

# **Quick Start Guide**



# Leica 1203+ in Spatial Analyzer

## Overview

Spatial Analyzer (SA) interfaces with the Leica 1203+ through the Theodolite Manager via a Bluetooth or RS232C (Serial Port) connection. This quick start guide will cover the operation of the Leica 1203+ inside of Spatial Analyzer.

## **Establishing Bluetooth Connection on PC**

• Use Bluetooth wizard installed on PC to create a new connection. Be sure the Leica 1203+ is powered on.

Bluetooth Settings	
Bluetooth View Help	
	😵 Bluetooth
Bluetooth Travel Mouse	Create New Connection
New Connection	🕒 Detai) 🔀 Delete

• The Bluetooth wizard will search for the device.



• The Bluetooth manager will complete the connection and display the COM number being used. Remember this number as it is needed inside of SA to establish connection. If prompted for a password just use "0000"

Add New Connection Wizard	
COM port setting	Note the COM number, this will be needed later in SA Setup of COM40 complete. Setup application software and driver if needed.
	<back next=""> Cancel</back>

• Now the Leica 1203+ is a recognizable connection for Bluetooth. Each time the Leica 1203+ is powered the user must enter the Bluetooth manager and activate the connection.



## **Running the Leica 1203+ in Spatial Analyzer**

• Add the Leica 1203+



• Select the Lecia 1203+ and pick instrument options.



• Run the Theodolite Manager and select new setup

* *			
	AICON ProCam 3D Probe		
	ArcSecond System		
	Auxiliary Data Interface		
	GSI V-STARS Photogrammetry System		
	KRYPTON SpaceProbe		
	Laser Projector		
	Laser Trackers		
	Metris Laser Radar (LRDriver)		
	Metron Scanner		
	METRONOR Portable Measurement System		
	Minolta Scanner		
	Portable CMM Arms		
	Theodolite Manager		
	UTIM Theodolites		
	Leica T-Scan		
	Faro Scanner LS		
	ScAlert Temperature Probe		
	API Laser Rail XD		

• Select New Setup and then Add.

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	<- Add
	-> Remove
neodolite Manager 🛛 🚦	
New Setup	
 Last Setup	
Other Setup	ו

• Select the instrument type and the Comm Port. This port was displayed in the Bluetooth manager during the creation of the connection. Then select the instrument in the available Spatial Analyzer list. Once connected the Leica 1203+ interface will display.

	SA#0 Leica TCRP1203+ Co 🔛
Add Instrument	Group: Group
Theodolite Connection	Target: Target
Type Leica TCRP1203+ 💌 🗲 🗕	Angles Only 💿 Distance On
Comm Port Com40 💌 🔶	Query Record [F3]
SpatialAnalyzer Connection Refresh	
Remote Monitor :800:     Remote Window Viewer :6997:     WILL-M4300 (192.168.1.103)     Instrument Interface Modules     Theodolite Manager     Untitled     A::0 - Leica TCRP 1203+ Total State     Remote Monitor :2545:     Remote Window Viewer :2544:	Acquire Track Record Reverse Face Set Rotation Auto Measure SA Geometry
User Name	Inactive      Active     Settings
Connect Cancel	

- The following topics will be covered:
  - Selecting a Reflector
  - Single Point Measurement
  - Perimeter Scanning
  - Target Tracking
  - Auto Measure Points

### **Selecting Target Reflector**

• Select the options button in the interface

SA#0 Leica TCRP1203+ 🛛 Co 🔀		
Group:	Group	BJ
Target:	Target	<u> </u>
O Ang Qu	gles Only	On

• Select the "Change Reflector" button.

Leica Options	
Tilt Compensator	OK Cancel
Targeting Properties	
Reflector Type: Reflectorless	ange Reflector
Automation Options	
Edit Automation Options	

• Select desired reflector type

Reflector Type		X
Reflector Type Prism Sheet Reflectorless		OK Cancel
Prism Constant	-30	mm

#### **Single Point Measurement**

- Specify Group and Target Name
- Sight Target
- Select Query or Record (F3) in the interface. Query will force the instrument to calculate a measurement. Record (F3) will send the measurement to SA.

