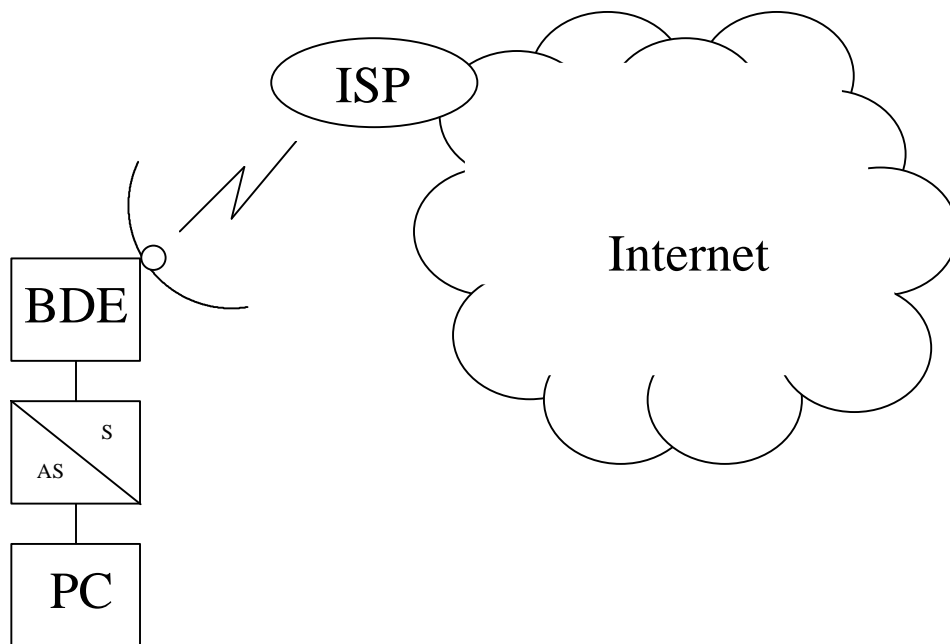


This version cancels  
all previous versions

# Inmarsat B Application Note



## How to connect a Windows 95/98 workstation to an ISP

AppNote 001/99

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## Legend :

<b>Issue No.</b>	<b>Date:</b>	<b>Author:</b>	<b>Changes:</b>
1.0	19990914	KLH	Start of document.
2.0	19991016	NIF	Overall review

## 1. Introduction

This note explains how to connect a standalone Windows 95/98 PC to an ISP (Internet Service Provider) through a RAMSAT RVP24 asynchronous-synchronous converter connected to an ECI Inmarsat B terminal using asynchronous PPP protocol.

### 1.1 RAMSAT RVP24

The RAMSAT RVP24 is an enhanced model of the RAMSAT RVH24 asynchronous-synchronous converter. In addition to the standard features, RVP24 also supports asynchronous PPP protocol (Point-to-Point protocol) which is used when connecting to an ISP.

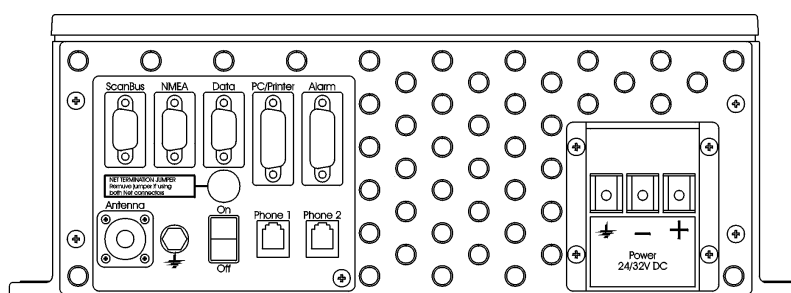
### 1.2 PPP-protocol

The Point to Point Protocol (PPP) is a modern datalink protocol with many features, among others,

- Support for asynchronous and synchronous data communication.
- Support for transparent data communication.
- Support for multiple protocol stacks.
- Support for layer 2 negotiations.
- Support for authentication between communicating partners.
- Support for layer 3 negotiations.
- Support for assigning network addresses. If using TCP/IP this would be the IP address.

