

Release Notes

**Keysight**  
**M8190A/M8192A**  
**Arbitrary Waveform**  
**Generator and**  
**Synchronization Module**

## Version 5.5.1.0 Information

Released Date:	January 28, 2019
Operating System:	<ul style="list-style-type: none"><li>• Windows 10 (32 bit or 64 bit)</li><li>• Windows 8.1 (32 bit or 64 bit)</li><li>• Windows 8 (32 bit or 64 bit)</li><li>• Windows 7 (32 bit or 64 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## New Functionality/Enhancements

- -/-

## Bug Fixes

- Fix for communication issues between M8190 and M8192 instances in systems with Keysight IO Libraries Suite newer than 18.0 (2017 Update 1).  
Note: This is now the minimum required version. You can get it at <https://www.keysight.com/find/iosuite>
- Some other minor fixes.

## Known Issues

- -/-

## Version 5.4.5.1 Information

Released Date:	August 10, 2017
Operating System:	<ul style="list-style-type: none"><li>• Windows 10 (32 bit or 64 bit)</li><li>• Windows 8.1 (32 bit or 64 bit)</li><li>• Windows 8 (32 bit or 64 bit)</li><li>• Windows 7 (32 bit or 64 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## New Functionality/Enhancements

- -/-

## Bug Fixes

- After update to version 5.4.1.0 on some M8190A modules the DAC sample rate can no longer be set to values above 4 GHz.

## Known Issues

- -/-

## Version 5.4.1.0 Information

Released Date:	July 4, 2017
Operating System:	<ul style="list-style-type: none"> <li>• Windows 10 (32 bit or 64 bit)</li> <li>• Windows 8.1 (32 bit or 64 bit)</li> <li>• Windows 8 (32 bit or 64 bit)</li> <li>• Windows 7 (32 bit or 64 bit)</li> </ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"> <li>• M8190_Setup.exe</li> <li>• M8192_Setup.exe</li> </ul>

## New Functionality/Enhancements

- Support for installation on certain Keysight PC-based instruments.
- Improved IQTools.
- Updated Keysight USB driver.
- Improved handling of VISA aliases; e.g. detect the conflict when two software instances are started with different names for the same hardware resource.
- M8190 SFP, M8192 SFP: Error Pane: Make “Open on Error” the default.
- M8192 SFP: Improved discovery of M8190 instruments
- M8190 SFP: Add menu item Help / User Guide

## Bug Fixes

- M8190 Firmware: Avoid conflicts, when more than one instance is started in Windows / Auto Start and no hardware resource is specified.
- M8190 SFP: Handle graph controls correctly on high DPI displays.
- M8190 SFP: Fixed a problem with lost GUI actions during auto refresh.
- M8192 SFP: Make connection to M8190 Firmware instances more reliable.
- M8190 SFP, M8192 SFP: Fixed initial window size.
- Fixed some installer problems.
- Fixed some problems with USB device discovery.
- The blue screen caused by the M950xA AXIe Chassis Driver 1.2.1.6 on non-English Windows is fixed in the chassis driver version 1.3.115.0 or newer.

## Known Issues

- -/-

## Version 5.3.2.1 Information

Released Date:	February 3, 2016
Operating System:	<ul style="list-style-type: none"> <li>• Windows 10 (32 bit or 64 bit)</li> <li>• Windows 8.1 (32 bit or 64 bit)</li> <li>• Windows 8 (32 bit or 64 bit)</li> <li>• Windows 7 (32 bit or 64 bit)</li> <li>• Windows Vista (32 bit or 64 bit)</li> </ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"> <li>• M8190_Setup.exe</li> <li>• M8192_Setup.exe</li> </ul>

## New Functionality/Enhancements

- Added a compiled version of IQTools in ...\Examples\MATLAB\iqtools\_compiled, which doesn't require a MATLAB installation but only the free MATLAB Runtime.

## Bug Fixes

- Communication problem in certain configurations of M8190A/M8192A synchronous systems
- Sporadic occurrence of glitches before the start of signal generation
- Compatibility issue with Keysight branded USB driver
- Sequencing issue for very high trigger repetition rate
- Conflicts between multiple M8190 SFP instances accessing internal files

## Known Issues

- Same as in V3.2.0.0.

## Version 5.2.0.0 Information

Released Date:	October 22, 2015
Operating System:	<ul style="list-style-type: none"><li>• Windows 8.1 (32 bit or 64 bit)</li><li>• Windows 8 (32 bit or 64 bit)</li><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## New Functionality/Enhancements

- Support of Low Phase Noise Option (-LPN) allowing the M8190A to operate with ultra-low phase noise performance.

## Bug Fixes

- File blocked when importing encrypted waveform leads to an error condition.

## Known Issues

- Same as in V3.2.0.0.

