VXG Signal Generator

M9383B and M9384B Options Upgrade

This manual provides documentation for the M9383B and M9384B running the Microsoft Windows 10 operating system.

KEYSIGHT

INSTALLATION GUIDE

Notices

© Keysight Technologies, Inc. 2016- 2022

No part of this manual may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Keysight Technologies, Inc. as governed by United States and international copyright laws.

Trademark Acknowledgments

Bluetooth and the Bluetooth logos are trademarks owned by Bluetooth SIG, Inc., U.S.A. and licensed to Keysight Technologies, Inc.

Manual Part Number

M9384-90016

Edition

Edition 1, December 2022
Supersedes: None

Published by:
Keysight Technologies
1400 Fountaingrove Parkway
Santa Rosa, CA 95403

Warranty

THE MATERIAL CONTAINED IN THIS DOCUMENT IS PROVIDED "AS IS," AND IS SUBJECT TO BEING CHANGED, WITHOUT NOTICE, IN FUTURE EDITIONS. FURTHER, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, KEYSIGHT DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED WITH REGARD TO THIS MANUAL AND ANY INFORMATION CONTAINED HEREIN, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KEYSIGHT SHALL NOT BE LIABLE FOR ERRORS OR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE FURNISHING, USE, OR PERFORMANCE OF THIS DOCUMENT OR ANY INFORMATION CONTAINED HEREIN. SHOULD KEYSIGHT AND THE USER HAVE A SEPARATE WRITTEN AGREEMENT WITH WARRANTY TERMS COVERING THE MATERIAL IN THIS DOCUMENT THAT CONFLICT WITH THESE TERMS, THE WARRANTY TERMS IN THE SEPARATE AGREEMENT WILL CONTROL.

Technology Licenses

The hardware and/or software described in this document are furnished under a license and may be used or copied only in accordance with the terms of such license.

U.S. Government Rights

The Software is "commercial computer software," as defined by Federal Acquisition Regulation ("FAR") 2.101. Pursuant to FAR 12.212 and 27.405-3 and Department of Defense FAR Supplement ("DFARS") 227.7202, the U.S. government acquires commercial computer software under the same terms by which the software is customarily provided to the public. Accordingly, Keysight provides the Software to U.S. government customers under its standard commercial license, which is embodied in its End User License Agreement (EULA), a copy of which can be found at http://www.keysight.com/find/sweula. The license set forth in the EULA represents the exclusive authority by which the U.S. government may use, modify, distribute, or disclose the Software. The EULA and the license set forth therein, does not require or permit, among other things, that Keysight: (1) Furnish technical information related to commercial computer software or commercial computer software documentation that is not customarily provided to the public; or (2) Relinquish to, or otherwise provide, the government rights in excess of these rights customarily provided to the public to use, modify, reproduce, release, perform, display, or disclose commercial computer software or commercial computer software documentation. No additional government requirements beyond those set forth in the EULA shall apply, except to the extent that those terms, rights, or licenses are explicitly required from all providers of commercial computer software pursuant to the FAR and the DFARS and are set forth specifically in writing elsewhere in the EULA. Keysight shall be under no obligation to update, revise or otherwise modify the Software. With respect to any technical data as defined by FAR 2.101, pursuant to FAR 12.211 and 27.404.2 and DFARS 227.7102, the U.S. government acquires no greater than Limited Rights as defined in FAR 27.401 or DFAR 227.7103-5 (c), as applicable in any technical data.

Safety Notices

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

WARNING

A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

Where to Find the Latest Information

Documentation is updated periodically. For the latest information about this product, including instrument software upgrades, application information, and product information, browse to the following URL:

https://www.keysight.com/find/m9383b

https://www.keysight.com/find/m9384b

To receive the latest updates by email, subscribe to Keysight Email Updates at the following URL:

http://www.keysight.com/find/MyKeysight

Information on preventing instrument damage can be found at:

http://keysight.com/find/PreventingInstrumentRepair

Is your product software up-to-date?

Periodically, Keysight releases software updates to fix known defects and incorporate product enhancements. To search for software updates for your product, go to the Keysight Technical Support website at:

http://www.keysight.com/find/techsupport

1. Hardware Options Upgrade
License Redemption and Installation Instructions. 8
Options Table 23

1 Hardware Options Upgrade

Use this procedure to install (upgrade) options to the M9383B/M9384B.

The following topics can be found in this section:

"License Redemption and Installation Instructions" on page 8

"Options Table" on page 23

License Redemption and Installation Instructions

Once you have purchased a hardware options upgrade, you will receive a Hardware Options Upgrade Entitlement Certificate. The entitlement certificate allows you access to the licensed capabilities of your Keysight hardware options upgrade.

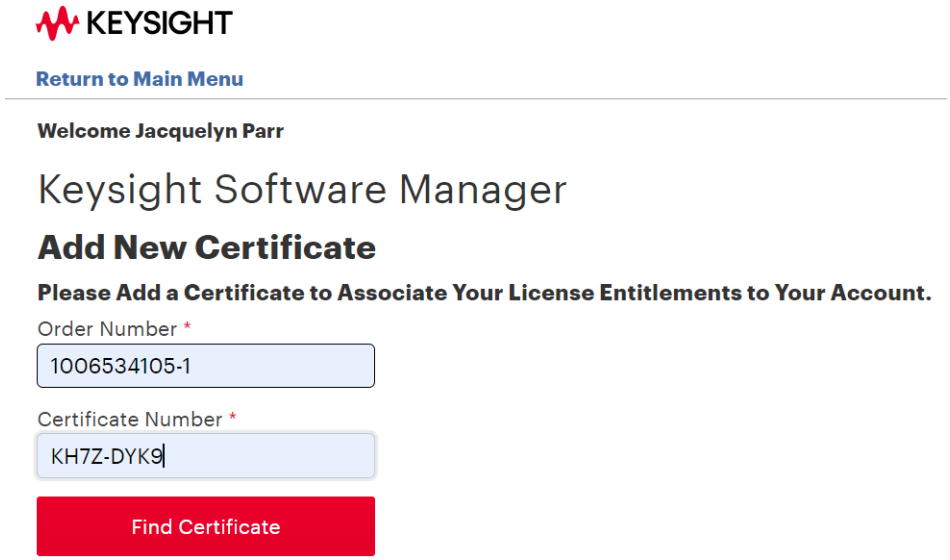
For this example, we will upgrade an instrument to Option 600/ST6, Enhanced Low Phase Noise for Channel 1. Refer to "Options Table" on page 23 for specific module licenses required for your option upgrade.

1. Access the Keysight Software Manager (KSM) website and use the entitlement certificate you received to add licenses to your profile. (Once added to KSM, the website shows how many licenses you are entitled to assign to hosts.)

