

AccessionIndex: TCD-SCSS-T.20251022.009

Accession Date: 22-Oct-2025

Accession By: Dr.Brian Coghlan

Object name: Adaptec ACB-4000 SCSI-1 controller

Vintage: 1985

Synopsis: External 5.25" MFM Winchester disk controller.

Description:

The Adaptec 4000 is a controller that interfaces a host computer via the ANSI X3T9.2/82-2 Small Computer System Interface (SCSI) with up to two 5.25" or 3.5" ST506/412 MFM-encoded Winchester disk drives. The host is connected via a 50-pin SCSI-1 cable. For the host, it obeys the SCSI standard command set. Internally it uses a 1kB dual-ported buffer for 1:1 interleaving of host and disk operations.

For the disk, it supports 16 heads and 2048 cylinders, variable sector sizes of 256, 512 or 1k bytes, and provides sector-level defect skipping, 32-bit ECC of both ID and data, and persistent configuration (stored on the drive). The drive is connected via 20-pin MFM data cable and a 34-pin control cable.

The controller uses an Intel 8085 microprocessor and an Intel 8156H multifunction device (256byte static RAM with three I/O ports and timer), with firmware in an Intel 2764 8kB EPROM, plus three custom chips: Adaptec AIC-010 serializer/deserializer (SERDES), AIC-250 MFM encoder/decoder (ENDEC) and an AIC-300 buffer controller.

The +5V and +12V power supplies are connected via a standard Molex connector.

Many thanks to Brian Coghlan for donating this item.

The homepage for this catalog is at: <https://www.scss.tcd.ie/SCSSTreasuresCatalog/>
Click '*Accession Index*' (1st column listed) for related folder, or '*About*' for further guidance.
Some of the items below may be more properly part of other categories of this catalog,
but are listed here for convenience.

Accession Index	Object with Identification
TCD-SCSS-T.20251022.009	Adaptec ACB-4000 SCSI-1 controller. External 5.25” MFM Winchester disk controller. 1985.
TCD-SCSS-T.20251022.009.01	Adaptec ACB-4000 SCSI-1 controller.
TCD-SCSS-T.20251022.009.02	Mounting frame.
TCD-SCSS-T.20251022.009.03	34-way flat control cable.
TCD-SCSS-T.20251022.009.04	20-way flat data cable.

References:

1. Wikipedia, *Adaptec*, see:
<https://en.wikipedia.org/wiki/Adaptec>
Last browsed to on 22-Oct-2025.
2. Wikipedia, *SCSI*, see:
<https://en.wikipedia.org/wiki/SCSI>
Last browsed to on 22-Oct-2025.
3. Adaptec, *Adaptec ACB-4000 Series User's Manual*, see:
<https://www.scss.tcd.ie/SCSSTreasuresCatalog/hardware/TCD-SCSS-T.20251022.009/Adaptec-4000-UsersManual-Oct85.pdf>
Last browsed to on 22-Oct-2025.

