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Instruction Manual

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Zehntner mapping and data analysis software MappingTools

as from software version 1.26



for following devices series:

ZDR 6020
ZRM 6013+
ZRM 6014
ZRS 6060

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Exclusion of liability

The features described in this instruction manual represent the complete technology of this instrument. These features are either included in the standard delivery or available as options at additional costs.

Illustrations, descriptions as well as the technical specifications conform to the instruction manual at hand at the time of publishing or printing. However, Zehntner GmbH Testing Instruments policy is one of continuous product development. All changes resulting from technical progress, modified construction or similar are reserved without obligation for Zehntner to update.

Some of the images shown in this instruction manual are of a pre-production model and/or are computer generated; therefore the design / features on the final version of this instrument may differ in various aspects.

The instruction manual has been drafted with the utmost care. Nevertheless, errors cannot be entirely excluded. The manufacturer will not be liable for errors in this instruction manual or for damages resulting from any errors.

The manufacturer will be grateful at any time for suggestions, proposals for improvement and references to errors.

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1. Introduction

1.1 Summary

The Zehntner "MappingTools" mapping and data analysis software makes your administration and analysis of road markings measurements and retro-reflective materials, e.g. traffic signs, warning clothes, etc. simple and easy. It also helps you in generating measurement reports.

Features:

- Generating measurement reports
- Save reports as a PDF-file
- Measurements can be exported to Microsoft® Excel
- Measurements containing GPS coordinates can be displayed on a bing™ map in different colours using adjustable profiles as well as alternatively exported to Google Earth™.
- The map can be saved as a picture for using in inhouse reports.

1.2 Device type

The "MappingTools" mapping and data analysis software is made for the following device types:

Device type	Description	Application area
ZRM 6013+ and ZRM 6014	Retroreflectometer R _L / Qd	Portable determination of the night and day visibility of all types of road markings.
ZRS 6060	Retroreflectometer	Portable determination of night visibility of retroreflective materials such as traffic signs, safety garments, contour safety markings, license plates, etc. (depending on device version) .
ZDR 6020	Dynamic Retroreflectometer R _L	Dynamic determination of the night visibility of all types of road markings.

Partially the illustrations are used of one device only. Therefore it is possible that the illustration of the same with another device type can be different. Anyway, the illustration can be used as an example.

1.3 Standard delivery

The "MappingTools" mapping and data analysis software is supplied with the device types mentioned in chapter 1.2 "Device type" on page 4.

2. Safety precautions and warnings

2.1 Dangers



Caution!

This note is included in this instruction manual wherever it is warned about dangers which will arise to life and limb of persons if the apparatus is handled improperly. Observe these notes and be particularly careful in these cases. Also inform other users on all safety notes. Besides the notes in this instruction manual the generally applicable safety instructions and regulations for prevention of accidents have to be taken into account.



Note

This note comprises instructions to be observed in order to comply with guidelines, instructions, notes and the proper procedure of the work, and to avoid data loss.

2.2 Notes regarding safety at work



The "MappingTools" mapping and data analysis software is exclusively designed for presenting road marking measurements and retro-reflective materials, e.g. traffic signs, warning clothes, etc. Any other application is not in accordance with the regulations. The manufacturer is not liable for damage resulting from inappropriate application. The user bears the full responsibility.



Unauthorised modifications and changes of the "MappingTools" mapping and data analysis software are not allowed. The manufacturer is not liable for damages resulting from unauthorised modifications; the user bears the full responsibility.



Zehntner GmbH Testing Instruments refuse any claims of liability and guaranty for any damages caused by the use of the "MappingTools" mapping and data analysis software.



To operate the ZRM 6013+, ZRM 6014, ZRS 6060 and ZDR 6020 please refer to the respective separate instruction manuals.

3. Install / Uninstall

3.1 System requirements

In order to install the MappingTools mapping and data analysis software on your PC or laptop, the system shall meet the following minimum requirements:

- Operating system: Microsoft® Windows XP SP3, Microsoft® Windows Vista, Microsoft® Windows 7 or Microsoft® Windows 8/8.1, Microsoft® Windows 10
- Required components: .NET Framework Version 4.0
Min. Microsoft® Internet Explorer 7
- Memory (RAM): Min. 512 MB
Recommended 1 GB
- Hard Disc space: Min. 100 MB + space for measurements
- Internet connection: For using the map you need a connection to the internet.
- Map: Own Bing Maps Basic Key.

3.2 Installation “MappingTools”

The current version can be downloaded for free from our website www.zehntner.com.

Unzip the downloaded file and double click the setup.exe for the installation. At this point Windows will lead you through the remainder of the installation process.

- ! Depending on the configuration of your system, it might be possible that you have to install additional components. The “MappingTools Setup-Wizard” will advise you to do, if necessary. Simply install the desired component by clicking on its corresponding link.

Zehntner recommends that the latest “MappingTools” version will be installed.

3.3 Removing “MappingTools”

In order to remove the “MappingTools” mapping and data analysis software from your system go to

Start->Settings->Control Panel-> Add/Remove Programs and choose Zehntner “MappingTools” from the list of installed software. Click on ***“remove”*** to uninstall the program.

4. Using Zehntner “MappingTools”

4.1 Starting-up

First connect your PC or laptop with the internet otherwise the map will not get loaded. The first time the “MappingTools” mapping and data analysis software will start in English, however the language can be changed in the settings window. Please also refer to chapter 5.4.2 “Settings” on page 22.

It might be necessary to export your measurements on your PC / laptop to get them displayed with the “MappingTools” mapping and data analysis software. For this please consider the separate instruction manual of the respective instrument (ZRM 6013+, ZRM 6014, ZRS 6060 or ZDR 6020). Afterwards the measurements need to be opened like described in chapter 5.1.1 “Open” on page 17.

4.2 Components of the main window

The main window of the “MappingTools” contains several parts illustrated in the picture below and explained in the following chapters.

