

# VOIP<sup>2</sup>ALL SERIES

## SIM Server User Guide

Up to 512 SIM cards



**Connecting to the Cellular  
with Remote SIM**

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## CONTENTS

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|           |   |           |
|-----------|---|-----------|
| <b>1.</b> | <b>INTRODUCTION TO THE VOIP<sup>2</sup>ALL SIM SERVER .....</b> | <b>3</b>  |
| 1.1.      | The VoIP <sup>2</sup> ALL Solution Overview .....               | 3         |
| 1.2.      | About this Manual .....   | 4         |
| 1.3.      | Terminology .....   | 4         |
| <b>2.</b> | <b>INSTALLATION AND SETUP .....</b>                             | <b>5</b>  |
| 2.1.      | Installation overview .....                                     | 5         |
| 2.2.      | Check Your Package Items .....                                  | 5         |
| 2.3.      | Hardware Installtion .....                                      | 5         |
| 2.3.1.    | Harware Overview .....  | 5         |
| 2.3.2.    | SIM Installation .....  | 6         |
| 2.3.3.    | Connecting the Cables .....                                     | 7         |
| 2.4.      | Software installation.....                                      | 7         |
| <b>3.</b> | <b>OPERATING THE SIM SERVER .....</b>                           | <b>9</b>  |
| 3.1.      | Connecting to the the SIM Server .....                          | 9         |
| 3.2.      | Replacing SIMs.....   | 10        |
| <b>4.</b> | <b>APPENDIX A: COM PORT .....</b>                               | <b>11</b> |

## 1. INTRODUCTION TO THE VOIP<sup>2</sup>ALL SIM SERVER

**Eurotech Communication** team is glad you have chosen to use the Eurotech’s VoIP<sup>2</sup>ALL Gateway for your needs. We will do our best, to make your installation efforts as well as day-to-day configuration and monitoring tasks, to be as pleasant as possible. We wish you a smooth operation, while greatly saving on your office mobile phone calls.

### 1.1. THE VOIP<sup>2</sup>ALL SOLUTION OVERVIEW

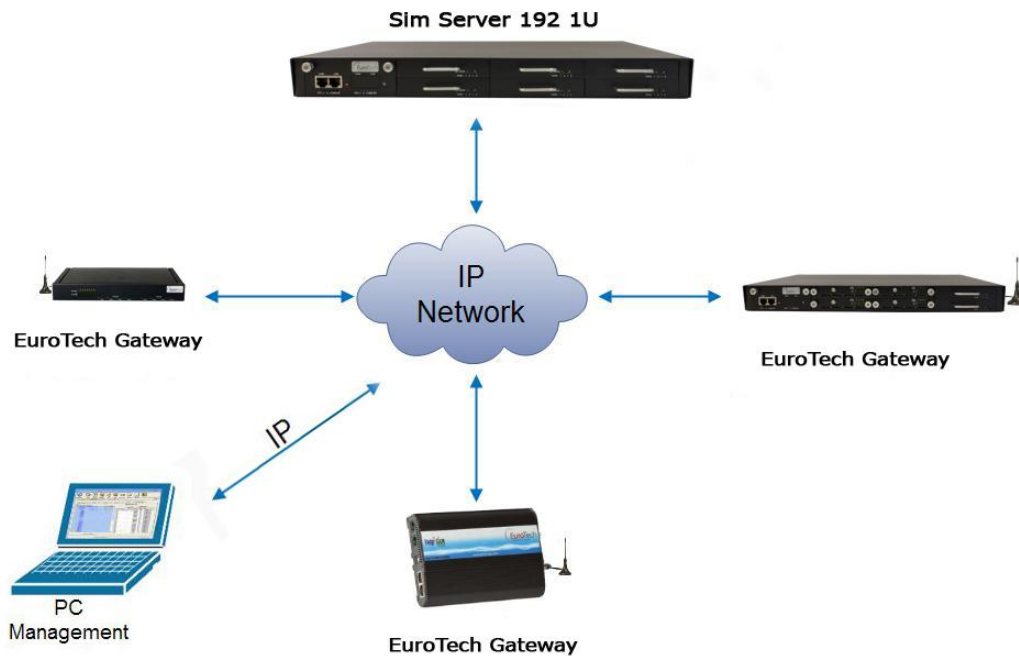
The Eurotech™ SIM Server is a solution that enables flexible and convenient storage and management of SIM cards, for developed networks of mobile gateways. The Server offers virtual allocation of SIM cards via IP from one location to mobile gateways, no matter their location.

