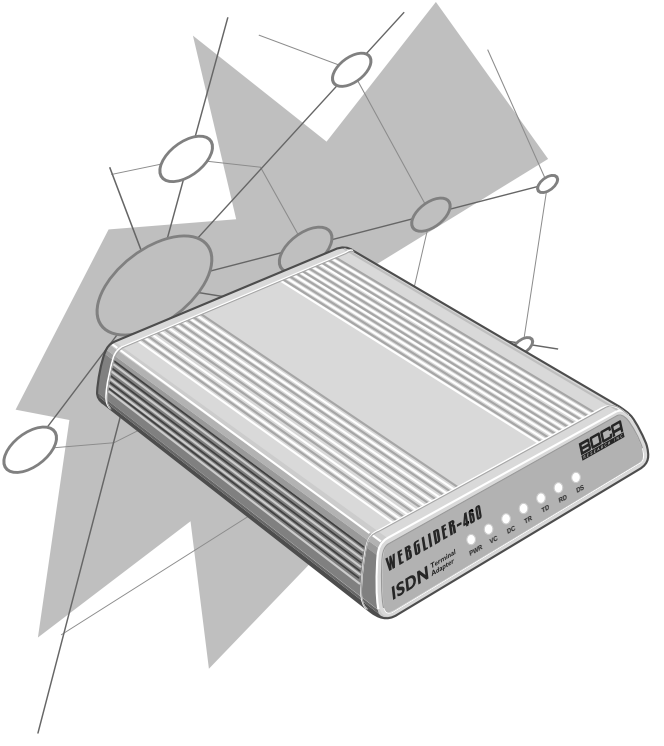
WEBGLIDER-460

ISDN Terminal Adapter



Reference Guide

Product Code: TU120AE

Before You Begin your Installation

The product you have purchased is designed to be easily installed with most IBM PC or compatible systems in conjunction with an ISDN phone line. The Quick Tour Installation Guide contains detailed instructions and is where you should begin installation. Most included software has automatic installation programs to place the software correctly onto your computer. However, as all computers are configured differently, you may be required to perform some basic DOS or Windows tasks. If you are not familiar with basic DOS commands such as DIR, CD, or EDIT, you should check your DOS manual, or seek assistance from your local computer dealer to install the product.

How to get Technical Assistance

The dealer that you purchased this product or your computer from is the first place you should go for technical assistance. The dealer is usually the most qualified source of help, and is most familiar with your system and how this product should be installed. Many dealers have customer service and technical support programs, with varying levels of support offered, depending on your needs and computer knowledge. ***Please contact the dealer first whenever a problem occurs.***

If your Dealer Can't Assist you

If you can't get assistance from your dealer, the manufacturer provides varying levels of technical assistance as summarized on the following page. The Standard Free Technical Support number is for quick answers to specific inquiries on product features and technical questions (call **407-241-8088**; M-F, 8 am to 6:30 pm EST). Direct access to technical support representatives is provided on a limited basis. If you require immediate attention or in-depth help with the installation of the product, please call our 900-priority support number for service. This number gives you immediate access to senior-level technicians. The number is **900-555-4900**. You will be charged $2.00 per minute. The charges will appear on your next phone bill.

Boca BBS
407-997-9159
(ISDN)
407-241-1601
(analog)

Automated
Fax Retrieval System
407-995-9456

Technical Support Fax
407-997-2163

Standard Free Technical Support
407-241-8088

On-Line Support!
***CompuServe*: GO BOCA**
***Internet*:**
***email:* support@boca.org**
on the World Wide Web:
http://www.boca.org

Priority Service
900-555-4900
($2 per minute)

Damaged or Missing Items

We use many world-class quality assurance programs to ensure the product you purchased is of the highest caliber. Sometimes, however, a component may be missing from the box, or is damaged or corrupt in some way. If this happens, immediately return the entire package to your place of purchase so you may exchange it for a new one. Your dealer should be able to provide you with an exchange far more quickly than by contacting us directly. If for some reason you are unable to return the product directly to its place of purchase, refer to the “Servicing Your Product” and “Warranty” sections in this manual for instructions.

Using the Boca Research WEBGLIDER-460 Reference Guide

This manual provides reference information for the WEBGLIDER-460**.** WEBGLIDER documentation assumes the user has basic computer skills and is familiar with personal computers. For installation, use the Quick Tour Installation Guide. Our customer support experience has shown that many costly and time-consuming calls to our technical support staff can be avoided with closer attention to the information provided in the documentation. **In addition to following the instructions provided in the WEBGLIDER documentation, you will also need to consult the documentation supplied with your communications software.**

IMPORTANT NOTICE

FCC Requirements

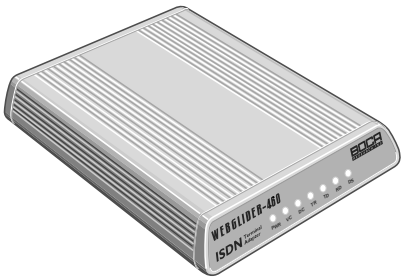
The Federal Communications Commission (FCC) restricts the way you can use modems. Read the FCC compliance statement found in Appendix E of this manual.

Publication Date: February, 1996
Printed in the U.S.A. TU120AE.PM5

Contents

Introduction 1

The WEBGLIDER is a Basic Rate Integrated Services Digital Network (ISDN) terminal adapter that allows connection of a PC (or other data terminal equipment) and up to two telephone devices (such as telephones, modems or faxes) to ISDN. This product was designed specifically for North American ISDN.



The WEBGLIDER

The WEBGLIDER allows you to connect your PC to the Internet, telecommute to a central site, connect to other remote PCs, or computer systems. At the same time your existing telephone equipment can be used to make calls to other equipment on the Public Switched Telephone Network (PSTN).

The on-board high speed processor handles all ISDN processing, channel aggregation and data compression giving the WEBGLIDER very fast connect times and very high throughput allowing connections to data terminal equipment at up to 460.8Kbps*.

The WEBGLIDER connects to the U-interface of the ISDN allowing direct connection to the ISDN without the need for an NT1 device. **NOTE: Do not attach the WEBGLIDER to an NT1 device.**

Basic Rate ISDN provides two 64 kbps B-channels, each of which can carry a data or a 'voice' call. This allows the WEBGLIDER to handle two simultaneous 'voice' calls (telephone, fax or modem), **or** a 'voice' call and an ISDN data call, **or** a data call that uses both B-channels (128 kbps).

Industry standard V.120 rate adaption and V.42*bis* data compression ensure interoperability with ISDN equipment from other vendors. The WEBGLIDER is able to store up to 32 different numbers and has directories of stored numbers for positive ("whitelisting") and negative ("blacklisting") checking of caller ID, allowing secure applications to be developed.

The industry standard AT command set is also included.

Familiarize yourself with the following terms before continuing.

ANALOG PHONE DEVICE: Regular phone handset, fax machine, etc.
AUX1/AUX2: POTS ports on the back of your WEBGLIDER.
BRI.: Basic Rate Interface
DN: Directory Numbers (phone numbers) given to you by your phone company when you get ISDN service
NETWORK (ISDN): Type of switching equipment the phone company uses to connect your ISDN line to their CO (central office)
POTS port: (Plain Old Telephone Service), i.e., RJ-11 phone-type jack into which you can plug standard devices like fax machines or telephone handsets.
SPID: Service Profile ID (supplied by your phone company)
TA: Terminal Adapter (usually ISDN modem)

1.1 This Reference Guide

This manual provides a technical reference for the WEBGLIDER.

Section 1... (this section) provides a description of package contents and tells you where to get started.

Section 2... describes the WEBGLIDER connectors and indicators.

Section 3... describes the physical installation.

Section 4... shows you how to configure your WEBGLIDER with command line options; otherwise, refer to the *Quick Tour Installation Guide*.

Appendices... provide troubleshooting guidance, extensive reference information (including specifications, a comprehensive AT command reference, and a glossary), regulatory and warranty information, and how to service your Boca product.

***(With two WEBGLIDERS, each using a Boca IO650 serial card, V.42bis compression, and rate aggregation).**

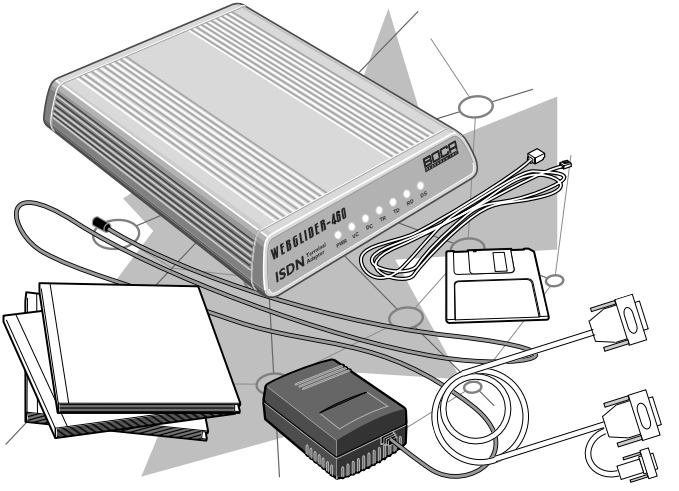
1.2 Package Contents

The WEBGLIDER package contents are illustrated below. The package contains:

- WEBGLIDER
- power supply
- RJ-45 cable
- RS-232 serial cable
- this Reference Guide
- Quick Tour installation guide
- Ordering ISDN Services guide
- software diskette(s).

Other software, CDs, documentation, and special introductory offers may also be included.

Examine the contents of your WEBGLIDER package and check for damage. Contact your supplier or distributor if any of the items listed above are missing or physically damaged. Do not install damaged equipment.



1.3 Notation Conventions Used

The following notations are used to describe commands:

Description	Meaning
<parameter description>	mandatory parameter
[parameter description]	optional parameter
|	option separator

Text in the following font:

SET NETWORK NI2

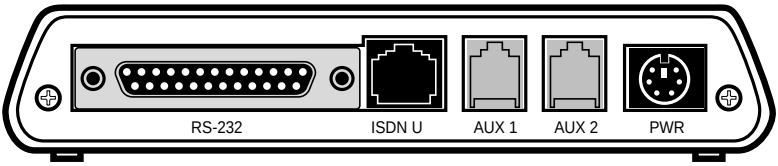
indicates input to, or output from the WEBGLIDER.

WebGlider Connections & Features 2

This section is a quick tour of the WEBGLIDER.

2.1 WEBGLIDER Interfaces

The WEBGLIDER is a Basic Rate Integrated Services Digital Network (ISDN) terminal adapter that allows connection of a PC (or other data terminal equipment) and up to two telephone devices (such as telephones, modems or faxes) to ISDN. The interface connectors are located on the back panel of the unit.



WEBGLIDER Back Panel

ISDN Connection

The WEBGLIDER connects directly to the ISDN network at the U-interface. An ISDN network terminator device (NT1) is not required. This port is labelled 'ISDN-U' and we have supplied an RJ-45 cable for connecting to the ISDN network. **NOTE: Do not attach the WEBGLIDER to an NT1 device.**

Serial Connection

The WEBGLIDER has a serial port for connecting to your PC or other Data Terminal Equipment (DTE). This port is labelled 'RS-232' and is located on the back panel. The port appears as a DCE (modem-like) connection and can be directly connected to terminal equipment using standard cables.

