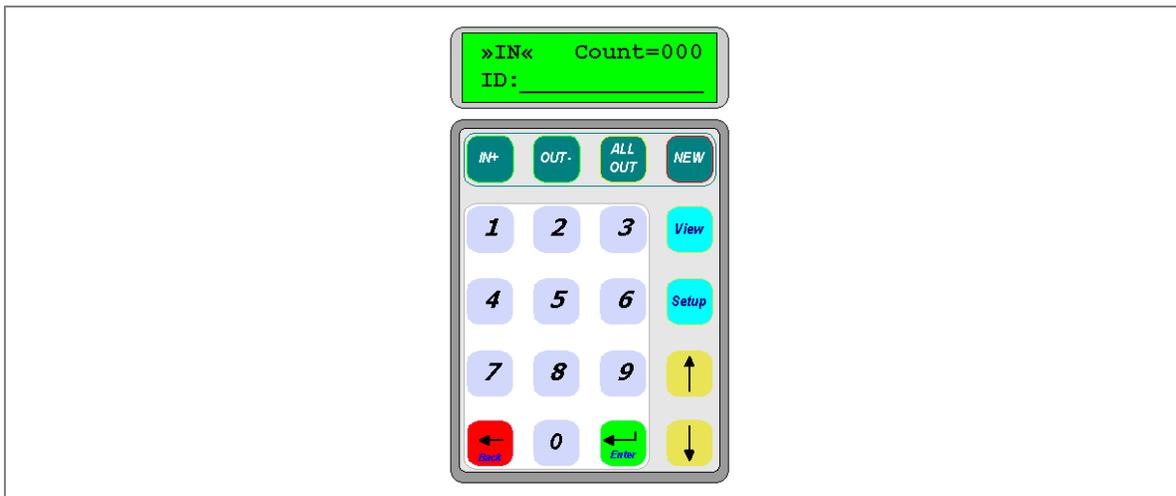


GENOVATION



iCount User Guide

**Preliminary
August 2009**

Subject to change without notice

WARRANTY REPAIR SERVICE AND LICENSE

Genovation, Incorporated ("Genovation") warrants this product to be in good working order and free of defects in materials and workmanship under normal use for a period of **one year** from the date of purchase. Any implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to a period of thirty (30) days from date of purchase. Any abuse including opening the case will void the warranty. Your sole remedy and Genovation's entire liability for this product will be repair or replacement as provided for above, or at Genovation's option, the refund of your purchase price. **A RETURN MATERIAL AUTHORIZATION (RMA) number is absolutely required before returning a product. Any shipment received without an RMA will be returned unopened. Please contact Customer Service for instructions before returning any product.** Genovation makes software available and licenses its use to you for world wide for use.

FCC CERTIFICATION

This product has been certified to comply with FCC, EC, TUV and other test standards. See label on the product for confirmation.

FCC CERTIFICATION REQUIRED STATEMENT WARNING:

This equipment has been certified to comply with the limits for a Class B Computing Device, pursuant to Subpart J of Part 15 of the FCC rules. Only peripherals (computer, computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this device. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

NOTE: This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for Class B computing devices in accordance with the specifications in Subpart J of part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off or on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antennas
- Relocate the computer with respect to the receiver
- Move the computer away from the receiver
- Plug the computer and receiver into different circuits

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402. (Stock #004-000-00345-4).

TECHNICAL SUPPORT

If you require technical support or if you wish to make suggestions about the product, don't hesitate to contact us. We can be reached Monday through Friday from 7:30 AM to 11:00 AM and from 11:30 AM to 4:00 PM Pacific Time. If the customer support lines are busy or if you are calling after hours, leave a message or send a FAX or E-MAIL and a representative will respond, typically within 24 hours.

