICCR(IC CARD READER)

Enable ICCR Power I0001	Disable ICCR Power I0010
IFD Number I1000	Config Number I1001

15.18 Key Management

Stored Keys	Inject Keys
EK2000	EK1000

15.19 Multilanguage

English 5L001	Korean 5L006
Japanese 5L007	

16 Appendix G – 2D Special Barcodes (KDC500C)

16.1 Set Symbologies

For KDC500C, please refer to Honeywell Adaptus® Technology enabled scanner user manual, such as 5600.

16.2 Barcode Options

For KDC500C, please refer to Honeywell Adaptus® Technology enabled scanner user manual, such as 5600.

16.3 Delete Last Scanned Barcode

Delete Last Scanned Barcode

TMKDC80001.

16.4 Scan Options

Enable Auto Trigger	Disable Auto Trigger
TMKDC5A001.	TMKDC5A010.

Reread Delay = Continuous TMKDC5B000.	Reread Delay = Short TMKDC5B001.
Reread Delay = Medium TMKDC5B002.	Reread Delay = Long TMKDC5B003.
Reread Delay = Extra Long TMKDC5B004.	

16.5 Scan Timeout

Scan Timeout = 500msec TMKDC101F4.	Scan Timeout = 1sec TMKDC103E8.
Scan Timeout = 2sec TMKDC107D0.	Scan Timeout = 3sec TMKDC10BB8.
Scan Timeout = 4sec TMKDC10FA0.	Scan Timeout = 5sec TMKDC11388.
Scan Timeout = 6sec TMKDC11770.	Scan Timeout = 7sec TMKDC11B58.
Scan Timeout = 8sec TMKDC11F40.	Scan Timeout = 9sec TMKDC12328.
Scan Timeout = 10sec TMKDC12710.	

16.6 Minimum Barcode Length

Minimum Length = 2 TMKDC002.	Minimum Length = 3 TMKDC003.
Minimum Length = 4 TMKDC004.	Minimum Length = 5 TMKDC005.
Minimum Length = 6 TMKDC006.	Minimum Length = 7 TMKDC007.
Minimum Length = 8 TMKDC008.	Minimum Length = 9 TMKDC009.
Minimum Length = 10 TMKDC00A.	Minimum Length = 11 TMKDC00B.
Minimum Length = 12 TMKDC00C.	Minimum Length = 13 TMKDC00D.
Minimum Length = 14 TMKDC00E.	Minimum Length = 15 TMKDC00F.

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 ┬MKDC01C.	Minimum Length = 29 ┬MKDC01D.

Minimum Length = 30 TMKDC01E.	Minimum Length = 31 TMKDC01F.
Minimum Length = 32 TMKDC020.	Minimum Length = 33 TMKDC021.
Minimum Length = 34 TMKDC022.	Minimum Length = 35 TMKDC023.
Minimum Length = 36 TMKDC024.	

16.7 ScanIfConnect

ScanIfConnect = Enable	ScanIfConnect = Disable
┬MKDC5I001.	┬MKDC5I010.

16.8 Data Process - Wedge/Store, Enter Key & Extend Key

Wedge Only TMKDC82000.	Wedge & Store Always TMKDC82001.
Store Only TMKDC82002.	Save if Sent TMKDC82003.
Save if Not Sent TMKDC82004.	
Enable Enter Key TMKDC8E001.	Disable Enter Key TMKDC8E000.
Enable Extend Key TMKDC8X001.	Disable Extend Key TMKDC8X000.

16.9 Data Process - Data Edit

Start Prefix Enter ┬MKDC83000.	Start Suffix Enter ┬MKDC83001.
Finish Prefix / Suffix Enter ┬MKDC83002.	Cancel Prefix / Suffix Enter ┬MKDC83003.
Delete Prefix ┬MKDC83004.	Delete Suffix ┬MKDC83005.
Display Prefix ┬MKDC83006.	Display Suffix ┬MKDC83007.
AIM ID None ┬MKDC8B000.	AIM ID In Prefix ┬MKDC8B001.
AIM ID In Suffix ┬MKDC8B002.	

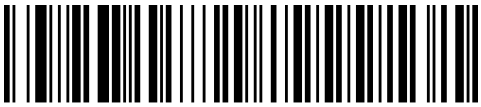
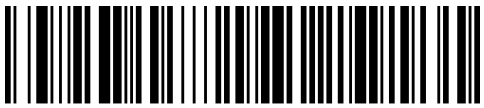
16.10 Data Process – Data Format

Data format = Barcode only	Data format = Packet data
₸MKDC84001.	₸MKDC84010.

16.11 Data Process - Termination Character & Duplicate Check

Termination Character = None TMKDC88000.	Termination Character = CR TMKDC88001.
Termination Character = LF TMKDC88002.	Termination Character = CR+LF TMKDC88003.
Termination Character = Tab TMKDC88004.	
Enable Duplicate Check TMKDC89001.	Disable Duplicate Check TMKDC89010.

16.12 Bluetooth

Enable Bluetooth Power ┬MKDC60001.	Disable Bluetooth Power ┬MKDC60010.
Enter Pairing Mode ┬MKDC61001.	Connect To ┬MKDC61301.
Disconnect ┬MKDC6D000.	
Enable Auto Pairing ┬MKDC6N001.	Disable Auto Pairing ┬MKDC6N010.
Bluetooth Profile = SPP  ┬MKDC6A000.	Bluetooth Profile = MFi ┬MKDC6A002.
Enable Auto Reconnect ┬MKDC6R001.	Disable Auto Reconnect ┬MKDC6R010.
Display BT Mac Address ┬MKDC63100.	Display BT FW Version  ┬MKDC63200.

16.13 System

Memory Status MKDC50001.	Reset Memory MKDC50002.
Enable Auto Erase MKDC5F001.	Disable Auto Erase MKDC5F010.
Battery MKDC53001.	
Display Version MKDC54001.	Serial Number MKDC54002.
Enable Beep Sound MKDC56001.	Disable Beep Sound MKDC56010.
Enable Power On Beep MKDC56101.	Disable Power On Beep MKDC56110.
Enable Beep On Connect MKDC56201.	Disable Beep On Connect MKDC56210.

Enable Beep On Scan ┬MKDC56301.	Disable Beep On Scan ┬MKDC56310.
Enable BeepOnMSCard ┬MKDC56401.	Disable BeepOnMSCard ┬MKDC56410.
Enable BeepOnICCard ┬MKDC56501.	Disable BeepOnICCard ┬MKDC56510.
Enable BeepOnNFCCard ┬MKDC56601.	Disable BeepOnNFCCard ┬MKDC56610.
High Beep Volume ┬MKDC5D001.	Low Beep Volume ┬MKDC5D010.
Enable Auto Menu Exit ┬MKDC58001.	Disable Auto Menu Exit ┬MKDC58010.
Enable Port Status ┬MKDC58101.	Disable Port Status ┬MKDC58100.

Display Format = Time & Battery ┬MKDC58200.	Display Format = Type & Time ┬MKDC58201.
Display Format = Type & Battery ┬MKDC58202.	Display Format = Memory Status ┬MKDC58203.
Display Format = Barcode Only ┬MKDC58205.	
Enable Menu Barcode ┬MKDC52401.	Disable Menu Barcode ┬MKDC52410.
Factory Default ┬MKDC57001.	KDC Reset ┬MKDCA0000.

16.14 Sleep Timeout

Sleep Timeout = Disable ┬MKDC51000.	Sleep Timeout = 5sec ┬MKDC51005.
Sleep Timeout = 10sec ┬MKDC5100A.	Sleep Timeout = 20sec ┬MKDC51014.
Sleep Timeout = 30sec ┬MKDC5101E.	Sleep Timeout = 1min ┬MKDC5103C.
Sleep Timeout = 2min ┬MKDC51078.	Sleep Timeout = 5min ┬MKDC5112C.
Sleep Timeout = 10min ┬MKDC51258.	

