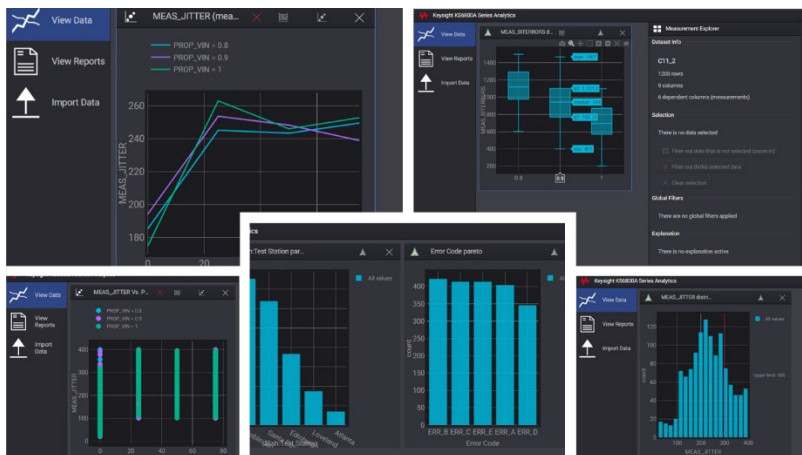


KS6800A Series PathWave Measurement Analytics Software

The Keysight Technologies, Inc. PathWave Measurement Analytics software provides an interface that allows users to import their test data to a data repository server. It protects the data repository server from data corruption and allows version control. It also allows for a simple interface which abstracts away the implementation details. The KS6810 Data Analytics Web Service software supports multiple data sources and a wide range of data import clients. The second component of KS6810A is the visualization tool. The KS6810A provides histogram, waveform plots and other modern test and measurement visualization tools with filter and split capabilities to enable data analysis.



Features

- Supports multiple data sources:
 - Keysight software products (i.e FlexDCA, compliance application software, ADS simulation software)
 - Keysight test equipment measurement result
 - Non-Keysight data sources (measurement result from multiple vendor test equipment or customized data source from user test environment)
- Supports a wide range of clients for data import:
 - Infiniium compliance software framework
 - Web import tool for different file format (i.e CSV, JSON)
 - Import program (i.e C#, Python, JAVA)
- Data can be retrieved for real time analysis with the visualization tool.
- Supports data analytics features:
 - Explain capability to correlate data with meta data.
 - Guided data analytics workflow to highlight root cause of outliers.
 - Data overlay to enable benchmarking against user defined baseline distribution

Setting up the KS6810A PathWave Measurement Analytics Software

The user would set up a web server that hosts the KS6810A Data Analytics Web Service software and a data repository server that hosts the data repository infrastructure. The user can use any data repository infrastructure such as MySQL, SQL Server, Microsoft SQL, Oracle or other data repository management system. It is recommended that the web and data repository servers are setup separately to ensure scalability, performance and data repository security. The user is responsible to provide backup, restore and replication of the data repository server. It is recommended that the user set up the servers through their Information Technology (IT) department.

