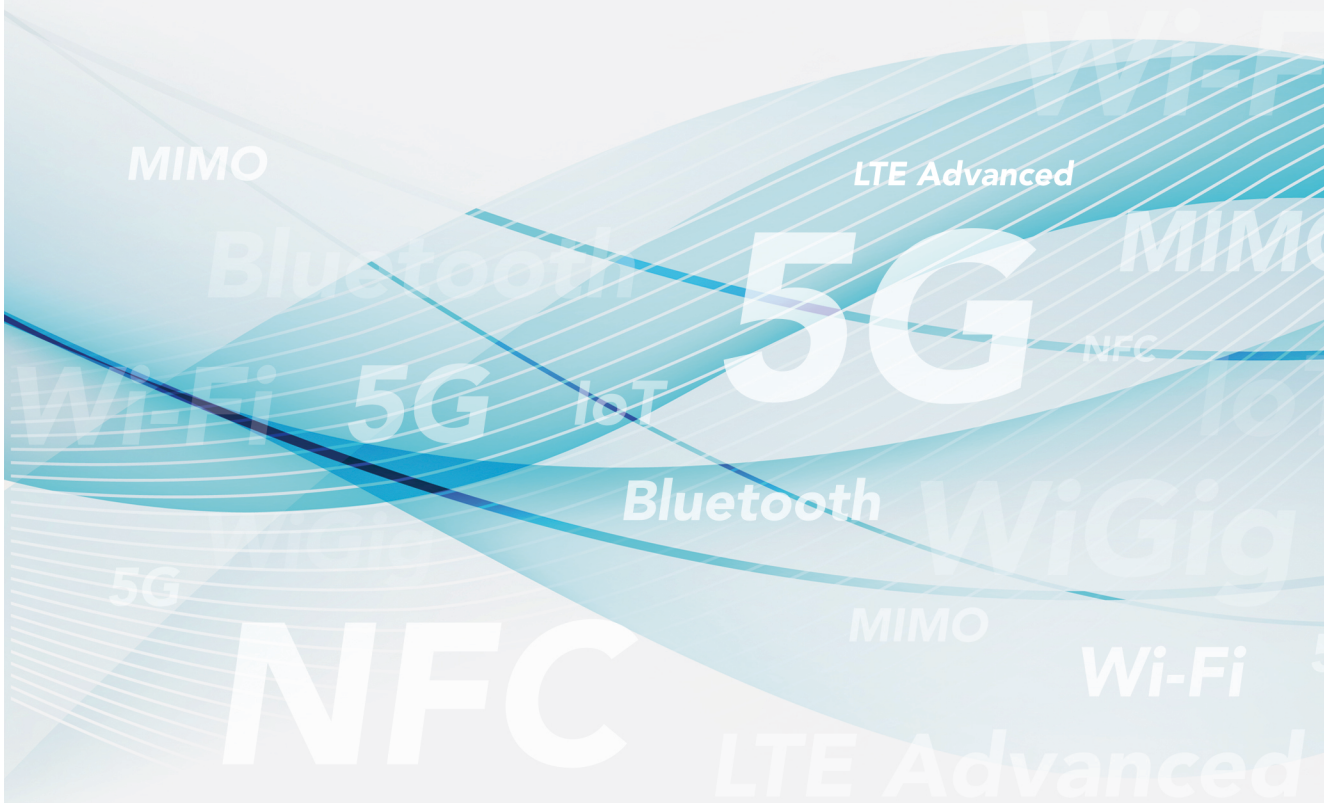


LitePoint IQramp™ Personal

For Data Analysis and Reporting



Copyright © 2017, LitePoint Corporation

All rights reserved

RESTRICTED RIGHTS LEGEND

No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual, or otherwise, without the prior written permission of LitePoint Corporation.

DISCLAIMER

LitePoint Corporation makes no representations or warranties with respect to the contents of this manual or of the associated LitePoint Corporation products, and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. LitePoint Corporation shall under no circumstances be liable for incidental or consequential damages or related expenses resulting from the use of this product, even if it has been notified of the possibility of such damages.

If you find errors or problems with this documentation, please notify LitePoint Corporation at the address listed below. LitePoint Corporation does not guarantee that this document is error-free. LitePoint Corporation reserves the right to make changes in specifications and other information contained in this document without prior notice.

