KoamTac

A NEW WAVE IN AUTO ID

User Manual KDC300

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COPYRIGHT, LICENSE, and WARNING PAGE

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

CAUTION:

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

WARNING:

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

INFORMATION TO USER:

This equipment has been tested and found to comply with the limit of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy 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 / Relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit difference from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

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

1. INTRODUCTION

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

FEATURES	KDC100	KDC200	KDC200P	KDC300
USB CONNECTIONS	2	1	1	1
RECHARGEABLE BATTERY	YES	YES	YES	YES
SCAN ENGINE	Laser	Laser	Laser	Imager
AUTOMATIC DATA UPLOAD	YES	YES	YES	YES
STORES 10,000+ BARCODES	YES	YES	YES	YES
KTSYNC® SOFTWARE	YES	YES	YES	YES
SDK FOR DEVELOPERS	YES	YES	YES	YES
SUPPORTS MICROSOFT© XP, VISTA, MOBILE 5.0+	YES	YES	YES	YES
BLUETOOTH ENABLED	NO	YES	YES	YES

Table 1 - Features of KDC

2. INSTALLATION & OPERATION

2.1 KDC Package

The standard KDC package contains:

1. One KDC barcode data collector
2. One USB cable
3. One neck strap
4. One KDC Laser Barcode Data Collector CD with
   - ✓ KTSync© for XP, Vista, and Mobile 5.0+
   - ✓ KDC device driver
   - ✓ User Manual

NOTE: Depending on your region or area, package contents may vary.

Figure 1 - Contents of KDC Package

2.2 KDC Characteristics

Before you use your KDC, please become familiar with its physical characteristics. For assistance, refer to Figure 2 and Figure 3 which shows the placement of buttons, display, LEDs, and ports on your KDC. All KDC models are similar except for the KDC100 which comes with an additional USB connector.

KDC100 Barcode Reader and Data Collector
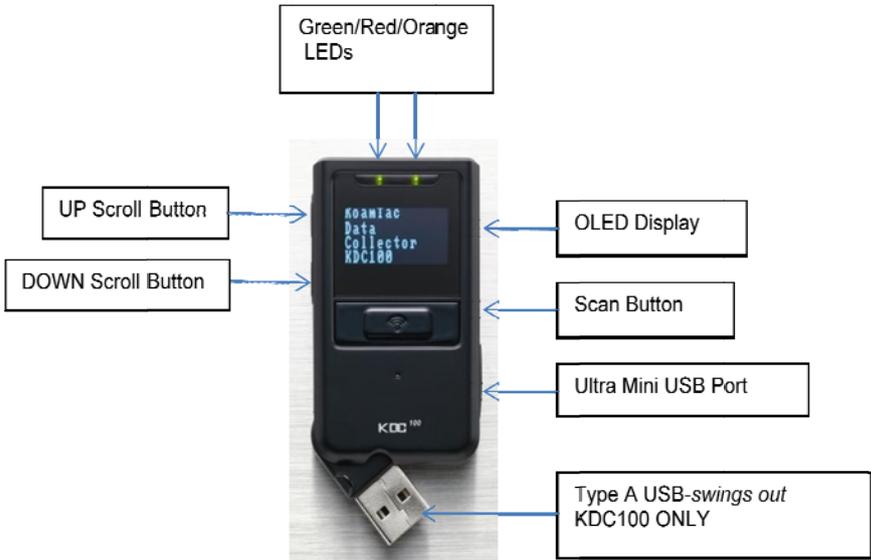
Figure 2 - Characteristics of KDC100

KDC200 - KDC200P - KDC300
Barcode Reader and Data Collector
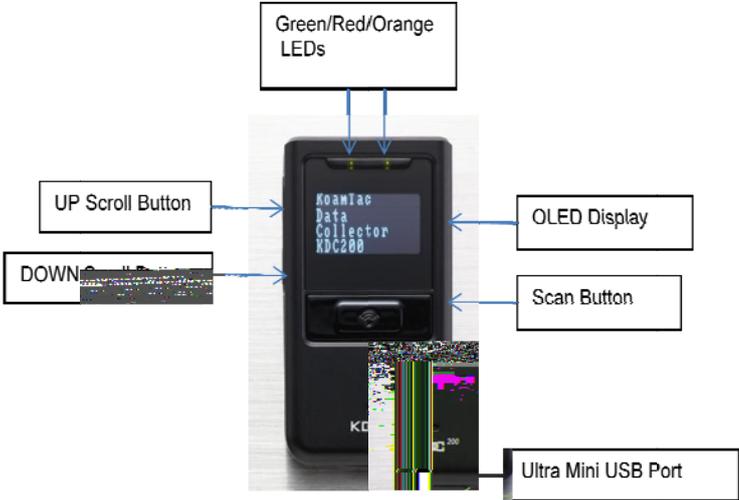
(KDC200 and KDC200P)

(KDC300)

Figure 3 - Characteristics of KDC200 - KDC200P - KDC300

2.3 Installation

Verify System Requirements

Prior to connecting the KDC to your computer, please verify that your system meets the minimum system requirements.

✓ Microsoft Windows XP or Vista

✓ Accessible USB port or serial port for connecting KDC to your computer

Affix Neck Strap to KDC

We **strongly** recommend attaching the neck strap to the KDC. Wear the KDC securely around your neck to prevent potential damage to the device if dropped. DO NOT swing the product with the neck strap. Contact with another object may damage the KDC causing it to malfunction. To install the neck strap,

1. Fit small thin cord of the strap around the pillar of the KDC.

2. Loop the thick cord of the strap through the thin loop.

3. Pull the strap tight.

Copy CD to PC

Please create a directory in PC and copy CD files.

- Insert the CD into your PC's disk drive.
- From the Windows taskbar, click the Start icon, My Computer icon, then the CD icon. A folder labeled KDC will display.
- Highlight the folder and click Copy this folder on the left sidebar menu.
- The Copy Items box pops up. Click on Make a New Folder. Rename folder to KTSync.
- With the KTSync folder highlighted, click Copy.
- The KTSync® program, User Manual, and KTReader.inf file will be copied into that folder.

Connect KDC to PC

The KDC is equipped with one ultra mini USB port. **If you have the KDC100, it has two ports, Ultra Mini and standard Type A which swings out. See Figure 2 for more details.** The USB port is used to upload barcode data and to charge the KDC battery. Prior to using the KDC, your PC must recognize the KDC. With the USB cable that came with the KDC, connect the KDC to your PC. Follow these directions for connecting the KDC to your PC.

1. Connect the cable's ultra mini USB connector to the KDC.
2. Connect the cable's Type A USB connector to your PC.
3. Wait until your computer beeps and displays the message *New Hardware Found*.
4. Follow the prompts to search for the KDC device driver. The device driver is located in the KDSync directory created when you copied the CD contents to your PC.
5. Select KDSync directory and *KTReader.inf* file.
6. Continue with the hardware installation procedure.

