

CipherLab User Guide

1800 Utility

for 8 Series Mobile Computers
(8200/8400/8700 Series with 160 x 160 Pixels
Display Resolution)

Version 2.00



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RELEASE NOTES

Version	Date	Notes
2.00	Dec. 18, 2014	<ul style="list-style-type: none">▶ Modified: 1.3, CH. 2, 2.1, 2.2, 4.1, 4.3, 5.1, 5.2, 6.1~6.9 – screenshot updated▶ Modified: 3.6 System Voltage updated▶ New: 6.9 Output via USB added▶ New: CH. 7 Host Settings added
1.00	Sep. 10, 2012	Initial release

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INTRODUCTION

This utility enables users to configure the 1800 RFID reader through 8200/8400/8700 series mobile computers. The 1800 RFID reader is a UHF reader able to read all EPC tags that conform with EPCglobal UHF Gen2, class 1 tags and ISO 18000-6c.

RFID technology offers some advantages over bar code. The most noticeable are that an RFID tag does not need line of sight to be scanned; RFID tags are scanned at a faster speed than bar code; RFID tags can be written to not only read. These are the main advantages associated with RFID tags in Supply Chain management today while there are many more. This utility makes it easy to configure the 1800 RFID reader so that it can be tailored for specific needs of the task at hand.

We recommend that you read the document thoroughly before use and keep it at hand for quick reference.

Thank you for choosing CipherLab products!


SETUP 1800 UTILITY

The software inside the mobile computer consists of three modules — Kernel, System, and Application; each has a function menu. For more information, please refer to 8 series Programming Manual. In this guide we will introduce how to use 1800 Utility to configure the 1800 RFID reader.

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1.1 LOAD PROGRAM

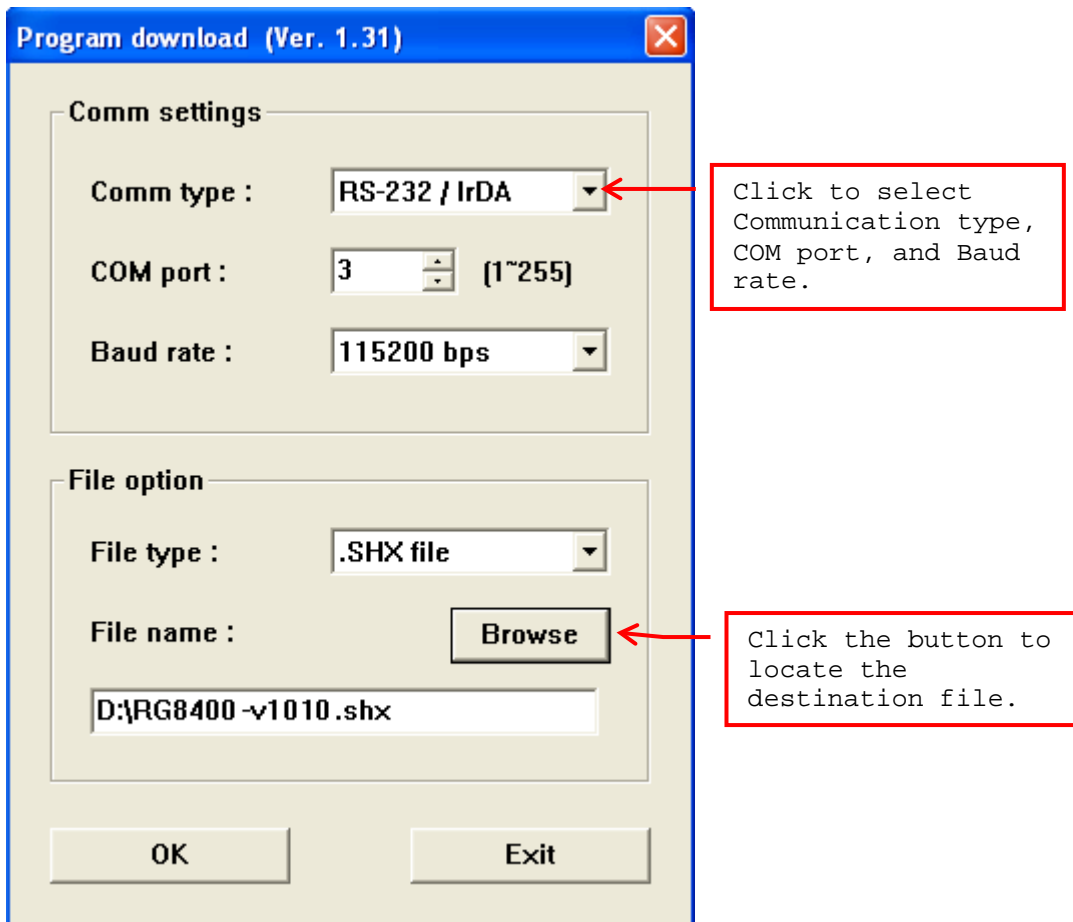
Before using 1800 Utility to configure the 1800 RFID reader, you have to load the program that corresponds to the specified 8 Series device (e.g. the **RG8400-v1xxx.shx** program file is for the 8400 mobile computer). Go to **System menu** by pressing [7]+[9]+  [Power]. Select **6.Load Program** to load related program with the appropriate interface.




Note: The mobile computer will stay in download mode for approximately 30 seconds.

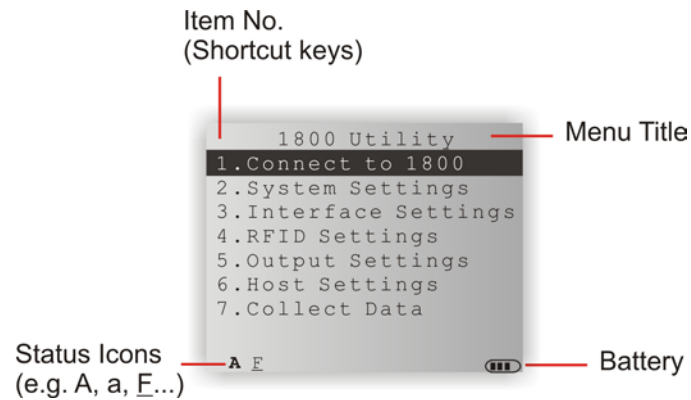
1.2 PROGLOAD

The utility “ProgLoad.exe” is provided for you to download a program (*.SHX) to the mobile computer. The figure illustrated below is the example to download the RG8400-v1xxx.shx file to 8400 for 1800 Utility configuration.





1.3 OPERATION

After finishing the download, power off the mobile computer, and press  to power on the mobile computer again. The 1800 Utility main menu will appear as below:



When a menu is displayed, you may select an item by either of the following ways:

- ▶ Press the arrow keys  [Up]  [Down] to move the highlight bar.
- ▶ Press the number key that corresponds to the item number.
- ▶ Follow the on-screen instructions to change a specific setting, or press [ESC] to return to a previous page or menu.

CONNECTING TO 1800

Once the 1800 configuration utility program is loaded into your mobile computer it will run on power-up and the following menu will be displayed.

How to access 1800 Utility?


- 1) Turn off the mobile computer.
- 2) Press [Power].



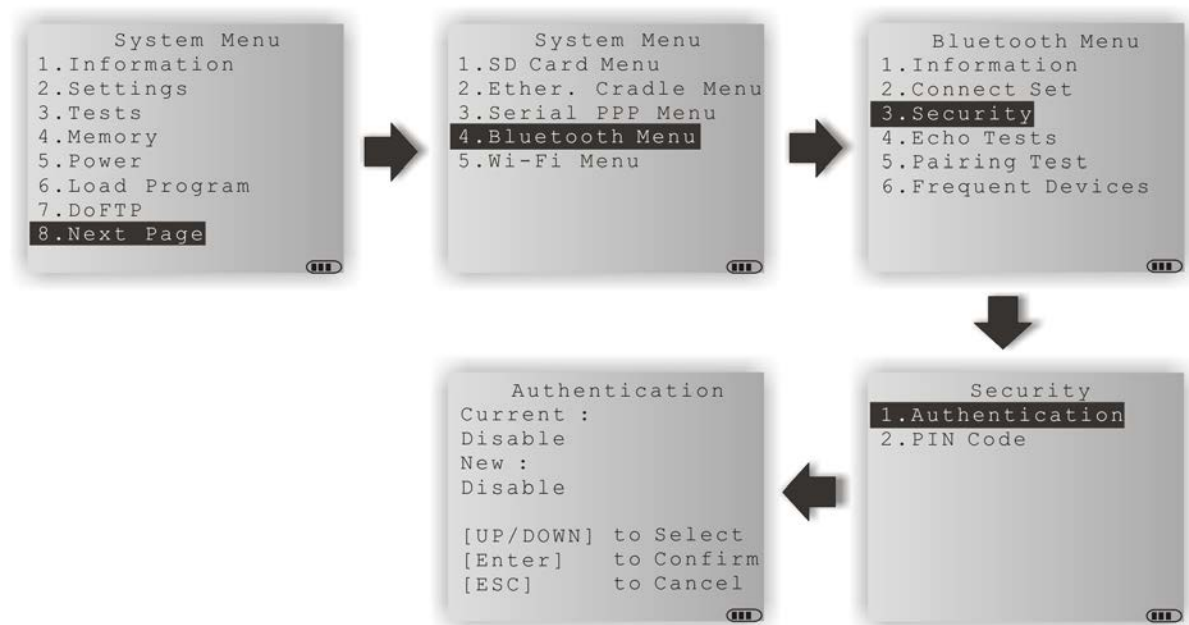
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2.1 BEFORE CONNECTING

The authentication status between 8400 and 1800 RFID readers must be the same before creating a *Bluetooth*[®] connection. Go to **System menu** by pressing <7>+<9>+ <power> keys. Select **8. Next Page** | **4. Bluetooth Menu** | **3. Security** | **1. Authentication** to disable security.


Note: The default value for 1800 RFID reader authentication is disabled; however, the value on 8400 is enabled.

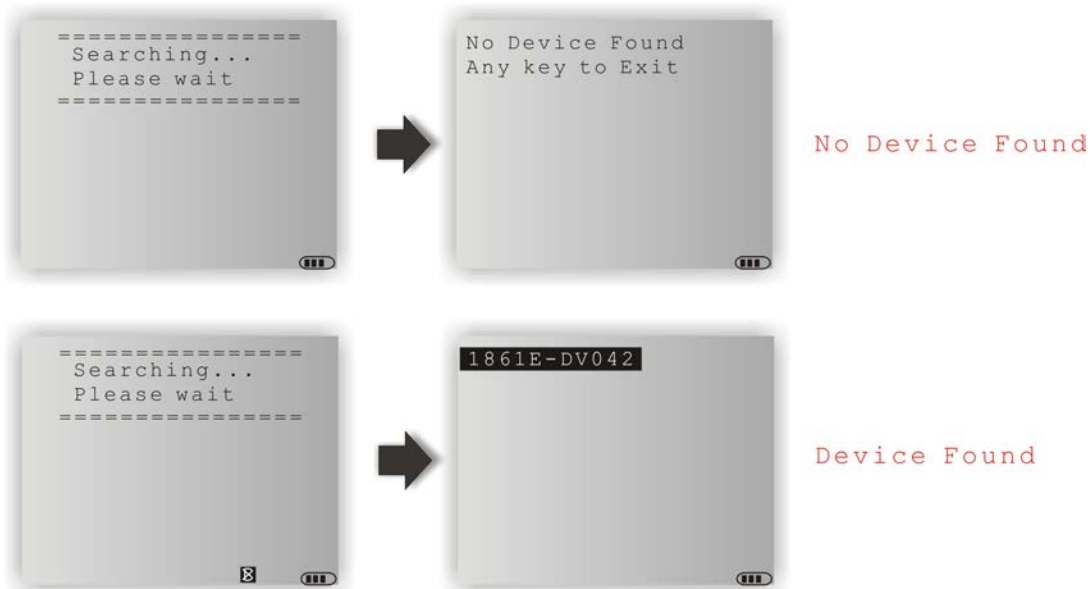


2.2 SEARCHING FOR DEVICE

Configure 1800 RFID reader via supplied utility, you have to inquire 1800 RFID reader firstly and then connect to it. Power on your 8400, go to **1800 Utility** Menu and select **1. Connect to 1800**.



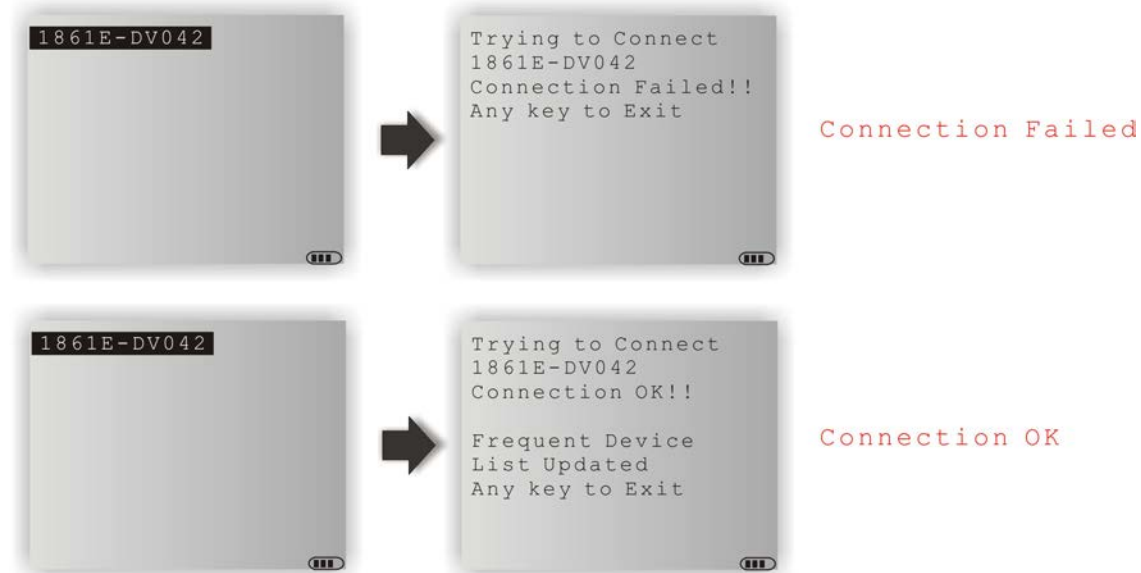
Before searching for device, ensure that 1800 RFID reader is powered on. Go to **1. Connect to 1800 | 1. Search for Device**. If no devices to be found, the “No Device Found” information will be displayed; please press any key to exit and try again. During device searching mode, a  *Bluetooth*® icon will appear and flash at the bottom of the screen.






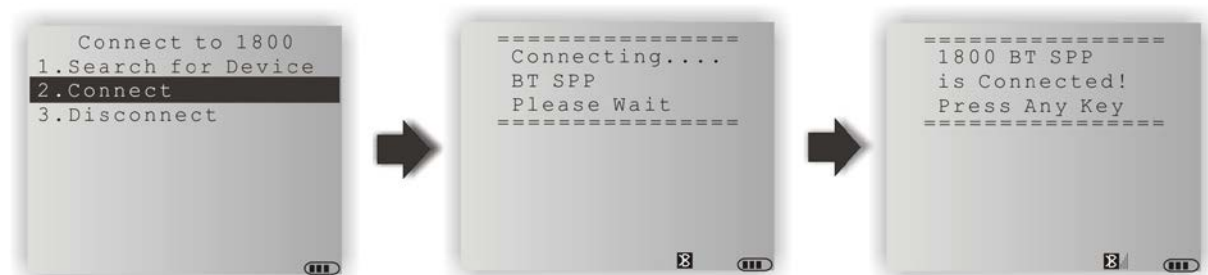
Note: The 1800 Utility application will automatically search for available *Bluetooth*® devices once the [ENTER] key is pressed.

2.3 CONNECT



After finding the device, you can press any key on the keypad to connect to the found 1800 RFID reader directly. Once the connection is established via *Bluetooth®*, the 1800 RFID reader responds with three short beeps with tones ascending from low to high. The LED indicator on the upper right of 8400 will flash blue.

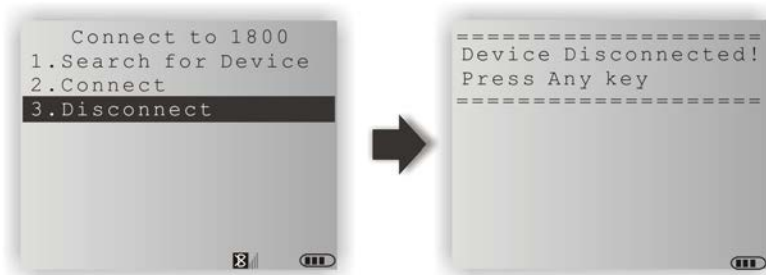


Once a device is found or is on the Frequent Devices list, it can be connected to. Go to **1. Connect to 1800** | **2. Connect** to connect or re-connect the 1800 RFID reader. The  *Bluetooth®* icon will appear and flash. Once connected, the  *Bluetooth®* icon will stop to flash and the  signal bars will appear next to the icon. The more bars, the stronger signal is.



2.4 DISCONNECT

To disconnect a device, go to **1. Connect to 1800** | **3. Disconnect** and press any key on the keypad. When a disconnection occurs, the  *Bluetooth*[®] icon and  signal bars will also disappear.



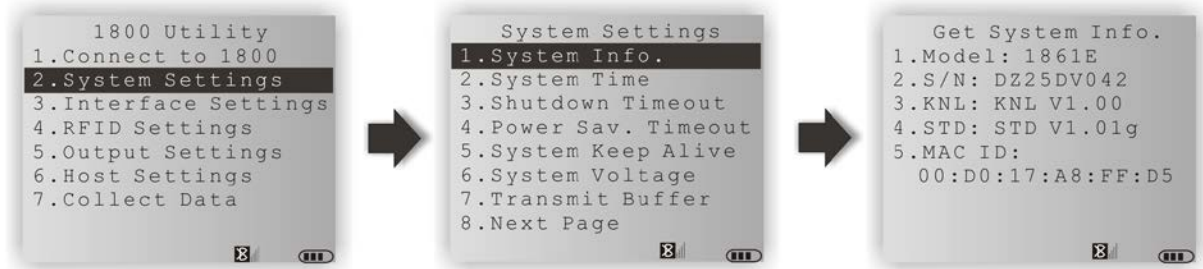
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3.1 SYSTEM INFO.

This option provides important 1800 RFID reader system information to help diagnose the system.

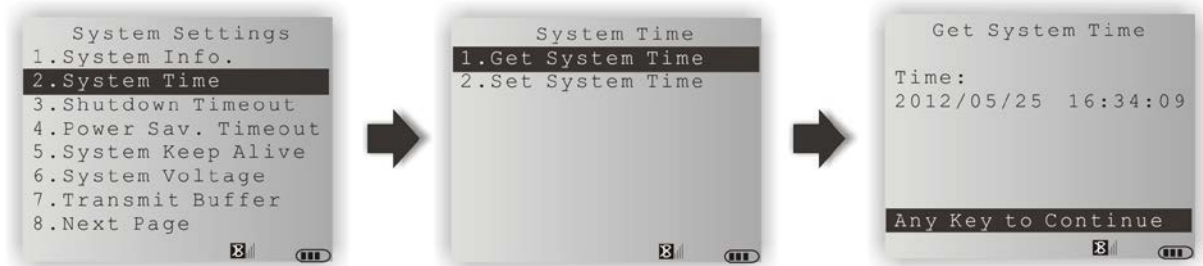


1800 Utility | 2. System Settings | 1. System Info.

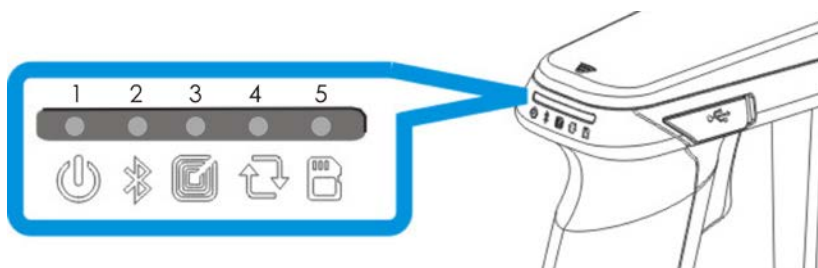
Model	Model name
S/N	A serial number assigned to the 1800 RFID reader
KNL	Kernel version
STD	Application program version
MAC ID	Connected <i>Bluetooth</i> ® MAC address

3.2 SYSTEM TIME

Get and Set the current time. On the System Settings menu, go to **2. System Time | 1. Get System Time** to get the connected 1800 RFID reader current system time. The LED4 on 1800 RFID reader will flash indicating data transmission.



Note: LED4 on 1800 RFID reader is specified for Data Transmission.

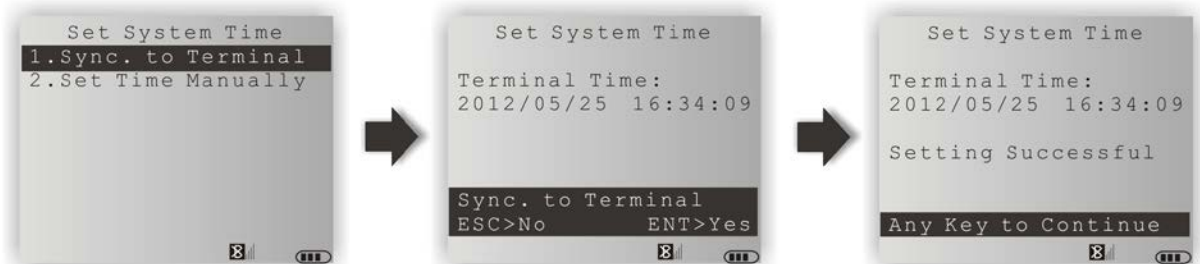


Go to **2. System Time** | **2. Set System Time** to set the connected 1800 RFID reader system time.



3.2.1 SYNC. TO TERMINAL

Select **1. Sync. to Terminal** by pressing [1] to set the 1800 RFID reader current time synchronized with 8400. Then press [ENTER] to accept synchronization or [ESC] to cancel synchronization.



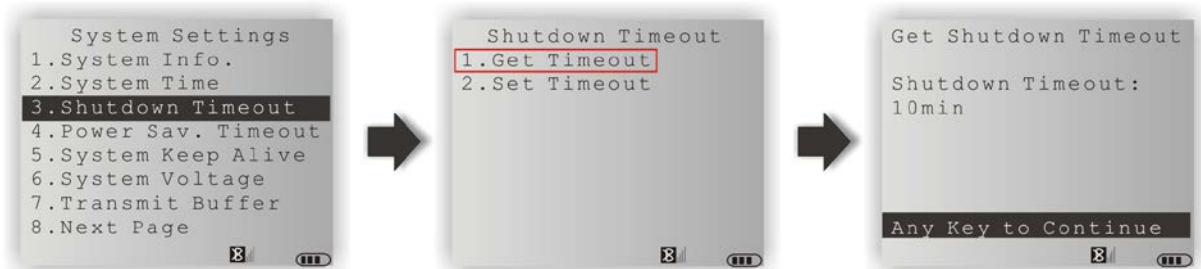
3.2.2 SET TIME MANUALLY

Select **2. Set Time Manually** by pressing [2] to set the 1800 RFID reader time manually. Follow the prompts on-screen to complete the data/time settings. Press [ENTER] to continue other parameters settings.

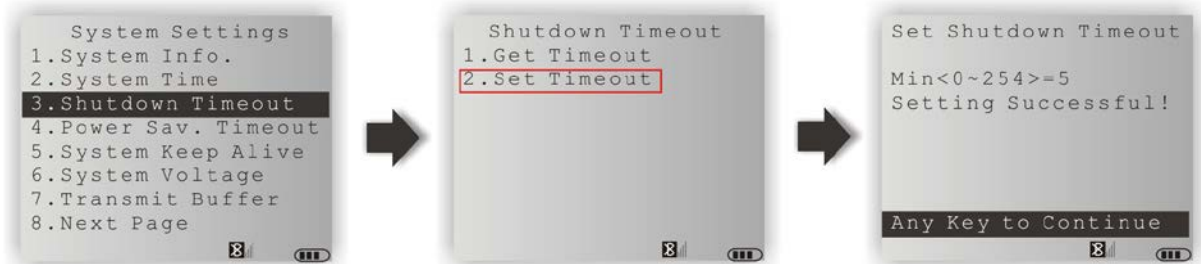


3.3 SHUTDOWN TIMEOUT

Go to **2. System Settings** | **3. Shutdown Timeout** to get or set the connected 1800 RFID reader timeout for shutdown. Select **1. Get Timeout** by pressing [1] to show the current timeout value. By default, the shutdown timeout for 1800 RFID reader is 10 minutes.

