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LASER 128EX
Turbo Power, Bargain Price

- REVIEWS:
- \$10 Productivity Packages
 - New Games Galore
 - Advanced Graphics Kit
And More!



If you still don't take the Laser seriously, stand back. Last year's Laser 128 made waves as the industry's cheapest Apple compatible, but Video Technology's new Laser 128EX turns the low-cost clone into a power user's hot rod. It looks like a IIc, has enough standard equipment to fill every slot in a IIe, and runs faster than a IIgs. It has plenty of input/output ports, plugs into virtually any Apple disk drive, has the same triple-speed processor as Applied Engineering's TransWarp accelerator card, and can hold a megabyte of on-board memory. It costs \$495.

The 128EX is scheduled to go on sale this month. We tested one supplied by Central Point Software of Portland, Oregon—according to Central Point President Michael Brown, a not-quite-production unit made for our mid-May deadline before the Hong Kong factory reached full speed. Our 128EX had a couple of teething problems, but was fast, attractive, and highly compatible with Apple II software. It's not compatible with IIgs software, sound, and graphics, but if it proves reliable it'll be everything an 8-bit user could wish for, at somewhere between one-half and one-third the cost of a comparably equipped Apple. The Laser EX is an exceptional bargain.

A FEW REVISIONS

Like the original 128, the EX comes to America with two parents. Video Technology's Northbrook, Illinois, office imports Lasers for most mail-order and retail dealers, including chains such as Soft-Set and Sears. (The latter is a coup for Laser, since last year Sears chose the Franklin Ace 500.) The official retail price is \$579. Individual customers can also buy directly from Central Point (9700 S.W. Capitol Highway, Portland, OR 97219, 503-244-5782); Brown told us that his firm will leave the base model to mass merchandisers and sell only the 128EX, at \$495 plus shipping.

Basically, the EX is a revised edition of the Laser 128. (See "Laser 128: An Affordable Compatible," December 1986, p. 58.) Both machines are compatible with the enhanced Apple IIe, in a case with a built-in disk drive and interfaces like the IIc's—two serial (printer and modem), external disk drive, composite- and RGB-color video, and mouse/joystick ports—plus a numeric keypad, a parallel printer port, and one expansion slot.

There are four changes, two of which are shared with the revised 128 base model (still around \$395): a restyled case in a lighter gray (close to Apple's platinum) color, and circuitry from Central Point's Universal Disk Controller card, allowing connection to either a 5¼- or 3½-inch external drive, built in.

The two EX extras are a faster CPU—its 65C02 can run at 2.3 or 3.6 megahertz as well as the standard 1.0-MHz clock speed—and an internal Apple-type memory card serving as a ProDOS RAM disk or AppleWorks 2.0 expander. In the \$495 version, the card is empty; it's socketed for up to 1 MB of 120-nanosecond RAM chips. (The more common 150-nanosecond chips, Brown says, aren't fast enough.) Officially, added RAM is a dealer-installable

option, but there'll be a door in the metal shield beneath the plastic case for those adventurous enough to try their own upgrades.

LOOKING INTO THE LASER

Even those who thought the original 128 stark or homely must admit the 128EX looks sharp. The lighter color, rounded corners, and stylized top panel and logo (replacing industrial ventilation slots and a stick-on name label) give the new Laser a sleeker, streamlined appearance.

The keyboard is unchanged, with convenient keypad and controls such as a speaker-volume dial and monochrome/color-display switch making up for the ten

LASER 128EX

Take a long look at Video Technology's newest Laser, the 128EX. It's sleek, fast, loaded with options—and it's priced at less than \$500.

by Eric Grevstad, Review Editor



nearly useless function keys. Compared to our first Laser's, the keyboard feels smoother and less plastic—a good improvement, though the sensitive spacebar still puts occasional double spaces between words. The Laser still boots up with Caps Lock on, tricking users into loading their word processors each morning and typing "DEAR SIR."

Our test EX didn't contain the production ROM chip (mounted, like the original Laser's, in an underside socket for replacement without removing the outer case). The finished ROM, Brown told us, include RAM diagnostics, plus DOS 3.3, Pascal, and ProDOS RAM-disk support.

