

## Modem 3600



**Our most secure dialup modem  
features 33.6-kbps speeds and works  
with dialup or leased lines.**

## FEATURES

- Provides sync, async, and fax capabilities for links between a local computer and a remote computer, fax, or DTE.
- Advanced error control and data compression ensure data integrity and increase data throughput.
- Switches to a dialup line if the leased-line connection fails, then automatically returns to the leased line when it's back up.
- High-speed fax enables communication with any ITU Group III fax device.
- Configure via the front panel or AT commands.
- Password security keeps your data safe.
- Dynamically adjusts data rate to conform to line conditions.

## OVERVIEW

The Modem 3600 is a high-performance V.34+/V.42 bis modem and fax in one unit. It offers serial throughput rates up to 230.4 kbps and works anywhere your telephone can reach, transmitting over standard dialup lines or private leased lines.

Perfect for less-than-ideal transmission lines, the Modem 3600 features echo canceling, auto-adaptive line equalizing, and trellis coding techniques. Automatic rate adaptation enables the modem to automatically decrease the DCE rate when the allowable bit error rate is exceeded (and increase it when line conditions improve).

It also has adaptive baud-rate selection, transmit pre-emphasis, automatic transmit-power selection, constellation shaping, and non-linear encoding and pre-coding.

All models feature a front-panel LCD for easy option selection and modem configuration. Through this password-protected LCD interface, you can get information about Modem 3600 operation and status, and you can control all major modem options without using an external terminal or a phone line connection.

What's more, a remote-configuration feature enables you to use the LCD to configure a remote modem from the local side. Plus, it comes with built-in standard diagnostics for testing phone line quality and modems at each end.

In addition to the LCD interface, you can configure your Modem 3600 via standard AT software commands. Or, choose one of nine factory-configured options to simplify setup for most standard applications. The modem is also flash-memory upgradable.

When functioning as a fax, the Modem 3600 is fully ITU Group III compatible. It conforms to the EIA-578 standard interface between a fax modem and a computer with fax software. When used with an EIA Class 1 software package, the modem can send and receive faxes at up to 14.4 kbps. And built-in error correction ensures that your fax will arrive at its destination without transmission errors.

The modem operates over dialup and 2- or 4-wire leased lines. It also features automatic dial-backup handling of both sync and async data. The dial backup feature prompts the modem to switch to a dial backup mode if the leased line is unable to support communications.

Multiple levels of security include password, password with callback, and user-programmed password. The modems can store up to 50 passwords and 50 phone numbers.

The standalone modem, suitable for both desktop and shelftop use, is available in both AC- and DC-powered versions. Order the AC-powered modem alone (MD1000A) or packaged with two serial cables (MD1000A-CABPAK-R2), which you can use to connect the modem to either DB25 or DB9 male RS-232 devices. We also offer a standalone DC-powered version (MD1000A-DC), as well as rackmount card (MD1000C) that draws AC power from and plugs into the backplane of the optional Modem Rack II (RM421A).

If you need communications software for your modem, add PROCOMM PLUS® 32 Quarterdeck v.4.8, which maximizes the 32-bit capabilities of Windows® and helps you avoid the hassles of setting up an Internet connection.

### Technically Speaking

The Modem 3600 has six LED indicators:

- TR (Terminal Ready) lights when the DTE asserts Data Terminal Ready. This signal is input on Pin 20.
- CS (Clear to Send) lights when the modem is ready to send data to the DTE. This signal is output on Pin 5.
- RS (Request to Send) lights when the DTE is ready to send data to the modem. This signal is input on Pin 4.
- CD (Carrier Detect) lights when the received audio carrier signal is detected, or, if error control is enabled, when error-control protocol negotiation is complete. This signal is output on Pin 8.

- RD (Received Data) lights for a data space condition at the receive data output, indicating receive data output activity. This signal is output on Pin 3.
- TD (Transmit Data) lights for a data space condition at the transmit data input, indicating transmit data input activity. This signal is input on Pin 2.

The modem has seven main LCD menus: Modem Status, Dial Stored Number, Display Status, Select Test, Modify Configuration, Change Phone Numbers, and Front Panel Features.



