# **RefSet Tablet**

Automatic Reference Line and Setout Program For Leica 1200 TPS

# **User Manual**

Version 1.3

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#### 1. RefSet Program Installation and Setup

#### GeoCom License Key Entry on TPS

- From the TPS start screen
- Select Tools then Licence Keys
- Select Manual Entry of Key for Method
- Arrow Down to *Key* and then enter the licence key
- Press F1 (CONT)

#### **TPS Bluetooth Setup**

- From the TPS start screen
- Select Config then Interfaces then GeoCOM Mode
- Press F3 (EDIT) to edit the interface setup
- Select Yes for the Use Interface setting
- Arrow down to *Port* and select **Port 3(BT)**
- Press F5 (DEVCE)
- Arrow down to **RS232 GeoCOM**
- Press F3 (EDIT) to edit the communication settings
- Press **F5** (**DEFLT**) to select the default settings which should be:
  - Baud Rate 19200
  - Parity None
  - Data Bits 8
  - *Stop Bit* **1**
- Press F1 (STORE) to save the settings
- Press F1 (CONT) then F1 (CONT) then F1 (CONT) to finish setup

#### **PC Bluetooth Setup**

#### TufTab a7230 with Toshiba Bluetooth Manager

- Make sure the TPS is turned on
- On the PC tap on **Start Bluetooth Bluetooth Settings**
- Tap on the New Connection button or tap on Bluetooth Add New Connection...
- Select *Custom Mode* and tap on **Next**
- When the TPS has been discovered it will appear in the list as <[Instrument Type] [Serial No] (eg: <TCRA1201+R1000 #260099)
- Select the TPS icon in the list and then tap on Next
- Enter the Bluetooth Passkey (PIN) as 0000 then tap on OK
- Select Serial Port at Please choose the service to use and tap on Next

- Check that the COM port is between COM1 to COM8, if not unselect *Use default COM port* and then select a COM port between COM1 to COM8
- Make sure Auto Connect is selected and tap on Next
- Tap Next to finish COM port setup
- Leave the Connection Name as is and tap on Next and then Finish
- Select the TPS icon in the *Bluetooth Settings* and then tap on **Bluetooth Connect** to connect to the TPS this should only have to be done once if *Auto Connect* was selected in the step above

#### PC with Windows7 Bluetooth Manager

- Make sure the TPS is turned on
- On the PC click on Start Control Panel Hardware and Sound Devices and Printers
- Click on Add a device
- When the TPS has been discovered it will appear in the list as <[Instrument Type] [Serial No] (eg: <TCRA1201+R1000 #260099)
- Select the TPS icon in the list and then click on Next
- Enter the *Pairing code* as **0000** then click on **Next** and then **Close**
- After the device has been successfully installed select the TPS icon in the list of devices and then right click and select *Properties*
- Select the *Hardware* tab
- Check that the COM port is between COM1 to COM8, if not click on **Properties** and then click on **Change Settings**
- Select the *Port Settings* tab and then click on **Advanced**
- Select a COM Port Number between COM1 to COM8
- Click on **OK** and then **OK** and then **OK**

#### PC with WindowsXP Bluetooth Manager

- Make sure the TPS is turned on
- On the PC click on Start Control Panel
- Double click on **Bluetooth Devices**
- Under the Devices tab click on Add
- Select *My device is set up and ready to be found* and then click on **Next**
- When the TPS has been discovered it will appear in the list as <[Instrument Type] [Serial No] (eg: <TCRA1201+R1000 #260099)
- Select the TPS icon in the list and then click on **Next**
- Select *Use the passkey found in the documentation* and enter the passkey as **0000** then click on **Next**
- Check that the *Outgoing COM port* number is between COM1 to COM8 and click on **Finish** and then **OK**

