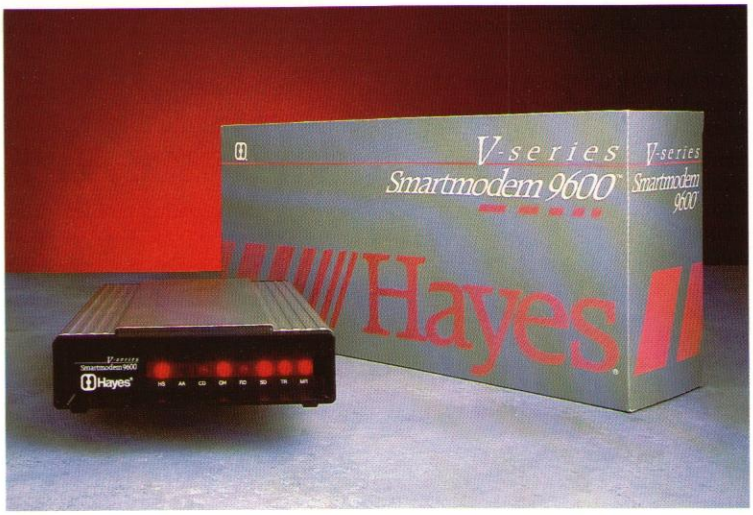
V-series Smartmodem 9600™



The Hayes V-series Smartmodem 9600 represents a significant advance in telecommunications. With the V-series Smartmodem 9600 you can now send and receive data across dial-up or conditioned leased lines at 9600 bps—and can achieve up to 19,200 bps throughput with adaptive compression.

The V-series Smartmodem 9600's advanced design provides a whole new set of telecomputing capabilities while maintaining compatibility with the existing, installed base of Hayes modems. In addition to all the functionality and dependability you've come to expect from Hayes, the V-series Smartmodem 9600 offers fast turnaround, half-duplex V.32 communications at a considerably lower price than V.32 full-duplex modems; error-control and forward error-correction; increased throughput with adaptive compression in error-control mode; and automatic feature negotiation.

Fast Turnaround, Ping-Pong Operation—A "ping-pong" protocol, used at 9600 bps and 4800 bps, incorporates special synchronizing techniques for fast line turnaround to simulate full-duplex V.32 operation, in terminal or interactive mode, that is indistinguishable from full-duplex operation. When performing fast downloads of large data files from mainframes to PCs, or full-screen data transfers where volume of data in the reverse direction is small (e.g., on-line airline reservation scheduling), the ping-pong protocol automatically allocates the direction of activity on the line in proportion to the volume of data being transmitted.

Error-Control—Error-control provides a reliable means of correcting errors that may occur during transmission due to noise on telephone lines. When the V-series Smartmodem 9600 connects with a remote V-series product, it initiates error-control, using an ARQ protocol that automatically requests retransmission of any corrupted data.

Error-control is achieved with Asynchronous Framing Technique (AFT), or a protocol based on the LAP-B (Link Access Protocol-Balanced) link level portion of X.25 at 2400 bps and 1200 bps, and an extension of LAP-B at 9600 bps and 4800 bps. At 9600 bps and 4800 bps, the V-series Smartmodem 9600 implements Trellis Encoding/Viterbi Decoding, a forward error correcting technique which allows the modem to transmit data accurately even across noisy telephone lines at very high speeds.

Adaptive Compression—When communicating with other V-series hardware, the V-series Smartmodem 9600 uses adaptive compression to increase throughput and provide up to twice the normal data transfer, lowering both transmission costs and connect time. Adaptive compression adjusts to the type of data being transmitted, and is automatically enabled when the modem is operating in error-control mode; no user interaction or preparation of data is required at either end of the connection.

Automatic Feature Negotiation—Feature negotiation automatically distinguishes between V-series hardware and other Hayes modems, then analyzes all options (including speed) available, selecting the combination that maximizes data transmission efficiency. On initial modem handshake, the V-series Smartmodem 9600 has the capability to fall back from 9600 bps to 4800, 2400, 1200, or 300 bps.