Telephone Connections

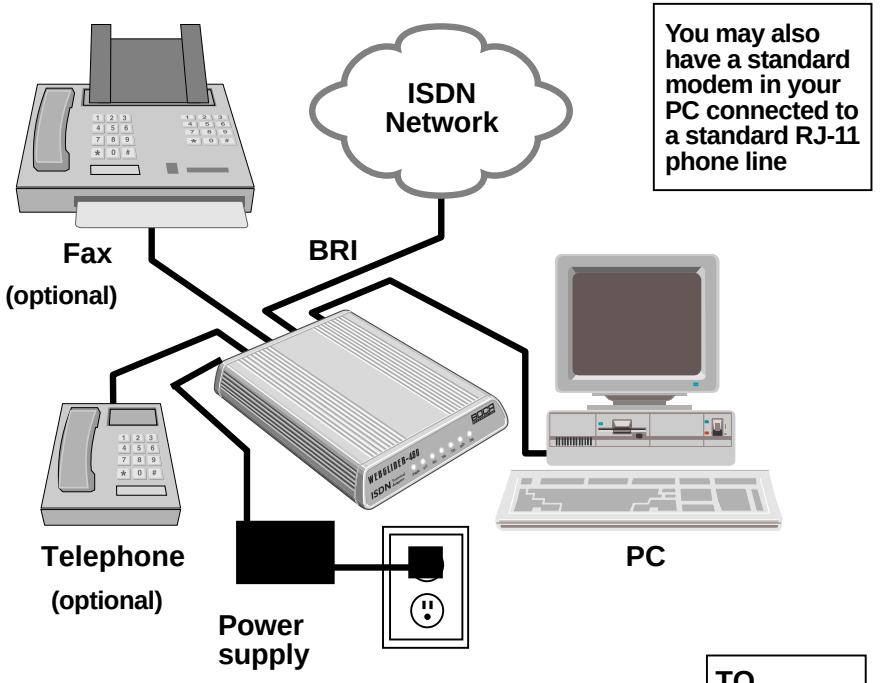
Two “voice” or POTS (Plain Old Telephone Service) ports are provided for connecting telephone equipment such as telephones, answering machines, faxes, or modems to the WEBGLIDER. These ports are labelled ‘AUX 1’ and ‘AUX 2’. Each port supports multiple telephone-type devices up to a Ringer Equivalence Number (REN) of three. WEBGLIDER allows both lines to be used at the same time for two simultaneous telephone calls, if no data call is present. If a data call is present, you can only use one AUX line.

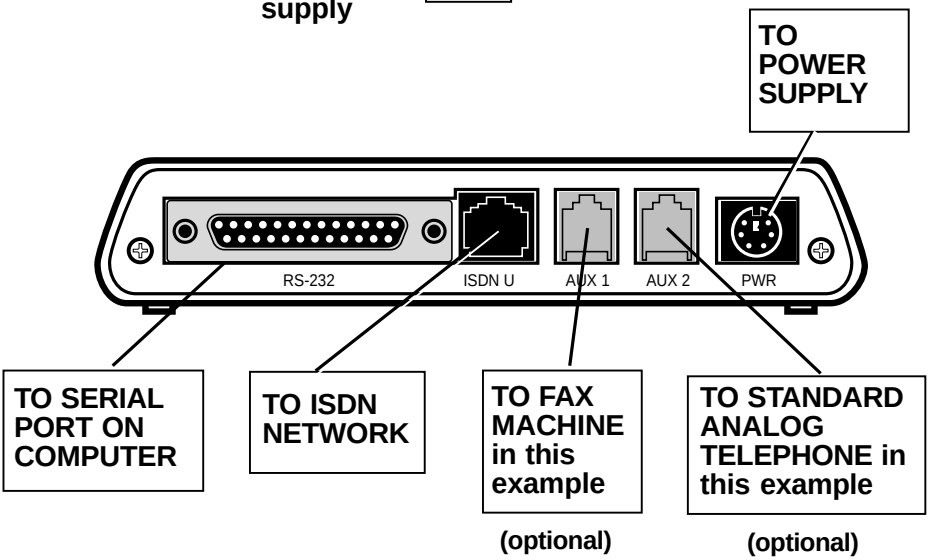
Power Connection

Power for the WEBGLIDER is provided by an external power supply. The power supply is attached to the connector (marked ‘PWR’) on the back panel. The WEBGLIDER does not draw power from the ISDN network. So, if there is no power to the WEBGLIDER, then the telephone ports will not work.

Typical Configuration

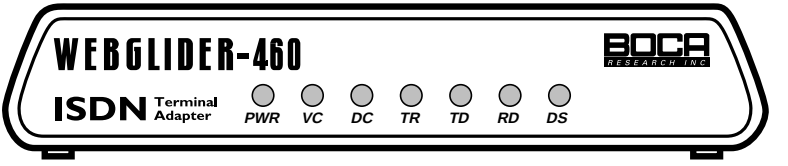
The illustration on the next page shows a typical WEBGLIDER configuration with a PC, a telephone, and a fax machine connected to an ISDN line. For a typical configuration (if you have an analog modem), you should assign one AUX port exclusively for that modem. This will allow you to establish either an analog modem call, or a voice call, using a handset plugged into the modem. You can then tele-conference while working on the same document, engage in two-player remote game playing, or do an analog data download. If you do not have an analog modem, just assign one AUX port exclusively to a handset.


ISDN Network
You may also have a standard modem in your PC connected to a standard RJ-11 phone line
Fax
(optional)
BRI
Telephone
(optional)
Power supply
PC


TO POWER SUPPLY
RS-232
ISDN U
AUX 1
AUX 2
PWR
TO SERIAL PORT ON COMPUTER
TO ISDN NETWORK
TO FAX MACHINE in this example
(optional)
TO STANDARD ANALOG TELEPHONE in this example
(optional)

2.2 WEBGLIDER Indicators

The WEBGLIDER's status indicators are located on the front panel.



The WEBGLIDER front panel.

There are six status indicators on the front panel:

Indicator	Meaning
PWR	**Power:** The WEBGLIDER is powered on.
VC	**Voice Call:** A call is established on AUX 1 or AUX2.
DC	**Data Call:** A data call is established for the RS-232 port.
TR	**Data Terminal Ready.** The DTE has DTR asserted.
TD	**Transmit Data:** Data is being sent by the DTE.
RD	**Receive Data:** Data is being received by the DTE.
DS	**D-Channel Status:** The indicator is **OFF** when the WEBGLIDER is not connected to the ISDN network. The indicator **flashes** when the ISDN network is detected and connection to the central office is starting up. The indicator is **ON solid** when the WEBGLIDER is ready for use (to make or receive calls from either the RS-232 port, or one of the AUX ports.)

The WEBGLIDER status indicators

The status indicators are also used during the Power On Self Test (POST).

Installation 3

1. Connect the output from the power supply lead to the socket marked 'PWR' on the back panel of the WEBGLIDER.

Note: This should be done BEFORE plugging the power adapter into the AC outlet.

Safety Statement

Use only the power supply shipped with the product.

2. Use a serial cable to connect the port marked ‘RS-232’ to your PC or other device that will be used for configuration. The WEBGLIDER is wired as a DCE allowing standard modem cables to be used. Full information on the cable required is provided in **Appendix B: Cable Connections**.

3. Connect the socket marked ‘ISDN U’ on the back panel to the ISDN network using the cable supplied. The ISDN network normally terminates with an eight-way RJ-45 socket.

Note: DO NOT CONNECT the WEBGLIDER to an NT1 or any other device providing an S-interface to ISDN.

Safety Statement

Do not install telephone wiring or connect/disconnect ISDN equipment during an electrical storm.

4. You may now connect your telephone equipment to the AUX port(s) or, you may choose to do this after the unit has been configured. Use the cables provided with your telephone equipment to connect to AUX 1 or AUX 2. If there is no power to the WEBGLIDER, then the telephone ports will not work.

5. Connect the power supply to the AC outlet.

6. Verify that the PWR LED on the WEBGLIDER is ON.

Command Line Configuration 4

If you use an operating system other than Windows, command line configuration should be used. This method uses a series of simple SET and SHOW commands to set the WEBGLIDER operating parameters. If you are configuring through Windows, refer to the *Quick Tour Installation Guide*. For a comprehensive description of all command-line options, see Appendix I in this manual.

Before continuing with this section, you should familiarize yourself with the following terms:

ANALOG PHONE DEVICE: Regular phone handset, fax machine, etc.
AUX1/AUX2: POTS ports on the back of your WEBGLIDER.
BRI.: Basic Rate Interface
DN: Directory Numbers given to you by your phone company when you get ISDN service
NETWORK (ISDN): Type of switching equipment the phone company uses to connect your ISDN line to their CO (central office)
POTS port: (Plain Old Telephone Service), i.e., RJ-11 phone-type jack into which you can plug standard devices like fax machines or telephone handsets.
SPID: Service Profile ID (supplied by your phone company)
TA: Terminal Adapter (usually ISDN modem)

Now, continue with the next page to prepare the WEBGLIDER for command line configuration.

NOTE: When the WEBGLIDER is configured correctly, the DS indicator will blink at first and then remain on solid. If it is not configured correctly, the DS indicator will blink continuously.

1. Power on the WEBGLIDER and wait for the self-test sequence to be performed. Start your modem software and go to the command screen where you can issue modem "AT" commands.

2. Configure your software for the COM port to which the WEBGLIDER is attached. Set the COM port speed to the desired value. Set the flow control to 'hardware' (usually RTS/CTS). Keep compression (V.42bis) disabled for now. If your dial-up service supports compression, re-enable it at a later time.

3. Type AT and press ENTER (or carriage return for non PCs). The OK response should be seen. If you do not see the A character after pressing A, press it a few more times until the WEBGLIDER detects the baud rate and displays an A character.

4. Type 'AT' and press ENTER. When you have received the OK response, enter the following command: **AT&Q4** and press ENTER.

The following prompt will appear: **ISDN-TA>**

The WEBGLIDER is now ready to be configured for use. In the example that follows, the information below is used:

Network	**NI1**
DN1	**555-1111**
SPID1	**61755511110100**
DN2	**555-2222**
SPID2	**61755522220100**
RS232#	**5551111**
AUX1#	**5552222**
AUX2#	**5551111**

5. The first item to configure is the network type. This will be either National ISDN-1, National ISDN-2, AT&T 5ESS custom or Northern Telecom DMS-100 custom. Depending on your switch type, enter the command as follows:

For National ISDN-1 (default)
`SET NETWORK NI1`
or for National ISDN-2
`SET NETWORK NI2`
or for AT&T 5E5 custom
`SET NETWORK AT5`
or for AT&T 5E6, 5E7, 5E8, 5E9 custom
`SET NETWORK AT9`
or for Northern Telecom DMS-100 custom
`SET NETWORK DMS`

Note: Some AT&T 5ESS and DMS-100 switches run **custom**; others run **National ISDN** (NI1 or NI2) protocols. Check this with your ISDN provider.

6. Your ISDN provider will have provided you with Directory Numbers (DNs). These are your ISDN numbers. Each DN is provided with a Service Profile ID (SPID). The SPID is normally based on the DN and includes the area code and a suffix. You need to configure the WEBGLIDER with your DNs and SPIDs.

To do this, use the command:

SET DN 1 <dn 1> <spid 1>

Where *dn 1* is one of your directory numbers (usually your main number) and *spid 1* is the associated SPID.

Note: The DN does not include the area code. Repeat this command for your other directory numbers, using SET DN 2 for the second number etc.

Example: (area code 617, SPID suffix 0100)

SET DN 1 5551111 61755511110100

SET DN 2 5552222 61755522220100

This example sets the first Directory Number to 5551111 with SPID 61755511110100 and the second Directory Number to 5552222 with SPID 61755522220100.

7. Now that we have set the DNs and SPIDs, we can assign ISDN numbers to the WEBGLIDER ports. Assigning numbers to ports allows incoming calls to be sent to the right ports.

