Temetra Reader
User Operations Manual

Version 1.4 February 2013

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Using Temetra Reader

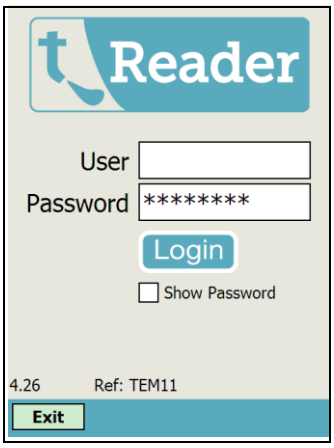
Temetra Reader is the application running on Windows Mobile device, used to read meters either wirelessly or visually (also known as manual or eyeball read).

Typically, you will download (collect) a route from Temetra at the start of a day, complete your meter readings, and then upload (send) the meter readings back to Temetra either at the end of the day or the end of the route. This collection of meter readings is called a tour.

When uploading or downloading, Temetra Reader needs to be able to communicate with the Temetra web application over the Internet.

Once you've collected your route, you no longer need a connection to the Internet and can read meters using the stored details.

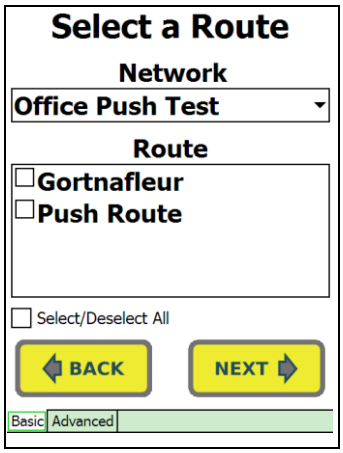
Logging In & Collecting a Route



Log in to Temetra reader using your username and password for Temetra***. If you're logging in for the first time, or changing from a previously logged in user, you will need to have an Internet connection on the handheld to validate the password.***

If you already have a route stored on the handheld under this username, you will be brought straight to the meter view screen, otherwise you will be asked to select a network and a route.

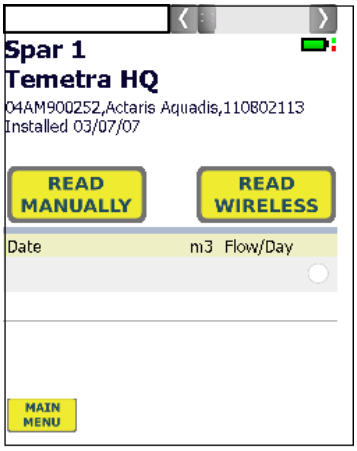
Select a route from the dropdown list and tap next, and all the meters for that route will be downloaded into the handheld. All the meter information for the route; name, address, meter and connection details will be stored in the handheld.

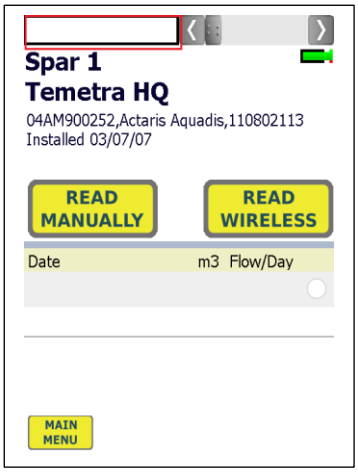


Navigating and Reading

Once you've loaded a route, most of your time in Temetra Reader will be spent on just two screens, the meter details page and the meter reading page. Meter details show you information about the meter in summary, and meter reading allows you to store a meter reading for that meter.

Meter View & Navigating within the Route



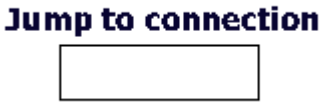


The main screen for Temetra Reader is the **meter view** screen, showing you a summary of the meter details for the next meter to be read, or to review previous meter readings previously taken.

To move between meters within your downloaded route, you can use the cursor buttons on the handheld keypad, or you can use the scrollbar at the top of the screen. Left and Right will bring you to the previous or next meter in walk order.

The connection reference (tag number) for the currently displayed meter is shown in the box at the top left.

To jump directly to a meter based on the connection reference, tap on the top left box (*see left*). This will open up a dialog box where you can enter a connection number and bring you to that connection. The reference you enter there has to be exactly the same as you see on Temetra, with leading zeros and dashes etc.



Function Key Shortcuts

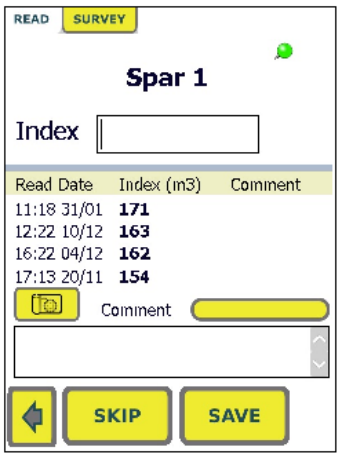
Within the Meter view page, you can use the following function key shortcuts:

F1: Show Meter Details
F2: Jump to Meter Search
F3: View Meter Historical Data

Reading Meters

All meters can be read manually, by typing the index from the meter into the handheld. If the meter is fitted with Automatic Meter Reading transponder, you have the option of reading the meter wirelessly.

