MicroCorr 7

PDA Software User Manual

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Contents

Introduction

MicroCorr 7 builds on the proven leak detection performance of MicroCorr correlators. The system takes advantage of the latest technological developments for ease of use and miniaturization.

The PDA interface gives clear graphics and simple touch operation. The compact design brings portability and flexible deployment on site, even installing outstations below ground if necessary.

- **Easily used high visibility PDA**
- **Highly compact and portable**
- **High performance correlation**
- **Bluetooth communications**
- **All traditional correlator features**

The system comprises 2 high technology sensors, 2 compact transmitter outstations, and an interface unit with Bluetooth connection to a PDA.

The system is supplied with two outstations, two accelerometer sensors, interface unit, interconnecting leads, antennae and charger. Various PDA options can be supplied or the user can supply a suitable PDA if preferred.

A full range of accessories including hydrophone sensors are also available.

Powering Up

Outstations

To turn the Outstations on, press the button on the top of the units. Whilst the unit is switched on the incorporated LED will light up green.

The LED can also be used to indicate different operations:

With the Outstation switched off:

LED off = Unit is switched off

With the Outstation switched off and plugged in to charger:

LED flashing slowly = Battery is on charge

With the Outstation switched on:

LED lit continuously = Normal operation mode

LED lit with slow flashes = Battery low, remaining use of up to 2 hour

LED flashes continuously = Battery very low, remaining use of 10 minutes

Outstation will shut off automatically after 45 minutes use if battery charge is too low.

Basestation

To turn the Basestation on, press the button on top of the unit. After switching on the LED will flash to indicate initialization of the device. After several seconds the LED will switch to continuous mode indicating the unit is ready for operation.

As a power saving feature, the Basestation will switch off automatically if there is no communication with the PDA within 15 minutes.

Initial Set-up

Before using the MicroCorr 7 system the PDA has to be configured for use with the Bluetooth communications with the Basestation.

This procedure is only required to be followed once with each new Basestation. After setup, Bluetooth communication settings will be saved in the PDA.

Setting up Bluetooth differs slightly between what PDA is being used. The following example is based on a Dell Axim X51 PDA with Windows Mobile V5.0. Please refer to your own PDA operation manual for further details on configuration.

Setting up Bluetooth connection on a Dell Axim X51:

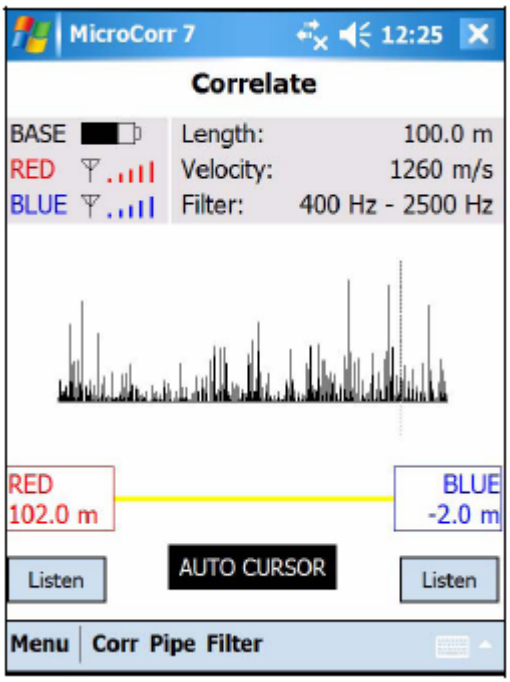
1. Turn on the MicroCorr 7 Basestation. Wait until LED is in solid state
2. Turn on PDA
3. From the “Start” menu, select “Settings” then “Communications”
4. Select the Bluetooth symbol
5. Mark the check box “Turn on Bluetooth”
6. Select the “Devices” tab and select “New Partnership”
7. The PDA will scan for any available Bluetooth devices and will list any found
8. Select MC7-XXXX (where XXXX represents the serial number of the Basestation) and click “Next”
9. Enter the “Passkey” = 0000 (4 zeros) and click “Next”
10. Check the box “Serial Port”
11. Click “Finish”
12. Select the “Com Ports” tab
13. Select “MC7-XXXX” and click “Next”
14. Select the required COM Port and click “Finish”
15. Check the new device (MC7-XXXX) and the configured COM Port is listed
16. Start the MicroCorr 7 application
17. Click “Menu” then “Settings”
18. From the drop down list make sure the correct COM Port is listed, change if necessary
19. Close the application. Bluetooth settings should now be saved

*License code can be obtained by emailing the serial number of the Basestation to support@palmer.co.uk

Features and Menu Options

When connecting the PDA to the Basestation for the first time, the PDA has to be configured for Bluetooth communications. Please refer to previous section for instructions.