16.15 NFC

Enable NFC Power	Disable NFC Power
┬MKDCN0001.	┬MKDCN0010.

16.16 MSR

Enable MSR Power ┬MKDCMB001.	Disable MSR Power ┬MKDCMB010.
No Beep On Error ┬MKDCM6000.	Beep On Error ┬MKDCM6001.
Enable Use Track1 ┬MKDCM3001.	Disable Use Track1 ┬MKDCM4001.
Enable Use Track2 ┬MKDCM3002.	Disable Use Track2 ┬MKDCM4002.
Enable Use Track3 ┬MKDCM3004.	Disable Use Track3 ┬MKDCM4004.
Enable Null Check Track1 ┬MKDCM3101.	Disable Null Check Track1 ┬MKDCM4101.
Enable Null Check Track2 ┬MKDCM3102.	Disable Null Check Track2 ┬MKDCM4102.

Enable Null Check Track3 ┬MKDCM3104.	Disable Null Check Track3 ┬MKDCM4104.
Enable Attach SS/ES ┬MKDCM9001.	Disable Attach SS/ES ┬MKDCM9000.
MSR Card Type = ISO ┬MKDCMA000.	MSR Card Type = Other 1 ┬MKDCMA001.
MSR Card Type = AAMVA ┬MKDCMA002.	MSR Card Type = JIS 2 ┬MKDCMA003.

16.17 ICCR(IC CARD READER)

Enable ICCR Power ┬MKDCI0001.	Disable ICCR Power ┬MKDCI0010.
IFD Number ┬MKDCI1000.	Config Number ┬MKDCI1001.

16.18 Key Management

Stored Keys	Inject Keys
┬MKDCEK2000.	┬MKDCEK1000.

16.19 Multilanguage

English ┬MKDC5L001.	Korean ┬MKDC5L006.
Japanese ┬MKDC5L007.	

17 Appendix G – 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 VersionR_305 introduces a feature to enable the user to make one special barcode to change multiple KDC configurations.

17.1 KDC20/100/250/270L/270D/350L/410/411/415/470L/ 470D/475L/475D/475S/500L

- 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

17.2 KDC30/270C/280C/300/350C/420/421/425/450/ 470C/475C/475H/500C

- 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 String1> 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

18 Appendix H – Power management

When the KDC is not in use, it enters sleep mode. In this state, the KDC consumes very little power to prolong battery life.

The KDC270/KDC280/470 supports an additional power management feature called Hibernation mode. In this state, the KDC consumes even less power than when in sleep mode. This is because Hibernation mode is essentially in the same state as the power off state. The KDC will boot up faster from Hibernation mode in comparison to the power off state. This is because in Hibernation mode, the KDC skips initialization.

Press and hold the SCAN button for more than 3 seconds to boot from Hibernation mode or power off mode.

By default, the Hibernation mode is disabled. It can be enabled by scanning the barcodes below with selected timeouts.

18.1 1D – KDC270L/270D/470L/470D/475L/475D/475S

Disabled 5P000	10 minutes 5P00A
15 minutes 5P00F	30 minutes 5P001E
45 minutes 5P02D	60 minutes 5P03C

18.2 2D – KDC30OP/KDC270C/280C/470C/475C/475H

Disabled ᵀMKDC5P000.	10 minutes ᵀMKDC5P00A.
15 minutes ᵀMKDC5P00F.	30 minutes ᵀMKDC5P001E.
45 minutes ᵀMKDC5P02D.	60 minutes ᵀMKDC5P03C.

The following table shows the different power management modes of the KDC.

Mode	Description	Current consumption	Support Models
Power Off	• KDC is not ready to use and all components are off • It takes about 30 – 60 seconds to boot up before it can be used • To power OFF the KDC, press and hold the SCAN + DOWN buttons for more than 3 seconds or Slide power switch off (KDC400 only). Or press and hold the both SCAN buttons for more than 3 seconds. (KDC500 only)	< 10 uA	KDC20/30 KDC350 KDC400 KDC270 KDC280 KDC470/475 KDC500
Hibernation	• KDC is not ready to use and all components are off. • It takes 4 – 5 seconds to boot up before it can be used • KDC transits into a hibernation mode from Power On or Sleep mode when the timeout has occurred (10, 15, 30, 45 & 60	< 10 uA	KDC30OP KDC270 KDC280

	minutes) • Power on the KDC by pressing the SCAN button for 3 seconds		KDC470/475
Decoder Off	• KDC is ready to use • KDC wakes up with a command from the host or a button event • Decoder is off when the timeout has occurred (5 minutes) • It takes about 500ms to start decoding	< (80uA ~ 3mA)	KDC30 KDC30OP KDC270C KDC280C KDC470/475C
Sleep	• KDC is ready to use • It takes 150ms to wake up from sleep mode • KDC wakes up with a command from the host or a button event • KDC transits into a sleep mode when the sleep timeout has occurred	< (80uA ~ 10mA)	All
Power On	• KDC is fully ready to use • To power ON the KDC, press and hold the SCAN + DOWN buttons for more than 3 seconds (KDC20, 30, 350, 270, 280, 470) or Slide power switch on (KDC400 only) or press and hold the both SCAN buttons for more than 3 seconds. (KDC500 only) • KDC30OP, KDC270, KDC280 and KDC470/475 power are also powered on with press and hold the SCAN button only for more than 3 seconds.	< (40mA ~ 100mA)	All

Note: KDC100/200/250/300 doesn't have power off state.

19 Appendix I – KDC470/475 specific features

19.1 Connection method with a PC

The KDC470/475 automatically sets up a communication path between itself and the PC when the KDC470/475 is plugged in via USB cable. By pressing the DOWN button for 3 seconds, the KDC470/475 toggles the communication path between the PC and smart device.

19.2 Smart device charging method

It is possible to charge a smart device and the KDC470/475 at the same time by via USB cable or using a charging cradle.

19.3 Configuring SCAN buttons

The KDC470/475 has two scan buttons (Main scan buttons) and provides an additional two scan buttons (Case scan buttons) on certain smart device cases. By default, both main and case scan buttons are enabled.

However, user can configure scans buttons as following

1. Enable/Disable main scan buttons. In this case, the Case scan buttons are only work.
2. Disable Case scan buttons and separate main LEFT and RIGHT scan buttons.
    ①. Enable only LEFT scan button
    ②. Enable only RIGHT scan button
    ③. Enable both LEFT and RIGHT scan button

19.4 1D – KDC470L/470D/475L/475D

Disable main scan buttons 5X000	Enable main scan buttons 5X001
Disable Case scan buttons 5X101	Enable Case scan buttons 5X100
Disable both main scan buttons 5X200	Enable LEFT main scan button only 5X201
Enable RIGHT main scan button only 5X202	Enable both main scan buttons 5X203

19.5 2D – KDC470C/475C/475H

Disable main scan buttons MKDC5X000.	Enable main scan buttons MKDC5X001.
Disable Case scan buttons MKDC5X101.	Enable Case scan buttons MKDC5X100.
Disable both main scan buttons MKDC5X200.	Enable LEFT main scan button only MKDC5X201.
Enable RIGHT main scan button only MKDC5X202.	Enable both main scan buttons MKDC5X203.

19.6 USB OTG (On-The-Go) Mode

KDC470/475 support OTG mode when using Android phone with a smartphone case. KDC470/475 smartphone case allows user to charge Phone and KDC470/475 at the same time. However, it is not possible to charge Phone if using OTG mode. It should be switched Bluetooth mode while charging a Phone.