To set the ISDN number for the RS-232 (data) port use the command: **SET RS232 DN <dn>**

To set the number for the AUX 1 port use the command:
SET AUX1 DN <dn>
and to set the number for AUX 2 use the command:
SET AUX2 DN <dn>

Where *dn* is the directory number you wish to use for this port.

Note: The directory number used for an AUX port must have been assigned previously using the ***SET DN*** command.

Example:
SET RS232 DN 5551111
SET AUX1 DN 5551111
SET AUX2 DN 5552222

This example sets the DN for the RS-232 port to 5551111, the DN for AUX 1 to 5551111, and the DN for AUX 2 to 5552222.

Note: The RS-232 and AUX 1 ports have the same number. Incoming calls will be routed to the correct port on call type (voice calls to AUX 1 and data calls to RS-232). ISDN digital data will be answered by the TA only (special signalling) and analog calls for an analog modem, fax machine, or phone will pass through to one of the AUX ports. Do not assign the handset to the same AUX port assigned to the RS232. This is so that when the RS232 port is busy with an ISDN signal, connection through the phone is still available.

8. Before saving, you should make sure all settings are as you intended. At the ISDN-TA prompt, type the following and press ENTER:

SHOW NETWORK
(shows the network (switch type) the WEBGLIDER is configured for)
SHOW DN
(shows all DNs and SPIDs)
SHOW RS232 DN
(shows the DN assigned to the RS232 data port)
SHOW AUX1 DN
(shows the DN assigned to the AUX1 port)
SHOW AUX2 DN
(shows the DN assigned to the AUX2 port)

9. To save the configuration, enter the command:

SAVE

This operation will take a few seconds to complete.

To leave configuration mode without saving, type EXIT. You can now use AT commands.

Summarizing the Commands from the Previous Example

Note: If your switch is running one of the **5E custom** protocols, it may be configured as **point-to-point** or **multipoint** (default). Enter the following command **only** if you have an AT&T custom point-to-point configuration:

ISDN-TA>SET TOPOLOGY POINT-TO-POINT

Example:

ISDN-TA>SET NETWORK NI1

(This sets the WEBGLIDER for National ISDN-1 switch type.)

ISDN-TA>SET DN 1 5551111 61755511110100

(where the DN1 is 5551111 and the SPID1 is 61755511110100)

ISDN-TA>SET DN 2 5552222 61755522220100

(where the DN2 is 5552222 and the SPID2 is 6175552220100)

ISDN-TA>SET RS232 DN 5551111

(where the phone number to the RS232 port to send/receive data is set to 5551111)

ISDN-TA>SET AUX1 DN 5551111

(where the AUX1 POTS port is set to use 5551111)

ISDN-TA>SET AUX2 DN 5552222

(where the AUX2 POTS port is set to use 5552222)

ISDN-TA>SAVE

NOTE: When the WEBGLIDER is configured correctly, the DS indicator will blink at first and then remain on solid. If it is not configured correctly, the DS indicator will blink continuously.

You have now set up your WEBGLIDER for basic operation, you should now be able to make and receive calls from all three ports.

To make a call on the data port, use AT dialing through your communications software. To make a call on AUX1 or AUX2, pick up the handset, wait for a dial tone, and make a call in the normal way. Or, use AT dialing through the communications software you have configured for your analog modem attached to one of the AUX ports.

Configuration is not limited to the items discussed above. See Appendix I for a full explanation of each command line option.

Troubleshooting A

Should your WEBGLIDER not function as expected, check the following before seeking support:

WEBGLIDER will not respond to DTE

1. Check the LEDs to make sure that the power on self-test has completed successfully. When the test completes successfully, the LEDs will flash in a sweep sequence. If a test fails, one or all of the LEDs will be flashing.

2. Make sure that the cables used conform to the specifications defined in Appendix B of this manual and that both ends of the cables are securely connected.

3. The WEBGLIDER will *autobaud* to the speed of your DTE. If autobaud appears not to work after pressing the A key several times, try changing the speed of your DTE. If you are using a PC, make sure your communication software is also configured to use the correct COM port.

4. Some asynchronous devices have specific requirements for DCD and DSR operation. The default behavior of these signals for the WEBGLIDER is that DCD and DSR are always on for AT dialing. Check that this method of operation is acceptable to your PC or terminal. DCD and DSR behavior can be modified using the AT&C and AT&S commands.

5. If you are using AT dialing and the WEBGLIDER was previously responding, it could be that the AT interface has been reconfigured not to respond. To check this, enter ATE1Q0 to enable 'echo' and disable 'quiet mode'.

Get AT response but cannot make a call on data port, or no dial tone on AUX port

1. If the DS light is off, check the connection to the ISDN line and make sure that the WEBGLIDER is not connected to an NT1. Also check that the network type is configured correctly.

2. If the DS light is flashing, there may be a problem with your SPIDs or the network type configuration. Check your SPIDs with your ISDN service provider (telco) and try adding trailing zeroes to the SPID. If you change the SPIDs don't forget to SAVE the configuration. Ask your service provider to run a test on your line from the central office.

3. Try setting the CALL SETUP option to both MINIMUM and MAXIMUM.

WEBGLIDER displays double characters

Local-echo is enabled in the terminal. Reconfigure the terminal to disable the local echo.

WEBGLIDER connects but the connection is then lost

1. If you are using rate adaption, check that the device you are connecting to is configured for the same rate adaption standard as the WEBGLIDER. The WEBGLIDER uses V.120, which will not interoperate with V.110.

2. Check that the PPP is not enabled if calling a line without PPP. Disable PPP by typing AT&Q0. Enable it by typing AT&Q3.

WEBGLIDER will not auto-answer on RS-232 port

In AT dialing mode 'automatic-answer' is enabled by setting the value of the S0 register to 1 (ATS0=1).

WEBGLIDER very slow or re-booting

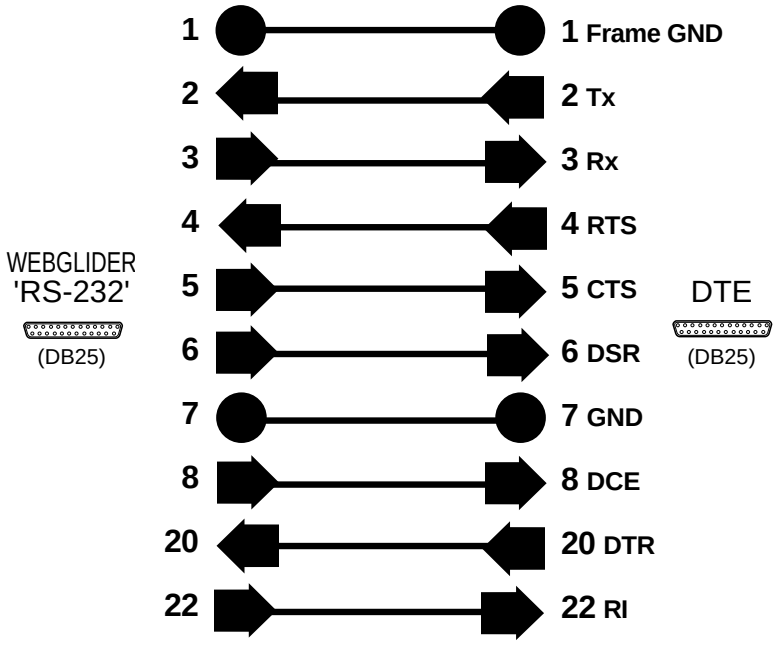
Serial cables greater than a few feet in length connected to the WEBGLIDER and left unterminated may cause problems. These cables should be plugged into a DTE or disconnected from the WEBGLIDER.

Cable Connections B

We recommend the example cables illustrated in this appendix for use with your WEBGLIDER.

B1 WEBGLIDER to 25-way DTE

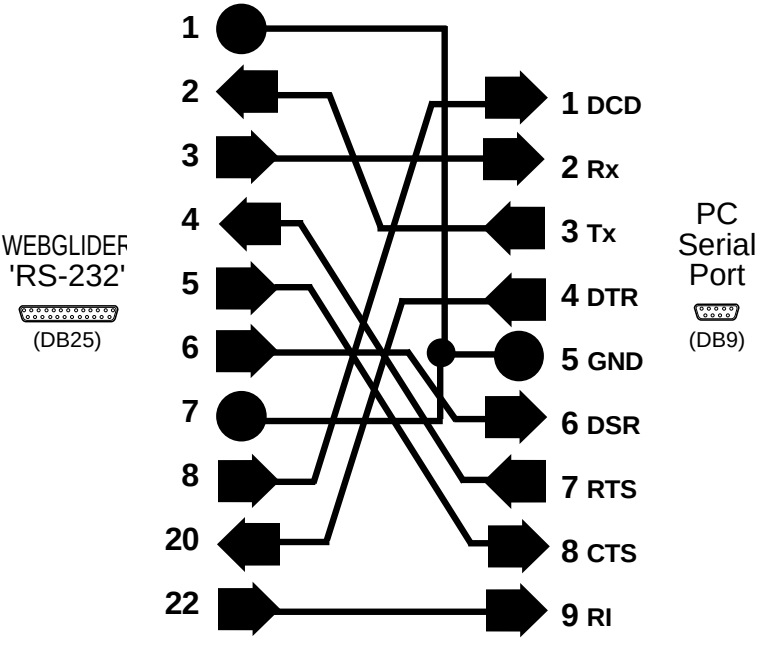
Use this cable to connect the RS-232 port of the WEBGLIDER to a DTE with a 25-pin D-type connector.



WEBGLIDER to 25-way DTE

B2 WEBGLIDER to IBM Compatible PC

Use this cable to connect the RS-232 port of the WEBGLIDER to the 9-way serial port of an IBM compatible PC.



WEBGLIDER to IBM Compatible PC

Command/Protocol Overview C

In most cases, your communications software will set and control the operation of your WEBGLIDER. Following is a brief survey of the most commonly used Hayes-compatible AT commands for use with your WEBGLIDER. In addition, we've also provided information on extended AT command sets, S-Registers, and commands and registers for high-level protocols such as MNP, V.42 / V.42bis, and V.32 / V.32bis.

NOTE: This section makes references to Hayes-compatible commands, originally developed for analog modem communications. Bear in mind the WEBGLIDER is not an analog modem. It is a digital device allowing communication between two DTE devices, and is also referred to as terminal adapter (TA). The WEBGLIDER supports the AT command set to ensure compatibility with today's communication programs.

It will rarely be necessary to use 'AT' commands and S-Registers in command or terminal mode. We include them here for more advanced users who may prefer command mode operation, or require special settings. See pages 51-74 for additional details.

Hayes-compatible commands consist of a basic command set and an extended command set. The basic set involves functions such as dialing a number, or putting the modem on-hook (i.e., replacing the telephone handset).

Extended commands allow more sophisticated control of the device such as adjusting transmission speed, or initiating high-level functions like data compression or error correction. These functions are defined and controlled by the available protocols mentioned above. A protocol is a set of standards by which

data communications operate. Every AT command includes an "AT" prefix, followed immediately by the command and, in many cases, additional parameters. Multiple commands can be entered at the same time from your communications software.

AT Command[parameter] [parameter] ... PRESS ENTER

Example: ATH or ATH0 tells the modem to disconnect

Extended commands were developed to provide greater functionality and control over modem operations. Their format is the same as the basic command except that an additional parameter is required following the AT prefix and before the numerical parameter. **Examples**: **AT&V** displays the value of the S-Registers, configuration parameters, and ISDN address directory (the stored numbers).

S-Registers

Modem command "language" also employs a set of indicators or registers, which are various numerical values all with a standard "S" prefix, hence S-Registers. To a large extent, the values defined in the S-Registers regulate the operation of the WEBGLIDER and the function of some commands in the AT command set.

