Application Note:
GSM0000AN026

Using a Terminal Program to Test PAD
Revision 1.01

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Objective:

The intent of this document is to show the user how to use a terminal program, such as HyperTerminal, to setup a TCP PAD function in the Enfora Enabler IIG products.

Overview:

A typical application for TCP PAD is point to multipoint connections. These connections have a central server or PC with a dial application and many remote devices connected to a modem. The intention is to transmit the data from the remote device to the central server or PC. In order to accomplish this, the server must dial to the remote modem and establish the connection. The following example will simulate a PAD connection between two PCs. One PC has an Internet connection and the second PC is connected via PAD.

Equipment Needed:

In this example the requirements are:

- An Enfora, Inc. hardware device.

- A notebook or desktop computer with any version of Microsoft Windows that has HyperTerminal or other terminal program.

- Mobile terminated SIM card (the following example is not applicable with a mobile originated SIM card).

References:

- GSM0000AN011 - Application Note: PAD Configuration and Use
- GSM0107AT001 - Enabler IIG AT Command Set

TCP PAD

1. Modem configuration

a. Enfora Enabler II-G Modem is the one connected to the remote device, in this case connected to a PC. This modem is set to TCP PAD Listen Mode.

Type the followings AT commands using a terminal program:

AT&F	(Set All TA Parameters to Factory)
AT+CREG=2	(GSM registration Status)
AT%CGREG=2	(GPRS attach status)
AT+CGDCONT=1,"IP","*APN*","",0,0	(The word "*APN*" should be replaced with the actual Access Point Name (APN) provided by the wireless network for your SIM card)
AT%CGPCO=1,"username,password",1	(username and password if need it for the APN)
AT$HOSTIF=2 mode)	(Configure the modem in TCP PAD mode)
ATX1	(enable IP reporting)
AT$ACTIVE=0	(Modem on LISTEN mode)
AT$PADDST="0.0.0.0",0	(entry must be left blank to allow an incoming PAD connection)
AT$PADSRC=500	(PAD source port is used as the source port in all outgoing PAD data messages. The remote host must use this port number as the destination port for PAD data sent to the device)
AT$AREG=2	(Auto Registration)
ATX1	(Show the IP address for that modem)
AT&W	(Save current settings)

When finished configuring the device, power cycle the modem. LISTEN will echo if the context activation is complete. *See figure 1.*
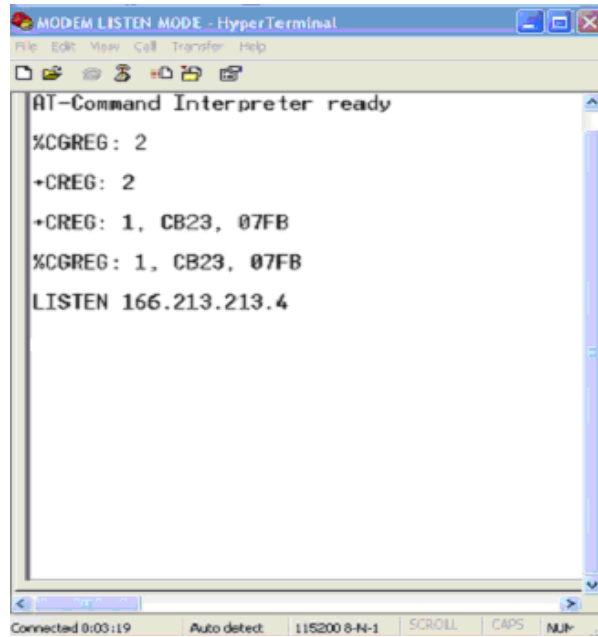
Figure 1: LISTEN echo

2. **Server or PC set up**

    a. HyperTerminal

    To open HyperTerminal, click **Start**, point to **All Programs**, point to **Accessories**, point to **Communications**, and then click **HyperTerminal**.

    b. Start **HyperTerminal** and create a new session with the following settings:

    Connection Description: Enter "**PAD TEST**" as the connection name

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Figure 2: HyperTerminal Connection Name

