iBOS®

Intelligent Battery Organizing System

Operations Manual

Barcode Scanner

Updated March, 2016
Version 1.8

Philadelphia Scientific®
industrial battery innovation

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1. Introduction

1.1 System overview

This manual will give you all the information that you need to operate the Barcode Scanner, BOS-SC6000 handheld computer scanner. The scanner is to be used in conjunction with an iBOS® battery room management system and subscriptions to Battery Tracker® and iBOSworld.com.

The scanner can be used to register forklifts and batteries into the iBOS® system. It is also used during a battery exchange to scan a forklift barcode, enter its hour meter reading, and scan the barcode of the discharged battery as well as the fully charged replacement battery. When a maintenance activity is required, such as watering or washing, the battery will be scanned followed by the barcode of the appropriate activity. When the registration information is saved, the battery exchange is complete, or the maintenance activity is complete, the information is sent via Bluetooth to the scanner cradle. The information is then sent via cable to the controller where it is uploaded via cellular modem to iBOSworld.com.

The data from the scanner is organized into informative reports that can be viewed in the Battery Tracker® section of iBOSworld.com. Not only can you see the log of battery room activity, but you can see valuable information such as number of cycles per day or week as well as average battery run time.

Barcode labels must be installed on all assets (batteries and trucks) before operating the scanner. See the Barcode Scanner Installation Manual, DOC0018, for information regarding the installation of the labels.

*****Barcode labels are not included with the system and must be supplied by the customer.*****

1.2 Organization of this Manual

- Section 2 – Scanner Overview
- Section 3 – Setup
- Section 4 – Operating Instructions
- Section 5 – Troubleshooting

1.3 Contact Information

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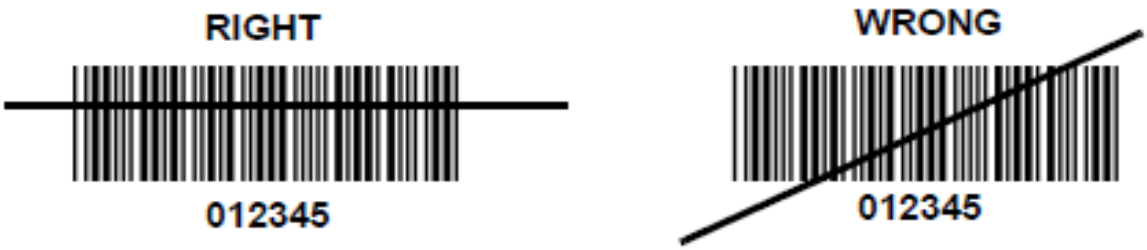
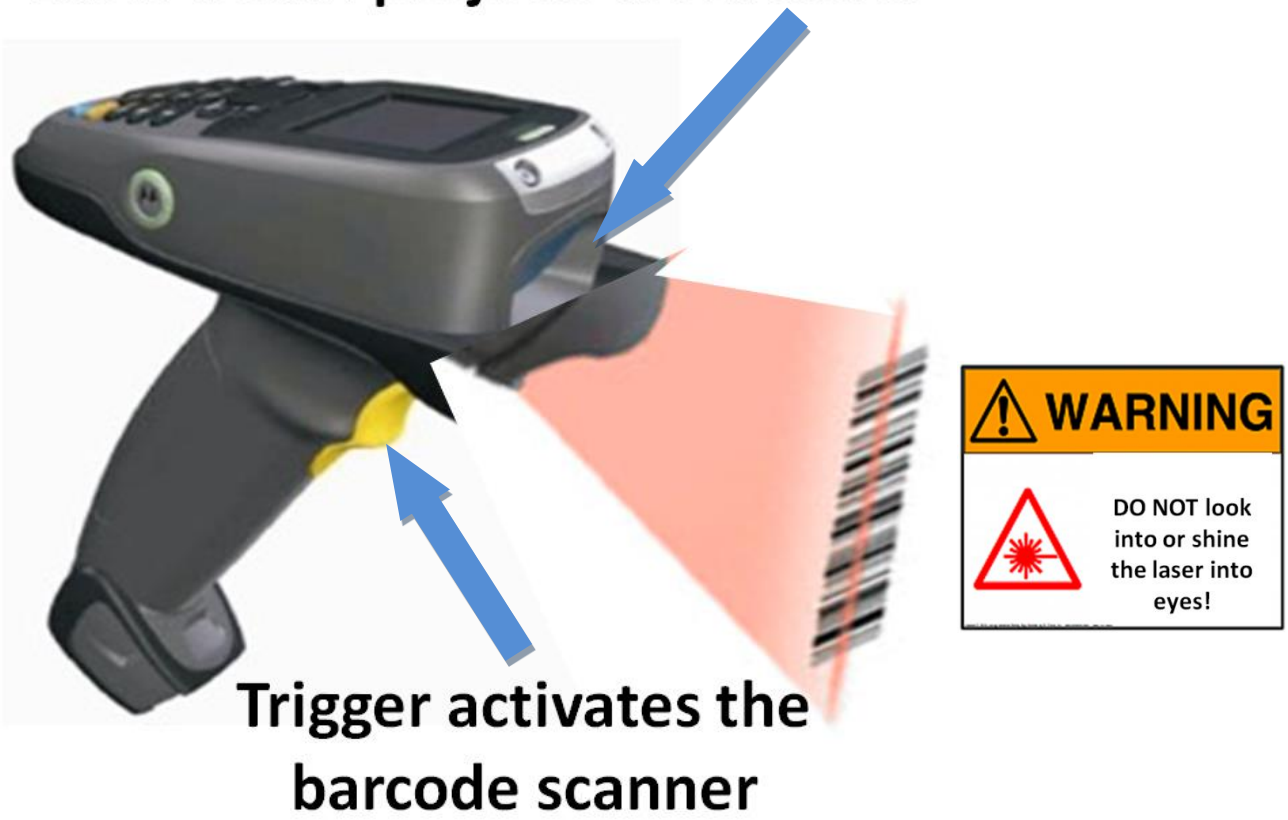
2/17 Norman Street
NSW, 2225
Australia
Phone: +61 2 8004-2447
Fax: +61 2 9012-0383
Email: Info@phlsci.com.au

