

AST Premium[®] Exec[™] Series

Premium Exec 386SX/20 • Premium Exec 286/12

Product Guide



AST Premium Exec Series

Features Overview

AST's Premium Exec personal computers pack the highest-performance processing and more standard features into a package barely larger than a notebook and weighing only 6½ lbs. (2.9 kg). Premium Exec notebooks measure only 11.4" x 9" x 2.25" (28.9/5.7/22.8 cm) and are designed to fit vertically in a standard briefcase.

Both models of the Premium Exec notebook computer include the latest flat panel display technology providing high-resolution VGA on a "paper white" screen capable of supporting 32 shades of gray. Other standard features include an 82-/83-key keyboard with 101-/102-key functionality; a slimline 3.5" floppy, 20 or 40 MB hard disk storage and expansion capabilities for additional memory and optional modems.

The Premium Exec 386SX/20 offers 20 MHz, 386SX™ processing power, 2 MB of high-performance, interleaved, page-mode RAM memory (expandable to 8 MB), a 3½", 1.44 MB floppy drive and either a 20 or 40 MB fast-access hard disk drive.

The Premium Exec 286/12 offers 12 MHz, 80286 processing power, 1 MB of high-performance, interleaved, page-mode RAM memory (expandable to 8 MB), a 3½", 1.44 MB floppy drive and either a 20 or 40 MB fast-access hard disk drive. The Premium Exec 286/12 can be easily upgraded to a 20 MHz, 386SX processor. For calculation-intensive programs, we've added support for either a 387SX™ or 80287™ math coprocessor.

The Premium Exec notebooks are designed around a modular architecture which separates the processor component from the motherboard. This design — pioneered by AST in desktop computers — offers the ability to simply interchange the Premium Exec 286/12's processor module with a 386SX/20 processor module. There is no compromise in performance or features.

The Premium Exec's keyboard provides all 82-keys, including function keys and dedicated word processing keys (such as "home," "Page Down," etc.) We also designed in the same inverted "T" cursor pad found on your desktop computer. An embedded numeric keypad is included to provide easy 10-key pad operation. Keyboard status lights let you monitor keyboard functions.

Both Premium Exec computers come with extensive power management features. These include: AST's MS-DOS® 3.3 and AST BIOS with built-in power management for maintaining battery life; programmable timeouts to shut down system components when not in use; a suspend/resume feature which shuts down the entire system temporarily without losing data; and AST's special processor clock-speed control feature integrated into the notebooks' core logic, providing the most efficient management of battery life.

Built-in, industry-standard interfaces give you the ability to connect to a wide variety of devices, including: printers, external keyboards, numeric keypads, pointing devices and VGA monitors.

Options from AST include either an internal 2400 Data Modem or an internal 2400 Data Modem with 9600 FAX/Send capabilities. Both modems support data compression standards to double data transfer rates.

We've also included LapLink III™ for easy file transfer and Battery Watch™ to let you quickly check your available power.

Premium Exec notebook computers offer the same quality, reliability and compatibility as AST's Premium and Bravo desktop computers. AST's dedication to producing high-performance computers combining value and extra features is evident in both Premium Exec notebooks.

STANDARD CONFIGURATIONS AND OPTIONS

Premium Exec 386SX/20

Model 23V

- ▶ Intel® 386SX™ 20 MHz processor
- ▶ 20 MB fast-access, 2.5" lightweight hard disk drive
- ▶ 2 MB of high-performance, interleaved, page-mode RAM memory (expandable to 8 MB)

Model 43V

- ▶ Intel® 386SX™ 20 MHz processor
- ▶ 40 MB fast-access, 2.5" lightweight hard disk drive
- ▶ 2 MB of high-performance, interleaved, page-mode RAM memory (expandable to 8 MB)

Premium Exec 286/12

Model 23V

- ▶ 80286, 12 MHz processor
- ▶ 20 MB fast-access, 2.5" lightweight hard disk drive
- ▶ 1 MB of high-performance, interleaved, page-mode RAM memory (expandable to 8 MB)

Model 43V

- ▶ 80286, 12 MHz processor
- ▶ 40 MB fast-access, 2.5" lightweight hard disk drive
- ▶ 1 MB of high-performance, interleaved, page-mode RAM memory (expandable to 8 MB)