SIM cards used are virtually stored and managed in a single central server unit. The gateway allocates the SIM in the SIM Server, thus, a GSM port may access the remote SIM via SIM emulation.

The SIM Server supports SIM of GSM/CDMA/UMTS networks.

There two types of SIM Servers:

- ▶ 3U SIM Server – Holds up to 256/512\* SIMs.
- ▶ 1U SIM Server – Holds up to 192 SIMs.



## 1.2. ABOUT THIS MANUAL

This manual is for use with the VoIP<sup>2</sup>ALL SIM Server.

Our VoIP stand-alone unit product range is:

- ▶ 2ch- For SOHO and SMB'S
- ▶ 4ch- corporate
- ▶ 8ch- enterprise
- ▶ 16ch-24-32ch -Enterprise and heavy duty traffic

All of the above units are compatible for use in our SIM Server System.

## 1.3. TERMINOLOGY

The following is a list of important terms used in this guide and their definitions:

**Gateway** – A VoIP<sup>2</sup>ALL with cellular ports.

**SIM Server** - A VoIP<sup>2</sup>ALL with a SIM Server program that has only SIM cards and no cellular cards.

**Internal SIM Server** – A SIM Server program that's run on a gateway. Allows you access to the SIM cards that is on the SIM Server cards that in the gateway.

**External SIM Server** – A SIM Server program that's run on external SIM Server or another Gateway. Allows you access to the SIM cards that are on the external SIM Server.

- ▶ **Master card** – The card that control the operation of the VoIP<sup>2</sup>ALL . Contain a DSP processor with a Linux based operating system.
- ▶ **Slave Card** – A card with cellular ports (modules).
- ▶ **SIM Server Card** – A SIM Server card that has 32 SIM sockets. Can be on a SIM Server or Gateway.
- ▶ **VoIP** – A protocol of transmitting voice calls on Ethernet networks.
- ▶ **SIP** – A protocol of registering VoIP clients and making VoIP calls.
- ▶ **SIP Server** – A virtual PBX that can register and connect SIP phones.
- ▶ **SIP Account** – A user name and password which is given to a SIP phone to register with.
- ▶ **SIP Registration** – The process of the initial connection to the SIP Server with the SIP account.
- ▶ **SIP Client** – A SIP phone that is registered in a SIP Server.
- ▶ **Internal SIP Server** – The SIP Server that is on the gateway.
- ▶ **SIM Registration** – Is the activation process of the SIM in the cellular network. Only when the SIM is register we can make calls.
- ▶ **Local SIM** – A SIM on slave cards.
- ▶ **Virtual SIM** – A SIM from a SIM Server.

## 2. INSTALLATION AND SETUP

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This section will guide you through the installation and setup process, including basic configuration and a system test to ensure that all components are working properly. These steps are *MANDATORY* to run the VoIP<sup>2</sup>ALL, unless otherwise indicated.

### 2.1. INSTALLATION OVERVIEW

Perform the following steps to install and setup your system:

- ▶ Check package items.
- ▶ SIM cards installation and connections
- ▶ Install SIM Cards
- ▶ Install LAN Cable
- ▶ Install power Cable
- ▶ Install the management application
- ▶ General configurations

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Note: In order to operate the system, mandatory basic setup steps should be performed by using the LAN.

