



ibAcus iCounter User's Guide

iCountability Corporation©

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About iCountability

iCountability Corporation is dedicated to creating inventory solutions that are user-friendly, cost-effective, and easily adaptable to many environments, enabling companies of all sizes to better manage their back-end data collection. Please visit us at www.icountability.com for more information.

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1 Purpose

This guide has two purposes:

1. Describe the handheld installation and update procedures for iCounter.
2. Describe how to use iCounter in performing inventory counts.

This guide does *not* describe every aspect of iCounter. This will be available in the upcoming *iCounter Reference Guide*. If you have questions that you cannot find the answers to in our documentation, please do not hesitate to contact us.

Most of the tasks in iCounter are performed using either the stylus or keys with obvious functions, for example, digits. The last part of this guide details the key maps that allow you the option of performing almost any supported function with the keys alone.¹

There are two flavors of iCounter: iCounterXP and iCounterCE. iCounterXP runs under the WindowsXP operating system, and therefore can be used on standard desktop/laptop computers. It is installed easily by running the setup file.

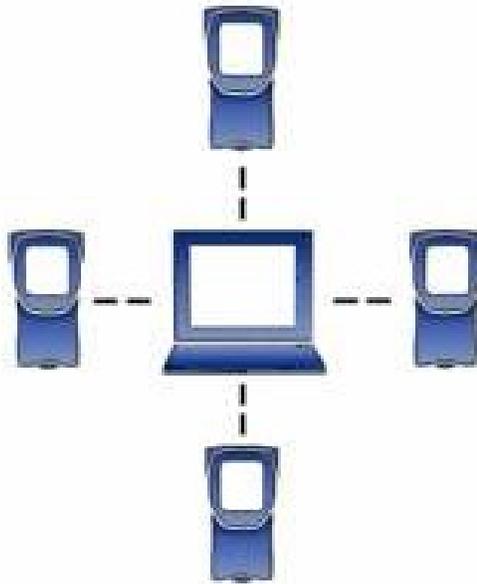
iCounterCE runs on the WindowsCE handheld devices. Its installation considerably more involved, and is described in detail in chapter 3.

Since most counting will done via the handheld devices, the information in this guide is geared toward iCounterCE client. However, other cosmetic differences, the iCounterXP functionality is essentially identical.

¹ Our experience has been that using the stylus along with the basic keys, like digits, is the most efficient way of counting.

2 Introduction

iCounter is the client component of the ibAcus inventory counting solution. It resides on each handheld computer (hereafter “handheld”) used by clerks to perform site counting. During the count, it wirelessly communicates the count data to CServer. CServer takes care of receiving and storing the count data from all iCounters (see diagram). Please refer to the *ibAcus Administrator's Guide* for more information on CServer.



3 Installation and Updates

3.1 Installing iCounter as a CServer Resource

Before doing any installs or updates to handhelds, you must install iCounter as a resource in CServer. On the PC, run the *iCounter setup* you received from iCountability and follow the directions. Read the notes in the install carefully. Essentially, if you install the iCounter package in the CServer\Resources\DynamicImport folder of the CServer installation, CServer will *automatically* import it when *started*.² If not, you will need to import the iCounter package yourself using CServer (as described in the next section) after you finish this setup procedure. Although not necessary, it is easier to have CServer do this automatically.

3.2 Importing the Packages

If you need to import the iCounter package yourself for some reason, use the following procedure. See Illustration 1 below for reference.

1. In CServer, select Resources→View Resources and double click Client Updates.
2. Click the Import Resource button (or right click in the window and select Import Resource).
3. Change Files of type: to Packages file(*.pkgs).
4. Change to the directory where you installed the iCounter packages.
5. Select the package you want to import and click Open.

² If CServer is already running when you install iCounterCE you need to restart CServer to have it import automatically.

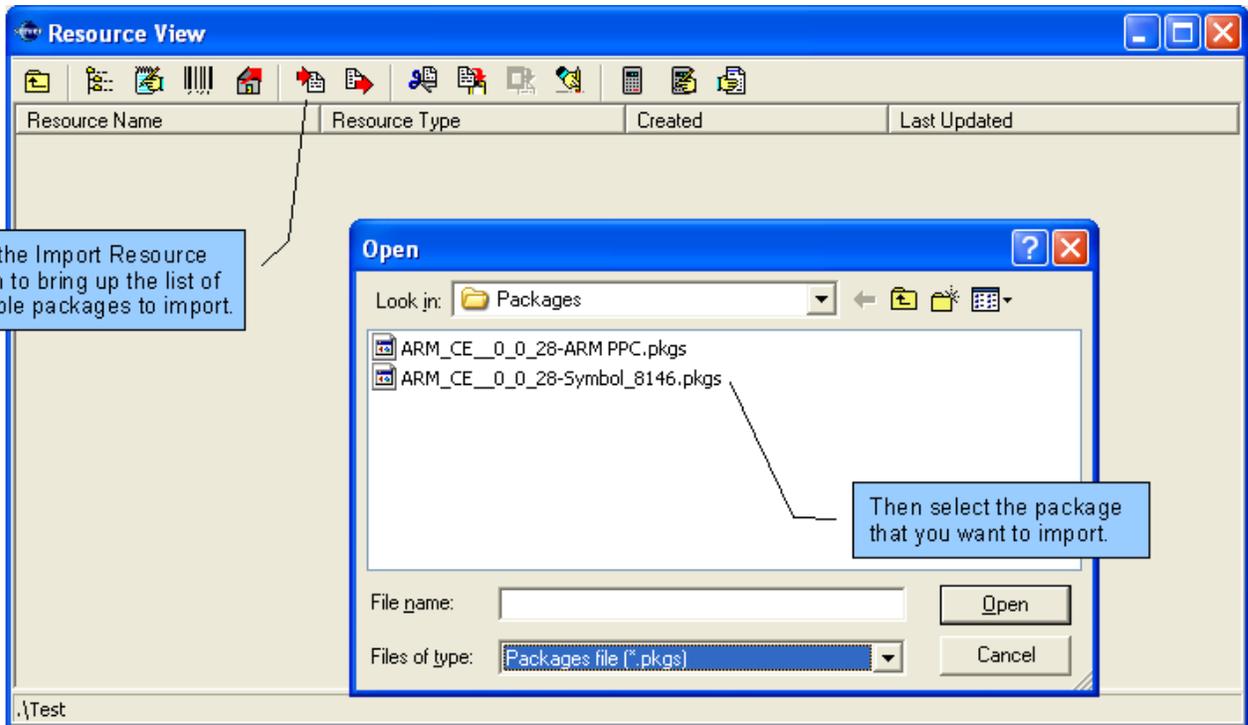


Illustration 1: Importing a package

The install may have included more than one package. Select the one that applies to your handheld. The naming convention for the packages is Chipset_OS__iCounterVersion_Device. Some examples are shown in Table 1 below.

