



SAS/SATA PROTOCOL SUITE™ VERSION 3.10 RELEASE NOTES

OCTOBER 2008

Release Notes:

What's New

- This is version 3.10 of the SAS and SATA Protocol Suite.
- This release contains the following components, which are necessary for the operation of the product:
 - SAS Protocol Suite Version 3.10.
 - SATA Protocol Suite Version 3.10.
- This release includes the following updates:
- Added Features:
 - Jammer functionality that was offered in Infusion product is now provided in Sierra Jammer and supports 1.5G, 3.0G & 6.0G data rates.
 - Jammer function (Infusion) can run one port while Analyzer(s) and / or Emulator(s) can run on other ports, simultaneously. This is offered in each of SAS & SATA software.
- Issues Fixed are:
 - Error injection of CRC over mixed SAS & SATA traffic is fixed in Jammer.
 - Train & Train Done primitives are supported in Jammer.

4.2. Known Issues

- USB2.0 is disabled for this release and will be enabled in the next release.
- The Target Emulator may lose link if a trace is made at a set speed and then another trace is made at auto-speed.
To avoid this the Analyzer and Target Emulator should both be set to autospeed or fixed speed.
- Since Auto-Speed Negotiation is not provided for SATA at 6Gig, the capture speed must be set manually by setting the proper speed in the settings menu, then starting and stopping a capture. Future linkups will be correct.
- (Analyzer Muxing) The Analyzer needs to detect MUX primitives from both host and device sides in order to capture the traffic correctly in the muxing mode.
- (Auto Speed detection – only STX231 and STX431) It is recommended to set the analyzer speed to 1.5G when you want to capture the speed negotiation of SATA 1.5G. In this case if you use auto speed detection about 30us of beginning of speed negotiation is lost.
- (Advanced Analyzer) Events on each link are counted independently. This means a condition is met if the number of events on a link equals the defined occurrence.
- (Analyzer Cascading) Because of using a chain connection for cascading boards and delay of signals, the traffic on different boards is not completely time synchronized. There is about 1 DWORD difference between each two consecutive boxes.
- (Capture and Trig patterns) STX230 with VP50 FPGA only supports one data pattern rather than two data pattern of other products.
- The STX460 SATA host emulator cannot establish a link in lower speeds with the devices that support all speeds. For example if a drive supports both 1.5G and 3G, the emulator doesn't work in 1.5G. This issue is due to the MGT long lock time. Meanwhile this issue causes the SATA compliance test GTR-02 to fail for the devices that support all speeds.
- On the STX460 & Sierra emulators, delay of sending HOLDA in response to HOLD is not compliant to spec. According to the spec this delay should be less than or equal 20 DWORDs for 1.5Gbps and 3Gbps. The spec for 6Gbps is not released yet. This delay on STX460 is 19 for 1.5Gbps, 23 for 3Gbps and 27 for 6Gbps. Reason of this issue is the MGTs long delay on the Virtex-4. As we checked with many real HBA and drives, looks like they have no problem with these values.
- In advanced analyzer the Set to LOW of External Trigger Out doesn't work correctly.
- (Device/Target emulator) does not correctly work in 1.5Gbps on VP50 boards. In device emulator if NCQ is enabled, symbol violation and running disparity errors would be observed. In a target emulator there is a problem if it is suddenly disconnected when bulk data is transferred.

- When too many state jumps happen in Advanced Analyzer in a short time, one of the hardware queues overflow. This causes some frames to be corrupted. This case happens when an infinite loop is created in Advanced Analyzer and state jumps occur very quickly. This issue is observed for 3G on STX430/STX431 and for 6G on STX460. On STX43x if you have many jumps and interval between jumps is less than 40 DWORD (40*13.3333ns) for a long time you will observe the issue. For example if interval between jumps is 30 DWORD, you will see the issue after about 70 jumps. For STX460 you will see the issue if interval between jumps is less than 60 DWORDs for a long time.
- Sometimes the SATA emulators do not wake up correctly by COMWAKE and need a PHY reset to wake up. As tested this issue happens rarely.
- In SAS initiator if a handshake to a received frame is deferred via error injection, a wrong task command is issued.
- (External Trigger Out – only Sierra) The external trigger out can be only be programmed once per each run.
- Logging is not supported in the Jammer.
- At 6G speed, state transitions can only happen every other Dword in the Jammer .
- In Jammer A/J/A case Port 3 & 4 may be intermittent in SATA.