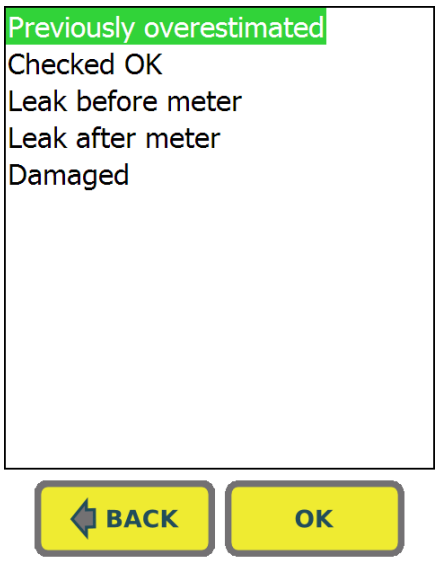
Manual (Eyeball) Reading



To read a meter manually, click on the Manual Read button. Enter the read index from the meter, using only the black numbers displayed, and ignoring the red numbers.

While you're typing, an arrow pointing up or down may appear on the right of the screen, along with the daily flow rate. This is a good indication to see if you're making a mistake or the flow has changed significantly since the last reading. If the arrow is red, it means the flow rate differs a lot from usual, or if it is amber, it differs a bit from usual. Temetra reader needs some historical readings for the meter for this check to be effective.

Once you've entered the meter index, you can add a comment by clicking in the comment field or alternatively click on the *yellow comment bar* and choose pre-selected comments as seen below. Comments you enter here will appear in Exceptions Report on Temetra, so can be useful to report observations made while meter reading.



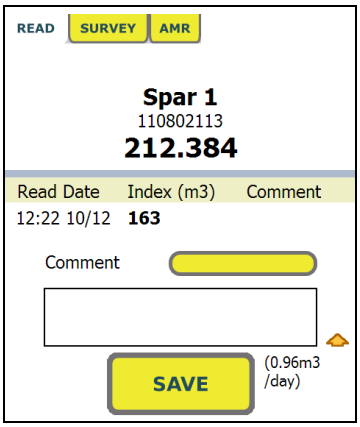
If you cannot read a meter, e.g.: because a car is parked over the chamber, you should press the *"**Read Manually**"* button, you must enter a comment in the comment field, then press the *"**Skip**"* button.

Wireless reads

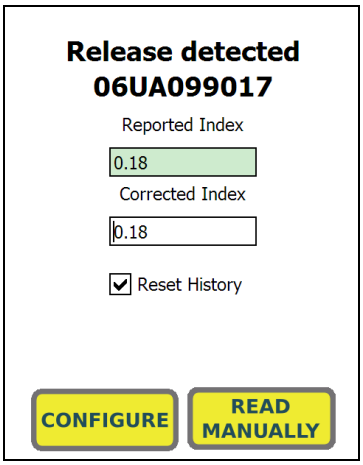
By clicking on the "**Read Wireless**" button, the handheld will communicate with the AMR transponder, returning a meter reading automatically. If the read is successful, you will be able to enter a comment for the read

If the communication fails, it may be because you are out of range – get closer and try again.

If you cannot communicate with the transponder, you can read the meter manually by clicking the manual read button instead.



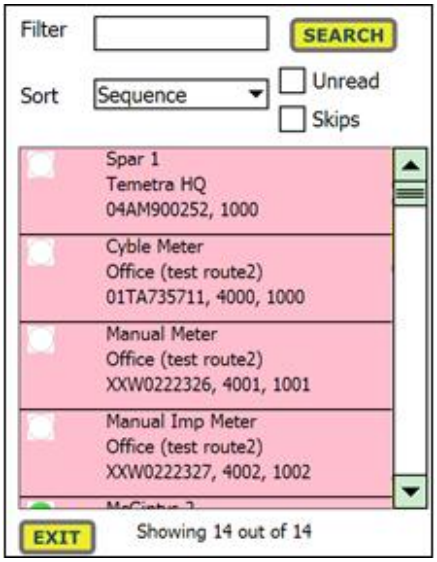
Tampers on Wireless Reads



Sometimes, a wireless read will come up with a "*Tamper Alert*". This means that the AMR device has been removed from the meter since configuration. In this case, the index returned by the transponder should be considered unreliable and you should either reconfigure the transponder and/or read the meter manually.

Check the read index on the physical meter itself, then enter it into the correction dialog to reconfigure it to be correct, and the AMR will be read again for a confirmation read.

Searching



For a more advanced search, tap on the "**Main Menu**" button at the bottom left of the screen, and

then tap on the search button in the top right.

On this screen, you can search for meter serials, names, and addresses. If you *tick* the "**Unread**" checkbox, the results will only contain meters which haven't been read and likewise if you *tick* "**Skips**" the results will only contain meters that have been skipped. If you see a meter in the list that you want to navigate to, tap on the entry in the list.
You can also search via three different options in the "**Sort**" dropdown; *Sequence*, *Priority* and *Proximity*.

Issue Tracker

Temetra has an **optional** Issue Tracker module that allows you to keep track of jobs to be carried out on meters. Issues can be assigned to the meter readers via the Issue Tracker, and when a meter with an issue is in view, the Issue Exclamation point icon will appear. Click on this icon to view the details of the issues.
If you require more information please contact your Temetra representative for details.

USER LOGIN

ROUTE SELECTION

Download all selected route details from Temetra to handheld.