PPP may be encapsulated in an asynchronous link protocol or a HDLC-like synchronous protocol via a serial connection.

## 2. Cable connections



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**Figure 1: Backside of the ECI Inmarsat B terminal.**

Since the ECI Inmarsat-B terminal is configured with a 9 pin D-sub connector and the RAMSAT box has a 25 pin D-sub connector a special cable is needed. The cable connections are shown in the tables below (Table 1 and 2):

Signal Name	Signal Abbreviation	Signal Number	B terminal X33 Data	Direction	DTE DB-25
Clear To Send	CTS	106	1	>	5
Receive Data	RD	104	2	>	3
Transmit Data	TD	103	3	<	2

Data Terminal Ready	DTR	108/2	4	<	20
Signal Ground	SG	102	5	-	7
Data Set Ready	DSR	107	6	>	6
Request To Send	RTS	105	7	-	Not used
Receive Clock	RTE	115	8	>	17
Transmit Clock	TTE	114	9	>	15

**Table 1: RAMSAT RVP24 to ECI Inmarsat B terminal connections.**

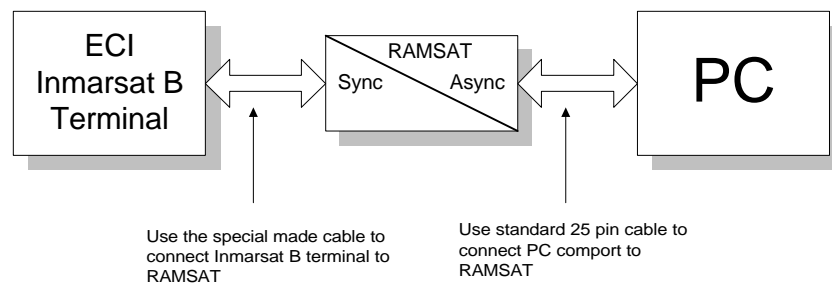
**Note:** V25bis does not include the use of Carrier Detect therefor the cable needs to be short-circuit at the DTE side between pin number 6 (DSR) and pin number 8 (DCD)

## RAMSAT to PC

Signal Name	RAMSAT V24 ASYNC	PC COM port DB-25	PC COM port DB-9
Transmit Data	2	2	3
Receive Data	3	3	2
Request to Send	4	4	7
Clear to Send	5	5	8
Data Set Ready	6	6	6
Signal Ground	7	7	5
Carrier Detect	8	8	1
Data Terminal Ready	20	20	4

**Table 2: RAMSAT RVP24 to PC connections.**

The picture shown below describes how to connect the cables between the devices.



**Figure 2**

### 3. Configuring the ECI B-terminal

The ECI Inmarsat-B terminal must be configured for V.25bis dialling. This is done through the service interface of the terminal using the following command :

**PAX X33 V25BIS**

When the PAX X33 V25BIS command is issued the clock rate on the B-terminal will automatically be set to 64 kbps.

If needed (for North American connections) the clock rate can be changed to 56 kbps by issuing the command:

**PAX X33 CLOCK56K**

#### 4. Installing the RAMSAT RVP24

To use your Terminal with the LSD 9600 data service you have probably already installed the modem driver for this service to your PC.

With the HSD 64000b/s service you similar need to install the RAMSAT RVP24 as an ISDN modem via the **Control Panel** (This example is based on a PC running Windows 98 )

**Control Panel** is found under **Start/Settings**. Double click the **Modems** icon, then select the box *Don't detect my modem; I will select it from a list* then click **Next** button (Fig. 3):

