

PS/55note C23V

● 5523-V28/VJ8



On October 20, 1992, one year after the release of the PS/55note N23sx, IBM Japan announced the PS/55note C23V (hereafter referred to as C23V), the first color notebook PC in the PC/AT series.

The C23V was equipped with the same 10.4-inch TFT color LCD display (512KB of VRAM, capable of simultaneously displaying 256 out of 4096 colors) as the high-end PS/55note C52 486SLC (9552-Y, hereafter abbreviated as C52), which was announced at the same time. The CPU was also upgraded to a 1386SX 25MHz, and it was the first PS/55note to feature a JEIDA (Japan Electronics Industry Development Association) V.4.1 compliant PC card slot.

The case was also completely redesigned, and the hard disk was made replaceable, making it a product that was a major improvement over the previous PS/55note.

It was.

However, the C23V used a TFT color LCD display, which was extremely expensive at the time, making it an expensive product with a standard price of 683,000 to 699,000 yen at the time of its release (the price difference depended on whether or not IBM DOS J5.0/V was included). Perhaps for this reason, the number of C23V units shipped seems to have been relatively low.

The C23V was a double-brand machine, bearing the traditional PS/55note brand name and also bearing the new name "ThinkPad" (see page 72 for the origin of the name ThinkPad). This was a transitional measure to incorporate the PS/55note series, which had been developed as a uniquely Japanese product, into IBM's overall worldwide product strategy.

PS/55note C23V (5523) model

Model number	Initial installation OS	CPU	LCD	Memory (maximum)
V28	none	i386SX 25MHz	10.4' TFT color	2MB (10MB)
VJ8	IBM DOS J5.0/V	Same as above	Same as above	Same as above
Model number	Built-in HDD	Battery (driving time)	weight	standard price
V28	80MB (packed)	NiCd (1.7 hours)	3.4kg	683,000 yen
VJ8	Same as above	Same as above	Same as above	699,000 yen

It was called PS/55note, but it was also called C52, C23V and M23V (the monochrome LCD model of C23V).

The name has been unified under the worldwide brand "ThinkPad."

large lcd display

The C23V's 10.4-inch TFT color LCD display was the highest quality LCD panel available at the time, equivalent to that of the higher-end C52 model. In fact, the C23V's LCD panel was developed with some modifications to the specifications for the C52 486SLC, and although the LCD display units of the two models have different part numbers, they look very similar. This LCD display unit is quite thick (approximately 20mm) and does not have a low-reflection coating on the surface, so reflections from lighting and other sources can be noticeable, but apart from that, it still has a fairly usable performance.

High resolution and multicolor display

The C23V had 512KB of VRAM, so you might think that it would be able to display a high-resolution image of 800 x 600 dots and 16 colors when using an external CRT, but unfortunately the generic SVGA driver included with Microsoft Windows 3.1 cannot display at this resolution.

256 color display

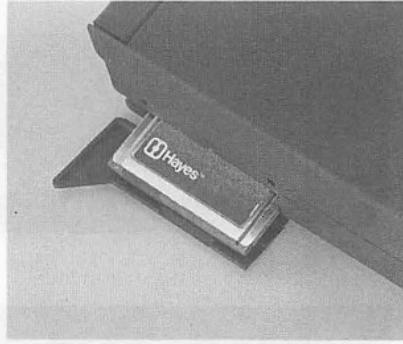
To display 256 colors on the C23V, it was necessary to register the device driver V256.SYS in CONFIG.SYS and use the IBM Japan version of Microsoft Windows 3.1. The V256.SYS included in the utility diskette that came with the machine is for an older version of Windows 3.0, so it must be replaced with the V256.SYS included in IBM Japan's Windows 3.1 diskette #8. For details, see the README.WRI that came with Windows 3.1.

Although the C23V I own is able to display 256 colors with the older version of V256.SYS, it would be better to use the newer driver.

First appearance of PC card slot

The C23V was the first PS/55note to be equipped with a PC card slot that could use one Type I or Type II PC card conforming to JEIDA V.4.1 (Pht.1). However, at the time, PC cards themselves were not yet common.

There were no third-party options available, and the supported original options were primarily limited to communications (modems, 3270 and 5250 communications) and SRAM cards.



Pht.1 PC card slot with a flip-open cover

The PC card slot at the time still had much room for improvement, did not support plug and play, and cards had to be inserted or removed with the power off. When the C23V was released, this did not pose any particular problems because the main focus was on communication cards, which are not normally inserted or removed, but it is now considered an outdated specification. The "IC card device driver" included on the utility diskette that came with the machine is best considered to only support communication cards and SRAM cards that were supported at the time of the C23V's release. If you are using a PC card with this machine today, we recommend using IBM Japan's PC card driver, PlayAtWill Ver. 3.0 or later.

expansion bus connector

In addition to a PC card slot, the C23V was also equipped with an expansion bus connector for connecting the AT bus, which had been used since the original PS/55note, to an external device (Pht.2).

Elimination of modem slot

The built-in modem slot that was present in the previous model, the N23sx, has been eliminated with the adoption of a PC card slot.

Adoption of pack type hard disk

Packed hard disks had already been used in Epson's PC-386NOTE series, NEC's 98note NS/E and later products, and Toshiba's DynaBook 386 series, but the C23V also came standard with a replaceable 80MB IDE hard disk pack, with a 120MB pack available as an option (Pht.3).