SA#0 Le	ica TCRP1203+ Co	🔀
Group:	Group	83
Target:	Target	
O Ang Qu	gles Only 💿 Distance lery Record [F3]	On

### **Perimeter Scanning**

• Measure points defining the area to scan.



• Construct a perimeter from the measured point in SA under Construct>>Perimeter



• Two types of perimeters exist in SA, open and closed. A single perimeter can be changed from open to closed in the perimeter properties dialog.

Perimeter	Properties	X
Name:	Perimeter	
Closed F	Perimeter 🔶	_
Perimeter c	ontains 9 vertices.	
Notes:		
Apply	Color Cancel	

• Set the scan properties for the appropriate perimeter. If the perimeter is closed the scan will be bounded by the perimeter. If it is open, the scan lines will be perpendicular to the perimeter.

Auto Measur	e SA Geometry	
Inactive	e 🔿 Active	
	Settings	
	Measure	
Auto Scan Propertie	25	<u>×</u>
Line Spacing:	3	in
Point Spacing:	2	in
Line Length:	5	in
Grid Rotation:	0	
Ser	pentine Mode	
🗹 Bre	ak Groups By Scanlines	;
🗹 Sho	ow Scanlines in SA	
ОК		ancel

• The user can specify the distance between scan lines and points per scan line. In addition the user can also specify line length for open perimeters. The orientation of the lines to the perimeter can be controlled by the Grid Rotation field.

• To measure a Perimeter, first select Active in the user interface and then select a perimeter from the Treeview in SA. Once the perimeter is selected, select the measure button.

Auto Measure SA Geometry	
O Inactive O Active	
Settings	
Measure	
Cylinder B::Perimeter	

• The scan will start and lines will be constructed (if option was checked). Points will be spaced per user setting. A point will always be measured at the beginning and end of each line.



• To stop a scan, press the cancel button in the progress dialog.

	X
Scanning and Sending to SA	
	Cancel

• This functionality can be used to scan surfaces with shape as well.



• Final Scan in part position



#### **Target Tracking**

• The Leica 1203+ is capable of tracking a prism target.

	a na sa ang kana na sa
Acquire	
Track	Record
Set Rotation	

• Simply select track and start moving the prism. The Leica 1203+ will track the prism. If the record option is check, measurements will be sent to SA while the prism is being moved.

#### **Auto Measure**

- The Leica 1203+ can also be used in the SA command Auto Measure. This command will drive the instrument to points in a group and allow a measurement to be recorded.
- To perform the Auto Measure, select from the following menu.

