

# Encompass® 1i Handheld Reader Quick Start Guide



*TRANSCORE.*

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*Driving inefficiencies out of surface transportation through innovative solutions*

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# Introduction

The Encompass 1i handheld reader combines the TransCore IP30 TC2 RFID scan handle and the Intermec model CN70e mobile computer. This document describes procedures to set up and read/verify tags using TransCore's Encompass 1i handheld reader.

Please refer to the following documents for comprehensive information about the IP30 TC2 RFID scan handle and the Intermec model CN70e mobile computer:

- IP30 handheld RFID reader user guide
- Microsoft Windows embedded handheld 6.5 (CN70e) user's manual

Both of these documents are available online at [www.intermec.com](http://www.intermec.com).

## Before You Begin

TransCore's Encompass 1i handheld reader is designed to read from TransCore eGo<sup>1</sup> Plus sticker or license plate tags, eGo<sup>®</sup> tags, ATA and/or Wiegand tags.

## Handheld Reader Setup Instructions

To set up the basic Encompass 1i handheld reader, you will need the following items:

- TransCore IP30 TC2 RFID scan handle with battery
- Intermec CN70e mobile computer
- Tagreader demo software program preloaded on the Intermec CN70e mobile computer
- IP30 TC2 scan handle battery charger with universal AC adapter and power cord
- CN70e mobile computer single dock/charging station with universal AC adapter and power cord

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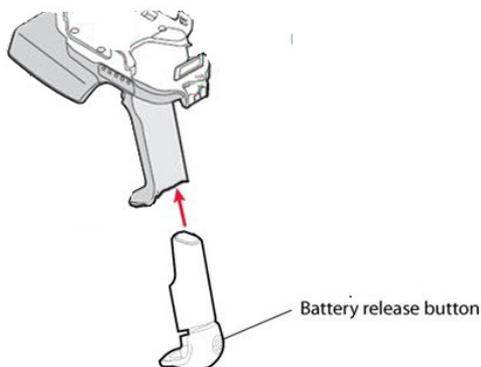
<sup>1</sup> eGo tags are fully compliant with the American National Standards Institute NCITS 256-2001 and International Organization for Standardization 18000-6B standards.

## The IP30 TC2 Scan Handle Battery

**Note:** Before you can use the IP30 TC2 scan handle, you must charge its battery. The charging process takes approximately 3 hours.

### Remove the battery

Push in the battery release button and remove the battery from the handle (Figure 1).



**Figure 1. Battery release button location**

### Charge the IP30 TC2 scan handle battery

The Encompass 1i two-bay charger (TransCore P/N 76-0700-020) is suitable for use only with TransCore batteries (P/N 76-0700-021).

Each charger power supply uses approximately 1.5 amps of current.



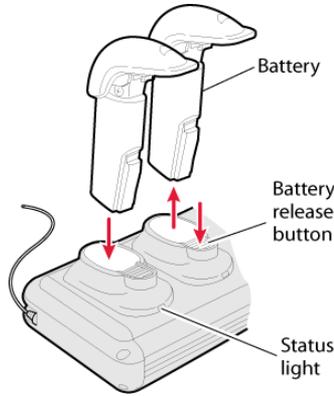
#### **Caution**

*Use of any other battery may present risk of fire or explosion hazard.*

### Charge the battery

1. Plug the power supply into a 110V AC outlet and then connect the power supply to the charger.
2. Insert one or two batteries into a slot in the charger (Figure 2).
3. Push the battery down until it locks into place.

- Charge the battery for 3 hours, or until status light is solid green.



