**Proposed Draft**

**Serial ATA International Organization**

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**4/30/2007**

# Serial ATA Revision 2.6 ECN # 012
# Title : Cable & Connector Retention

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### Document History

| Version | Date | Comments |
|---|---|---|
| 0 | 8/10/2006 | Initial release. |
| 0.1 | 10/11/2006 | Revised figures and added explanation of GD&T usage |
| 0.2 | 4/30/2007 | Re-issued and reformatted for Rev. 2.6 |
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# 1 Introduction

The original SATA connector set has been found to have a tolerance overlap condition of the features which provide cable retention. These features are defined as a “bump” on the cable receptacle and a “slot” on the plug. The tolerance stack of feature size and feature location results in an overlap condition which prevents the bump from engaging with the slot.

# 2 Technical Specification Changes

In order to minimize impact to existing products in the market, the following changes will be made to the feature location tolerances. The proposed changes make use of Geometric Dimensioning & Tolerancing (GD&T) by utilizing Maximum Material Condition (MMC), the new tolerancing scheme allows “bonus” tolerance when features are less than the maximum allowable size.

Glossary:

GD&T = Geometric Dimensioning & Tolerancing
MMC = Maximum Material Condition
WRT = with respect to

## 2.1 Figure 27 – Device plug connector

Section E-E

Delete dimensions for locations of slots (7.05mm & 5.78mm)
Replace with basic dimensions from Centerline of Datum B to Centerlines of Slot
Change 7.62 dimension to basic dimension
Add Geometric Tolerance Control frame to feature size.
GD&T = True position of 0.05mm @ MMC, WRT Datum B @ MMC

## 2.2 Figure 30 – Cable receptacle connector interface dimensions

Front View

Delete dimension for bump location (4.71mm)
Replace with basic dimension from Centerline of Datum B to Centerline of Bump
Add Geometric Tolerance Control frame to feature size.
GD&T = True position of 0.05mm @ MMC, WRT Datum B @ MMC

## 2.3 Figure 32 – Host signal plug connector interface dimensions

Section B-B

Delete dimension for slot location (5.78mm)
Replace with basic dimension from Centerline of Datum B to Centerline of Slot
Add Geometric Tolerance Control frame to feature size.
GD&T = True position of 0.05mm @ MMC, WRT Datum B @ MMC

## 2.4 Figure 38 – Power receptacle connector interface dimensions

Front View

Delete dimensions for locations of bump (5.98mm & 7.62mm)
Replace with basic dimensions from Centerline of Datum B to Centerlines of Bump
Add Geometric Tolerance Control frame to feature size.
GD&T = True position of 0.05mm @ MMC, WRT Datum B @ MMC

