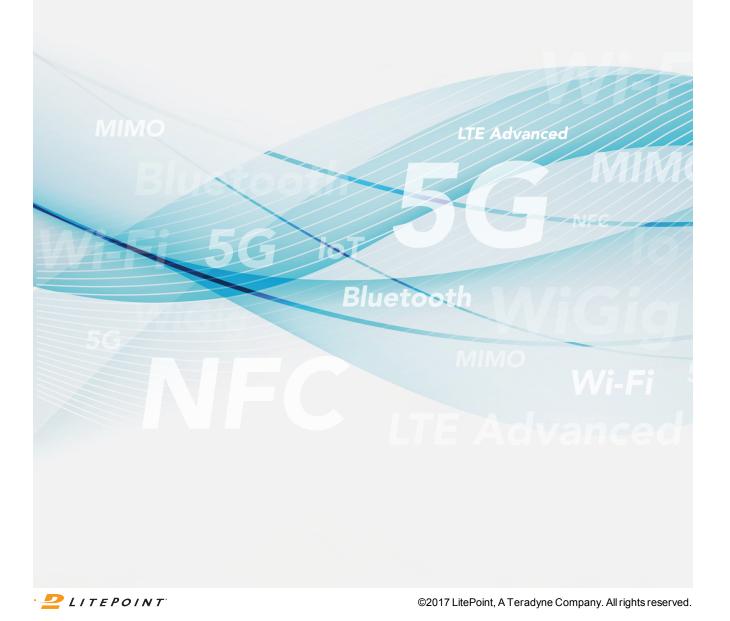


Quick Start Guide

LitePoint lQramp[™] Personal

For Data Analysis and Reporting



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1. Introduction

LitePoint IQramp is a data analysis and reporting solution for analysis of wireless test data. IQramp was specifically designed to analyze measurement results from the LitePoint IQfact+, IQvector, and zScript automated test software solutions.

1.1. The IQramp Quick Start Guide

The purpose of this quick start guide is to get you up and running with IQramp as quickly as possible, while introducing you to the powerful and flexible features of the application. By working through a typical process of uploading, viewing, and analyzing data, you will learn best practices that you can apply to the data you work with in IQramp.



This guide does not describe all IQramp features and settings. For complete details, including steps for installing and activating IQramp on your system, refer to the *IQramp User's Guide*.

2. Load a Dataset and Create a Chart

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2.1. Load a Dataset

	iQram	Þ	ANALYSIS	TEMPLATES	REPOR	TS .					
	Datasets	Yield	i≣ Statist	ics <u>"II</u> Plot	<u>.ll</u> P	ivot	<u>"II</u> Scatter				
± ()pen 🛓 Sa	ave Selected	C Start Over	X Close Selected		ettings	🖍 Rename Alias	Name	X Delete Runs	X Delete Resu	Its
						5	Search				Q
	Auto Reload	Dataset	File Nar	ne Program Na	ime	Runs	Tests		Folder		v
		result	result	IQfactPlus	5		845	C:\User	s\amcdonald\Desktop	VIQfactPlus	
							00 -	npData ►	✓ 4 ₇ Share with ▼ Burn	Search IQrampData	
										dified Type	

- 1. With the **Analysis** module selected, click the **Datasets** tab, and then drag and drop one or more data files to the workspace.
 - Or, click **Open** to browse and select a data file.



When you upload IQfact+ files that have both *result.csv* and *measurement.csv* files, the files must be loaded at the same time. The easiest way to do this is to zip the files together, and then upload the zipped file.

	Datasets Yield	ı :≣	Statistic	cs <u>"III</u> Plot	<u>.11</u>	Pivot	<u>.III</u> Scatter			
1	Open ± Save Selected	C Start	Over	× Close Selected	≁ Load	settings	🖍 Rename Alias Name	× Delete Ru	ns X Delete	Results
						Search	1			Q
1	Dataset			File Name			Program Name	Runs	Tests	T
	result.csv		result.zij	p		IQfactPlu	S	5	845	
	result_dut1.csv		Test Da	ta.zip				5	5275	
D	result_dut2.csv		Test Da	ta.zip				5	5275	
D	result_dut3.csv		Test Da	ta.zip				5	5275	
D	result_dut4.csv		Test Da	ta.zip				5	5275	
		en D	ata	asets:	Drc	p f	iles here	to o	pen.	