Example: S-Register 7, or S7=n, defines the length of time the WEBGLIDER will wait for an outgoing call to be established before reporting NO CARRIER to the DTE. In this case, the acceptable range is 0-255 with a default value of 20. With S7=20, the WEBGLIDER will wait 20 seconds for an outgoing call to be established before reporting NO CARRIER.

Data Communication Protocols

These protocols represent various domestic and international standards which enhance modem performance and reliability. The protocols are activated and controlled by a variety of extended AT commands and S-Registers.

MNP stands for Microcom Networking Protocol and is a protocol developed by Microcom for full-duplex, error-free communications. This protocol detects and corrects errors which can result from telephone line noise and other signal distortions. There are several classes of MNP operation also referred to as service classes. Class 5 maximizes data transfer rate and provides compression which can significantly increase data throughput.

The “V-Dot” standards are more numerous, but have a single origin: the International Telecommunications Union Telecommunications Standards Sector (formerly the Consulting Committee for International and Telephone and Telegraph or CCITT). Some of the lower-level standards such as V.21 and V.22 have “domestic” equivalents as developed by the former Bell System, also referred to as Bell standards. The “V.Dot” standards may be summarized as shown on the following page.

V.21 The CCITT standard for 300bps communications. Domestic modems follow the Bell 103 standard, but V.21 can accept international calls at 300bps.

V.22 The CCITT standard for 1200bps communications. The domestic equivalent is the Bell 212A standard.

V.22bis The CCITT standard for 2400bps.

V.23 CCITT for 1200bps with a 75bps back channel. This is mostly used in Europe and South America.

V.24 CCITT serial interface standard (EIA / RS232-D).

V.25bis Automatic calling and answering protocol, originally intended for use over PSTN.

V.32 CCITT standard for 9600bps and 4800bps communications.

V.32bis CCITT standard for an extensive range of high-speed modems operating at 14,400bps, 12Kbps, 9600bps, 7200bps, and 4800bps.

V.34 ITU-TSS protocol. It can operate up to 28,800bps for data and 14,400bps for send / receive fax.

V.42 CCITT standard for detection and negotiation for LAPM (Link Access Procedure for Modems) error control. V.42 will also support MNP levels 2-4.

V.42bis An extension of V.42 specifying the data compression protocol for use with V.42.

V.110 Rate Adaption standard for ISDN B-channel

V.120 Rate adaption and multiplexing standard for ISDN B-channel

Technical Specifications D

Power requirements

North America: 120V AC @60Hz

Unit power consumption

Normal operation:	2.5 W Maximum
Ringing:	3.5 W Maximum

Dimensions

Length:	7 9/16 ” (192 mm)
Width:	5 9/16 ” (141 mm)
Height:	1 5/32” (30 mm)

Mass

1.10 lb (0.50 kg)

Environment

Operational:	Temp:	+5°C to +50°C
	Humidity:	10 % to 90 % non condensing
Non-Operational:	Temp:	-30°C to +80°C
	Humidity:	5% to 95% non condensing

Interfaces

RS-232 Port:	Connector - DB-25 female Operation - RS-232 asynchronous
ISDN Port:	Connector - RJ-45 (ISO 8877) Layer 1 - ANSI T1.601 (ISDN U-interface, 2B1Q) with metallic termination AUX 1: Connector - RJ-11 4 way Operation - Telephone interface (network presentation), DTMF dialing, REN 2 AUX 2: Connector - RJ-11 4 way (wired with AUX 1 and AUX 2) Operation - Telephone interface (network presentation), DTMF dialing, REN 2

Central office support

National ISDN-1
National ISDN-2
AT&T 5ESS 5E5, 5E6, 5E7, 5E8, 5E9 custom and National ISDN
Northern Telecom DMS-100 BCS 32 and above, NIS 208.5 & 6.

EKTS support

Yes

Supplementary services

Calling Line ID Presentation (CLIP), also known as Caller ID
User-to-User Information (UUI)

Compliance Information E

FCC Statement:

"This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.
(2) This device must accept any interference received including interference that may cause undesired operation.

THIS UNIT COMPLIES WITH FCC PART 68 AS OF DATE OF MANUFACTURE.

This equipment has been tested and found to comply with the limits for a **Class B** digital device, pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antennae.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to insure compliance.

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment."

Notification to the Telephone Company

Notification to the telephone company is no longer required prior to connecting the registered equipment but upon request from the telephone company the user shall tell the telephone company which line the equipment is connected to as well as the registration number and the ringer equivalence of the registered protective circuitry. In most, but not all areas, the sum of all RENs should be 5.0 or less. The FCC Registration number and Ringer Equivalence number are printed on the main chip in the center of the internal modem board, or on the underside of the external modem.

Malfunction of the Equipment

In the event that the device should fail to operate properly, the customer shall disconnect the equipment from the telephone line to determine if it is the customer's equipment which is not working properly, or if the problem is with the device, the user shall discontinue use until it is repaired. In the event service is needed the user should contact the vendor from whom you purchased the device.

Telephone Connection Requirements

Except for telephone company-provided ringers, all connections to the telephone network shall be made through standard plugs and standard telephone company-provided jacks, or equivalent, in such a manner as to allow for easy and immediate disconnection of the terminal equipment. Standard jacks shall also be arranged that, if the plug connected thereto is withdrawn, no interference to the operation of the equipment at the customer's premises which remains connected to the telephone network, shall occur by reason of such withdrawal.

Incidence of Harm

Should terminal equipment or protective circuitry cause harm to the telephone network, the telephone company shall, where practical, notify the customer that temporary discontinuance of service may be required; however, where prior notices are not practical, the telephone company may temporarily discontinue service if such action is deemed reasonable in the circumstances. In the case of such temporary discontinuance, the telephone company shall promptly notify customers and will be given the right to bring a complaint to the FCC if they feel the disconnection is not warranted.

Changes in Telephone Company Equipment or Facilities

The telephone company may make changes in its communications facilities, equipment, operations, or procedures, where such action is reasonably required and proper in its business. Should any such changes render the customer's terminal equipment incompatible with the telephone company facilities, the customer shall be given adequate notice to make modifications to maintain uninterrupted service.

General

The FCC prohibits customer-provided terminal equipment be connected to party lines or to be used in conjunction with coin telephone service.

Installation

The device is equipped with a USOC RJ-11 standard miniature modular jack and is designed to plug directly into a modular jack.

DOC Compliance Statement (Canada)

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunction, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure, for their own protection, that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority or electrician, as appropriate.

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the load numbers of all the devices does not exceed 100. The Load number appears on the underside of the WEBGLIDER.

Warranty F

Limited Warranty

Boca Research, Inc. (BRI) warrants to the original buyer of this BRI product that the hardware is free of defects in materials and workmanship for a period of five (5) years from the date of purchase from BRI or its authorized dealer. Should the product fail to be in good working order at any time during the five-year period, BRI, will at its option, repair or replace this product as described below. This warranty does not cover defects resulting from misuse, abuse, negligence, accident, repairs, or alterations made by either the customer or another party. Boca Research reserves full rights to determine whether a defective product falls into this category.

The entire risk as to the quality and performance of the product rests with the customer. Any written or oral information or advice given by Boca Research dealers, distributors, agents, or employees will in no way increase the scope of this warranty. This warranty applies only to the product described in this manual and not to any other value-added software which may be included.

All products will be serviced and returned via UPS-ground at no charge to customers.

All customers are required to demonstrate proof of purchase when requesting a Return Merchandise Authorization (RMA). The period of service commences on the date of purchase. A copy of the sales slip must be included with the returned merchandise.

Products which require Limited Warranty service during the warranty period should be delivered to BRI at the address in the Appendix (Servicing Your Boca Product) with proof of purchase and the Return Merchandise Authorization (RMA) number provided by BRI Technical Support. Refer to the Appendix in your manual. Replacement parts or complete products will be furnished on an exchange basis only. Replaced parts and / or products become the property of BRI.

If the returned product is sent by mail, the purchaser agrees to prepay shipping charges, insure the product or assume the risk of loss or damage which may occur in transit, and to use a shipping container equivalent to the original packaging. ALL EXPRESS AND IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OF PURPOSE FOR THE PRODUCT ARE LIMITED IN DURATION TO THE ABOVE FIVE- AND ONE-YEAR PERIODS, RESPECTIVELY.

UNDER NO CIRCUMSTANCES (WHETHER BASED IN CONTRACT OR TORT) SHALL BOCA RESEARCH BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE, LOSS OF BUSINESS, OR OTHER FINANCIAL LOSS AS A RESULT OF THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR DISRUPTION OF ITS PRODUCTS.

Boca Research reserves the right to make periodic changes or enhancements to any Boca Research product without prior notification, but has no obligation to modify or update products once sold.

This warranty gives you specific legal rights, and you have other rights which may vary from state to state. This warranty is valid only in the United States.

Servicing Your Boca Product G

If your WEBGLIDER-460 requires service, first contact the authorized dealer from whom you purchased the product. If the dealer is unable to assist you, and you must contact Boca Research, Inc., please follow the instructions below.

Our ISDN BBS is available 24 hours a day at **(407) 997-9159**. You may also contact our analog BBS at **(407) 241-1601**. Product information is provided here along with special software and utilities that may be downloaded.

If the Troubleshooting section (Appendix A) did not resolve your problem, you may call our technical support staff for assistance. If you haven't referred to the Troubleshooting section, do so now.

NOTE: CALLING TECHNICAL SUPPORT WITHOUT COMPLETE AND ACCURATE INFORMATION CONCERNING YOUR PROBLEM MAY BE BOTH TIME-CONSUMING AND FRUSTRATING FOR YOU.

1. When calling Boca Research Technical Support, have the following information available:

   - **Board or external unit name and part number**
   - **Computer manufacturer**
   - **Computer Model**
   - **Peripherals in system**
   - **Operating system and version**

If you suspect a problem with a specific program or software package, make note of the name, version or release number, and manufacturer of the software.

2. Call our Technical Support Department between the hours of 8:00 a.m. and 6:30 p.m. EST Monday through Friday at (407) 241-8088. A technician will be available to discuss the problem(s) you are experiencing.

   If factory service is required, you will be given a Return Merchandise Authorization (RMA) number. Please place this number on the outside of the package when you return the item(s) for service and reference it on any correspondence included in the package. Boca Research, Inc. will return any product which is not accompanied by an RMA number.

3. Refer to the Warranty Statement if the product is covered under the five-year Boca Research, Inc. Limited Warranty.

4. Certain parts will not be covered under the Boca Research, Inc. Limited Warranty. Dealer installed parts are warranted by the dealer. Parts which you have installed yourself are covered only by the supplier's warranties. In these cases, Boca Research, Inc. can identify which parts are defective, but will not replace such parts until specific written authorization is received from you. The cost of parts and labor involved in making such repairs will be billed to you C.O.D.

5. When sending the WEBGLIDER-460 to Boca Research, Inc. for repairs, please be sure to include:

- **the WEBGLIDER-460 unit (external case only)**
- **a copy of the original invoice**
- **your return street address (for UPS purposes)**
- **phone number**
- **the RMA number mentioned above**

Package the product securely in a container equivalent to the original packaging, and insure the package to protect against loss or damage during transit. Shipping charges must be prepaid; C.O.D. shipments will not be accepted. Please use the address below for all correspondence:

Boca Research, Inc.
RMA Department - RMA # _____
1601 Clint Moore Road
Boca Raton, FL 33487-2841

6. If the repairs performed on your WEBGLIDER were covered by the warranty, Boca Research, Inc. will return it prepaid via UPS.

AT Command Reference H

Overview

Your WEBGLIDER provides serial, asynchronous dialing for the data port (RS-232) using standard AT commands with extensions for getting the most out of ISDN.