Charge KDC Battery

After installing the KDC, you must charge its battery. To charge the battery, follow these directions.

1. Connect the cable's ultra mini USB connector to the KDC.
2. Connect the cable's Type A USB connector to your computer.
3. Your KDC battery will begin charging. Two small LEDs on the front panel will illuminate orange. When the battery is fully charged, the LEDs will illuminate green.

KDC100	*KDC200*	*KDC200P*	*KDC300*
2 Hours	*2 Hours*	*2 Hours*	*4 Hours*

Table 2 – Approximate Time to Charge KDC Battery

Configure KDC

The KDC is designed to meet the data collection requirements of many different industries in a variety of dynamic situations. To perform well in these diverse environments, the KDC is designed to be configured easily and quickly. For the KDC to perform at its maximum level, the KDC must be configured properly. Until you are familiar with configuring the KDC, it is recommended that you DO NOT modify the KDC. The KDC can be configured in three different methods which are explained in Chapter 2.5 KDC Menus, Chapter 4. Synchronization, and Appendix C – Special Barcodes (currently only available for KDC100, KDC200, and KDC200P).

CONFIGURATION METHODS FOR THE KDC

- KDC Menu
- KTSync® Software
- Special Barcodes – *Currently only available for the KDC 100 / 200 / 200P only*

Press UP and DOWN Scroll Buttons simultaneously to access the KDC menu.

Figure 4 - Location of Scroll Buttons

2.4 Basic Operation

Reading Barcodes

Reading a barcode is simply. Point the KDC at a barcode and press the scan button. Be sure to point the scan engine at the barcode, not at your face, making sure to position the light beam on the barcode. If the barcode is scanned successfully, you will hear one beep and the LEDs will illuminate in green. The scanned barcode data will display along with scan time and battery level. *Depending on the configuration of your KDC, other information may also display.*
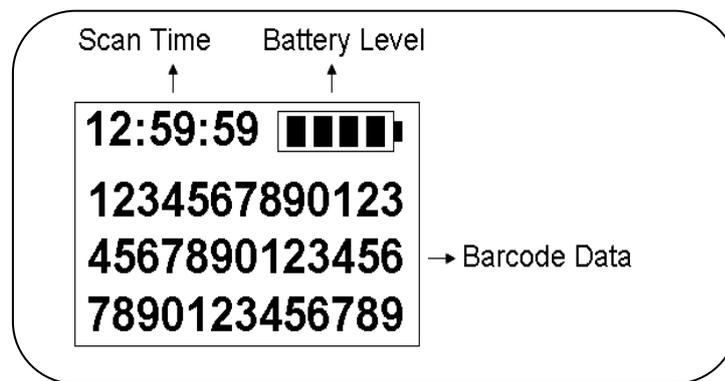
Figure 5 - KDC Display

If the scan was unsuccessful, you will hear two beeps, the LEDs will illuminate in red, and the message **Failed reading…** will display. If you have problems scanning a barcode, try the following suggestions while pointing the KDC at the barcode and depressing the scan button.

- Modify the angle of the KDC in relation to the barcode, making the angle bigger or smaller as needed.

- Modify the distance between the barcode and the KDC, moving closer or further away as needed.

- Check option settings defined in the KDC menu section and change options as needed.

- Check that the barcode's width does not exceed the light beam's width and vice versa.

Upload Barcode Data to PC

Use the KTSync® synchronization program to upload barcode data from the KDC to your PC. Please refer to Chapter 4. Synchronization for details.

2.5 KDC Menus

Top Menu	Sub Menu / Option	Option / Note
KDC Mode	Normal	Default
	Onetime	Onetime Compare Mode
	Continuous	Continuous Compare Mode
	Collation	Select Compare Digits
View Data	View/Delete	View/Delete Data
Set Barcodes	**1D**	
	Codabar	Enable/Disable
	Code 11	Enable/Disable
	Code 39	Enable/Disable
	Code93	Enable/Disable
	Code128	Enable/Disable
	EAN8	Enable/Disable
	EAN13	Enable/Disable
	EANUCC	Enable/Disable
	I2of5	Enable/Disable
	Matrix2of5	Enable/Disable
	MSI	Enable/Disable
	Plessey	Enable/Disable
	PosiCode	Enable/Disable
	RSS-14	Enable/Disable
	RSSLimit	Enable/Disable
	RSSExpand	Enable/Disable
	S2of5ID	Enable/Disable
	S2of5IA	Enable/Disable
	TLC39	Enable/Disable
	Telepen	Enable/Disable
	Trioptic	Enable/Disable
	UPCA	Enable/Disable
	UPCE0	Enable/Disable
	UPCE1	Enable/Disable
	2D	
	AztecCode	Enable/Disable
	AztecRunes	Enable/Disable
	CodablockF	Enable/Disable
	Code 16K	Enable/Disable
	Code49	Enable/Disable
	DataMatrix	Enable/Disable
	MaxiCode	Enable/Disable
	MicroPDF	Enable/Disable
	PDF417	Enable/Disable
	QRCode	Enable/Disable
	Postal Codes	
	Postnet	Enable/Disable
	PlanetCode	Enable/Disable
	UKPost	Enable/Disable
	CanadaPost	Enable/Disable
	KixPost	Enable/Disable
	AusPost	Enable/Disable
	JapanPost	Enable/Disable
	ChinaPost	Enable/Disable
	KoreaPost	Enable/Disable
	OCR Fonts	
	OCR OFF	Enable/Disable
	OCR A	Enable/Disable
	OCR B	Enable/Disable
	OCR US Currency	Enable/Disable
	OCR MICRE13B	Enable/Disable
	OCR Semi Font	Enable/Disable

Top Menu	Sub Menu / Option	Option / Note
Code Options	*Codabar*	
	TxStartStop	Enable/Disable
	Check Digit	• DoNotVerify • VerifyDoNotTx • VerifyDoTx
	Concatenate	• Disabled • Enabled • Required
	Code39	
	Tx StartStop	Enable/Disable
	Check Digit	• DoNotVerify • VerifyDoNotTx • VerifyDoTx
	Append	Enable/Disable
	FullASCII	Enable/Disable
	I2of5	
	Check Digit	• DoNotVerify • VerifyDoNotTx • VerifyDoTx
	Code11	
	Check Digit	• 1 digit • 2 digits
	Code128	
	Concatenate	Enable/Disable
	Telepen	
	Output	• AIM • Original
	UPCA	
	VerifyChkDgt	Enable/Disable
	NumberSys	Enable/Disable
	2DgtAddenda	Enable/Disable
	5DgtAddenda	Enable/Disable
	Req. Addenda	Enable/Disable
	Sep. Addenda	Enable/Disable
	Coupon Code	Enable/Disable
	UPCE	
	Expand	Enable/Disable
	Req. Addenda	Enable/Disable
	Sep. Addena	Enable/Disable
	Check Digit	Enable/Disable
	NumberSys	Enable/Disable
	2DgtAddenda	Enable/Disable
	5DgtAddenda	Enable/Disable
	EAN-13	
	VerifyChkDgt	Enable/Disable
	2DgtAddenda	Enable/Disable
	5DgtAddenda	Enable/Disable
	Req. Addenda	Enable/Disable
	Sep. Addena	Enable/Disable
	ISBN Trans.	Enable/Disable
	EAN-8	
	VerifyChkDgt	Enable/Disable
	2DgtAddenda	Enable/Disable
	5DgtAddenda	Enable/Disable
	Req. Addenda	Enable/Disable
	Sep. Addena	Enable/Disable
	MSI	
	Tx CheckChar	Enable/Disable
	PosiCode	
	A and B	Enable/Disable
	A&B Limited A	Enable/Disable
	A&B Limited B	Enable/Disable
	EAN-UCC	
	UPCEAN VER.	Enable/Disable
	Emulation	• RSS Emulate • 128 Emulate • No Emulate
	POSTNET	
	Tx CheckDgt	Enable/Disable
	PlanetCode	
	Tx CheckDgt	Enable/Disable

