ZTR™

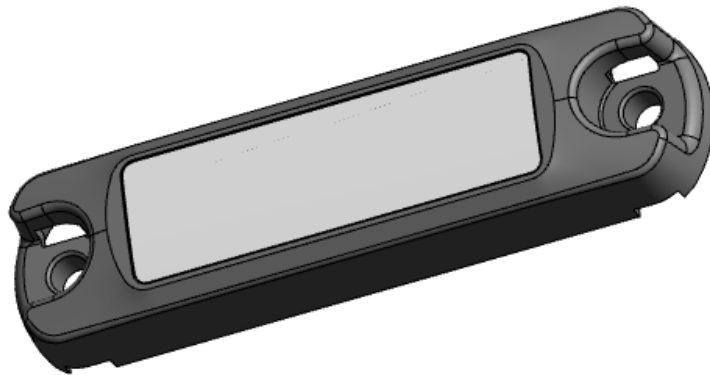# T15
Installation
Guide

Please call
ZTR Connected Asset Technical Support
With any questions:
1-888-320-8332

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ZTR Control Systems – T15 Device
Regulatory and Compliance Statements – FCC/ISED

This device 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.

Note:
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.

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

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.

CAN ICES-3 (B)/NMB-3(B) – This Class B Digital Apparatus Complies with Canadian ICES-003.
Cet Appareil numerique de la classe (B) est conforme a la norme NMB-003 du Canada.

OWNERSHIP AND CONFIDENTIALITY

WARNINGS AND PRECAUTIONS

HANDLING LI-ION CELLS:

All T15 devices contain an internal Lithium-thionyl Chloride (Li-Ion) battery, and must be handled properly during installation, normal use and removal.

Li-Ion cells contain a large amount of energy and react extremely violently when exposed to moisture in the atmosphere. Risk of fire or explosion exists only if the battery is handled improperly and/or abused mechanically, electrically or thermally. Proper handling means the battery must **NOT** be subjected to the following conditions:

- Short circuit
- Puncturing
- Recharging
- Crushing
- Incineration
- Immersion in water
- Exposure to temperature exceeding rated limits

Care must be taken, especially during installation and decommissioning, to **ensure the units are not punctured or crushed**.

In the event of battery ignition, use **ONLY** Class D fire extinguishers on the flame. **DO NOT USE:** water, sand, CO_2, Halon, dry powder, or soda ash extinguishers.

For more information, consult the manufacturer Safety Data Sheet (SDS) for standard Lithium Thinoyl Chloride batteries.

DISPOSAL OF LI-ION CELLS:

Lithium Ion batteries are often subject to local, state or provincial laws and regulations regarding disposal. They cannot be simply disposed of in the trash. Check with your local landfill/recycling facility for hazardous waste disposal requirements and safe disposal options.

Introduction

** PLEASE READ THESE INSTALLATION INSTRUCTIONS THROUGH FIRST TO BECOME FAMILIAR WITH THE INSTALLATION, WIRING AND TESTING PROCEDURES. THIS WILL SAVE INSTALLATION TIME AND BETTER PREPARE YOU FOR TESTING **

This manual includes instructions for permanent installation of the T15 monitoring system.

The general flow of the instructions are as follows:

The following instructions and any accompanying documentation, drawings and specifications are the property of ZTR CONTROL SYSTEMS. They are issued in strict confidence and shall not be reproduced, copied or used as the basis for sale or manufacture of any apparatus without prior written permission from ZTR CONTROL SYSTEMS.

1. Installation Requirements

For reference during the installation of the T15, please be sure to bring along the following documents for your reference as needed:

- Schematics of the equipment you are working on, if applicable

2. Supplies

a. What Comes in the Kit:

- T15
- 3M Double Sided Tape
- T15 Installation Manual

b. What is Not Included in the Kit:

The following are optional supplies that are **not** provided in this kit which you may need to use during the installation of the device:

- Magnet – Neodymium or other rare-earth magnet type is recommended
- Tie Wraps.
- Self-tapping screws for Mounting.
- Screws, Nuts & Washers.

Please be sure to meet your company's Standard Safety Protocols for Installations

3. Considerations before Installation

The ideal way to ensure a trouble-free installation is to consider your options and make some decisions before starting the install. Take a good look at the asset (equipment or tool) to determine how to best install the T15.