VOICE NUMBER: (949) 833-3355 ext. 112
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1: Introduction

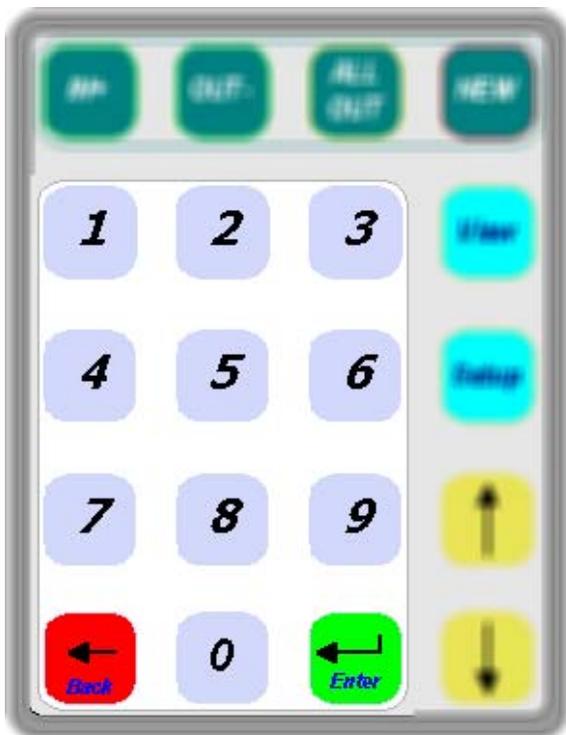
The Genovation iCount is the perfect device for keeping track of students, employees, attendees and riders as they utilize classroom space or ride on buses. The iCount is available with many ID reading options to fit your circumstances and budget:

- Front-firing barcode scanner for badges and cards
- RFID reader for cards, badges and tags
- Magnetic card swipe (special order only)
- Barcode card swipe
- External reader of your choosing
- Manual ID or PIN entry using the keypad

The iCount is a user-friendly solution that operates standalone (only 5v DC is required), shows the running headcount (tally) and will keep track of who is “IN” and who is “OUT” including their ID numbers. Child or senior left behind? Never again! No PC is required, however the unit can connect to a PC and upload the information to a document or spreadsheet.

The unit comes supplied with cables for both USB and RS232 PC connections and a 120v AC to 5v DC wall adapter. Optional power adapters are available for running the iCount from your 12v vehicle power. An Ethernet option is also available.

Understanding the Keypad

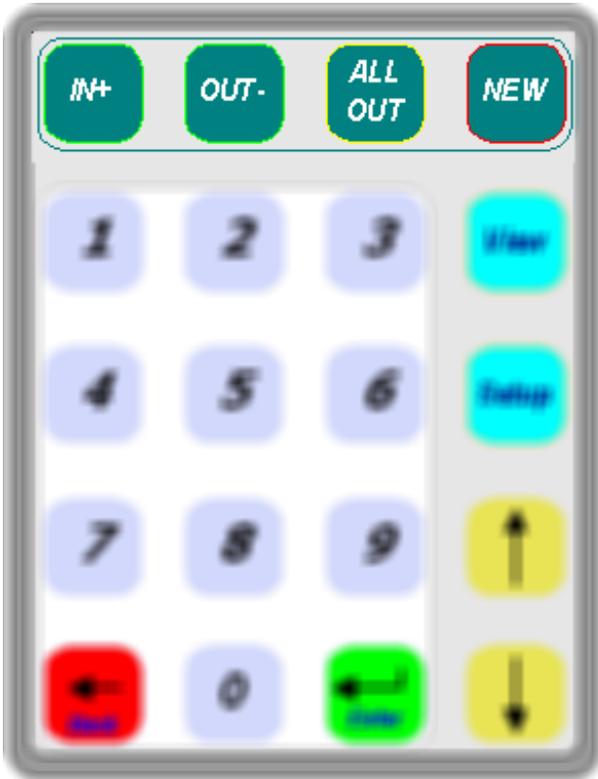


The Numeric Key Section:

The numeric key section allows ID numbers to be entered manually (for instance if someone has lost their ID card).