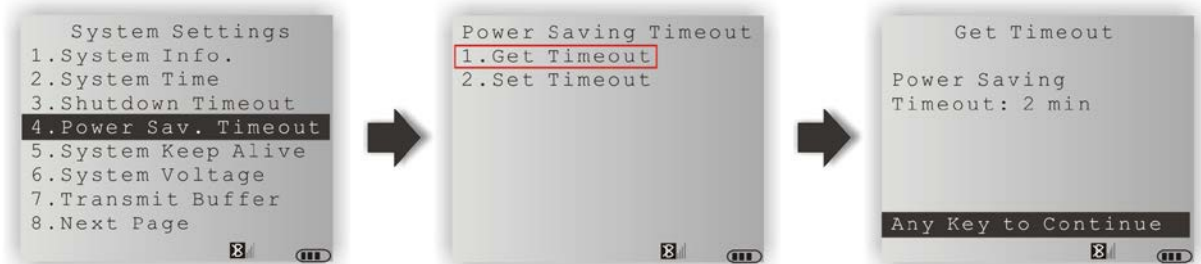


Select **2. Set Timeout** by pressing [2] to set shutdown timeout manually. You have to specify the time interval (0~254 minutes; 0= Disable).



3.4 POWER SAV. TIMEOUT

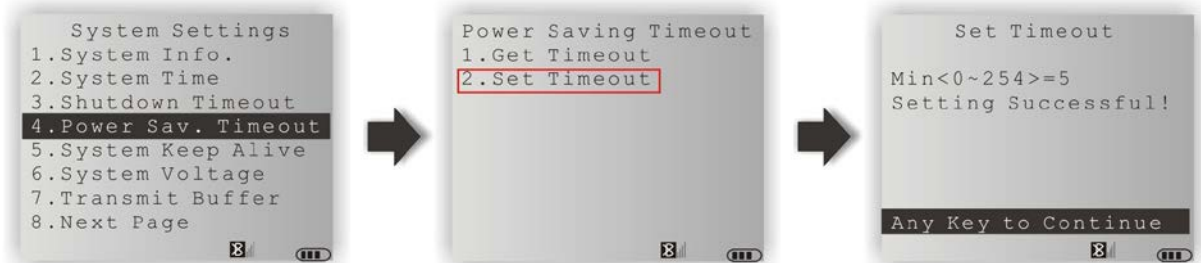
Go to **2. System Settings** | **4. Power Sav. Timeout** to get or set the connected 1800 RFID reader Power Saving Timeout settings. Select **1. Get Timeout** by pressing [1] to display the current timeout value. By default, the power saving timeout is 2 minutes.



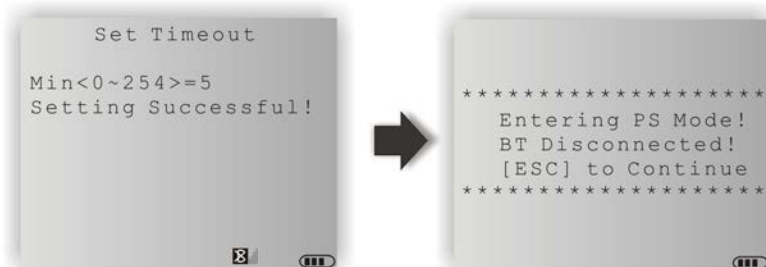
Select **2. Set Timeout** by pressing [2] to set power saving timeout manually. You have to specify the time interval. The timeout value is in the range of 0~254 minutes. When the timeout is set to '0' that means the power saving function is disabled.

Power saving will not activate when one of the following conditions is met:

- ▶ 1800 RFID reader is working.
- ▶ The timeout value of Power Saving is greater than the Shutdown Timeout.

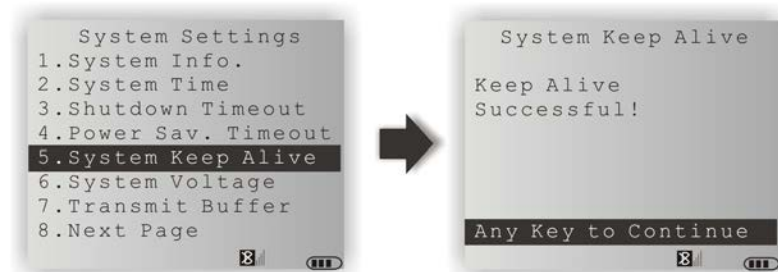


1800 RFID reader will stay active until entering power saving mode. If the timeout is set to 5 minutes as below, the 1800 RFID reader will enter power saving mode when it has been idle for 5 minutes. The *Bluetooth*® connection will also be disconnected once entering power saving mode. Press the trigger to wake up the 1800 RFID reader.



3.5 SYSTEM KEEP ALIVE

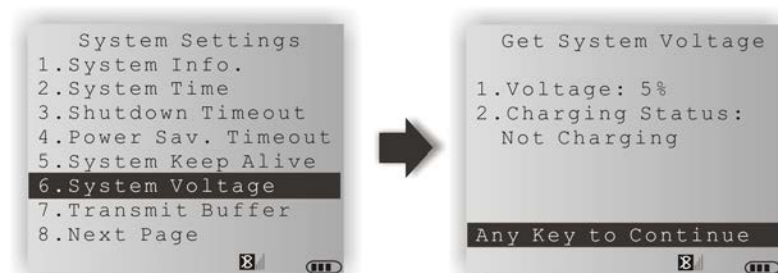
Go to **2. System Settings | 5. System Keep Alive** to keep system alive. If the timeout value for system shutdown and power saving mode are not '0', performing this function will reset the timeout counter, just once, to prevent the 1800 RFID reader from entering power saving mode or shutting down itself.



3.6 SYSTEM VOLTAGE

Go to **2. System Settings | 6. System Voltage** to get the current system battery voltage. This **Get System Voltage** screen keeps getting real time information of voltage and charging status. When the battery voltage is under 5%, we suggest charging the battery immediately before the reader is powered off. The charging status appears as *Charging*, *Not Charging*, or *Done*.

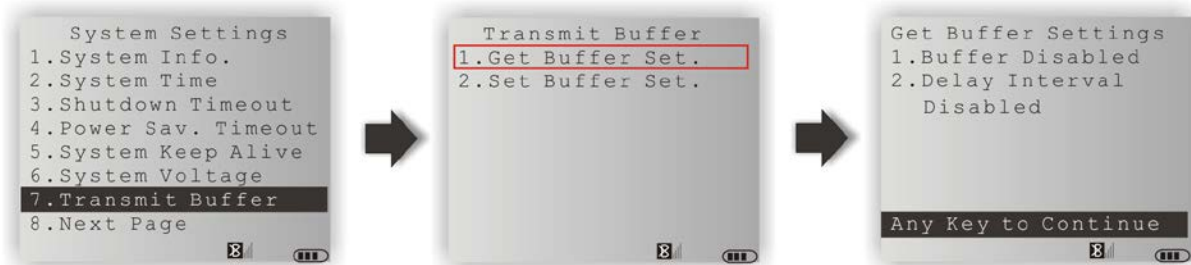
By default, the battery alarm will beep when the battery charge gets low. In order to prevent data loss, it is advised to replace the battery immediately when hearing two short beeps (high tone) from the 1800 RFID reader.



Warning: Using *Bluetooth*® connection will reduce battery power substantially. Disable the *Bluetooth*® function when it is not in use.

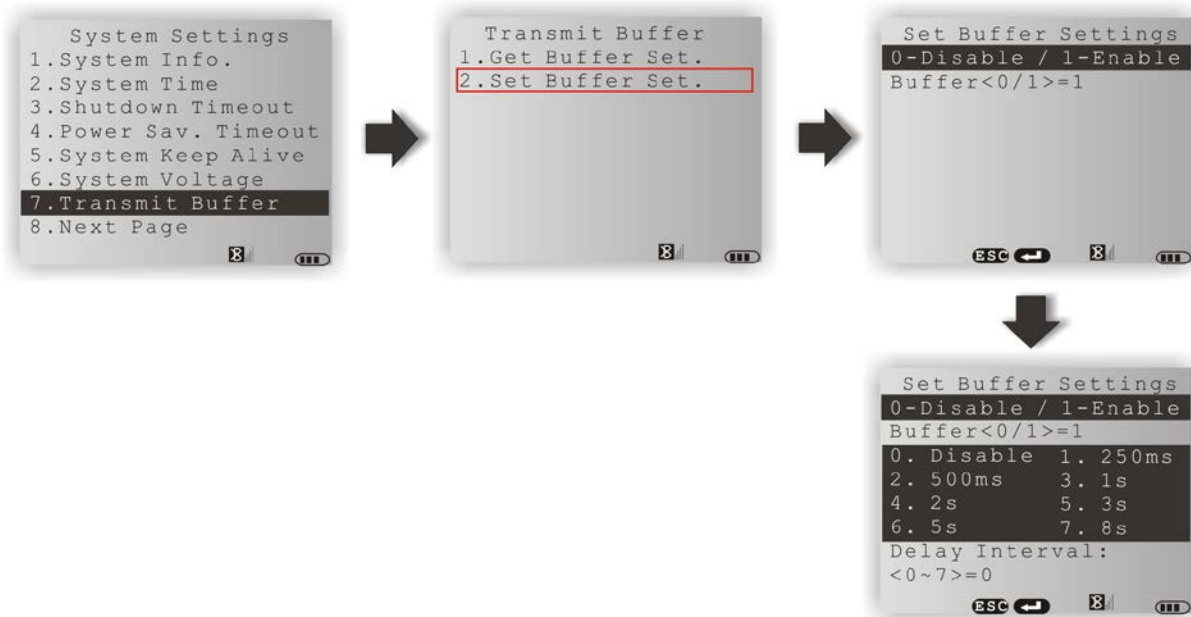
3.7 TRANSMIT BUFFER

By default, transmit buffer is enabled when the 1800 RFID reader is out of range. Upon reading a tag successfully within range, the 1800 RFID reader responds with one short beep (high tone) and the LED3 (specified for RFID Tag access) indicator becomes solid green and goes off. However, the mobile computer may not receive the data immediately if the reader is out of range. With the 2KB transmit buffer, the reader can ignore the transmission range and keep on reading tags until the buffer is full. Go to **2. System Settings | 7. Transmit Buffer | 1. Get Buffer Setting** to show the current status of the buffer.



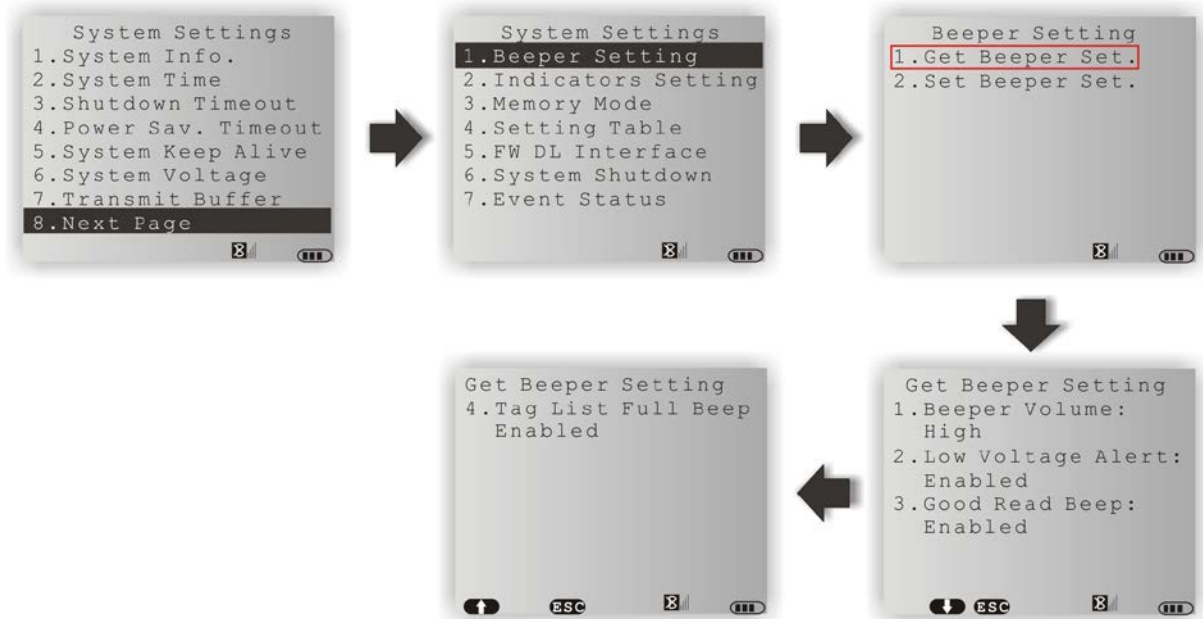
Note: 1800 RFID reader supports 2KB SRAM for transmit buffer while out of range over a wireless personal area network (WPAN).

Go to **2. System Settings | 7. Transmit Buffer** and select **2. Set Buffer Setting** to set transmit buffer by pressing the [2] key. It allows you to disable or enable 1800 RFID reader buffer and select an available delay interval time for data transmission. By default, the delay interval function is disabled.



3.8 BEEPER SETTING

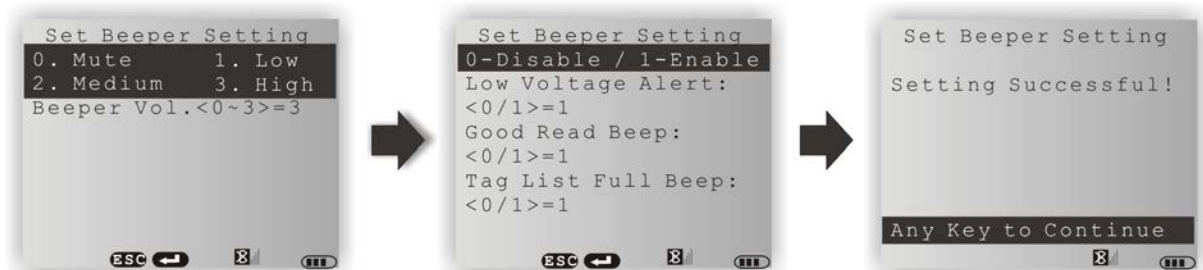
Go to **2. System Settings | 8. Next Page | 1. Beeper Setting** and select **1. Get Beeper** by pressing the [1] key to get beeper related information.



1800 Utility | 2. System Settings | 8. Next Page | 1. Beeper Setting

Beeper Volume	0. Mute 1. Low 2. Medium 3. High (Default)
Low Battery Alert	0. Disable 1. Enable (Default)
Good Read Beep	0. Disable 1. Enable (Default)
Tag List Full Beep	0. Disable 1. Enable (Default)

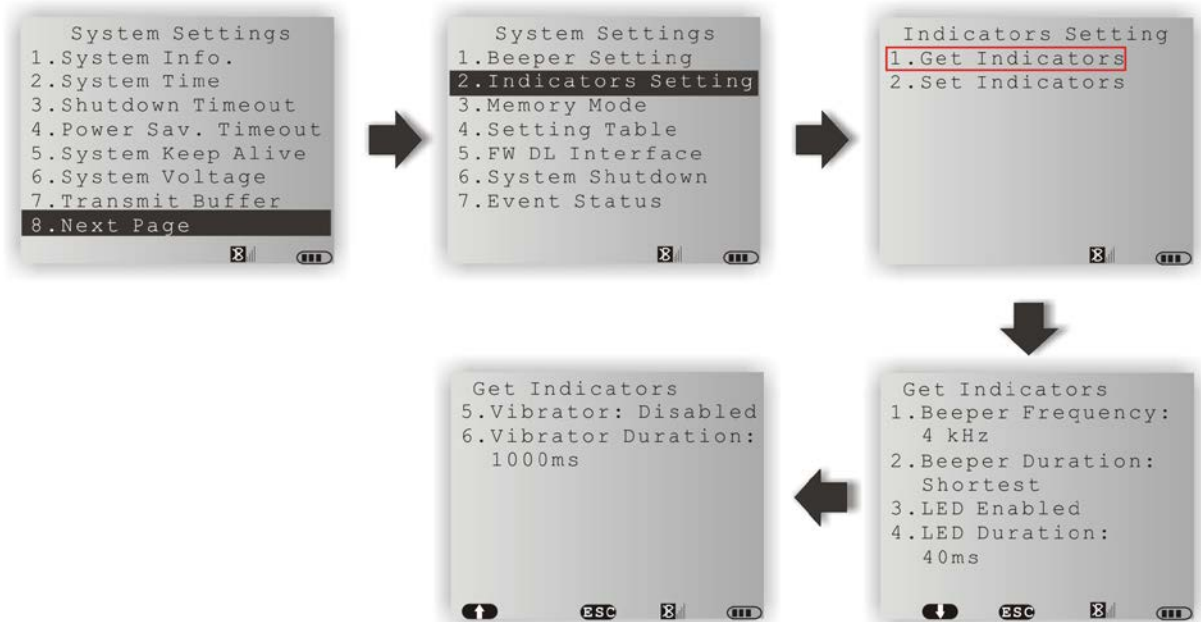
Select **2. Set Beeper** by pressing the [2] key to configure beeper as below:



Note: If the volume for beeper is muted, there will be no audio feedback from the reader.

3.9 INDICATORS SETTING

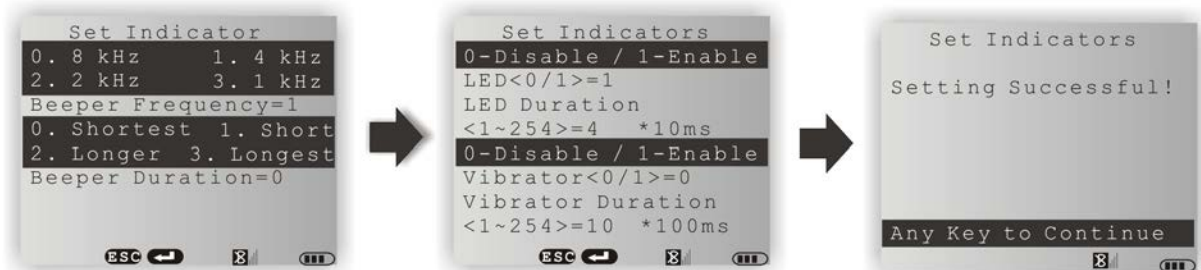
1800 RFID reader supports beeper, LED indicators and vibrator feedbacks to inform the user of the current status of the connected 1800 RFID reader. Go to **2. System Settings** | **8. Next Page** | **2. Indicators Setting** and select **1. Get Indicator** by pressing the [1] key to get Indicator related information.



1800 Utility | 2. System Settings | 8. Next Page | 2. Indicator Setting

Beeper Frequency	0. 8 kHz 1. 4 kHz (Default) 2. 2 kHz 3. 1 kHz
Beeper Duration	0. Shortest (Default) 1. Short 2. Longer 3. Longest
LED Status	0. Disable 1. Enable (Default)
LED Duration	1~254 (Default=40ms)
Vibrator Status	0. Disable (Default) 1. Enable
Vibrator Duration	1~254 (Default=1000ms)

Select **2. Set Beeper** by pressing the [2] key to configure indicators as below:

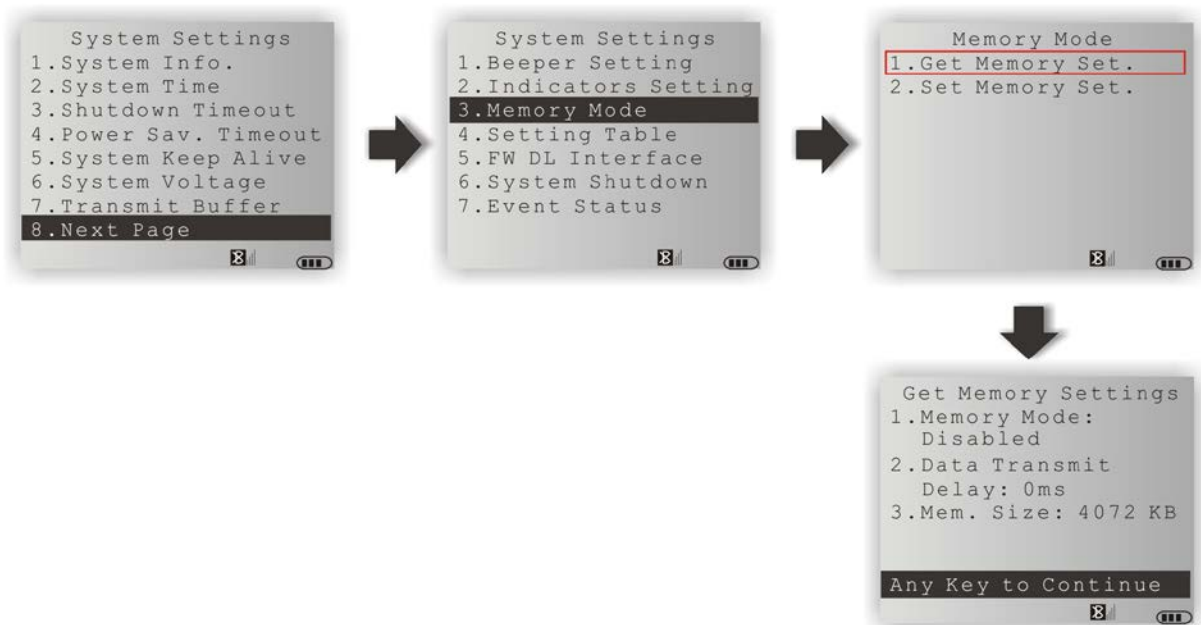


3.10 MEMORY MODE

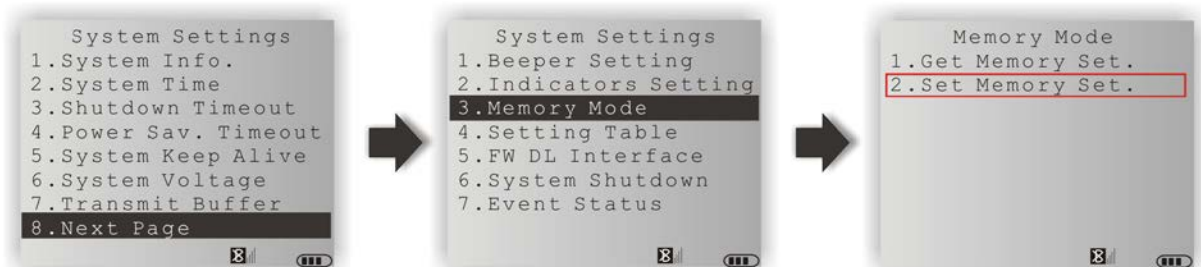
1800 RFID reader includes 4MB flash memory for Memory Mode operation. When the 1800 RFID reader is in memory mode with green LED5 (specified for memory mode) flashing and blue LED2 (specified for *Bluetooth*® connection) off, any real-time connection established with the host is disabled. By default, the memory mode is disabled and the data transmission delay time is set to 0ms.

Warning: No real-time connection is allowed unless the memory mode is disabled.

Go to **2. System Settings | 8. Next Page | 3. Memory Mode** and select **1. Get Memory Settings** by pressing [1] key to get memory mode relative settings information.




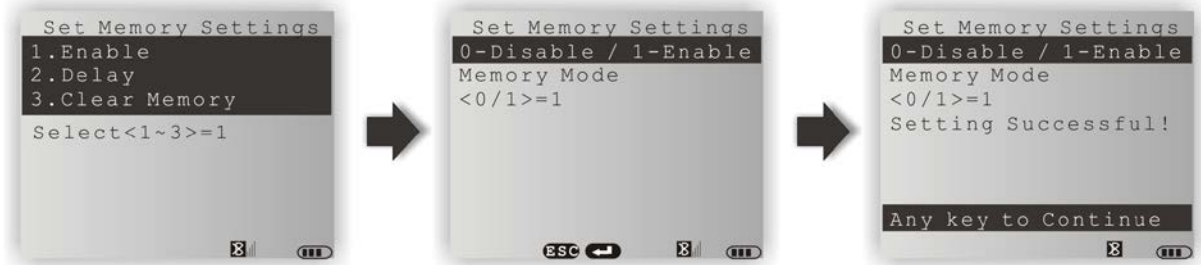
Go to **2. System Settings | 8. Next Page | 3. Memory Mode** and select **2. Set Memory Settings** by pressing [2] key to begin configuring memory mode.



3.10.1 ENABLE/DISABLE MEMORY MODE

Enable/Disable Memory Mode

For a memory mode configuration, you have to select **1. Enable** by pressing the [1] key, then input **1. Enable Memory Mode** or **0. Disable Memory Mode** to enable/disable memory mode. The  signal bars will disappear when entering memory mode.



3.10.2 DATA TRANSMIT DELAY

You may set a delay time between each data record while transmitting data back to the host computer. By default, the delay time for data transmission is '0'.