Hayes®

V-series Smartmodem 9600

Features	Benefits
9600, 4800, 2400, 1200, and 0-300 bps transmission	Provides automatic speed selection on initial handshake in Bell and CCITT modes. Makes the highest connection possible.
Hayes Standard AT Command Set expansion	User control with complete Hayes AT Command Set, plus subset of special V-series commands.
Asynchronous and synchronous transmission	Transmission flexibility enables communication with a variety of devices through a single modem and a single communications port.
Error-control	Provides maximum reliability of communications with other V-series hardware. Especially suited to transmitting program code or important text files or spreadsheets. Implementation of the LAP-B link level portion of X.25 or Asynchronous Framing Technique (AFT) at 2400 bps and 1200 bps, and extended LAP-B derivative at 9600 bps and 4800 bps, allow point-to-point error-control.
Adaptive compression	On-line compression increases data throughput in error-control mode, providing up to twice the normal data transfer and lowering both transmission costs and connect time.

Features	Benefits
Automatic feature negotiation	Automatically distinguishes between remote V-series hardware and other Hayes modems to establish appropriate connection. Analyzes all options (including speed) available and selects combination that maximizes data transmission efficiency. No user interaction required.
Flow-control options	RTS/CTS, Transparent XON/XOFF, XON/XOFF (Stop/Start), or none.
Storable configuration profiles	Stores two user configuration profiles in nonvolatile memory in addition to factory configuration profile.
Stored telephone numbers	Stores up to four telephone numbers (36 digits) in nonvolatile memory for asynchronous autodial.
Designate user profile	Designate either of two stored configuration profiles as the default to recall when the modem is powered up or reset.
View configuration profiles	Use modem commands to display the active and stored configuration profiles and any telephone numbers stored in the modem's nonvolatile memory.
Call progress monitoring	Recognizes dial tone, ringback signal, and busy signal.
Enhanced diagnostic testing	Loopback tests and modem firmware tests check the modem's firmware ROM and the communication link to diagnose communication problems for quick correction.

Specifications Summary

Asynchronous data formats	7 data bits with mark, space, even, odd, or no parity; 8 data bits with no parity; 1 or 2 stop bits.
Communication standards	Bell 103 (0-300 bps); Bell 212A/CCITT V.22 (1200 bps); CCITT V.22 bis (2400 bps); V.32 HDX (4800 bps); V.32 HDX (9600 bps).
Forward error correction	Trellis Encoding/Viterbi Decoding in all 9600 bps modes.
Operation	Full-duplex at 2400 bps and below; half-duplex at 9600 bps and 4800 bps using "ping-pong" protocol for fast-turnaround to simulate V.32 full-duplex operation.
Dialing capability	Command-selectable tone or pulse dialing; tone duration and spacing variable from 50 to 255 milliseconds.
Command buffer	255 characters.
Line type	Two-wire, dial-up and conditioned leased line operation.
Echo suppressor defeat tones	Bell standard: 2225 Hz±10 Hz CCITT standard: 2100 Hz±15 Hz
Receive signal frequency	±7 Hz tolerance
Status indicators	Eight LED indicators on front panel.
Interface	RS-232C configured as DCE.
Rear panel	Two modular telephone jacks (connects to phone system with modular jacks RJ11, RJ12, RJ13, RJ41S, and RJ45S); one RS-232C female connector (DB-25); one female Hayes power supply connector; on-off switch.
Audio monitor	Two-inch speaker with programmable volume control.
Power supply	UL-listed 120 VAC 60 Hz input; 14 VAC output; rectified, filtered, and regulated inside the modem. 6.5 watts maximum power consumption.
Size	(cm) 4.4 x 13.97 x 24.38; (in) 1.75 x 5.5 x 9.6
Hardware requirements	Computer (and suitable communication software), terminal, or printer with an RS-232C serial port; shielded RS-232C cable with a DB-25 connector; cables that support full functionality can be obtained from your dealer or directly from Hayes.
Software compatibility	Smartcom III™ communication software (on both 3½" and 5¼" disks) takes full advantage of the modem's asynchronous capabilities and provides a complete communication environment.
Registration/Certification	FCC registered for direct connection to the phone system. Certified to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of FCC rules.
Warranty	Two year limited warranty—extendable for an additional two years.