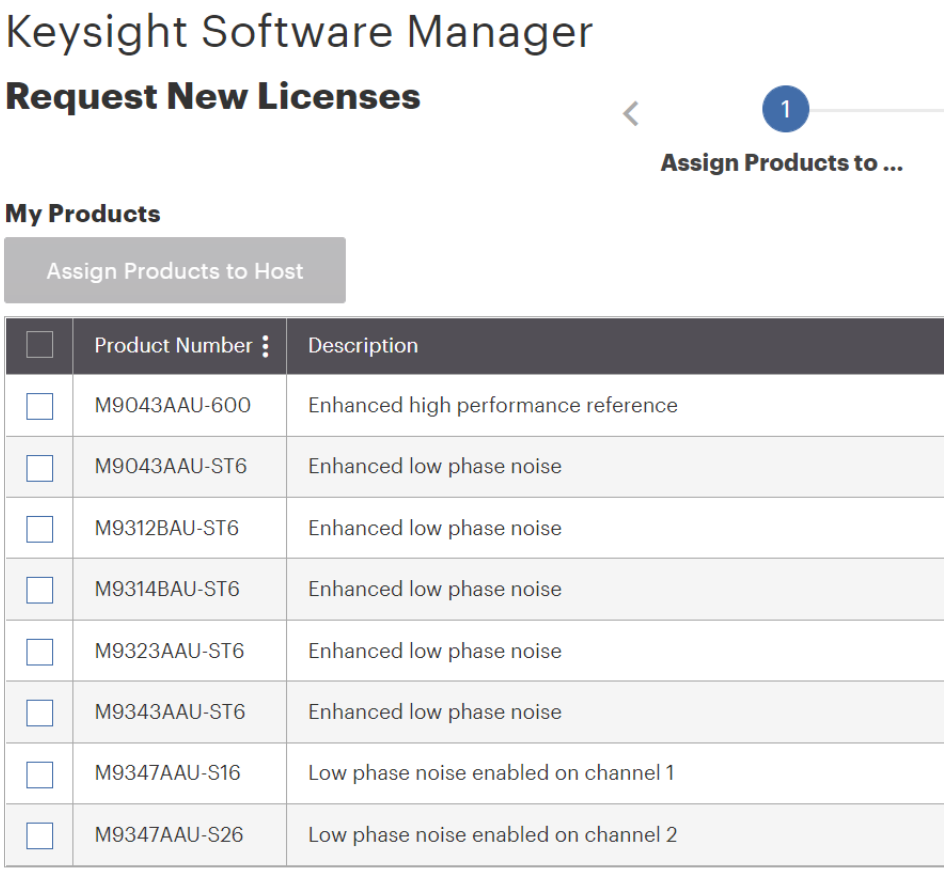
   Go to http://www.keysight.com/find/softwaremanager

   - If you are a first time user, you must register with an email address and select a password. This allows you to create a profile which is needed to add entitlement certificates or assign a license to a host.
   - If you are a returning user, enter your email, password, and select **Login**.

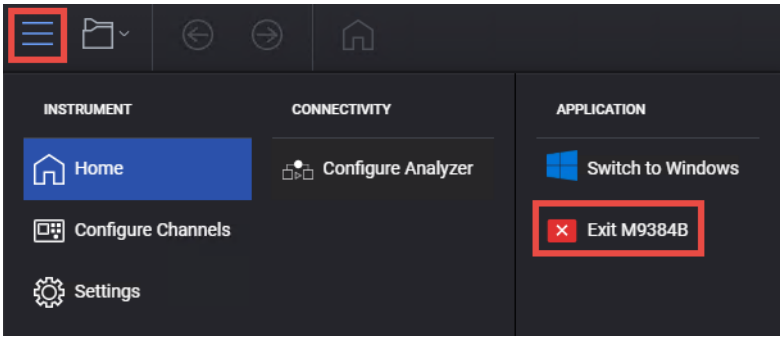
2. In the Keysight Software Manager (KSM) window, enter the Order Number and Certificate number on your entitlement certificate emailed to you. Select **Find Certificate**.



3. In KSM, select **Request Licenses**.

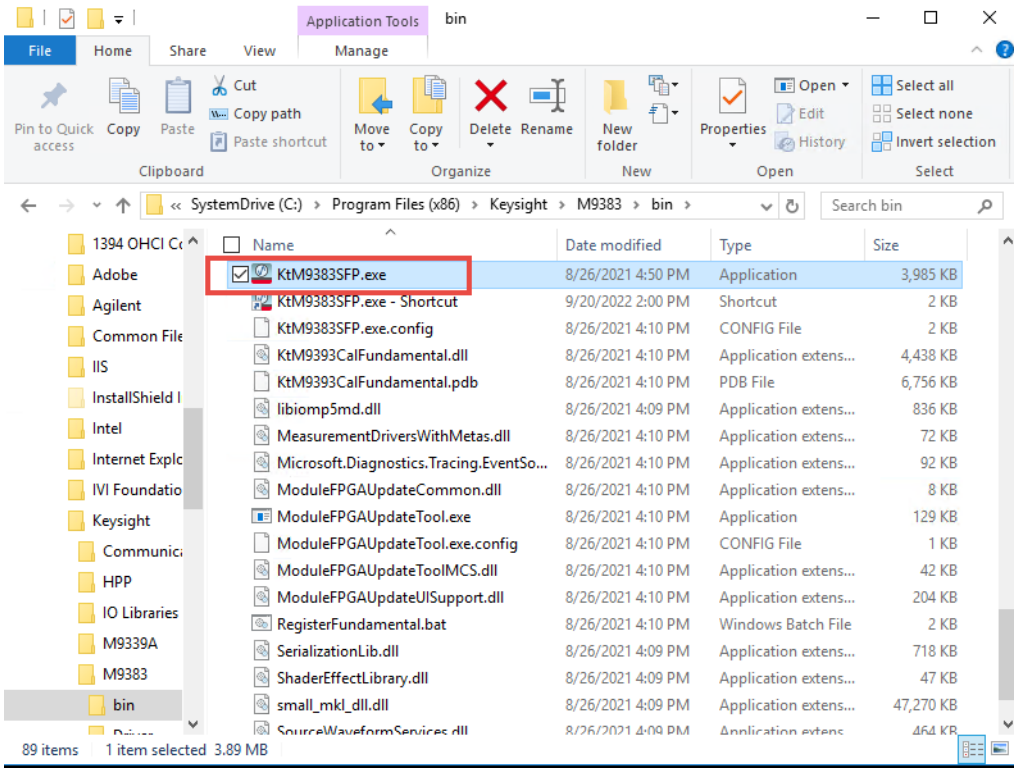


4. In the **M9484B PathWave** application, select the **System** menu (triple bar at top left of window) and select **Exit M9384B**.



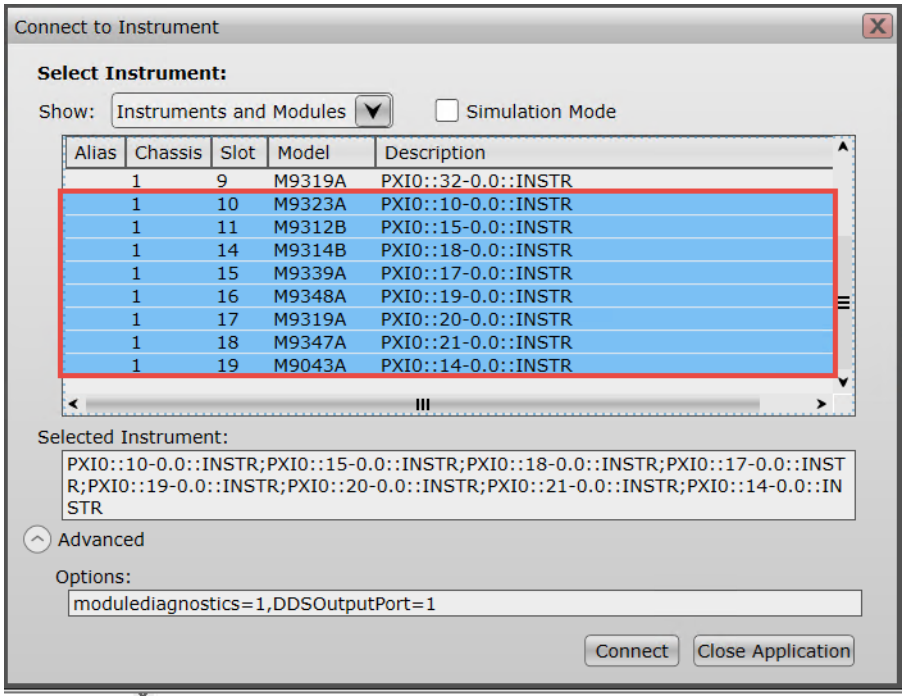
5. Sign out of the default user (Instrument). If the Windows task bar is not present at the bottom of the screen, tap the lower section of the display until the task bar appears.