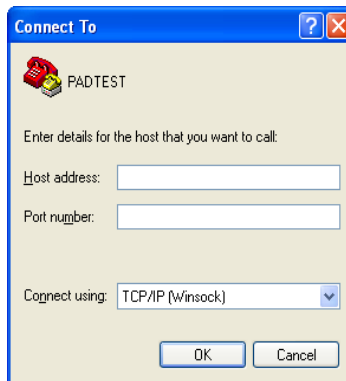Connect using: **Direct connect to TCP/IP (Winsock)**

Figure 3: Connect To TCP/IP winsock

Host address: IP remote modem LISTEN xxxx.xxxx.xxxx.xxxx

Port number: The port configured in the AT$PADSRC remote modem

c. Click the CALL button, which is the phone, located on the top left side of the HyperTerminal. This will have HyperTerminal start the connection. The process of the connection will be shown at the bottom left of the HyperTerminal window. *See "connecting" In figure 4.*
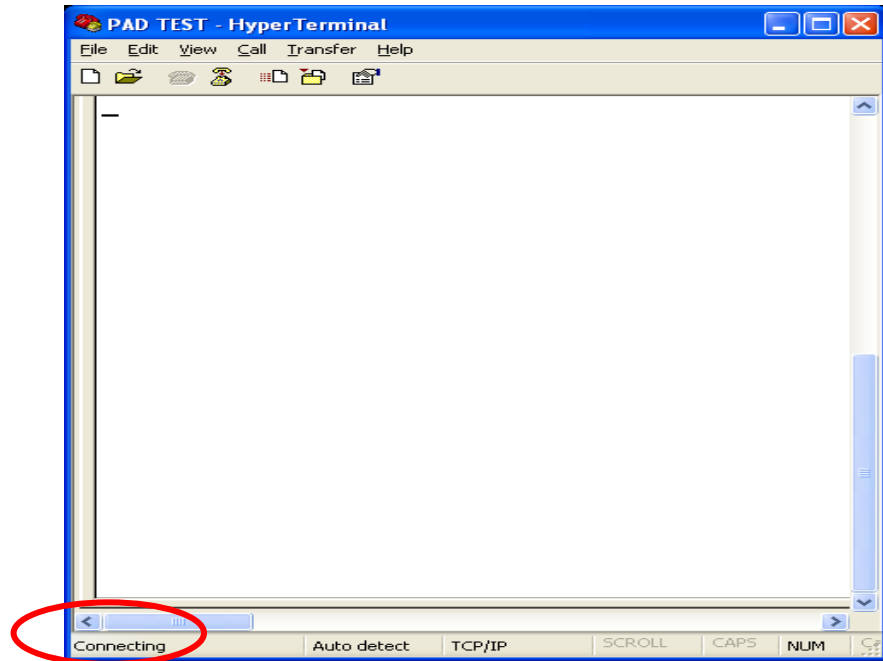

Figure 4: Connection in progess

d. Once the connection is established to the remote modem, HyperTerminal will show connected at the left bottom side. *See Figure 5.*
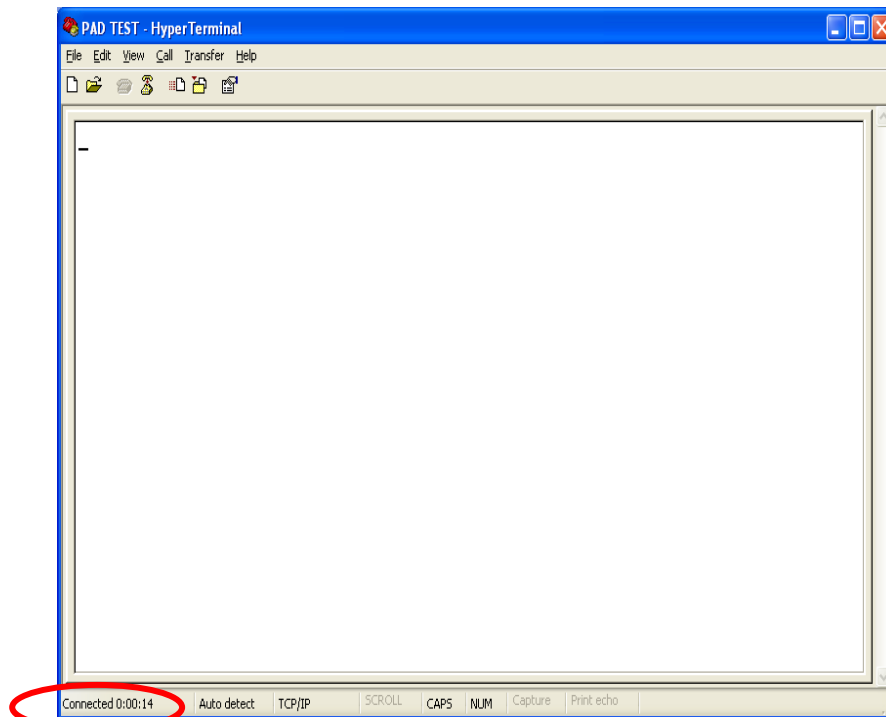

