



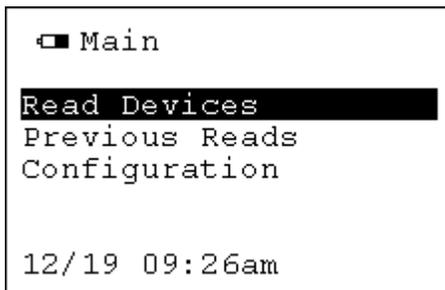
# User Reference Guide

Active Handheld Reader

## Turning a unit on

When a **HandBAT** is first picked up the display will normally be turned off. To turn the unit on press any key. If the display contrast appears too dark, or too light, press the **MAIN** function key and then the right ( → ) or left ( ← ) arrow keys to change the contrast. The right arrow key each time it is pressed will darken the display. The left arrow key each time it is pressed will lighten the display.

## Main



This screen is the Main Menu and is used as a selection screen for desired functions of the handheld reader. Select the function you wish to perform using the up ( ↑ ) or down ( ↓ ) arrow keys. You have three functions to choose from.

- The primary function of the HandBAT is to **Read Devices**.
- The second function is for reviewing **Previous Reads** stored in the HandBAT.
- The third function is for **Configuration** of the HandBAT itself.

On Special Edition HandBAT's a 4<sup>th</sup> option will be available Labeled Update SE TracBAT. This menu item is used for changing SE TracBAT calibrations. See help menus in the HandBAT for information on how to use this special menu.

**At any time, and in any screen on the HandBAT, you can press the help key for assistance. All help screens are context sensitive.**

## Read Devices

This is the primary screen option used to read your BAT RF tags installed on your vehicles. To activate this option press the up ( ↑ ) or down ( ↓ ) keys to highlight the appropriate option, then press the **Enter Key** found in the middle of the up/down and left/right arrow keys. After depressing the **Enter Key** you will be presented with the **Select Device** screen as shown below.

```
Select Device
                Range=1
Active AirBat
Active TracBat

< reduces range.
> increases range.
Press Help for info.
```

Select the type of BAT RF Sensor you wish to read at this time.

- TracBAT sensors
- AirBAT sensors.

Select your choice by using the up/down keys to highlight your desired Sensor type and pressing the **Enter Key**.

**NOTE: Make sure you are within range of the sensor before attempting to read. If several sensors can be seen at once it may be necessary to change the range so that only close sensors can be read. Get close to the desired sensor with the lowest range setting so that you know which sensor you are reading.**

**For advanced Users only:**

The Range setting allows for tweaking of the read range of the unit. Normally you want this to be set at 1. On rare occasions the user may want to scan the area for tags that may not be right near them. In this case the HandBAT allows for range to be increased up to 3. This is accomplished by pressing the right arrow. After reading, the range should be reduced to insure the next user does not accidentally read an incorrect sensor. The sensitivity can be manually reduced by pressing the left arrow.

**READING TracBAT mileage sensors**

If you have a TracBAT mileage sensor, then use the up/down keys to highlight this menu item. Point the handheld at the TracBAT you wish to read, and press the **Enter Key**. If the tag is not within range or there is a problem with the tag, then you will get the following Read Failed screen.

```
TracBat Devices
Find TracBats R=1
Read#      Mileage

TracBats found, but
None were in range.
Get closer or change
range, See Help.
```

This may be caused by not holding your handheld reader within range of the TracBAT mileage sensor you wish to read. Please move to within the reading range and try again. If the problem persists, and

you cannot read the desired sensor, then increase the range just a bit. Be careful not to increase range too much as you may begin to see sensors behind you instead of the sensor of interest. **See screen help for more info.**

When a successful read of the TracBAT has taken place, the following screen will appear on the **HandBAT**. This is the main information screen for the TracBAT. There is a sub-screen available which will read the trip mileage data from the sensor.

```
TracBat
Rd#17 12/19/07 09:57
S/N    0005540/19 7

Life    0003265 mi
Trip    Press Down

Fluid Entry Press >
```

To read the trip mileage information, press the **Down ( ↓ )** arrow key. Note that the trip mileage has a resolution of tenths of a mile. When you choose to get the trip mileage it will reread the mileage sensor and return a screen similar to the screen shown below. At this point all of the life and trip information has been stored in the **HandBAT**.

```
TracBat
Rd#17 12/19/07 09:57
S/N    0005540/19 7
Revs    505 Revs/mi
Life    0003265 mi
Trip    000001.4 mi
Reset trip Press ^
```

The trip mileage information that is stored in the TracBAT sensor may be **reset** by pressing the **up ( ↑ )** arrow key.