Key points:

- In the example above, the *result.csv* dataset contains 5 runs of 845 tests.
- You can upload and work with multiple data files.
- To remove all datasets, click Start Over.
- To remove individual datasets, select one or more datasets, and then click Close Selected.

2.2. Select Data to Analyze

Use the Statistics tab to view the data in a dataset and select data to include in a chart.

1. On the **Datasets** tab, select a dataset, and then click the **Statistics** tab.

		ORTS										
Ⅲ Datasets Ⅲ Yield Ⅲ Satisfics ▲ Plot ▲ Pivot ▲ Scatter												
to report template + Add settin	gs as columns	± De	wnload CSV									
							Search				Q 🗉 8	ielect All
ame	Runs I	Passed	Failed	Errored	Outliers Un	t Lower	Upper	Min	Max	Mean	STD	СРК 🔻
11; 2442; TX1; 20.00	5	5	0	0				1	1	1	0	^
442; TX1; 20.00	5	5	0	0	dB			-0.19	-0.1	-0.15	0.008	
2442; TX1; 20.00	6	5	0	0	dB			-0.19	-0.1	-0.15	0.008	
-11; 2442; TX1; 20.00	5	5	0	0	dB			7.5	7.5	7.5	0	
2; TX1; 20.00	6	5	0	0	Mbp	11.00	11.00	11	11	11	0	
i2; TX1; 20.00	5	5	0	0	dB			-19.46	-19.32	-19.376	0	
442; TX1; 20.00	5	5	0	0	dB	-40.00	-16.00	-19.46	-19.32	-19.376	0	-40930.
K-11; 2442; TX1; 20.00	5	5	0	0	96			10.65	10.81	10.742	0.056	
1 HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0	%			10.65	10.81	10.742	0.056	
42; TX1; 20.00	5	5	0	0	dB			-19.31	-19.28	-19.292	0	
1 HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0	%			10.83	10.87	10.85	0.014	
2; TX1; 20.00	5	5	0	0	dB			-19.59	-19.35	-19.443	0	
1 HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0	%			10.48	10.78	10.664	0.102	
42; TX1; 20.00	5	5	0	0	dB			-11.92	-11.05	-11.521	0.005	
11; 2442; TX1; 20.00	5	5	0	0	%			25.35	28.03	26.522	0.968	
-11; 2442; TX1; 20.00	5	5	0	0	ppm			0.09	0.64	0.502	0.208	
-11; 2442; TX1; 20.00	5	5	0	0	ppm			0.16	0.67	0.546	0.194	
11; 2442; TX1; 20.00	5	5	0	0	ppm			0.05	0.6	0.452	0.204	
-11; 2 -11; 2	8442; TX1; 20.00 2442; TX1; 20.00 4442; TX1; 20.00	8442; TX1; 20.00 5 2442; TX1; 20.00 5 4442; TX1; 20.00 5	2442; TX1; 20.00 5 5 2442; TX1; 20.00 5 5	X442; TX1; 20.00 5 5 0 2442; TX1; 20.00 5 5 0 442; TX1; 20.00 5 5 0	1442; TX1; 20.00 5 5 0 0 2442; TX1; 20.00 5 5 0 0 442; TX1; 20.00 5 5 0 0	1442; TX1; 20:00 5 5 0 0 ppm 2442; TX1; 20:00 5 5 0 0 ppm 442; TX1; 20:00 5 5 0 0 ppm	442, TX1, 20.00 5 5 0 0 ppm 442, TX1, 20.00 5 5 0 0 ppm 442, TX1, 20.00 5 5 0 ppm	442, TX1, 20 00 5 5 0 0 ppm 442, TX1, 20 00 9 5 0 0 ppm 442, TX1, 20 00 5 5 0 0 ppm	442, TX1, 130.00 5 5 0 0 ppm 2.09 442, TX1, 130.00 5 5 0 0 ppm 0.19 442, TX1, 130.00 5 5 0 0 ppm 0.09	442, TX, 13000 5 5 0 ppm 0.09 0.64 442, TX, 13000 5 5 0 ppm 0.16 0.67 442, TX, 12000 5 5 0 ppm 0.16 0.67 442, TX, 12000 5 5 0 ppm 0.05 0.65	442, TX1, 130.00 5 5 0 0 ppm 0.09 6.64 0.902 442, TX1, 130.00 5 5 0 0 ppm 0.16 0.67 0.946 442, TX1, 230.00 5 5 0 0 ppm 0.08 0.68 0.432	H42, TX1, 103.00 5 5 0 ppm 0.09 0.84 0.902 0.208 H42, TX1, 103.00 5 5 0 ppm 0.16 0.87 0.946 0.194 H42, TX1, 203.00 5 5 0 ppm 0.05 0.68 0.442 0.204

