

KOAMTAC

KDC480/485 QG Quick Guide

Type-C USB Version



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See Reference Manual for more detailed information.

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KDC480/485 QG

Quick Guide

1. Product Concept

1.1 What is KDC480/485 about?

This Barcode/Rfid/mPOS SmartSled is our most modular product yet. Whether you need to read barcodes or RFID tags this is the KDC for you. The KDC480 and KDC485 are rugged devices with an IP65 rating and are built to last. No matter what type of data you need to collect or how you need to collect it, there is a companion module to get the job done quickly and accurately. You can charge your device with our unique charging cases and never miss a minute of productivity. KDC485 is an angled version of KDC480 to provide more scan engines and a different view angle.

The KDC480/485 can be attached to any smart device via a custom case to create a sled scanning solution. This unique modular design allows you to upgrade your smart device without worrying about replacing the entire scanning solution. Your investment in a KDC is protected regardless of upgrades in smartphone and tablet technology.

1.2 Key Design Concepts

a) Barcode Reading

At their base, the KDC480/485 is superior barcode scanners. The KDC480/485 is available in various models: 1D Laser, 1D CCD, and 2D Imager, so you can read a variety of barcodes in any industry. Especially, the KDC485 offers downward angled scan engines, allowing you to hold your device at level while scanning barcodes at a lower height. The KDC connects via Bluetooth Classic technology for easy pairing and data transfers.

b) RFID Companions

The RFID companions attach directly to your KDC creating a contactless radio frequency identification reader. The interface can be utilized for asset management and tracking whether those assets are people, animals, or inanimate objects. Options include High Frequency (HF), 0.5W Ultra High Frequency (UHF), or 1.0W UHF. Also, the charging is easy with a Type-C USB connector or charging cradle for multiple devices. Additionally, replacing the battery through the slot on the side is easy and fast.

c) Additional Companions

- o Extended Battery Pack - For long shifts or projects. Never worry about the battery of your KDC or smart device.
- o Pistol Grip - Pull the trigger for easy scanning.
- o MSR (Magnetic Swipe Reader) Companion – payment through MSR card or membership management through loyalty card
- o mPOS (Mobile POS) Companion – payment through Chip&Pin, MSR, and Contactless (NFC)

1.3 Key Features

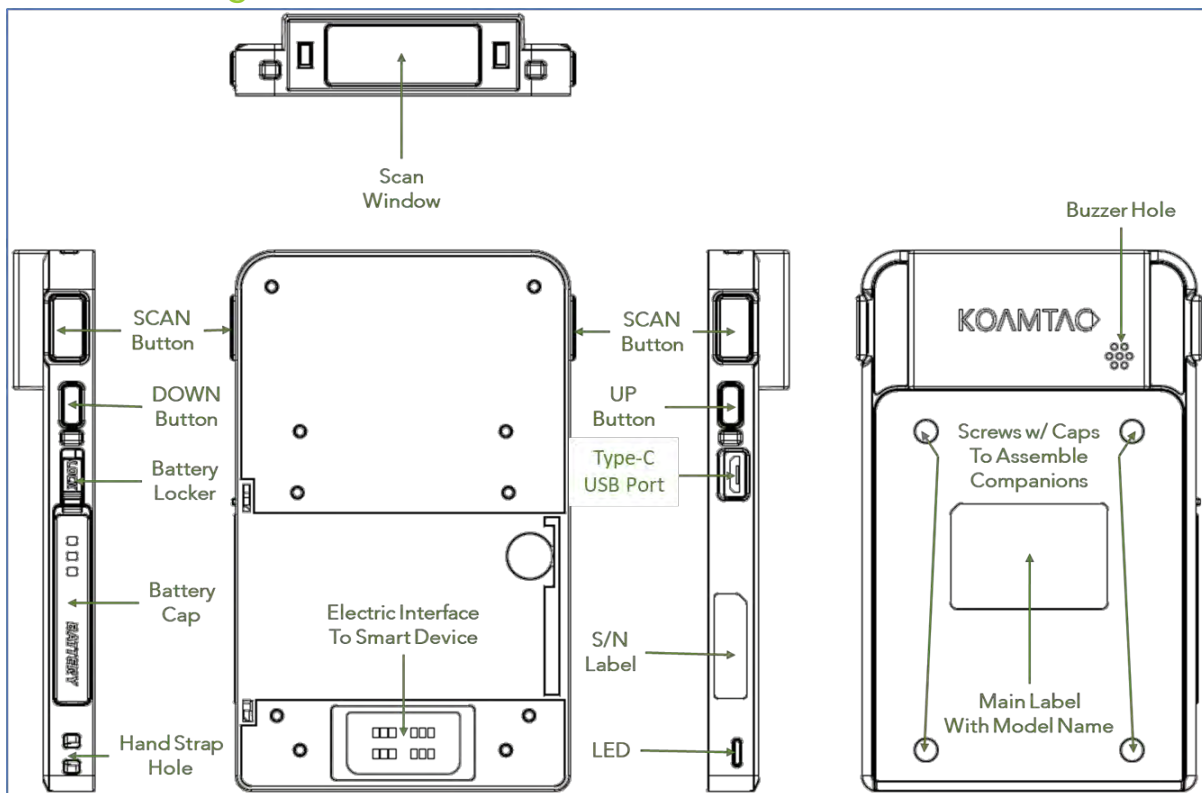
- a) **Sled (SmartSled®)**
 - Supports virtually all smartphones: Protect investment on Sled regardless of smartphone/tablet change.
 - Connects with smartphones/tablets via USB and Bluetooth.
 - Can replace battery (1100mAh) easily from the side of KDC480/485
 - IP65 rated and 5ft drop spec
- b) **Modular Design:** Supports various technologies and accessories below:
 - 1D and 2D Barcode Reader
 - HF or UHF RFID Reader
 - Extended Battery Pack
 - Pistol Grip
 - MSR & mPOS Companion
- c) **Custom Smart Case for simultaneous charging**
 - One USB charging port (or charging cradle) charges both KDC480/485 and smartphone/tablets.

2. Product Introduction

The KDC480 Bluetooth barcode scanning sled is a 1D Laser/CCD or 2D Imager Bluetooth Barcode Data Collector supporting Bluetooth Low Energy (BLE) v5.0.

The KDC485 Bluetooth barcode scanning sled is an angled version of KDC480 with a different 1D Laser/2D Imager scan engine.

2.1 KDC480/485 Diagram



**KDC485 is identical with the exception of an angled scan window and scan engine*

2.2 How to turn on and off

Refer to the figure in section 1.1 to locate the SCAN and DOWN buttons.

- Press and hold the SCAN + DOWN buttons simultaneously for 3 seconds.
- The KDC will beep when it is turned ON.
- Press and hold the SCAN + DOWN buttons simultaneously for 3 seconds again to turn off the KDC.

2.3 How to Install/Uninstall the Smart Device into the Integrated Case (Android/iOS)

This only applies to KDC480/485 integrated charging case (SmartSled Custom Case). To install the smart device, please follow the steps below.

- a) Bend top of SmartSled Charging Case back.



- b) Slide device into case toward connector.



- c) Pull top of case over device.



- d) To remove, bend top of SmartSled Charging Case back (careful not to bend smart device) and slide device out.

2.4 How to Connect PC with KDC or Phone

This functionality only applies to KDC480/485 integrated charging case (SmartSled Custom Case).

The KDC480/485 automatically sets up a communication path with PC when you plug in USB cable to KDC480/485 so that you can use KTSync on PC or download a new firmware into KDC from PC (KDC Path).

See Reference Manual for more detailed information.

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But, if you want to connect PC with your phone without taking out the phone from the case (Phone Path), you can set up by pressing DOWN button for 3 seconds. Then KDC480/485 bypasses the communication path to the phone from PC so that you can access the phone from PC. In the same way, if you press DOWN button for 3 seconds again, it changes to KDC Path again.

While in Phone Path, if it is put on to the charging cradle, it changes to KDC Path right away.


