Encompass® 1150
Mobile Reader

TransCore's Encompass 1150 (E1150) Mobile RFID Reader offers a portable and cost effective solution for decoding or verifying RFID tags. The lightweight, ergonomic design makes it the ideal choice for parking, tolling, railroad, ground management, transportation asset management, field service, and warehouse operations.

This document describes the procedures to set up and use an Encompass 1150 (E1150) Mobile Reader.

Required Supplies

You need the following additional materials and/or tools to complete the reader installation:

- Host PC using Windows (2000, XP, Vista, or 7) operating system with at least one USB port (either USB 1.0 or USB 2.0)
- USB communications cable provided with E1150
- USB wall charger provided with E1150
- USB drive with Field Configuration Software (FCSW)
- Test tag provided with E1150

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Installing the Software

Install the Field Configuration Software (FCSW)

Insert the FCSW USB drive into the host computer and load the software. The program installs a shortcut icon for the software and a shortcut icon for the E1150 mobile reader instructions to the desktop.

⚠️ **CAUTION**   ***CAUTION: Do not launch the field configuration software program at this time.***

E1150 Setup

Note: *The E1150 mobile reader is designed to be used in any environment, accommodating a wide temperature range as well as meeting an IP64 rating.*

1. Place the E1150 on a flat surface.

2. Plug the USB cable into the power adapter and into the USB port at the base of the E1150. Plug the power adapter into a standard 110V AC wall outlet. Allow the E1150 to fully charge. The green battery indicator located on the E1150 screen will be completely illuminated when the unit is ready for use. After initial setup, the E1150 can be charged via the power adapter or any USB 1.0/2.0 port.

Note: *The automatic charger shutoff allows for the E1150 to remain connected to the charger after completion of a charge cycle. The charging notification and state of charge indication will remain on the display while the unit is connected to a charging USB port.*

3. Once charged, connect the USB cable from the USB port at the base of the E1150 to one of the host computer's USB ports. Allow the device driver to be detected and installed automatically. If the device driver fails to automatically load, disconnect the E1150 from the host computer. Locate the device driver setup executable file at *http://www.ftdichip.com/Drivers/D2XX.htm* and download the driver from the FTDIchip website, or install the driver from the FCSW USB drive. Launch the *CDM20828_Setup.exe* file and allow it to automatically install the necessary device driver. Reconnect the E1150 and allow it to be detected by the operating system.

Start the E1150 Field Configuration Software

1. Launch the field configuration software via the desktop shortcut icon.

2. The **E1150 FCSW** startup window will open (Figure 1). Click **Connect.** Click **COM** Port.

Figure 1 — **E1150 Field Configuration Software Startup Window**

3. Select the associated COM port from the **COMSelect** window (Figure 2). Click **SELECT.** Observe that the connect status in the lower left corner of the **E1150 FCSW** window reads **Connected.**
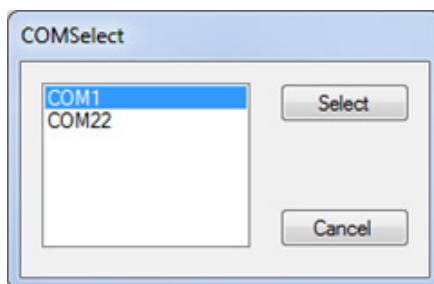

Figure 2 — **COM Port Selection Window**

4. To view the FCSW and E1150 Version information, click on **Help** and then **About** (Figure 3).

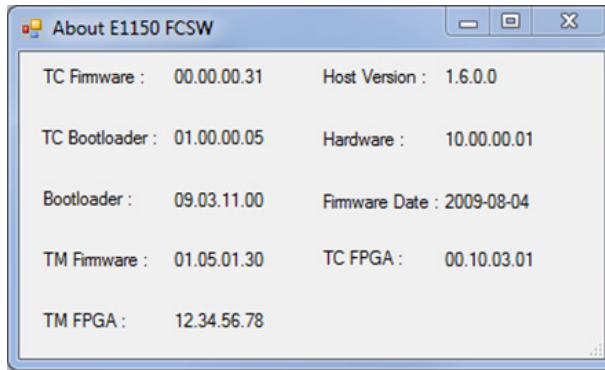*Note:* *The firmware version shown in* Figure 3 *is for example only. Your version information may be different.*