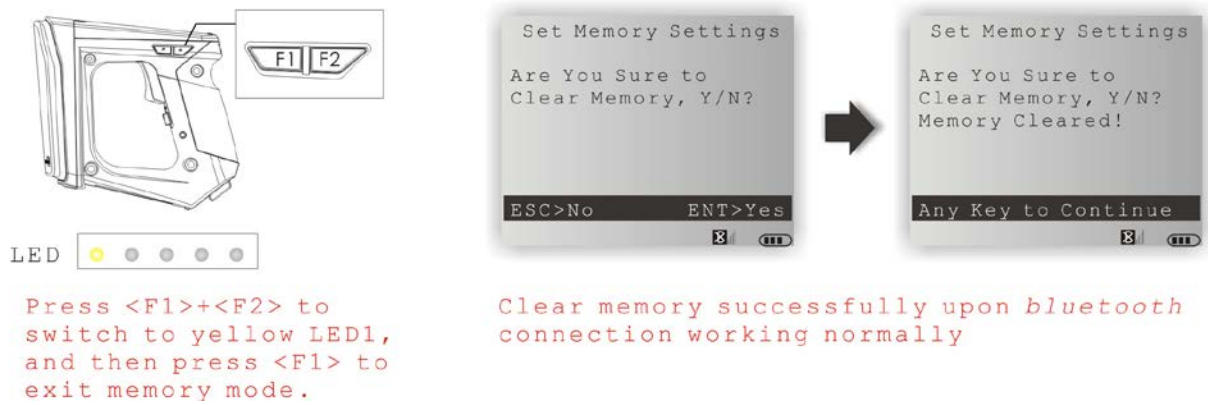


3.10.3 CLEAR MEMORY

Once the data has been uploaded, the memory may be cleared. To do this, select "Clear Memory" from the menu.



In order to upload data and clear memory, your reader must exit memory mode and re-connect to the terminal via *Bluetooth*[®]. See the figures illustrated below.

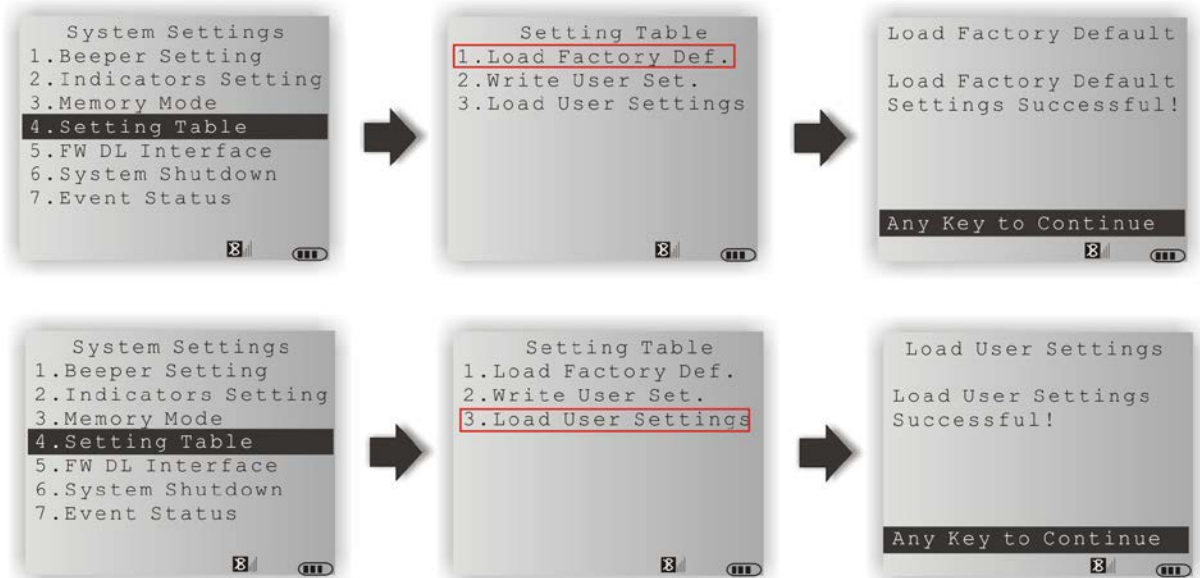


Note: You can restore the *Bluetooth*[®] connection by pressing function keys <F1>+<F2> on the 1800 RFID reader to switch to yellow LED1, and then press <F1> to re-connect the reader to the terminal. For more function keys information, please refer to 1800 reference manual.

3.11 SETTING TABLE

3.11.1 LOAD FACTORY DEFAULT/USER SETTING

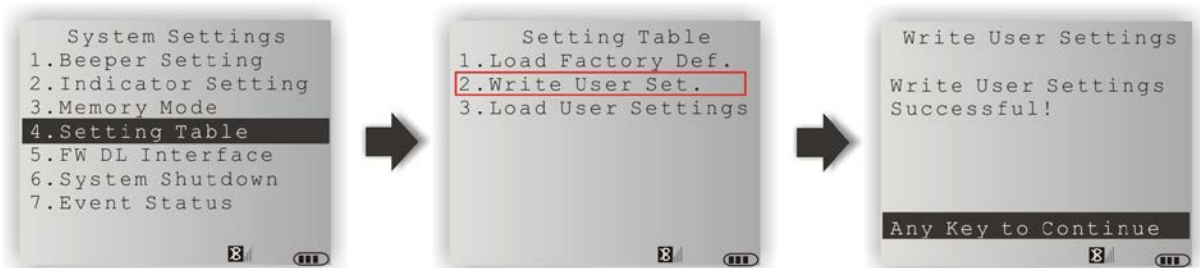
Setting table allows you to restore all of the settings to factory default or user setting values.



Note: Restoring factory default will not disconnect the reader.

3.11.2 WRITE USER SET.

To write the current configuration to the Reader's setting table, go to **2. System Settings** | **8. Next Page** | **4. Setting Table** and select **2. Write to User Set.** by pressing the [2] key.




3.12 FW DL INTERFACE

3.12.1 BLUETOOTH®

1800 Utility allows you to change the firmware download interface through *Bluetooth®* or USB connections. Select *Bluetooth®* or USB interface that is connected to mobile computer for a firmware upgrade via ProgLoad.exe (PC based application) supported by CipherLab. After upgrading successfully, the 1800 RFID reader will power off. Within seconds, the 1800 RFID reader will power on and connect to the mobile computer automatically.



3.12.2 USB

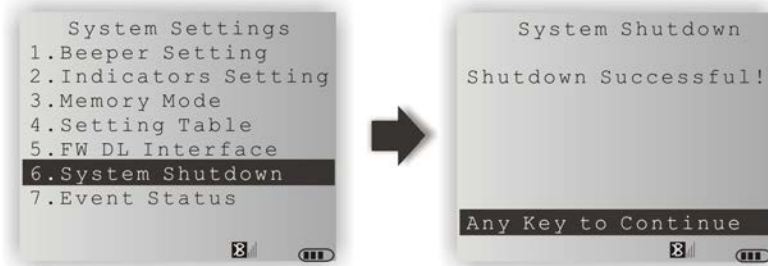
For USB interface, be sure the USB cable is connected to both 1800 RFID reader and mobile computer before processing firmware upgrade. The *Bluetooth®* interface will be disconnected when you select **2. USB** as the firmware download interface. Also, the  signal bars will disappear.



Note: 1) Ensure the 1800 RFID reader has a fully charged battery prior to attempting an upgrade.
2) In order to avoid the data loss during firmware upgrade, please save or upload all the data from the reader's memory before beginning firmware upgrade.

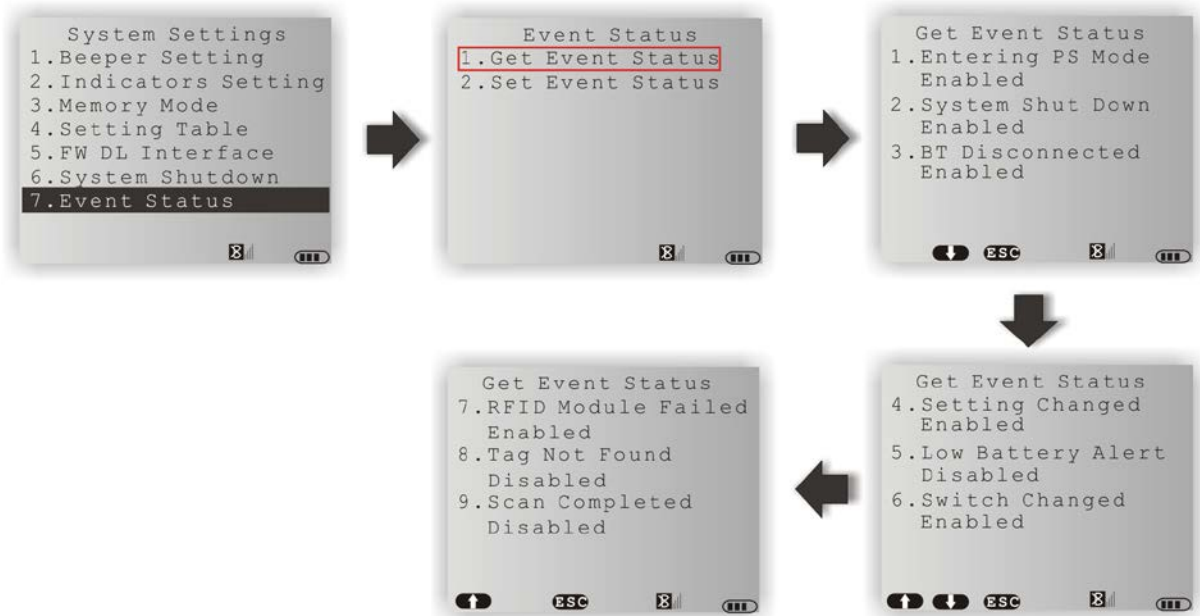
3.13 SYSTEM SHUTDOWN

Go to **2. System Settings** | **8. Next Page** | **6. System Shutdown** to power off 1800 RFID reader directly through the *Bluetooth®* connection.



3.14 EVENT STATUS

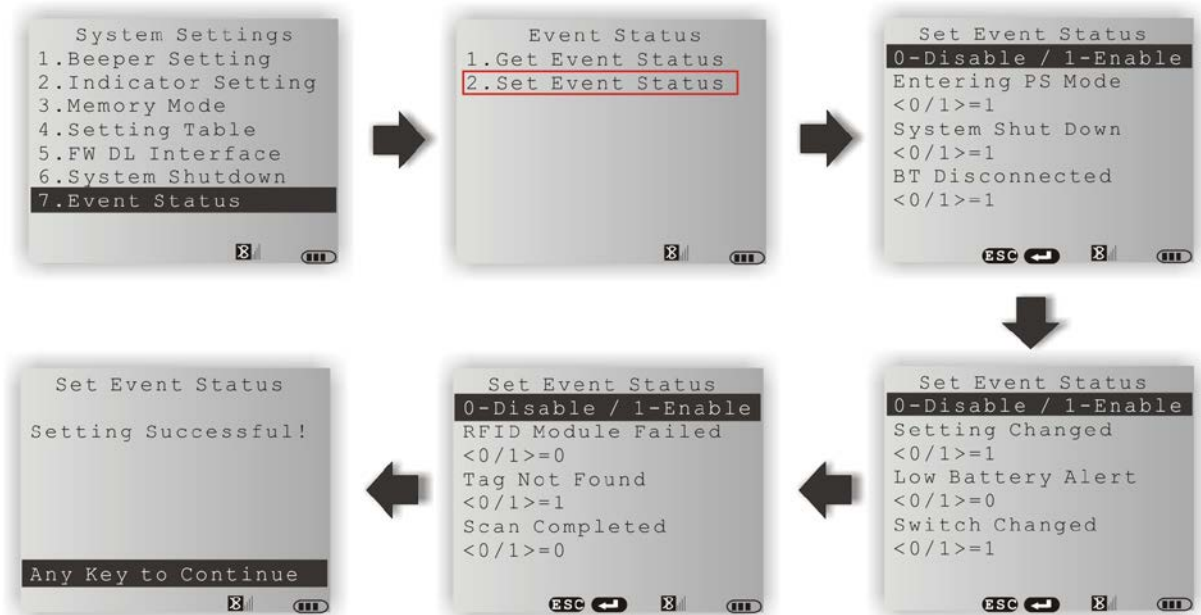
Go to **2. System Settings** | **8. Next Page** | **7. Event Status** and select **1. Get Event Status** by pressing the [1] key to display the current event status.



1800 Utility | 2. System Settings | 8. Next Page | 7. Event Status

Entering PS Mode	0. Disable 1. Enable (Default)
System Shut Down	0. Disable 1. Enable (Default)
BT Disconnected	0. Disable 1. Enable (Default)
Change Setting	0. Disable 1. Enable (Default)
Low Battery Alert	0. Disable (Default) 1. Enable
Alternate Mode	0. Disable 1. Enable (Default)
RFID Fail	0. Disable 1. Enable (Default)
Tag Not Found	0. Disable (Default) 1. Enable
Scan Completed	0. Disable (Default) 1. Enable

Select **2. Set Event Status** by pressing the [2] key to set event status as below:



Note: This function is available only when the data format is set to packet data.

INTERFACE SETTINGS

IN THIS CHAPTER

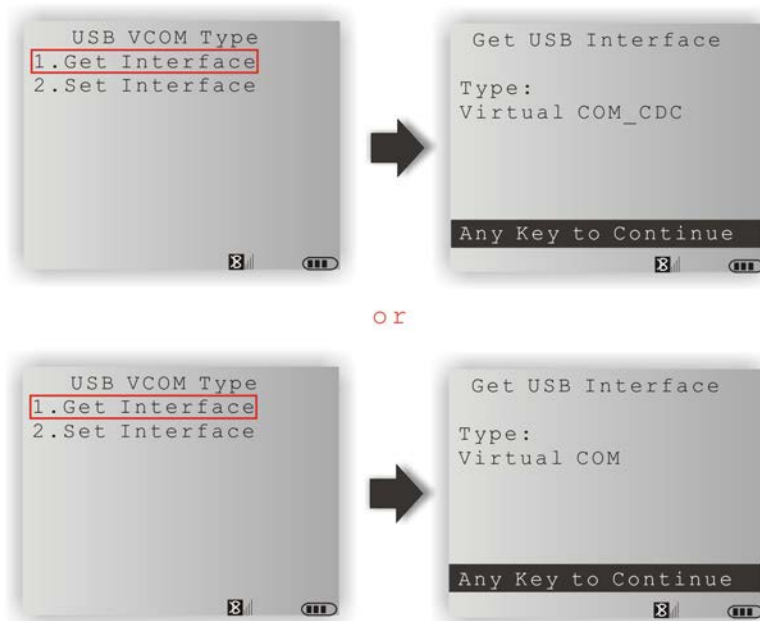
4.1 USB VCOM Type	28
4.2 BT Setting.....	30
4.3 BT Security	31

4.1 USB VCOM TYPE

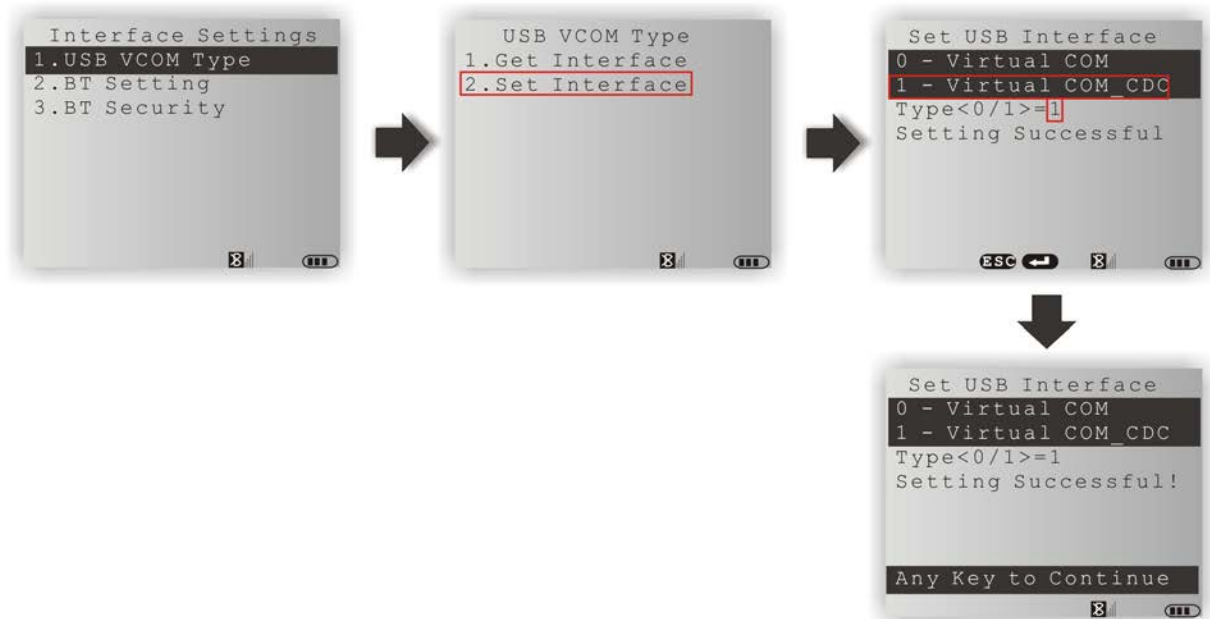
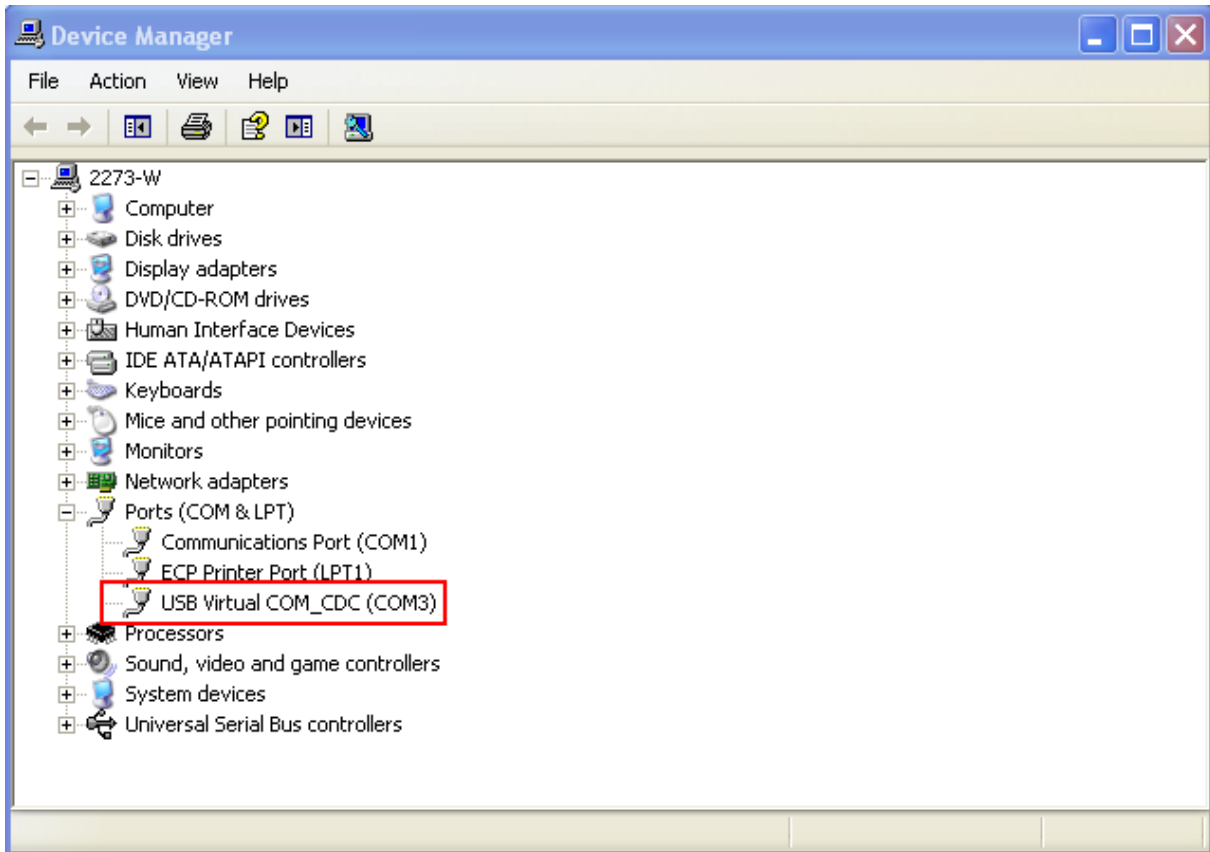
To create a connection between 1800 RFID reader and mobile computer, you have to select the available USB interface type. Wrong USB interface type will not connect. You can also use the function keys to switch between USB interface types; please refer to 1800 reference manual. Go to **3. Interface Settings | 1. USB VCOM Type** on the 1800 Utility main menu, and then select **1.Get Interface** by pressing the [1] key to confirm the currently active interface.



By default, the USB VCOM Type is set to Virtual COM CDC.

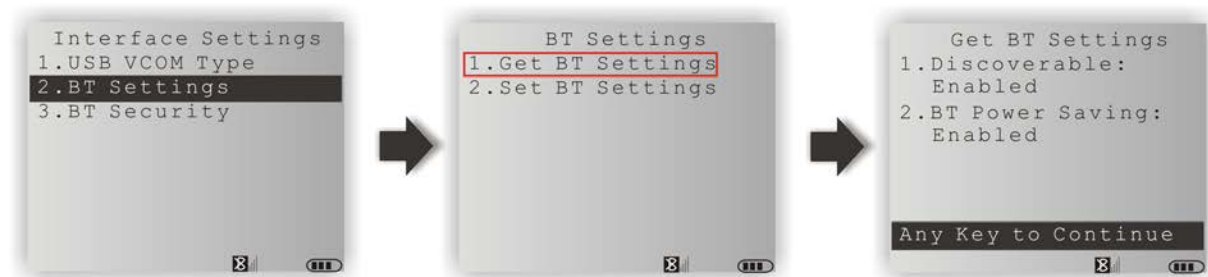


Based on the Device Manager, in your host, find the connected port of the host computer and select correct interface (as the picture shown below). On the terminal, go to **3. Interface Setting** | **1. USB VCOM Type** and select **2. Set Interface** by pressing the [2] key. For example as below, select **Type 1** to use Virtual COM CDC.



4.2 BT SETTING

BT Setting allows you to configure *Bluetooth*[®] related settings including discovered device and *Bluetooth*[®] power saving. Go to **3. Interface Settings | 2. BT Setting** on the 1800 Utility main menu and select **1.Get BT Setting** by pressing the [1] key as below.



1800 Utility | 3. Interface Settings | 2. BT Setting

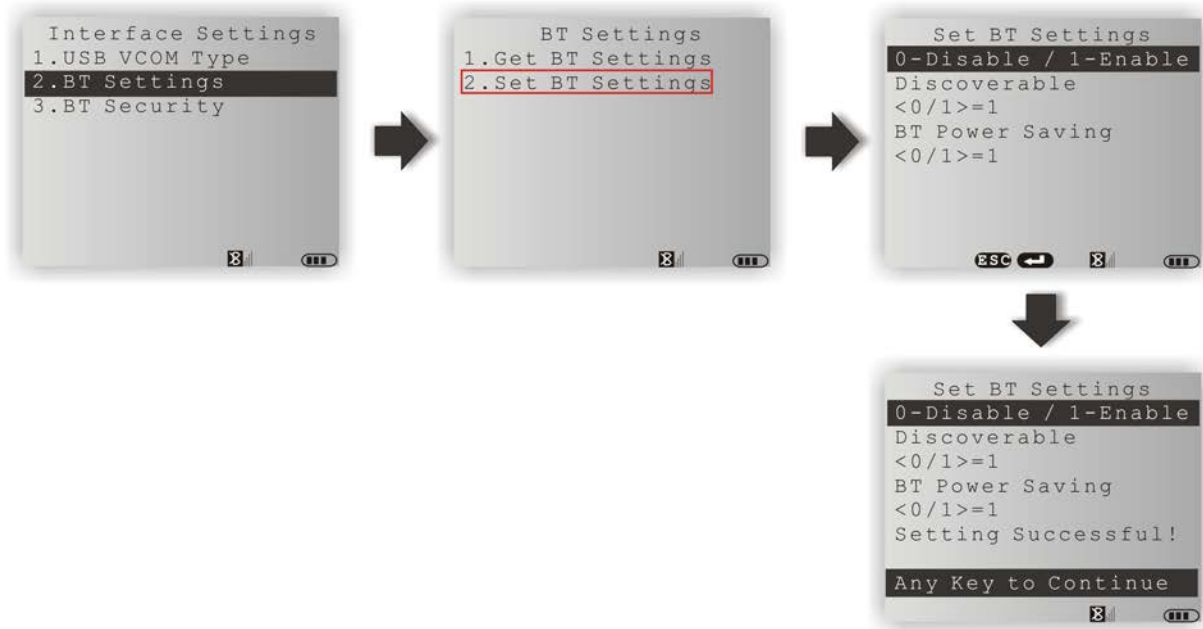
Discoverable	0. Disable 1. Enable (Default)
BT Power Saving	0. Disable 1. Enable (Default)

4.2.1 DISCOVERABLE

Configure the 1800 RFID reader to hide itself from other devices equipped with *Bluetooth*[®] wireless technology. Simply disable the broadcasting so that it won't be discovered by any other *Bluetooth*[®] devices. However, broadcasting must be enabled for establishing an initial connection. By default, this function is enabled.

4.2.2 BT POWER SAVING

Generally, the *Bluetooth*[®] connection is always active, and LED2 will be flashing blue. When power saving mode is enabled and the reader enters this mode, the *Bluetooth*[®] connection will be terminated and LED2 will go off. Press the trigger to wake up the reader and re-establish the *Bluetooth*[®] connection. Once connected LED2 will start flashing.



