

# TagTracker User Guide

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TagTracker is used to configure the reader, monitor its operation. It is a graphic interface program for the Oregon RFID reader that runs on Palm PDAs.

Oregon RFID recommends and sells the Meazura PDA but many other models of Palm PDAs will work. Contact us for a list of compatible models.

TagTracker also supports Bluetooth for a wireless link to the reader.



TagTracker

Download TagTracker from:

Copy TagTracker.prc to the Palm, then start the program.

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The Oregon RFID mobile reader maintains a database to keep track of tag detections.

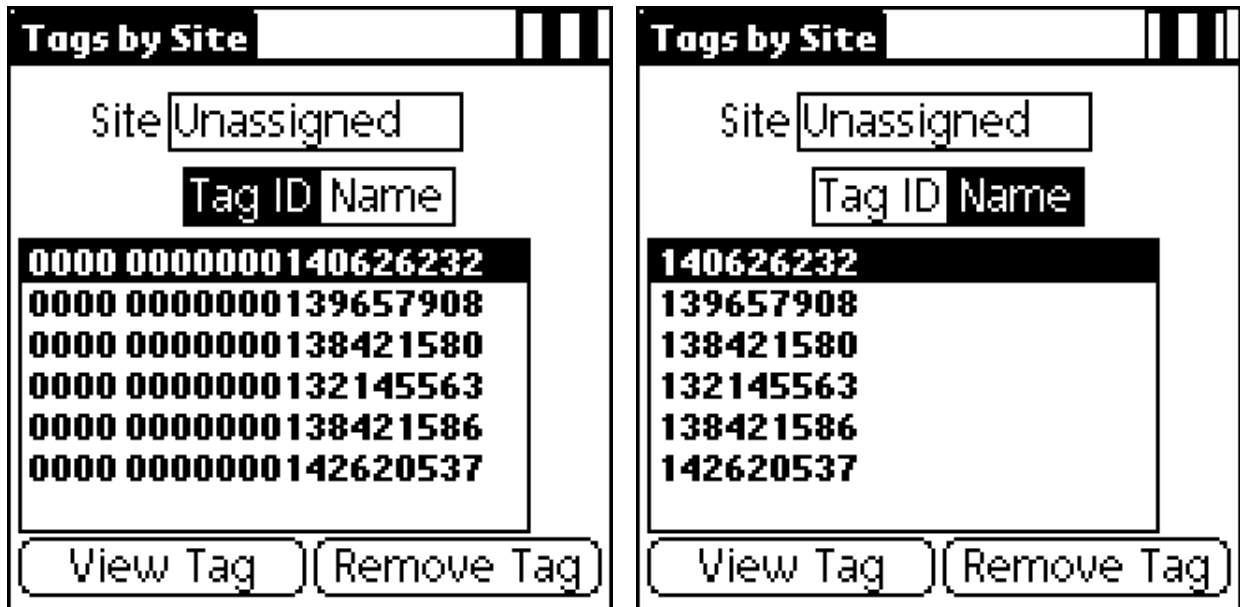
Tags are organized into sites. Each site can contain up to 500 tags.

Each tag record contains:

- Tag unique identifier (up to 21 digits)
- Tag name (25 character name assigned by user)
- Date and time of initial detection
- Tag description (up to 6 fields)
- List of positions (up to 200 per tag)
  - XYZ location (state plane, GPS)
  - Date and time of measurement