There are two modes in KDC470/475: OTG mode and Bluetooth mode.

- KDC470/475 stores mode in NVRAM
- These modes are only determined via a special barcode and a command

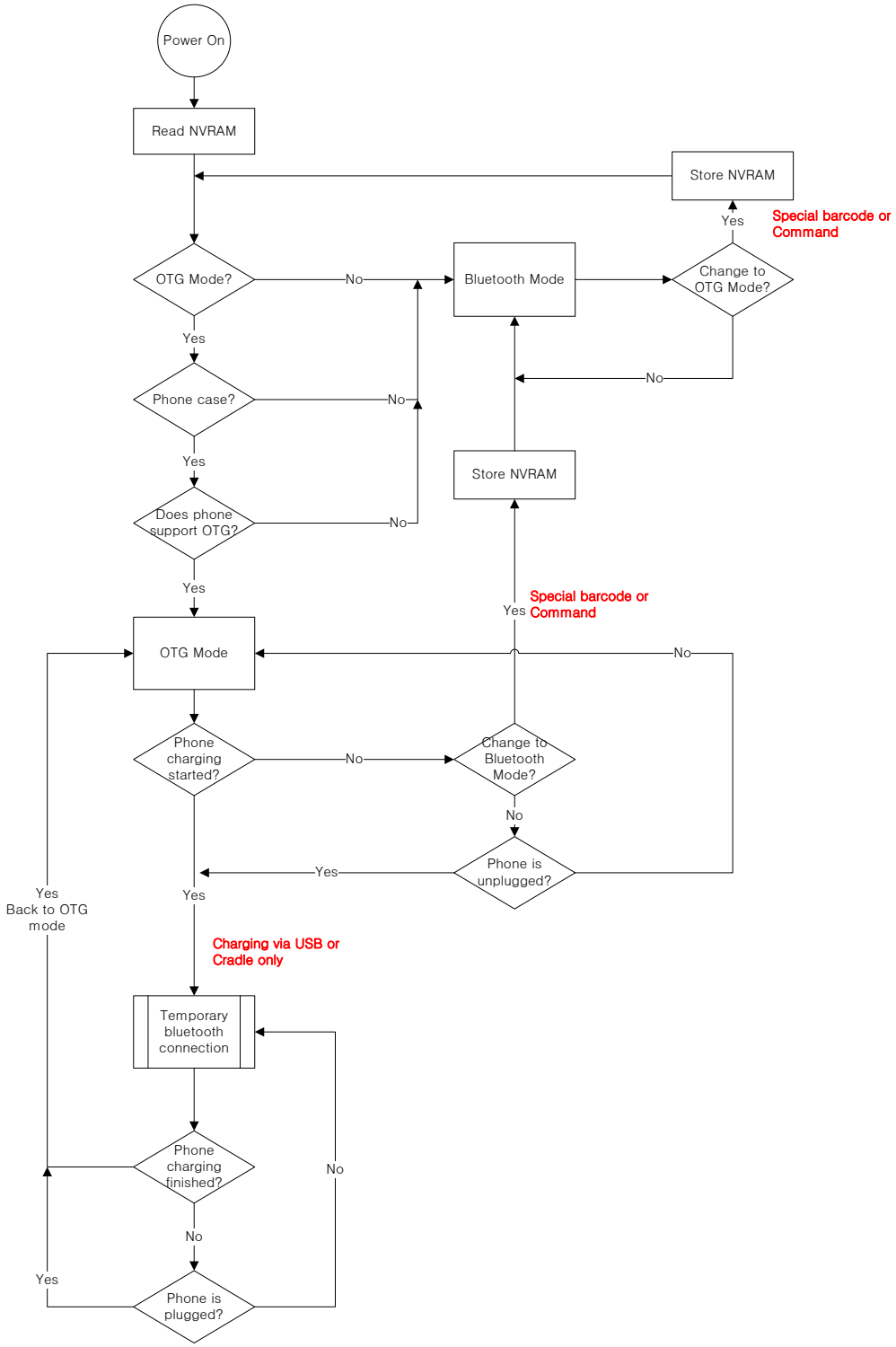
In the OTG mode, KDC470/475 is switched to Bluetooth mode temporarily when

- KDC470/475 is running w/o a smartphone case
- KDC470/475 is running w/o a smartphone
- KDC470/475 is running w/ a smartphone which doesn't support OTG mode
- KDC470/475 and Phone are under charging via USB or Cradle
    - KDC470/475 is switched back to OTG mode when USB cable is unplugged or removed from charging cradle.

All transitions between OTG and Bluetooth modes are done automatically in KDC470/475 and application can keep connections when transition is happened with following an application guide.

[Note] To switch and connect between OTG and Bluetooth, the KDC470/475 should be paired with Phone before using it.

The below picture describes overall flow of using OTG and Bluetooth mode in KDC470/475.



When does KDC470/475 switch modes?

- U1: Removes Phone from KDC470/475 case and KDC470/475 switches to Bluetooth mode from OTG mode
- U2: Inserts Phone to KDC470/475 case and KDC470/475 switches back to OTG mode from Bluetooth mode
- U3: Plugs USB cable and KDC470/475 switches to Bluetooth mode from OTG mode
- U4: Unplugs USB cable and KDC470/475 switches back to OTG mode from Bluetooth mode
- U5: Puts KDC470/475+Case into a cradle and KDC470/475 switches to Bluetooth mode
- U6: Removes KDC470/475+Case from a cradle and KDC470/475 switches back to OTG mode
- U7: Scans a Bluetooth mode special barcode to change to Bluetooth mode
- U8: Scans an OTG mode special barcode to change to OTG mode

The following table shows the connection modes of KDC470/475 which can be changed automatically.

Phone Installed?	USB Connected?	On the Charging Cradle?	Mode to be set to
Yes	No	No	OTG
	No	Yes	Bluetooth
	Yes	N/A	Bluetooth
No	N/A	N/A	Bluetooth

Special Barcodes

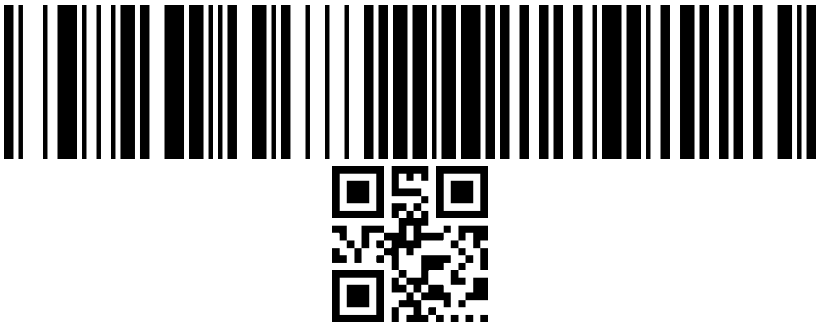
- Bluetooth Mode: KDC and Smart Device communicate each other through Bluetooth.

- OTG Mode: KDC and Smart Device communicate each other through USB.

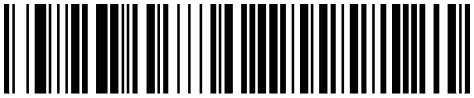
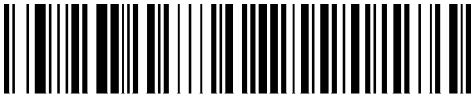
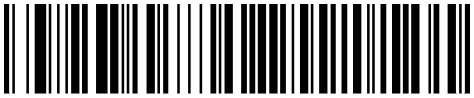
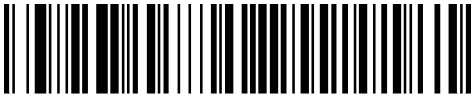
- USB HID and USB Serial: And then select either HID mode or Serial mode for your data communication method.