Built-in EasySetup

The C23V was also the first to feature Easy Setup, a familiar initial setup program for the ThinkPad series. When you power on the computer while sliding the resume/suspend switch to the right, Easy Setup launches, allowing you to configure power management and perform system tests.

With the inclusion of EasySetup, the reference diskette is no longer necessary, and on PC/AT models from C23V onwards, the new device configuration is automatically recognized when memory is added or the disk pack is replaced.

Providing PS2.EXE

The C23V came with a configuration utility called PS2.EXE, which was an improved version of the PS/55note N23sx's "Toolbox NTOOL.EXE." This utility allowed you to configure the date and time, display/keyboard, and power saving settings.

power adapter

The power adapter was larger than that for the 5523-S (weight 430g) and the plug shape was changed from round to flat (Pht.5, Pht.6) to accommodate the increased power consumption due to the increased CPU clock speed and the inclusion of a TFT color LCD. To enable use overseas, an optional AC 100-240V adapter (49G2164), the same as the standard adapter for the C52, was available.

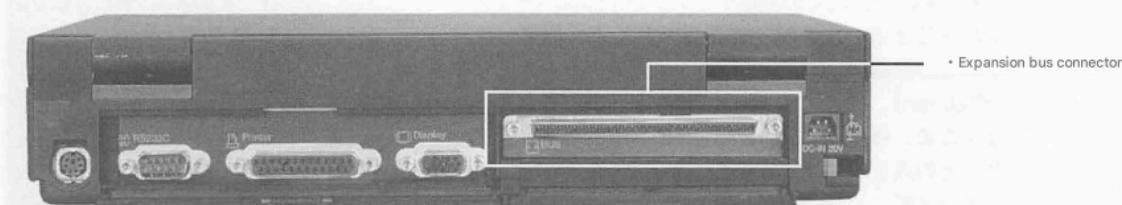
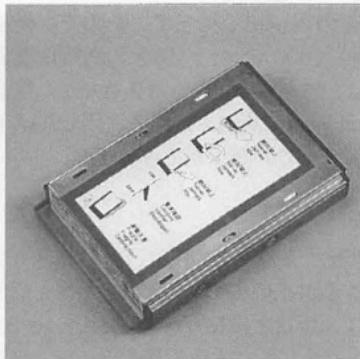
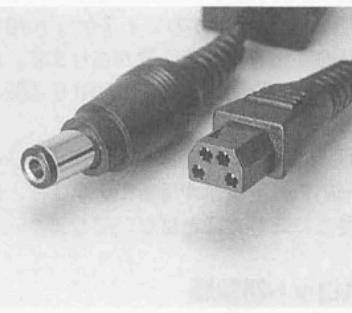


Photo 2: Rear of C23V



Pht.3 Packed Hard Disk

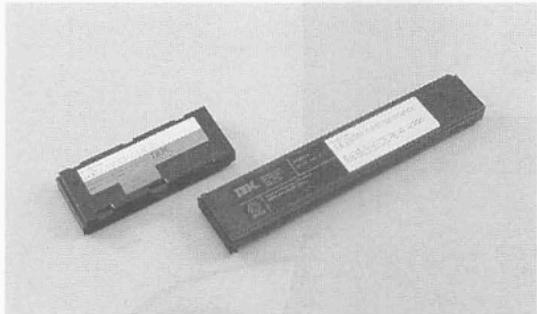


Pht.5 round plug and platform plug

The base-type power connector of the Pht.4 C23V (top) and the round power connector of the PS/55note (bottom)

● battery pack

The rod-shaped NiCd battery pack, inserted from the left side of the C23V, was nearly as long as the width of the device and weighed approximately 580g, nearly twice as much as that of the original PS/55note (Phase 6). The capacity was also increased from 7.2V and 1.7Ah for the original PS/55note to 10.8V and 2.4Ah for the C23V. The battery's cataloged continuous operating time was approximately 1.7 hours. Despite the faster CPU and the more power-hungry TFT color LCD display, the cataloged performance was slightly better than that of the N23sx, which was impressive, but users still wanted a longer operating time.



Battery pack for Pht.6 PS/55note (left) and C23V (right)

● CPU is i386SX 25MHz

The CPU used in the C23V was a 25MHz i386SX. While this CPU was fast enough compared to the 16MHz i386SX used in the N23sx, it was no match for the 25MHz IBM486SLC used in the C52, which was released at the same time. As a result, the C23V was a somewhat unbalanced product, with a high-quality LCD display but a relatively slow CPU.

● Memory up to 10MB

The standard memory of the C23V was still 2MB, which was close to the minimum required to run DOS/V. Even with the optional 72-pin SIMM, the upper limit was 10MB. However, 10MB of memory was larger than the maximum of 6MB of the N23sx, so it may not have felt insufficient at the time of its release.

Note that IBM products from this period generally check the SIMM ID, so commercially available 72-pin SIMMs cannot be used as is. If you are interested in changing the SIMM ID of a commercially available 72-pin, 16MB SIMM with parity bit for use with a C23V, etc., please refer to page 260 and try it at your own risk.

(Written by Hiroshi Oyama)