The **Back** key allows for correcting mistakes and also works as an **Escape** key when viewing the iCount menus.

The **Enter** key is used to accept the user input.



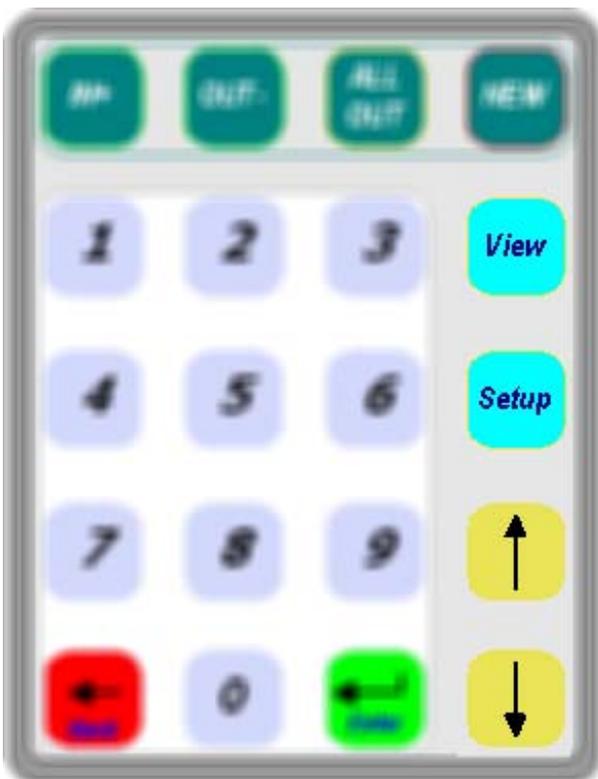
The In/Out Mode Section:

The **IN** (plus) key is used when people are entering the room or boarding the bus. After pressing IN all subsequent IDs are added to the attendance record. Once a person has checked in, they may not check in again (unless they check out first).

The **OUT** (minus) key is used when people are leaving the room or exiting the bus. Only people that have checked in can check out.

The **ALL OUT** key is used to quickly empty the room or vehicle. All IDs are instantly set as OUT.

The **NEW** key erases all data and starts fresh. If you need to save the data you can upload it to a PC.



The Menu Key Section:

The **View** key allows the user to review the ID numbers of users that are checked in or out. In addition the record can be sent to a PC.

The **Setup** key allows an operator to adjust the settings in the device to match the desired operating conditions.

The **Up** and **Down** keys are used to navigate the menus.

NOTE: The IN/OUT keys and the Menu key sections can be password protected

Understanding the LCD

In normal operation the iCount device is either checking people IN or checking them OUT. During these times the display holds three important pieces of information. First, the top line of the display shows the IN or OUT state. Second, it shows the number of people that have checked in, but have not checked out. This is the headcount or tally number. Finally, the bottom line of the LCD is used if you need to enter an ID number manually.



When the View or Setup menus are utilized the display changes according to the desired function. See later in the manual for more information about the menus.

Understanding the LEDs

Depending on your iCount model number, there may also be two LED indicators. When the iCount is checking people IN, the left-most (**green**) LED is illuminated. When the iCount is checking people OUT, the right-most (**red**) LED is illuminated.

Understanding the Beeper

The iCount uses an audible beeper to provide feedback to the user. There are several different beep patterns that you should be familiar with.

- One long beep indicates a user error (E.g. invalid key).
- Two medium beeps indicate that a pass-code is required.
- Three short beeps indicate a successful operation (E.g. card scan).

Turning the iCount On

There is no power switch on the iCount. The unit will power up immediately when the cable is plugged in. When power is interrupted the iCount will remember it's previous state including the ID numbers of those checked in or out.

2. Checking IN and OUT

From the factory, all of the iCount keys and operations are enabled. Please review the manual section on Menus in case you prefer to password protect some of the iCount functions to prevent malicious operation of the unit.