- If the COM port is not between COM1 to COM8, in the *Control Panel* double click on **System** then select the *Hardware* tab and click on **Device Manager**
- Double click on the Ports (COM & LPT) to display COM ports
- Double click on the current COM Port assigned to the TPS
- Select the Port Settings tab and then click on Advanced
- Select a COM Port Number between COM1 to COM8
- Click on **OK** and then **OK** and then close the *Device Manager*

#### **RefSet Tablet Installation on Tablet PC**

- Extract the *Install\_RefSet\_Tablet.exe* file from the zip file into any folder on the Tablet PC
- In Windows Explorer on the Tablet PC, double tap on the Install\_RefSet\_Tablet.exe file
- RefSet Tablet will then start to install
- Tap on Yes at the User Account Control screen to allow the program to install
- Follow the instructions to install the program to the hard disk
- An icon to start RefSet Tablet is placed on the desktop and in the Start menu

#### **RefSet Tablet Key File Installation on Tablet PC**

- Copy the **RefSet\_{serial number}.key** file to the \*Program Files*\*RefSet*\*RefSet Tablet* folder on the Tablet PC
- Repeat the procedure for other key files for each TPS if multiple instruments will be used with this Tablet PC

## 2. RefSet Program Configuration

- Start RefSet Tablet
- Tap or select **Program Configuration**

COM Port	Set to the same as that set in the Tablet PC in the <b>PC Bluetooth</b> <b>Setup</b> (eg: COM7)					
• Comms Settings	Baud Rate, Parity, Data Bits, Stop Bit					
	Set to the Set to the Setup (	he same as that set in the instrument in the <b>TPS Bluetooth</b> (eg: 19200, None, 8, 1)				
• Data File Type	Set to the	e type of data point file to use in RefSet:				
	STR GSI	Surpac string file Leica gsi data file				
• Data Folder	Set to the either be	e path name of the folder of data point files – This can on the Tablet PC or on a memory card				
	The Da	ta Folder must have two subfolders:				
	Data GSI	Surpac string files folder Leica gsi data files folder				
	(This is used in	the same folder structure as on the Leica CF data cards the TPS)				
• Log Setout Data	Set to Y setout in saved in	to save the automatic setout points to a log file. The points all automatic modes will be saved to this file which will be a folder named <b>Log</b> under the <b>Data Folder</b>				
• Log File Type	Set to the	e type of log file to save the automatic setout point data to:				
	STR CSV	Surpac string file Comma separated text file				

#### 3. RefSet Program Operation

#### **Program Startup**

- Turn on the TPS
- Setup the TPS using the normal station setup procedures (eg: Resection, etc)
- When station setup is complete TPS can be left in any screen display
- Turn on the Tablet PC
- Start RefSet Tablet on the Tablet PC
- Tap or select **Connect to TPS**
- When the connection is made the menu will change to **Disconnect from TPS** and the TPS will beep once and display a connected icon next to the Bluetooth icon
- If no connection is made *Unable to Connect to TPS* will be displayed, if this occurs:
  - Check TPS is still on, if not restart TPS and try to connect again
  - If TPS is still on then select **Quit** in RefSet Tablet and then restart RefSet Tablet and try to connect again
  - If there is still no connection then select **Quit** in RefSet Tablet and then shut down and restart the PC and try to connect again
- If during operation the TPS switches off (eg: flat battery) *No Connection to TPS* will be displayed in RefSet Tablet, if this occurs:
  - Replace the battery on the TPS and turn the TPS on
  - Wait until the TPS has finished its startup sequence
  - Tap Retry on the Check Connection screen in RefSet Tablet
  - The program should then reconnect to the TPS
  - Continue with the program operation
- Note: During operation the TPS is controlled by RefSet Tablet any settings changed on the TPS by the operator (eg: changing the EDM Mode, changing the Reflector Ht) will be overridden by the settings in RefSet Tablet to change these settings make the changes in RefSet Tablet
- At the end of the survey tap **Quit** to disconnect from the TPS and exit RefSet Tablet