## Version 5.1.0.0 Information

Released Date:	July 28, 2015
Operating System:	<ul style="list-style-type: none"><li>• Windows 8.1 (32 bit or 64 bit)</li><li>• Windows 8 (32 bit or 64 bit)</li><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## New Functionality/Enhancements

- Cosmetic Rebranding of M8190A and M8192A IVI Driver.
- Show all installed software licenses known by the License Manager.

## Bug Fixes

- Segment start and end offset values in Sequence Table Panel sometimes wrong after loading the table from instrument.
- Input field keeps wrong value when the setting causes an error.
- The segment length field in the Status/Control Panel is truncated for long values.
- When changing M8190A output levels, improve iteration to target levels on DC path.
- M8190A/92A SFP start-up issue.

## Known Issues

- Same as in V3.2.0.0.

## Version 5.0.14.0 Information

Released Date:	December 10, 2014
Operating System:	<ul style="list-style-type: none"> <li>• Windows 8.1 (32 bit or 64 bit)</li> <li>• Windows 8 (32 bit or 64 bit)</li> <li>• Windows 7 (32 bit or 64 bit)</li> <li>• Windows Vista (32 bit or 64 bit)</li> </ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"> <li>• M8190_Setup.exe</li> <li>• M8192_Setup.exe</li> </ul>

## New Functionality/Enhancements

- Sequencing functionality including action, frequency, and amplitude tables accessible from the M8190A SFP.
- Support USB 2.0 connection between controller PC and M8190A or M8192A.
- Improved error and warning handling by a separate scrollable window in M8190A and M8192A SFP.
- Cosmetic Rebranding of M8190A and M8192A LabVIEW Driver.

## Bug Fixes

- If the loop count in the last segment of a sequence is greater than one, the sequencer aborts signal generation.
- Improve stability during waveform transfer from M8190A SFP.
- Issue in fast waveform transfer in up-conversion mode using the IVI Driver.

## Known Issues

- Same as in V3.2.0.0.



## Version 4.0.0.0 Information

Released Date:	July 16, 2014
Operating System:	<ul style="list-style-type: none"><li>• Windows 8.1 (32 bit or 64 bit)</li><li>• Windows 8 (32 bit or 64 bit)</li><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## New Functionality/Enhancements

- Cosmetic Rebranding: changed from “Agilent Technologies” to “Keysight Technologies” (e.g. Icons, Texts, Start Menu, ...).

## Known Issues

- Same as in V3.2.0.0.

## Version 3.2.0.0 Information

Released Date:	April 2, 2014
Operating System:	<ul style="list-style-type: none"> <li>• Windows 8.1 (32 bit or 64 bit)</li> <li>• Windows 8 (32 bit or 64 bit)</li> <li>• Windows 7 (32 bit or 64 bit)</li> <li>• Windows Vista (32 bit or 64 bit)</li> </ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"> <li>• M8190_Setup.exe</li> <li>• M8192_Setup.exe</li> </ul>

## New Functionality/Enhancements

- Windows 8 and Windows 8.1 support.

## Bug Fixes

- Compatibility problem with IOLS 16.3 Update 2 (known issue from V3.0.35.1).
- “Signal Studio Encrypted” file import fails.
- Improved robustness of file import.
- Waveform download from SFP stops signal generation in dynamic mode.
- Writing waveform samples to memory in chunks fails, if signal generation is active in dynamic mode.

## Known Issues

- With the Agilent M950xA AXIe Chassis Driver 1.2.1.6 on non-English Windows versions, a Blue Screen occurs when the firmware is started.

Workaround: Either uninstall the driver or disable a part of it by renaming AgAXIeSMDu\_M950x.dll to e.g. AgAXIeSMDu\_M950x.dll.HIDE. This DLL is located in ...

- 64 bit system: C:\Program Files (x86)\Common Files\Agilent\PXI\Drivers\
- 32 bit system: C:\Program Files\Common Files\Agilent\PXI\Drivers\

## Version 3.1.0.0 Information

Released Date:	February 7, 2014
Operating System:	<ul style="list-style-type: none"><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## New Functionality/Enhancements

- Multitone waveform generation (equally and arbitrary spaced tones) including notches and user-defined amplitude and phase corrections.
- Complex modulated waveform generation (ASK, PSK, QAM, MSK, APSK, STAR, VSB, FSK and user-defined modulation schemes) including user-defined amplitude and phase corrections.

## Bug Fixes

- Dynamic sequencing errors with some waveform lengths.
- Internal trigger generation not working reliably when Fast Switching Option not installed.
- Loading of configuration file fails when all channels use external sample clock.
- Startup error for multi-module configurations when addresses (inst, HiSLIP) are not explicitly set on the command line.

## Known Issues

- Same as in V3.0.35.1.