The screenshot displays the MappingTools software interface. At the top, there is a menu bar with 'File', 'View', 'Measurement', 'Extras', and 'Help'. Below the menu bar, the main window is divided into several sections:

- (1) Job-Browser:** A list of jobs, currently showing 'Area Rheinfeiden.zmf'.
- (2) Map-Browser:** A satellite map view showing a road network with a green line indicating a measurement path. The path starts at 'Start Area Rheinfeiden' and ends at 'End Area Rheinfeiden'. A scale bar indicates 1000 feet.
- (3) Measurement-Browser:** A table of measurement data with columns for Position (km), Date, RL (m), RL Max. (m), RL Min. (m), RL s (m), RL Pass (%), and Temp. The table contains 15 rows of data.
- (4) Main-Measurement-View:** A large view showing the measurement path on the map, with a green line and blue markers.
- (5) Detail-Data-Browser:** A photo viewer showing a street view image of the measurement path.
- (6) Status bar:** A bar at the bottom of the window showing the current job name 'Area Rheinfeiden (Area Rheinfeiden.zmf)' and a scale of 2/2.

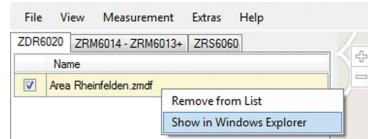
Key:

- (1) Job-Browser
- (2) Map-Browser
- (3) Measurement-Browser
- (4) Main-Measurement-View
- (5) Detail-Data-Browser
- (6) Status bar

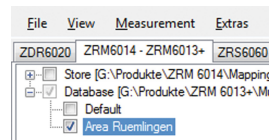
4.3 Job-Browser

A job represents a series of measurements. If a Zehntner data-file is opened or imported the jobs are listed in the tab of the Job-Browser. By checking a job the measurements are displayed in the Measurement-Browser. The ZDR 6020 and ZRS 6060 have their separate tab. The ZRM 6013+ and the ZRM 6014 share a tab.

By a right click on a measurement, the job can either be removed from the Job-Browser or shown in the windows explorer.

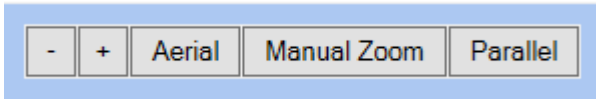


If a data-file contains several jobs the Job-Browser is structured hierarchically. In the file tree you can either select or deselect a single or all jobs.



4.4 Map-Browser

Measurements which are selected in the Measurement-Browser are displayed coloured in the Map-Browser depending on the selected profile.



The zoom can be changed by the – and + button.

You can switch from the “Aerial” view to the “Road” view and vice versa.

The “Autozoom” can be deactivated when clicking on a line or a pin if “Manual Zoom” is activated.

For the **ZDR6020 measurements** the “Parallel” mode can be activated to show **double lines** parallel.

Road:

The screenshot shows the 'Road' view in MappingTools. The map displays a road network with numbered points (129.7 to 161.0) along a yellow road. The interface includes a menu bar (File, View, Measurement, Extras, Help), a toolbar with 'Aerial' and 'Manual Zoom' buttons, and a status bar showing coordinates and zoom level. Below the map is a data table for 'Area Fhenfelden (Store.zsf)'.

RL (mcd./k/m²)	Qd (mcd./k/m²)	Number of	Database	Job	Serial Number	Date
204.0	130.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
233.0	133.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
241.0	138.0	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
248.3	134.0	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
251.7	132.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
233.0	123.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
229.3	124.9	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
246.3	141.3	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
201.0	143.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
238.0	148.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
251.0	150.3	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
250.0	148.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20

Aerial:

The screenshot shows the 'Aerial' view in MappingTools. The map displays an aerial photograph of the same road network with numbered points (129.7 to 161.0) overlaid. The interface is similar to the 'Road' view, but the map background is an aerial image. Below the map is a data table for 'Area Fhenfelden (Store.zsf)'.

RL (mcd./k/m²)	Qd (mcd./k/m²)	Number of	Database	Job	Serial Number	Date
204.0	129.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
233.0	133.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
241.0	138.0	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
248.3	134.0	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
251.7	132.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
233.0	123.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
229.3	124.9	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
246.3	141.3	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
201.0	143.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
238.0	148.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
251.0	150.3	3	Store.zsf	Area Fhenfelden	440016014	20.09.20
250.0	148.7	3	Store.zsf	Area Fhenfelden	440016014	20.09.20

- ❗ The view “Aerial” are not available in high resolution on every part of the earth but the view “Road” works everywhere. Alternatively an export to Google Earth™ is provided.
- ❗ If you zoom in too deep on the map in the view “Road” and there is no element like a street it might be confusing and you have to zoom out.

4.5 Measurement-Browser

The Measurement-Browser illustrates the recording data of a job selected in the Job-Browser. Each selected job has its own separate tab with a Main-Measurement-View and a Detail-Data-Browser.

4.6 Main-Measurement-View

In the Main-Measurement-View the data (a collection of measurements) is displayed line by line in table form. One measurement in the Main-Measurement-View can contain several single measurements. Thus the shown value of a geometry in the Main-Measurement-View is an average over all belonging valid single measurements.

Following actions can be carried out:

Multi select:

The function “multi select of measurements” can be used to delete measurements or to calculate the mean value. The mean value is shown at the bottom of the status bar.

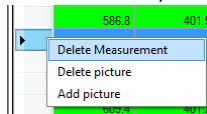
Area Rheinfelden (Store.zsdf)						
	RL (mcd/tx/m²)	Qd (mcd/tx/m²)	Number of Measurements	Serial Number	Date	Us
	233.0	133.7	3	440016014	20.09.2010 10:30	
	241.0	138.0	3	440016014	20.09.2010 10:32	
	248.7	134.0	3	440016014	20.09.2010 10:33	
	251.7	132.7	3	440016014	20.09.2010 10:34	
	233.0	123.7	3	440016014	20.09.2010 10:35	
	229.7	134.7	3	440016014	20.09.2010 10:36	
	245.3	141.3	3	440016014	20.09.2010 10:37	
	201.0	143.7	3	440016014	20.09.2010 10:38	
	238.0	148.7	3	440016014	20.09.2010 10:39	
	251.0	150.3	3	440016014	20.09.2010 10:40	
	269.0	148.7	3	440016014	20.09.2010 10:42	

RL mean: 223.2 [2/2] Qd mean: 142.5 [2/2]

Left mouse click: By a left mouse click on a measurement, the map will change its view to this section. The measurements can be sorted in ascending or descending order by clicking on the header of a column.

