

## Leica Viva – Bluetooth Connection to Ohmex SonarMite Echo Sounder

The Ohmex SonarMite echo sounder is much like its predecessor, the Ohmex SonarLite, but uses Bluetooth, rather than a cable, to stream depths to the Leica CS15 Controller.

This guide will take you through configuring SmartWorx Viva to accept and record depths from the SonarMite via the Bluetooth connection.


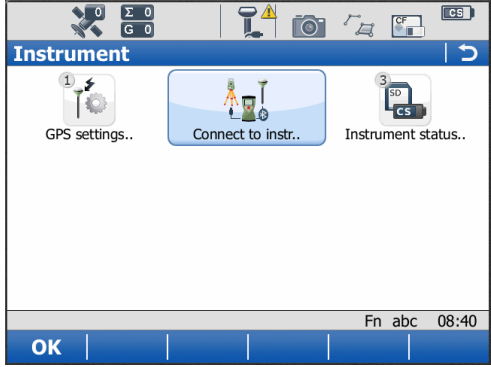
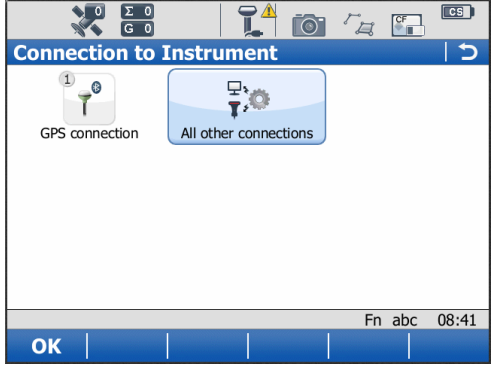
When you measure a GPS position, the most recently received echo sounder depth will be recorded as an Annotation to that point.

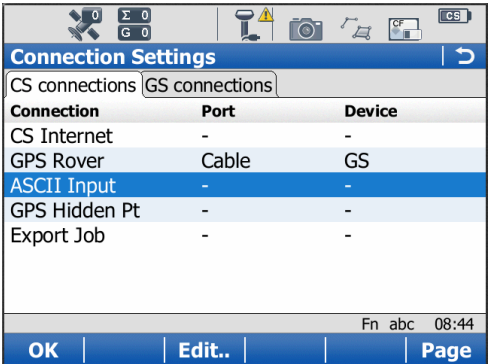
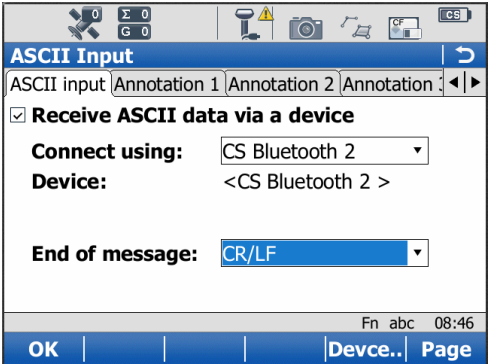
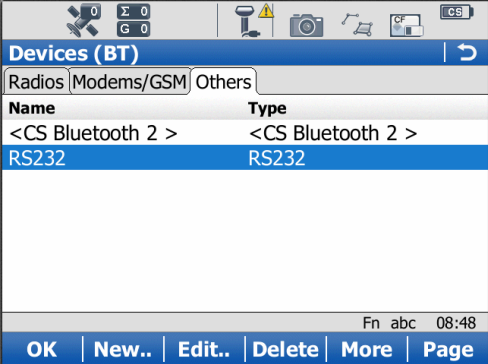
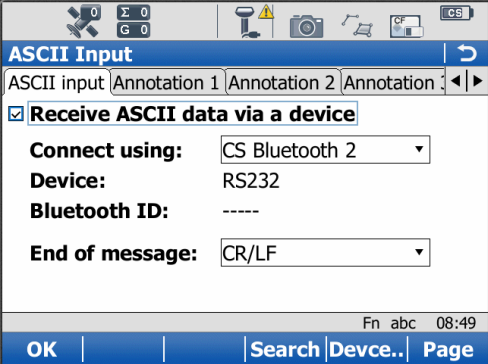