Standard Configurations On All Models

- ▶ 3.5" 1.44 MB floppy disk drive
- ▶ VGA "paperwhite" display with 32 gray shades
- ▶ MS-DOS 3.3 from AST
- ▶ Laplink III™ from Travelling Software
- ▶ Serial Interface Cable
- ▶ Battery Watch™ from Travelling Software
- ▶ Tilt Stand
- ▶ Battery Pack
- ▶ 110/220V Auto Sensing AC Adapter
- ▶ Carrying Case With Handle
- ▶ AST Utilities (Includes EMS 4.0 AST Cache, Etc.)
- ▶ Complete Documentation

Memory Expansion Options

- ▶ 1 MB upgrade (1 MB SIMMs)
- ▶ 4 MB upgrade (4 MB SIMMs)

Other Options

- ▶ 2400 BAUD Data Modem (U.S. and Canada only*)
- ▶ 2400 BAUD Data Modem/9600 BAUD FAX/Send (U.S. only*)
- ▶ Numeric Keypad
- ▶ Leather Accessory Case
- ▶ Nylon Accessory Case
- ▶ Automobile Adapter/Battery Charger With Built-in Quick Charger
- ▶ Lightweight Small Trickle Battery Charger
- ▶ Secondary Battery Packs
- ▶ 1 MB and 4 MB Memory Expansion SIMMs
- ▶ 386SX/20 Upgrade Module (for Premium Exec 286/12)
- ▶ External Charger (for use with AC adapter, auto adapter or trickle charger to charge a secondary battery pack)

Monitors

- ▶ AST Super VGA Monitor
- ▶ AST Color VGA Monitor
- ▶ AST Monochrome VGA Monitor

Additional Software Options

- ▶ MS-DOS 4.0
- ▶ OS/2®

*Contact your local AST office for details.

AST Premium Exec Series

Features

Benefits

► MICROPROCESSOR & COPROCESSOR

20 MHz, 386SX or 12 MHz,
80286 Processor

Speeds processing of CPU-intensive applications using state-of-the-art notebook processor technology. The 20 MHz 386SX is the highest level of processing power available in a notebook computer.

Support For 387SX or
80287 Math Coprocessor

A math coprocessor increases response time for numeric intensive calculations.

► RAM MEMORY

Two Megabytes Memory Standard,
Expandable To Eight Megabytes On
Premium Exec 386SX; One Megabyte
Memory Standard, Expandable to Eight
Megabytes on Premium Exec 286/12

Generous standard memory allows for 640Kb conventional memory for DOS, 128Kb of Shadow RAM for shadowing both system and video BIOS to boost performance, and one megabyte of memory left over (256Kb with Premium Exec 286/12) for extended or expanded memory. Additional memory (to 8 MB) allows growth of system memory to support memory-demanding operating systems or applications. The computers support two SIMM sockets to accommodate 1 or 4 MB SIMMs. The second SIMM socket is user upgradeable. The memory subsystem is designed with interleaved page-mode memory for high performance.

EMS 4.0 Support

Allows fast manipulation of large amounts of data running under expanded memory.

► TRUE NOTEBOOK COMPUTER

Weights Only 6.5 lbs. (2.9 kg) and
Measures Only 11.4" × 9" × 2.25"
(28.9/5.7/22.8 cm)

Easy to carry and small enough to fit vertically in a standard brief case.

► SECURITY FEATURES

Password Security

Enabling the system password option in AST's Setup Menu to prevent unauthorized access to the system and files stored on the hard disk. Your data is secure on your hard disk, no matter where you may leave your computer.

► VIDEO DISPLAY

CCFT Backlit Film Supertwist LCD Display

AST VGA graphics supporting VGA, EGA, CGA and Hercules® graphics and text modes for high-resolution, 32 gray scale graphics. Provides 640 × 480 monochrome text and graphics resolution. The advanced CCFT (Cold Cathode Fluorescent Tube) backlight provides up to three times longer life than older EL (Electro-luminescent) technology. The new film supertwist LCD display provides a clear, paperwhite screen that's lighter and brighter than ever before.

Adjustable Brightness,
Contrast Display Angle

High-contrast display is easy to read and adjustable display angle provides maximum viewing comfort.

