

Options by IBM: Processor Upgrade Products

The Options™ by IBM® offerings now include two processor upgrade products:

- The **IBM 486SLC2 Processor Upgrade** allows PS/2 Model 55 SX customers to migrate from an existing 80386SX processor to an IBM Microelectronics 486SLC2 processor.
- The **IBM Blue Lightning 486BL2 Processor Upgrade** migrates PS/2 Model 70 and 80 systems from existing 80386DX processors to IBM Microelectronics Blue Lightning 486BL2 processors.

By simply installing these IBM processor upgrades, the investment in the original machine remains intact, while performance increases to the next level of computing power. The IBM 486SLC2 and IBM 486BL2 processors offer exceptional performance and are specifically tuned for the demands of advanced operating system and application environments.

These processors are integrated 32-bit microprocessors that offer a 486 instruction set, a 33/66MHz clock, and 16KB of internal cache. The clock-doubling speed and internal 16KB cache may enhance performance, depending on the application, up to 10 times over the 386SX processor with the IBM 486SLC2 Processor Upgrade, and up to seven times over the 386DX processor with the IBM Blue Lightning 486BL2 Processor Upgrade.

Both processor upgrades use an optimized instruction set for optimal price/performance and support enhanced CISC (complex instruction set computer) architecture, ensuring compatibility with this architecture.

Description	Part Number	Planned Availability Date	Single Unit Price
IBM 486SLC2 Processor Upgrade	13H6694	11/15/94	\$259
IBM 486BL2 Processor Upgrade	13H6698	10/25/94	345

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IN BRIEF . . .

IBM 486SLC2 Processor Upgrade

- ◆ Upgrades a PS/2 Model 55 SX 80386SX processor to a 32-bit 486SLC2 33/66MHz processor (32-bit processor, 24-bit memory addressing, and 16-bit I/O bus)

IBM Blue Lightning 486BL2 Processor Upgrade

- ◆ Upgrades a PS/2 Model 70/80 80386DX 33/66MHz processor to a 32-bit Blue Lightning 486BL2 (32-bit processor, 32-bit memory addressing, and 32-bit I/O bus)

Common features:

- ◆ 16KB of L1 Internal Cache for additional processor performance
- ◆ Clock speed of 33/66MHz
- ◆ Optimized instruction set implementation
- ◆ IBM Microelectronics processor design
- ◆ Initial investment protected in existing hardware and software, while benefiting from an upgrade to the next level of processor performance
- ◆ Ease of installation — installs in minutes

For technical support:

- ◆ Call the HelpCenter® (800-426-7299)
or
- ◆ Request technical information via IBM Faxback (800-426-3395)

IBM 486SLC2 Processor Upgrade (13H6694)

The IBM 486SLC2 Processor Upgrade allows PS/2 Model 55 SX customers to migrate from an existing 80386SX processor to an IBM Microelectronics 486SLC2 processor. By simply installing these IBM processor upgrades, the investment in the original machine remains intact, while performance increases to the next level of computing power. The IBM 486SLC2 processor offers exceptional performance and is specifically tuned for the demands of advanced operating system and application environments.

The IBM 486SLC2 processor is an integrated 32-bit microprocessor that offers a 486 instruction set, a 33/66MHz clock, and 16KB of internal cache. The clock-doubling speed and internal 16KB cache may enhance performance up to 10 times over the 386SX processor (depending on the application). The IBM 486SLC2 processor uses an optimized instruction set for optimal price/performance and supports enhanced CISC (complex instruction set computer) architecture ensuring compatibility with this architecture. When installed on the current system, this processor upgrade allows the continued use of a 387SX Math CoProcessor if the clock speed is 33MHz.

The IBM 486SLC2 Processor Upgrade is packaged in the form of a daughter card and is designed to clip-on over the 386SX processor.

Planned Availability Date: November 15, 1994

Technical Information

Physical Specifications:

- Width: 47 mm (1.8 in.)
- Depth: 100 mm (3.9 in.)
- Height: 16 mm (0.6 in.)

Operating Environment:

- Temperature: 0°C to 60°C (32°F to 140°F)
- Relative humidity: 10% to 90% (non-condensing)

Agency Approvals: Meets FCC Class B and required operating criteria.

Original Country of Origin: U.S.A.

Note: This may vary through the life of this product.

Hardware Requirements — IBM Systems: The IBM 486SLC2 Processor Upgrade (#3853, 13H6694) is supported on the following platform:

Manufacturer	Machine Type	Model
PS/2 55 SX	8555	R31, R61, 031, 041, 061, 081

Software Requirement: A Utility Installation Diskette is provided in the option package.

Compatibility: This product has been designed by IBM Microelectronics to upgrade the processors on all models of the PS/2 55 SX system as specified in the **Hardware Requirements** section. IBM testing and external certification has been completed for the processor upgrade.

Planning Information

Cable Orders Required: No

Installation Time: 30 minutes (average)

Packaging: One Box

Shipment Group

- IBM 486SLC2 Processor Upgrade
- Installation publication
- Utility Installation Diskette
- Chip removal tool
- 6-pin cable connector

Note: An *Options by IBM Hardware Maintenance Manual Supplement* (S83G-8275) is available in support of this product.