#### **Remote Control Operation**

- During both the Refline and Setout programs the TPS may be turned remotely to point it at a specific position
- In the Refline or Setout program tap **Shift** then **Remote** to enter the remote mode
- Tap the direction buttons to move the TPS in that direction, each tap of the button will increase the speed of the TPS movement, tap the opposite direction button to decrease the speed of the TPS
- Tap **Stop** to stop the TPS at the required position
- Tap **Back** to return to the Refline or Setout program

#### 4. Refline

- With RefSet Tablet connected to the TPS
- Tap or select **Refline** on the start menu screen
- The *Refline Selection* screen will then be shown
- Select the *Data Job* to use from the list
- Select the Start Point and End Point of the refline from the lists OR
  - Select either the *Start Point* or the *End Point* list box
  - To enter the point coordinates from the keyboard tap **Input** and then enter the new *Point ID* and coordinates for the selected point, then tap **Cont**, the new point will then be stored in the data file
  - To measure a point tap **Meas**, then at the *Measure Point* screen, enter the new *Point ID* and then point the TPS to the point to measure and make sure a distance has been measured, then tap **Cont**, the new point will then be stored in the data file
- To manually enter a grade for the refline, select **Y** for *Enter Grade*?, then enter the grade to use (eg: 50 for up at 1 in 50 or -50 for down at 1 in 50). The refline will then go from the start point elevation towards the end point at the entered grade
- To display the refline details and the start and end point coordinates, tap on Info
- To start the refline measurement, tap **Cont**

) RefSet Tablet				RefSet Tablet						
<b>Refline Selection</b>	7	8	9	Refline		7	8	9		
Data Job	refset_test					Refline 1 - 2				
		4	5	6		Pt Increment 1		4	5	6
Start Point	1					^Offset	0.607			
End Point	2 🗠	1	2	3		^Horiz Line 4.756		1	2	3
						^Slope Line	4.797			
Enter Grade?	N (* )*	0	•	±		^Height 1.970		0	•	±
Grade 1:	0					^Perp Height	1.970			
		CE	1	Ent		Refl Ht	0.000	CE	1	Ent
Cont Input Meas	Config Info Quit		Ļ	→		Auto+ Dist	Next Line New Line Shift	←	Ļ	$\rightarrow$

Refline Selection Screen

(Showing Start Point selected for Input or Meas)

Main Refline Screen

- Tap NewLine to return to the *Refline Selection* screen to enter new refline points
- Tap **NextLine** to go to the next refline by incrementing the refline start and end points by the *Pt Increment* value (eg: if *Pt Increment* is 1 then refline will change from 1-2 to 2-3, if *Pt Increment* is 2 then refline will change from 1-2 to 3-4, if *Pt Increment* is -1 then refline will change from 2-3 to 1-2)
- Tap Shift then Quit to exit refline and return to the main menu screen

RefSet Tablet			🔮 RefSet Tablet			🔮 RefSet Tablet		
Refline - Auto Refline			Refline - Auto Hole 📃			Refline - Auto Grade		
Refline	1 - 2		Refline	1 - 2		Refline	1 - 2	
Pt Increment	1		Pt Increment	2		Pt Increment	2	
Auto Interval	1.000					Auto Interval	1.000	
Auto Offset	0.000		^Offset	0.607		Auto Height	1.500	
At End Of Line	Continue		^Slope Line	4.797		At End Of Line	Continue	
^Offset	0.607		^Perp Height	1.970		<b>^Horiz Line</b>	4.756	
^Horiz Line	4.756					^Height	1.970	
Refl Ht	0.000		Refl Ht	0.000		Refl Ht	0.000	
ARef- Dist	Next Line New Line Shift		AHole- Dist	Next Hole New Line Shift		AGrad- Dist	Next Line New Line Shift	