<i>Name</i>	<i>Description</i>
ARM_CE__1_0_1-Symbol_8146	Device: Symbol 8146 OS: WindowsCE Chipset: ARM iCounter Version: 1.0.1
ARM_CE__1_0_1-ARM PPC	Device: PocketPC OS: WindowsCE Chipset: ARM iCounter Version: 1.0.1

Table 1: Sample iCounter package names of the form Device_OS_Chipset_iCounterVersion

3.3 Installation on the Handheld

Each handheld must be connected to the CServer computer via Microsoft ActiveSync³ when installing iCounter for the *first* time. The initial install must be performed on one handheld at a time. Future connections to CServer, as well as all updates, may be performed on all handhelds simultaneously. See the Updates section for further information.

There are two basic steps to installing iCounter on a handheld for the first time:

1. Install iCounter as a CServer resource.
2. Install iCounter from the CServer resource to the handheld.

3.3.1 Prerequisites

There are a number of items that must be in place before beginning to install iCounter. These include:

1. CServer installed on the PC. See the *ibAcus Administrator's Guide*.
2. Microsoft ActiveSync installed.
3. ActiveSync connection between the CServer computer and the handheld.
4. Valid iCounter package file imported in the CServer Client Updates resources.
5. Valid iCounter license file. This is not necessary to *install* iCounter but is to *use* it.

3.3.2 Installing

Now you are ready to install iCounter from CServer to the handheld.

1. In CServer, select Resources→View Resources and double click Client Updates. This brings up a list of one or more packages that are available for installing on the handheld. Recall the naming convention mentioned in Table 1 above.
2. Double click the package that applies to your handheld. This brings up a small Install window showing the iCounter application to be installed.
3. Press the Install button and then accept the subsequent license agreement. A window opens, showing the install taking place, which closes when the install is complete. This should take only a few seconds for a wired connection but may be slower (less than one minute) if you are using an infrared connection.

You have successfully installed iCounter and can close the Install window. Any subsequent upgrades to iCounter can be done wirelessly. See the Updates section for further information.

³ You can connect using ActiveSync in several ways, including via cradle, infrared, and wireless.

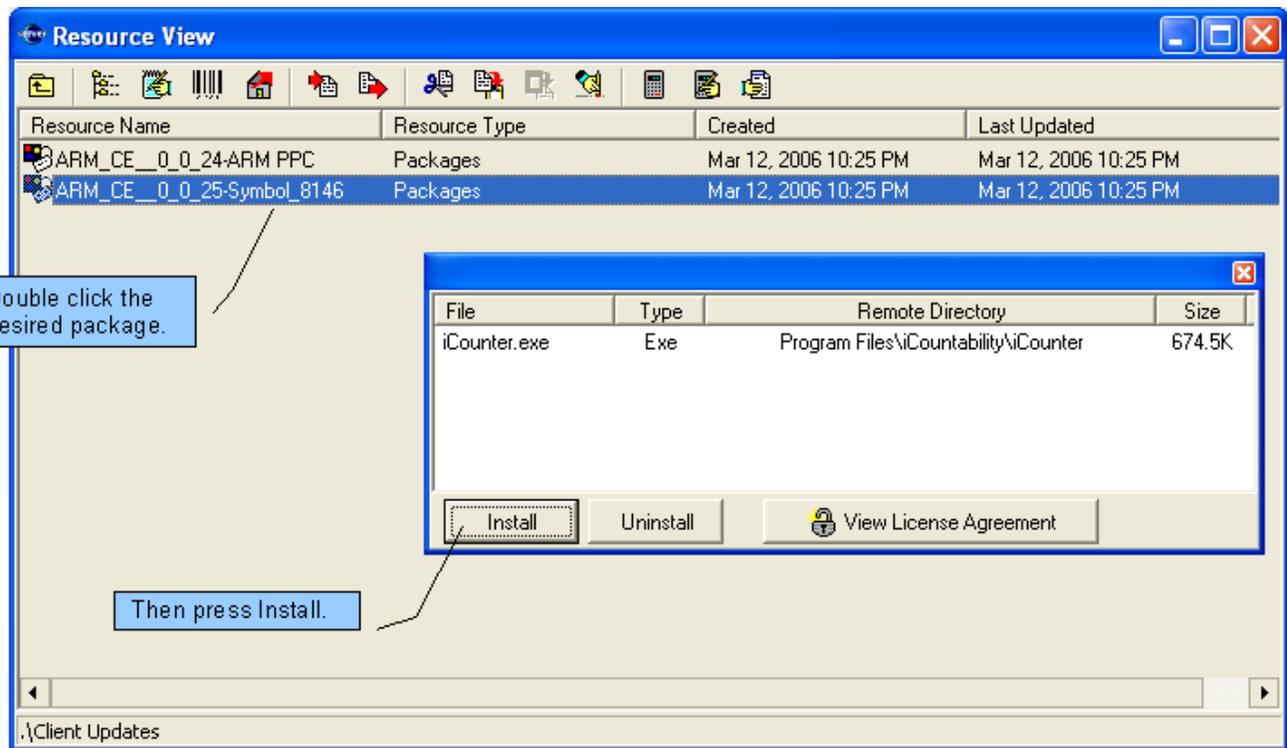


Illustration 2: Installing the package from CServer to iCounter.

3.3.3 Licensing

In order to use iCounterCE you need to have a valid license file reflecting all of the handhelds on which it is installed. Once iCounterCE is installed on all desired handhelds, follow these steps to obtain a valid license file:

1. Synchronize the iCounterCE on each handheld with CServer (see section 4.1.2). You will receive the message “License undefined” in the iCounterCE status bar.
2. Once *all* the handhelds have synchronized, you need to export the License Resource in CServer. In the Resource View window select the License Resource and press the Export resource button. Save it to a location that you will remember. You can refer to the *ibAcus Administrator's Guide* for further details on exporting resources, if necessary.
3. Email the exported license file to support@icountability.com.
4. Within 24 hours we will send you an email containing a valid license resource.⁴ Save it to a location you will remember.
5. Import this license resource file into CServer by pressing the Import resource button in the Resource View.

You are now ready to use iCounterCE on all of the handhelds for which you requested licenses.

⁴ Of course, this assumes you have either paid for the number of license requested, or you are requesting a trial license.

3.4 Updates

Periodically, we will release new versions of iCounter in order to provide bug fixes and new features. Upgrading iCounter on each of your handhelds is easy to accomplish wirelessly. This is a significant advantage since there is no need to create an ActiveSync connection for each one. *Once iCounter is installed on a handheld*, any subsequent upgrades will automatically occur when iCounter synchronizes⁵ with CServer at startup. CServer will check for a more recent version in its list of packages. If one is found, it will automatically send and install it to the handheld. iCounter will automatically close and reopen in less than half a minute.

3.5 Uninstalling

iCounter can be uninstalled from an ActiveSync-connected handheld using the same mechanism as used in installation from CServer.

1. Select Resources→View Resources.
2. Double click Client Updates.
3. Double click on the package you want to uninstall.
4. Click the Uninstall button. CServer brings up a small window showing the uninstall taking place, after which it closes. iCounter is gone from the handheld but may be reinstalled from CServer at any time.