2. In the Search box, enter search criteria to define the data you are interested in. You can view the data in a chart, or simply narrow down the data displayed in the Statistics table.

tion License Ch	loose version													
e iQra	ıтþ	ANALYSIS	TEMPLATES	R	EPORT	S								
III Datasets	III Yield	i≣ Statistics	<u>ah</u> F	lot	<u>l</u> ı Piv	rot <u>III</u>	Scatter							
Group By:	None - 📕 Ar	id to report template	+ Add settin	igs as colun	nns	L Download CS	8V							
Row Count:	15 Selected: 1	5				EVM_	AVG_DB	HT20				Q		elect All
-	Name		Runs	Passed I	Failed	Errored Outlie	rs Unit	Lower	Upper	Min	Max	Mean	STD	СРК
7. EVM_AVG_	DB HT20; CCK-11;	2442; TX1; 20.00	5	5	0	0	dB	-40.00	-16.00	-19.46	-19.32	-19.376	0.049	22.8568
8. EVM_AVG_	DB HT20; OFDM-6	2442; TX1; 17.00	5	5	0	0	dB	-40.00	-19.00	-27.43	-26.51	-26.942	0.357	7.4118
9. EVM_AVG_	DB HT20; OFDM-5	4; 2442; TX1; 17.00	5	3	2	0	dB	-40.00	-27.00	-27.24	-26.89	-27.08	0.128	0.2090
10. EVM_AVG	DB HT20; MCS0;	2442; TX1; 15.00	5	5	0	0	dB	-40.00	-5.00	-28.67	-27.79	-28.046	0.323	12.3214
11. EVM_AVG	DB HT20; MCS7;	2442; TX1; 15.00	5	3	2	0	dB	-40.00	-28.00	-28.09	-27.34	-27.846	0.273	-0.1877
✓ 18. EVM_AVG	DB HT20; CCK-11	; 2412; TX1; 20.00	5	5	0	0	dB	-40.00	-16.00	-19.38	-19.32	-19.348	0.025	44.9649
19. EVM_AVG	DB HT20; OFDM-	5; 2412; TX1; 17.00	5	5	0	0	dB	-40.00	-19.00	-27.5	-26.91	-27.12	0.214	12.6474
20. EVM_AVG	DB HT20; OFDM-	54; 2412; TX1; 17.00	5	3	2	0	dB	-40.00	-27.00	-27.64	-26.79	-27.224	0.327	0.2283
21. EVM_AVG	DB HT20; MCS0;	2412; TX1; 15.00	5	5	0	0	dB	-40.00	-5.00	-28.14	-26.57	-27.66	0.575	7.1478
22. EVM_AVG	DB HT20; MCS7;	2412; TX1; 15.00	5	1	4	0	dB	-40.00	-28.00	-28.14	-27.4	-27.676	0.266	-0.4058
23. EVM_AVG	DB HT20; OCK-11	; 2484; TX1; 20.00	5	5	0	0	dB	-40.00	-16.00	-19.33	-19.16	-19.266	0.057	19.1733
24. EVM_AVG	DB HT20; OFDM-	5; 2484; TX1; 17.00	5	5	0	0	dB	-40.00	-19.00	-28.28	-27.15	-27.712	0.49	5.9256

Key points:

- Each row in the Statistics table displays a test in the selected dataset.
- You can simultaneously display data from multiple datasets.
- · Search criteria can include values from any displayed column.



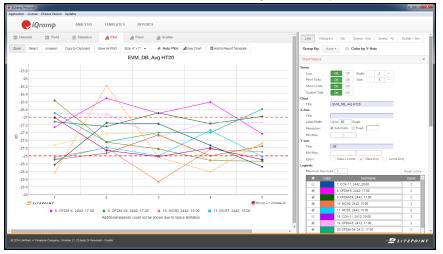
All search boxes in IQramp use regular expressions. Refer to *Appendix A* in the *IQramp User's Guide* for details and examples.