Figure 5: Connection established

e. Once the connection is established CONNECT will echo at the remote PC which is configured in LISTEN mode.
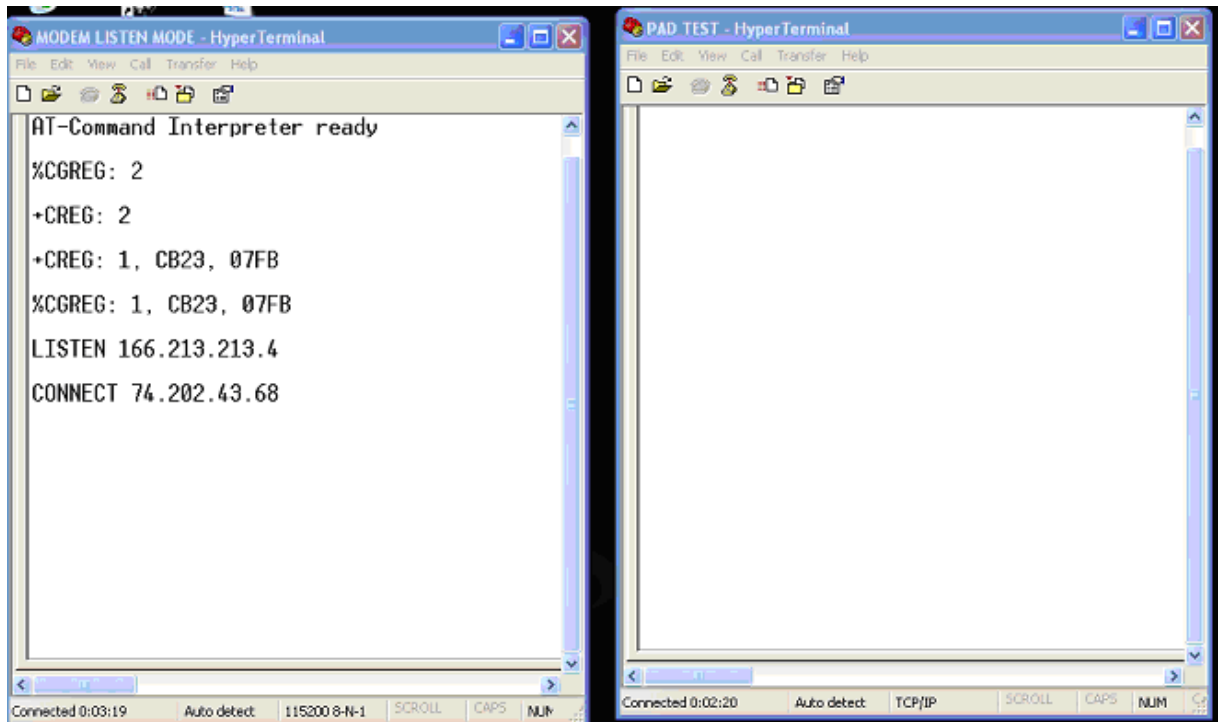

Figure 6: CONNECT echo at remote modem

f. When the connection is established, type characters on the PAD TEST window. Those characters will echo at the remote PC (Listen mode) HyperTerminal window.

