




LitePoint IQramp

For Data Analysis and Reporting

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1. Introduction to LitePoint IQramp

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

IQramp includes two applications:

- LitePoint IQramp Personal – Upload and analyze data, manage templates, and generate reports.
- LitePoint IQramp Report Builder – Generate reports from a command line using existing report templates and data files.

1.1. Using this Guide

The purpose of the *LitePoint IQramp Personal User's Guide* is to provide detailed information and guidance on using the features of the IQramp Personal application. It serves as a companion document to the *IQramp Quick Start Guide*, which provides minimal instructions to quickly get you up and running with IQramp.

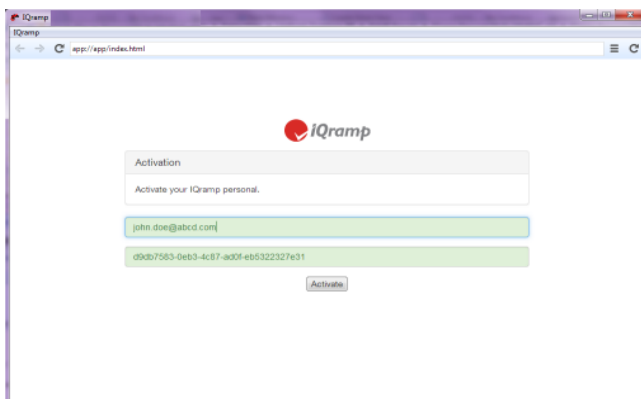
1.2. Installing and Activating IQramp Personal



Before you install LitePoint IQramp, make sure you are connected to the Internet and have an activation key from LitePoint.

To install and activate IQramp Personal:

1. Go to litepoint.com/software/iqramp-downloads.
2. Download **IQramp Personal** for your operating system.
3. Right-click the downloaded .zip file, and click **Extract All**.
4. Double-click the extracted `IQramp_Personal_App.exe` file to begin the installation.

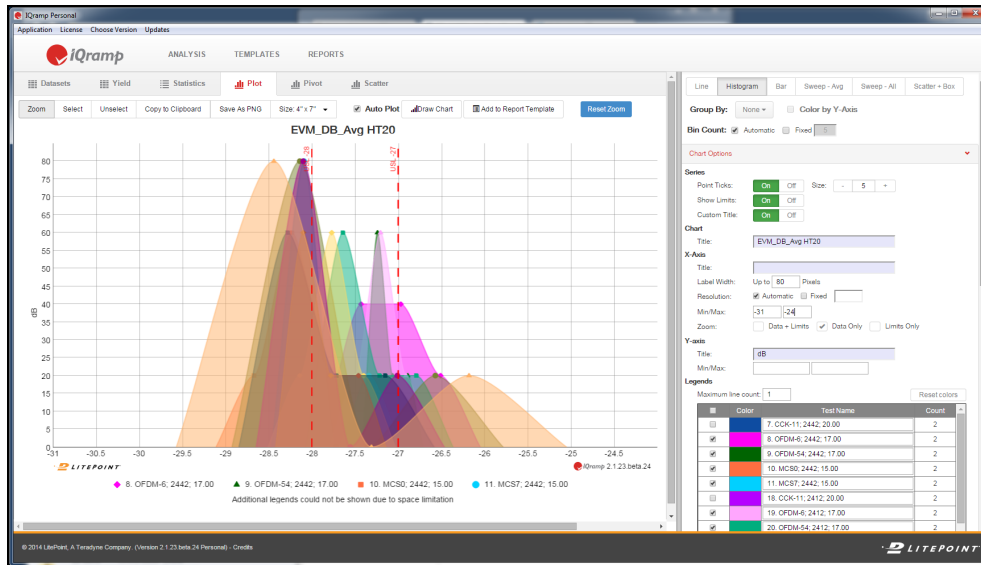


5. Enter your email address and activation key in the **Activation** window, and click **Activate**. The IQramp interface opens.

1.3. Accessing the IQramp Interface

You can open IQramp in one of two ways:

- Double-click the `IQramp_Personal_App.exe` file.
- Enter the path and IQramp file name from a command-line prompt.
For example: `c:\Desktop\IQramp-win64 IQramp_Personal_App.exe`



To record logs in the background, include the `-log` argument in the command. This can be helpful when working with LitePoint Support to debug an issue.

For example: `c:\Desktop\IQramp-win64 IQramp_Personal_App.exe -log`

The IQramp main window contains three modules: **Analysis**, **Templates**, and **Reports**.

- The **Analysis** module is the heart of the IQramp Personal application. In this module, you upload datasets, search and filter data, and then perform analyses using a variety of charting tools and configuration options.
- The **Templates** and **Reports** modules help you to create templates of report settings and then use the templates to create, manage, and distribute analysis reports.

Accessing Product Updates

LitePoint makes product updates available via the www.litepoint.com/support website. To download updates, you must be a valid and registered user of the Support Center and have a current software maintenance agreement with LitePoint for IQramp.

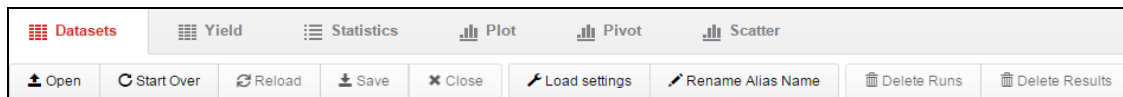
2. Using the Analysis Module

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The **Analysis** module is used to upload test datasets, search and filter data, and then perform analyses using a variety of charting tools and configuration options. This section describes each component of the Analysis module and how the components work together to analyze data.

2.1. Datasets

The **Datasets** tab is used to load and manage the test data used for analysis and report generation.

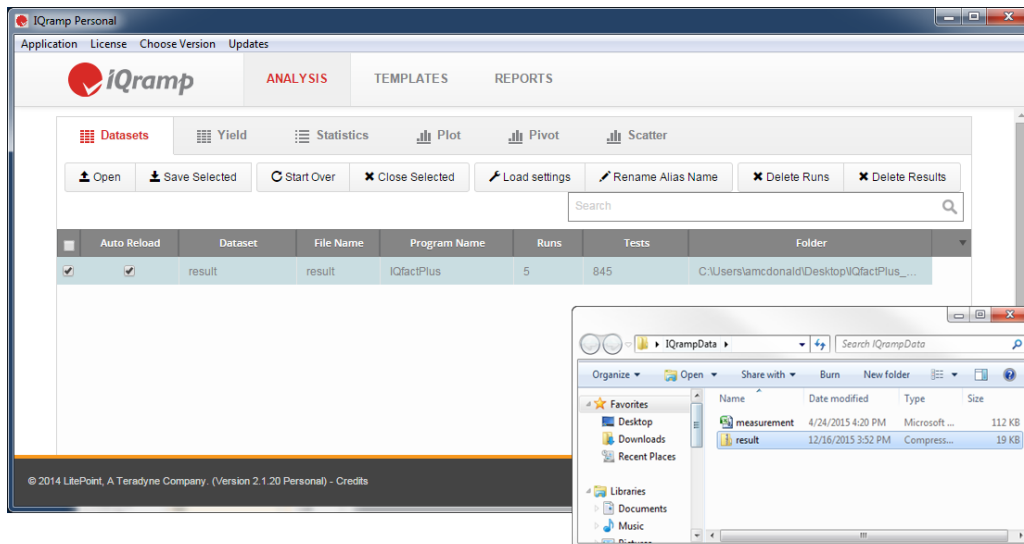


2.1.1. Open



IQramp supports output files from LitePoint IQfact+, IQvector, and zScript applications.

To open a dataset, drag and drop one or more data files from a Windows browser window to the workspace onto the **Datasets** tab page. You can also click **Open** to browse and select a data file to load.



2.1.1.1. Loading IQfact+ Files

When you load IQfact+ files that have *result.csv* and *measurement.csv* files, both files must be loaded at the same time. The files can be loaded either as two separate files or zipped together and loaded as a zipped file. If you have the only the *measurement.csv* file, you need only load that file.

As needed, you can change the name of the *result.csv* file and its associated *measurement.csv* file. Use one of the following naming conventions for the two files, where *xyz* is the name you are changing *result.csv* to.

- *xyz.csv* and *measurement.csv*
- *xyz.csv* and *xyz_measurement.csv*
- *xyz.csv* and *measurement_xyz.csv*



Click the **Auto Reload** check box to automatically reload a dataset when changes occur (at the location specified in the **Folder** column).

2.1.2. Start Over

Click **Start Over** to remove all datasets from the IQramp application.

2.1.3. Reload

Click **Reload** to reload the selected dataset(s).

2.1.4. Save

The **Save** option saves a dataset as a `.ramp` file. This option is useful if you modify a dataset (for example, deleted runs or results) and want to save the changes as a separate dataset without modifying the original dataset.

To save a selected dataset:

1. On the **Datasets** tab page, choose a dataset, and then click **Save**.
The **Save As** window opens.
2. Navigate to the desired location, enter a **File Name**, and click **Save**.

2.1.5. Close

Click **Close** to remove selected datasets from the IQramp application.

2.1.6. Load Settings

Before loading a dataset, you can define filtering and naming criteria. When loading a dataset, the selected options are applied.

1. On the **Datasets** tab page, click **Load Settings**, and choose one or more of the following options:

Parameter	Description
Skip tests with no values	Tests with no values are not loaded (selected by default).
Skip tests with text only values	Tests with text-only values are not loaded (selected by default).
Use Measurement Id to calculate test hash	The measure ID is included in the hash calculation (internal ID) for each test.
Use Measurement name in alias name	The measurement name is included in the alias name of each test (after the optional Measurement ID).

2. To filter the tests that are loaded, enter filter values in the **Load tests using this filter** field. Only tests that match the filter criteria are loaded.



Make sure to check the filter values before reloading or loading new datasets, as the values you enter remain in place until you change or remove them.

2.1.7. Rename Alias Name

The **Rename Alias Name** option customizes how the alias name is generated for each test in a dataset.

Rename Test Alias

Use Measurement Id in the Name Alias Use Default Alias : On Off

Select Settings

Drag settings from one box to another. You can sort the settings also within a box

Search: All Settings :79 Clear All Default Selected Settings Concatenate name with values

ALIGN_METHOD	CHANNEL
ALWAYS_SAVE_CAPTURE	DATA_RATE
ANT_ID	MODE
ANT0_PORT	RX_POWER_DBM
ANT1_PORT	SPIKE_REMOVAL
ANT2_PORT	START_POWER_LEVEL_DBM
ANT3_PORT	STOP_POWER_LEVEL_DBM

To rename an alias:

1. On the **Datasets** tab page, click **Rename Alias Name** in the button toolbar. The **Rename Test Alias** window opens.
2. (Optional) Click the **Use Measurement Id in the Name Alias** check box to include the numeric measurement ID at the beginning of the alias name.