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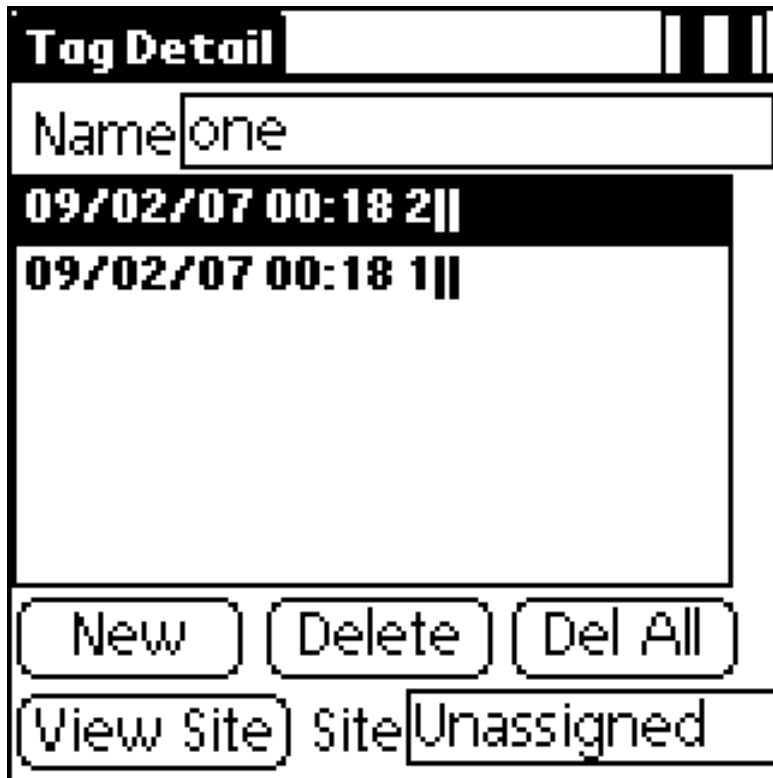
Tags are listed by tag ID or name. The initial name is the tag ID without leading zeroes but can be renamed to any 25 character name.



Pressing "View Tag" will display the characteristics of individual tags. Touching on the site name will select a different site to view.

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The tag detail shows the list of positions and the site name. Pressing the site name allows selecting a different site to move the tag into.



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New positions are added by pressing the “New Position” button. The record is timestamped and added to the tag record.

The image shows a dialog box titled "New Position". It contains three input fields for coordinates: X (15.432), Y (34.828), and Z (16.401). To the right of the Y field is a button labeled "Read Fix". At the bottom of the dialog are two buttons: "OK" and "Cancel".

Coordinate	Value
X	15.432
Y	34.828
Z	16.401

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Clicking on the name field in the tag detail will display the user defined tag description fields.

The tag can be renamed on this form. Up to 6 user defined fields with tag characteristics can be entered.

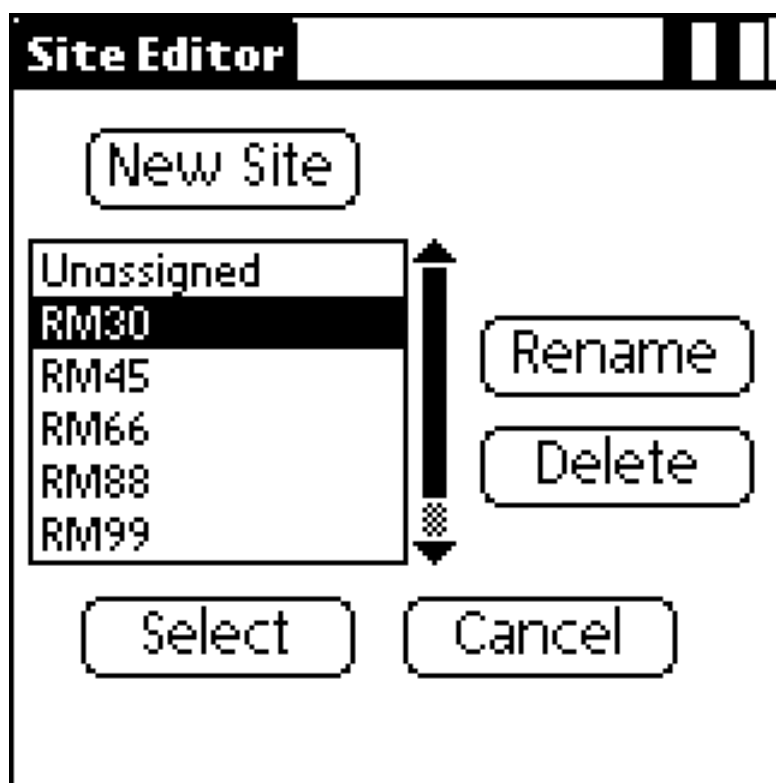
The time and date of the initial tag detection are displayed.