The ISDN command set was originally developed for use with V-series modems that operate over the telephone network. While keeping the standard AT commands that are used for making and answering calls we have made enhancements to allow access to ISDN supplementary services including caller ID and user-to-user signalling over the D-channel at call setup and clear down time. **Note:** Not all ISDN networks provide caller ID and user-to-user signalling.

Introduction to Commands

AT commands are entered on a command line which starts with the characters AT or at and ends when a Carriage Return (see S3 register) character is received. The maximum length of a command line is 256 characters. Multiple commands can be concatenated together, in which case the AT prefix need only appear before the first command.

Example: `ATS112=3VD14085552609`
This single command has the same effect as the three commands:

```
ATS112=3
ATV
ATD14085552609
```

The command line may be edited using the Backspace (see S5 register) character. To repeat the last command A/ or a/ should be entered (without Carriage Return). All commands are in ASCII.

Introduction to Responses

The WEBGLIDER sends response codes to the PC (or DTE) when commands are issued or events such as call establishment happen. These response codes can be in English text (default) or numeric code form. Numeric mode is useful when the device is being software controlled. The commands Q and V can be used to set the response mode. In text mode the WEBGLIDER will respond to badly formed commands with ERROR. In most cases (but not when dialing or answering) correctly formatted commands receive an OK response when they have been processed.
All responses are in ASCII.

States

A port configured for AT dialing can be in one of two states, **command state** or **data state**. When in command state the WEBGLIDER interprets local DTE data as commands. The data state is entered when a call is set up. In this state data from the local DTE is sent over the connection to the remote DTE. The DTE can get from data mode back to command mode using the **escape command** (+++) and go back on-line again when required using the **online command** (ATO).

Commands

This section describes the AT commands in detail, giving examples where relevant. The commands are grouped as follows:

- Mode selection
- Call control commands
- Extended call control commands
- DTE interface commands
- Miscellaneous commands
- Configuration

For notation conventions please refer to **Section One**.

Mode Selection

&Q Communication Mode

Syntax: AT&Q[0|1|2|3|4]

Description: Sets the communication mode as follows:

&Q0 AT dialing, asynchronous operation (default)

&Q1 DTR dialing, asynchronous operation

&Q2 Dial-on-data, asynchronous operation

&Q3 PPP mode (asynchronous to synchronous PPP conversion; used for most Internet ISDN services)

&Q4 Command line configuration mode.

DTR dialing and dial-on-data are described in **Section Four**. PPP mode provides AT dialing, but when the connection is established asynchronous to synchronous PPP conversion is enabled. Use this option if your internet provider requires synchronous PPP. Command line configuration is defined in **Section Four**.

Call Control Commands

A Answer

Syntax: ATA
Description: This command causes an incoming call to be answered. The command can be aborted by the PC (or DTE) sending any character when the command is executing.
See also: ***A, S0, RING***

D Dial

Syntax ATD<isdn number[*subaddress]>
Description Initiates a call to the ISDN address defined by *isdn number* (and optional *subaddress*).

To dial a pre-stored number the following syntax should be used:
ATDS=n
where *n* is the index of the stored number.

Aggregated calls are made using the same command, two B-channels are used rather than one, see ***&B***.
Examples: ATD12025556000
An ISDN call is initiated to 12025556000.
ATD5550620*2 calls the equipment at 5550620, specifying subaddress 2.
See also: ***D, &Z, &B***

H Hook

Syntax: ATH[0|1]
Description: This command causes a call to be cleared. This command cannot be entered during a call while in data mode, the user must escape back to command mode using '+++'.
H Same as H0

H0 Hang-up, clear call
H1 Go off-hook (do nothing, respond OK)
See also: ***+++, O***

O Online

Syntax: ATO
Description: If a connection is established this command causes an exit from the command mode into an on-line state.
See also: ***+++, H***

Extended Call Control Commands

The following commands are 'extended' call commands for ISDN; they allow access to the supplementary services of ISDN. **Note: Caller ID** and **user-to-user information** (uui) are not available on all networks, check with your ISDN provider.

*A Answer with optional UUI

Syntax: AT*A[,uui]
Description: Causes the incoming call to be answered. The *uui* parameter allows optional user-to-user (D-channel) information to be passed at this time. This information must be in double quotes. The maximum length of *uui* depends on your network.
Example: AT*A,"Transaction Accept"

This example answers the call and sends the user-to-user information **Transaction Accept** to the remote device via the ISDN D-channel.

If the remote calling device is another Boca Research ISDN product using AT dialing, this information will be received with the **CONNECTED** response.
See also: ****D, A, Extended Response Codes***

*D Dial with optional UUI

Syntax: AT*D/<isdn number[*subaddress]>/[uui]
Description: Initiates an ISDN call to the address specified by *isdn number* and optional *subaddress*. The *uui* parameter allows the inclusion of an optional connect time user-to-user (D-channel) message. This information must be between double quotes.
Example: AT*D/5552234/"Transaction Request 53663:50"
In this example the ISDN number 5552234 is called with user-to-user information **Transaction Request 53663:50**.
See also: ***D, *A, Extended Response Codes***

*H Hang-up call with optional UUI

Syntax: AT*H[,uui]
Description: Causes the currently established call to be cleared. User-to-user information can be passed at this time if the optional *uui* parameter is included.
Example: AT*H,"Timeout"
The ISDN connection is closed and user-to-user information **Timeout** is sent. A remote Boca Research ISDN product will inform the user of the disconnection as follows:

CLEARED:16,"Timeout"

See also: ***H, Extended Response Codes***

DTE Interface Commands

These commands configure the behavior of the RS-232 port. See also S-registers S2, S3, S4, S5, S39, S95, S112.

E Echo

Syntax: ATE[0|1]
Description: This command controls whether command input characters are echoed back to the DTE.

E Same as E0
E0 Echo disabled
E1 Echo enabled (default).

Q Quiet

Syntax: ATQ[0 | 1]

Description: This command controls whether or not result codes should be sent back to the DTE on completion of commands. The command is used as follows:

Q Same as Q0

Q0 Quiet mode disabled, results sent (default)

Q1 Quiet mode enabled, no results sent

See also: ***V***

V Verbose

Syntax: ATV[0 | 1]

Description: This command controls the output format of result codes, the two possible formats are verbose and numeric (short form). **Note:** When quiet mode is enabled no response codes will be sent to the DTE.

V Same as V0

V0 Numeric form

V1 Verbose literal form (default).

See also: ***Q***

W Negotiation progress messages

Syntax: ATW[0 | 1 | 2]

Description: This command selects the format of the connection negotiation progress messages.

W Same as W0

W0 The **CONNECT** message reports the port speed.
If S95 is 0 the extended negotiation messages are disabled (default).

W1 The **CONNECT** message reports the port speed. If S95 is 0 **CARRIER** and **PROTOCOL** messages are enabled. The **CARRIER** speed is the ISDN B-channel speed.

W2 The **CONNECT** message reports the link speed. If S95 is 0 the extended negotiation messages are disabled.

See also: ***S95***

X Result code and call progress messages

Syntax: ATX[0|1|2|3|4]

Description: Configuration of response codes sent to DTE to report call progress.

X Same as X4

X0,X1 Sends NO CARRIER when destination is busy. Sends NO CARRIER when no B-channel is available or no link to central office (C.O.) (default).

X2 Sends NO CARRIER when destination is busy
Sends NO Dial tone when no B-channel or no link to C.O.

X3 Sends BUSY when destination is busy
Sends NO CARRIER when no B-channel or no link to C.O.

X4 Sends BUSY when destination is busy
Sends NO Dial tone when no B-channel or no link to C.O.

&B B-channel Profile selection

Syntax: AT&B[1|2|3|4]

Description: This command selects the current B-channel profile. The B-channel profile controls data compression and rate aggregation. Data compression uses the V.42*bis* standard and

allows data to be transferred between the two DTE devices (e.g. PCs) above the speed of the ISDN link. Rate aggregation controls whether the WEBGLIDER bonds the two 64 kbps B-channels together to provide an ISDN link speed of 128 kbps.

Profile	Data Compression	Rate Aggregation
&B1 1 (default)	**OFF**	**OFF**
&B2 2	ON	OFF
&B3 3	OFF	ON
&B4 4	ON	ON

Incoming calls are handled in one of two modes. In the simplest mode incoming calls need to match the current profile (i.e. the remote terminal adapter must have the same data compression and rate aggregation settings).

Automatic profile selection can be achieved where Multiple Subscriber Numbering or subaddressing are available. Each of the four profiles can be assigned a unique ISDN address, this allows automatic profile selection for incoming calls depending on the address called.

Port speed (the speed of transmission between the WEBGLIDER and the DTE) can be any speed regardless of the settings of rate aggregation and data compression. The WEBGLIDER will 'flow control' the DTE if data cannot be sent over the ISDN fast enough.

Example: AT&B4S114=460
Enables rate aggregation and data compression and sets the port speed to 460800 bps.

&C Data Carrier Detect (V.24 circuit 109) behavior

Syntax: AT&C[0|1]

Description: This command selects the behavior of DCD, as follows:

&C	Same as &C0
&C0	**DCD always asserted (default).**
&C1	DCD asserted only when ISDN connection established.

&D Data Terminal Ready (V.24 circuit 108) response

Syntax: AT&D[0|1|2|3]

Description: This command selects the response to changes in the DTR signal, as follows:

&D	Same as &D0
&D0	Ignore DTR
&D1	DTR drop puts WEBGLIDER in command state, but does not clear call
&D2	**DTR drop clears call (default)**
&D3	DTR drop resets unit

&K DTE-DCE flow control

Syntax: AT&K[0|1|2|3|4]

Description: This command selects the flow control mechanism to be used between the DTE and WEBGLIDER, as follows:

&K	Same as &K0
&K0	No flow control
&K1	**RTS-CTS flow control (default)**
&K2	XON-XOFF flow control
&K3	As &K1
&K4	As &K2

Note: This command has the same effect as S39

&S Data Set Ready (V.24 circuit 107) behavior

Syntax: AT&S[0 | 1]

Description: This command selects the behavior of DSR, as follows:

&S Same as &S0

&S0 This command causes DSR to be always on (default)

&S1 This command causes DSR to be on when an ISDN connection is established.

Miscellaneous Commands

These commands allow setting and inspection of S-registers and stored ISDN addresses, performing of internal tests, escaping back from online mode to command mode and other general functions.

S S-register programming command

Syntax: ATSr=n
Description: This command is used to change the value of an S-register. *r* is the number of the register and *n* is the new value.

I Internal tests

Syntax: ATI [0 | 1 | 2 | 3 | 4]
Description: This command provides identification information and initiates internal tests as follows:

I	Same as I0
I0	Display product identification
I1	Display ROM checksum
I2	Perform ROM checksum, returning OK or ERROR
I3	Display part number and revision level
I4	Display encoded product information

+++ Escape

Syntax: +++
Description: This escape sequence is used to exit from an established connection back to command mode. To help prevent the escape code being triggered by legitimate data, the escape sequence should be preceded and followed by a one second pause.
See also: ***O, S2***

&O Display configuration

Syntax: AT&O
Description: Same effect as &V

&V Display configuration

Syntax: AT&V
Description: This command causes the values of the S-registers, configuration parameters and ISDN address directory (the stored numbers) to be displayed.

&W Save registers and options as user defaults

Syntax: AT&W
Description: The current settings for S-registers and all other parameters (e.g., directory entries, DTR response, indication format, security, call log etc.) are saved to non-volatile memory as user defaults.

&Z Set directory entry

Syntax: AT&Z<dir id>=<dial string>
Description: This command stores the ISDN address dial string in one of the 32 locations of the stored number directory. The location is specified by <dir id>.
Example: AT&Z2=5556874
Sets stored number directory entry 2 to 5556874

Z Reset

Syntax: ATZ
Description: This command resets the WEBGLIDER and restores registers from user defaults.