- Turn the **Use Default Alias** option **Off** to define custom settings for alias names. The **Select Settings** section is displayed.
- Drag settings from the **All Settings** list to the **Selected Settings** list.



You can drag items up or down to reposition them in the **Selected Settings** list.

- When finished, click **Save**.
- Click the **Statistics** tab to view the updated alias names in the **Name** column.

Concatenate name with values:

(Optional) A checkbox is provided to **concatenate** settings name with values.

Before you select the concatenate the Value with Name checkbox, only values are shown in the name column.

	Name	Dataset	Runs	Passed	Failed	Errored	Outliers	Unit	Lower	Upper	Min	Max	Mean
<input type="checkbox"/>	7. POWER_DBM; 5; 6P81; 0	measurement_result_3	3	3	0	0		dBm			-11.26	-11.23	-11.24
<input type="checkbox"/>	8. POWER_DBM; 9; 6P81; 0	measurement_result_3	3	3	0	0		dBm			-11.04	-11.03	-11.03

After you select the concatenate the Value with Name checkbox, the name is visible with the value in the format name_value as shown below in the name column.

	Name	Dataset	Runs	Passed	Failed	Errored	Outliers	Unit	Lower	Upper	Min	Max	Mean
<input type="checkbox"/>	7. POWER_DBM; CHANNEL_5; DATA_RATE_6P81; MODE_0	measurement_result_3	3	3	0	0		dBm			-11.26	-11.23	-11.24
<input type="checkbox"/>	8. POWER_DBM; CHANNEL_9; DATA_RATE_6P81; MODE_0	measurement_result_3	3	3	0	0		dBm			-11.04	-11.03	-11.03

2.1.7.1. Displaying Default Alias Settings


Use **Default** button on the **Rename Test Alias** window displays the default alias settings in the **Selected Settings** section. The default settings list is a smaller subset of the **All Settings** list, which can be a helpful starting point when creating custom alias settings.

To display the default alias settings:

1. On the **Rename Test Alias** window, click **Default** to display the default alias settings in the **Selected Settings** section.
2. Remove and add settings as needed by dragging them between the **All Settings** and **Selected Settings** lists.
3. Click **Clear All** to clear selected settings or **Default** to reset the list to the default settings.
4. When finished, click **Save**.

2.1.8. Delete Runs

The **Delete Runs** button removes specific runs from a dataset and excludes them from analysis. When you delete a run from a dataset, it is deleted only from a working copy of the dataset while it is loaded in IQramp (not the original file).

Delete Runs							
 Delete		Search <input type="text"/>					
<input type="checkbox"/>	Row Index	Station Name	Program Name	Program Revision	DUTSN	Dataset	Device Index ▼
<input type="checkbox"/>	1		IQfactPlus			result	
<input type="checkbox"/>	2		IQfactPlus			result	
<input type="checkbox"/>	3		IQfactPlus			result	
<input checked="" type="checkbox"/>	4		IQfactPlus			result	
<input type="checkbox"/>	5		IQfactPlus			result	

To delete runs:

1. On the **Datasets** tab page, choose a dataset, and then click **Delete Runs**. The **Delete Runs** window opens.
2. Choose one or more runs, and click **Delete**. The runs you choose are deleted from the list.
3. Click **Save** to save the changes and close the window.

2.1.9. Delete Results

The **Delete Results** button removes specific test results from a dataset and excludes them from analysis. When you delete a test result from a dataset, it is deleted only from a working copy of the dataset while it is loaded in IQramp (not the original file).

Delete Results

Runs min/max: Tests: Results min/max:

	Dataset	Test	Run	LSL	USL	Value
<input type="checkbox"/>	result	11. CABLE_LOSS_DB_1 HT20; MCS7; 2442; TX1; 15.00 HT20; MCS7; 2442; TX1; 15.00	1			7.50
<input checked="" type="checkbox"/>	result	11. DATA_RATE HT20; MCS7; 2442; TX1; 15.00 HT20; MCS7; 2442; TX1; 15.00	1	65.00	65.00	65.00
<input type="checkbox"/>	result	11. EVM_AVG_1 HT20; MCS7; 2442; TX1; 15.00 HT20; MCS7; 2442; TX1; 15.00	1			-28.09
<input type="checkbox"/>	result	11. EVM_AVG_DB HT20; MCS7; 2442; TX1; 15.00 HT20; MCS7; 2442; TX1; 15.00	1	-40.00	-28.00	-28.09
<input type="checkbox"/>	result	11. EVM_AVG_PERCENT HT20; MCS7; 2442; TX1; 15.00 HT20; MCS7; 2442; TX1; 15.00	1			3.94
<input type="checkbox"/>	result	11. EVM_AVG_STREAM_PERCENT_1 HT20; MCS7; 2442; TX1; 15.00 HT20; MCS7; 2442;	1			3.94

To delete results:

1. On the **Datasets** tab page, choose a dataset, and then click **Delete Results**. The **Delete Results** window opens.
2. Choose one or more results, and click **Delete**.



Use the filter options at the top of the window to search for results you want to delete.


The results you choose are deleted and removed from the list.

3. Click **Save** to save the changes and close the window.

2.2. Yield

The **Yield** tab page provides information on the yield (percentage of passing results) for the runs and tests in a dataset. You can group and sort results based on dataset parameters and download data to a `.CSV` file for further analysis.

To view yield data:

1. On the **Datasets** tab page, choose one or more datasets for which you want to view yield data.
2. Click the **Yield** tab to view yield results for each selected dataset.
3. Choose a parameter from the **Group By** menu to group results.
4. To compare results using different parameters, click **Add Table**, and then choose a **Group By** parameter.
5. To download data to a `.CSV` file, click the **Download**  icon for the table you want to download, enter a **File Name**, and then click **Save**.

2.3. Statistics

The **Statistics** tab page displays the tests in a dataset. You can search, group, sort, and display statistics to target the data you want to analyze.



For details on the **Add to report template** option, refer to *The Templates and Reports Modules* section in this guide.

To view statistics, click the **Datasets** tab, choose a dataset, and then click the **Statistics** tab.

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	
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	-40.00	-16.00	-19.46	-19.32	-19.376	0	0.2037
7. EVM_AVG_PERCENT HT20, CCK-11; 2442; TX1; 20.00	5	5	0	0	0	%			10.65	10.81	10.742	0.056	
7. EVM_AVG_STREAM_PERCENT_1 HT20, CCK-11; 2442; TX1; 20.00	5	5	0	0	0	%			10.65	10.81	10.742	0.056	
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	%			10.63	10.67	10.65	0.014	
7. EVM_MIN_1 HT20, CCK-11; 2442; TX1; 20.00	5	5	0	0	0	dB			-19.99	-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	-11.05	-11.321	0.005	
7. EVM_PK_PERCENT HT20, CCK-11; 2442; TX1; 20.00	5	5	0	0	0	%			25.35	28.03	26.522	0.968	
7. FREQ_ERROR_AVG HT20, CCK-11; 2442; TX1; 20.00	5	5	0	0	0	ppm			0.09	0.64	0.502	0.208	
7. FREQ_ERROR_MAX HT20, CCK-11; 2442; TX1; 20.00	5	5	0	0	0	ppm			0.16	0.67	0.546	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	

The statistical data for dataset(s) you choose are displayed.

2.3.1. Searching for Data

Search criteria can contain values for any of the displayed columns. You can enter simple keywords or regular expressions. Refer to Appendix A: Using Regular Expressions to Search a Dataset for details and examples on using regular expressions.

Enter search criteria to target the data you want to analyze in the **Search** box.

Name	Runs	Passed	Failed	Errored	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	22.8566
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	0.2098
10. EVM_AVG_DB HT20, MCS0; 2442; TX1; 15.00	5	5	0	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	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	0	dB	-40.00	-16.00	-19.38	-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	0.2285
21. EVM_AVG_DB HT20, MCS0; 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	0.1055
23. EVM_AVG_DB HT20, CCK-11; 2484; 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	5.9296

2.3.1.1. Interpreting Highlighted Values

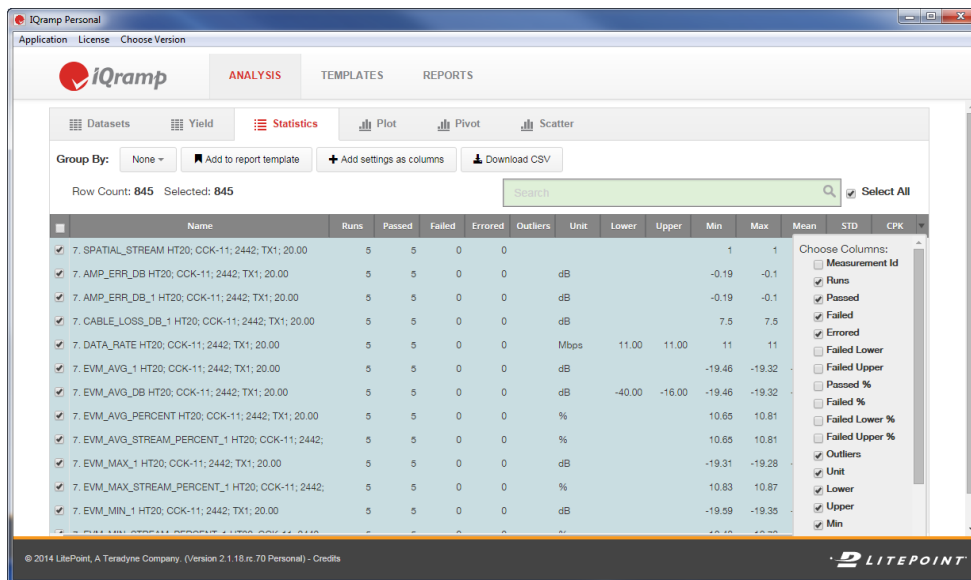
The following types of values are highlighted in the statistics table:

- Failed or Error values greater than 0 are highlighted in yellow.
- CPK values between 1 and 2 are highlighted in yellow.
- CPK values less than 1 are highlighted in red.

2.3.2. Customizing the Displayed Data

The following options are available for customizing the displayed data:

- Adding Test Results as Columns
- Adding Settings as Columns



2.3.2.1. Adding Test Results as Columns

You can customize the parameters you want to display on the **Statistics** table with the **Choose Columns** list. The displayed data is included in charts, reports, and data downloads.

