USER GUIDE

TRACE®

# Trace Interrogator VRT (TI VRT) for Windows CE

# Introduction



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## FCC Compliance

The VRT HAND HELD Interrogator (HHI) has been type accepted by the Federal Communications Commission under Part 90. Transmitter licensing is required by the FCC. The VRT HAND HELD Interrogator (HHI) transmitter is currently licensed by the FCC to operate at 451.355 MHz. FCC ID's G8JHHI01, G8JHHI02.

Changes or modifications to this equipment not expressly approved by AMCO Automated Systems could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the condition that this device does not cause harmful interference.

The TRACE transponder is governed by FCC Part 15 and requires no licensing.

# System Requirements

## Hardware Requirements

DAP 5240 or 5240X with AMCOAS integrated RF card

## Software Requirements

Windows CE 4.20
Route Manager VRT 2.0 or later
TI VRT CE 1.1 or later

## Warnings

Do not attempt to modify or edit any of the subsidiary tables or files outside of the TI VRT (CE) / RM VRT environment without prior authorization by AMCO Automated Systems technical service personnel. Unauthorized manipulation of these files may void your software service agreements.

Uploading from Route Manager VRT (RM VRT) will overwrite Route/Account information on the Hand Held. It is the User's responsibility to download any data prior to uploading.

### RF EXPOSURE

The antenna used for this transmitter must be installed to provide a separation distance of at least 24 cm from all persons, and must not be co-located or operating in conjunction with any other antenna or transmitter.

## TI VRT CE Operation

The screen shots shown in various illustrations may vary slightly from your handheld's display.

# Conventions

All user interactions are via the handheld's keyboard. TI VRT CE responds to the keystrokes independent of platform. All letters are assumed to be upper case. Function keys F1 – F4 are also used.

### <Esc>

- Cancels operations
- Exits screens

### <Enter>

- In menus/list boxes selects item
- In editable field submits entry
- When on an unread rf account, triggers an rf read.
- With Automove on and on a completed account, and moves to next Account.
- In Details list box (History & TOU) initiates single interrogation of highlighted item

### <Up Arrow>, <Down Arrow>

These keys are used to navigate between accounts within the current Route. When either the first or last account is reached an audible warning will sound and the display will remain on the current account.

### <Tab>

**→I** Key is used to navigate between fields within the current screen (messages, search, etc.).

### Message Box <Yes> <NO>

The response to the message box can be:

- Touching the button <Yes> or <No> with stylus
- Clicking letter "Y" or "N" on the keyboard
- Moving to the desired button by using left/right arrow keys and pressing Enter when the button is highlighted.

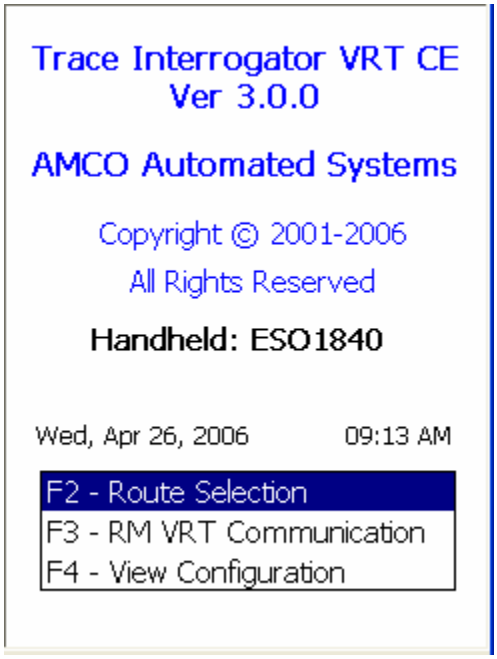
### Stylus

In most cases it's possible instead of moving to a specific location and pressing ENTER just to touch it with a stylus.

# TIV Screens

### Splash screen

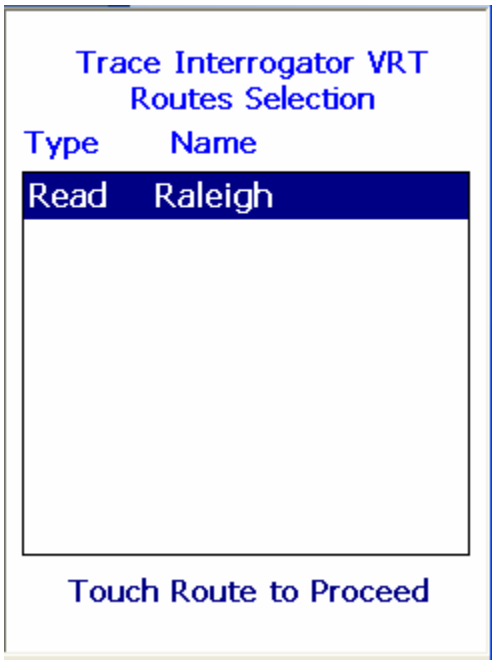

### Main



The main screen allows the selection of the following modes:

- Route Selection / Data Entry
- Communication (between RMVRT and device)

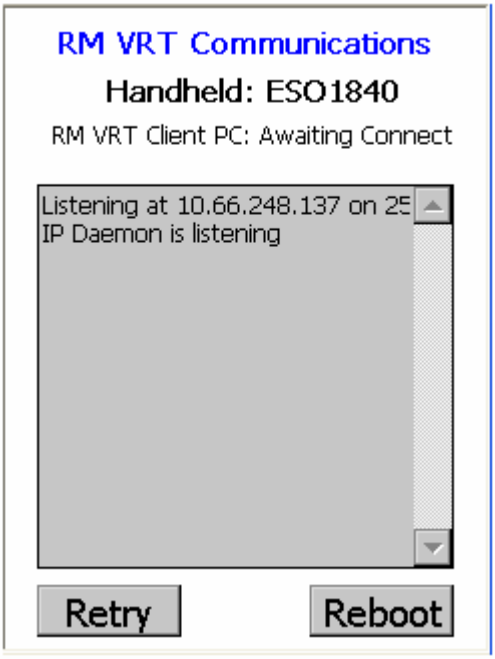
## Route Selection



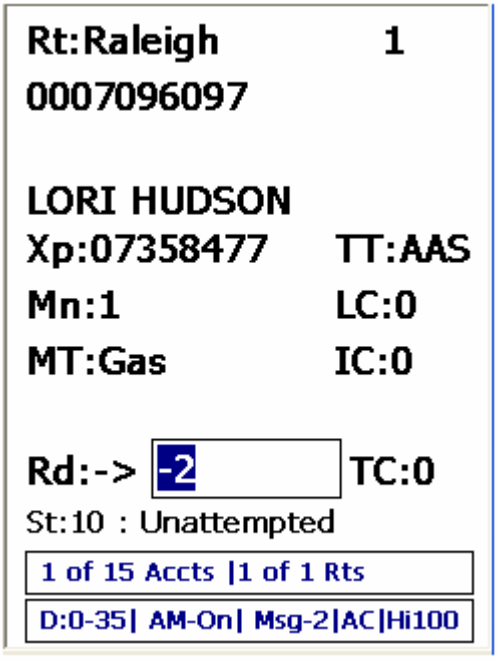

If Route Selection is selected, the list of routes loaded in the device is displayed along with the Route type. To view/update Account information for the chosen route highlight the route and press “Enter” or touch the chosen route line on the screen.

## Communications

The Communications mode is used to exchange data files and other information with Route Manager VRT. This selection, opens the specified communications port, displays the communications screen and initiates polling for incoming messages from RM VRT.




## Data Entry

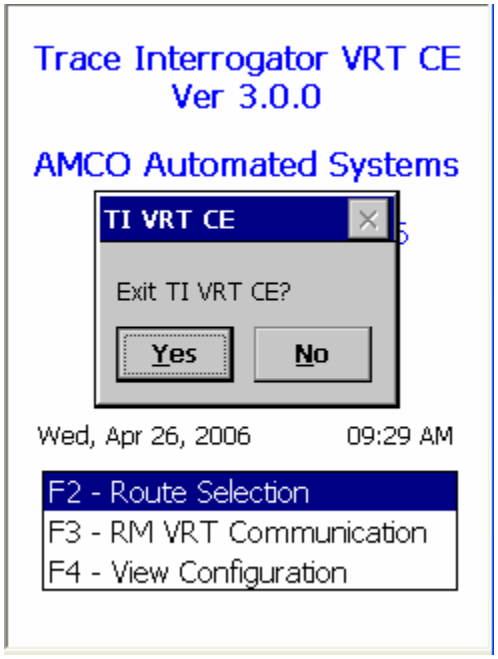



**Rt**: Route ID
**Xp**: Transponder Serial Number
**TT**: Transponder Type
**Mn**: Meter Number
**LC**: Location Code
**MT**: Meter Type
**IC**: Instruction Code
**Rd**: Index Read
→ : Direction of Data Entry
**TC**: Trouble Code
**St**: Account Status
**D:0-35** Number of VRT details (requests) available
**AM**-off/on AutoMove enabled
**Msg-2** There are 2 messages in the alarm category.
**AC / BT :** shows the type of power: AC from cradle or BT from battery
**Hi100%** : shows that the battery is charged at 100%

### Exit TI VRT CE

Pressing the <ESC> in the Main Menu will pop up a confirmation box. Use the <TAB>, <Left Arrow>, or <Right Arrow> keys to select the response.

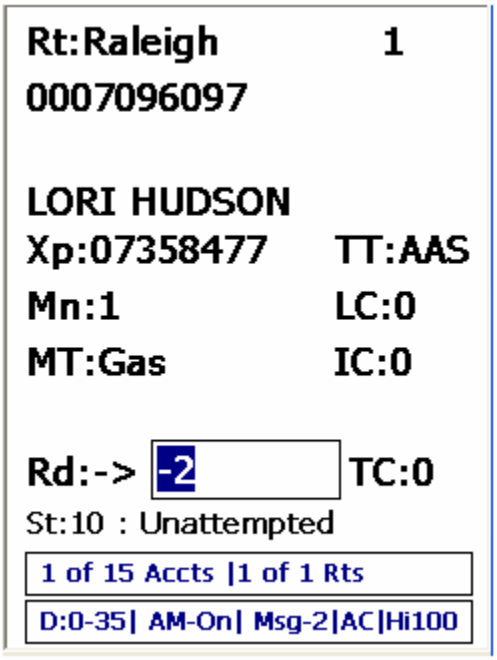
- Touch “YES” button or click the “Y” key or click the <Enter> key when the button is highlighted to accept the selection.
- Touch <No> button or click the “N” key or click the <Enter> key when the button is highlighted to Cancel.




# Account Navigation and Data Entry

### Navigation

All user interactions are via the handheld’s keyboard or the Touch Screen using a stylus. TI VRT (CE) responds to the keystrokes independent of platform. All letters are assumed to be upper case. Function keys F1 – F4 are also used.




<Esc>

- Cancels operations.
- Exits screens.

<Enter>

- In menus/list boxes selects item.
- In editable field submits entry.
- With Automove on, submits entry and moves to next Account.
- In Details list box (History & TOU) initiates single interrogation of highlighted item.
- In Read box on Data Entry Screen, initiates RF interrogation of current account.

<Up Arrow>, <Down Arrow>

These keys are used to navigate between accounts within the current Route. When either the first or last account is reached an audible warning will sound and the display will remain on the current account.

### Jumps

Jumps are moving from the current account in the current route to various other accounts and routes. Pressing the appropriate hot key activates jumps. The X (Cancel Jump) Hot key is used to return to the account displayed just prior to the jump except as noted.

Jump to Account Details

Hot Key: **A**

This is a jump to the account details screen of a selected account on the data entry screen.

X has no effect.

<ESC> closes the popup.

Jump to Beginning of Current Route

Hot Key: **B**

This is a jump to the first account in the current route.

X Jumps to record displayed prior to the jump.

If pressed at the beginning of the route the bounds beep sounds and the display remains on the current account.

Jump to End of Current Route

Hot Key: **E**

This is a jump to the Last account in the Current route.

X Jumps to record displayed prior to the jump.

If pressed at the end of the route the bounds beep sounds.

Jump to Specified Sequence Number

Hot Key: **J**

This is a jump to a specified sequence number in the current route.

After pressing the J hot key an entry window will pop up. Type the sequence number in the box and press the <ENTER> key.

X Jumps to record displayed prior to the jump.

Jump to the Next Route

Hot Key: **N**

This is a jump to next route.

X has no effect.

If pressed on the Last route the bounds beep sounds and the display remains on the current account.

Jump to the Previous Route

Hot Key: **P**

This is a jump to the first account in the previous route.

X has no effect.

If pressed on the first route the bounds beep sounds and the display remains on the current account.

Jump to Next Unread Account in the Current Route

Hot Key: **U**

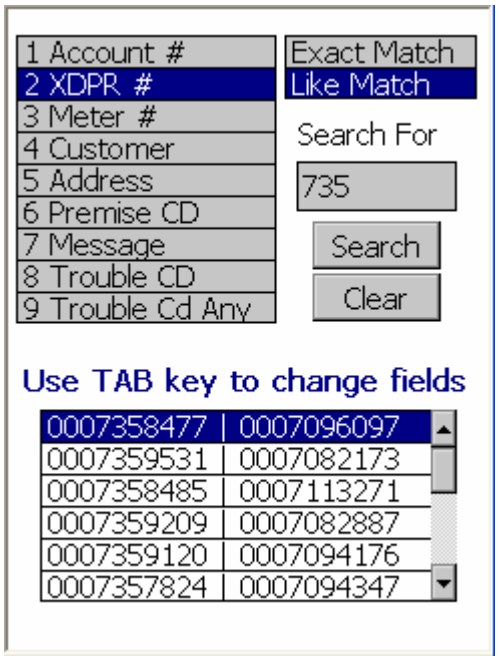
This is a jump to a next account with index read –2 and trouble code 0 in the current route.
X Jumps to record displayed prior to the jump.

## Searches

Hot Key: **H** search menu

Searches allow the user to jump to any specified account in the current Route. Currently the following searches are available:

- Account number
- Transponder number
- Meter number
- Customer Name
- Customer address
- Premise code
- Specific trouble code
- Any trouble code




To perform a search

- Press the H key to bring up the search type display
- Select the type of search to perform using the <Up Arrow/Down Arrow> keys or stylus.
- Use the <→I> key (Tab) or stylus to move between fields on the screen
- Select whether exact match is wanted or the search performed by partially submitted information is preferred (except for search for accounts with trouble code).
- Fill the field with the desired information (except for search for accounts with any trouble code).
- Click Search to begin the defined search or press ENTER while Search button is being highlighted.
- Searches with only 1 account returned will jump directly to that account.