2. Scanner Overview

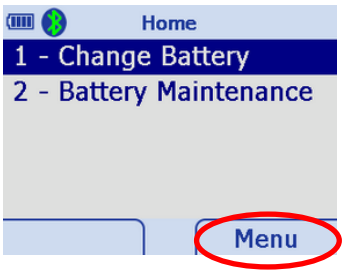
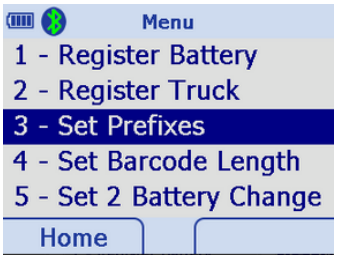
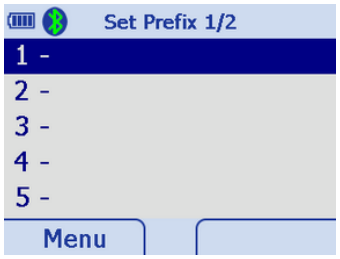

RIGHT
012345
WRONG
012345

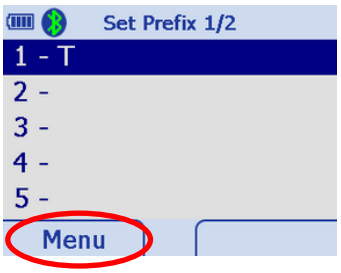

Laser beam projects from here.
WARNING
DO NOT look into or shine the laser into eyes!
Trigger activates the barcode scanner

3. Setup

3.1 Set Prefixes

When registering assets, you may want to begin each reference with a letter or group of letters specific to a group of assets. If there are several assets to register, the input process can become repetitive. In order to make the process more efficient, the prefix of an asset group can be pre-programmed into the system.

• Press the right menu key under the word “Menu” to begin.	
• Press “3”.	
• Up to 9 prefixes can be entered. • Enter the slot number where you would like to store the prefix.	
• Prefixes will be upper case. • The prefixes will be only letters. • The maximum length of a prefix is 7 letters. • Type the prefix. (Use orange key to access letters.) • Press “Enter”.	

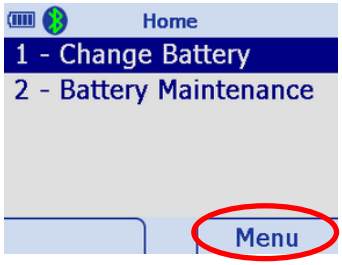
• If there are additional prefixes to input, enter the slot number where you would like to store the next prefix. • If there are no more prefixes to add, press the menu key below “Menu” followed by the menu key below “Home”.	

3.2 Set Barcode Length

The maximum number of digits in the barcode should be no more than 20 digits. The scanner can read a large number of barcode formats. See Appendix B – Barcode Formats for a complete list.

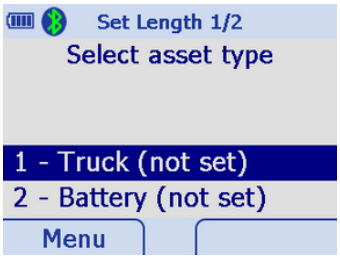
To help prevent other barcodes from being scanned as a battery room asset, it is recommended that all battery barcodes should be the same length, and all truck barcodes should be the same length but different from the batteries. The length of the barcodes can be programmed during the scanner setup.

