Adding Excel Sheets and Charts to Report

Users familiar with Microsoft Excel can insert Excel sheets or charts into a report template. To use this reporting method a licensed copy of MS Excel must be installed on the host PC that is generating reports. This report generation method allows users to leverage the calculation and charting capabilities of Excel to generate fully customize reports in the **COMPASS Report Editor**.

The first step is to create the spread sheet to report by opening a **COMPASS** data file in Excel. Place the contents of the data file on a sheet named "Data1". Create a new sheet that references the values on the "Data1" sheet. Format and name the new sheet as desired. Create a report template and insert an Excel Field. Edit the properties of the Excel field to reference the Excel file, sheet and cell range. Any information within the defined cell range is reported. In the most extreme case, a report template can include only an Excel field with no other Report Editor based data fields. In this case, only information provided by Excel will appear on the final report.

During report generation, data files are imported in the various Data# (1,2,3 etc) sheets in Excel. The new data refreshes calculations on sheets that link to the cells on the Data# sheets. The refreshed information is then reported.

A more detailed view of this process follows in the sections below.

Creating Template Excel File

1. Import one or more **COMPASS** data file(s) into an Excel file. See COMPASS help for details on importing data into Excel. Name the imported data sheets as Data1, Data2 and so on. When generating reports, the selected data files are added to data sheets Data1, Data2 etc. in sequence.

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 1. "Data1" Worksheet With Imported COMPASS Data In Template Excel File

2. Create a report worksheet that references the imported data sheet(s). Format the data and perform all calculations required for the final report. All Excel functionality is supported, including Excel Macros and links to other spreadsheets. A chart object must be added to a worksheet and cannot be added to a new location. The sheet name and cell range are required for reference in the report template. The figures below are example Excel templates.

	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 2. "Report1" Worksheet With Reported Range B8:H16 Referencing Data In "Data1" Worksheet

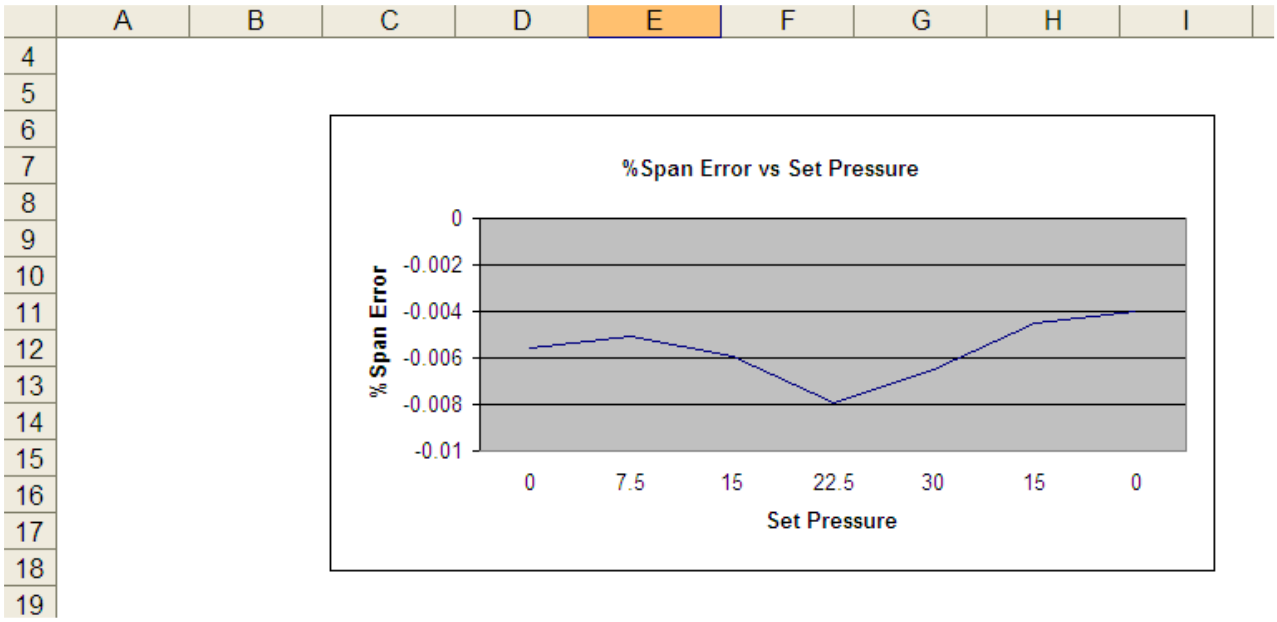

Figure 3. "Chart1" Worksheet With Reported Range C6:I18 Referencing Data In "Data1" Worksheet

