VNS2000 Server Software

Automated Messaging Interface

OEM & Developer Guide

Version 1.02

Visiplex, Inc. 2012

VNS2000 Server Software

Automated Messaging Interface

Copyright

The product described in this manual includes copyrighted Visiplex computer programs stored in semiconductor memories and computer files. As such, these programs may not be copied or reproduced in any manner without the express written permission of Visiplex, Inc.

Disclaimer

The information within this document has been carefully reviewed and is believed to be accurate. However, no responsibility is assumed for inaccuracies. Visiplex, Inc. reserves the right to make changes to any of the products herein to improve reliability, functionality or design.

Copyright ©Visiplex, Inc. Buffalo Grove, IL 2010

Table of Contents

Introduction

1.1 VNS2000 Configurations 4

1.2 Device Activation Methods 5

1.3 Alert Types 5

Software and Hardware Installation

2.1 Software and Hardware Requirements 7

2.2 Installing VNS2000 Server Software and Slave Encoder 7

2.3 Verifying Installation and Configuring VNS2000 Server 8

2.4 Performing Initial Test 9

Device Activation

3.1 Device Activation Concepts 11

3.2 Device Activation using Serial Communication and VISIPLEX Protocol 12

3.3 Device Activation using Serial Communication and Data Stream Analyzer Protocol 15

3.4 Device Activation using Serial Communication and TAP Protocol 17

3.5 Device Activation using Email 19

Introduction

1.1 VNS2000 Configurations

The typical mass notification and messaging system consists of a wireless encoder or system, transmitter, antenna and wireless devices (receivers). Visiplex offers two main encoders:

- **VS4800** - desktop encoder supporting up to 1000 wireless devices (receivers).

- **VNS5100 -** PC based encoder supporting up to 10000 wireless devices (receivers). The VNS5100 provides more sophisticated processing and programming options and more extensive hardware support.

The VNS2000 software is available in two configurations which provide similar but not identical functionality to the user and should be implemented based on the application or solution required:

1. Integrated with the VNS5100 PC based Mass Notification System:
    - The VNS5100 PC receives all inputs directly from systems connected to it. The data can be received from dry-contact closures (alarm points), wireless 900MHz wireless transmitters, activation requests via serial communication protocols such as VISIPLEX and TAP, keyword based activation requests via serial communication using Data Stream Analyzer protocol, and telephone lines connected to the VNS5100 telephone interfaces.

    - The received data is processed by the VNS2000 Server software which generates the required alerts according to the event triggers programming and system programming.

    - The VNS2000 Server archives the events in order to provide visual and audible indications using the Visual Control Panel and System Monitor screens. The archived events are also used for generating activity reports.

    - All databases are stored on the PC hard drive and memory.

2. Optional Add-On software to the VS4800 Wireless Voice & Data Paging encoder:
    - The VS4800 receives all inputs from systems connected to it. The data can be received from dry-contact closures (alarm points), 900MHz wireless transmitters, activation requests via serial communication protocols such as VISIPLEX and TAP, keyword based activation requests via serial communication using FreeText (similar to Data Stream Analyzer) protocol, and telephone lines connected to the VS4800 telephone interfaces.

    - If the VS4800 internal databases are programmed to respond to the received data, it will process the received data accordingly and activate the appropriate wireless devices.

    - The VS4800 reports dry-contact closure (alarm points) activity, 900MHz wireless transmitters activity and paging activity to the VNS2000 Server software.

    - The VNS2000 Server archives the events reported by the VS4800 in order to provide visual and audible indications using the Visual Control Panel and System Monitor. The archived events are also used for generating activity reports.

    - If the VNS2000 Server databases are also programmed to respond to the dry-contact closure or 900MHz wireless transmitter event reported by the VS4800, it will also process the received data and generates the required alerts according to the event triggers and system programming stored in the VNS2000 Server databases.