**Figure 2. Scan handle dual battery charger**

### **Charging-status light-emitting diode indicators**

There is one charging-status light-emitting diode (LED) for each compartment. The charger LED indications are as follows:

Off	Battery not inserted properly, no battery installed, or battery completely run down
Red	Battery is faulty and should be replaced
Flashing red	Battery temperature is out of specifications. Make sure battery temperature is between 32° to 95°F (0° to 35°C)
Fast flashing green	Battery is charging
Slow flashing green	Battery is quick charging, which occurs for the first hour that the battery is being charged
Green	Battery is fully charged

TransCore recommends that you charge the IP30 TC2 scan handle battery after each shift.

## Charging the CN70e Mobile Computer Battery

Before using the IP30 TC2 scan handle with the color mobile computer, you need to charge the mobile computer battery using the CN70e mobile computer single dock/charger station.

### Charge the mobile computer battery using the single dock station

1. Connect the power supply unit plug to the single dock station jack (Figure 3).
2. Insert the mobile computer onto the computer dock connector (Figure 3).
3. The battery may also be removed from the mobile computer and charged in the docking station (Figure 3).

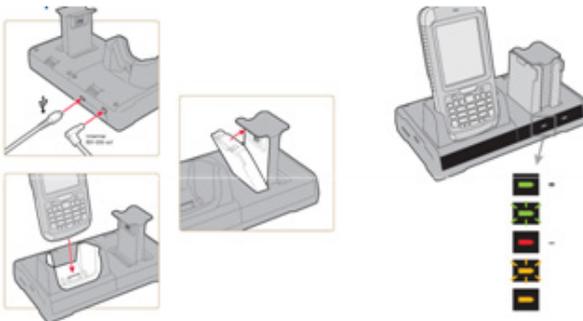


Figure 3. Single dock station

**Note:** *The Tagreader Demo software will not operate without a charged battery in the CN70e mobile computer. Do not proceed if the battery is not fully charged.*

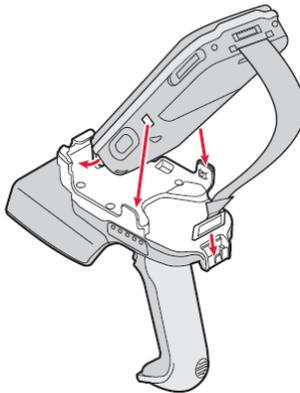
### Connect Scan Handle to Mobile Computer

1. Remove the CN70e hand strap and insert it into the slot on the IP30 TC2 scan handle (Figure 4). You will hear a click when the clip is fully seated. Slide the CN70e mobile computer into your IP30 TC2 scan handle.



**Figure 4. Insert CN70e hand strap into scan handle**

2. Ensure that the computer slides all the way into the IP30 TC2 scan handle. You will hear a click when you have the mobile computer fully inserted (Figure 5).



**Figure 5. Connect CN70e mobile computer to scan handle**

## **Removing Scan Handle from Mobile Computer**

***Note: Once the computer is latched into the scan handle, it is very difficult to remove. TransCore recommends that you only detach the computer from the scan handle when necessary. The computer will fit into the charging cradle with the handle attached.***

1. To remove the mobile computer from the IP30 TC2 scan handle, gently pry the tab with two up-arrows located on the right side of the scan handle with a slim but sturdy plastic or nylon implement (Figure 6). Metal is not recommended as it could damage the computer unit.



**Figure 6. Separating computer from scan handle**

***Note: Take care to secure both the computer and scan handle so neither unit is dropped as you separate them.***

2. Gently pull up and slightly twist the computer; it should easily release from the scan handle.
3. Alternately, look for the channel located near the arrow tab. Slide the sturdy plastic or nylon implement into the channel and gently press up until the computer releases from the scan handle ( Figure 7).



**Figure 7. Slide implement into channel**

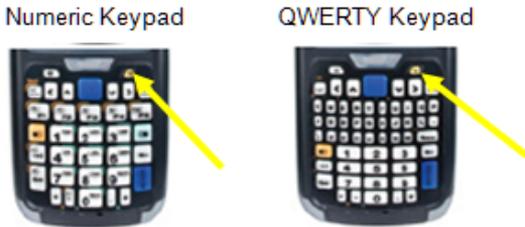
4. Disconnect the hand strap from the scan handle. Insert the clip into the slot at the top of the computer to create a handle. You will hear a click when the clip is fully seated.