Checking IN

If the iCount is not already set to »IN« (see the display), press the **IN+** key to change the iCount mode to »IN«. To check a person in, simply read/swipe their card or type the ID number on the keypad using the **0** to **9** keys and press **Enter**. For each person checked in you should see the Count number increment by one.

Once a person has checked in, they may not check in again (unless they check out first). The standard model will hold 500 IDs. Extra memory for 999 users is available as an option.

The ID number can be any value, but it must be between 3 and 14 digits (characters) in length. If you are using the keypad, you can make corrections using the **Back** key. Once you have keyed the correct number in, press **Enter** to accept the ID or PIN number.

If **Hide User ID Numbers** has been turned on, then you will see stars (****) instead of the user ID or PIN number.

Checking OUT

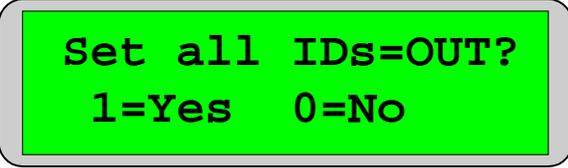
If the iCount is not already set to «OUT» (see the display), press the **OUT-** key to change the iCount mode to «OUT». Only IDs that have been checked in can check out. Use the same procedure as above to read a card or manually enter an ID. For each person checked out, you should see the Count number decrement by one. When everyone is checked out the count should be zero.

The ID number can be any value, but it must be between 3 and 14 digits (characters) in length. If you are using the keypad, you can make corrections using the **Back** key. Once you have keyed the correct number in, press **Enter** to accept the ID or PIN number.

If **Hide User ID Numbers** has been turned on, then you will see stars (****) instead of the user ID or PIN number.

Using ALL OUT

The **ALL OUT** key is used to set all of the ID numbers stored in the device to OUT. For instance, on arrival at a museum for a field trip you might prefer to use the ALL OUT key when all the students exit the bus at once, rather than have each individual check out. Obviously you would then need to inspect the bus to make sure no one was still on board.



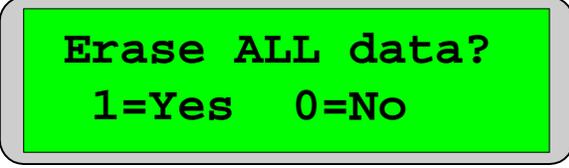
Set all IDs=OUT?
1=Yes 0=No

You might also want to use this when clearing out a classroom. You would probably not want to use this on a bus route where only a few of the students exit the bus as a time. In this case you would use the iCount to count off the students as they leave.

This operation does not erase any of the IDs. The people may check back in and new people may be added to the list of IDs already contained in the device.

Using NEW

The **NEW** key is used to erase all of the IDs from the record. The iCount will start fresh with a count of 0 and new IDs stored in the device. If there are no IDs in the device you cannot View or Print any data since there is no data to view or print.



Erase ALL data?
1=Yes 0=No

NOTE: You should use this whenever possible, in order to keep the list of IDs from expanding unnecessarily (typically at least once a day or more).