To customize the columns on the **Statistics** table:

1. On the **Statistics** tab page, click the down-arrow at the right side of the column headings to view the **Choose Columns** list.
2. Click or uncheck check boxes to specify the columns to display.
3. When finished, click the down-arrow to close the list.
4. Drag column headings to position the columns as desired.

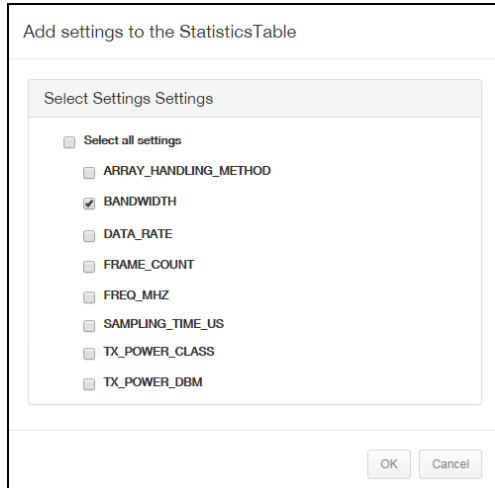
Choosing Analysis Parameter Columns

The following table describes the columns you can select for analysis:

Parameter	Description	Parameter	Description
Measurement ID	Numeric test measurement ID	Max	Maximum spec limit
Dataset	Name of the dataset	Mean	Mean value
Runs	# of test runs	Median	Median value
Passed	# of times passed tests	Mode	Mode value
Failed	# of failed tests	10th Percentile	First 10th percentile
Errored	# of errors reported	25th Percentile	First 25th percentile
Failed Lower	# of failed tests – lower limit	50th Percentile	First 50th percentile
Failed Upper	# of failed tests – upper limit	75th Percentile	First 75th percentile
Passed %	% of passed tests	90th Percentile	First 90th percentile
Failed %	% of failed tests	Variance	Variance value
Failed Lower %	% of failed tests – lower limit	Kurtosis	Measures the data peaks or flattens relative to a normal distribution.
Failed Upper %	% of failed tests – upper limit	Skewness	Measures the data distribution is symmetrical
Outliers	% of outlier tests	STD	Standard deviation
Unit	Unit	CPK	Measures how centered the data is between the spec limits
Lower	Lower spec limit	CP	Measures how well the data fits within the spec limits
Upper	Upper spec limit	CPL	Measures how close the process mean is running to the lower specification limit
Min	Minimum spec limit	CPU	Measures how close the process mean is running to the upper specification limit

2.3.2.2. Adding Settings as Columns

By default, the **Choose Columns** list contains a list of test parameters associated with the tests in the dataset. You can also add test settings to the **Choose Columns** list, which you can include as columns in the **Statistics** table.



To add settings to the **Statistics** table:

1. On the **Statistics** tab page, click **Add settings as columns** in the button toolbar. The **Add Settings to the Statistics Table** window opens.
2. Select settings to add to the **Choose Columns** list, and then click **OK**. The selected settings are added to the **Statistics** table.
3. Back in the **Statistics** table, open the **Choose Columns** list, and then select one or more of the settings to add as columns to the **Statistics** table.
4. Drag column headings to position the columns as desired.

2.3.3. Grouping and Sorting Data

You can group and sort data on the **Statistics** table to help you review the test data and determine the tests for which you want to analyze and create reports.

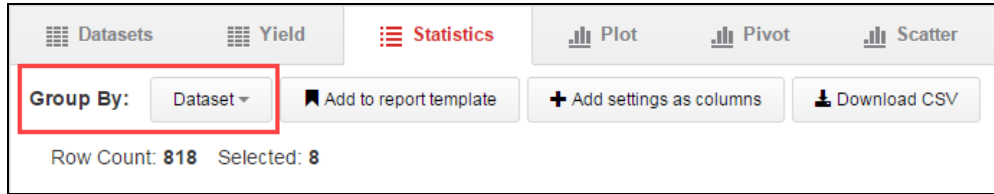
2.3.3.1. Sorting by Column Headings

To sort by column headings, you can click a column heading to sort the **Statistics** table by the values in the selected column. Click again to switch the sort order between ascending and descending.


STD	▼
0.833	
0.575	

2.3.3.2. Grouping by List

Choose a parameter from **Group By** menu in the button toolbar to group data on the **Statistics** table by the selected parameter.



The following table describes common **Group By** parameters (the parameters can vary based on the selected dataset):

Parameter	Description
DUTSN	The serial number of the DUT used for the test
Dataset	The dataset used for analysis
File Name	<p>The file name of the files used for running the tests. File names are .zip file formats. It is possible to have multiple datasets in a single zip file.</p> <hr/> <p> If you have a single file, the Dataset and File Name are the same.</p>
Program Name	The name of the test program, for example <i>IQfactPlus</i>
Program Revision	The revision number of the test program
Row Index	The row number in the data file, or loop number in the number of loops
Start Time	The time the test was started
Station Name	The name of the test station

2.3.4. Downloading Data as CSV Files

The Download CSV option saves all data displayed on the Statistics tab to a CSV file (including data added by customizing the list of displayed columns). You can download the entire dataset, or a subset created by entering filtering criteria in the Search box.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Name	Runs	Passed	Failed	Errored	Outliers	Unit	Lower	Upper	Min	Max	Mean	STD	CPK
2	7. SPATIAL_STREAM HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0					1	1	1	0	
3	7. AMP_ERR_DB HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0		dB			-0.19	-0.1	-0.15	0.008	
4	7. AMP_ERR_DB_1 HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0		dB			-0.19	-0.1	-0.15	0.008	
5	7. CABLE_LOSS_DB_1 HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0		dB			7.5	7.5	7.5	0	
6	7. DATA_RATE HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0		Mbps	11	11	11	11	11	0	
7	7. EVM_AVG_1 HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0		dB			-19.46	-19.32	-19.376	0	
8	7. EVM_AVG_DB HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0		dB	-40	-16	-19.46	-19.32	-19.376	0	-40930
9	7. EVM_AVG_PERCENT HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0		%			10.65	10.81	10.742	0.056	
10	7. EVM_AVG_STREAM_PERCENT_1 HT20; CCK-11; 2442;	5	5	0	0		%			10.65	10.81	10.742	0.056	
11	7. EVM_MAX_1 HT20; CCK-11; 2442; TX1; 20.00	5	5	0	0		dB			-19.31	-19.28	-19.292	0	

To download **Statistics** data as a CSV file, click **Download CSV** in the button toolbar.

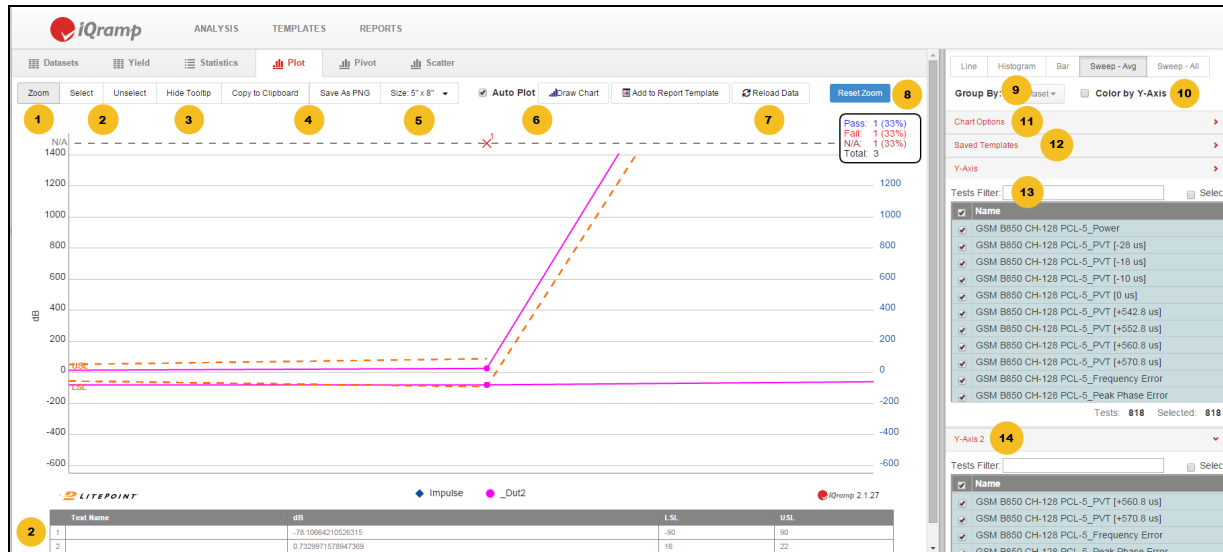
2.4. Plot

The **Plot** tab allows you to analyze selected datasets using plot types such as line, histogram, and sweep.

2.4.1. Universal Plot Features

The features common to all types of plots include:

- Selecting tests and correlating results
- Viewing information for selected points
- Customizing and working with plot data



- | | |
|-------------------------------|----------------------------|
| 1 Zoom and Resize | 8 Reset Zoom |
| 2 Select and View Data Points | 9 Group By |
| 3 Hide Tooltip | 10 Color By Y-Axis |
| 4 Copy and Save | 11 Chart Options |
| 5 Size | 12 Saved Templates |
| 6 Redraw Options | 13 Selected Tests (Y-Axis) |
| 7 Reload Data | 14 Y-Axis 2 |

2.4.1.1. Zoom and Resize

- Click **Zoom**, and then drag to highlight an area of the chart to zoom in on.
- Click **Reset Zoom**, to return the chart to the default zoom level.
- Select an option from the **Size** list to change the overall dimensions or resolution of the chart.

2.4.1.2. Select and View Data Points

- Click a data point on the chart, or click **Select** and drag to highlight multiple points. The data for the selected points is displayed in a table below the chart.

- Click a previously selected data point to remove its data from the table, or click **Unselect** and drag to highlight an area on the chart to remove multiple data points from the table.

2.4.1.3. Hide Tooltip

Click **Hide Tooltip** to remove tooltips from the plot display.

2.4.1.4. Copy and Save

Click **Copy to Clipboard** to copy the current chart to your clipboard. You can then easily paste the chart into an email or other document. You can also save the current chart as a .png file by clicking **Save as PNG**.

2.4.1.5. Size

Click **Size** to choose a size for the plot. You can choose from a few predefined sizes in units of inches or pixels, or you can enter your own size.

2.4.1.6. Redraw Options

Click **Draw Chart** to redraw a chart. You can click the **Auto Plot** check box to automatically redraw a chart when any changes are made to the plot settings.

