How to use MS Excel to regenerate a report from the Report Editor

Summary

This article describes how to create **COMPASS** reports with **Microsoft Excel**. When completed, Excel worksheets and/or charts are available to the Report Editor providing enormous reporting power.

The first step is to create an Excel template file by opening an existing **COMPASS** data file into **Excel**. Customize a worksheet to reference the **COMPASS** data and perform any calculations and charting operations. Next, create a new Report Editor template and insert an Excel field that references the Excel template. The Report Editor field defines the Excel filename, worksheet and cell range to transfer to the report. During report generation, data files are imported into the Excel template file to refresh the customized worksheet(s) and/or charts. Finally the specified reporting cell range is transferred from Excel to the Report Editor.

This procedure works so long as the **COMPASS** data files have a consistent format. If the data file header information or test points collected are altered, the Excel cell references will be invalid resulting. Make sure that the **[Tools][Options][Data in File]** and **[Tools][Options][Data Header]** sections of **COMPASS** are not altered after the Excel template is complete. The maximum number of cycles and points can also impact the report based on how the data is referenced in Excel.

To get started, use the example Excel template and spreadsheet installed with **COMPASS**. Using the **COMPASS Report Editor**, generate a report using the sample.dat file and the ExcelExample1.tpl report template. If **COMPASS** was installed in a non-default location, edit the Excel field in the report template to point to the Excel template file.

Article Topics

- How to create a **COMPASS** report with MS Excel.
- How to add an Excel field to the **COMPASS** report template.

See Also

N/A

Requirements

The following items are required to implement this setup.

- **COMPASS for Pressure Basic** or **Enhanced**, version 2.00 or newer.
- **Microsoft Excel** 2002 or newer.

Creating An Excel Template File

Import one or more **COMPASS** data file(s) with known formatting into **Excel**. Use an appropriate delimiter as defined by the data file. By default the semi-colon ";" is used as the data file delimiter. Name the imported data sheets as "Data1", "Data2" and so on. During report generation, the selected data files are put into worksheets "Data1", "Data2" etc. in sequence. More than one data file is required only if the desired report requires

information from more than one data file. If this is not the case, import a data file in the "Data1" worksheet only. The relative order of worksheets has no impact on the functionality.

80	[TEST DATA]							
81	[TEST TEMPERATURE]							
82	ID100001	ID100002	ID100003	ID100005	ID100015	ID200001	ID300001	
83	Point	Date	Time	Status	Averaging	Reference ID	DUT ID	
84					sec			
85	[TEST LINE PRESSURE]							
86	[TEST PRESSURE CYCLE]							
87	1	20060523	7:01:38	T		6195	7254	
88	2	20060523	7:07:54			6195	7254	
89	3	20060523	7:10:40			6195	7254	
90	4	20060523	7:13:21			6195	7254	
91	5	20060523	7:16:00			6195	7254	
92	6	20060523	7:18:25			6195	7254	
93	7	20060523	7:20:13	T		6195	7254	
94								

Report1 / Chart1 / Report2 / Chart2 \ **Data1** / Data2 /

Figure: "Data1" worksheet with imported **COMPASS** data in the Excel template file

Create a report worksheet that references the imported data sheet(s). Any calculations or macros available from Excel can be used on the data. To create a plot, create a chart object on a separate worksheet. The chart must be on a worksheet and cannot be on it's own tab. Note the sheet name and cell range of all reportable data.

	A	B	C	D	E	F	G	H
7								
8		**Set Point**	**Reference Pressure**	**DUT Pressure**	**DUT - Ref**	**%Span Error**	**Tolerance**	**Pass/Fail**
9		kPa	kPa	kPa	kPa	%	kPa	
10		0	0	-0.0017	-0.0017	-0.0056	0.0009	**Fail**
11		7.5	7.466112	7.4646	-0.0015	-0.0051	0.0016	
12		15	14.99772	14.9959	-0.0018	-0.0059	0.0024	
13		22.5	22.4667	22.4643	-0.0024	-0.0079	0.0031	
14		30	29.9983	29.9964	-0.0019	-0.0065	0.0039	
15		15	14.99771	14.9964	-0.0013	-0.0045	0.0024	
16		0	0	-0.0012	-0.0012	-0.004	0.0009	**Fail**

Figure: "Report1" worksheet with Reported Range B8:H16 referencing data in "Data1" worksheet