- If there are multiple accounts satisfying the requested search then the results list will present the following information
  - Account Number
  - Address

  Select an item from the results list and press the <ENTER> key or click with the stylus to jump to the account.
- Pressing the <ESC> key cancels the search.
- Press button <Clear> to clear the search and to start over.

X Jumps to record displayed prior to the jump.

Note: Transponder number for exact search has to be 8 digits.

## Information Displays

Several informational displays are available to the user from the data entry screen. Most of these take the form of a Pop-Up List Box over the Data Entry screen. As usual the <ESC> key acts as the Cancel button to exit back to Account Data Entry screen.

Help / Available Commands Display

Hot Key: **F1**

X has no effect.

- <Up Arrow> and <Down Arrow> keys select the desired hot key from the list.
- <ENTER> initiates the command as if the hot key had been pressed.
- Clicking the desired selection with a stylus initiates the command.
- Pressing the shortcut letter on the keyboard performs the shortcut.
- <ESC> closes the popup.

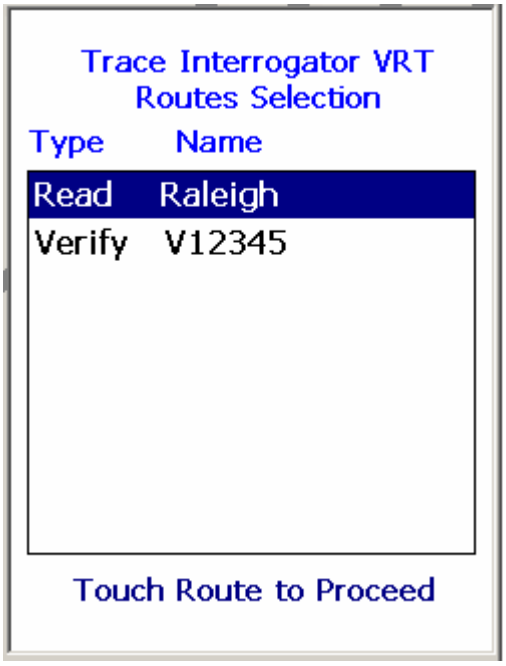
Route Selection Display

Hot Key: **F2**

X has no effect

- <Up Arrow> and <Down Arrow> keys select the desired Route from the list.
- <Enter> jumps to the first account in the selected route.
- <ESC> closes the popup.

Note: Clicking the desired route with a stylus jumps to the first account in the selected route



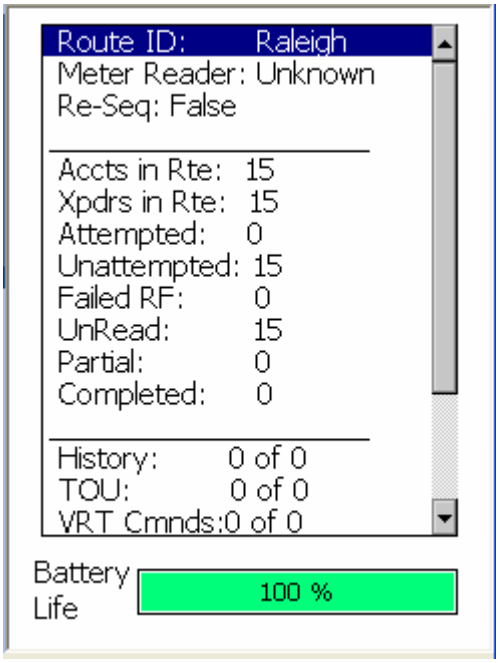

Route Summary Display

Hot Key: **F3**

X has no effect.

Use <Up Arrow> and <Down Arrow> or stylus to move within the screen.

<ESC> closes the popup.



Configuration Display

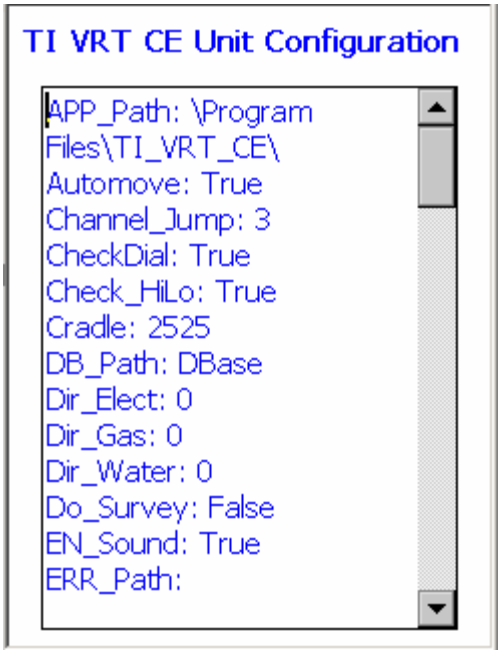
Hot Key: **F4**

X has no effect.

Use <Up Arrow> and <Down Arrow> or stylus to move within the screen.

Tab moves the cursor from the Meter Reader configuration items to all the configuration items.

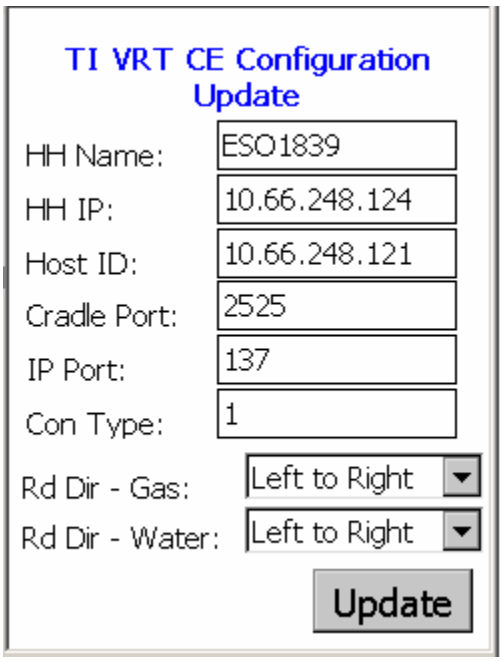
<ESC> closes the popup.

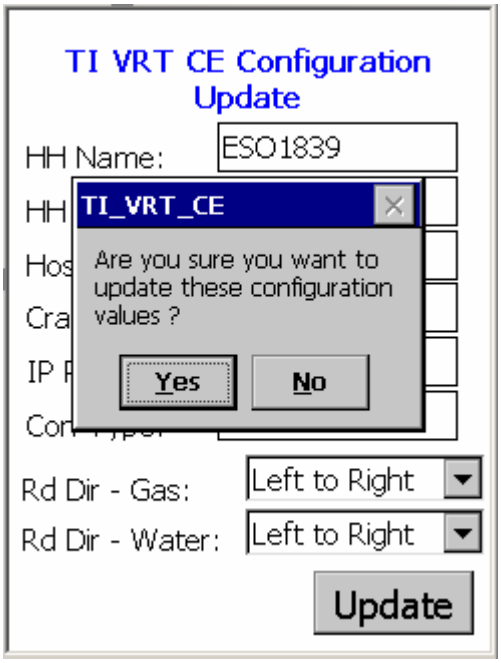



Updating Configuration of Handheld

Hot Key: **F4 Twice**

If the handheld device was previously used by another person or used for the first time, you can update the configuration to enable the handheld device to communicate with Route Manager VRT. You can also change the read direction for manual reads. Once the handheld is updated, you will be asked to confirm the changes on configuration as seen below.



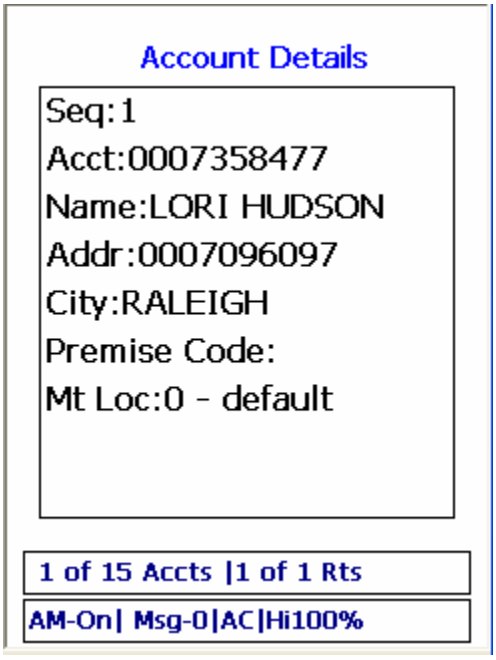




Account Details Display

Hot Key: **A**

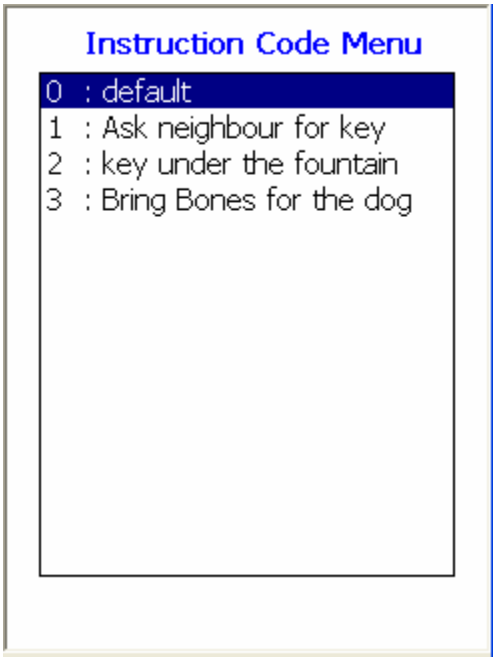
<ESC> closes the popup.

**A** is used to display the account details of a selected account on the data entry screen.



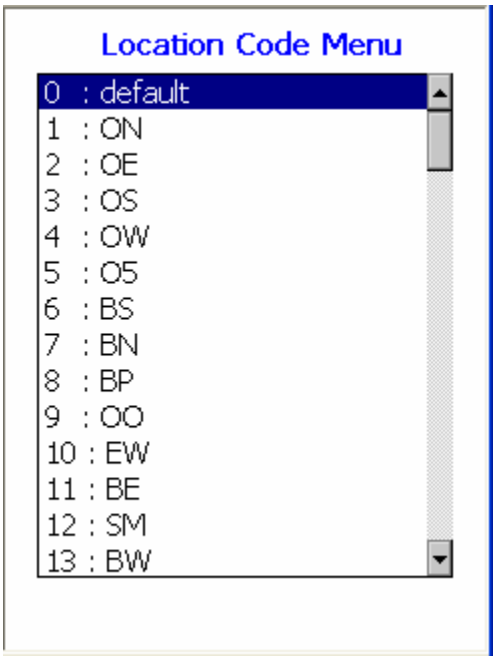

Instruction Code Display

Hot Key: **I**
<ESC> closes the popup.
Instruction codes are used to indicate instructions for Meter Reader. Pressing **I** opens the list of available Instructions codes.



## Location Code Display

Hot Key: **L**
<ESC> closes the popup.
Location codes are used to indicate Location of Meters/Transponders. Pressing **L** opens the list of available Location codes.



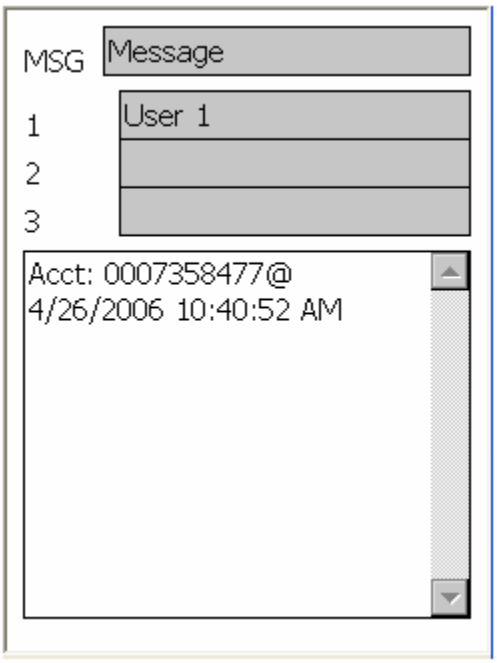

## Messages Display

Hot Key: **M**
<ESC> closes the popup.

A 19-character message, 3 user messages of 20 characters each can be entered for each account or edited using this option.

These messages can be sent from RM VRT. If "M" appears the lower Information Bar of the data entry display, the account contains one or more messages. If "!!" follow the message then one of the messages contain alarm.

A free form note pad is also available here. A free form note pad is NOT account specific but is common to all accounts and all routes.




It can be configured in RM VRT not to allow to edit messages.

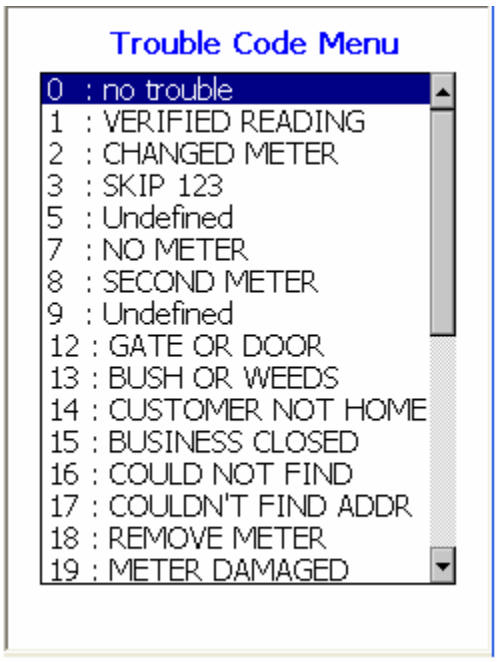
An audible alarm can be set in RM VRT if one of the messages contains alarm; if sound is disable a message box will pop up with the warning.

Error Log Display

Hot Key: **O**
Use <Up Arrow> and <Down Arrow> or stylus to move within the screen.
<ESC> closes the popup.

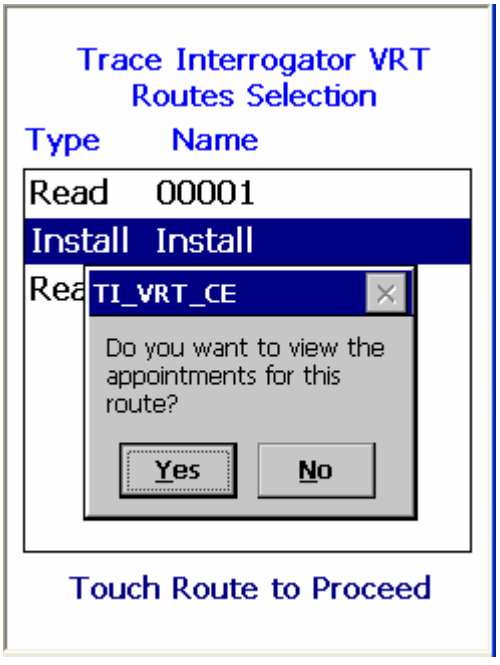
Trouble Code Display

Hot Key: **T**
<ESC> closes the popup.
Trouble codes are used to indicate problems with obtaining readings. Pressing **T** opens the list of available trouble codes.