2.4.1.7. Reload Data

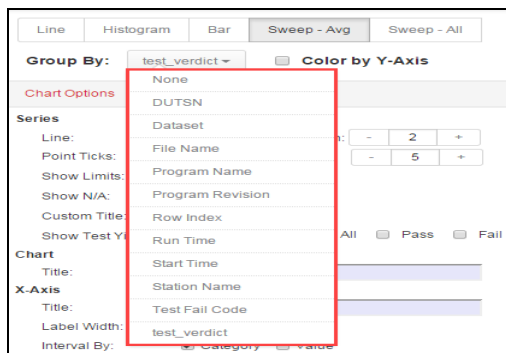
Click **Reload Data** to reload the data used in the plot.

2.4.1.8. Reset Zoom

Click **Reset Zoom** to show all data in the plot at the default zoom level.

2.4.1.9. Group By

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



2.4.1.10. Color by Y-Axis

Click the **Color by Y-Axis** check box to use the same color for the plot lines associated with the same Y-Axis. This feature is available for Line, Sweep-Avg, and Sweep-All charts.

2.4.1.11. Chart Options

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

Series

Line: On Off Width: - 2 +

Point Ticks: On Off Size: - 5 +

Show Limits: On Off

Show N/A: On Off

Custom Title: On Off

Show Test Yield: On Off All Pass Fail

Chart

Title:

X-Axis

Title:

Label Width: Up to Pixels

Interval By: Category Value

Resolution: Automatic Fixed

Sort By:

Y-axis

Title:

Min/Max:

Zoom: Data + Limits Data Only Limits Only

Y-axis 2

Title:


Min/Max:

Legends

Maximum line count:

<input checked="" type="checkbox"/>	Color	Dataset	Count
<input checked="" type="checkbox"/>		Impulse	1
<input checked="" type="checkbox"/>		_Dut2	1

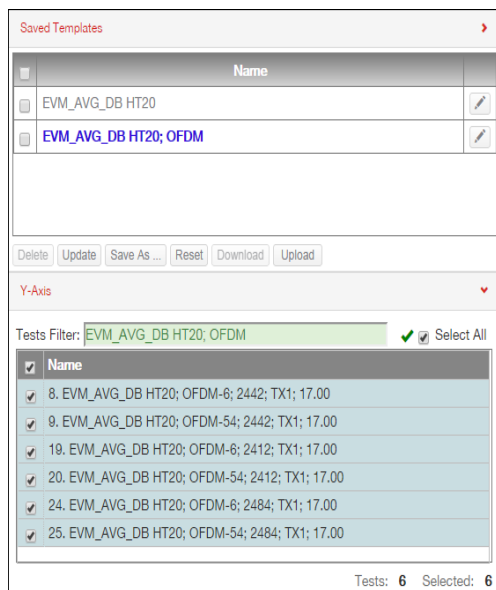
The following table describes the use of each chart option. Not all options appear on every chart type.

Option Group	Description
Series	<ul style="list-style-type: none"> • Line: Turns the display of plot lines On or Off. If set to On, adjust the Width of the lines as needed. • Point Ticks: Turns the display of data points On or Off. If set to On, adjust the Size of the data points as needed. • Show Limits: Turns the display of upper and lower test limits On or Off. • Show N/A: Turns the display for non-measurement points on a graph On or Off. A dashed line is added on top of the graph, and red X is added for each N/A point. The number on each X represents the total number N/A points stacked at the same point. You can change the size of an X by adjusting the Point Ticks size. • Custom Title: Turn On to use the custom titles (entered in the Title fields) for the Chart, X-Axis, and Y-Axis. Turn Off to use the default titles. When you begin typing in any of the Title fields, the switch is automatically turned On, and the entered content is saved as the custom title. Custom titles are saved for each IQramp user. • Show Test Yield: Turn On to show yield information, and then select the information you want to view, All, Pass, or Fail. The following information is displayed on the chart. <div data-bbox="378 808 565 894" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> Pass: 5 (100%) Fail: 0 (0%) Total: 5 </div>
Chart	<ul style="list-style-type: none"> • Title: Changes the chart title.
X-Axis	<ul style="list-style-type: none"> • Title: Adds a title for the x-axis. • Label Width: Enter a value to adjust the display space provided for the labels on the x-axis. This property applies to labels displayed vertically, such as on the Sweep-Avg and Sweep-All charts, and is helpful when displaying long label names. • Interval By: Selects the means by which the interval label is determined. Select Category to use the test category. Select Value to use the value of the test result. • Resolution: Define the number of intervals displayed along the x-axis. When set to Automatic, IQramp determines the resolution. If you select Fixed, the entered value determines the resolution. For example, if you set the value to 1, all intervals and their labels are displayed; if you set the value to 2, every 2nd interval is displayed; if you set the value to 3, every 3rd interval is displayed, and so on. <hr/> <div data-bbox="367 1371 425 1444" style="display: inline-block; vertical-align: middle;">  </div> <div data-bbox="475 1371 1386 1430" style="display: inline-block; vertical-align: middle;"> <p>For Scatter plots, the Logscale option is also available to calculate logarithmic intervals based on the x-axis values.</p> </div> <hr/> <ul style="list-style-type: none"> • Sort By: Sorts the order of values on the X-axis. Choose Numeric to sort X-axis values numerically, or choose Alpha to sort X-axis values alphabetically. None is enabled by default. Available for Sweep and Scatter charts.
Y-Axis	<ul style="list-style-type: none"> • Title: Change the default title for the y-axis. • Min/Max: Set the minimum and maximum values for the y-axis. • Zoom: Select an option for the default zoom. The selected option is used for the initial display of a plot, and also when the display is reset using the Reset Zoom button.

Option Group	Description
Y-Axis 2	<ul style="list-style-type: none"> • Title: Change the default title for the y-axis. • Min/Max: Set the minimum and maximum values for the y-axis 2.
Legends	<ul style="list-style-type: none"> • Maximum Line Count: The maximum number of lines of legends to display below the x-axis. If all of the legends cannot be displayed within the maximum number specified, the message, <i>Additional legends could not be shown due to space limitation</i> is displayed below the legends. • Test name: Change the name of the legend for the associated test. • Count: The number of tests included in the plot line.

2.4.1.12. Saved Templates

The **Saved Templates** section is used to create and manage chart templates. Chart templates contain filtering criteria that you can then apply to other datasets. Using a chart template saves the time of reentering the filtering criteria, and ensures that the same tests are evaluated in subsequent datasets.



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:

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

To update a chart template:

If you select a chart template and modify the selected tests, click **Update** to save the modifications.

2.4.1.13. Selected Test (Y-Axis)

The Y-Axis panel displays the selected tests for the current chart. You can change 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.



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

2.4.1.14. Y-Axis 2

Use the Y-Axis 2 section to include a second set of test results in a plot. This feature is useful to plot and compare two different results with the same test settings in a single plot; for example, power and EVM. The second Y-Axis values appear on the right-hand side of the plot.

As with the Y-Axis, you can enter keywords in the Tests Filter box or manually select the tests to plot. This feature is available in Line, Scatter+Box, Sweep-Avg, and Sweep-All charts.

2.4.2. Creating Plots

Once you load a dataset and determine the specific data you want to analyze, you are ready to create a plot. The following procedure provides general steps for creating a plot and adds specific information and examples for each plot type.

To create a plot:

1. In the **Statistics** table, select the test results you want to plot, and then click the **Plot** tab. By default, a Line plot is displayed.
2. Use the plot features and customization options to analyze the data.



See the *Datasets* and *Statistics* topics presented in this section of the guide for details on loading datasets and filtering data.

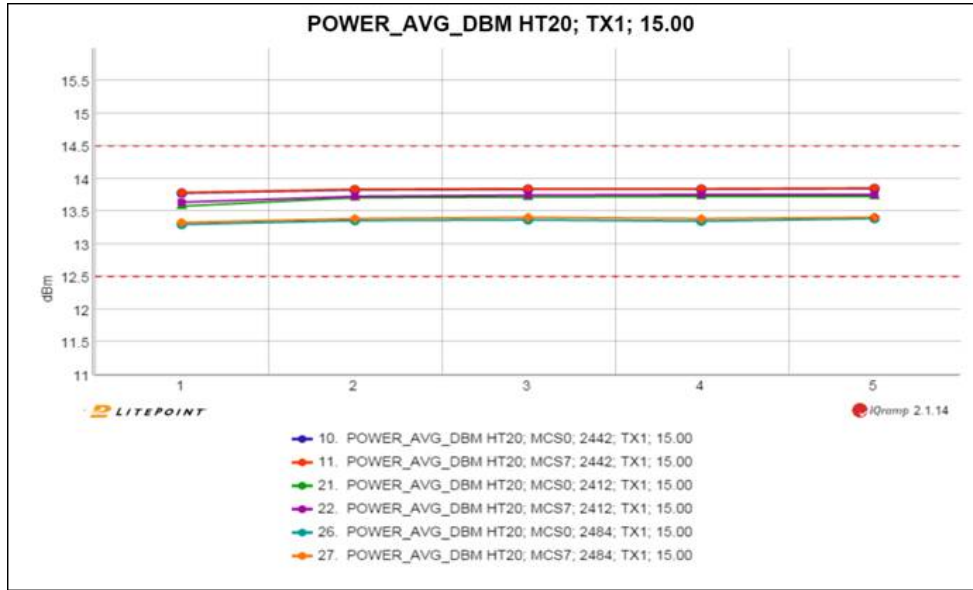
The following plots are available:

- Line Plot
- Histogram
- Bar
- Sweep - Avg and Sweep - All

2.4.2.1. Line Plot

A Line plot is a graph that displays values (on the y-axis) and count (on the x-axis). The numbers on the x-axis typically represent test runs.

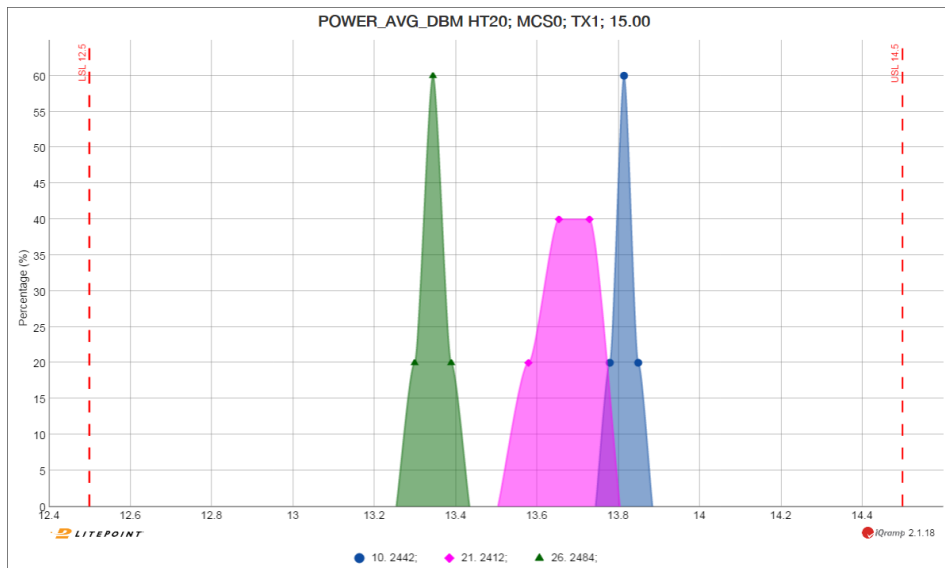
In the following plot, five runs of six tests are plotted along the x-axis, and the test values are plotted on the y-axis:



2.4.2.2. Histogram

A histogram is a graphical representation of the distribution of numerical data. Percentage values are displayed on the y-axis, and test values on the x-axis.