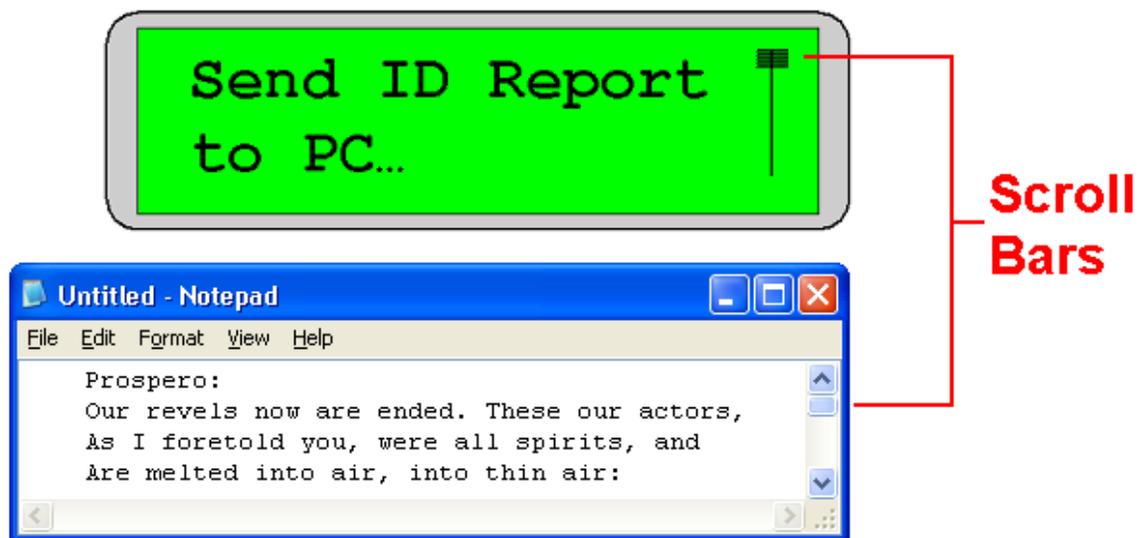
3. Using the View/Report Menus

From the factory, all of the iCount keys and operations are enabled. Please review the manual section on Menus in case you prefer to password protect some of the iCount functions to prevent malicious operation of the unit.

The View Menu Items

Press the **View** key. If **Hide User ID Numbers** has been turned on enter one of your two pass-codes or scan a pass card. Pass-codes are described in the Setup Menu section of this document.

Once the View menu is open, you can select any of the six menu items to read the current status of the headcount and the iCount itself. Like a PC, the menus display a “scroll bar” along the right hand side to help you navigate the list of menu items.



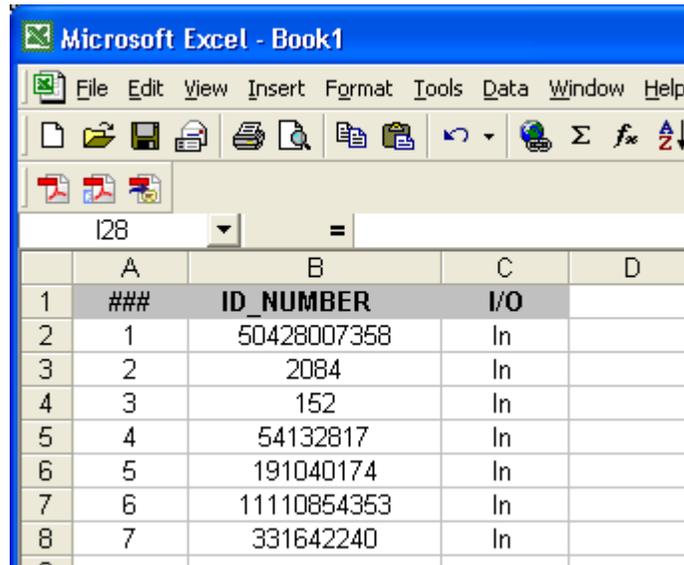
The menu items in the View area are:

- Send ID Report to PC
- List All IDs (both In and Out).
- List Present (only those In)
- List Absent (only those Out)
- Show iCount firmware version
- Show which iCount PC cable is attached

Send ID Report to PC

Make sure the iCount is connected to the PC using one of the supplied cables (USB, RS-232 or Ethernet). If you are using the USB cable, the report will be sent to the PC as if a human had typed the information in on the keyboard. If you are using the RS232 cable or Ethernet, then you should be running special software that communicates with the iCount over a serial port.