Table 3 – KDC300 Menu Options

KDC 300 Menu Options – continued

Scan Options	Time Out	0.5 to 10 seconds
	Minimum Length	2 to36 characters
	Security Level	1 to 4
Data Process	Wedge / Store	• Wedge Only • Wedge & Store • Store Only • Wedge & Store if Sent • Wedge & Store if Not Sent
	Data Format	• Barcode only • Packet data
	Handshake	Enable/Disable
	Terminator	• None • CR • LF • CR+LF • Tab
Bluetooth	Power	Enable/Disable
	Pairing	Enter Pairing Mode
	Auto Connect	Enable/Disable
	Auto PowerOff	Enable/Disable
	Auto PowerOn	Enable/Disable
	Beep Warning	Enable/Disable
	PWR OFF Time	1min ~ 30min
System	Memory Status	# of Stored Barcode & Amount of Remaining Memory
	Reset Memory	Empty Data Memory
	Sleep Timeout	Disabled to 10 minutes
	Date / Time	YYYY:MM:DD or HH:MM:SS
	Battery	% of Battery Left
	Version	FW Version & Serial Number
	Button Lock	Enabled/Disabled
	Beep Sound	Enabled/Disabled
	Auto Menu Exit	Enabled/Disabled
	Port Status	Enabled/Disabled
	Display Format	• Time & Battery • Type &Time • Type &Battery
	Factory Default	Restore to Factory Default Settings

KDC Mode Menu

The KDC Mode Menu has three options – Normal, Onetime, and Continuous modes.

- Normal: This is the default mode which provides basic barcode scanning. In Normal mode barcode data can be manipulation directly through the KDC or using KTSync® during the synchronization process.

- Onetime: This mode allows you to define a master barcode and then compare another barcode to the master barcode one time.

- Continuous: This mode allows you to define a master barcode and then compare multiple barcodes to the master barcode continuously.

- Collation: This mode works in conjunction with Onetime and Continuous modes, allowing you to define a string of characters within the master barcode and a string of characters within a slave barcode for comparison in Onetime or Continuous modes.

View Data Menu

This menu option allows you to view and/or delete barcodes stored in the KDC.

Set Barcodes Menu

This menu lists all the barcode symbologies supported by your KDC and allows you to select the barcode symbologies you will be scanning. For maximum scan performance, you should select only the symbologies you are scanning. Please refer to Appendix A.1 – Symbologies for a detailed listing of symbologies supported by your KDC.

Code Options Menu

Your KDC supports various Code Options including Transmission of Start and Stop Characters, Symbology Conversion, Verification of Optional Check Character, Transmission of Check Digit, and Concatenate. Please refer to Table 3 – KDC300 Menu Options for a detailed listing of Code Options for the symbologies supported by the KDC.

Scan Options Menu

- Scan Angle: Allows you to configure the laser beam angle to the barcode. Wide is 54° and Narrow is 27°. The default is Wide.

- Filter: Allows you to change the Filter mode from Normal to High for poor quality barcodes. The default is Normal.

- Timeout: Allows you to set the length of time before the KDC will stop scanning a barcode from .5 second up to 10 seconds. The default is 2 seconds.

- Minimum Barcode Length: Allows you to set a barcode length from 2 characters to 36 characters. It is strongly recommended that you maximize the minimum barcode length setting to prevent possible errors. The default is 4 characters.

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

Scan Options Menu

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.

- Wedge & Store if Sent: If data transmission is successful, barcode data is stored in memory.

- Wedge & Store 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: KDC transmits scanned barcodes only. User may incorporate proper data transmission error detection and correction mechanism in this mode.

  - KDC supports various termination characters for barcode only format.

  - User can select <NONE>, <CR>, <LF>, <CR+LF> or <TAB> as the termination character.

- Packet Data: KDC transmits packet data with checksum to minimize transmission errors.

  - KTSync$^®$ operates in Packet Data mode ONLY.

  - If you are using KTSync$^®,$ Data Format mode must be set to Packet Data.

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

- Handshake Mode will increase the reliability of barcode data transmission.

- The default mode for Handshake is Disabled.

- Data transmission speed is slower when Handshake Mode is Enabled.

**Terminator** – KDC supports various termination characters when the Data Format mode is set to Barcode Only. This option allows you to select <NONE>, <CR>, <LF>, <CR+LF>, or <TAB> as the termination character. The default terminator is <CR+LF>.

Bluetooth Menu - KDC200 / KDC200P / KDC300

The KDC supports Bluetooth, a robust wireless protocol that allows connectivity between a Bluetooth enabled KDC and a Microsoft compatible host device running a Bluetooth environment. Before utilizing the advantages of Bluetooth functionality with the KDC, you should become familiar with Bluetooth connectivity and its impact on your host environment.

To configure your KDC for Bluetooth functionality, you must use the KDC Menus.   To access the menus, simultaneously press the UP and DOWN scroll buttons on the side of the KDC for about 5 seconds until the KDC Menus display. Use the DOWN button to scroll to Bluetooth then press the Scan button.

Below is a listing of the Bluetooth options and their settings. The default settings for these options have been set to increase the usability of Bluetooth technology without compromising the KDC battery usage.   IMPORTANT: We strongly recommend NOT changing these settings until you have 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 Bluetooth Menu - KDC200 / KDC200P / KDC300.

- Power - Enabled or Disabled
- Pairing Mode
- Auto Connect - Enabled or Disabled
- Auto Power On - Enabled or Disabled
- Auto Power Off - Enabled or Disabled
- Beep Warning - Enabled or Disabled
- PWR Off Time - 1 to 30 Minutes

Bluetooth Menu - KDC200 / KDC200P / KDC300

System Menu

- Memory Status: Checks the number of stored barcodes and memory usage.

- Reset Memory: Resets KDC memory by erasing all stored barcodes.

- Sleep Timeout: Sets amount of time KDC waits, when not being used, before going to *sleep.*

- Date/Time: Sets the date and time of KDC which can also be set using KTSync®

- Battery: Shows current status of battery power level.