TRADEMARKS

LitePoint and the LitePoint logo, are registered trademarks and IQramp, IQfact+, IQvector, and zScript are trademarks of LitePoint Corporation. Microsoft Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries. All trademarks or registered trademarks are owned by their respective owners.

CONTACT INFORMATION

LitePoint Corporation
575 Maude Court
Sunnyvale, CA 94085-2803
United States of America
Phone: +1.866.363.1911
Phone: +1.408.456.5000

LITEPOINT TECHNICAL SUPPORT

www.litepoint.com/support

Document Information

Doc: 1075-5004-001
Date and Revision: Jun 2017, Rev 5
Software Release Version: 2.1.23.1

Table Of Contents

- Table Of Contents** **3**
- 1. Introduction** **4**
 - 1.1. The IQramp Quick Start Guide 4
- 2. Load a Dataset and Create a Chart** **5**
 - 2.1. Load a Dataset 5
 - 2.2. Select Data to Analyze 6
 - 2.3. Create a Chart 7
- 3. Work with Charts and Chart Templates** **8**
 - 3.1. Display Options 8
 - 3.2. Select and Filter Chart Data 11
 - 3.3. Create Chart Templates 11
- 4. Work with Reports** **13**
 - 4.1. Create a Report Template 13
 - 4.2. Create a Report 14

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.

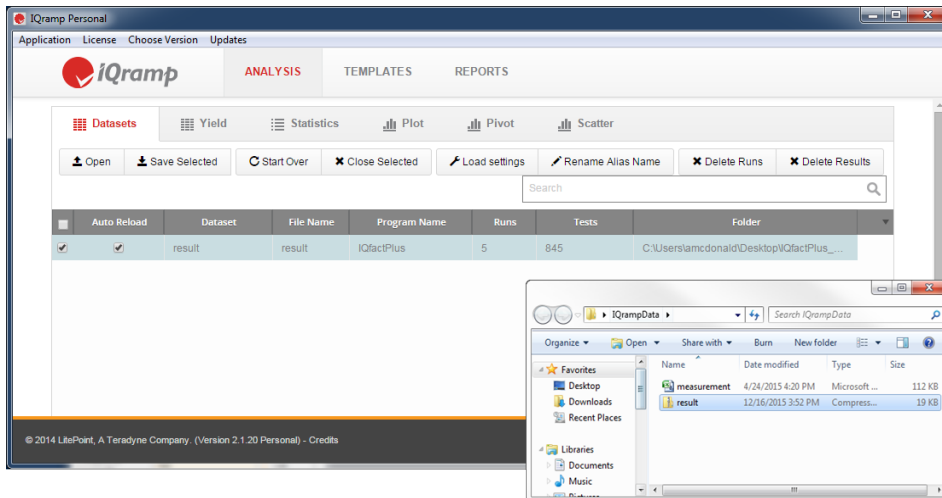


This guide does not describe all IQramp features and settings. For complete details, including steps for installing and activating IQramp on your system, refer to the *IQramp User's Guide*.

2. Load a Dataset and Create a Chart

2.1. Load a Dataset	5
2.2. Select Data to Analyze	6
2.3. Create a Chart	7

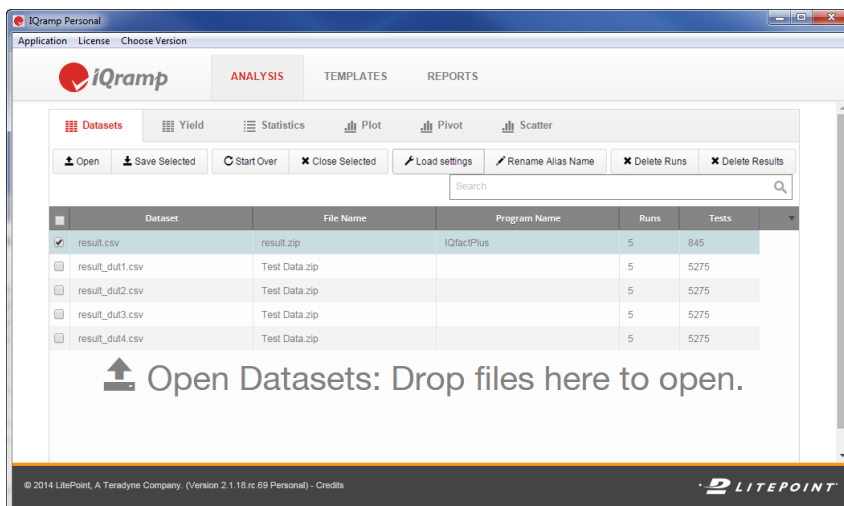
2.1. Load a Dataset



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.