READ WIRELESSLY

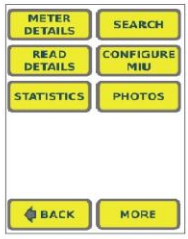
Read meter index wirelessly with transponder.

METER READS

Details of current meter to read. Scroll left and right to see previous and next meter.

READ MANUALLY

Enter index details from meter and validate.



MENU

LOG OUT

Switch to a different user.

MORE

METER DETAILS

Detailed information about current meter.

READ DETAILS

Extended information about current read, including wireless data.

SETTINGS

Configure Temetra Reader, devices and internet connection.

SEND CONFIGS

Send any stored transponder congiurations to Temetra

STATISTICS

Information about current route, including meters read and unread.

SEARCH

Search for meters within current route by name, serial, connection, etc.

SWITCH ROUTE

Allow current user to select a different route.

SEND READINGS

Send all stred meter readings to Temetra.

PHOTOS

(Photo module required)

Download all photos for route from Temetra.

CONFIGURE MIU

(AMR Radio module required)

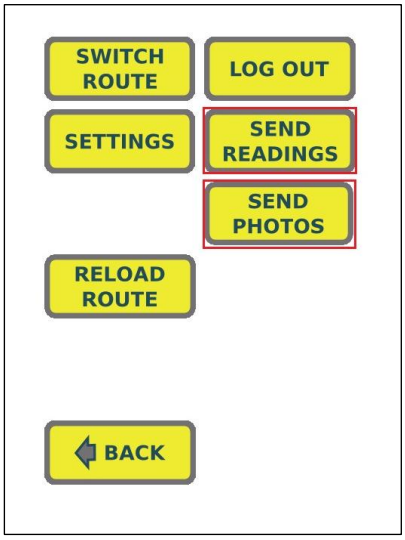
Configure a wireless transponder and store details.

RELOAD ROUTE

Refresh route details from Temetra while maintaining current reads.*

*For example, collect any new meters on the route from Temetra that have been added since route was previously collected by handheld.

Uploading Reads to Temetra



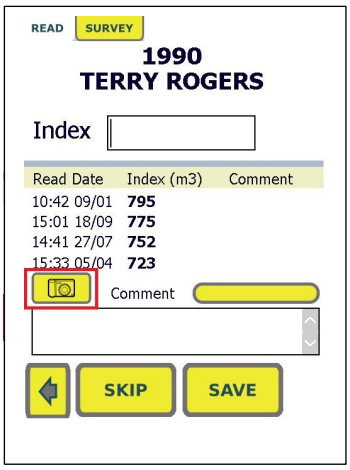
Uploading readings returns all the reads you've done on the handheld to Temetra. Once the reads are on Temetra they are immediately processed and available for viewing. Uploaded reads are safely stored, so you should upload regularly to ensure you never lose readings – once per day is recommended.

To upload collected reads to Temetra, *you need to be connected to the internet.*

Tap "**Main Menu**" on the meter view page and go to "**More**". Tap "**Send Readings**" and the readings will be uploaded to Temetra. Keep an eye out for the dialog box that tells you whether the upload was successful. If there was an error, try and upload again, or fix the problem and attempt to upload again.

If you have photos taken using the optional photo module, the "**Send Photos**" option will also be available on this screen, click "**Send Photos**" and they will be uploaded to Temetra with an upload successful message upon completion.

Photographing Meters



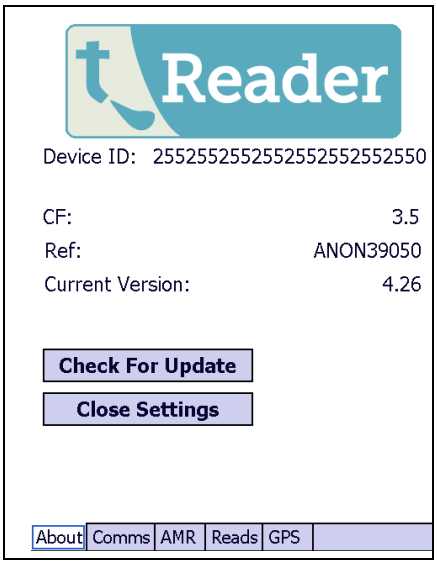
Some Handheld's possess a camera which allows photos to be taken of the meter you are currently at. These photos can be used to help locate the meter and/or photograph issues with the meter in its current state.

On the Casio IT800 for example, you can take photos of the meter by pressing the "**Manual Read**" option on a meter which then reveals a camera icon on the left-hand side of the screen.

Clicking this icon brings you to camera mode, by pressing the enter key on the Handheld a photo will be taken and the option to "**Save Photo**" or "**Discard Photo**" will be made available.

Administration

Updating Temetra Reader



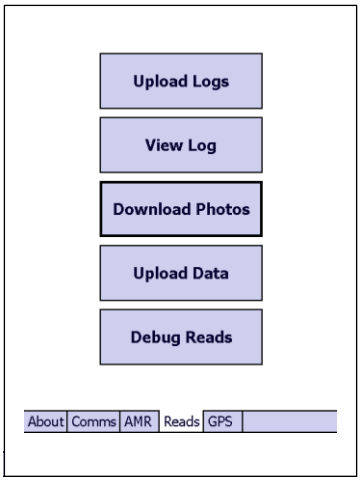
From time to time new versions of Temetra Reader are released and we've designed it so that it's very easy to keep up to date with the latest version.