Note: When connecting more than two readers to a notebook computer with *Bluetooth*® wireless technology, we suggest that you disable the *Bluetooth*® Power Saving function for a more reliable connection.

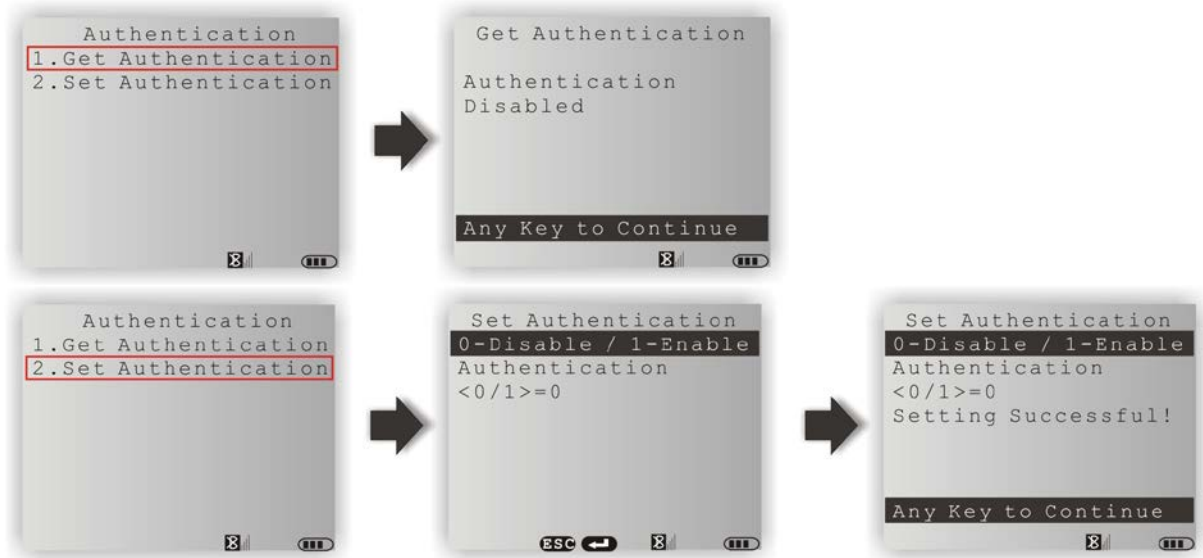
4.3 BT SECURITY

For secure connections, you can go to **3. Interface Settings | 3. BT Security** on the 1800 Utility main menu.



4.3.1 AUTHENTICATION

By default, authentication is disabled. When the authentication is changed on the 1800 RFID reader, you have to go through the whole process to re-establish the connection.

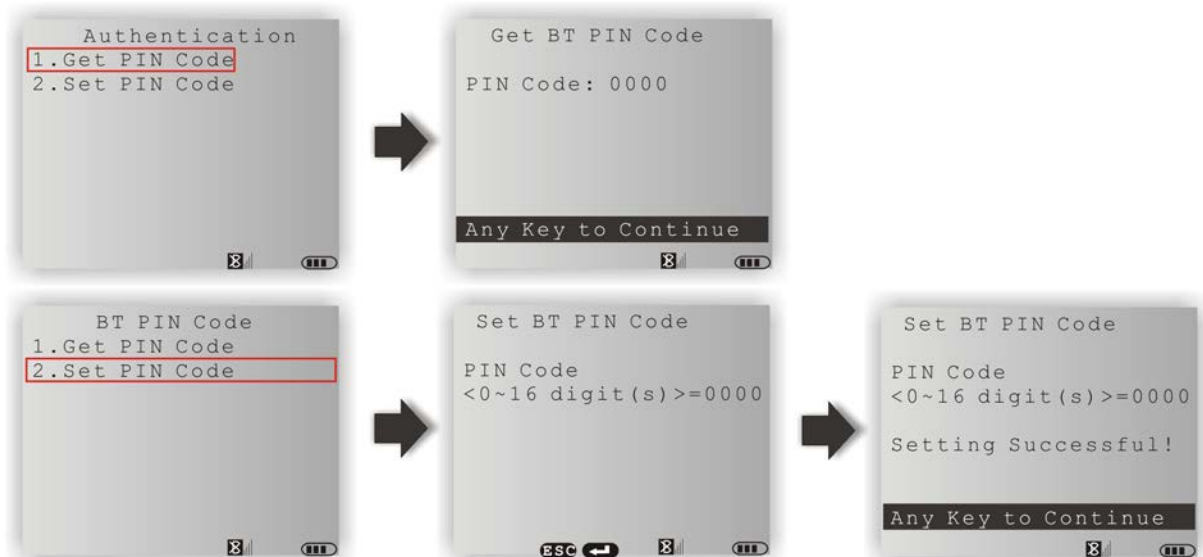


1800 Utility | 3. Interface Settings | 3. BT Security

Authentication	0. Disable (Default) 1. Enable
PIN code	0000 (Default)

4.3.2 PIN CODE

1800 Utility allows up to 16 digits for a PIN code. If the PIN or passkey is incorrect, any connection requirement will be rejected by 1800 RFID reader. This function will activate upon the authentication is enabled. By default, the PIN code value is "0000".



RFID SETTINGS

IN THIS CHAPTER

5.1 Trigger Switch 34

5.2 Scan Mode Setting 35

5.3 Multi-Tag Criteria 39

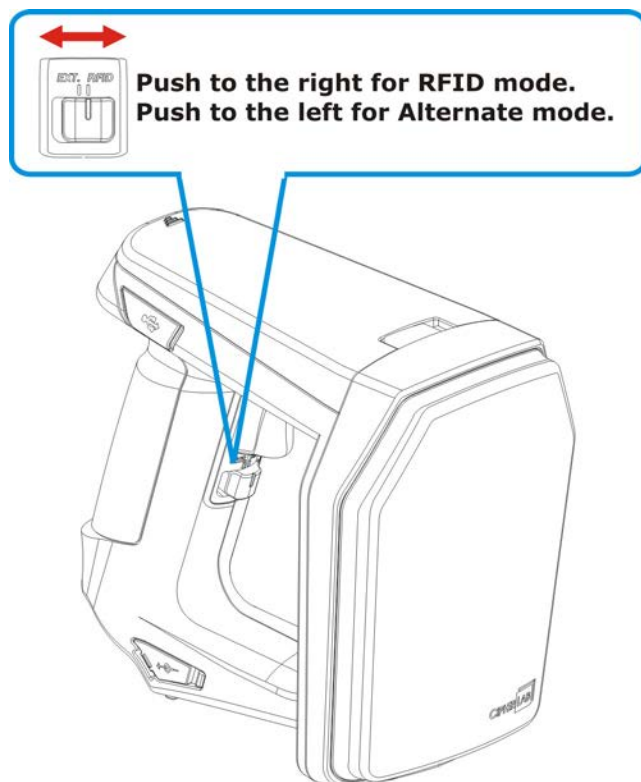
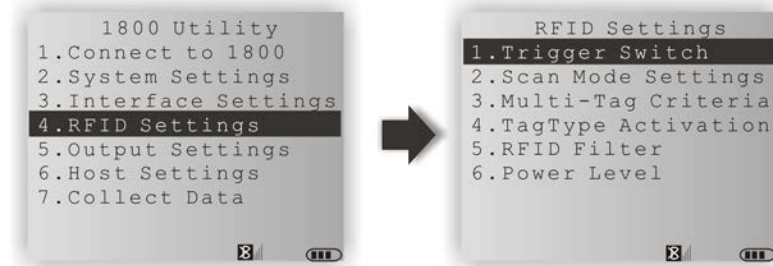
5.4 Tag Type Activation..... 40

5.5 RFID Filter 42

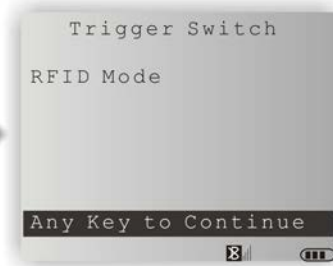
5.6 Power Level..... 56

5.1 TRIGGER SWITCH

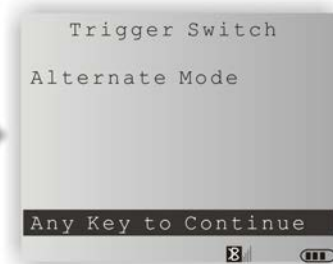
Go to **4. RFID Settings** | **1. Trigger Switch** to detect the configured mode (RFID or Alternate mode) of 1800 RFID reader via *Bluetooth®*.



Push the 1800 switch to the right for RFID mode



Push the 1800 switch to the left for Alternate mode



5.2 SCAN MODE SETTING

1800 RFID reader scan modes include Single and Multi-Tag modes.

Scan Mode	Description	
Single Mode	<p>Read tags by pressing the trigger.</p> <ol style="list-style-type: none"> 1. Condition to start the operation: Press and hold the trigger. 2. Conditions to stop the operation: <ol style="list-style-type: none"> (1) A tag is read. (2) Trigger is released. (3) "Scanning Timeout" expires. (4) New scan mode is set. 3. Release the trigger and press it again to start a new operation cycle. The Scanning Timeout value will be refreshed. 	
Multi-Tag Mode	Multi-Tag counter=0	<p>Press and hold the trigger to read tags continuously. Previously read tags will be accepted.</p> <ol style="list-style-type: none"> 1. Conditions to start the operation: Press and hold the trigger. 2. Conditions to stop the operation: <ol style="list-style-type: none"> (1) Trigger is released. (2) New scan mode is set. 3. Scanning speed is controlled by Scanning Delay.
	Multi-Tag counter≠0	<p>Press and hold the trigger to read tags continuously. Previously read tags will be discarded; only the Unique tags will be recorded and the counter increased.</p> <ol style="list-style-type: none"> 1. Condition to start/continue the operation: Press and hold the trigger. 2. Condition to suspend the operation: Release the trigger. 3. Conditions to stop the operation: <ol style="list-style-type: none"> (1) The number of new tags read equals Multi-Tag counter. (2) New Multi-Tag Counter is set. (3) New scan mode is set. 4. The counter of read tag can be reset by commands or function keys. 5. Scanning speed is controlled by Scanning Delay.

By default, the scanning timeout for Single Mode is 0s and the delay time for Multi-Tag Mode is 100ms.

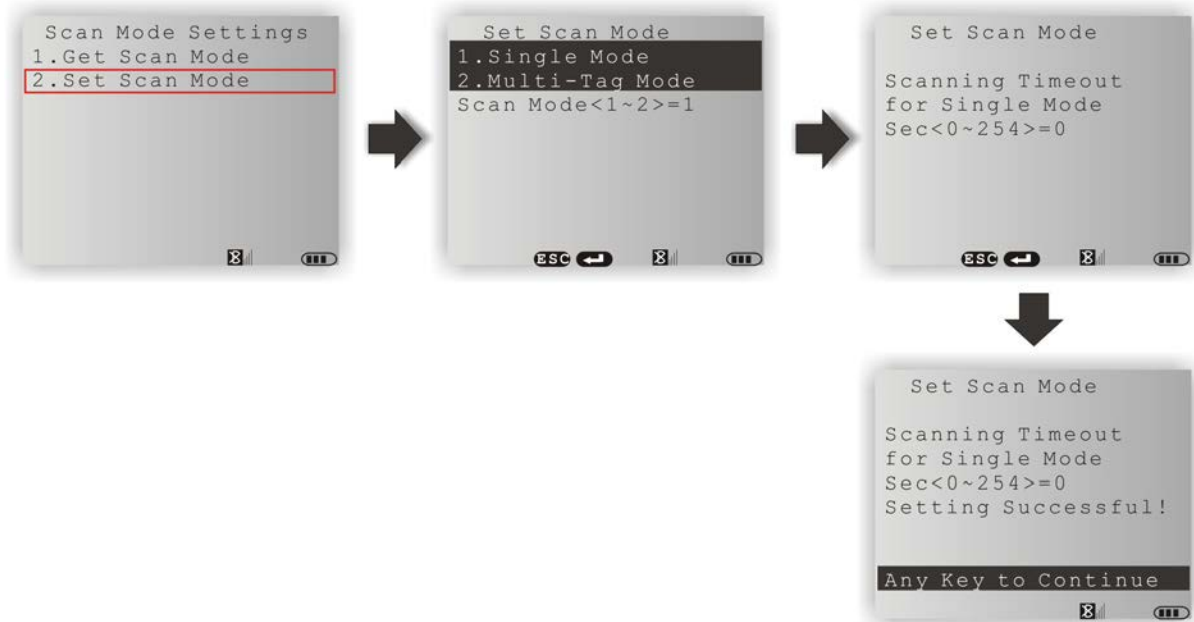


5.2.1 SINGLE MODE

Go to **4. RFID Settings** | **2. Scan Mode Setting** and select **2.Set Scan Mode** by pressing the [2] key.

Single Mode

You have to specify the scanning timeout interval (0~254 sec.; 0= Disable) when the scan mode is set to Single Mode.



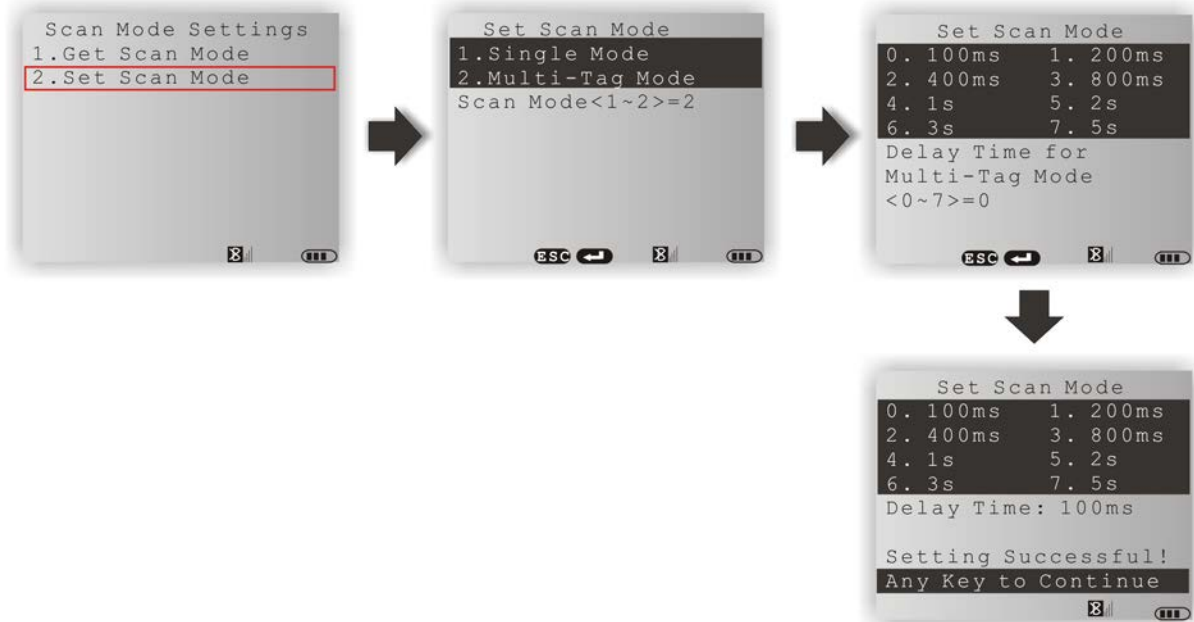
Note: The scanning timeout configuration is available for Single Mode. For example, if you set the scanning timeout to 10, the waiting time is 10 seconds upon pressing the trigger. The operation will stop even though no tag data is received.

- 1) Operation will stop when the operation time equals Scanning Timeout.
- 2) The range of timeout is between 0~254 seconds. When the timeout is set to '0', the operation will not stop.
- 3) Operation time will not be refreshed when a new timeout is configured.

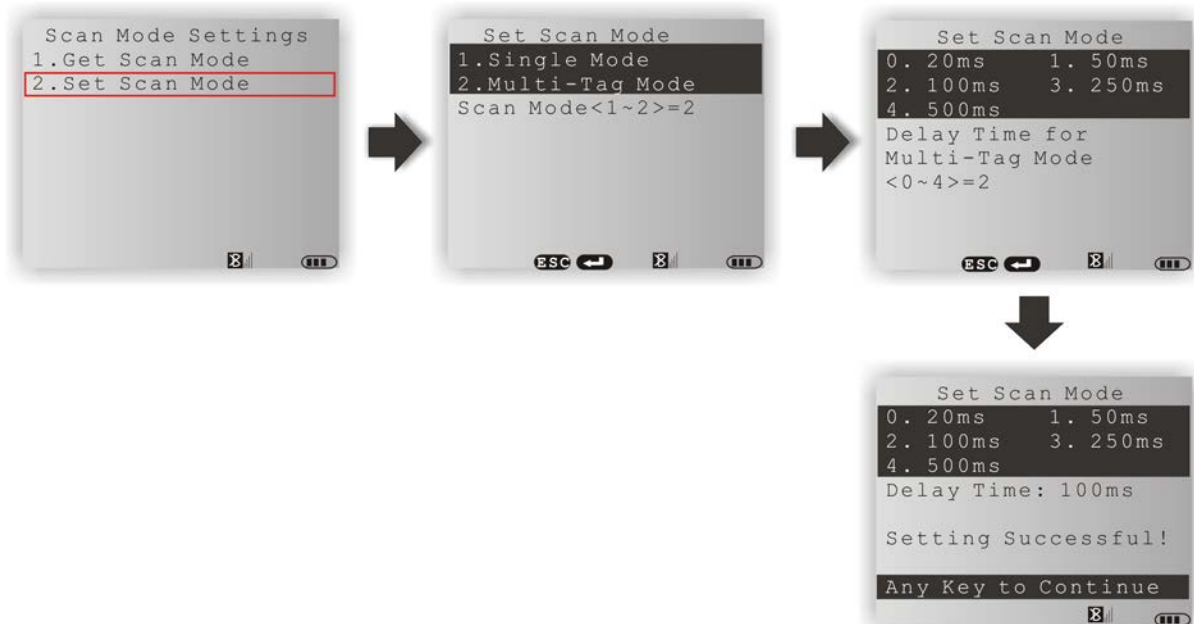
5.2.2 MULTI-TAG MODE

In this mode the 1800 RFID reader is always scanning. Specify the scanning delay time when the scan mode is set to Multi-Tag Mode.

For 1861, the scanning delay time has eight options:

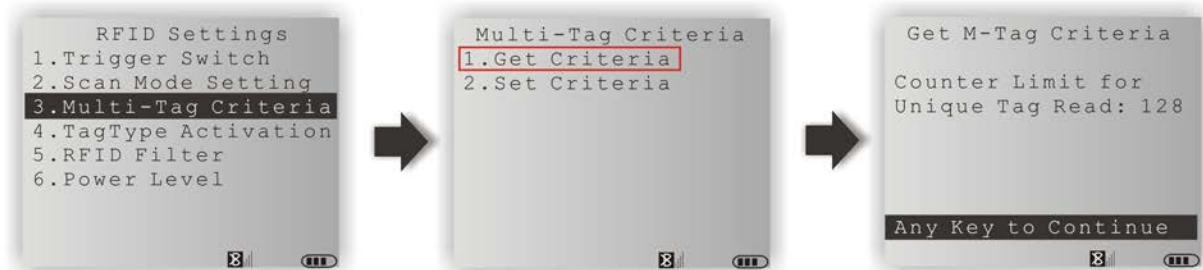


For 1862, the scanning delay time has five options:



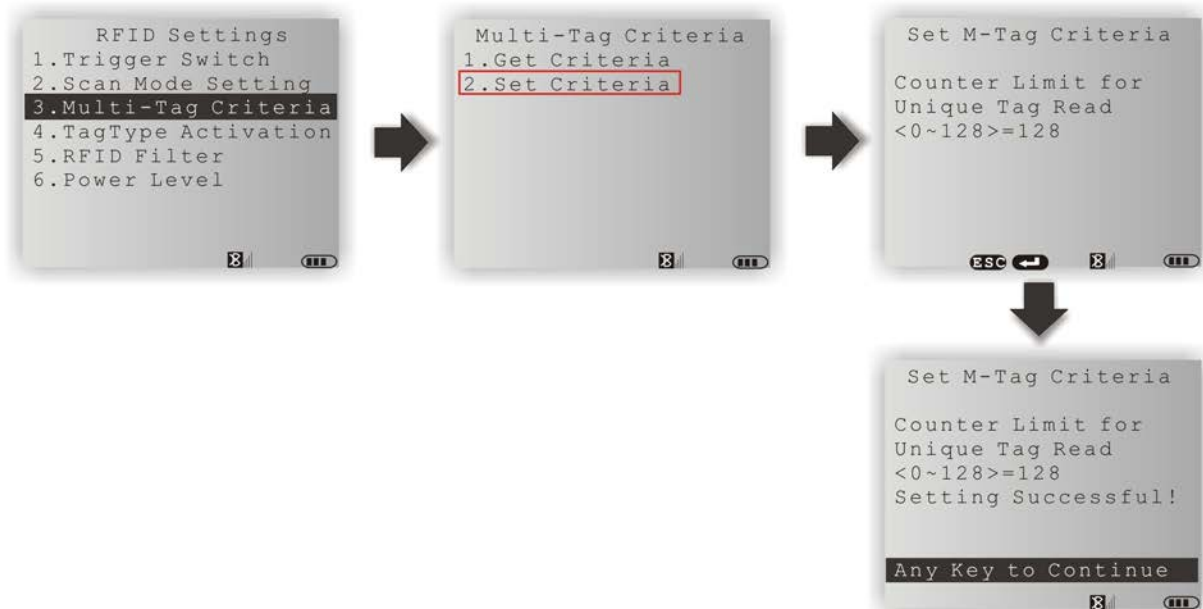
5.3 MULTI-TAG CRITERIA

Set a non-zero Multi-Tag Counter to create a tag list in the 1800 RFID reader. If the scan mode is Multi-Tag, any received individual tag will be compared to and stored into the list which can contain up to 128 entries. Repeated EPC tags will be discarded. Only unique tags will be stored in the list. When the tag list is full, the scan action will stop and pressing the trigger will have no effect. To re-activate scanning you must clear memory data via function keys or commands. By default, the counter is set to 128.



Note: The Multi-Tag counter is used to set the number of individual tags that can be stored in the tag list. If the value is set to '0', all scanned tags will be accepted including repeated tags. The scanned tags in Multi-Tag mode will be saved in On-chip RAM for a fast comparing process.

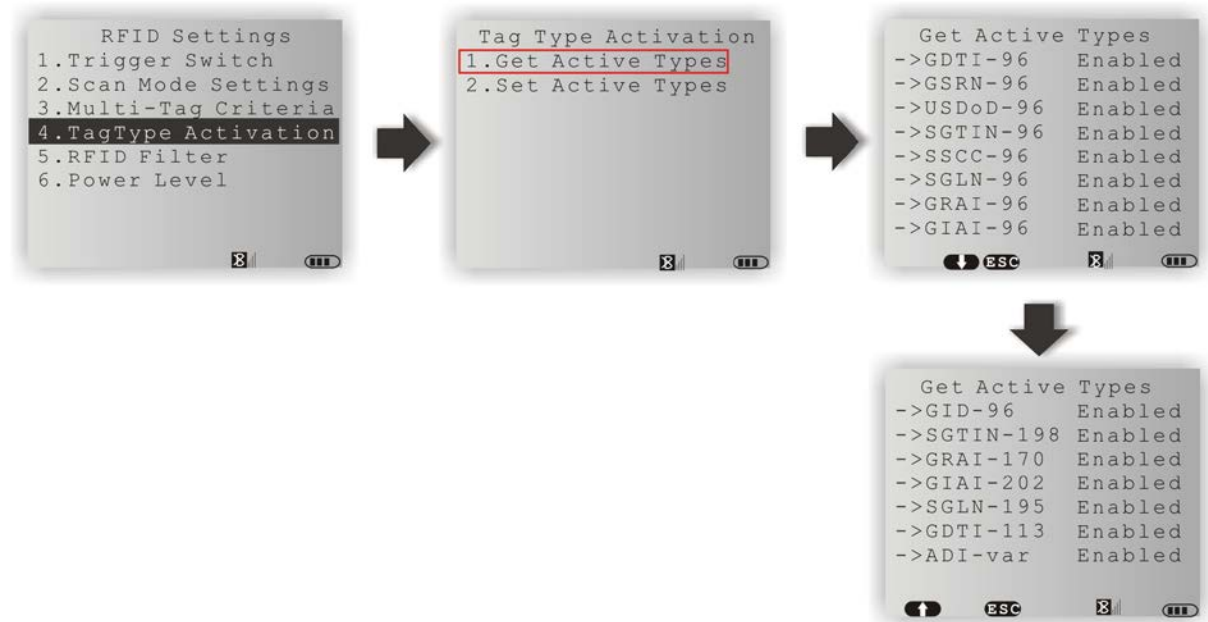
Go to **4. RFID Settings | 3. Multi-Tag Criteria** and select **2. Set Criteria** by pressing the [2] key. The Set M-Tag Criteria menu allows you to configure the counter value.