(Note) If using a **UHF RFID** module with your KDC480/485 + integrated SmartSled® Custom Case, please be sure the SmartSled® is in Barcode Mode (toggle with UP button) before connecting via USB to PC. Once in Barcode Mode, the communication path can be toggled with the DOWN button.

3. How to Replace the Battery

3.1 Things to Know

- a) Each KDC comes with a rechargeable Lithium-Ion.
- b) 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.
- c) Replacement batteries may be purchased from a KDC reseller.
- d) Batteries should be disposed of properly as according to the WEEE (Waste Electrical and Electronic Equipment) regulation.

3.2 Procedure

	<p>1) Unlock the battery cover by sliding the lock switch right.</p>
	<p>2) Open the cover as shown in the picture.</p>
	<p>3) For easy removal, use a paperclip or similar tool to pull on folded sticker. 4) Hold the sticker and remove battery.</p>
	<p>5) <Insert the battery> 6) Before inserting battery, fold sticker over battery lengthwise.</p>
	<p>7) Slide the lock switch up, open the battery cover and slide in the battery slowly.</p>
	<p>8) Close the battery cover and slide the lock switch down</p>

4. Bluetooth Pairing




Connecting your KDC using Bluetooth is made easy with the pairing barcodes below

4.1 Bluetooth Profiles Explained

- HID Profile:** Allows one-way Bluetooth communication with an Android or iOS host device. The KDC only transmits data to the host device.
- SPP Profile:** Allows two-way Bluetooth communication. The KDC transmits data to the host device and the host device can transmit data back to the KDC.
- HID Windows Profile:** Allows one-way Bluetooth communication with a Windows PC. The KDC only transmits data to the Windows PC.

Note: HID inputs data directly into an application. SPP requires the KOAMTAC KTSync® app or integration of KOAMTAC SDK to input data into an application. To gain access to the SDK, please complete the form here: <https://www.koamtac.com/sdk/>

4.2 Bluetooth Pairing a KDC480/485 to your smart device with special barcodes

Bluetooth Profile & Pairing	
#1. HID-BLE & Pairing (Android, iOS, Mac)	
#2. HID-Windows & Pairing (Windows)	
#3. SPP-BLE & Pairing (Android, iOS, Mac, Windows)	

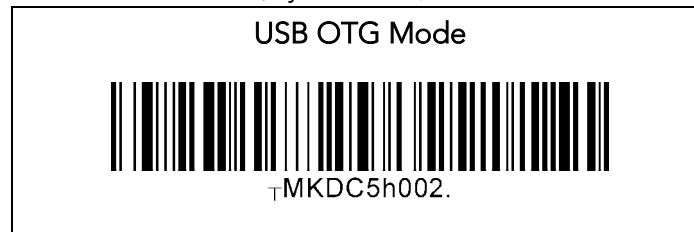
- Navigate to the Bluetooth setting on the host device and ensure that Bluetooth is both enabled and searching for devices.
- Using the KDC, scan the pairing barcode above that corresponds to your desired Bluetooth profile. If you are unsure which Bluetooth profile is right for you, please refer to [Chapter section 2.1](#).

- If you use an Android, iOS, or Mac device and desire an HID connection, then scan barcode #1 above.
 - If you use a Windows device and desire an HID connection, then scan barcode #2 above.
 - If you desire an SPP connection for any device, then scan barcode #3 above.
- c. In HID or HID Windows Profile, check the list of available Bluetooth devices on your host device. From the list, select the KDC480/485 listed by serial number in brackets that matches the serial number found on the back side of the KDC480/485. KDC480/485 will beep upon connection. Now it is ready to use.
 - d. In SPP Profile for non-iOS, check the list of available Bluetooth devices on your host device. From the list, select the KDC480/485 listed by serial number in brackets that matches the serial number found on the back side of the KDC480/485. KDC480/485 will beep upon connection, but you should launch KTSync or your application and select KDC480/485 within the application to complete the connection. Now it is ready to use.
 - e. In SPP Profile for iOS, the KDC is NOT listed on your host device, so you should launch KTSync or your application and select the KDC480/485 listed by serial number in brackets that matches the serial number found on the back side of the KDC480/485. KDC480/485 will beep upon connection. Now it is ready to use.

5. USB/Serial Connection

5.1 USB OTG: How to enable OTG on your KDC480/485 (Android Only)

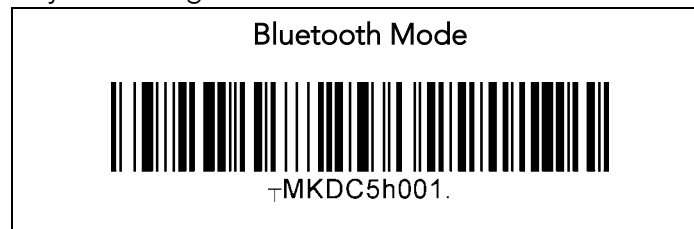
- Remove your Android smart device from the integrated smart case if already mounted.
- Scan the OTG Mode barcode first. (By default, it is USB OTG mode)



- Once OTG is configured, it will be stored in the KDC NVRAM and KDC480/485 will run as an OTG mode whenever it restarts.
- Mount your Android smart device into the integrated smart case then they connect via USB OTG automatically.

Note: When you charge (via USB cable or charging cradle), USB OTG will be suspended. The connection between KDC480/485 and the smart device will be changed to Bluetooth connection automatically. The OTG connection will resume once the device is removed from the charging cradle or disconnected from the USB cable.

In case of OTG-enabled KDC480/485, if you want to use Bluetooth only, you can change to Bluetooth Mode by scanning this.



5.2 Serial: How to enable Serial on your KDC480/485 (iOS Only)

- Just mount your iOS smart device into the integrated smart case then they connect via Serial automatically. (There is no specific barcode for this Serial communication. If you install phone into the integrated charging case, the Serial communication is automatically enabled.)
- The Serial communication is the only option for the integrated charge case for iOS and does not support HID keyboard.

6. Usage

6.1 Using Keyboard Wedge (HID Keyboard)

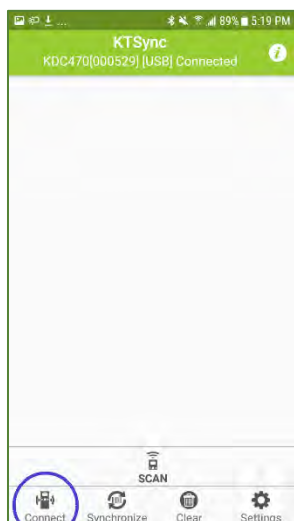
This option is only available using Bluetooth connection with HID profile.

Once the KDC is paired with the host, open any application with a text field and tap on the text field. Scan any barcode and it will populate in the text field.

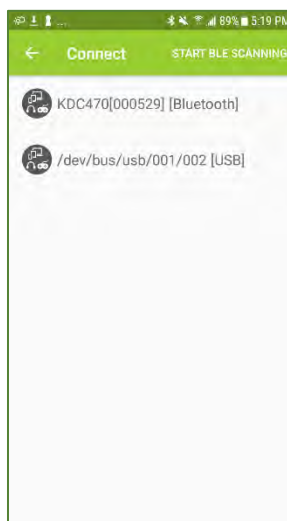
6.2 Using KTSync – Android/iOS

You can use KTSync to utilize your KDC alone or with a native application. This is only available using USB OTG (Android), Serial (iOS), or Bluetooth connection with SPP.