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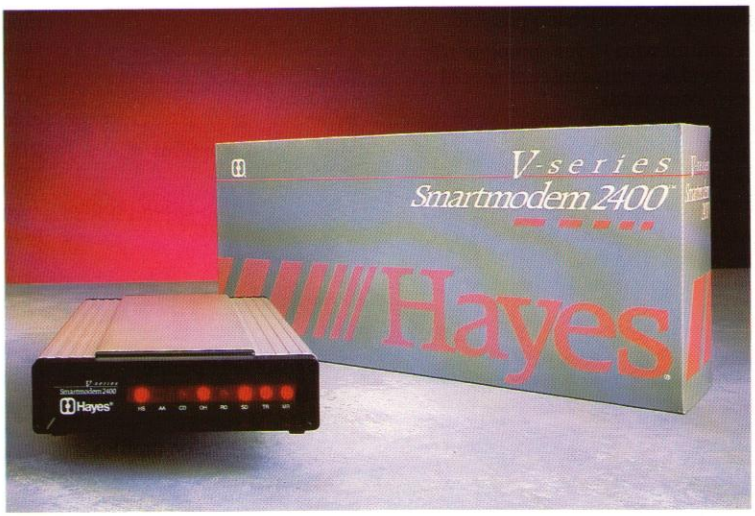
V-series Smartmodem 2400™



The Hayes V-series Smartmodem 2400 offers a new set of advanced features that increase the speed and reliability of telecommunications across dial-up or conditioned leased lines, while maintaining compatibility with other Hayes modems. Retaining the functionality of the Smartmodem 2400™ the V-series Smartmodem 2400 also provides error-control, increased throughput with adaptive compression in error-control mode, and automatic feature negotiation. With a V-series Smartmodem 2400, your RS-232C compatible equipment can now send and receive data at 2400 bps across an error-control link—and can achieve up to 4800 bps effective throughput using adaptive compression.

Error-Control—Error-control provides a reliable means of correcting errors that may occur during transmission due to noise on telephone lines. When the V-series Smartmodem 2400 connects with a remote V-series product, it initiates error-control, using an ARQ protocol that automatically requests retransmission of any corrupted data.

Error-control is achieved with Asynchronous Framing Technique (AFT) or a protocol based on the LAP-B (Link Access Protocol-Balanced) link level portion of X.25 at 2400 bps and 1200 bps.

Adaptive Compression—When communicating with other V-series hardware, the V-series Smartmodem 2400 significantly increases data throughput above standard connections with adaptive compression, providing up to twice the normal data transfer and lowering both transmission costs and connect time.

Adaptive compression adjusts to the type of data being transmitted, and is automatically enabled when the modem is operating in error-control mode; no user interaction or preparation of data is required at either end of the connection.

Automatic Feature Negotiation—Feature negotiation automatically distinguishes between V-series hardware and other Hayes modems, then analyzes all options (including speed) available, selecting the combination that maximizes data transmission efficiency.

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V-series Smartmodem 2400

Features and Benefits

Features	Benefits
2400, 1200, and 300 bps transmission	Provides automatic speed selection on initial handshake in Bell and CCITT modes. Makes highest connection possible.
Hayes Standard AT Command Set expansion	User control with Hayes complete AT Command Set, plus subset of special V-series commands.
Asynchronous and synchronous transmission	Transmission flexibility enables communication with a variety of devices through a single modem and a single communications port.
Error-control	Provides maximum reliability of communications with other V-series hardware. Especially suited to transmitting program code or important text files or spreadsheets. Implementation of the LAP-B link level portion of X.25 and Asynchronous Framing Technique (AFT) allows point-to-point error-control at 2400 bps and 1200 bps.
Adaptive compression	On-line compression increases data throughtput in error-control mode providing up to twice the normal data transfer and lowering both transmission costs and connect time.
Automatic feature negotiation	Automatically distinguishes between remote V-series hardware and other Hayes modems to establish the appropriate connection. Analyzes all options (including speed) available and selects combination that maximizes data transmission efficiency. No user interaction required.
Flow-control options	RTS/CTS,Transparent XON/XOFF, XON/XOFF (Stop/Start), or none.
Storable configuration profiles	Stores two user configuration profiles in nonvolatile memory in addition to factory configuration profile.
Stored telephone numbers	Stores up to four telephone numbers (36 digits) in nonvolatile memory for asynchronous autodial.
Designate user profile	Designate either of two stored configuration profiles as the default to recall when the modem is powered up or reset.
View configuration profiles	Use modem commands to display the active and stored configuration profiles and any telephone numbers stored in the modem's nonvolatile memory.
Call progress monitoring	Recognizes dial tone, ringback signal, and busy signal.
Enhanced diagnostic testing	Loopback tests and modem firmware tests check the modem's firmware ROM and the communication link to diagnose communication problems for quick correction.