It is recommended that the battery barcode be a different length than the truck barcode. This will prevent batteries from being accidentally scanned as trucks and vice versa.

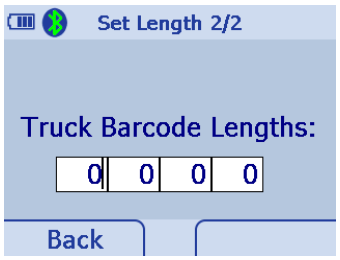
• To set the barcode lengths, press the right menu key under the word “Menu.”	
• Press “4.”	

3.2.1 Set Length of Truck Barcode

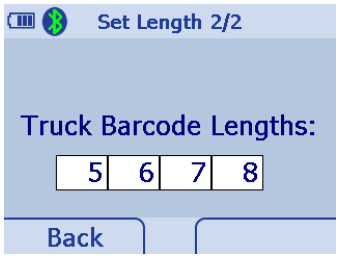
- To set the length of truck barcodes. Press “1”.



- Input the desired length of truck barcodes. (Up to 4 different lengths can be added.)

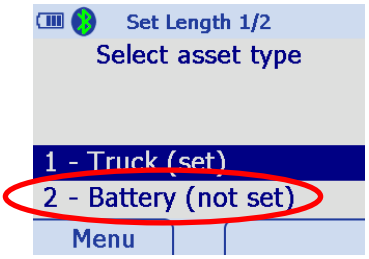


- Press “Enter”.



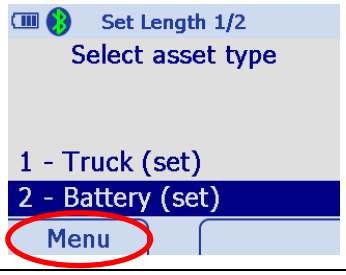
3.2.2 Set Length of Battery Barcode

- To set the length of battery barcodes. Press “2”.

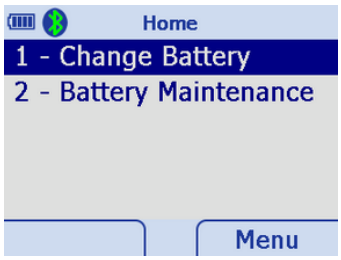
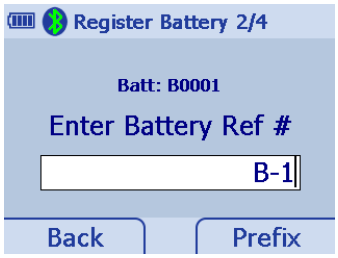


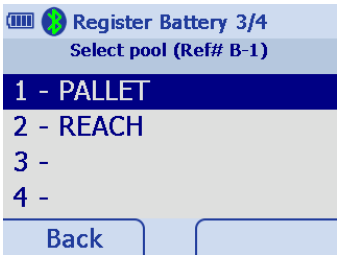
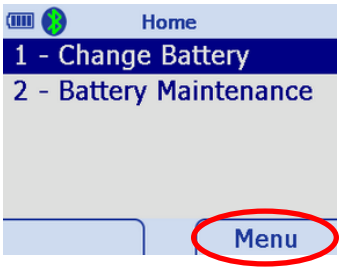
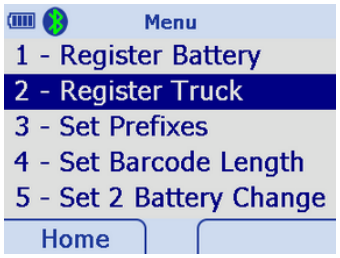
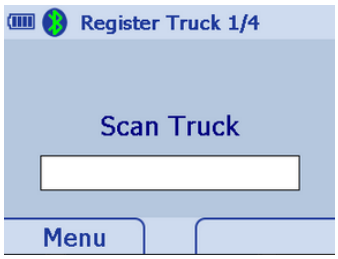
- Enter the desired length of battery barcodes.

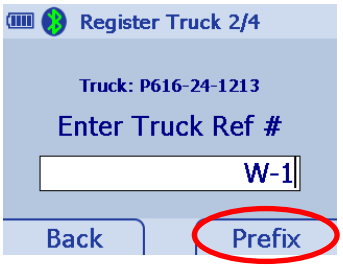
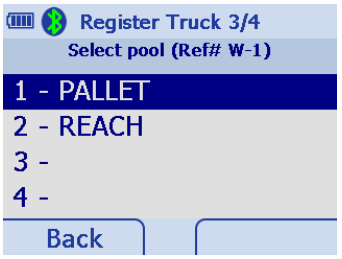
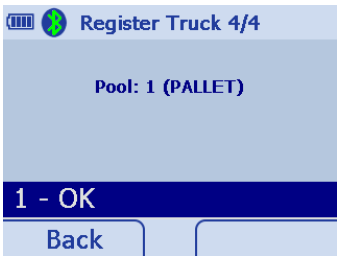
- Press “Enter”.