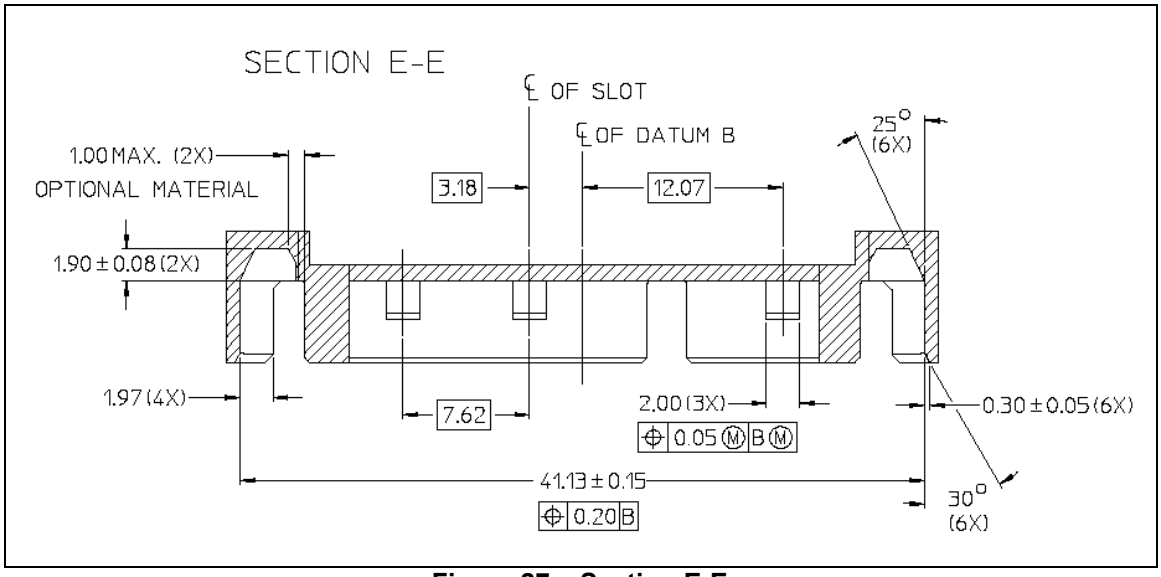


**Figure 27 – Section E-E**

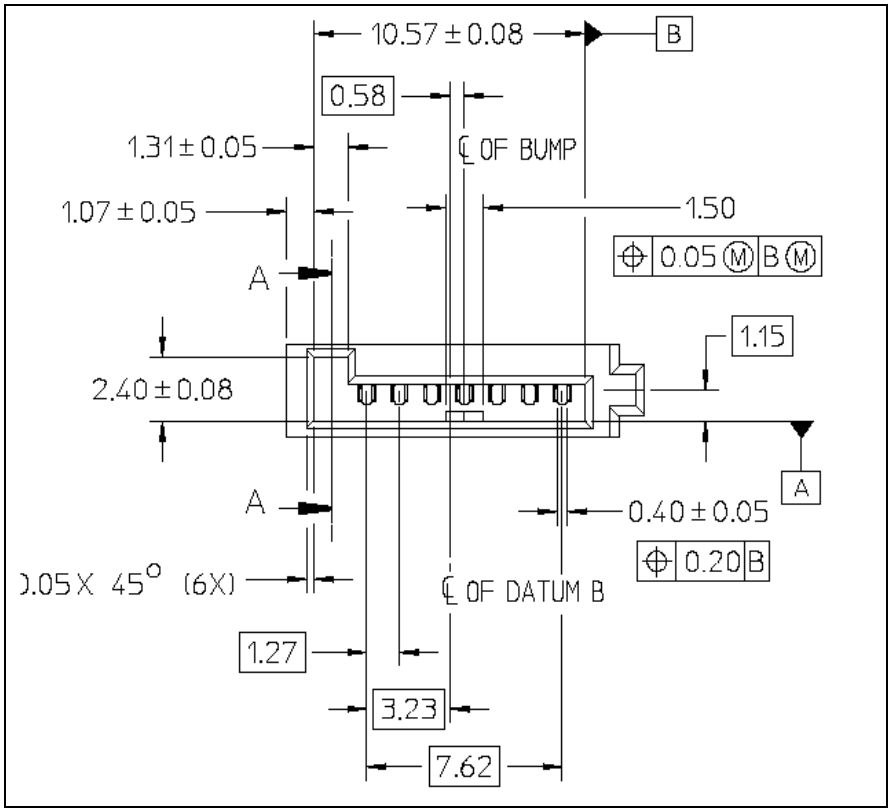


**Figure 30 – Front View**