**! Caution, this will erase the trip information stored in the TracBAT.**

**When you press the up ( ↑ ) arrow key, the following screen will appear on the HandBAT. At this point, all of the data for the current sensor being read has been stored in the HandBAT, and displayed.**

```
TracBat
Rd#17 12/19/07 09:57
S/N    0005540/19 7
Revs    505 Revs/mi
Life    0003265 mi
Trip    000001.4 mi
Reset trip succeeded
```

If you press the up ( ↑ ) arrow key, and the **HandBAT** does not succeed in resetting the trip, error messages will be given with the option to try again. When the trip is reset the reset is logged into memory for later download.

To select the **Fluid Entry** option press the **right** ( → ) arrow key. The following screen will be shown if this option is chosen.

```
Fluid Entry
Rd#19  12/19 11:14am

Fuel Amt  0000   Gal
CLT Amt   0   LTR
Oil Amt   0   Qt

Save
```

The fluid quantities are entered by using the **up** ( ↑ ) or **down** ( ↓ ) arrow keys on each selected digit. When the desired entries are completed:

- Press **Enter**
- Select **Save** selection
- Press **Enter**.

A **beep** will sound confirming the save.

**Note:** The data will be not be stored if the screen is exited without saving.

#### HandBAT Navigation Tips:

- Return to the Main menu by depressing the **MAIN** key.
- Return to the previous screen press the **BACK** key.
- Access Help screen (additional directions) by depressing the **HELP** key.

**NOTE:** If this instruction manual differs from the on screen help **always** refer to the HandBAT on-screen help.

#### READING AirBAT sensors

```
Select Device
                Range=1
Active AirBat
Active TracBat

< reduces range.
> increases range.
Press Help for info.
```

If you have an AirBAT sensor, use the up/down keys to highlight **Active AirBAT** from the **Select Device** screen.

- Point the HandBAT at the AirBAT sensor you wish to read.
- Press the **Enter Key**.

If the sensor is not within range or there is a problem with the sensor you will get the Read Failed screen as shown earlier in this manual. Use the HandBAT help screens to diagnose the difficulty.

When a successful read of the AirBAT has taken place, the following screen will appear on the HandBAT. This screen is the main information screen for the AirBAT sensor. The data is now stored in the hand held reader for later viewing.

```
Dual AirBat
Rd#18 12/19/07 10:10
S/N    0046562/49 7
Outer      80 PSI
Inner      100 PSI
Low Limit   90 PSI
Time Low  160 Hours
More Info  Press >
```

To change the pressure warning limits on the sensor press the **right ( → )** arrow key. A screen similar to the one shown below will be displayed.

```
More Info
Read Tire Log
Change Low Limit
Read AirBat Version
```

- Select **Change Low Limit**
- Press **Enter**

```
Change Low Limit
Write Limits
Set Low Limit    90

Select Write limits
and press Enter to
change this AirBat
```

If you want to change the limits

- Use the arrow keys to navigate to the setting you want to change
- Press the **Enter Key** and you will be allowed to change the limits in 5 PSI increments by pressing the up (↑) or down (↓) arrow keys.
- When the limits have been set to the desired values press the **Enter Key** which changes the default write settings
- Then arrow to the **Write Limits** line
- Press **Enter**.

This will write the limits to the desired tag. The writing screen will appear as follows.

```

Writing ...

Company Logo
```

You will be returned to the previous screen with a notification of whether or not the **write was successful**. If the write to the AirBAT sensor works a screen similar to the one shown below will be displayed. The new limits should be shown on the screen.

```
Dual AirBat
Rd#18 12/19/07 10:10
S/N    0046562/49 7
Outer      80 PSI
Inner     100 PSI
Low Limit   90 PSI
Write Successful
Set Limits  Press >
```

If the write failed, a screen similar to the following will appear with the failed message.