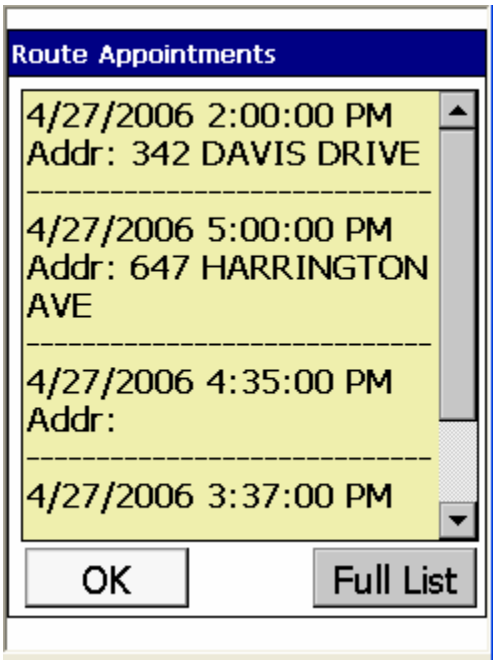



## Appointments

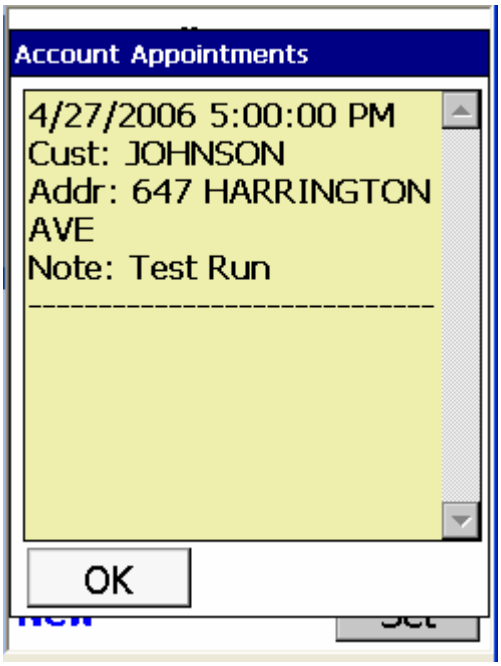
An appointment can be set for transponder installation, troubleshooting etc. While selecting the routes, following message will be displayed on the screen only if it has appointments set for selected route.




Click on **Yes** button to view list of today's installation appointments for the selected route. To view messages in details, click on **Full List**.




Detail appointment's message will also be displayed as an "Account Appointments" screen of particular account having appointment




## Data Entry Operations

Index reads can be entered manually, singly by RF, as part of a multiple parameter read of Index, History and TOU.

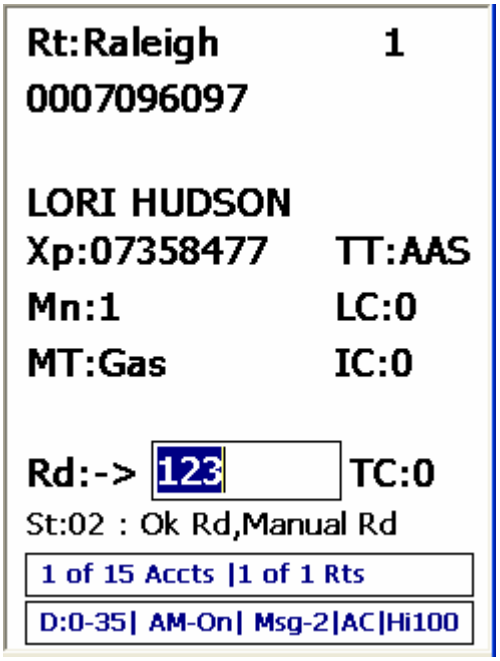
History and TOU reads can be performed either singly or as part of a multiple parameter read of Index, History and TOU.

## Default Read of An Unread Account

If the current read value is -2 and the transponder number is not blank, then pressing the <ENTER> key will trigger an RF read of the transponder.

## Manual Index Read

Enter digits 0 - 9 and press the <ENTER> key.
The direction of manually reading a meter is shown by the arrow by the reading and is dependant on the meter type.




The number entered will be checked against:

- The number of dials as reported in Route Manager for the account. This option can be turned off/on in RM VRT.
- Upper Limit and Lower Limit for the account as reported in RM VRT. This option can be turned off/on in RM VRT.
- Previous read for the account as reported in RM VRT. A Zero (0) uploaded for the value to check turns this option off.

If the entered index read fails the verification above the message will pop up asking if it needs to be recorded or cancelled. Choose the option by selecting “OK” to record or “X” to cancel.

If the Automove option is ON, the display will show the next account in the route. If the account is the last one in the current route an audible alert will sound.

Clear Index Read

Hot Key: **C**
X has no effect
After pressing the “C” key the reading is cleared and the cursor is positioned in the index read field waiting for the entry to overwrite the previous reading.

Force Unattempted Account

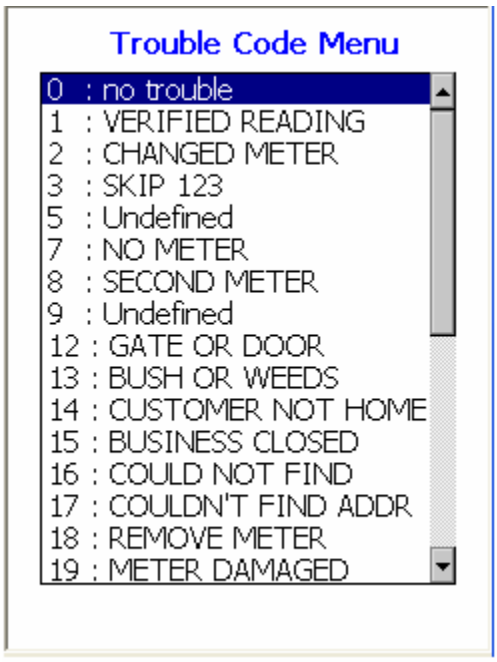
Hot Key: **F**
X has no effect
If the account had manual reading, then after pressing the “F” key the message box pops up verifying if it’s really desired to reset account. Selecting “Yes” clears the reading and trouble code and sets the account status to Unattempted. Selecting “No” has no affect on the account.

Adding a Trouble Code

Hot Key: **T**
X has no effect
Trouble codes are used to indicate problems with obtaining readings. A code can be entered with or without entering a reading.

<Up Arrow> and <Down Arrow> keys select the desired Trouble code from the list.
<ENTER> updates the account with the selected Trouble code.
<ESC> closes the popup.

P.S. Stylus selects the desired Trouble code from the list, updates the account with the selected Trouble code and closes the popup.




Adding / Editing a Text Message

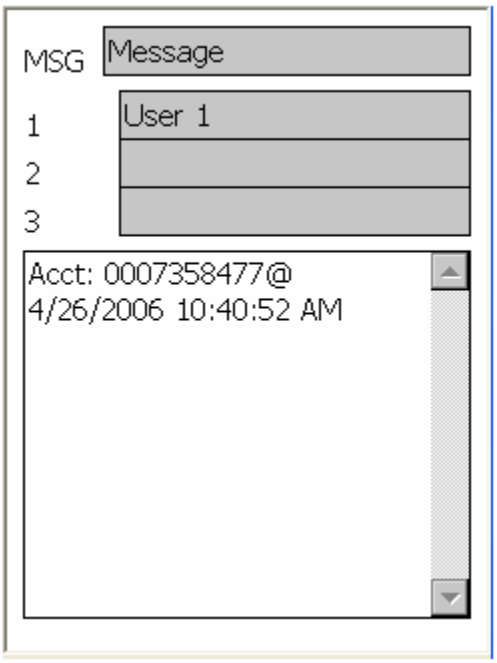
Hot Key: **M**
X has no effect

A 19-character message, 3 user messages of 20 characters each can be entered for each account or edited using this option. These messages can be sent from RM VRT and changed depending on the device configuration.

A free form note pad is also available here. Entry into the note pad causes the account number and a time stamp to be added to any already existing text. This option is NOT account specific and is common to all accounts and routes. The text can be viewed from any account in the device.

<TAB> or selecting message with a stylus moves the cursor to the next message for editing. Messages can be allowed /disallowed to be edited in the device configuration in Route Manager VRT.

<ESC> Asks if the changes to messages to be saved. Clicking button <YES> with stylus or pressing key <Y> will save the changes and close popup; pressing button <NO> or clicking key <N> quit the popup without saving changes to messages.



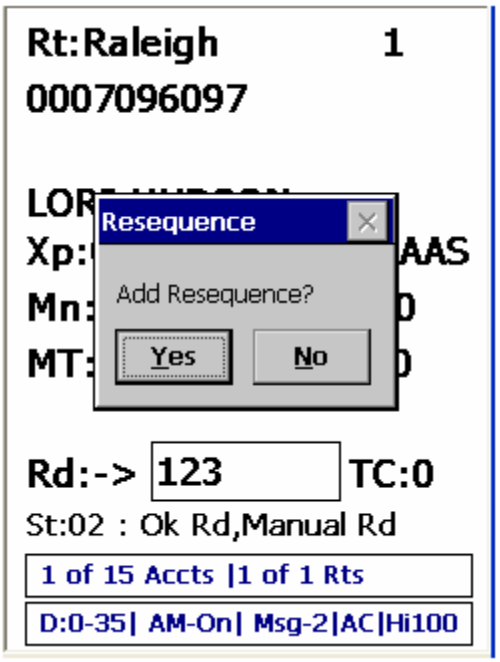

Setting the Re-sequence Flag

Hot Key: **Q**
X has no effect

If account(s) is out of sequence in a route, setting the Re-sequence flag marks the route for re-sequencing by date time stamp during reading the route. The re-sequencing is going to be done in the Billing system after uploading to RM VRT.

The message box will pop-up to verify if re-sequencing is desired. Answer yes or no by:

- Touching the button <Yes> or <No>
- Clicking letter “Y” or “N” on the keyboard
- Moving to the desired button by using left/right arrow keys and pressing Enter when the button is highlighted.

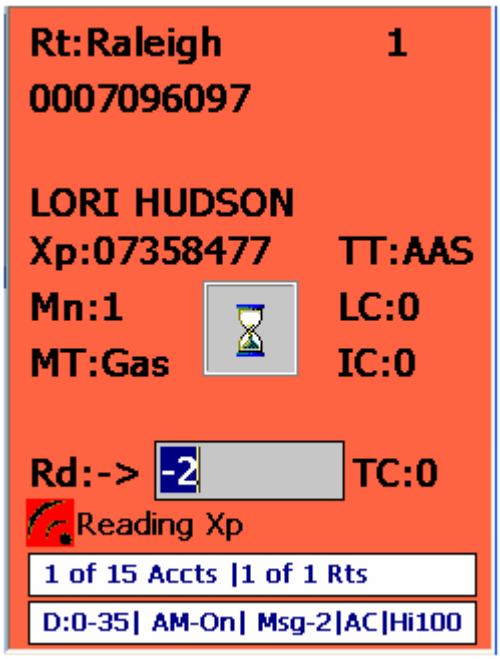



To remove Resequence request press Q again and select appropriate answer to the pop up message (see above)

Single RF Index Read

Hot Key: **S**
X has no effect

Single RF Index Read is used to get index read only.
After pressing the “S” key an RF interrogation will start. The user will be able to watch status as “reading XP” with change in background colors. Once the interrogation is completed the account record will be updated.



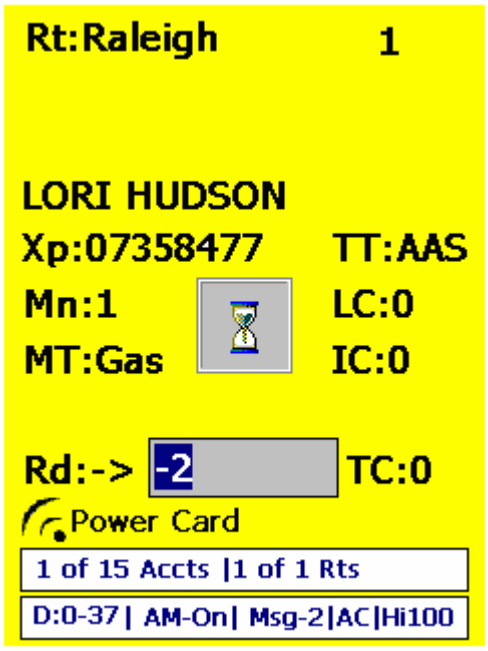

Notes:
A success/fail sound will alert the meter reader about the result of reading if the option “Enable sound “is ON.

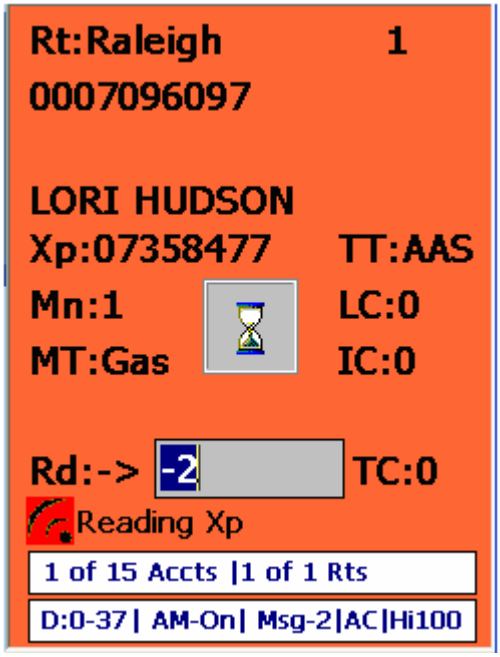
If the Automove option is ON and the reading was successful, the display will show the next account in the route. If the account is the last one in the current route an audible alert will sound.