Figure 3 — E1150 FCSW About Window

Configure the E1150 for Operation

Select **Options,** then **Configuration** in the FCSW window. Operation configuration parameters can be changed via the **Config** window as shown in Figure 4. The configuration parameters are listed in the **Tag Conversion Code** drop down menu as shown in Figure 5. Click **Save** after setting your options.
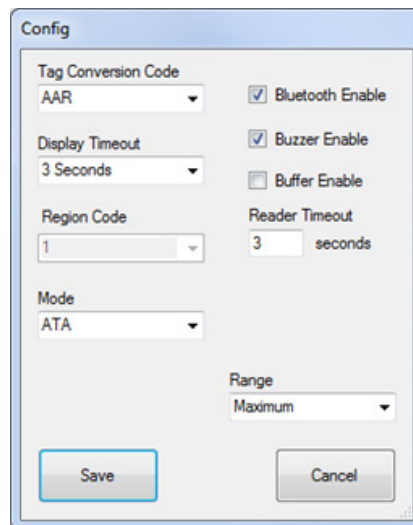

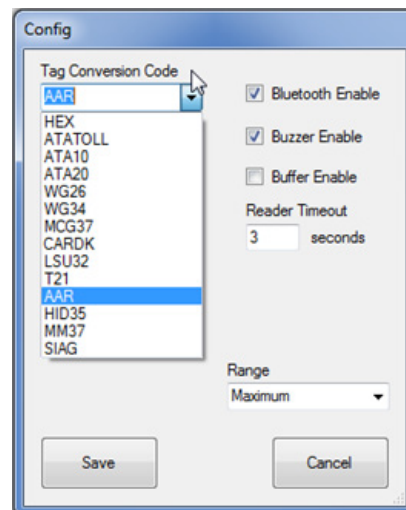**Figure 4 — FCSW Default Configuration Window**

Figure 5 —   FCSW Configuration Tag Conversion Code Choices

Table 1 – Configuration Window Parameters

| Operational Parameter	Description
Tag Conversion Code	Used to define how the E1150 will display the retrieved tag data. The default parameter is **AAR.**
Display Timeout	Controls the amount of time available for displaying data. The default is **3 seconds.** Other times may be selected but operational time will be significantly affected when the unit is running on battery power.
Mode parameter	Used to select the RFID protocol being used to read tags. Figure 6 shows the Mode dropdown menu. The default is **ATA Mode.**
Multi Mode	Used for reading tags from mixed tag populations such as FDOT. The Multi-Protocol Pair is fixed to SeGo & Allegro/T21 and cannot be changed.
Bluetooth Enable	Used when tethering the reader to a Bluetooth connected device running a host application. The default option is **off.**
Buzzer Enable	Used to enable the audible signal on completion of a successful read. The default option is **on.**
Buffer Enable	Used to enable the on-board E1150 tag buffering mode. The default option is **off.**
Reader Timeout	The configuration parameter should be set to **3 seconds** for proper operation.
Range	The configuration parameter may be changed to conserve battery charge or optimize the read range and will significantly affect operational time when battery powered. The default option is **Maximum.** Select the lowest possible range setting that works reliably with your tags and environment.
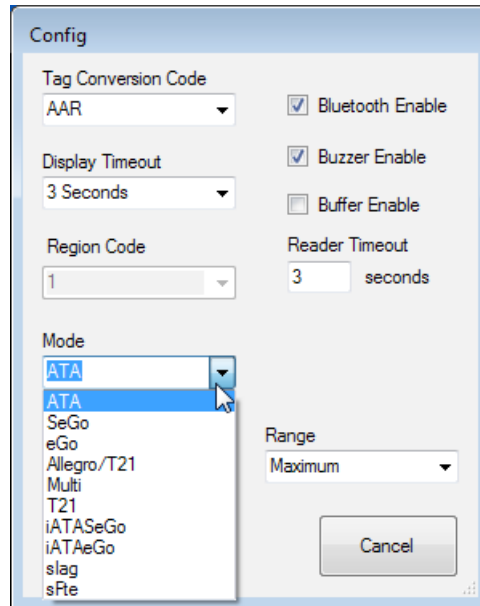
Figure 6 – FCSW Configuration Mode Choices