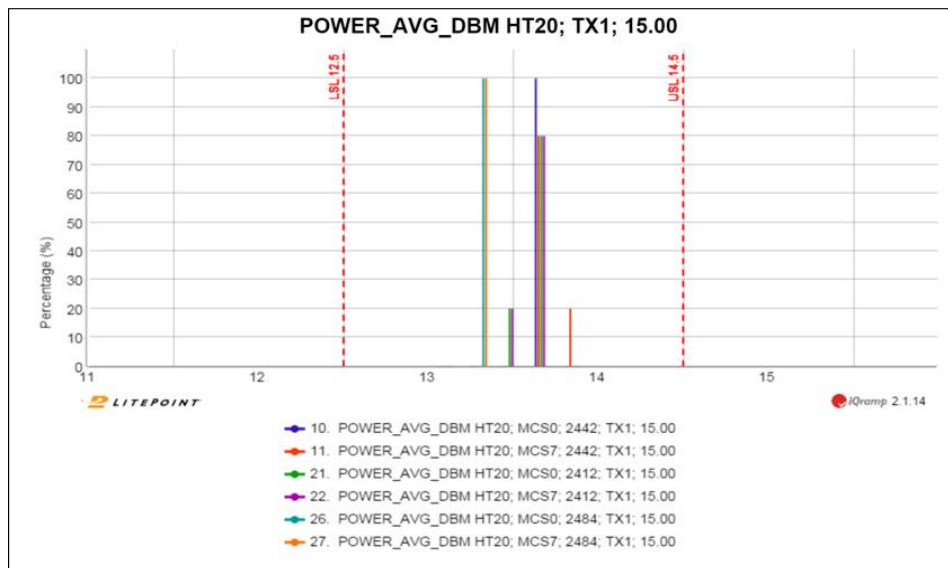
Bin Count: If set to **Automatic**, IQramp calculates the number of bins to display, which is based on the total number of data points and the distribution of the results. If set to **Fixed**, the you specify the number.



2.4.2.3. Bar

A Bar chart is a graphical representation of the distribution of numerical data in the form of rectangular bars. Percentage values are displayed on the y-axis, and test values on the x-axis.

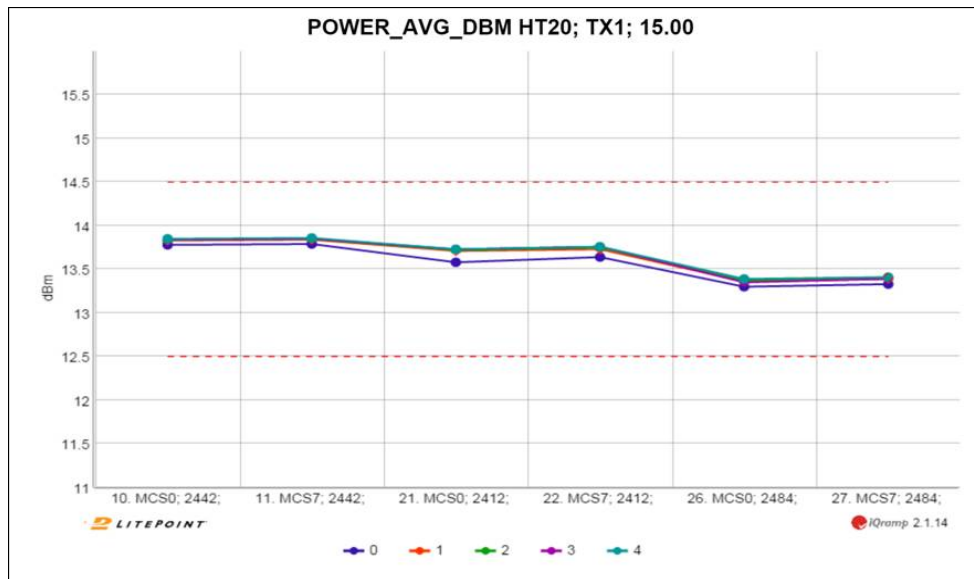
The following chart shows the distribution of results for six tests. Some tests (for example #10 in this chart) have a single bar, which indicates that 100% of the results were of same value. Other tests (such as #11 in this chart) have two bars, which indicates that the results were distributed between two values.



2.4.2.4. Sweep - Avg and Sweep - All

Sweep charts represent test values on the y-axis and test items on the X-axis. **Sweep - All** displays individual results, and **Sweep - Avg** displays the average result for a series of runs.

The following plot shows a **Sweep - All** chart. Each of the six segments along the x-axis represent a test, and each plotted point represents a run (0 through 4) of the test. A **Sweep - Avg** chart displays one point, which represents the average value for each test (in this case, an average of five runs).



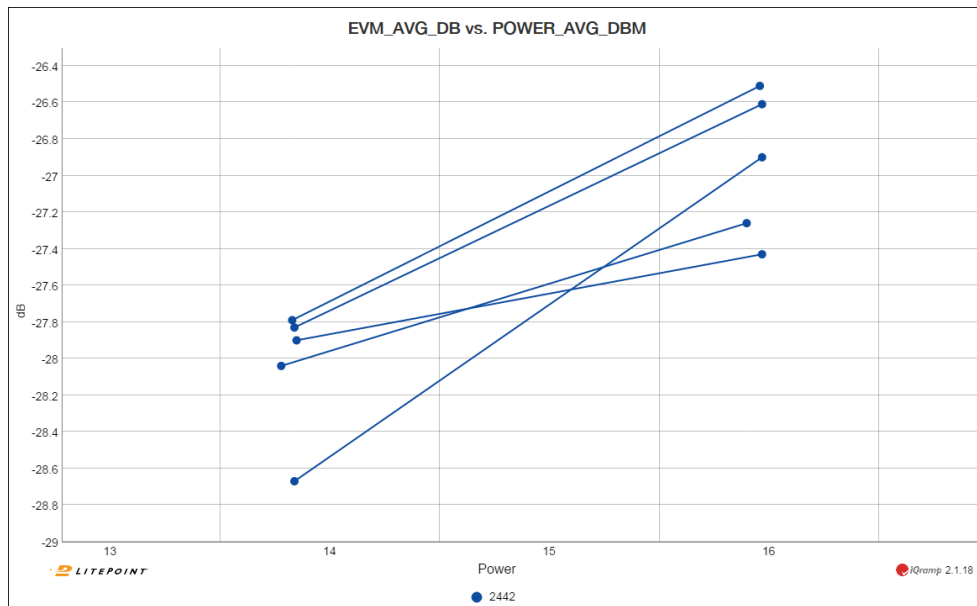
2.5. Pivot

A Pivot is an x/y plot used to correlate one of the following:

- Two different sets of results
- A result and input parameters

2.5.1. Creating Pivot Charts

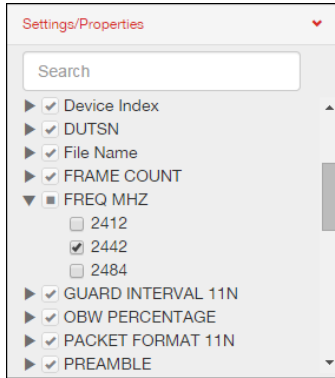
Pivot charts show the correlation between different sets of results.



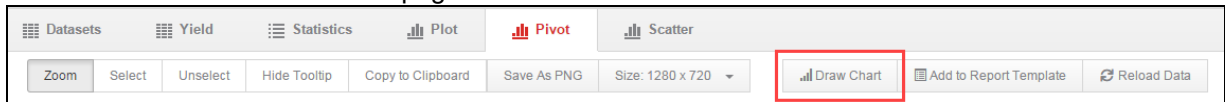
To create a pivot chart:

1. Click the **Pivot** tab.
The **Pivot** tab page is displayed.
2. In the right panel of the **Pivot** tab page, expand the **Dataset** section, and choose one or more datasets to analyze.
3. Expand the **Results** section in the right panel of the **Pivot** tab page, and drag a test to the **X-Axis** section.
You can also right-click a test and choose **Add to X-axis** from the menu that opens.
4. In the **Results** section, drag a test to the **Y-Axis** section.
You can also right-click a test and choose **Add to Y-axis** from the menu that opens.

- Expand the **Settings/Properties** section in the right panel of the **Pivot** tab page, and drag settings or properties to the **Group By** section. You can also right-click a setting or property and choose **Add Group By** from the menu that opens. For example, to filter a Group By selection by specific values, expand the selection and select the values in the following figure:



- Click **Draw Chart** in the **Pivot** tab page button toolbar.



The pivot chart is created with your settings.

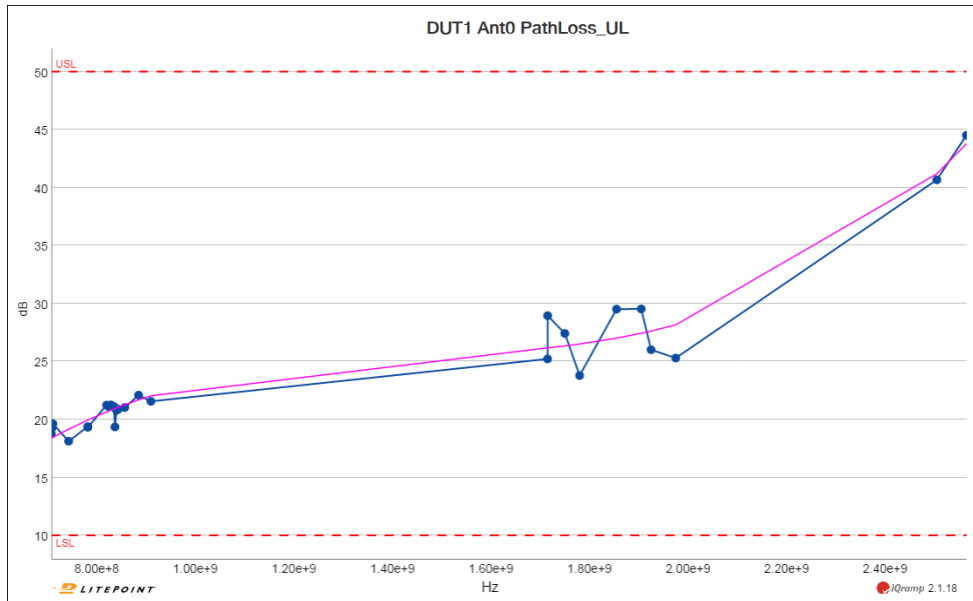
2.5.2. Viewing and Working with Pivot Charts

The available features for zooming, resizing, viewing data points, and specifying chart options are the same as those available on the Plot tab. For descriptions and steps for using each option, refer to the *Universal Plot Features* topic presented earlier in this section of the guide.