Description	
Name:	AAA
X	23.1
Y	14.2
Z	8.8
Weight	42
08/24/07 23:13	
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	



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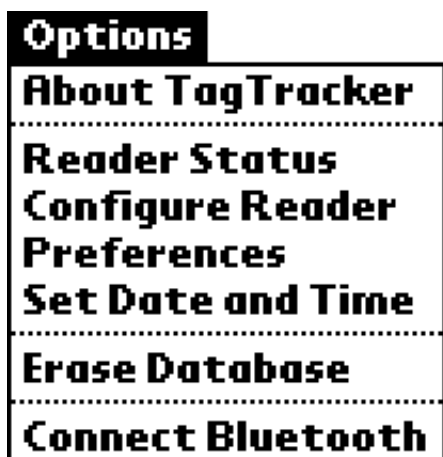
Tags are organized into sites. The ‘Unassigned’ site is used to store tags that are not placed in a site yet but have been processed (named, physical characteristics entered).



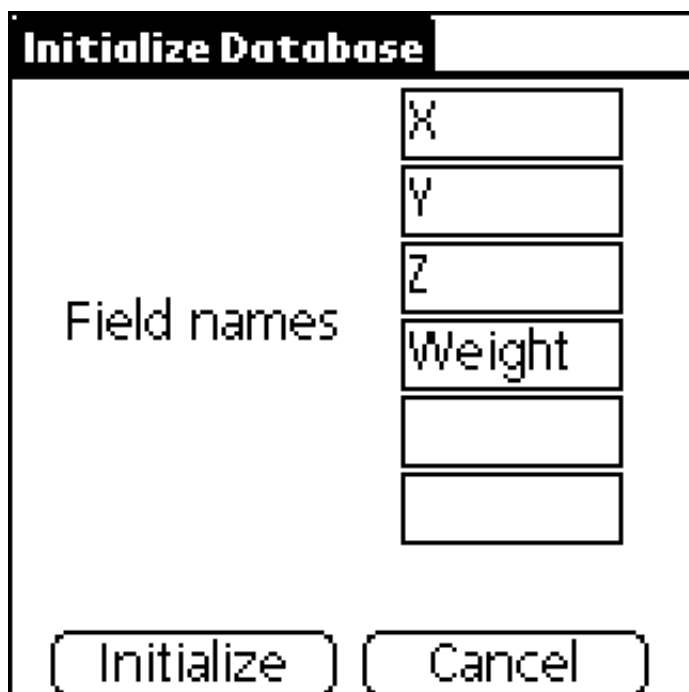
Deleting a site will move the tags to the “Unassigned” site. Deleting tags from the “Unassigned site” permanently removes them.

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All tags can be deleted and the database initialized by selecting the “Erase Database” menu item in the top left corner of the screen.

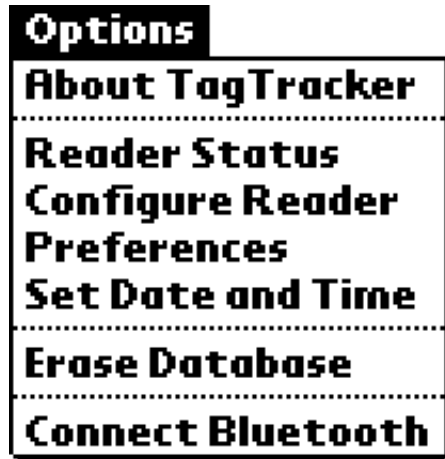


Enter up to 6 field names to define the format of the tag record.