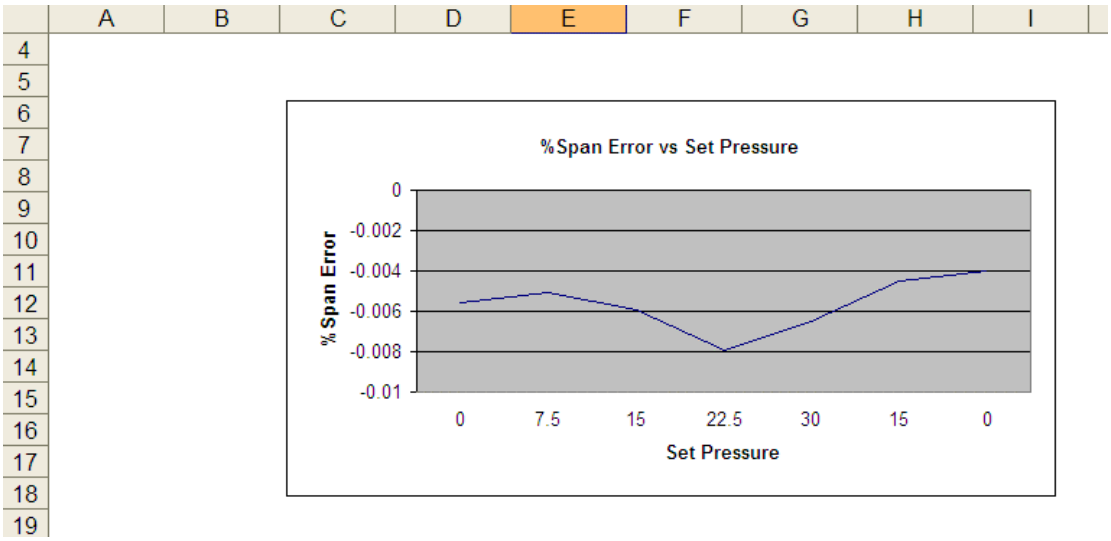


Figure: "Chart1" worksheet with Reported Range C6:I18 referencing data in "Data1" worksheet

Format the report worksheet appropriately. The exact size and format of the cell range will be captured as a picture and inserted into the report.

Since **COMPASS** reports exactly what is visible in the Excel template, the background grid will display on the report if it is not cleared. Clear the grid by using the Excel **[Tools][Options]** menu and access the **[View]** tab. Options on this tab are available to hide the grid.

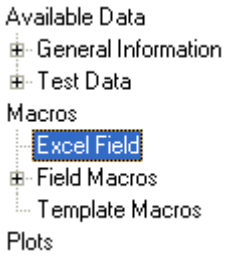
To use a customized frame around the selected range, an extra column and row must be added to the top left selection range. For example, range A4:G15 must be specified in the report template. However the reported range is B5:G15 as in the figure below.

Set Point	DUT - Ref (1)	DUT-Ref (2)	%Span Error (1)	%Span Error (2)	Repeatability
kPa	kPa	kPa	%	%	%
0	-0.0017	-0.0002	-0.0056	-0.0007	0.0049
7.5	-0.0015	-0.0001	-0.0051	-0.0002	0.0049
15	-0.0018	0	-0.0059	0.0001	0.006
22.5	-0.0024	-0.0005	-0.0079	-0.0015	0.0064
30	-0.0019	0.0001	-0.0065	0.0003	0.0068
15	-0.0013	0.0004	-0.0045	0.0012	0.0057
0	-0.0012	0.0002	-0.004	0.0008	0.0048
					0.0068
					(Max)

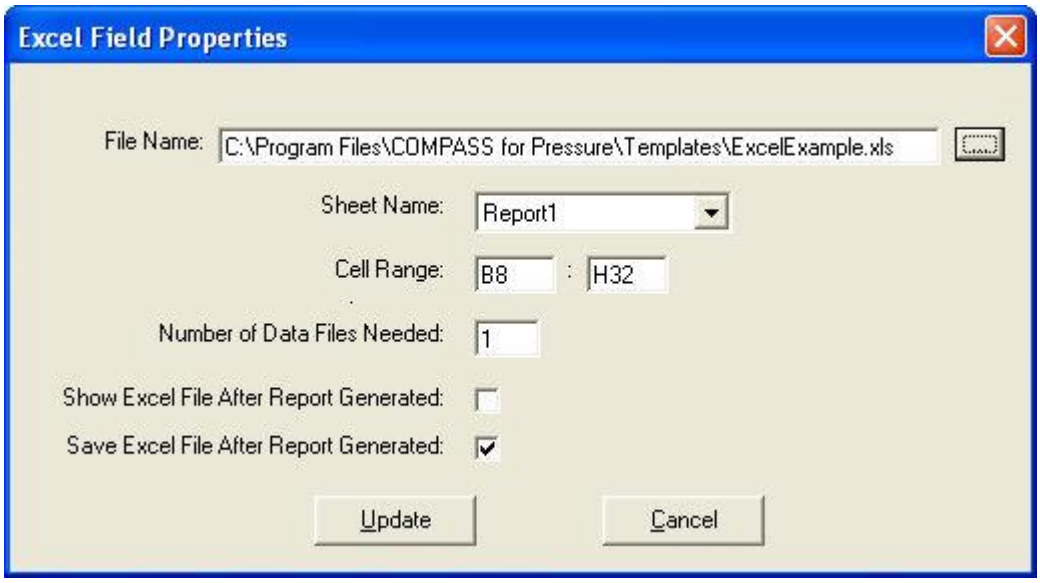
Figure: "Report2" worksheet with Reported Range A4:G15 with customized frame