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### 2.2. CHECK YOUR PACKAGE ITEMS

Please verify that your package contains the following components (some were ordered specifically) before installation:

- ▶ **Main Hardware Device** - The VoIP<sup>2</sup>ALL SIM Server
- ▶ **110/220V 50-60Hz Power Cable.**
- ▶ **LAN connection cable** - for VoIP<sup>2</sup>ALL connection to the internet.
- ▶ **TCP/IP Cross Cable (Red Cable)** – for connecting the gateway directly to the PC Network Interface Card.
- ▶ **RS-232 Serial PC Comport connection cable (RJ-45 to RS-232 COM)** – for debugging and direct access to the configuration files. Will be referred as Com cable in this manual.
- ▶ **Software Installation CD** - Installation kit of the gateway Manager CD for MS-Windows Management Application, including the User Manual file and additional auxiliary utilities.

### 2.3. HARDWARE INSTALLTION

This section describes how to install the VoIP<sup>2</sup>ALL Gateway Hardware.

#### 2.3.1. HARWARE OVERVIEW

The SIM Server consists of one master card, that controls the operation of the gateway, and SIM Server cards, that holds all the SIM cards.

The master card has a connection to the LAN and the COM Port in the left of the SIM Server.

**3U SIM Server** - The SIM Server cards are set from card 1 to card 8 from left to right, where card 1 is the closest to the master of the SIM Server. (\* future expansion to 16 cards 512 SIMs)

**1U SIM Server** - The SIM Server cards are set from card 1 to card 6 from bottom left to top right, where card 1 is the closest to the master of the SIM Server.

All the SIM Server cards are hot swappable. You can replace the SIMs while the SIM Server is working and you can also replace the order of the cards if needed.

When inserting a SIM Server card in the SIM Server, scan the card for any changes and build a data base with the current SIMs information.

## 2.3.2. SIM INSTALLATION

### ▶ *To insert the SIM cards in the SIM Server:*

- 1) Remove the SIM Server card in the :
  - ▶ 3U SIM Server - Open the two screws that secure the SIM Server card to the case.
  - ▶ 1U SIM Server – pull the card from the unit by the handle.



Each SIM Server card has 32 SIM sockets in it.  
The SIM sockets are marked from 1 to 32.

- 2) To open the socket, slide the metal lock inward and push the socket up.
- 3) Position the SIM in the socket, so the SIM metal contacts facing downward and the snubbed triangle outwards.
- 4) Insert the SIMs in the socket.



- ▶ Push the socket down toward the card.
- ▶ Slide the metal lock of the socket outward until the SIM is locked.
- ▶ The SIMs now is in place.
- ▶ Slide the SIM Server card back in to is place.

## 2.3.3. CONNECTING THE CABLES

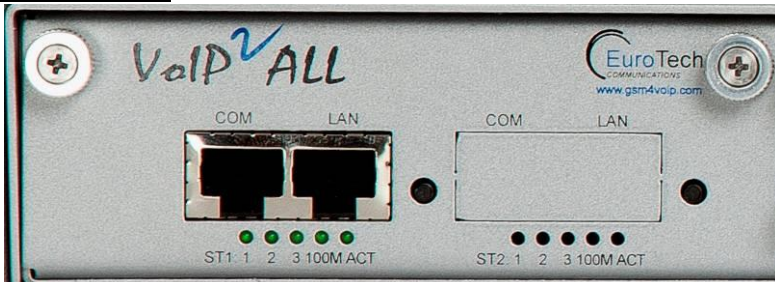
Connect the following:

- ▶ **LAN cable** - The LAN cable is used to connect the system to the internet network, connect the LAN line to the left RJ-45 marked LAN (the right RJ-45 that marked LAN are not in use).
- ▶ **Com Cable** – Connect the Com Cable from the PC RS-232 comport to the left RJ-45 marked COM (the right RJ-45 that marked COM are not in use). The com connection is not essential for the day to day work.

### 3U SIM Server



### 1U SIM Server



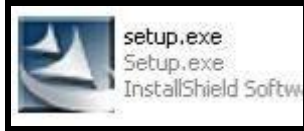
- ▶ **Power cable** - Connect the power supply cable from your 110-240V 50-60Hz power outlet to the VoIP<sup>2</sup>ALL Gateway power connector. After connecting the power to the gateway, power up the gateway by flipping the power switch. All the LEDs in the master will go on while the initialization process continues. At the end of this process the LED that is marked 2 will start blinking and the LED that is marked 1 will go off.