If you should get the **Write Failed** message:

- Move the hand held reader closer to the appropriate sensor.
- Press the **Enter Key** again and the reader will try and write out the desired pressure limits.

```

Change Low Limit
Write Limits
Set Low Limit    90
Write Failed
Select Write limits
and press Enter to
change this AirBat

```

Utilize the navigation tips listed on page 4 to exit this screen

If an AirBAT that supports tire logging is read, the detail screen will include a time low parameter which will indicate how long the lights have been blinking. More Information can then be requested such as **Read Tire Log, Change Low Limit and Read AirBAT Version.**

```

Dual AirBat
Rd#10 01/07/10 13:28
S/N    0005602/44 0
Outer      0 PSI
Inner      0 PSI
Low Limit  90 PSI
Time Low   0 Hours
More Info  Press ->

```

Press the **Right ( → )** arrow key to display the (more info) tire logging option screen.

To read the tire log simply select the tire log line and press the **Enter Key**. Only AirBAT sensors with versions equal or greater than 200, support tire logging. An error message will be given on versions of 150 or 100. The version can be manually read by using the Read AirBAT Version option on this same screen. The Version will be displayed but not stored for later downloads.

```

More Info
Read Tire Log
Change Low Limit
Read AirBat Version

AirBat Software
version is 200

```

The following screen will appear when a tire log is first read.

```

AirBat #0005602/44 0
  Current Reading

Start HrsLow PSI I/O
1/06 |   23 |  0|Out
1/06 |    0 |  0|In

01/06 01:28pm

```

This screen displays how long the current low tire event has lasted.

- A tire which has been low for less than 1 hour will reflect 0 in the **Hrs Low** column.
- The lowest pressure recorded during the event is shown under the **PSI** column.
- On a dual tire system two readings will be shown in the **I/O** column, one for the outer tire labeled "Out" and one for the inner tire labeled "In".
- If the system has not had any low tire events the minimum pressure during the event will display "???".
- The calculated date that the tire went low will be displayed in the **Start** column.

Note: The Start date is based on the Date and Time in the HandBAT which is set during a download to a PC.

```

AirBat #0009889/44 0
Rd# 6 01/07/10 07:22
  Outer Tire
Start Hrs Low PSI
1/06 |   23 |  0
Event2|    0 |  0
Event3|    0 |  ???
<- Delete

```

When a Tire log is read out of an AirBAT the last three events are recorded in the previous readings system as a Tire log for the inner or outer tire. This means that on a dual tire sensor two readings are added into the previous readings system after a Tire log is read. In the previous readings detail screen all three events are listed instead of just the current reading as illustrated above. The most current reading will be at the top of the list and should match the one displayed immediately after a Tire Log read. The previous two readings will be shown below the most current reading..

### Viewing Previous Reads

Each time you read any BAT RF tag, the data is stored in the **HandBAT**'s internal memory. The data is assigned a read sequence number. This allows the user to easily and quickly retrieve tag data previously stored in the **HandBAT**. The memory can hold up to 400 records. When the memory is full, the **HandBAT** will replace the oldest of the stored records in the list upon each new read event. This means that when the 401 record is stored, record 1 is erased, and replaced with the data for 401 then renumbered to 400. Record 2 now becomes the oldest record and will be renumbered to record 1, etc.

To view the records from any screen:

- Press the **main** key. This will return you to the main screen.

- Using the up ( ↑ ) or down ( ↓ ) arrow keys, highlight the **Previous Reads** option in the main menu.
- Depress the **Enter Key**. The following screen will appear.

```

Previous Reads
View Records
Erase all records
Download to PC

```

- Select **View Records**
- Press the **Enter Key** and the following screen will appear. The most recent records will be displayed.

To view the detail data of any record:

- Move the cursor up or down to highlight the desired record
- Press the **Enter Key** to view the details on that record.