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

The COMPASS report will include exactly what is viewed in the Excel template sheet, including the Excel background grid. Clear the grid using the [View] tab of Excel's [Tools][Options] menu.

In order to report a customized data frame, select one more row above the top row and one more column to the left of the desired range to report. For example, range A4:G15 must be specified in the report template although the real reporting range is B5:G15 in the following figure.

	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 4. "Report2" Worksheet With Reported Range A4:G15 Referencing Data In "Data1" And "Data2" Worksheet

Referencing Excel in Report Template

When editing a template use the **<Available Data><Macros><Excel Field>** on the left side of the **COMPASS** Report Editor to access add an Excel field to a report template. Like all other report editor fields, place the cursor at the desired field location in the report template and double click **<Excel Field>** to add a new Excel field to the template at the current cursor position.

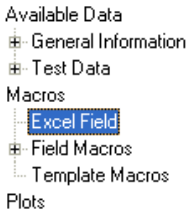

Figure 5. Adding <Excel Field> To Templeate

The **Excel Field Properties** form shows when inserting an <Excel Field> into the report template, as shown as the figure below. The form is also viewed by accessing the **[Properties]** menu after clicking on an inserted Excel field. Define the spreadsheet file name, report range and sheet information then click **[Update]** to save the changes or **[Cancel]** to discard the changes.

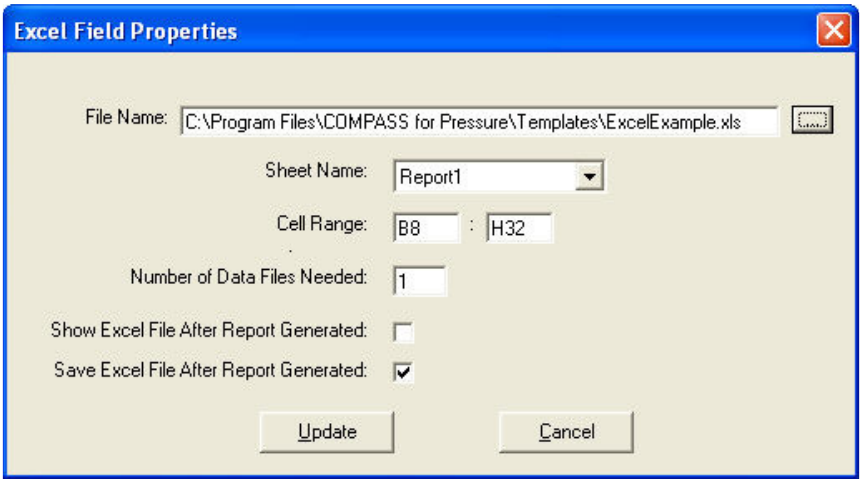

Figure 6. Excel Field Properties Form To Specify The Properties Of The Excel Field

Table 1. Description Of <Excel Field Properties> Form

FEATURE	DESCRIPTION

File Name **<String Field>**	The full path and file name of the Excel file to merge data files with during report generation. Change the file name by typing in the field or by selecting the file after pressing the ellipsis 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 the 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 are selected when generating reports. if "1" is specified, each selected data file will generate one report. If "2" or more is entered, only one report is generated for all data files selected. The files are copied to the Data1-n" sheets of the Excel file during report generation.
Show Excel File After Report Generated **<Check Box>**	Select this option to leave MS Excel open with the reported data file(s) after report generation. This option is very useful when initially trouble shooting reports. It is also used to further manipulate the spreadsheet if specific selections are required. MS Excel will remain open with the data file(s) reported in the If checked, the excel file with the selected data file imported will remain open, so that users can take a look at the Excel file.
Save Excel File After Report Generated **<Check Box>**	Check this option to automatically save the Excel file using the same path and file name of the first data file imported. The default file extension is ".xls".

