

**Proposed
Draft**

**Serial ATA
International Organization**

**Version 0
May 10, 2012**

**Serial ATA Revision 3.1 ECN # 063
Title : Rx Rise/Fall Time Reinstated**

This is an internal working document of the Serial ATA International Organization. As such, this is not a completed standard and has not been approved. The Serial ATA International Organization may modify the contents at any time. This document is made available for review and comment only.

Permission is granted to the Promoters, Contributors and Adopters of the Serial ATA International Organization to reproduce this document for the purposes of evolving the technical content for internal use only without further permission provided this notice is included. All other rights are reserved and may be covered by one or more Non Disclosure Agreements including the Serial ATA International Organization participant agreements. Any commercial or for-profit replication or republication is prohibited. Copyright © 2000 to 2012 Serial ATA International Organization. All rights reserved.

This Draft Specification is NOT the final version of the Specification and is subject to change without notice. A modified, final version of this Specification ("Final Specification") when approved by the Promoters will be made available for download at this Web Site: <http://www.sata-io.org>.

THIS DRAFT SPECIFICATION IS PROVIDED "AS IS" WITH NO WARRANTIES WHATSOEVER, INCLUDING ANY WARRANTY OF MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR ANY PARTICULAR PURPOSE OR ANY WARRANTY OTHERWISE ARISING OUT OF ANY PROPOSAL, SPECIFICATION, OR SAMPLE. Except for the right to download for internal review, no license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted or intended hereunder.

THE PROMOTERS DISCLAIM ALL LIABILITY, INCLUDING LIABILITY FOR INFRINGEMENT OF ANY PROPRIETARY RIGHTS, RELATING TO USE OF INFORMATION IN THIS DRAFT SPECIFICATION. THE PROMOTERS DO NOT WARRANT OR REPRESENT THAT SUCH USE WILL NOT INFRINGE SUCH RIGHTS.

THIS DOCUMENT IS AN INTERMEDIATE DRAFT FOR COMMENT ONLY AND IS SUBJECT TO CHANGE WITHOUT NOTICE.

* Other brands and names are the property of their respective owners.

Copyright © 2000 to 2012 Serial ATA International Organization. All rights reserved.

1 Introduction

1.1 Problem Statement

In SATA Rev 3.0 there was a set of values for Rx Rise/Fall times. During integration of the Rx Differential Input Voltage and splitting into Host and Device entries the Rx Rise/Fall time values were inadvertently overwritten.

1.2 Solution Summary

Add Rx Rise/Fall Time values as previously documented in SATA Rev. 3.0.

1.3 Background (optional)

.

2 Technical Specification Changes

2.1 <Title of section being changed>

[editor note: Existing text is black. New text is marked as underlined in blue color. Material to be deleted ~~is red with strikethrough markings~~.]

Table 42 – Lab-Sourced Signal (for Receiver Tolerance Testing)(part 1 of 2)

Parameter	Units	Limit	Electrical Specification					Detail Cross-Ref Section	Measurement Cross-Ref Section
			Gen1i	Gen1m	Gen2i	Gen2m	Gen3i		
$V_{diffRXdevice}$, RX Differential Device Input Voltage	mVppd	Min	325	240	275	240	-	7.2.2.5.1	7.4.7
		Min	-		-		200		7.4.4 7.4.4.3 7.4.13
		Nom	400		-		-		7.4.7
		Max	600		750		-		7.4.4 7.4.13
		Max	-		-		1_000		
$V_{diffRXhost}$, RX Differential Host Input Voltage	mVppd	Min	325	240	275	240	-	7.2.2.5.1	7.4.7
		Min	-		-		240		7.4.4 7.4.4.3 7.4.13
		Nom	400		-		-		7.4.7
		Max	600		750		-		7.4.4 7.4.13
		Max	-		-		1_000		
$t_{20-80RX}$, RX Rise/Fall Time	ps (UI)	<u>Min</u> 20 % to 80 %	<u>100 (0.15)</u>		<u>67 (0.20)</u>		-	7.2.2.5.2	<u>7.4.5</u> <u>7.4.12</u>
			:		:		<u>62 (0.37)</u>		<u>7.4.5</u> <u>7.4.13</u>
		<u>Max</u> 20 % to 80 %	<u>273 (0.41)</u>		<u>136 (0.41)</u>		-		<u>7.4.5</u> <u>7.4.12</u>
			:		:		<u>75 (0.45)</u>		<u>7.4.5</u> <u>7.4.13</u>

Table 42 – Lab-Sourced Signal (for Receiver Tolerance Testing) (part 2 of 2)

Parameter	Units	Limit	Electrical Specification					Detail Cross-Ref Section	Measurement Cross-Ref Section	
			Gen1i	Gen1m	Gen2i	Gen2m	Gen3i			
UI _{VminRX} , RX Minimum Voltage Measurement Interval	UI		-		0.5		-		7.2.2.5.3	7.4.7
			-		-		0.45 to -0.55			7.4.4.2
t _{skewRX} , RX Differential Skew	ps	Max	-		50		30		7.2.2.5.4	7.4.16
V _{cm,acRX} , RX AC Common Mode Voltage	mVp-p	Max	100		100		100		7.2.2.5.5	7.4.12
f _{cm,acRX} , AC Common Mode Frequency	MHz	Min	2		2		2		7.2.2.5.6	7.4.12
		Max	200		200		200			
TJ at Connector, Clk-Data, f _{BAUD} /500 JTF Defined	UI	Max	0.60		0.60		-		7.2.2.3.12 7.3	7.4.9 7.4.13
DJ at Connector, Clk-Data, f _{BAUD} /500 JTF Defined	UI	Max	0.42		0.42		-			
TJ after CIC, Clk-Data JTF Defined	UI	Max	-		-		0.60		7.2.2.5.8 7.3	7.4.9 7.4.13
RJ before CIC, MFTP Clk-Data JTF Defined	UI	Max	-		-		0.18 p-p (2.14 ps 1 sigma)			