Left mouse double click: The views in the Detail-Data-Browser can be changed.

Right mouse click on row: With this action you can choose between delete measurement, delete picture and add picture.

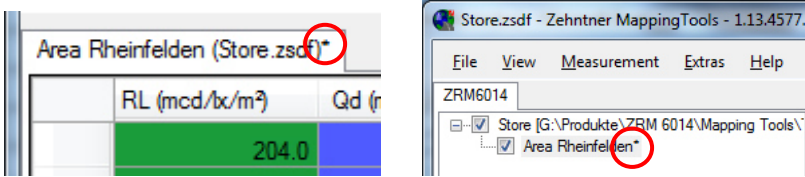


The deletion and adding of pictures is only possible for *.ZSDF files.

	Position (km)	Date	RL (mcd./x/m ²)	RL Min. (mcd./x/m ²)	RL Max. (mcd./x/m ²)	RL σ (mcd./x/m ²)	RL Pass (%)	Temperature (°C)	Humidity (%)	Speed (m/s)
	0.200	20.09.2010 10:00:34	140	96	156	5	86	22	41	17.792
	0.250	20.09.2010 10:00:37	161	100	266	11	98	22	42	18.569
	0.300	20.09.2010 10:00:39	255	194	272	2	100	23	44	19.292
	0.350	20.09.2010 10:00:42	234	169	252	13	99	23	45	19.678
	0.400	20.09.2010 10:00:44	207	175	232	4	100	22	47	19.617
	0.450	20.09.2010 10:00:47	246	196	250	3	99	22	46	19.35
	0.500	20.09.2010 10:00:49	228	205	262	9	99	22	43	20.025
	0.550	20.09.2010 10:00:52	257	165	272	4	99	22	42	20.097
	0.600	20.09.2010 10:00:54	231	171	234	3	99	22	41	20.436
	0.650	20.09.2010 10:00:57	246	131	251	5	99	23	41	20.361
	0.700	20.09.2010 10:00:59	236	63	242	5	79	22	41	20.4
	0.750	20.09.2010 10:01:02	229	201	275	9	100	22	42	20.4
	0.800	20.09.2010 10:01:04	216	151	223	6	95	22	42	20.45
	0.850	20.09.2010 10:01:07	247	196	252	4	99	21	43	20.464
	0.900	20.09.2010 10:01:09	209	120	231	17	99	22	43	20.4
	0.950	20.09.2010 10:01:12	140	115	173	4	100	22	43	20.4
	1.000	20.09.2010 10:01:14	163	146	184	3	100	22	42	20.361
	1.050	20.09.2010 10:01:16	192	168	225	4	100	22	42	20.147
	1.100	20.09.2010 10:01:19	217	165	223	6	99	22	42	19.878

RL mean: 229.0 [3/3]

A modification of a job in the Main-Measurement-View, respectively, the deletion of measurements is indicated by a star in the tab of the Measurement-Browser and in the Job-Browser.



The star will disappear when the job is saved.

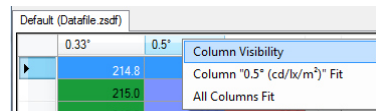
If a picture is deleted the picture will be removed from the picture folder, as long as the picture is not assigned to another measurement.

A picture will be inserted by copying the picture from the source folder to the destination folder. If there is already a picture, this picture, will be replaced and removed if it is not dedicated to another measurement. If a picture with an already existing name and same picture format, not located in the picture folder, is inserted the current picture with the same name will be overridden.

The picture will be copied only and represented as relative scaled in the software. The resolution and the size will be unchanged.

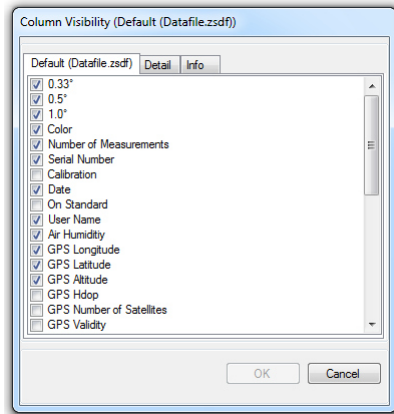
Right mouse click column:

With this click you can choose if you get to the form of column visibility, adapt the selected column width or all column width.



Column visibility:

Define which column is visible.

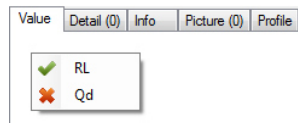


4.7 Detail-Data-Browser

The Detail-Data-Browser contains more detailed and descriptive information about a selected measurement in the Main-Measurement-View. Depending on the device type the Detail-Data-Browser differs with the numbers of views.

The following views exist:

Value: The Value view presents the geometry values of the actual selected measurement, as well as the maximum and the minimum value. If more than one geometry exists, a geometry can be hidden with a right mouse click on the tab or the space key.



Detail: The Detail-view shows the information of the single measurements (single or average measurements) in table form. Like in the Main-Measurement-View the delete function is provided.

Value	Detail (3)	Info	Picture (1)	Profile
	RL (mcd/bx/m²)	Qd (mcd/bx/m²)	Measurement Number	Date
	235	137	1	20.09.2010 10:57
	230	137	2	20.09.2010 10:58
	225	121	3	20.09.2010 10:58


Info: The Info-View shows the additional information to a measurement and helps to edit the information.

Value	Detail (0)	Info*	Picture (0)	Profile
	Description	Information		
	Location	Sissach		
	Street			

Picture: This view shows the picture which belongs to the selected measurement. A click on the picture opens a separate window with enlarged view. A click on the picture name opens the explorer path of the actual selected picture.