Specifications Summary

Asynchronous data format	7 data bits with mark, space, even, odd, or no parity ; 8 data bits with no parity; 1 or 2 stop bits.
Communication standards	Bell 103 (0-300 bps); Bell 212A/CCITT V.22 (1200 bps); CCITT V.22 bis (2400 bps).
Operation	Full-duplex.
Dialing capability	Command-selectable tone or pulse dialing; tone duration and spacing variable from 50 to 255 milliseconds.
Command buffer	255 characters.
Line type	Two-wire, dial-up and conditioned leased line operation.
Echo suppressor defeat tones	Bell standard: 2225 Hz±10 Hz CCITT standard: 2100 Hz±15 Hz
Receive signal frequency tolerance	±7 Hz
Status indicators	Eight LED indicators on front panel.
Interface	RS-232C configured as DCE.
Rear panel	Two modular telephone jacks (connects to phone system with modular jacks RJ11, RJ12, RJ13, RJ41S, and RJ45S and RJ45S); one RS-232C female connector (DB-25); one female Hayes power supply connector; on-off switch.
Audio monitor	Two-inch speaker with programmable volume control.
Power supply	UL-listed 120 VAC 60 Hz input; 14 VAC output; rectified, filtered, and regulated inside the modem; 6.5 watts maximum power consumption.
Size	(cm) 4.4 x 13.97 x 24.38; (in) 1.75 x 5.5 x 9.6
Hardware requirements	Computer (and suitable communication software), terminal, or printer with an RS-232C serial port; shielded RS-232C cable with a DB-25 connector; cables that support full functionality can be obtained from your dealer or directly from Hayes.
Software compatibility	Smartcom III™ communication software (on both 3½" and 5¼" disks) takes full advantage of the V-series asynchronous capabilities and provides a complete communication environment. Available separately for the IBM® PC, XT, AT, and 100% compatibles.
Registration/Certification	FCC registered for direct connection to the phone system. Certified to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of FCC rules.
Warranty	Two year limited warranty—extendable for an additional two years.

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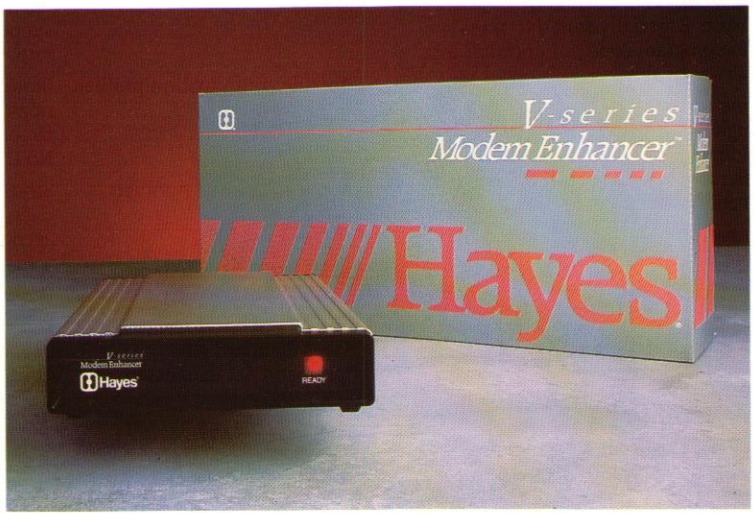
V-series Modem Enhancer™



The Hayes V-series Modem Enhancer, an external unit that resides between your personal computer and Hayes Smartmodem 2400™ or Smartmodem 1200,™ brings new V-series system technology to current users of Hayes external modems. With the V-series Modem Enhancer, your modem can take advantage of advanced V-series features—error-control, increased throughput with adaptive compression in error-control mode, automatic feature negotiation, and improved configuration capabilities—all while maintaining your modem's functionality and compatibility with other Hayes modems.

Error-Control—Error-control provides a reliable means of correcting errors that may occur during transmission due to noise on the telephone line. When your Smartmodem product, connected to the Enhancer, establishes communication with a remote V-series product, it initiates error-control, using an ARQ protocol that automatically requests retransmission of any corrupted data. Point-to-point error-control is achieved with Asynchronous Framing Technique (AFT) or a protocol based on the LAP-B (Link Access Protocol-Balanced) link level portion of X.25 at 2400 bps and 1200 bps.

