

# SETTOP LEVELME

TRIMBLE ACCESS™  
Settop LEVELME is a  
3rd party application.



- PERFORM HIGH-ACCURACY TRIG-LEVELINGS WITH YOUR TOTAL STATION.
- FAST TO HANDLE AND HIGHLY PRODUCTIVE.
- GENERATING DIRECT REPORTS FROM THE FIELD AND EXPORTING RESULT FILES.

## Level Me, your best level.

The possibility of carrying out accurate leveling with your total station is now within your reach. Now it is easier than ever with the new Level Me module for Trimble Access.

## High precision in trigonometric leveling.

Thanks to the S Series Trimble stations, it is possible to establish a level program that is easy to handle as well as designed for trig-leveling, with results that can compare with a standard Geometric Leveling. The leveling module makes it possible to level in the manner of differential leveling, by using the midpoint method. Now, by using the landmark at a known height and measuring the prism, in Autolock mode in Backsight and Foresight, you can attain the resulting level difference with astonishing precision.

## Configuration and Traverse Options

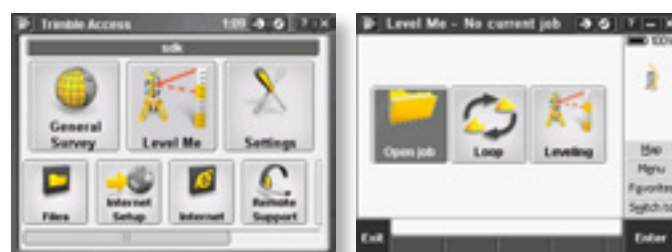
With the configuration option you can establish if you want to carry out direct and reverse circle readings as well as determine the number of repetitions and cycles of each one of the points set up. You can also select the measurements you want to use in a set of readings. Use the traverse mode to set up sideshot points around the main leveling. Always refer to and edit the results obtained in both leveling and in the points set up.

## Distance and level differences are no longer a problem

One of the major advantages lies in the fact that, as the sights are sloped, there is no limiting distance as is the case with the use of the levels and sights. This makes Level Me the perfect application for increasing leveling length and mountainous terrain performance. You must also select the double leveling to multiply its productivity and perform the loop return measurements during the loop flow.

## High-accuracy leveling.

What accuracies are obtained? Obviously, accuracy will depend on the physical characteristics of the measurement along with the angular and distance metric precision of the instrument. On average, with the use of S series Trimble equipment, with sights of up to 100m, which entails 200-m leveling, situated at approximately the midpoint and even on mountainous lands, it is possible to meet First Order Class II leveling specifications, that is, accuracy levels reaching  $4\text{mm} \sqrt{\text{Km}}$ . If we increase the angular precision with a 1 or 0.5" instrument, one can obtain accuracy levels reaching  $2\text{mm} \sqrt{\text{Km}}$ .



## Configuration and Survey Options.

Use the configuration option to define whether you want to perform a direct and reverse circle Reading and to determine the number of repetitions and cycles of each one of the points taken. You must also select those measures you want to use in a set of readings. Select the work mode between standard and double leveling system. Use the survey mode to take radiated points around the leveling line. Always refer to and manage the results obtained in both the main leveling and the radiated points.

## Generation of direct reports from the field.

Once a leveling line or loop has been created, the software will display the closure of the leveling as well as detailed information of each one of the parts with an extraordinary gain in speed in the data processing. Thanks to the automatic recognition of internal subloops during the closure of a leveling, it will be possible to partially observe the quality of each one of the subloops the leveling loop is composed of.

## Exporting results to different formats.

The possibility exists of exporting to 3 different formats:

- a) Full Format: Detailed results and automatic compensation of the leveling on an Excel (\*.csv) sheet.
- b) M5 format: This is the same format that generates the Trimble Business Center software cabinet.
- c) Job format: This stores the leveling results in the \*.job active file with the possibility of transferring the data to other works.

# TRIMBLE ACCESS™ SETTOP LEVELME

Leveling	
Characteristics	Details
Atmospheric Corrections	<ul style="list-style-type: none"> <li>• Updates values of atmospheric pressure in each leveling and possibility of changing temperature.</li> <li>• Automatically corrects sphericity and refraction in each sight.</li> </ul>
Levelings	<ul style="list-style-type: none"> <li>• A fully guided process in Backsight and Foresight shot.</li> </ul>
Options	<ul style="list-style-type: none"> <li>• Selection of the order of the CD/CI faces.</li> <li>• Selection of leveling method between standard and double leveling system.</li> <li>• Change of the number of observations per point.</li> <li>• Selection of number of cycles.</li> <li>• Shows pressure and temperature in each leveling.</li> <li>• Automatic increase of point name.</li> <li>• Indication of subloop tolerance.</li> <li>• Selection of Unit System between meters, international feet and U.S survey feet.</li> <li>• Change of search window for the Autolock.</li> </ul>
Checkpoints	<ul style="list-style-type: none"> <li>• Possibility of selecting or discarding a set of point readings leading to the CD/CI average of the readings selected.</li> </ul>
Setup	<ul style="list-style-type: none"> <li>• Function for setting up points around the leveling once backsight reading has been made.</li> </ul>