Air Humidity (%)	GPS Longitude	Value	Detail (3)	Info	Picture (1)	Profile
53.3	7.8161					
53.7	7.8155					
52.6	7.8149					
52.9	7.8144					
51.3	7.8139					
48.9	7.8134					
49.4	7.8128					
47.8	7.8123					
47.7	7.8118					
50.3	7.8113					
47.3	7.8107					

4.8 Filename extensions

Data file	Device / program
*.KMZ	<ul style="list-style-type: none"> Google Earth file exported from a *. ZMDF or *. ZSDF-file. Please also refer to chapter 5.3.6 on page 19.
*.PDF	<ul style="list-style-type: none"> PDF reports exported from "MappingTools"-files from ZDR 6020 Please also refer to chapter 6.1 on page 23. PDF reports exported from "MappingTools"-files from ZRM 6013+, ZRM 6014 or ZRS 6060 Please also refer to chapter 6.2 on page 26.
*.PNG	<ul style="list-style-type: none"> Picture format if the current map view in the Map-Browser is exported. Please also refer to chapter 5.1.7 on page 18.
*.XLS	<ul style="list-style-type: none"> Original measurement file of the ZDR 6020 Please also refer to chapter 5.1.2 on page 17 and chapter 5.1.5 on page 17. Excel-report-export-file from "MappingTools"-files from ZDR 6020 Please also refer to chapter 6.1 on page 23. Excel-report-export-file from mapping tools measurement files from ZRM 6013+, ZRM 6014 or ZRS 6060 Please also refer to chapter 6.2 on page 26.
*.ZMDF	<ul style="list-style-type: none"> "MappingTools"-file with ZDR 6020-measurement data Please also refer to chapter 5.1.1 on page 17 and chapter 5.1.2 on page 17
*.ZMTP	<ul style="list-style-type: none"> "MappingTools"-profile file Please also refer to chapter 5.4.1 on page 20.
*.ZSDF	<ul style="list-style-type: none"> Original measurement file of the ZRM 6013+, ZRM 6014 and/or ZRS 6060 "MappingTools"-file with measurement data from ZRM 6013+, ZRM 6014 or ZRS 6060 <p>Please also refer to chapter 5.1.1 on page 17 and chapter 5.1.6 on page 18.</p> <p> Should you not be able to open .ZSDF files on a 64-bit operating system, please install „Microsoft SQL Server Compact 3.5 Service Pack 2 for Windows Desktop“. This error occurs if a different Microsoft SQL Server Compact is installed. Please contact Zehntner if the error remains.</p>

5. Overview of the menu

The menu items are changing depending on the device type. So as mentioned not every function can be chosen for every device.

5.1 Menu "File"

5.1.1 Open

This menu item allows you to load an existing "MappingTools"-file (*.ZMDF, *.ZSDF).

- ! Should you not be able to open .ZSDF files on a 64-bit operating system, please install „Microsoft SQL Server Compact 3.5 Service Pack 2 for Windows Desktop“. This error occurs if a different Microsoft SQL Server Compact is installed. Please contact Zehntner if the error remains.

5.1.2 Import

Import an existing original measurement file of the device ZDR 6020 as a Microsoft® Excel-file. With each import a ZMDF-file will automatically be generated in the same directory where also the XLS-file lies. ZMDF is a new file format for storing measurements and gives more possibilities to maintain ZDR 6020 measurements with the "MappingTools" mapping and data analysis software.

- ! The structure of an original measurement must not be changed. It has to be a tab separated XLS-file otherwise the import will not work properly.

5.1.3 Save

This menu item allows you to "Save" or to "Save as" the current selected measuring file. To save all jobs in the Measurement-Browser "Save all" can be used.

5.1.4 Export

The function "Export" in the file menu is used to convert open or imported data to generate a file which is compatible with another program.

5.1.5 Export .XLS

This menu item is used to convert into a ZMDF-file to a RetroGrabber compatible XLS-file. The RetroGrabber is the operating software of ZDR 6020.

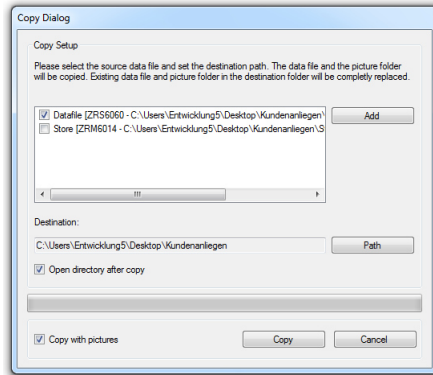
5.1.6 Copy

This menu-item is used for copying a ZSDF-file from one place in the file system to another one. To keep the data consistence, the "PICS" folder and a data-file with the same name (if existing) will be completely replaced in the destination directory.

It is possible to add data-files of other storage locations.

Determine if the pictures should be copied too or only the data-file.

Tick the "Open directory after copy" to open the directory directly after the copy process.



5.1.7 Save map as a picture

This menu item allows you to save the current view in the Map-Browser as a picture (*.PNG).

5.2 Menu "View"

The menu item view includes the possibility to display or hide the map, the Measurement-Browser or Job-Browser by ticking.

5.3 Menu "Measurement"

Basically this menu item is only activated, if at least one job is displayed in the Measurement-Browser.

5.3.1 Information Editing

This menu item allows editing the header information from the selected job.

5.3.2 Remove from list

This menu item removes the current selected job in the Job-Browser.

5.3.3 Show in Windows Explorer

This menu item shows the data-file of the selected job in the Windows Explorer.