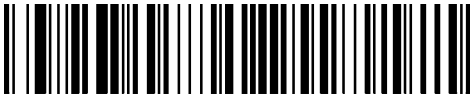
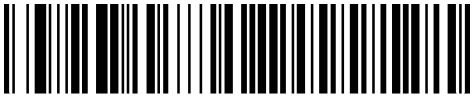
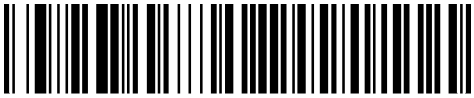
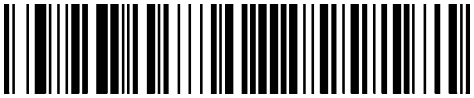
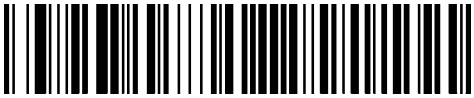
USB HID Mode (HID Keyboard Mode)

USB Serial Mode



19.7 KDC470/475 UHF Barcodes

Enable UHF Power ┬MKDCNU001.	Disable UHF Power ┬MKDCNU000.
Power Level = 0 (18)  ┬MKDCNU400.	Power Level = 1 (19)  ┬MKDCNU401.
Power Level = 2 (20)  ┬MKDCNU402.	Power Level = 3 (21)  ┬MKDCNU403.
Power Level = 4 (22) ┬MKDCNU404.	Power Level = 5 (23) ┬MKDCNU405.
Power Level = 6 (24) ┬MKDCNU406.	Power Level = 7 (25) ┬MKDCNU407.
Power Level = 8 (26) ┬MKDCNU408.	Power Level = 9 (27) ┬MKDCNU409.
Power Level = 10 (28) ┬MKDCNU40A.	Power Level = 11 (29) ┬MKDCNU40B.

Power Level = 12 (30)  ┬MKDCNU40C.	
UHF Set Region = US ┬MKDCNU8001.	UHF Set Region = KR ┬MKDCNU8002.
UHF Set Region = JP ┬MKDCNU8003.	UHF Set Region = EU ┬MKDCNU8004.
Packet Data Format = Binary  ┬MKDCNU300.	Packet Data Format = Hex Decimal  ┬MKDCNU301.
Smart Hopping ┬MKDCNUH.	
Send Data Type = EPC  ┬MKDCNU500.	Send Data Type = PC+EPC  ┬MKDCNU501.

Read Mode = Barcode ┬MKDCN7001.	Read Mode = RFID (UHF) ┬MKDCN7010.

UHF Reading Timeout = 0 second ┬MKDCNU600.	UHF Reading Timeout = 2 seconds ┬MKDCNU67D0.
UHF Reading Timeout = 10 second ┬MKDCNU62710.	UHF Reading Timeout = 30 seconds ┬MKDCNU67530.
UHF Reading Timeout = 60 second ┬MKDCNU6EA60.	
Duplicate Check = Enable ┬MKDCN6101.	Duplicate Check = Disable ┬MKDCN6110.
Smart Hopping = Enable ┬MKDCNUh001.	Smart Hopping = Disable ┬MKDCNUh010.
Tag Read Mode = Multiple Read ┬MKDCN6001.	Tag Read Mode = Single Read ┬MKDCN6010.
Tag Read Mode = Active Read Enabled ┬MKDCN6201.	Tag Read Mode = Active Read Disabled ┬MKDCN6210.

Stop Active Read = Enabled ┬MKDCN6301.	Stop Active Read = Disabled ┬MKDCN6310.
RFID Beep Count = 0 ┬MKDCN6400.	RFID Beep Count = 5 ┬MKDCN6405.
RFID Beep Count = 10 ┬MKDCN640A.	RFID Beep Count = 20 ┬MKDCN6414.
RFID Beep Count = 50 ┬MKDCN6432.	
Store RFID Data = Enabled ┬MKDCN6501.	Store RFID Data = Disabled ┬MKDCN6510.
Charging Phone in UHF 1.0W = Enabled ┬MKDCN6601.	Charging Phone in UHF 1.0W = Disabled ┬MKDCN6610.

20 Appendix J – How to connect KDC280 to host via BLE

KDC280 has BLE(Bluetooth Low Energy) V4.1 instead of Bluetooth V2.1 and supports below three profiles.

- SPP
  - It is a KoamTac specific customized profile which provides bi-directional communication in the paired mode.
- HID
  - It is a Bluetooth Low Energy standard profile which does support Human Interface Device as like keyboard. It is required to be paired first.

20.1 Selecting profile

Select a BLE profile. There are two ways to set up a BLE profile. The user may establish a BLE profile manually (on the KDC280) or by scanning a programming barcode as shown below.

SPP

HID

The user also may select a BLE profile from the **ConnectDevice** menu of KDC280.

KDC280 Main menu → BT Config → ConnectDevice

20.2 Pairing

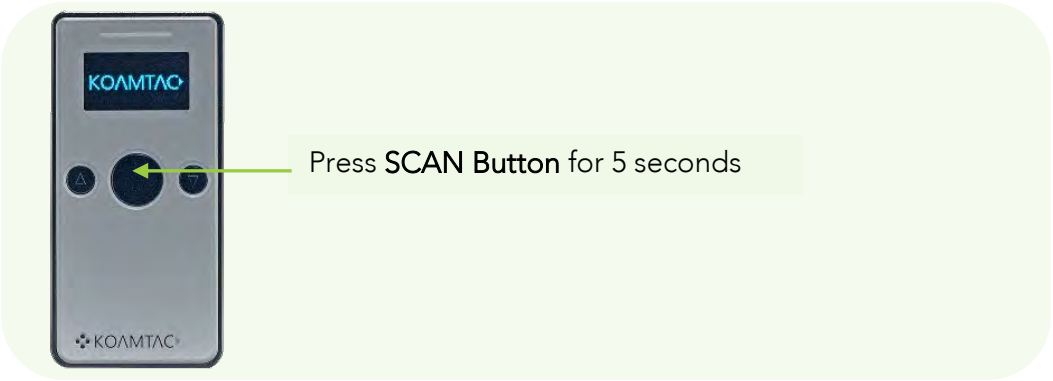
1. There are three ways to put KDC280 into **Pairing** mode.

   - Scan below **Pairing** barcode.

- Select **Pairing** from the KDC280 menu.

  KDC280 Main Menu → BT Service → Pairing

- Press the Scan button for five seconds in order to enter into Pairing mode.



2. On the host device, go to **Settings -> Bluetooth**, and select the KDC280 that needs to be paired. The KDC and host device will now communicate with each other.

3. After it has been paired, open application and select a paired device and connect to the KDC280.

21 Appendix K – Social Distancing Feature

The COVID-19 pandemic has added a new challenge to every workplace - warehouses, manufacturing lines, and even retail store floors - the need to maintain distance between people for their health and safety. Reopening your business is already an undertaking but ensuring social distance among your workers is made easy with the KOAMTAC social distancing feature.

Whether you're a small or enterprise business, the KOAMTAC social distancing feature works with the technology and systems you already have in place so you, and your workers, can have peace-of-mind as you adjust to the new normal.

- Supported on all Bluetooth Low Energy (BLE) 5.0 KDC devices.
- For more on the social distancing feature, please watch: https://youtu.be/m4Manx9vK68

There are three ways to enable and control the settings for the social distancing feature:

1. Enable via the KDC menu
2. Scan the special Social Distance barcodes that correspond with the settings you wish to enable
3. Enable via the KTSync application

21.1 Social Distancing Feature Parameters

The following parameters can be changed:

- **Distance**: Set the acceptable social distance range with values between 1 to 10 meters (Default: Disabled).