Adaptive Compression—When communicating with other V-series hardware, the Enhancer uses adaptive compression to increase throughput up to twice the normal data transfer, lowering both transmission costs and connect time.

Adaptive compression adjusts to the type of data being transmitted, and is automatically enabled when the modem is operating in error-control mode; no user interaction or preparation of data is required at either end of the connection.

Automatic Feature Negotiation—Feature negotiation automatically distinguishes between V-series hardware and other Hayes modems, then analyzes all options (including speed) available, selecting the combination that maximizes data transmission efficiency.

Improved Configuration Capabilities—For the Smartmodem 1200 user, the V-series Modem Enhancer's nonvolatile memory adds three conveniences previously available only in Hayes 2400 bps modems—configuration without DIP switches, storage and retrieval of two user-defined profiles (in addition to the factory configuration), and storage of four phone numbers for asynchronous autodial. The V-series Modem Enhancer stores a variety of operating parameters in its nonvolatile memory, making even the Smartmodem 2400 more versatile.

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V-series Modem Enhancer

Features	Benefits
Error-control	Provides maximum reliability of communications with other Hayes V-series hardware. Especially suited to transmitting program code or important text files or spreadsheets.
Adaptive compression	On-line compression increases data throughput in error-control mode, providing up to twice the normal data transfer and lowering both transmission costs and connect time.
Automatic feature negotiation	Automatically distinguishes between remote V-series hardware and other Hayes modems to establish the appropriate connection. Analyzes all options (including speed) available for modem link and selects combination that maximizes data transmission efficiency. No user interaction required.
Flow-control options	RTS/CTS, Transparent XON/XOFF, XON/XOFF (Stop/Start), or none. Offers support to a variety of software implementations.
Storable configuration profiles	Stores two user configuration profiles in nonvolatile memory in addition to factory configuration profile. Ease of use. No DIP switches. Fully programmable.
Stored telephone numbers	Stores up to four telephone numbers (36 digits) in nonvolatile memory for asynchronous autodial.
Maintains Smartmodem product functionality	Adds new functionality to an installed Hayes external modem without inhibiting existing functionality.
Hayes Standard AT Command Set expansion	User control with complete Hayes AT Command Set, plus subset of special V-series commands.

Specifications Summary

Error-control	LAP-B derivative or Asynchronous Framing Technique (AFT) at 2400 bps and 1200 bps.
Command buffer	255 characters.
Nonvolatile memory	User-modifiable, nonvolatile memory stores up to four, 36-digit telephone numbers and two user profiles (in addition to the active configuration held in RAM and the factory configuration stored in ROM).
Status indicators	One LED indicator on front panel.
Interface	RS-232C configured as DCE.
Rear panel	Two RS-232C connectors (DB-25); one Hayes power supply connector.
Power pack	UL-listed 120 VAC 60 Hz input; 8.5 VAC output; rectified, filtered, and regulated inside the device.
Power consumption	Less than 10 watts.
Size	(cm) 3.81 x 13.97 x 24.38; (in) 1.5 x 5.5 x 9.6
Hardware requirements	External Hayes Smartmodem 2400 or Smartmodem 1200; computer (and suitable communication software), terminal, or printer with an RS-232C serial port. Two shielded RS-232C cables with DB-25 connectors—cables that support full functionality can be obtained from your dealer or directly from Hayes.
Software compatibility	Smartcom III™ communication software (on both 3½" and 5¼" disks) takes full advantage of the V-series Modem Enhancer's asynchronous capabilities and provides a complete communication environment.
Certification	Certified to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of FCC rules.
Warranty	Two year limited warranty—extendable for an additional two years.

As of May 19, 1987, Hayes is in the process of seeking Federal Communications Commission approval for the V-series Modem Enhancer. This device has not been approved by the Federal Communications Commission. This device has not been, and may not be, offered for sale or lease, or sold or leased until the approval of the FCC has been obtained.