2.3. Create a Chart



The following example creates a Line chart. Several additional chart types are available, including histogram, sweep, and pivot tables. Refer to the *IQramp User's Guide* for details.

1. In the Statistics table, select the test results you want to plot, and then click the Plot tab.



3. Work with Charts and Chart Templates

3.1. Display Options	8
3.2. Select and Filter Chart Data	. 11
3.3. Create Chart Templates	. 11

The Plot window includes features that help you configure and customize the display of a chart, search for and select chart data, and create templates of search criteria. Key features are described below.

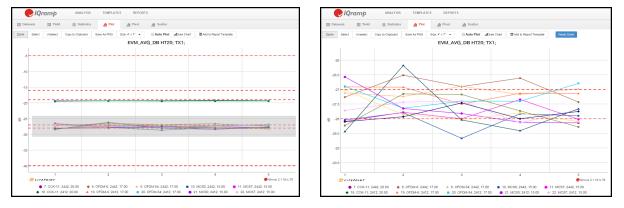


The following example shows chart display option using a Line chart. Several additional chart types are available in IQramp, including histogram, sweep, and pivot tables. Refer to the *IQramp User's Guide* for complete details.

3.1. Display Options

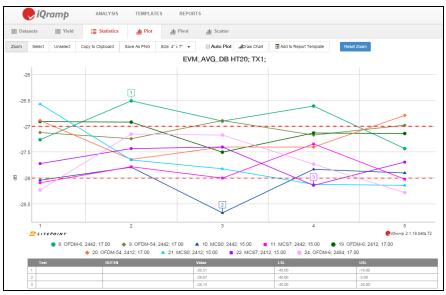
Zoom In On Chart Data

Click Zoom, and then highlight the area of the chart you want to zoom in on.



View Data Points

Click individual data points on the chart, or click **Select** and drag to highlight multiple points. The data for the selected points is displayed below the chart.



Group By List

Use the Group By list to correlate and group tests by categories such as DUT serial number, Dataset, and Station Name.

Line His	togram Bar Sweep -	wg Sweep	- All Scatter + Box
Group By:	None - Color by	Y-Axis	
Bin Count: 🗑	None	1	
	DUTSN		
Chart Options	Dataset		*
Series	File Name		
Point Ticks:	Program Name	- 5	+
Show Limits	Program Revision		
Custom Title	-		
Chart	Row Index		
Title:	Start Time	TX1; TX2; TX3; T	X
X-Axis Title:	Station Name		

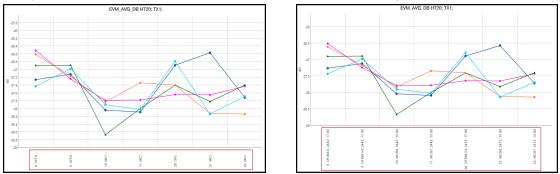
Chart Options

Use the Chart Options to configure a chart's display properties, such as the title, labels, colors, and minimum and maximum axis values.

Chart Options		*
Series		
Line:	On Off Width: - 2 +	
Point Ticks:	On Off Size: - 5 +	
Show Limits:	On Off	
Custom Title:	On Off	
Chart		
Title:	EVM_DB_Avg	
Show Test Yield:	On Off Call Pass Fail	
X-Axis		
Title:		
Label Width:	Up to 80 Pixels	
Interval By:	Category 🔲 Value	
Resolution:	Automatic 🔲 Fixed	
Sort By AN:	On Off	
Y-axis		
Title:	dB	
Min/Max:	-40 -22	
Zoom:	Data + Limits Data Only Limits C	Only
Legends		
Maximum line count:	1	Reset colors
Color		Count
	1	1
	2	1
	3	1
	4	1
	5	1
	6	1
	7	1
	8	1
	9	1
	10	1

Key point:

• Use the Label Width property to increase the display space provided for labels on the x-axis. This property applies to labels displayed vertically, such as on the Sweep-Avg and Sweep-All charts. In the examples below, the Label Width value was increased from 80 to 180 pixels.