⁵ We use the term “synchronize” to mean “connect to CServer and send and/or receive data”. The data that is transferred or received is different depending on the context. For example, at startup iCounter is sending its user information to CServer, then receiving the site profile from CServer. When synchronizing after counting items it is sending all counted data to CServer that has not already been sent.

4 Using iCounter

There are two basic types of counts: *retail* and *quantity*. Retail counts record the inventory as dollar amounts on a departmental basis. Quantity counts record the inventory as quantities of items defined by codes, and are typically done using a handheld with a built in bar code reader⁶. iCounter supports both of these basic types as well as several combinations of them through the use of *count modes*. Before going into these details let us take a look at how to start a count.

4.1 Starting

4.1.1 Activating the Count

The count profile for the site to be counted must be activated before counting is started. This is done using the CServer interface, not the handheld. The manager will most likely be responsible for doing this.

To activate the count profile:

1. Find the appropriate count profile in Resources→View Resources.
2. Activate the profile/count⁷ by right clicking it and selecting Activate Count, or by pressing the Activate Count button.

⁶ Coded counts are not limited to products with official barcodes. Some sites have their own system of identifying products, such as SKU numbers. These numbers can be converted to a bar code and counted using the bar code reader functionality that is built in to iCounter.

⁷ The first time you must activate the profile resource since there will be no count resource. This creates the corresponding count resource. If you need to reactivate the count after closing it, you must right click on the count directly.

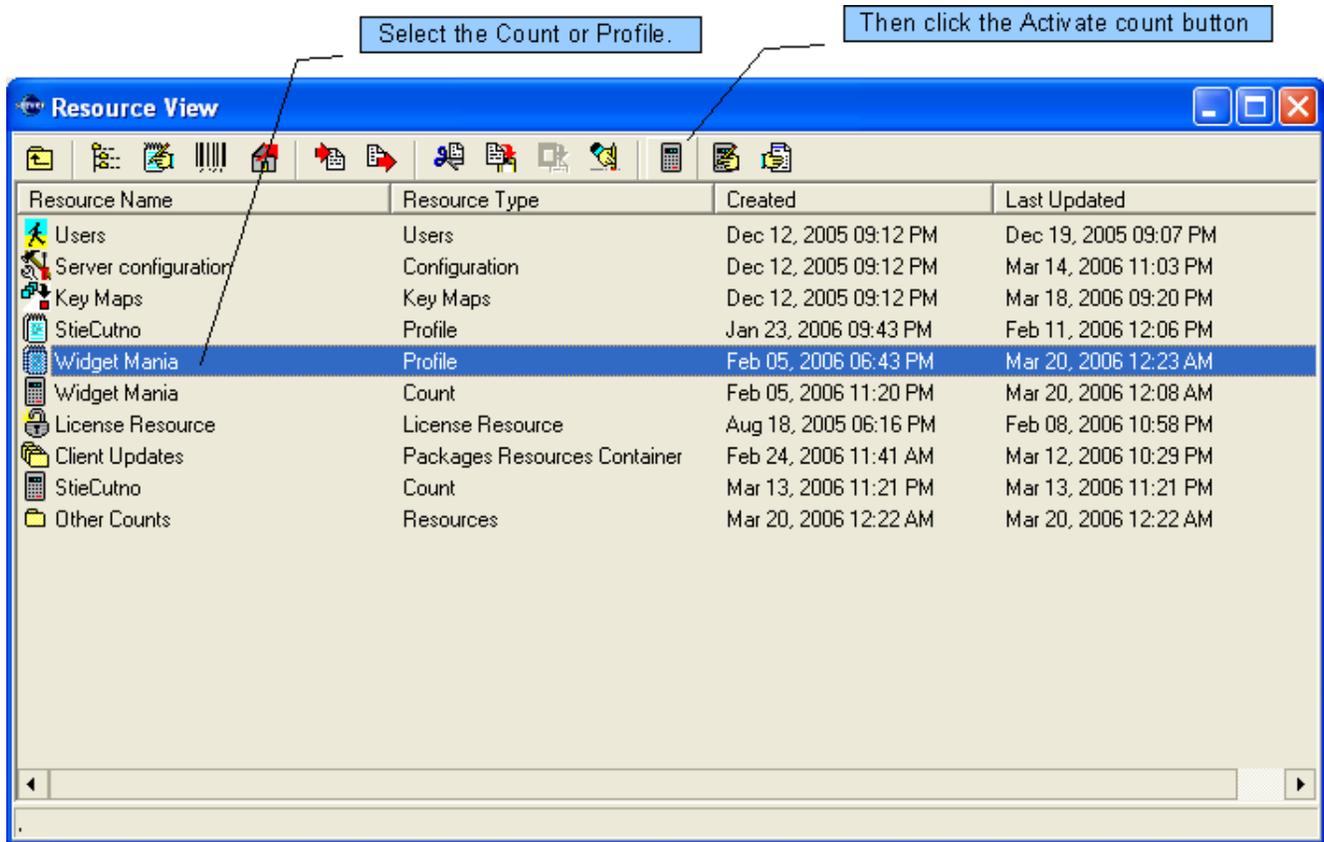


Illustration 3: Activating the Profile or Count in CServer.

4.1.2 Starting iCounter

Turn on your wireless⁸ handheld and use the stylus to start iCounter. In Pocket PC 2003 click Start, then Programs, then iCounter. This brings up the iCounter application which should cover most of the screen at this point.

The first thing you must do is configure iCounter to connect to CServer:

1. Click the Count Server menu item at the bottom left.
2. Select Configuration.
3. Specify the Host and Port of CServer⁹.
4. Click Ok.

⁸ For the purposes of this guide, we assume that you are using wireless handhelds. iCounter works fine on wired handhelds, but requires you to use a cable in order to synchronize with CServer.

⁹ The manager will have this information. this is ultimately obtained from the CServer computer. The Host can be entered as a TCP/IP address which can be obtained by running ipconfig at a command prompt. The port must match the value specified in CServer Resources→Server Configuration in the Server Port tab.

Next you need to enter your user id and password:

1. Click the Count Server menu
2. Select User.
3. Specify your User ID and Password¹⁰.
4. Click Ok.

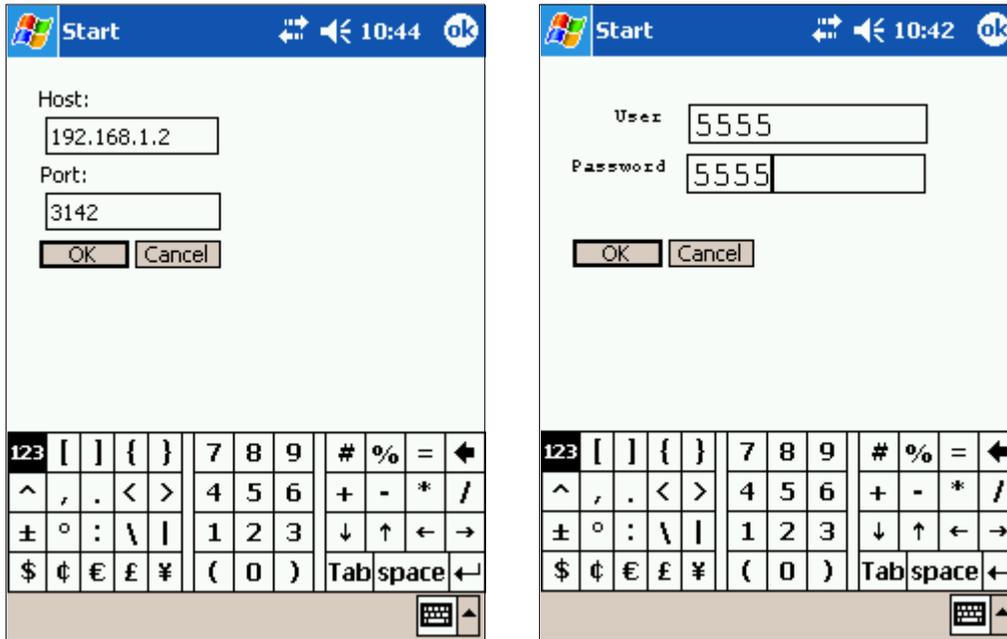


Illustration 4: Host, port, and user configuration

Finally, you need to get the site profile containing all of the departments, sections, and other necessary information from CServer. Use the stylus to select Synchronize from the Count Server menu. Providing that a count has been activated in CServer, you should very shortly see the message “Received site data from server” in the status bar at the bottom of the window. This indicates that iCounter now has the site profile in it's memory, including all defined locations, sections, shelves, and departments.

You are now ready to count.

4.2 iCounter Layout

Illustration 5 below shows the layout of iCounter as it appears on your handheld. These are briefly described below. Do not worry if you do not understand everything yet. We will explain in more detail further on.

¹⁰ This user information must match one of the users defined in CServer.

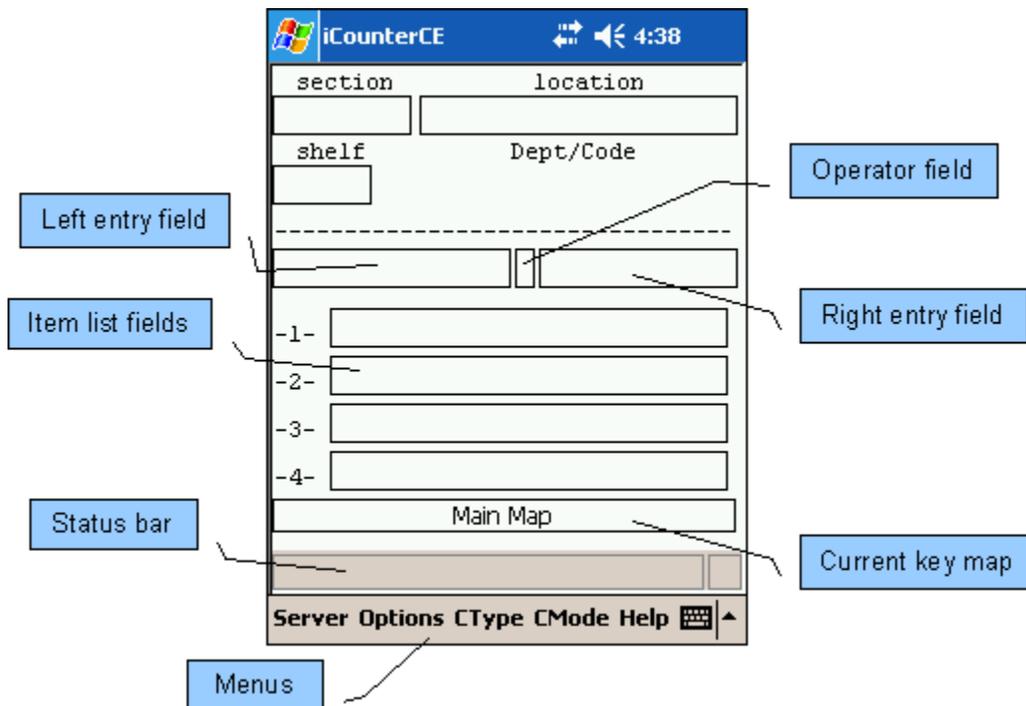


Illustration 5: iCounter layout

menus You can click these with the stylus to bring up any of the menu functions.

location This shows the current location being counted. Click this with the stylus to change locations.

section This shows the current section within the location being counted. Click this with the stylus to change sections. You can also change sections by scanning a section tag with the bar code reader.

shelf This shows the current shelf within the section being counted. Click this with the stylus to change shelves or create a new shelf.

department/code Depending on the *count mode* you are using this field shows either the department or barcode value. The *department* consists of the department number and name, while the *code* consists of the barcode that was just scanned.

entry fields These are the fields where the count data is entered. The left entry field is the **main entry field** for entering your data. The right field is typically used to assist you in calculating a value if necessary. This will become clearer as we discuss count modes below.

operator This shows the operation used (if any) in computing your count, like * for multiplication.

item list This shows the list of items. While counting, you will see the list of items already counted for the current shelf.

key map This shows the current key map. You really do not need to know anything about this

but you can check out the chapter on key maps for further details.

status bar This shows various status messages, such as “Server confirms update”, upon successfully synchronizing count data to CServer.

4.3 Count Modes

Count modes are used to specify the type and method of counting allowed by for a specific *count*. In some cases, you may be doing only *retail* counting, thus needing only to record the *departments* and *retail values*. In other cases, you may be doing *quantity* only counts, requiring only the *barcode* and *quantity* of each item. The count modes that are available for a particular *count* are listed in the CMode and CType menus of iCounterCE.¹¹ Only those count modes and collection types selected in CServer will be available for that *count* in iCounter. Refer to *ibAcus Administrator's Guide* for detailed descriptions of the count modes.

To select a specific count mode and collection type iCounter must first be initially synchronized with CServer to obtain all of the available options for this count. You can then choose the desired mode by selecting from the CMode and CType menus. Note that some count modes have only one type. If a default count mode was selected in CServer this count mode will be selected automatically in iCounter, although you can still select a different mode at any time.

4.3.1 Linked Departments

Two of the count modes, DeptValueQuantity and CodeDeptValueQuantity, allow the use of linked departments (as described in the *ibAcus Administrator's Guide*) to make the counting of fractional quantities more efficient. Currently, the only type of linked department is Split Fractional which automatically separates a decimal the quantity you enter into its whole and decimal parts, and places the whole part in the current department and the decimal part in the linked department. Section 4.7 describes the details of counting including the use of linked departments.

Department links must be defined in the count using CServer. See the the *ibAcus Administrator's Guide* for details.

4.4 Basic Counting Steps

Once you have done the initial synchronize (described above in section 4.1.2) to login and get the site profile and count modes, you can start counting. Although the basic steps of counting are similar for all count modes, there are differences depending on the the specific count mode and collection type you are currently using. Here is the basic idea:

1. Select a location.
2. Select a section.
3. Select or create a shelf.
4. Select a department.
5. Count items.

¹¹ In iCounterXP the available count modes and collection options are listed in the Options menu.