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V-series Smartmodem 2400B™

The Hayes V-series Smartmodem 2400B offers a new set of advanced features that increase the speed and reliability of telecommunications across dial-up or conditioned leased lines, while maintaining compatibility with other Hayes modems. Retaining the functionality of the Smartmodem 2400B,™ the V-series Smartmodem 2400B also provides error-control, increased throughput with adaptive compression in error-control modes, and automatic feature negotiation. With a V-series Smartmodem 2400B, your IBM® PC, XT, AT, or 100% compatible can now send and receive data at 2400 bps across an error-control link—and can achieve up to 4800 bps effective throughput using adaptive compression.

Error-Control—Error-control provides a reliable means of correcting errors that may occur during transmission due to noise on telephone lines. When the V-series Smartmodem 2400B connects with a remote V-series product, it initiates error-control, using an ARQ protocol that automatically requests retransmission of any corrupted data.

Error-control is achieved with Asynchronous Framing Technique (AFT) or a protocol based on the LAP-B (Link Access Protocol-Balanced) link level portion of X.25 at 2400 bps and 1200 bps.

Adaptive Compression—When communicating with other V-series hardware, the V-series Smartmodem 2400B significantly increases data throughput above standard connections with adaptive compression, providing up to twice the normal data transfer and lowering both transmission costs and connect time.

Adaptive compression adjusts to the type of data being transmitted, and is automatically enabled when the modem is operating in error-control mode; no user interaction or preparation of data is required at either end of the connection.

Automatic Feature Negotiation—Feature negotiation automatically distinguishes between V-series hardware and other Hayes modems, then analyzes all options (including speed) available, selecting the combination that maximizes data transmission efficiency.

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V-series Smartmodem 2400B

Features and Benefits

Features	Benefits
2400, 1200, and 300 bps transmission	Provides automatic speed selection on initial handshake in Bell and CCITT modes. Makes highest connection possible.
Hayes Standard AT Command Set expansion	User control with Hayes complete AT Command Set, plus subset of special V-series commands.
Asynchronous and synchronous transmission	Transmission flexibility enables communication with a variety of devices through a single modem and a single communications port. (Synchronous applications require software incorporating the Hayes Synchronous Interface (HSI).)
Error-control	Provides maximum reliability of communications with other Hayes V-series hardware. Especially suited to transmitting program code or important text files or spreadsheets. Implementation of LAP-B link level portion of X.25 and Asynchronous Framing Technique (AFT) allows point-to-point error-control.
Adaptive compression	On-line compression increases data throughput in error-control mode, providing up to twice the normal data transfer and lowering both transmission costs and connect time.
Automatic feature negotiation	Automatically distinguishes between remote V-series hardware and other Hayes modems to establish the appropriate connection. Analyzes all options (including speed) available and selects combination that maximizes data transmission efficiency. No user interaction required.
Flow-control options	RTS/CTS, Transparent XON/XOFF, XON/XOFF (stop/start), or none.
Storable configuration profiles	Stores two user configuration profiles in nonvolatile memory in addition to factory configuration profile.
Stored telephone numbers	Stores up to four telephone numbers (36 digits) in nonvolatile memory for asynchronous autodial.
Designate user profile	Designate either of two stored configuration profiles as the default to recall when the modem is powered up or reset.
View configuration profiles	Use modem commands to display the active and stored configuration profiles and any telephone numbers stored in the modem's nonvolatile memory.
Call progress monitoring	Recognizes dial tone, ringback signal, and busy signal.
Enhanced diagnostic testing	Loopback tests and modem firmware tests check the modem's firmware ROM and the communication link to diagnose communication problems for quick correction.

Specifications Summary

Asynchronous data format	7 data bits with mark, space, even, odd, or no parity; 8 data bits with no parity; 1 or 2 stop bits.
Communication standards	Bell 103 (0-300 bps); Bell 212A/CCITT V.22 (1200 bps); CCITT V.22 bis (2400 bps).
Operation	Full-duplex.
Dialing capability	Command-selectable tone or pulse dialing; tone duration and spacing variable from 50 to 255 milliseconds.
Command buffer	255 characters.
Line type	Two-wire, dial-up and conditioned leased line operation.
Echo suppressor defeat tones	Bell standard: 2225 Hz±10 Hz CCITT standard: 2100 Hz±15 Hz
Receive signal frequency tolerance	±7 Hz
Rear panel	Two modular telephone jacks (connects to phone system with modular jacks RJ11, RJ12, RJ13, RJ41S, and RJ45S and RJ45S); COM port selection switch.
Audio monitor	Two-inch speaker with programmable volume control.
Power consumption	6.5 watts maximum.
Size	(cm) 33.86 x 10.67 x 2.12; (in) 3.33 x 4.2 x 0.835
Hardware requirements	IBM PC, XT, AT, or 100% compatible; no serial card required.
Software compatibility	Smartcom III™ communication software (on both 3½" and 5¼" disks) takes full advantage of the modem's asynchronous capabilities and provides a complete communication environment. Available separately for the IBM® PC, XT, AT, and 100% compatibles.
Registration	FCC registered for direct connection to the phone system.
Certification	Certified to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of FCC rules.
Warranty	Two year limited warranty—extendable for an additional two years.

