



TECHNICAL
OVERVIEW

EG7000A PathWave Instrument RPA

PATHWAVE

Keysight PathWave Instrument RPA enables no-code automation of bench setups, instruments and circuits or devices under test (DUTs). R&D engineers and technicians debugging and verifying circuits can now leverage automation without the knowledge, complexity and effort required to develop custom scripts using SCPI or device-specific driver commands.

Product Summary

Keysight PathWave Instrument RPA is PC and instrument-based software which enables R&D engineers and technicians to control instruments and measurement setups without having to pre-define their measurement sequence or compose test automation scripts. The software automates their interactions with the instrument making replaying configurations and measurements seamless, granting them the flexibility of direct interaction while gaining the productivity of automation. The software increases efficiency by not only automating but orchestrating repetitive tasks in their workflow by configuring and parameterizing recordings and replaying these newly created workflows.

- Remotely access, orchestrate and control your measurement setup anywhere in the world ¹
- Automate and parameterize all UI interactions with your instruments and devices under test
- Manage and share PathWave Instrument RPA automation sessions for tighter collaboration
- Automation sessions can be created via a no-code, one-button record and playback operation

1. EG7000A-2FL is required for multi-instrument orchestration or DUT control.

PathWave Instrument RPA Use Models

PathWave Instrument RPA is designed to leverage its simple functionality to serve many of today's design engineering workflows.

- Remotely Access Your Instruments and DUTs ¹
 - PathWave Instrument RPA accesses instruments remotely through Keysight IO Libraries instrument discovery and a remote connection using either Virtual Network Control (VNC) or Windows Remote Desktop (RDP). Access to the DUT is through the same remote mechanisms above to the PC driving the DUT-control software.
- Intuitively Script Your Interactive Measurement Automation
 - PathWave Instrument RPA provides a simple and intuitive user interface to record and playback users' mouse and keyboard operations as an automation session. Configuration of automation sessions can be accomplished using the Visual Script Editor.
- Accelerate Your Time to Automation with the No-code Visual Script Editor
 - For editing automation sessions, PathWave Instrument RPA provides a simple visual script editor (Figure 1). Automation sessions and parameters can be edited directly and re-configured via dragging-and-dropping blocks.
- Configure and Build Complex Automation Sessions via Parameterization
 - Changing test parameters on instrument front panels is easily accomplished. In most use cases, tests need to be performed using different sets of parameters that require several test variables to be changed several times, even though the operational procedures are the same for each test. This function enables to reduce hours of scripting and to perform repetitive test in a simple and easy way compared to legacy approaches.
- Orchestrate ¹ and Automate Instruments and Devices Across Your Measurement Setup
 - Test orchestration driven by advanced option of Keysight Instrument RPA (EG7000A-2FL). A maximum of 2 instruments and 1 Device Under Test (DUT) can be controlled sequentially with a single instance of PathWave Instrument RPA software. Once recording files are captured, instruments and DUTs can be controlled by replaying recording files.

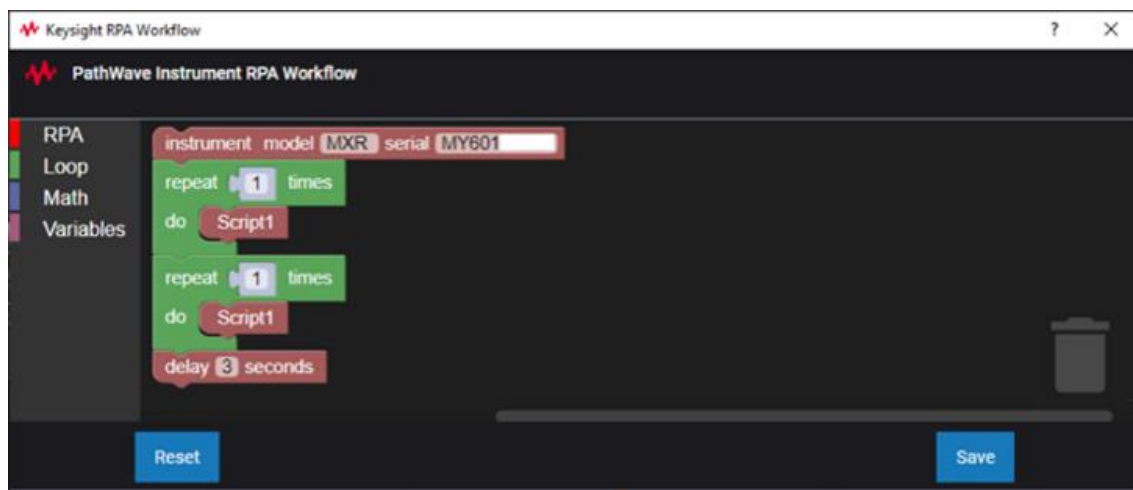


Figure 1: PathWave Instrument RPA Visual Script Editor

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Functional Overview

Fundamental to PathWave Instrument RPA's design is the creation of automation sessions which are recorded remote connections to the various devices, instruments and computers making up a typical measurement setup. Through its remote, UI-driven interface, PathWave Instrument RPA does not need SCPI, or device-specific driver commands to drive measurement setups (Figure 2). Instead PathWave Instrument RPA uses an intelligent and configurable software core for developing automation sessions using its record and playback functionality.

Automation sessions are created by recording and analyzing user interactions with either their instrument or device and can be configured, stitched together, parameterized, and combined with other session flow control tools to build up advanced fully automated bench measurement setups.