- **Host Alert**: This setting will forward distance alerts to the connected host device (Default: Disabled).
- **KDC Alert**: This setting allows the user to enable/disable an audible **beep** sound (Default: Enabled), **vibration** (Default: Disabled), and **data storage** (Default: Disabled) settings for distance violations on the KDC.
- **Security Key**: Choose between fixed key or a custom key. Only KDC devices using the same key will be able to detect and report the distance between devices. If fixed key is selected, the KDC will use a predefined key. If you prefer to set your own custom key, this action can only be performed though using KTSync (Default: Fixed Key).

21.2 Enabling the Social Distancing Feature via the KDC Menu

If you prefer to enable the social distancing feature by navigating through the KDC menu, then follow the instructions below:

a) From **KDC BLE Config** menu, select **Social Dist.** to configure
b) Set the **Distance** from 1m to 10m
c) Set the **Host Alert** to enable/disable
d) Set the **KDC Alert**: Beep, Vibrator, and Data Store to desired settings
e) Set the **Security Key**: Fixed Key or Custom Key

21.3 Enabling the Social Distancing Feature via Social Distance Barcodes

If you prefer to enable the social distancing feature via special barcodes, scan the special social distance barcodes that correspond with the settings you wish to enable:

Social Distance Range	
Disable 	1.0M
2.0M 	3.0M
4.0M 	5.0M
7.0M 	10.0M

Host Alert	
Enable 	Disable

KDC Alert

Beep Enable	Beep Disable
┬MKDC6z301.	┬MKDC6z300.
Vibrate Enable	**Vibrate Disable**
┬MKDC6z401.	┬MKDC6z400.
Store Data Enable	**Store Data Disable**
┬MKDC6z501.	┬MKDC6z500.

Security Key	
Fixed Key	Custom Key
┬MKDC6z601.	┬MKDC6z602.

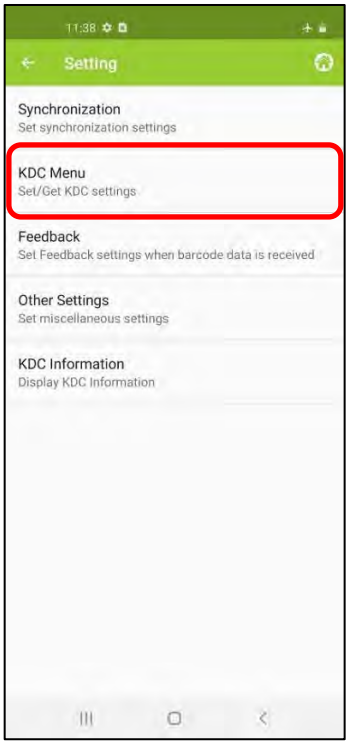
Disable All
┬MKDC6z600.

21.4 Enabling the Social Distancing Feature via the KTSync application

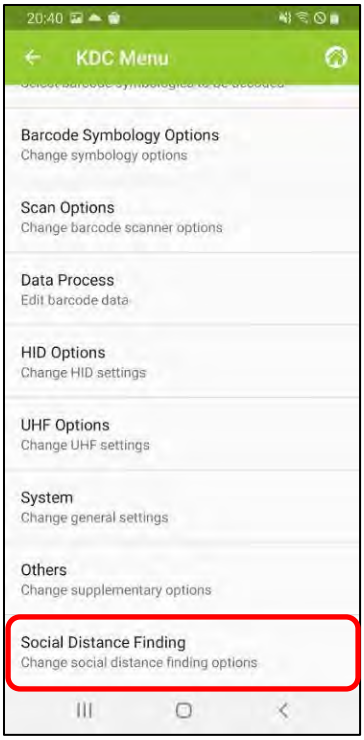
The social distancing feature can also be configured in the KTSync application.

* Note: This menu is only shown when KTSync is connected to a KDC BLE device running firmware version 050025 or higher.

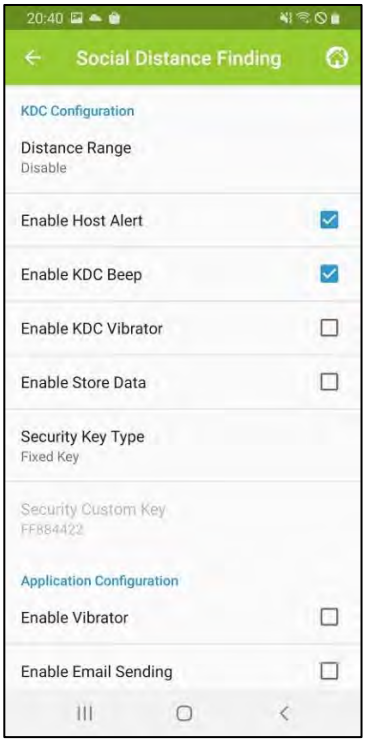
a) Open KTSync and tap the **Setting** icon
b) Select **KDC Menu** (Fig. 10)
c) Select **Social Distance Finding** (Fig. 11)
d) Choose your Social Distance settings. Settings listed in the KDC Configuration section are the same settings available to you as if you were setting parameters on the KDC itself. These settings will be saved when you exit this screen. (Fig. 12)
e) Additional Application Configuration settings can be set on this screen as well. (Fig. 12)
    - *Enable Vibrator*: If enabled, the host device vibrates when receiving social distance alert data.
    - *Enable Email Sending*: If enabled, email application is launched instead of a social distance data pop up when receiving social distance alert data.
    - *Email Address:* Register and email address to send social alert events.



< Fig. 10 >



< Fig. 11 >



< Fig. 12 >

21.5 Examples of Social Distance Alerts & Social Distance Alert Data

Whenever the KDC is connected, the KDC is sending social distance alert data to host device if **host alert** is enabled and another KDC is found within the selected **distance range**.

When a social distance violation occurs, you may receive these alerts, depending on settings:

1. Social distance warning on KDC, showing your KDC serial number accompanied by **beep/vibrate** if selected. (Fig. 13)
2. Social distance pop-up in KTSync showing your KDC serial number, the date & time of the violation, the serial number of the other detected KDC, and the distance if using the **host alert** setting. (Fig. 14)

3. Social distance email showing your KDC serial number, the date & time of the violation, the serial number of the other detected KDC, and the distance if using the **enable email sending** setting. (Fig. 15)

*Note: When reconnected, the KDC will send social distance data to the host device even if the same KDC is found within distance.

*Note: Only one social distance data alert is sent to the host device when multiple KDC devices are detected if social alert is already being displayed as a pop-up or email application is already launched.