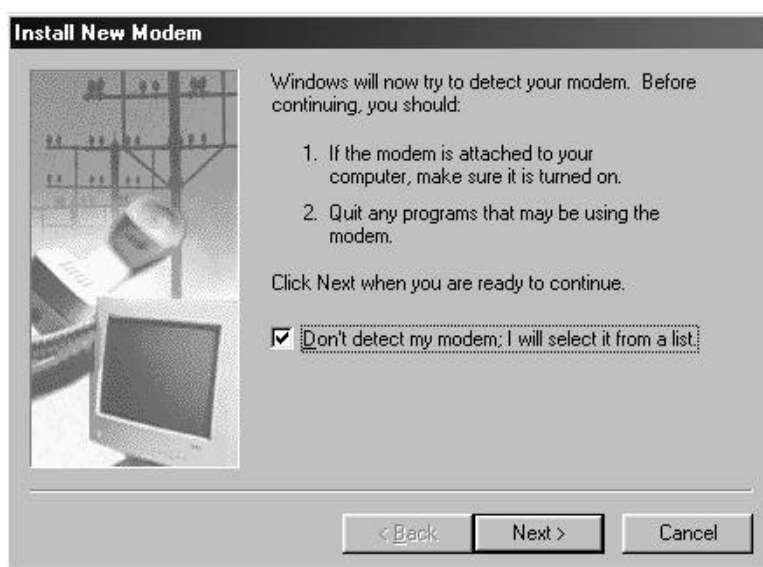


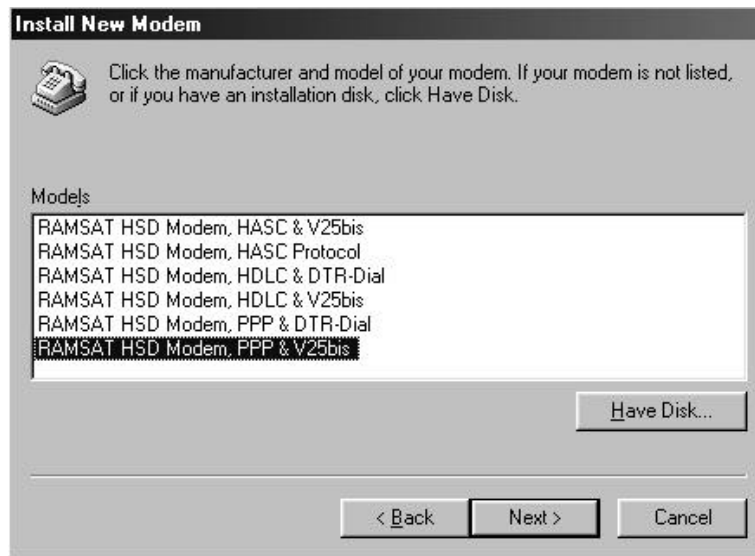
Figure 3

In the next window click *Have disk* and then insert the disk labelled "RAMSAT - file transfer" then click **OK** (Fig. 4):



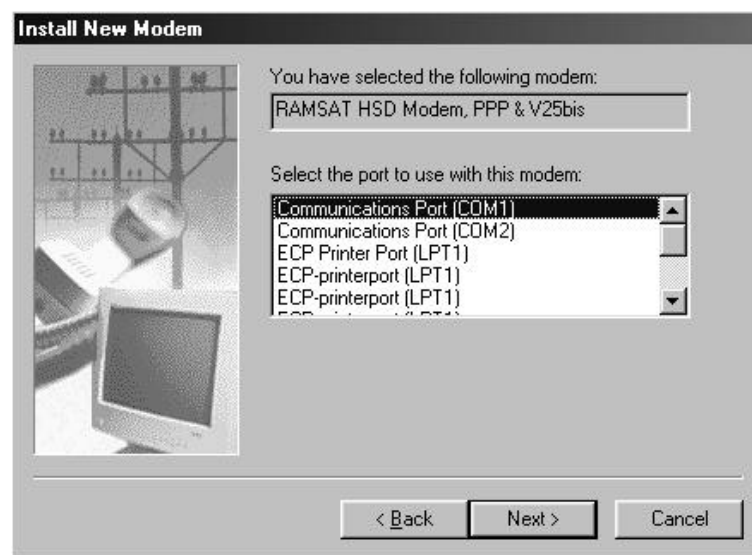
Figure 4

In the next window you will see a list of different modem drivers for RAMSAT, select PPP and V25bis support by a click on “RAMSAT HSD modem, PPP & V25bis”, then click **Next** (Fig. 5):



**Figure 5**

Next select which COM-port the RAMSAT unit has been attached to, then click **Next** (Fig. 6):