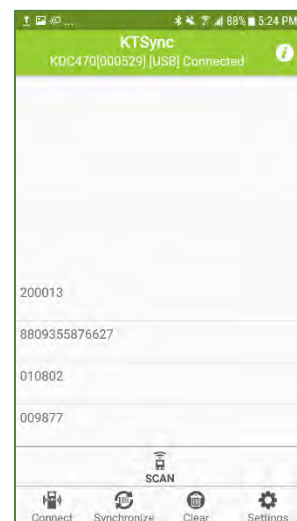
- Download and install KTSync from the [Google Play Store](#) or the [Apple App Store](#).
- Open KTSync and tap on the “Connect” option on the bottom left to view a list of available devices. (Fig. 1)
- In case of Android, the pairing should be established from Settings of the phone and in case of iOS, “START BLE SCANNING” menu should be run from “Connect” menu.
- From the device list, select your KDC – ensuring that the serial number displayed in brackets matches the serial number on the back of your KDC. (Fig. 2)
- Upon successful connection, KTSync will display “Connected” next to the name of your KDC at the top of the application. (Fig. 3)
- To test your connection, scan any barcode. If the connection is successful, the barcode data will display on the screen. (Fig. 3)



< Fig. 1 >



< Fig. 2 >



< Fig. 3 >

See Reference Manual for more detailed information.

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In Always-pairing mode, an application can connect to a KDC without reading a pairing barcode, so the connection procedure is a little different.

- a) In the KTSync app, tap the Connect icon at the bottom left of the app.
- b) In KTSync, tap "START BLE SCANNING" in the top right.
- c) In KTSync, check the list of found devices.
- d) In KTSync, tap the KDC480/485 listed by serial number in brackets followed by [BLE] that matches the serial number found on the back side of the KDC480/485. The format will look like this, KDC480/485[xxxxxx] [BLE], where xxxxxx is the serial number.
- e) The KDC480/485 will beep upon connection. Now it is ready to use.



< Fig. 4 >

6.3 Using KTSync Keyboard – Android

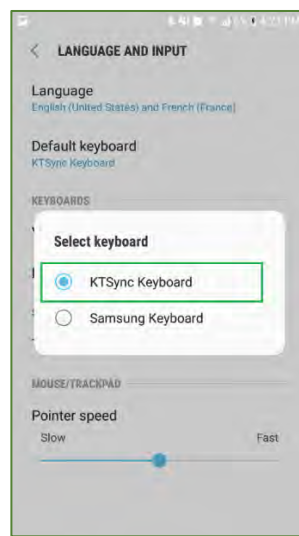
Once your KDC is connected to KTSync, you can use your KDC as a keyboard.

- While KTSync is running in the background, navigate to Settings > Language & Input > Virtual Keyboard > Manage keyboards
- Tap on “KTSync Keyboard” to enable it.
- Change “KTSync Keyboard” to the default keyboard. (Fig. 5)

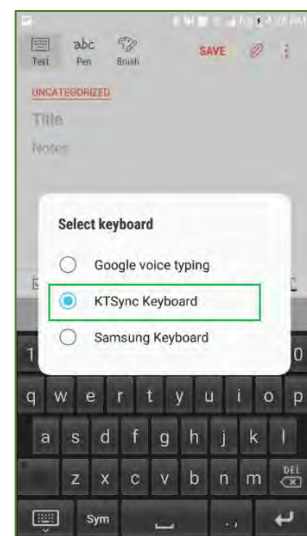
To switch back to the previous keyboard, simply change the default keyboard again. Or, when a text field is selected swipe down from the top of the screen to bring up the notification panel. Select ‘choose input method’ and you can select the default keyboard from here. (Fig. 6)



< Fig. 5 >



< Fig. 6 >



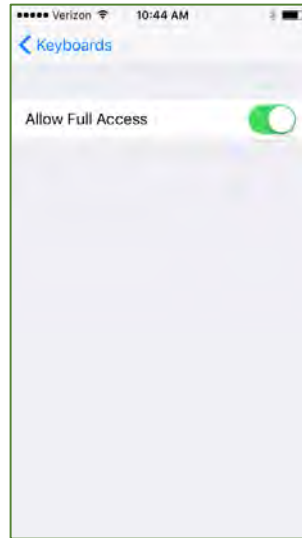
6.4 Using KTSync Keyboard – iOS

Once your KDC is connected to KTSync, you can use your KDC as a keyboard.

- Navigate to the iPhone/iPad/iPod Settings > General > Keyboard > Keyboards > Add New Keyboard... > Select the KTSync keyboard to be added. (Fig. 7)
- Select the KTSync Keyboard and toggle the switch to Allow Full Access. (Fig. 8)

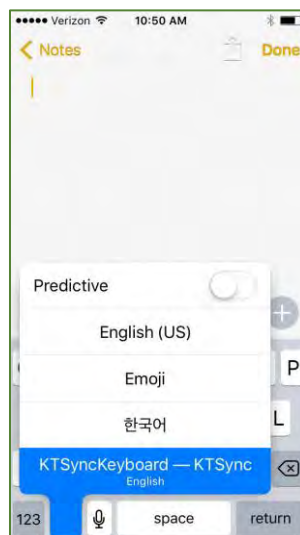


< Fig. 7 >



< Fig. 8 >

- Open the application you want to scan into and tap on the screen, so the on-screen keyboard appears.
- Press and hold the globe icon located to the left of the spacebar.
- Select the KTSync Keyboard and begin scanning. (Fig. 9)



< Fig. 9 >

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

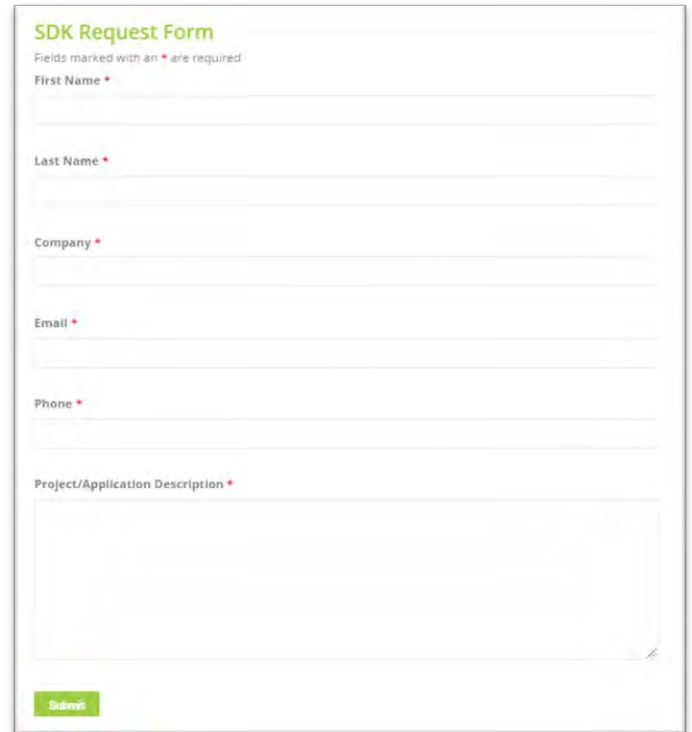
6.5 Using other developed applications with SDK – Android/iOS

A Software Development Kit (SDK) for Android and iOS is available to all KOAMTAC customers to ensure smooth development of applications that work seamlessly with a KDC scanner. It's easy to request the SDK from the KOAMTAC website:

- a) On any web browser, open www.koamtac.com
- b) Navigate to SUPPORT > Downloads > [SDK](#)
- c) Complete the form and submit it.

After submission, a KOAMTAC representative will reach out regarding next steps for completing the SDK Agreement.