< Fig. 13 >

< Fig. 14 >

< Fig. 15 >

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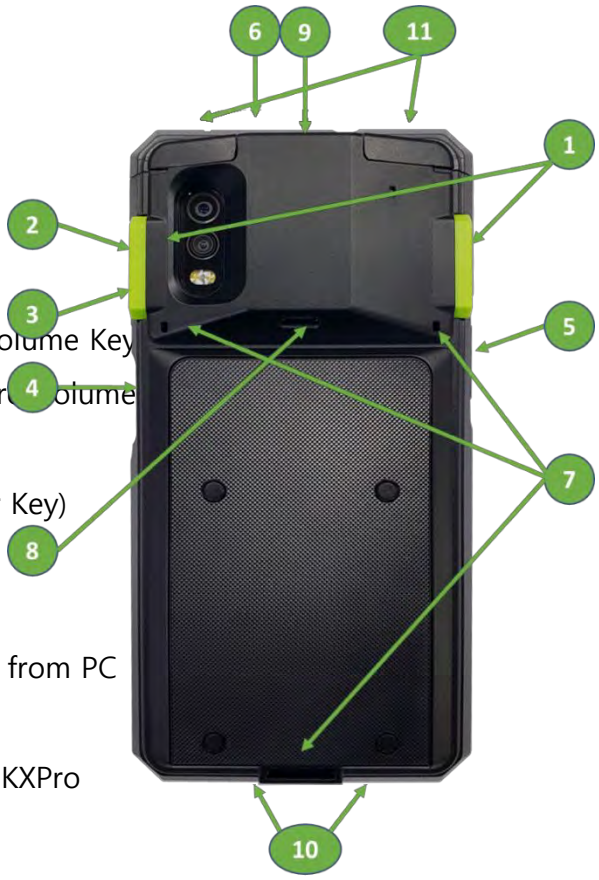
22 Appendix L – SKXPro

The SKXPro is a 2D Imager Barcode Data Scanning Sled for the Samsung Galaxy XCover Pro. It is connected to the XCover Pro via the USB Type-C port at the bottom of the SKXPro. Data between the SKXPro and XCover Pro is transferred through this physical connection, not by Bluetooth.

22.1 SKXPro Diagram



① Left & Right SCAN Keys (for SKXPro)
② VOLUME UP Key (access to XCover Pro Volume Key)
③ VOLUME DOWN Key (access to XCover Pro Volume)
④ SIDE Key (of XCover Pro)
⑤ XCover Key (access to XCover Pro XCover Key)
⑥ Top Key (access to XCover Pro Top Key)
⑦ Hand Strap Holes (for SKXPro)
⑧ USB Port to access XCover Pro or SKXPro from PC
⑨ Barcode Scan Window (for SKXPro)
⑩ Pogo Pins for Charging XCover Pro and SKXPro
⑪ Screw Holes (for SKXPro)

22.2 How to Turn On and Off

Refer to the figure in section 21.1 to locate the buttons and keys.

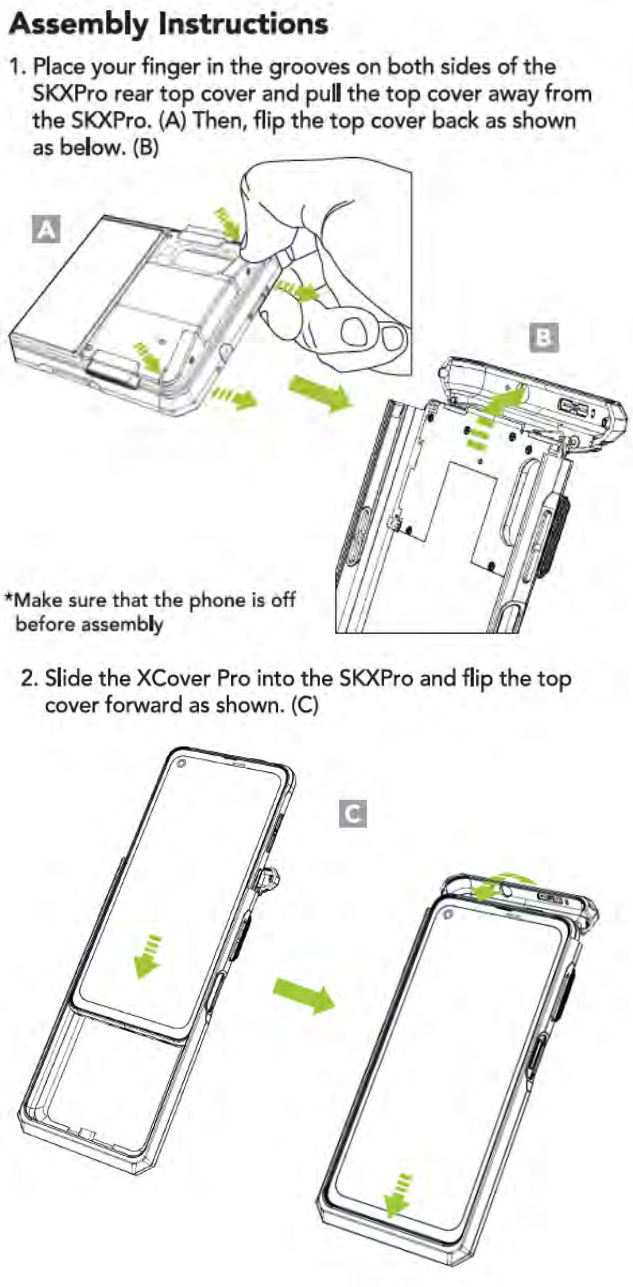
The SKXPro does not have its own internal battery but rather draws power from the XCover Pro's battery. The SKXPro works only when the XCover Pro is mounted into SKXPro Scanning Sled. If you need to access the SKXPro or the XCover Pro, you can access them by using the USB port from the back of the SKXPro.

To turn on the XCover Pro, press and hold the SIDE key for a few seconds.

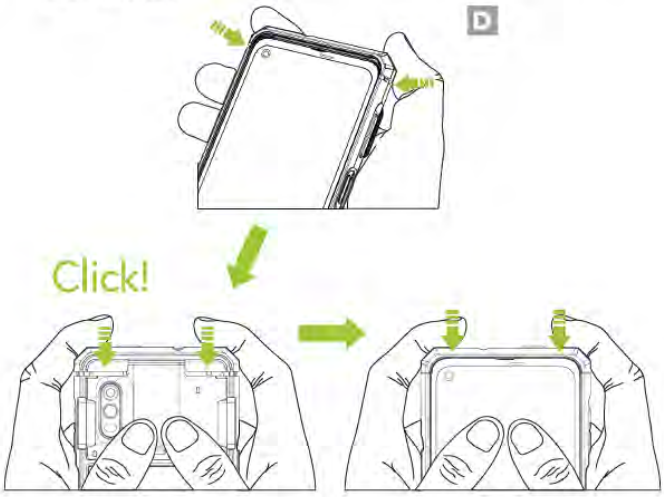
To turn off the XCover Pro, press and hold the VOLUME DOWN and SIDE keys simultaneously. Alternatively, open the notification panel and tap power icon.

22.3 How to Assemble (Mount) the XCover Pro into the SKXPro

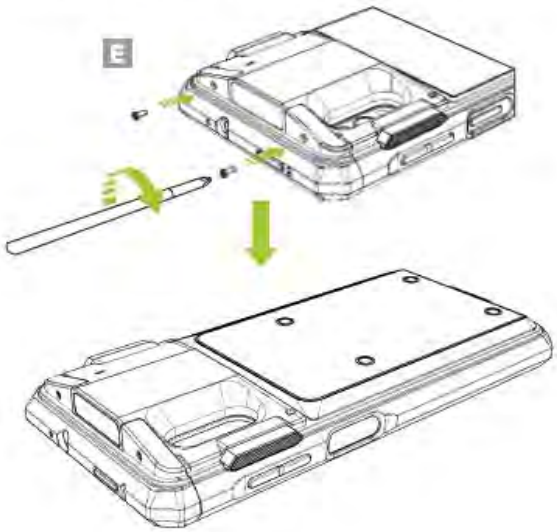
Make sure that the XCover Pro is off before assembly. (Please note, a PH0 screwdriver is necessary to complete assembly/disassembly.)