Reading Tags with the E1150

Place the Test Tag in front of the E1150 and push the **Scan** button located on the unit. Alternatively from the host computer, click the **Read Tag** button on the **E1150 FCSW** window (Figure 7). Both the E1150 and the FCSW display window will show the decoded tag data based on the protocol and tag conversion code configured in the unit. If you prefer a more detailed representation of the tag data, select the **Detail Display** tab on the FCSW window, shown in Figure 8.
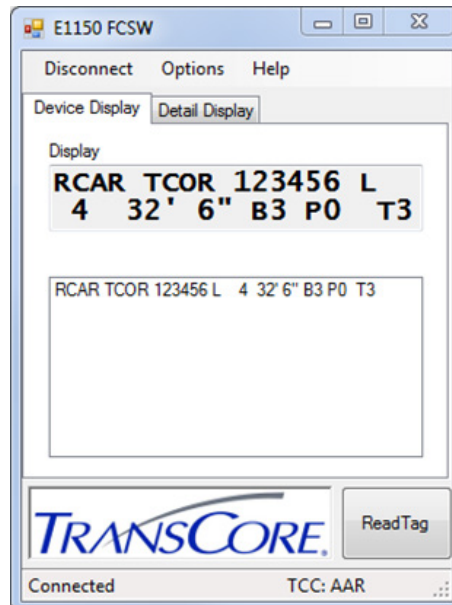

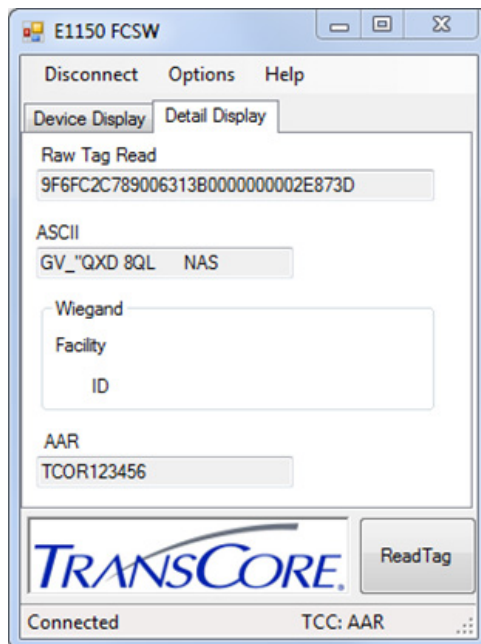**Figure 7 – FCSW Read Tag Results - Device Display**

Figure 8 – FCSW ReadTag Results - Detail Display

Bluetooth Operation

With a user supplied USB Bluetooth® Adapter, a wireless Virtual COM port connection can be established with the E1150. Follow the manufacturer's instructions for installation of a Virtual COM port connection to the host computer. Once a Bluetooth Virtual COM port connection is established with the Bluetooth dongle, the field configuration software can be launched and used as before. The Bluetooth pairing number required for the E1150 is **1234.**

> *Note: The connection to the E1150 is established using a virtual COM port. It is necessary to ensure that only one E1150 is enabled and within range of the host computer at any one time. Multiple Bluetooth connections are not supported through the virtual COM port.*

Host Data Logging

To enable Host Data Logging, click **Options**, then **Host Data Logging**, and finally **Activate Data Logging** (Figure 9). The E1150 will prompt for a save location for the logged data, then return to the Read Tag Window. The E1150 FCSW is now logging all tag reads to the log file selected.

> *Note: Host Data Logging requires that the E1150 be connected to the PC (via USB or Bluetooth). If the E1150 loses connection to the PC, the data log may become corrupted.*
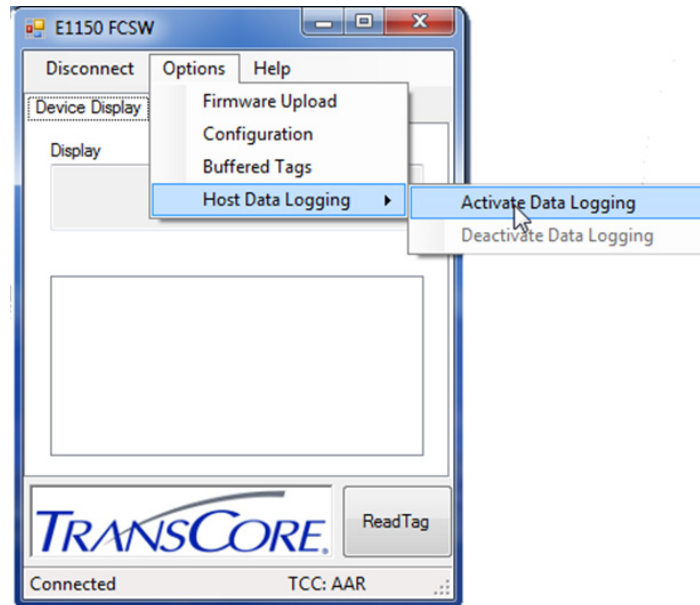
Figure 9 – Activate Tag Logging