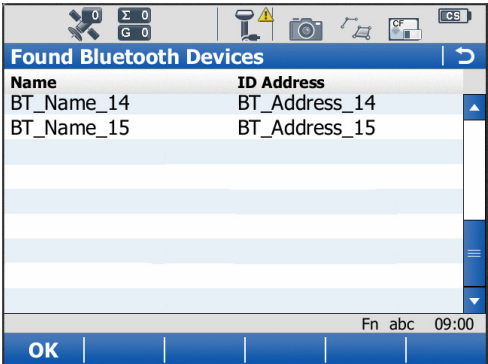
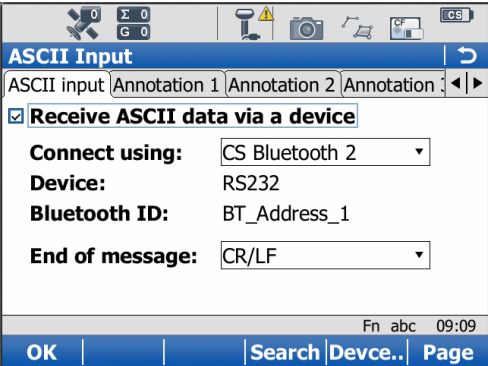
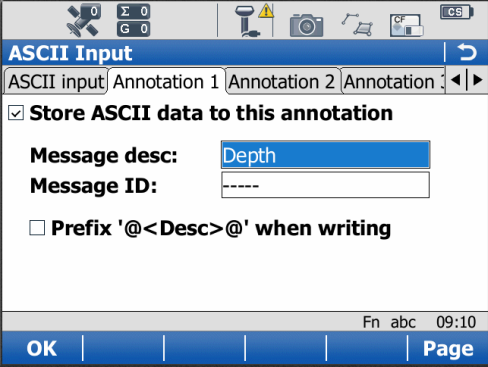
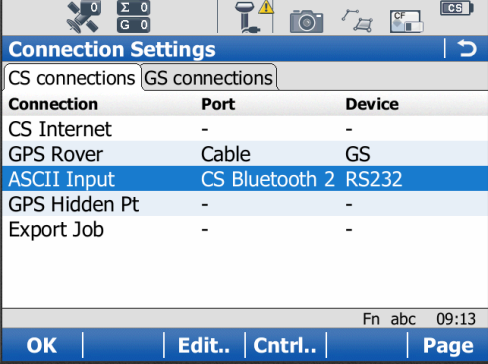
### Contents:

1. Configuring SmartWorx viva to connect to the Ohmex SonarMite echo sounder via Bluetooth
2. Configuring the Survey Screen to display and record measured depth
3. Configuring AutoPoints to display and record measured depth
4. Using the correct Format File to export a CSV coordinate file with measured depth in the 5<sup>th</sup> column

# 1. Configuring SmartWorx Viva to connect to the Ohmex SonarMite echo via Bluetooth

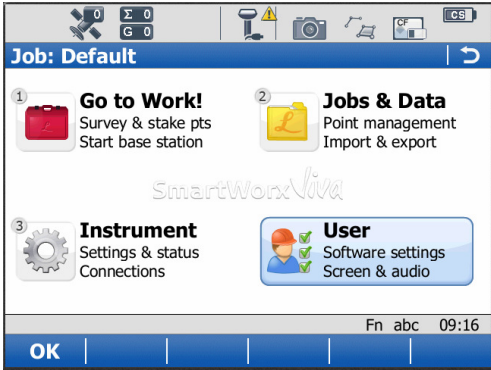
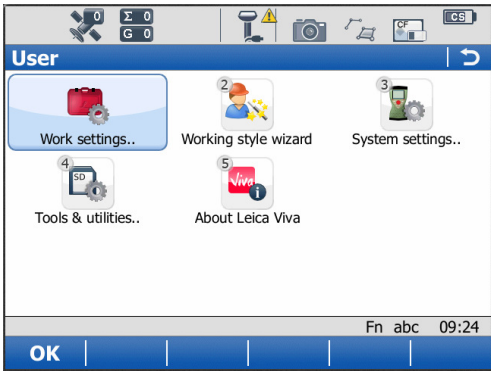
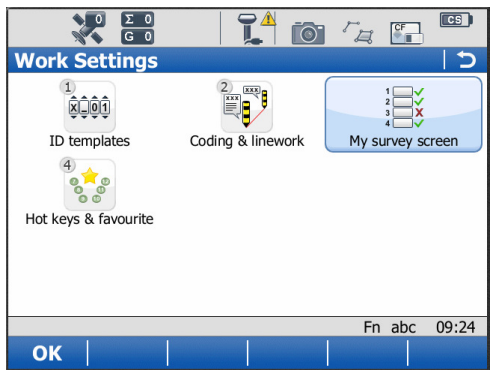
Step	Instruction & Screenshots
<p>1.1 <b>Instrument</b></p>	 <p>The screenshot shows the main menu of the SmartWorx Viva software. At the top, it displays 'Job: Default'. Below this, there are four numbered options: 1. 'Go to Work!' (Survey &amp; stake pts, Start base station), 2. 'Jobs &amp; Data' (Point management, Import &amp; export), 3. 'Instrument' (Settings &amp; status, Connections), and 4. 'User' (Software settings, Screen &amp; audio). The 'Instrument' option is highlighted with a blue border. The bottom of the screen shows a status bar with 'Fn abc 08:35' and an 'OK' button.</p>
<p>1.2 <b>Connect to instr..</b></p>	 <p>The screenshot shows the 'Instrument' menu. It has three numbered options: 1. 'GPS settings..', 2. 'Connect to instr..' (highlighted with a blue border), and 3. 'Instrument status..'. The bottom of the screen shows a status bar with 'Fn abc 08:40' and an 'OK' button.</p>
<p>1.3 <b>All other connections</b></p>	 <p>The screenshot shows the 'Connection to Instrument' menu. It has two numbered options: 1. 'GPS connection' and 2. 'All other connections' (highlighted with a blue border). The bottom of the screen shows a status bar with 'Fn abc 08:41' and an 'OK' button.</p>

