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HP 8234X & HP82350 HPIB Card Product Support Overview

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* This short survey provides an overview of the PC-based HPIB cards that are sold by HP.

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* HP PCHPIB cards fall into three categories. First, an old series of ISA cards that were based on memory-mapped I/O:

- HP 27209: This card was the original HP PCHPIB card, and was sold in the mid-1980s under products numbered 61062, 88500, and 82990. It was replaced by a follow-on product, the ...
- HP 82335: This was a minor update to and largely compatible with the 27209 card, and is still being sold for DOS and Win3.

These two cards are only discussed here to relate them to the follow-on 8234X cards. Details on them are available in a separate document.

* Following the 82335, a new series of ISA cards under the general designation 8234X was devised that used the SICL (and later, the VISA) I/O control libraries -- which were not compatible with the software shipped with the 82335 (the "Command Library").

The 8234X series has been followed by the 82350 card, which is also SICL and VISA compatible, but which is compatible with the PCI bus and not the ISA bus.

* All the 8234Xc cards are 16-bit I/O mapped ISA (not EISA) cards with many similarities:

- HP 82340A/B: This was in principle a low-cost and relatively low-performance card (though its differences in performance relative to other HPIB cards were not particularly noticeable in practice). It is now obsolete (as of spring 1997). There is no difference in hardware between the A and B models; they just have different software.

  The 82340 is capable of streamed or polled operation. In streamed operation, the CPU will "hang" when it tries to read or write data through the card until the operation is complete; this allows fast transfers of block data, at the expense of "hogging" the CPU. For more intermittent data, the 82340 can poll the card and accept data when it is available.

  It was supported on all MS-Windows platforms -- Win3, Win95, and WinNT.

- HP 82341A: This was in priciple a higher-cost and higher-performance card (though, as with the 82340, the performance benefits were ambiguous). It supported streamed and polled operation, but it also could use its on-board 4 KB RAM to provide buffered I/O.

  Like the 82340, it is supported on all MS-Windows platforms -- Win3, Win95, and WinNT.

  This board had a programmable logic controller that could be reconfigured in software, which made field fixes relatively easy to implement. It was obsoleted in favor of the ...

- HP 82341B/C: This is minor relayout of the 82341A card -- it works the same, the same comments apply; they just changed the PC board around. (The 82341A had two sockets, one for a four-sided chip, another for a RAM SIMM ... they were never used, and so were deleted in the B and C models.)
- HP 82341D: This is the newest member of the family, essentially an 82341C converted to a Microsoft Plug&Play configuration to allow (in principle) automatic installation and configuration. It works much like the 82341 card -- though unlike all the other 8234X cards it doesn't have the 4-position DIP switch used for configuring the I/O address, since that is done automatically.

  It is also not supported under Win3, it only works under Win95. (WinNT was supported at introduction, but we ran into some snags; we are not recommending it for WinNT until NT 5.0, which will be a reasonable Plug&Play solution).

All these products are shipped with a SICL/VISA CD-ROM. The bits are also publicly available on the MXD PC Products website. The cards are supported under Microsoft C/C++ and Visual BASIC (as well as VEE and HP BASIC for Windows). Visual BASIC for Applications is *not* supported.

* As far as the 82350 card goes, it is new technology based, as mentioned, on the PCI bus. Since in principle PCI allows for automatic configuration, there are no DIP switches or jumpers on the card. The 82350 is supported under Win95 and WinNT (but not Win3).

As with the 8234X cards, the product is shipped with a SICL/VISA CD-ROM. It is supported under the same languages. There is no floppy option.