6. Go to step 1, 2, or 3.

Somewhere within these step you will also want to synchronize your data (send it to CServer).

This can be done at any time, according to your counting policy and needs, but it is recommended that you do it frequently enough to ensure data integrity. If you are using a wireless connection to CServer, synchronization is extremely quick and easy, simply requiring the press of a button. You might want to consider a policy of synchronizing after every section. Any time you synchronize you are automatically taken back to the section level (step 2 above).

The *count mode* and *collection type* can be changed at any time during the count. Doing so also causes you to automatically be taken back to the section level (step 2 above).

4.5 Setting a Flag

Any inventory item can be flagged in iCounter. After an inventory item is entered on the stack, proceed to enter the flag ID in the left entry field. After the flag ID is input, press the Flag Add Key. This will add the entered flag on the top-most inventory item. To remove a flag from an inventory item you must enter the flag ID and press the Flag Remove Key. This will remove the entered flag from the top most inventory item. You can add multiple flags to the top inventory item by repeating this process with different flag IDs. Note, before using flags in iCounter you must first ensure a set of flags are already attached to the count in CServer and that the flag keys are available in the active key map..

4.6 Using the Pointer and Keypad

Both the pointer (stylus or mouse) can be utilized during a count. For some items, such as selecting a location or section, you may find the pointer more convenient. For others, such as entering a retail or quantity value, you must use the keypad. Initially, using the keypad for some items may be more difficult since you have to remember what key to press for the *location* or *section*. However, once you gain experience with the software you may find the keypad significantly faster. In any case, the choice is yours.

The next sections illustrate how to enter various data and complete certain tasks during a count, in some cases using the pointer, in others the keypad. After this, in section 4.7, we take a detailed look at the steps for each count mode and collection type.

4.6.1 Selecting a Location

The easiest way to select a location is by clicking the location box and selecting from the list.¹² However, you can also select a location by either:

1. Entering a location **number** and pressing the “select location” key or
2. Entering a location **name** and pressing the “select location by name” key.
3. Scan an iCountability location marker

¹² For sites that are divided into only a few locations, this step is not done often, especially for sites divided into something like “stock room” and “main floor”. Of course, the site manager can divide the site into as many or few locations, sections, and shelves, as desired.

These keys must be defined in the keymap you are using in order to work.

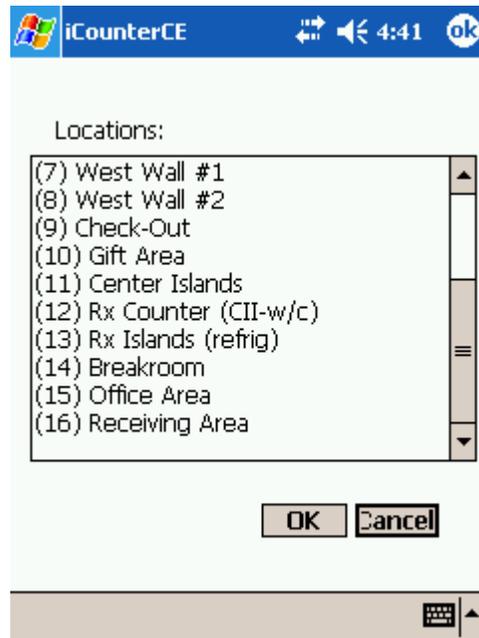


Illustration 6: Location selection

Note

If the Auto set first section/shelf on location selection check box is checked in the count profile in CServer iCounter automatically selects the first section and shelf every time you select a new location. If you do not want this to occur you must uncheck this flag in CServer and restart iCounter.

4.6.2 Selecting a Section

There are two ways of selecting a section:

1. Manually by clicking the section box with the stylus and selecting the desired section.
2. Scanning the generated section tag.¹³ If the section does not exist iCounter automatically creates it if the Strict Section Mapping flag is *not* checked in CServer.

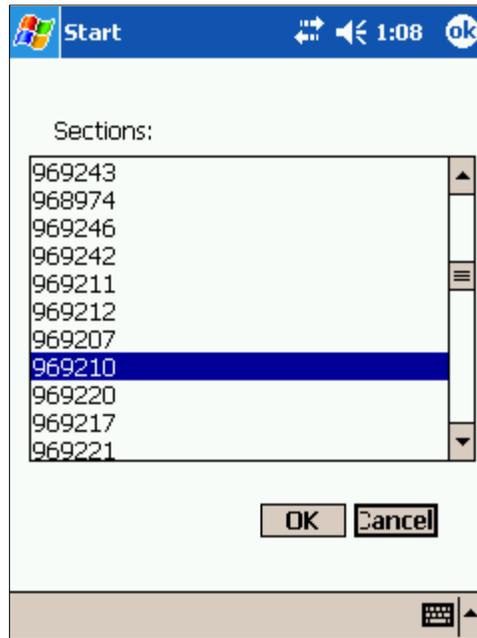


Illustration 7: Section selection

¹³ Of course, this assumes that the site manager has generated the tags using CServer and printed them out. Each clerk will have a number of them for use while counting.

4.6.3 Selecting Shelf

When you select a section you are automatically placed in the first shelf of that section. However, when you have finished counting one shelf, you will need to switch to (or create) the next one.¹⁴ Do this by clicking on the shelf box and selecting either Shelf up, Shelf down, or New.

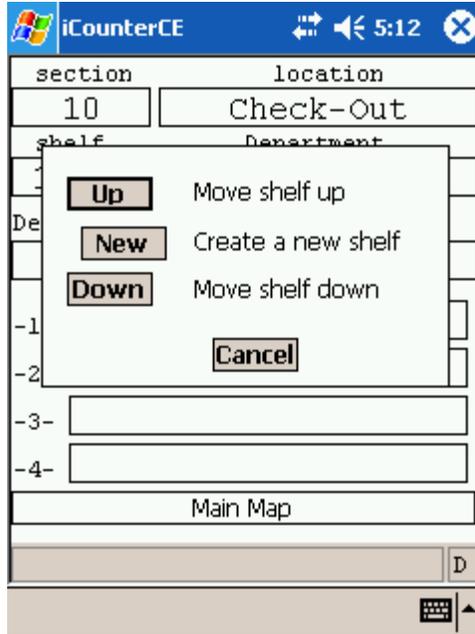


Illustration 8: Shelf selection

14 It's quite common to create shelves on the fly since different sections often have varying numbers of shelves.

4.6.4 Selecting a Department

Do this by clicking the department box and selecting from one of the departments from the list.