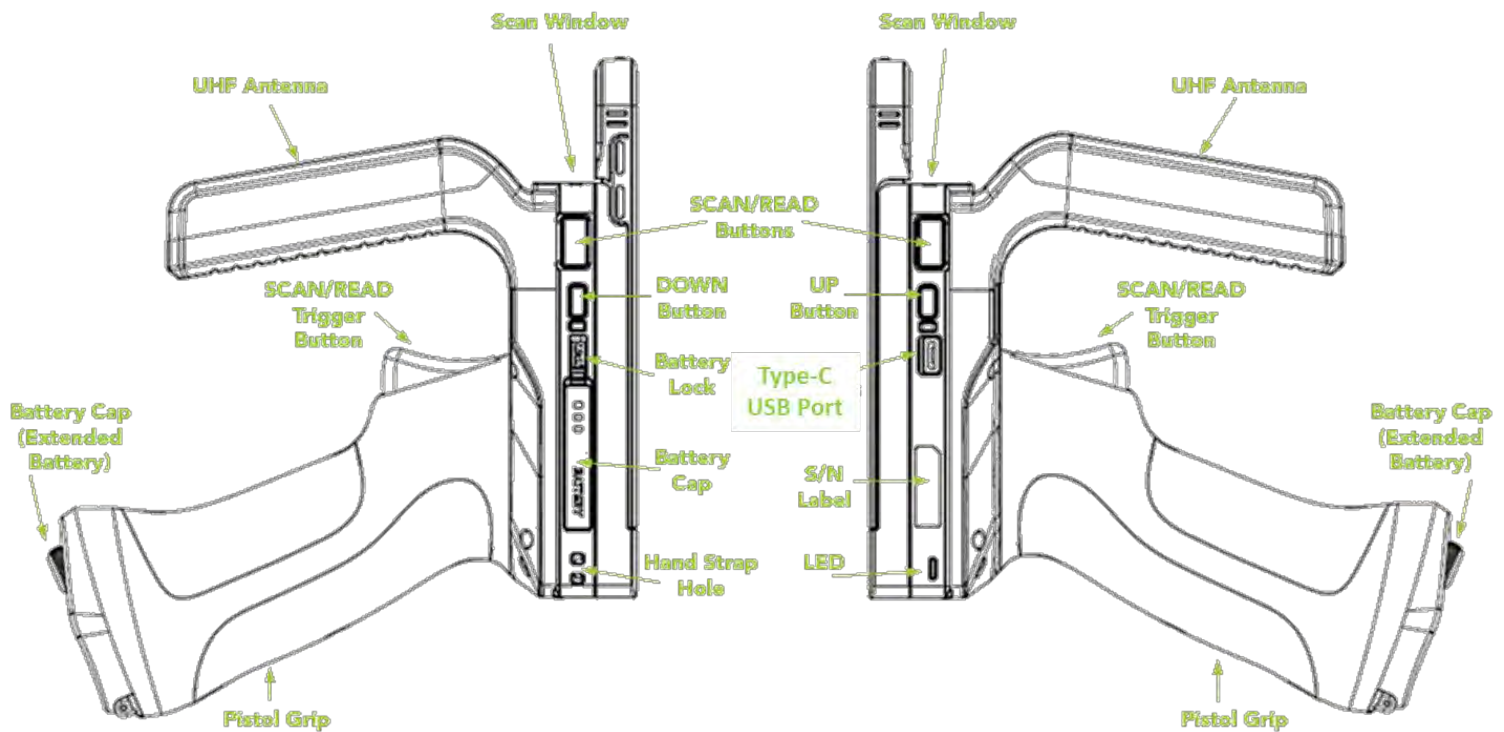
The SDK package will have libraries, documents, a sample application, and its source code.



The image shows a screenshot of a web form titled "SDK Request Form". At the top, it says "Fields marked with an * are required". The form contains several input fields: "First Name *", "Last Name *", "Company *", "Email *", and "Phone *". Below these is a larger text area labeled "Project/Application Description *". At the bottom left of the form is a green "Submit" button.

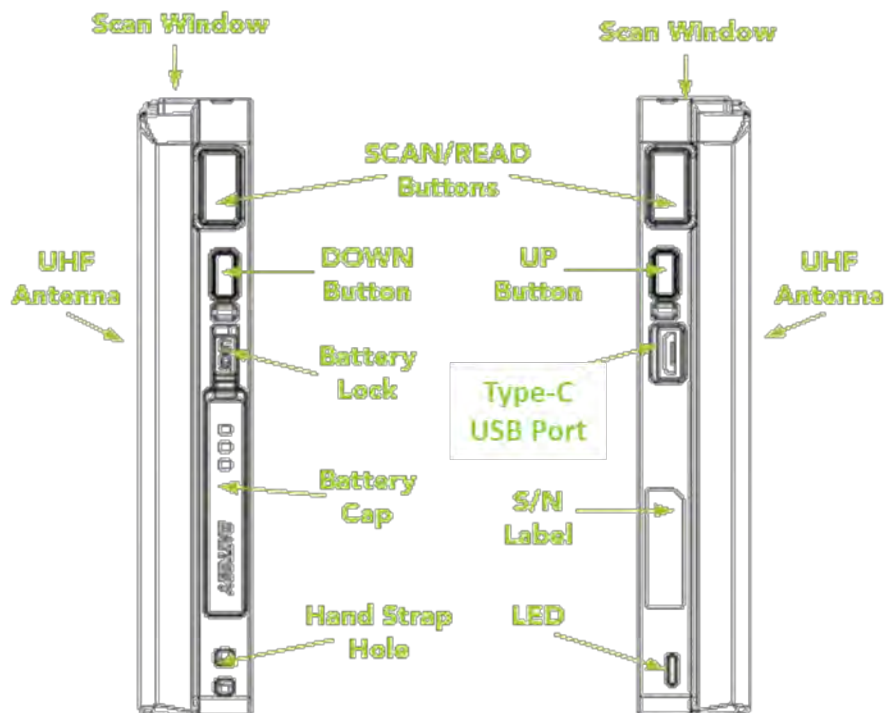
7. UHF Reader Companion

7.1 KDC480/485 1.0W UHF Reader Diagram



* 1.0W UHF Reader mounted to KDC480

7.2 KDC480/485 0.5W UHF Reader Diagram



** 0.5W UHF Reader mounted to KDC480*

8. UHF Reader Companion Usage

For optimal UHF tag read performance and to ensure that human exposure to RF energy does not exceed the FCC and European Union guidelines, always follow the instructions and precautions below:

- Before using the KDC480 UHF reader, the user should carefully read this operation guide and user guide to understand how to use KDC480 UHF reader properly.
- The KDC480 UHF reader should be used by a professional person who fully understands how to operate the KDC480 UHF reader.
- Maintain at least 20cm (about 8 inches) between the KDC480 UHF reader and the body when reading UHF RFID tags.
- Keep the KDC480 UHF antenna facing towards the UHF RFID tag. Do not direct the antenna towards the body when reading UHF RFID tags.
- Exit UHF tag read mode and enter Barcode read mode when finished reading UHF tags.
- Do not wear the KDC480 UHF reader when not using the KDC480 UHF reader.

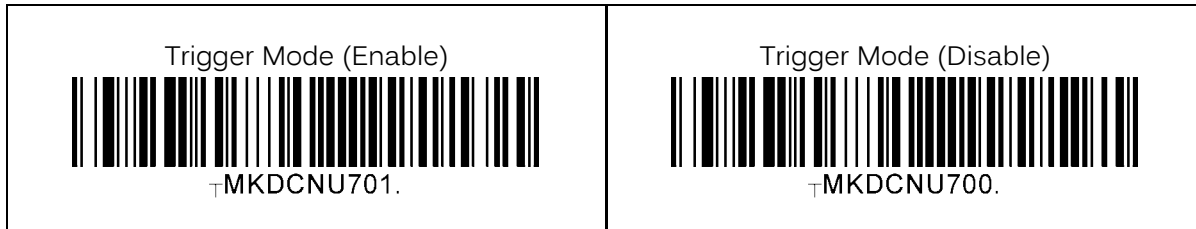
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8.1 Read RFID tag and Barcode with trigger: Trigger mode

In the trigger mode, with the trigger on the pistol grip, you can read barcodes and UHF tags. If you pull trigger once then KDC480/485 reads RFID tag and pull trigger twice very shortly then KDC480/485 reads barcodes.

The following are barcodes to enable/disable Trigger mode.



8.2 Toggling the Read Mode: Barcode mode vs. UHF mode

With the same SCAN button or the trigger on the pistol grip, you can read barcodes (Barcode mode) or UHF tags (UHF mode) depending on the read mode and you can change the mode alternatively.