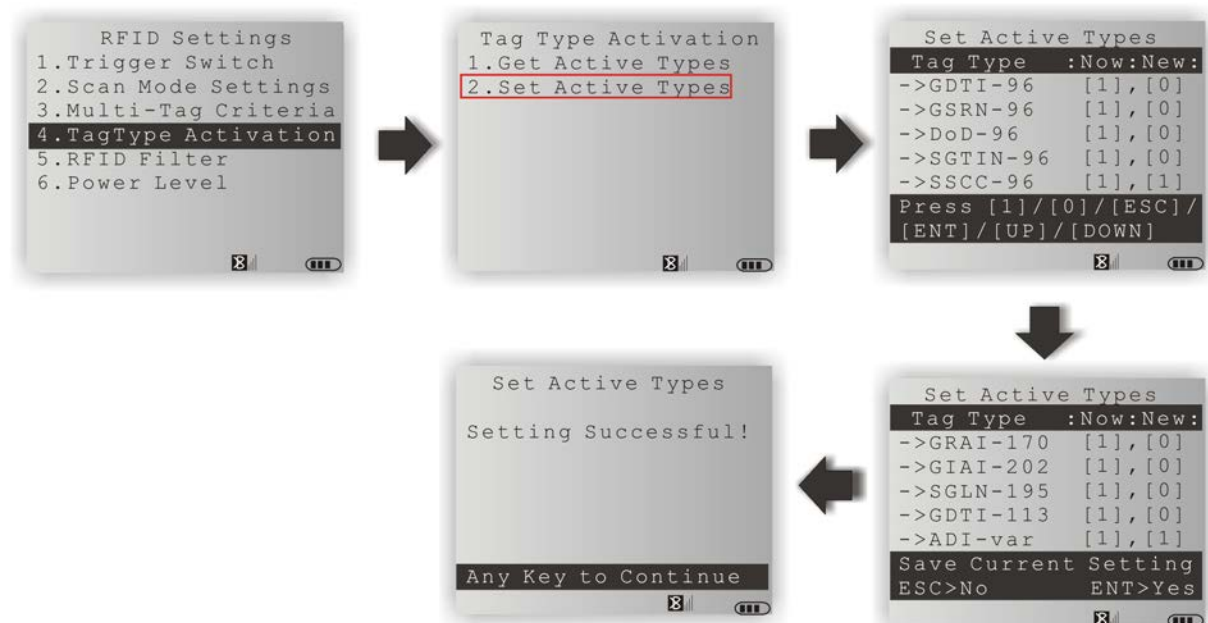
Note: Before configuring the counter, you have to set the scan mode to Multi-Tag.

5.4 TAG TYPE ACTIVATION

The EPC Encoding Scheme includes GDTI-96, GSRN-96, DoD-96, SGTIN-96, SSCC-96, SGLN-96, GRAI-96, GIAI-96, GID-96, SGTIN-198, GRAI-170, GIAI-202, SGLN-195, GDTI-113 and ADI-var. Each of these tag types can be selected individually. By default, all of these tags are enabled.



Go to **4. RFID Settings | 4. Tag Type Activation** and select **2. Set Setting** by pressing the [2] key. In the Set Tag Type Activation menu, you can configure the status to each tag type. By default, each tag type is enabled (Value 1 – Enabled, Value 0 – Disabled).



5.4.1 EPC SCHEME TABLE

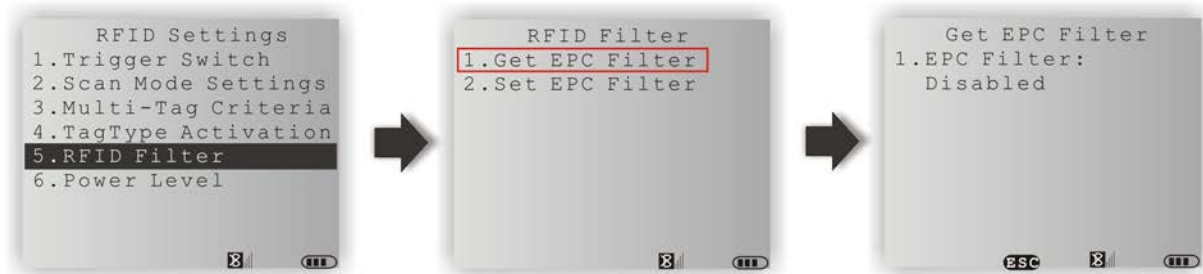
The following table summarizes the EPC schemes defined in the specification and correspondence to GS1 Keys.

EPC Scheme	Tag Encoding	Corresponding GS1 Key	Typical Use
SGTIN	SGTIN-96 SGTIN-198	GTIN key (plus added serial number)	Trade item
SSCC	SSCC-96	SSCC	Pallet load or other logistics unit load
SGLN	SGLN-96 SGLN-195	GLN key (with or without additional extension)	Location
GRAI	GRAI-96 GRAI-170	GRAI (serial number mandatory)	Returnable/Reusable asset
GIAI	GIAI-96 GIAI-202	GIAI	Fixed asset
GDTI	GDTI-96 GDTI-113	GDTI (serial number mandatory)	Document
GSRN	GSRN-96	GSRN	Service relation (e.g., loyalty card)
GID	GID-96	[none]	Unspecified
DoD	DoD-96	[none]	US Dept of Defense supply chain
ADI	ADI-var	[none]	Aerospace and defense – aircraft and other parts and items

5.5 RFID FILTER

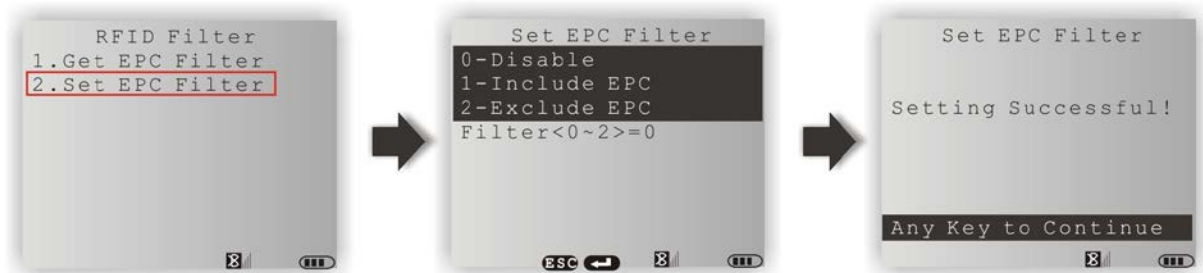
5.5.1 EPC FILTER

The filter function enables the user to include or exclude specific predefined tags whilst scanning. For example, this feature can be used when there are many tags in a location but the user wants to count only a specific product group not every product or tag. By default the filter function is disabled.



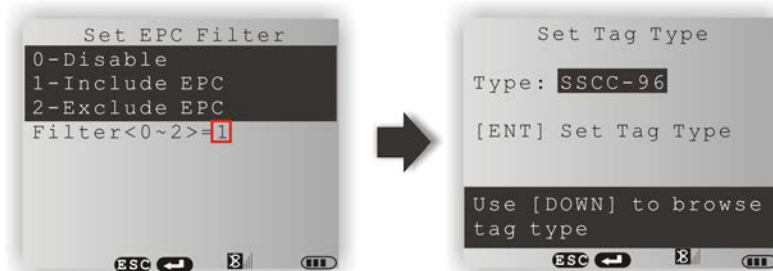
Go to **4. RFID Settings | 5. RFID Filter | 2. Set EPC Filter** by pressing the [2] key. In the Set EPC Filter menu, you can select whether you want to include or exclude tags based on the filter value or disable the feature altogether.

Select the [0] key to disable the filter function.



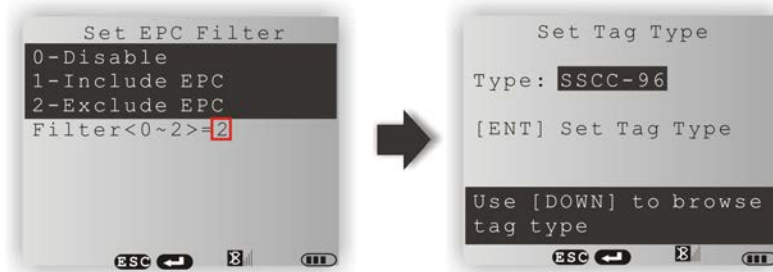
Include EPC

If the Include EPC option is selected, all tags that match the filter value are “included” when scanned. In the **Set EPC Filter** menu, select **Include EPC** by pressing the [1] key.



Exclude EPC

If the Exclude EPC option is selected, all tags that match the filter value are “excluded” or ignored when scanned.



Tag Type

The EPC filter is based on the type of tag you want to read. You may only apply the filter to ONE type of tag. Select the type of tag you wish the filter to apply to in the following screen.

5.5.2 FILTER VALUES

1800 Utility supplies different filter values for each tag as below:

Tag Types	Filter values
GDTI-96/GDTI-113	<ul style="list-style-type: none">▶ Filter Value▶ GS1 Company Prefix▶ Document Type
GSRN-96	<ul style="list-style-type: none">▶ Filter Value▶ GS1 Company Prefix▶ Service Reference
DoD-96	<ul style="list-style-type: none">▶ Filter Value▶ Managed Identifier▶ Serial Number
SGTIN-96/SGTIN198	<ul style="list-style-type: none">▶ Filter Value▶ GS1 Company Prefix▶ Item Reference
SGLN-96/SGLN195	<ul style="list-style-type: none">▶ Filter Value▶ GS1 Company Prefix▶ Location Reference
GRAI-96/GRAI-170	<ul style="list-style-type: none">▶ Filter Value▶ GS1 Company Prefix▶ Asset Type
GIAI-96/GIAI-202	<ul style="list-style-type: none">▶ Filter Value▶ CS1 Company Prefix▶ Asset Reference
SSCC-96	<ul style="list-style-type: none">▶ Filter Value▶ GS1 Company Prefix▶ Serial Reference
GID-96	<ul style="list-style-type: none">▶ Manager Number▶ Object Class
ADI-var	<ul style="list-style-type: none">▶ Filter Value▶ CAGE/DoDAAC▶ Part Number

5.5.3 FILTER VALUE

Filter Value is additional control information that may be included in the EPC memory bank of a Gen 2 tag. The intended use of the filter value is to allow the 1800 RFID reader to select or deselect the tags corresponding to certain physical objects, making the reader easier to read the desired tags in a complex environment where many other tags are present.

For example, if you want to read the single tag on a pallet, there may also be hundreds of item level tags on the pallet. You can use the method of **Filter Value** to filter tags. Mobile applications can use the filter value to select or deselect different type of the same tag types.

Each tag has different **Filter Value** up to 7 definitions. Select one of the standards for Filter Value, and then press the **Enter** key.



Note: Filter values are available for all EPC types except for the General Identifier (GID).

► GDTI-96/GDTI-113 (Global Document Type Identifier)

Filter values marked as "Reserved" are reserved for assignment by EPCglobal in future versions of this specification. Alternatively, a filter value identified as "All Others" means that the object to which the tag affixes does not match the description of any of the other filter values defined in the EPC scheme. When encoding a new tag, the filter value should be set to match the description of the object to the affixed tag. "All Others" is used only if a suitable filter value for the object is not defined in the specification.

Type	Filter Value
All Others	0
Reserved	1~7

► GSRN-96 (Global Service Relation Number)

Type	Filter Value
All Others	0
Reserved	1~7

▶ SGTIN-96/SGTIN-198 (Serialized Global Trade Item Number)

Type	Filter Value
All Others	0
Point of Sale (POS) Trade Item	1
Full Case for Transport	2
Reserved	3
Inner Pack Trade Item Grouping for Handling	4
Reserved	5
Unit Load	6
Unit inside Trade Item or component inside a product not intended for individual sale	7

▶ SSCC-96 (Serial Shipping Container Coder)

Type	Filter Value
All Others	0
Reserved	1
Full Case for Transport	2
Reserved	3
Reserved	4
Reserved	5
Unit Load	6
Reserved	7

▶ SGLN-96/SGLN-195 (Global Location Number With or Without Extension)

Type	Filter Value
All Others	0
Reserved	1 ~ 7

▶ GRAI-96/GRAI-170 (Global Returnable Asset Identifier)

Type	Filter Value
All Others	0
Reserved	1 ~ 7

▶ GIAI-96/GIAI-202 (Global Individual Asset Identifier)

Type	Filter Value
All Others	0
Reserved	1 ~ 7

► DoD-96 (US Department of Defense Identifier)

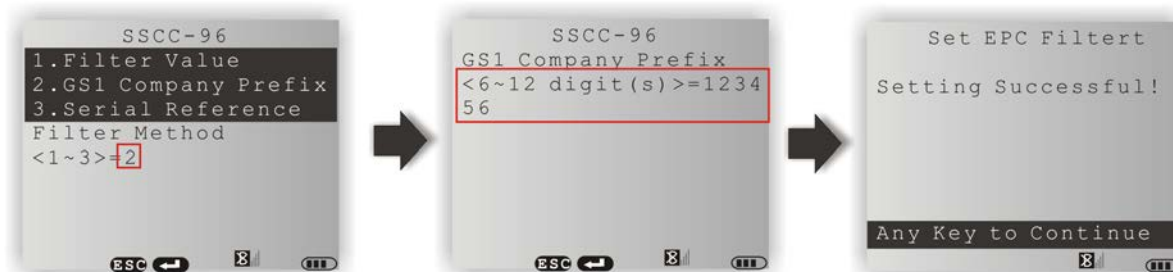
Type	Filter Value
Pallet (palletized unit load)	0
Case (shipping and exterior container)	1
Unit pack	2
Reserved	3~15

► ADI-var (ADI Identifier)

Type	Filter Value
All Others	0
Item, other than an item to which filter values 8 through 63 apply	1
Carton	2
Reserved	3~5
Pallet	6
Reserved	7
Seat cushions	8
Seat covers	9
Seat belts	10
Galley cars	11
Unit Load Devices, cargo containers	12
Security items (life vest boxes, rear lav walls, lav ceiling access hatches)	13
Life vests	14
Oxygen generators	15
Engine components	16
Avionics	17
Experimental ("flight test") equipment	18
Other emergency equipment (smoke masks, PBE, crash axes, medical kits, smoke detectors, flashlights. etc.)	19
Other rotables; e.g., line or base replaceable	20
Other repairable	21
Other cabin interior	22
Other repair (exclude component); e.g., structure item repair	23
Reserved	24~63

5.5.4 GS1 COMPANY PREFIX

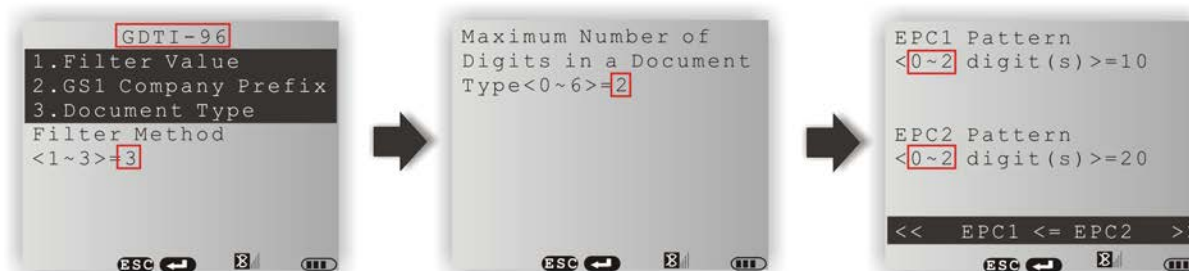
Here the GS1 Company Prefix is specified for digit number assigned by a GS1 Member Organization to a managing entity. The managing entity is free to create GS1 keys using the allocated GS1 Company Prefix. Key in the filter value, ranging from 000000 to 999999999999 with digits for the GS1 Company Prefix. Then press the **Enter** key.



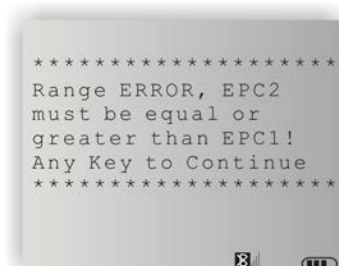
Note: GS1 Company Prefix is available for all EPC types except for the DoD-96, GID-96 and ADI-var.

5.5.5 DOCUMENT TYPE (GDTI-96/GDTI-113 ONLY)

The Document Type is assigned by the managing entity to a particular class of document. Key in the max. number of digits, ranging from 0 to 6 for Maximum Number of Digits in a Document. Then press the **Enter** key. Key in the values for EPC1 Pattern and EPC2 Pattern; both inputs must contain the same number of digits as specified in the previous screen. For example, if you key in "2" for Maximum Number of Digits, the range of number is the patterns that must be between "00" and "99".



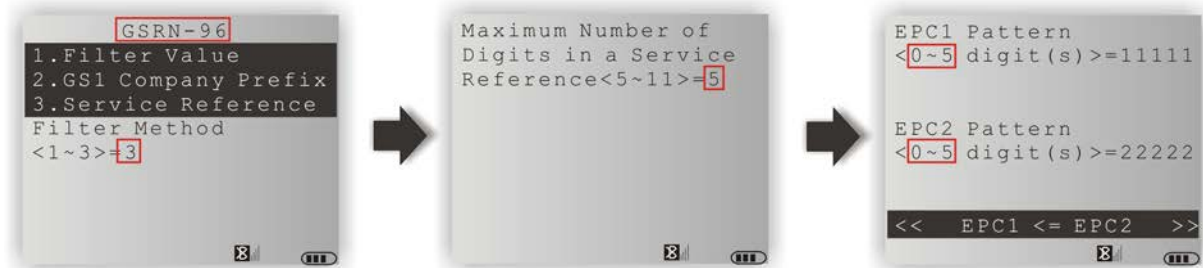
The value for EPC2 Pattern must be greater than or equal to EPC1 Pattern, otherwise an error message appear as below. Press any key to return to the previous screen.



5.5.6 SERVICE REFERENCE (GSRN-96 ONLY)

The Service Reference is assigned by the managing entity to a particular service relation.

Key in the max. number of digits, ranging from 5 to 11 for Maximum Number of Digits in a Service Reference, and then press the **Enter** key. Key in the values for EPC1 Pattern and EPC2 Pattern, both inputs must contain the same number of digits as specified in the previous screen. For example, if you key in "5" for Maximum Number of Digits, the range of number is the patterns that must be between "00000" and "99999".

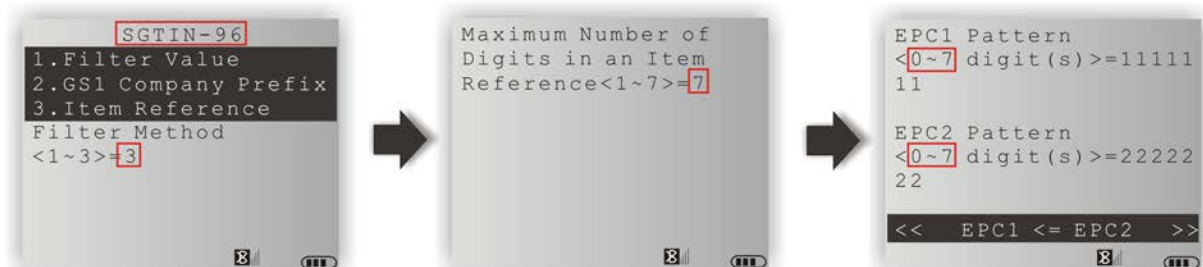


Note: The value for EPC2 Pattern must be greater than or equal to EPC1 Pattern, otherwise an error message will appear. Press any key to return to the previous screen

5.5.7 ITEM REFERENCE (SGTIN-96/SGTIN-198 ONLY)

The Item Reference is assigned by the managing entity to a particular object class.

Key in the max. number of digits, ranging from 1 to 7 for Maximum Number of Digits in an Item Reference, and then press the **Enter** key. Key in the values for EPC1 Pattern and EPC2 Pattern, both inputs must contain the same number of digits as specified in the previous screen. For example, if you key in "7" for Maximum Number of Digits, the range of number is the patterns that must be between "0000000" and "9999999".

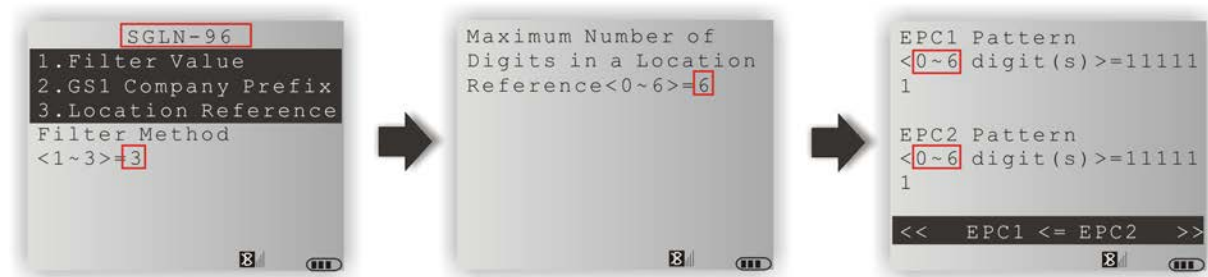


Note: The value for EPC2 Pattern must greater than or equal to EPC1 Pattern, otherwise an error message will appear. Press any key to return to the previous screen

5.5.8 LOCATION REFERENCE (SGLN-96/SGLN-195 ONLY)

The Location Reference is assigned uniquely by the managing entity to a specific physical location.

Key in the max. number of digits, ranging from 0 to 6 for Maximum Number of Digits in a Location Reference, and then press the **Enter** key. Key in the values for EPC1 Pattern and EPC2 Pattern, both inputs must contain the same number of digits as specified in the previous screen. For example, if you key in "6" for Maximum Number of Digits, the range of number is the patterns that must be between "000000" and "999999".



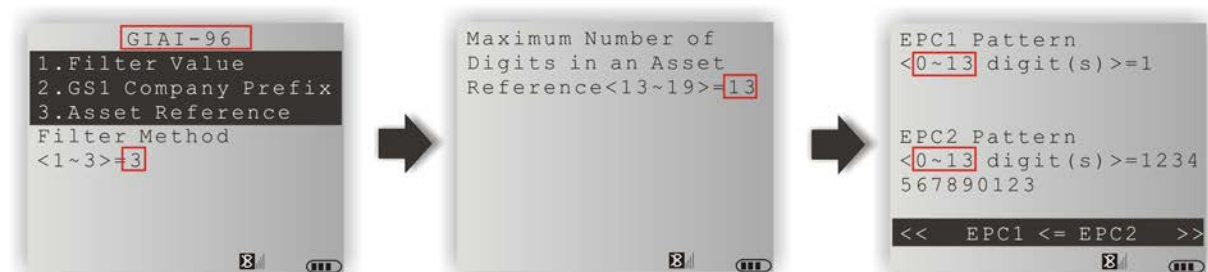
Note: The value for EPC2 Pattern must greater than or equal to EPC1 Pattern, otherwise an error message will appear. Press any key to return to the previous screen.

5.5.9 ASSET REFERENCE (GIAI-96/GIAI-202 ONLY)

The Asset Reference is assigned uniquely by the managing entity to a specific asset.

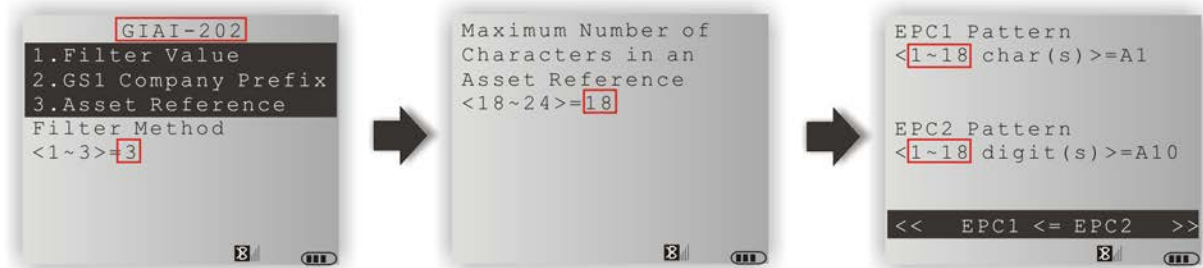
► GIAI-96

Key in the max. number of digits, ranging from 13 to 19 for Maximum Number of Digits in an Asset Reference, and then press the **Enter** key. Key in the values for EPC1 Pattern and EPC2 Pattern, both inputs must contain the same number of digits as specified in the previous screen. For example, if you key in "13" for Maximum Number of Digits, the range of number is the patterns that must be between "00000000000000" and "99999999999999".



► GIAI-202

Key in the max. number of digits, ranging from 18 to 24 for Maximum Number of Character in a Asset Reference, and then press the Enter key. Key in the values for EPC1 Pattern and EPC2 Pattern, both inputs must contain the same number of digits as specified in the previous screen. For example, if you key in "18" for Maximum Number of Characters, the range of number is the patterns that must be between "000000000000000000" and "999999999999999999".

