

# AI4100-DU Portable Reader Display/ UMLER Version User Manual

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# AI4100-DU Portable AEI Reader

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# AI4100-DU Portable AEI Reader

## 1. BRIEF OVERVIEW

The AI4100-DU Portable AEI Reader is a small, lightweight unit consisting of a Janam XM2 rugged mobile computer with an integrated AEI tag RF reader running Windows Mobile 6.5.

The AI4100-DU Portable AEI Reader is used to read the data encoded into an AEI tag. The AI4100-DU also contains a subset of UMLER and will automatically compare the data in the AEI tag against the UMLER data.

Unlike previous portable AEI tag readers that have two separate components that must be Bluetooth paired with each other, the AI4100 is a single-piece unit (see Figure 1).



Figure 1- AI4100 AEI Portable Reader

## AI4100-DU Portable AEI Reader

The RF reader and antenna are permanently attached to the Janam XM2 mobile computer (see Figure 2).



**Figure 2 - AI4100 Side View**

The AI4100-DU AEI Portable Reader is shipped with a charging cradle, which allows for a USB connection to a computer, and a battery (see Figure 3).



**Figure 3 - AI4100 Components**

## AI4100-DU Portable AEI Reader

Even though the portable reader can read over 10,000 AEI tag on a single battery charge, we recommend the purchase of a second battery for each portable reader. The cradle has a separate battery charging position in the back of the unit for charging a second battery while the portable reader is in the cradle and having its battery charged (see Figure 4).



**Figure 4 - AI4100 Portable Reader in the Cradle**

# AI4100-DU Portable AEI Reader

## 2. QUICK START

### 2.1. Initial Startup

The AI4100-DU Portable AEI Reader is shipped with the power off. To power up the unit, press the red power button in the lower left corner of the unit (see Figure 5). This will cause the computer to boot up and automatically start the Softrail AEI Portable Reader program. This program must be running and shown on the display for the system to read AEI RF tags and barcodes. The AI4100-DU information display will first appear (see Figure 6).



Figure 5 - AI4100 Buttons





**Figure 6 - AI4100-DU Information Display**

## 2.2. Power Off

To power down the unit, press and hold the power button. A power off display will appear (see Figure 7).



**Figure 7 - Power Off Screen**

## AI4100-DU Portable AEI Reader

### 2.3. Reading AEI Tags

There are three buttons that can start the RF reading of an AEI tag. These are at the top on the left hand side of the computer, at the top on the right hand side, and the large red button just below the screen (see Figure 5). When any of these buttons is pressed and held, the computer will turn on the AEI tag RF reader and attempt to read a tag. A "Reading Tag" message will appear on the screen. It will continue attempting to read a tag until a tag is read or the button is released. If a tag is read, the information in the tag will be displayed (see Figure 8). If not, a "No Tag Read" message will appear.

The AI4100-DU has a subset of the UMLER database, which includes all rail vehicles registered in North America. For each rail vehicle the subset contains the following fields:

- The coupler to coupler length
- The number of axles
- The bearing type

If any of the fields in the AEI tag disagrees with UMLER, they will be displayed on the screen (see Figure 9). Please note that the AEI tag length does not have to match exactly with UMLER, but must be within +/- one foot of the UMLER value.

If the rail vehicle cannot be found in UMLER, a "Not found in UMLER" message will appear on the screen (see Figure 10).