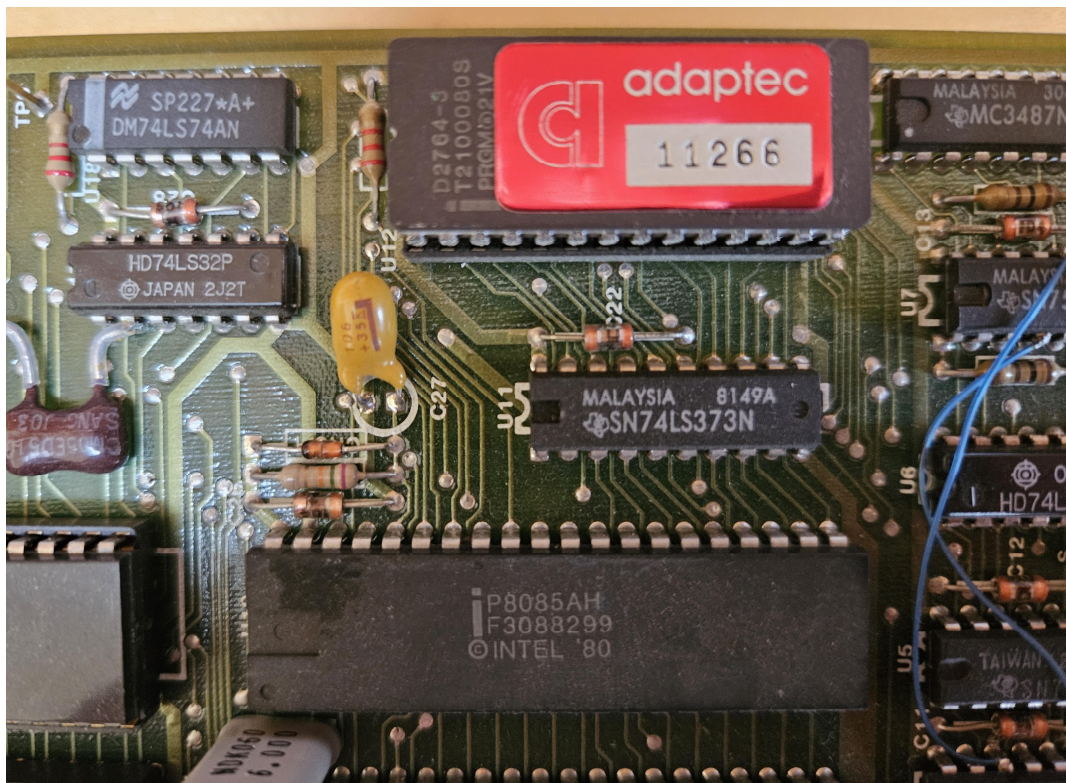


Figure 2: Adaptec ACB-4000, top right front closeup.

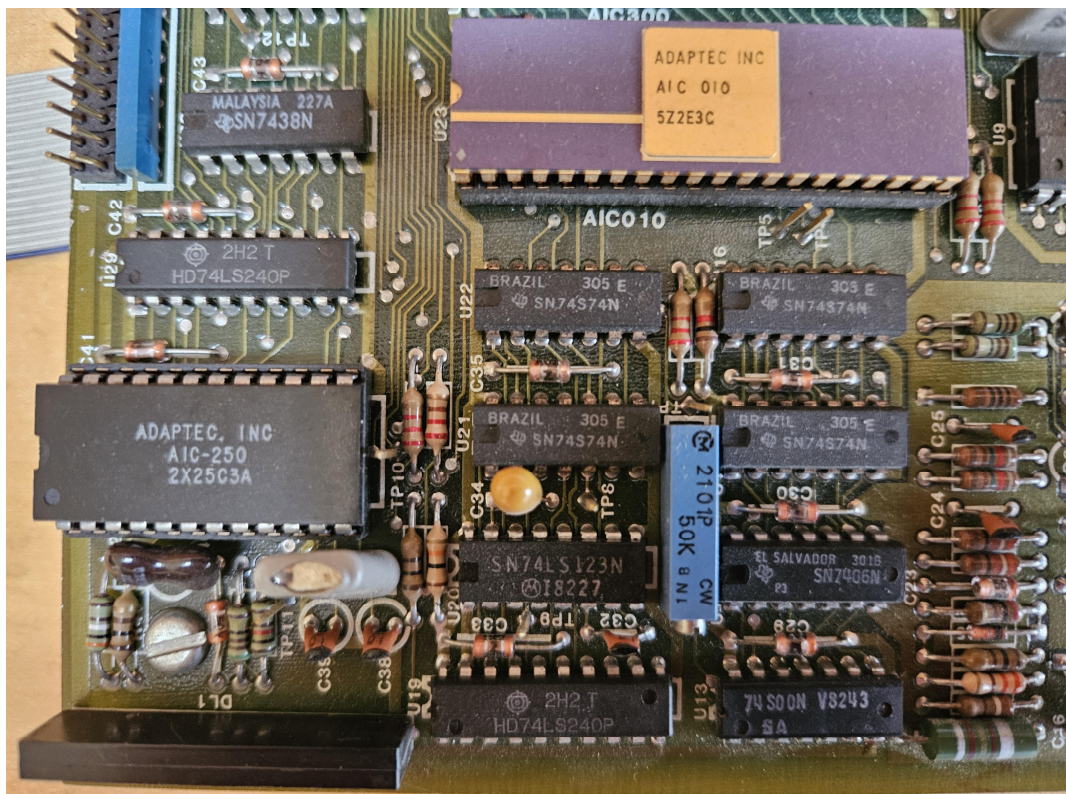


Figure 2: Adaptec ACB-4000, bottom left front closeup.