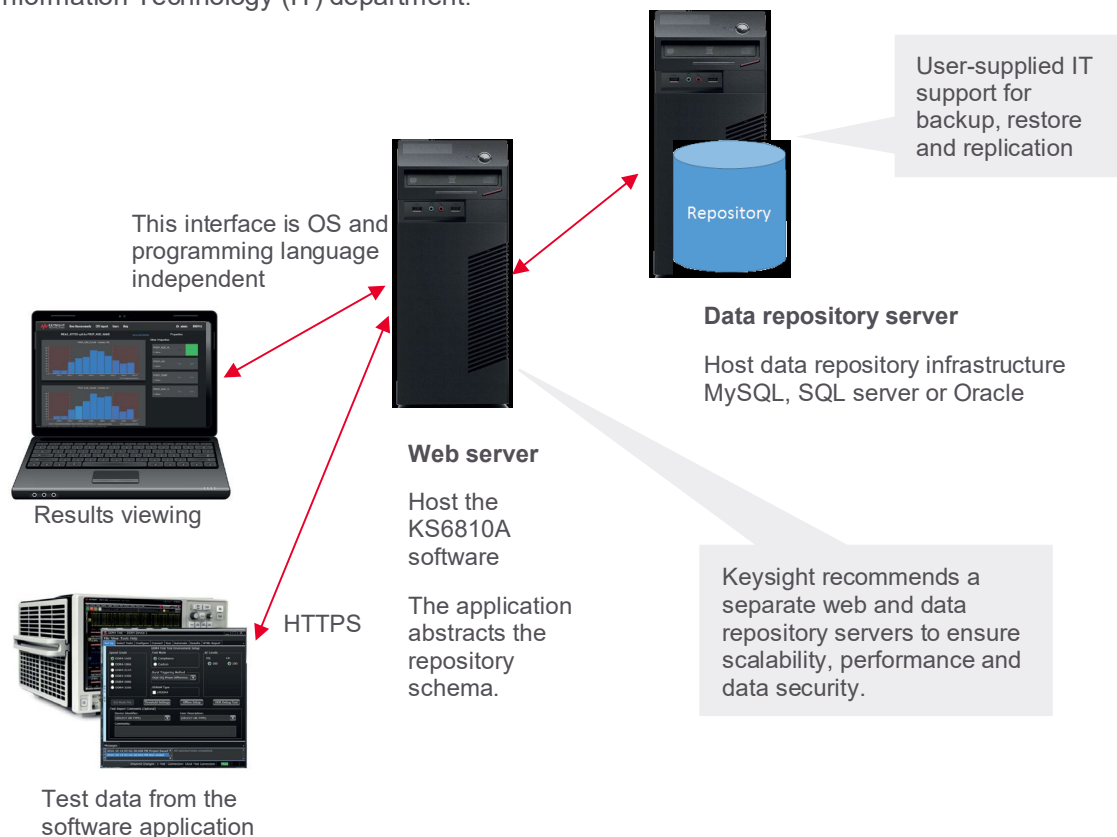


Figure 1: The KS6810A PathWave Measurement Analytics software is installed on a server maintained by the user. The user will import and retrieve the data via a URL address that connects to the server.

Data Sources and Data Import

The KS6810A PathWave Measurement Analytics software enables users to upload test results from other sources to the data repository. The data source can come from Keysight test equipment such as the oscilloscopes. The software also supports non-Keysight test equipment measurement data as well as other user defined measurement methods. The user would collect the measurement result and save it into a .CSV format. Users can use the Web CSV import tool to import the data to the repository. The .CSV data import tool allows users to specify the number of measurements and properties available in the .CSV format test result. If the user chooses not to use .CSV format, the KS6810A software includes C#, Python and other programming languages reference applications to help the user script a customized data import tool.

Keysight compliance software use model

The KS6810A PathWave Measurement Analytics software allows the user to import the test result from the Keysight compliance test software. The user would first configure the compliance application software, run the tests and then export the test result to the data repository.

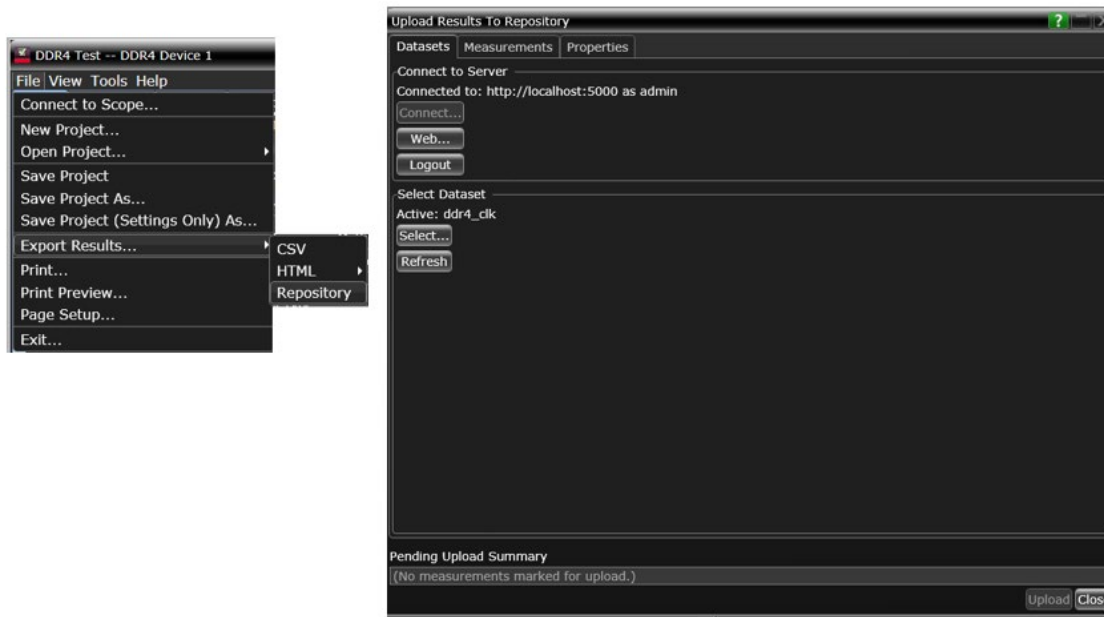


Figure 2. Infiniium Compliance Test Software with PathWave Measurement Analytics interface. The user exports the compliance test result to the repository via an URL address that connects to the server.