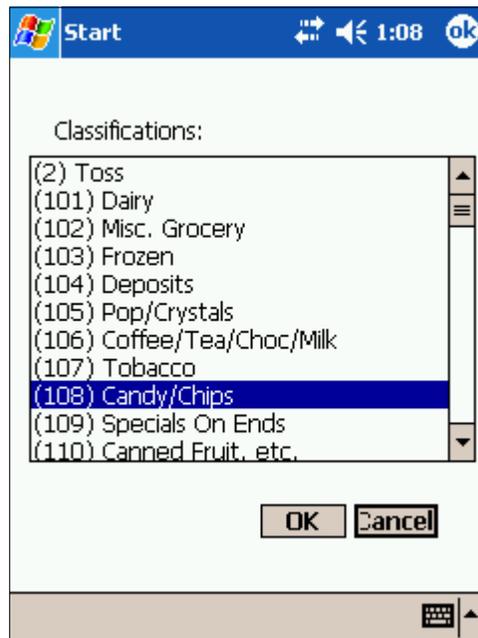


Illustration 9: Department selection

4.6.5 Entering Retail Values and Quantities

Retail Values

The retail value is always entered as dollars and cents without a decimal¹⁵. You will notice that there are three fields for entering the count. These allow you to use the basic calculator functions (usually the keys *, +, /, -) to compute your entry. You can use these to make your entries easier. Some examples:

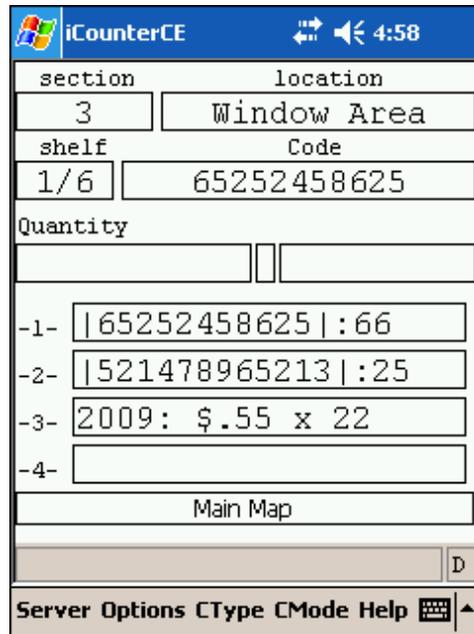
- There are 7 items at \$15.99. Enter 1599*7<enter>. You will see 1599 in the first field, * in the second, and 7 in the third.
- There are 3 boxes with 8 items per box, at \$3.72 per item. Enter 3*8*372.
- There are 6 items left in a box that holds 9, at \$21.59 per box. Enter 2159/9*6.

Note that all operations are performed in order of entry. There is no mathematical precedence. For example, entering 7 – 2 * 3 equates to 15, not 1.

¹⁵ So \$15.99 is entered as 1599.

Quantities

Enter the quantity of the item and hit enter. As with retail entries, you can use the calculator functions (*, +, /, -) as well. So, if there are 3 boxes of 6 items, you can enter 3*6<enter>, or of course, just 18<enter>.



The screenshot shows the iCounterCE application window. The title bar includes the Windows logo, the text 'iCounterCE', and system icons for network, volume, and time (4:58). The main interface is a form with the following fields and content:

section	location
3	Window Area
shelf	Code
1/6	65252458625
Quantity	
-1-	65252458625 :66
-2-	521478965213 :25
-3-	2009: \$.55 x 22
-4-	
Main Map	
D	
Server Options CType CMode Help	

Illustration 10: Retail and quantity items

4.6.6 Synchronizing

Click the Count Server menu and select Synchronize. You will see a “Server confirms update” message on the status bar. You can synchronize whenever you like: after every shelf, after every section, or as you wish. Of course, the more frequently you synchronize, the more up to date CServer is.

4.6.7 Deleting Data

You can delete a count entry from the list by clicking on it. This is useful if you made a mistake and catch it before submitting.

Alternatively, you can clear all pending data by clicking Clear All Pending Data!! from the Options menu. Do this with care, however, since it removes *all* data that has not been synchronized.

Once you have submitted it is too late to delete that data. However, changes can be made directly in CServer, if necessary. Refer to the *ibAcus Administrator's Guide* for further information.

4.7 Counting with the Count Modes

In this section we detail the steps used for each of the *count modes* and *collection types* available for counting. Keep in mind that these counting procedures must not be followed exactly; you may change locations, section, shelves, or departments at any time. You can synchronize as often as you like, although we recommend that you complete an entire shelf first. If you are out of wireless range for some time, it is not a problem. iCounter maintains your counted data internally until you synchronize. In addition, if you exit iCounter before synchronizing, the unsynchronized data will be there when you reopen, allowing you to synchronize then.

Now let us take a look at the steps for each count mode.

4.7.1 DeptValue Count Mode

This involves the entry of the retail value of items for each department, the typical mode for retail counts. Within the DeptValue mode there are 4 collection types: Normal, FastUnordered, FastOrdered, and ValueQty.

Both the Normal and ValueQty collection types are typically used for counting with handheld devices on-the-fly. The “ordered” types are used more for batch type entry using the iCounterXP client, useful if you have already counted and have the results on paper, and now simply want to quickly enter them into the ibAcus system.

DeptValue - Normal

1. Select a location.
2. Select a section.
3. Select or create a shelf.
4. Select a department. Note: the department can be changed at any time during the count.
5. Count the retail items:
 - a) Enter the retail value of the item. This can be done using the operator keys (like * for multiplication) to make it easier to compute. For example, to record 9 items at \$8.99 you can enter 9 * 899, or 899 * 9.
 - b) Hit enter and go to step (a) until all items in this shelf are counted.
6. Go to step 3 until all shelves in this section are counted.
7. Synchronize the data. This can be done at any time, more or less frequently. Once per section is used here for illustration purposes.
8. Go to step 2 until all sections in this location are counted.
9. Go to step 1 until all locations are counted.

DeptValue - ValueQty

This type is similar to the Normal type except that it eliminates the possible need to specifically multiply a quantity, thus making entry a bit simpler. The quantities themselves are *not* stored with the count but only used to calculate the full retail values.

1. Select a location.
2. Select a section.
3. Select or create a shelf.
4. Select a department. The department can be changed at any time during the count.
5. Count the retail items:
 - a) Enter the retail value of the item.
 - b) Hit enter.
 - c) Enter the quantity of items.
 - d) Hit enter and go to step (a) until all items in this shelf are counted.
6. Go to step 5 until all shelves for this section are counted.
7. Synchronize the data. This can be done at any time, more or less frequently. Once per section is used here for illustration purposes.
8. Go to step 3 until all sections for this location are counted.
9. Go to step 2 until all locations are counted.

DeptValue – FastUnordered and FastOrdered

As already mentioned this collection type is for special cases where batch entry is required. It provides a quick method for getting all of the data into the system, and is typically used for entering values down to the section level.¹⁶

The only difference between the *ordered* and *unordered* types is that you need enter only the last two digits of the section if using the *ordered* type. This makes it quicker if you have section tags with large numbers.¹⁷

1. Select a location.
2. Select the first section.
3. Enter the department and hit enter.
4. Enter a retail value for this section and hit enter.
5. Hit enter again.
6. If there are more sections for this location:

¹⁶ You can enter specific shelves also but it requires you to explicitly select a shelf other than the one specified.

¹⁷ The sections in your count profile must be sorted in order to correctly use the ordered collection type. See the *ibAcus Administrator's Guide*.

- a) Enter the next section number and hit enter. Only the last two digits are required if you are using the *ordered* collection type.
 - b) Goto step 3.
7. Goto step 2 until all locations are counted.