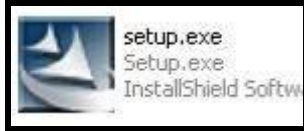
## 2.4. SOFTWARE INSTALLATION

Configuration is performed on an auxiliary computer by installing the VoIP<sup>2</sup>ALL Management software CD for MS-Windows Application.

► **To install the VoIP<sup>2</sup>ALL Management Software on a MS-Windows PC :**

- 1) Insert the VoIP<sup>2</sup>ALL Management installation CD into the CD drive of the PC.
- 2) In Windows Explorer, navigate to the installation CD drive



- 3) Double click  to install the Management Application.
- 4) Click **Next**  
The **Setup Type** window opens.
- 5) Select **Complete** and click next.
- 6) Click **Install**.  
The VoIP<sup>2</sup>ALL Management application installs itself. Wait until a completion message appears.

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Note: If the VoIP<sup>2</sup>ALL icon appears on the Desktop, the application was successfully installed.

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## 3. OPERATING THE SIM SERVER

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### Overview

At the core of every VoIP<sup>2</sup>ALL unit there is a DSP processor. The processor runs on a Linux operating system. Run the v2g\_2 program which operate the unit and a sim\_server program which operate the internal SIM Server.

The SIM Server is connected to the net with one IP Address in 3 different Ports:

- ▶ 2007 is the port for managing the unit
- ▶ 2008 is the port for managing the SIMs
- ▶ 2009 is the port of the Internal SIM Server.

The work of the SIM Server is done automatically. Each time you insert a new SIM Server card, it scans the card and updates the data base of the SIMs.

The data base of the SIMs is kept on a DB file and the settings of the SIM Server are kept in sim\_server.xml file inside the SIM Server.

When connecting with the PC management (port 2007), the only setting that needs to be done with the PC software is the IP settings. That includes the IP Address of the unit, the Default Gateway address and the Subnet Mask. The rest of the settings are relevant only to the gateway.

When a gateway is connected to the management software, the SIMs data base is read from the SIM Server. The status of the each SIM can be viewed and the settings can be changed.

The gateway can be configured for each SIM to define when the SIM will work and with what setting to register it in the cellular network. The gateway saves these settings in the xml file.

When the time to work with a SIM from the SIM Server arrives the gateway connects to the SIM Server port 2009 and requests registration data from the SIM Server. The transferring of the data of the SIM is done with port 2008.

After the SIM is registered in the cellular network the gateway can work without a constant connection to the SIM Server. Connection to the SIM Server is needed only if during a call the cellular network requires additional data from the SIM.

### Network Bandwidth

When the gateway is registering SIMs from the SIM Server in the cellular network it sends 250 Bytes per seconds, for each SIM.

When the SIM is registered, it sends 50 Bytes every 30 seconds for each SIM.

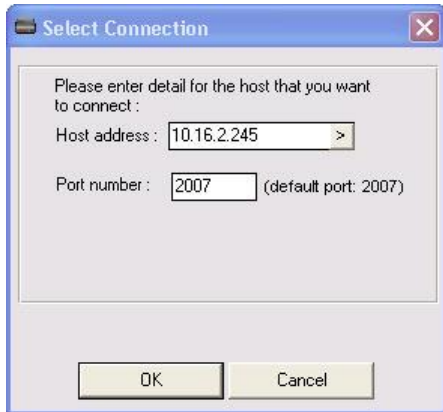
#### 3.1. CONNECTING TO THE SIM SERVER

- ▶ **To connect to the SIM Server with the PC Management:**

1) Launch the VoIP<sup>2</sup>ALL Management by clicking the VoIP<sup>2</sup>ALL logo on your PC desktop.



- 2) Click **Connect** on the toolbar.  
The Selected Connection window will open.



