

## ISDN via Satellite

### Portable Terminals Have Come a Long Way

We did a brief test of the Nera WorldCommunicator satellite terminal, using a Comrex EuroNexus. Working from the tailgate of a car in our parking lot, we set up the Nera antenna and modem as described in their manual. A single coaxial cable connects those units together. Battery operation is possible, but we used AC power. The EuroNexus and Matrix ISDN module have the required "S/T" ISDN interface, and connect to the satellite modem via a straight-through RJ-45 cable.

The manual indicated that the AOR-W satellite would be almost due south from our location in Massachusetts. Using the small compass on the antenna, we roughly aimed it in that direction. After turning on the modem, the display indicated that it was seeking satellites, and it found AOR-W after a few seconds. A little experimentation with the orientation and tilt of the antenna quickly brought the signal strength reading over 600 on their signal to noise ratio scale (the manual indicates that 520 is the minimum for our application). France Telecom had already been selected as the service provider, and we didn't change it.

The display then indicated that the unit was ready for a call. We set the EuroNexus to 64 kb/s, and made sure that no LDNs (local dialing numbers) were programmed. We then called the Comrex ISDN test line from the EuroNexus by dialing "902 00 1 978 929 9806" (the 902 being necessary because the number was being sent as a block). After a somewhat longer than normal wait, the units connected, and our 64 kb/s connection was established. We had a crystal-clear link for the 10 minute call, which was ended by simply pressing the HANG-UP key on the EuroNexus.

Please note that the delay time through the satellite system is around a half second each way, so the normal 6 mS G.722 delay is considerably lengthened. A mix-minus return feed will be necessary, and some allowance may be needed in pacing a conversation. Use of audio coding systems with longer delay times will obviously require more caution.

Further information about the Nera World Communicator is available on the web at [www.gmpcs-us.com](http://www.gmpcs-us.com).