3.2. Select and Filter Chart Data

The Y-Axis panel displays the selected tests for the current chart. You can modify the selections by manually selecting the tests to plot (press Shift and click tests to select a range of tests), or by modifying the filter criteria in the Test Filters box. This capability allows you to quickly modify selections and redraw a chart, without returning to the selections on the Statistics tab.

Y-Ax	is	*	Y-Axis 👻
Test	s Filter: EVM_AVG_DB HT20	🗸 📄 Select All	Tests Filter: EVM_AVG_DB HT20; OFDM
	Name		Name
	7. EVM_AVG_DB HT20; CCK-11; 2442; TX1; 20.00	<u> </u>	8. EVM_AVG_DB HT20; OFDM-6; 2442; TX1; 17.00
	8. EVM_AVG_DB HT20; OFDM-6; 2442; TX1; 17.00		9. EVM_AVG_DB HT20; OFDM-54; 2442; TX1; 17.00
	9. EVM_AVG_DB HT20; OFDM-54; 2442; TX1; 17.00		19. EVM_AVG_DB HT20; OFDM-6; 2412; TX1; 17.00
	10. EVM_AVG_DB HT20; MCS0; 2442; TX1; 15.00		20. EVM_AVG_DB HT20; OFDM-54; 2412; TX1; 17.00
	11. EVM_AVG_DB HT20; MCS7; 2442; TX1; 15.00		24. EVM_AVG_DB HT20; OFDM-6; 2484; TX1; 17.00
	18. EVM_AVG_DB HT20; CCK-11; 2412; TX1; 20.00		25. EVM_AVG_DB HT20; OFDM-54; 2484; TX1; 17.00
	19. EVM_AVG_DB HT20; OFDM-6; 2412; TX1; 17.00		
	20. EVM_AVG_DB HT20; OFDM-54; 2412; TX1; 17.00		
	21. EVM_AVG_DB HT20; MCS0; 2412; TX1; 15.00		
	22. EVM_AVG_DB HT20; MCS7; 2412; TX1; 15.00		
	23. EVM_AVG_DB HT20; CCK-11; 2484; TX1; 20.00	-	
	Tests: 1	15 Selected: 12	Tests: 6 Selected: 6

Key point:

Changes in selections and filtering criteria are synchronized with the selections and data displayed on the Statistics tab.

3.3. Create Chart Templates

Chart templates are used to save filtering criteria that you can then apply to other datasets. Using a template saves the time of reentering the filtering criteria, and ensures that the same tests are evaluated in subsequent datasets.

Sa	ved Templates				>
	Name				
	EVM_AVG_DB HT20			(ľ
	EVM_AVG_DB HT20; OFDM			(/
Del	ete Update Save As Reset Download Upload				
Y-/	Axis				۲
Tes	ts Filter: EVM_AVG_DB HT20; OFDM			Select	All
	Name				
	8. EVM_AVG_DB HT20; OFDM-6; 2442; TX1; 17.00				
V	9. EVM_AVG_DB HT20; OFDM-54; 2442; TX1; 17.00				
	19. EVM_AVG_DB HT20; OFDM-6; 2412; TX1; 17.00				
	20. EVM_AVG_DB HT20; OFDM-54; 2412; TX1; 17.00				
V	24. EVM_AVG_DB HT20; OFDM-6; 2484; TX1; 17.00				
V	25. EVM_AVG_DB HT20; OFDM-54; 2484; TX1; 17.00				
		Tests:	6	Selected	6

To create a chart template:

- 1. In the right-hand panel of the Plot window, open the Saved Templates section, and then click **Save As**.
- 2. Enter a name for the template and click **Save**. The template for the current Y-Axis filter criteria is added to the Saved Templates list.

To apply a chart template to a dataset:

1. In the Saved Templates section, click to select a template. The template's filter criteria is applied to the dataset, and the results are displayed in the Y-Axis section.

4. Work with Reports

4.1. Create a Report Template	13
4.2. Create a Report	14

The Reports module allows you to create interactive reports that can be shared with other IQramp users. Report recipients can view and analyze a report, and also apply the report settings to their own data.

4.1. Create a Report Template

Report templates are layouts of user-defined filters and settings that are then used to create reports. Templates can include multiple chart types and can be reused and combined into new reports as needed. Using templates minimizes the time required to create and configure new reports.



Reports are based on report templates, and so must be created before you can create a report.