6. From the Windows **Start** menu, select the **Change Account Settings** icon and sign out.
7. At the login prompt, enter the appropriate password. The factory default password is
   - User name: **administrator**
   - Password: **Keysight4u!**
8. Select the **Next** arrow to log in.
9. From the Windows **Start** menu, open **File Explorer** and navigate to `C:\Program Files(x86)\Keysight\M9383\Bin\KtM9383SFP.exe`.



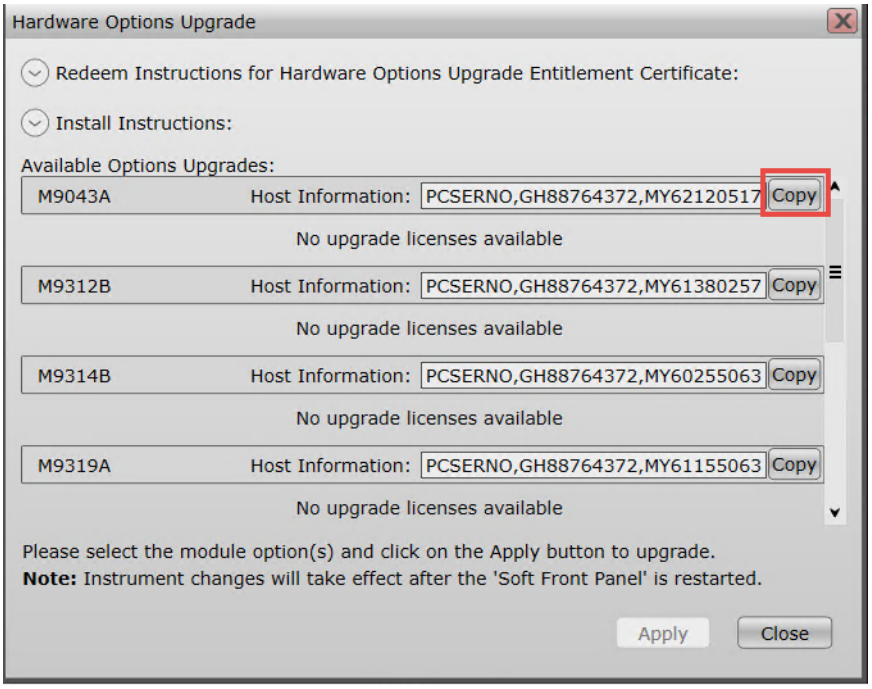
10. Double click on **KtM9383SFP.exe** to open the Connect to Instrument dialog.
11. In the Connect to Instrument dialog, select all modules for channel 1 upgrade and then select **Connect**.

(For ST6 Channel 1, module Slots 10 through 19 / modules M9323A, M9312B, N9314B, M9339A, M9348A, M9319A, M9347A, and M9043A)

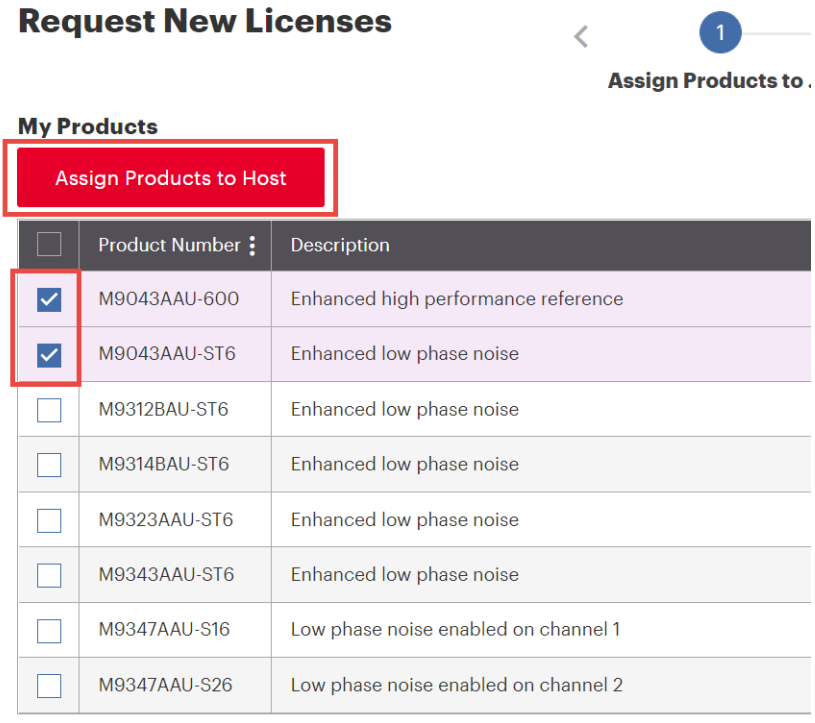


12. In the M9383B Soft Front Panel (SFP), select **Utilities** > **Hardware Options Upgrade**. Note that Single Channel VXGs may have modules spread out across the chassis slots.

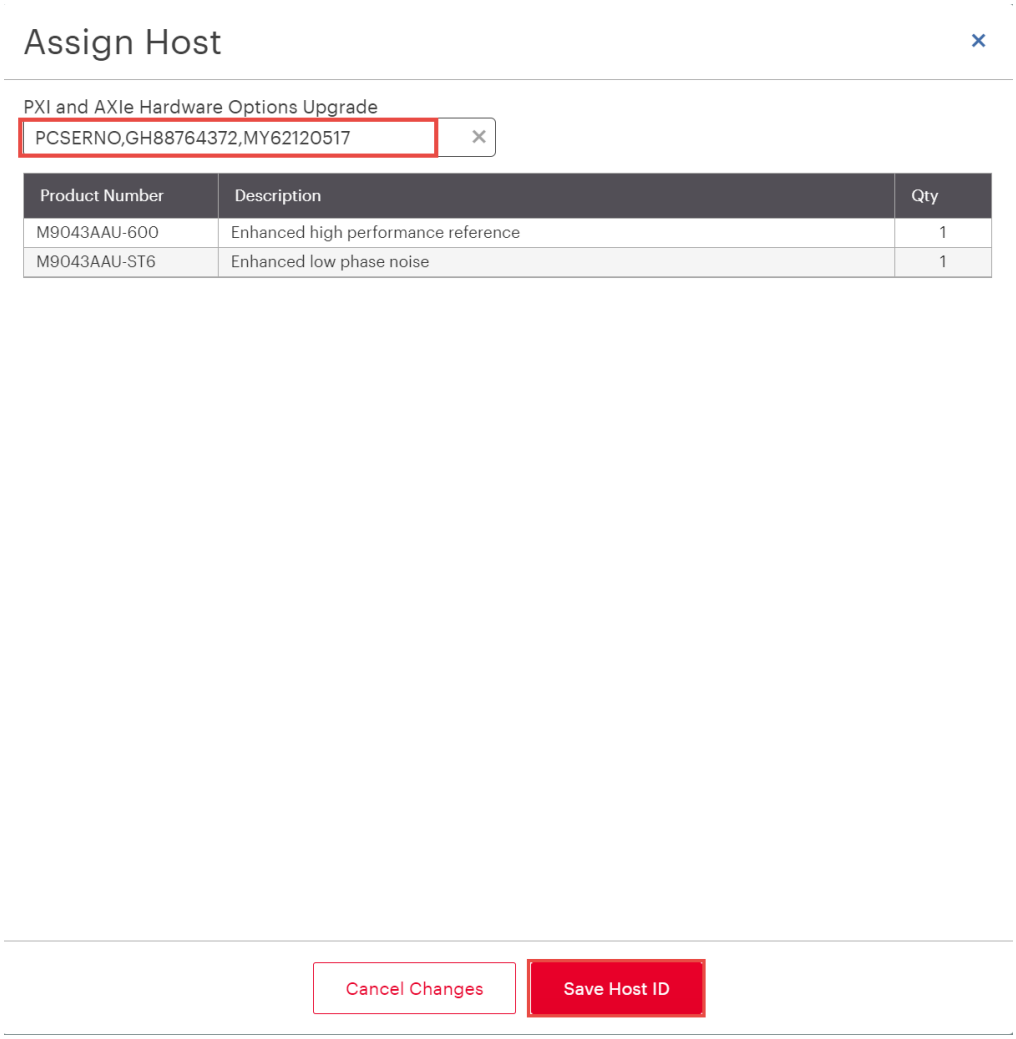
13. In the Hardware Options Upgrade dialog, select **Copy** to the right of the first module. (For this example the **M9043A** module.)



