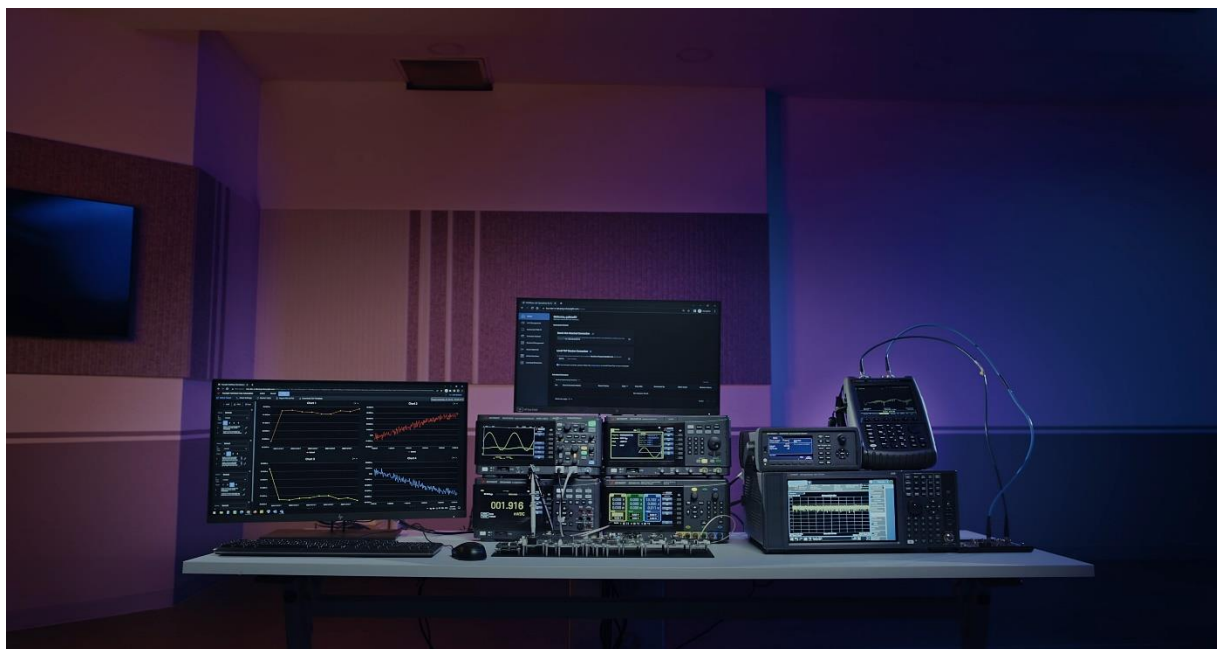# Keysight SR101EDUA Digital Learning Suite

A unified web-based digital learning suite

One Secured Access to All

With new EdTech being introduced almost every day and courses built towards career-focused learning and student-centric blended learning, educational institutes must rapidly transform to keep pace with this megatrend. However, this means that educators may be required to spend more resources on maintaining or managing these assets from different providers.

SR101EDUA offers a solution and a convenient way to make the switch to online learning and manage all engineering lab resources easily. It is a digital learning suite for both educators and students to access industry-relevant learning resources through a secure web interface. This unique digital learning suite transforms the learning experience by providing remote access and control to engineering lab resources as well as tools to visualize, compare, and analyze measurement data. It accelerates lab project completion time by up to 10x and increases up to 3x more lab resource utilization.

SR101EDUA is also able to enrich the learning experience with self-paced learning resources that can accelerate student development and help students explore adjacent fields for a holistic learning journey. Hands-on lab collaborative tools allow both educators and students to work together, learn, and build a lasting knowledge foundation. The digital learning experience starts here.