USB: You should first open whatever PC application you wish to receive the report (E.g. Notepad or Excel). Press **Enter** to transmit the ID Report to the PC. The iCount will “type” the information into that application. For example:



	A	B	C	D
1	###	ID NUMBER	I/O	
2	1	50428007358	In	
3	2	2084	In	
4	3	152	In	
5	4	54132817	In	
6	5	191040174	In	
7	6	11110854353	In	
8	7	331642240	In	

Note: If you are using Excel, you should format the cells to TEXT.

RS232 and Ethernet: Refer to the documentation supplied with your software vendor. The iCount will transmit the information to the PC in ASCII format using communication parameters of 9600 baud, 8 data bits and no parity. Ethernet makes use of a virtual com port or other network methods.

After the report finishes there will be three short beeps.

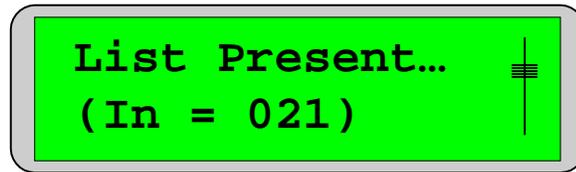
List All IDs

The menu item will show the total number of all IDs that the iCount has registered (In and/or Out). If you press **Enter**, then the iCount will display the actual ID numbers themselves and their status (In/Out). You can peruse the list using the **up** and **down** arrow keys.

Press **Back** to return to the main View menu. Press **Back** again to return to the normal running mode.

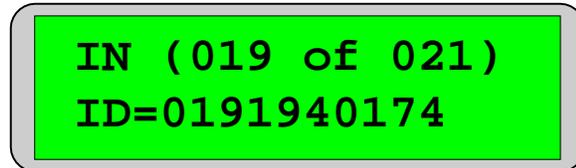
List Present

This menu item will show the total number of all IDs that have checked In, but have not checked Out.



If you press **Enter**, then the iCount will display the actual ID numbers themselves and you can peruse the list using the **Up** and **Down** arrow keys.

Press **Back** to return to the main View menu. Press **Back** again to return to the normal running mode.



List Absent

The menu item will show the total number of all IDs that have checked Out (or more accurately have checked In and Out). If you press **Enter**, then the iCount will display the actual ID numbers themselves and you can peruse the list using the **Up** and **Down** arrow keys.

Press **Back** to return to the main View menu. Press **Back** again to return to the normal running mode.

Firmware Version

This screen shows the version number of the iCount. Contact Genovation regarding firmware updates.

Host Connect

This screen shows which host PC cable type is attached to the iCount. Note that if you are not connected to a PC the screen will still attempt to report a type.

4. Using the Setup Menus

From the factory, all of the iCount keys and operations are enabled. Please review this section in case you prefer to password protect some of the iCount functions to prevent malicious operation of the unit. The pass-codes perform a similar function to the manager's key lock found on a retail cash register.

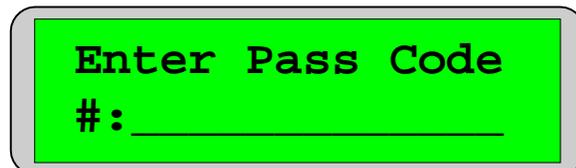
About Pass-Codes

To prevent students or attendees from tampering with the data in the unit, the iCount allows you to optionally password protect three areas of operation on the keypad:

- The **In / Out / All Out / New** keys (the whole top row)
- The **View** menus
- The **Setup** menus

The iCount supports up to two pass-codes and these pass-codes may be numbers keyed in on the keypad or they may be cards scanned with the optional card reader. Like user IDs or PIN numbers, pass-codes can be any value, but they must be between 3 and 14 digits (characters) in length. Note that you must also turn on password protection for whichever of the three areas you wish to protect.

Once a pass-code (or two) is set and an area is password protected, then the operator will be prompted for a pass-code before access to the area is allowed.