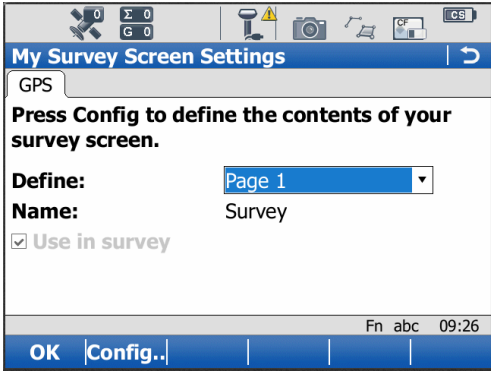
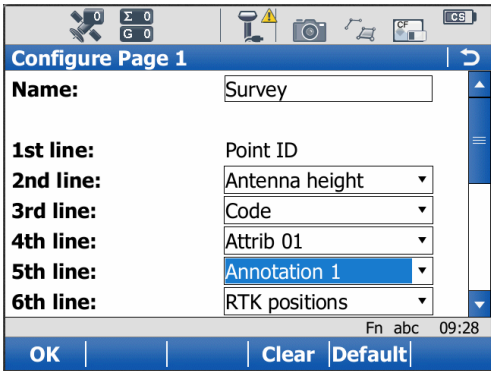
<p>1.4</p>	<p>Scroll down to <b>ASCII Input</b>. <b>F3 Edit..</b></p>	 <p>The screenshot shows the 'Connection Settings' screen with the 'ASCII Input' option highlighted in blue. The table below shows the connection details:</p> <table border="1"> <thead> <tr> <th>Connection</th> <th>Port</th> <th>Device</th> </tr> </thead> <tbody> <tr> <td>CS Internet</td> <td>-</td> <td>-</td> </tr> <tr> <td>GPS Rover</td> <td>Cable</td> <td>GS</td> </tr> <tr> <td>ASCII Input</td> <td>-</td> <td>-</td> </tr> <tr> <td>GPS Hidden Pt</td> <td>-</td> <td>-</td> </tr> <tr> <td>Export Job</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Connection	Port	Device	CS Internet	-	-	GPS Rover	Cable	GS	ASCII Input	-	-	GPS Hidden Pt	-	-	Export Job	-	-
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GPS Hidden Pt	-	-																		
Export Job	-	-																		
<p>1.5</p>	<p>Tick the box <b>Receive ASCII data via a device</b>. Connect using: <b>CS Bluetooth 2</b> End of message: <b>CR/LF</b> <b>F5 Devce..</b></p>	 <p>The screenshot shows the 'ASCII Input' screen with the checkbox 'Receive ASCII data via a device' checked. The configuration is as follows:</p> <ul style="list-style-type: none"> <li>Connect using: CS Bluetooth 2</li> <li>Device: &lt;CS Bluetooth 2 &gt;</li> <li>End of message: CR/LF</li> </ul>																		
<p>1.6</p>	<p>Select <b>RS232</b> <b>OK</b></p>	 <p>The screenshot shows the 'Devices (BT)' screen with the 'Others' tab selected. The 'RS232' device is highlighted in blue.</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>&lt;CS Bluetooth 2 &gt;</td> <td>&lt;CS Bluetooth 2 &gt;</td> </tr> <tr> <td>RS232</td> <td>RS232</td> </tr> </tbody> </table>	Name	Type	<CS Bluetooth 2 >	<CS Bluetooth 2 >	RS232	RS232												
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<CS Bluetooth 2 >	<CS Bluetooth 2 >																			
RS232	RS232																			
<p>1.7</p>	<p><b>F4 Search</b></p>	 <p>The screenshot shows the 'ASCII Input' screen with the 'Receive ASCII data via a device' checkbox checked. The configuration is as follows:</p> <ul style="list-style-type: none"> <li>Connect using: CS Bluetooth 2</li> <li>Device: RS232</li> <li>Bluetooth ID: -----</li> <li>End of message: CR/LF</li> </ul>																		