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.

Row Count: 845 Selected: 0

Name	Runs	Passed	Failed	Errored	Outliers	Unit	Lower	Upper	Min	Max	Mean	STD	CPK
7_SPATIAL_STREAM_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0				1	1	1	0	0
7_AMP_ERR_DB_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	dB			-0.19	-0.1	-0.15	0.008	
7_AMP_ERR_DB_1_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	dB			-0.19	-0.1	-0.15	0.008	
7_CABLE_LOSS_DB_1_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	dB			7.5	7.5	7.5	0	
7_DATA_RATE_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	Mbps	11.00	11.00	11	11	11	0	
7_EVM_AVG_1_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	dB			-19.46	-19.32	-19.376	0	
7_EVM_AVG_DB_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	dB	-20.00	-16.00	-19.46	-19.32	-19.376	0	-0.200
7_EVM_AVG_PERCENT_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	%			10.69	10.81	10.742	0.096	
7_EVM_AVG_STREAM_PERCENT_1_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	%			10.60	10.81	10.742	0.096	
7_EVM_MAX_1_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	dB			-19.31	-19.28	-19.292	0	
7_EVM_MAX_STREAM_PERCENT_1_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	%			10.83	10.87	10.85	0.014	
7_EVM_MIN_1_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	dB			-19.59	-19.35	-19.443	0	
7_EVM_MIN_STREAM_PERCENT_1_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	%			10.48	10.78	10.664	0.102	
7_EVM_PK_DB_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	dB			-11.92	-11.09	-11.521	0.005	
7_EVM_PK_PERCENT_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	%			26.35	26.03	26.322	0.969	
7_FREQ_ERROR_AVG_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	ppm			0.09	0.64	0.362	0.209	
7_FREQ_ERROR_MAX_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	ppm			0.16	0.67	0.346	0.194	
7_FREQ_ERROR_MIN_HT20_CCK-11_2442_TX1_20.00	5	5	0	0	0	ppm			0.05	0.6	0.452	0.204	

- 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.

Name	Runs	Passed	Failed	Errorred	Outliers	Unit	Lower	Upper	Min	Max	Mean	STD	CPK
7. EVM_AVG_DB HT20; CCK-11; 2442; TX1; 20.00	5	5	0	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	0	dB	-40.00	-19.00	-27.43	-26.51	-26.942	0.357	7.4118
9. EVM_AVG_DB HT20; OFDM-54; 2442; TX1; 17.00	5	3	2	0	0	dB	-40.00	-27.00	-27.24	-26.89	-27.08	0.128	-0.2038
10. EVM_AVG_DB HT20; MCS9; 2442; TX1; 15.00	5	5	0	0	0	dB	-40.00	-5.00	-26.67	-27.79	-26.046	0.333	12.3214
11. EVM_AVG_DB HT20; MCS7; 2442; TX1; 15.00	5	3	2	0	0	dB	-40.00	-28.00	-28.09	-27.34	-27.846	0.273	-0.1571
18. EVM_AVG_DB HT20; CCK-11; 2412; TX1; 20.00	5	5	0	0	0	dB	-40.00	-16.00	-19.36	-19.32	-19.348	0.025	44.9649
19. EVM_AVG_DB HT20; OFDM-6; 2412; TX1; 17.00	5	5	0	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	0	dB	-40.00	-27.00	-27.64	-26.79	-27.224	0.327	-0.2406
21. EVM_AVG_DB HT20; MCS9; 2412; TX1; 15.00	5	5	0	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	0	dB	-40.00	-28.00	-28.14	-27.4	-27.676	0.266	-0.4034
23. EVM_AVG_DB HT20; CCK-11; 2434; TX1; 20.00	5	5	0	0	0	dB	-40.00	-16.00	-19.33	-19.16	-19.266	0.057	19.1733
24. EVM_AVG_DB HT20; OFDM-6; 2484; TX1; 17.00	5	5	0	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.