14. In the KSM window, select the check box next to both **M9043AAU-600 Enhanced high performance reference** and **M9043AAU-ST6 Enhanced low phase noise**, then select **Assign Products to Host**.



15. In the Assign Host dialog, paste the Host information you copied from the Hardware Options upgrade SFP, and then select **Save Host ID**.



16. Go back to the M9383B SFP Hardware options upgrade dialog and **Copy** the Host ID for **M9312B**.
17. In KSM, select **M9312BAU-ST6** > **Assign Product**, paste the Host name, and then select **Save Host ID**.
18. In the M9383B SFP Hardware options upgrade dialog, **Copy** the Host ID for **M9314B**.
19. In KSM, select **M9314BAU-ST6** > **Assign Product**, paste the Host name, and then select **Save Host ID**.

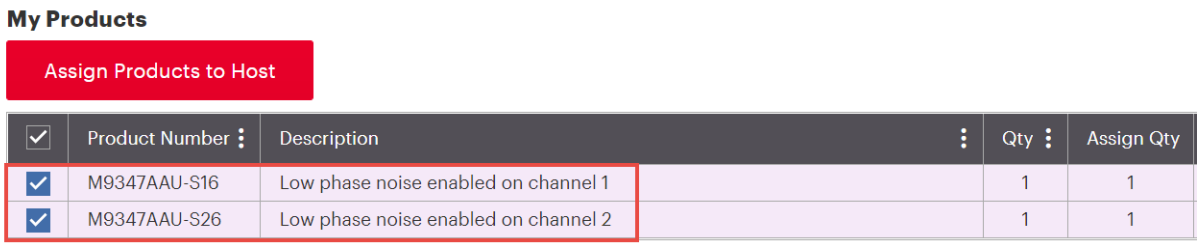
20. In the M9383B SFP Hardware Options upgrade dialog, **Copy** the Host ID for the **M9319A**.

NOTE

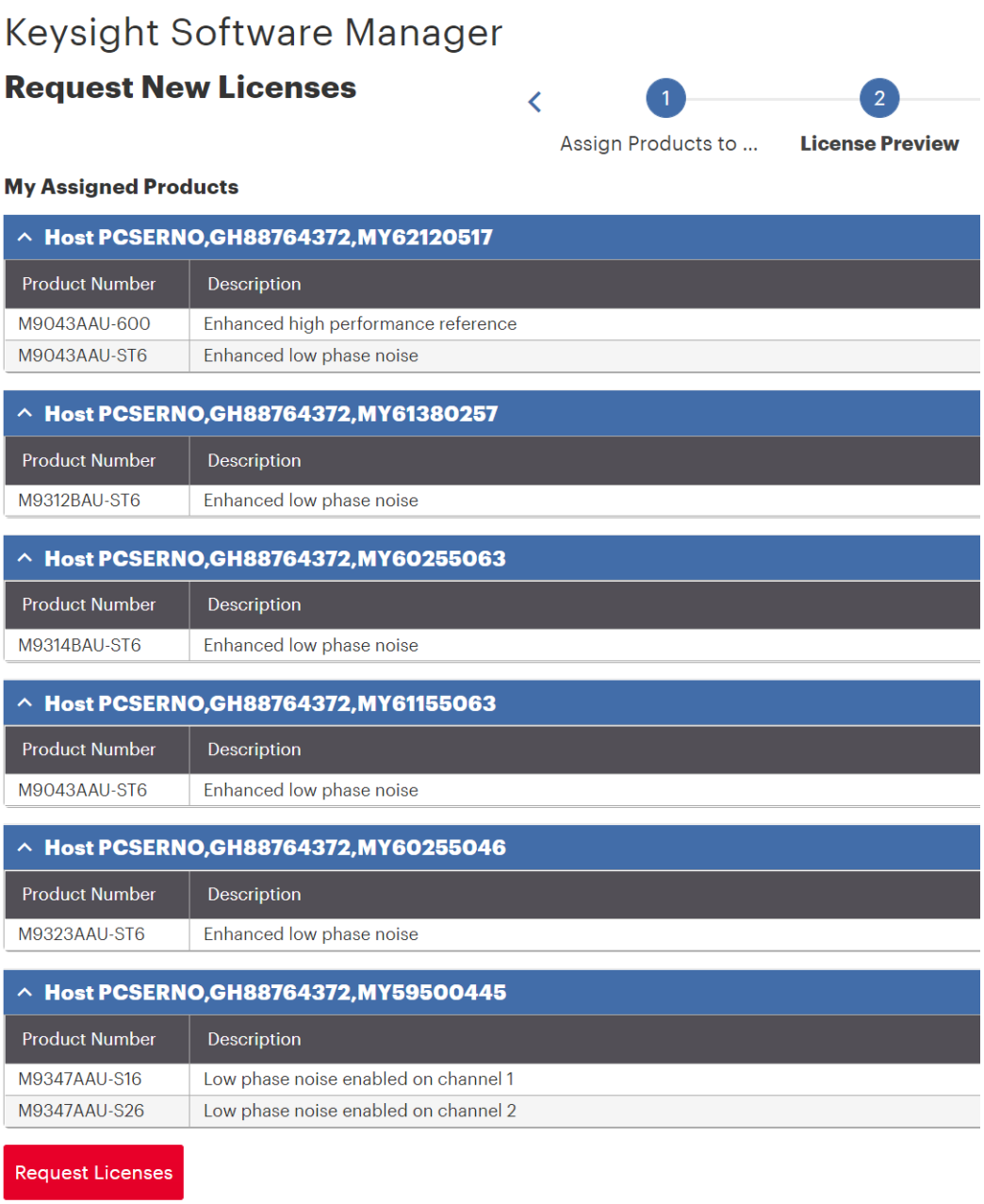
M9343AAU is a Composite module, which means that one module Model number (in this case, (M9319A) is the predominate module for three other modules (M9319A, M9339A and M9348A. These modules share the same Host ID/serial number). These three modules combine to make the M9343AAU module in KSM.Therefore, the license for the M9319A is applied to the other two modules as well and the M9319AU is the predominant module used in KSM.