After starting the MicroCorr 7 application the main screen appears as shown below (please note: actual screen shots may differ slightly with different versions of the software):



The displayed information on screen contains:

BASE

Battery Power Status

RED

Radio Signal Strength of the Red Outstation

BLUE

Radio Signal Strength of the Blue Outstation.

In the case of a turned off Basestation or broken communications with the Basestation, the above information will not be displayed.

Length

Total length of pipe being investigated

Velocity

Sound velocity dependant on selected pipe material and diameter. In the case of more than one pipe section is entered the average sound velocity will be displayed.

Filter

Frequency range of selected filter

Red + Distance Value

Distance from the leak position to the Red Outstation

Blue + Distance Value

Distance from the leak position to the Blue Outstation

Listen

Listen to the real-time noise of either Red or Blue Outstation by selecting the left or right Listen button. Stop listening by clicking the button again.

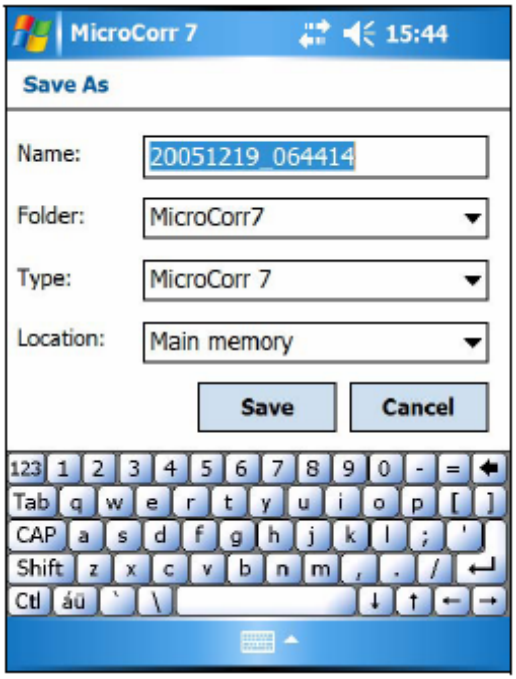
Cursor = Move the cursor by tapping on the correlation graph. Select Auto-Filter to select the maximum correlation i.e. the best leak noise

From the bottom menu command bar:

Menu:

File

Save	Saves the current correlation
Load	Loads a previously saved correlation
Delete	Deletes a previously saved correlation



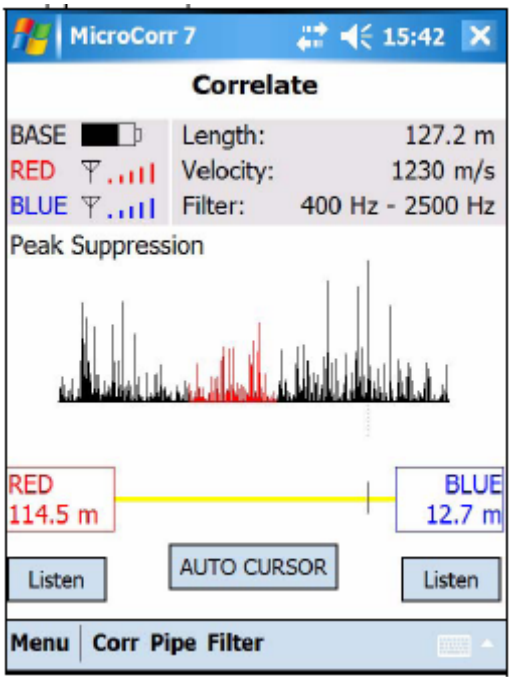
To open a previously saved correlation file, using the “File—Load” menu within the MC7 software, browse to the file location and select the .MC7 file you wish to open.