We take many precautions to ensure no data is ever lost during an upgrade, but it's always a good idea to upload any unsaved reading before upgrading to a new version of Temetra Reader.

To update the version of Temetra Reader, tap on the "**Main Menu**" button on the meter view page. Next, click "**Settings**" and it will take you to the admin page. To check for updates, you will need to be connected to the internet, and tap the "**Check For Update**" button and the version number of the latest release will be displayed.

If a newer version of Temetra Reader is available, there will be a button labelled "**Upgrade**". By clicking this, Temetra Reader will download the latest version, install and automatically restart. (The latest version can also be downloaded via a cradle connected to your PC from this link – www.temetra.com/r and choosing "*Run from Desktop*".

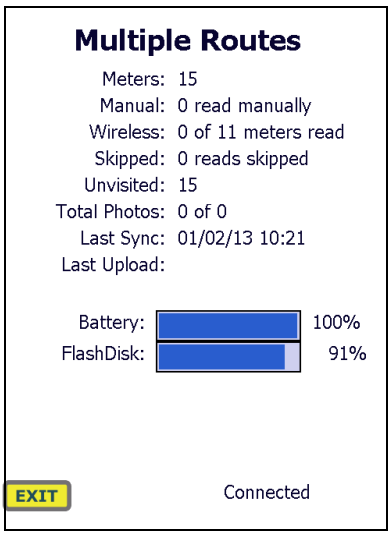
Downloading Photos



If you have the Photos module installed, you will need to periodically update the photos on the handheld to pick up new photos added. Downloading photos can be time consuming and use significant internet traffic, depending on the number of photos being collected. We recommend you're connected to a broadband internet connection rather than via GSM phone.

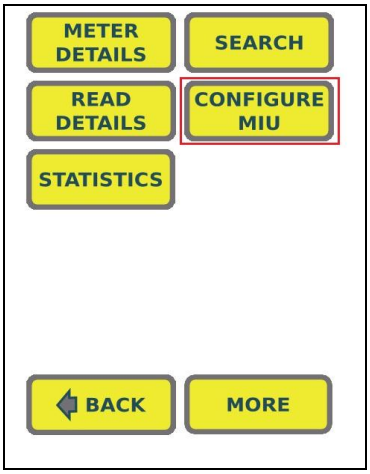
Before you do this, make sure that the handheld has an SD memory card inserted underneath the battery so there is enough room for the photos. To download the photos, tap "**Main Menu**" on the meter view page, then "**More**" and "**Settings**". On the Settings screen select "**Reads**" from the bottom tabs and then click "**Download Photos**". Photo download will then begin for the current route you are on.

Statistics



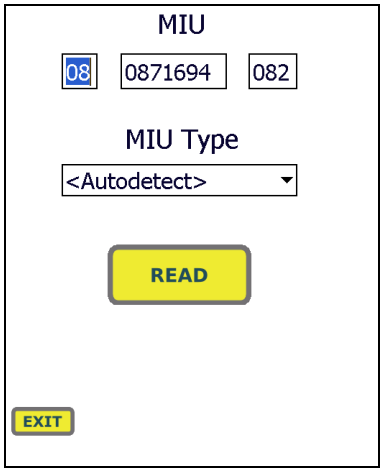
Temetra Reader has a statistics page which displays data like the route code, the number of accounts and meters in the route, the number of meters read, and the number of photos for this route. To view the statistics, tap "**Main Menu**" on the meter view page, and tap "**Statistics**". To exit back out of statistics, tap "exit at the bottom left of the screen.

Configuring AMR Transponder

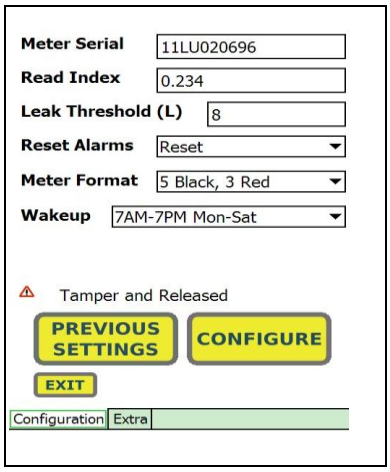


When logged into Temetra Reader and on the main meter view screen, click the "**Main Menu**" menu button at the bottom left of the screen.

Click on the "**Configure MIU**" button in the right column.



Enter the full MIU and checksum of the AMR you want to configure, and optionally select the MIU type, or leave it on "**Auto Detect**", and click "**Read**". If the AMR can't be read, make sure the device is in range and the MIU you have entered is correct.



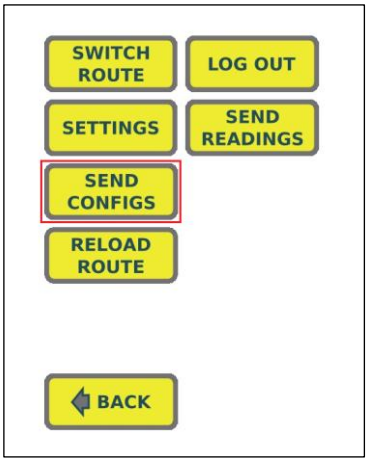
Enter the details of the meter into the provided fields, the first screen shows all the common properties that can be configured.