21. In KSM, select **M9343AAU** > **Assign Product**, paste the Host name, and then select **Save Host ID**.
22. In the M9383B SFP Hardware options upgrade dialog, **Copy** the Host ID for the **M9323A**.
23. In KSM, select **M9323AAU-ST6** > **Assign Product**, paste the Host name, and then select **Save Host ID**.
24. In the M9383B SFP Hardware options upgrade dialog, **Copy** the Host ID for the **M9347A**.
25. In KSM, select both **M9347AAU-S16** and **M9347AAU-S26** > **Assign Product**, paste the Host name, and then select **Save Host ID**.

    Note that you must select both M9347AAU-S16 (Low phase noise enabled on channel 1) and M9347AAU-S26 (Low phase noise enabled on channel 2) even though the Upgrade Option License is for one channel only.

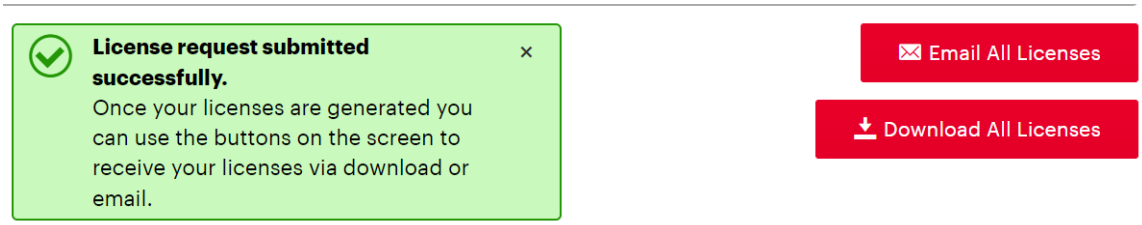


26. In KSM, select **License Preview** to view the assigned licenses.

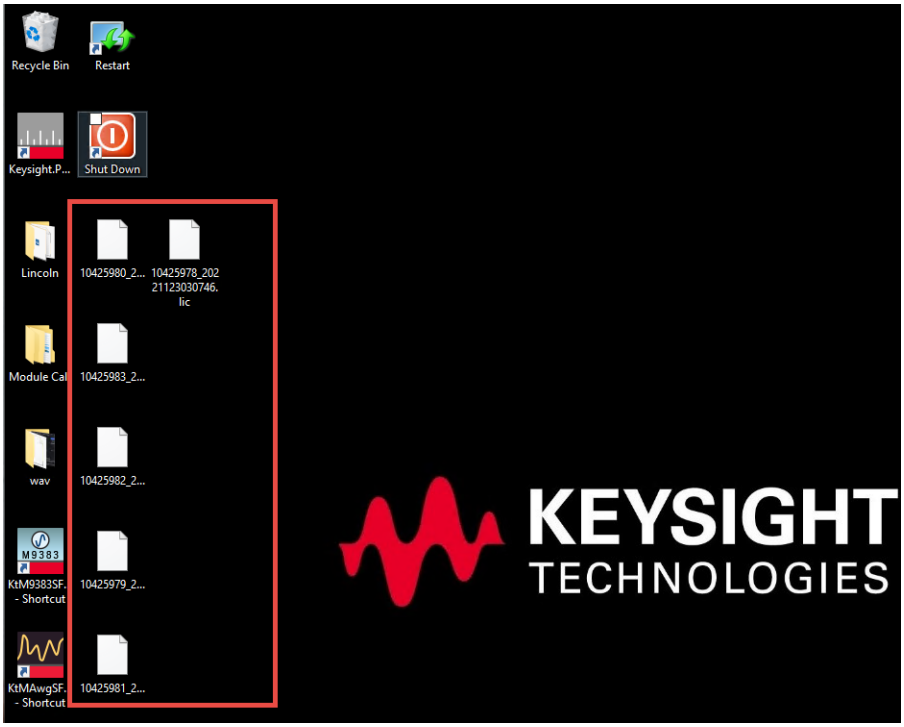


27. Select **Request Licenses**.

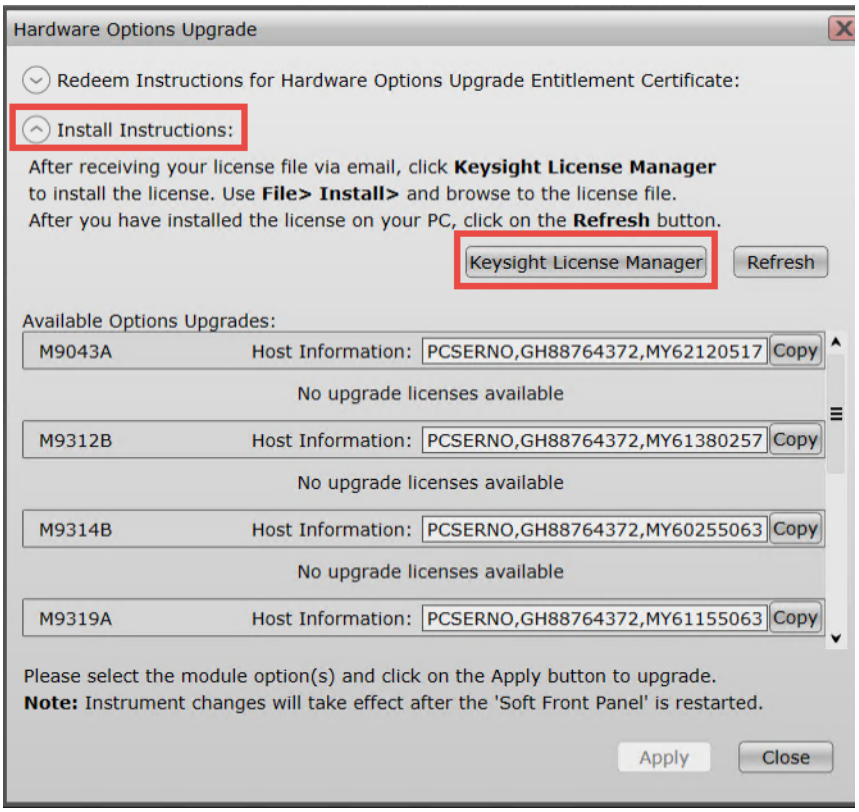
28. Select **Email All Licenses**. Verify your email address and then select **Send**.



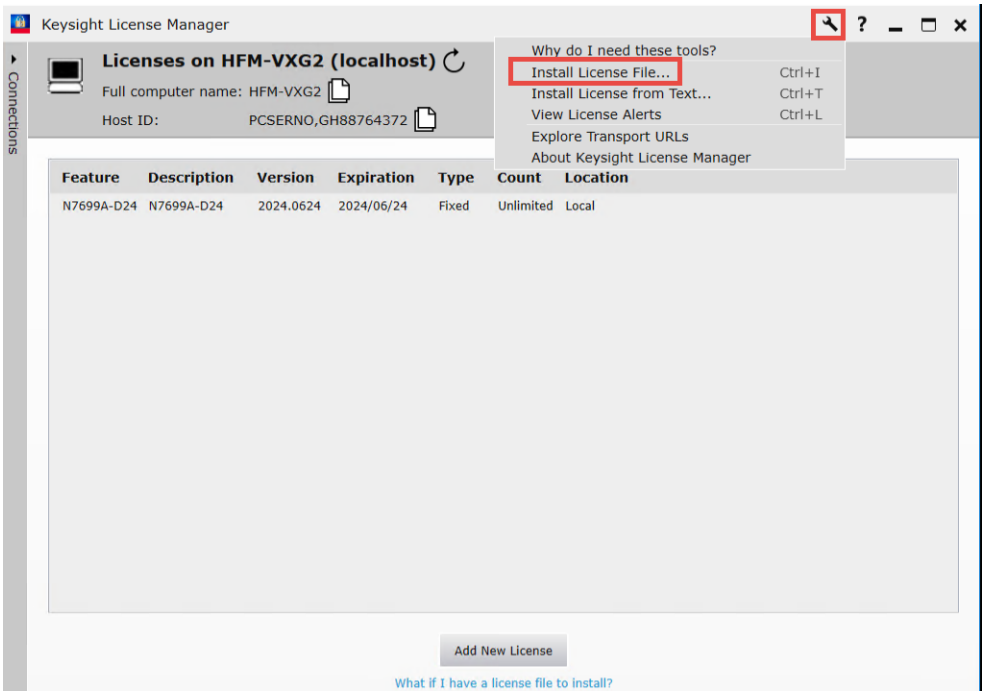
29. Copy and paste license files to the M9384B Desktop.