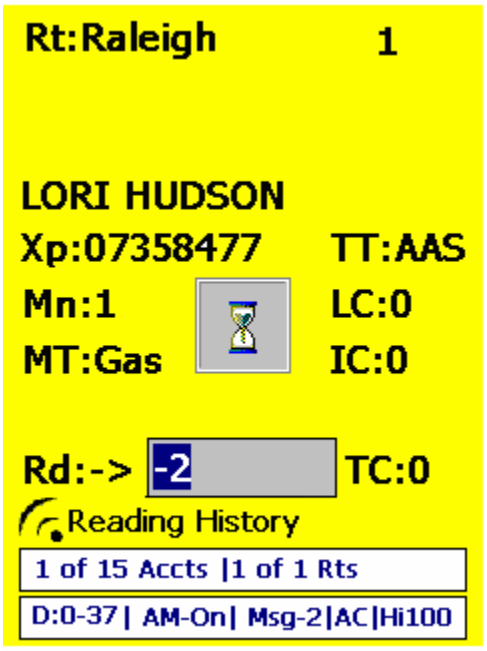
Multiple Parameter RF Read

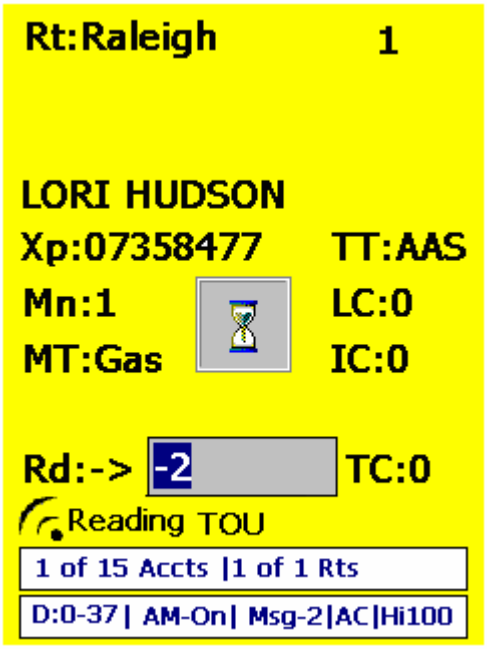
Hot Key: **R**
X has no effect
Press the <ENTER> key to start the interrogation.

Multiple parameter RF read is used to get index read and all the VRT requests.
After pressing the “R” key or <ENTER> key an RF interrogation will start for index read and for all the VRT commands in the account. The user will be able to watch status as “reading XP”, ”Reading History”, ”Reading TOU” with change in background colors as follows. Once all the interrogations are completed the account record will be updated.


Rt:Raleigh 1
LORI HUDSON
Xp:07358477 TT:AAS
Mn:1 LC:0
MT:Gas IC:0
Rd:-> -2 TC:0
Power Card
1 of 15 Accts |1 of 1 Rts
D:0-37| AM-On| Msg-2|AC|Hi100


Rt:Raleigh 1
0007096097
LORI HUDSON
Xp:07358477 TT:AAS
Mn:1 LC:0
MT:Gas IC:0
Rd:-> -2 TC:0
Reading Xp
1 of 15 Accts |1 of 1 Rts
D:0-37| AM-On| Msg-2|AC|Hi100



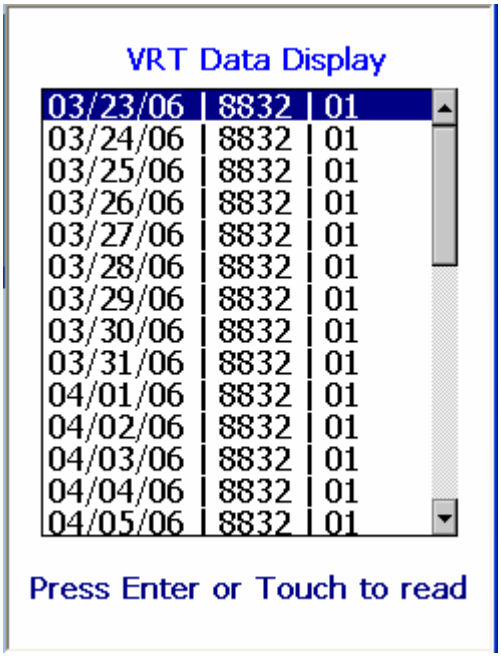




Notes:
A success/fail sound will alert the meter readers about the result of reading if the “Enable sound “option is on.

If the Automove option is ON and all the reading were successful, the display will show the next account in the route. If the account is the last one in the current route an audible alert will sound.

Single History / TOU RF Read

If a “D” appears in the lower left corner of the data entry display, the account contains one or more History and or TOU requests.
Press the “D” key to display a pop-up list of all requests.
Use the Up / Down arrow keys or a stylus to select the History/TOU request to read.
Press the <ENTER> key to start the interrogation.



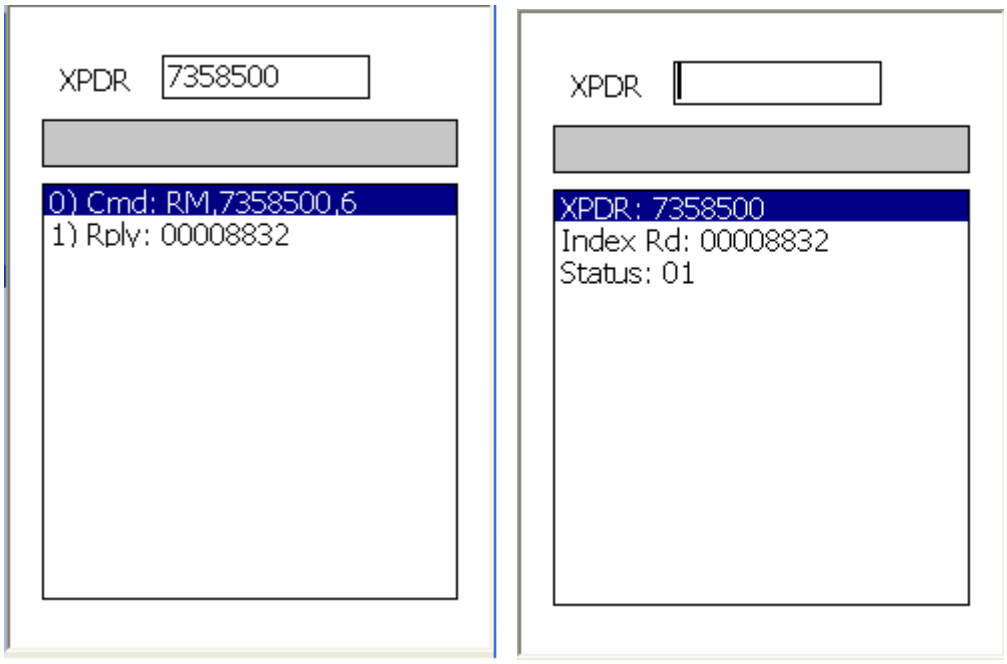

An RF communications window will open and RF interrogation will start. The user will be able to watch commands issued and replies returned from the target transponder. Once the interrogation is completed the account record will be updated. The pop-up list will be updated with the information obtained from the transponder for the chosen VRT request.

If a valid index read does not exist, one will be added to any single History requests.
A new index read will be added to any Single TOU request.
Pressing the <ESC> key will close the Pop-Up display.

General Index RF Read

Hot Key: **G**
X has no effect

After pressing the “G” key the popup display will open. Enter the desired transponder number and press <ENTER>. An RF communications window will open and RF interrogation will start. The user will be able to watch commands issued and replies returned from the target transponder. When the interrogation is completed, the communications commands will be replaced with read results. Data is NOT added to the database.




## VersaProbe

Jump to VersaProbe connection

Hot Key: **V**
This is a jump to the VersaProbe connection screen.
X has no effect.
Click <Ok> to close popup.

VersaProbe Communication Modes

The VersaProbe works only in the Sensus I/O Mode.

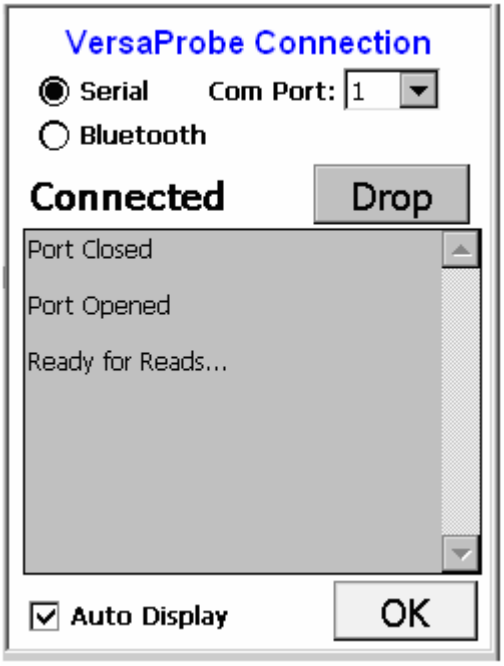
### Serial Communication Mode

To communicate in serial mode,

1. Connect the lemo end of the lemo cable to the handheld’s lemo port and the other end to the 6 pin connector of the VersaProbe.

2. On the handheld's VersaProbe connection screen (use <V> key to view this screen from either main screen/ data entry screen), make sure that **Serial** is selected and com port is **Com1**.

3. Hit the **Connect** button. Once the connection is established Connect button will change to **Drop**, which is used to cancel the connection. The screen will be as follows:




**Bluetooth Communication Mode**

To activate the Bluetooth radio, press and hold the trigger button for about 12 seconds. During this time the display will progress through several steps.

1. Initially asterisks begin to appear on the display, from left to right.


2. As you continue to hold the trigger button, a blinking * will appear in the right corner of the protocol list display to indicate that Bluetooth radio is installed.

3. Continue holding the trigger button, until the display changes to:

| RELEASE BUTTON<br>NOW |
|---|

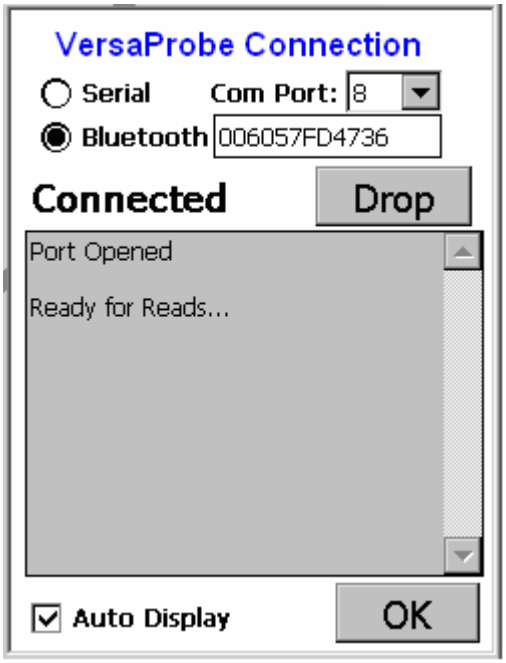
4. Release the trigger button and the display will change to:

| INITIALIZING<br>BLUETOOTH RADIO |
|---|

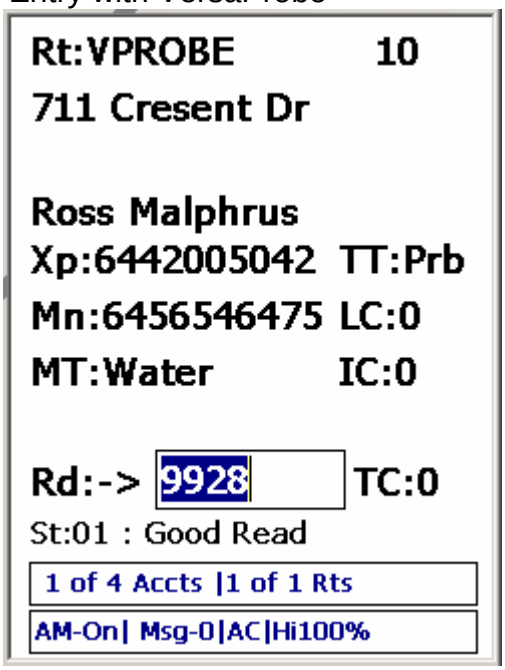
5. The VersaProbe will perform a short radio module test and then display the Bluetooth device address of radio module. Enter this address into the handheld by updating the handheld's configuration file using Route Manager VRT.

| BDA=006057FD4736<br>CONNECT VTCE NOW |
|---|

6. On the handheld's VersaProbe connection screen (use <V> key to view this screen from either main screen/ data entry screen), make sure that the **Bluetooth** is selected and Com Port is **Com8**. Hit the **Connect** button and the screen will be as follows:



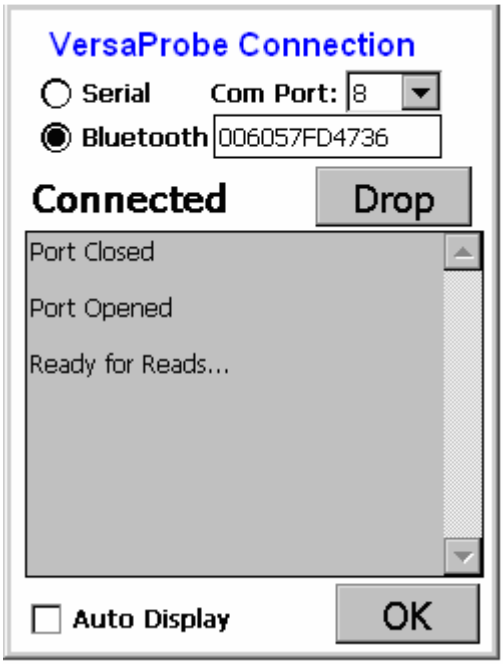
Data Entry with VersaProbe



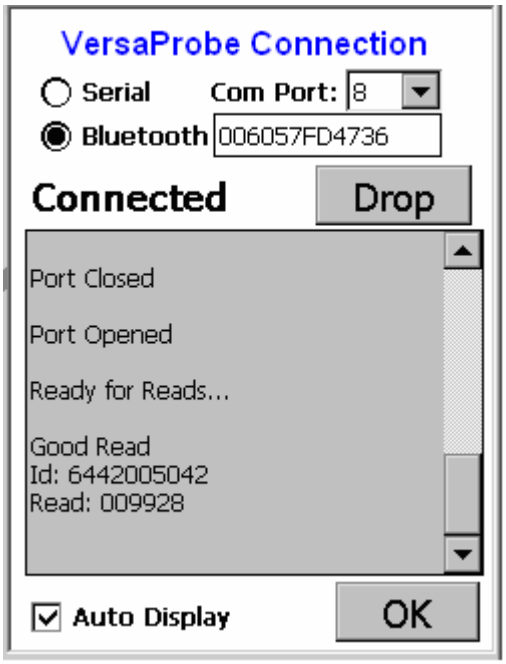

**Rt**: Route ID
**Xp**: Probe Encoder Number
**TT**: Transponder Type of Probe
**Mn**: Meter Number
**LC**: Location Code
**MT**: Meter Type
**IC**: Instruction Code
**Rd**: Index Read
→ : Direction of Data Entry
**TC**: Trouble Code
**St**: Account Status
**AM**-off/on AutoMove enabled
**Msg-0** There are 0 messages in the alarm category.
**AC / BT** shows the type of power: AC from cradle or BT from battery
**Hi100%** shows that the battery is charged at 100%

Read with VersaProbe

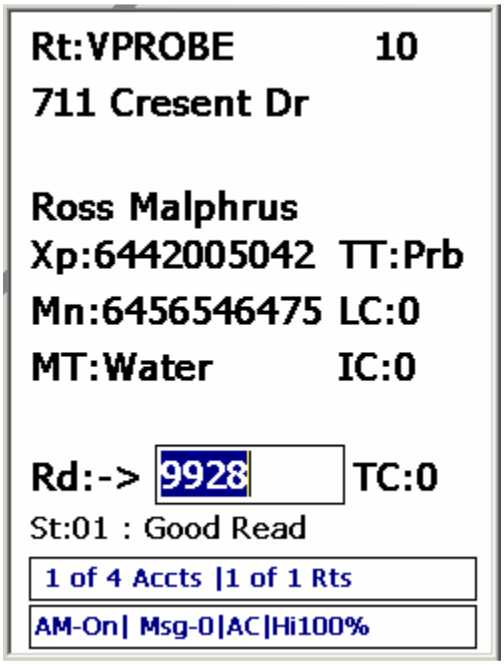
Press <V> key at main screen/ data entry screen, to show VersaProbe connection screen. Make sure the connection settings are correct and then hit the **Connect** button. Once the connection is established, the status changes to the **Connected** and the "Ready for Reads…" message displayed.