KEYSIGHT

LTI Compliance

With a built-in Learning Tool Interoperability (LTI) feature, you can easily plug and play the whole SR101EDUA solution into your LMS. Ensuring educational technology tools are IMS Global certified is the best way to establish a plug-and-play ecosystem. Students can navigate seamlessly from the LMS to the Collaborative Learning Module without having to log in separately to different devices. Lecturers can also design the teaching curriculum to include remote lab capability.

Go to https://site.imsglobal.org/certifications/keysight-technologies/pathwave-lab-operations-for-remote-learning to find out more about Keysight PathWave Lab Operations for Remote Learning as an IMS Global certified LTI learning tool.

Figure 1. Top 2 LMS Providers in the Market

The Digital Learning Suite is certified with LTI compliance, allowing for seamless integration with the university LMS and providing easy access to a holistic end-to-end education journey from anywhere at any time via a secure SSO web interface. Visit https://site.imsglobal.org/certifications/keysight-technologies/keylab-digital-learning-platform to find out more.

Instrument Control

Control all your instruments from an integrated web interface powered by the Keysight PathWave Test Automation test sequencer.
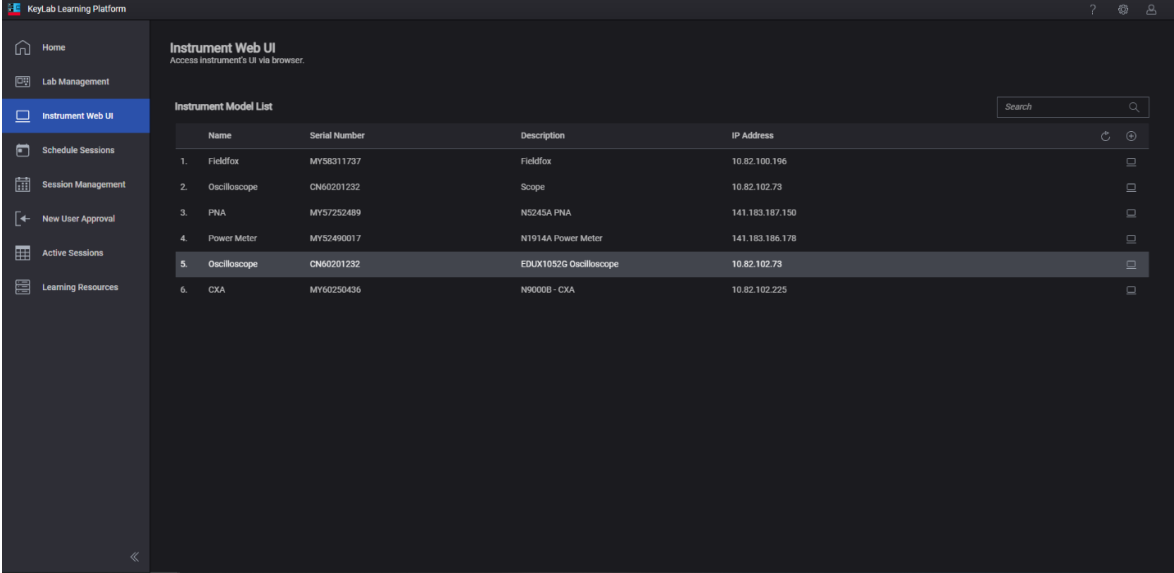