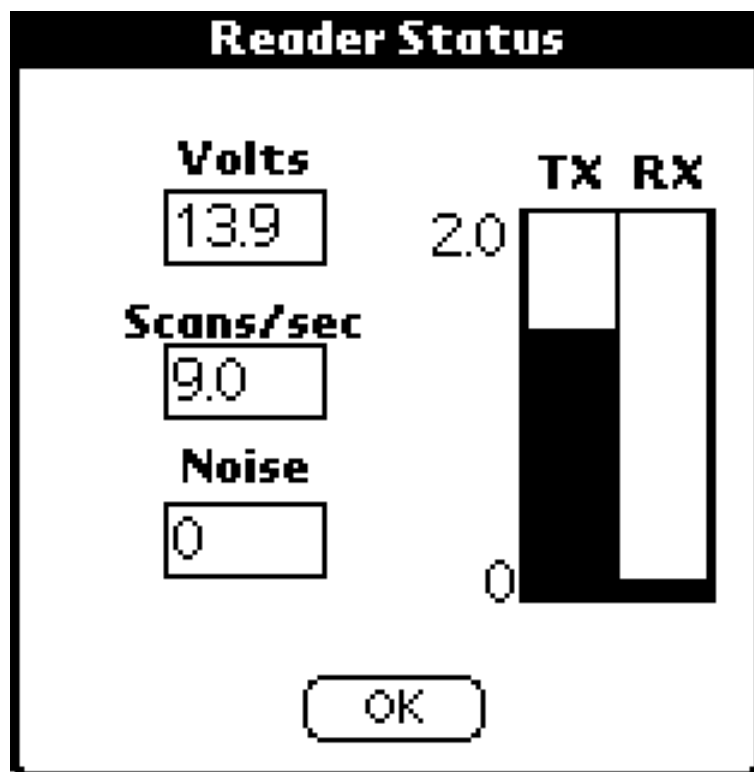


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Select the “Reader Status” menu item in the top left corner of the screen.



The battery voltage, scans per second and instantaneous noise level are displayed with a plot of transmit (TX) and receive (RX) amperage.



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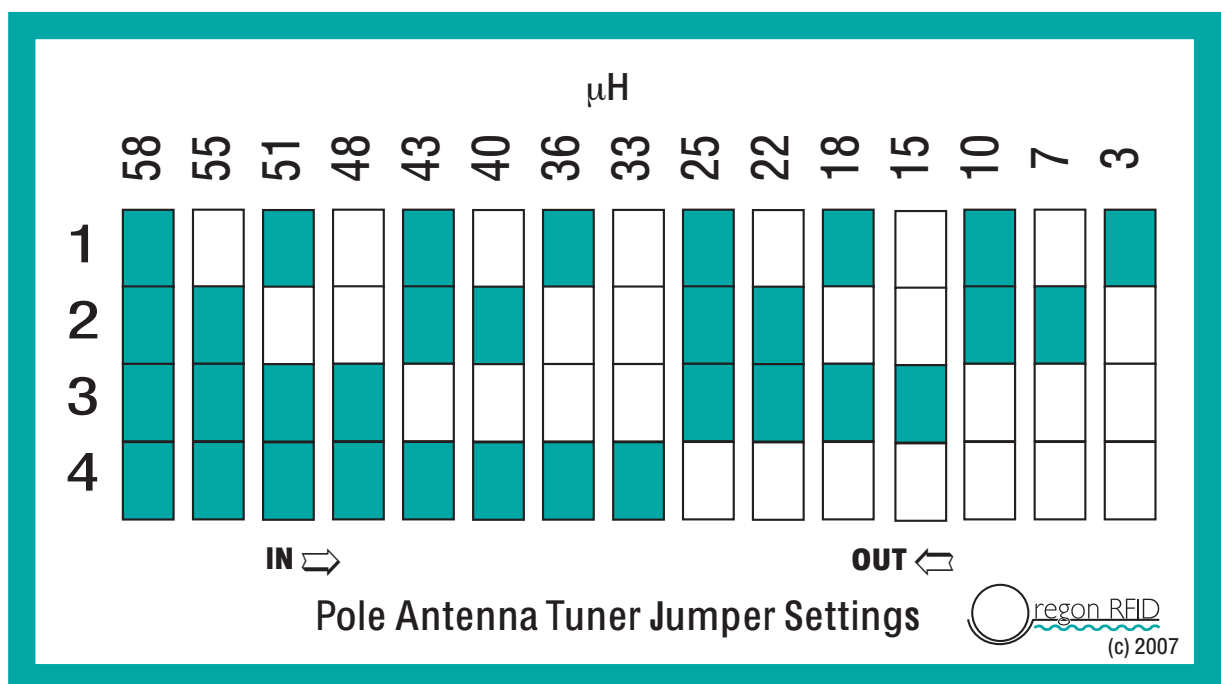
The antenna is tuned before shipment. However any metal near the antenna can require retuning for optimum performance.

Tuning is done by adjusting the capacitance of the tuner board to match the inductance of the antenna loop. The tuning capacitors are inside the antenna handle.

The tuning board has jumpers for selecting the capacitance value and a fine tuning adjustment screw.

The jumper settings for the antenna that comes with the kit are set to 3+4. Normally you won't need to change these.

To use other antennas, the inductance of the loop is measured with an inductance meter and the jumper table shows the setting.



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Remove the large threaded cap between the handle and the 2" section with the tuning capacitors. Slip wrenches are handy for this.