► STANDARD INTERFACES

Interfaces Include: One Bidirectional
Parallel; One Asynchronous 9-Pin; One
External VGA Monitor and One Keypad/
External Keyboard/Mouse; One Interface
For External Power Source

Provides for the connection of parallel and serial devices; a standard CRT VGA Monitor (either color or monochrome) for home or office use and an external keypad interface that allows you to connect AST's optional number keypad, a pointing device or an external PS/2®-compatible keyboard.

► CLOCK

Real-Time, Battery-Powered Clock/
Calendar On The System Board

Provides the current time and date during power-on or system reset. This saves time by not having to reset the clock each time the unit is turned on.

► KEYBOARD

82-/83-Key Keyboard; LED Indicators;
Cursor Pad and Word Processing Keys

Standard layout increases productivity and enables faster cursor movement and easier numeric input. Provides full desktop keyboard functionality with 101-/102-key keyboard emulation. An integrated numeric keypad provides easy input for numeric intensive operations. Keyboard LEDs provide easy recognition of keyboard status. Cursor Pad is a standard inverted "T" for easy cursor movement. Dedicated word processing keys include: Home, End, PgUp, PgDn, Ins and Del. Standard key spacing provides maximum comfort.

AST Premium Exec Series

Features

Benefits

► POWER

NiCad Battery Pack; AC Adapter

Provides more than three hours of power for system when AC power is not available. Secondary batteries allow quick replacement of a discharged battery. The AC adapter auto senses 115V or 230V power for ease of use in international travel. A Fast Recharge ability allows the battery to be recharged in less than three hours when the computer is turned off.

Low Battery Indicator

The Low Battery (LED) Indicator notifies the user to replace or recharge the battery.

Backup Battery

Small NiCad battery saves system data while you're changing the main NiCad battery.

► POWER MANAGEMENT FEATURES

System Suspend/Resume

Allows the user to save the operating state of the computer, including the contents of RAM and the display, by simply closing the cover with the power switch on. With the cover closed all system components will be powered down (or put to sleep) except memory and all system activity/processing will be suspended. When the cover is reopened, the computer's operating status will resume at the point the cover was closed.

Turbo Mode

Turbo Mode is designed to enhance performance of applications which are continuously processing.

► STANDARD SOFTWARE AND UTILITIES

MS-DOS 3.3 From AST

MS-DOS 3.3 from AST is included. It includes special power management functions for extended battery life.

AST Disk Cache Utility

Increases the performance of fixed disk drive read operations by improving access to data stored on the fixed disk drive. This also helps to conserve battery life by reducing accesses to the hard drive.

AST Expanded Memory Manager (ASTEMM)
(REMM For Premium Exec 286/12).

Supports Version 4.0 of the Expanded Memory Specifications (EMS), enabling applications to access memory beyond the 640Kb MS-DOS limitation. This allows the fast and easy manipulation of large amounts of data, without purchasing additional hardware.

LapLink III®

Provides quick and easy transfer of data between the Premium Exec and desktop computers without the need of floppy disks. Just connect the serial cable provided with the Premium Exec from the Premium Exec's serial port to the serial port of your desktop computer. Then, you can transfer files as if both computers' hard drives were in the same system.

Battery Watch®

Battery Watch has been especially customized for the Premium Exec to frequently monitor system power consumption and measure battery life.

AST Technical Specifications

	Premium Exec 386SX/20	Premium Exec 286/12
MICROPROCESSOR		
Type	80386SX	80286
Operating Speed	20 MHz	12 MHz
Address Bus/Data Bus	16-bit	16-bit
Physical/Virtual Address	16 MB/64 TB	1 MB/16 MB
Protected/Virtual 8086 Mode	Yes	No
Packaging	100 (PQFT)	68 Pin (PLCC)

AST Premium Exec Series

Technical Specifications

COPROCESSOR

Optional	387SX-20	80287-12
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Packaging	68 Pin (PLCC)	44 Pin (PLCC)
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EXPANSION SLOTS	One AST expansion slot	One AST expansion slot
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AST BIOS:	Allows most installation and setup procedures to be performed from the keyboard. SAA CUA compatible. BIOS-based password security. System and video BIOS shadowed for optimum performance.	
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KEYBOARD	82-key keyboard, 83-key version supplied depending on language configuration.	
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SECURITY	Password security includes System boot and keyboard.	
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VIDEO DISPLAY

