UnixWorld Online: Hardware Review: No. 001

The Motorola Hybrid Modem Terminal Adapter:

Versatile telecommunications for accessing the Internet

By Richard Raucci

Adding ISDN capabilities to a system used to mean fumbling between a Terminal Adapter and a modem, but the introduction of hybrid modems meld the unit into one, and make the transition smoother.

To date, the ability to access the Internet has been limited to high-speed networks typically offered as a part of office or university installations. Moving to a distributed network, such as a telecommuting office worker or a distributed campus setup, often would require setting up a modem connection to the corporate or school main computer, or even directly to the Internet, via a PPP or SLIP account. This would usually result in a much slower connection than the user would expect (compare the difference between a 9600 to 14,400 baud modem to a 56K and above TCP/IP network, for example).

These modem connections to the Internet and office networks had their place for distributed workers, however, because they could also coexist with modem-based services that these users might already have in place. For example, a slow PPP account could use the same modem that a cc:Mail dial-up account or a non- Internet online service would use. Lowering costs for ISDN connections have left the modems behind, though, and users are now faced with the idea of providing an ISDN adapter connection side-by-side with their modem, at least for Internet usage.

Configuring yet another piece of hardware in the relatively small confines of a system is problem enough, and switching between an ISDN adapter and a modem is a tricky business, especially because most online services still don't have ISDN access, so you'd wind up unable to move to an ISDN adapter alone in some cases.

Physical Description

Fortunately, Motorola has developed a hybrid modem that features an ISDN adapter (plus an integrated NT1 network termination unit) and a high-speed modem in the same unit. The HMTA 200 Terminal Adapter ($895) is a compact desktop unit, about seven by ten inches wide and two inches high, no larger than many external modems. It features a comprehensive LCD panel, a keypad for entering parameter information, and nine status lights. The rear connectors include a V.35 DTE and an EIA 366 port, and a standard EIA 232 serial connector (in a DB25-pin format), as well as an ISDN line connector and a power connector. There's no power switch; once the system is connected to the power supply (a fairly large power brick, standard 120 volt power supply), the unit is powered up. The parameter settings are stored in nonvolatile memory.

The HMTA 200 supports baud rates up to 115.2K digital and 57.6K analog (asynchronous). Digital asynchronous connections can be made to ISDN-equipped digital providers, but not to standard analog systems. It's important to note that the upper limit for the unit for a connection to a standard analog service under modem emulation is the 57.6K rate.

The unit also supports up to a 128K digital ISDN connection (synchronous, with bonding between channels for the 128K rate). Since bonded channels are still pending from ISDN providers, the HMTA 200 also supports standard ISDN rates of 56 and 64K on one channel.

Configuration

Configuring the Hybrid Modem is best achieved using Motorola's Configuration Manager software. Unfortunately, it's only available for Microsoft Windows at this time. It provides a set of comprehensive graphical menus that cover parameter settings for the modem and ISDN parts of the unit, including ISDN provisioning, data call protocols, call establishment and control, AT command operation, and analog modem features. The Configuration Manager allows you to set up and save multiple configuration files and download the parameters to the Hybrid via a serial connection. It's an easy way to set the unit up for a particular type of ISDN service.

On a workstation, you would also be able to use a Windows emulator like SoftPC to run the Configuration Manager, as long as the emulator could access the serial ports on the system. For example, SoftPC on an RS/6000 Model 350 under AIX could run the software and configure the unit for the Unix system.

It's also possible to configure the unit using the keypad and LCD menus, which is what you'll have to use if you don't have a Windows system handy. The menu system is fairly straightforward, and includes the same parameters as the Configuration Manager, and even some extras. For example, PC systems and Windows have legendary problems with high-speed serial connections, so the Configuration Manager will only set the Hybrid to a maximum 57.6K connection, even on a digital line. By using the keypad/menus, you can set the system to a 115.2K connection at twice the rate

Performance

The Hybrid Modem worked well on a variety of systems, including a PC under Windows and a SparcClassic under Solaris 2.4. It's important to note that you'll have to establish an ISDN service (usually provided by your local phone service provider) to use the digital features of the unit, and you'll have to have ISDN access to your Internet service provider for this as well.

Once connected to the computer via the EIA 232 port (using a standard serial cable), the system can be configured by either of the methods described above. The unit will then accept standard AT commands. For example, we could establish communication with the unit via a terminal window under Solaris by passing commands to the relevant device, as when using tip or cu terminal communication software. It's also possible to throw the unit into either digital or analog mode using an AT command string. Thus it would be possible to set the unit up for different cron jobs between digital and analog services (for example, batch-downloading News from an ISDN service provider in digital mode and switching to analog mode for uucp mail from a local dial-up account). The Hybrid's modem emulation also allows you to use the ISDN line for analog communication, which you can't do with a standard modem.

Documentation

The HMTA 200 comes with a comprehensive manual, spiral-bound. This is well-laid-out, and includes a helpful "flow-chart" for using the LCD menus to configure the unit. It also covers ISDN operation, synchronous communications parameters, and asynchronous configurations. What it doesn't cover is basic setup for an Internet or server connection. You'll have to refer to your Internet service provider and your operating system manual pages for information on PPP, SLIP, and ISDN connections.

Closing Considerations

Motorola has a useful unit in the HMTA 200. It's very versatile, and goes a long way to providing a smooth transition from analog modem services to ISDN. However, we'd like to see the Configuration Manager available as a Motif application for Unix systems. Also, it would be a nice feature if the unit could connect to a standard analog line.

Providing an integrated ISDN terminal adapter with analog capabilities in one small unit is a good way of encouraging telecommuting and a distributed office. It's also the best way to connect to the Internet without losing the modem features some users still need.

Vendor Information:

```
Motorola
5000 Bradford Drive
Huntsville, Alabama 35805-1993
(205) 430-8000
```

Edited by Becca Thomas / Online Editor / UnixWorld Online / beccat@wcmh.com

Go To Content   Search

Last Modified: Tuesday, 22-Aug-95 15:51:50 PDT