Onboard Tag Buffering

The E1150 has the capability of Buffering tag reads into internal memory. This buffer is limited to the first 100[1] tags read after enabling Buffering. To activate the buffering capabilities of the E1150, select **Buffer Enable** in the **FCSW Configuration** (Figure 6).

To view the Buffered Tags, select **Options**, then **Buffered Tags** (Figure 10).
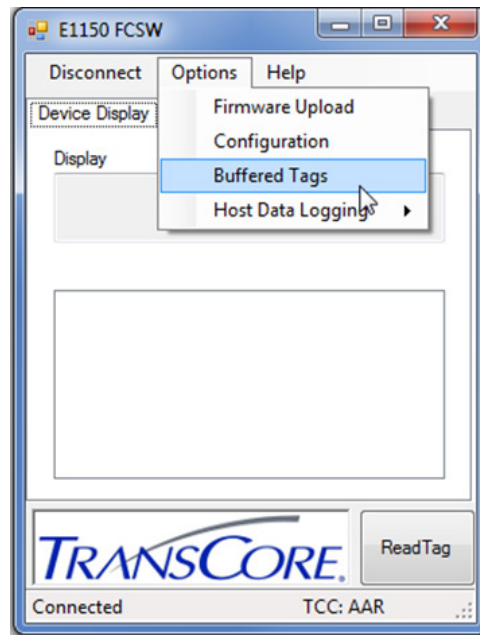

Figure 10 – Activate Buffered Tag View

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1   The tag buffer for AAR is limited to the first 150 tags read after enabling Buffering.

Once activated, the **Buffered Tag View** (Figure 11) gives the option to download the E1150's tag data buffer. Selecting the **Buffered** button returns the amount of tags in the buffer. By inputting a requested tag buffer number in the field below **Get Log #**, it is possible to retrieve a specific buffered tag read. **Get All** returns all tags in the buffer, while **Erase All** empties the tag buffer. **Save** allows the current displayed tag buffer to be saved to a log file, and **Close** closes the tag buffer window.
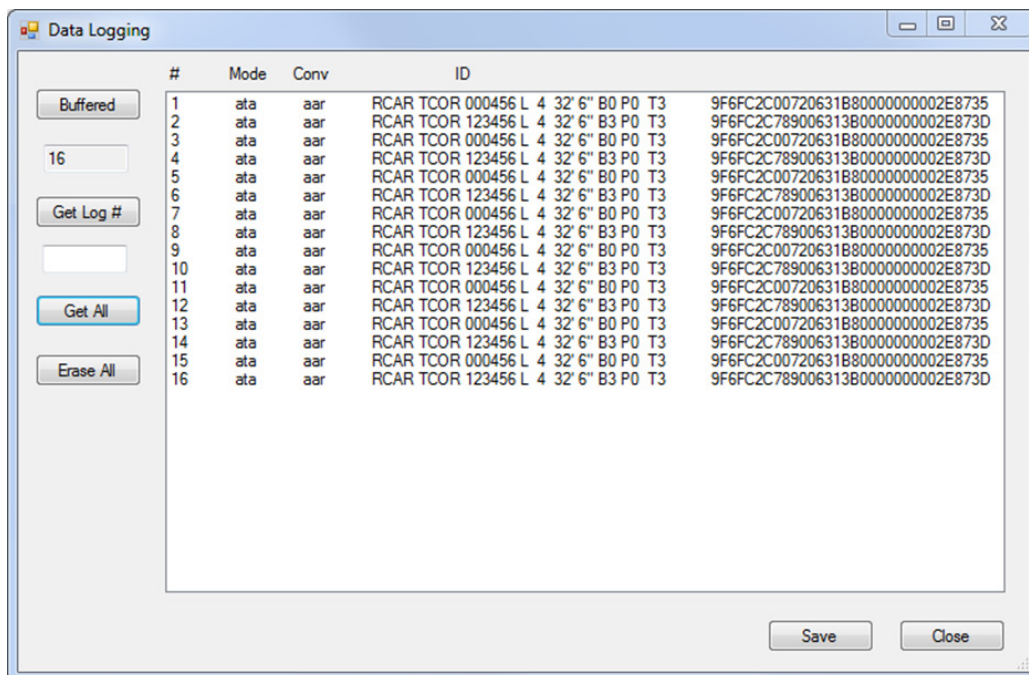