- Version: Shows KDC firmware version and serial number.

- Button Lock: Locks or unlocks KDC scan and scroll buttons.

- Beep Sound: Enables or disables KDC beep sound.

- Port Status: Enable or disable KDC port messages.

- Display Format: Selection of display format - Time & Battery, Type & Time, or Type & Battery

- Factory Default: Resets certain KDC options to factory defaults. Factory defaults for the KDC are listed below.

Defaults for KDC300

1D Symbologies	2D Symbologies	SCAN OPTIONS
Codabar	AztecCode	Timeout – 2 seconds
Code 11	AztecRunes	Minimum Length – 4 Characters
Code 39	CodablockF	Security Level – 1 Level
Code93	Code16K	
Code128	Code49	**DATA PROCESS**
EAN8	DataMatrix	Wedge/Store – Wedge & Store Always
EAN13	MaxiCode	Data Format – Barcode Only
EANUCC	MicroPDF	Handshake- Disabled
I2of5	PDF417	Terminator - <CR> + <LF>
Matrix2of5	QRCode	
MSI		*BLUETOOTH*
Plessey	**Postal Codes**	Power – Disabled
PosiCode	Postnet	Auto Connect – Disabled
RSS-14	PlanetCode	Auto Power On –Disabled
RSSLimit	UK Post	Auto Power Off- Enabled
RSSExpand	CanadaPost	Beep Warning – Enabled
S2of5ID	Kix Post	Power Off Time – 5 minutes
S2of5IA	Aus Post	
TLC39	Japan Post	
Telepen	China Post	**System**
Trioptic	Korea Post	Sleep Timeout – 5 seconds
UPCA		Button Lock – Disabled
UPCE0	**OCR Fonts**	Beep Sound – Enabled
UPCE1	OCR Off	Auto Exit –Enabled
		Port Status –Enabled
		Display Format – Time & Battery

Table 4 - Factory Default Settings for KDC300

2.6 LED Status

LED Color	Status
Green	● Successful Reading ● USB is connected and battery is fully charged
Orange	● Low battery ● USB is connected and battery is charging
Red	● No reading ● Empty battery

Table 5 - Explanation of LEDs

2.7 Empty Battery

The KDC will display the message ***Empty Battery Connect USB*** when the battery is empty. Synchronize the KDC IMMEDIATELY to prevent loss of collected data.

2.8 Buffer Full

The KDC will display the message ***Buffer Full*** when the size of collected data reaches 200KB or the number of collected barcodes is 10,240. To prevent the loss of data, you should synchronize the data then reset the memory when this message displays.

2.9 Reset Feature

The Reset feature lets you restart the KDC if necessary without losing any stored barcode data or option settings. To reset the KDC, follow these steps.

1.   Connect the KDC to your PC.

- KDC100 - Connect to your PC directly using the *swing out,* Type A USB connector. See Figure 7 - Reset Function for KDC100.

- KDC200 / KDC200P / KDC300 - Connect to your PC using the included cable, attaching the ultra mini USB connector to your KDC and the standard, Type A connector to your PC's USB port. See Figure 6 - Reset Function for KDC200 - KDC200P - KDC300.

2.   Press DOWN scroll button and SCAN button simultaneously for 5 seconds.

3.   When the LEDs illuminate yellow, release the buttons.

4.   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 or the KDC settings during the reset process.*

Figure 7 - Reset Function for KDC100

Figure 6 - Reset Function for KDC200 - KDC200P - KDC300

2.10 Replace Battery

The KDC battery has a lifetime of at least 300 charges. However, when the battery is no longer chargeable, it needs to be replaced. You can purchase a replacement battery from your distributor. The steps for replacing the battery are as follows.

1. Disassemble the KDC back cover by unscrewing the middle screw.

2. Remove old battery and replace with new battery.

3. Reassemble the back cover.

Figure 8 - Replacing KDC Battery

3. BLUETOOTH - KDC200 / KDC200P / KDC300

The KDC supports a generic Bluetooth COM port and is compatible with following Bluetooth stacks. However, the KDC supports SPP (Serial Port Profile) and may support other Bluetooth stacks than those listed below.

- BlueSoleil
- Broadcom (Widcomm)
- Microsoft Windows XP SP2, Vista, and Mobile5.0+
- Toshiba

3.1 Power

The POWER option allows you to Enable or Disable the Bluetooth functionality of the KDC.   To use Bluetooth, this option must be set to Enable. However, like all devices enabled for Bluetooth, the KDC, when set to Enable, will search constantly to connect with a Bluetooth host. Constant searching uses battery power. Unless you are using Bluetooth with your KDC, this option should be set to Disabled.

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

3.2 Pairing

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

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

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

1. Select Pairing from the Bluetooth menu. The message "**Pairing started…**" will displayed.
2. When prompted by the host device, enter the Security PIN "0000".
3. The **"Pairing success"** message will display when the Bluetooth connection is successfully established.   The connection must be established before the pairing timeout which is 60 seconds.

➢ If **"Pairing failed..."** message displays, the Bluetooth connection with the host device failed. If the message "**Connected"** displays, a Bluetooth connection was established.

➢ It is possible for the message "**Pairing failed..."** to display on the KDC while the host device displays **"Connected"** message.   If this occurs, a Bluetooth connection is established.

3.2 Auto Connect

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

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

3.3 Auto Power On

The Auto Power On option allows the KDC to automatically power on Bluetooth when the SCAN button is depressed.   The default setting is Disabled. NOTE: The host may have to open the COM port before reconnecting with the KDC.

3.4 Auto Power Off

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

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

3.5 Beep Warning

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

1. One (1) high short beep when Bluetooth is connected.
2. One (1) low short when Bluetooth is disconnected.
3. Five (5) short beeps if:

   - "Beep Warning is ENABLED"
   - "Auto Power Off is DISABLED"
   - "KDC200/200P/300 is DISCONNECTED from HOST"
   - "Bluetooth power is ON"

3.6 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 time duration specified in the PWR Off Time option is met and the KDC is NOT CONNECTED to the host. The time settings for this option are from one (1) minute to 30 minutes. The default is five (5) minutes.

4. SYNCHRONIZATION

When barcode data is collected, it must be uploaded to your application. KTSync®, which is bundled with the KDC, is software that allows barcode data to be uploaded to any PC, PDA, or smartphone running Windows XP, Vista, or Mobile 5.0+. It has two major functions - Synchronization and Keyboard Emulation.

- Synchronization - Provides data upload functionality to your applications.

- Keyboard Emulator - Allows scanned data to upload directly into your application as if the data were being entered manually on a keyboard.