4.7.2 DeptValueQuantity Count Mode

This mode has only one collection type, Normal., and is identical to the DeptValue-ValueQty mode described above. The *only* difference is that the *quantity* is stored with the count. For example, if you count 4 items at \$6.00, this this mode stores 4 items at \$6.00, while the DeptValue-ValueQty mode stores 1 item at \$24.00. This mode also allows the use of linked departments if defined for this count.

1. Select a location.
2. Select a section.
3. Select or create a shelf.
4. Select a department. The department can be changed at any time during the count.
5. Count the retail items:
 - a) Enter the retail value of the item.
 - b) Hit enter.
 - c) Enter the quantity of items:
 - If this is a regular quantity simply enter it. For example, enter 17 for seventeen.
 - If you need to enter a split fractional quantity (and the current department is a linked department) enter the quantity with two decimal places without the decimal. For example, for 6.5 enter 650.
 - d) Finish this item:
 - If you entered a regular quantity press enter and go to step (a) until all items in this shelf are counted.
 - If you entered a split fractional quantity press the *linked department* key to enter the whole part in the current department and the fractional part in the linked department, 6 and .5 in the above example. Then go to step (a) until all items in this shelf are counted.
6. Go to step 5 until all shelves for this section are counted.
7. Synchronize the data. This can be done at any time, more or less frequently. Once per section is used here for illustration purposes.
8. Go to step 3 until all sections for this location are counted.
9. Go to step 2 until all locations are counted.

4.7.3 CodeQuantity Count Mode

This mode has three collection types: **Normal**, **OneButton**, and **OneButtonPredictive**. All are very similar except for the minor differences mentioned in the steps below.

1. Select a location.
2. Select a section.
3. Select or create a shelf.
4. Scan the barcode of the item.
5. Enter the number of items:
 - a) For Normal collection type enter the number of items using the keypad and hit enter.
 - b) For OneButton each scan automatically enters a quantity of one. To enter more than one simply scan multiple times. This is useful for small quantities of items since it is typically faster to scan than enter digits. You can still enter the number of items using the keypad but this will be *added* to the scan already entered. For example, if you scan an item twice then enter 3 on the keypad this gives a quantity of 5.
 - c) OneButtonPredictive is the same as OneButton except that if you enter a quantity on the keypad it *replaces* the 1 that was automatically entered by the scan. For example, if you scan an item twice and enter 3 on the keypad this gives a quantity of 4, not 5.
6. Goto step 4 until all items for this shelf are counted.
7. Goto step 3 until all shelves for this section are counted.
8. Synchronize the data. This can be done at any time, more or less frequently. Once per section is used here for illustration purposes.
9. Goto step 2 until all sections for this location are counted.
10. Goto step 1 until all locations are counted.

4.7.4 CodeDeptValueQty

This is the most comprehensive count mode since it records the most data per item. It has only one collection type, Normal. This mode also allows the use of linked departments if defined for this count.

1. Select a location.
2. Select a section.
3. Select or create a shelf.
4. Select a department. The department can be changed at any time during the count.
5. Scan an item.
6. Enter the retail value and hit enter.
7. Enter the quantity of items:
 - a) If this is a regular quantity simply enter it. For example, enter 17 for seventeen and press

enter.

- b)** If you need to enter a split fractional quantity (and the current department is a linked department) enter the quantity with two decimal places without the decimal. For example, for 6.5 enter 650. Then press the *linked department* key to enter the whole part in the current department and the fractional part in the linked department, 6 and .5 in the above example.
- 8.** Go to step 5 until all items for this shelf are counted.
- 9.** Go to step 3 until all shelves for this section are counted.
- 10.** Synchronize the data. This can be done at any time. Once per section is used here for illustration purposes.
- 11.** Go to step 2 until all sections for this location are counted.
- 12.** Go to step 1 until all locations are counted.

5 Key Maps

For most usage of iCounter you need know nothing about key maps. However, if you do require to change the default functionality of specific keys, or just want to know about how the keys works, this is the chapter to read.

5.1 Overview

This provides a general overview of key maps and how to use them in iCounter. For more detailed information about key maps, and how to create them, please refer to the *ibAcus Administrator's Guide*.

What is a Key Map?

All key usage in iCounter is strictly controlled by our key maps. That is, when you hit a key, iCounter “catches” it and decides what to do with it (that is, what function to perform). For numeric keys the function is generally to display the number in one of the entry fields. For another key, it might be to select the location based on the number just entered, or perhaps to synchronize. Almost everything you can do with the stylus can be done with a key, provided it is defined in the key map in use by iCounter.

Multi-maps

Since some handhelds have fewer keys than others, there may not be enough keys to cover all of the functions required by iCounter. For this reason, an iCounter key map is really a *multi-map*, which allows you to use the same key for multiple functions, depending on which map you are currently in. Another way to put it is that the iCounter key map for a given handheld is really a group of one or more key maps.

You change from one map to another by pressing the *map transition key*, or by pressing a key that automatically changes to a specific map after performing its function.¹⁸

5.2 How it works

Every handheld that we support typically comes with a default key map. In addition, you can define your own key maps using CServer. Depending on the handheld you have and how many keys it has, the key map will consist of a group one or more key maps (multi-map) to encompass all functionality. To illustrate, let's say your handheld has a small keypad, with only numeric keys (0 to 9), decimal (.), and basic math operators (+, -, *, /, =). In this case iCounter will definitely require multiple maps. Let's assume that this multi-map has three key maps defined, as shown in Table 2 below.

¹⁸ Although theoretically a keypad need have only 2 keys to provide all functionality (one for a function and the other to transition to the next map), obviously, anything less than about 11 keys is pretty much useless.

Key Map	Key	Function
MAIN		Contains the numeric and basic math keys. These are the keys you'll use the most during a count.
MAIN	0	Enters a 0 in one of the entry fields.
MAIN	1	Enters a 1 in one of the entry fields.
MAIN	2	Enters a 2 in one of the entry fields.
MAIN	3	Enters a 3 in one of the entry fields.
MAIN	4	Enters a 4 in one of the entry fields.
MAIN	5	Enters a 5 in one of the entry fields.
MAIN	6	Enters a 6 in one of the entry fields.
MAIN	7	Enters a 7 in one of the entry fields.
MAIN	8	Enters a 8 in one of the entry fields.
MAIN	9	Enters a 9 in one of the entry fields.
MAIN	+	Enters a + (plus) in the operator field.
MAIN	-	Enters a – (minus) in the operator field.
MAIN	*	Enters a * (multiply) in the operator field.
MAIN	=	Enters the current count item into the item list.
MAIN	/	Map transition. Changes to the SITE map. Since there are no other keys available we had to use one of them for changing maps. And since division probably won't be used much we chose this one. Division is still available, but you'll need to change to the SITE map to get it (see below).
SITE ¹⁹		Contains keys related to the selection of site elements etc. You'll notice that we've configured almost all of them to automatically change back to the MAIN map, because this is typically what you'll want to do after using one of these functions.
SITE	7	Select a location. Then automatically change back to the MAIN map.
SITE	8	Select a section in the current location. Then automatically change back to the MAIN map.
SITE	9	Add a new shelf in the current section and go to that shelf. Then automatically change back to the MAIN map.
SITE	4	Select a department. Then automatically change back to the MAIN map.
SITE	6	Go up one shelf. Then automatically change back to the MAIN map.
SITE	3	Go down one shelf. Then automatically change back to the MAIN map.