• Press the menu key below “Menu” followed by the menu key below “Home” to return to the Home screen.	

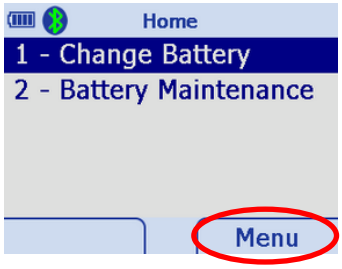
3.3 Register Assets

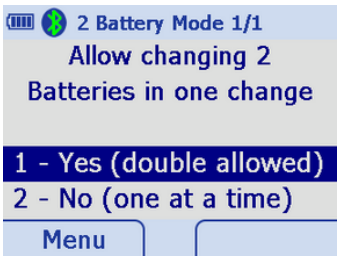
3.3.1 Register Battery • To register a battery in the iBOS® system, press the right menu key under the word “Menu”.	
• Press “1”.	
• Scan the barcode on the battery that you would like to register.	
• Enter the battery reference number. If you are using a preset prefix, hit the key below “Prefix” as many times as needed to scroll to the slot number containing the desired prefix. • Use the orange key to access letters and special characters. • Press “Enter”.	

• Select the desired pool number.	
• Press “1” to send the data to the controller. If you do not press “Back”, the data will be automatically sent in 5 seconds. • Repeat the process for the rest of the batteries. • If there are no more batteries to register, press the menu key below “Menu” to go back.	
3.3.2 Register Truck • To register a truck in the iBOS® system, press the right menu key under the word “Menu”.	
• Press “2”.	
• Scan the barcode on the truck that you would like to register.	

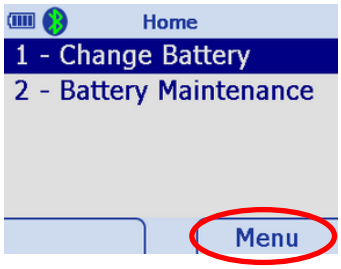
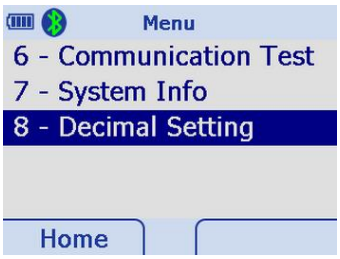
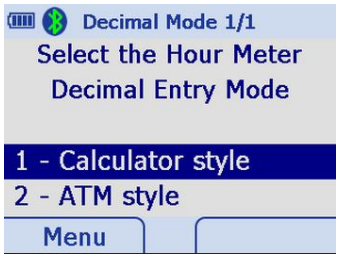
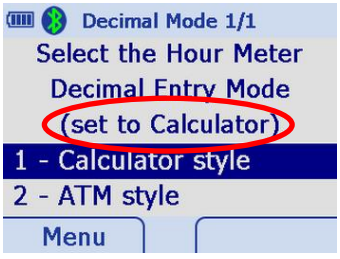
• Enter the truck reference number. If you are using a preset prefix, hit the key below “Prefix” as many times as needed to scroll to the slot number containing the desired prefix. • Use the orange key to access letters and special characters. • Press “Enter”.	
• Select the desired pool number.	
• Press “1” to send the data to the controller. If you do not press “Back”, the data will be automatically sent in 5 seconds. • Repeat the process for the rest of the trucks. • If there are no more trucks to register, press the menu key below “Menu” to go back.	

3.4 Set to 2 Battery Change

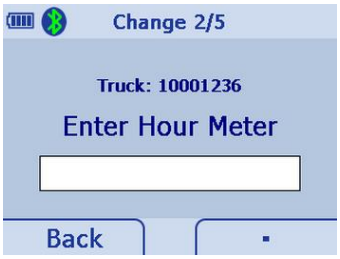
• To set the system to change 2 batteries in one transaction, press the right menu key under the word “Menu”.	

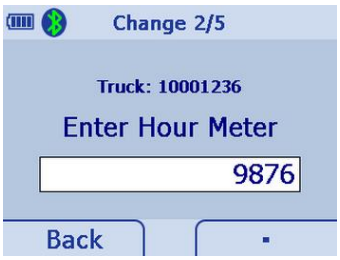
• Press “5”.	
• To allow changing two batteries at one time press “1”. • To allow changing only one battery at a time, press “2”.	