To create a report template:

1. With a chart displayed on the Plot, Pivot, or Scatter tabs, click Add to Report Template.

Section Se	Itings		
Template:	Create New 🔻		
New Templa	te Name: EVM_AVG_DB HT20 - Sweep		
Component	SWEEP		
Section Title	Sweep - Avg	Í.	

- 2. Enter a New Template Name and optional Section Title.
 - Or select a template from the Template list to add the chart to an existing template.
- 3. Click Add.

Key point:

- From the Templates list, you can save templates to your local system. The template file can then be sent and shared with other IQramp users.
- You can also create report templates from selected tests on the Statistics tab.

4.2. Create a Report

Select datasets and report templates to create an interactive report.

To create a report:

1. On the main IQramp window, click Reports, and then click Create Report.

		>>	Datasets	
Reports / Generate Report			 result.csv(result.zip) result.csv(Data1.zip) 	
Report Name			- resolution(balan.2p)	
EVM_AVG_DB HT20 Report				
Report Description				
Generate Correlation Reports				
	nerate your report. Rearrange the template order by dragging and dropping.			
Select the template(s) IQramp should use to ge	nerate your report. Rearrange the template order by dragging and dropping. Sort By: Name © Accending © Deconding Modified On © Accending @			
Select the template(s) IQramp should use to ge Fitter: Descending	Sort By: Name Accending Descending Modified On Accending 🖉			
Select the template(s) IQramp should use to ge Fitter: Beconding Template Title	Sort By: Name According Descending Modified On According @			
Select the template(s) IQramp should use to ge Fitter: Descending Template Title EVM_AVG_D8 HT20 - Sweep	Sort By: Name According Deconding Modified On According @ Modified On 01/07/2016 11:82:32 AM			
Select the template(s) ICramp should use to ge Filter: Descenting Template Title EVM_AVG_DB HT20 - Sweep EVM_AVG_DB HT20 - Bar	Sort By: Name According Decenting Modified On According Image: Modified On Optimized Strength Image: Modified On Optimized Strength Image: Modified On According Image: Modified On			
Select the template(s) (Dramp should use to ge Filter: Descentig Template Title EVM_AVG_DB HT20 - Bar & EVM_AVG_DB HT20 - Bar	Sort By: Name According Decenting Modified On According Image: Modified On According According According </td <td></td> <td></td> <td></td>			
Select the template(s) ICramp should use to ge Filter: Descenting Template Title EVM_AVG_DB HT20 - Sweep EVM_AVG_DB HT20 - Bar	Sort By: Name According Decenting Modified On According @ Modified On 01/07/2016 11:82:32 AM 01/07/2016 10:26:59 AM			
Select the template(s) (Gramp should use to get Fider: Decentral EMA, KO, DB 1170 - Sweep EVM, AVG, DB 1170 - Sweep EVM, AVG, DB 1170 - Hanogram & EVM, AVG, DB 1170 - Hanogram & EVM, AVG, DB 1170 - Line EVM, AVG, DB 1170 - Line	Sort By: Name According Decenting Modified On According Image: Control of the Control of th			
Select the template(s) (Dramp should use to ge Filter: Concording Templatie Title EVM_AVG_00B (HT20 - Sweep) EVM_AVG_00B (HT20 - Hestogram EVM_AVG_00B (HT20 - Line	Sort By: Name According Decenting Modified On According If 01/07/2016 11:82:32 AM			
Select the template(s) (Gramp should use to get Fider: Decentral EMA, KO, DB 1170 - Sweep EVM, AVG, DB 1170 - Sweep EVM, AVG, DB 1170 - Hanogram & EVM, AVG, DB 1170 - Hanogram & EVM, AVG, DB 1170 - Line EVM, AVG, DB 1170 - Line	Sort By: Name According Decenting Modified On According Image: Control of the Control of th			

- 2. In the Datasets panel, select one or more datasets.
- 3. Enter a Report Name and optional Report Description.
- 4. Select one or more templates to include in the report.
- 5. Click **Generate & Open Report**. The report is generated, added to the Reports list, and opened.



6. With the report open, you can make changes to the report settings, and then click **Save** to update the report on the Reports list.

Key points:

- From the Reports list, you can save reports to your local system. The report file can then be sent and shared with other IQramp users.
- You can also save and distribute reports as PDF files.