Optionally, you can go to "**Extra**" tab at the bottom of the screen and enter a comment for the configuration, and choose to reset all historic data on the AMR.

When all the details are filled in, go back to the "**Configuration**" tab, and click on "**Configure**". Temetra Reader will then configure the device, and read back the new information from the AMR. Read through the values to confirm they are correct.

To configure another AMR, click the "**ok**" button on the top right of the screen.

Uploading AMR Configurations



As you configure meters on transponders, Temetra reader is saving all the configurations to a file. This file can be uploaded to Temetra, and the transponders will be automatically configured on the corresponding serial number.

To access the sending of configurations from the meter view screen: go to "**Main Menu**", "**More**" & then go to "**Send Configs**". The configuration reads will now be uploaded to Temetra, and you will be informed if the upload was unsuccessful. If the upload fails, make sure you have an active Internet connection.

Internet Connection from Handheld

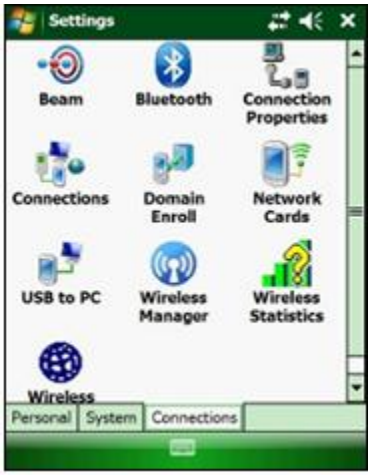
Temetra Reader needs access to the Internet for downloading routes and sending reads back to Temetra. This can be via

- Cradle attached to PC – In this case you will need Microsoft Active Sync installed/Windows Mobile Device Centre (Vista & Windows 7). The handheld will piggyback on the internet connection of the PC to get connected to the Internet.
- The cradle can be directly connected to your LAN via ethernet dongle.
  Setting this up is best completed by your IT department, but once complete, you handheld will have direct access to the internet once inserted in the cradle.
- Using in-built Bluetooth connectivity. By pairing your handheld with a mobile phone, you can use the Internet connection on your phone(*See instructions below*). This is very convenient, since it allows you to upload and download routes from the field.
- Sim Card installed on selected Handheld's – May need to be setup by your IT Department.

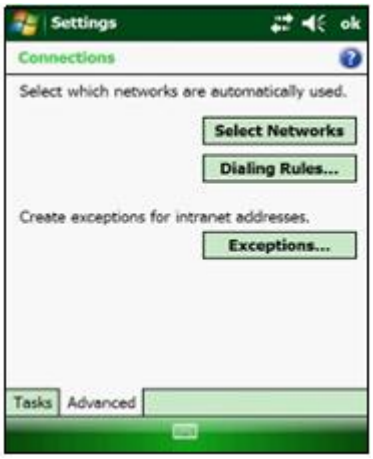
Connecting your Handheld to your Phone via Bluetooth

These steps might differ slightly for different handhelds in the way that they are named, but generally the steps are the same. Different mobile phone operators require different settings, but the ones included were correct at the time of writing this.

On the handheld's main screen, click "**Start**" and then "**Settings**".



On the Settings screen, click the "**Connections**" tab at the bottom & then the "**Connections**" icon.



Next, Select the "**Advanced**" tab and click "**Select Networks**".

Under the heading that states "*Programs that automatically connect to the Internet should connect using:"* Click the "**New**" button.

You will then be required to enter a name for these settings (ideally you should enter a name like "Bluetooth" here as it serves as a means of recognition later on.

Next, Click on the "**Modem**" tab and select "**New**".

Enter a name for the modem connection, again using a descriptive term such as "Phone" or equivalent.

From the "**Select a modem**" heading, press the *dropdown arrow* and choose "**Bluetooth**". *****

Click "**Next**" and the Handheld will start searching for your Phone.

****** *At this point, ensure Bluetooth is enabled on your phone and that it's set to "Discoverable Mode" in order for your Handheld to find your Phone.*

When the Phone is found, set a passcode which will be used to authenticate the devices. Enter it on your Handheld, then enter the same code on your Phone when it prompts you.

Then, assign a name to the device or just keep the default one.

Select the device you just paired with and click "**Next**". For the phone number, enter "***99#**", and then click "**Next**". *The " * " character can be used by pressing shift+8, and the " # " character is used by pressing shift+3.*

Enter the settings for your mobile provider, the settings at the time of writing for the 3 major networks were as follows:

Provider	Username	Password
Vodafone Ireland	dublin	dublin
O2 Ireland	gprs	gprs
Meteor	my	wap
Vodafone UK	wap	wap

Click "**Finish**", and your connection should be working. You can test it by opening up Internet Explorer on the Handheld and typing www.temetra.com in the address bar, if it loads the pairing has been successful.

Pairing with a GPS Logger

To allow the location of every meter to be captured during a meter reading tour, Temetra Reader can log the location of every meter reading once it has been paired with a GPS device.

The instructions for pairing below are for a Psion Workabout Pro, Generation 2/3, running Windows Mobile 6.1

Pairing is a once-off procedure that links a particular GPS device to a particular handheld. Once pairing is complete, to collect meter locations you just need to make sure that the GPS device is charged up and switched on.