- Additional functions include:

  - Prefixes and suffixes add-on functions to scanned barcodes eliminating manual data entry

  - Symbology and Scan Option selections

  - Barcode Wedging options

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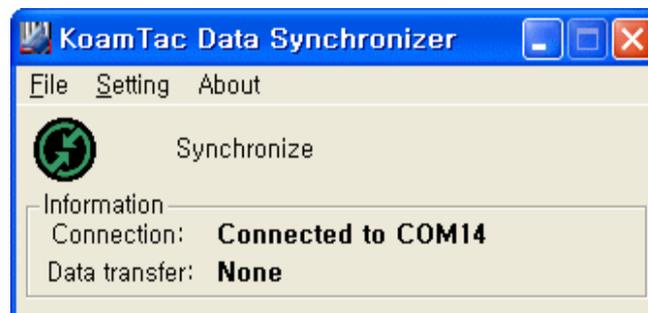

Figure 9 - KTSync® Synchronizer Menu

File Menu

- Connect: Select the KDC port assignment. This information can be found in Windows Device Manager. The port assignment is used by KTSync® when synchronizing data from the KDC.

- Synchronize: This option tells the KDC to synchronize data with the host manually.

Setting Menu

- Synchronize: Select Synchronize options.

- Barcode & KDC: Select Barcode and KDC options.

- Confirmation: Select Auto Connection and/or Synchronization Confirmation options.

About Menu - KTSync® - Version Information

4.1 Connect to KDC

The KDC connects to a COM port automatically when connected to your PC's USB port. After the port is assigned, you must manually assign the KDC to its assigned COM port in KTSync®. **You can manually assign the KDC COM port using KTSync® Connection submenu under File menu if needed.**

Figure 10 - 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 KDC Mode Menus.
  You must EXIT the KDC from the Menus before KTSync® will connect to the KDC.
- If KTSync® fails to connect automatically to the KDC, please follow these directions.

  1. Exit KTSync®.
  2. Check that you have connected the KDC to a USB port on your PC.
  3. Make sure to use the cable provided with the KDC.
  4. Check that the KDC is not in KDC Mode Menu.
  5. Restart KTSync®.

4.2 Synchronization Settings

The KDC Menus provides several synchronization options for synchronizing host devices such as your PC, PDA, or smartphone. KTSync® is included with the KDC for synchronizing host devices running Windows XP, Vista, or Mobile 5.0+. You can also configure various Synchronization and Keyboard Emulation functions in the Synchronization Settings option.
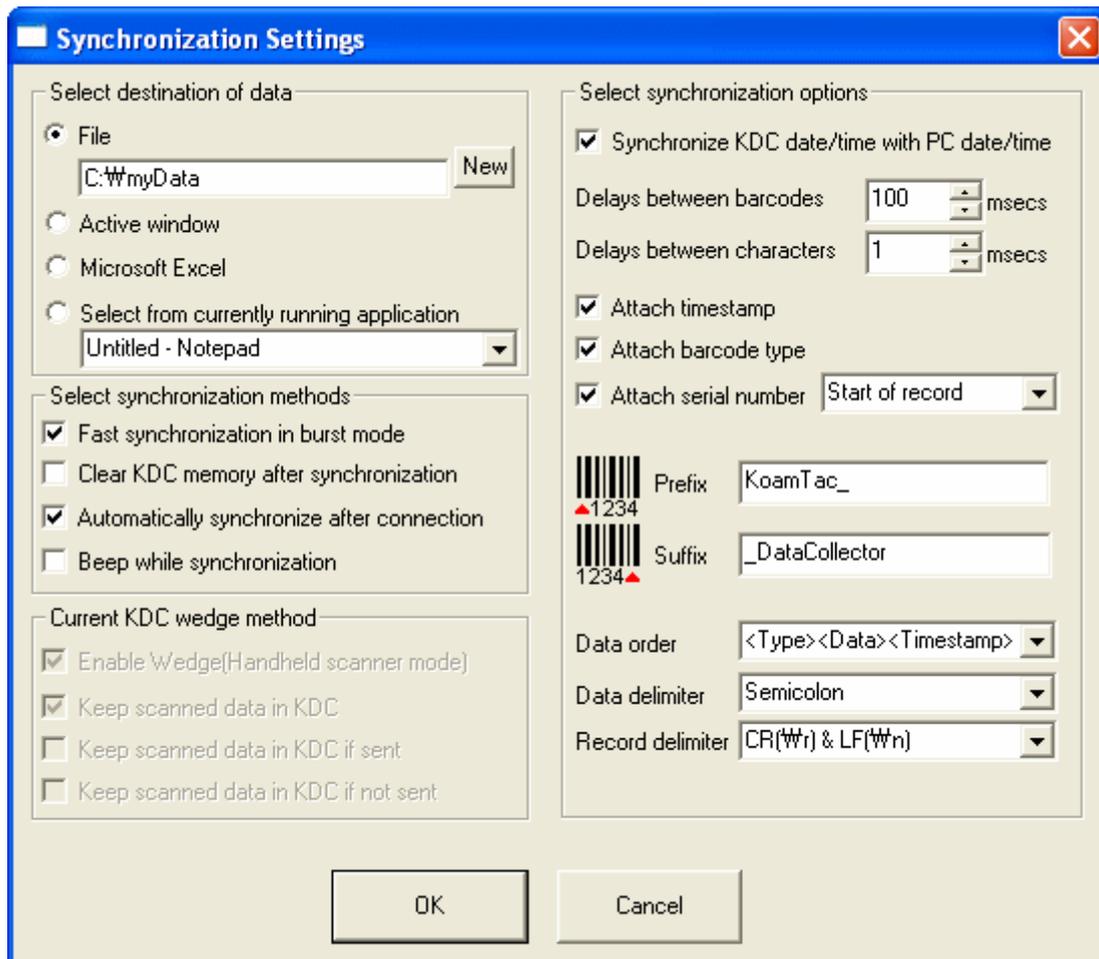

Figure 11 - KTSync® Synchronization Settings

Destination of Data

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

- File - This option means data will be saved in the assigned filename. You can select a different target directory by clicking the New icon. C:\MyData is the default directory. If this directory is not created, you will be prompted to create it before data can be uploaded to a file.

- Active Window - This option means scanned barcode data is sent directly to the active program running on your device as if the data was being entered directly from a keyboard.
- Microsoft Excel - This option means barcode data is being imported directly into Microsoft's Excel. Various parameters can be set when uploading data to Excel.
- Select from Current Running Application – This option allows you to select a currently running application for data synchronization.

Note:

- Data synchronization begins immediately if *Automatically After Connection* is selected. If not selected, data synchronization is started manually by the user.

- Users **SHOULD NOT** operate the PC during the synchronization process. It can interrupt the process causing unreliable results*.*

Synchronization Methods

Fast Synchronization in Burst Mode

The KDC can synchronize data to a host device in Burst mode or Handshake mode. Burst mode provides the fastest synchronization process when the Destination of Data option is set to File.

Clear KDC Memory after Synchronization

The stored barcode data is cleared from the KDC memory after synchronization if this option is selected. The KDC can store a total of 10,240 barcodes or 200KB of barcode data.