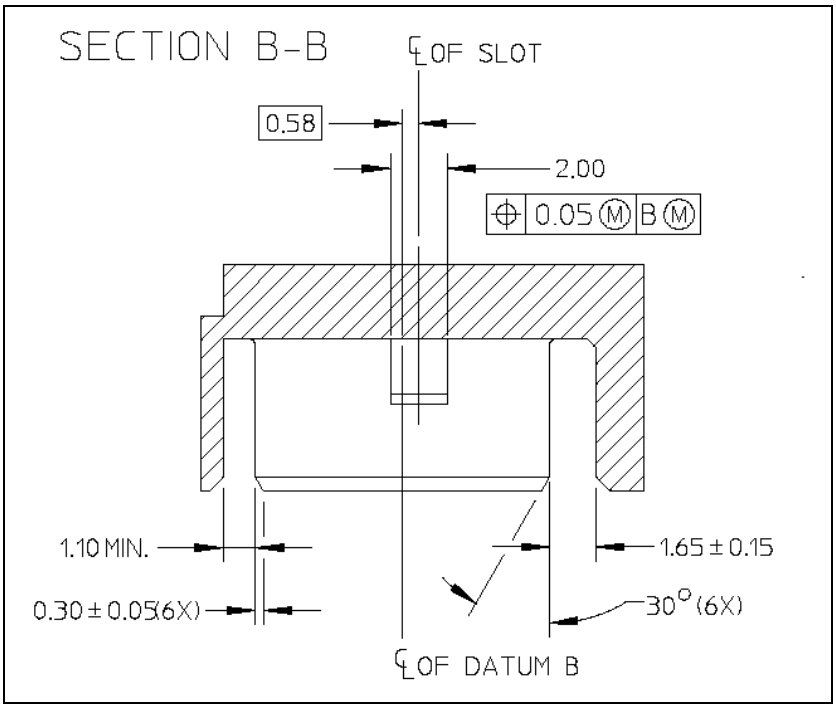


**Figure 32 – Section B-B**

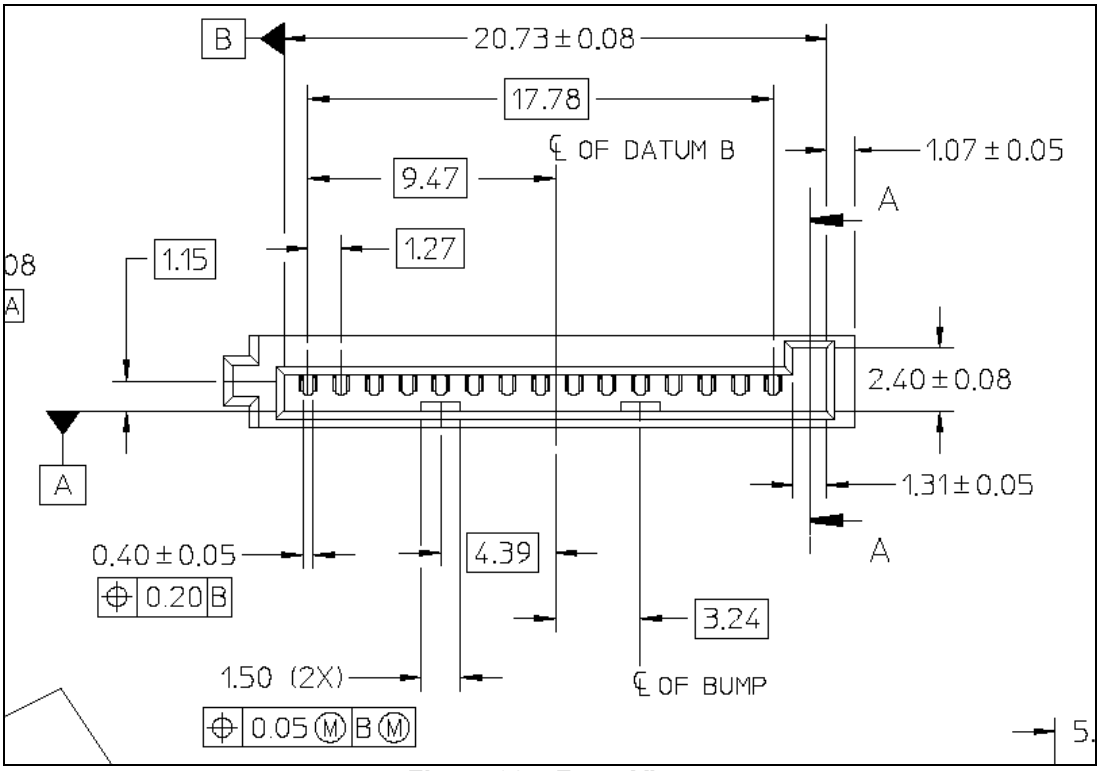


**Figure 38 – Front View**