One early bug was that, when connected to an old composite Monitor III, the EX display appeared on the bottom left, with the first column obscured, instead of centered on the screen. The image was properly centered on a composite Taxan and a monochrome IIc monitor; on a Color Monitor IIe and IIc, it was centered vertically but pushed left (but not far enough to hide column 1). Brown said, "Those old Monitor IIIs are a little weird," but promised to investigate the bugs.

The original Laser was impressively compatible with Apple software, and today's Lasers are even more so. Like its predecessor, the 128EX ran almost every program we tried—AppleWorks 1.3 and 2.0, Apple Writer II, Certificate Maker, Award Maker Plus, Bank Street Writer Plus, ProTerm, Fantavision, F-15 Strike Eagle, SuperCalc3a, WordPerfect, Airheart, Accolade's Comics, The Lurking Horror, and more. An *inCider* BBS user had complained that his Laser flunked Activision games and Ogre; the 128EX played our copies perfectly. Our old 128 gagged on Garry Kitchen's GameMaker; the EX had no trouble.

We did have a few failures. Both our old and new Lasers skewed screen captions on Point-to-Point 1.50 (an old version of the program, since fixed). MultiScribe 2.0A worked, but didn't follow a mouse plugged into the 128EX mouse/joystick port as other mouse-controlled software did. Baudville's Rainy Day Games booted to its menu, but crashed while loading a game. MECC's Number Munchers wouldn't boot—a problem that, like the Laser's inability to run the IIc System Utilities, may be somehow related to its emulating an enhanced IIe. Number Munchers also hung up on our enhanced IIe, but not an old IIe or IIc.

SPEED AND SLOTS

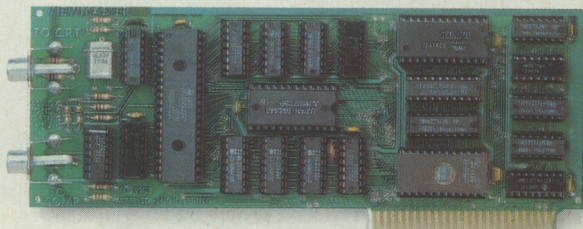
Overall, though, the 128EX earns the same high marks for running Apple II programs that the first Laser did—and bonus points for running most of them three times as fast. The EX is a three-speed computer; holding down the 1, 2, or 3 key during power-up or pressing Control-Reset sets its clock rate to 1.0, 2.3, or 3.6 MHz, indicated by the changing pitch of a beep. (The Laser ROM works at either 1.0 or 2.3 MHz, so BASIC programs show little improvement when shifted from second to third gear, though they're still twice as fast as on a 1.0-MHz IIe or IIc.)

Using a 1000-cell AppleWorks spreadsheet as an example, the Laser in first gear recalculates as quickly (or slowly) as a IIe—38 seconds. The medium speed cuts that to 16.7 seconds, which trails the Apple IIgs' 14.4. But a Laser in top gear tops that—11.3 seconds.

If you insist on maximum speed, a IIe with Applied's TransWarp edges the EX by two-tenths of a second. Nevertheless, EX owners will soon learn what accelerator-card users know: Triple-speed games can be tricky, but fast searches, sorts, and number crunching spoil you for ever going back to 1.0 MHz. Running AppleWorks with a macro program on a Laser with turbo speed and a mega-byte of RAM is going to be a pleasure.

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WIZARD 80					✓		✓	✓
VISION 80	✓	✓			✓			
OMNIVISION		✓					✓	✓
VIEWMAX 80	✓	✓			✓			✓
SMARTERM	✓	✓				✓	✓	✓
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Got AppleWorks on a 3½-inch disk? No problem. As before, the Laser's built-in 5¼-inch drive is slot 6, drive 1, and a 5¼-inch drive plugged into the rear connector is slot 6, drive 2. The new disk controller, however, will recognize a 3½-inch drive in the same connector as slot 7, drive 1, and boot from it if there's a disk present. (You can't daisy-chain multiple drives as with the GS SmartPort, however.)

The Chinon-built Laser 800K drive (\$195) has improved since last fall's first models: There's still the manual-ejection button Apple forgot, but the drive is considerably quieter and has an LED (light-emitting diode) access light. Future models will follow the new color scheme, too.