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

Automatically Synchronize after Connection

This option lets you automatically synchronize collected data to your PC immediately when the KDC is connected to the host.

- IMPORTANT: Remember to configure all options properly before performing an automatic synchronization process.
- Data synchronization can be done manually by clicking the synchronize icon if this option is not selected.

Beep while Synchronization

You can enable or disable the beep tone during the synchronization process. A beep is sounded each and every time barcode data is synchronized if this option is selected. The KDC beeps 5 times when the synchronization process is complete.

KDC Wedge Method

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

- Wedge Only - Scanned data is transmitted to the host. The KDC does not store scanned data.

- Wedge & Store - Scanned data is stored in the KDC and transmitted to the host.

- Store Only - Scanned data is stored in the KDC but NOT transmitted to the host.
- Wedge & Store if Sent - Scanned data is stored in the KDC ONLY if transmission to the host is successfully.
- Wedge & Store if Not Sent - Scanned data is stored in the KDC ONLY if transmission to the host is unsuccessfully.

Enable Wedge (Handheld scanner mode)

- Marked if either Wedge only or Wedge & Store option are selected.

Keep Scan Data in KDC

- Marked if either Store only or Wedge & Store option are selected.

Synchronization Options

Synchronize KDC Time with PC Time when Connected

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

Delays

You can set transmission delays between barcodes and characters during the synchronization process. It is important to set proper delays to prevent errors during the transmission of collected barcodes. Some Windows applications such as Excel require longer delay times.

Prefix and Suffix

- Enter the characters you want appended to the front or back of the barcode in the prefix and/or 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>

4.3 Barcode & KDC Settings

KTSync® allows you to configure the KDC Scan Options and Barcode Settings. The configurations options for the KDC using KTSync® are similar to the Set Barcodes, Code Options, and Scan Options on the KDC Menu. Please refer to Appendix A for proper barcode settings for your application.

IMPORTANT: You must configure barcode options properly for the best performance.
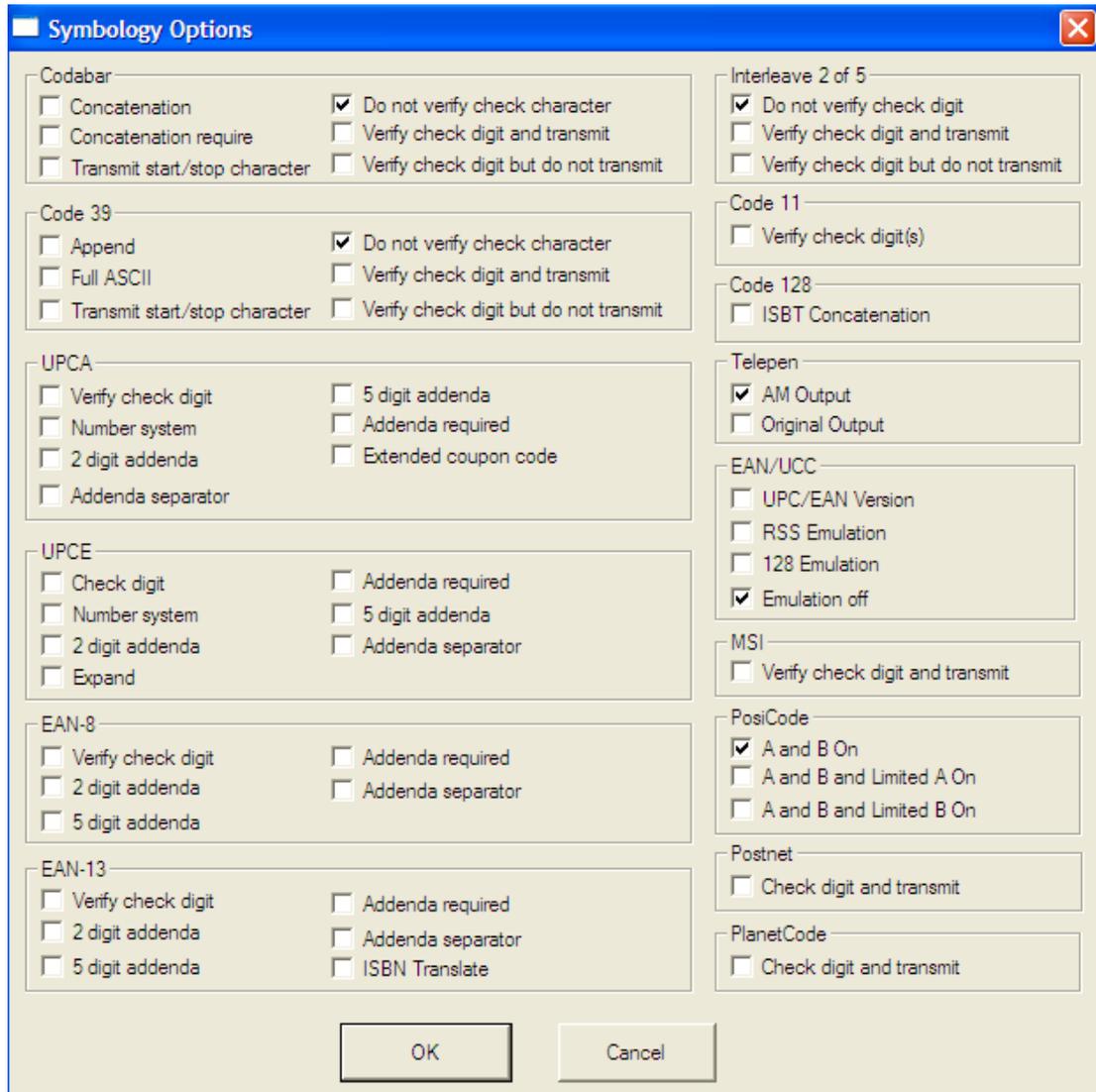