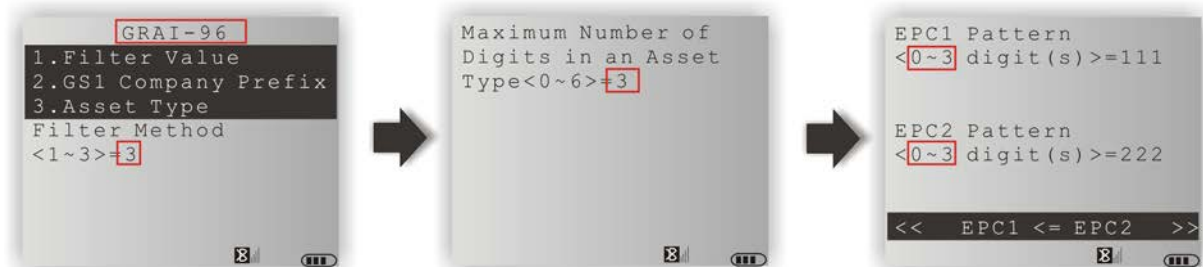


Note: The value for EPC2 Pattern must be greater than or equal to EPC1 Pattern. 0~9, A~Z and a~z are allowed for GIAI-202. Theoretically, A~Z (a~z) inputted are greater than 0~9 digits. Upper case letters are greater than lower case letters. If an error occurs, the error message will appear; press any key to return to the previous screen.

5.5.10 ASSET TYPE (GRAI-96 ONLY)

The Asset Type is assigned by the managing entity to a particular class of asset.

Key in the max. number of digits, ranging from 0 to 6 for Maximum Number of Digits in an Asset Reference, and then press the **Enter** key. Key in the values for EPC1 Pattern and EPC2 Pattern, both inputs must contain the same number of digits as specified in the previous screen. For example, if you key in "6" for Maximum Number of Digits, the range of number is the patterns that must be between "000000" and "999999".

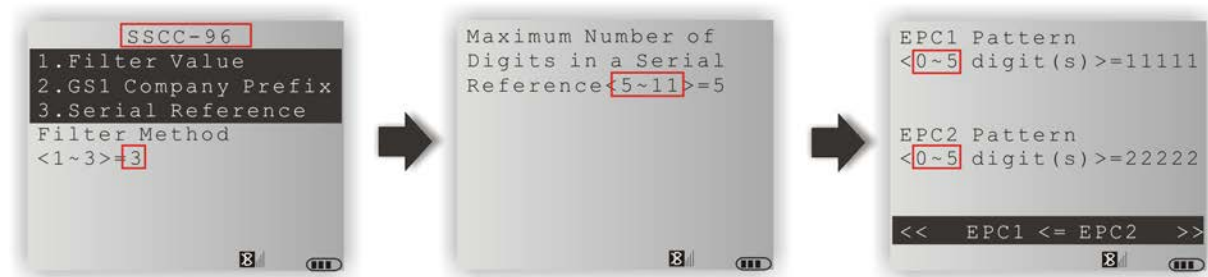


Note: The value for EPC2 Pattern must be greater than or equal to EPC1 Pattern, otherwise an error message will appear. Press any key to return to the previous screen

5.5.11 SERIAL REFERENCE (SSCC-96 ONLY)

The Serial Reference is assigned by the managing entity to a particular logistics handling unit.

Key in the max. number of digits, ranging from 5 to 11 for Maximum Number of Digits in a Serial Reference, and then press the **Enter** key. Key in the values for EPC1 Pattern and EPC2 Pattern, both inputs must contain the same number of digits as specified in the previous screen. For example, if you key in "5" for Maximum Number of Digits, the range of number is the patterns that must be between "00000" and "99999".

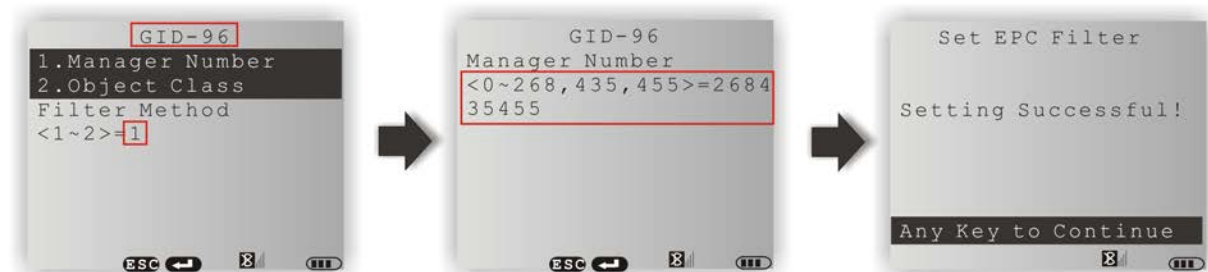


Note: The value for EPC2 Pattern must be greater than or equal to EPC1 Pattern, otherwise an error message will appear. Press any key to return to the previous screen.

5.5.12 MANAGER NUMBER (GID-96 ONLY)

EPCglobal assigns the Manager Number to an entity, and ensures that each Manager Number is unique. Manager Number identifies an organizational entity (essentially a company, manager or other organization) that is responsible for maintaining the numbers in subsequent fields – **Object Class** and **Serial Number**.

Key in the filter value, ranging from 0 to 268435455 for the Manager Number. Then press the **Enter** key.

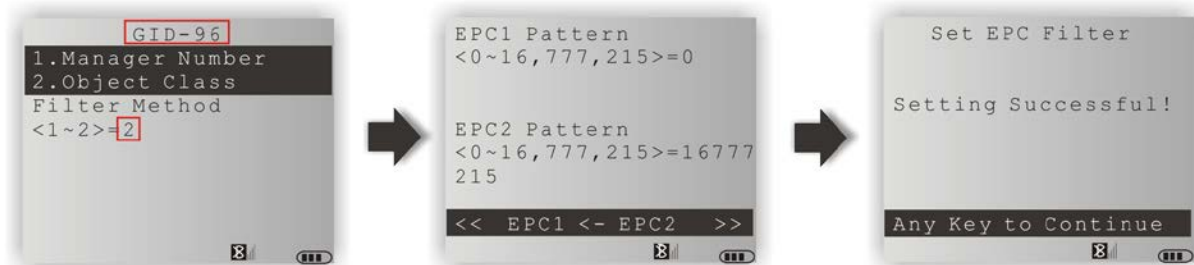


Note: A Manager Number is not a GS1 Company Prefix. Manager Number is only used in GID EPCs.

5.5.13 OBJECT CLASS (GID-96 ONLY)

The Object Class is used by an EPC managing entity to identify a class or “type” of thing. These object class numbers must be unique.

Key in the filter value, ranging from 0 to 16,777,215 for the Patterns. Then press the **Enter** key.

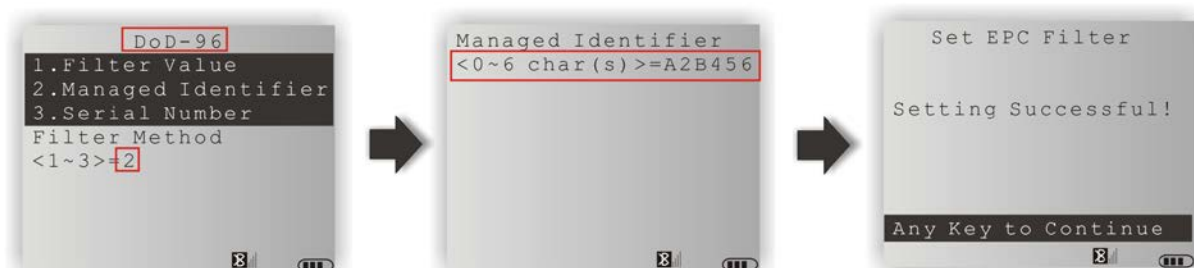


Note: A Manager Number is not a GS1 Company Prefix. Manager Number is only used in GID EPCs.

5.5.14 MANAGED IDENTIFIER (DOD-96 ONLY)

This field will be encoded with the respective supplier's CAGE code. This code identifies the supplier and ensures uniqueness of serial number across all suppliers.

Key in the filter value with upper case characters or space for the Managed Identifier. Then press the **Enter** key.

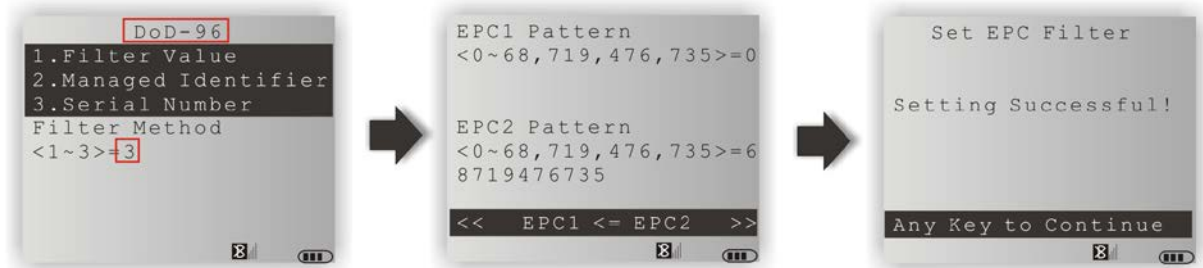


Note: For DoD-96, only 0~9 digits, space and upper case letters A~Z except for I and O are used. If an error occurs, an error message will appear; press any key to return to the previous screen.

5.5.15 SERIAL NUMBER (DOD-96 ONLY)

Serial Number for DoD-96 can be uniquely identified up to 68719476736 tagged items. The serial number in the RFID tag ID is merely a unique number assigned by the supplier to represent a specific RFID tag. It is not the same as the serial number of the product being shipped.

Key in the filter value, ranging from 0 to 68719476745 with tagged serial number for EPC1 Pattern and EPC2 Pattern. Then press the **Enter** key.

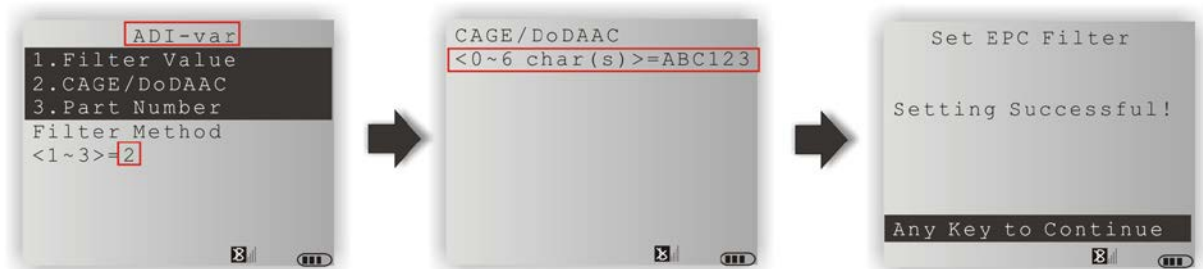


Note: The value for EPC2 Pattern must be greater than or equal to EPC1 Pattern. If an error occurs, the error message will appear; press any key to return to the previous screen.

5.5.16 CAGE/DODAAC (ADI-VAR ONLY)

This is a six position code that uniquely identifies a unit, activity, or organization that has the authority to requisition and/or receive material.

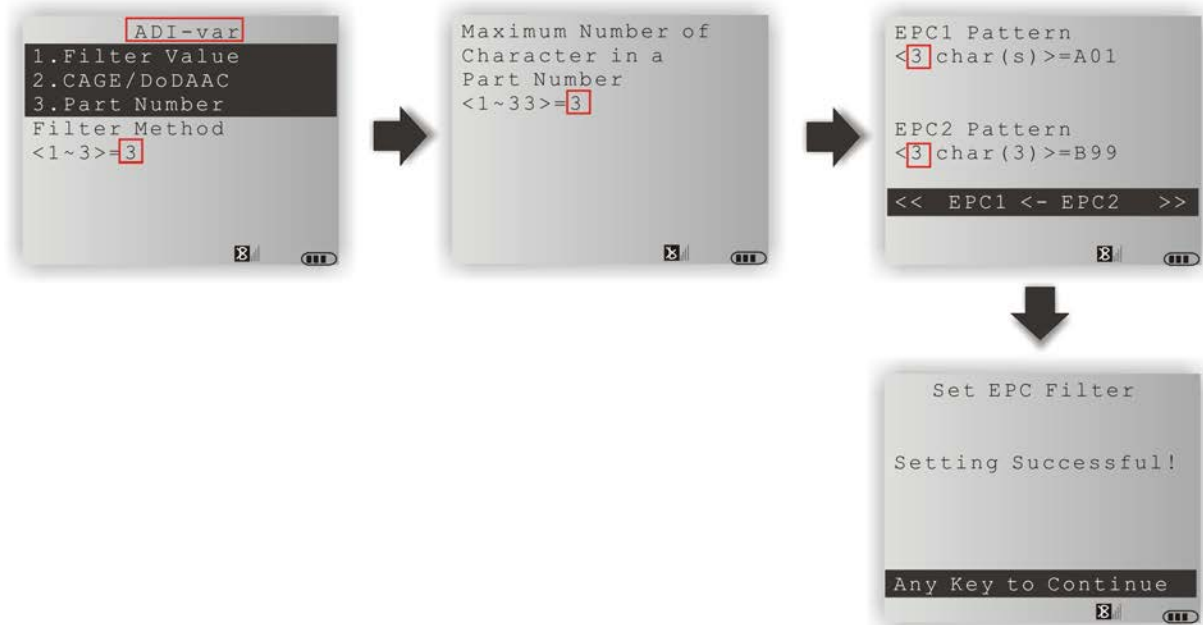
Key in the filtered value with digits or upper case characters for the CAGE/DoDAAC, then press Enter key.



5.5.17 PART NUMBER (ADI-VAR ONLY)

An original part number that is unique within the CAGE code or DoDAAC and a sequential serial number that is uniquely assigned within that original part number.

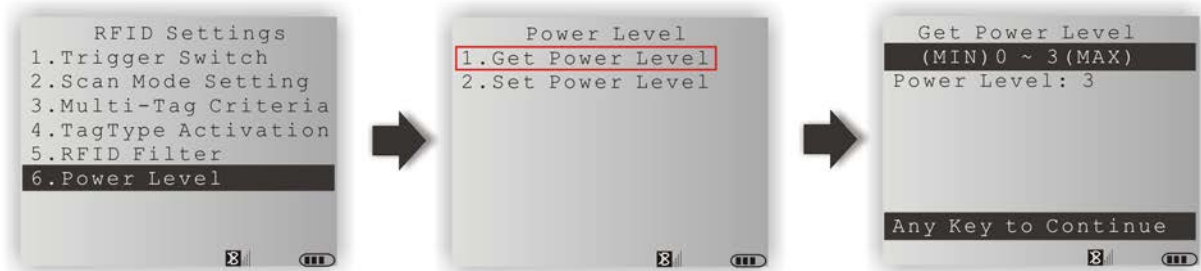
Key in the number of digits, ranging from 1 to 33 for Maximum Number of Characters in a Part Number, and then press the **Enter** key. Key in the values for EPC1 Pattern and EPC2 Pattern, both inputs must contain the same number of digits as specified in the previous screen.



Note: Only 0~9 digits upper case letters A~Z are available. If an error occurs, the error message will appear; press any key to return to the previous screen.

5.6 POWER LEVEL

Go to **4. RFID Settings** | **6. Power Level** and select **1. Get Power Level** by pressing the [1] key to show the current reader power level.



Go to **4. RFID Settings** | **7. Power Level** and select **2. Set Power Level** by pressing the [2] key to configure the 1800 RFID signal power level. The greater value is specified for the stronger signal. By default, the level is set to '3' (1861) or '15' (1862) for the strongest broadcast.



Note: This setting is only to adjust the signal strength of the RFID reader. Thus the user is supposed to toggle the reader switch to RFID mode before configuring power level. Otherwise, a setting failure message will show up on the screen.



OUTPUT SETTINGS

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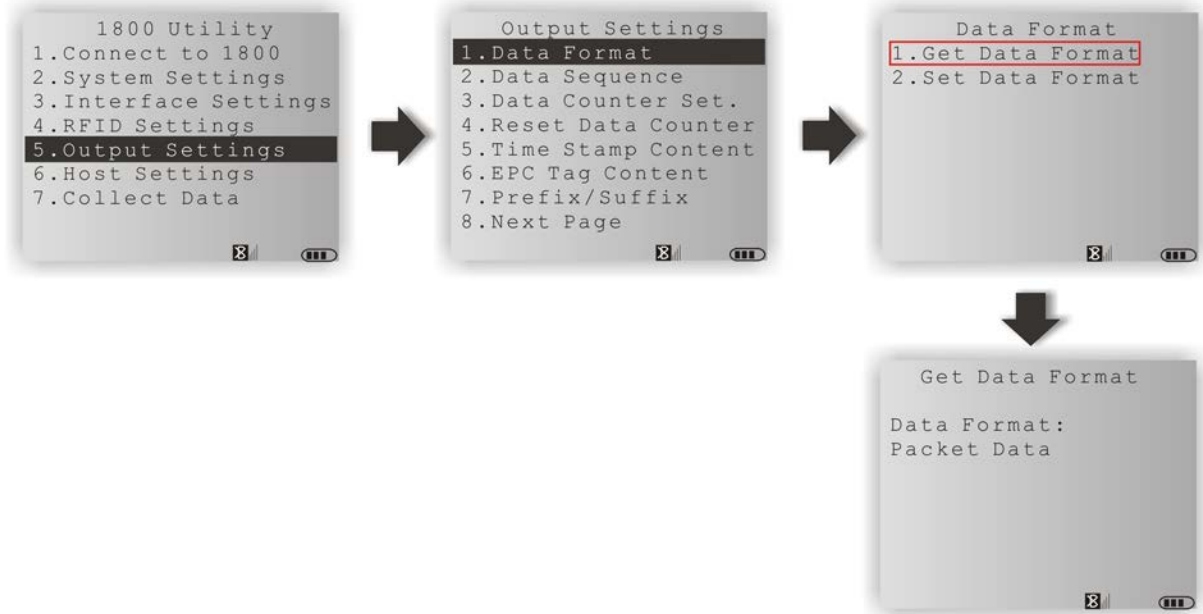
6.7 Prefix/Suffix 66

6.8 Programmable Key 68

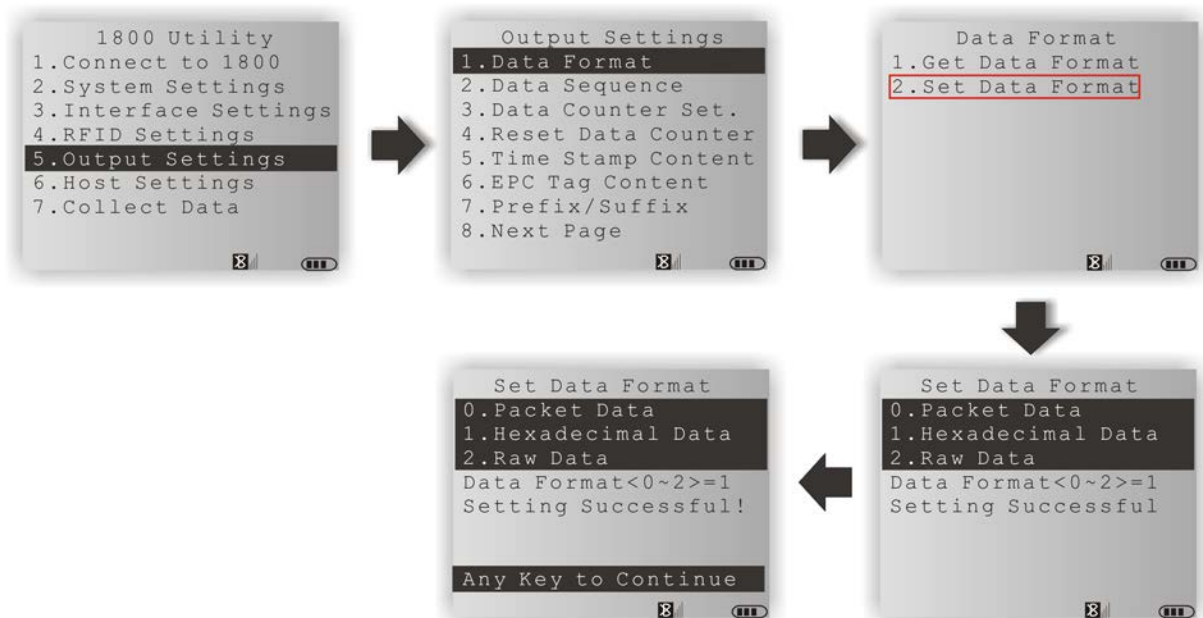
6.9 Output via USB..... 70

6.1 DATA FORMAT

The 1800 RFID Reader can output data in various formats. This chapter discusses the available formats. By default, the data format is set to Packet Data.



On the 1800 Utility main menu, go to **5. Output Settings | 1. Data Format** and select **2. Set Data Format** by pressing the [2] key to select the output data format.



1800 RFID reader supports Packet Data, Hexadecimal data and Raw Data for data collected from a tag. The relation between *Bluetooth*[®] interface and output data formats are described as below:

BT SPP/3610 VCOM (USB VCOM via 3610)

The output formats for *Bluetooth*[®] SPP/USB VCOM via 3610 are specified to Packet Data, Hexadecimal, and Raw Data. The default value is Packet Data.

BT HID/3610 HID (USB HID via 3610)

The output formats for *Bluetooth*[®] HID/USB HID via 3610 are specified to Hexadecimal and Raw Data. The default value is Hexadecimal.

Note: *Bluetooth*[®] HID or USB HID via 3610 interface does not support Packet Data as an output format.

6.1.1 PACKET DATA

Choose Packet Data as the output format in order to prevent data loss during transmission. The preamble (packet header), packet length, checksum bits etc. will be added to the packet before transmitting. Please refer to the packet format shown below.

Preamble	Packet Length	Message Type	OP Code	Data	Checksum	End Mark
1 Byte	1 Byte	1 Byte	2 Byte (MSB first)	0~251 Bytes	2 Byte (MSB first)	1 Byte

6.1.2 HEXADECIMAL

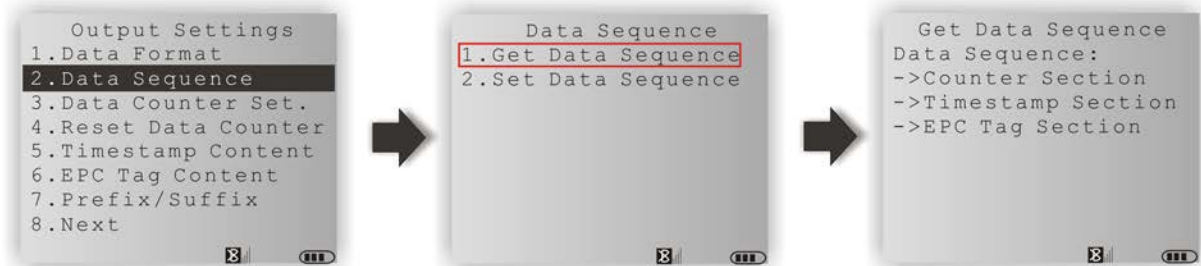
With this output format specified, the source data will be interpreted in hexadecimal format.

6.1.3 RAW DATA

As the name implies, raw data output will be recorded and displayed faithfully according to the original data type. In this case, the output data type will be in Hexadecimal, but adopting the sequence and options selected by the user.

6.2 DATA SEQUENCE

Data output consists of three parts, the counter, the time/date stamp and the tag data. By default, the sequence is Counter, Timestamp and EPCTag. Go to **5. Output Settings | 2. Data Sequence** and select **1. Get Data Sequence** by pressing the [1] key to display current sequence setting.

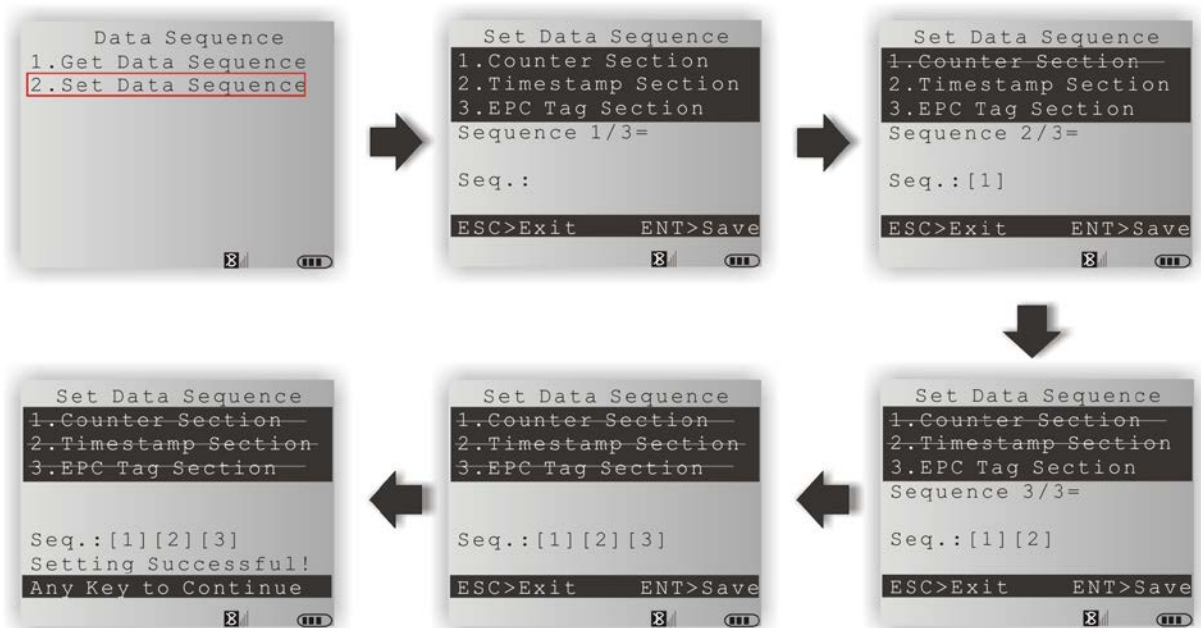


Go to **5. Output Settings | 2. Data Sequence** and select **2. Set Data Sequence** by pressing the [2] key to configure the sequence of data output.