Since the VersaProbe is ready for the reads, simply hold the VersaProbe up to the meter, press the trigger button, and then release it within less than four seconds. A success/fail sound will alert the meter reader about the result of reading if the option “Enable sound “is on. The screen will be as shown below.



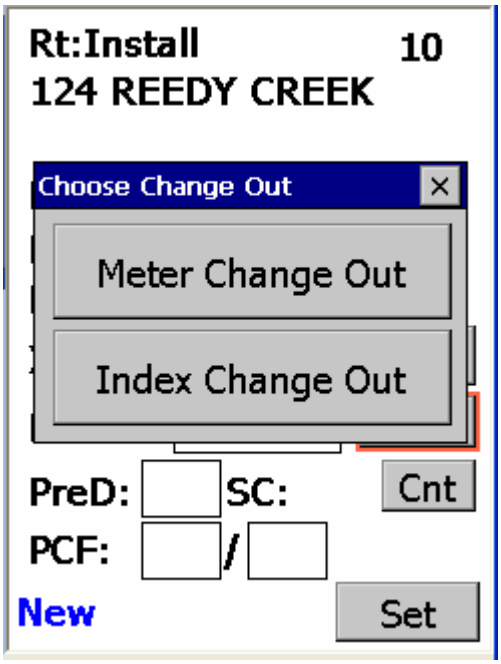

Click on the **OK** button to view the data entry screen. Read will be updated in the account as shown below.



## Transponder Installation

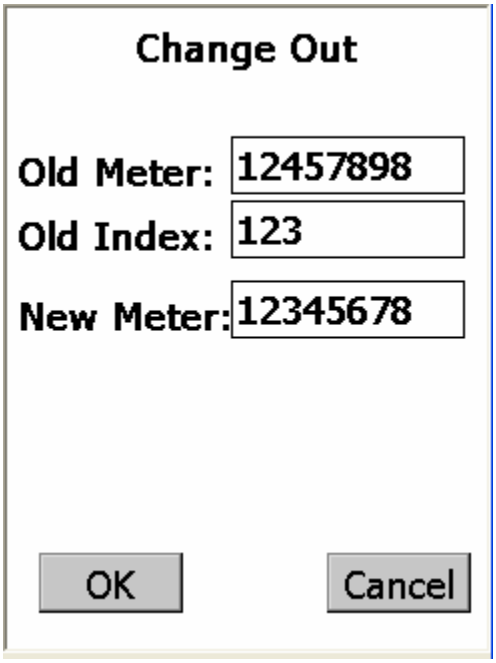
Change Out

In the installation route, hit F4 to view Change Out screen and choose from Meter Change Out and Index Change Out. The Change Out screen will be as follows:

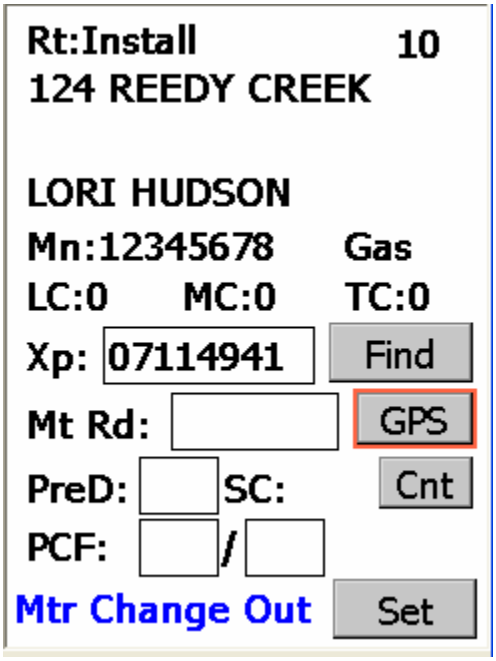



Meter Change Out

Click on Meter Change Out button and enter the values of Old Index and New Meter number. Click OK. Screen will be as follows:

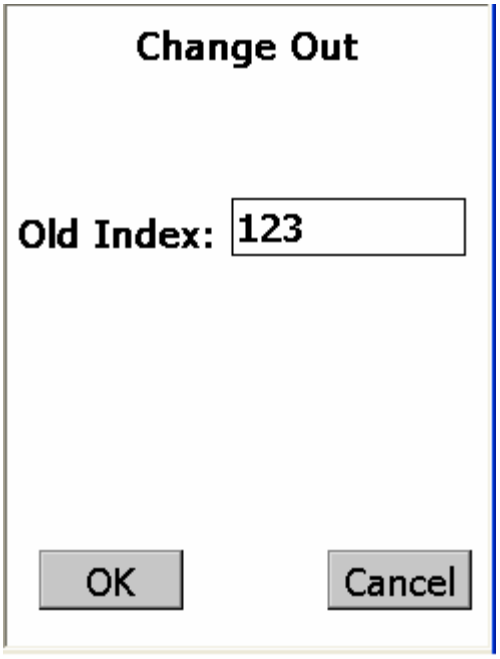



After successful change out you can see the status as “Mtr Change Out”. You can check “Change Out Report” for all the meter changes.

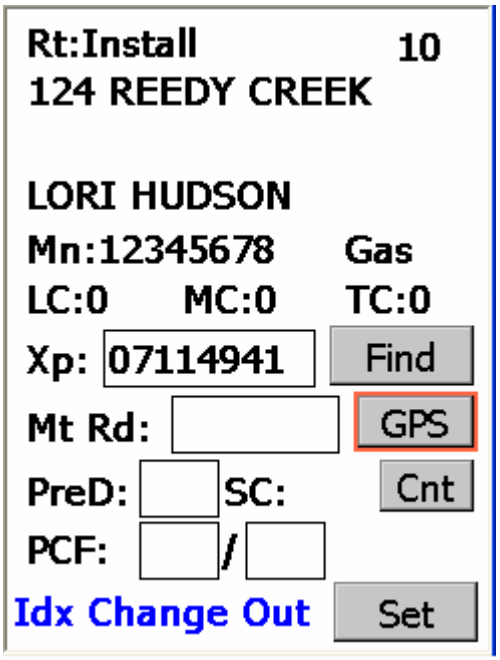


Index Change Out

Enter the value of the index which you want to change. Click OK.

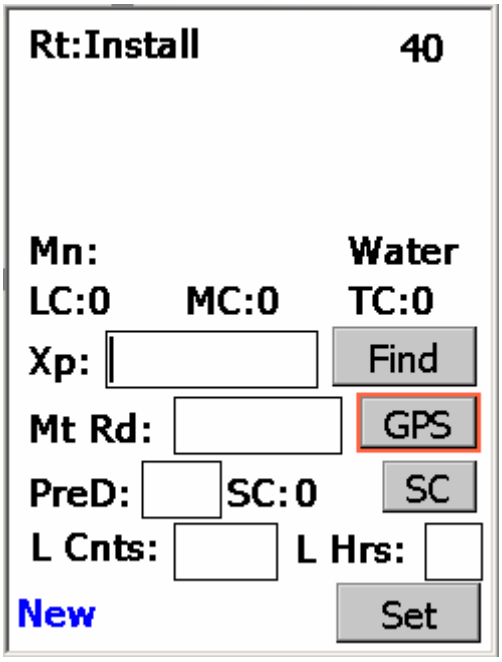



After successful change out you can see the status as “Idx Change Out”. You can check “Change Out Report” for all the index changes.



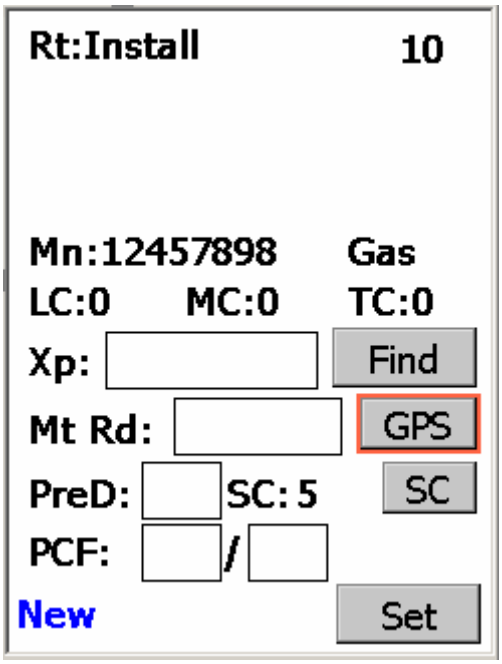
Data Entry with Installation

**Water**




**Rt**: Route ID
**Mn**: Meter Number
**LC**: Location Code
**MC**: Meter Location Code
**TC**: Trouble Code
**Mt Rd**: Index Read
**Xp**: Transponder Serial Number
**PreD**: PreDivider
**SC**: Sub-Counts
**L Cnts**: Leak Counts
**L Hrs**: Leak Hours
**Find**: Used to find the transponder Serial Number
**GPS**: It will show GPS screen
**Set**: To set entered parameter values

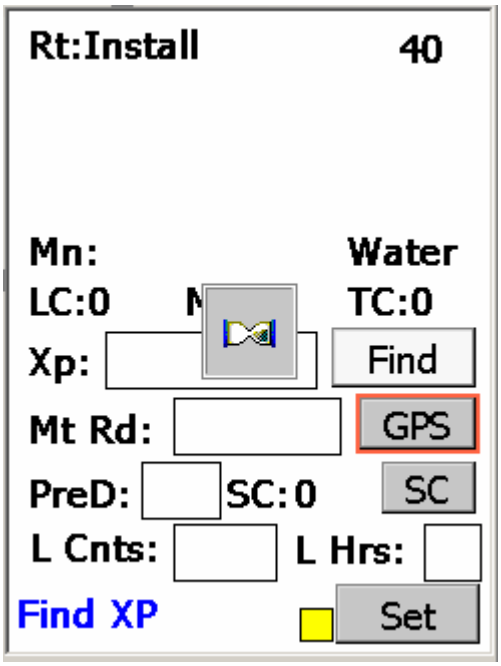
**Gas**



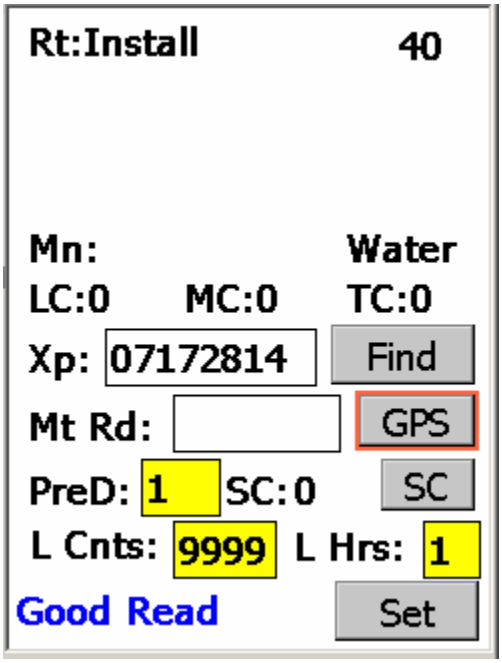

**Rt**: Route ID
**Mn**: Meter Number
**LC**: Location Code
**MC**: Meter Location Code
**TC**: Trouble Code
**Mt Rd**: Index Read
**Xp**: Transponder Serial Number
**PreD**: PreDivider
**SC**: Sub-Counts
**PCF**: Pressure Compensation Factor
**Find**: Used to find the transponder Number
**GPS**: It will show GPS screen
**Set**: To set entered parameter values

The Installation feature works with High/Low power RF card.

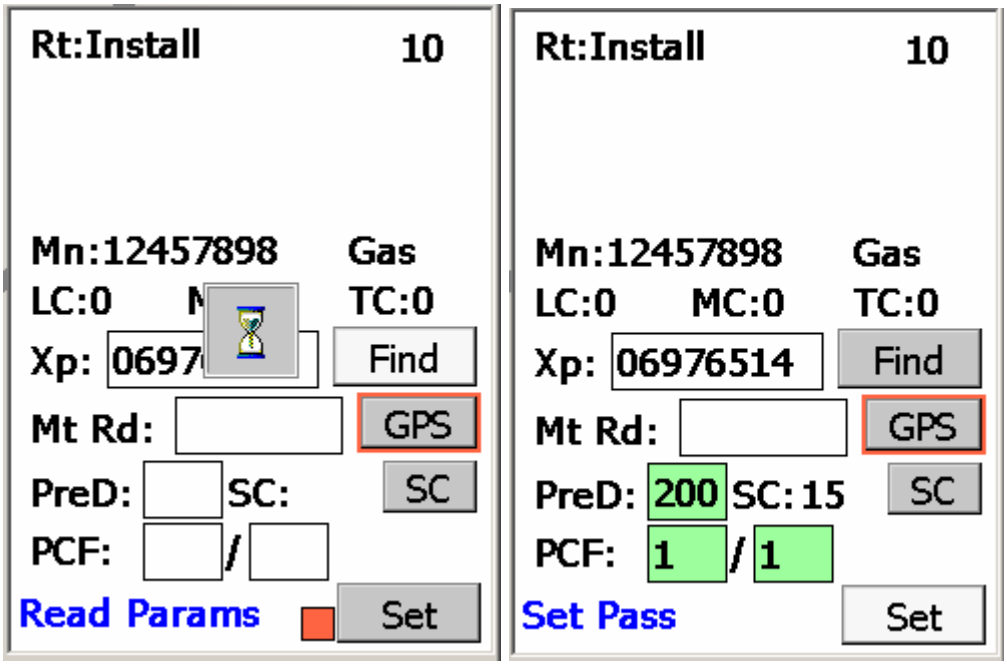
Manually enter transponder serial number or just press **Find** button to read the transponder serial number. Current status is given in lower left corner of the screen.