<p>1.8</p>	<p>Amongst the devices found in the Bluetooth search you'll see the SonarMite – its serial number will be displayed. Select the SonarMite and press <b>OK</b></p>	 <p>The screenshot shows a list of found Bluetooth devices. The list has two columns: 'Name' and 'ID Address'. The first two rows are: BT_Name_14 with ID Address BT_Address_14, and BT_Name_15 with ID Address BT_Address_15. The screen has a blue header 'Found Bluetooth Devices' and a bottom bar with 'OK' and 'Fn abc 09:00'.</p>																		
<p>1.9</p>	<p><b>F6 Page</b></p>	 <p>The screenshot shows the 'ASCII Input' configuration screen. The 'Receive ASCII data via a device' checkbox is checked. Below it, there are four settings: 'Connect using:' set to 'CS Bluetooth 2', 'Device:' set to 'RS232', 'Bluetooth ID:' set to 'BT_Address_1', and 'End of message:' set to 'CR/LF'. The screen has a blue header 'ASCII Input' and a bottom bar with 'OK', 'Search Device..', and 'Page'.</p>																		
<p>1.10</p>	<p>Tick the box <b>Store ASCII data to this annotation</b>. In the Message desc: box type in <b>Depth</b>. <b>OK</b></p>	 <p>The screenshot shows the 'ASCII Input' configuration screen. The 'Store ASCII data to this annotation' checkbox is checked. Below it, there are two settings: 'Message desc:' set to 'Depth' and 'Message ID:' set to '-----'. There is also an unchecked checkbox for 'Prefix '@&lt;Desc&gt;@' when writing'. The screen has a blue header 'ASCII Input' and a bottom bar with 'OK' and 'Page'.</p>																		
<p>1.11</p>	<p><b>OK</b> to return to the Main Screen</p>	 <p>The screenshot shows the 'Connection Settings' screen. It has two tabs: 'CS connections' and 'GS connections'. Below the tabs is a table with columns 'Connection', 'Port', and 'Device'. The 'ASCI Input' row is highlighted in blue. The table data is as follows:</p> <table border="1"> <thead> <tr> <th>Connection</th> <th>Port</th> <th>Device</th> </tr> </thead> <tbody> <tr> <td>CS Internet</td> <td>-</td> <td>-</td> </tr> <tr> <td>GPS Rover</td> <td>Cable</td> <td>GS</td> </tr> <tr> <td>ASCI Input</td> <td>CS Bluetooth 2</td> <td>RS232</td> </tr> <tr> <td>GPS Hidden Pt</td> <td>-</td> <td>-</td> </tr> <tr> <td>Export Job</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p>The screen has a blue header 'Connection Settings' and a bottom bar with 'OK', 'Edit..', 'Cntrl..', and 'Page'.</p>	Connection	Port	Device	CS Internet	-	-	GPS Rover	Cable	GS	ASCI Input	CS Bluetooth 2	RS232	GPS Hidden Pt	-	-	Export Job	-	-
Connection	Port	Device																		
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GPS Hidden Pt	-	-																		
Export Job	-	-																		