Feed some twinax cable through the top of the handle to separate the handle from the tuning board.

The antenna is fine tuned by slowly turning the variable inductor while watching the amperage level on the PDA screen. Tune for the maximum amperage.



A plastic or ceramic screwdriver is best. Metal screwdrivers can be used but hold them away from the screw when checking the amperage level. The cut end of a plastic tie wrap can be used as a tuning tool.

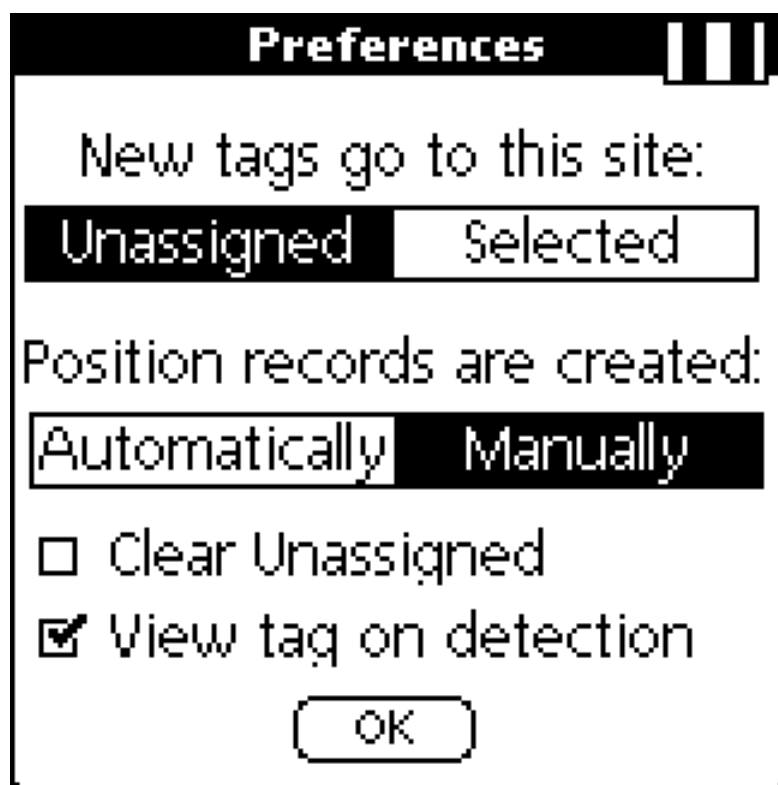
Re-attach the handle by turning until it starts to become tight, then add 1/4 turn. Don't overtighten.

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The Preferences screen determines the behavior of the reader.

When a new tag is detected it can be placed in the “Unassigned” site or the currently selected site.

Position records can automatically be created for each new detection or they can be added manually by pressing the “Add position” button.

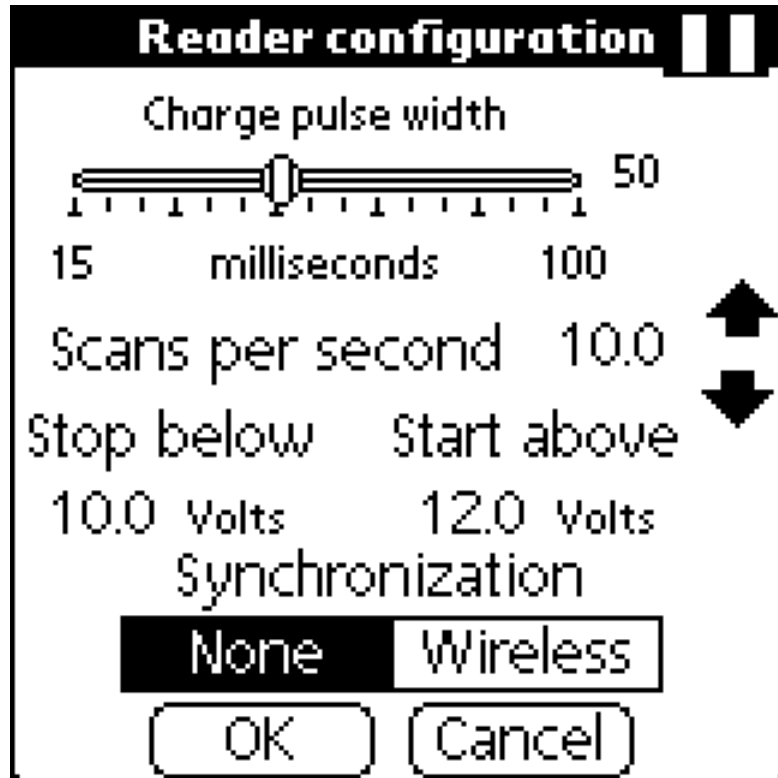


When checked, the “Clear Unassigned” option will cause position records to be removed from a tag record when moved to that site.