The cursor moves up or down one record each time the up ( ↑ ) or down ( ↓ ) arrow key is pressed. You can move down 5 records by pressing the right ( → ) arrow key, or you can move up 5 records by pressing the left ( ← ) arrow key. If you hold the keys down they will auto scroll.

```

View Records
Read#  Data
18 000 000i PSI
17 0003265 mi
16 000 000i PSI
15 080 100i PSI
14 0053543 km
13 0181269 mi

```

Highlight the desired record and press the **Enter** key. Following is a sample record screen .

```

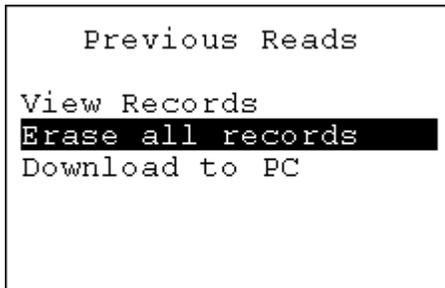
Dual AirBat
Rd#18 12/19/07 10:10
S/N 0046562/49 7
Outer 80 PSI
Inner 100 PSI
Low Limit 90 PSI
< Delete

```

This screen shows the information for the sensor that was read.

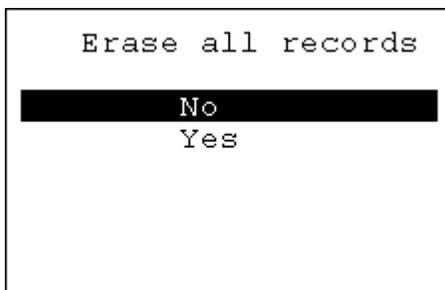
- The first line describes the sensor that was read, the read date and time utilizing military time.
- The second line reflects the S/N of the device.
- The information read from the device follows.
- The **Delete** record option is always allowed if the **Left ( ← )** arrow key is pressed. If a record is deleted it remains in the list so that numbers stay in order, however, the data is removed. When a downloaded the deleted record serial number is sent but the data is flagged as erased.

Press the **Back** key two times to return to the **Previous Reads** menu. The second item on this page is the Erase all Records feature.



When **Erase all records** is selected by pressing the **Enter key**, the following screen will be shown. Use the up and down arrow keys to highlight the desired selection. By selecting the **Yes** menu item, and pressing the **Enter key**, all of the stored records will be erased. Selecting **No** will return you to the previous menu.

**! WARNING:** Selecting the **Yes** option will permanently erase all records. The erased records will not be available for retrieval.



Press the **Back** key to select the **Download to PC** option.

- Highlight the **Download to PC** option
- Press **Enter**. You will be given a prompt to **Enter to Download** as shown below.

```
Download to PC
Enter to Download
```

To begin the download make sure you are in range of a wireless download pod connected to a PC then press **Enter**. The following screen will be shown.

```
Download to PC
19 Records sent
Downloading...
Download complete
Press any key
```

If for some reason the download fails a message will be given to diagnose the problem. The following is an example of one of the diagnostic messages. This message reflects that a pod cannot be found.

```
Download to PC
19 Records sent
Downloading...
Download failed
No Pod found
Press any key
```

The records will be uploaded to the internet usually within a few minutes upon a successful completion. The HandBAT time is updated on each download to keep records synchronized to local time.

### **Configuration**

The Configuration option of the main menu will allow you to configure various user **HandBAT** parameters. When this option is selected the following screen will be shown.

```
Configuration
Version
HandBat settings
Set Date And Time

Factory Test
```

### Configure – Version

When **Version** is selected the following screen will be shown. This screen will normally only be referenced for warranty or upgrade purposes.

```
Version
P/N 8200000
S/N 0010923/49 7
-----
MCU version 116
MCU build C40AF576
```

The version screen allows the user to tell which version and build numbers are currently programmed into the processors inside the unit.

### Configure – HandBAT settings

The **HandBAT settings** screen allows you to set default parameters in the system. When selected a screen similar to the one below will be displayed.

```
HandBat settings
Coolant Units Gal
Fuel Units Gal
Set Low Limit 90
Power Down Time 15
Read Range R=1
```

- Selecting the **Coolant Units option** allows the user to select the desired measurement type for coolant entry units that will be used when entering coolant amounts (i.e. Qt, Lit, or Gal.).
- Selecting the **Fuel Units** option allows the user to select the desired measurement type for fuel quantities to be used when entering fuel amounts (i.e. Lit or Gal.).
- The **Set Low Limit** option is the low tire pressure setting that will be used as a default but can be overridden when actually writing the low limits in an AirBAT.