3.5 Set Decimal Point Option

• To set the decimal point option when entering hour meter readings, press the right menu key under the word “Menu”.	
• Press “8”.	
3.5.1 Calculator Style • To set the system to manually enter a decimal point, press “1”.	
• The scanner is now in “Calculator” mode. To verify, press “8”, again, and the screen will show “(set to Calculator)”.	

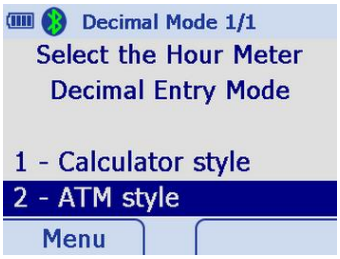
- The decimal point will only appear if manually entered.



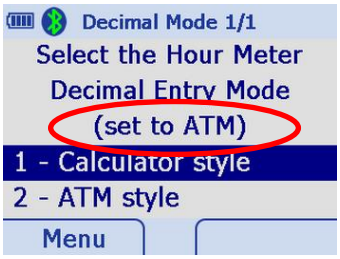


3.5.2 ATM Style

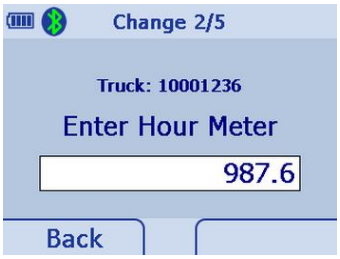
- To set the system to automatically enter a decimal point on the screen, press “2”.



- The scanner is now in “ATM” mode. To verify, press “8”, again, and the screen will show “(set to ATM)”.



- The decimal point automatically appears on the screen.

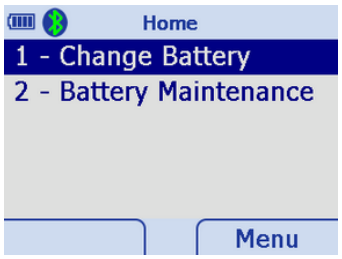


4. Operating Instructions

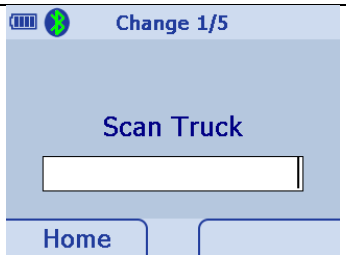
4.1 Change Battery

4.1.1 Changing One Battery

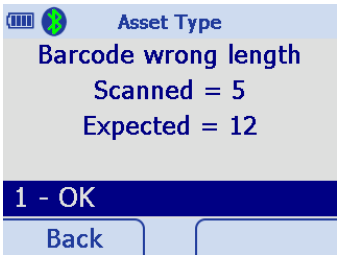
- Press “1”.



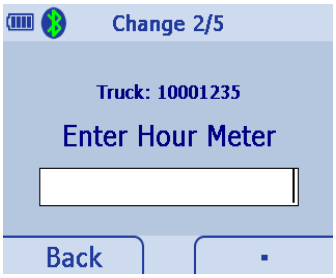
- Scan the truck barcode.
- Note: If the truck or battery barcode is torn and not able to be scanned, type in either the barcode number or asset reference number.

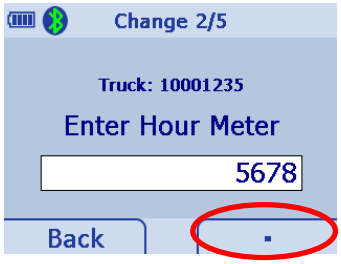
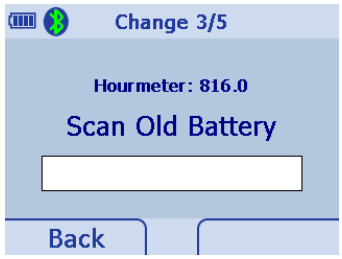


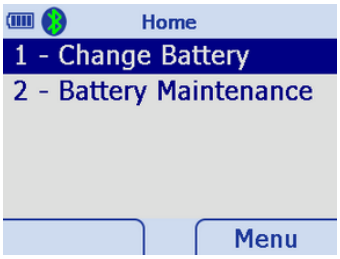
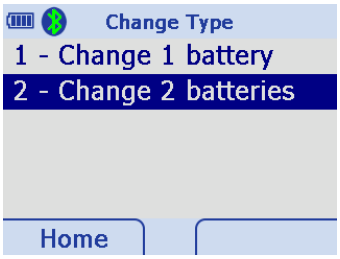
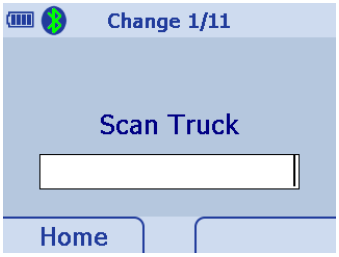
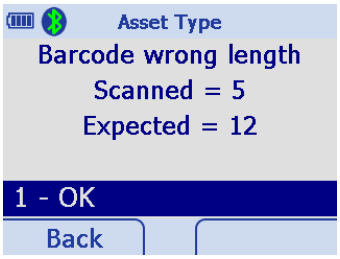
- If you scan a barcode of the wrong length, the screen to the right will appear.