- a) On "Barcode mode", a barcode can be read by a SCAN button or trigger button.
- b) On "UHF mode", UHF tags can be read by a SCAN button or trigger button.
- c) By default, it is a "Barcode mode" and also it is set back to a "barcode mode" after the factory default.
- d) There are two ways to change the read mode:
 - 1) Press and hold the UP button for 3 seconds
 - 2) Change from within the application using SDK
- e) When the mode is changed, the KDC will give a series of beeps to confirm the mode change:
 - When you enter **UHF Mode**: 1 long and 2 short beeps
 - When you enter **Barcode Mode**: 1 long and 1 short beep

8.3 Changing the UHF Read Tag Modes: Single, Multiple, or Active

This mode only works when the device is in UHF mode. Refer to 3.1 to see how to toggle read modes.

When in UHF Mode, you have the option of scanning in 3 different modes. The modes change in the following order: Active (default) read -> Single read -> Multiple read. The mode can be changed by pressing the DOWN button for 2 seconds.

- **Single mode**: Only one tag is read every time the scan button is pressed.
 - 1 short beep will occur when changing mode with Down key.
- **Multiple mode**: When the Scan button is pressed, reads multiple tags simultaneously for the set time (default 10 seconds).
 - 2 short beeps will occur when changing mode with Down key.
 - Time setting can be changed in Settings ->Reading Timeout.
- **Active mode**: Basic operation status. Simultaneous reading of multiple tags while pressing the scan button (max. 10 minutes)

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- o 3 short beeps will occur when changing mode with Down key.

Alternatively, you can scan the special barcodes (page 6) to change the mode. To change from active mode to another mode, you should disable the active mode first.



In Active Mode, if the SCAN button or Trigger button is pressed more than 10 minutes, the read mode automatically changes from UHF Mode to Barcode Mode to save battery life in the case of the trigger being stuck in the scan position. This option is enabled by default and may be disabled.

If you need to scan with the trigger depressed for more than 10 minutes, you need to disable the Active Read 10 Minute Timeout.

Active Read 10 Minute Timeout

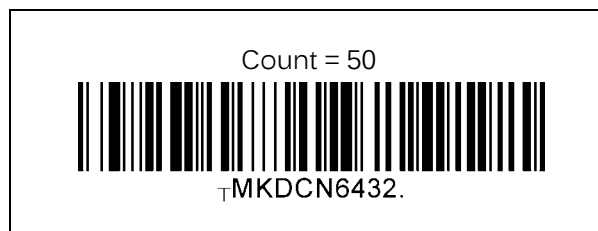
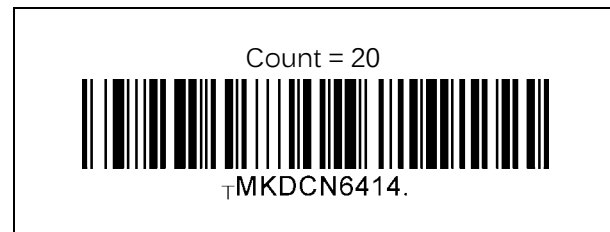
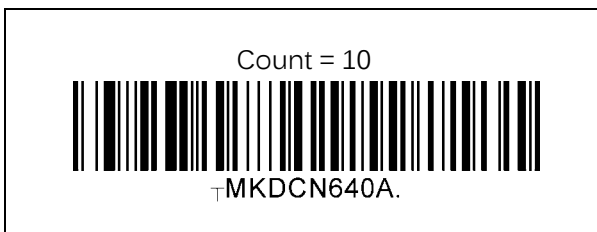
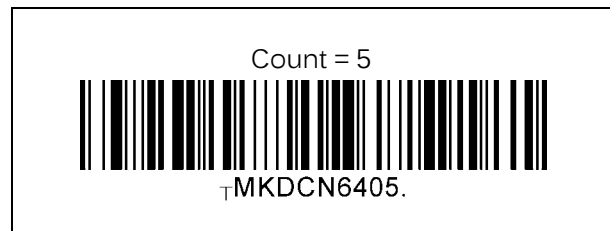
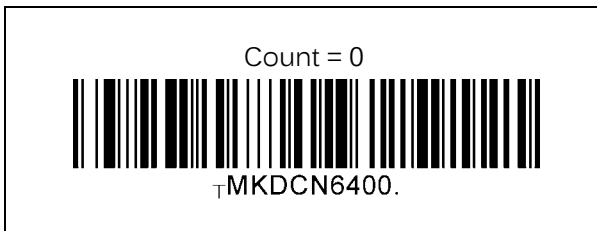


8.4 UHF Tag Counting (Beep Count)

By setting the Count attribute, you can get an estimate on how many tags are read per beep.

- Count = 0: The device only beeps once when you start reading
- Count = 5: Beeps once every 5 tags read. Example: 2 beeps means you read 10 to 14 tags.
- Count = 10: Beeps once every 10 tags read. Example: 2 beeps means you read 20 to 29 tags.
- Count = 20: Beeps once every 20 tags read. Example: 2 beeps means you read 40 to 59 tags.
- Count = 50: Beeps once every 50 tags read. Example: 2 beeps means you read 100 to 149 tags.

Scan the barcode on below that corresponds with your preference for Tag Counting.



8.5 Phone Charging Option

This option allows the user the option to charge their phone via the extended battery contained inside the pistol grip.

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



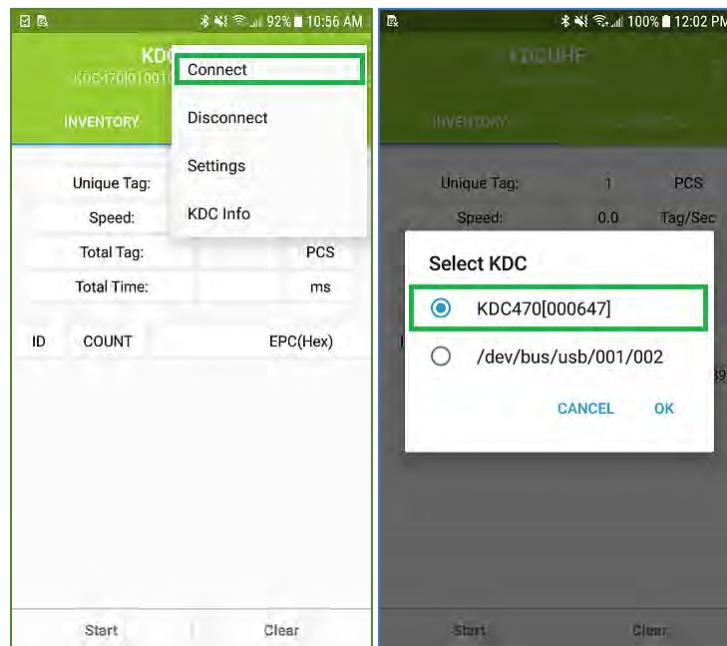
9. KDCUHF Demo App (Tag Read/Write Demo)

9.1 Install demo application

1. You can download the demo application from Google Play Store or Apple App Store and install it: KDCUHF

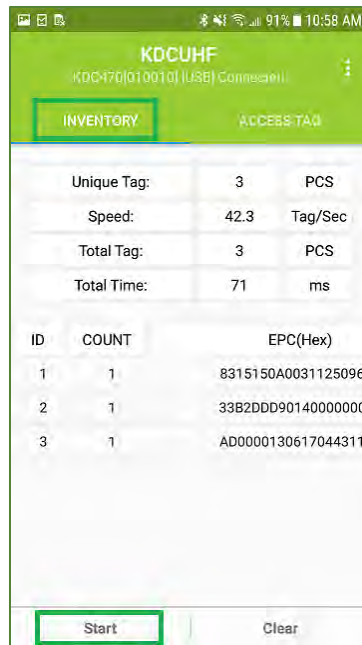
9.2 Connect KDC with a smart device

1. First, you should pair KDC with your host device through Bluetooth.
 - a. Send KDC to a pairing mode by scanning SPP & Pairing or MFi & Pairing barcode from the Quick Manual
 - b. Pair your smart device with KDC from the Bluetooth device list
 - c. See the [reference manual](#) for more detail pairing process.
2. Start KDCUHF you just installed then KDCUHF is trying to connect with KDC among paired KDC list.
3. If you want to connect to the specific KDC, please use the menu "Connect" from KDCUHF.