5.3.4 Generating Report

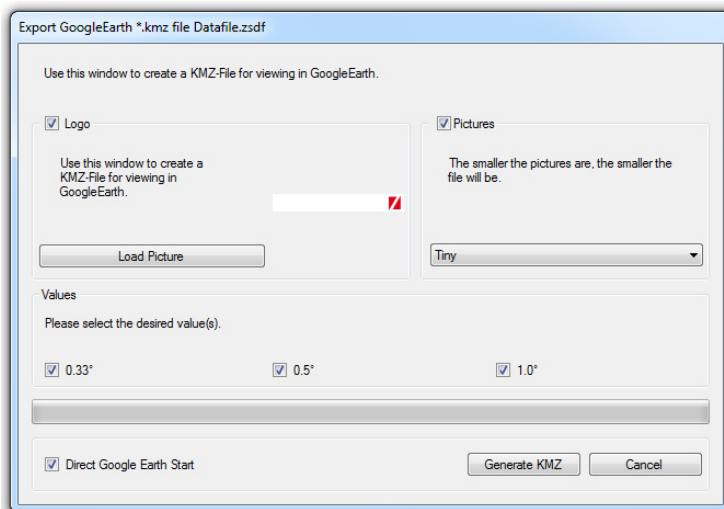
This menu item will generate a measurement report from the selected job. There are two types of reports depending on the device. One report is a PDF-output the other a Microsoft® Excel-file. For further information please refer to chapter 6 "Measurement report" on page 23.

5.3.5 Delete 0 Measurements

Use this menu item to delete all invalid measurements in the Main-Measurement-View.

5.3.6 Export .KMZ

This menu item is used to export a job as a KMZ-file to display the measurements in Google Earth. Define the value range. Feel free to add a logo and to decide the size of the pictures. A progress bar shows the status during the file's generation. Start Google Earth directly by checking "Direct Google Earth Start".



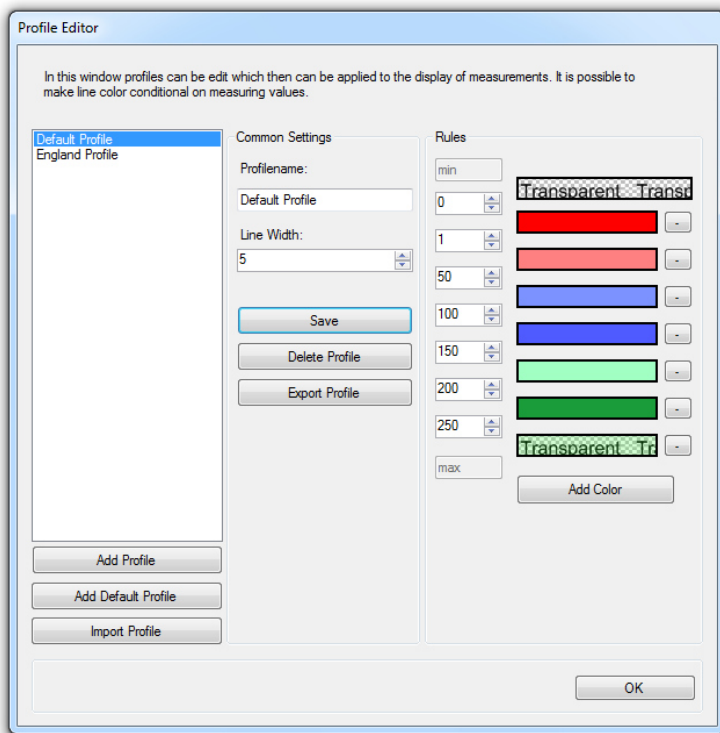
5.4 Menu “Extras”

5.4.1 Profile Editor

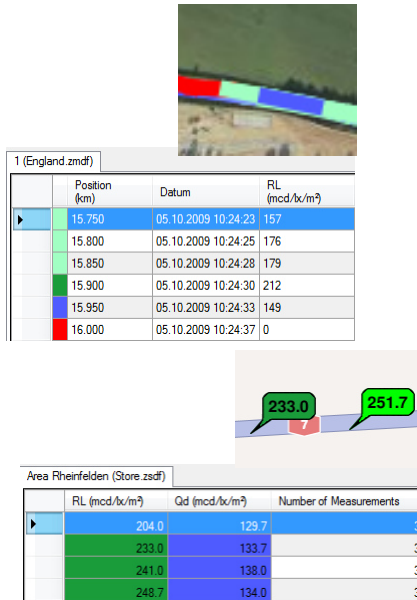
This menu item will open an editor window in which different colour profiles can be added or changed.

To create a new profile click on the “Add Profile” button, set a new name in the “Profile name” textbox, change and/or add colours and values to the rule and save it. There must be always one profile, therefore with “Add Default Profile” the direct generation of a profile is provided.

Colours can be changed by clicking on the coloured boxes.



The colours of the selected profile are displayed on the map and in the Main-Measurement-View:



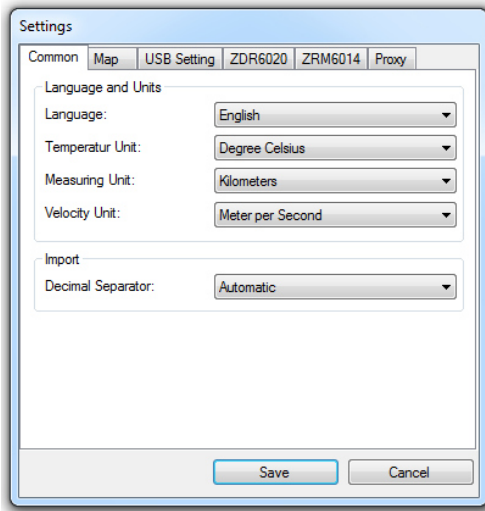
These profiles are stored locally on the PC / laptop. So if you want to use the same profile on another PC / laptop, then you can use the "Export Profile" and "Import profile" function.

5.4.2 Settings

The global program settings are structured by tabs in a common, map and device specific part (ZRM 6013+, ZRM 6014 or ZDR 6020).

Several settings can be set such as language, units, appearance and reaction on events.

The device-specific settings for the ZRS 6060 will be made directly in the Measurement-Browser with a right mouse click on the data columns.



! Only use the proxy settings if you use a proxy in your network.