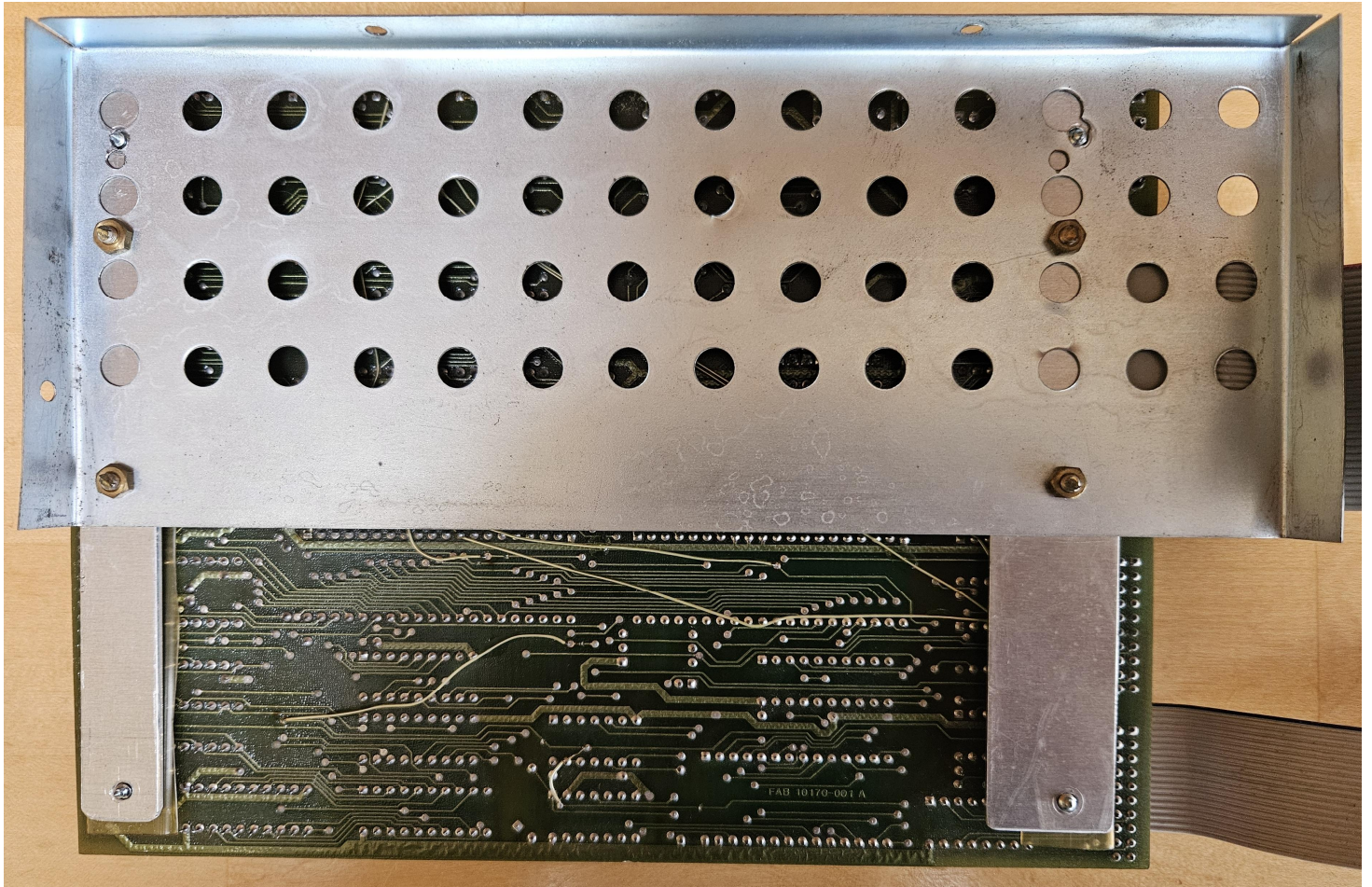


Figure 3: Adaptec ACB-4000 rear view, with mounting frame.