2.6. Scatter

A scatter chart is used to correlate two sets of test results. Although you can use a pivot chart to correlate two sets of test results, scatter charts provide additional capabilities, such as changing the order in which the points are displayed on the chart and applying linear or polynomial curves to the datapoints.

The following plot correlates frequency and pathloss results:



To create a scatter chart:

1. Click the **Scatter** tab.
The **Scatter** tab page is displayed.
2. In the right panel of the **Scatter** tab page, expand the **Scatter Chart Parameters** section.
The X-axis and Y-axis sub-sections are displayed.
3. In the **X-axis** sub-section, enter **Filter** criteria to search for and select test results represented on the x-axis.
4. In the **Y-axis** sub-section, enter **Filter** criteria to search for and select test results represented on the y-axis.
5. Use the plot features and customization options to view and analyze the plot data.

2.6.1. Viewing and Working with Scatter Charts

The available features for zooming, resizing, viewing data points, and specifying chart options are the same as those available on the **Plot** tab. For information on each option, see *Universal Plot Features*.

2.6.1.1. Configuration Options Specific to Scatter Charts

The following configuration options are available for Scatter Charts:

Option	Description
Order By	The order in which the points are displayed along the x-axis. Click Index to display in the order the tests occur in the dataset, or click Value to display the points by the value of the test result.
Direction	When the Order By option is specified as Value , click the Direction arrows to display the data in ascending or descending order.

3. Using the Templates and Reports Modules

3.1. Templates 32

3.2. Reports 40

The **Reports** module allows you to create interactive reports that can be shared with other IQramp users or PDF versions that are available to any recipient. Reports are based on one or more report templates, therefore, you must first create at least one template before you can create a report.

3.1. Templates

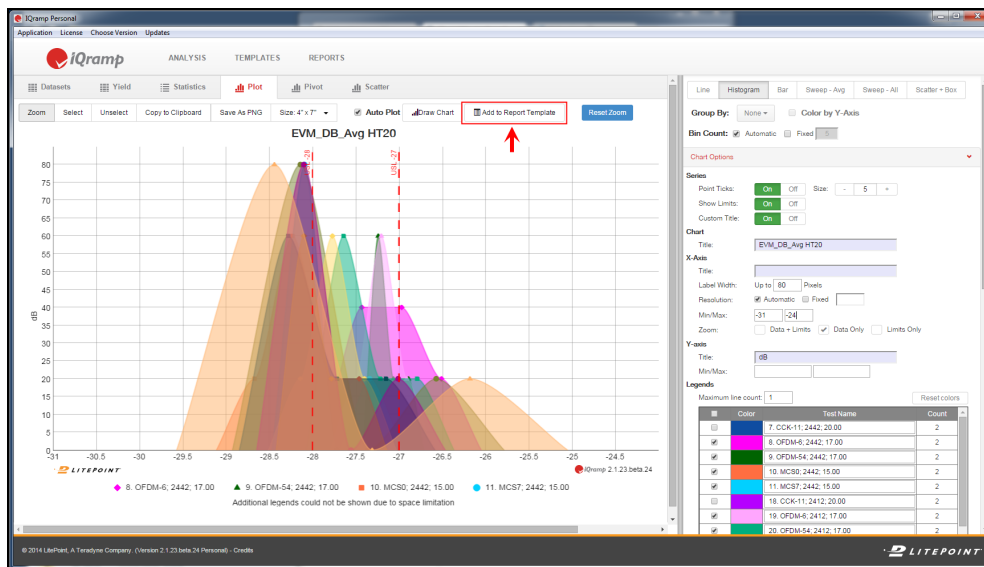
Templates are layouts of user-defined filters and settings that are used to create reports. Templates can include multiple chart types and can be reused and combined into new reports as needed. Using templates minimizes the time required to create and configure new reports.

3.1.1. Creating Templates from Plot, Pivot, or Scatter Charts

Report templates are easily created as you work in the Analysis module. New templates are added to the list of templates in the Templates module, from where they can be edited and managed.

When you create a report template from the Plot, Pivot, or Scatter tabs, the following parameters are included in the template:

- Plot type
- Filter settings
- Group By setting
- Chart options
- Number of tests
- X and Y axis settings (Pivots only)



3.1.1.1. Creating Templates from Plot or Scatter Charts

To create a report template from a Plot or Scatter chart:

1. At the top of the chart, click **Add to Report Template** on the button toolbar.

The **Add Chart to Template** window opens.

2. Enter a **New Template Name** and optional **Section Title**.
You can also choose a template from the **Template** menu to add the chart to an existing template.
3. Click **Add**.
A template is created with your settings.

3.1.1.2. Creating Templates from Pivot Charts

To create a report template from a Pivot chart:

1. At the top of the chart, click **Add to Template** on the button toolbar.

The **Add Pivot to Template** window opens.

2. Enter a **New Template Name** and optional **Section Title**.
You can also choose a template from the **Template** menu to add the chart to an existing template.
3. In the **Section Content** section, click the **Generate a batch of pivot plots** check box to generate multiple pivot plots.
4. Choose the settings and properties you want to include in the pivot charts.
For example, if you choose the *data rate* and *bandwidth* settings, and the data rates in the dataset are MCS0 and MCS9, and bandwidth values are 20 and 40 Mhz, the report generates the following pivots:
 - Data rate MCS0 and Bandwidth of 20 MHz
 - Data rate MCS0 and Bandwidth of 40 MHz

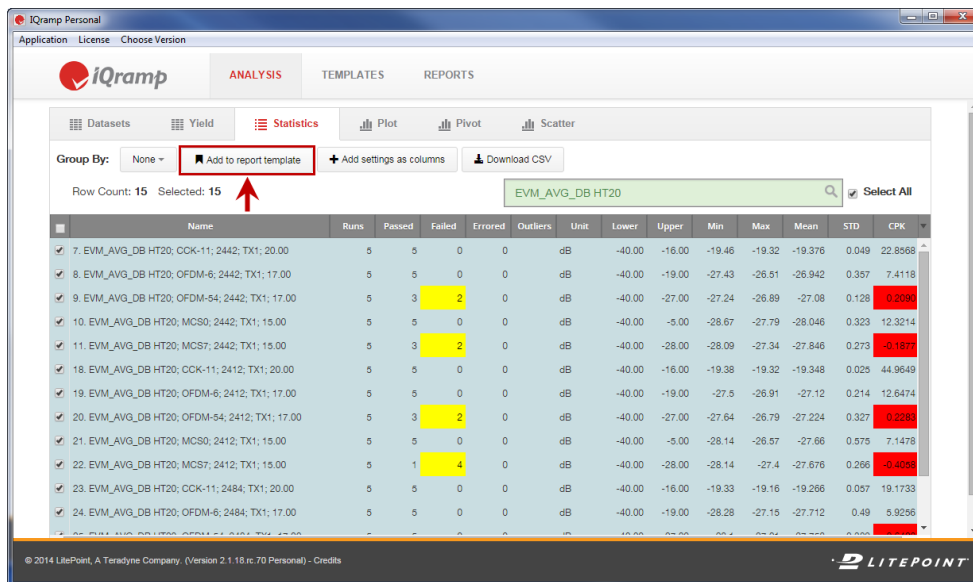
- Data rate MCS9 and Bandwidth of 20 MHz
 - Data rate MCS9 and Bandwidth of 40 MHz
5. Click **Add**.
A template is created with your settings.

3.1.2. Creating Templates from the Statistics Tab

You can also create templates of the test data on the **Statistics** tab, and at the same time, you can apply the selected test data to Line, Histogram, and Sweep charts.

When you create a report template from the **Statistics** tab page, the following parameters are included in the template:

- Plot types
- Filter settings
- Group By setting
- Data grouping and display settings



The screenshot shows the IQramp Personal software interface. The 'Statistics' tab is active, and the 'Add to report template' button is highlighted with a red box and an arrow. The table below displays test results for various EVM_AVG_DB HT20 configurations.

Name	Runs	Passed	Failed	Errored	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	0.2006
10. EVM_AVG_DB HT20; MCS0; 2442; TX1; 15.00	5	5	0	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	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	0	dB	-40.00	-16.00	-19.38	-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	0.2243
21. EVM_AVG_DB HT20; MCS0; 2412; TX1; 15.00	5	5	0	0	0	dB	-40.00	-5.00	-28.14	-26.97	-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	-0.4043
23. EVM_AVG_DB HT20; CCK-11; 2484; 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

To create a report template from the **Statistics** tab page:

1. At the top of the Statistics table, click **Add to Report Template**.

The screenshot shows the 'Add section to template' dialog box. It is divided into three main sections:

- Section Settings:** Includes a 'Template' dropdown menu set to 'Create New', a 'New Template Name' text input field, and a 'Section Title' text input field.
- Section Content:** Contains two columns of checkboxes:
 - Left column: Generate Correlation Reports, Use RegEx Filter, Consolidate tables and plots into single components, Use Section Title For Charts.
 - Right column: Include Statistics Table, Use Default Statistics Columns, Include Line Chart, Include Histogram Chart, Include Sweep Chart.
- Section Preview:** Displays a table with the following data:

Name	Runs	Passed	Failed	Errored	Outliers	Unit	Lower	Upper	Min	Max	Mean	STD	CPK
9. EIM_AVG_DB HT20, OFDM-64, 2442, TX1, 17.00	5	3	2	0		dB	-40	-27	-27.24	-26.89	-27.08	0.13	0.00
8. EIM_AVG_DB HT20, OFDM-64, 2442, TX1, 17.00	5	5	0	0		dB	-40	-19	-27.43	-26.51	-26.94	0.38	7.4118
7. EIM_AVG_DB HT20, CDK11, 2442, TX1, 20.00	5	5	0	0		dB	-40	-16	-19.46	-19.32	-19.38	0.05	22.8566

Buttons for 'Add' and 'Close' are located at the bottom right of the dialog.