Screen Size	8.5" Diagonal (21.3 cm)
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Aspect Ratio	1:1
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Dot Size	.24 mm
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Display Type	Film Supertwist
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Maximum Pixel Supported	640 × 480
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Video Modes Supported	VGA, EGA, CGA, Hercules®
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Character Display	80 × 25
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Horizontal Frequency	30 KHz
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Vertical Frequency	125 Hz
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Gray Shades Supported	32
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Dimensions

Height	133 mm
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Width	180 mm
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External VGA connector supports 640 × 480 (VGA mode)

NICAD BATTERY PACK

Height/Depth/Width	1.40" × 4.85" × 2.50" (3.5 × 12.2 × 6.3 cm)
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Weight	1.25 lbs. (.57 kg)
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Nominal Open Circuit Voltage	4.8 Volts
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Capacity (AMP Hours)	5 Amp Hours
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Power (Watts)	24 Watts
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AC ADAPTER (with Quick Charger)

Height/Depth/Width	2.20" × 6.40" × 3.10" (5.5 × 16 × 7.8 cm)
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Weight	1.30 lbs. (.59 kg)
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Operating Voltage	90V – 264V Auto Sensing
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Line Frequency	47 Hz – 63 Hz
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Steady-State Power	12 Watts output – 23 Watts input
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Peak Power	18 Watts output – 27 Watts input
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Operating Current	260 ma @ 115 Volts – 140 ma @ 230 Volts
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AUTO ADAPTER (Optional)

Height/Depth/Width	2.20" × 6.40" × 3.10" (5.5 × 16 × 7.8 cm)
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Weight	1.65 lbs. (.75 kg)
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Operating Voltage	9 – 24 Volts
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Steady-State Power	12 Watts output – 23 Watts input
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Peak Power	18 Watts output – 27 Watts input
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Operating Current	3 Amps max., 1 Amp typical
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AST Premium Exec Series

Technical Specifications

EXTERNAL BATTERY CHARGER (Optional)

Height/Depth/Width	2.25" x 3.50" x 2.95" (5.6 x 8.8 x 7.4 cm)
Weight	2.95 lbs. (1.3 kg)
Nominal Operating Voltage	10 Volts max.
Average Power	13 Watts typical
Maximum Power	18 Watts

TRICKLE CHARGER (Optional)

Height/Depth/Width	2.20" x 6.40" x 3.10" (5.5 x 16 x 7.8 cm)
Weight	0.6 lbs. (0.27 kg)
Input Voltage	115V, 60 Hz AC or 220V, 50 Hz AC
Output Voltage	6V, 400 ma DC

PHYSICAL MEASUREMENTS

System Unit	
Width/Height/Depth	11.4" x 2.25" x 9" (28.9 x 5.7 x 22.8 cm)
Weight (Model 23V)	6.5 lbs. (2.9 kg)
Includes Battery Pack	

TEMPERATURE RANGE

Operating	50° to 95°F; 10° to 35°C
Shipping	-22° to 140°F; -30° to 50°C

RELATIVE HUMIDITY (non-condensing)

Operating	20 to 80%
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DISKETTE DRIVE

Standard	3.5", 1.44 MB
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INPUT/OUTPUT PORTS

Serial	1
Parallel	1 (bidirectional)
Monitor Interface	1 (For external VGA monitor — color or monochrome)
Mouse/External Keyboard	1 6-pin PS/2® Connector (For external 101-/102-key keyboard, numeric keypad or pointing device)

REAL-TIME CLOCK CALENDAR

Standard Feature

FRONT PANEL CONTROLS

Contrast control, brightness control, power on/off. Indicator lights for operating speed, fixed disk access, power on/off and battery life.

SOFTWARE AND DOCUMENTATION

Standard	MS-DOS 3.3 with built-in power management functions. AST Utility Software including ASTdisk™ RAM disk; SuperSpool™ print spooler; ASTEMM; (286/12 uses REMM) ASTCache™ disk caching software; AST SETUP; AST SETUP Interface and complete documentation. Also includes LapLink III and Battery Watch.
Optional	Microsoft OS/2 from AST, MS-DOS 4.01

HARD DRIVE CAPABILITIES

Standard	20 MB, 40 MB, Fast access 2.5", lightweight drives.
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AST Premium Exec Series