## 2. Configuring the Survey Screen to display measured depth


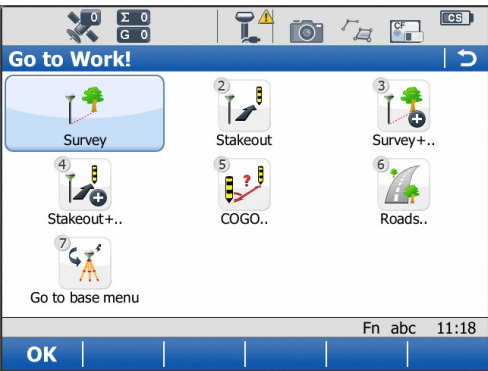
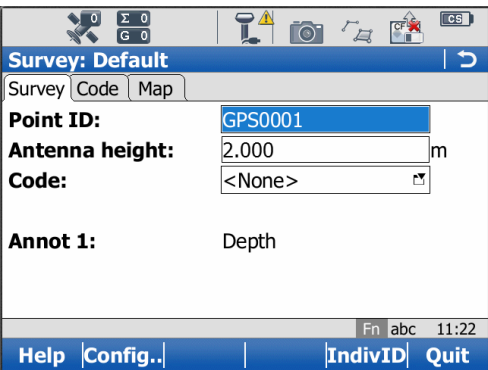
This section is not necessary if you intend to use the AutoPoints function to survey points automatically e.g. every 1 second. However, if you intend to press the Measure button every time you want to survey a point then you need to follow these steps.

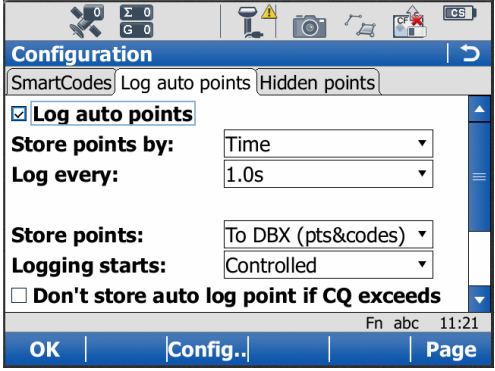
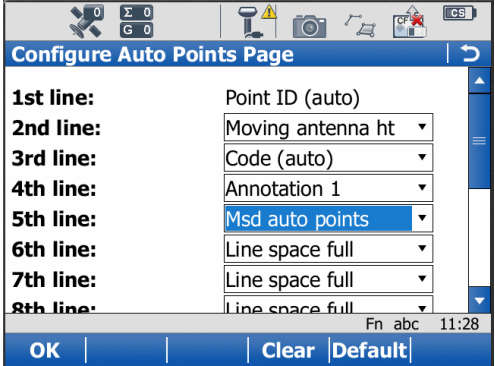
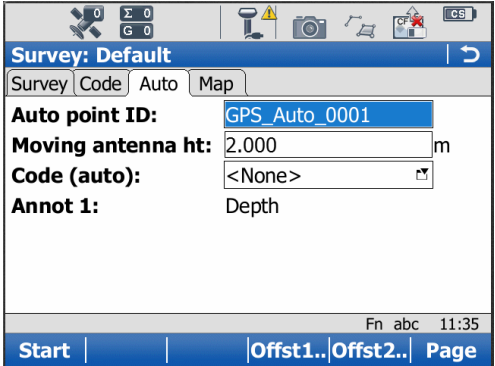
<p>2.1</p>	<p><b>User</b></p>	
<p>2.2</p>	<p><b>Work settings..</b></p>	
<p>2.3</p>	<p><b>My survey screen</b></p>	

<p>2.4</p>	<p><b>F2 Config..</b></p>	
<p>2.5</p>	<p><b>Point ID</b> is hard-coded to 1<sup>st</sup> line Put <b>Antenna</b> height into one of the display lines. Put <b>Annotation 1</b> into one of the display lines. If you intend to survey points with Codes and String Numbers you may choose to put <b>Code</b> and <b>Attrib 01</b> into 2 of the display lines. <b>OK</b> twice to return to the Main Screen</p>	

### 3. Configuring AutoPoints to display and record measured depth

This section is not necessary if you intend to press the Measure button every time you want to survey a point. However, if you intend to use the AutoPoints function to survey points automatically e.g. every 1 second then you need to follow these steps.