Some factors to consider when planning the installation of the T15 are:

- T15 Mounting Considerations.

    o T15 should be mounted away from radiating heat

    o T15 should be mounted in an area where it cannot be damaged by falling and moving objects

    o T15 should be mounted in an area where it does not interfere with regular operations of the equipment/tool or the operator

    o T15 should be mounted in a way that the label is easily readable/scannable

    o For best results, T15 should be mounted with as high as possible, with line-of-sight visibility, and the top face unobscured.

- Copy and Record the ESN # from the label in case you need to change any details later after activation.

4. T15 Installation

4.1. Mounting

The T15 is designed to accommodate two primary methods of secure mounting to equipment:
- Screw / rivet mounting via screw holes (up to #8 size screws accepted)
- Tie-wrap mounting via strap slots (0.300" max tie width)

Installation methods used depends largely on the application and should be determined on a case-by-case basis, or for groups of similar equipment. 3M™ VHB™ Tape should be used in conjunction with tie-wrap installs to prevent excessive movement due to vibration. The 3M™ VHB(TM) tape can be used to stabilize the T15 when using the screw mount method.

Screw-mount Install   Tie-Wrap Install

4.2. Scout - Mobile Application Installation

The mobile application is used to provision the T15 tags, and activate them in ZTR's ONE *i*3 interface. In order to run the Scout mobile application, the minimum OS required is Android v5.0 (Lollipop).

Complete the following steps to install and activate Scout:

1) Download the Scout mobile application from the Google Play store and install it on your Android device.

2) Enable Bluetooth on your mobile device.

3) Open the app, select 'Login', and enter your ONE *i*3 credentials. If you do not have ONE *i*3 login credentials, please contact your ONE *i*3 account administrator.

4) On successful login, the phone will request a series of permissions. Please say **Yes** or **Allow** to all of them per below:

   - Photo, Media and File Access = ALLOW
   - Location Access = ALLOW
   - Take Pictures & Video = ALLOW
   - NFC Access = ALLOW
   - Telecommunications Access = ALLOW

5) After permissions have been granted, the app will display the main splash page as shown in the example image to the right.

   At this point, if Bluetooth has not been enabled, the app will prompt the user to enable it. Bluetooth connectivity is confirmed by the presence of the Bluetooth icon in the status bar at the top of the phone display:
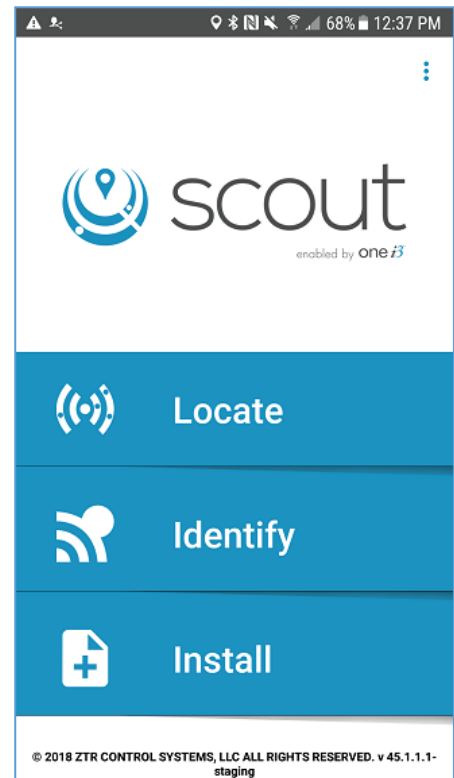
4.3. T15 Wakeup & Provisioning

4.3.1. Wakeup

T15 tags ship from the factory in a suspended sleep state to conserve battery life until activation. They will remain in this state until woken via magnet field. Once woken up, the device will continually broadcast with a special "wake confirmation" flag for a period, typically 5 minutes, after which it will return to the deep sleep state unless confirmation via the Scout app is issued.

To wake a T15 out of its sleep state, swipe a magnet across the unit. For best results, the magnetic field should be oriented perpendicular to the length, as demonstrated:
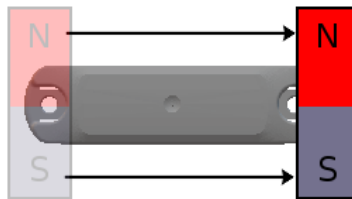
1 - Swiping motion and orientation with generic type magnet

The time spent by the magnetic field in contact with the T15 device should be no less than 1 second total.