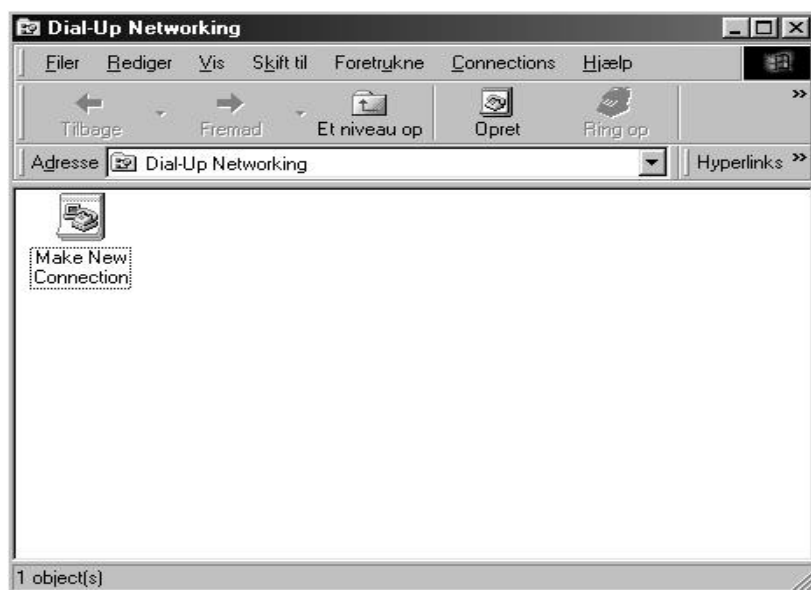
**Figure 6: Select Com port.**

Click the **Finish** button in the next window. After this the RAMSAT RVP24 should be correctly installed on the PC and could be used with Dial Up Network calling into Internet or other Net servers using the PPP protocol. RAMSAT is automatically initialised to use PPP protocol by the modem driver when used with Dial Up Network. The net protocols to be used across the connection must be properly installed with your network setup. For the Internet this is typically TCP/IP. For other servers confer your system manager.

To make a connection to the Internet by an ISP (Internet Service Provider) **Dial-Up Networking** needs to be configured with data from your ISP account.

*Dial-Up Networking* is found under Start/Programs/Accessories/Communications/Dial-Up Networking. (If the *Dial-Up Networking* does not appear, see the Windows 98 manual on Configuring the PC: How to install *Dial-Up Networking*).

Double click the icon *Make a new connection* (Fig. 7):



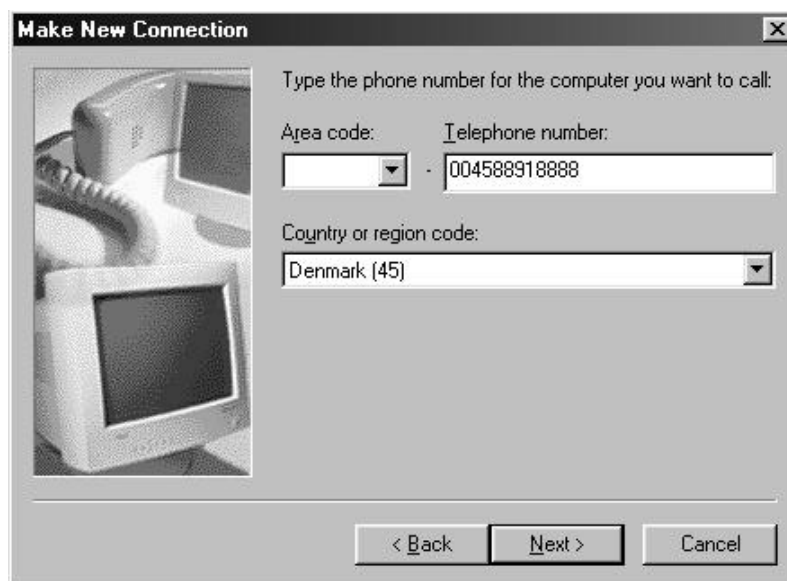
**Figure 7**

In the next window, name the connection and select which installed modem to use for the connection (if more than one modem are installed on the PC) otherwise select the recent installed RAMSAT HSD modem, then click the **Next** button Fig. 12):



**Figure 8**

In the next window type the phone number for the Internet provider remember to enter the country code. In this example the provider is located in Denmark therefore the country code is **0045XXXXXXXX**. When done press **Next**. Use the next window to confirm and save the settings by clicking **Finish** (Fig. 13):



**Figure 9**

When setting up a *Dial-Up Networking* connection for Windows 98, a Dial-Up Adapter must be installed. The dial-up adapter is a virtual adapter which for Internet (PPP) connections must have a TCP/IP protocol binding. If the adapter is not installed, Windows 98 will automatically ask for it to be installed when saving the *Dial-Up Networking* connection.