34
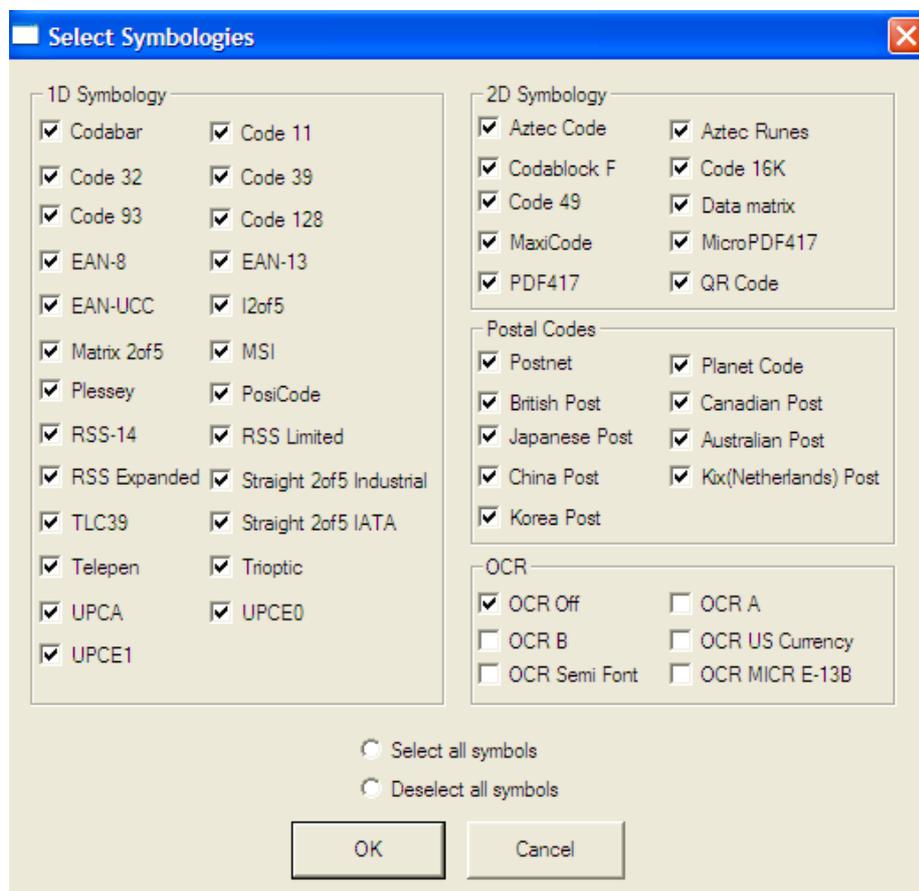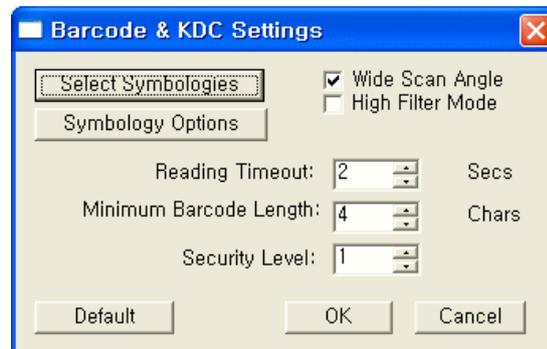
Figure 12 - KTSync® Barcode, Symbologies, and Scan Options

4.4 Confirmation Settings

The Confirmation Settings window will display. If you want to confirm an Auto Connection or Auto Synchronization, this window will pop up.

Figure 13 - KTSync® Confirmation Settings

5. Master - Slave Barcode Compare

The KDC Mode Menu supports two applications for collecting data, Normal mode and Master-Slave Barcode Compare mode. In the Master-Slave mode, a ***master*** barcode is defined then compared to ***slave*** barcodes. The specific modes are described below.

- Onetime mode - Define one ***master*** barcode and compare it with one ***slave*** barcode.

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

- Collation mode

   1. Allows you to compare a substring within a barcode instead of comparing an entire barcode string.
   2. Uses a Start Character Position and Number of Characters to be Compared to define the substring.

The following flow chart shows the data flow in this Master-Slave Compare application. Within this application, you can go back to KDC Mode Menu by pressing the UP and DOWN scroll buttons simultaneous during the Master-Slave Barcode Compare process.
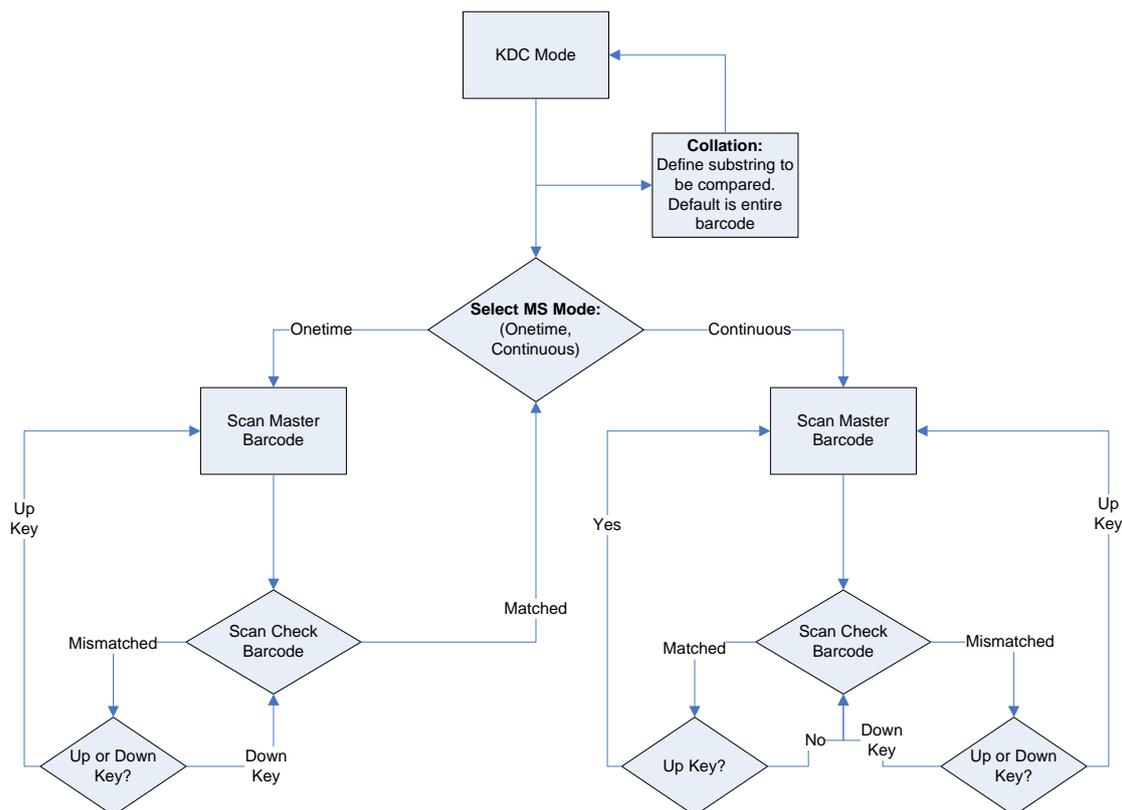
Figure 14 - Master-Slave Barcode Compare Diagram

6. Troubleshooting

PROBLEM	CAUSE	SOLUTION
KDC not working	Dead battery	● Charge battery by connecting KDC to your PC using the included cable
	Hardware failure	● Contact distributor for technical support
KDC not charging	Bad battery	● Replace battery – Contact Local Distributor
	Poor USB port	● USB port doesn't supply proper current to KDC - Charge KDC using a different USB port on your PC
Failed reading	Damaged barcode	● Scan a different barcode
	Out of scan range	● Move the scanner closer to barcode ● Move scanner farther from the barcode
	Incorrect angle	● Change the angle of scanner to barcode
	Symbology not supported	● Contact KoamTac - www.koamtac.com for possibility of custom symbology support
	Scan options	● Check scan option settings
	Dirty scan window	● Clean scan window
	Damaged scan window	● Replace scan window
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
Can't communicate with PC, PDA, or smartphone	USB cable is not connected properly	● Check cable connection between KDC and host device
	Software is not working properly	● Reload the software
	COM configuration	● Check COM port configurations
LED blinks yellow	Low battery power	● Charge the battery by connecting KDC to PC. ● KDC will lose collected data if the battery is empty.
Buffer Full Message	Full Memory	● Clear the Memory using Synchronization program
Empty Battery Message	Empty battery	● Connect USB immediately. ● Synchronize the collected data and charge KDC