## Version 3.0.35.1 Information

Released Date:	December 17, 2013
Operating System:	<ul style="list-style-type: none"> <li>• Windows 7 (32 bit or 64 bit)</li> <li>• Windows Vista (32 bit or 64 bit)</li> </ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"> <li>• M8190_Setup.exe</li> <li>• M8192_Setup.exe</li> </ul>

## New Functionality/Enhancements

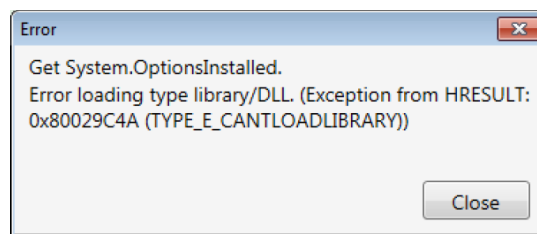
- M8192A IVI-COM, IVI-C, MATLAB and LabVIEW driver.
- Example C++ program showing the usage of the streaming feature.
- Internal trigger generator as advancement event source for sequencing.

## Bug Fixes

- M8190A SFP hangs when firmware is closed.
- DC offset when importing waveform from file.
- AXIe chassis information not displayed correctly for multiple M8190A modules in a chassis.
- Sporadic deadlock in M8190A/M8192A communication.
- 1-channel version of M8190A uses wrong clock signal, when configured as slave in a multi-module group.

## Known Issues

- With Agilent IO Libraries Suite 16.3 Update 2 (16.3.17914), the M8190 Soft Front Panel can't connect to the M8190 Firmware and displays this error message box:



This is not caused by M8190A/M8192A but by the IO Libraries Suite Installer. Workaround: Add following entries to the system environment variable PATH:

- 64 bit system: ;%VXIPNPPATH%VisaCom;%VXIPNPPATH64%VisaCom
- 32 bit system: ;%VXIPNPPATH%VisaCom
- With the Agilent M950xA AXIe Chassis Driver 1.2.1.6 on non-English Windows versions, a Blue Screen occurs when the firmware is started. Workaround: Either uninstall the driver

or disable a part of it by renaming AgAXIeSMDu\_M950x.dll to e.g.

AgAXIeSMDu\_M950x.dll.HIDE. This DLL is located in ...

- 64 bit system: C:\Program Files (x86)\Common Files\Agilent\PXI\Drivers\
- 32 bit system: C:\Program Files\Common Files\Agilent\PXI\Drivers\

## Version 3.0.0.0 Information

Released Date:	October 23, 2013
Operating System:	<ul style="list-style-type: none"><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## New Functionality/Enhancements

- Support for synchronization of multiple M8190A modules. Includes support of M8192A synchronization module.
- Support for streaming.
- Support for N7617B Signal Studio for MultiTone.
- Added reduced noise floor mode.

## Bug Fixes

- File import

## Version 2.4.3.1 Information

Released Date:	June 28, 2013
Operating System:	<ul style="list-style-type: none"><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li><li>• Windows XP (32 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## New Functionality/Enhancements

- Support for new main board revision.

## Bug Fixes

- Switching between coupled and uncoupled mode.

## Version 2.4.0.0 Information

Released Date:	May 6, 2013
Operating System:	<ul style="list-style-type: none"> <li>• Windows 7 (32 bit or 64 bit)</li> <li>• Windows Vista (32 bit or 64 bit)</li> <li>• Windows XP (32 bit)</li> </ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"> <li>• M8190_Setup.exe</li> <li>• M8192_Setup.exe</li> </ul>

## New Functionality/Enhancements

- Waveform import supports additional file formats including header information.
- Imported waveforms can be re-sampled and scaled from the Soft Front Panel (SFP). Fractional and integer re-sampling is supported.
- Standard waveform generation and download for sine, square, triangle, sinc and noise in direct mode and interpolated mode has been added to the Soft Front Panel (SFP).
- File import and licensing support for N7617B Signal Studio for WLAN.
- Support for N5990A-151 HDMI Sink Tests with M8190A.
- Support for N5990A-153 MHL Receiver Tests with M8190A.
- Improve synthesizer frequency locking behavior.
- Allow changes in the action table while signal generation is active.
- Add support for new main board revision 0x2. This includes support for internal reference clock.

## Bug Fixes

- Performance issue when starting a sequence with many entries.
- Almost 100% CPU load during waveform download.
- SFP cannot connect if firmware is in clock-loss state.
- Amplitude actions could potentially result in an undesired phase change of carrier.
- When sample format is changed the action table could potentially contain outdated entries.
- Changed base port for socket and telnet connections from 49152 to 60000.



## Version 2.3.6.2 Information

Released Date:	November 8, 2012
Operating System:	<ul style="list-style-type: none"><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li><li>• Windows XP (32 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## Bug Fixes

- Waveform file import problem.