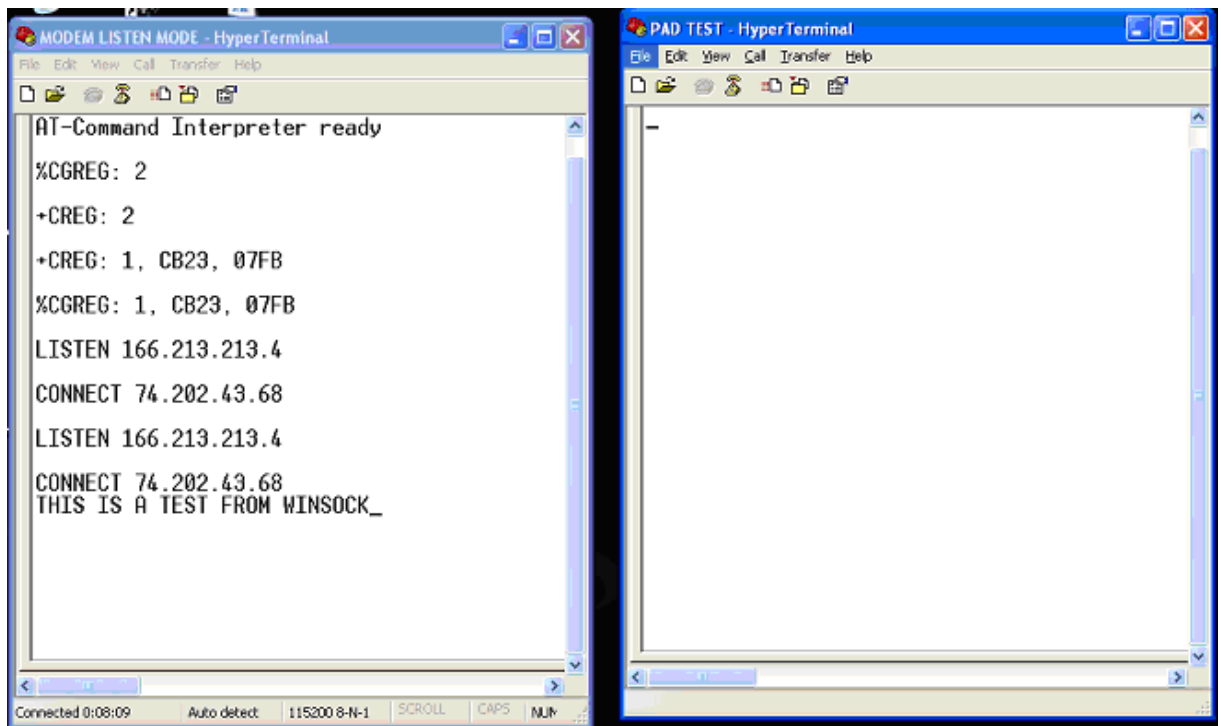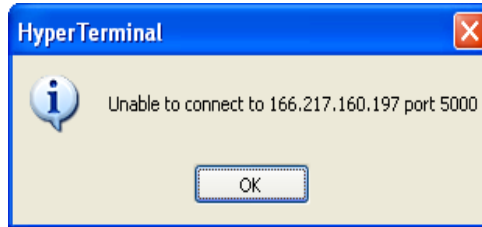> **Note:** What is being typed in the PAD TEST window will only echo in the remote window.

Figure 7: Message echo on remote PC

Troubleshooting

If the modem is trying to connect and you receive a pop-up message in HyperTerminal of "Unable to connect to connect…"

The reasons for this could be:

1. AT$PADDST is not configure correctly. The correct way is leave it open for any connection

    AT$PADDST="0.0.0.0",0

    Or

    AT$PADDST="yyyy.yyyy.yyyy.yyyy", zzzz Where xxxx is the IP assigned to the server and zzzz is the port where you server is listening to.

2. AT$PADSRC does not match the entry for port in the WINSOCK

3. SIM card does not support Mobile Terminated Data

4. Verify server PC has Internet connection

Revision History:

Date	Rev	Author	Description
10/12/07	1.00	Marcela Valdivieso	Initial Release
6/25/08	1.01		Added "mobile terminated SIM" to list of Equipment Needed