9.3 Read UHF data

1. Select "INVENTORY" and approach your UHF tags to read.
2. Then tap on "Start" button or press the physical SCAN button on the KDC.
3. You might hear multiple fast beeps while reading depending on the number of UHF tags nearby.
4. You can clear the current information with "Clear" button.



Unique Tag	The number of the unique tags which have been read.
Speed	The rate to identify tags, in pcs/s.
Total Tag	A piece of EPC No. The total amount which includes the data being repeatedly read.
Total Time	Total time it takes from start point, in ms.

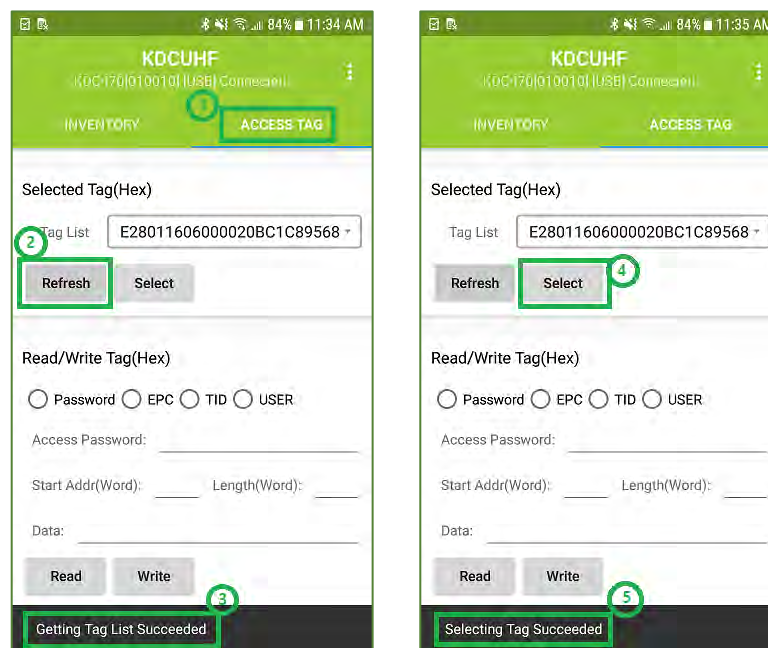
Meaning of the data in EPC column as below:

ID	ID for identifying unique tags
COUNT	The number of read each tag
EPC	EPC data of read tag
PC	PC data of read tag

9.4 Select UHF tag

Scan tags nearby and select the tag which you want to work with.

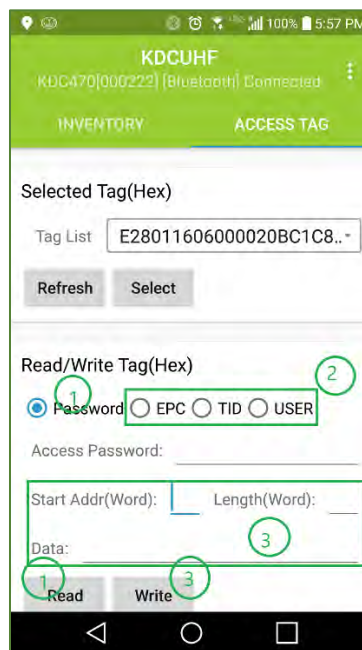
1. Select "ACCESS TAG" to set up
2. Approach UHF tag to write and tap on "Refresh" then you'll see the tag information on the "Tag List" field if successful.
3. Also, you'll see the toast message at the bottom saying, "Getting Tag List Succeeded".
4. Choose one UHF tag to do manual operation and tap on "Select".
5. If successful, you'll see the toast message at the bottom saying, "Selecting Tag Succeeded".



9.5 Read or Write UHF tag

Read Password and Read/Write data

1. Access password is required to read or write data. To get password, select "Password" and tap "Read" button.
 - KDCUHF uses the default access password (00 00 00 00) to get password. If the access password of the tag has been changed, the proper access password is required.
2. Once the password is read successfully, select the memory area to write (Password, EPC, or USER).
3. And then put the start address (Start Addr) and the length (Length), together with the data in hex to write (Data) and tap "Write" button.



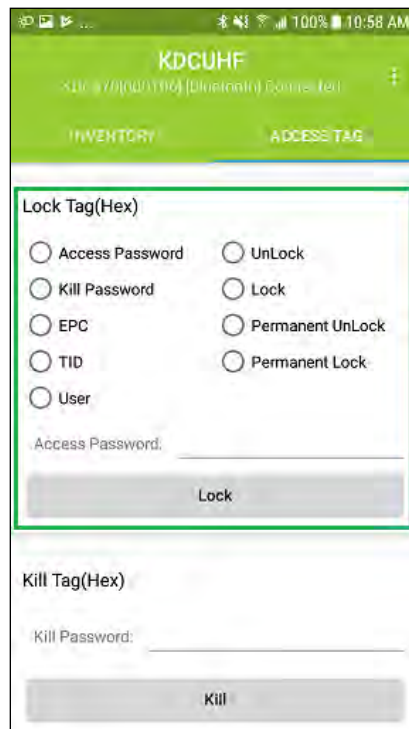
9.6 SDK API

1. The API to write a data to UHF tag is:
`public boolean WriteUHFTagMemory(byte[] pwd, UHFMemoryBank bank, int start, int length, byte[] data, UHFStatus status)`
2. You can check the guide document in the SDK package: KDC SDK Guide for Android.pdf

9.7 Lock UHF tag

Select UHF tag, Get access password and lock the tag.

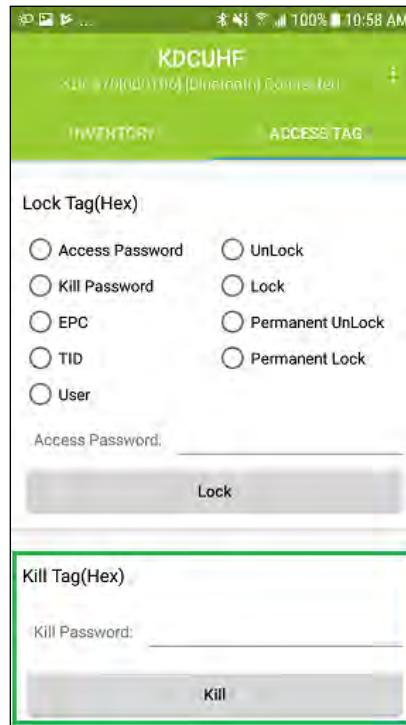
1. Select UHF tag which you want to lock through "Select Tag" menu. If the tag is selected already, skip it.
2. Access password is required to proceed locking the tag.
 - It might be invalid to lock the tag with the default password. Please modify the access password first before locking
3. Choose memory bank and action (unlock, lock, permanent...) and tap "Lock" button on "Lock Tag" menu.



9.8 Kill UHF tag

Select UHF tag, Get kill password and kill the tag.

1. Select UHF tag which you want to kill through "Select Tag" menu. If the tag is selected already, skip it.
2. Kill password is required to proceed killing the tag.
 - It is not possible to kill tags with default kill password. Please modify the kill password first.
3. Tap "Kill" button on "Kill Tag" menu.
 - Killed tags are no longer available.



9.9 UHF Setting

Change the connected KDC UHF configurations.

1. Enable UHF Power

Determine whether UHF Power is on or off.

2. UHF Power Level

Set UHF Power Level to the specific dBm.

3. Enable Smart Hopping

Enable or Disable "Smart Hopping" function.
It is depended on KDC which you are using.

4. UHF Read Tag Mode

Select UHF Read Tag Mode.

Single – Read only one tag.

Multiple – Read tags for a specific time.

Active – Read tags during "Scan" button is pressed

5. UHF Reading Timeout

Set Reading Timeout for Multiple Read Tag Mode.

6. Enable Duplicate Check

If enabled, duplicated tag data is not sent by KDC.