4.3.2. Provisioning

Provisioning is the process of activating and submitting device details for availability within the ONE *i*3 platform. This allows for monitoring through both the ONE *i*3 platform and Scout mobile application.

On successful wakeup of the T15 device as outlined in 4.3.1, the device can be provisioned by completing the following procedure before the timeout expires and the unit returns to deep sleep:

1) Open Scout and select "Install" from the splash screen.

2) Choose the SCAN" button with Bluetooth logo to initiate a scan of all nearby ZTR BLE devices.

3) In the ESN scan screen, the five closest assets will be listed according to signal strength. The top of the list indicates the strongest (closest) asset. For best results, physically isolate the target tag from any nearby BLE devices as much as possible.

4) On successful selection of the target ESN, the remaining data fields can be populated. These values will be visible in ONE *i*3 and Scout on provision completion.

5) Select the blue checkmark button in the lower right to complete the provisioning process. Scout will first display a reminder to ensure the unit has been activated magnetically, and then display a message prompt to indicate that the activation was successful.
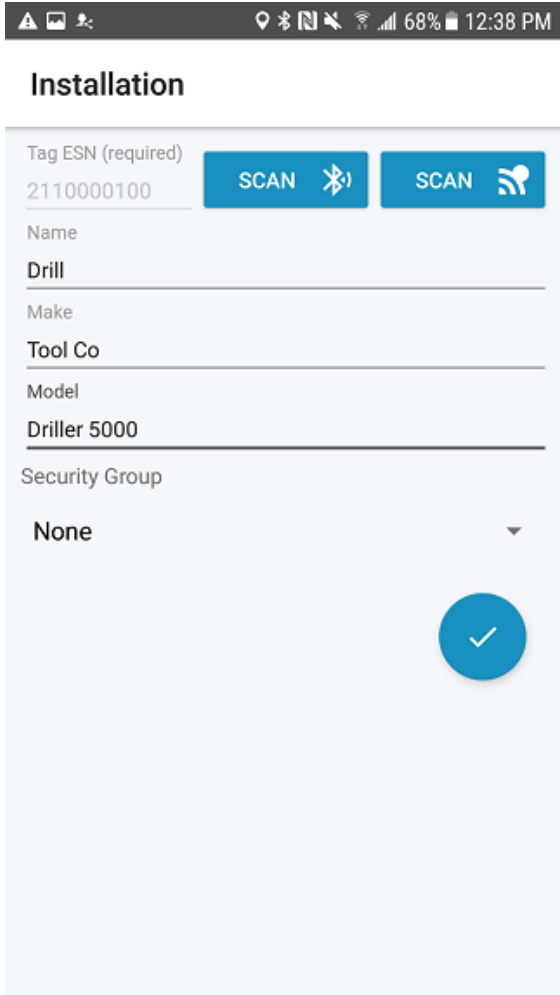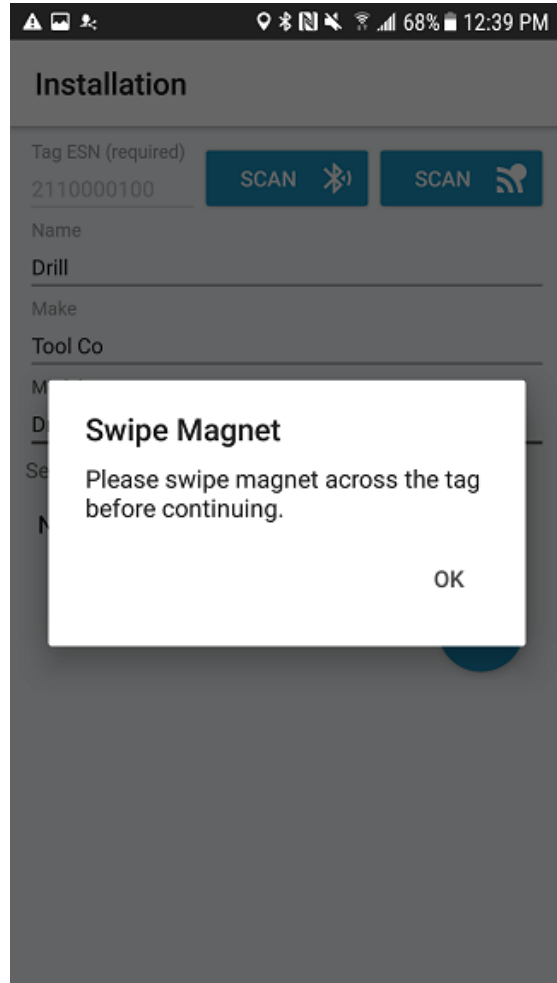
The provisioning process is illustrated as follows:
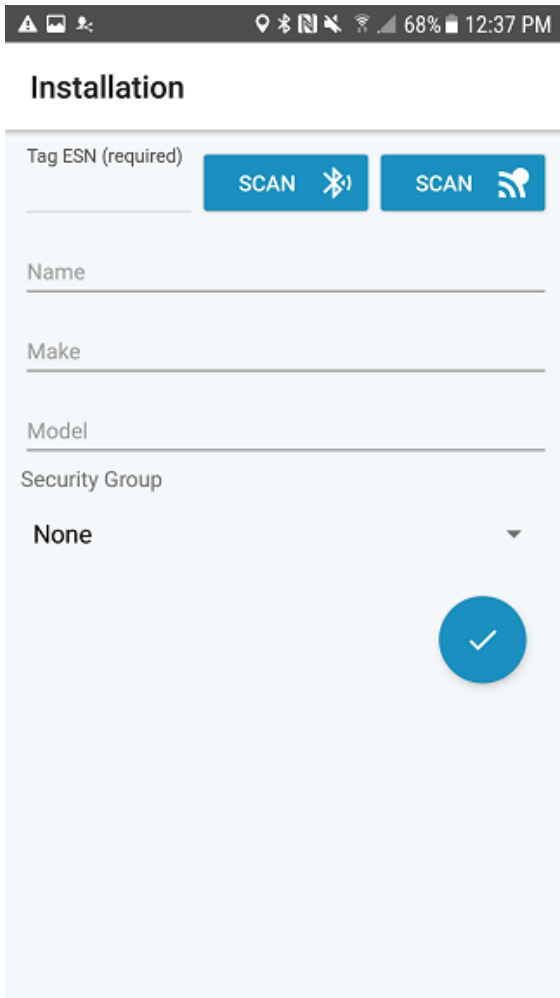
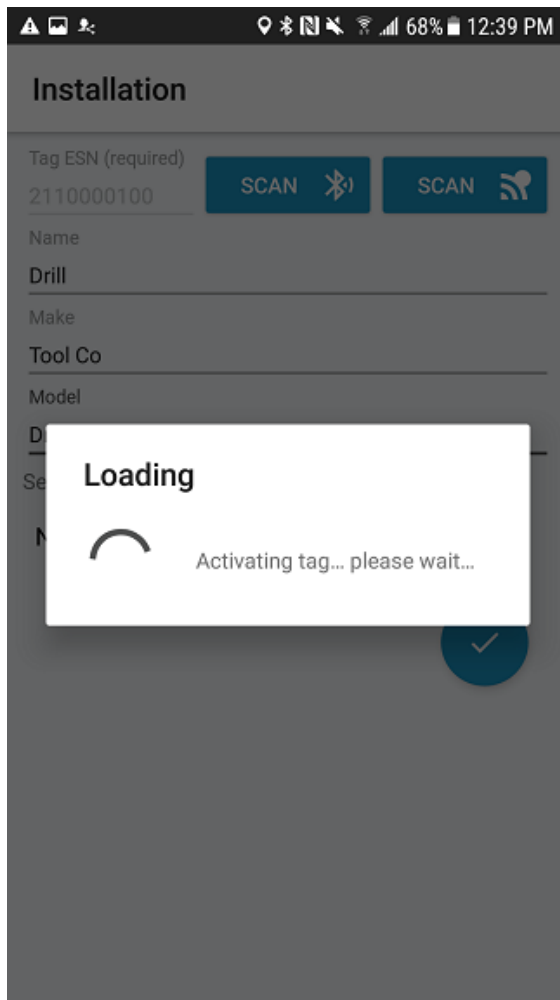*Installation screen with ESN scanning "Select" button.*
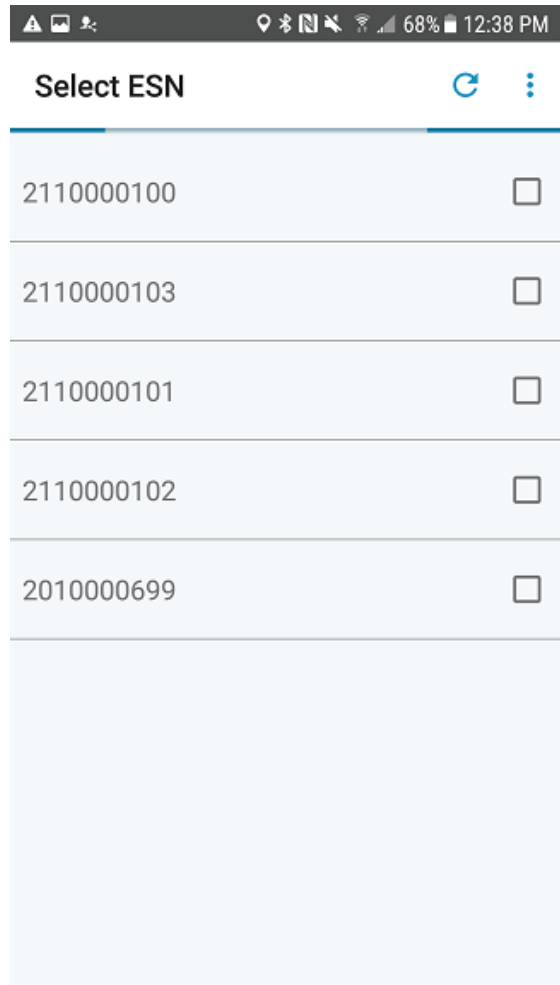
Bluetooth ESN scanning screen showing 5 nearest assets, with strongest signal at the top of the list.
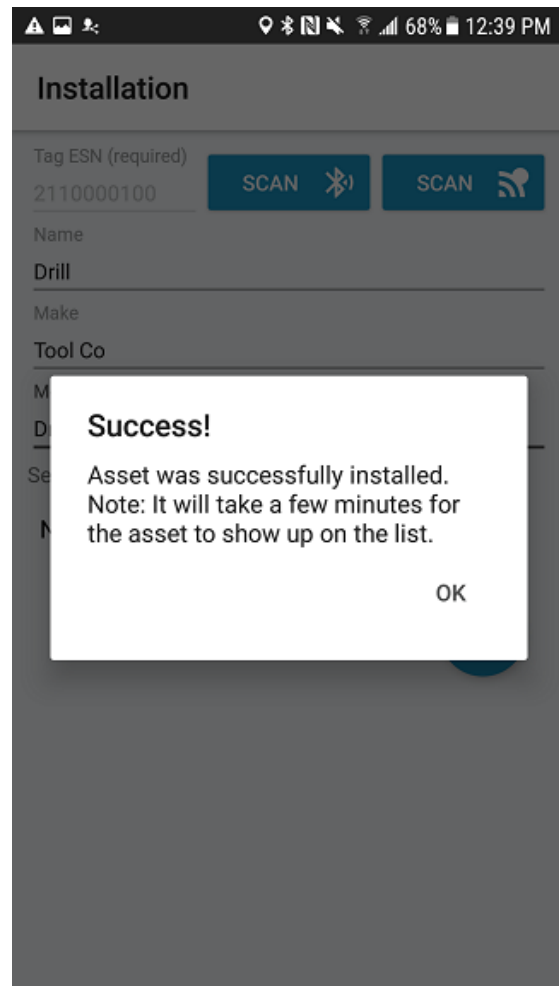
ESN successfully acquired via BLE scan.