Auto Refline Screen

Auto Hole Screen

Auto Grade Screen

#### Auto Grade Line Setout

- Set up the refline start and end points using the design string points or use the **Meas** function to measure the points and then manually enter a grade in the *Refline Selection* screen, to extend an existing grade line if no design is to be used (eg: ore drives)
- Tap Auto+ then tap AGrade+ to turn on auto grade and go to the auto grade screen
- Check the *Auto Height* setting and set to the refline height offset that is to be set out (eg: 1.500 for a grade line 1.5m above the design)
- Point the TPS at the wall at the approximate position to start the setout and then tap on **Dist** to start measuring and start the auto grade setout
- The TPS will then move and setout the *^Height* value that has been set in the *Auto Height* setting (eg: 1.500), to within the *AGrade Height Accuracy* set in the refline configuration (eg: 0.025m), near the start position
- When the refline has been setout the TPS will beep and flash the guide light to indicate that the auto setout point has been reached
- The TPS will then move along the refline at the set *Auto Interval* value (eg: 1.0m intervals), and setout each interval
- At the end point of the refline the auto setout function will respond according to the setting in *End Of Line* on the auto grade screen
  - If set to *Continue* the auto setout will continue past the ref line end point
  - If set to *Stop* the auto setout will stop near the ref line end point
  - If set to *Next Line* the auto setout will stop near the ref line end point, then will change to the next refline by incrementing the refline start and end points using the *Pt Increment* value (as when the **NextLine** button is tapped), auto grade setout will then continue using the new refline and setout the *Auto Height* value
- To stop auto grade setout, tap the **Stop** button
- To turn auto grade setout off, tap the AGrade- button

#### **Auto Refline Setout**

- Tap Auto+ then tap ARef+ to turn on auto refline setout and go to the auto refline screen
- Check the *Auto Offset* setting and set to the refline offset that is to be set out (eg: 0.000 for the centreline)
- Point the TPS at the wall or backs at the approximate position to start the setout and then tap on **Dist** to start measuring and start the auto refline setout
- The TPS will then move and setout the *^Offset* value that has been set in the *Auto Offset* setting (eg: 0.000), to within the *Auto Accuracy* set in the refline configuration (eg: 0.025m), near the start position
- When the refline has been setout the TPS will beep and flash the guide light to indicate that the auto setout point has been reached
- The TPS will then move along the refline at the set *Auto Interval* value (eg: 1.0m intervals), and setout each interval
- At the end point of the refline the auto setout function will respond according to the setting in *End Of Line* on the auto refline screen
  - If set to *Continue* the auto setout will continue past the refline end point
  - If set to *Stop* the auto setout will stop near the refline end point
  - If set to *Next Line* the auto setout will stop near the refline end point, then will change to the next refline by incrementing the refline start and end points using the *Pt Increment* value (as when the **NextLine** button is tapped), auto refline setout will then continue using the new refline and setout the *Auto Offset* value
- To stop auto refline setout, tap the **Stop** button
- To turn auto refline setout off, tap the **ARef** button

#### **Auto Hole Setout**

- Set up the refline start and end points to be the collar and toe points of the drill hole
- Tap Auto+ then tap AHole+ to turn on auto hole setout and go to the auto hole screen
- Point the TPS at the wall or backs at the approximate position of the hole
- Tap on **Dist** to start measuring and to start the auto hole setout
- The TPS will then move and setout the hole collar position by getting the *^Offset* and *^Perp Ht* values on the auto hole setout screen to zero, within the *Auto Accuracy* set in the refline configuration (eg: 0.025m)
- When the hole has been setout the TPS will beep and flash the guide light to indicate that the auto setout point has been reached
- The program will then change to the next refline by incrementing the refline start and end points using the *Pt Increment* value (as when the **NextLine** button is tapped), and will then setout the collar position of that hole
  - Note: The *Pt Increment* value is set to 2 when the **AHole** function is started
- To stop auto hole setout, tap the **Stop** button
- To turn auto hole setout off, tap the AHole- button