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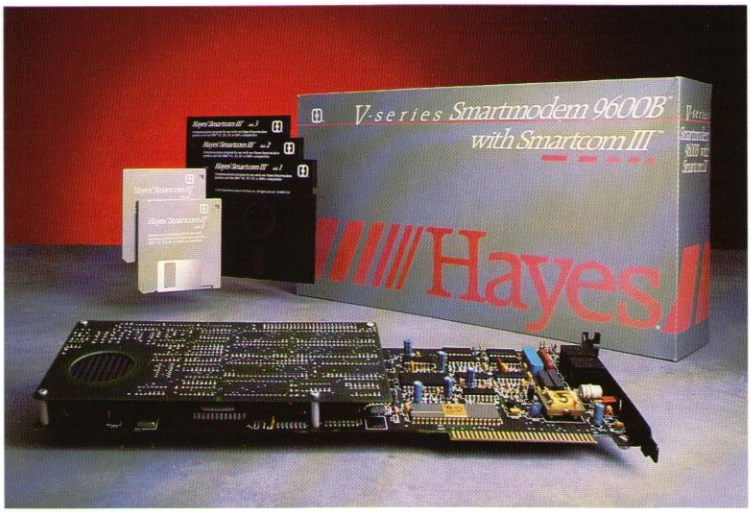
V-series Smartmodem 9600B™



The Hayes V-series Smartmodem 9600B represents a significant advance in PC telecomputing. Your IBM® AT or 100% compatible can now send and receive data across dial-up or conditioned leased lines at 9600 bps—and can achieve up to 19,200 bps throughput with adaptive compression.

The V-series Smartmodem 9600B's advanced design provides a whole new set of telecomputing capabilities while maintaining compatibility with the existing, installed base of Hayes modems. In addition to all the functionality and dependability you've come to expect from Hayes, the V-series Smartmodem 9600B offers fast-turnaround, half-duplex operation at 9600 bps and 4800 bps, simulating full-duplex V.32 communications at a considerably lower price than V.32 full-duplex modems; error-control and forward error- correction; increased throughput with adaptive compression in error-control mode; and automatic feature negotiation.

Fast Turnaround, "Ping-Pong" Operation—A "ping-pong" protocol, used at 9600 bps and 4800 bps, incorporates special synchronizing techniques for fast line turnaround to simulate full-duplex, V.32 operation, in terminal or interactive mode. When performing fast downloads of large data files from mainframes to PCs, or full-screen data transfers where volume of data in the reverse direction is small (e.g., on-line airline reservation scheduling), the ping-pong protocol automatically allocates the direction of activity on the line in proportion to the volume of data being transmitted.

Error-Control—Error-control provides a reliable means of correcting errors that may occur during transmission due to noise on telephone lines. When the V-series Smartmodem 9600B connects with a remote V-series product, it initiates error-control using an ARQ protocol that automatically requests retransmission of any corrupted data.

Error-control is achieved with Asynchronous Framing Technique (AFT) or a protocol based on the LAP-B (Link Access Protocol-Balanced) link level portion of X.25 at 2400 bps and 1200 bps, and an extension of LAP-B at 9600 bps and 4800 bps. At 9600 bps and 4800 bps, the V-series Smartmodem 9600B implements Trellis Encoding/Viterbi Decoding, a forward error correcting technique which allows the modem to transmit data accurately even across noisy telephone lines at very high speeds.

Adaptive Compression—When communicating with other V-series hardware, the V-series Smartmodem 9600B uses adaptive compression to increase throughput and provide up to twice the normal data transfer, lowering both transmission costs and connect time. Adaptive compression adjusts to the type of data being transmitted, and is automatically enabled when the modem is operating in error-control mode; no user interaction or preparation of data is required at either end of the connection.