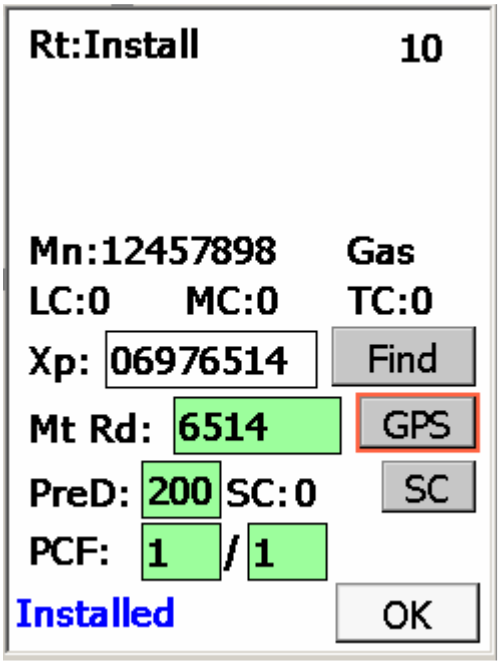

Once the transponder is found, it will display the transponder serial number and its parameter values as shown below. A success/fail sound will alert the meter readers about the result of reading if the "Enable sound "option is on.



The PCF (Gas), PreDivider (Water, Gas) and SC values can be set. Valid values for the PCF are from 1 to 255 and for the PreDivider values are :1,2,4,5,7,9,10,20,50,100, 200, 250. Enter the desired values and then click on the **Set** button. It will read, check and set the parameters values. Finally the status will be either **Set Pass** or **Failed**

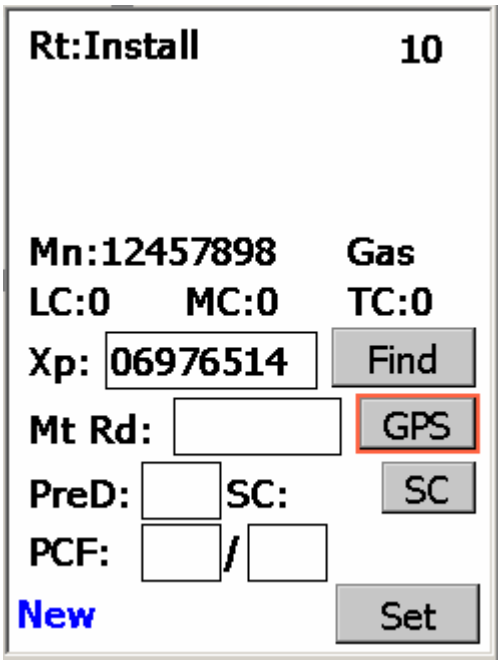



This feature also allows setting desired meter index. After a successful installation, it will reset the sub-count value to zero and the status as **Installed**.



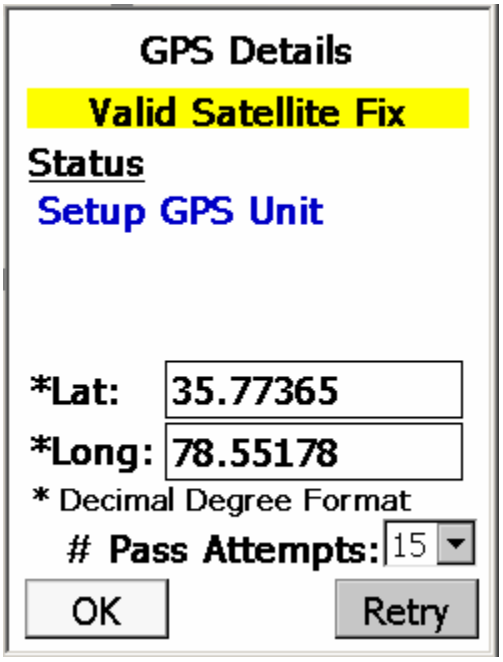
## Using the Scanner

Scanner feature is available with **Install Route**( Read type of route). It will scan the transponder serial number and will be displayed on the current account as shown below. A successful scan will give sound on the handheld and as well as two beeps sound on the scanner.

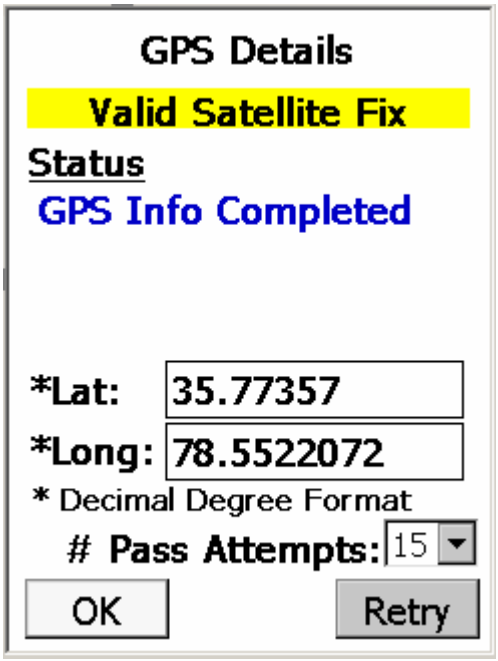



## Using the GPS

At the install route screen, by clicking on the GPS button you can view GPS Details screen which is as shown in the picture. GPS is used to find transponder location. It provides Latitude & Longitude values in decimal format. Refer to the configuration section for GPS ComPort settings.



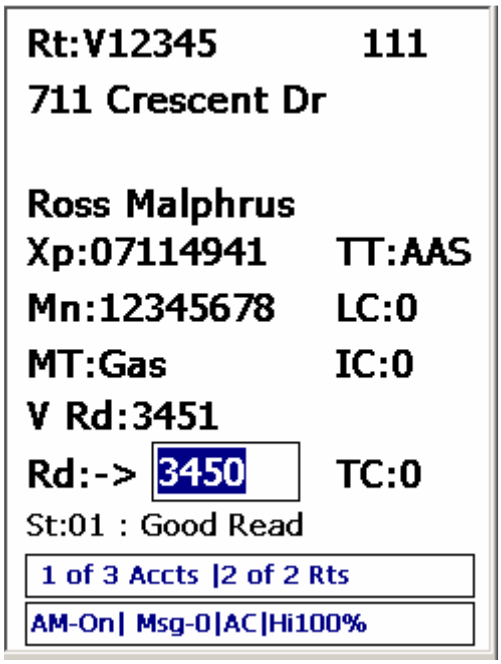

**Status** describes various phases of the process. First it tries to open port, Setup GPS unit. Once the device is setup, it gives transponder location in Latitude, Longitude values and status as **GPS Info Completed**.




Click **Ok** to close popup.

## Verification

Data Entry with Verification

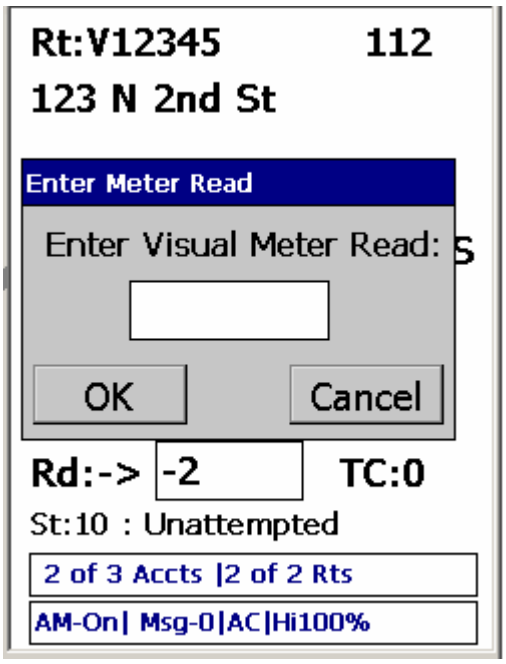



**Rt**: Route ID
**Xp**: Transponder Serial Number
**TT**: Transponder Type
**Mn**: Meter Number
**LC**: Location Code
**MT**: Meter Type
**V Rd:** Visual Read
**IC**: Instruction Code
**Rd**: Index Read
→ : Direction of Data Entry
**TC**: Trouble Code
**St**: Account Status
**AM**-off/on AutoMove enabled
**Msg-0** There are 0 messages in the alarm category.
**AC / BT** shows the type of power: AC from cradle or BT from battery
**Hi100%** shows that the battery is charged at 100%

Read with Transponder Verification

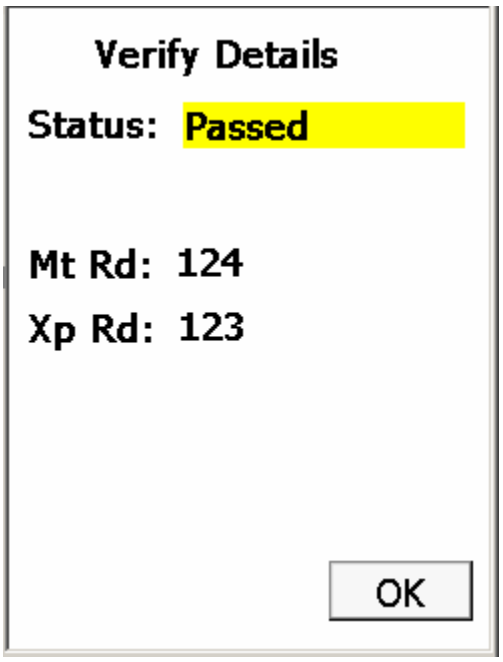
If the current read value is -2 and the transponder number is not blank, then pressing the <ENTER> key will trigger an RF read of the transponder along with verification of the transponder reading against a visual meter reading.

After pressing <ENTER>, the screen shown below will appear.

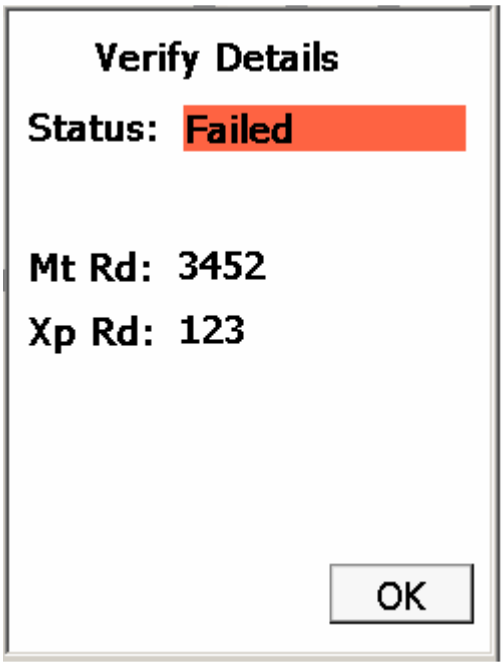



Enter the meter read obtained by visually reading the dials associated with the meter and press <ENTER> or tap OK to continue.

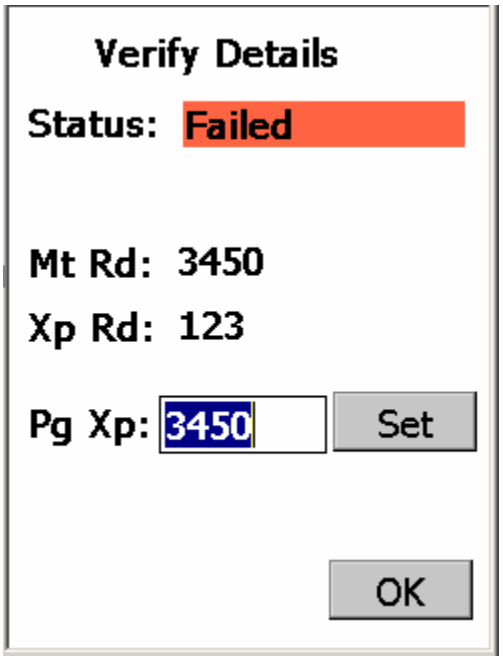
If the difference between the visual meter read and the transponder read is less than or equal to the allowed tolerance as set through Route Manager VRT, then the verification will pass. Press <ENTER> or tap OK to return to the data entry screen. The verification information will be returned back to Route Manager VRT.



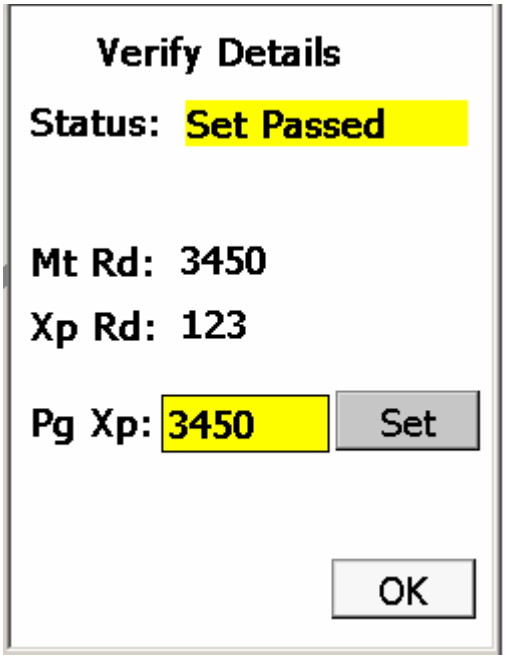

If the difference between the visual meter read and the transponder read is greater than the allowed tolerance as set through Route Manager VRT, then the verification will fail. Press <ENTER> or tap OK to return to the data entry screen. The failed verification information will be returned back to Route Manager VRT.



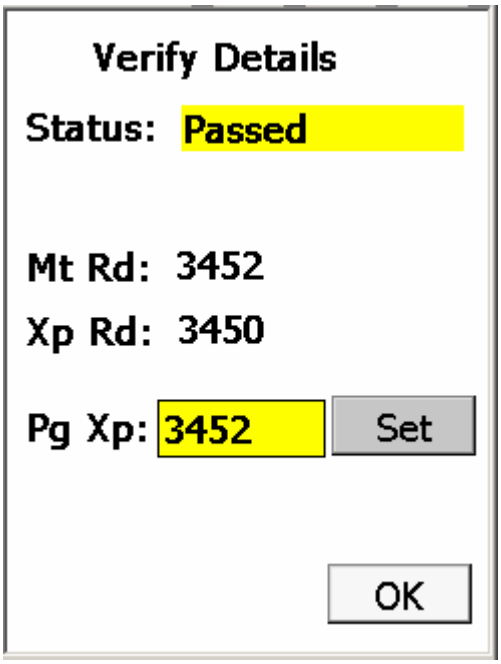
If the route has the Allow Programming for Verification flag set, then you will be able to reprogram the transponder with a new index value after a failed verification. The screen displayed below shows a failed verification. Enter the new index value into the Pg Xp box and touch Set or press <ENTER> to continue with programming.