The **Add Section to Template** window opens.

2. In the **Section Settings** section, enter a **New Template Name** and optional **Section Title**. You can also choose a template from the **Template** menu to add the chart to an existing template.
3. In the **Section Content** section, you can choose from the following available template options:

Option	Description
Generate Correlation Reports	Tests are grouped by the selected Group By parameter.
Use RegEx Filter	The RegEx filter entered in the Search box on the Statistics tab page is included in the template. The filter is applied to the selected dataset when a report is created.
Consolidate tables and plots in single components	Tests are grouped into single components in the report output. If not selected, each test is presented as a separate component. For example, if the check box is selected, and you select the Include Line Chart option, the tests are consolidated into a single Line Chart. If the check box is not selected, a separate Line Chart is created for each test.
Use Section Title for Charts	The Section Title is included in the title of each chart and table in the report output.
Include Statistics Table	The template includes a table of the selected tests (and test data) from the Statistics tab page. The included test data is based on the current column configuration.
Use Default Statistics Columns	Test data associated with the default column settings is included in the template, which overrides any custom column settings you define.
Include Line, Histogram, and Sweep Charts	The template includes the selected chart types.
Show All Runs in the Sweep Chart	If you select the Sweep Chart option, a Sweep - Avg chart is included. If you select the Show All Runs in the Sweep Chart option, a Sweep - All chart (rather than a Sweep - Avg chart) is included.

4. Expand the **Section Preview** section to view the layout and contents that are included in the template.
5. Click **Add**.
A template is created with your settings.

3.1.3. Create a Template from a text file

User uploads a text file which will instantly generate multiple template files in template section with all the group by chart options.

This saves users time in creating templates.

Text file formats is shown in screenshot.

Where

1. The first line is the title of the template file name prefix
2. The other lines are the plot title and regular expression input for each plot
3. A new button is for "Create Batch Templates" is add to upload the text file.
4. Once Generate button is clicked multiple template json file by different group will be created , e.g.
 - o Group by filename, group ID, none, row index

A sample text file:

User will upload a text file (sample file attached) as a master template. This file will be used to create multiple templates files with the given regular expressions using different group by available options.

File format explanation

wifi_tech_ (*Template file will use this name*)

"Average Power", "**auto:5**", "**auto-8**" (*regular expression for y axis and y2 axis **regex1,regex2***)

OPTIONS (*if user wants to ignore lqrap's last used local settings, then this keyword is required before listing the options*)
















showTestYield,true (*these option names are same as json output from template files*)

y2BottomHalf,true (*these option names are same as json output from template files*)

```
Wifi_Test
"Average Power", "power_avg_dbm"
"EVM", "evm_avg_db"
"Mask Margin", "margin_db"
"Frequency Error", "freq_error_avg"
"OBW", "obw_mhz"
```


Template Editor

Template Title: Expand All Collapse All

Title: "Mask Margin" (Consolidated Results, Include: sweep)	  
Title: "Frequency Error" (Consolidated Results, Include: sweep)	  
Title: "OBW" (Consolidated Results, Include: sweep)	  
Title: "Average Power" (Consolidated Results, Include: sweep)	  
Title: "EVM"	  

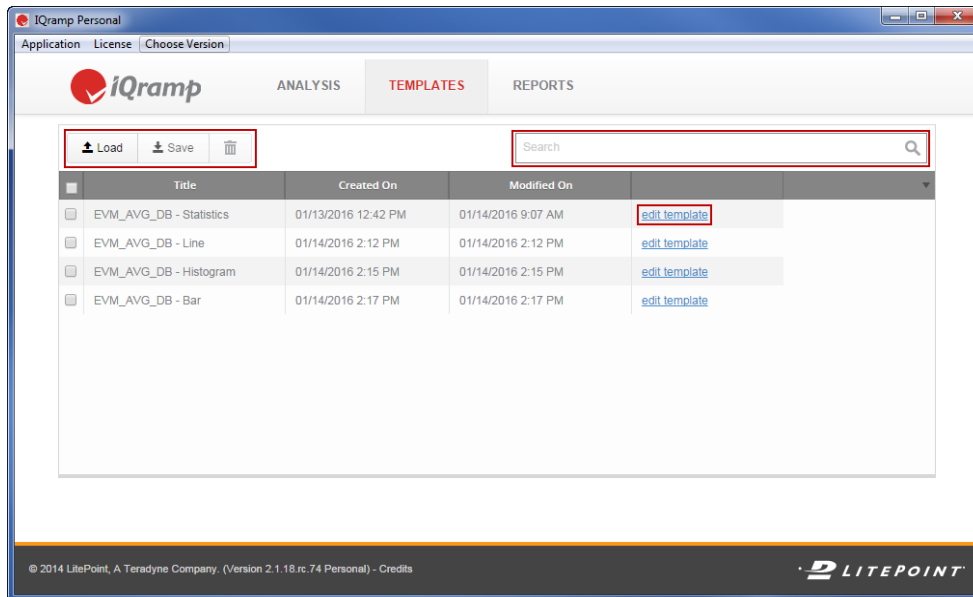
Include Statistics Table Include Line Chart Include Histogram Chart Include Sweep Chart

Group By:
Regular Expression:

 ANALYSIS TEMPLATES REPORTS

3.1.4. Working with the Templates List

The report templates that you create as you work in the **Analysis** module are located in the **Templates** module. Use the **Templates** module to edit and manage report templates.



3.1.4.1. Editing Templates

To edit a template:

1. On the **Templates** module screen, click the **Edit Template** link for the template you want to edit.
2. On the Template Editor window, click **Expand All** to view all editable options.
3. Change the **Template Title**, **Section Title**, and chart display options as needed.
4. Click **Save**.

3.1.4.2. Saving Templates

You can save a template to a location outside of the IQramp application. The template is saved as a `.json` file, which you can share with other IQramp users.

To save a template, select a template on the Templates module screen, and click **Save** in the button toolbar of the **Templates** module screen.

3.1.4.3. Loading Templates

You can load templates to the **Templates** module from outside of the IQramp application.


To load a template, click **Load** in the button toolbar of the **Templates** module screen.

3.1.4.4. Managing Template Display Options

Several options are available to customize the sort order, specify template properties to display, and filter the list of templates.

- Change the sort order – Click a column heading (*Title*, *Created On*, or *Modified On*) to sort the templates by the values in the selected column. Click again to switch the sort order between ascending and descending.
- Select columns to display – Click the down-arrow on the upper-right of the templates table to select the columns to display in the table.
- Filter the template list – Enter search criteria in the search box to filter the template list by the search parameters.

3.1.4.5. Deleting Templates

To delete a template, select one or more templates from the list on the Templates module screen, and click the **Delete**  button.

3.2. Reports

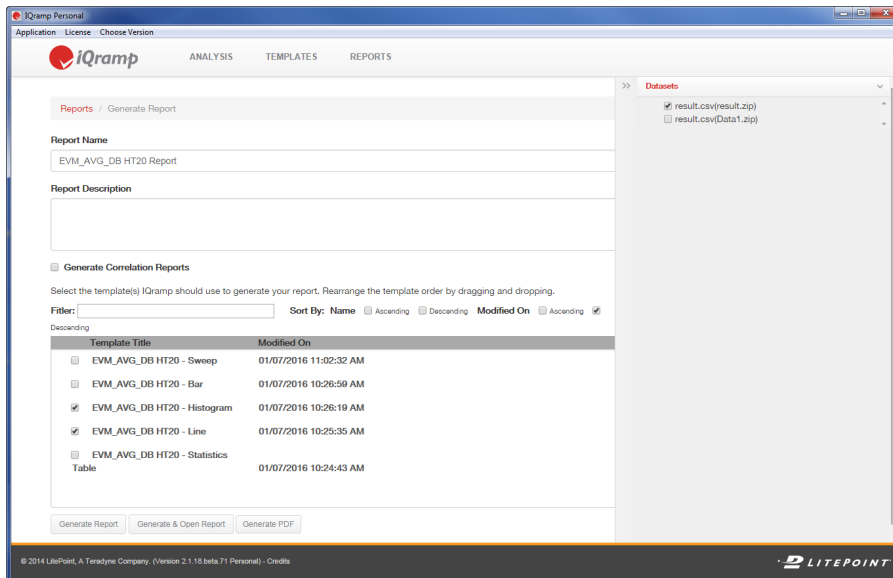
The **Reports** module allows you to create interactive reports that can be shared with other IQramp users or PDF versions that are available to any recipient.

3.2.1. Creating Reports

Create a report by applying one or more report templates to selected datasets.

To select templates and create a report:

1. On the **Reports** module screen, click **Create Report**.



The **Reports/Generate Report** screen opens.

2. Choose one or more datasets from the **Datasets** panel on the right-hand side of the **Reports/Generate Report** screen.
3. Enter a **Report Name** and optional **Report Description**.
4. Select **Generate Correlation Reports** to group tests in the report by the selected **Group By** parameter.

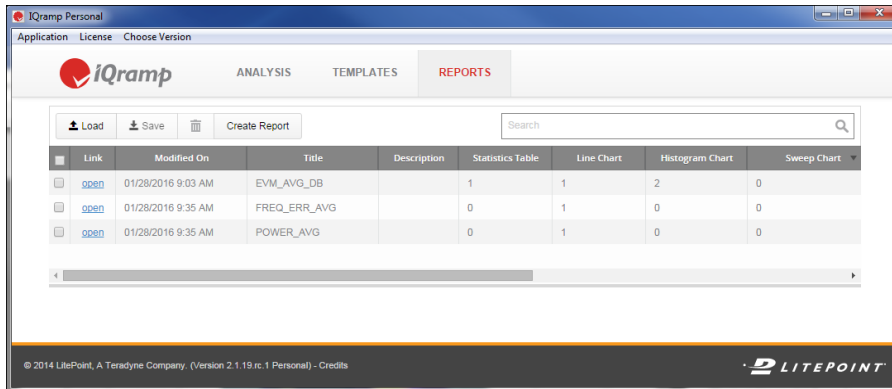


This setting overrides any **Group By** settings in the templates used to create the report.

5. Select one or more templates to include in the report. Use the **Filter**, **Sort By**, and drag-and-drop options to help you locate the templates to include in the report.
6. Click **Generate Report**, **Generate & Open Report**, or **Generate PDF**.
 - **Generate Report** generates the report and adds it to the Reports list.
 - **Generate & Open Report** generates the report, adds it to the Reports list, and opens the report.
 - **Generate PDF** generates the report, adds it to the Reports list, and generates a PDF file of the report.