RefSet Tablet			RefSet Tablet		1	🔮 RefSet Tablet		
Refline - Auto Ring			Refline - Auto Ring 📃 🔤			Refline - Auto Ring		
Refline	1 - 2		Refline	1 - 2		Refline	1 - 2	
Pt Increment	1		Pt Increment	1		Pt Increment	2	
Rig Laser O/S	1.000		Rig Laser O/S	1.000		Rig Laser O/S	1.000	
			Ring Spacing	1.500				
Ring RefPt	2 🔷		Ring Number	2 🔷		^Laser Line	-0.393	
^Laser Line	0.215		^Laser Line	2.257		^Height	1.970	
^Height	1.970		^Height	1.970				
Refl Ht	0.000		Refl Ht	0.000		Refl Ht	0.000	
ARing- Dist	Next Ring New Line Shift		ARing- Dist	Next Ring New Line Shift		ARing- Dist	Next Ring New Line Shift	

ARing by Ref Points Screen

ARing by Ring Spacing Screen

ARing by Ref Lines Screen

### Auto Ring Setout

- The auto ring setout method can be set in the *Refline Configuration* and the setup of the data points for each method can be seen in the examples below.
- The *Ref Points* method needs a point for the start and end of the refline and reference points somewhere on each ring, these points do not have to be on the centreline
- The *Ring Spacing* method only requires a point for the start and end points of the refline, however the start point needs to be on the first ring and the ring spacing needs to be consistent for the entire ring markup. The point number of the start point should also match the ring number of the first ring if possible.
- The *Ref Lines* method needs two points for each ring line and needs to follow a consistent numbering system (eg: all the start points to the right of the refline and all the end points to the left of the refline)



# Auto Ring Setout by Ref Points

- Set up the refline with the start and end points (in the example above the start point would be 1 and the end point would be 7)
- Tap Auto+ then tap ARing+ to turn on auto ring setout and go to the auto ring screen

- On the auto ring setout screen select the *Ring RefPt* of the ring to setout (in the example above set it to point 2 to start setting out the rings at ring 1)
- Point the TPS at the wall at the approximate position of the ring
- Tap on **Dist** to start measuring and to start the auto ring setout
- The TPS will then move and setout the ring laser line position by getting the *^Laser Line* value on the auto ring setout screen to zero, to within the *Auto Accuracy* set in the refline configuration (eg: 0.025m), it will also setout the same *^Height* value as the start point, to within the *ARing Height Accuracy* set in the refline configuration (eg: 0.2m)
- When the ring laser line has been setout the TPS will beep and flash the guide light to indicate that the auto setout point has been reached
- The program will then increment the *Ring RefPt* value by the *Pt Increment* value and then setout the laser line of the next ring (in the example above if the *Pt Increment* is set to 1 the *Ring RefPt* will increment to 3 and setout the laser line of ring 2), the *Pt Increment* can be set to -ve values to decrement the *Ring RefPt* values
  - Note: The *Pt Increment* value is automatically set to 1 when the **ARing** by ref points function is started
- To stop auto ring setout, tap the **Stop** button
- To turn auto ring setout off, tap the **ARing-** button

#### Auto Ring Setout by Ring Spacing

- Set up the refline with the start and end points (in the example above the start point would be 1 and the end point would be 2), the start point needs to be located on the first ring and if possible needs to have the same number as the first ring
- Tap Auto+ then tap ARing+ to turn on auto ring setout and go to the auto ring screen
- Check the *Rig Laser Offset* setting on the auto ring setout screen, +ve values move the laser lines forward along the refline, -ve values move the laser lines back along the refline (in the example above it would be set to a negative value)
- Check the *Ring Spacing* setting on the auto ring setout screen and set to the distance between the rings
- On the auto ring setout screen select the *Ring Number* of the ring to setout. The numbering of the rings starts from the start point number and increases towards the end point for the number of rings between the start and end point (in the example above the ring numbers would start at 1 and go to 5)
- Point the TPS at the wall at the approximate position of the ring
- Tap on **Dist** to start measuring and to start the auto ring setout
- The TPS will then move and setout the ring laser line position by getting the *^Laser Line* value on the auto ring setout screen to zero, to within the *Auto Accuracy* set in the refline configuration (eg: 0.025m), it will also setout the same *^Height* value as the start point, to within the *ARing Height Accuracy* set in the refline configuration (eg: 0.2m)