Figure 2. Lab Instruments connected to SR101EDUA

SR101EDUA can connect to instruments linked to lab benches in the local network or directly connect to the instrument's soft front panel as shown below.
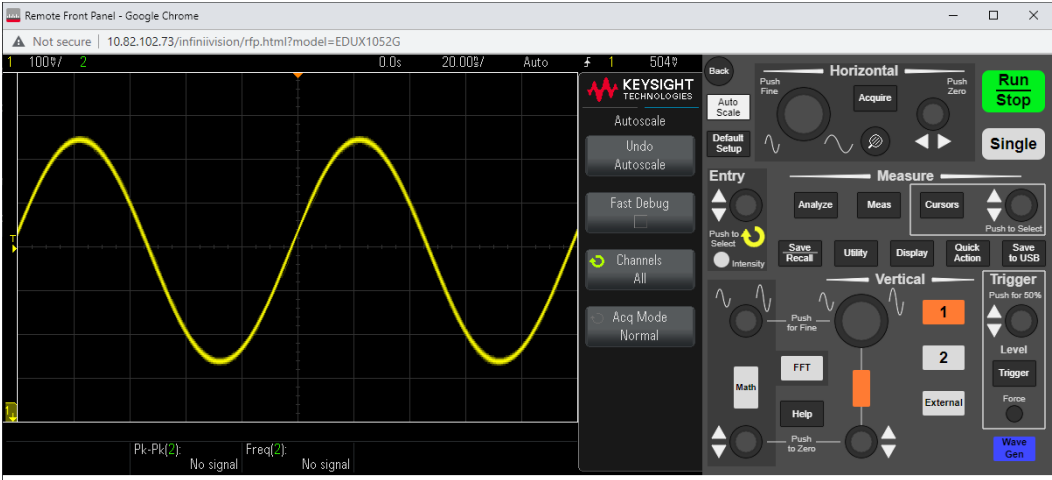

Figure 3. Oscilloscope Web UI

Educators can now take a screenshot, plot measurement data to XY plots, perform math functions to XY plots, and more. These graphical charting tools enable educators to engage with students to visualize, compare, analyze, and share test results.

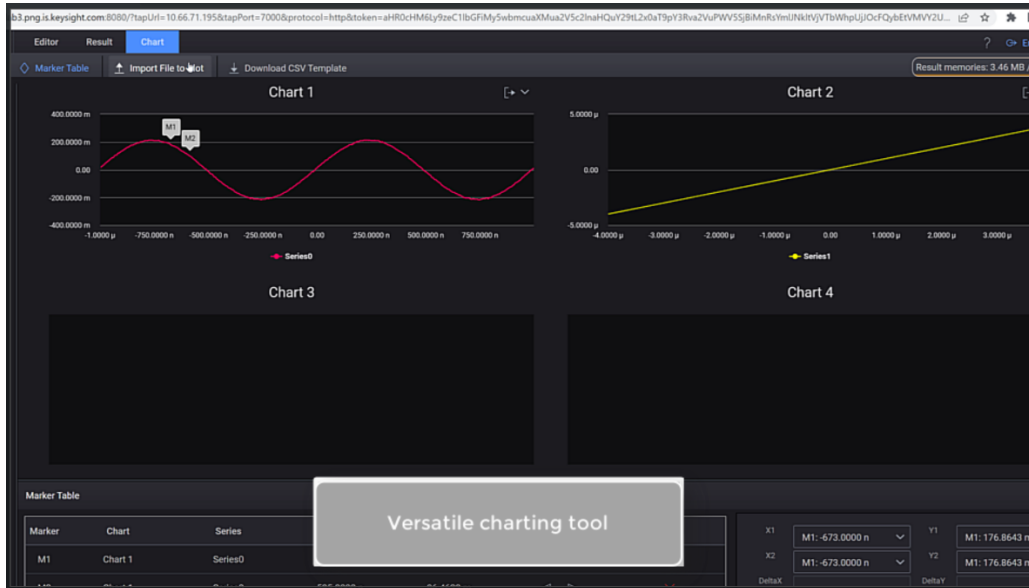# Measurement, Plotting, Math Equation

Figure 4. Test Sequencer with Charting Tool

SR101EDUA improves the lab workflow by up to 10x faster compared to the traditional lab setting. It also gives educators up to 3x more asset utilization via a streamlined process, as all lab equipment can be seamlessly managed through SR101EDUA.