KS6810A Visualization Tool

Users can retrieve the test results from the data repository server to be viewed with the KS6810A visualization tool. The KS6810A visualization tool allows the user to see their compiled measurement result in histogram and line plots. The KS6820A advance version of the data analytics software provides additional viewing capabilities such as box-whisker and waveform plots. The plots can be split by properties or test conditions which include temperature, ASIC version, work bench, date and equipment model. The user can navigate to each measurement taken. The visualization tool is included as part of the KS6810A Data Analytics web service software.

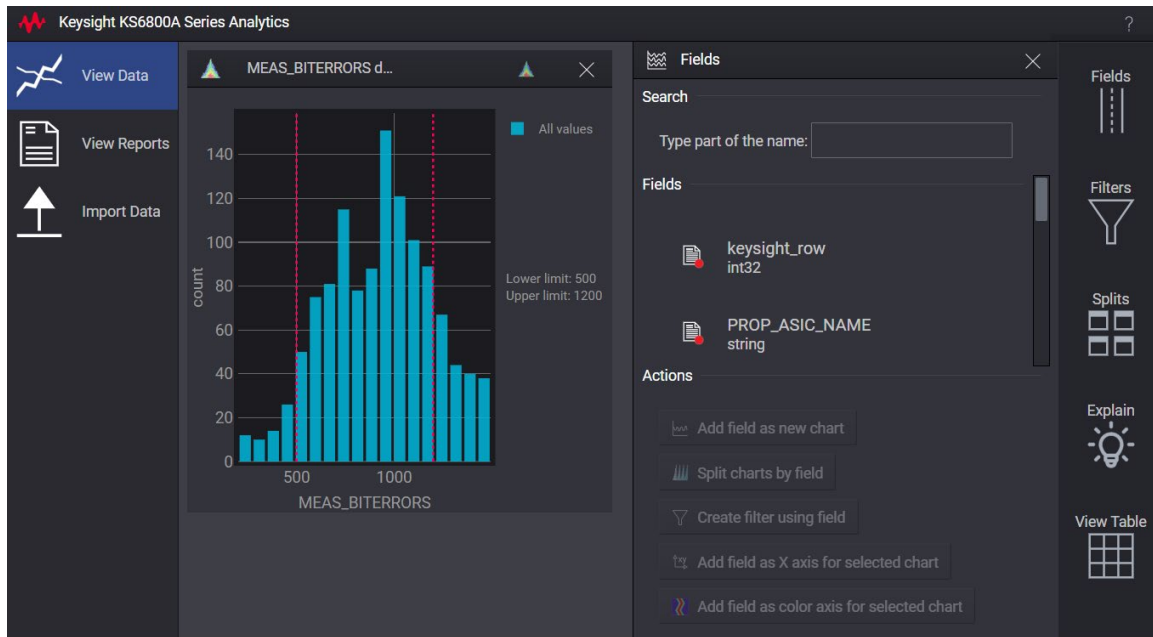


Figure 3: The KS6810A Visualization Tool reveals the plot of a bit error rate measurement in histogram mode. The red dotted lines indicate upper and lower test limits of the measurement as in the specification.