<p>3.1</p>	<p><b>Go to Work!</b></p>	
<p>3.2</p>	<p><b>Survey</b></p>	
<p>3.3</p>	<p>Press <b>Fn</b> then <b>F2 Config..</b></p>	

<p>3.4</p>	<p><b>F6 Page</b></p> <p>Tick the box <b>Log auto points</b> box.</p> <p>You'll probably want to stick with the defaults on this page (shown opposite).</p> <p>If you choose to log points at a higher rate than every 1 second you'll probably end up with too much data and the job will need to be exported to CSV in Leica Geo Office rather than directly on board the CS15 controller.</p>	
<p>3.5</p>	<p><b>F3 config..</b></p> <p>Set up the AutoPoints display something like the page opposite. It is good to include the <b>Moving antenna ht</b> and the number of <b>Msd auto points</b> you have surveyed.</p> <p>The <b>Annotation 1</b> will show the measured depth.</p> <p><b>OK</b> twice to return to the Survey screen.</p>	
<p>3.6</p>	<p>You are now ready to start surveying AutoPoints when you press <b>OK</b> to <b>Start</b></p>	



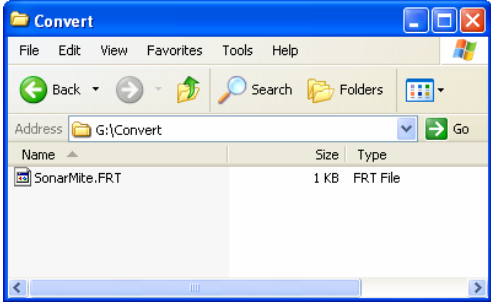
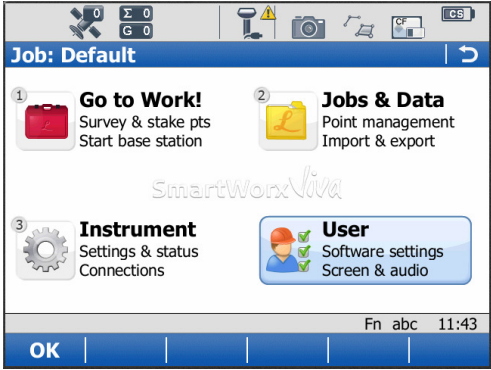
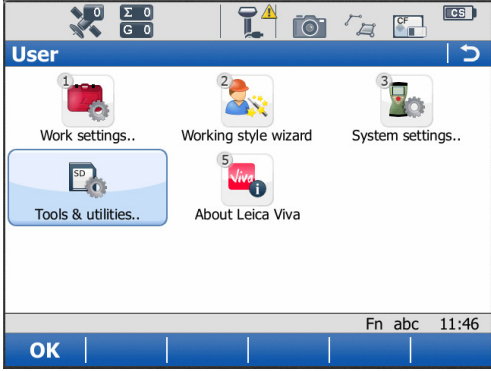
#### 4. Using the correct Format File to export a CSV coordinate file with measured depth in the 5<sup>th</sup> column

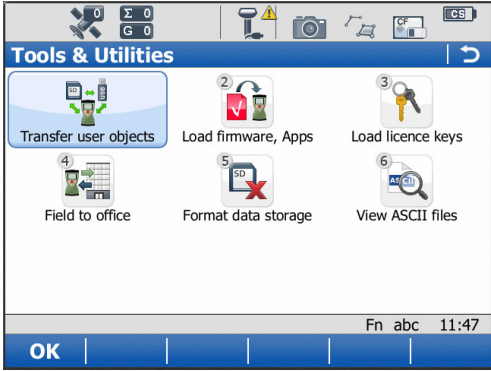
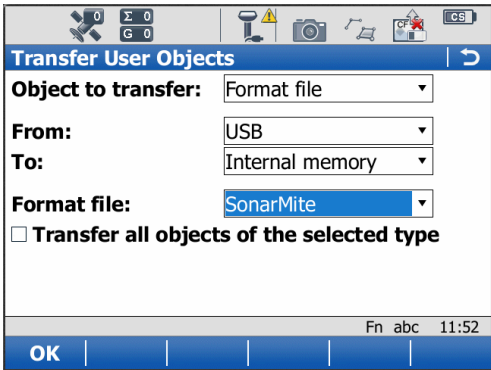
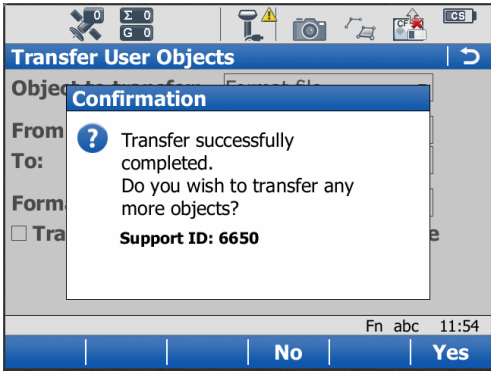
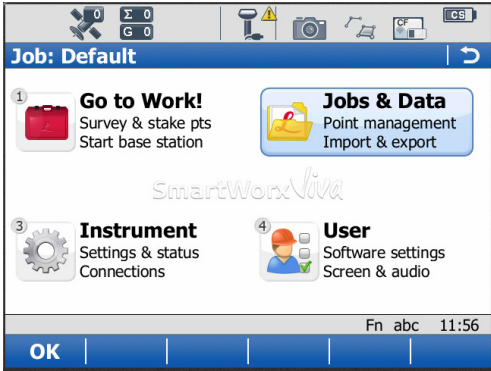
When you have completed your survey you will then probably want to export your data to a CSV file in the format:

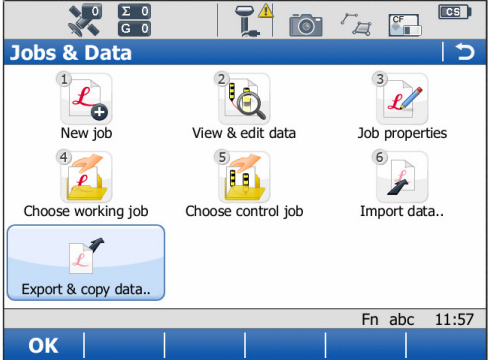
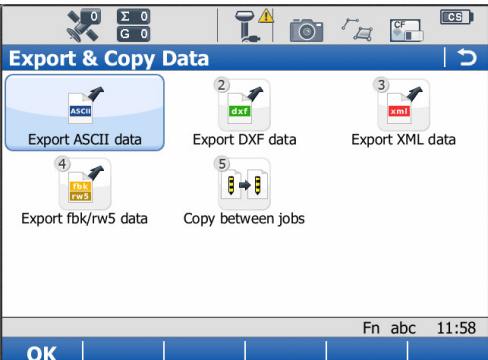
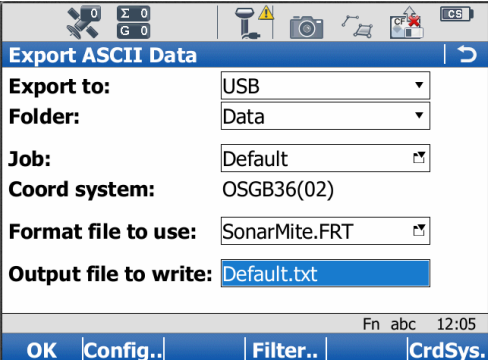
Pt ID, Easting, Northing, Orth Ht, Depth

Ask your Leica contact for the Format File called SonarMite.FRT which will export your survey data in this format.

To load and use this Format File onboard the CS15 controller, follow these steps.

<p>4.1</p>	<p>Copy the <b>SonarMite.FRT</b> file into a folder called <b>Convert</b> in your USB memory stick.  Put the memory stick into the bottom of the CS15 controller.</p>	
<p>4.2</p>	<p><b>User</b></p>	
<p>4.3</p>	<p><b>Tools &amp; utilities..</b></p>	

<p>4.4</p>	<p><b>Transfer user objects</b></p>	
<p>4.4</p>	<p>Object to transfer: <b>Format file</b>                  From: <b>USB</b>                  To: <b>Internal memory</b>                  Format file: <b>SonarMite</b>  <b>OK</b></p>	
<p>4.6</p>	<p><b>F4 No</b></p>	
<p>4.7</p>	<p><b>Jobs &amp; Data</b></p>	

<p>4.8</p>	<p><b>Export &amp; copy data..</b></p>	
<p>4.9</p>	<p><b>Export ASCII data</b></p>	
<p>4.10</p>	<p>By default your CSV file will be exported to the Data folder of your USB memory stick. Ensure the <b>SonarMite.FRT</b> format file is selected. <b>F2 Config..</b></p>	
<p>4.11</p>	<p>Type in <b>CVS</b> into the Default file extension box. <b>OK</b> twice to export your data to the USB memory stick in CSV format then press F4 No to say you don't want to export any more data.</p>	