# Establish a Connection to the Scan Handle

*Note: Before using the IP30 TC2, you first must establish a connection between the IP30 TC2 and the CN70e mobile computer using the Wireless Reader Wizard applet.*

## Connect the IP30 TC2 using the wireless reader wizard

1. Switch on the mobile computer by pressing the On/Off button (Figure 8).



**Figure 8. Location of on/off button**

2. Make sure you have your Bluetooth radio enabled on your mobile computer. See *the Microsoft Windows embedded handheld 6.5 (CN70e) user manual for more information*. A menu screen appears (Figure 9).



**Figure 9. Handheld reader menu screen**

3. Tap the **Windows** icon in the lower left corner of the screen. The Start screen displays (Figure 10).



Figure 10. Start screen

4. From the Start screen, tap **Settings** to go to the Settings screen (Figure 11).



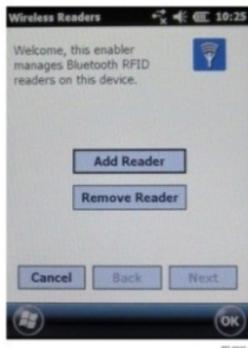
Figure 11. Settings screen

5. From the Settings screen, select **System**. The System screen displays (Figure 12).



Figure 12. System screen

6. Scroll to the bottom of the System screen and tap on **Wireless Readers**. This will start the wireless readers wizard. (Figure 13).



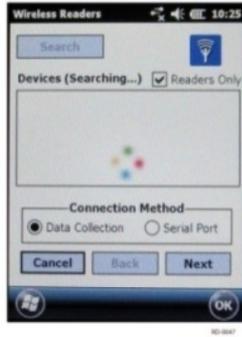
**Figure 13. Wireless readers wizard screen**

7. Tap **Add Reader**. The wizard advances to the next screen.
8. Leave the reader setting on **Search**, which is the default setting. Tap **Next** (Figure 14).



**Figure 14. Search for RFID device**

9. The computer will start discovering readers (Figure 15).



**Figure 15. Device search screen**

10. Highlight and select the device from the list (Figure 16). Tap **Next**.

*Note: The Devices list will show all data collection devices, including RFID readers, that are Bluetooth enabled. To connect to the correct reader, verify that the serial number you selected matches the one located on the bottom of the IP30 TC2's antenna.*



**Figure 16. Devices list**

11. The CN70e will prompt you to add the device. Select **Yes**.
12. Enter passcode 0000 (Figure 17).



**Figure 17. Enter passcode '0000'**

13. Tap **Next**. The remote device information screen appears (Figure 18).



**Figure 18. Remote device information screen**

14. Tap **Finish**.

# Using Your Encompass 1i Handheld Reader

Before reading tags, check the IP30 TC2 scan handle battery capacity by squeezing the trigger (Figure 19). The IP30 TC2 LED panel (Figure 20) displays the battery capacity, as well as other functions of the scan handle (see table on page 12).



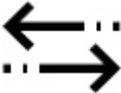
**Figure 19. Trigger location**



**Figure 20. Scan handle LED panel**

## LED Indicators and Descriptions

The table lists the IP30 TC2 scan handle LED symbols and descriptions.