5.5 Menu “Help”

5.5.1 Manual

If an instruction manual of the selected language exists, the instruction manual can be displayed over this menu item or by pressing the key “F1”. Otherwise the English instruction manual is displayed.

5.5.2 About

Software information like the version is displayed here.

6. Measurement report

One of the software's features is the possibility to generate reports. Depending on the device, the output file is a PDF- or a Microsoft® Excel-file.

6.1 Generate a report for ZDR 6020 measurements

To generate a ZDR 6020 measurement report select a job in the Job-Browser and open the "Generate Report" window over the menu **Measurement->Generate Report**.

Generate Report

Chose in this window which data should be displayed and printed in the report and click afterwards on "Generate Report".

Pageorientation
 Portrait Landscape

Measurement Informationen
 Common information which will be displayed on the first side of the report.

<input checked="" type="checkbox"/> Region	<input type="checkbox"/> Client Name
<input checked="" type="checkbox"/> Street	<input type="checkbox"/> OrderID
<input type="checkbox"/> Direction	<input type="checkbox"/> Retro Grabber Versior
<input checked="" type="checkbox"/> Startposition	<input checked="" type="checkbox"/> Firmware Version
<input type="checkbox"/> Interval	<input checked="" type="checkbox"/> Total length
<input type="checkbox"/> Line	
<input type="checkbox"/> Side	
<input checked="" type="checkbox"/> Driver	
<input type="checkbox"/> Comment	
<input type="checkbox"/> Order Date	

Company Logo

Load Picture

ZEHNTNER
TESTING INSTRUMENTS

Datatable

Columns which will not be displayed in the report are on the left side, columns which will be displayed are on the right. There is a automatic limitation of data presented by grey items.

Endposition		Position
Marker	→	Date
Reference		RL
RL or		RL Max.
Speed		RL Min.
Startposition	←	RL Pass
Temperature		Humidity

In this window you are able to change some settings for the measurement report.

6.1.1 Page orientation

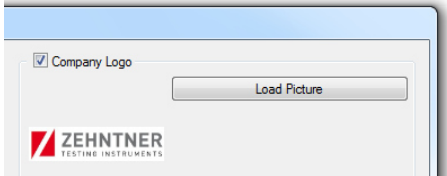
Here the page orientation can be set.

6.1.2 Measurement Information

In the measurement information section it is possible to choose the header information displayed on the first page of the measurement report.

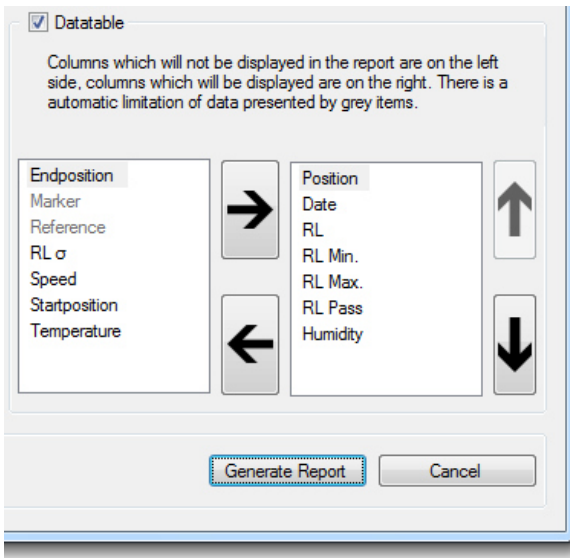
6.1.3 Company Logo

If the "Company Logo" function is activated, a logo in the formats BMP, JPG, GIF or PNG can be chosen. The company logo will appear on the first page of the measurement report.




6.1.4 Data Table

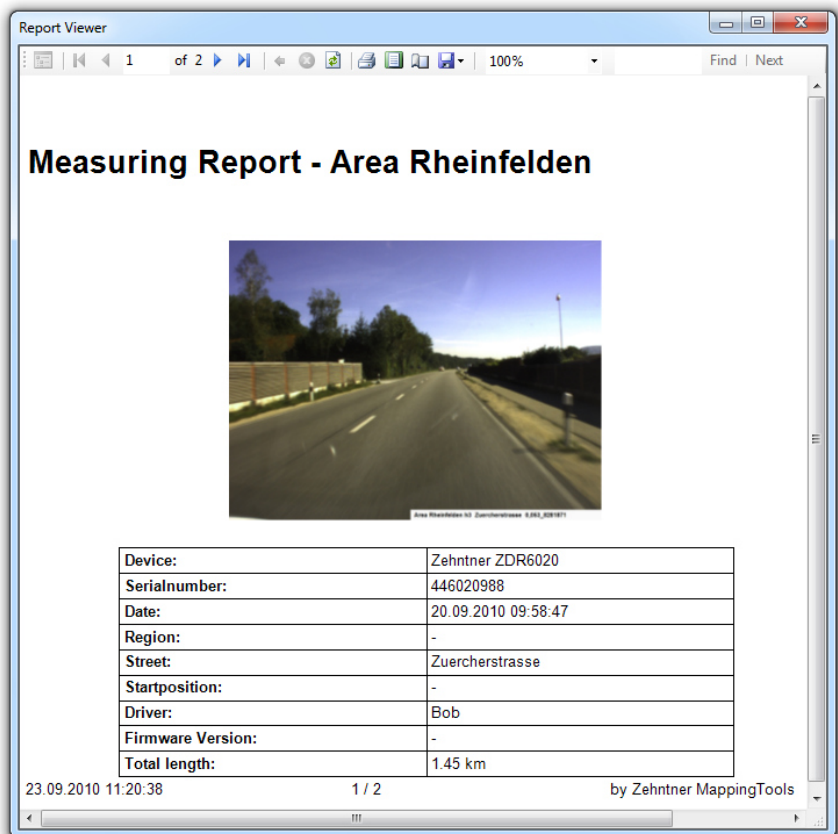
If the data table section is activated, a data section will be appended to the measurement report with more detailed information. Data columns can be moved from the left text box to the right, which represents the measurement report. With up and down arrows the column order can be defined. The number of columns available to choose depends on the page orientation. If there is not enough space on the measurement report, the columns are disabled and cannot be chosen.