* Given the number of cards mentioned above, it can be very confusing to remember which one works where, and the following configuration matrix should help clear this up:

```
_____

               DOS     Win3    Win95    WinNT
_____

   27209       YES     YES     no       no      See note below.
   82335       YES     YES     YES      no      See note below.
   82340A/B    no      YES     YES      YES
   82341A/C    no      YES     YES      YES
   82341D      no      no      YES      no      See note below.
   82350A      no      no      YES      YES

_____
```
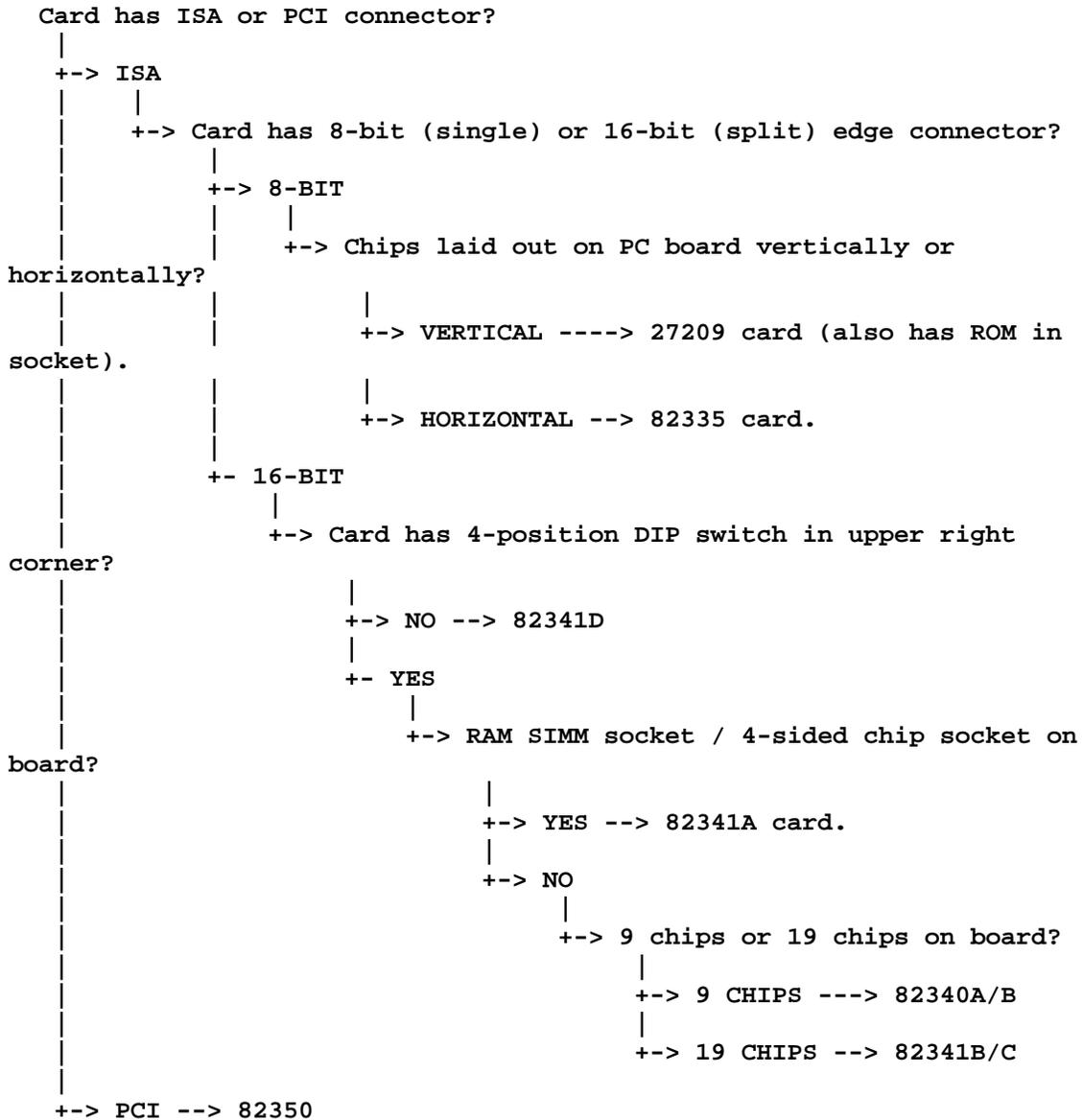
The entries on the 27209 and 82335 cards have a number of nitpicking considerations. The 27209 by itself never worked under anything but DOS (it was obsolete before Windows was introduced), but the 82335 eventually had a Command Library for both DOS and Windows, and the 27209 would work with that software. So both these cards work under DOS and Win3 with the Command Library.

Since there were a lot of 82335 cards out in the real world, and SICL was needed to support them under VEE, a SICL library for the 82335 was devised and is included with the standard SICL software. It provides

support under Win3 and Win95, but not WinNT. It will *not* work with the 27209 card. VISA will not work with the 82335 or the 27209 on any platform.

As noted, the 82341D is not supported on WinNT until NT 5.0 comes out. Note that none of the HPIB cards works on WinNT on a dual-CPU system. This needs to be corrected but it is hard to say when that will be.

* Identifying the type of card is also confusing. The following tree should allow you to determine the type of card:

```
   Card has ISA or PCI connector?
     |
    +-> ISA
     |     |
     |     +-> Card has 8-bit (single) or 16-bit (split) edge connector?
     |          |
     |         +-> 8-BIT
     |          |     |
     |          |     +-> Chips laid out on PC board vertically or
horizontally?
     |          |          |
     |          |          +-> VERTICAL ----> 27209 card (also has ROM in
socket).
     |          |          |
     |          |          +-> HORIZONTAL --> 82335 card.
     |          |
     |         +- 16-BIT
     |             |
     |             +-> Card has 4-position DIP switch in upper right
corner?
     |                    |
     |                    +-> NO --> 82341D
     |                    |
     |                    +- YES
     |                        |
     |                        +-> RAM SIMM socket / 4-sided chip socket on
board?
     |                            |
     |                            +-> YES --> 82341A card.
     |                            |
     |                            +-> NO
     |                                 |
     |                                 +-> 9 chips or 19 chips on board?
     |                                       |
     |                                       +-> 9 CHIPS ---> 82340A/B
     |                                       |
     |                                       +-> 19 CHIPS --> 82341B/C
     |
    +-> PCI --> 82350
```