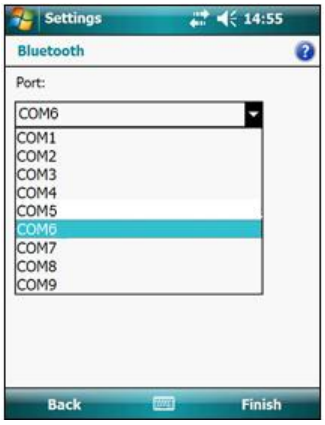
Some Handheld's have internal GPS loggers (such as the Casio IT800) and as such, do not need to be paired with an external logger. In this case, you can disregard the following instructions and skip to "Activating GPS pairing in Temetra Reader"

From the Handhelds Main Screen – Click "**Start**" and then "**Settings**".

Next, Click the "**Connections**" tab on the bottom of the page & select "**Bluetooth**".

From here, Select the "**Device**" tab and then "**Add new device…**". (*Ensure the Bluetooth Logger is switched <u>on</u>*). Next, select your Bluetooth device – if nothing shows up, you'll need to click the "***Refresh***" button.

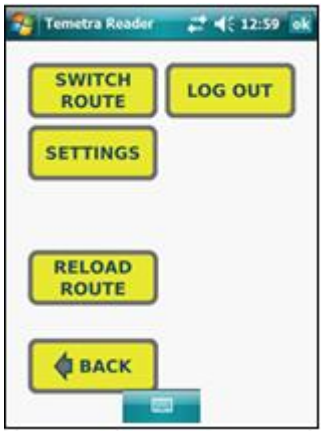
You will be asked for a password, enter **0000** (four Zeroes). Tick the "**Serial Port**" box & click "**Finish**".



Select the "**COM Ports**" tab from here and Select "**New Outgoing Port**". Select the device and you should be given a selection of a list of various COM# numbers. Select one of the COM items e.g. COM2 (*any except COM0 and COM5 will suffice*) to assign the device to that COM#.

Click "**Finish**".

Activating GPS Pairing in Temetra Reader



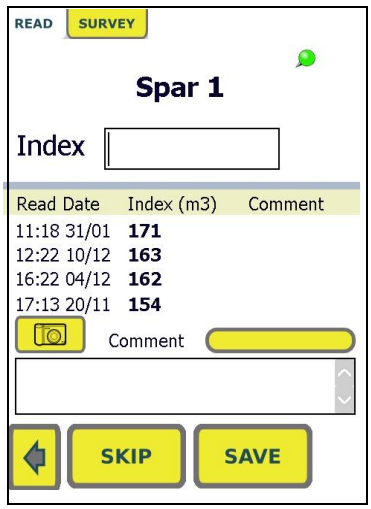
Now that your Handheld is paired with the GPS Logger we need to activate the GPS Pairing in Temetra reader.

To do this, log in to Temetra Reader and access the "**Main Menu**" screen, then click "**Settings**"

From here go the GPS tab and from the GPS Port list, select the ***** COM# you set the GPS Logger to. Click the "**Enable GPS**" box. Temetra Reader is now paired with the GPS logger. If left alone the small pin, visible as the yellow pin on the left, will turn green and show how many satellites are being picked up by the GPS device, the accuracy of the markers and the current state of the GPS logger.

(On the Casio IT800, the GPS Com Port is Com Port 8)

GPS logging of meter reads



If your device is working correctly, when you go to the meter reading screen, you'll see a green pushpin icon in the top right.

The green pin means that when you SAVE the meter reading, the current GPS location will be stored with the reading.

 Green Pin: All OK. Handheld is paired, GPS has good fix.

 Amber Pin: Handheld is paired with GPS device, but there are insufficient satellites in range to get a good fix. This can happen if you're indoors or have just switched on the GPS device – Move to a location where you can see more of the sky, and allow the device time to get a signal.

 Flashing Grey Pin: Handheld is NOT paired with GPS device – make sure your GPS device is charged up and switched on. Ensure you have the correct GPS device for your handheld (engraved number on handheld and GPS device matches).

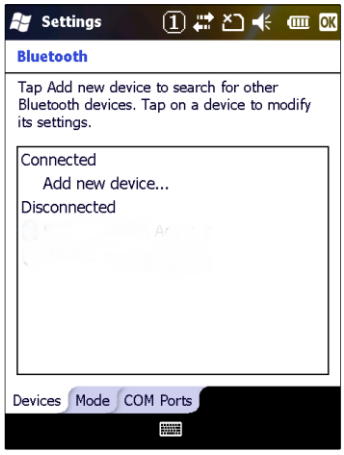
No Pin: GPS functionality is disabled – use the SETTINGS page, GPS tab to enable.

Pairing your Handheld with an external AMR Device

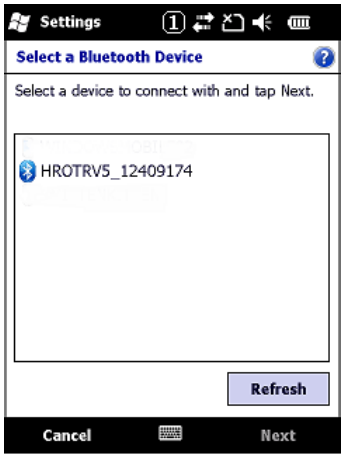
The following instruction's demonstrates the pairing of an external AMR device (in this case a Homerider AMR) with a Casio IT800 Handheld, but as in the previous instructions, the process is generally similar across different types of Handheld's and AMR's.