The Excel template must use data files that are formatted in a consistent manner. The number of headers and columns of data stored in a data file are controlled by the [Tools][Options][Data Header] and [Tools][Options][Data in File] options in COMPASS. Changing these options will change the relative cell locations of imported data. This can prevent an Excel template from functioning properly. The number of test cycle and points will also impact the results depending on how data is referenced.

Sample Report

The two figures below are a sample report template and the resultant report. The sample report template uses both excel fields and report template fields to define the custom report.

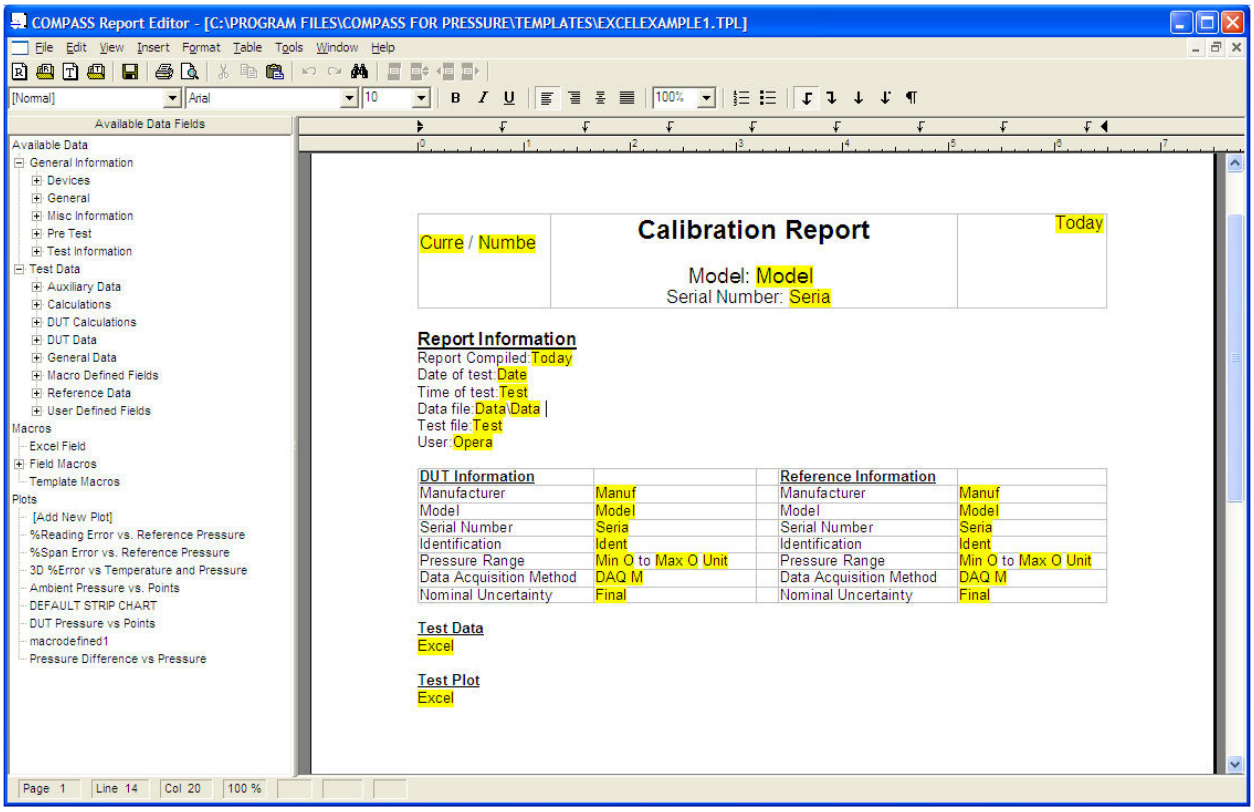

Figure 7. Excel Field Properties Form To Specify The Properties Of The Excel Field

The generated report using the above Excel template file and COMPASS report template will look like the following.