Clear Flash memory (Control R)

To perform this procedure, do the following:

1. Turn the WEBGLIDER off.

2. Hold down the **CTRL** and **R** keys at the same time.

3. While holding the keys down, turn the WEBGLIDER back on.

4. Continue holding the keys until the indicators on the WEBGLIDER stop flashing.

5. When the DC and TD indicator lights stay on solid, release the **CTRL** and **R** keys. The WEBGLIDER will reboot again. Reset is complete.

CAUTION: Use the CTRL/R function only when you wish to clear the entire contents of flash memory and restore factory default settings. NOTE: You will have to reconfigure the WEBGLIDER after performing this procedure. Refer to the *Quick Tour Installation Guide* ("Running the Configuration Utility"). Also, the WEBGLIDER loses date and time following a reset.

S-Registers

S-registers contain configuration parameters that define the behavior of the WEBGLIDER. They can be written to using the Sr=n command and read from using the Sr? command (see previous section). The table below summarizes the S-registers. Detailed descriptions follow the table.

Register	Values	Default	Description
S0	0,1	0	Auto-answer control
S1	0...255	N/A	Pending incoming call count
S2	0...255	43	Escape sequence character
S3	0...127	13	Command line terminator
S4	0...127	10	Line feed character
S5	0...127	8	Backspace character
S7	0...255	20	Outgoing connection time-out
S39	0,3,4	3	DTE-DCE flow control
S95	0...12	0	Negotiation messages
S112	0,1,3	3	Extended message format
S114	3... 460	Autobaud	Port speed
S141	0,1	0	B1 loopback control
S142	0,1	0	B2 loopback control

S-Register Summary

S0 Register

Purpose: The S0 register determines whether incoming ISDN calls will be automatically answered. If automatic answering is disabled the DTE decides whether to answer the call or not.

Values: 0 No automatic answer
1 to 255 Automatic answer on this many rings

Default: 0

See also: ***S1, A, &C, &S, RING***

S1 Register

Purpose: Number of pending non-answered incoming calls (Read only).

Values: 0 to 255

S2 Register

Purpose: Escape sequence character, if greater that 127 escape is disabled

Values: 0 to 255

Default: 43 (+ character)

See also: +++

S3 Register

Purpose: Command line termination character. This S-register contains the ASCII character used to terminate the command line.

Values: 0 to 127.

Default: 13 (<CR> character).

S4 Register

Purpose: Response formatting character. This S-register contains the ASCII character used to format output responses.

Values: 0 to 127.

Default: 10 (<LF> character).

S5 Register

Purpose: Command line editing character. This S-register contains the character used by the DTE to edit the command line (deleting characters from the right).

Values: 0 to 127.

Default: 8 (<BS> character)

S7 Register

Purpose: S7 contains the maximum number of seconds to wait for an outgoing call to be established before reporting NO CARRIER to the DTE.

Values: 0 to 255

Default: 20

S39 Register

Purpose: S39 defines the mode of flow control that is to be used between the WEBGLIDER and the DTE. The options are: no flow control (data may be lost), flow control using the V.24 interface signals RTS (request to send) and CTS (clear to send), and flow control using XON and XOFF characters to start and stop the flow of data over the link.

Values:
- 0 No flow control.
- 1 RTS, CTS flow control.
- 2 XON, XOFF flow control.
- 3 RTS, CTS flow control.
- 4 XON, XOFF flow control.

Default: 3

See also: ***&C command***

S95 Register

Purpose: This S-register controls the amount of information (in addition to the CONNECT message that shows the port speed) that is sent to the DTE during connection negotiation. The CARRIER message shows the speed of the ISDN connection and the PROTOCOL message shows the protocol running over the B-channel.

Values: The sum of the following:

4 Enable CARRIER message (bit 2)

8 Enable PROTOCOL message (bit 3)

32 Enable COMPRESSION message (bit 5)

Default: 0

See also: Response codes

S112 Register

Purpose: Sets options for extended response code format for RING, CONNECTED and CLEARED messages.

Values: The sum of the following:

1 Extended response enable (bit 0)
- 0 AT format
- 1 extended format.

2 Extended response format (bit 1)
- 0 short form
- 1 long form.

8 Extended RING & NO CARRIER format (bit 3)
- 0 AT standard
- 1 RING with calling party number
  NO CARRIER with cause in decimal.

128 ALERT enable (bit 7)
- 0 ALERT not displayed
- 1 ALERT displayed.

Other bits are reserved and should be set to 0.

Default: 3.

See also: Extended Response Codes

S114 Register

Purpose: Sets port speed in bits per second (bps).

Values:		
	3	300 bps
	6	600 bps
	12 or 1	1200 bps
	24 or 2	2400 bps
	48 or 4	4800 bps
	96 or 9	9600 bps
	192 or 19	19200 bps
	38	38400 bps
	57	57600 bps
	115	115200 bps
	230	230400 bps
	460	460800 bps

Default: **Autobaud**.
See also: **AT&B**

S141 Register

Purpose: Local B-channel 1 loopback. Setting S141 will cause all incoming B1 information to be looped back to the transmitter. Loopback must be performed after the call is established.

Values:		
	0	Do not loopback B1.
	1	Loopback B1.

Default: **0**

S142 Register

Purpose: Local B-channel 2 loopback. Setting S142 to 1 will cause all incoming B2 information to be looped back to the transmitter. Loopback must be performed after the call is established.

Values:		
	0	Do not loopback B2.
	1	Loopback B2.

Default: **0**

Response Codes

Response codes are generated when command line processing is complete. These codes can have numeric or text form (see ATV).

AT Response Codes

Numeric	Text	Meaning
0	**OK**	Command successfully executed
1	**CONNECT**	Connection established
2	**RING**	Incoming call indication
3	**NO CARRIER**	Call cleared, communication terminated
4	**ERROR**	Error
5	**CONNECT 1200**	Communication established, 1200 bps
6	**NO DIALTONE**	Network does not respond
7	**BUSY**	Called number is busy
10	**CONNECT 2400**	Communication established, 2400 bps
11	**CONNECT 4800**	Communication established, 4800 bps
12	**CONNECT 9600**	Communication established, 9600 bps
16	**CONNECT 19200**	Communication established, 19200 bps
17	**CONNECT 38400**	Communication established, 38400 bps
18	**CONNECT 57600**	Communication established, 57600 bps
59	**CARRIER 64000**	ISDN speed is 64000 bps
60	**CARRIER 128000**	ISDN speed is 128000 bps
67	**COMPRESSION: V42BIS**	V42*bis* data compression
83	**PROTOCOL: V.120**	V.120 rate adaption protocol
96	**CONNECT 460800**	Communication established, 460800 bps
97	**CONNECT 230400**	Communication established, 230400 bps
99	**CONNECT 115200**	Communication established, 115200 bps

Standard AT Response Codes

Extended Response Codes

These messages are generated as responses to extended ISDN call commands (i.e. those starting with a '*'), or when an incoming call is received when extended response codes are selected (see S112). There are no numeric substitutes for these text messages.

Note: The availability of user-to-user information and caller ID may vary between networks.

Extended RING 1

Syntax: RING:<uui>,<calling address[*subaddress]>

Meaning: This message is sent when an incoming call is received and S112 bit 0 is set. *uui* shows user-to-user information (if any). This information was sent by the calling DTE when the connection was initiated and is enclosed in double quotes. The address of the remote DTE is provided in the form *calling address[*subaddress]*.

Examples: RING:"PPP",4075557710*143

In this example an incoming call has been received from remote ISDN address 4075557710, subaddress 143. The user-to-user information **PPP** was sent with the call.

RING:,212

An incoming call has been received from remote ISDN address 212. No user-to-user information was supplied with the call.

Extended RING 2

Syntax: RING:<uui>,<calling address[*subaddress]> ,<b-channel id>,<called address[*subaddress]>

Meaning: This message is sent when an incoming call is received and S112 bits 0 and 1 are set. *uui* shows user-to-user information (if any). This information was sent by the calling DTE when the connection was initiated and is enclosed in double quotes. The address of the remote DTE is provided in the form *calling address[*subaddress]*. *b-channel id* identifies the local B-channel allocated for the call (1 for B1, 2 for B2). The address and subaddress that the incoming call was made to is provided by *called address[*subaddress]*.

Examples: RING:,213,1,214

An incoming call from ISDN address 213 was received, channel B1 has been allocated for the call. The call was made to ISDN address 214. No user-to-user information supplied with the call.

RING:"login required",2776426*1,2,4773900

Here an incoming call from 2776426, subaddress 1 has been received, B-channel 2 has been allocated for the call, the called address was 4773900 and the user-to-user information was **login required**.

Extended CONNECTED 1

Syntax: CONNECTED:<uui>
Meaning: This message is sent to the DTE when an outgoing call is fully established and S112 bit 0 is set. *uui* is the user-to-user information sent by the remote party when it received the call.
Example: CONNECTED:"SALES AND STOCK INFO AVAILABLE"
The outgoing call is established and the remote DTE has sent the user-to-user information **SALES AND STOCK INFO AVAILABLE**.

Extended CONNECTED 2

Syntax: CONNECTED:<uui>,<b-channel id>
Meaning: This message is sent to the DTE when an outgoing call is fully established and S112 bits 0 and 1 are set. *uui* is the user-to-user information sent by the remote party when it received the call. *b-channel* id identifies the local B-channel allocated for the call (1 for B1, 2 for B2).

Extended CLEARED

Syntax: CLEARED:<cause>
Meaning: This message is sent to the DTE when an ISDN call (that was setup using extended AT* call commands) disconnects. *cause* provides the reason for the call being cleared. The normal clearing indication (for calls not setup with extended commands) is NO CARRIER.
Example: CLEARED:16
The call cleared with cause 16 (normal call clearing)

Extended BUSY

Syntax: BUSY, LINE IN USE
Description: This message is sent when an AT dial command is issued when both B-channels are in use by AUX ports and S112 bits 0 and 1 are set.

Extended ALERT

Syntax: ALERT:<b-channel ID>
Description: The number dialed is a valid ISDN number, the called DTE is not busy and has been informed (by a RING message) of the call that was initiated by the WEBGLIDER and the local B-channel is assigned according to *b-channel id.* This message is very useful for application diagnostics. This message is produced when S112 bit 7 is set to 1 (S112>128).
Example: ALERT:2
The remote DTE has been alerted of our call (by a RING message) and we have been assigned local B-channel B2. Expect a CONNECT message or call cleared (if the called DTE does not answer or rejects our call).

Additional Command Line Options I

The following is a summary of command line options for the WEBGLIDER. The SET command is used for changing the values of configurable parameters. The other commands are used for displaying parameters, saving parameters, clearing the screen, and displaying help.

Command	Function
SET	Change the value of a configuration item
SHOW	Display the value of a configuration item, status, or call log
SAVE	Store configuration in non-volatile memory
EXIT	Exit configuration
HELP	Provide helpful information
CLEAR	Clear the screen

SET

Syntax: **SET <parameter name> <value>**

Description: This command is used for changing the values of configurable parameters. The possible parameter names for the SET command are shown in the tables below. The parameters have been divided into general parameters, data port ('RS-232') parameters and telephone port ('AUX') parameters. See charts on the following page.