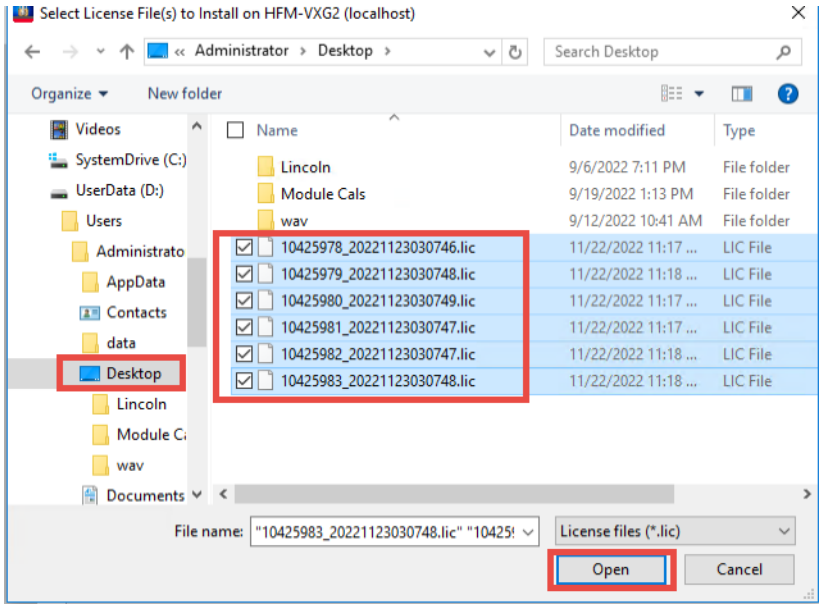
30. From the M9383 SFP Hardware Option Upgrade, select **Install Instructions** > **Keysight License Manager**.



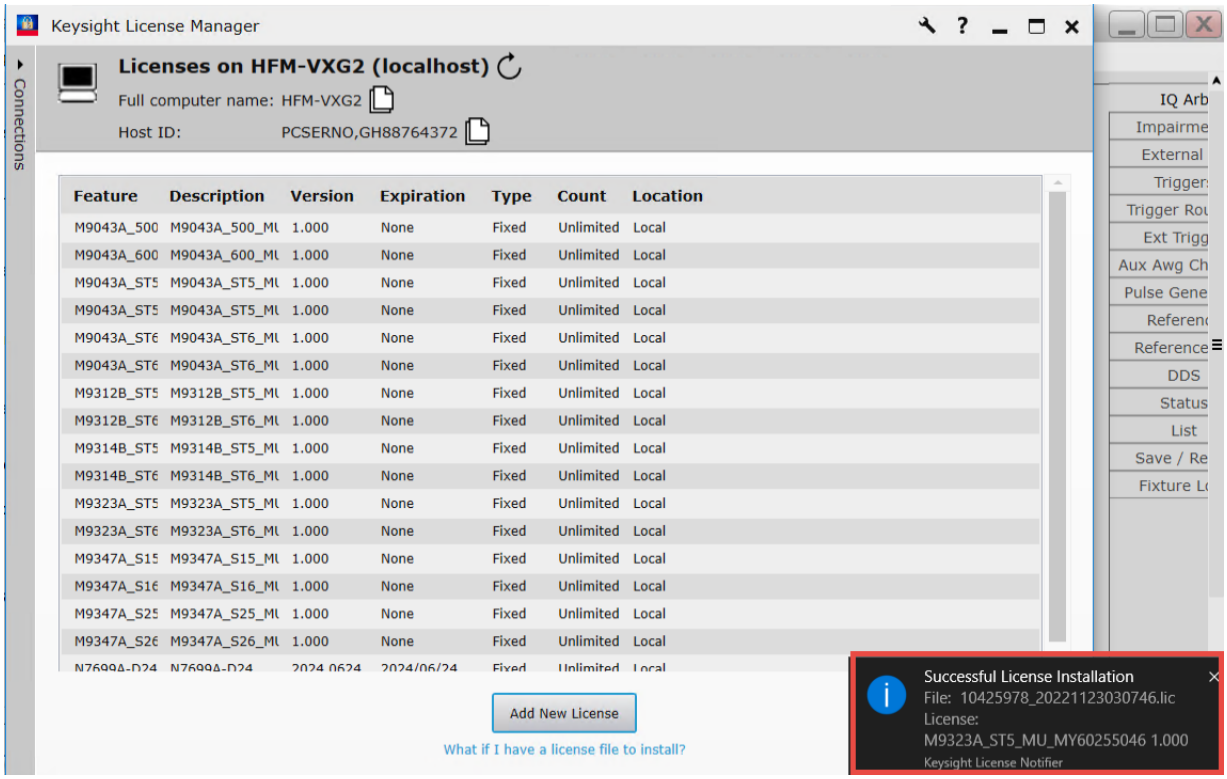
31. At the top of the Keysight License Manager dialog, select the **Wrench** icon > **Install License File**.



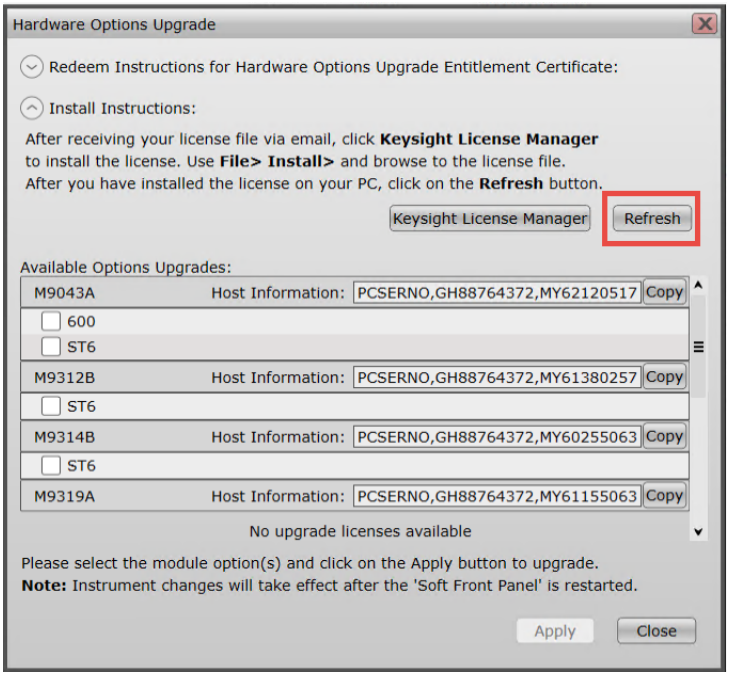
32. Navigate to the license files, highlight all, and then **Open**.