Figure 8 - AEI Tag Display UMLER Check Ok

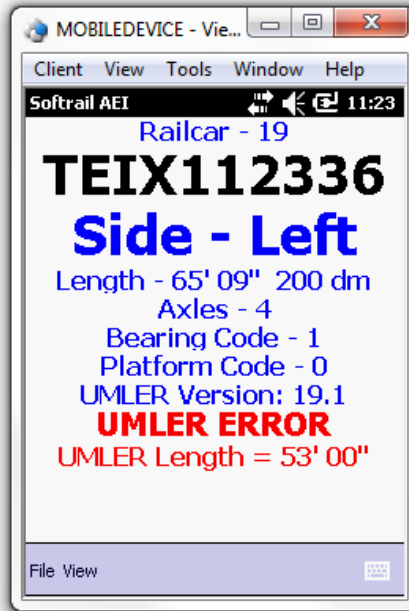


Figure 9 - AEI Tag Display UMLER Error



Figure 10 - AEI Tag Display Not Found in UMLER

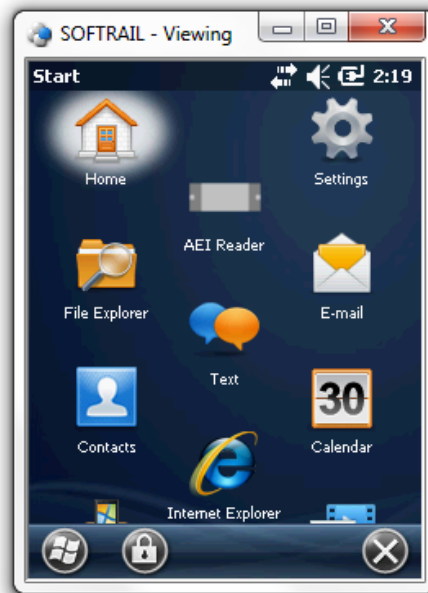
Please note the following when attempting to read an AEI tag:

- The Softrail AEI Tag Reader Software program must be running and shown on the screen. If not, press the Windows Flag button on the left side just below the screen (see Figure 5). If the program list screen (see Figure 11) does not appear, press this button again. Tap the AEI Reader icon to start the program.

## AI4100-DU Portable AEI Reader

A second way to start the Softrail AEI Tag Reader Software is to power down the unit by holding down the Power button until the Power Off screen appears (see Figure 7) and then tap the Power Off button. Press the Power button again to power up the unit, and the Softrail AEI Tag Reader Software will automatically start running.

- The AEI tag is designed to be mounted against metal. The AI4100 AEI Portable Reader should be able to read all tags mounted against metal that are within three feet of the antenna. For tags not mounted against metal, the read range will be much shorter.
- To read tags, point the portable reader at the AEI tag so the portable reader's antenna surface is parallel to the surface of the tag.
- If attempting to read tags at longer distances, wave the portable reader up and down.
- Depress one of the three buttons referenced above until a tag is read or you no longer want to attempt to read the tag.



**Figure 11- Program List Screen**

### 3. UPDATING UMLER

Periodically Softrail will release a new version of UMLER that can be copied to the AI4100-DU portable reader. This new UMLER version can be downloaded to a Windows based computer by going to Softrail's web page at <https://www.aeitag.com/portable-readers> and clicking on the AI4100-DU's "More Info" button.

## AI4100-DU Portable AEI Reader

The new UMLER file can be downloaded at any time, but there is a nominal charge for upgrading the AI4100-DU. Do not copy and replace the existing UMLER file in the AI4100-DU until the Installation Key has been purchased from Softrail.

The UMLER file is called “portable umler.txt”. To copy the new UMLER file the AI4100-DU must first make a USB connection to the computer that has the new downloaded UMLER file.

There is a USB connector on the back of the cradle, which allows a connection to a Windows computer. When the AI4100-DU is inserted into the cradle and turned on, Windows Mobile should automatically open. There may be several screens requesting you to register the device prior to the screen showing the connection status (see Figure 12).



**Figure 12 - Window Mobile**

Some Windows 10 computers do not have Window Mobile properly installed.

The following is a link for instructions to get the Windows Mobile Device Center working on Windows 10 computers:

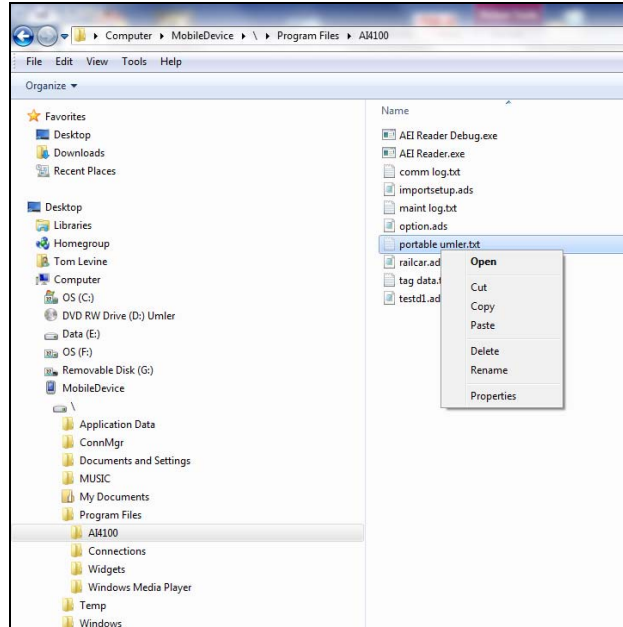
<http://www.junipersys.com/Juniper-Systems-Rugged-Handheld-Computers/support/Knowledge-Base/Support-Knowledge-Base-Topics/Desktop-Connection-ActiveSync-or-Windows-Mobile-Device-Center/WMDC-in-Windows-10>

Once a connection is made, open Window Explorer to copy and paste the new UMLER file into the AI4100-DU (see Figure 13).

You will first have to delete the existing “portable umler.txt” file. It can be found in the MobileDevice/Program Files/AI4100 folder. Right click on the file name and a popup menu will appear with a Delete menu item. Delete the file and then copy the new UMLER file.

Power down (see Paragraph 2.2) and restart the AI4100-DU. You will be asked to enter the Installation Key for the new UMLER file.

# AI4100-DU Portable AEI Reader



**Figure 13 - Window Explorer**

## 4. ABOUT

To find information about the software version and the unit's serial number, tap the About menu item under the File menu, and the About display shown in Figure 14 will appear.



**Figure 14 - About Display**

# AI4100-DU Portable AEI Reader

## 5. MAINTENANCE AND COMMUNICATION LOGS

To help find problems with the portable reader, the portable reader maintains two logs. These are the maintenance log and the communications log.

### 5.1. Maintenance Log

The maintenance log is located in a text file called "maint log.txt" in the Program Files\AI4100 folder. It contains information about when various events occurred and if internal problems were detected.

To view the maintenance log tap the Maintenance Log menu item under the View menu.

The following is an example of information contained in this log:

```
12/29/2005 12:48 Start of program
12/29/2005 16:31 Program closed
01/13/2006 10:14 Start of program
```

To help find problems, Softrail may need to obtain a copy of the maintenance log.

## AI4100-DU Portable AEI Reader

### Communications Log

The communications log is located in a text file called "comm log.txt" in the Program Files\AI4100 folder. It contains information about communications between the portable reader's mobile computer and other devices including the internal AEI RF reader. The internal RF reader is connected to the mobile computer's serial communications port.

To view the communications log, tap the Communications Log menu item under the View menu.

The following is an example of information contained in this log:

```
12/29/2005 12:49 R (COM1) Received "**P=H@!?8MQD    S"  
12/29/2005 12:49 R (COM1) Received "FXO3!XD H1D    S"  
12/29/2005 12:49 R (COM1) Received "FC2:?$@:P2D    S"  
12/29/2005 12:49 R (COM1) Received "GCUH!MM@N1D    S"
```

To help find problems, Softrail may need to obtain a copy of the communications log.

## 6. TECHNICAL SUPPORT AND UPDATES

Periodically Softrail issues maintenance releases and new versions of the software in the AI4100-DU Portable Reader. Maintenance releases are free and correct problems found with the program and/or provide minor enhancements to the program. Before contacting us with problems we suggest you contact your sales representative and review the issues with him and/or check our web page at [www.aeitag.com](http://www.aeitag.com) to insure that you have the latest maintenance release of the program.

Technical support is free for the first one year after purchase, but is limited to two hours of support for each portable reader that is purchased. Time is charged in blocks of 15 minutes.

A maintenance agreement can be purchased to extend the period of technical support or add additional hours.

For technical support or more information on the maintenance agreement, contact Softrail at:

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