Correlation files can also be opened using the PC based MC7 software. Simply copy the files over and open using the PC version of the MC7 software.

Tools

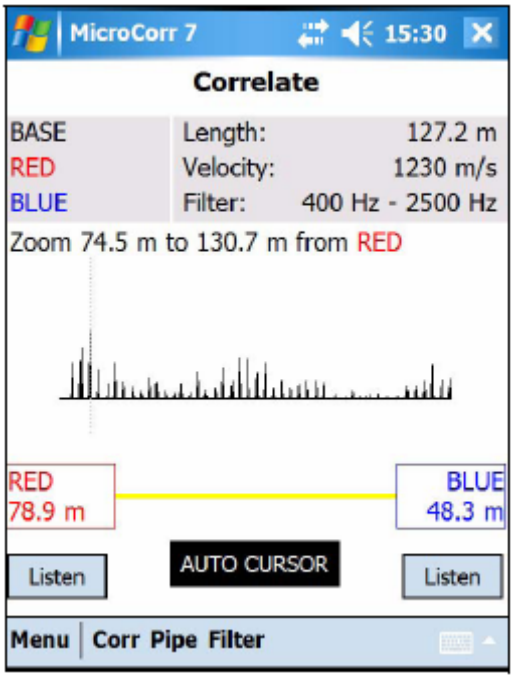
Peak Suppression

Allows user to eliminate unwanted peaks. Drag the stylus over the graph to select desired frequency range. A confirmation box will appear.



Zoom

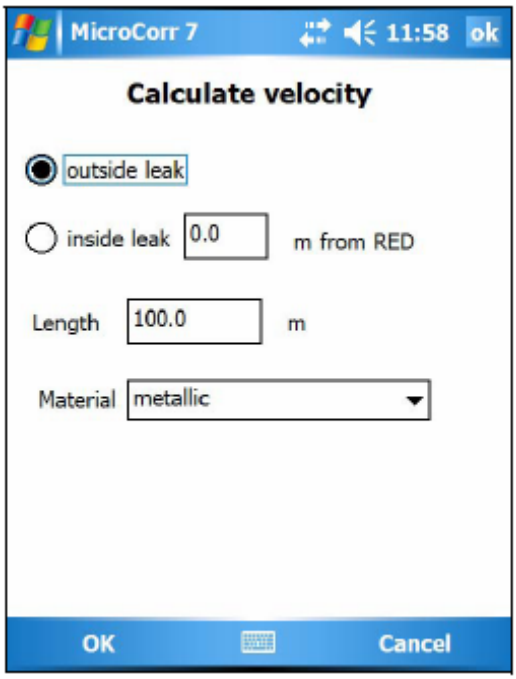
Zooms in or out of the correlation graph



Calculate Velocity

Calculate sound velocity by correlating a leak

Select “inside leak” if the leak is situated between the Red and Blue Outstations. If the leak is outside the Red and Blue Outstations select the “outside leak” option.



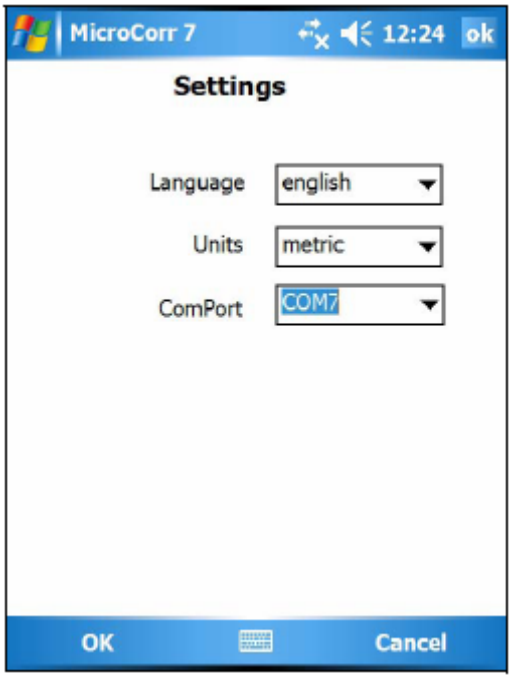
Enter the distance between the Red and Blue Outstations and select the material of the pipe. Tap “OK” for the new velocity to be calculated.