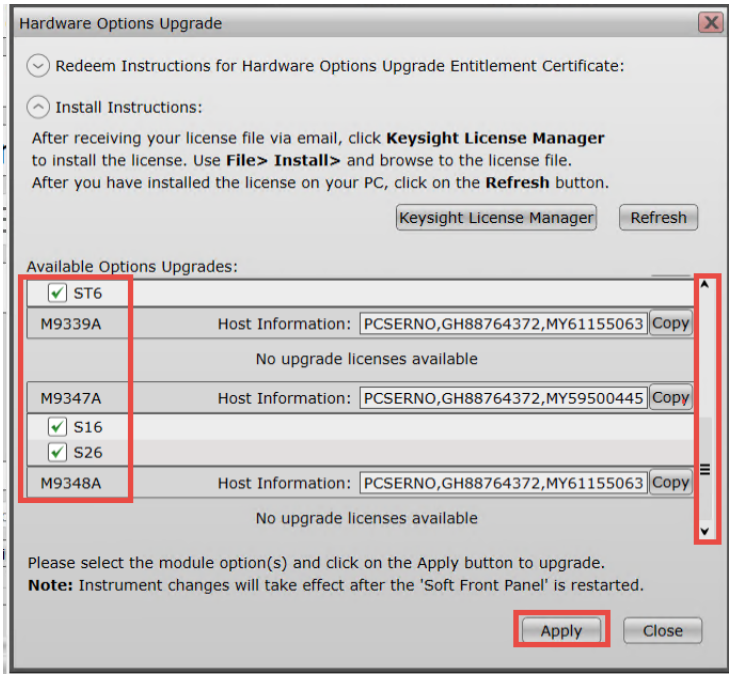
33. Once the Installation is completed, minimize the Keysight License Manager.



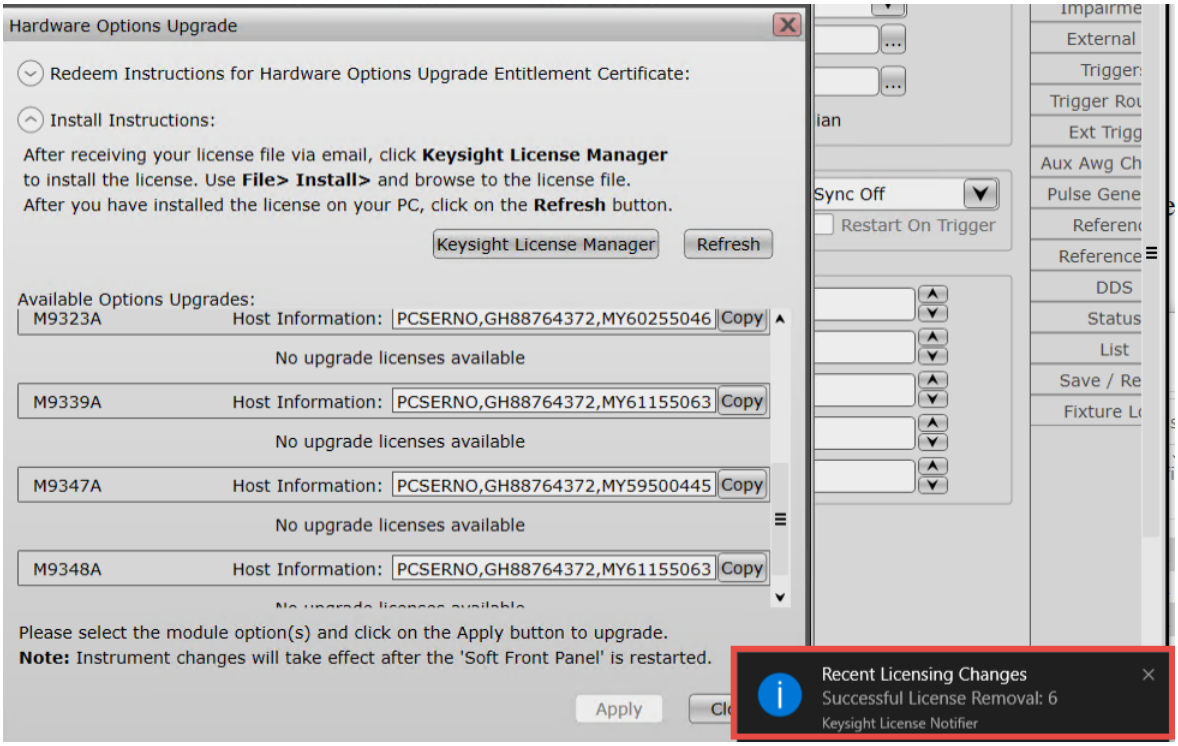
34. In the Hardware Options Upgrade dialog, select **Refresh**.



35. Scroll down the list of Available Option Upgrades, select all **Available Options Upgrade** check boxes, and then **Apply**.

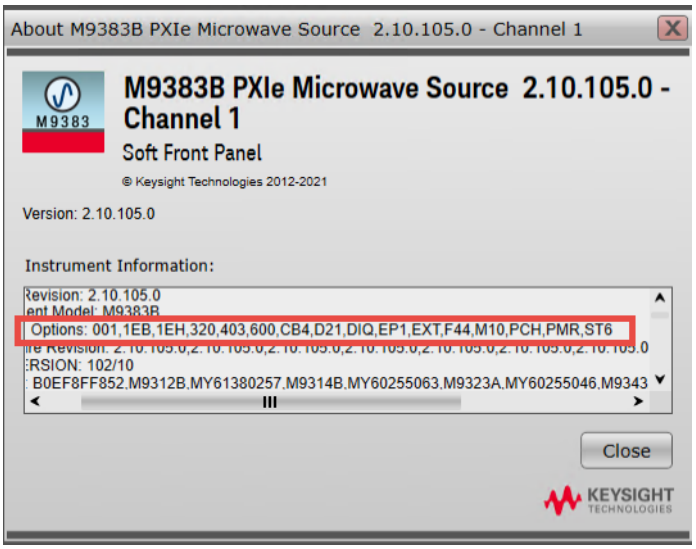


Once the licenses are all installed, you will see the message at the bottom of the dialog.