## Version 2.3.1.0 Information

Released Date:	September 27, 2012
Operating System:	<ul style="list-style-type: none"><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li><li>• Windows XP (32 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## New Functionality/Enhancements

- Added Digital Up-Conversion (Option -DUC) capability.
- Added additional waveform file import formats.
- Added software enable / disable for Trigger, Event and Dynamic Control Input.
- LabVIEW driver is part of the installation package.
- Programming examples have been updated.
- Added updated version of IQ tools.
- Included the fourth edition of the User's Guide as well as the fourth edition of the Getting Started Guide.

## Bug Fixes

- Sporadically erroneous waveform download.

## Version 2.2.2.0 Information

Released Date:	August 9, 2012
Operating System:	<ul style="list-style-type: none"><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li><li>• Windows XP (32 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## Bug Fixes

- Waveform import using the SFP.

## Version 2.2.0.0 Information

Released Date:	July 6, 2012
Operating System:	<ul style="list-style-type: none"><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li><li>• Windows XP (32 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## Functionality/Enhancements

- IVI-COM, IVI-C, MATLAB and LabVIEW driver supporting the entire M8190A functionality.
- Additional functionality of the M8190A can be controlled using the Soft Front Panel (SFP).
- Added licensing support for N7620B Signal Studio for Pulse Building.
- Changed termination voltage range for DC amplifier path from [-1.6V, 3.6V] to [-1.5V, 3.5V].
- Included third edition of the User's Guide as well as third edition of the Getting Started Guide.

## Bug Fixes

- Range error for loop counts in segments, sequences and scenario.
- SFP startup error of 1-channel instrument.
- Using sequences consisting of only one segment.
- Firmware startup error occurring on some M8190A revision 1 modules.

## Version 2.1.2.0 Information

Released Date:	May 5, 2012
Operating System:	<ul style="list-style-type: none"> <li>• Windows 7 (32 bit or 64 bit)</li> <li>• Windows Vista (32 bit or 64 bit)</li> <li>• Windows XP (32 bit)</li> </ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"> <li>• M8190_Setup.exe</li> <li>• M8192_Setup.exe</li> </ul>

## Functionality/Enhancements

- One M8190A as well as two M8190A instruments are supported in a M9505A 5-slot AXIe chassis.
- M8190A Revision 1 instruments as well as M8190A Revision 2 instruments are supported.
- The delay range between channel 1 and channel 2 has been extended to 10 ns.
- The doublet mode has been enabled.
- Additional functionality of the M8190A can be controlled using the Soft Front Panel (SFP).
- Include second edition of the User's Guide as well as second edition of the Getting Started Guide.

**NOTE**

IOLS 16.2 is required for V2.1.2.0.

## Version 2.0.14.2 Information

Released Date:	April 4, 2012
Operating System:	<ul style="list-style-type: none"> <li>• Windows 7 (32 bit or 64 bit)</li> <li>• Windows Vista (32 bit or 64 bit)</li> <li>• Windows XP (32 bit)</li> </ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"> <li>• M8190_Setup.exe</li> <li>• M8192_Setup.exe</li> </ul>

## Bug Fixes

- Operational under Win XP.
- Crash with Win XP when connected via remote desktop.
- Reference clock loss sometimes not recognized.
- Waveform download from Soft Front Panel (SFP).
- HPP needs .NET Framework 3.5 SP1 - added check and shows error message if not found.
- Use correct registry key to determine if VC++ 2010 redistributable (x86) must be installed.
- Workaround for connection issue from Bench Link to M8190A. Use command line option `"/NoHardwareRevisionInIdnString"` to start the M8190A firmware.

## Version 2.0.9.1 Information

Released Date:	March 21, 2012
Operating System:	<ul style="list-style-type: none"><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li><li>• Windows XP (32 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

## Functionality/Enhancements

- User's Guide 1st Edition added to the installation.

## Bug Fixes

- Optimized PLL lock algorithm for reference clock input.
- Interoperability with Agilent M9703A (12-Bit High Speed Digitizer).

## Version 2.0.5.0 Information

Released Date:	March 8, 2012
Operating System:	<ul style="list-style-type: none"><li>• Windows 7 (32 bit or 64 bit)</li><li>• Windows Vista (32 bit or 64 bit)</li><li>• Windows XP (32 bit)</li></ul>
Hardware Revision:	2.0
File Names:	<ul style="list-style-type: none"><li>• M8190_Setup.exe</li><li>• M8192_Setup.exe</li></ul>

### NOTE

The M8190A is available in two different hardware revisions. Refer to the data sheet or User's Guide of the M8190A for the differences between Revision 1 and Revision 2.

V2.0.5.0 is the initial software version for Revision 2 instruments

## Initial Release