After a successful program operation, the screen below will appear. Press <ENTER> or touch OK to continue.



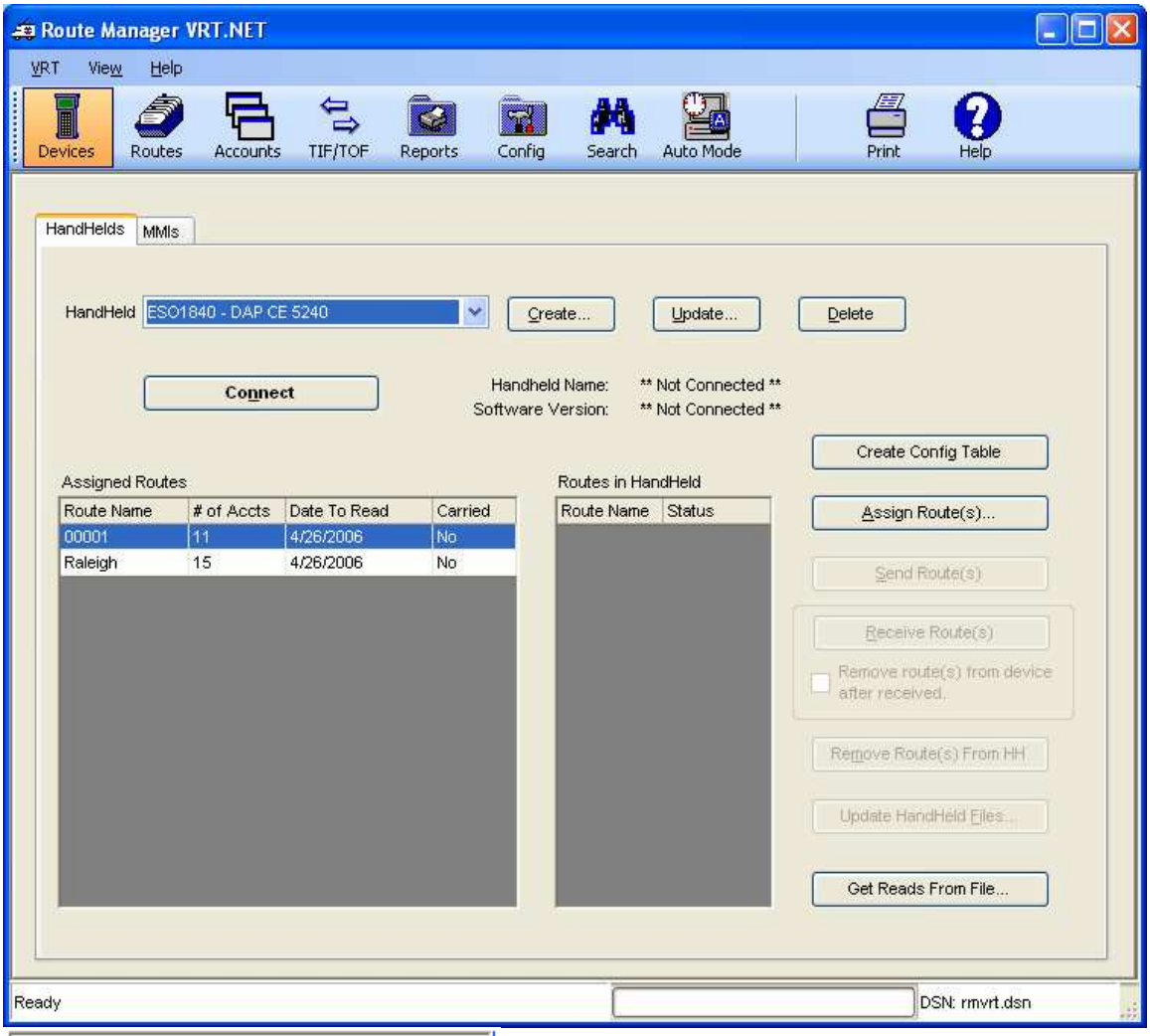
You also have the option of reprogramming the index after a successful read verification. After the verification test passes, the screen below will be displayed. Touch Set to program the transponder with the value shown in the Pg Xp box, or press <ENTER> to continue without programming.

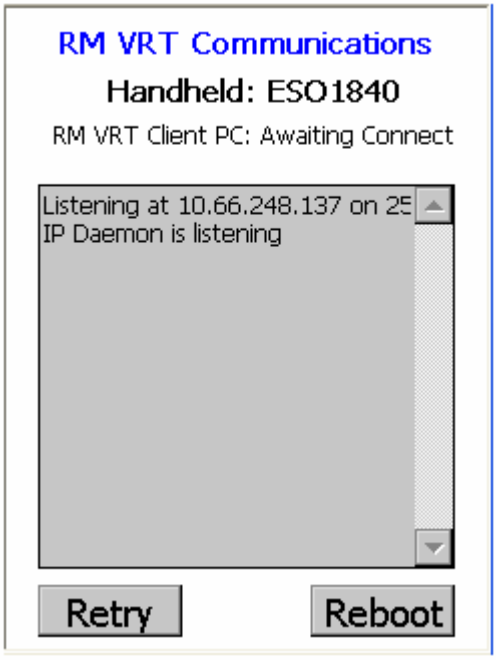



# TI VRT CE Communication with Route Manager VRT

## Establishing communications

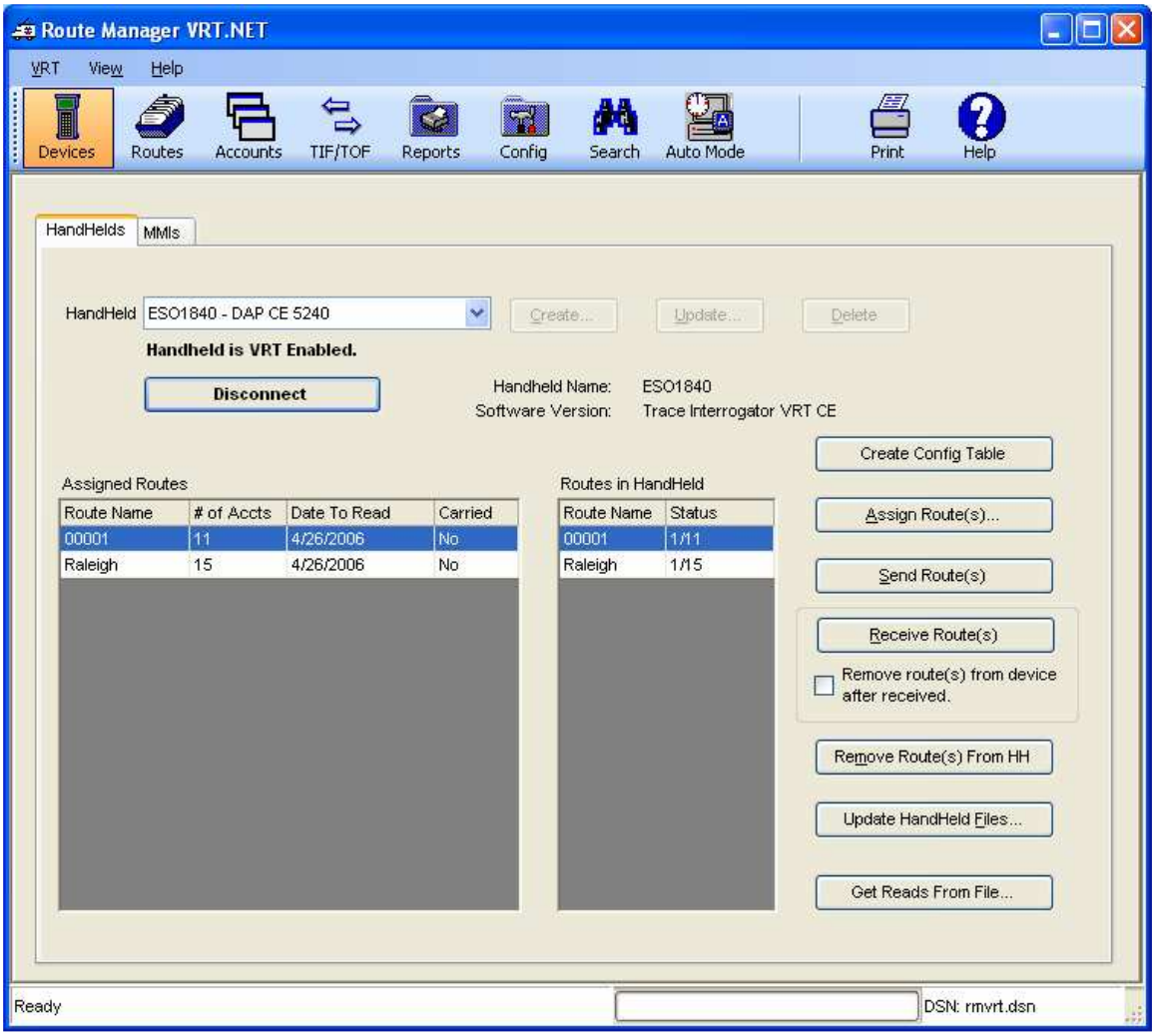
1. Using the Devices section of Route Manager VRT, select the desired Handheld from the Handheld Selection drop-down list.
2. Ensure that the handheld device's cradle and the computer with RM VRT are connected with the proper cable (Ethernet).
3. Ensure that the handheld is turned on and properly seated in its cradle.
4. Make sure the Handheld is in communications mode. (F3 from the Main Menu)
5. Click the **Connect** button in RM VRT.


Route Manager VRT.NET
VRT
View
Help
Devices
Routes
Accounts
TIF/TOF
Reports
Config
Search
Auto Mode
Print
Help
HandHelds
MMIs
HandHeld
ESO1840 - DAP CE 5240
Create...
Update...
Delete
Connect
Handheld Name: ** Not Connected **
Software Version: ** Not Connected **
Create Config Table
Assigned Routes
Route Name
# of Accts
Date To Read
Carried
00001
11
4/26/2006
No
Raleigh
15
4/26/2006
No
Routes in HandHeld
Route Name
Status
Assign Route(s)...
Send Route(s)
Receive Route(s)
Remove route(s) from device after received.
Remove Route(s) From HH
Update HandHeld Files...
Get Reads From File...
Ready
DSN: rmvrt.dsn


RM VRT Communications
Handheld: ESO1840
RM VRT Client PC: Awaiting Connect
Listening at 10.66.248.137 on 25
IP Daemon is listening
Retry
Reboot

**Upon Successful connection:**

- The **Connect** button will display '**Disconnect'**
- The Serial Number and Handheld Software Version will be displayed directly beneath the **Disconnect** button.
- The Handheld function buttons will be disabled.
- The Handheld Communication buttons will be enabled.
- If Routes exist in the Handheld they would be displayed in the "Routes in Handheld" display grid.




## Uploading Routes from RM VRT to TI VRT (CE)

1. Follow the Connection steps outlined earlier.
2. Ensure that the desired Route is assigned to the connected handheld.
3. Highlight the desired route(s) in the Assigned Routes display grid.
4. Click the **Send Route** button to send the route to the Handheld Device.

After the Route has been sent successfully to the Handheld device, the Routes in Handheld display grid will be updated to display the sent route and the Handheld will be automatically rebooted .

Note: Uploading Route(s) will overwrite any existing data on the hand held. It is the user's responsibility to make sure all data is downloaded from the hand held PRIOR to uploading new routes.

## Downloading data From TI VRT (CE) to RM VRT

1. Ensure that the Handheld is connected via the steps outlined earlier.
2. Select the desired Route(s) to receive from the Routes in Handheld display grid.
3. Click the **Receive Route** Button to start the process.
4. Upon successful completion the Route Status will change to 'Transferred' and the Handheld will disconnect from the application.

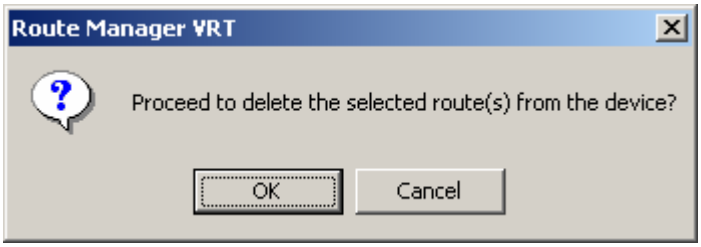
## Removing Route From TI VRT (CE)

**To Remove Routes From Hand Held after receive:**

1. Follow the Steps outlined earlier for Transferring and Connecting to the Handheld device
2. Select the **Remove Route(s) from device after received** check box
3. Click the **Receive Route(s)** button

**To Remove Routes from HH without receiving the Route from HH:**

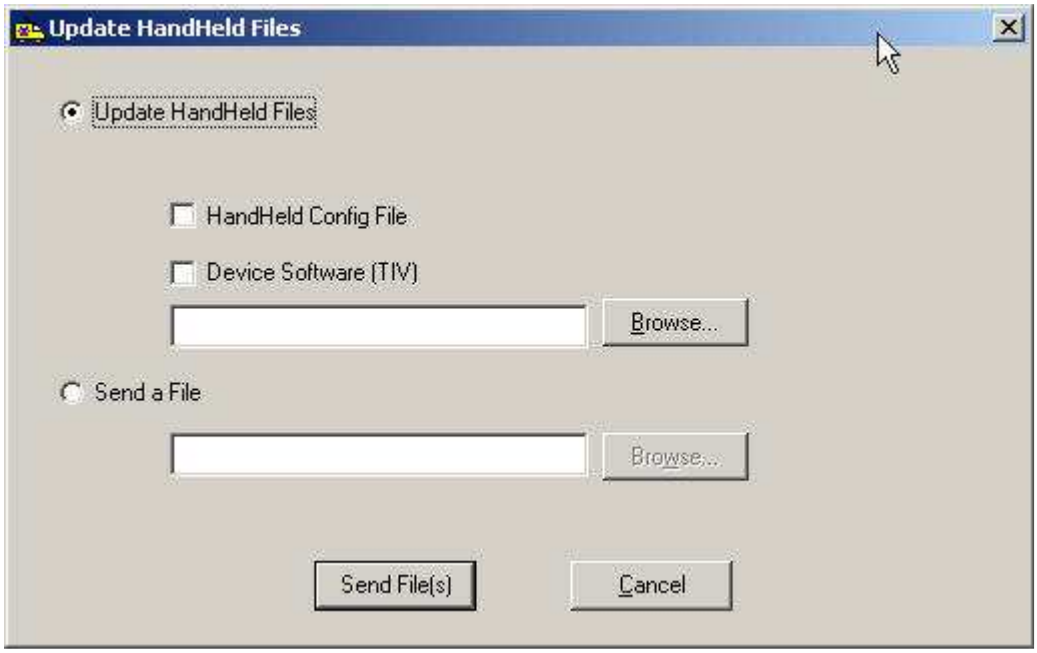
1. Follow the Steps outlined earlier for Connecting to the Handheld.
2. Once connected, select the Route to remove from the **Routes in Handheld** display grid.
3. Click the **Remove Route(s) from HH** button.
4. Click OK on the message box.