3. Align the top cover with the body of the SKXPro and close it by pressing both sides from the back until you hear a click. Press both sides of the top cover once again from the front. (D)



4. Using the provided screws, tighten the top cover via the screw holes on both sides of the scanner. (E)

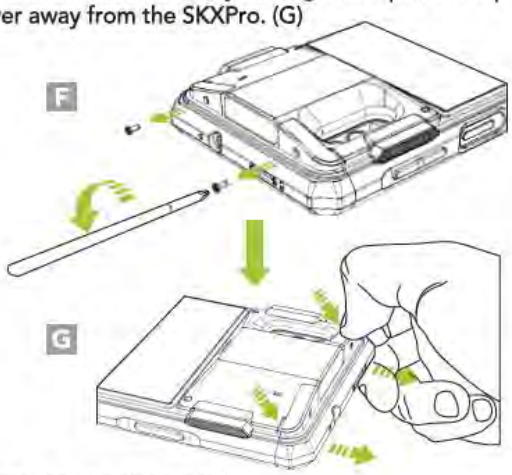


22.4 How to Remove the XCover Pro from the SKXPro

Make sure that the phone is off before removal. (Please note, a PH0 screwdriver is necessary to complete assembly/disassembly)

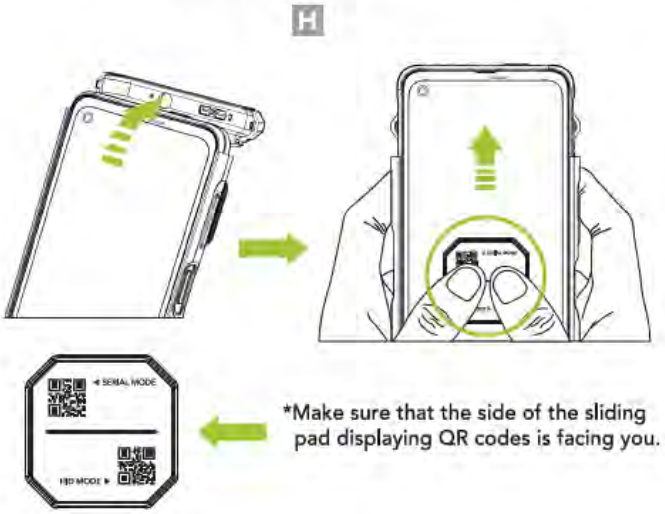
Removing the XCover Pro

1. Remove the screws on both sides of the scanner. (F) Next, remove the top cover by pressing the grooves on both sides of the SKXPro with your finger and pull the top cover away from the SKXPro. (G)



*Make sure that the phone is off before assembly

2. Flip the top cover back. After placing the sliding pad on the XCover Pro screen as shown in the figure, remove the XCover Pro by pushing up the sliding pad with both fingers. (H)

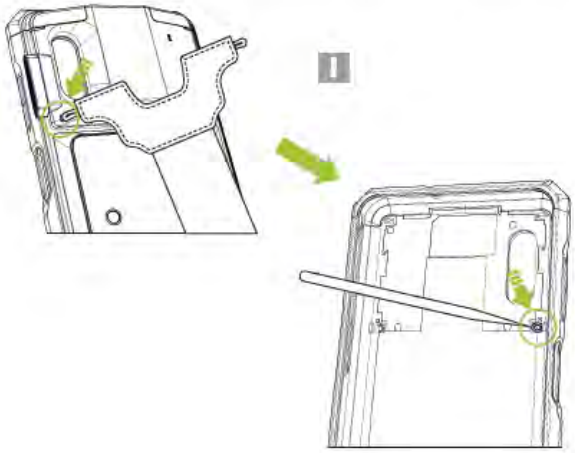


*Make sure that the side of the sliding pad displaying QR codes is facing you.

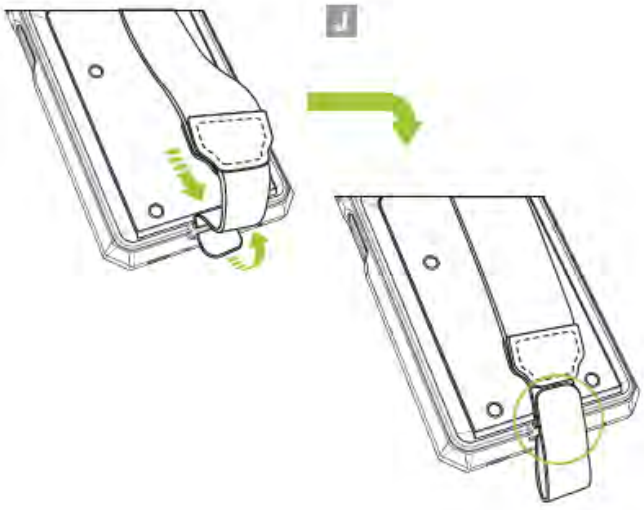
22.5 Assembling the Hand Strap and Protective Boot for SKXPro

Hand Strap Assembly Instructions

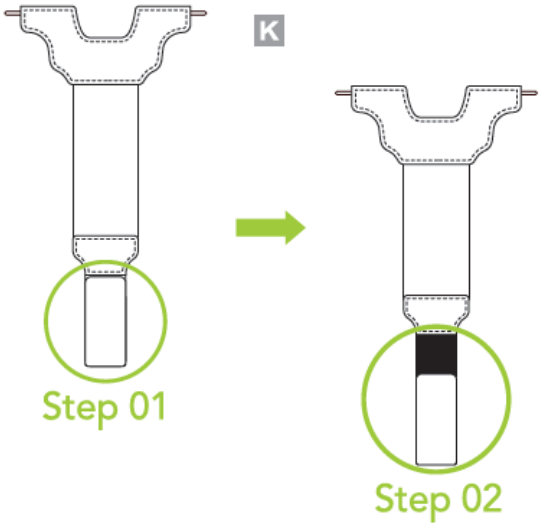
1. Slide the hand strap's left elastic band through the left strap hole of the SKXPro. Use pin or sharp tool to fasten the left elastic band to the plastic tab inside the SKXPro. (I) Repeat the process with the hand strap's right elestic band.



2. Loop the hand strap band through the slot on the bottom of SKXPro and attach the hook and loop band to itself. (J)



3. By adjusting the lower hook and loop band of the hand strap the length of the hand strap can be adjusted in two steps to suit the user. (K)



Protective Boot Assembly Instructions

Push the lower part of SKXPro into the lower part of the Protective Boot as shown below, and then insert the upper part of the SKXPro into the upper part of the Protective Boot. (L)

22.6 Connection Between the XCover Pro and the SKXPro

Once the XCover Pro is assembled with the SKXPro, the two will be connected via USB and the connectivity will be USB HID connectivity by default. This allows the SKXPro to function as a keyboard. The SKXPro is also able to utilize USB Serial connectivity.

a. USB HID **Connectivity**: Allows one-way USB communication. The SKXPro only transmits data to the host device, the XCover Pro.
b. USB Serial **Connectivity**: Allows two-way USB communication. The SKXPro transmits data to the XCover Pro application and the XCover Pro application can transmit data/control back to the SKXPro.

Note: USB HID inputs data directly into an application, while USB Serial requires KTSync SKXPro or a custom application developed using the KOAMTAC SDK to input data into an application. To gain access to the SDK, please complete the form here: https://www.koamtac.com/sdk/

22.7 Connection Between XCover Pro and PC

To access the XCover Pro while installed in the SKXPro sled, you can use the USB port located on the back of SKXPro. (Item ⑧ from the diagram in section 1.1) Please connect the SKXPro sled to the PC with a USB cable, then scan the barcode shown below to bypass the SKXPro. Once you disconnect the USB cable from the PC, the XCover Pro will automatically reconnect to the SKXPro.

Phone to PC Connection

To connect a PC to the SKXPro (for firmware upgrades or SKXPro configuration), please connect the SKXPro sled to the PC with a USB cable, then scan the barcode below. Once you disconnect the USB cable from the PC, the SKXPro will automatically reconnect to the XCover Pro.

PC to SKXPro Connection

To reset the default connection (XCover Pro to SKXPro), use this barcode.