st	rument	Query	Relationships	Analysis	Scripts	Rep														
÷	Add				Alt+	۰I														
	Run In	terface M	Iodule																	
Ż	Run In	terface M	Iodule and Conr	nect																
	Conne	ction Sta	tus																	
	Proper	ties																		
	Drag P	osition																		
	Remov	/e																		
	Locate	(Transfo	orm to Part)			+														
	Bundle																			
	Measur	Measurement Grouping																		
	Object Associations																			
	Straigh	nten (mal	ke Z axis align w	ith working	g frame)															
	Measur	re				►														
	Autom	atic Meas	surement			►			ļ	Aut	Auto Mea	Auto Measure	Auto Measure	Auto Measure	Auto Measure	Auto Measure	Auto Measure	Auto Measure	Auto Measure	Auto Measure
	Synchr	ronized M	leasurement			•			ļ	Aut	Auto Mea	Auto Measure	Auto Measure (strea	Auto Measure (streamline	Auto Measure (streamlined)	Auto Measure (streamlined)	Auto Measure (streamlined)	Auto Measure (streamlined)	Auto Measure (streamlined)	مراجع Auto Measure (streamlined)
	Theodo	olite Data	Observer						/	Aut	Auto Mea	Auto Measure	Auto Measure a Vect	Auto Measure a Vector Gr	Auto Measure a Vector Group (	Auto Measure a Vector Group (multi-	Auto Measure a Vector Group (multi-measu	Auto Measure a Vector Group (multi-measure)	Auto Measure a Vector Group (multi-measure)	Auto Measure a Vector Group (multi-measure)
	Point Ir	nstrumer	nt at a Point						/	Aut	Auto-Cor	Auto-Correspo	Auto-Correspond Me	Auto-Correspond Measure	Auto-Correspond Measured Po	Auto-Correspond Measured Point to	Auto-Correspond Measured Point to Closes	Auto-Correspond Measured Point to Closest Point	Auto-Correspond Measured Point to Closest Point	Auto-Correspond Measured Point to Closest Point
	Drift Cl	heck							1	Mea	Measure	Measure Batch	Measure Batch of Po	Measure Batch of Points	Measure Batch of Points	Measure Batch of Points	Measure Batch of Points	Measure Batch of Points	Measure Batch of Points	Measure Batch of Points
	Laser P	rojector				•			/	Aut	Auto Mea	Auto Measure	Auto Measure Comp	Auto Measure Composite	Auto Measure Composite Core	Auto Measure Composite Core Mater	Auto Measure Composite Core Material	Auto Measure Composite Core Material	Auto Measure Composite Core Material	Auto Measure Composite Core Material
	Collima	ition							ļ	Aut	Auto-Cor	Auto-Correspo	Auto-Correspond wit	Auto-Correspond with pro	Auto-Correspond with proximit	Auto-Correspond with proximity trig	Auto-Correspond with proximity trigger	Auto-Correspond with proximity trigger	Auto-Correspond with proximity trigger	Auto-Correspond with proximity trigger
						/														

Measure     Measure       Measure Anchor Pts.     Single Point       Locate Instrument     Next Pass       Stop     Stop				Options       Auto Increment Group       Group for data       AutoP         Entire Pass       Halt on Failed Target       Tolerance       0.0         Multi-Pass       Halt on Tolerance Error       0.0         Wark Failed Targets       App         Measure Manually       Watch Window						Pts Apply pend To Report Export	
Nominals:: St 1 2 3	at Nom. X -37.8002 -99.6510 -35.0131	Nom. Y -189.5860 -157.0850 -191.0348 175.4481	Nom. Z 56.1156 56.6792 29.0580 29.1330	Act. X	Act. Y	Act. Z	Delta X	Delta Y	Delta. Z	Magnitud	
4	-64.5781	-175.4481	29.1330								

• Select the group to measure and the following dialog will appear.

- This will allow for a single point to be measured or an entire pass be performed. Choose Entire Pass and the instrument will drive to the first point.
- Sight the target and press Record (F3) in the instrument interface.
- Once the measurement is recorded the instrument will drive to the next point.

A	uto Measure	men	t Mode	Working	Frame: A	::WORLD	1					X
Orient       Measure       Options         Measure Anchor Pts.       Single Point       Entire Pass         Locate Instrument       Next Pass       Multi-Pass         Stop       Stop       Mark Failed Targets         Measure Manually       Append To Report         Watch Window       Export								Apply Report				
1	Nominals::	Stat	Nom. X	Nom. Y	Nom. Z	Act. X	Act. Y	Act. Z	Delta X	Delta Y	Delta. Z	Magnitude
	1	<b>v</b>	-37.8002	-189.5860	56.1156	-37.8040	-189.5882	56.1171	0.0038	0.0023	-0.0015	0.0047
	2	$\checkmark$	-99.6510	-157.0850	56.6792	-99.6514	-157.0885	56.6839	0.0004	0.0035	-0.0047	0.0059
	3	3 ✓ -35.0131 -191.0348 29.0580 -35.		-35.0182	-191.0413	29.0570	0.0051	0.0066	0.0009	0.0084		
	4	✓	-64.5781	-175.4481	29.1330	-64.5812	-175.4593	29.1387	0.0031	0.0113	-0.0057	0.0130

• A completed Auto Measure