Gigabit SERDES Jitter Summary

IDT77V7101
Application Note
AN-296

Notes

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Introduction

This document summaries the jitter measurements and calculations for both IDT and HP/Agilent Gigabit SERDES. The IDT SERDES has a better total jitter generation (pk-pk) than the HP/Agilent SERDES.

Measurement of Total Jitter (pk-pk) for IDT Gigabit SERDES

IDT measured DJ (RMS) + RJ (RMS) = 23.5 ns (worst case) for IDT 77V7101 Gigabit SERDES

DJ (RMS)	=	15.5 ps (measured)
RJ (RMS)	=	8 ps (measured)
DJ (pk-pk)	=	21.7 ps (assuming sinusoidal contribution)
RJ (pk-pk)	=	112.3 ps (assuming 14 sigma Gaussian distribution)
Total Jitter (pk-pk)	=	134 ps

Measurement of Total Jitter (pk-pk) for HP/Agilent Gigabit SERDES

The measured DJ (RMS) + RJ (RMS) = 24.46 ns (worst case) for HP/Agilent 1636A/1646A Gigabit SERDES

DJ (RMS)	=	15.5 ps (measured)
RJ (RMS)	=	8.5 ps (measured)
DJ (pk-pk)	=	21.7 ps (assuming sinusoidal contribution)
RJ (pk-pk)	=	119 ps (assuming 14 sigma Gaussian distribution)
Total Jitter (pk-pk)	=	140.7 ps

Contact Information

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