19 If you define your own key maps you can organize them however you want. You do not have to divide them in the same way we do here.

Key Map	Key	Function
SITE	5	Submit the counted items for synchronization. This totals all items per department and gets it ready for synchronization. Once this is done we call it pending data. This also takes you out of the section you were currently counting. Normally, you'd do this after finishing a section, although you can do it more or less frequently if desired.
SITE	=	Synchronize all pending data. That is, send all data submitted that has not already been sent to the server.
SITE	.	Delete one item from the list. Then automatically change back to the MAIN map.
SITE	0	Clear all items from the list. Then automatically change back to the MAIN map.
SITE	*	Enters a / (divide) in the operator field. Then automatically change back to the MAIN map. No, this is not a typo. We're using the '/' key for changing to the next map.
SITE	/	Change to the DISPLAY map. We don't have to use the same key to change maps in each map, but we did it this way so that it's easier to remember.
DISPLAY	Contains keys related to displaying lists of counted items, or the list of locations, or departments. Useful for checking out what you have to choose from, but probably not something you'll use frequently during a count.	
DISPLAY	1	Display all counted items for the current shelf in the items list.
DISPLAY	7	Display all locations in the items list.
DISPLAY	4	Display all departments in the items list.
DISPLAY	5	Display all departments attached to the current section in the items list.
DISPLAY	6	Page up the items list.
DISPLAY	3	Page down the items list.
DISPLAY	/	Change to the MAIN map.

Table 2: Sample key map

Let's go through the counting process as we did above, but this time specifying which keys are used along the way.²⁰ Recall, here is the typical count procedure:

1. Select a location.
2. Select a section.

²⁰ You'll want to keep referring back to the map table for reference as you read through this process.

3. Select or create a shelf.
4. Select a department/code.
5. Count an item on the shelf and enter it. Do this by entering any number using the built in calculator.
6. Repeat 5 until all items for the shelf are counted.
7. When finished counting all of the items on this shelf, select (or create) the next shelf (that is, go to step 3).
8. When finished counting all of the shelves in this section, synchronize the data, and select the next section (that is, go to step 2).
9. When finished counting all of the sections in this location, select the next location (that is, go to step 1).

let's describe in more detail how the keys would be used for this multi-map.

Change Maps

The map you're currently using is displayed in the *key map bar* (see Illustration 5: iCounter layout). To change to different map press the map transition key for the current map. In our case, the map transition keys for all maps are the same, the slash '/'. Each time you press this key you change key maps.

Select Location

Let's say you want to select location 3. Assuming you're in the MAIN map, press '3', then press '/' (which changes to the SITE map), then '7' which means select the given location. Now you see location 7 appear in the location field. Note also, that now you're back in the MAIN map, since '7' in the SITE map automatically changes back to the MAIN map.

Select Section

Let's say you want to select section 2. Assuming you're in the MAIN map, press '2', then press '/' (which changes to the SITE map), then '8' which means select the given section. Now you see section 2 appear in the section field. Note also, that now you're back in the MAIN map, since '8' in the SITE map automatically changes back to the MAIN map.

Create a Shelf

You need to do this if the current section has no shelves defined or you need to add a new shelf to the existing ones. Assuming you're in the MAIN map, press '/' (which changes to the SITE map), then '9' which means add a new shelf. If there were 2 shelves before there are now 3 and you see shelf 3/3 appear in the shelf field. You are now positioned at shelf 3. Note also, that now you're back in the MAIN map, since '9' in the SITE map automatically changes back to the MAIN map.

Select a Shelf

If you already have shelves created, you may simply need to select a specific one, instead of create a new one. For shelves we do it a bit differently – by moving up or down – instead of specifying a specific shelf number, since this seems to be more in line with counting shelf by shelf

To move *up* to the next shelf (assuming it exists), press '/' (which changes to the SITE map), then '6' which means go up one shelf. Assuming you were at shelf 2, now you're now at shelf 3.

To move *down* to the previous shelf (assuming you're not already at the lowest shelf 1), press '/' (which changes to the SITE map), then '3' which means go down one shelf. Assuming you were at shelf 2, now you're now at shelf 1.

Select Department

For this example, let's assume you're doing a *retail* count, and you want to select department 101. Assuming you're in the MAIN map, press '101', then press '/' (which changes to the SITE map), then '4' which means select the given department. Now you see section department 101 appear in the department field. Note also, that now you're back in the MAIN map, since '4' in the SITE map automatically changes back to the MAIN map.

Count the Item

You do this the same as before. Simply enter the retail value of the items using the numeric and math operator keys. Then to enter it into the item list simply hit '='. You can continue counting items on the current shelf this way until the shelf is fully counted. Then you either create or move to the next shelf, and count that one.

Synchronize

Before actually synchronizing you must submit the items counted. Assuming you're in the MAIN map, press '/' (which changes to the SITE map), then '5' which means submit counted data. Now you see empty section, shelf, and department fields. Note also, that now you're be back at the MAIN map, since '5' in the SITE map automatically changes back to the MAIN map.

Now you can synchronize the pending data (all unsynchronized submitted data).²¹ Assuming you're in the MAIN map, press '/' (which changes to the SITE map), then '=' which means synchronize all pending data. You should see a short lived window showing bytes being transferred, then an audible “ding” indicating that synchronization is complete, and a “Server confirms update” message in the status bar.

To continue with the count you'll have to select the appropriate location, section, shelf, and department as described above.

²¹ You don't have to synchronize every time after you submit data, but it is a a good idea since it keeps the server up to date better.

Displaying Lists

You may want to see the list of locations or departments available in current count. To view the list of locations, change to the SITE map by pressing '/' twice (once to go from MAIN to SITE, and once to go from SITE to DISPLAY), then press '7'. To view the list of all departments press '4' in the SITE map.

To display the list of items for the current shelf, press '1' in the SITE map. This is the normal view when counting items. Note that the latest items appear on top of the list.

If there are more than 8 or so items they won't all fit on one screen. To page down press '3' or to page up press '6' in the the SITE map.

Delete an Entry

You can delete a counted entry from the list by selecting the entry number (shown on the left of the screen) and hitting the delete entry key '.' in the SITE map. This is useful if you've made a mistake and catch it before submitting. Once you've submitted it's too late, although you can correct such things by doing corresponding negative entries, or alternatively clearing all pending data. Only do the latter if you're sure you're willing to lose all of the count data you've entered since your last synchronization.

6 Conclusion

Hopefully, this guide has given you a basic understanding of how to use iCounter enough to get you started. It hasn't covered every possible function so if you have any questions please do not hesitate to contact us as mentioned at the beginning of the guide.