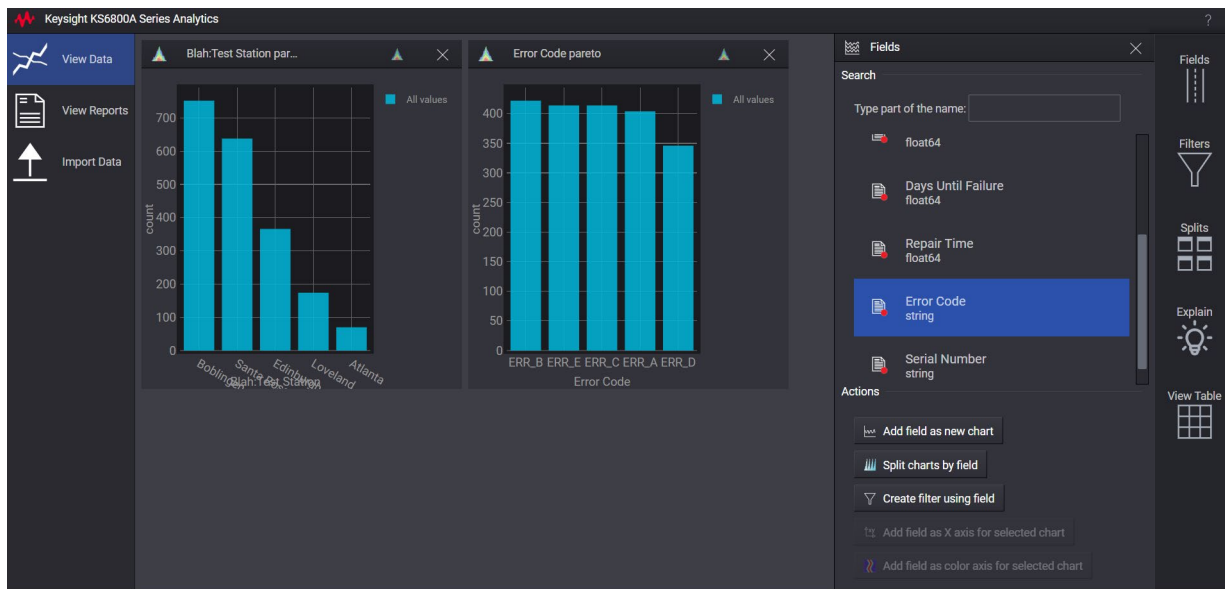


Figure 4: Pareto plot of manufacturing data analysis.

Analytics

The KS6820A advance option offers data analytics capabilities. The user can select a group of data of interest which includes failed test data. The user interface allows user to review the possible test properties that causes the result of the test data. It also provides a guided analytics workflow to detect outliers.

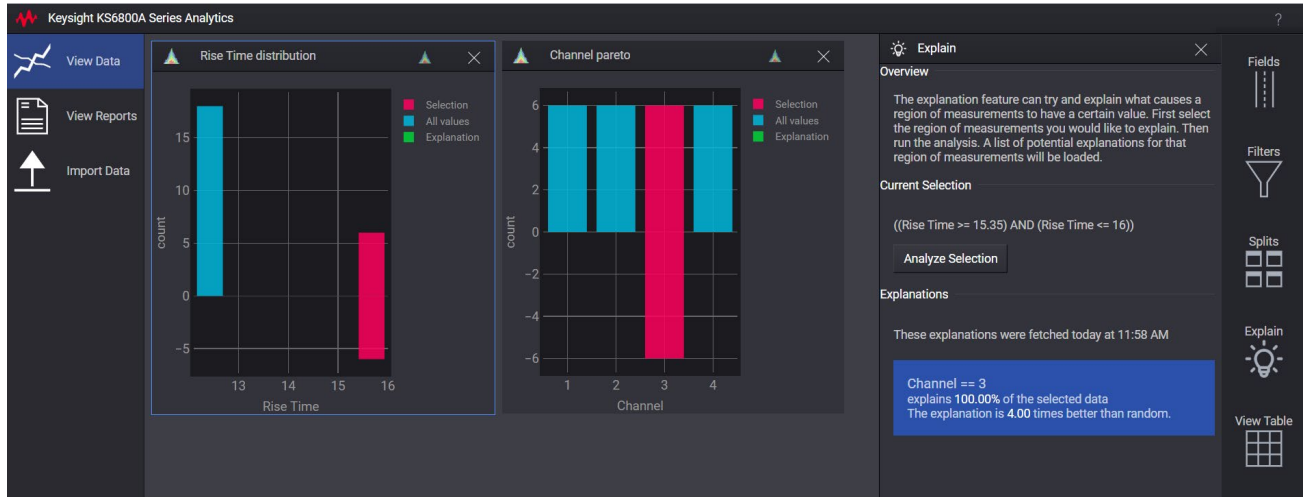


Figure 5: The Explain feature offers possible explanations to the device under test failure as indicated by the red bar distribution.

Guided analytics workflow provides scanner to run distribution, correlation and dependency features to identify outliers in a dataset.