- When the ring laser line has been setout the TPS will beep and flash the guide light to indicate that the auto setout point has been reached
- The program will then increment the *Ring Number* value by the *Pt Increment* value and then setout the laser line of the next ring (in the example above if the *Pt Increment* is set to 1 the *Ring Number* will increment to 2 and setout the laser line of ring 2), the *Pt Increment* can be set to –ve values to decrement the *Ring Number* values
  - Note: The *Pt Increment* value is automatically set to 1 when the **ARing** by ring spacing function is started
- To stop auto ring setout, tap the **Stop** button
- To turn auto ring setout off, tap the ARing- button

#### Auto Ring Setout by Ref Lines

- Set up the refline with the start and end points of the first ring (in the example above the start point would be 1 and the end point would be 2)
- Tap Auto+ then tap ARing+ to turn on auto ring setout and go to the auto ring screen
- Check the *Rig Laser Offset* setting on the auto ring setout screen, +ve values move the laser lines to the right of the ring, -ve values move the laser lines to the left of the ring (in the example above it would be set to a negative value)
- Point the TPS at the wall at the approximate position of the ring
- Tap on **Dist** to start measuring and to start the auto ring setout
- The TPS will then move and setout the ring laser line position by getting the *^Laser Line* value on the auto ring setout screen to zero, to within the *Auto Accuracy* set in the refline configuration (eg: 0.025m), it will also setout the same *^Height* value as the start point, to within the *ARing Height Accuracy* set in the refline configuration (eg: 0.2m)
- When the ring laser line has been setout the TPS will beep and flash the guide light to indicate that the auto setout point has been reached
- The program will then change to the next refline by incrementing the refline start and end points using the *Pt Increment* value (as when the **NextLine** button is tapped), and will then setout the *^Laser Line* position of the next ring
  - Note: The *Pt Increment* value is automatically set to 2 when the **ARing** by ref lines function is started
- To stop auto ring setout, tap the **Stop** button
- To turn auto ring setout off, tap the **ARing-** button

## 5. Refline Configuration Settings

EDM Program	The EDM program to use in refline					
	RL-TRK RL-STD	Reflectorless tracking Reflectorless standard				
• Start Measure?	Start distance	e measuring when refline starts				
• Auto Accuracy	Sets the accu to 0.025 the to the next po	racy at which points are setout in auto modes (eg: if set TPS will get the points to within 25mm before moving pint)				
• ARing Height Acc	Sets the accu (eg: if set to 200mm of the	aracy at which the $^{Height}$ is setout in the ARing mode 0.200 the TPS will setout the laser lines to within e $^{Height}$ of the first laser line setout)				
• AGrade Height Acc	Sets the accu	Sets the accuracy at which the <i>^Height</i> is setout in the AGrade mode				
• Auto Wait (secs)	Sets the time the TPS will stop on an auto setout point (eg: if set to 5 the TPS will wait 5 seconds after it sets out a point before it moves on to the next point)					
• Auto Interval	Sets the inte modes	erval between setout points in the ARef and AGrade				
• ARef S/O Offset	The default Auto Offset value to setout in auto refline mode					
• AGrade S/O Height	The default Auto Height value to setout in auto grade mode					
• Auto End Of Line	Sets the beh refline is read	aviour of the auto setout mode when the end of the ched in the ARef and AGrade modes				
	Stop Continue Next Line	Stops auto setout at the end of the refline Continues auto setout past the end of the refline Increments to the next refline at the end of the current refline				
• Auto Ring Method	The ring seto	ut method in auto ring mode				
• Rig Laser O/S	The default Rig Laser O/S value in auto ring mode					
• Ring Spacing	The default Ring Spacing value in auto ring mode					