Figure 5. Calculate Delta Value from the Graph

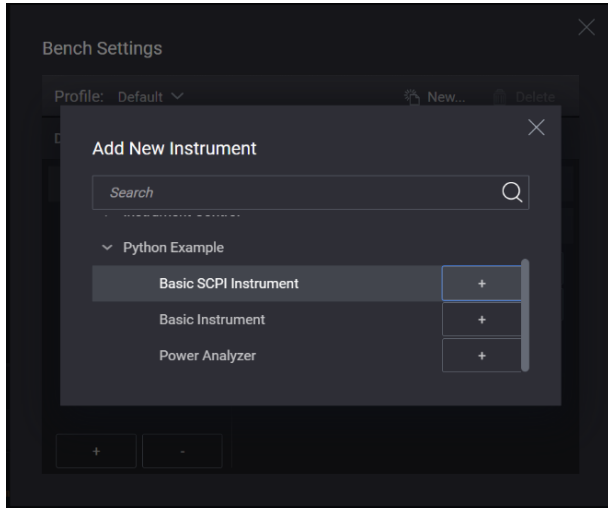# Adding Non-Keysight Instrument with Python

Figure 6. Add-in Non-Keysight Instrument with SCPI

One of SR101EDUA's key strengths is that it does not have instrument restrictions to connect. SR101EDUA supports non-Keysight instruments and achieves the same actions via SCPI commands. The built-in test sequencer allows for repetitive commands like taking multiple screenshots, plotting multiple data points, or performing math operations to be completed with just a touch of a button.
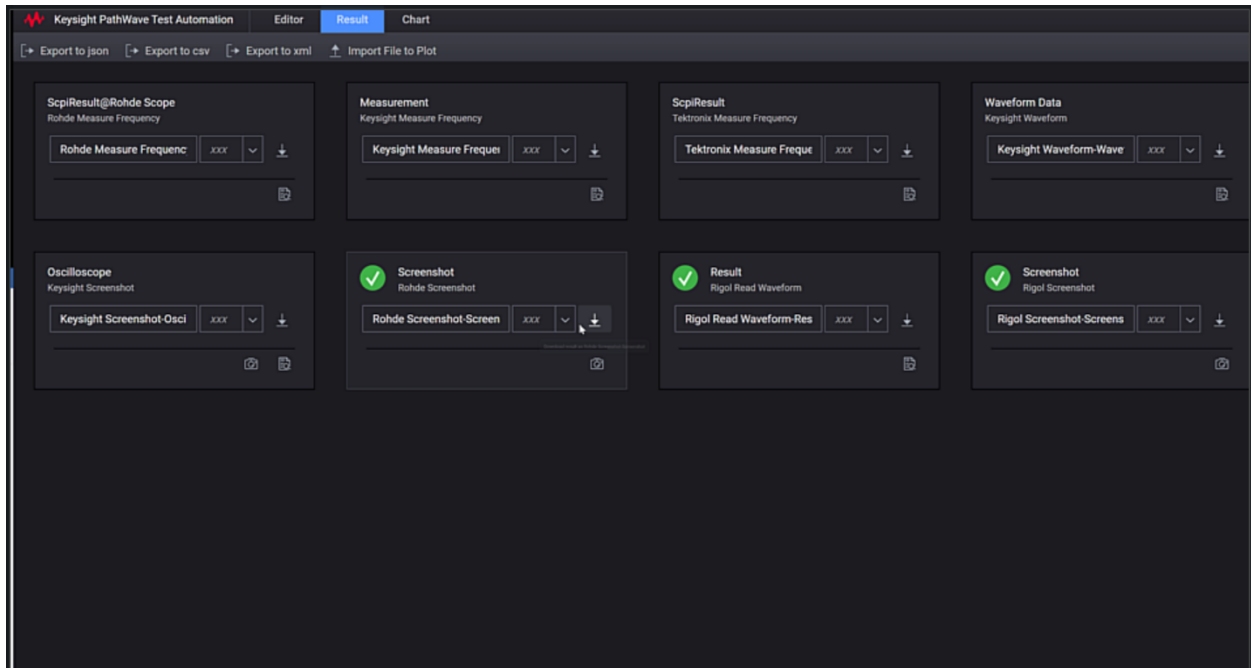