6.1.5 Report Viewer

In the "Report Viewer" window a preview will be shown on two sites. In this window the report can be printed or saved as a .PDF or .XLS-file.

By clicking on this icon  in the menu the current view will change to a print view.

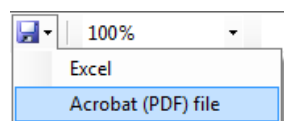


Measuring Report - Area Rheinfeld

Device:	Zehntner ZDR6020
Serialnumber:	446020988
Date:	20.09.2010 09:58:47
Region:	-
Street:	Zuercherstrasse
Startposition:	-
Driver:	Bob
Firmware Version:	-
Total length:	1.45 km

23.09.2010 11:20:38 1 / 2 by Zehntner MappingTools

Over the save icon the report can be saved in the PDF format. You are able to save the report as an .XLS-file if you choose „Excel“.



6.2 Generating a report of ZRM 6013+, ZRM 6014 or ZRS 6060 measurements

With the devices ZRM 6013+, ZRM 6014 and ZRS 6060 you are able to choose which jobs or which measurements of a specific job shall be displayed in the measuring report. You can choose from the following options:

- „All listed measurements“ (all measurements of the selected job)
- „Actual selected measurement(s)“ (only the actual selected measurements of the selected job displayed in the Main-Measurement-View)
- „Content of all open tabs“ (all open jobs of the same device version of the actual selected job)

The desired jobs must be opened and if desired the required measurements must be selected.

In the sample below, the device type ZRS 6060 and its job "Default" is selected where 7 single measurements are also selected. Furthermore, a second job of a ZRS 6060 is opened. As both jobs contain measurements of the same device version (6060.CEN), both can be displayed in the same measuring report if you choose the function "Content of all selected jobs".

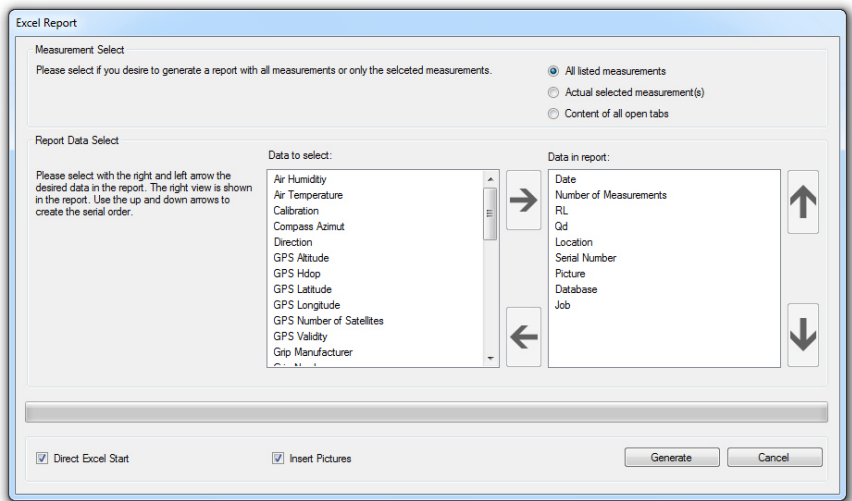
Area Rheinelden (Area Rheinelden, 1.mdf)	Default (Database.zsdf)	Default (Da.zsdf)	
0.3°	0.5°	1.0°	Color
208.9	91.3	10.1	green
780.3	267.9	46.3	yellow
869.8	374.6	61.5	yellow
330.9	319.4	79.2	orange
213.9	99.1	20.0	white
645.9	408.9	87.8	yellow
586.8	401.5	93.5	yellow
772.5	480.7	108.9	white
745.6	491.7	115.4	white
741.2	495.9	108.4	white
609.4	401.2	111.4	white
143.3	74.9	13.4	white
143.3	74.9	13.4	white

Value	Detail (1)	Info	Picture (0)	Profile
0.3°	330.9	Min.: 330.9		
		Max.: 330.9		
0.5°	319.4	Min.: 319.4		
		Max.: 319.4		
1.0°	79.2	Min.: 79.2		
		Max.: 79.2		

The generation of a ZRM 6013+, ZRM 6014 or ZRS 6060 measurement report can be selected over **Measurement->Generate Report**.

Depending on your selection of the jobs and the single measurements, you are able to choose which jobs or which measurements of the jobs can be exported.

You can choose between „All listed measurements“ (all measurements of the selected job), „Actual selected measurement(s)“ (only the actual selected measurements of the selected job displayed in the Main-Measurement-View) „Content of all open tabs“ (all open jobs of the same device version of the actual selected job).



In this sample „All listed measurements“ was chosen. This means that all measurements of the job “Default” of the device version 6060.CEN will be displayed in the measuring report.

If all open jobs are exported to the Excel-file the order is given by the order of the open jobs.

With the arrows left/right the data for the report can be selected or deselected. The order can be controlled with the arrows up/down.

During the generation of the Microsoft® Excel-file the status is represented in the progress bar. To open the excel sheet directly afterwards tick “Direct Excel Start”.

The direct insertion of the picture not only as name is activated by selecting the “Insert Pictures”.

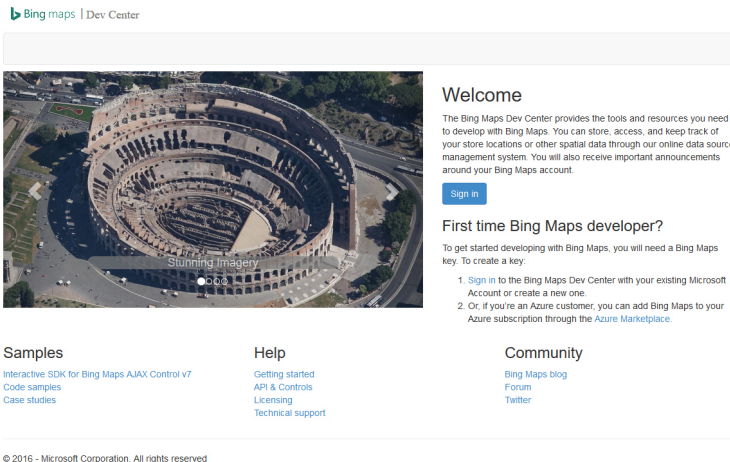
If you have a PDF creating software you can generate a PDF-file from the Microsoft® Excel-file.