Phone to SKXPro Connection

22.8 Using Keyboard Wedge (HID Keyboard): USB HID Mode (DEFAULT)

This option is only available when SKXPro is set to USB HID connectivity. USB HID mode is the default mode of the SKXPro. Once the XCover Pro phone is assembled into the SKXPro, the SKXPro automatically works as a keyboard without any further setup. If you open any application with a text field and tap on the text field, then proceed to scan any barcode, you will notice that the barcode data will be populated into that text field. If you need to switch back into USB HID Mode from USB Serial Mode, scan this barcode:

USB HID Mode (HID Keyboard Mode)

22.9 Using KTSync SKXPro: USB Serial Mode

The KTSync SKXPro app is a program which communicates with the SKXPro via USB Serial connection. It enables users to read and store data, supports keyboard wedging, and also

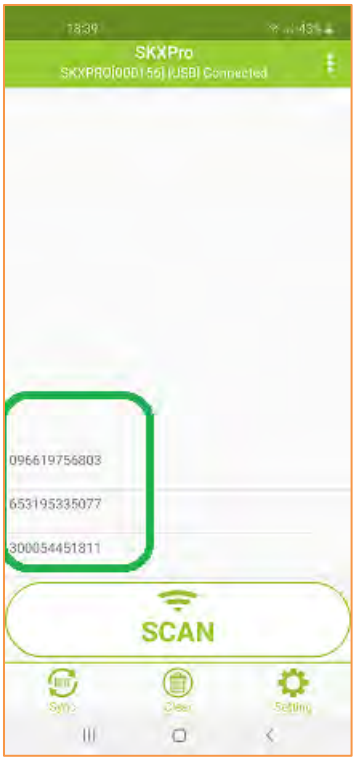
contains configuration options for the SKXPro. Download the KTSync SKXPro app from the Google Play Store. You can use KTSync SKXPro app to utilize your SKXPro alone or with a native application. This is only available when using a USB connection with USB Serial Mode. To change to USB Serial Mode, scan this barcode:

USB Serial Mode

a) Download and install KTSync SKXPro app from the Google Play Store.
b) Open the KTSync SKXPro app then it will automatically connect to the SKXPro. The SKXPro will display "Connected" next to the name of your SKXPro at the top of the application. (Fig. 1)
c) To test your connection, scan any barcode. If the connection is successful, the barcode data will display on the screen. (Fig. 2)

SKXPro
SKXPRO[000156] [USB] Connected
SCAN
Sync
Clear
Setting

< Fig. 1 >


SKXPro
SKXPRO[000156] [USB] Connected
096619756803
653195335077
300054451811
SCAN
Sync
Clear
Setting

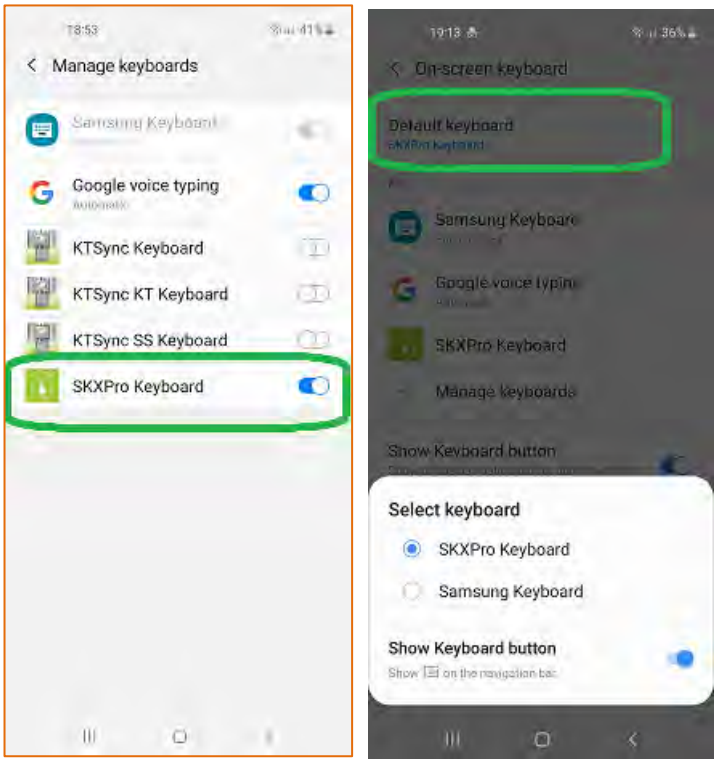
< Fig. 2 >

22.10 Using SKXPro Keyboard – Android

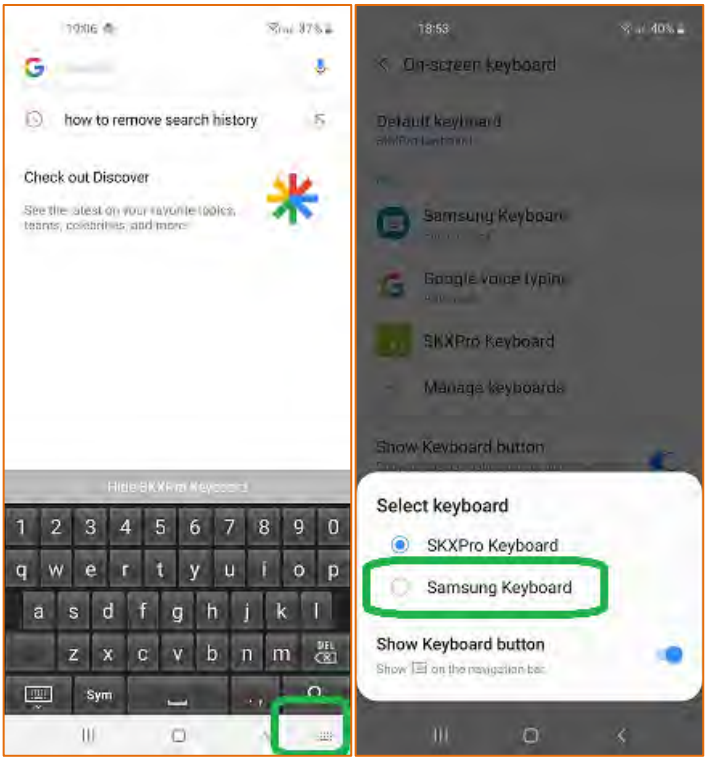
You can set up the SKXPro as a keyboard while SKXPro is connected in USB Serial Mode.

a) While the KTSync SKXPro app is running in the background, navigate to Settings → General management → Language and input → On-screen keyboard → Manage keyboards.
b) Tap on "SKXPro Keyboard" to enable it.
c) Change "SKXPro Keyboard" to the default keyboard. (Fig. 5)

To switch back to the previous keyboard, simply change the default keyboard again. Or, when a text field is selected, tap on the keyboard button from the keyboard and select the default keyboard. (Fig. 6)



< Fig. 5 >



< Fig. 6 >

Note: The SKXPro must be connected to KTSync SKXPro app and the SKXPro keyboard must be selected for this to work.

22.11 Charging Timeout

SKXPro has a charging timeout feature, meaning it stops charging to protect the battery of the XCover Pro. So, when charging using SKXPro charging cradle or USB cable, it charges for maximum 24 hours and it stops. But after 24 hours, the battery may drain a little bit. So to compensate this battery drain, the supplementary charging technique is adopted. So, after the full charging, there is additional 15 min charging after 3 hours periodically.

This charging timeout feature can be enabled or disabled by scanning this barcode:

SXKPro Cradle Charging Timeout Enable	SXKPro Cradle Charging Timeout Disable
┬MKDCX0000.	┬MKDCX0001.