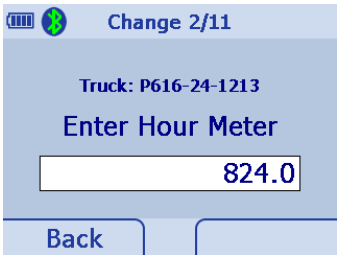
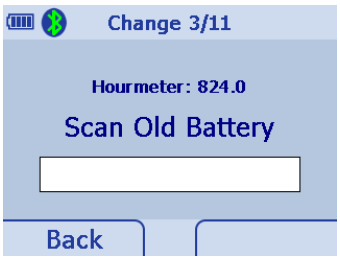
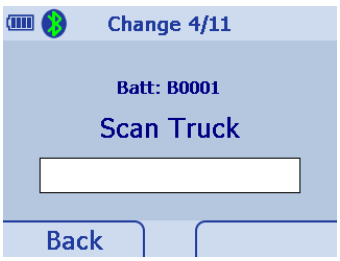
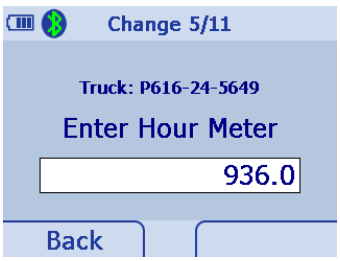
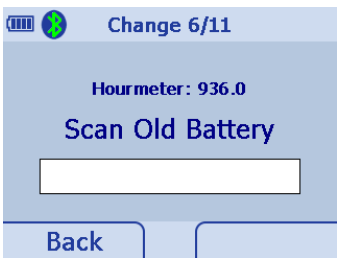
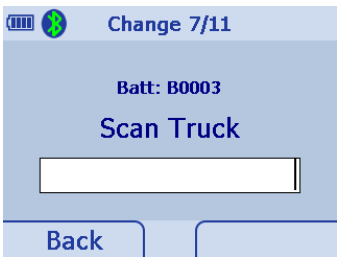


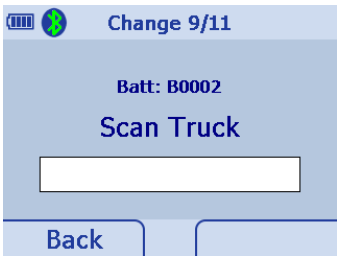
- The truck number that was just scanned or input is listed at the top of the following screen. Use the “Back” button to re-enter the information if needed.
- Input the truck’s dead man hour meter reading using the keypad on the scanner.
- Note: If not recording hour meter readings, enter zero for the hour meter.



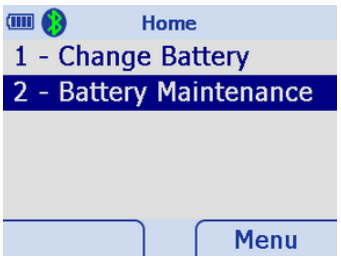
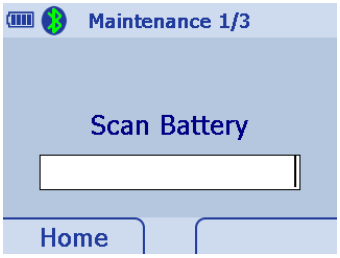
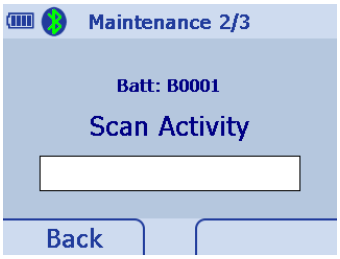
• Note: To enter a decimal point, press the right menu key under the decimal point on the screen.	
• Press “Enter”.	
• Scan the discharged battery to be removed from the forklift.	
• Scan the fully charged battery to be placed in the forklift.	
• If you are satisfied that the battery change was done correctly, press “1” to send the data to the controller.	

• If the information was sent to the controller without issue, the screen to the right will appear, and after a few seconds, the scanner will return to the Home screen. • If there are communications issues, see Section 5 – Troubleshooting.	
4.1.2 Changing Two Batteries • Press “1”.	
• Press “2”.	
• Scan the first truck’s barcode • Note: If the truck or battery barcode is torn and not able to be scanned, type in either the barcode number or asset reference number.	
• If you scan a barcode of the wrong length, a screen similar to the one on the right will appear.	