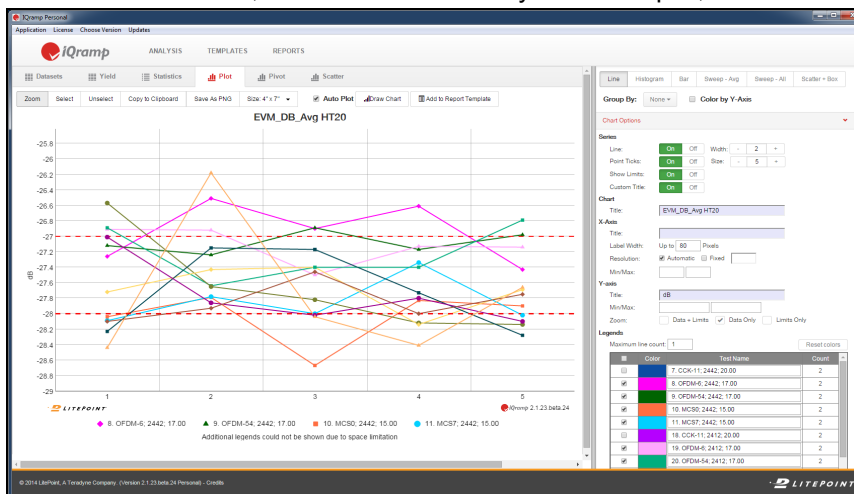
All search boxes in IQramp use regular expressions. Refer to *Appendix A* in the *IQramp User's Guide* for details and examples.

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.

- 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.

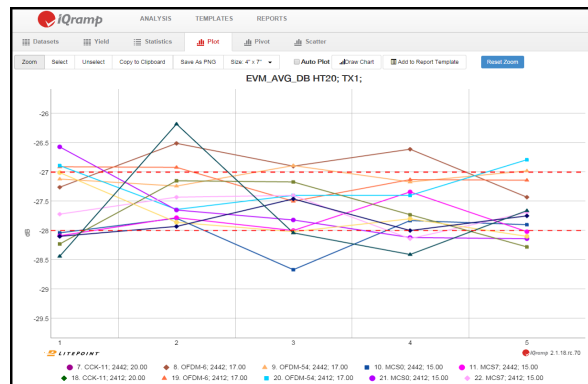
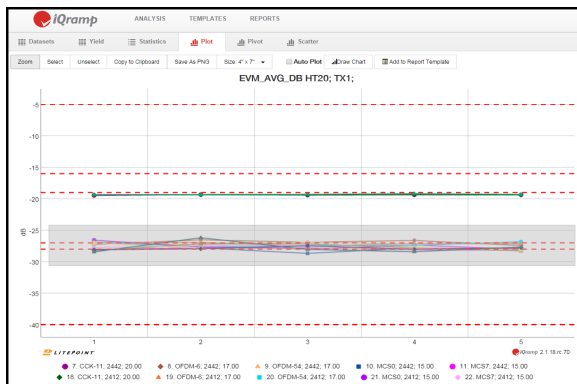


The following example shows chart display option using a Line chart. Several additional chart types are available in IQramp, including histogram, sweep, and pivot tables. Refer to the *IQramp User's Guide* for complete details.

3.1. Display Options

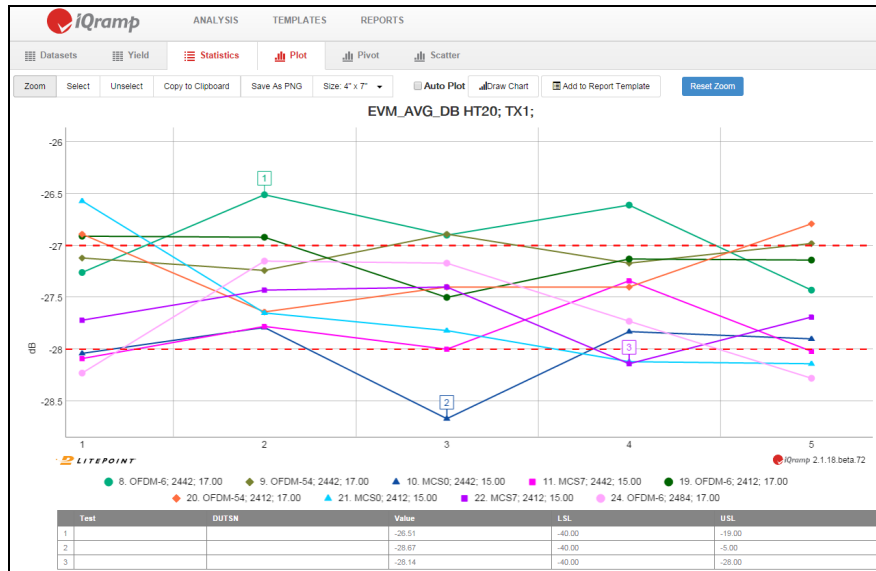
Zoom In On Chart Data

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.