Figure 7. List of Different Brand Instruments Added into Bench
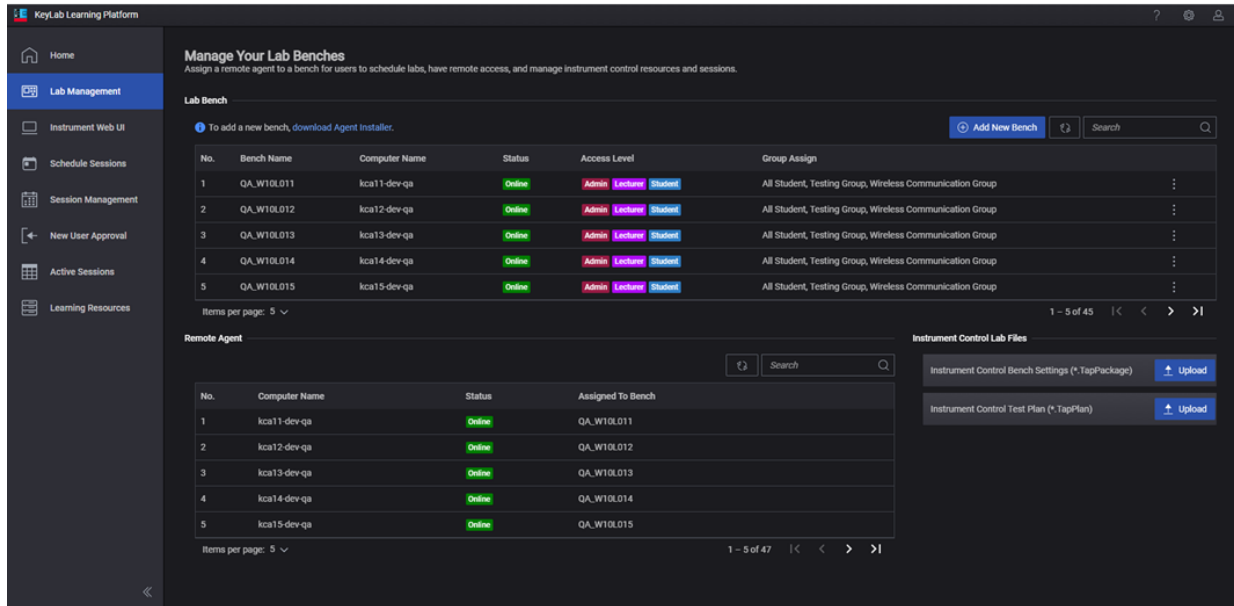
Lab Management

Figure 8. Available Lab Benches to connect

SR101EDUA simplifies teaching in laboratories with multiple test benches. The Lab Management tab allows educators to have custom bench arrangements to configure lab layouts, number of benches, type and number of instruments, and to name of the benches accordingly to mimic the actual lab physical bench positions.
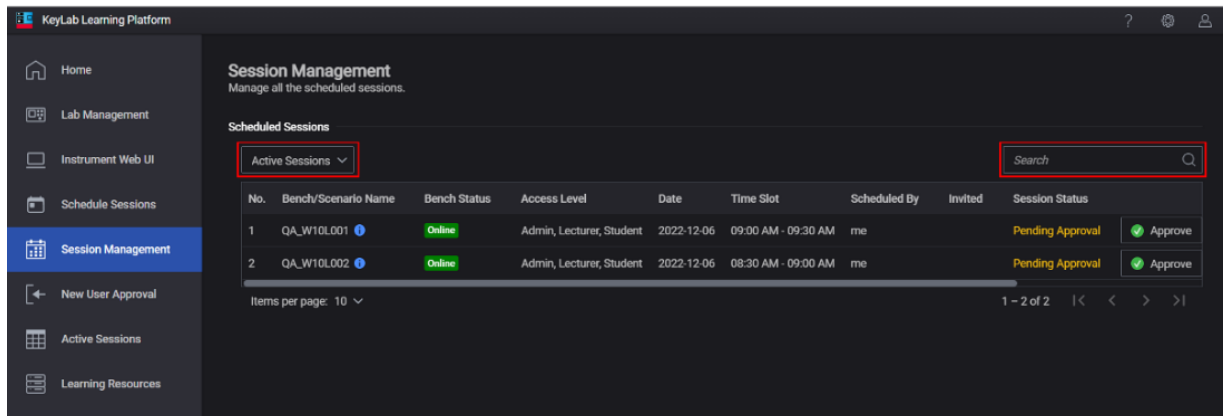