General Parameters

Parameter name	Configures
BLACKLIST	Security blacklist directory
DATE	Today's date
DN	Directory numbers and SPIDs
LOG	Call log control
NETWORK	Network type
SECURITY	Incoming call security mode
STORED NUMBER	Stored number directory
TIME	Time of day
TOPOLOGY	ISDN line topology
WHITELIST	Security whitelist directory

Data Port Parameters

Parameter name	Configures
AUTODIAL	Auto re-dial parameters
CALL SETUP	Call compatibility mode for interoperability
CALL TYPE	ISDN call type (voice/data)
CHARACTER	Asynchronous character format
DIALING	Dialing procedure
PROFILE	Aggregation and compression profile
RS232 DN	Directory Number for 'RS-232' port
SPEED	Port speed
SUBADDRESS	Subaddress for 'RS-232' port

Voice Port Parameters

Parameter name	Configures
AUX1 DN	Directory Number for 'AUX1'
AUX2 DN	Directory Number for 'AUX2'
AUX2 REDIRECT	Call redirection from AUX2 to AUX1

The SET command parameters are defined below, they are arranged in alphabetical order, rather than type.

SET AUTODIAL

Type: Data port parameter

Syntax: SET AUTODIAL <stored number index> <attempts> <redial timer> <inactivity timer>

Description: This command is only relevant when the dialing mode is set to DTR dialing or dial-on-data. Dial-on-data mode only supports an inactivity timer where an ISDN connection can be dropped if no data is passed in either direction for a particular period. Parameters for this command are as follows:

stored number index: the index (1-32) into the stored number directory of the number to be called.
attempts: the number of connection attempts (0-32) that the WEBGLIDER should make if the connection fails (0 means try forever).
redial timer: the time interval in seconds between attempts (0-3600).

The inactivity timer is the length of time in which no traffic has passed. The device will drop the call. This is only relevant to dial-on-data mode and can be disabled if not required, values are in seconds ranging from zero (disabled) to 3600 (60 minutes).

Examples: SET AUTODIAL 4 2 60 0
This example causes stored number 4 to be dialed when the dialing criterion is met (see SET DIALING). If the connection fails, one further attempt will be made after a wait period of 60 seconds.
See also: SET DIALING, SET STORED NUMBER

SET AUX1 DN

Type: Voice port parameter

Syntax: `SET AUX1 DN <directory number>`

Description: This command allows the ISDN number for the voice port 'AUX 1' to be configured. This is the number that will be dialed from the ISDN / PSTN network to ring the AUX1 port.

NOTE: 'Directory number' should not include the area code and should be one of the DNs that have already been configured using the SET DN command.

Example: SET AUX1 DN 5551111

The directory number of AUX 1 is set to 5551111.

See also: SET DN, SET RS232 DN, SET AUX2 DN

SET AUX2 DN

Type: Voice port parameter

Syntax: **`SET AUX2 DN <directory number>`**

Description: Has the same effect as SET AUX1 DN, but for port AUX 2

See also: SET DN, SET RS232 DN, SET AUX1 DN

SET AUX2 REDIRECT

Type: Voice port parameter

Syntax: `SET AUX2 REDIRECT <ON | OFF>`

Description: This causes all incoming calls for AUX 2 to be redirected to AUX 1. This allows you to have two directory numbers, both directed to a single device. The default setting is OFF.

Example: SET AUX2 REDIRECT ON

Incoming POTS calls to AUX 2 will ring the device on AUX 1

See also: SET DN, SET AUX1 DN, SET AUX2 DN

SET BLACKLIST n

Type: General parameter

Syntax: SET BLACKLIST <index> <isdn address>

Description: The WEBGLIDER has a configurable 'blacklist' that is intended for ISDN addresses of unwanted callers. The blacklist is used with Caller ID and applies to all three ports (see SET SECURITY). This command allows ISDN addresses to be written into the blacklist directory. Index is the position in the directory (1-32) and isdn address is the number to store (up to 15 digits).

Example: SET BLACKLIST 1 5551234

This stores the number 5551234 in the blacklist entry 1.

See also: SET SECURITY, SET WHITELIST, SHOW BLACKLIST

SET CALL SETUP

Type: Data port parameter

Syntax: SET CALL SETUP <specification>

Description: This command solves interoperability problems between WEBGLIDER and some other vendors equipment. When specification is set to MAXIMUM (default) the ISDN data call made for the RS-232 port accurately specifies V.120 to the network and remote ISDN equipment. It has been found that currently some networks do not support V.120 calls in this form, to overcome this specification can be set to MINIMUM.

SET CALL TYPE

Type: Data port parameter

Syntax: SET CALL TYPE <VOICE|DATA>

Description: ISDN differentiates between voice and data calls, some ISDN providers tariff these two service differently. The RS-232 port makes data type calls, while the two AUX ports make analog / voice calls.

When an incoming call is received the WEBGLIDER uses the call type information as well as the number to route the call to the correct port (e.g. a voice call is not sent to the data port). Under some circumstances it is desirable to override this system, in this case the WEBGLIDER can be configured to make and accept calls of either type on the data port if required. This command is used to set the type of call made and accepted by the RS-232 port.

Warning: If all ports are configured to accept voice calls the response to incoming calls may be unpredictable. Each port you wish to use should be given a different ISDN number.

Example: SET CALL TYPE VOICE
This example sets the call type for the RS-232 port to voice.
See also: SET CALL SETUP

SET CHARACTER
Type: Data port parameter
Syntax: `SET CHARACTER <data bits> <parity> <stop bits>`
Description: This command sets the format of asynchronous characters. Data bits is the number of bits in the asynchronous character, this can be 7 or 8. Parity is the method of error checking and can be EVEN, ODD or NONE. Stop bits is the number of stop bits added to the end of an asynchronous character, this can be 1 or 2. The settings configured in this command must match those configured in the locally connected PC (or DTE). The default settings are 8 data bits, no parity and 1 stop bit, (8, N, 1).
Example: SET CHARACTER 7 EVEN 1
Sets the asynchronous character format to 7 data bits, even parity, 1 stop bit.
See also: SET SPEED

SET DATE
Type: General parameter
Syntax: SET DATE <mm>/<dd>/<yy>
Description: This command sets the date within the WEBGLIDER. If accurate call logging is required the date should be set after power up, otherwise the date will start at 1/1/94.
Example: SET DATE 2/29/96
Sets the date to February 29 1996
See also: SET TIME

SET DIALING
Type: Data port configuration
Syntax: SET DIALING <dialing mode>
Description: This command sets the dialing mode for a port. Dialing mode can be either:
AT for AT dialing (default)
DTR for DTR dialing
DATA for dial-on-data
For DTR dialing one of the stored numbers is dialed when the local DTE becomes ready. Dial-on-data dials a stored number when the local asynchronous DTE sends data (any character) and can timeout after a period of inactivity. These parameters are configured using the SET AUTODIAL command.
Example: SET DIALING DTR
Sets the RS-232 port to DTR dialing.
See also: SET AUTODIAL

SET DN

Type: General configuration

Syntax: `SET DN <index> <directory number> <service profile ID>`

Description: The WEBGLIDER can support from one to three Directory Numbers (DNs), how many DNs you have depends on your service provider and what you ordered. Each Directory Number that the WEBGLIDER uses has a Service Profile ID (SPID) associated with it. This SPID is assigned by your ISDN service provider (telco) and needs to be programmed into your ISDN device. You need to use this command before you set up the DNs used by the individual ports. Index is the number you want to configure (start with index 1, the numbers can be entered in any order). Directory number is the ISDN number assigned by your ISDN provider, without the area code. The service profile ID is the identifier assigned by your ISDN provider, numbers and SPIDs are assigned in pairs, be sure to match the pairs.

Example: SET DN 1 5551111 61755511110100
SET DN 2 5552222 61755522220100

Here we are configuring two numbers and corresponding SPIDs.

See also: SET RS232 DN, SET AUX1 DN, SET AUX2 DN, SET PROFILE

SET LOG

Type: General configuration

Syntax: `SET LOG <log mode>`

Description: This command enables and disables logging of calls to an internal log and allows the log to be cleared (reset). Log mode can be set to ON (start logging), OFF (stop logging), and CLEAR (clear and reset log).

See also: SHOW LOG

SET NETWORK

Type: General configuration

Syntax: SET NETWORK <network type>

Description: This command sets the type of ISDN switch (central office) that the WEBGLIDER is connected to. This command is usually executed once during initial installation to set the network type. The new network type will only be activated if a SAVE is executed. Network type can be one of the following

NI1	National ISDN-1
NI2	National ISDN-2
AT5	AT&T 5ESS, version 5 custom
AT9	AT&T 5ESS, version 6-9 custom
DMS	Northern Telecom DMS-100 custom

Example: SET NETWORK AT5

The WEBGLIDER is configured to operate with an AT&T 5ESS (version 5) central office switch.

See also: SET TOPOLOGY

SET PROFILE

Type: Data port configuration

Syntax: SET PROFILE <profile number>

Description: This command sets the B-channel profile, this controls rate aggregation and data compression for the data port ('RS-232') of the WEBGLIDER. Profile number can be 1, 2, 3 or 4 and controls the characteristics as follows:

Profile	Compression	Aggregation
1 (default)	**OFF**	**OFF**
2	ON	OFF
3	OFF	ON
4	ON	ON

Each profile can be given a unique ISDN address (ISDN number and subaddress combination), if more than one profile is given an ISDN address, the WEBGLIDER will automatically switch to the relevant profile when an incoming call is received (depending on the called number). This allows a single device to support incoming calls of all types.

SET RS232 DN
Type: Data port parameter
Syntax: SET RS232 DN <directory number>
Description: This command sets the ISDN number for the 'RS-232' data port. This is the number that will be dialed from the ISDN network to access this port. Directory number should not include the area code and should be one of the DNs that was configured using the SET DN command.

Warning: The SET RS232 DN and SET SUBADDRESS commands apply only to the last profile selected. Select a profile before assigning ISDN addresses.

Example: SET RS232 DN 5552222
Sets the directory number of the RS-232 port to 5552222.
See also: SET DN, SET AUX1 DN, SET AUX2 DN

SET SECURITY
Type: General configuration
Syntax: SET SECURITY <security mode>
Description: This command sets the security mode used for protection against unwanted incoming calls using caller ID. WEBGLIDER security can be off, (no incoming call security), use a blacklist (do not allow calls from list of unwanted callers) or use a whitelist (only allow access to a configured group of callers).

Security mode can be set to OFF, BLACKLIST
or WHITELIST. Up to 32 numbers can be stored in the blacklist and whitelist directories.
See also: SET BLACKLIST, SET WHITELIST.

SET SPEED
Type: Data port configuration
Syntax: SET SPEED <baud rate>
Description: The WEBGLIDER is designed to do automatic baud rate detection (autobaud). If you experience problems with autobaud at certain speeds the port speed can be set using this command. Speed is the data rate in bits per second and can be: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400 or 460800.
Note: After you have set the speed, autobaud detection is disabled until the unit is restarted.

SET STORED NUMBER
Type: General configuration
Syntax: SET STORED NUMBER <index> <isdn address>
Description: This command allows ISDN addresses to be written into the stored number directory. Index is the position in the directory (1-32) and isdn address is the number to store (up to 15 decimal digits).
Example: SET STORED NUMBER 30 12127779000
The ISDN number 12127779000 is stored in the ISDN directory, entry 30
See also: SET AUTODIAL

SET SUBADDRESS
Type: Data port parameter
Syntax: SET SUBADDRESS <subaddress>
Description: Subaddressing can be useful to provide a unique ISDN address for each profile of the 'RS-232' port. This optional command allows an ISDN subaddress to be configured for the 'RS-232' port, the subaddress applies to the current profile. If you need subaddressing, check with your ISDN provider to make sure it is available.

Warning: The SET RS232 DN and SET SUBADDRESS commands apply only to the last profile selected. Select a profile before assigning ISDN addresses.