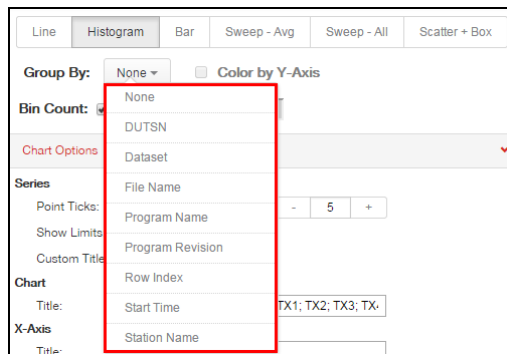


Chart Options

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 All 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 Only

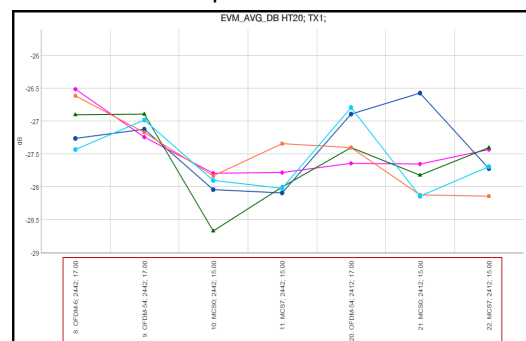
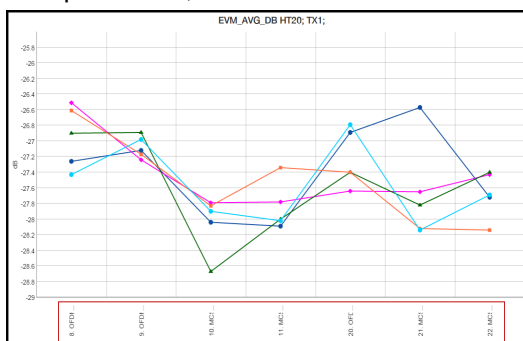
Legends

Maximum line count: 1 Reset colors

<input checked="" type="checkbox"/>	Color	None	Count
<input checked="" type="checkbox"/>	1		1
<input checked="" type="checkbox"/>	2		1
<input checked="" type="checkbox"/>	3		1
<input checked="" type="checkbox"/>	4		1
<input checked="" type="checkbox"/>	5		1
<input checked="" type="checkbox"/>	6		1
<input checked="" type="checkbox"/>	7		1
<input checked="" type="checkbox"/>	8		1
<input checked="" type="checkbox"/>	9		1
<input checked="" type="checkbox"/>	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.

The first screenshot shows the Y-Axis panel with the filter set to 'EVM_AVG_DB HT20'. A list of 15 tests is displayed, with 12 tests selected. The second screenshot shows the filter updated to 'EVM_AVG_DB HT20; OFDM', resulting in a list of 6 tests, all of which are selected.

Test ID	Test Name	Selected
7	EVM_AVG_DB HT20; CCK-11; 2442; TX1; 20.00	<input type="checkbox"/>
8	EVM_AVG_DB HT20; OFDM-6; 2442; TX1; 17.00	<input checked="" type="checkbox"/>
9	EVM_AVG_DB HT20; OFDM-54; 2442; TX1; 17.00	<input checked="" type="checkbox"/>
10	EVM_AVG_DB HT20; MCS0; 2442; TX1; 15.00	<input checked="" type="checkbox"/>
11	EVM_AVG_DB HT20; MCS7; 2442; TX1; 15.00	<input checked="" type="checkbox"/>
18	EVM_AVG_DB HT20; CCK-11; 2412; TX1; 20.00	<input type="checkbox"/>
19	EVM_AVG_DB HT20; OFDM-6; 2412; TX1; 17.00	<input checked="" type="checkbox"/>
20	EVM_AVG_DB HT20; OFDM-54; 2412; TX1; 17.00	<input checked="" type="checkbox"/>
21	EVM_AVG_DB HT20; MCS0; 2412; TX1; 15.00	<input checked="" type="checkbox"/>
22	EVM_AVG_DB HT20; MCS7; 2412; TX1; 15.00	<input checked="" type="checkbox"/>
23	EVM_AVG_DB HT20; CCK-11; 2484; TX1; 20.00	<input type="checkbox"/>
8	EVM_AVG_DB HT20; OFDM-6; 2442; TX1; 17.00	<input checked="" type="checkbox"/>
9	EVM_AVG_DB HT20; OFDM-54; 2442; TX1; 17.00	<input checked="" type="checkbox"/>
19	EVM_AVG_DB HT20; OFDM-6; 2412; TX1; 17.00	<input checked="" type="checkbox"/>
20	EVM_AVG_DB HT20; OFDM-54; 2412; TX1; 17.00	<input checked="" type="checkbox"/>
24	EVM_AVG_DB HT20; OFDM-6; 2484; TX1; 17.00	<input checked="" type="checkbox"/>
25	EVM_AVG_DB HT20; OFDM-54; 2484; TX1; 17.00	<input checked="" type="checkbox"/>