## Updating Handheld files

1. Follow the Steps outlined earlier for Connecting to the Hand Held device.
2. Click the **Update Handheld File** button. You are presented with the **Update Handheld Files** form (see picture below)
3. Select one of the two options: Update Handheld Files or Send a File.

a. **Update Handheld Files** – Select the check boxes for the files you wish to update and then click button “Send File(s)”, or
b. **Send a File** – Input or Browse to the name and location of a file to send to the Handheld and then click button “Send File(s)”

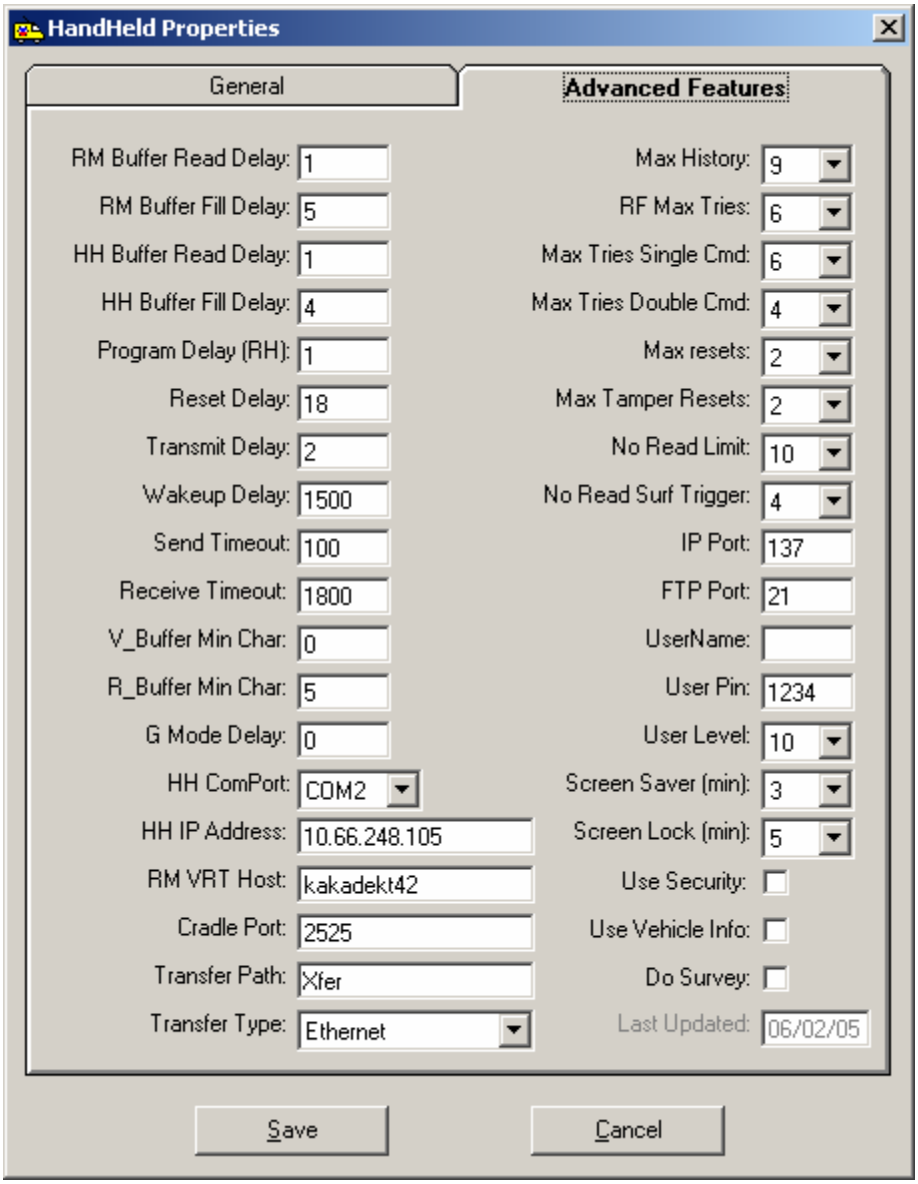


# Hot Keys

| Hot Keys | Action |
|---|---|
| **A** | **A**ccount Details |
| **B** | Jump to **B**eginning of current route |
| **C** | **C**lear Reading |
| **D** | **D**etail History / TOU for Current Account. Pressing **<Enter>** key initiates RF interrogation for the selected item |
| **E** | Jump to **E**nd of current route |
| **F** | Set account as Unattempted (only for manual read) |
| **G** | **G**eneral Interrogation of the entered transponder. |
| **H** | Searc**h** menu |
| **I** | **I**nstruction code. |
| **J** | **J**ump (by sequence) |
| **L** | **L**ocation code. |
| **M** | **M**essage (Comments). Messages can be added or edited if allowed. |
| **N** | Jump to **N**ext route |
| **O** | Err**O**r log |
| **P** | Jump to **P**revious route |
| **Q** | Set the Re-Se**q**uence flag for upload |
| **R** | **R**F Read Index and all VRT requests for current account. Pressing **<Enter>** key initiates RF interrogation for the selected Account |
| **S** | **S**ingle index read for current account |
| **T** | **T**rouble code. Allows selection of trouble code for current account. |
| **U** | Jump to next **U**nread account |
| **V** | Jump to **V**ersaProbe connection screen |
| **X** | Jump to record displayed prior to the jump (Only available for B,E,H,J,U hot keys) |
| **F1** | Displays key list with description. When an item is selected the choice is executed (if appropriate). |
| **F2** | Route Selection / Load |
| **F3** | Current Route Summary or Communication on the main screen |
| **F4** | Configuration Settings |

# Configuration

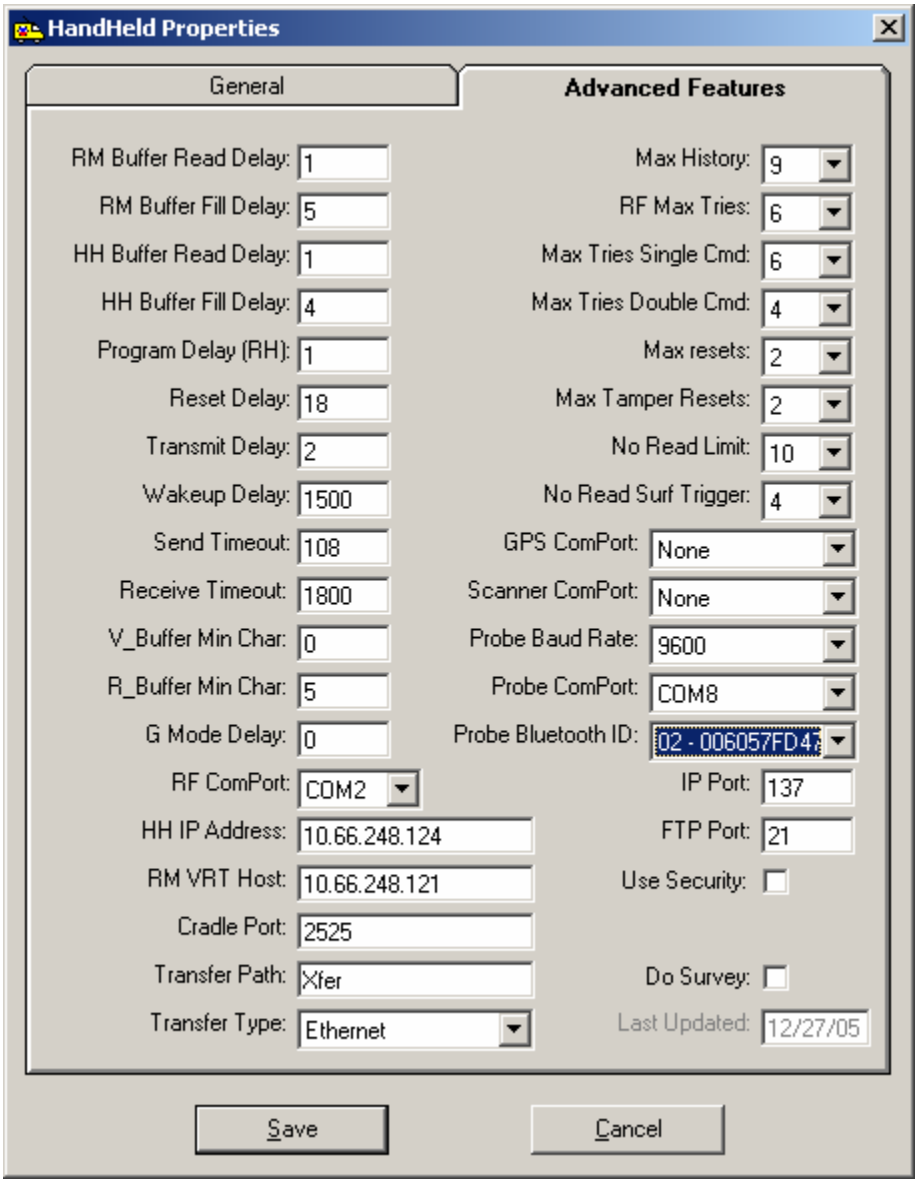
## General




Make sure the following values are added correctly.

**Handheld IP Address:** IP address of Handheld
**RM VRT Host:** Name of the computer with RM VRT installed
**Transfer Type:** Ethernet
**HH ComPort:** ComPort 2
**Send Timeout:** 100
**Receive Timeout:** 1800
**Max History:** 9

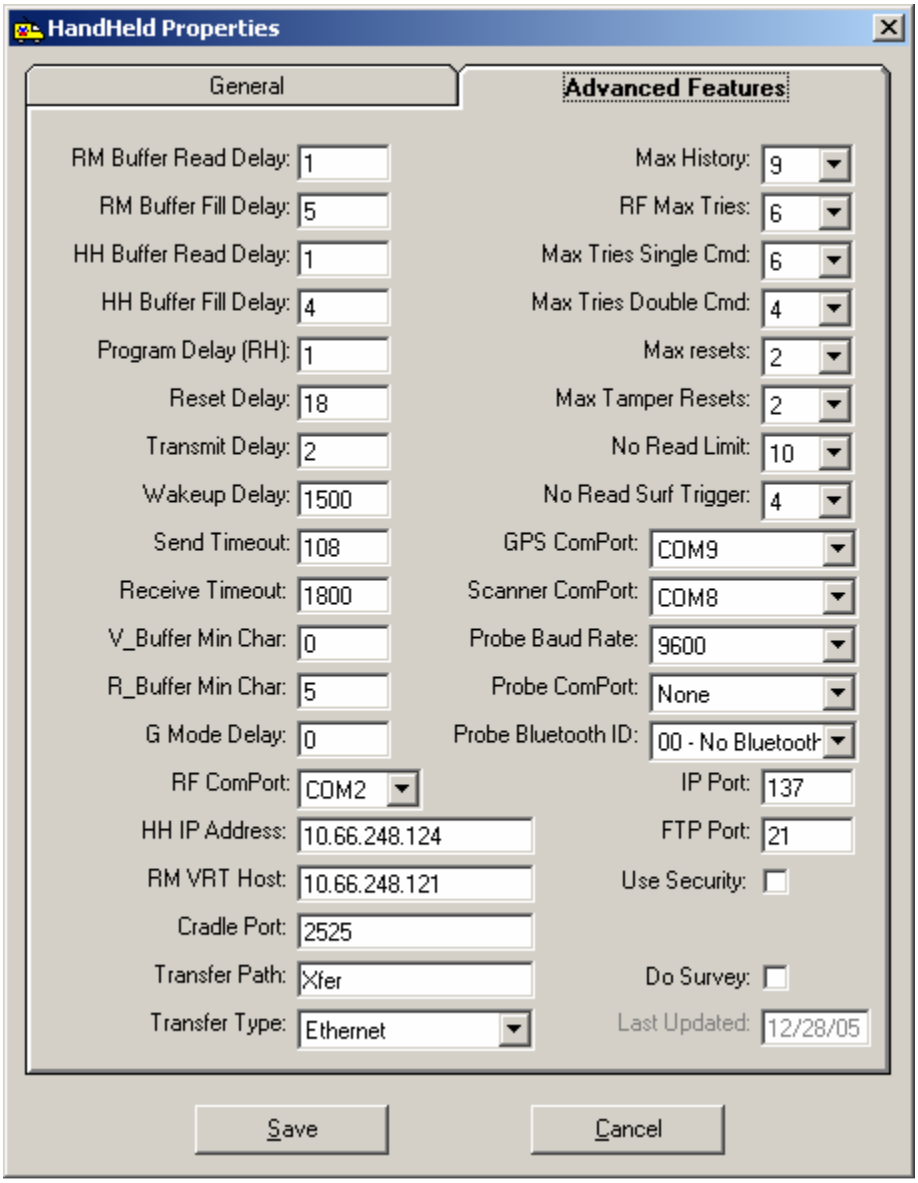
## VersaProbe




Make sure the following values are added correctly.

**Probe Baud Rate:** 9600
**Probe ComPort:** Com8 for Bluetooth Communication
Com1 for Serial Communication
**Probe Bluetooth ID:** Select appropriate Bluetooth ID of the device
Note: You will find this ID in the VersaProbe communication mode and It is created in Route Manager under Config\ Misc Codes\ VersaProbe Bluetooth ID\ create.

## Scanner & GPS




Make sure the following values are added correctly.

**GPS ComPort:** COM9
**Scanner ComPort:** COM8

# Troubleshooting

1. General troubleshooting.
    a. Click on the screen with the stylus if the navigation using device keys does not produce expected results.
    b. Try to reboot handheld by holding F1+ 0 +9 keys together for few seconds.

2. Trouble in connecting Handheld with host PC.
    a. Make sure that the Handheld is correctly seated in the cradle and there is not any contaminated material in between the cradle and handheld's contacts.
    b. If using router (instead of Company's Network connections) for handheld and host PC communication, make sure that the firewall on the host PC is disabled. (To disable firewall, go to "Start Menu" -> "Settings" -> "Control Panel" -> "windows firewall" and select option "OFF" )
    c. Check if the Handheld's LED is glowing either green or red. If not then may be AC charger is faulty.

3. For RF card error message or for further information, please contact

    Customer Service
    AMCO Automated Systems
    208 South Rogers Lane
    Raleigh, NC 27610
    Phone: 1-800-786-2215
    Fax: 919-250-5439