🔮 RefSet Tablet		a RefSet Tablet		RefSet Tablet	
Setout Selection		Setout - Polar		Setout - Auto Se	tout 📃
Data Job	refset_test	Point ID	1	Point ID	1
		Pt Increment	1	Pt Increment	1
Point ID	1 • •				
		^HZ	-0° 00' 02"	^Length	3.439 Away
Northing	101.634	^HDist	3.439 Away	^Cross	0.001 Right
Easting	95.205	^Height	-2.063 Cut	^Height	-2.063 Cut
Elevation	98.400				
		Refl Ht	0.000	Refl Ht	0.000
Cont Input	Config	Auto+ Dist	Next New Point Shift	Auto- Dist	Next New Point Shift

Setout Selection Screen

Polar Setout Screen

Ortho Setout with Auto on

#### 6. Setout

- With RefSet Tablet connected to the TPS
- Tap **Setout** on the main menu screen
- The Setout Selection screen will then be shown
- Select the *Data Job* to use from the list
- Select the *Point ID* from the list <u>OR</u>
  - To enter the point coordinates from the keyboard tap **Input** and then enter the coordinates for the point, then tap **Cont**, the new point will then be stored in the data file
- To start the point setout, tap **Cont**
- The TPS will then turn towards the setout point if *Auto Posit* is set to **Y** in the setout config, and will start measuring if *Start Measure* is set to **Y** in the setout config
- Tap NewPt to return to the Setout Selection screen to enter a new setout point
- Tap NextPt to go to the next point by incrementing Point ID by the Pt Increment value
- Tap **Shift** then **Pos2D** (or **Pos3D** or **PosPP3D**) to position the TPS telescope back to the setout point, the positioning method is set by the *Posit Mode* setting in the setout configuration and has three modes
- Tap **Shift** then **Disp** to toggle the setout mode between *Polar* and *Ortho*
- Tap **Shift** then **Quit** to exit setout and return to the main menu screen

#### **Auto Setout**

- Tap **Auto**+ to turn on auto setout mode
- If distance measuring is not active, tap on **Dist** to start measuring and start the auto setout
- The TPS will then setout the point (ie: get the *^HDist* to zero) to within the *Auto Accuracy* set in the setout configuration (eg: 0.025m)
- When the point has been setout the TPS will beep and flash the guide light to indicate that the auto setout point has been reached

- The program will then change to the next setout point by incrementing the *Point ID* using the *Pt Increment* value (as when the **NxtPt** button is tapped), and will then setout the position of that point
- To stop auto setout, tap the **Stop** button
- To turn auto setout off, tap the Auto- button

#### 7. Setout Configuration Settings

• Default Mode	The default setout display mode
	PolarDisplay shows ^Hz, ^HDist and ^HeightOrthoDisplay shows ^Length, ^Cross and ^Height
• EDM Program	The EDM program to use in setout
	<b>RL-TRK</b> Reflectorless tracking <b>RL-STD</b> Reflectorless standard
• Start Measure?	Start distance measuring when setout starts
• Posit Mode	Method of positioning the TPS telescope
	<ul> <li>2D Setout point using horizontal coords only</li> <li>3D Setout point using horizontal and vertical coords</li> <li>PP3D Setout point using horizontal coords and vertical coord of previous point</li> </ul>
• Auto Posit	Position the TPS telescope when setout starts
• Auto Accuracy	Sets the accuracy at which points are setout in auto modes (eg: if set to 0.025 the TPS will get the points to within 25mm before moving to the next point)
• Auto Wait (secs)	Sets the time the TPS will stop on an auto setout point (eg: if set to 5 the TPS will wait 5 seconds after it sets out a point before it moves on to the next point)