3.2.2. Viewing and Customizing Reports

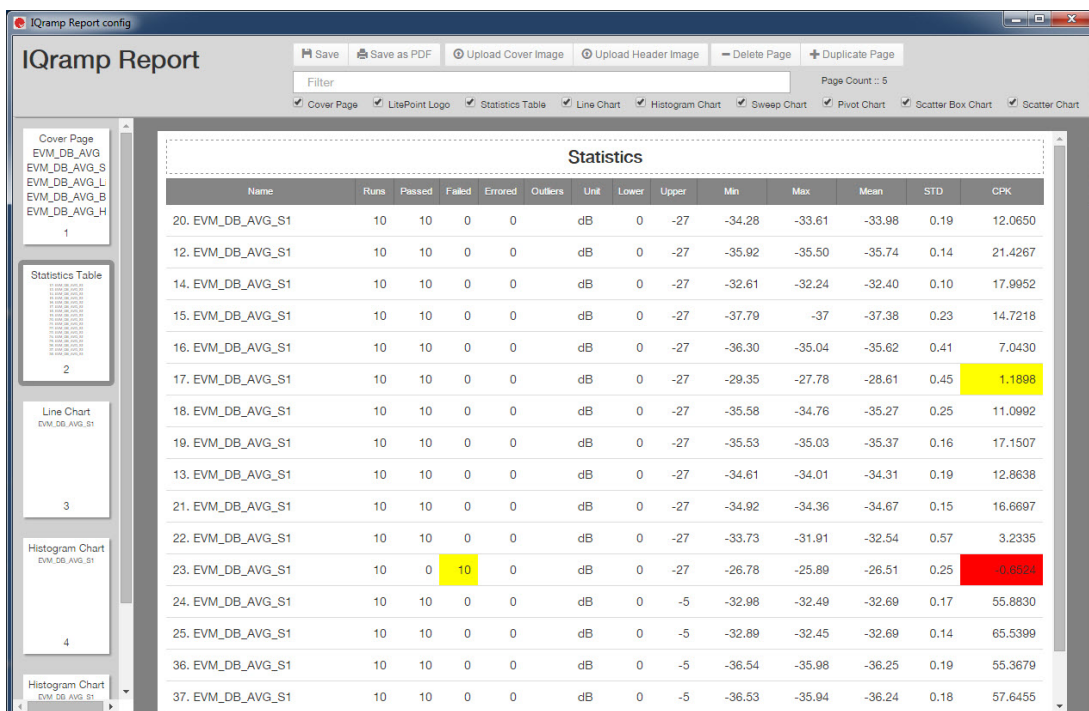
Click the **open** link in the **Link** column of the Reports table to open the report for that row.



3.2.2.1. Working with the Report Interface

The IQramp Report interface contains the following panels and tools:

- Left panel – thumbnails of each report page, used to navigate and select pages
- Main panel – the selected report page
- Filter and taskbar – tools to filter data, specify pages to display, apply custom logos, and save the report

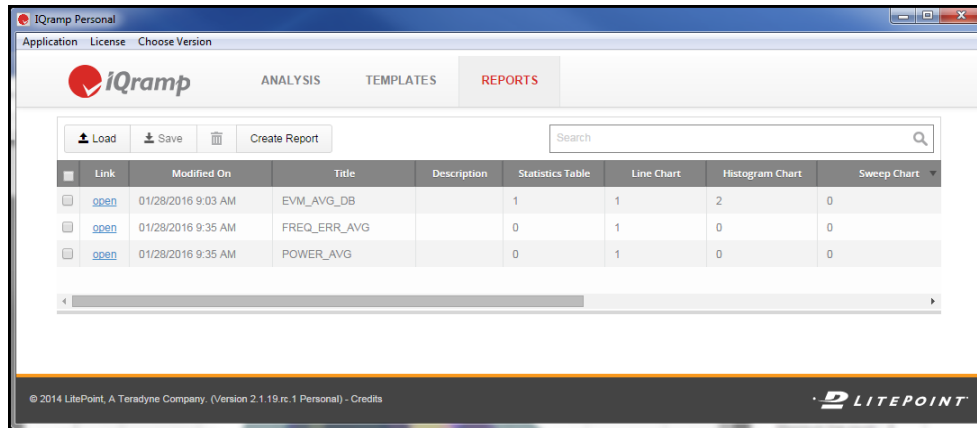


The following table lists the available report options:

Option	Description
Save	Saves the report.
Save as PDF	Saves the report as a PDF, which includes only the filtered report data. Custom settings apply to new and existing reports when saved as a PDF file.
Upload Cover Image	Uploads a cover image, which is included on the first page of your report.
Upload Header Image	Uploads a header image, which is included at the top of the first page of your report.
Delete Page	Deletes the page you choose from the page thumbnails in the left pane of the IQramp report window.
Duplicate Page	Duplicates the page you choose from the page thumbnails in the left pane of the IQramp report window.
Filter	Filters the displayed data based on the entered values.
Page Options	Includes each page with a check mark next it in a report.

3.2.3. Working with the Reports List

Use the **Reports** module to manage the list of existing reports.



3.2.3.1. Saving Reports

You can save a report to a location outside of your IQramp application. The report is saved as a `.json` file, which you can share with other IQramp users.

To save a report, select a report on the **Reports** module screen, and click **Save** in the button toolbar.

3.2.3.2. Loading Reports

You can load reports to the Reports module from outside of the IQramp application.

To load a report, click **Load** in the button toolbar of the **Reports** module screen.

3.2.3.3. Managing Report Display Options

Several options are available to customize the sort order, specify report properties to display, and filter the list of reports:

- Change the sort order – Click a column heading (such as Modified On or Title) to sort the reports by the values in the selected column. Click again to switch the sort order between ascending and descending.
- Select columns to display – Click the down-arrow on the upper-right of the reports list to select the columns to display in the table.
- Filter the reports list – Enter search criteria in the search box to filter the reports list by the search parameters.

3.2.3.4. Deleting Reports

Select one or more reports, and click **Delete**  in the **Reports** module button toolbar.

4. Plotting in Real Time

When you plot in real time, a Pivot chart automatically reloads and redraws when changes are made to the associated dataset.



Real-time plotting is only available for IQramp running on Windows.

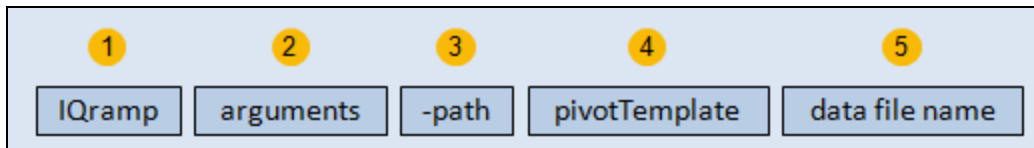
4.1. Before You Begin

Before initiating real-time plotting, you must have the following items:

- A zSeries output file (.csv format).
- A created Pivot template that uses the **Saved Pivot Template** option on the Pivot tab page in IQramp.
See *Using the Analysis Module* for more information.

4.2. Creating Command Lines

You can create a command line to open IQramp and start real-time plotting. Include all required options, and position the following options as specified:



Position	Name	Required/Optional	Description
1	IQramp	Required	The IQramp application: IQramp_Personal_App.exe
2	-autoReload	Required	Automatically reloads the data file when the file is changed.
2	-autoRedraw	Required	Automatically redraws the Pivot chart when the data file is changed.
2	-log	Optional	Writes log messages to the iqramp.log file for debugging purposes.
2	-zoomMax	Optional	Opens IQramp with the window size maximized.
3	-path	Optional	The initial window when IQramp opens, typically the Pivot window.
4	pivotTemplate	Required	The path and name of the template file used to draw the Pivot table.
5	Data file name	Required	The path and name of the data file.

The following rules apply when creating command lines:

- Argument names are not case sensitive. This rule applies to positions 2, 3, and 4.
- No spaces are allowed within path and file names. This rule applies to positions 1, 4, and 5.

- Arguments with an initial dash (position 2) are positioned after *IQramp_personal_App.exe* and before the *-path* argument. Arguments relative to each other can be in any order.

4.2.1. Command-Line Example

The following example opens IQramp with the a log, auto-reloading, and auto-redrawing enabled. The path to the initial opening IQramp window and data file path are also included.

```
IQramp_Personal_App.exe -log -autoReload -autoDraw -path pivot/pivotchart  
pivotTemplate C:\DataFiles\PoutVsEvmDbPeak.json C:\DataFiles\SampleFiles.csv
```

4.3. Changing Data and Template File Names

Once a command line is executed and IQramp is running, you can change the dataset and template file names in the command line. The changes are automatically reflected in the Pivot chart.

Appendix A: Using Regular Expressions to Search a Dataset

You can use regular expressions to filter and search data. The following table describes some of the most commonly used regular expressions:

Regular Expression	Description
.	Matches any single character.
*	Matches zero or more of the preceding character or pattern.
.*	Matches zero or more occurrences of any character.
	Matches values on either side of the pipe.
?	Matches zero or one of the preceding character or pattern.
+	Matches one or more of the preceding character or pattern.
[]	Encloses a list or range of characters (or both).
^	Matches the beginning of a string.
\$	Matches the end of string.

Dataset Search Examples

The following examples describe the use and results for two often used regular expressions:

- AND (.*)
- OR (|)

Example	Description
EVM .* MCS	Searches for data that includes EVM measurements and MCS as the modulation type.
EVM .* AVG .* MCS	Searches for data that includes EVM and AVG measurements and MCS as the modulation type.
EVM MCS	Searches for data that includes EVM and AVG measurements or MCS as the modulation type.
HT20 .* (EVM MCS)	Searches for data that includes the throughput type HT20 and either EVM measurements or MCS as the modulation type.

Appendix B: IQramp ReportBuildr

The IQramp ReportBuildr is a separate application from IQramp Personal, which you can use to create reports from a command line with previously built report template and data files. You can download IQramp ReportBuildr from www.litepoint.com/software/iqramp-downloads/.

The ReportBuildr is run from a command-line utility, which you can integrate into your own script to automatically generate reports.

Enter the following text at the command-line to invoke ReportBuildr:

```
reportBuildr [--help] [--version] --templates=listOfTemplates [--title=reportTitle] [--description=reportDescription] [-o outputPath] dataPath
```

For example:

```
./reportBuildr --templates=IQramp-template1.json,IQramp-template2.json --title="Demo Report" -o demoReport.json result.csv
```