7. UHF Read Mode

Determine whether to scan Barcode or UHF when a Scan button of KDC is pressed or a scan command is received from the application.

8. UHF Data Type

Select UHF Data Type. Received data is composed with EPC and PC or EPC only.

9. Set UHF Region

Set UHF bandwidth (Frequency, Power, ...) to fit the region.
It is depended on KDC which you are using.

10. Stop Active Read

"Active Read" function stops after a certain period of time.

11. RFID beep count

Select read beep count of KDC.

See Reference Manual for more detailed information.

Visit store.koamtac.com to purchase additional KDCs and accessories.

12. Store RFID data

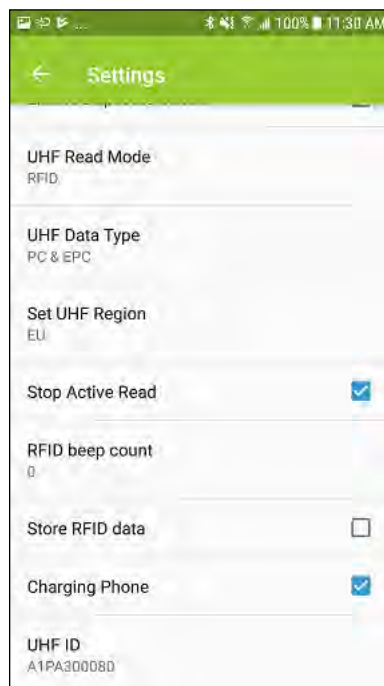
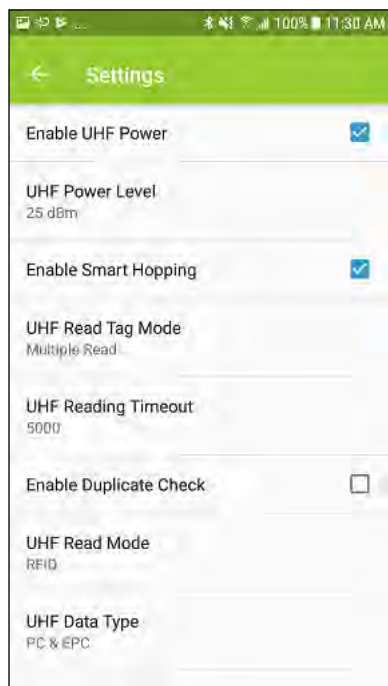
Determine whether read tag data is stored or not.

13. Charging Phone

Enable or Disable "Charging Phone" function when using 1.0W.

14. UHF ID

Show the UHF module ID



9.10 Application setting

Change KDC UHF configurations.

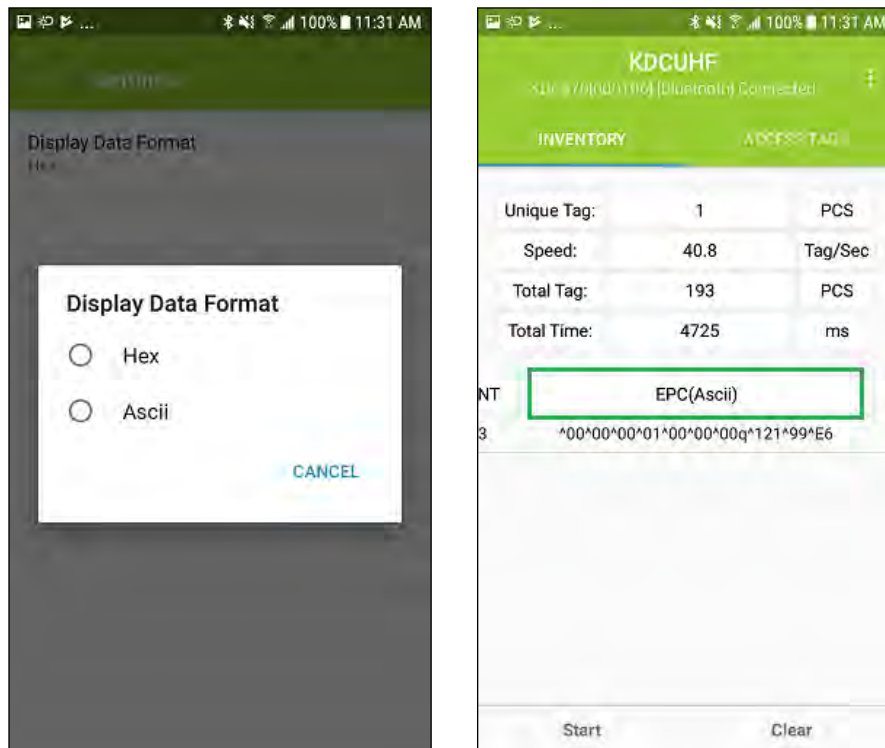
1. Display Data Format

- Select Hex string or ASCII as the default display data format.

When "Display Data Format" is ASCII,

"^" is used control character like "\" so you should write "^^", if you want to input "^" in ASCII mode.

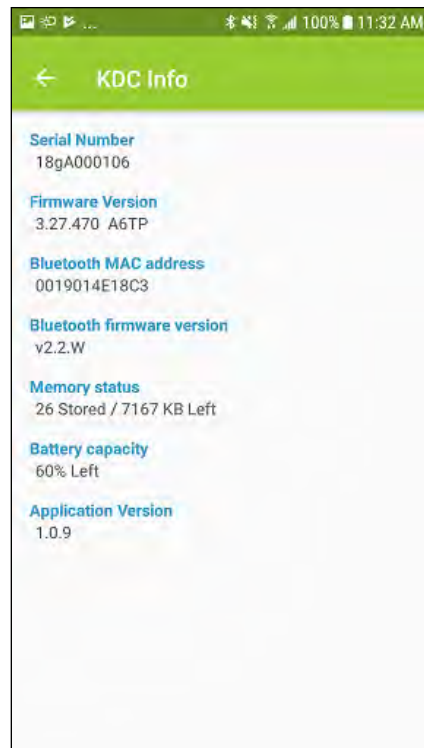
Characters that can't be displayed are indicated by "^" and a two digit hex string. For example, 0x00 0xFF will be displayed ^00^FF.



9.11 KDC Information

Display the connected KDC information.

- Serial Number, Firmware Version, etc.



10. Product Specifications

10.1 Base Scanner

Physical	Design	Bluetooth Barcode SmartSled
	Size	KDC480: 2.6" x 4.1" x 0.6" (65 x 105 x 16 mm) KDC485: 2.6" x 4.1" x 0.9" (65 x 105 x 24 mm)
	Weight	3.1 oz (88 g)
Functionality	Supporting OS	Android / iOS / Windows / Mac OS X
	Keys	2 SCAN(READ) Keys, UP Key, Down Key
	Buzzer	Yes
	LED Indicator	1 Status LED (Red / Amber / Green)
	USB Port	1 Type-C USB Port
Memory	RAM	SDRAM 64KB
	ROM	Program Flash ROM 512KB User Data Flash ROM 8MB
	Barcode/Rfid Storage	400,000+ Barcodes/Rfid tags (EAN-13 or EPC Data)
Power	Battery (Standard)	1100 mAh Lithium-Ion
	Extended Battery	2,000 mAh / 6,000 mAh (Optional)
	Charging Solution	USB Connector / Charging Cradle
	Simultaneous Charging	Yes (KDC & Host using OUA/GUA Adaptor)
	Charging Time (KDC)	4 Hours
Communication	Bluetooth	Bluetooth Low Energy V5.0, HID/SPP
	USB	USB HID, USB Serial (Android with OTG cable / Windows)
	Serial	Serial (iOS)
Barcode Reader	1D/2D Symbology	Yes
	# of scans (1 sec interval)	KDC480D CCD: 49,500+ KDC480C Imager: 26,500+ KDC485H Imager: 31,000+
	# of scans (10 sec interval)	KDC480D CCD: 16,500+ KDC480C Imager: 11,000+ KDC485H Imager: 20,000+
	Scan Range (20mil Code39)	KDC480L Laser: 1.97" to 17.72" (50 to 450 mm) KDC480D CCD: 1.97" to 17.72" (50 to 450 mm) KDC480C Imager: 2.36" to 18.35" (60 to 466 mm) KDC485S Laser: 1.40" to 52.00" (35 to 1320 mm) KDC485H Imager: 1.73" to 31.5" (44 to 800 mm)
	Screen Reading	Yes (KDC480D, KDC480C, KDC485H)
	Postal Code / OCR Passport	Yes (KDC480C/485H) / Yes (KDC480C)
Companions	RFID (HF Reader)	Optional
	RFID (UHF Reader)	Optional (0.5W, 1.0W)

See Reference Manual for more detailed information.