## 5. Testing the Connection setup

To test if the configuration is functioning try to connect to your ISP by clicking on the new connection icon you named "*Internet*" which was stored in the folder *Dial-Up Networking*, then enter the user name and password obtained from your provider and press the **Connect** button (Fig. 14):



**Figure 10:**

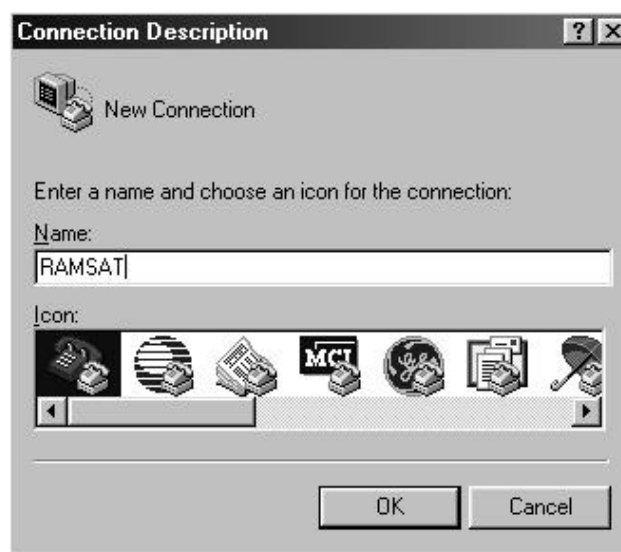
Windows 98 should display a message window telling whether the connection attempt succeeded or failed. If the connection succeeded it should now be possible to run the browser software installed on the PC to surf the WEB (World Wide Web) or make a configuration of the e-mail client according to the information given from your ISP.

## 6. Verifying the RAMSAT setup

If your connection for some reason fails to connect, try to verify the RAMSAT installation by using **HyperTerminal** or a similar terminal program to send AT commands to RAMSAT and verify the response.

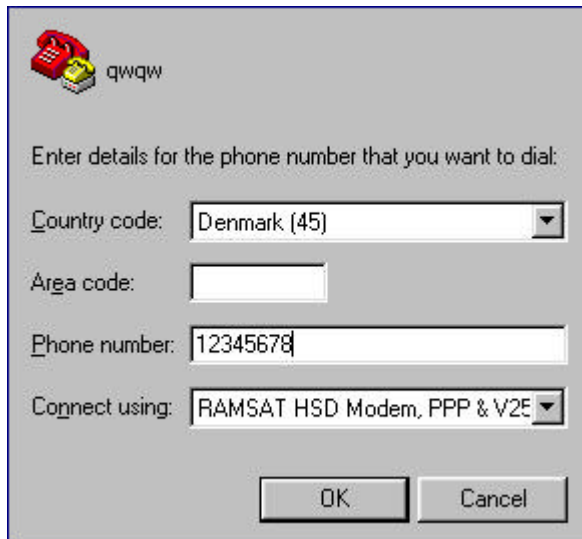
HyperTerminal can be found under **Start/Programs/Accessories/Communications/HyperTerminal**). If HyperTerminal does not appear confer with the Windows 98 manual on how to install HyperTerminal.