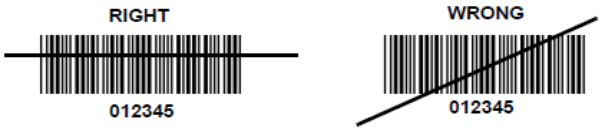
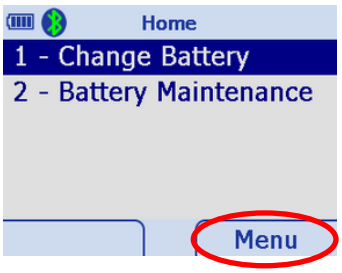
• Input the truck's hour meter reading and press "Enter". • Note: If not recording hour meter readings, enter zero for the hour meter.	
• Scan the discharged battery to be removed from the forklift.	
• Scan the second truck's barcode.	
• Input the truck's hour meter reading and press "Enter". • Note: If not recording hour meter readings, enter zero for the hour meter.	
• Scan the discharged battery to be removed from the forklift. • Complete a battery change in both forklifts.	
• Scan the first truck's barcode.	

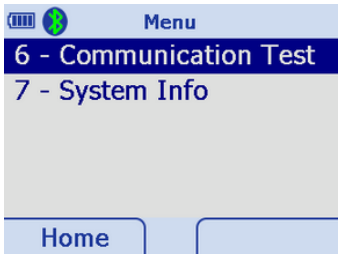
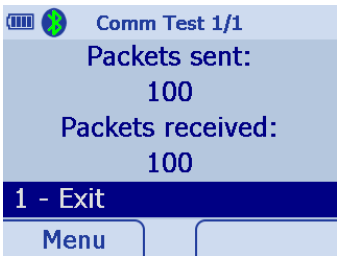
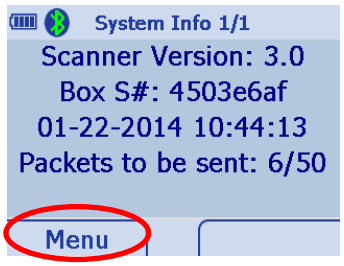
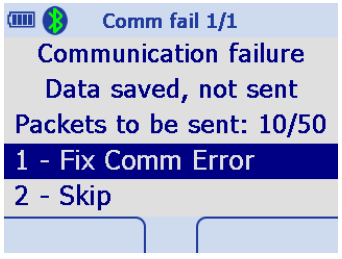
• Scan the fully charged battery to be placed in the forklift.	
• Scan the second truck's barcode.	
• Scan the fully charged battery to be placed in the forklift.	
• If you are satisfied that the battery change was done correctly, press "1" to send the data to the controller.	
• If the information was sent to the controller without issue, the screen to the right will appear, and after a few seconds, the scanner will return to the Home screen.	

4.2 Battery Maintenance

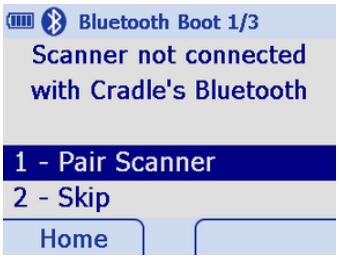
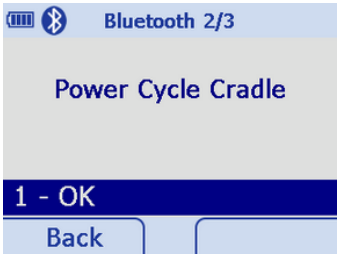
• Press “2”.	
• Scan the battery to be maintained.	
• Scan the appropriate activity code for the maintenance that is being performed.	
• If you scanned the appropriate codes, press “1” to complete the activity. If you do not press the key below “Back”, the data will be automatically sent to the controller after 5 seconds.	
• If the information was sent to the controller without issue, the screen to the right will appear, and after a few seconds, the scanner will return to the Home screen. • If there are communications issues, see Section 5 – Troubleshooting.	