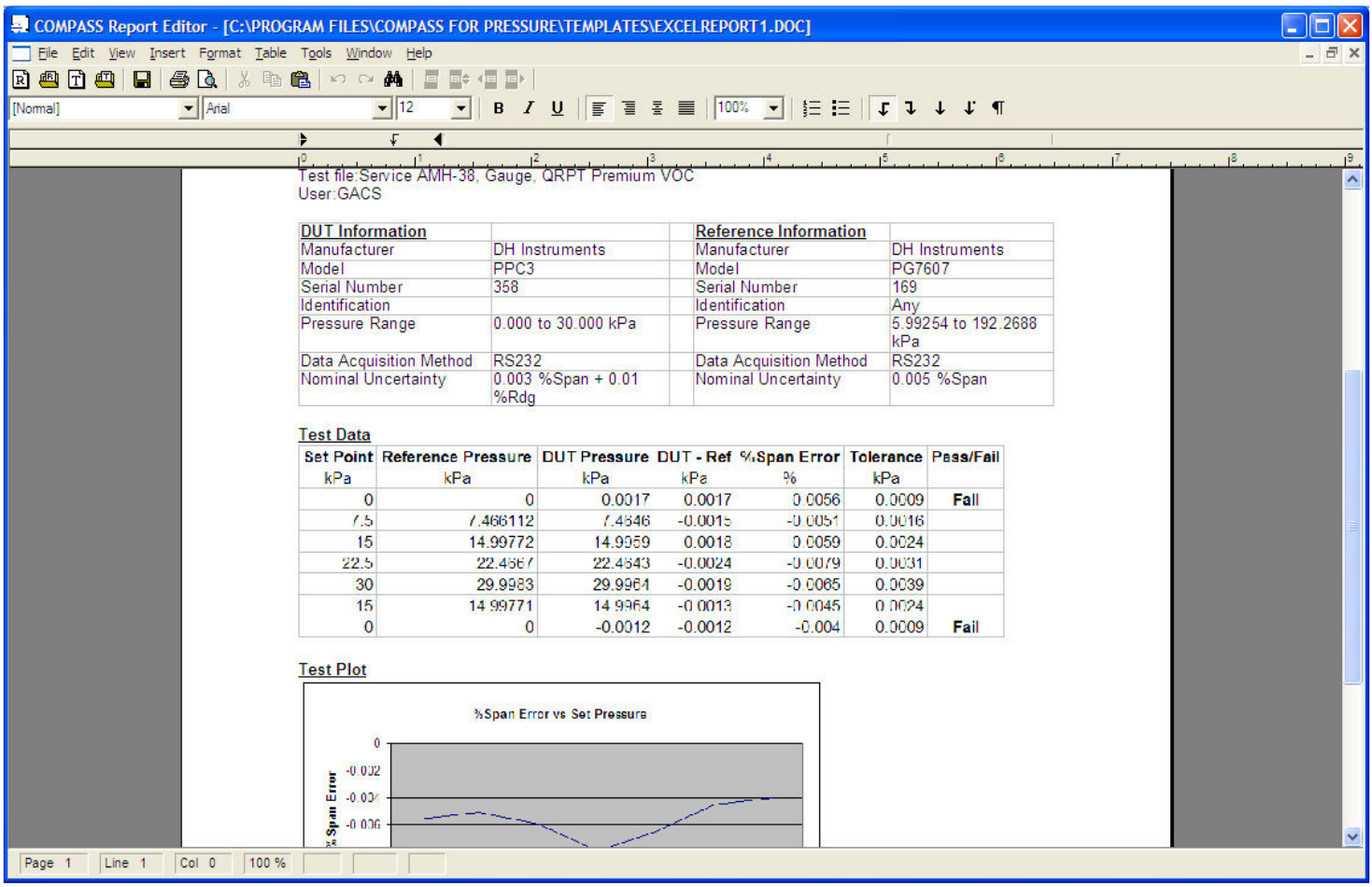

Figure 8. Generated COMPASS Report