Figure 11 — Buffered Tag View

Disconnect the E1150

> *Note: It is important to exit the software on the host computer before disconnecting the reader from the system.*

1. Exit the software on the host computer before you disconnect the reader. Click **Disconnect** in the **E1150 FCSW** Window. Observe that the status on the lower left corner of the window reads **Not Connected.**
2. Click the **X** on the upper right corner of the window to exit the software.
3. Disconnect the E1150 reader from the host PC.

Firmware Update

Do not attempt to update the firmware unless you have obtained an official firmware upload file from Transcore. Save this firmware download file to a known location on your computer such as the Windows desktop.

Firmware is updated via the **Option** tab under **Firmware Upload.**

Select **Option > Firmware Upload.**

A file explorer window will open. Navigate to the location of the firmware *.hex file (Figure 12).
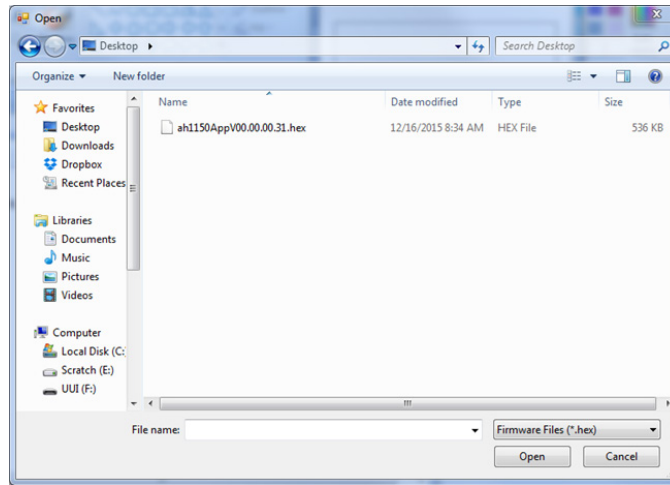

Figure 12 — Updating Firmware

Allow the process to complete. Exit the program.

Diagnostics

Should you encounter trouble when using the E1150 Mobile Reader, perform the following diagnostic steps:

1. Ensure that the unit is adequately charged, or fully charge the unit.

2. Reposition the tag closer to the front area of the unit and try reading again.

3. Isolate the tag from other tags which might be interfering and try reading again.

4. If steps 1 and 2 do not correct the problem, uninstall then reinstall the host software on the host computer. If steps 1 through 3 do not correct the problem, contact TransCore for further assistance.

Regulatory and Compliance

FCC RADIO FREQUENCY INTERFERENCE STATEMENT

47 CFR §15.105(a)

Note: *This equipment has been tested and found to comply with the limits for a Class A 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 (RF) energy and may cause harmful interference to radio communications if not installed and used in accordance with the instruction manual.*

Operating this equipment in a residential area is likely to cause harmful interference, in which case, depending on the regulations in effect, the users may be required to correct the interference at their own expense.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules, and Industry Canada license-exempt RSS standard(s).

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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

NO UNAUTHORIZED MODIFICATIONS

47 CFR §15.21

CAUTION: The equipment may not be modified, altered, or changed in any way without permission from TransCore, LP. Unauthorized modification may void the equipment authorization from the FCC and will void the TransCore warranty.

TransCore LP

CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

ATTENTION
Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.
Remplacer uniquement avec une batterie du même type ou d'un type equivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

For more information:

Sales Support
800.923.4824

Technical Support
505.856.8007

transcore.com

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