LED Symbol	Indication	Description
	READY TO WORK	Indicator: Off – IP30 TC2 not ready for operation or in low power mode Blinking – IP30 TC2 not connected to mobile computer Steady – IP30 TC2 connected to mobile computer and ready for use
	DATA COMM	Data communication with host is active

	RF ON	RF power is on
	TAG COMM	Valid tag transaction
	BATT	Battery condition: Red – <20% charge Orange – 20% to 80% charge Green – >80% charge

**Note: If your IP30 TC2 RFID scan handle is not identified by the TransCore logo on the LED panel, you will not be able to read ATA, Wiegand, and TransCore eGo or eGo Plus tags.**

## Reading Tags

### To read tags

1. Return to the Start screen. Scroll down and tap the **TagReader** icon (Figure 21).

TagReader Demo



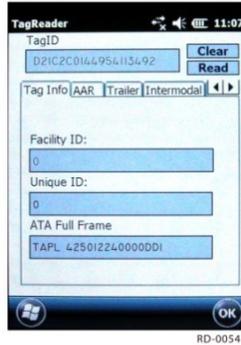
**Figure 21. Tagreader demo icon**

2. Aim the handheld reader at the tag and squeeze the trigger. To obtain a good first-time read, the front edge of the handheld reader needs to be within 3.5 to 12 feet (approximately 1.1 to 3.7 meters) of the properly mounted tag.

**Note: Distance will vary depending on tag type.**

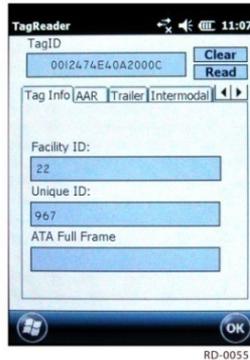
3. Check the mobile computer screen to see the ID displayed.

An example of a screen display for an ATA tag transaction is shown in Figure 22.



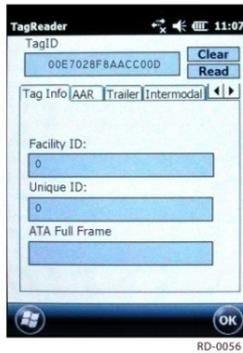
**Figure 22. Sample display of ATA tag read**

An example of a screen display for a half-frame Wiegand tag transaction is shown in Figure 23.



**Figure 23. Sample display of Wiegand tag read**

An example of a screen display for an eGo or eGo Plus tag transaction is shown in Figure 24.



**Figure 24. Sample display of an eGo or eGo Plus tag**

Windshield sticker-type tags are designed for optimal performance when mounted to a windshield. Tags that are not mounted to glass will not perform to the specifications listed in this guide.

## **Resetting Your CN70e mobile computer**

Applications operating on your CN70e mobile computer may stop responding to the system. Should this occur, you may need to perform either a warm reset or cold reset of your computer. Refer to the warm and/or cold resetting sections in the *Intermec Mobile Computer for Windows Mobile 6.1 (CN70e) User's Manual*.

## **Cold Weather Operation**

The Encompass 1i reader is designed to operate at temperatures ranging from 5°F to 122°F (-15°C to 50°C). When operating the reader continuously in cold temperatures (less than 32°F/0°C), the lithium-ion (Li-ion) battery loses its charge faster than when operated at warmer temperatures. Operating in colder temperatures does not damage the Li-ion battery it only reduces the battery charge capacity.

If required to operate the reader at the minimum operating temperature, try to warm the E1i Handheld Reader when it is not in use. If you cannot warm the reader between tag reads, you can expect to charge the scan handle battery more frequently.

## **IP30 TC2 RFID Scan Handle Specifications**

Specifications for the IP30 TC2 RFID scan handle are printed on the back side of the *Encompass 1i Handheld Reader Product Profile* (TransCore document number 16-7040-001). The Encompass 1i Handheld Reader product profile can be found at [www.transcore.com](http://www.transcore.com). Select downloads then RFID Products and Readers.

## Safety/Regulatory/Compliance



### **WARNING**

*Refer to the Model IP30 (915 MHz) and CN70e Compliance Inserts enclosed with the reader for important safety and regulatory information.*



### **CAUTION**

*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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate 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 user may be required to correct the interference at their own expense.*





Two easy ways to contact us:

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- Visit us on the Web at [www.transcore.com](http://www.transcore.com)