Press "**Start**" and then the "**Settings**" icon

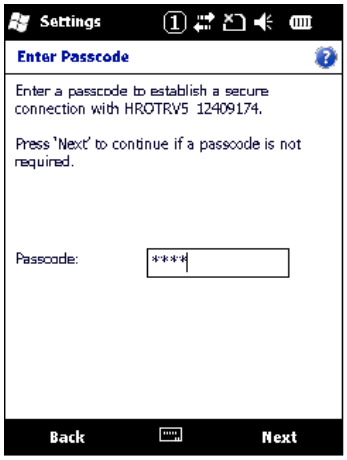
Next, Press the "**Bluetooth**" icon



At this Point, *Ensure your AMR Device is switched on*, Click "**Add new device**"

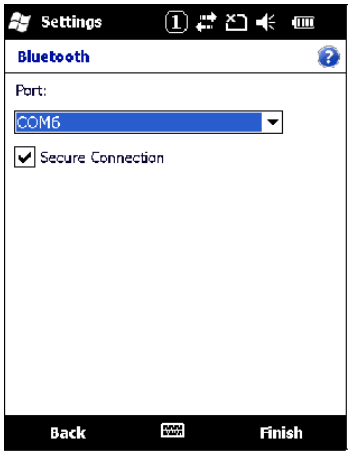


Your Handheld with start searching for your AMR device, when it appears on screen select it and click "**Next**".

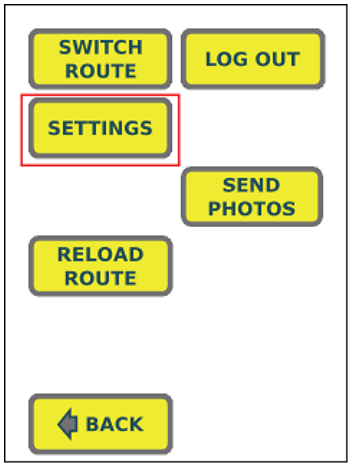


You will be asked to enter a passcode, on most AMR devices this is 0000 (4 zeroes), on the one in our example (Homerider) it is 5322.

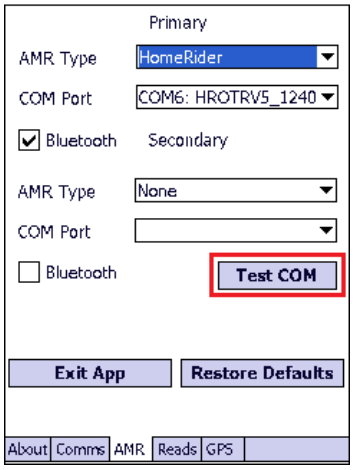
Enter relevant code and press "**Next**" & then "**Done**"



Next, in the bottom tab select "**COM Ports**" and then "**New Outgoing Port**". Select your device name and then press "**Next**". *Select com port 6 or 7 from the dropdown list and ensure the secure connection option is ticked*. Then click "**Finish**".



Both devices are now paired but the AMR is not linked to Temetra Reader. To do so, exit out and log in to Temetra reader. Go to the "**SETTINGS**" menu, found at the "**MAIN MENU**".



Finally, Select the *AMR* tab on the bottom of the screen. Then, from the "**AMR Type**" under the *Primary* heading, select your AMR Device type (in this case, Homerider) from the dropdown arrow & select your designated port from the "**COM Port**" dropdown.

Click "**Test Com**" and you should get a message on screen saying "*Found Homerider, none*" (or whatever your device type is).

Glossary of Terms:

ACCOUNT: Defines the owner and/or operator of a meter; for a billing customer this defines the property that the meter and connection applies to.

This would encompass billing address (if different), external reference I.D's and any special instructions that may exist.

An individual account may have more than one meter or connection and from an invoicing perspective the billing entity may have more than one property.

AMR DEVICE: Usually refers to an internal RF card in the Handheld or an external device paired via Bluetooth that allows for reading meter's wirelessly (Once the meter has the corresponding Transponder).

CONNECTION REF. (ROUTE NUMBER): Identifies a metering point on the pipework. This is the most useful number when talking about meters / customers. If meter is replaced, connection ref remains the same.

GPS LOGGER: A GPS Logger allows the location of every meter to be captured during a meter reading.

METERS: Meters in Temetra hold all information associated with the physical installation of the meter. This includes meter type, serial number, reference numbers, GPS location, installation date, expected collection method etc.

METER INDEX: Normally comprised of up to 8 digits, these digits indicate the current volumetric flow. In a metric meter this is measured in m^3 (1000 Litres) and may or may not include digits after the decimal point.

For manually read meters, the index normally consists of just the digits up to the decimal point (by convention the white on black digits on a meter index) with those after the decimal point discarded (by convention the white on red digits on a meter index).

METER READING: This refers to a combination of a meter index, a date and time, a collection method and any meter reader comments.

MIU/ACTARIS CYBLE RF: Meter Interface Unit, a transponder that is fitted to meters to allow automatic meter reading. The meter reader uses some form of wireless reading system to read the meter rather than physically viewing (eyeball) the meter. Readings done with MIU have all the basic reading information, but also additional data stored by the MIU while attached to the meter.