Make a new **HyperTerminal** session by double clicking the **Hypertrm.exe** icon, give the session a name , then click **OK** (Fig. 8):



**Figure 11: Describe new connection.**

In the next window select the modem attached to the COM port (RAMSAT HSD modem PPP and V25bis) or alternatively use: *Direct to comX* (where X is the number of the COM-port where the RAMSAT is attached) then click **OK** (Fig. 9):

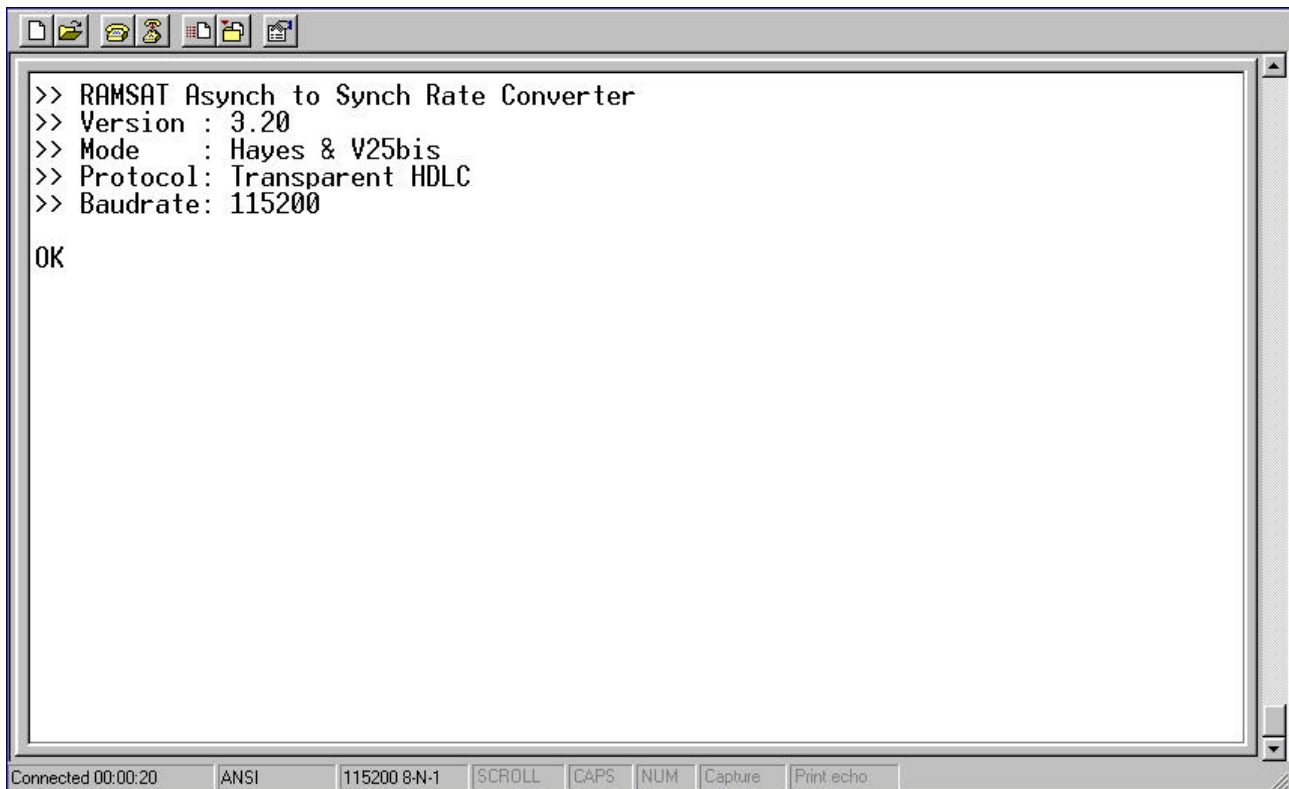


**Figure 12**

HyperTerminal is now ready to send AT commands to the RAMSAT. Enter the command:

**AT%I<enter>**

The command is sent to RAMSAT by the port selected and RAMSAT should respond by displaying the current settings which is either the default setting or a result of your recent AT commands sent. The default factory settings are shown below.