Loop	
Characteristics	Details
Check Loop	<ul style="list-style-type: none"> <li>• Possibility of changing name, initial level and landmark height of each one of the leveling and setup points.</li> <li>• Selection or rejection of the readings made in a leveling section.</li> <li>• Subsequent change of the temperature of a set of readings with automatic reprocessing.</li> </ul>
Close Loop	<ul style="list-style-type: none"> <li>• Simple exporting of the list of levelings and setup points in *.csv. format.</li> <li>• Possibility, within the list of levelings, of exporting the set of sights made at a point with the corresponding corrections applied.</li> <li>• Elimination of the last leveling and of the setup points.</li> </ul>
Exporting	<ul style="list-style-type: none"> <li>• Shows the loop closure in relation to the starting level.</li> <li>• Checks the Loop closure on the basis of the maximum tolerance margin set at <math>2 \times 25 \text{mm} \times \sqrt{\text{Km}}</math> (double levelling).</li> <li>• Shows the foreseeable theoretical error, calculated according to the Study of Errors of the characteristics of the instrument and the sights of the loop.</li> <li>• At an informative level, it shows the total leveled distance, the gradient of the terrain, the number of levelings and the relevant information of each leveling.</li> <li>• If the closure meets the tolerance margin, it carries out the compensation in proportion to the number of levelings.</li> <li>• Automatic recognition of internal subloops according to the subloop tolerance assigned. The tolerance is a multiple of the kilometric error of the subloop.</li> <li>• Presentation of reports on the compensation of the loop, internal subloops and of the setup points.</li> </ul>
Options	<ul style="list-style-type: none"> <li>• ASCII format: Full report on field data and compensation of the Loop and setup points in the unit system selected. Possibility of displaying raw data.</li> <li>• M5 format: Exporting to DiNi format that can be interpreted by the Trimble Business Center office software.</li> <li>• Job format: Keeps compensated results in *.job active file, which can be transferred to other works.</li> </ul>
Options	<ul style="list-style-type: none"> <li>• Change of subloop tolerance.</li> <li>• Selection of Unit System regarding length (meters, international feet and U.S. survey feet) and temperature (Celsius and Fahrenheit)</li> </ul>

## Accuracy\*

Typical Deviation in height measurement in 250m Sights (500m Levelings)

Error by sight:

3" Angular Accuracy Precision	3.6 mm
1" Angular Accuracy Equipment	1.2 mm
0.5" Angular Accuracy Equipment	0.6 mm

Double leveling Km error:

3" Angular Accuracy Equipment	10.3 mm
1" Angular Accuracy Equipment	3.4 mm
0.5" Angular Accuracy Equipment	1.7 mm

Typical Deviation in height measurement in 100m Sights (200m Levelings)

Error by sight:

3" Angular Accuracy Equipment	1.5 mm
1" Angular Accuracy Equipment	0.5 mm
0.5" Angular Accuracy Equipment	0.3 mm

Double leveling Km error:

3" Angular Accuracy Equipment	6.6 mm
1" Angular Accuracy Equipment	2.2 mm
0.5" Angular Accuracy Equipment	1.2 mm

Typical Deviation in height measurement in 50m Sights (100m Levelings)

Error by sight:

3" Angular Accuracy Equipment	0.8 mm
1" Angular Accuracy Equipment	0.3 mm
0.5" Angular Accuracy Equipment	0.2 mm

Double leveling Km error:

3" Angular Accuracy Equipment	4.9 mm
1" Angular Accuracy Equipment	1.6 mm
0.5" Angular Accuracy Equipment	1.0 mm

Typical Deviation in height measurement in 25m Sights (50m Levelings)

Error by sight:

3" Angular Accuracy Equipment	0.5 mm
1" Angular Accuracy Equipment	0.2 mm
0.5" Angular Accuracy Equipment	0.1 mm

Double leveling Km error:

3" Angular Accuracy Equipment	4.1 mm
1" Angular Accuracy Equipment	1.4 mm
0.5" Angular Accuracy Equipment	1.0 mm

\* Estimated values as an average slope of 10%

## System Requirements

### Instruments

- Trimble S3 total station
- Trimble S5 total station
- Trimble S6 total station
- Trimble S7 total station
- Trimble S8 total station
- Trimble S9 total station
- Trimble VX total station

### Controllers

- Trimble CU (Model 3) controller
- TSC2 controller
- TSC3 controller
- Trimble Tablet controller

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