Settings

Language Changes the display language*

Units Select between imperial or metric measurements

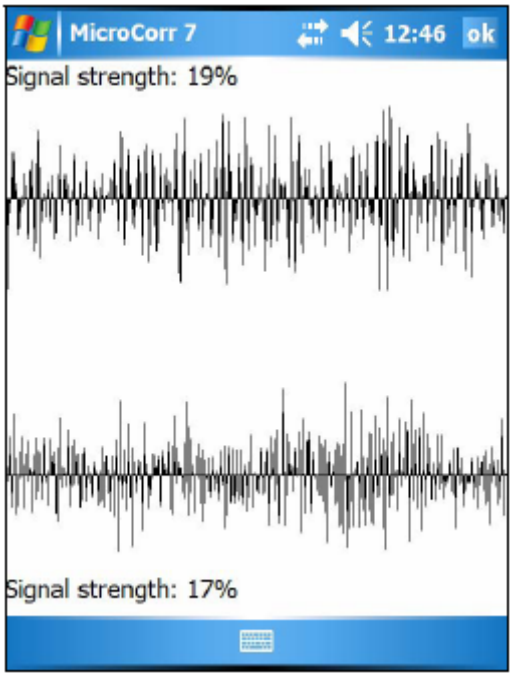
COM Port Select the COM Port for connection to the Basestation



*Note: language will not change until the MicroCorr 7 application has been restarted

Signals

Displays the radio signals and signal strength of the Outstations



Update

Upgrade the Basestation firmware should a new release become available

Connect Basestation

Re-establish Basestation communications

About

Displays the current software version

Exit

Exits the MicroCorr 7 software application

Using the MicroCorr 7 Application

Listen

To listen to either the Blue or Red Outstation, using the stylus pen, tap the “listen” button under the Outstation to be listened to. To stop listening, tap the same “listen” button again.

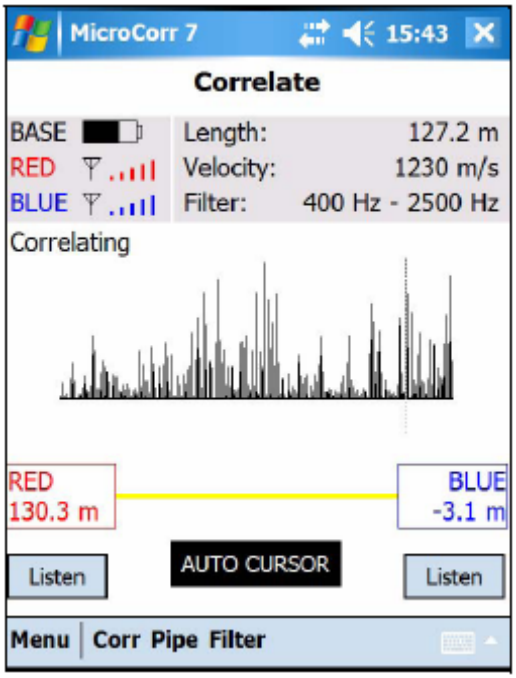
Cursor

You can move the cursor along the correlation graph to any point to display the properties at that point on the graph.

Tap “Auto Cursor” to home in on the maximum correlation result, this indicates the highest leak noise, thus indicating the leak itself.

Corr (Start) / Stop

Tapping “Corr” will start the correlation. The live correlation results including the graph will update automatically during correlation.

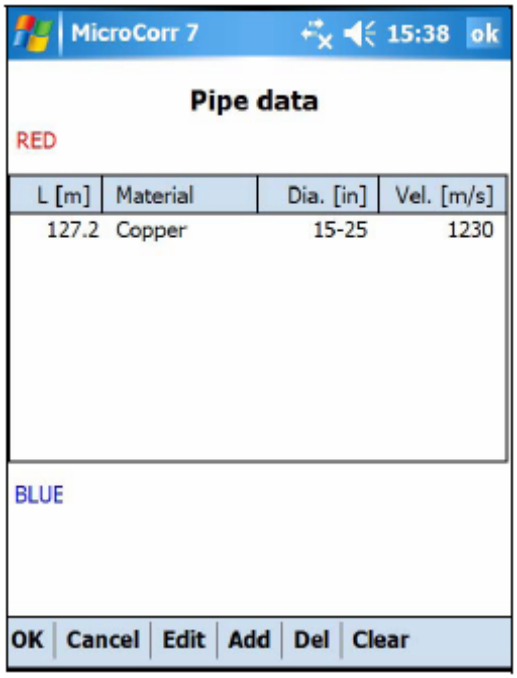


Correlation can be stopped at anytime by tapping “Stop”.