7. Bing Maps Key

The use of Bing Maps is only possible with a Bing Maps Key. The Bing Maps Basic Key for private Windows App's is freeware.

To get the Bing Maps Basic Key go to the website www.bingmapsportal.com of the Bing Maps Dev Center and create a new account if necessary.

1. Go to the website www.bingmapsportal.com.



Bing maps | Dev Center

Welcome

The Bing Maps Dev Center provides the tools and resources you need to develop with Bing Maps. You can store, access, and keep track of your store locations or other spatial data through our online data source management system. You will also receive important announcements around your Bing Maps account.

[Sign in](#)

First time Bing Maps developer?

To get started developing with Bing Maps, you will need a Bing Maps key. To create a key:

1. [Sign in](#) to the Bing Maps Dev Center with your existing Microsoft Account or create a new one.
2. Or, if you're an Azure customer, you can add Bing Maps to your Azure subscription through the [Azure Marketplace](#).

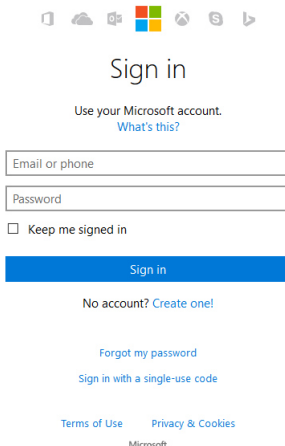
Samples
[Interactive SDK for Bing Maps AJAX Control v7](#)
[Code samples](#)
[Case studies](#)

Help
[Getting started](#)
[API & Controls](#)
[Licensing](#)
[Technical support](#)

Community
[Bing Maps blog](#)
[Forum](#)
[Twitter](#)

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2. Sign in or create new Microsoft account.



Sign in

Use your Microsoft account.
[What's this?](#)

Email or phone

Password

Keep me signed in

[Sign in](#)

[No account? Create one!](#)

[Forgot my password](#)

[Sign in with a single-use code](#)

[Terms of Use](#) [Privacy & Cookies](#)

Microsoft

Microsoft

Create an account

You can use any email address as the user name for your new Microsoft account, including addresses from Outlook.com, Hotmail or Gmail. If you already sign in to a Microsoft PC, tablet, or phone, then use Outlook.com or OneDrive, use that account to sign in.

First name Last name

Your name will appear on your profile, calendar, family, and others in the Microsoft services you use.

User name

Hotmail email address

Password

Re-enter minimum 8 characters

Re-enter password

Country/region

Birthdate

Month Day Year

Gender


Help us protect your info

Your phone number helps us keep your account secure.

Country code

Phone number

Before proceeding, we need to make sure a real person is creating this account.



Enter the characters you see.

Send me promotional offers from Microsoft. You can unsubscribe at any time.

Clicking **Create account** means that you agree to the [Microsoft Services Agreement](#) and [privacy and cookie statement](#).

© 2016 Microsoft | [Terms of Use](#) | [Privacy & Cookies](#) | [Developers](#) | [English \(United States\)](#)

3. Confirm the Microsoft account if necessary.

 Bing maps | Dev Center

Do you want to use the account for your new Bing Maps account? [Yes](#)

Or choose one of the following options:

[Sign in with another account](#) (This will sign you out of , so you can sign in with another account or create a new one.)

[Cancel, and think about it](#) (This will take you back to the Maps Dev Center home page.)

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4. Create Bing Maps account.

Bing maps | Dev Center

Create account

Account details

Account name *

Contact name

Company name

Email address *. This email address will receive important service announcements and notifications.

Phone number

I agree to the [Bing Maps Platform APIs Terms of Use](#) (TOU).

***Email Preferences**
The contact information you have provided will be used in accordance with the [Bing Privacy Statement](#).

I would like to receive occasional Bing Maps emails including announcements, special promotions, and survey invites. You may unsubscribe at any time.

* Required field

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5. Go to My account -> My keys and create a key for **private Windows App**.

Bing maps | Dev Center

My account ▾ Data sources ▾ Announcements Contacts & info

[Sign out](#)

My keys

Create key

Application name *

Application URL

Key type * [What's This](#)

Basic ▾

Application type *

Private Windows App (8.x and earlier) ▾

* Required field

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6. Enter the Bing Maps Basic Key in the settings (Extras -> Settings -> Map -> Bing Maps Key).

Bing maps | Dev Center

My account | Data sources | Announcements | Contacts & info | Sign out

My keys

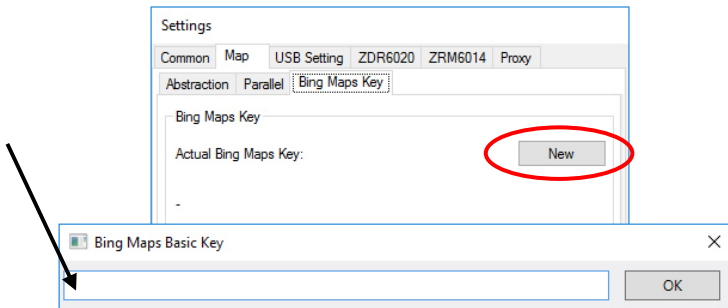
Key created successfully.

[Click here](#) to create a new key.
[Click here](#) to download complete list of keys.

View Specific Key:

Application name	Key details	
Zehntner MappingTools	Key: [REDACTED] Application Url: Key type: Basic / Private Windows App (8.x and earlier) Created date: Expiration date: None Key Status: Enabled	Update Copy key Usage Report

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