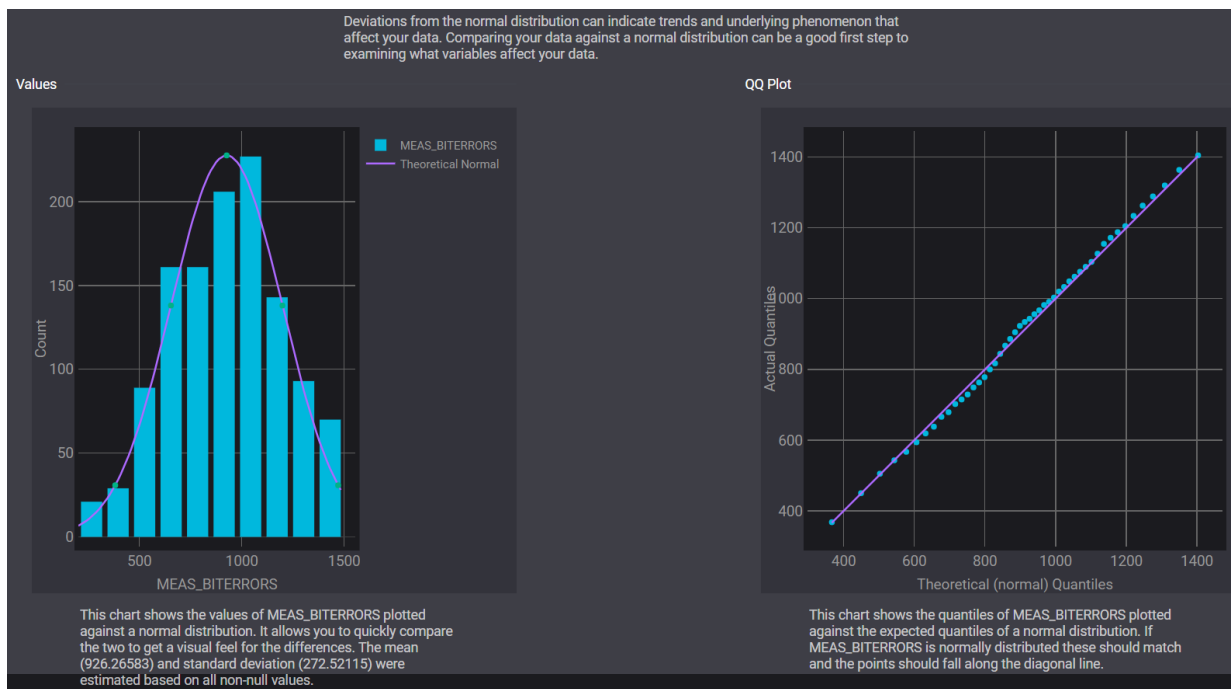


Figure 6. Guided analytics workflow to scan for normal distribution allows user to model the behavior of the test data to detect outliers and anomalies.

Does MEAS_BITERRORS depend on PROP_VIN

Dependence between two variables means that values of the dependent variable depend on the independent value. This means that the center of the distribution of the dependent value is a function of the independent value. Understanding dependence between variables can sometimes indicate causes (A causes B) and other times can help in understanding groups of related measurements.

Breakdown by PROP_VIN

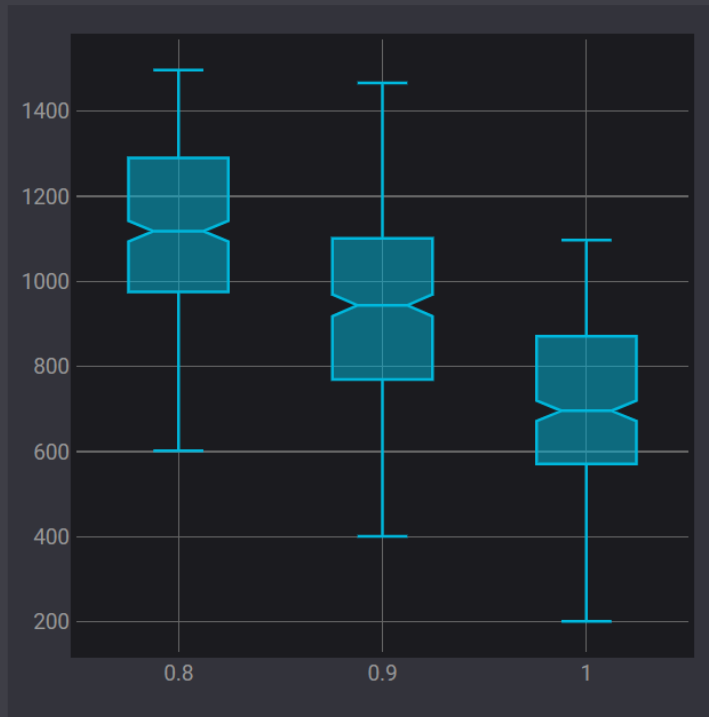


Figure 7. Guided analytics workflow to scan dependency allows user to see the data relationship with a test environment. The more distinct the boxes the more likely the measurement depends on the environment.