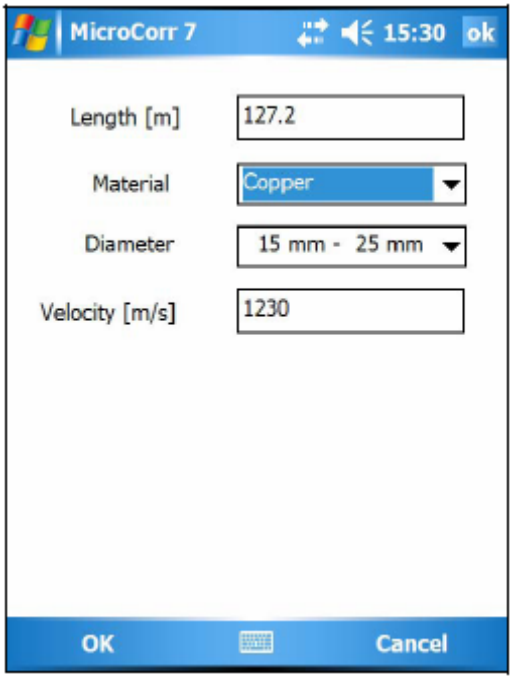
Correlated leak position will be displayed showing distance from each Outstation.

Pipe

Tap “Pipe” to configure the pipe properties under investigation. The software will always default to a preset pipe length and material.



To edit the properties, highlight the pipe and tap “Edit”. After entering the correct length, material and diameter, the software will automatically calculate the correct velocity.



Alternatively, you can override the automatic calculated velocity and manually add your own. Click “OK” once the pipe properties have been entered.

To add a new pipe section tap “Add”. Each entered pipe section will be shown in the pipe data list in the order they are added. First section at the top, latest at the bottom.

Starting from the Red Outstation at the top of the list, add each new pipe that flows towards the Blue Outstation.

To remove a section of pipe, highlight the desired section and tap “Del”.

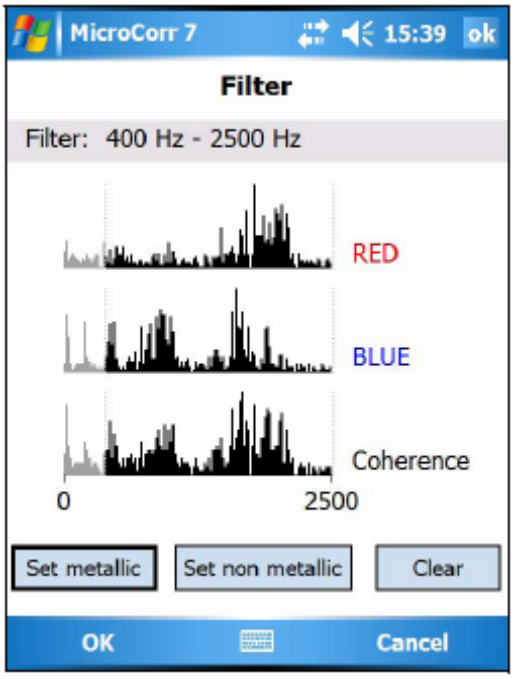
Tapping “Clear” removes all entered pipes leaving a default value pipe.

Filter

The filter screen displays information on the frequency range and the frequency analysis (FFT) displaying the Red, Blue and combined (Coherence) signal spectrums.

The frequency range:

No filters = 0Hz – 2500Hz
Metallic = 400Hz – 2500Hz
Non Metallic = 0Hz – 700Hz



To clear any set filters, tap the “Clear” button.

To manually filter the frequencies, tap on the graph and slide the cursor across the desired range. Greyed out frequencies will be dismissed from the results.

Confirm required frequency range by tapping “OK”. Correlation results will automatically be recalculated.

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Note

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