Table 6 - Troubleshooting Techniques

7. Warranty

LIMITED WARRANTY AND DISCLAIMERS

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

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

Serial Number

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

Warranty/Warranty Period/Liability

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

Warranty Coverage and Procedure

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

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

8. CONTACT INFORMATION

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CORPORATE HEADQUARTERS

116 Village Boulevard, Suite 200

Princeton, NJ 08540

PH: 609-724-4335 FAX: 609-228-437

email: admin@koamtac.com

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

APPENDIX A - Barcode & Scan Options

The process for scanning and reading barcodes is delicate and complicated. Your KDC, though equipped with a high performance scan engine, if configured incorrectly, 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.

A.1 Symbologies

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

	KDC100	KDC200	KDC200P	KDC300
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, EAN128, Code39, Code93, & Code35	EAN13, EAN8, UPCA, UPCE Bookland EAN EAN13 with Add-on, EAN8 with Add-on, UPCA with Add-on, UPCE with Add-on, Interleave 2 of 5, ITF14, Code128, Codabar, EAN128, Code39, Code93, & Code35	EAN13, EAN8, UPCA, UPCE Bookland EAN EAN13 with Add-on, EAN8 with Add-on, UPCA with Add-on, UPCE with Add-on, Interleave 2 of 5, ITF14, Code128, Codabar, EAN128, Code39, Code93, & Code35	Codabar, Code11, Code32, Code39, Code128, EAN8, EAN13, EANUCC, I2of5, MSI, Plessey, PosiCode, RSS-14, RSSLimit, RSSExpand, S2of5IA, S2of5I TLC39, Telepen, Trioptic, UPCA, & UPCE
2D Barcodes	N/A	N/A	PFD417	AztecCode, AztecRunes, CodablockF, Code 16K, Code49, DataMatrix, MaxiCode, MicroPDF, PDF417, & QRCode
Postal Barcodes	N/A	N/A	N/A	AusPost, CanadaPost, ChinaPost, JapanPost, KoreaPost, KixPost, Planet Code, Postnet (US), & UKPost
OCR Fonts	N/A	N/A	N/A	OCR-A, OCR-B, OCRUSCurrency, OCRMICRE13B, & OCRSEMIFONT

Table 7 - Symbologies Supported by KDC

Appendix B – FAQ

B.1 Symbology

Q: What barcode symbologies are supported by the KDC300?

A: The KDC300 supports most major 1D, 2D barcode symbologies and OCR.

KDC300

2D Barcodes

AztecCode, AztecRunes, CodablockF, Code16K, Code49, DataMatrix, MaxiCode, MicroPDF, PDF417, and QRCode

1D Barcodes

Codabar, Code11, Code32, Code39, Code128, EAN8, EAN13, EANUCC, I2of5, MSI, Plessey, PosiCode, RSS-14, RSSLimit, RSSExpand, S2of5IA, S2of5ID, TLC39, Telepen, Trioptic, UPCA, and UPCE

Postal Barcodes

AusPost, CanadaPost, ChinaPost, JapanPost, KoreaPost, KixPost, Planet Code, Postnet (US), and UKPost

OCR Fonts

OCR-A, OCR-B, OCRUSCurrency, OCRMICRE13B, and OCRSEMIFONT

KDC100 / KDC 200 / KDC200P*

1D Barcodes

EAN13
EAN8
UPCA
UPCE
Bookland EAN
EAN13 with Add-on
EAN8 with Add-on
UPCA with Add-on
UPCE with Add-on
Interleave 2 of 5
ITF14
Code128
Codabar
EAN128
Code39
Code93
Code35

2D Barcodes

PFD417 - *KDC200P only*

Table 8 – Listing of Symbologies Supported by KDC

B.2 Host Interface

Q: What interface ports are supported by the KDC300?
A: The KDC300 has one ultra mini USB port which supports serial and USB-Serial. It also supports *Bluetooth* SPP.

Q: What *Bluetooth* protocol stacks are supported by KDC300?
A: The KD300 supports all major *Bluetooth* stacks such as Toshiba®, Widcomm®, BlueSoleil® and Microsoft®. The KDC300 can also connect to other *Bluetooth* stacks supporting SPP (Serial Port Profile).

B.3 Battery

Q: How long will the KDC300 battery last before it needs to be replaced?
A: The battery on the KDC300 can be charged at least 300 times before it needs to be replaced.

Q: How long does it take to charge the KDC300?
A: It takes about 4 hours to fully charge the KDC300 from an empty battery status to a fully charged status.

Q: How many barcodes can a fully charged KDC300 scan?
A: The KDC300 can scan more than 20,000 barcodes with *Bluetooth* connection.

Q: How long will the KDC300 battery lasts in the sleep mode?
A: The KDC300 lasts more than 10 days in sleep mode. If *Bluetooth* is powered ON and connected to a host device, it will last for more than five days.

Q: Can I replace the KDC300 battery?
A: Yes. The KDC300 has a separate compartment for the battery which can be opened easily with a screw driver. Contact your distributor for a replacement battery.

B.4 Memory

Q: How many barcodes can be stored in the KDC300?

A: The KDC300 has 200KB of data memory and is able to store over 10,000 UPC barcodes.

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

A: Yes. KTSync® is synchronization and wedging software included with the KDC300 which supports host applications running on *Microsoft*® Windows XP, Vista, and Mobile5.0+.

Q: Does the KDC300 support *Blackberry*®, *Symbian*®, *Apple*®, and *Palm*® devices?

A: KTSync® supports devices running Microsoft® Windows XP, Vista, and Mobile5.0+. Applications for *Blackberry*, *Symbian*, *Apple*, *Palm,* and others can be developed using KoamTac's software development kit. Contact KoamTac if you are interested in our SDK.

B.5 Programming

Q: Can the KDC300 be programmed by a KoamTac Business Partner?
A: Currently, the KDC doesn't support a programming environment for its partners. However, an application generator utility is scheduled for release in 2009.

Q: Does KoamTac provide customization services for the KDC300?
A: Yes. Custom applications or projects can be developed by KoamTac engineers. This service is provided as an additional fee to KoamTac. For more information regarding this service, please contact KoamTac.

Q: Can a partner develop a PC or PDA application for the KDC300?
A: Yes. A software development kit for devices or applications running *Microsoft*® Windows XP, Vista, and Mobile5.0+is available to our partners. Partners can use DLL and our demo source code included in the SDK for custom applications.

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