Automatic Feature Negotiation—Feature negotiation automatically distinguishes between V-series hardware and other Hayes modems, then analyzes all options (including speed) available, selecting the combination that maximizes data transmission efficiency. On initial modem handshake, the V-series Smartmodem 9600B has the capability to fall back from 9600 bps to 4800, 2400, 1200, or 300 bps.

Hayes®

V-series Smartmodem 9600B

Features	Benefits
9600, 4800, 2400, 1200, and 0-300 bps transmission	Provides automatic speed selection on initial handshake in Bell and CCITT modes. Makes highest connection possible.
Hayes Standard AT Command Set expansion	User control with complete Hayes AT Command Set, plus subset of special V-series commands.
Asynchronous and synchronous transmission	Transmission flexibility enables communication with a variety of devices through a single modem and a single communications port. (Synchronous applications require software incorporating the Hayes Synchronous Interface (HSI).)
Error-control	Provides maximum reliability of communications with other Hayes V-series hardware. Especially suited to transmitting program code or important text files or spreadsheets. Implementation of Asynchronous Framing Technique (AFT), or LAP-B link level portion of X.25 at 2400 bps and 1200 bps, and an extension of LAP-B at 9600 and 4800 bps allows point-to-point error-control.
Adaptive compression	On-line compression increases data throughput in error-control mode, providing up to twice the normal data transfer and lowering both transmission costs and connect time.

Features	Benefits
Automatic feature negotiation	Automatically distinguishes between remote V-series hardware and other Hayes modems to establish appropriate connection. Analyzes all options (including speed) available and selects combination that maximizes data transmission efficiency. No user interaction required.
Flow-control options	RTS/CTS, Transparent XON/XOFF, XON/XOFF (Stop/Start), or none.
Storable configuration profiles	Stores two user configuration profiles in nonvolatile memory in addition to factory configuration profile.
Designate user profile	Designate either of two stored configuration profiles as the default to recall when the modem is powered up or reset.
Stored telephone numbers	Stores up to four telephone numbers (36 digits) in nonvolatile memory for asynchronous autodial.
Call progress monitoring	Recognizes dial tone, ringback signal, and busy signal.
Enhanced diagnostic testing	Loopback tests and modem firmware tests check the modem's firmware ROM and the communication link to diagnose communication problems for quick correction.
View configuration profiles	Use modem commands to display the active and stored configuration profiles and any telephone numbers stored in the modem's nonvolatile memory.

Specifications Summary

Asynchronous data format	7 data bits with mark, space, even, odd, or no parity; 8 data bits with no parity; 1 or 2 stop bits.
Communication standards	Bell 103 (0-300 bps); Bell 212A/CCITT V.22 (1200 bps); CCITT V.22 bis (2400 bps); V.32 HDX (4800 bps); V.32 HDX (9600 bps).
Forward error correction	Trellis Encoding/Viterbi Decoding in all 9600 bps modes.
Operation	Full-duplex at 2400 bps and below; half-duplex using "ping-pong" protocol for fast-turnaround to simulate V.32 full-duplex operation at 9600 bps and 4800 bps.
Dialing capability	Command-selectable tone or pulse dialing; tone duration and spacing variable from 50 to 255 milliseconds.
Command buffer	255 characters.
Line type	Two-wire, dial-up and conditioned leased line operation.
Echo suppressor defeat tones	Bell standard: 2225 Hz±10 Hz CCITT standard: 2100 Hz±15 Hz
Receive signal frequency tolerance	±7 Hz.

Rear panel	Two modular telephone jacks (connects to phone system with modular jacks RJ11, RJ12, RJ13, RJ41S, and RJ45S); COM port selection switch.
Audio monitor	Two-inch speaker with programmable volume control.
Power consumption	6.5 watts maximum.
Size	(cm) 33.86 x 10.67 x 2.3; (in) 13.33 x 4.2 x 0.937.
Hardware requirements	IBM AT or 100%-compatible (requires equivalent clock speed); **no serial card required.**
Software compatibility	Smartcom III™ communication software (on both 3-½" and 5-¼" disks) takes full advantage of the modem's asynchronous capabilities and provides a complete communication environment.
Registration/Certification	FCC registered for direct connection to the phone system. Certified to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of FCC rules.
Warranty	Two year limited warranty—extendable for an additional two years.

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