- 3) Enter in the **Host Address** the IP Address of the SIM Server (The default IP address is 10.16.2.245).
- 4) Enter in the **Port Number** the connection to GUI port of the SIM Server (The default port is 2007).
- 5) Enter in the 'Password' the password of the VoIP<sup>2</sup>ALL gateway (The default password is **admin**).
- 6) Press OK to connect.

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**Note:** If you can't remember the IP Address see Appendix A: Com Port.

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### 3.3 Changing the IP Address of the SIM Server

► **To change the IP address of the SIM Server:**

- 1) Connect to the SIM Server with the current IP address in port **2007**.
- 2) Open the **VoIP** window, the **General** tab.
- 3) Enter in the **IP Address** box the new IP address for the gateway.
- 4) Press **Save**.
- 5) Disconnect from the gateway.
- 6) Restart the gateway, wait 30 seconds for the of the initialization process.

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Note: This PC software is compatible for working with all types of the VoIP<sup>2</sup>ALL .

When you are connected with the PC to the SIM Server, with the exception of the IP settings there is no other settings in the PC software that are relevant to the SIM Server.

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## 3.2. REPLACING SIMS

To replace SIM cards see **Error! Reference source not found.** 3.2

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**Note:** After extracting a SIM Server card, you have to wait 60 seconds before sliding it back for the gateway to recognize that it was extracted.

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## 4. APPENDIX A: COM PORT

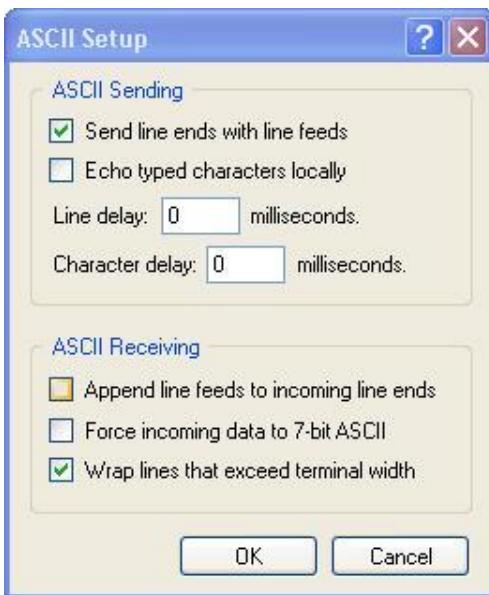
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The Com Port connection, gives you direct access to the Linux based operating system files of the DSP.

- 1) Connect the **Com Cable** from the gateway to the PC RS232 Com Port.
- 2) Connect the Hyper Terminal press **Disconnect** then **Properties**.
- 3) In the **Connect To** tab press **Configure**, The **Port Setting** should be:



- 4) Press **OK** and move to the **Settings** tab.
- 5) Press **ASCII Setup**:

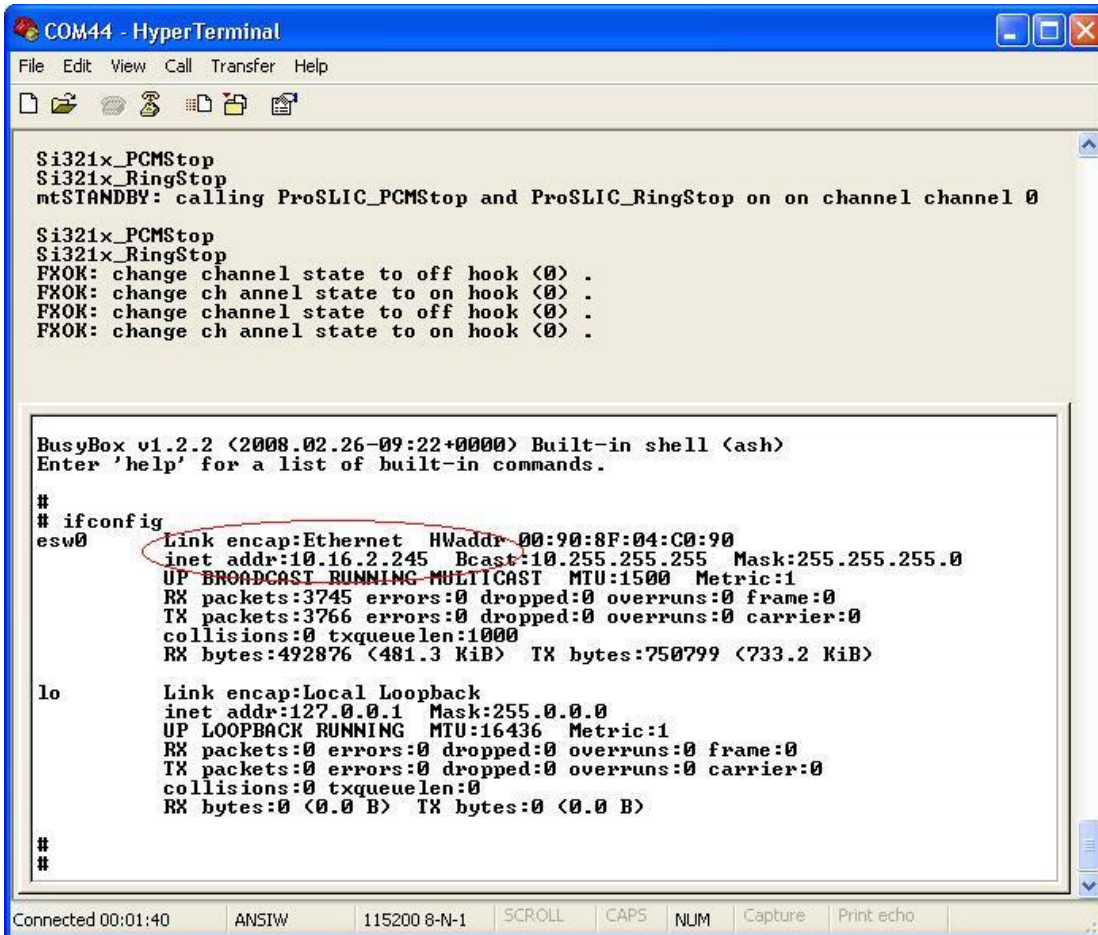


- 6) Define this settings and press **OK**.
- 7) Press **Connect** in the Hyper Terminal.

- 8) When restarting the gateway you will see the initialization process, wait until it is finished.
- 9) Press the **Enter** button. On screen you will see #.
- 10) To see the IP settings write the command **ifconfig** and press Enter.

On screen you will:

The IP Address of the gateway is marked in a red circle.



```

COM44 - HyperTerminal
File Edit View Call Transfer Help

Si321x_PCMStop
Si321x_RingStop
ntSTANDBY: calling ProSLIC_PCMStop and ProSLIC_RingStop on on channel channel 0

Si321x_PCMStop
Si321x_RingStop
FXOK: change channel state to off hook <0> .
FXOK: change ch annel state to on hook <0> .
FXOK: change channel state to off hook <0> .
FXOK: change ch annel state to on hook <0> .

BusyBox v1.2.2 (2008.02.26-09:22+0000) Built-in shell (ash)
Enter 'help' for a list of built-in commands.

#
# ifconfig
esw0      Link encap:Ethernet HWaddr 00:90:8F:04:C0:90
          inet addr:10.16.2.245 Bcast:10.255.255.255 Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:3745 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3766 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:492876 (481.3 KiB) TX bytes:750799 (733.2 KiB)

lo       Link encap:Local Loopback
         inet addr:127.0.0.1 Mask:255.0.0.0
         UP LOOPBACK RUNNING MTU:16436 Metric:1
         RX packets:0 errors:0 dropped:0 overruns:0 frame:0
         TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
         collisions:0 txqueuelen:0
         RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)

#
#

```

Connected 00:01:40    ANSIV    115200 8-N-1    SCROLL    CAPS    NUM    Capture    Print echo