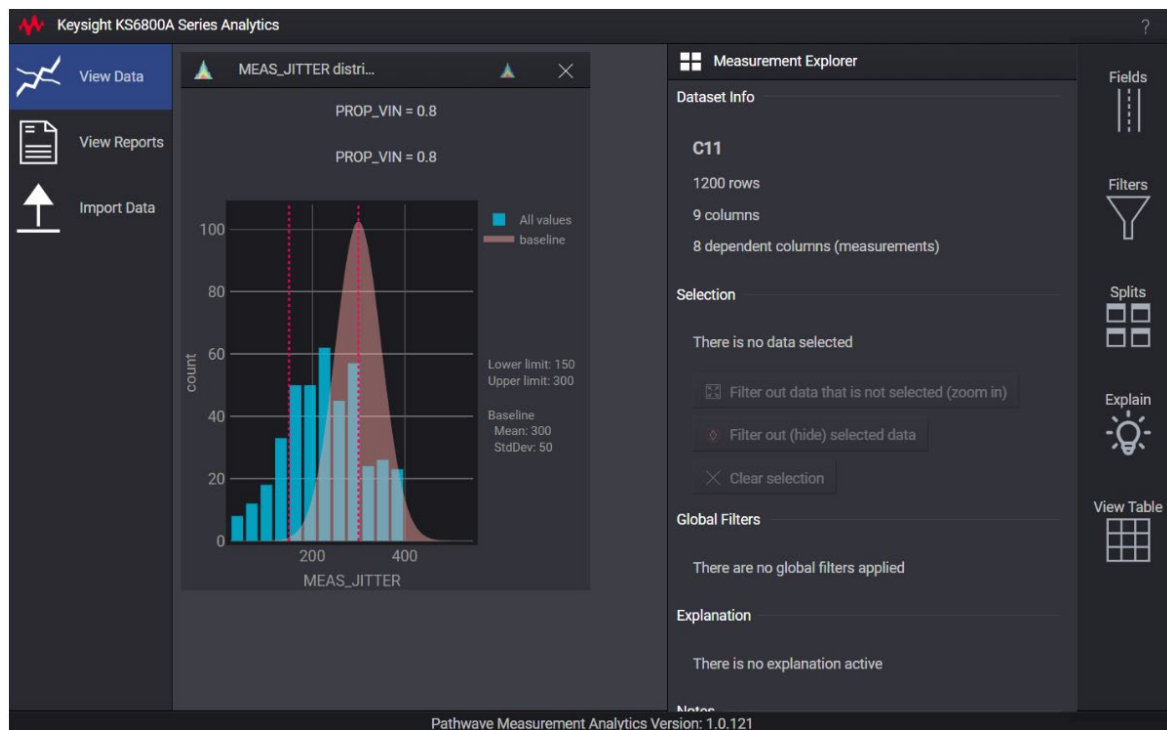


Figure 8. Data overlay allows benchmarking against normal distribution and industry data.

Ordering Information

Model Number	Description	Note
KS6810A	Data Analytics Web Service Software (1 license)	
KS6811A	Data Analytics Web Service Software (15 licenses)	
KS6812A	Data Analytics Web Service Software (unlimited/corporate license)	
KS6820A	Data Analytics Web Service Software (Advance version)	Requires KS6810A, KS6811A or KS6812A



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Time-based – Time-based licenses can be used through the term of the license only (6, 12, 24, or 36 months).

License types

Node-locked – License can be used on one specified instrument/computer.

Transportable – License can be used on one instrument/computer at a time but may be transferred to another using Keysight Software Manager (internet connection required).

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- Step 2.** Choose your license term: perpetual or time-based.
- Step 3.** Choose your license type: node-locked, transportable, USB portable, or floating.
- Step 4.** Depending on the license term, choose your support subscription duration.

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