Fixed Date Reading is the meter index at the start of each calendar month. Cyble RF returns previous 13 FDR's with every reading. This is useful for flow profiles and fixed date billing.

NETWORK: The network defines the entire collection of meters for a geographic area including all meters irrespective of type, reading method or purpose. Every meter on Temetra belongs to a single network.

RECEIVE/DOWNLOAD: When a meter reader is ready to begin his tour with a handheld computer they download their particular route from Temetra on to their handheld. This downloaded contains the complete list of meters on this tour, their locations, serial numbers, previous index, previous reference consumption data, etc.

ROUTE: Each meter on Temetra belongs to a route. For instance, where there is a grouping of 800 meters they may be divided into two routes with 400 meters per route.

SCHEME OR DMA: Meters tend to be arranged according to their water source so Temetra allows each meter to belong to a single scheme or District Metering Area. DMA's are grouped into schemes.

For instance where a City and County are separated in a Network for the purpose of billing they would now be aggregated into the one scheme.

SEND/UPLOAD: When a meter reader has done some meter readings on a previously downloaded route, they can send these reading back to Temetra by doing an upload. This sends the readings back to Temetra where it is displayed as a Tour and each meter's reading is displayed with the appropriate meter.

SKIP: A skip is defined as any circumstance that may arise that prevents a meter from being read. A comment must be entered in order for a skip to be accepted. By clicking on the yellow comment button on the meter view screen, lists of pre-set comments are available for selection. Skip codes can be setup to designate particular reasons for being unable to read a meter, e.g.: Meter overgrown. This is done via the Temetra Web App.

TOUR: This is a collection of readings, input together.

This is typically done from a handheld,

i.e.: * Meter Reader collects a route

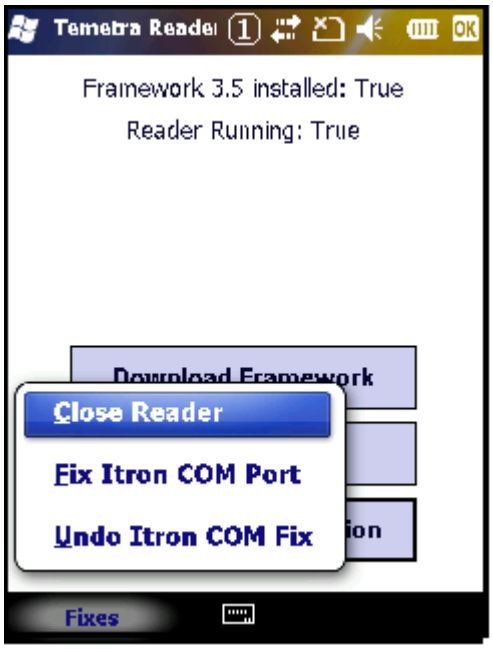
* Visits Meters, Enters readings, skip, comments, etc.

* Uploads readings to Temetra

This collection of readings is named a “Tour”. The Tour does not have to be completed to upload the readings to Temetra. So, a meter reader could collect his route, carry out half of the readings and upload same to Temetra. This tour would display only the meters that have been read.

Troubleshooting:

Issue:	Solution:
Logging in to Temetra Reader: Receive Error Message on Handheld stating: "*Error: Problem encountered connecting to server. Please check your settings* "	(a) No internet connectivity on your Handheld - Are you trying to log in with different user credentials than those used to originally download the route? See: Using Temetra Reader
	(b) Are your Username and Password details correct?
Cannot find read's to upload:	Did you switch routes accidentally? You can go to the "**Main Menu**" button, then "**More**" and from here select "**Switch Route**". From the select a route screen there is an "**advanced**" tab on the bottom of the screen, if you select this you will be given the option to tick a box "**Load Previous Readings**".
You are unable to "Skip" a meter read:	You must enter a comment in the comment box *before* clicking the "Skip" Button.
When updating Temetra Reader version via mobile phone pairing, the download does not complete:	Some Handheld's have a tendency to go to sleep when downloading files; this can result in disconnection from the internet and thus non-completion of the download. While the download is in progress it is important to keep the Handheld's screen "awake", this can be done by tapping on the screen every twenty seconds or so. Alternatively, you can download via a cradle connected to a PC where this issue will not be encountered. See: Internet Connection from Handheld
Where you encounter any error in relation to sending reads:	Go to "**Main Menu**", "**More**" & then "**Settings**". Select the "**Reads**" tab from the bottom of the screen and then click "**Upload Logs**".

	This sends specific information to Temetra for analysis & problem resolution.
Wireless Reading: The "Read Wireless" button is not available from the meter view screen.	Ensure your AMR device is currently configured properly in Temetra Reader firstly, See AMR configuration Temetra Reader. Failing that, you may need to check your initial settings for pairing the AMR with your Handheld via Windows Mobile.
ITRON COM Port 1 not displaying in Temetra Reader (*This applies to Psion Handheld's* ***only***)	If COM port 1 is not available for selection from the Settings/AMR page, a fix needs to be applied. On your Psion Handhelds main (Windows) screen, go to "**Start**" then" **Programs**" and click "**Launcher**".  Click the "**Fixes**" tab on the bottom of the screen and choose "**Fix Itron COM Port**", the fix will then be applied and the Handheld will reset. The option to select COM Port 1 should now be available from the Temetra Reader, AMR page in Settings.


Reader