Example: SET SUBADDRESS 1
Sets the subaddress for the RS-232 port (current profile) to 1.
See also: SET DN, SET RS232 DN

SET TIME
Type: General configuration
Syntax: SET TIME <hh>:<mm>:<ss>
Description: This command sets the time of day within the WEBGLIDER. If accurate logging of calls is required the time must be set after the device is powers up, otherwise time defaults to 00:00:00 (midnight). hh, mm and ss represent hours, minutes and seconds of the current time in 24-hour format.
Example: SET TIME 20:40:00
This sets the time to 2040hrs (8.40 pm).
See also: SET DATE

SET TOPOLOGY
Type: General configuration
Syntax: `SET TOPOLOGY <bus type>`
Description: This command allows the ISDN line topology to be configured. Bus type can be set to POINT-TO-POINT or MULTIPOINT. This command is only relevant for AT&T 5ESS switches running custom.
See also: SET NETWORK

SET WHITELIST
Type: General configuration
Syntax: `SET WHITELIST <index> <isdn address>`
Description: The WEBGLIDER has a configurable 'whitelist' that is intended for ISDN addresses of callers with access to the WEBGLIDER. The whitelist is used with Caller ID and applies to all three ports (enabled using SET SECURITY). This command allows ISDN addresses to be written into the whitelist directory. Index is the position in the directory (1-32) and isdn address is the number to store (up to 15 decimal digits).
See also: SET BLACKLIST, SET SECURITY

SHOW

Syntax: SHOW <parameter name>

Description: This command is used for displaying the values of configurable parameters. All items configured with a SET command can be displayed with a SHOW command (e.g. SHOW NETWORK).

The following items may also be displayed:
To display all port parameters enter: SHOW CONFIG
To display the status of the interfaces enter: SHOW STATUS
To display the firmware version enter: SHOW VERSION
To display the contents of the call log enter: SHOW LOG

Log entries, from the time the log was started or last cleared, are shown. The log holds up to 64 calls after which only the most recent 64 calls are stored.

Each call is presented on one line, the meanings and formats for each of the fields are shown below.

Field name	Start Column	Width	Meaning
REF	1	1-2	Call reference 1 - 64
PORT	6	4	Port call made to/from
TIME	12	8	Time of call set-up (hh:mm:ss)
DATE	22	8	Date of call set-up (mm/dd/yy)
DIR	30	2-3	Call direction **IN** = incoming, **OUT** = outgoing
REMOTE ADDRESS	35	23	ISDN address of remote device
DURATION	60	8	Call duration (00:00:00 = Call refused)
CAUSE	70	1-8	Call clearing cause (Q.931 cause code)

When a local disconnect occurs **Cause** will be one of the following:

DTR	The local DTE was no longer ready.
ATH	An ATH (hang-up) command was issued by the DTE.
INACT	The port is in dial-on-data mode and the inactivity timer has expired.
V120 T/O	The V.120 connection was not established to the remote device.

SAVE
Syntax: SAVE
Description: This command causes the configuration information to be saved, allowing the WEBGLIDER to be powered off, without the configuration information being lost. This operation can take a few seconds to complete.

EXIT
Syntax: EXIT
Description: This command exits configuration and returns back to AT dialing mode.

HELP or ?
Syntax: HELP [topic] or ? [topic]
Description: This command provides helpful information on the commands available and how to perform certain functions. Topic is optional, if specified help is provided for the topic stated, if not specified a list of help topics is provided.

CLEAR
Syntax: CLEAR
Description: This command causes the WEBGLIDER to clear the screen. The screen is cleared by sending a carriage return and multiple line feeds to the terminal device.

Microsoft's Remote Access Server J

The following files contain the latest WEBGLIDER definitions for Remote Access Server (RAS). These files are on the driver and configuration diskette:

WINNT.INF Microsoft Windows NT 3.5 MODEM.INF file
WFW311.INF Microsoft Windows for Workgroups 3.11 MODEM.INF file.

Upgrading Windows for Workgroups 3.11 MODEM.INF

- For Windows for Workgroups 3.11, the MODEM.INF file is located in the C:\WINDOWS\SYSTEM subdirectory.
- Create a backup of your original MODEM.INF file. **Example:**
  C:\>CD\WINDOWS\SYSTEM
  C:\>COPY MODEM.INF MODEM.BAK
- Copy the WFW311.INF file into this directory. **Example:**
  COPY <path>\WFW311.INF MODEM.BAK
  (where path is the directory where the WFW311.INF file is located)

Upgrading Windows NT 3.5 MODEM.INF

- For Windows NT 3.5, the MODEM.INF file is located in the C:\WINNT35\SYSTEM32\RAS subdirectory.
- Create a backup of your original MODEM.INF file. **Example:**
  C:\>CD\WINNT35\SYSTEM32\RAS
  C:\>COPY MODEM.INF MODEM.BAK
- Copy the WINNT35.INF file into this directory. **Example:**
  COPY <path>\WINNT35.INF MODEM.BAK

(where path is the directory where the WINNT35.INF file is located)

When you have finished copying the INF file, you will need to reinstall the WEBGLIDER for the new INF file to take effect.

Dial-Up Networking for Windows 95 K

Make sure you have added the necessary protocols to the Network icon inside **Control Panel** and **Dial-Up Networking** under **My Computer**. The steps below will allow you to connect to the Internet with the WEBGLIDER.

1. Select **My Computer**.
2. Select **Dial-up Networking** and establish your connection, then select **Make New Connection**.
3. Enter the name of the new connection.
4. Ensure "WEBGLIDER" is the chosen modem. Select **Next**
5. Enter the phone number, select **Next**, then **Finish**.
6. Find the new connection icon you just created and click on this icon with the right mouse button.
7. Select **Properties**, then click on the **Server Type** button.
8. Confirm the server settings with your host's system administrator. Keep selecting **OK** until your icon appears. Double-click on this icon.
9. Enter user name and password.
10. Select the **Connect** button.

Glossary L

2B+D

See Basic Rate Interface.

5ESS

Call switching equipment developed by AT&T.

Aggregation

See Rate Aggregation.

Asynchronous Communication

Data communication whereby data characters are individually synchronized using start and stop bits.

AT Dialing

Call control language initially designed for asynchronous modems.

B channel

64 kbps circuit switched user information channel.

BackupUnit(BU)

Device for establishing an ISDN backup circuit when a digital leased line circuit fails.

Basic Rate Interface (BRI)

A term used to describe a simple standardized combination of ISDN channels supplied to subscribers. Normally consisting of 2 B-channels and one 16 kbps D-channel (2B+D).

Bearer Service

Basic services offered by the ISDN network allowing users to communicate between two user-network interfaces.

Bonding

See Rate Aggregation.

Broadband ISDN (B-ISDN)

ISDN services that operate at data rates higher than primary rate.

Caller ID

See Calling Line Identification.

Calling Line Identification (CLI)

Supplementary service of ISDN whereby the address of the calling party is supplied at connect time.

CCITT

International Telegraph and Telephone Consultative Committee. This organization establishes communications standards. Now called ITU-T.

Central Office (CO)

Site containing customer line termination and call switching equipment for those lines. Also called exchange, local exchange.

Circuit Switching

Communication technique where a dedicated communication path with a fixed very small delay is established for the duration of a call.

COM Port

Serial asynchronous communication port of a Personal Computer.

D-channel

ISDN control channel for the carrying of out-of-band signalling to control circuit switched calls on associated B-channels. Can also be used for carrying packet switched data.

Data Circuit terminating Equipment (DCE)

Device to interface a DTE to a communication line (e.g. terminal adapter, modem).

Data Terminating Equipment (DTE)

A device where a data path ends (e.g. terminal, host computer, router).

Dialing

Call setup procedure.

Dial On Data

Mode of operation in which the DCE attempts to connect to a pre-stored address automatically when the connected DTE sends data.

Dial On DTR

As above but connection is attempted when the DTE becomes ready.

Digital Leased Line

Dedicated private digital circuit between two fixed points.

Directory Number (DN)

Subscribers unique number within area code boundary.

DMS-100

Call switching equipment developed by Northern Telecom.

EIA-232

Serial communication standard, also called RS-232.

EURO-ISDN

European ISDN standard, based on Q.931.

European Telecommunications Standards Institute (ETSI)

European body responsible for setting telecommunication standards.

Exchange

See Central Office.

G4 Fax

Group 4 digital facsimile.

High-level Data Link Control (HDLC)

Bit-oriented data link control protocol.

Integrated Services Digital Network (ISDN)

Circuit switched communication network that uses digital switching and digital transmission to carry different traffic types including data, voice and facsimile.

Integrated Services Private Branch Exchange (ISPBX)

An ISDN capable private switching exchange.

International Telecommunications Union (ITU)

Agency of the United Nations responsible for standardizing telecommunications.

ISDN

See Integrated Services Digital network.

ISDN Address

Network-wide unique numeric identifier of specific ISDN device consisting of subscribers ISDN number followed by an optional subaddress to identify a particular device (see also ISDN number).

ISDN Number

Network-wide unique numeric identifier for subscriber ISDN network interface. (see also ISDN Address).

ISDN Provider

Organization providing your connection to ISDN.

Modem

Modulator / demodulator. Data Circuit Terminating Equipment (DCE) for data transmission over analog telephone lines.

Narrowband ISDN

Term covering Basic Rate and Primary Rate ISDN.

National ISDN

Protocols for communication between central office and subscribers ISDN equipment. Replaces proprietary standard used by many switch manufacturers.

Network Termination (NT)

Subscriber premises termination of ISDN network.

Packet Switched Public Data Network (PSPDN)

A public network offering a data packet switching service.

Pinout

Definition of pin assignments within a connector.

POTS

Plain Old Telephone Service, another name for standard analog telephony.

PPP

Point-to-Point Protocol. A method of sending packet data over a serial connection, used mainly by the internet community.

Primary Rate Interface (PRI)

An access method for ISDN consisting of 23 or 30 B-channels and one 64 kbps D-channel.

Public Switched Telephone Network (PSTN)

A public network offering a telephone service.

R-interface

The interface between a non-ISDN DTE (TE2) and terminal adapter.

Rate Adaption

Function of mapping a terminal with a data rate of less than 64 kbps to a data rate of 64 kbps for circuit switched connections over a B-channel.

Rate Aggregation

Function of splitting a data stream from a high speed DTE over two circuit switched B-channels to increase overall throughput.

S-interface

Interface between ISDN Terminal Equipment (e.g. a TA) and ISDN Network Terminator (NT).

Service Profile ID (SPID)

Service Profile Identifier. A numeric string given to a subscriber by an ISDN provider to identify the subscribers ISDN equipment. The identifier is programmed by the subscriber into the ISDN equipment.

Supplementary Service

Additional service used in conjunction with a bearer service or a teleservice.

Switch

The equipment at the telephone company's central office which handles communications to subscribers.

Synchronous Communication

Mode of communication where sender and receiver are synchronized by a common clock.

T-interface

Subscriber site interface between an NT1 and a device capable of switching ISDN calls (an NT2).

Teleservice

An ISDN value added service such as Group 4 fax or videotex.

Terminal Adapter (TA)

Data circuit terminating equipment (DCE) for connecting non-ISDN equipment to an ISDN network.

U-interface

Interface between subscribers NT1 and the local ISDN exchange.

V.11

Definition of electrical characteristics of a DTE interface.

V.24

Definitions for interchange circuits / signals between data terminal equipment (DTE) and data circuit terminating equipment (DCE).

V.25bis

Automatic calling and answering protocol, originally intended for use over PSTN.

V.28

Definitions of electrical characteristics of a DTE interface.

V.35

Synchronous DTE interface standard.

V.42bis

Data compression standard.

V.110

Rate adaption standard for ISDN B-channel.

V.120

Rate adaption and multiplexing standard for ISDN B-channel.

X.30

Definition for interfacing X.21 DTEs to an ISDN.

X.31

Definition for the support of packet mode terminal equipment by an ISDN.

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