Our 128EX also worked with an Apple UniDisk 3.5 and the platinum Apple 3.5 Drive from a GS, though the latter moaned and groaned and was three times slower, loading ProDOS 8 and a BASIC STARTUP program in 33 seconds to the other microfloppies' 10. The EX also accepted a single-sided Mac drive, if you'll accept only 400K storage and a bent paper clip to eject disks.

We should make one point clear: You can't use a 3½-inch drive and a card in the Laser's expansion slot at the same time (unless the card is the 3½-inch disk controller, which seems rather pointless). Software sees the EX as a IIc with a parallel or serial (depending on a keyboard switch) printer card in slot 1, a modem card in slot 2, an extended 80-column card in slot 3, a mouse card in slot 4, the memory-expansion card in slot 5, a 5¼-inch disk controller in slot 6, and the 3½-inch controller in slot 7.

This gives you two ProDOS RAM disks (/RAM in slot 3 and /RAM5 on the expansion card) and the ability to plug in a second drive of either size, but disables the slot on the Laser's left side. To change that, a DIP switch next to the underside ROM socket toggles slot 7 between the 3½-inch disk controller and the external slot; the cards we then tried, such as Micro Systems Research's Clockworks and Prometheus' ProModem 1200A, worked successfully.

Another DIP switch disables the RAM card for an external slot 5, in case you want to use the old Laser two-slot expansion box. Central Point feels one slot is sufficient considering the EX's new built-in features; the firm says it plans to offer a snap-on plastic end cap to protect a card mounted in the slot while maintaining portability.

Low-cost imports naturally raise different questions of reliability than domestic brands. We've had mail from happy owners whose 128s are holding up to hard knocks; we've heard from buyers unhappy with Laser breakdowns. When *inCider* asked Video Technology President David Gish about reliability, he said, "We feel the quality has been improved quite a lot since last fall; some running changes we've made have improved that dramatically [since our first units] and we're not getting any complaints now." For repair after the 90-day warranty, Gish added, a growing number of Laser dealers have joined Central Point and Video Technology as service centers.

On the technical side, Brown told us, the 128EX has a feature that should reduce complaints: The 1.0-MHz mode and disk-drive speed now match Apple's instead of being 2 percent slower, which caused some problems with IIc drives and an occasional "rainbow" effect when displaying certain hi-res colors. We'll be pounding on *inCider's* test unit pretty heavily from now on, and we'll let you know if anything goes awry.

We'll also be using the EX heavily because it's an impressive machine. It's not for you if you want the 16-bit software, music, and graphics of the IIgs, but it's a big change from the simple budget-conscious, Commodore-alternative stance of the original 128. The Laser 128EX is a fully loaded, souped-up, tricked-out computer in a neat compact package, at a price that should make Apple blush for shame. This dark horse is moving up fast. ■

REVIEWS

Franklin Ace 500; Sensible Writer; Ask Me, Drug Alert, Drugs: Their Effects on You, Drugs: Who's in Control?; Print-Quick; The Invoicer

Anti-Laser Weapon

FRANKLIN ACE 500

Franklin Computer Corp.,
Route 73 and Haddonfield Road,
Pennsauken, NJ 08110,
(609) 488-0666

Apple IIc-compatible computer
\$499

Rating: ■■■■

A recent press release hinted at smaller, cheaper machines to come, but for now Franklin Computer Corp. looks like a company that's been beaten at its own game. Just as the firm was enjoying modest success with its Apple IIe-compatible Ace 2100 and 2200, Video Technology of Hong Kong introduced the Laser 128, with IIc styling, a IIe-type expansion slot, and a killer price (\$395 via mail-order). The Ace series got into the Sears catalogue, but Franklin was no longer the only clone in town—just the most expensive.

Franklin may appear to face uphill odds—a lawsuit aimed at stopping Laser sales was recently settled with no effects other than a revised 128 boot ROM. But dismissing the latest Franklin, the Ace 500, as a washout—\$100 more than the Laser without the Laser's expansion slot—is a little unfair. The 500 is a good-looking, nicely Apple-compatible computer worth considering for home or school use. I'd rather have the Laser's slot than the Franklin's extra memory, however, and I was dismayed when our Franklin's 80/40-column switch fell off.