Automation Sessions

The principal element of the PathWave Instrument RPA software is the automation session. This is the name given to the recorded session which is designed to be manipulated and extended via the Visual Script Editor. The Automation Session is a compact file which supports the following operations:

- Save and load
- Adjust pre-established parameters from the recording
- Adjust the number of iterations
- Adjust the speed of playback
- Insert pauses or delays into the session
- Concatenate sessions
- Share the session with other colleagues

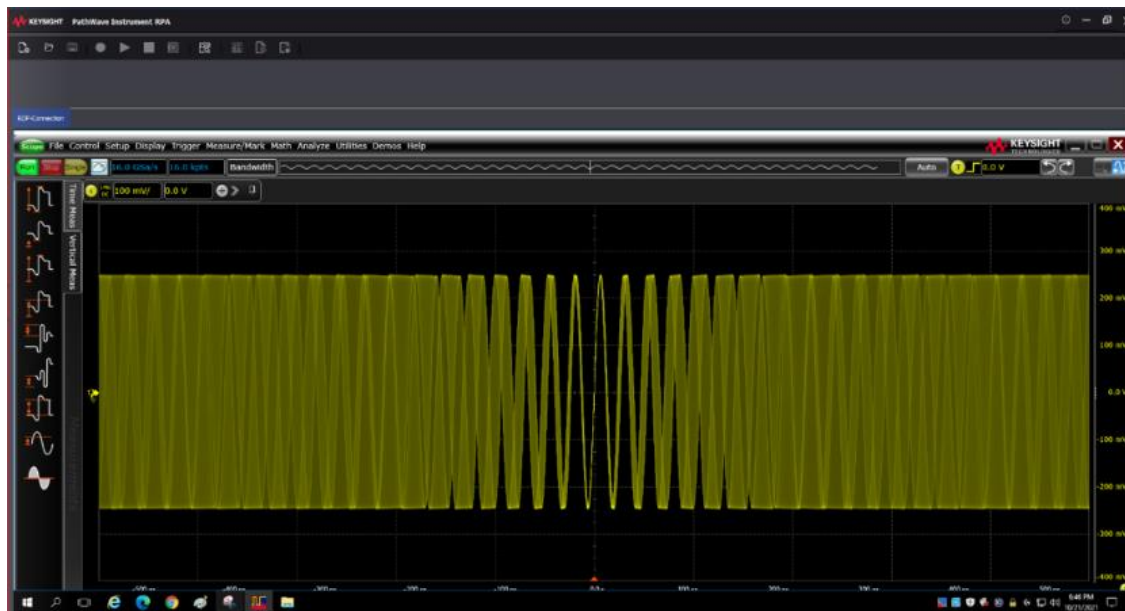


Figure 2: PathWave Instrument RPA User Interface

PathWave Instrument RPA enables hardware development engineers to stay connected while driving up productivity and collaboration through intelligent workflow automation.










Software Workflow

The PathWave Instrument RPA workflow is centered on an *Automation Session*. Each Automation Session consists of the following:

1. Instrument and/or Device Connection(s)
2. User *Session Recording*
3. User *Session Script*

The *Session Script* is a user modified or augmented version of the standard user *Session Recording*, which could add delays, parameters, and loops and is maintained alongside the original *Session Recording* as part of an *Automation Session*. You can choose to playback either the *Session Recording* or the *Session Script* using their respective playback commands.

A typical workflow progresses as follows:

-  1. Connect to an instrument
-  2. Create a new *Automation Session*
-  3. Record your interactions with the instrument as a *Session Recording*
 -  a. (Optional) Outline parameters for use in *Session Scripts*
-  4. Save your Automation Session
-  5. Playback your Session Recording
-  6. (Optional) Create a Session Script based on your Session Recording
 - (Optional) adjust parameters
 - (Optional) add delays and other script primitives
 - (Optional) Concatenate and/or loop scripts
-  d. (Optional) playback your Session Script
-  7. (Optional) You can load an Automation Session

Note: You can stop playback by clicking the mouse and hitting the *Stop* button during playback or *Script Stop* during script playback.

Engineered to Work Within Your Workflow

R&D engineers know debugging and the process leading to “first-measurement” are very fluid workflows, often requiring real-time critical thinking and complete interactive control of the setup – a workflow not easily or flexibly automated with existing tools.

Working within your existing workflows, not interrupting how you get things done is the goal of PathWave Instrument RPA. The software provides the flexibility to automate when needed all within your existing flow.

Download your free trial and try PathWave Instrument RPA today!

Ordering Information

EG7000A Software Licensing

Keysight EG7000A PathWave Instrument RPA is licensed based on the options purchased. Licenses are sold as fixed node-locked to a single PC and 1 year subscription.

Model	Option	Function	License term and condition	Key capabilities
EG7000A	1FL	Standard	1 year, Node-Locked	Capture and replay user operations
				Edit script for customization
				Single unit control
EG7000A	2FL	Advanced	1 year, Node-Locked	Capture and replay user operations
				Edit script for customization
				2 instruments and 1 DUT control

System and Installation Requirement

Recommended Minimum PC Configuration

- Microsoft Windows 10 Home, Professional, Enterprise or Educational, 64-bit
- Minimum 8 GB free hard disk space
- Minimum 4 GB RAM (8 GB recommended)
- Minimum 1280 x 1024 video resolution

Prerequisite Drivers and Software – Packaged along with Installer

- Keysight IO Libraries Suite version 18.2.27313.1 or later
- Microsoft .NET v 2017 or later (Only re-distributable package)
- Keysight PathWave License Manager
- Node
- Python

More Information

For additional details regarding Keysight EG7000A PathWave Instrument RPA, please visit <https://www.keysight.com/us/en/product/EG7000A/pathwave-instrument-rpa-software.html>

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications, or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