Visit store.koamtac.com to purchase additional KDCs and accessories.

	Magnetic Strip Reader	Optional
	Chip-and-PIN (EMV)	Optional
	Ext. Battery (2,000 mAh)	Optional
	Pistol Grip (6000 mAh)	Optional
Environment	Drop Spec	5 ft (1.5 m)
	IP Rating	IP65
	Operating Temp.	-4 °F ~ 122 °F (-20 °C ~ 50 °C)
	Storage Temp.	-4 °F ~ 140 °F (-20 °C ~ 60 °C)
	Humidity Spec	5% ~ 95% (non-condensing)
Regulatory Conformance	Laser Safety	IEC60825-1 (Class I) (KDC480L) IEC60825-1 (Class II) (KDC485S/H)
	LED Safety	IEC62471:2006 (KDC480D/C)
	Regulatory	CE, FCC, KC, J-MIC, VCCI, SRRC, RoHS Compliant
Accessories	Hand Strap	Yes
	Charging Cradle	1-slot/4-slot for Handheld Sled 1-slot/5-slot for Pistol Sled
	4-slot Charging Cradle	Yes
	Supporting Case (Integrated Charging Case)	Tab Active 3, Apple iPod Touch 5/6G, iPhone 7/8+
	Supporting Case (Separated Charging Case)	All Cases

10.2 1.0W UHF Reader

Physical	Design	Pistol Grip UHF Reader
	Weight (w/o KDC)	15.0 oz (425 g)
RFID Details	Supported Standards	EPC Class1 Gen2, EPC Gen2 V2
	Nominal Read Range	20'+ (6m+) dependent on tag type and operating environment
	Output Power Range	+0 to +30 dBm
	Tag Read Rate / Storage	400+ tags per second / 400,000+ Barcodes/RFID tags (EAN-13 or EPC Data)

10.3 0.5W UHF Reader

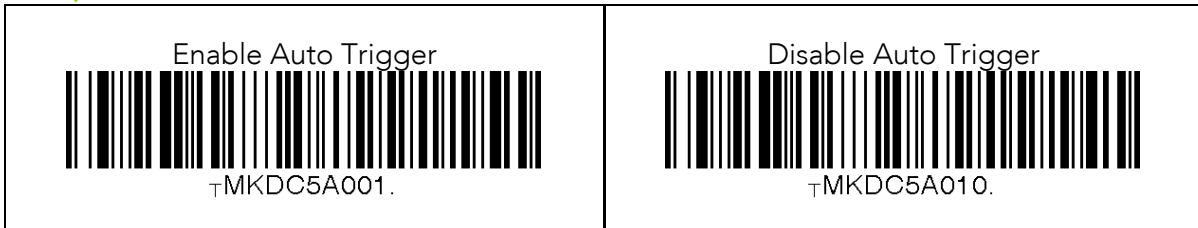
Physical	Design	Handheld UHF Reader
	Weight (w/o KDC)	1.9 oz (53 g)
RFID Details	Supported Standards	EPC Class1 Gen2, EPC Gen2 V2
	Nominal Read Range	5'+ (1.5m+) dependent on tag type and operating environment
	Output Power Range	+0 to +27 dBm
	Tag Read Rate / Storage	100+ tags per second / 400,000+ Barcodes/RFID tags (EAN-13 or EPC Data)

See Reference Manual for more detailed information.

Visit store.koamtac.com to purchase additional KDCs and accessories.

11. Appendix. Useful Special Barcodes

11.1 Scan Options







11.2 Scan Options



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



11.4 Data Process – Data Edit

<p>Start Prefix Enter</p>  <p>┆MKDC83000.</p>	<p>Start Suffix Enter</p>  <p>┆MKDC83001.</p>
<p>Finish Prefix / Suffix Enter</p>  <p>┆MKDC83002.</p>	<p>Cancel Prefix / Suffix Enter</p>  <p>┆MKDC83003.</p>


11.5 Data Process – Data Format and Handshake

<p>Data format = Barcode only</p>  <p>┆MKDC84001.</p>	<p>Data format = Packet data</p>  <p>┆MKDC84010.</p>
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11.6 Data Process – Termination Character & Duplicate Check

<p>Termination Character = None</p>  <p>┆MKDC88000.</p>	<p>Termination Character = CR</p>  <p>┆MKDC88001.</p>
<p>Termination Character = LF</p>  <p>┆MKDC88002.</p>	<p>Termination Character = CR+LF</p>  <p>┆MKDC88003.</p>
<p>Termination Character = Tab</p>  <p>┆MKDC88004.</p>	

See Reference Manual for more detailed information.
Visit store.koamtac.com to purchase additional KDCs and accessories.

<p>Enable Duplicate Check</p>  <p>‡MKDC89001.</p>	<p>Disable Duplicate Check</p>  <p>‡MKDC89010.</p>
--	--

11.7 Bluetooth

<p>Enable Bluetooth Power</p>  <p>‡MKDC60001.</p>	<p>Disable Bluetooth Power</p>  <p>‡MKDC60010.</p>
<p>Enter Pairing Mode</p>  <p>‡MKDC61001.</p>	<p>Disconnect</p>  <p>‡MKDC6D000.</p>
<p>Bluetooth Profile = SPP</p>  <p>‡MKDC6A000.</p>	<p>Bluetooth Profile = HID iOS</p>  <p>‡MKDC6A001.</p>
<p>Bluetooth Profile = MFi</p>  <p>‡MKDC6A002.</p>	<p>Bluetooth Profile = HID Normal</p>  <p>‡MKDC6A004.</p>

11.8 HID Initial Delay

<p>HID Initial Delay = Disabled</p>  <p>‡MKDCH0000.</p>	<p>HID Initial Delay = 1second</p>  <p>‡MKDCH0001.</p>
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<p>HID Initial Delay = 2seconds</p>  <p>‡MKDCH0002.</p>	<p>HID Initial Delay = 3seconds</p>  <p>‡MKDCH0003.</p>
<p>HID Initial Delay = 5seconds</p>  <p>‡MKDCH0005.</p>	<p>HID Initial Delay = 10seconds</p>  <p>‡MKDCH000A.</p>

11.9 HID Character Delay


<p>HID Character Delay = Disabled</p>  <p>‡MKDCH1000.</p>	<p>HID Character Delay = 10msec</p>  <p>‡MKDCH100A.</p>
<p>HID Character Delay = 20msec</p>  <p>‡MKDCH1014.</p>	<p>HID Character Delay = 30msec</p>  <p>‡MKDCH101E.</p>
<p>HID Character Delay = 50msec</p>  <p>‡MKDCH1032.</p>	<p>HID Character Delay = 100msec</p>  <p>‡MKDCH1064.</p>

11.10 System

<p>Memory Status</p>  <p>‡MKDC50001.</p>	<p>Reset Memory</p>  <p>‡MKDC50002.</p>
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<p>Reset BT Registry</p>  <p>┘MKDC50005.</p>	<p>Display Version</p>  <p>┘MKDC54001.</p>
<p>Factory Default</p>  <p>┘MKDC57001.</p>	<p>KDC Reset</p>  <p>┘MKDCA0000.</p>

11.11 OTG/Bluetooth (Android)

<p>USB OTG Mode</p>  <p>┘MKDC5h002.</p>	<p>Bluetooth Mode</p>  <p>┘MKDC5h001.</p>
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