Technical Specifications

Storage Device Performance	Premium Exec 386SX/20 & 286/12	Premium Exec 386SX/20 & 286/12
Standard Configurations	Model 23V	Model 43V
Diskette Drives	1.44 MB	1.44 MB
Diskette Size	3.5"	3.5"
Fixed Disk Drives	20 MB	40 MB
Formatted Capacity	20 MB	40 MB
Drive Height (With Drive Frame)	.69"	.75"
Interface	IDE	IDE
Transfer Rate (bits/sec)	10 Mbits/s	12 Mbits/s
Sector Interleave	1:1	1:1
Access Time	23 ms	19 ms
MODEMS (Optional)		
DATA MODEM (U.S. and Canada only; contact your local AST office.)		
Maximum Baud Rate	2400	
Protocol Supported	CCITT V.22bis, V.21, V.22; MNP5 (supported in software); Bell 103 and 212A	
Features	Hayes AT command set, MTEZ V.103 software	
DATA FAX/SEND MODEM (U.S. only; contact your local AST office.)		
Maximum Baud Rate — Data	2400	
Maximum Baud Rate — FAX	9600	
FAX Send Capability	Yes	
Protocols Supported	CCITT V.22bis, V.21, V.22, V.42, MNP5; CCITT V.29, V.27; Bell 103 and 212A	
EXTERNAL NUMERIC KEYPAD (Optional)		
Height/Depth/Width	1.30" × 5.75" × 3.60" (3.3 × 14 × 9 cm)	
Weight	0.3 lbs. (.13 kg)	
Number Of Keys	17	
Cable Length	24" (60 cm)	
Interface (Aug Type)	6 Pos. Mini-Din	
WARRANTY	One year limited warranty — Optional ExeCare (U.S. and Canada only; contact your local AST office)	

AST Premium Exec Series

Questions and Answers

How can I upgrade a Premium Exec 286/12 to a 386SX/20?

By purchasing the 386SX/20 upgrade, you can have any AST authorized reseller upgrade your Premium Exec 286/12. The reseller will simply exchange the 286/12 processor module with the 386SX/20 module. In addition, you may purchase a 1 MB memory upgrade to achieve the identical features and functions of a factory-equipped Premium Exec 386SX/20.

What types of adapters are available to power the Premium Exec?

AST provides an AC adapter standard, and several other adapters as optional equipment. The AC adapter plugs into the Premium Exec's power adapter port and into a 115/230 volt power source and has two modes of operation. With the AC adapter plugged into the Premium Exec and the Premium Exec turned on, the AC adapter will power the system and trickle charge the battery. With the Premium Exec turned off, the AC adapter will fast-charge the battery. The automobile adapter option provides the same two modes of operation, but plugs into the cigarette lighter in an auto. The trickle charger option is smaller and lighter than the AC adapter and provides the trickle charge mode of operation only. AST also offers an external charger option that holds a spare battery and contains charging circuitry which can be charged by any of the above chargers.

How can you expand the system memory to 8 MB?

The Premium Execs are designed with 2 SIMM sockets that support either a 1 MB or 4 MB SIMM. The Premium Exec 286 is factory configured with a 1 MB SIMM in the first socket. The Premium Exec 386SX/20 is factory configured with a 1 MB SIMM in both sockets. The second SIMM socket which is accessible to the user, can be easily upgraded by the user. The first SIMM socket must be upgraded by the dealer.

How can I connect the Premium Exec to a network?

There are several third-party products available that provide network connections through the Premium Execs' parallel port. For example, Xircom® manufactures several different modules providing Ethernet, Arcnet or Token Ring Connections. These are compatible with various network operating systems, such as Novell® Banyon® and 3Com®.

What math coprocessors are supported by the Premium Exec?

The Premium Exec 286/12 supports the low-power version of the 80287 from Intel to conserve power when using a math coprocessor. The Premium Exec 386SX/20 supports Intel's 387SX and a low-power version, Fasmath™ CX-83S87-20-KP, from Cyrix™.

How can I replace the NiCad battery pack with a fully-charged spare battery pack?

The battery pack can be replaced simply by suspending the operation of the system (close cover when the power is on), unlatch the side door, slide the battery pack out, and insert the spare battery pack. Open the cover to resume operation. An internal smaller NiCad backup battery is integrated into the Premium Exec to power the system for a few minutes while you change the battery.

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