- The **Power Down Time** sets the amount of time in minutes that a HandBAT screen will remain on when it is left inactive.
- The **Read Range** option sets the default read range of the HandBAT but can be overridden when reading units for ease of use.

### Configure - Set Date And Time

When selected this option allows the user to manually update the Year, Month, Day, Hour and Minutes utilizing the up ( ↑ ) or down ( ↓ ) arrow keys.

```

Set Date And Time
Year           11
Month          5
Day            3
Hour           10
Minute         18
Update Time
05/03  10:18 am

```

**Note:** When the HandBAT device goes to sleep and turns off, the screen it can be easily awakened for use with the touch of any key on the handheld.

### Configure – Factory Test

```

Configuration
Version
HandBat settings
Set Date and Time
Factory Test

```

With the Factory Test menu item highlighted, press the **Enter Key**, and the following screen will appear

```

Enter Password
WARNING
Unauthorized access
may void warranty
-----
|                               |
-----

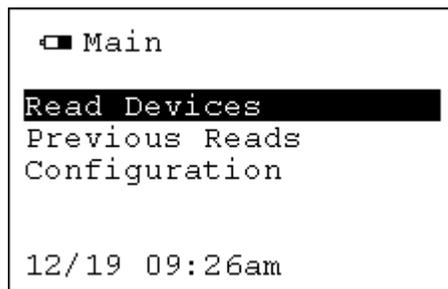
```

This menu is password protected and is for factory use only; it **cannot be accessed by end user**. Press the **Main key** or the **Back key** to exit.

If customer service should request that you to go into this screen for diagnostic purposes you will be given a password that will last for two hours. The following parameters will apply to the password.

- The password will be a number that is entered on the keypad.
- The Right arrow key corresponds to +4
- The Left arrow key corresponds to -4
- The Up arrow key corresponds to +1
- The Down arrow key corresponds to -1
- The password will be a minimum of 5 digits.

### **Battery indicator**



The battery indicator is in the upper left hand corner of the main screen (as shown above). It will show the current status of the battery. When the battery gets sufficiently depleted the unit will not allow the user to keep the device turned on. If a HandBAT becomes severely discharged the **HandBAT** will display a low battery message and then turn itself off automatically.

### **Battery Replacement**

If the **HandBAT** batteries are depleted then new ones should be put into the unit. The batteries can be replaced by removing the two screws on the battery cover. It is recommended that 3 **lithium 1.5 volt AAA batteries** should be used so that the unit will still function below freezing.

Note: Standard alkaline 1.5 volt batteries will work but not below freezing since standard alkaline batteries will not work in freezing temperatures.

### **Care and Handling of the HandBAT**

**The HandBAT is not hermetically sealed and will be damaged if left in water.**

### **Troubleshooting**

The system can be reset holding down the **Back** and **Down** arrow keys simultaneously for approximately 4 seconds; the screen will flash and redraw. No records or data will be lost.

### **RF exposure information**

Safety specifications or Specific Absorption Rate information:

Under United States FCC guidelines, part 15 section 247, this device is categorically excluded from routine environmental evaluation for demonstrating RF exposure compliance with respect to MPE and/or SAR limits.

- 1.) Exposure falls under general population/Uncontrolled exposure.
- 2.) Device transmits less than 10 mW of power in the 2.4 to 2.48 GHz band.

- 3.) The device should be considered a spread spectrum transmitter.
- 4.) Typical exposure times are less than 5 seconds during any tag reading.
- 5.) This device is tested and evaluated under US FCC part 15 section 247.
- 6.) The device is tested as a production unit.

The unit uses a meander line radiator with less than 3 dBi of gain and less than 10 mW of output power.

## CERTIFICATIONS

This unit complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



FCC ID: SRA-8200000

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. Users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying Rf exposure compliance.

Should you need any additional assistance with any problems or issues please contact STEMCO Customer Service at (800) 527-8492.

*This product meets the applicable Industry Canada technical specifications/Le présent matériel est conforme aux spécifications techniques applicables d'Industrie Canada.*  
IC: 7413A-8200000



0272-12-6153



(01)07898940473939

*Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.*



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