

M8070A – T10 SAS Link Training

T10 SAS Link Training is an option for M8070A. It performs execution of Train_Tx-SNW and Train_RX-SNW phases with in-system TX EQ training for T10 SAS-3 and SAS-4 conformant devices.

This allows e.g. for performing a jitter tolerance test without re-cabling between TX EQ Training and device characterization.

General Notes

Using IEEE and SAS Plugins in Parallel

In case the IEEE TX EQ Training as well as the T10 SAS Link Training plugins are installed side by side onto a **M8070A version prior to S3.7** warning/error messages will appear during startup. These messages suggest that one of the plugin packages is invalid which is not the case. Upgrade M8070A or as a temporary workaround, uninstall one of the above-mentioned plugins using the Plugin Manager.

User Guide

After installation of the plugin package the user guide can be found in the following folder:
C:\Program Files\Keysight\M8070A\Plugins\M8070A_T10_SAS_LinkTraining\doc\

Or by pressing the help button in the toolbar of the plugin.

Software Licensing

Here basic licensing requirements are listed. For more details on these options and possible substitute options refer to the user guide.

SAS-3 Link Training

- SAS-3 Link Training operation requires one of the following module bound options 0S6, US6 or TS6 to be installed on the respective module.
These options are available for M8041A, M8051A and M8062A modules.
- Using SAS-3 Link Training on a M8041A or M8051A module requires the licenses 0G4 and C16 to be installed on the respective module.
- Using a M8062A module requires options C32, 0G4 and 0A4 while the M8041A module requires options C16, 0G2 and 0A2 for supporting a M8062A module frontend.

SAS-4 Link Training

- SAS-4 Link Training operation requires one of the following module bound options 0S6, US6 or TS6 installed on the M8062A module.
- A M8062A module can only operate in combination with a M8041A module.
- Using a M8062A module requires options C32, 0G4 and 0A4 while the M8041A module requires options C16, 0G2 and 0A2 for supporting a M8062A module frontend.
- Cannot be operated directly on a standalone M8041A or M8051A module because of SAS-4 data rate requirements.

New Release SAS Link Training 2.0.0.0

Build Date	December 6, 2017
M8070A Required	3.6.0.0 or newer with options 0TP or 0NP
Operating System	Same as M8070A System Software
Software Pre-requisites	Same as M8070A System Software
SAS-3 on M8041A or M8051A	Options 0G4 and C16 installed on respective module
SAS-3 or 4 on M8062A as M8041A frontend	M8041A with options C16, 0G2, 0A2 and M8062A with options C32, 0G4 and 0A4.
File Name:	M8070A_T10_SAS_LinkTraining.m8kp

SAS-3 Link Training

New Features

- Handling of Train_Tx-SNW and Train_RX-SNW for SAS-3 as defined in SAS Protocol Layer – 4.
- Enables seamless receiver (jitter) tolerance testing for SAS-3 devices which requires in-system handling of Train_Tx-SNW and Train_RX-SNW as a prerequisite.

- Allows definition of user defined test sequences before and after TX EQ training without output signal interruption.

SAS-4 Link Training

Improvements

- Added support for sequence symbol width 10.
- Added support for allowing sequence controls in plugin specific sequence definitions. This enables pattern defined squelch support on M8062A modules.
- Reduced delay of TX EQ Training to Pre-Training transition.

Notes

- SAS-4 Pre-compliance release based on SAS Protocol Layer – 4 Rev. 11 and Serial Attached SCSI – 4 Rev. 09.

Version History

SAS Link Training 1.0.0.0

Build Date	August 9, 2017
M8070A Required	3.6.0.0 or newer with options OTP or ONP
Operating System	Same as M8070A System Software
Software Pre-requisites	Same as M8070A System Software
SAS-4 on M8062A as M8041A frontend	M8041A with options C16, 0G2, 0A2 and M8062A with options C32, 0G4 and 0A4.
File Name:	M8070A_T10_SAS_LinkTraining.m8kp

SAS-4 Link Training

Features

- Handling of Train_Tx-SNW and Train_RX-SNW for SAS-4 as defined in SAS Protocol Layer – 4.
- Enables seamless receiver (jitter) tolerance testing for SAS-4 devices which requires in-system handling of Train_Tx-SNW and Train_RX-SNW as a prerequisite.
- Allows definition of user defined test sequences before and after TX EQ training without output signal interruption.

Notes

- Pre-compliance release based on SAS Protocol Layer – 4 Rev. 11 and Serial Attached SCSI – 4 Rev. 09.