Referencing Excel in Report Template

The **<Available Data><Macros><Excel Field>** under the **<Available Data Fields>** panel on the left side of the **COMPASS Report Editor** when editing a template is used to insert an **Excel** sheet or chart into the report template. Double click **<Excel Field>** to add it to the template at the current cursor position.



The **Excel Field Properties** form shows after inserting the Excel field into the report template. The properties dialog is also available by clicking the Excel field and selecting **[Properties]**. Browse or enter the desired Excel template file, select the worksheet to report and the corresponding cell range. Click **[Update]** to save the changes and **[Cancel]** to discard the changes. The other options are available to display Excel and to save the Excel file as part of the reporting process. By default, Excel is not visible during the report generation process.



FEATURE	DESCRIPTION
File Name <String Field>	The template Excel file name with full path. Change the file name by typing or selecting using the button.
Sheet Name <List Box>	The name of the Excel worksheet to be inserted.

Cell Range <String Field>	The range of the selected Excel worksheet to be inserted. Specify top-left corner and bottom-right corner cells of the area to be inserted into the report.
Number of Data Files Needed <Integer Field>	The number of data files needed for the Excel sheet or chart to be inserted. This field affects how many reports to be generated if multiple data files selected when generating reports. If "1" is specified, each selected data file will generate one report, if "2" or more is specified, only one report will be generated for all data files selected. In this case the Excel template should use data sheets name “Data1”, “Data2”, “Data3”, etc.
Show Excel File After Report Generated <Check Box>	If checked, the Excel file with the selected data file imported will remain open, so that users can take a look at the actual Excel file. This is very useful when troubleshooting issues.
Save Excel File After Report Generated <Check Box>	If checked, the Excel file with the selected data file imported will be saved at the location of the selected data file. The file name is identical to the default report name except the file uses a “*.xls” extension.

Sample report template using Excel fields

Curre / Numbe	**Calibration Report** Model: Model Serial Number: Seria	Today

Report Information
Report Compiled: Today
Date of test: Date
Time of test: Test
Data file: Data\Data
Test file: Test
User: Opera

DUT Information			Reference Information	
Manufacturer	Manuf		Manufacturer	Manuf
Model	Model		Model	Model
Serial Number	Seria		Serial Number	Seria
Identification	Ident		Identification	Ident
Pressure Range	Min O to Max O Unit		Pressure Range	Min O to Max O Unit
Data Acquisition Method	DAQ M		Data Acquisition Method	DAQ M
Nominal Uncertainty	Final		Nominal Uncertainty	Final

Test Data
Excel

Test Plot
Excel

Sample report using Excel fields

1 / 1	Calibration Report Model: PPC3 Serial Number: 358	Aug 7 2007

Report Information

Report Compiled:Aug 7 2007
Date of test:20060523
Time of test:6:55:29 AM
Data file:C:\DHI Projects\COMPASS Rpt Editor\Templates\ExcelExample\DataFile1.dat
Test file:Service AMH-38, Gauge, QRPT Premium VOC
User:GACS

DUT Information		Reference Information	
Manufacturer	DH Instruments	Manufacturer	DH Instruments
Model	PPC3	Model	PG7607
Serial Number	358	Serial Number	169
Identification		Identification	Any
Pressure Range	0.000 to 30.000 kPa	Pressure Range	5.99254 to 192.2688kPa
Data Acquisition Method	RS232	Data Acquisition Method	RS232
Nominal Uncertainty	0.003 %Span + 0.01%Rdg	Nominal Uncertainty	0.005 %Span

Test Data

Set Point	Reference Pressure	DUT Pressure	DUT - Ref	%Span Error	Tolerance	Pass/Fail
kPa	kPa	kPa	kPa	%	kPa	
0	0	-0.0017	-0.0017	-0.0056	0.0009	**Fail**
7.5	7.466112	7.4646	-0.0015	-0.0051	0.0016	
15	14.99772	14.9959	-0.0018	-0.0059	0.0024	
22.5	22.4667	22.4643	-0.0024	-0.0079	0.0031	
30	29.9983	29.9964	-0.0019	-0.0065	0.0039	
15	14.99771	14.9964	-0.0013	-0.0045	0.0024	
0	0	-0.0012	-0.0012	-0.004	0.0009	**Fail**

Test Plot