- ▶ Each section can be enabled or disabled.
- ▶ Each section has individual prefix and suffix.
- ▶ The sequence for each section can be adjusted.

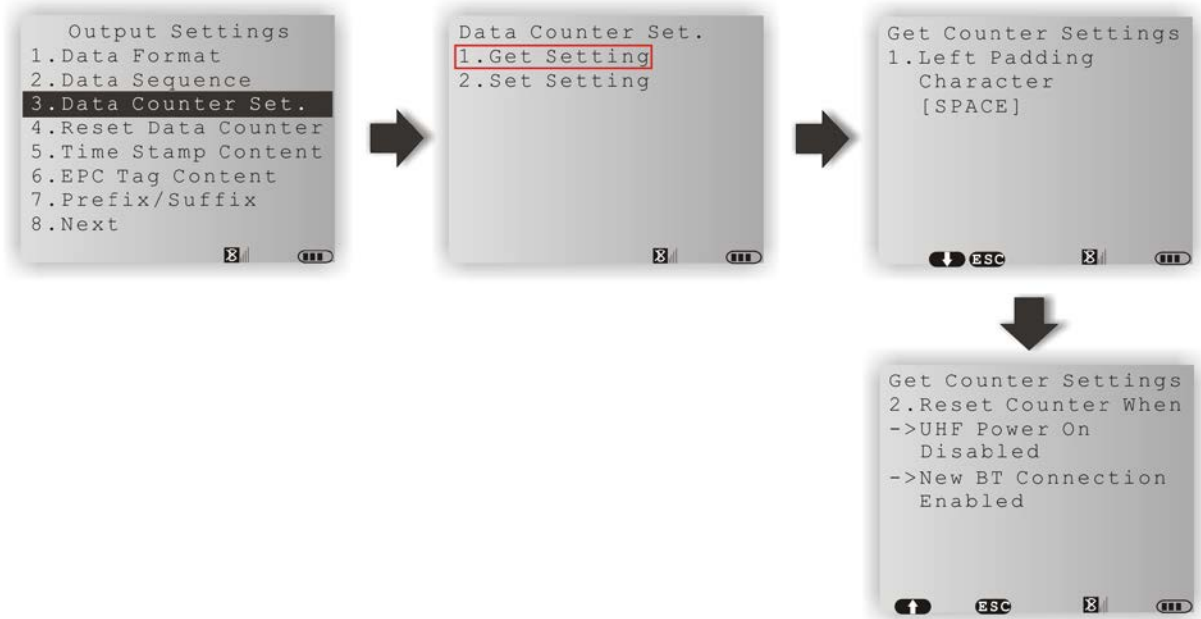
To set a sequence, select the sequence number that corresponds to the data type you would like to include. Do this in the order you want the data to be sent. The figures illustrated below show that the counter will be the first section, timestamp the next, and then EPCTag.

As a data type is selected, the screen will show a strikethrough mark through the option leaving the available options to follow.



6.3 DATA COUNTER SETTING

You can define the padding character for the data counter. The counter contains a sequential number corresponding to the transmitted record. The padding character is to the left of the counter value. By default, the value is SPACE.



Go to **5. Output Setting | 3. Data Counter Set.** and select **2. Set Setting** by pressing the [2] key to set data counter events. There are two events supported to reset the counter. Here you can also set counter content to left padding characters. By default, "SPACE" and "0" are specified to counter contents.



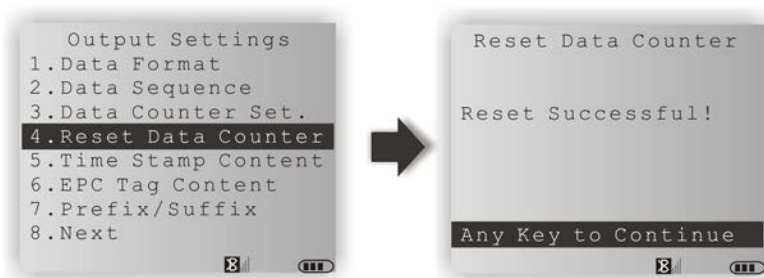
1800 Utility | 5. Output Settings | 3. Data Counter Set. | 2. Set Setting

UHF Power On	0. Disable 1. Enable (Default)
New Connection	0. Disable 1. Enable (Default)

Note: Data Counter can be reset when the 1800 RFID reader system powers on or a new connection is established.

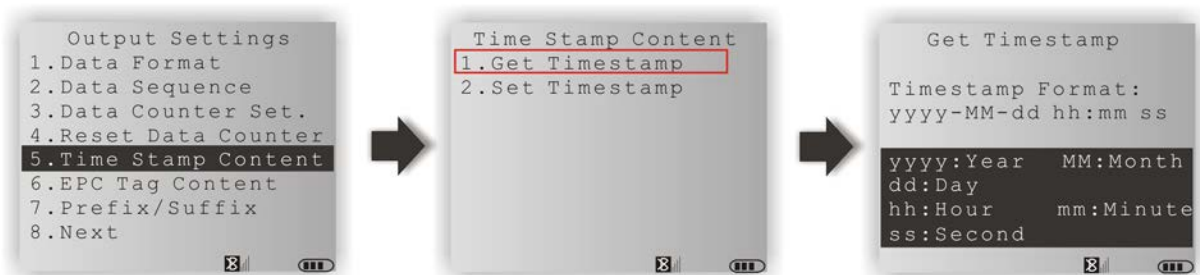
6.4 RESET DATA COUNTER

Go to **5. Output Settings | 4. Reset Data Counter** for resetting the counter to default value.



6.5 TIMESTAMP CONTENT

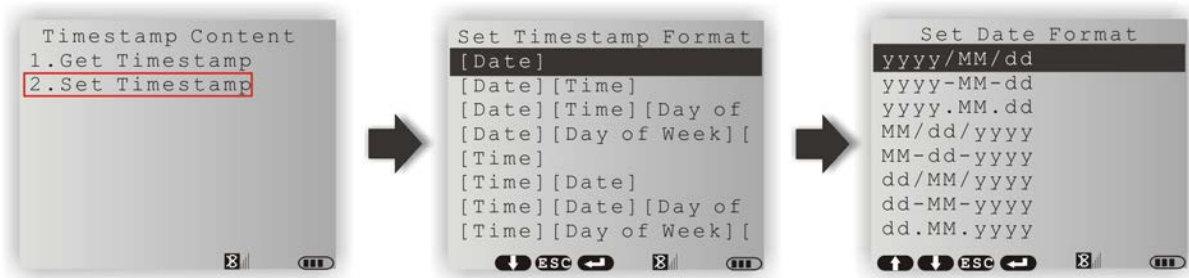
Timestamp section is divided into Date and Time settings. In this section you are also able to configure the field separators. There are three separators – “**Space**”, “-” and “,” pre-specified to Timestamp section.



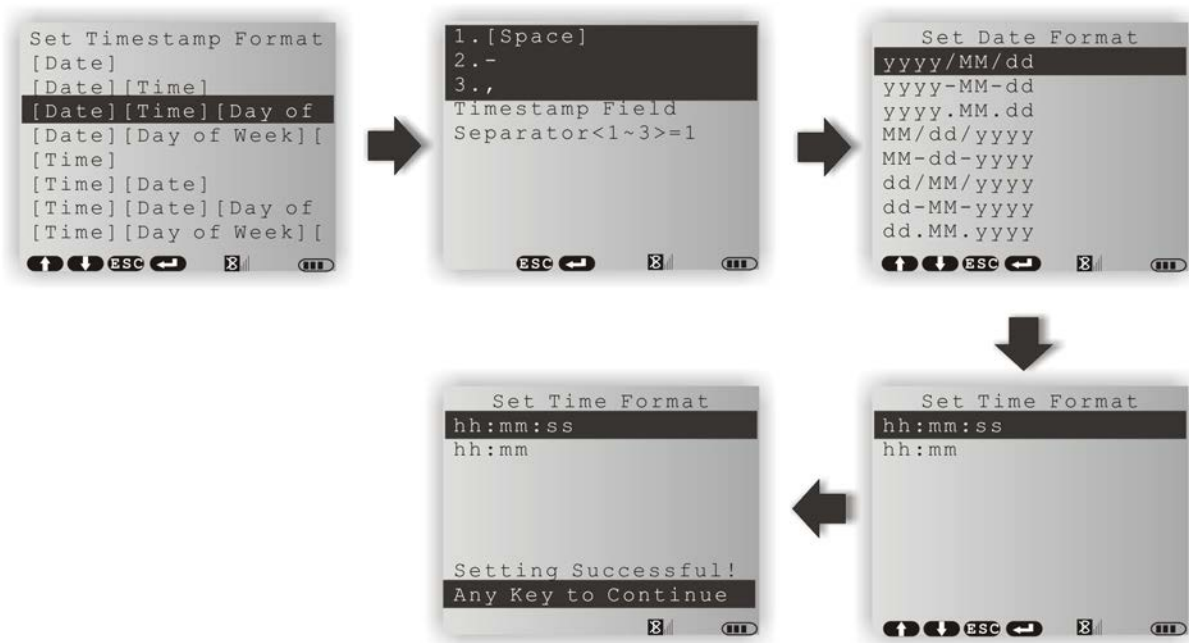
Note: By default, Day of Week field is disabled.

Go to **5. Output Settings | 5. Timestamp Content** and select **2. Set Timestamp** by pressing the [2] key to set Timestamp content and sequence.

Example 1:



Example 2:



Timestamp Sequence

- [Date]
- [Date][Time]
- [Date][Time][Day of Week]
- [Date][Day of Week][Time]
- [Time]
- [Time][Date]
- [Time][Date][Day of Week]
- [Time][Day of Week][Date]

[Day of Week][Date][Time]

[Day of Week][Time][Date]

Date Format

yyyy/MM/dd

yyyy-MM-dd

yyyy.MM.dd

MM/dd/yyyy

MM-dd-yyyy

dd/MM/yyyy

dd-MM-yyyy

dd.MM.yyyy

Time Format

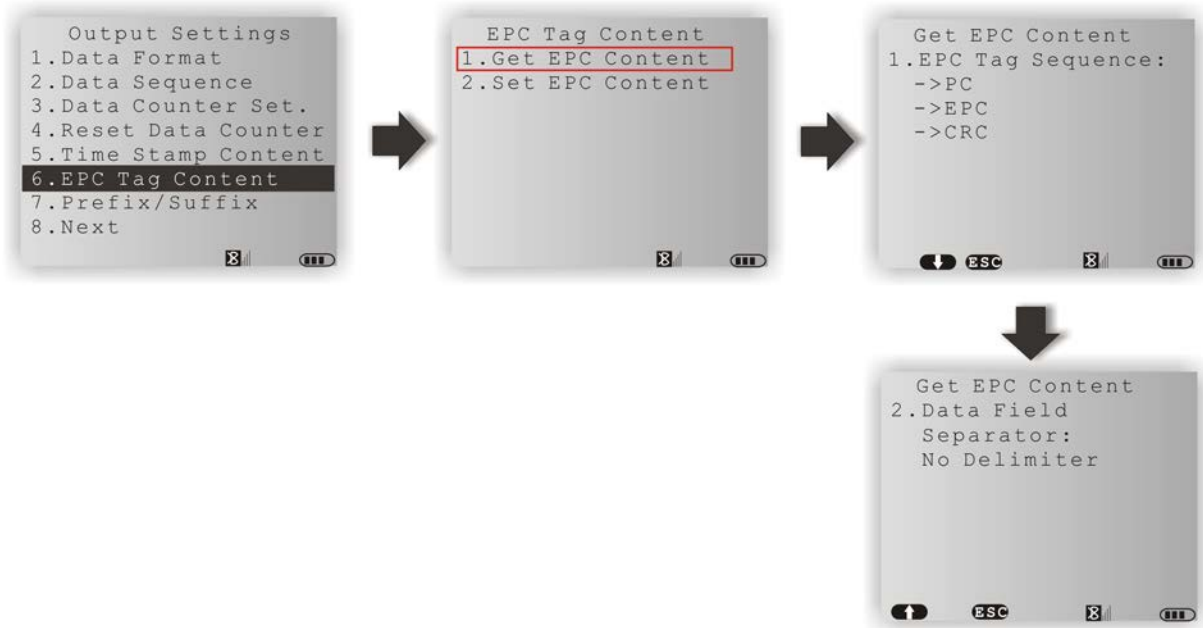
hh:mm:ss

hh:mm

Note: If the field is disabled, the separator will also be ignored.

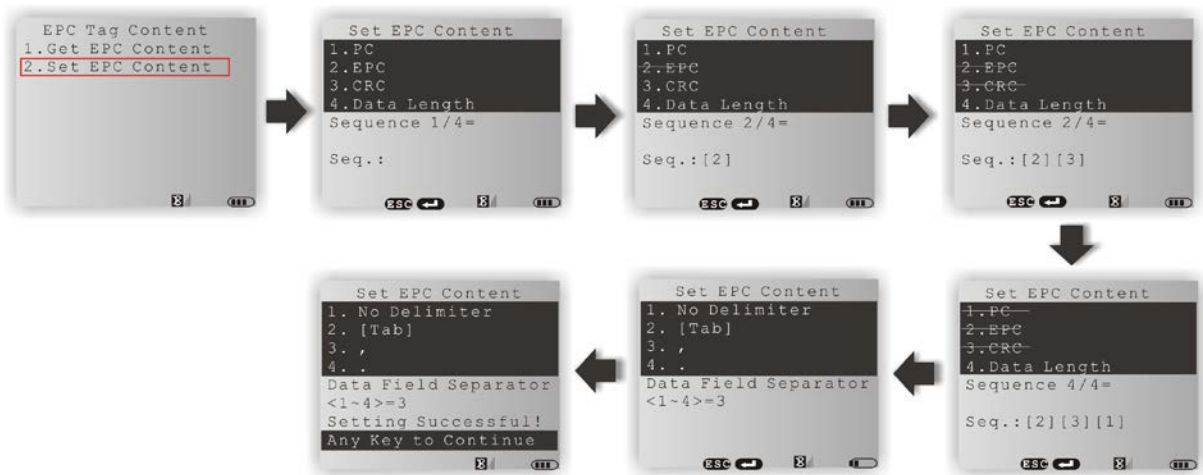
6.6 EPC TAG CONTENT

EPCTag Content is divided into PC, EPC, CRC and Data Length. The following separators may also be used between fields – “No Delimiter”, “Tab”, “,” and “.”. By default, the Data Length is disabled. For Data Length the separators are not included.



Go to **5. Output Settings | 6. EPCTag Content** and select **2. Set EPC Content** by pressing the [2] key to configure EPC contents and sequences.

To set a sequence, select the sequence number that corresponds to the data type you would like to include. Do this in the order you want the data to be sent. As a data type is selected, the screen will show a strikethrough through the option leaving the available options to follow.

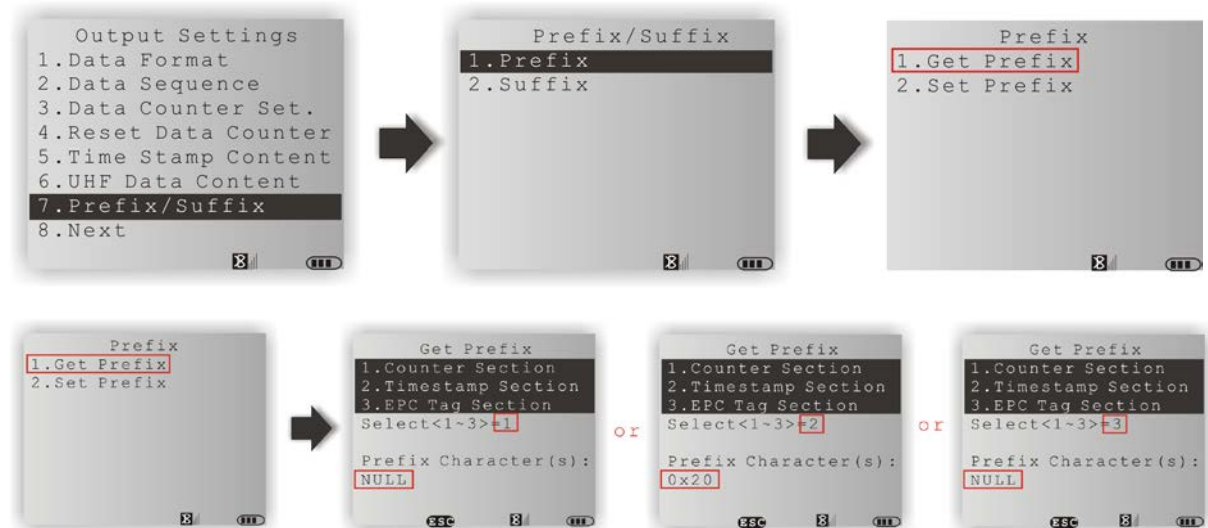


Note: If the field is disabled, the separator will also be ignored.

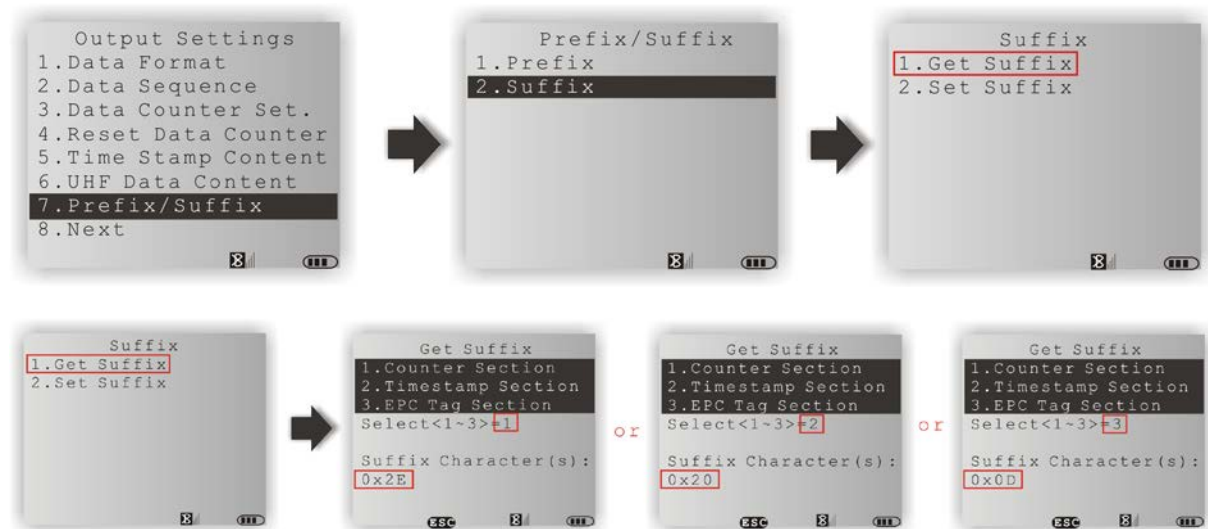
6.7 PREFIX/SUFFIX

By default, there is no prefix code assigned to each section, and [ENTER] or [CR] (Carriage Return) is configured to be suffix code for each data record.

Prefix:



Suffix:

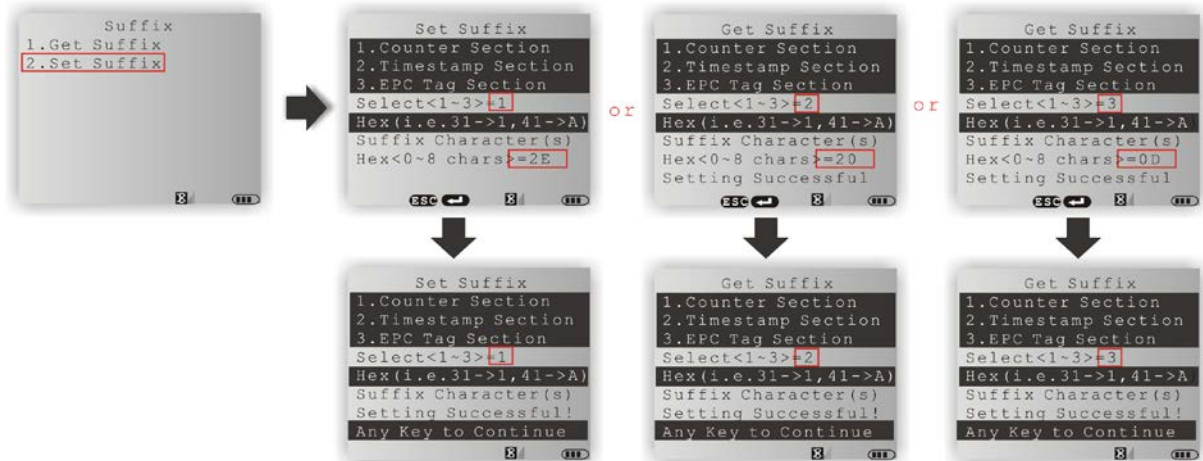


Go to **5. Output Settings** | **7. Prefix/Suffix** and select **1. Prefix** or **2. Suffix** illustrated as below.

Prefix: On the Prefix/Suffix menu, select **1. Prefix** | **2. Set Prefix** by pressing the [2] key. You can define the prefix and suffix using a hexadecimal value for each character you want to use.



Suffix: On the Prefix/Suffix menu, select **2. Suffix** | **2. Set Suffix** by pressing the [2] key. Please refer to [ASCII Table](#).

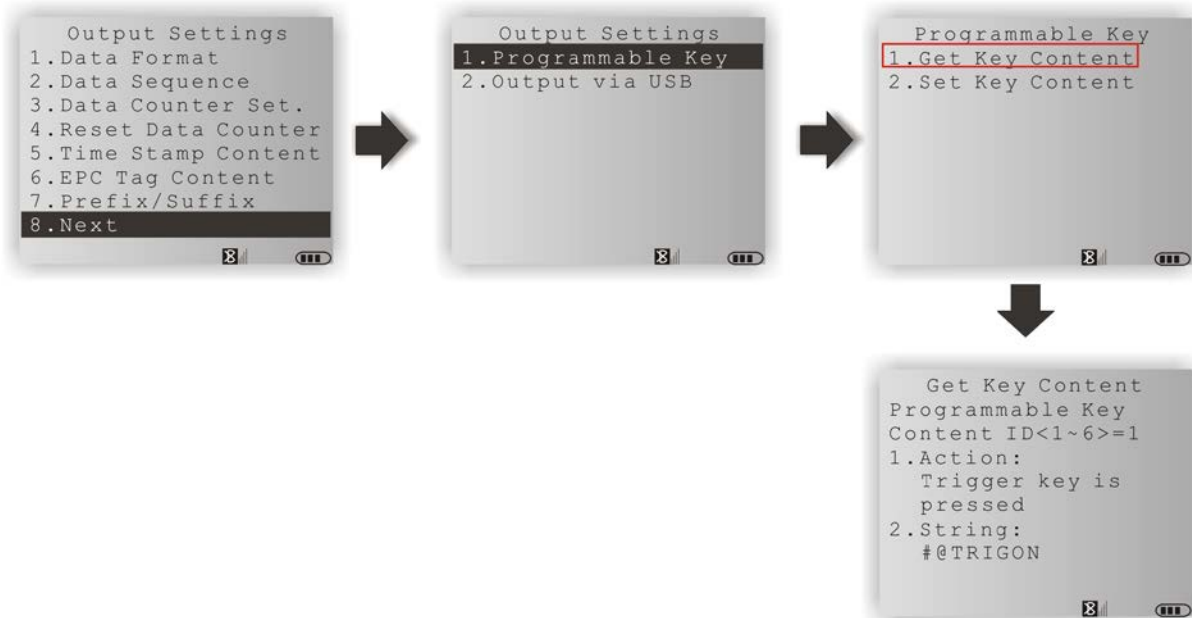


Note: Up to 8 characters can be configured as prefix or suffix. If the specified content is longer than 8 bytes, it will be truncated.

6.8 PROGRAMMABLE KEY

1800 Utility supports up to 6 output strings that can be allocated to programmable keys. These programmable keys are used to send the terminal predefined strings describing the action performed. There are a total of 8 actions that can be monitored and allocated.