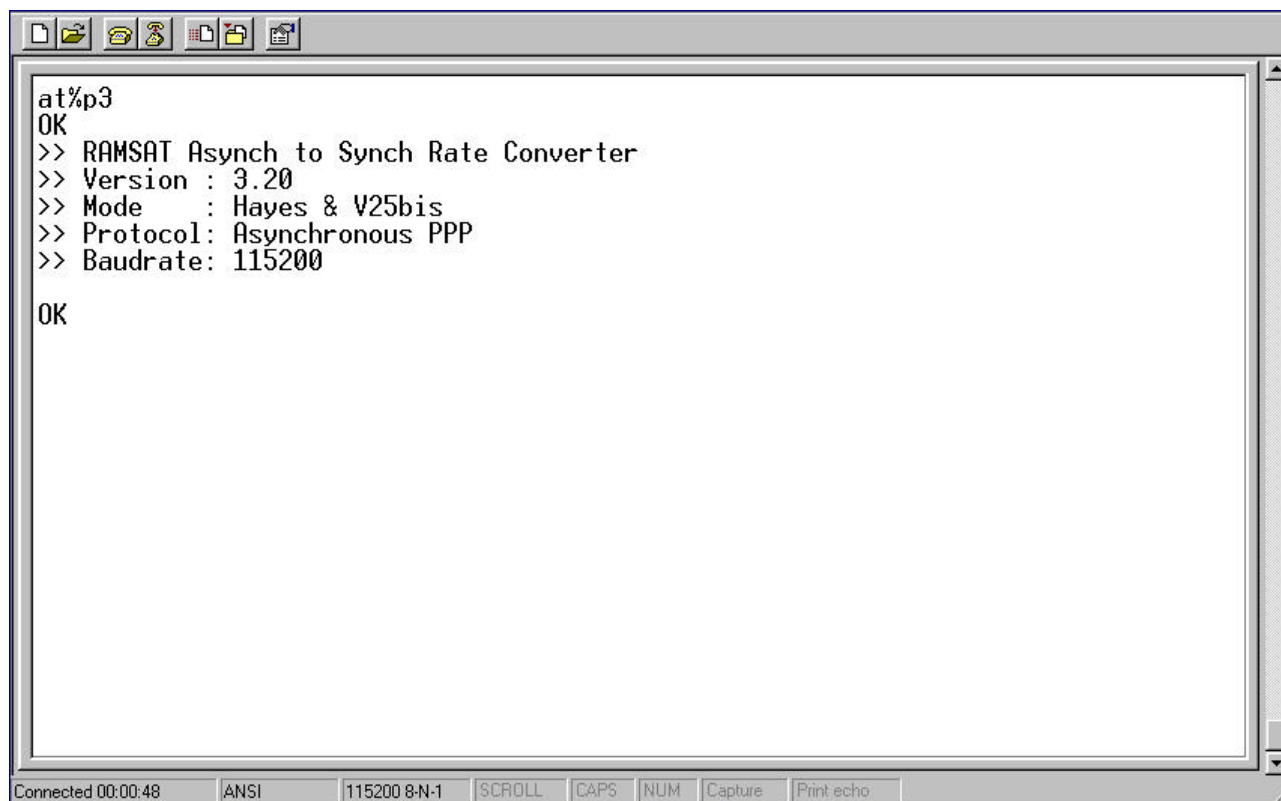


```
>> RAMSAT Asynch to Synch Rate Converter
>> Version : 3.20
>> Mode : Hayes & V25bis
>> Protocol: Transparent HDLC
>> Baudrate: 115200

OK
```

Connected 00:00:20   ANSI   115200 8-N-1   SCROLL   CAPS   NUM   Capture   Print echo

Try to change the current protocol setting to PPP by typing **AT%P3<cr>**. Verify by typing **AT%I<cr>** again as shown in the next picture below:



```
at%p3
OK
>> RAMSAT Asynch to Synch Rate Converter
>> Version : 3.20
>> Mode    : Hayes & V25bis
>> Protocol: Asynchronous PPP
>> Baudrate: 115200

OK
```

Connected 00:00:48 | ANSI | 115200 8-N-1 | SCROLL | CAPS | NUM | Capture | Print echo

Reset the settings to defaults by typing **AT&F<cr>**

Make an attempt to dial into a known ISDN site or ISP by typing **ATDxxxxxxx<cr>** where xxxxxxxx is the number to dial. If you are dialing into an ISP you cannot make a login by HyperTerminal because Hyperterminal does not use PPP protocol, but you may be able to make a short connection.

HyperTerminal may now be closed. You may Save the HyperTerminal session for later verification.