If several minutes have elapsed since first swiping of the unit with a magnet, it may need to be woken again.

Activation in progress.

Successful activation confirmation.

Note: Assets that have been activated & provisioned will automatically push data to the ONE *i*3 platform when detected by a mobile phone running Scout, or when in the presence of another ZTR gateway such as the M8HZT. These updates occur on a configurable periodic basis.

5. Installation Confirmation

Once a device is provisioned, it will act as an asset tracking beacon for the remainder of its working life. To manually access asset details using the Scout mobile app after provisioning, two primary methods are available:

1) Bluetooth Low Energy (BLE) Scan
2) Barcode Scan

5.1. Bluetooth Low Energy (BLE) Scan

To retrieve the details of a particular asset via Bluetooth scan, open the Scout mobile app and select "Locate" from the splash screen. This will initiate a BLE scan and populate the list with detected assets along with a summary of each asset's details.

The filter search bar can be used to narrow down the results to a particular set of assets that match the search criterion. Selecting the desired asset from the list will display a new screen with an enhanced list of details for the particular asset. See below:
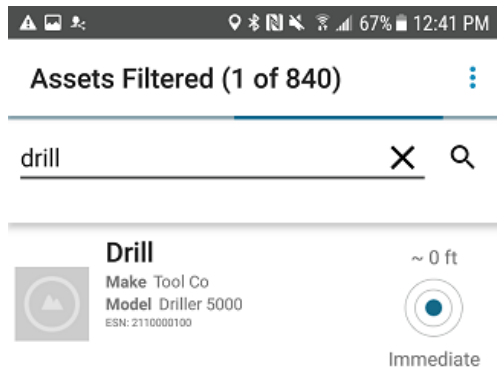
BLE asset search using filter.
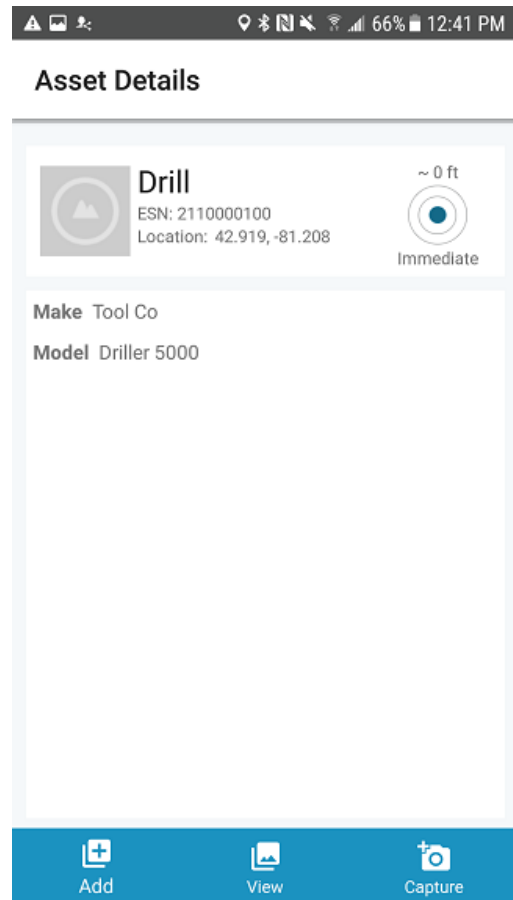
Additional asset details displayed when asset is selected from scan results list.

5.2. Barcode Scan

To retrieve the details of a provisioned asset manually, open Scout and select "Identify" from the splash screen. This will enter barcode scanning mode. Focus the label of the T15 in the camera port, and adjust position until maximum focus is achieved. As soon as a legible barcode is detected, the app will automatically read the ESN and display asset details. This process will open the same screen as if the asset was selected through BLE scan mode.

6. T15 Asset Monitoring (ONE i3)

The ONE *i*3 platform offers a full suite of telematics and asset tracking functionality, including utilization/run-time data, location tracking, and fleet health.

Provisioned T15 tags are automatically available for monitoring on the platform. To access ONE *i*3 functionality, visit https://www.onei3.com, and log in with valid credentials.

Appendix A: Label Revision History

This section will illustrate any changes to the product label as a result of a revision/update.

Revision:	Date: (MM/DD/YYYY)	Author:	Reason:
1	04/30/2018	C. Moulton	Initial release

Appendix B: Installation Guide Revision History

This section will detail any changes to the content of this document as a result of a revision/update.

Revision:	Date: (MM/DD/YYYY)	Author:	Reason:
1.0	04/30/2018	C. Moulton	Initial release