The Setup Menu Items

The menu items in the Setup area are:

- Setup Pass-Code 1
- Setup Pass-Code 2
- Protect In / Out / All Out / New keys (on/off)
- Protect View menu (on/off)
- Protect Setup menu (on/off)
- Hide (mask) user ID/PIN numbers (yes/no)

Setup Pass-Code 1

This screen allows you to setup pass-code # 1 the first time (“to-do”) or to change it (“re-do”).

The pass-code can be a number input using the number pad or it can be a card or badge scanned with an optional reader. Once the new pass-code is accepted, the iCount returns to the main setup menu.

Setup Pass
Code 1 [TODO]

Pass Code/Card 1
#: _____

Setup Pass-Code 2

This screen allows you to setup pass-code # 2 the first time (“to-do”) or to change it (“re-do”).

The pass-code can be a number input using the number pad or it can be a card or badge scanned with an optional reader. Once the new pass-code is accepted, the iCount returns to the main setup menu.

Setup Pass
Code 2 [TODO]

Pass Code/Card 2
#: _____

Protect In/Out Menu

By enabling protection on the In/Out menu, you are locking the top row of keys and requiring a pass-code to gain access to any of them. Either successful pass-code will allow the operator to change the iCount mode from IN to OUT, from OUT to IN, to set the headcount to OUT (ALL OUT) or to erase everything (NEW).

Press **Enter** to change the setting. You will be presented with a screen that accepts a **1** key to turn the protection On or a **0** key to turn the protection Off. You do not need to press Enter again. As soon as you press 1 or 0, the value is set.

Protect In/Out
Menu [OFF]

Protect In/Out?
1=On 0=Off _

Protect View Menu

In a similar manner you can selectively allow unrestricted access or require a pass-code in order to operate the View key.



Protect Setup Menu

In a similar manner you can selectively allow unrestricted access or require a pass-code in order to operate the Setup key.

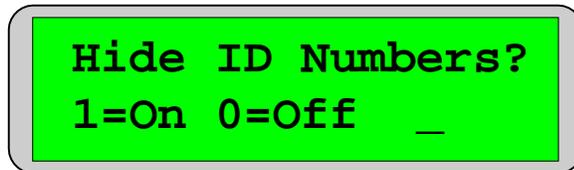


Hide User IDs

You are probably familiar with the PIN-pads found at check-out counters everywhere. These devices hide your PIN number by displaying star characters (****) instead of the number you are entering. This is commonly called PIN-masking. You can turn this feature on for iCount as well.



Press **Enter** to change the setting. You will be presented with a screen that accepts a **1** key to turn the star characters On (hiding the numbers) or a **0** key to turn the star characters Off (revealing the numbers). You do not need to press Enter again. As soon as you press 1 or 0, the value is set.



Customization Is Standard

The iCount product line has been designed with customization in mind. Contact our sales or technical support staff for full-custom or semi-custom variations of our products.

5. RS-232 Operation

This section is for Application developers. It describes how the iCount data can be accessed remotely over a serial port.

Serial Port Settings

A host PC can communicate with the iCount over an RS-232 communications (COM) port or the optional Ethernet connection. The required settings for RS-232 are:

- o 9600 baud
- o 8 data bits
- o no parity
- o one stop bit.

Remote iCount Command Set

Version 1.00 supports the following commands. All other command values are reserved for factory use or future expansion. All command are prefixed with the '@' character (0x40)

Command Group	Command Byte (ASCII / hex)	Command Description
General	E / 0x45	Echo on/off @E0 or @E1
Buzzer	B / 0x42	Beep @B<length_byte>
Data	e / 0x65	Erase all data @e^A
	r / 0x72	get Report @r
Factory Control	^D / 0x04	Restart firmware @^D
	^E / 0x05	Get connected port type ('R'/'U') @^E
	^F / 0x06	Get fixed version string (16 chars) @^F
	^H / 0x08	Get firmware version byte (i.e. 0x10) @^H

The iCount also supports ASCII BEL (0x07 = beep)

It takes approximately 1¼ seconds to transmit a data record containing 50 ID numbers.