“View tag on Detection” will present the tag record after is detected.

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The reader settings can be changed from the "Configure reader." menu item.



The charge pulse width determines the length of time that the magnetic field is generated to inductively charge tags. If a tag isn't completely charged the read range may be shortened. A tag will stop charging when the capacitors have reached saturation so any excess charging time is wasted power.

Decrease the pulse width until the read range begins to drop. The battery life will be best at this point.

The scans per second can be decreased to save power. Set it so that the rate is sufficiently fast for the intended use.

When operating from batteries the reader will automatically shut down when the voltage drops below the threshold. It will not start up unless the voltage is above a different threshold. These should be set at least 2 volts apart to prevent the reader from starting and stopping repeatedly.

Enable Wireless Synchronization if the reader is going to be used in the proximity of other readers. The reader will listen for other readers and will automatically change the charge/listen cycle to get in step with them. Unsynchronized readers can block each other's signals and prevent both from detecting tags.



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The database is exported by connecting the reader to a PC and using a serial cable.

Type the command 'EX' using Hyperterminal (57600 baud).

EX

starting site number (0 for unassigned)

ending site number (if blank will do one site)

0 for all positions, 1 for new tags and positions

The command 'EX' will export the entire database.

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The output is tab separated ASCII text which can be captured and imported into a spreadsheet or database. Each line has a descriptor for the record (site, tag, position).

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>ex

All sites and tags, all positions

EX 0 2 0

BEGIN UPLOAD

Sites: 3

Site 1: 'Unassigned'

Tags: 2

ID Name Type Date Time Length Width Height Weight

Tag 1: 0000\_0000000140626231 One R 8/24/2007 20:57 22 33 445 5

Positions 1 Date Time Position X Position Y Position Z

Position 1 8/24/2007 20:57 1 2 3

ID Name Type Date Time Length Width Height Weight

Tag 2: 0000\_0000000140626232 2 R 8/24/2007 21:1 a s d f

Positions 1 Date Time Position X Position Y Position Z

Position 1 8/24/2007 21:01 a a a

Site 2: 'RM23'

Tags: 4

ID Name Type Date Time Length Width Height Weight

Tag 1: 0000\_0000000132145563 RM1 R 8/24/2007 20:58 1 1 1 1

Positions 1 Date Time Position X Position Y Position Z

Position 1 8/24/2007 20:59 1 1 1

ID Name Type Date Time Length Width Height Weight

Tag 2: 0000\_0000000138421586 RM2 R 8/24/2007 20:58 2 2 2 2

Positions 1 Date Time Position X Position Y Position Z

Position 1 8/24/2007 20:59 2 2 2

ID Name Type Date Time Length Width Height Weight

Tag 3: 0000\_0000000084791967 RM3 W 8/24/2007 20:58 3 3 3 3

Positions 1 Date Time Position X Position Y Position Z

Position 1 8/24/2007 21:00 3 3 3

ID Name Type Date Time Length Width Height Weight

Tag 4: 0000\_0000000142620537 RM4 R 8/24/2007 20:58 44 44 44 44

Positions 1 Date Time Position X Position Y Position Z

Position 1 8/24/2007 21:00 4 4 4

Site 3: 'New Site'

Tags: 2

ID Name Type Date Time Length Width Height Weight

Tag 1: 0000\_0000000139657908 3 R 8/24/2007 21:1 3 3 3 3

Positions 1 Date Time Position X Position Y Position Z

Position 1 8/24/2007 21:01 z z z

ID Name Type Date Time Length Width Height Weight

Tag 2: 0000\_0000000138421580 fawr R 8/24/2007 21:1 3 45 7 6

Positions 1 Date Time Position X Position Y Position Z

Position 1 8/24/2007 21:02 yes there is

END UPLOAD