ACE, ADVANTAGE, DEUCE

When I tested the Ace 500, I found my preconceived ideas of Franklin-versus-Laser advantages and disadvantages fading away. For example, there's little real difference in price. When you count shipping and handling, Central Point Software sells a Laser 128 for \$415; the Ace 500's list price is \$499, but *inCider* bought one for \$449 from a New York City discount house.



The rival machines are generally similar in layout. Each resembles an Apple IIc, with a built-in disk drive and a wider keyboard adding a numeric keypad and function keys. Each adds extra ports to the IIc-style back panel; the Franklin has a serial port, parallel port, headphone jack, mouse/joystick interface, two video jacks for composite and either Apple- or IBM-style RGB color monitors (DIP switches control which RGB signal the Franklin sends), and an external disk-drive port. The Franklin's power supply is a bulky wall plug, rather than a box that can sit on the floor.

The drive port worked with 5¼-inch Apple Disk IIc and Laser FD-100C drives; Franklin sells a 5¼-inch drive of its own for \$149.95. As the Ace 500 manual says, the port doesn't work with Apple's UniDisk 3.5, and I had no luck trying it with several other 3½-inch drives—the Apple 3.5 from a IIGs, the Chinon drive sold by Central Point, or a 400K Macintosh drive.

Besides the external drive, Franklin options include an RGB monitor (\$299.95), a monochrome monitor (\$139.95), and a mouse (\$79.95). I tested our 500 with Apple monitors and a Macintosh mouse, which worked fine.

Franklin omitted the IIc's least-used feature, the regular/Dvorak keyboard switch. Instead, a row above the keyboard includes an 80/40-column button (rather loosely mounted on our machine), a sliding volume button for the 500's speaker, and two helpful additions: a four-position switch that offers white, green, amber, or blue text with RGB monitors, and a neat button that toggles between a regular and mousetext character set, letting the Ace run both old and new software without bizarre symbols or unreadable inverse-video characters. There are indicator lights for traditional functions (power on, Caps Lock, Num Lock) and also for disk and CPU activity, disk write, IBM or Apple color palette, and double-hi-res graphics mode.

My first impression of the Ace 500 credited it with two advantages over the 128: better looks and a better keyboard. The first still holds true; Laser representatives were unhappy

inCider's Ratings

Excellent—remarkable, a must buy	■■■■■
Very good—impressive and recommended	■■■■
Good—average, solid performance	■■■■
Fair—flawed but adequate	■■■
Poor—unacceptable or unusable	■

when I described the 128 (December 1986, p. 58) as plain and homely, but the Franklin's sleek black case and low-slung profile turn more heads. The keyboard race, however, turned out to be a tie. Franklin's feels better for touch typing, crisp and responsive if a little noisy, but I have some complaints about its layout.

The keyboard resembles that of an Apple that fell under the influence of an IBM PC. Besides the usual Apple layout (with open and solid Fs instead

of apple keys), there are 12 function keys, an Alt key (neither very useful for most Apple programs), and a numeric keypad.

As on the IBM, the cursor arrows are arranged in a compass pattern on the keypad—much easier than Apple's horizontal line for cursor navigation, but there's a drawback: You can't use the arrow keys and keypad numbers at the same time. I usually left Num Lock off for the sake of cursor arrows, then tapped the keypad

to no effect when choosing from AppleWorks menus.

Also, Apple users will instinctively reach for the top right corner of the keyboard for the delete (destructive backspace) key, only to find a plain nondestructive backspace or left arrow. The delete key, like a PC's, is at the bottom right. ("Only users with technical applications," the manual assures you, "are likely to use DEL.") I'm trying to think of a productivity package that doesn't.)

SOFTWARE SELECTIONS

Considering the reams of self-booting Apple software available, I suspect few users will bother with FDOS 2, the Ace's bundled operating system. FDOS looks and works much like Apple DOS 3.3 (with commands such as CATALOG, INIT, and BRUN and a utility program called FUD to Apple's FID). There are minor advantages—as with ProDOS, a simple hyphen replaces either the RUN or BRUN command—and the extra ability to format and read 40- as well as 35-track disks, storing 160K instead of 143K of data, with Franklin drives.