Security, Auditability, and Control

This product uses the security and auditability features of the host hardware, software, and/or application software.

Terms and Conditions

Field Installable Feature: Yes

Warranty Period: One year

Warranty Service: Customer Carry-in Exchange (CCE)

Customer Setup: Yes

All other terms and conditions are the same as those applicable to the IBM machine type in which the feature is installed.

Help and Service Information

During the warranty period, technical support is available (800-426-7299) 24 hours a day, seven days a week, for answering any questions about your new IBM option. If you need warranty service, return or exchange is available. In addition, if your IBM option is installed in an IBM computer, you may be entitled to service at your location. Your technical support representative can help you determine the best alternative.

Charges

Description	Part Number	Single Unit Price*
486SLC2 Processor Upgrade	13H6694	\$259

* The single unit price reflects the purchase price for a single unit acquired from IBM, and is subject to change without notice. This price is for information purposes only, and shall not limit in any way the remarketers' ability to set their own prices for IBM products.

IBM 486BL2 Processor Upgrade (13H6698)

The IBM Blue Lightning 486BL2 Processor Upgrade migrates PS/2 Model 70 and 80 systems from existing 80386DX processors to IBM Microelectronics Blue Lightning 486BL2 processors. By simply installing these IBM processor upgrades, the investment in the original machine remains intact, while performance increases to the next level of computing power. The IBM 486BL2 processor offers exceptional performance and is specifically tuned for the demands of advanced operating system and application environments.

The IBM Blue Lightning 486BL2 processor is an integrated 32-bit microprocessor that offers a 486 instruction set, a 33/66MHz clock, and 16KB of internal cache. The clock-doubling speed and internal 16KB cache may enhance performance up to seven times over the 386DX processor (depending on the application). The IBM Blue Lightning 486BL2 processor uses an optimized instruction set for optimal price/performance and supports an enhanced CISC (complex instruction set computer) architecture ensuring compatibility with this architecture. When installed on the current system, this processor upgrade allows the continued use of a Math CoProcessor capability for non-integer application performance.

The IBM Blue Lightning 486BL2 Processor Upgrade is packaged in the form of a plug-in daughter card. The upgrade card plugs directly into the 80386DX processor socket — no bus slot is obstructed and no drivers or software is required. This processor upgrade can be installed on all PS/2 Model 70 or 80 systems as specified in the **Hardware Requirements** section.

Product Positioning: The IBM Blue Lightning 486BL2 Processor Upgrade increases PS/2 Model 70 and 80 systems to the next level of processor performance, advanced operating systems, and advanced applications. Initial investments are protected in current hardware and software. The internal 16K L1 Cache and the patented Hypertec write-back optimizing cache provide the primary means by which the upgrade card obtains its substantial performance increase.

Availability Date: October 25, 1994

Technical Information

Physical Specifications:

- Width: 85.00 mm (3.3 in.)
- Depth: 95.00 mm (3.7 in.)
- Height: 12.00 mm (0.5 in.)

Operating Environment:

- Temperature: 0°C to 60°C (32°F to 140°F)
- Relative humidity: 10% to 90% (non-condensing)

Agency Approvals: Meets FCC Class B and required operating criteria.

Original Country of Origin: U.S.A.

Note: This may vary through the life of this product.

Hardware Requirements — IBM Systems: The IBM Blue Lightning 486BL2 Processor Upgrade (#3854, 13H6698) is supported on the following platforms:

Manufacturer	Machine Type	Model
PS/2 70	8570	A16, A21, A61, A81, E61, 061, 081, 121, 161
PS/2 80	8580	A16, A21, A31, 041, 071, 081, 111, 121, 161, 311, 321

Software Requirement: A Utility Installation Diskette is provided in the option package.

Compatibility: This product has been designed by IBM Microelectronics to upgrade the processors on all 386DX PS/2 70/80 systems as specified in the

Hardware Requirements section. IBM testing and external certification has been completed for the processor upgrade.

Planning Information

Cable Orders Required: No

Installation Time: 30 minutes (average)

Packaging: One box

Shipment Group

- IBM 486BL2 Processor Upgrade
- Installation publication
- Utility Installation Diskette
- 80386DX chip extractor tool
- 132-pin PGA socket extender

Note: An *Options by IBM Hardware Maintenance Manual Supplement* (S83G-8275) is available in support of this product.

Security, Auditability and Control

This product uses the security and auditability features of the host hardware, software, and/or application software.

Terms and Conditions

Field Installable Feature: Yes

Warranty Period: One year

Warranty Service: Customer Carry-in Exchange (CCE)

Customer Setup: Yes

All other terms and conditions are the same as those applicable to the IBM machine type in which the feature is installed.

Help and Service Information

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Charges

Description	Part Number	Single Unit Price*
486BL2 Processor Upgrade	13H6698	\$345

* The single unit price reflects the purchase price for a single unit acquired from IBM, and is subject to change without notice. This price is for information purposes only, and shall not limit in any way the remarketers' ability to set their own prices for IBM products.