4: Technical Specifications

iCount 801

Specifications	
Mechanical Data:	
Life Cycles	5 X 10 ⁷
Key Type	Cherry, Gold Contact
Operating Force	0.686N {79gf}
Color	Dark grey
Number of Keys	20 with relegendable keycaps

Electrical Data:	
Power Supply	5V _{DC} , <30ma RS232 adapter supplied, USB bus powered
Key Roll-Over	2-key
Memory	FLASH non-volatile, >100 year retention

LCD Display:	
Type	2x16 Super-Twist "STN"
Backlight	LED

Dimensions:	
Length x Width x Height	15.5cm x 9.6cm x 3.5cm (6.1" x 3.75" x 1.5")

Environmental:	
Operating Temperature	0 to 70 degrees C (32 to 158 degrees F)
Operating Humidity	0% to 98% non-condensing
FCC Rating	Class B Device

Weight:	
Keypad	0.3kg (0.65lbs)
Single Keypad Ship Weight	1.0kg (2.0lbs)

Interface: RS232	
Type	Serial RS232C compliant, FULL duplex
Cable Length	6ft (2.0m) (Detachable via RJ-45 connection)
Connection	RJ-45 to DB-9 female

Interface: USB	
Type	USB 1.1 & 2.0 compliant bus powered
Cable Length	6ft (2.0m) (Detachable via RJ-45 connection)
Connection	RJ-45 to USB standard Type A

Ordering Information	
Part Number	Description
iCount 801	iCount firmware installed in MiniTerm 901

iCount 807

Specifications	
Mechanical Data:	
Life Cycles	2 X 10 ⁷
Key Type	Tactile sealed membrane (20,000,000+ operations)
Operating Force	0.686N{79gf}
Color	Two tone, Light and Dark gray
Number of Keys	20 - relegendable membrane
Electrical Data:	
Power Supply	5V _{DC} , <30ma RS232 adapter supplied, USB bus powered
Key Roll-Over	2-key
Memory	FLASH+EEPROM non-volatile, >100 year retention
LCD Display:	
Type	2x16 Super-Twist "STN"
Backlight	Yes (LED)
Dimensions:	
Length x Width x Height	18.5cm x 15.0cm x 5.3cm (7.25" x 6.0" x 2.25")
Environmental:	
Operating Temperature	0 to 70 degrees C (32 to 158 degrees F)
Operating Humidity	0% to 98% non-condensing
FCC Rating	Class B Device
Weight:	
Keypad	0.3kg (0.65lbs)
Single Keypad Ship Weight	1.0kg (2.0lbs)
Interface: RS232	
Type	Serial RS232C compliant, FULL duplex
Cable Length	6ft (2.0m) (Detachable via RJ-45 connection)
Connection	RJ-45 to DB-9 female
Interface: USB	
Type	USB 1.1 & 2.0 compliant bus powered
Cable Length	6ft (2.0m) (Detachable via RJ-45 connection)
Connection	RJ-45 to USB standard Type A
Interface: Ethernet Device Server	
Type	10Base, T-100Base-TX (Auto-Sensing)
Cable Length	Not included
Connection	RJ-45
Protocols	TCP/IP, UDP/IP, ARP, ICMP, SNMP, TFTP, Telnet, DHCP, BOOTP, HTTP, and AutoIP
Internal Device Options:	
Barcode Scanner	Front mounted, Visible RED Beam
Slotted Barcode Reader	Infrared swipe reader for Barcode ID cards
Magnetic Card Reader	For reading ATM, credit cards, and magnetic cards
RFID Card / Label Reader	Reads RFID cards and RFID Labels
Fingerprint ID Reader	Scans and encodes fingerprints into usable data
RS232 Ext. Wedge Device	Allows external RS232 serial device sharing

Ordering Information	
Part Number	Description
iCount 807	iCount firmware installed in MiniTerm 907