While it may not lure applications users from ProDOS, FDOS looks like a pleasant environment for BASIC programmers. It lets you program the Ace's function keys (default definitions include such common statements as CATALOG,D1 and UNLOCK), and the keypad provides one-touch entry of BASIC editing commands for tasks such as clearing the screen or listing a program.

The most important software question, of course, is compatibility, and the Ace 500 earns high marks. The Laser had an edge on the Ace 2100 and 2200, but Franklin has been catching up. I tried the 500 with programs including AppleWorks 1.3 and 2.0, Super MacroWorks, DOS 3.3 and ProDOS system disks, MultiScribe 2.0, Catalyst 3.0, MouseFiler, Multiplan, Award Maker Plus, Blazing Paddles, Type, Stickybear Drawing, PFS:Write (ProDOS), and games ranging from Airheart, Borrowed Time, and F-15 Strike Eagle to Marble Madness and Leather Goddesses of Phobos. Most ran with no problems.

There were some quirks. MouseTalk wouldn't start from Control-Open F-Reset, but was fine from a cold (power off) start; Shanghai was just the opposite. MouseCalc 1.1 stumbled, repeatedly hanging up but freeing itself with Control-Reset.

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Homeworker 2.1 worked all right, but the video never jelled—the mousetext character set scrambled highlighted menu choices, while the regular character set couldn't draw menu border lines.

While the Laser emulates an enhanced Ile, software sees the Ace 500 as a IIc—AppleWorks, for instance, offering "Built-in disk" and "Ext. disk IIc" instead of "Drive 1" and "Drive 2." I was impressed when the Ace booted and ran Apple's IIc System Utilities, which neither a Laser nor Ile can, though video gremlins struck again—each menu choice appeared twice on screen as I selected it, and the help screen had been through a blender.

I haven't discussed the rival machines' most telling differences yet. While the Laser has an expansion slot (compatible with the Ile's slot 7), the Franklin has more memory—256K standard, expandable to 512K. The second 128K follows Applied Engineering's RamWorks/Z-RAM or Check-

mate Technology's MultiRam C standard; the FDOS disk includes drivers for both FDOS and ProDOS RAM disks, and (for 512K Aces) a program that automatically loads AppleWorks 1.1, 1.2, or 1.3 onto the RAM disk.

The extra memory is a nice feature, but the advent of ProDOS and AppleWorks 2.0 has put some large handwriting on the wall concerning Apple—instead of RamWorks—standard memory expansion. A Franklin (or a Laser, for that matter) with an internal Apple-standard memory card would be more up-to-date.

Sensible Writer recognized the Franklin's RAM, as did Applied's Super AppleWorks Desktop Expander (version 5.3.1, with AppleWorks 1.3) and AppleWorks 2 Expander (version 1.01, with AppleWorks 2.0). Both Applied programs saw the 500 as a IIc with a 128K Z-RAM card installed, which passed Applied's diagnostic bit test but failed on the eighth pass of the overall test. The 2.0 Expander

worked perfectly, boosting the AppleWorks desktop from 56K to 116K. The 1.3 Expander, however, reported successful installation and started AppleWorks with an enlarged (109K) desktop, but when I loaded a word-processing file AppleWorks went berserk: It brought up the word-processing screen with the filename at top, but the file turned out to be AppleWorks' help screen.

WORTH A LOOK

Every non-Apple computer has individual compatibility hiccups, and the Franklin's are relatively minor. (Also, since the 500 is in more retail stores than the Laser, you're more likely to find a dealer who'll let you try your favorite software before you buy.)

If you're attracted by its sleek design and nice touches, such as the standard/mousetext switch, and don't need to add expansion cards, the Ace 500 is a fair alternative to the IIc. It's an affordable, compatible machine. I just can't recommend it as enthusiastically as I might the Laser. ■

Eric Grevstad
inCider staff

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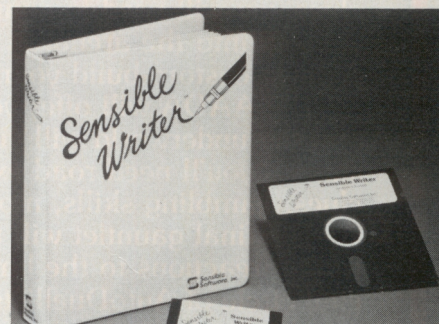
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