Figure 9. Admin View of Active Sessions or Past Sessions

Teaching/Learning Resources

There are a lot of hidden operating costs when running a university like headcount, time, and program maintenance. It is not an easy task for the lead program to keep its program up-to-date and on par with Industry standards, especially when resources spent on developing effective programs are not negligible.
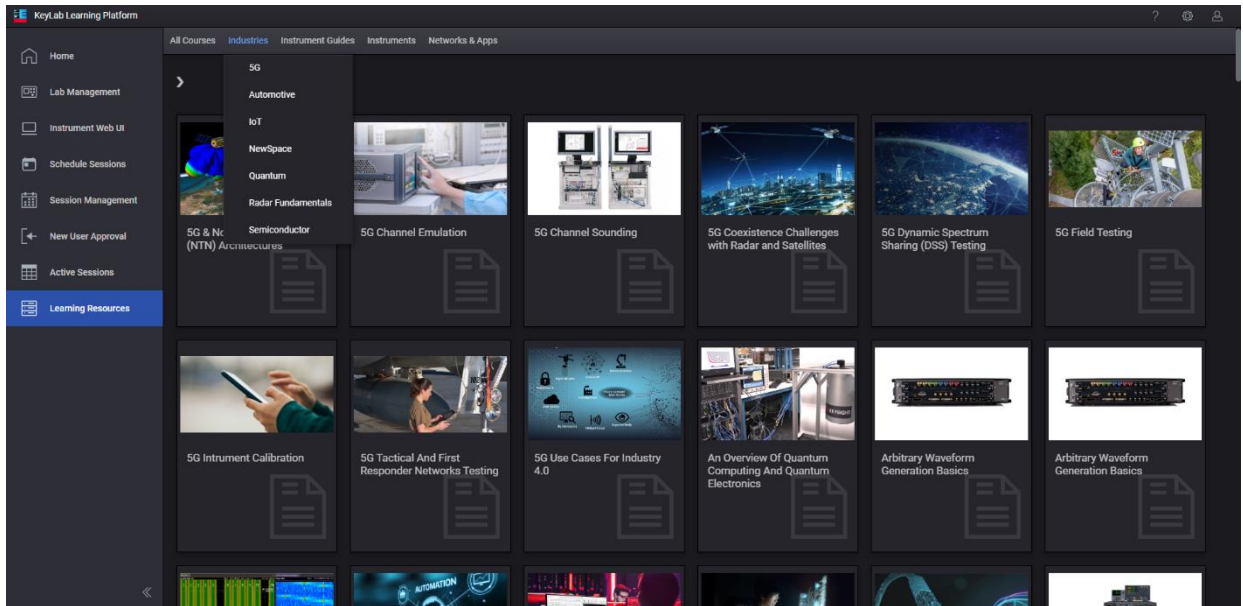