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.

The 'Saved Templates' panel shows two saved templates: 'EVM_AVG_DB HT20' and 'EVM_AVG_DB HT20; OFDM'. Below it, the Y-Axis panel shows the filter set to 'EVM_AVG_DB HT20; OFDM', with a list of 6 tests, all of which are selected.

Test ID	Test Name	Selected
8	EVM_AVG_DB HT20; OFDM-6; 2442; TX1; 17.00	<input checked="" type="checkbox"/>
9	EVM_AVG_DB HT20; OFDM-54; 2442; TX1; 17.00	<input checked="" type="checkbox"/>
19	EVM_AVG_DB HT20; OFDM-6; 2412; TX1; 17.00	<input checked="" type="checkbox"/>
20	EVM_AVG_DB HT20; OFDM-54; 2412; TX1; 17.00	<input checked="" type="checkbox"/>
24	EVM_AVG_DB HT20; OFDM-6; 2484; TX1; 17.00	<input checked="" type="checkbox"/>
25	EVM_AVG_DB HT20; OFDM-54; 2484; TX1; 17.00	<input checked="" type="checkbox"/>

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

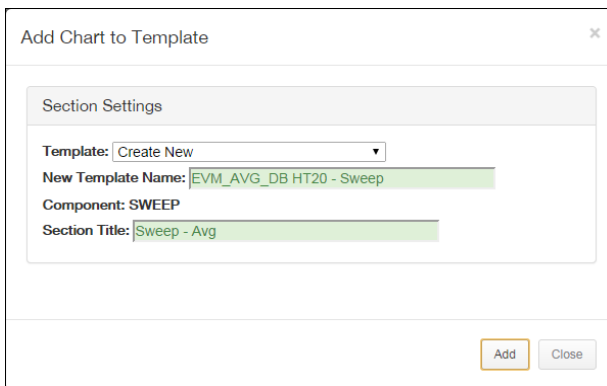
Report templates are layouts of user-defined filters and settings that are then used to create reports. Templates can include multiple chart types and can be reused and combined into new reports as needed. Using templates minimizes the time required to create and configure new reports.



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**.



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:

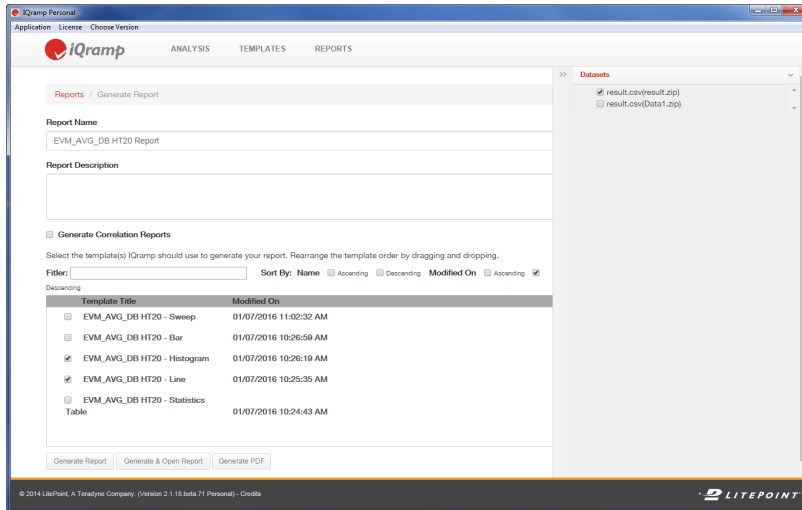
- From the Templates list, you can save templates to your local system. The template file can then be sent and shared with other IQramp users.
- You can also create report templates from selected tests on the Statistics tab.

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**.



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.