MD1000A

## TECH SPECS

**Carrier Detect Level** — Dynamic to -43 dBm

**Clocking** — Internal, external, or receive

**Compliance** — Fax: EIA-578; ITU V.29, V.27 ter, V.21, V.17;

Modem: UL® 1950; CSA 950; IC-CD-03 (Canada); FCC Part 68 (US);  
FCC Part 15, Class A

**Compression** — V.42 bis and MNP® 5

**Data Rates** — Fax: 2400, 4800, 7200, and 9600 bps; 12.2 and 14.4 kbps;  
Modem: ITU-T V.34+: 2400, 4800, 7200, and 9600 bps; 12.2, 14.4, 16.8,  
19.2, 21.6, 24, 26.4, 28.8, 31.2, and 33.6 kbps;  
ITU V.32 bis: 7200 and 9600 bps; 12.2 and 14.4 kbps trellis encoded;  
ITU V.32: 4800 and 9600 bps unencoded;  
ITU V.22 bis: 1200 and 2400 bps;  
ITU V.21: 300 bps (async only);  
Bell 212A: 1200 bps;  
Bell 103: 300 bps (async only)

**Digital Interface** — EIA-232D, ITU V.24

**Error Correction** — V.42 and MNP 2-5

**Fax Compatibility** — ITU Group III compatible when used with  
Class 1 fax software

**Line Equalization** — Auto-adaptive

**Modulation** — Fax: QAM: 12 and 14.4 kbps; 7200 and 9600 bps;

DPSK: 2400 and 4800 bps;

FSK: 300 bps;

Modem: ITU: V.34+, V.34, V.33, V.32 bis, V.32, V.29, V.27, V.22 bis, V.22,  
and V.21;

Bell: 212A and 103

**Operation** — Fax: Half-duplex over 2-wire dialup lines;

Modem: Full-duplex over 2-wire dialup or leased lines; full duplex  
over 4-wire leased lines

**RTS/CTS Delay** — 0 to 150 ms ( $\pm$  2 ms) in 10-ms increments

**Serial Throughput** — 230.4 kbps

**Tests** — V.54 remote loopback, V.52 511 PN pattern, analog loopback,  
analog loopback with test pattern, local digital loopback, remote  
digital loopback, remote digital loopback with test pattern, test-  
pattern generation/checking

**Transmitter Output Level** — -9 dBm permissive;

-9 to -30 dBm in 1-dBm increments for leased-line operations

(V.34: -6 to -30 dBm in 1-dB increments for leased-line operation)

**Connectors** — (1) DB25 F, (2) RJ-45

**Indicators** — (6) LEDs: TR, CS, RS, CD, RD, TD

**Temperature** — Operating: 32 to 122°F (0 to 50°C);

Storage: -40 to +158°F (-40 to +70°C)

**Relative Humidity** — Up to 95%, noncondensing

**Power** — MD1000A, MD1000A-CABPAK-R2: 115 VAC, 60 Hz, 14 watts;

MD1000A-DC: 12-60 VDC, 14 watts;

MD1000C: From the RM421A rack

**Size** — MD1000A, MD1000A-CABPAK-R2, MD1000A-DC:

2.5"H x 7"W x 9.6"D (6.4 x 17.8 x 24.4 cm)

**Weight** — MD1000A, MD1000A-CABPAK-R2, MD1000A-DC: 3 lb. (1.4 kg)

## Why Buy From Black Box? Exceptional Value. Exceptional Tech Support. Period.

### Recognize any of these situations?

- You wait more than 30 minutes to get through to a vendor's tech support.
- The so-called "tech" can't help you or gives you the wrong answer.
- You don't have a purchase order number and the tech refuses to help you.
- It's 9 p. m. and you need help, but your vendor's tech support line is closed.

According to a survey by Data Communications magazine, 90% of network managers surveyed say that getting the technical support they need is extremely important when choosing a vendor. But even though network managers pay anywhere from 10 to 20% of their overall purchase price for a basic service and support contract, the technical support and service they receive falls far short of their expectations—and certainly isn't worth what they paid.

At Black Box, we guarantee the best value and the best support. You can even consult our Technical Support Experts before you buy if you need help selecting just the right component for your application.

Don't waste time and money—call Black Box today.

Item	Code
Modem 3600 Standalone	
AC Powered	<b>MD1000A</b>
AC Powered with (2) Serial Cables	<b>MD1000A-CABPAK-R2</b>
DC Powered	<b>MD1000A-DC</b>
Modem 3600 Rackmount Card	<b>MD1000C</b>
<b>To rackmount your MD1000C, order...</b>	
Modem Rack II	<b>RM421A</b>
<b>For async communications, you'll need...</b>	
PROCOMM PLUS 32 Quarterdeck v.4.8	<b>14-00-00397</b>