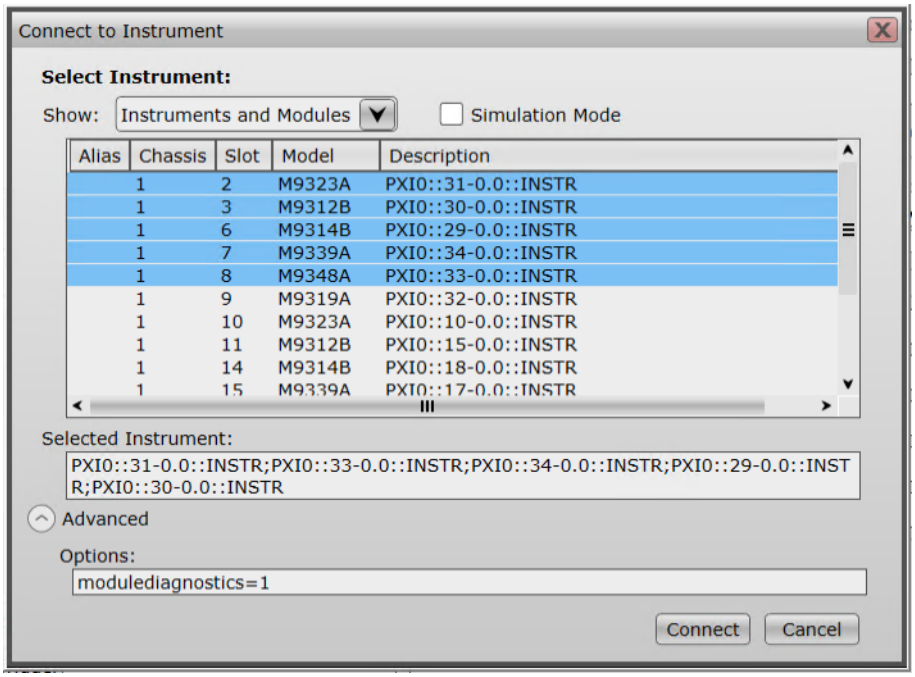


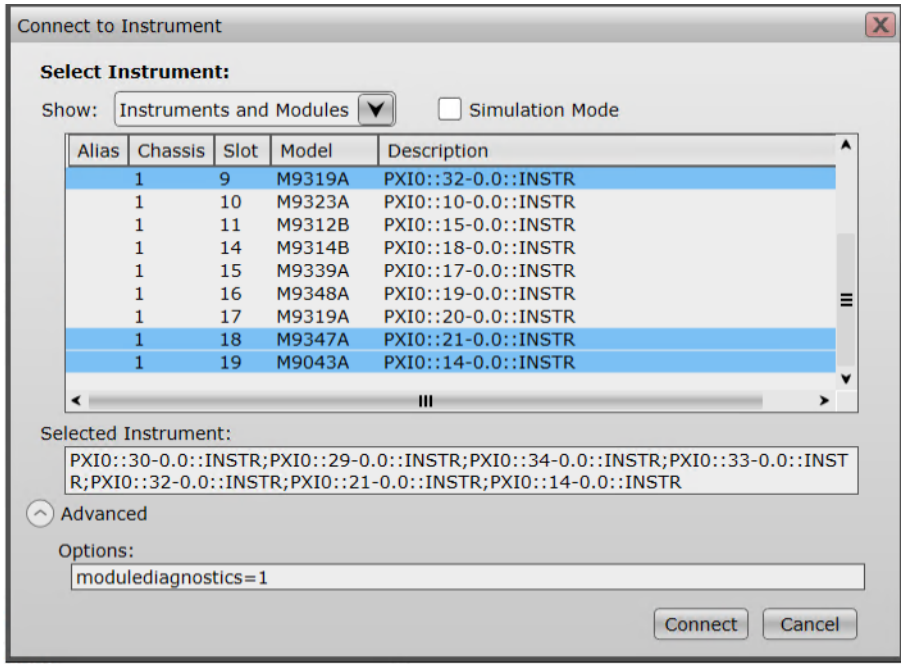
36. Close the Option Upgrade dialog, then go to **File** > **Connect**.

37. Select **Help** > **About** and verify option installation.



38. If you have ordered an upgrade for Channel 2, repeat the procedure with these modules selected.





39. Close the SFP, then right click on the Windows **Start** menu and select **Restart**.

40. Once the instrument reboots, go into M9384B PathWave and run **Self Test** and **Alignments**. Verify options are installed.

Options Table

Option	Description	M9043A Reference	M9312B 20 GHz Out	M9314B 44 GHz Upconv.	M9323A Amp	M9343A Vector Modulator (M9319A)	M9347A DDS LO
F14	1 MHz to 14 GHz	NA	F14	NA	NA unless IES	Included for Vector	F11, F21
F20	1 MHz to 20 GHz	NA	F20	NA	NA unless IES	Included for Vector	F11, F21
F32	1 MHz to 31.8 GHz	NA	F20	F32	Included	Included for Vector	F11, F21
F44	1 MHz to 44 GHz	NA	F20	F44	Included	Included for Vector	F11, F21
500	High performance reference	500	NA	NA	NA	NA	NA
600	Enhanced high performance reference	600	NA	NA	NA	NA	NA
ST5	Low phase noise	ST5	ST5	ST5	ST5	ST5	S15, S25
ST6	Enhanced low phase noise	ST6	ST6	ST6	ST6	ST6	S16, S26
PCH	Phase coherency for N channels	NA	NA	NA	NA	PCH	PCH
DNV	Disable non-volatile memory access	NA	DNV	DNV	DNV	DNV	DNV
1EH	Improved harmonics below 2 GHz	NA	1EH	NA	NA	NA	NA
D05	RF bandwidth, 500 MHz, 256 MSA memory for frequency options F14 and F20	NA	D05	NA	If option 1ES installed, add D05	D05	NA
D06	RF bandwidth, 500 MHz, 256 MSA memory for frequency options F32 and F44	NA	D05	D06	D06	D06	NA
D10	RF bandwidth, 1 GHz, 256 MSA memory for frequency options F14 and F20	NA	D10	NA	If option 1ES installed, add D10	D10	NA

Option	Description	M9043A Reference	M9312B 20 GHz Out	M9314B 44 GHz Upconv.	M9323A Amp	M9343A Vector Modulator (M9319A)	M9347A DDS LO
D11	RF bandwidth, 1 GHz, 256 MSA memory for frequency options F32 and F44	NA	D10	D11	D11	D11	NA
D20	RF bandwidth, 2 GHz, 256 MSA memory for frequency options F14 and F20	NA	D20	NA	If option 1ES installed, add D20	D20	NA
D21	RF bandwidth, 2 GHz, 256 MSA memory for frequency options F32 and F44	NA	D20	D21	D21	D21	NA
D1E	RF bandwidth, 1 GHz, 256 MSA memory for frequency options F32 and F44, limited	NA	D10	D1E	D1E	D1E	NA
D2E	RF bandwidth, 2 GHz, 256 MSA memory for frequency options F32 and F44, limited	NA	D20	D2E	D2E	D2E	
M05	Baseband generator memory upgrade to 512 MSa	NA	NA	NA	NA	M05	NA
M10	Baseband generator memory upgrade to 1024 MSa	NA	NA	NA	NA	M10	NA
EXT	Wideband differential external IQ inputs	NA	NA	NA	NA	EXT	NA
DIQ	Differential IQ inputs	NA	NA	NA	NA	DIQ	NA
UNQ	Band limited fast switching	NA	UNQ	UNQ	UNQ	UNQ	UNQ
UNZ	Fast switching	NA	UNZ	UNZ	UNZ	UNZ	UNZ
1EE	Hight output power from 20 GHz to 43.5 GHz, limited above 43.5 GHz	NA	NA	NA	1EE	NA	NA
1EB	High output power from 20 GHz to 44 GHz	NA	NA	NA	1EB	NA	NA

Option	Description	M9043A Reference	M9312B 20 GHz Out	M9314B 44 GHz Upconv.	M9323A Amp	M9343A Vector Modulator (M9319A)	M9347A DDS LO
1ES	Improved signal to noise ratio	NA	NA	NA	Add module and 1ES	NA	NA
FRQ	Frequency extender connectivity	NA	NA	NA	NA	NA	FRQ
AL2	Auxiliary LO	NA	NA	NA	NA	NA	AL2
PME	Limited pulse modulation	NA	PME	PME	NA	NA	NA
PMR	Pulse modulation	NA	PMR	PMR	NA	NA	NA
303	Multifunction generator with LF output	NA	303	303	NA	NA	NA
320	Pulse train generator (SCPI only)	NA	320	320	NA	NA	NA
UNT	Amplitude modulation	NA	UNT	UNT	NA	NA	NA
CB4	Channel bonding, 4 GHz	NA	NA	NA	NA	CB4	CB4
403	Calibrated AWGN	NA	NA	NA	NA	403	NA
LW1	Large waveform playback	NA	NA	NA	NA	LW1	NA

This information is subject to change without notice.
© Keysight Technologies 2022

Edition 1, December 2022

M9384-90016

www.keysight.com