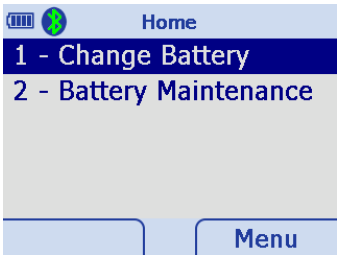
5. Troubleshooting

Scanner cannot read barcodes	Be sure that the cradle base is connected to power and to the communications cable. Be sure that the tape is removed from the scanner battery and battery is properly seated in handle. Be sure that the scanner is connected to the cradle base via Bluetooth. If after powering the scanner on and off it will not connect to the cradle base, see Appendix A – Scanner and Cradle Pairing Process. Be sure to squeeze the trigger on the scanner when scanning barcodes. When scanning, be sure that the laser line crosses all of the bars of the barcode.  Be sure that the scanner is synchronized with the controller. Check the format of the barcodes. Refer to Appendix B – Barcode Formats for a complete list of acceptable formats.
Scanner is locked up	Reboot the scanner by holding down the trigger and the number 2 key. Hold for ten seconds before releasing
Scanner will not sync with controller	Check connections in cable assembly between cradle and controller. Check that USB cable is firmly connected to controller. Press the menu key below “Menu”.  Press “6”.

	 Press “1” to exit.  Press “7” to check System Info and verify that there is a box S#.  Press the key below “Menu” to go back and the key below “Home” to return home. Note: Packets are sent with Change Battery or Battery Maintenance. No packets are sent during a Communication Test.
Communication failure	 Once the number of data packets saved but not sent reaches 10, the Comm fail 1/1 screen will display at the end of a battery change/maintenance sequence of scans. Make sure that all the cables between the cradle and control box are securely connected. Power cycle the cradle.

Appendix A – Scanner and Cradle Pairing Process

• The scanner is tested and paired at the factory before shipping. • For the scanner to transmit its data through the cradle to the iBOS® controller, the cradle must be powered, and the scanner and cradle must be paired. Pairing registers a device to the cradle such that the device and cradle can exchange information. • If the scanner and cradle are paired and communicating, the Bluetooth symbol “B” on the scanner screen will be green. If they are not communicating, the “B” will be white.	
• The screen to the right may appear when the scanner is first powered up. It may also appear, if the cradle loses power or the scanner goes out of range. • If the “B” is still white, press “1”.	
• Power cycle the cradle and press “1”.	
• Scan the cradle’s PAIR barcode.	

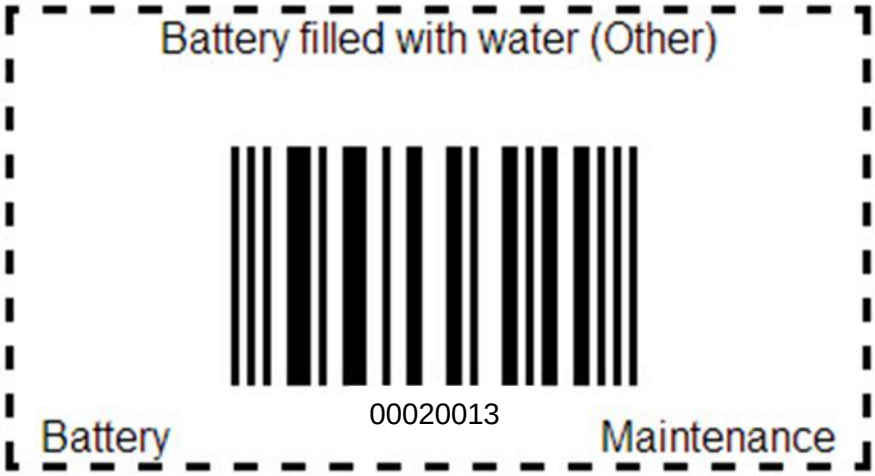
• Each cradle has a unique barcode. Only pair the scanner with a cradle that you intend to use. Do not scan data until pairing completes.	
• Once the pairing process is complete, the scanner will return to the Home screen.	

Appendix B – Barcode Formats

1D	UPC/EAN (UPCA/UPCE/UPCE1/EAN-8/EAN-13/JAN-8/JAN-13 plus supplements, ISBN (Bookland), Code 39 (Standard, Full ASCII, UCC/EAN-128, ISBT-128 Concatenated), Code 93, Codabar/NW7, MSI Plessey, I 2 of 5 (Interleaved 2 of 5 / ITF, Discrete 2 of 5, IATA, Chinese 2 of 5), GS1 DataBar (Omnidirectional, Truncated, Stacked, Stacked mnidirectional, Limited, Expanded, Expanded Stacked, Inverse), Base 32 (Italian Pharmacode)
2D	TLC-39, Aztec (Standard, Inverse), Maxicode, DataMatrix/ECC 200 (Standard, Inverse), QR code (Standard, Inverse, Micro)
PDF417	PDF417 (Standard, Macro), Composite Codes (CC-A,CC-B,CC-C)
Postal	U.S. Postnet and Planet, U.K. Post, Japan Post, Australian Post, Netherlands KIX Code, Royal Mail 4 State Customer, upu fics 4 State Postal, USPS 4CB

Appendix C – Watering and Washing Barcodes

Watering



Washing

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