Example: For programmable key ID 1 content



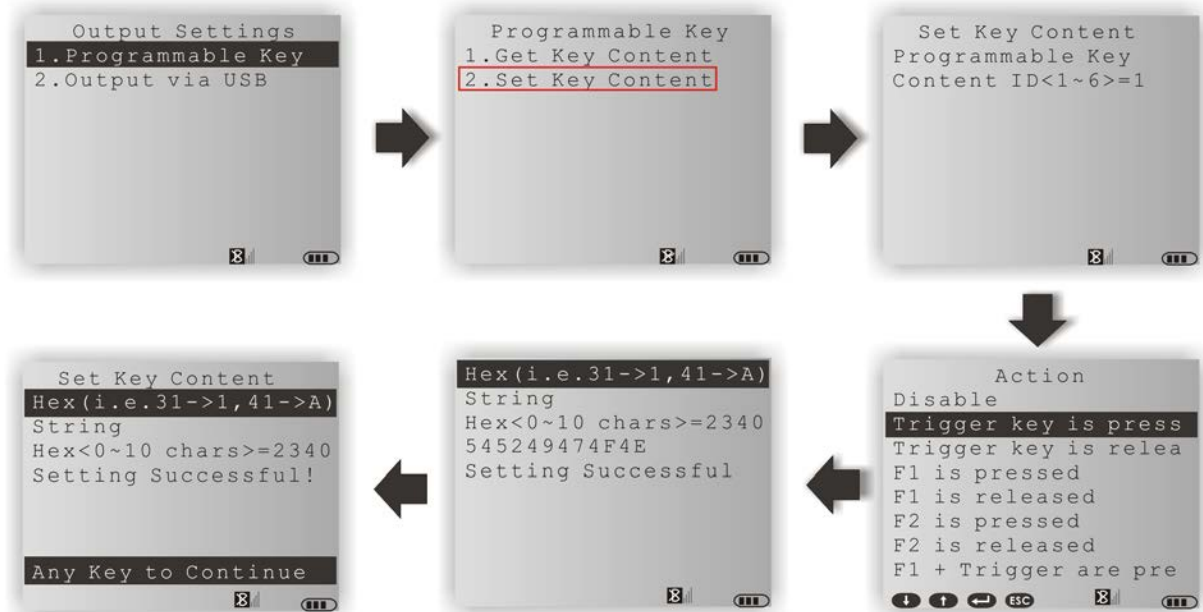
Action

0	Disable
1	Trigger is pressed
2	Trigger is released
3	F1 is pressed
4	F1 is released
5	F2 is pressed
6	F2 is released
7	F1+Trigger are pressed
8	F2+Trigger are pressed

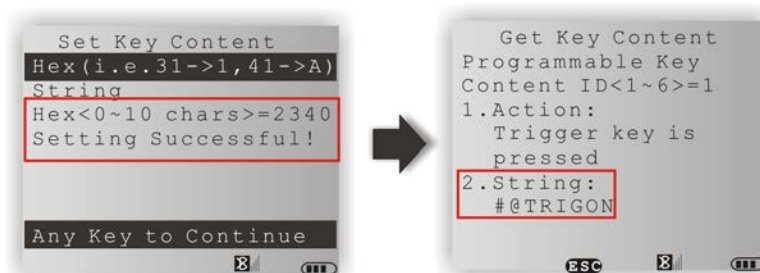
Key Content (Default)

ID 1	Action: Trigger is pressed → String: # @ TRIGON\r	
ID 2	Action: Trigger is released	String: # @ TRIGOFF
ID 3	Action: Disable	→ String: NULL
ID 4	Action: Disable	→ String: NULL
ID 5	Action: Disable	→ String: NULL
ID 6	Action: Disable	→ String: NULL

Go to **5. Output Settings | 8. Programmable Key** and select **2. Set Key Content** by pressing the [2] key. You can define the content using hexadecimal. All strings defined must be equal to or less than 10 bytes in length. If a specified content is longer than 10 bytes, it will be truncated.



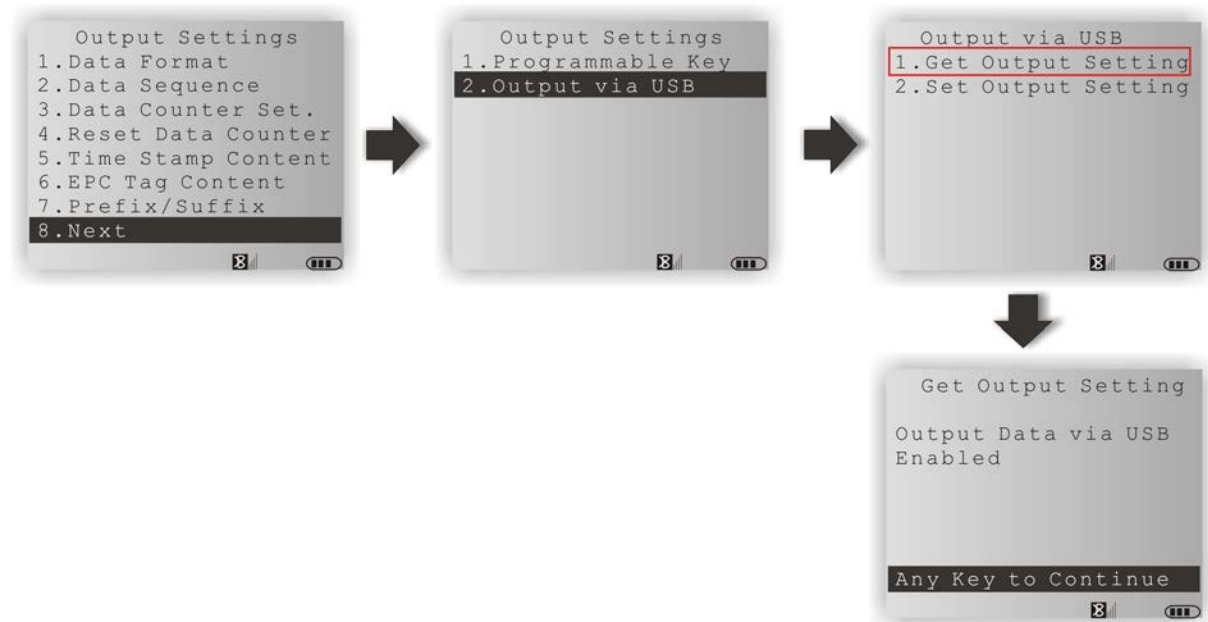
Define a string using hexadecimal characters. For example, to set the value to "#@TRIGON" the hexadecimal value is "2340545249474F4E". Please refer to [ASCII Table](#).



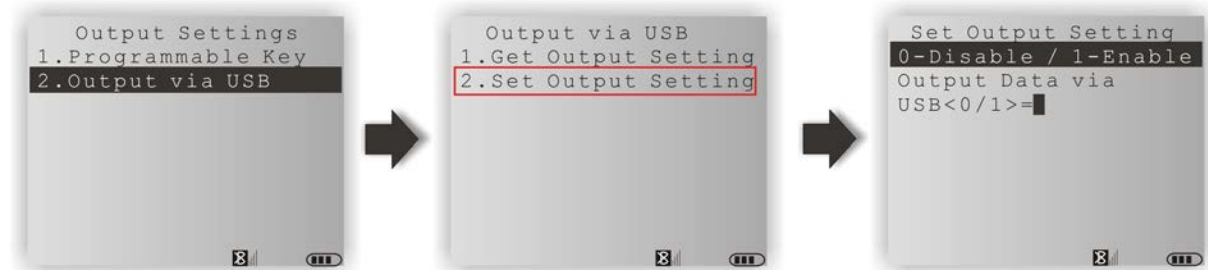
6.9 OUTPUT VIA USB

Users can decide whether the RFID reader can dump collected tag data through the USB connection to your PC.

Note: While this function is enabled, keep it in mind that all tag data will only be transferred through the USB connection instead of the Bluetooth one. Certainly, a data receiving application is supposed to be launched on PC to which the USB cable connects.



Go to **8. Next** | **2. Output via USB** and select **2. Set Output Setting** by pressing the [2] key to disable/enable this function.



Chapter 7

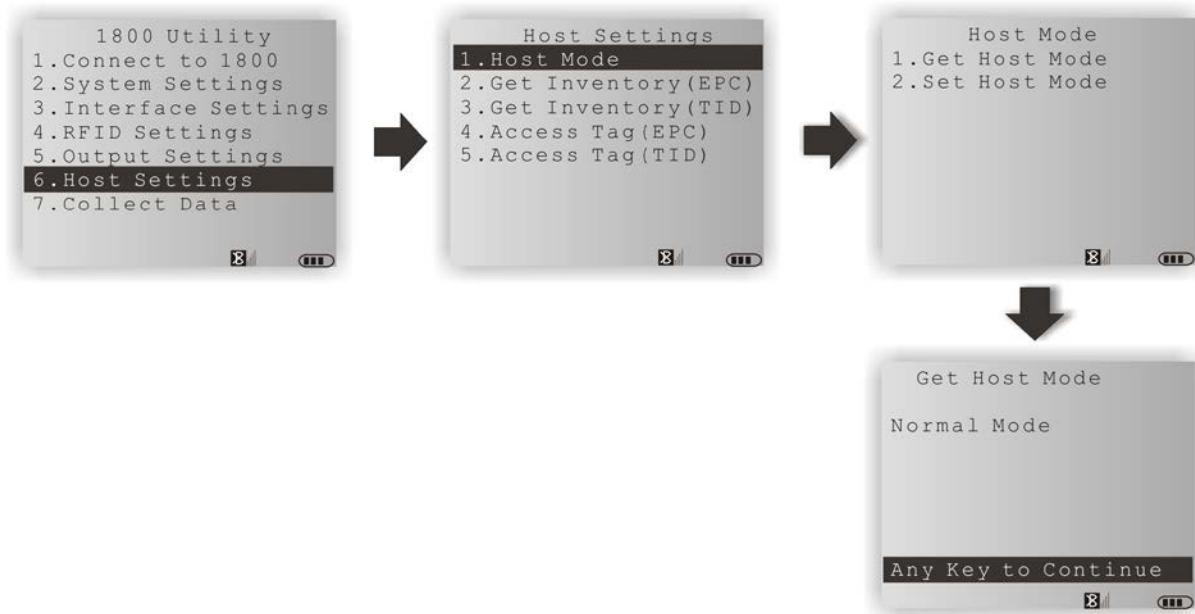
HOST SETTINGS

IN THIS CHAPTER

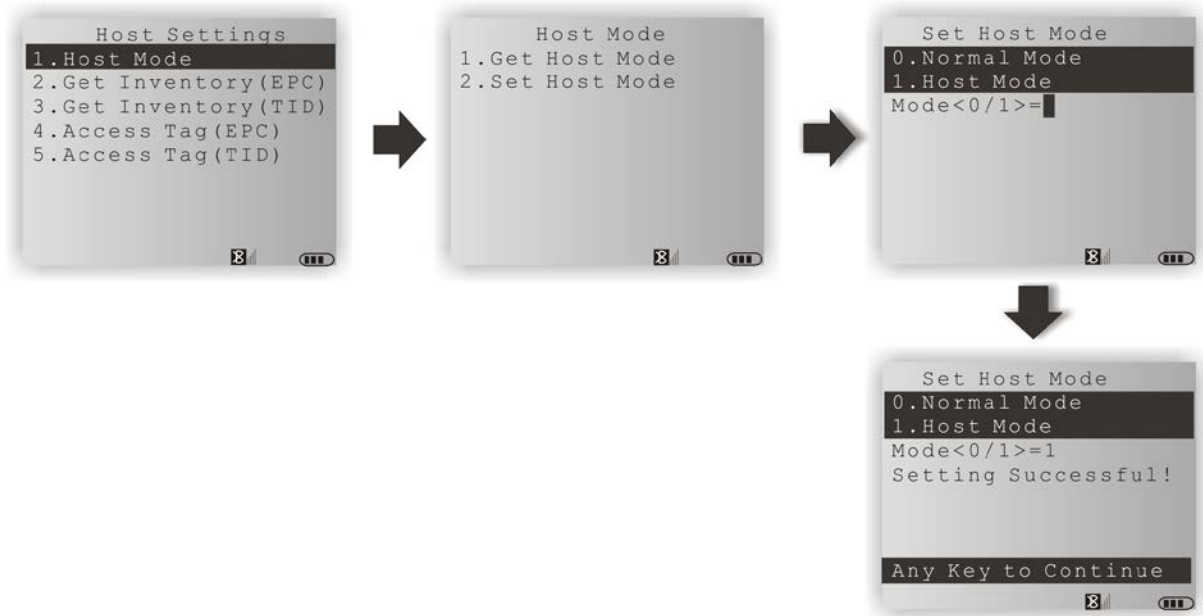
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7.1 HOST MODE

In general, you can hold the 1800 RFID Reader in your hand to collect tag data by pressing the trigger. Alternatively, the reader supports a convenient way called Host Mode allowing users to collect tag data without pressing the trigger.



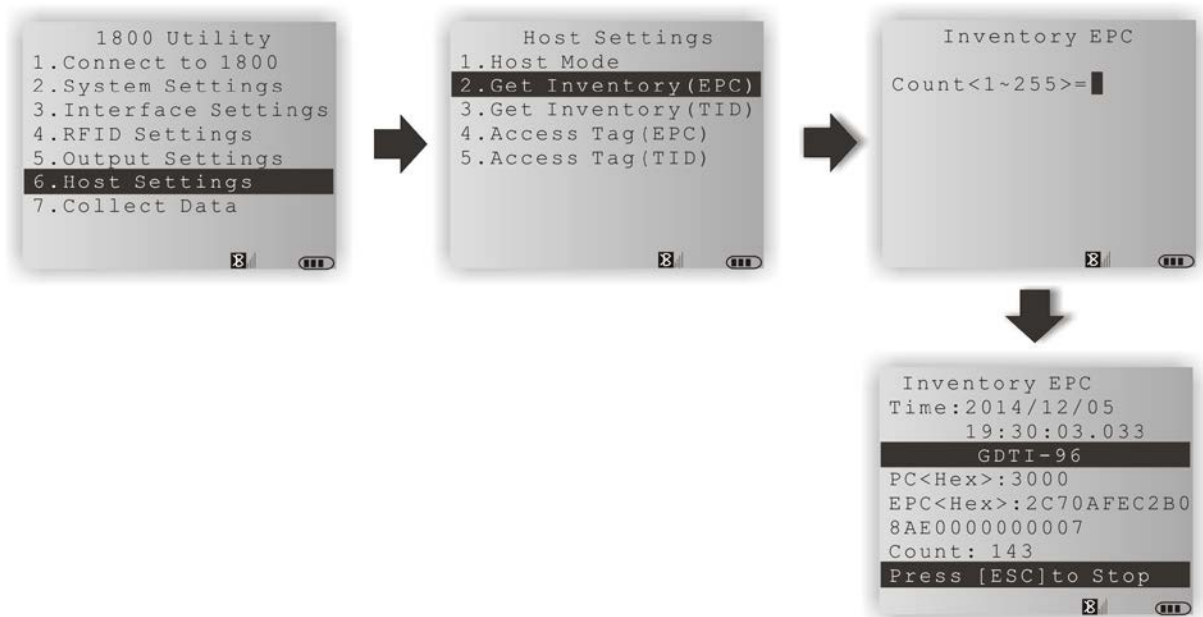
Go to **6. Host Settings** | **1. Host Mode** and select **2. Set Host Mode** by pressing the [2] key to configure this function. And then, as the pictures illustrated below, press [0] or [1] to set the reader to Normal Mode or Host Mode.



Note: The following functions in this chapter work only when the Host mode is activated.

7.2 GET INVENTORY (EPC)

You can get the EPC data of a tag via this function. Go to **6. Host Settings | 2. Get Inventory (EPC)** and then specify the count of tags to be read. You can press [ESC] to stop the task during scanning.



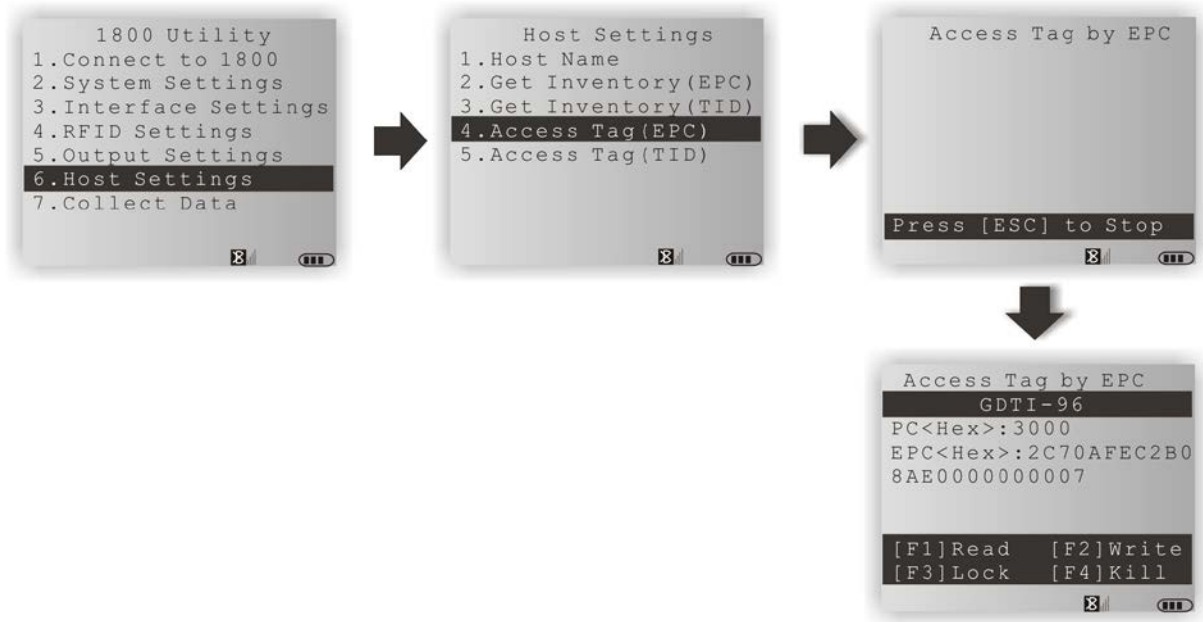
7.3 GET INVENTORY (TID)

You can get the TID data of a tag via this function. Go to **6. Host Settings** | **3. Get Inventory (TID)** and then specify the count of tags to be read. You can press [ESC] to stop the task during scanning.



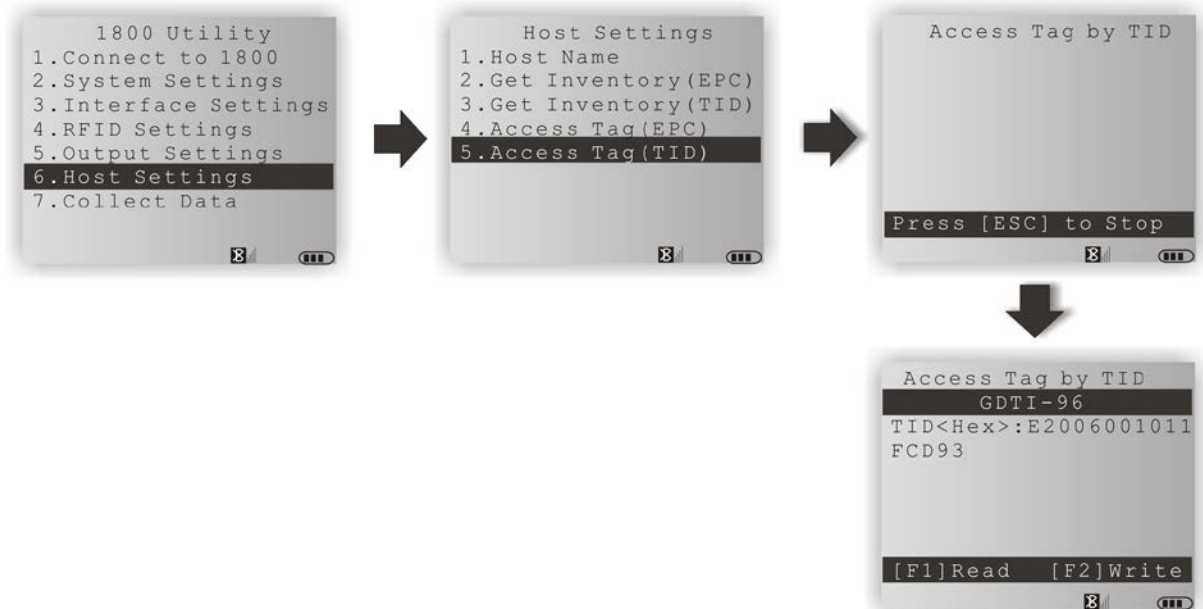
7.4 ACCESS TAG (EPC)

You can read, write, or lock memory banks of the EPC tag; or execute the “kill” command to have the tag be silenced permanently. Go to **6. Host Settings** | **4. Access Tag (EPC)** to get the information of the tag. Then you can press [F1] to read data from memory banks of the tag, press [F2] to write data to memory banks, or press [F3] to lock memory banks. Apart from those actions, you can even “kill” the tag. Make sure you’ve realized the tag will respond no more after being killed.



7.5 ACCESS TAG (TID)

You can read or write memory banks of the TID tag. Go to **6. Host Settings | 5. Access Tag (TID)** to get the information of the tag. Then you can press [F1] to read data from or press [F2] to write data to memory banks.



COLLECT DATA

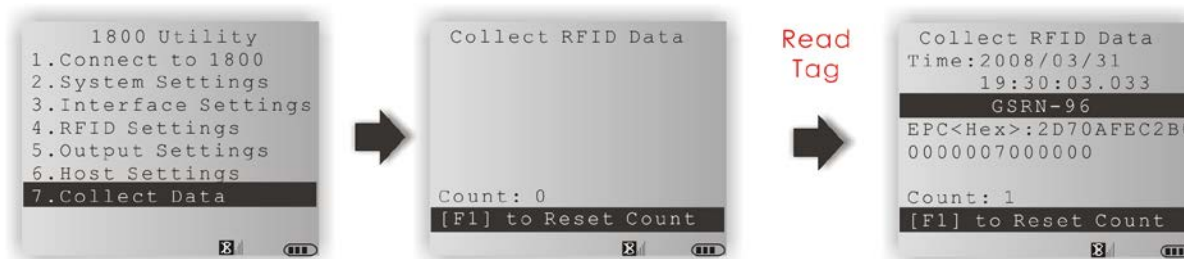
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8.2 Alternate Mode	76

8.1 RFID MODE

After all configurations are finished, select **6. Collect Data** on the 1800 Utility main menu as below to begin collecting RFID Data via the 1800 RFID reader.

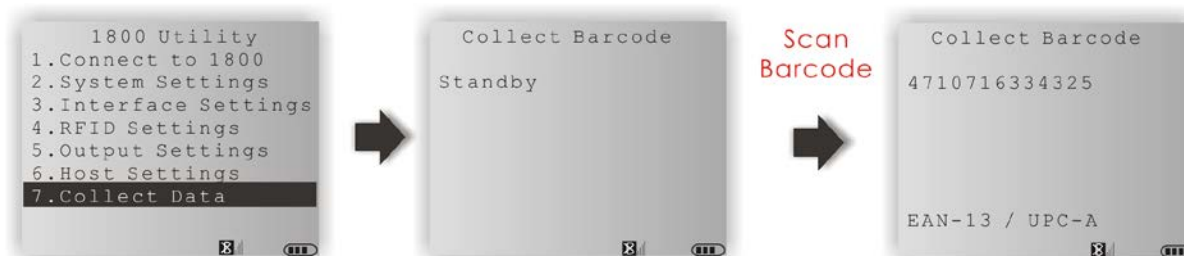
When you toggle the switch of 1800 RFID reader to RFID Mode, the 1800 Utility will show **"Collect RFID Data"** during scanning. Press the trigger of 1800 RFID reader to scan RFID tags and display on the 8 series terminal screen.



Note: If you want to switch Alternate and RFID modes during scanning, you have to set the Data Format to **"Packet Data"**. Refer to [6.1 Data Format](#). With output format set to **"Hexadecimal Data"** or **"Raw Data"**, the RFID/Alternate mode toggling won't take effect. Users are supposed to toggle the switch after the screen returns to the **6. Collect Data** main menu.

8.2 ALTERNATE MODE

When you toggle the switch of 1800 RFID reader to Alternate Mode, the reader will send a command letting the application know that it's in alternate mode and, for example: the barcode scanner of the terminal needs to be activated when the trigger of the reader is pressed. The 1800 utility will then display **"Collect Barcode"** screen and show any barcodes scanned with the terminal's scanner. Press the trigger of the reader to control 8 series terminal for scanning barcodes.



Note: You have to enable Programmable Key functions so that you can configure the terminal to scan barcodes. Please refer to [6.8 Programmable Key](#).

ASCII TABLE

	0	1	2	3	4	5	6	7
0		DLE	SP	0	@	P	`	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	\$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	'	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	\	l	|
D	CR	GS	-	=	M	]	m	}
E	SO	RS	.	>	N	^	n	~
F	SI	US	/	?	O	_	o	DEL