Figure 10. Learning Resources Page in SR101EDUA

With SR101EDUA, educators and students can now have access to thousands of on-demand industries-relevant learning resources from Keysight technical experts. The Learning Resources tab offers a wide range of premium teaching resources across different industries like 5G, Quantum, IoT, etc. The rich library consists of content in various formats such as videos, application notes, and lab lessons, among others. As a one-stop digital learning suite that provides an end-to-end teaching journey to educators, SR101EDUA allows educators to save time when designing their syllabi through these resources.
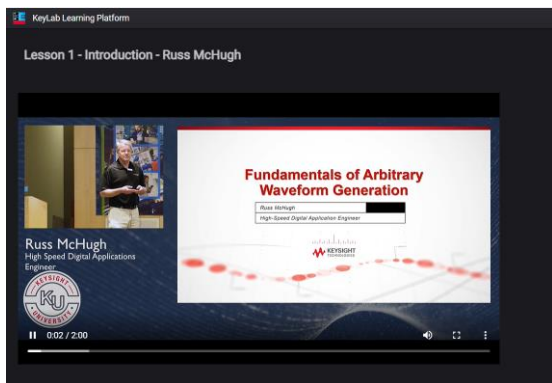

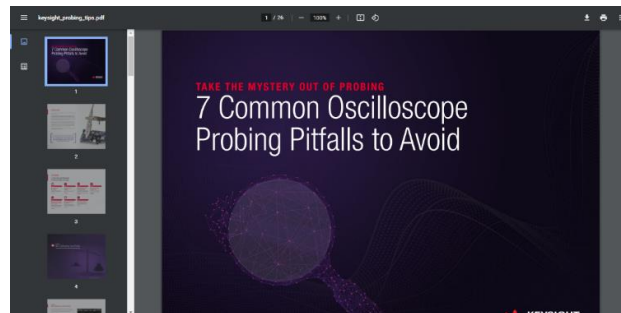**Figure 11.** Content in Video Format

Figure 12. Content in Document Format

 KEYSIGHT

System Requirements

Item	Recommended	Minimum
RAM	32 GB RAM or higher	16 GB RAM or higher
Hard Disk Space	256 GB free disk space for the general operating system	30 GB free disk space for the SR101EDUA installation directory
Processor	64-bit, Quad-core CPU	
Operating System Requirements	Ubuntu Linux 20.04 LTS	
Virtual Machine Hypervisor Supported	Oracle VM VirtualBox Manager (Windows 10)	
Others	Requires Internet access	

Software Requirements

SR101EDUA deployment tool (contact your local Keysight representative)

NOTE	You will need a Microsoft Windows 10 machine to run the SR101EDUA deployment tool. Use the Keysight SR101EDUA Install Wizard to install all required software.

Software System requirements

Required 3rd party software for installation	Ubuntu ISO (https://releases.ubuntu.com/20.04.5/ubuntu-20.04.5-live-server-amd64.iso) FileZilla (https://filezilla-project.org/download.php?type=client) VirtualBox (https://www.virtualbox.org/)
Supported LTI compliant LMS platforms integration	Moodle v3.9 and above Blackboard Canvas For other LTI compliant LMS platforms, please contact Keysight Technologies for further information
Supported web browsers	Microsoft Edge v107.0.1418.62 and above Google Chrome v108.0.5359.94 and above Mozilla Firefox v107.0.1 and above

Ordering Information

Solution number	Description
PW9300EDU	SR101EDUA Hybrid Collaborative Learning Module
KS8400EDU	SR101EDUA Test Sequencing & Control Module

SR101EDUA – License Types and Terms

Model number	Description	
PW9300EDU	R-X4Y-002-L	Floating (single site) license, 12-months subscription-based with KeysightCare software support
	R-X4Y-002-X	Floating (single site) license, 24-months subscription-based with KeysightCare software support
	R-X4Y-002-Y	Floating (single site) license, 36-months subscription-based with KeysightCare software support
KS8400EDU	R-X4Y-002-L	Floating (single site) license, 12-months subscription-based with KeysightCare software support
	R-X4Y-002-X	Floating (single site) license, 24-months subscription-based with KeysightCare software support
	R-X4Y-002-Y	Floating (single site) license, 36-months subscription-based with KeysightCare software support

Further Information

Please visit our solution page for more information https://www.keysight.com/sg/en

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