Note: Configuration 2 can cause duplicated device activation if both VS4800 and VNS2000 Server software are programmed to respond to dry-contact closure (alarm points) and 900MHz wireless transmitters activity reported by the VS4800.
It is highly recommended that only the VNS2000 Server software will be programmed to respond to the dry-contact closure (alarm points) and 900MHz wireless transmitters activity, which will provide the most flexible programming options while avoiding duplicated device activation. In that case, there is no need to program any devices on the VS4800 and all devices should be programmed on the VNS2000 Server software.
Exception: Device activation requests using the VS4800 serial ports or the telephone lines connected to the VS4800 telephone interfaces cannot be monitored or responded to by the VNS2000 Server software.
In these cases, the device will have to be programmed on the VS4800 instead of on the VNS2000 Server. The VNS2000 Server software will only archive the paging activity resulted by such device activation requests. If this is a concern, consider the VNS5100 instead of the VS4800 as preferred solution.

1.2 Device Activation Methods

The VNS2000 Server software supports access to devices using automated and manual alert activation:

1. Automated alerts:
   - Dry-contact closure of one of the alarm/ dry-contacts module. The VNS2000 supports up to 1000 dry-contacts using the optional VS1800 alarm module.
   - Incoming serial data, which will be processed according to the active protocol on the specific serial port receiving the data. The Data Stream Analyzer / FreeText protocol also supports a search for a specific keyword in the incoming data stream and responding to it accordingly with an automated alert.
   - Triggering a button or dry-contact closure of a 900MHz wireless transmitter. If the VNS2000 Server software is programmed to respond to the call from the wireless transmitter, it will send a pre-programmed alert to a pre-assigned wireless device.
     The VNS2000 software can also monitor low battery and supervision of 900 MHz wireless transmitters.
   - Receiving an email message on the default MAPI email software running on the PC. The email message can either be forwarded to a specific device or analyzed according to the Data Stream Analyzer protocol, which will activate a specific wireless device according to the keyword found in the email message body.
     The email activation supports incoming messages filtering by keyword that must appear on the subject line and/or by email sender address.
   - Scheduled events which activate individual or multiple wireless devices. The VNS2000 Server software supports a weekly schedule with 500 daily events where each event can activate an individual device, a common device code (capcode) device or a sequential group device.
2. Manual alerts:
   - Dialing in to the telephone line connected to the VNS5100 (tone dialing only, requires **VS5104** option for the VNS5100).
     The voice prompt will request the caller to enter a device number and the message to be sent, and then send it to the wireless device. Messages can be numeric or alphanumeric by using the Alpha by Phone feature that allow the translation of a numeric code to an alphanumeric message.
     The VNS2000 Server also support password protected access to each telephone line connected to the VNS5100 in order to allow access to authorized users only.
   - Using the optional PC software that allows any user on the network to send a message from their PC (requires VNS2000 Network software package).

1.3 Alert Types

The VNS2000 Server software supports the activation of the following alert types to wireless devices, email subscribers, telephone subscribers and network PC clients:

1. Wireless Speakers:
   - Pre-recorded tones and bells - activation of tones and bells stored in the wireless amplifier/speaker memory by accessing the tone or bell ID.
   - Pre-recorded voice alerts – activation of voice alert that is stored on the PC hard drive and played through the encoder as live voice alert. The user is required to select from a list of voice messages stored on the PC hard drive.
   - User recorded voice alerts - activation of customized user recorded voice alert that is recorded by the user before sending the alert to the wireless speaker.
2. Controlled Device:
   - Activation of devices that have ON and OFF status, including strobe lights and sirens. The activation can be assigned with a time interval after which the device will be deactivated.
3. Alphanumeric Display:
   - Activation of alphanumeric displays that can display an alphanumeric message using different formats and effects.

4. Pager:
    - Alphanumeric – activation of alphanumeric pagers.
    - Numeric – activation of numeric only pagers.
    - Tone only - activation of tone or vibrate pagers.
    - Voice (pre-recorded) - activation of voice alert that is stored on the PC hard drive and played through the encoder as live voice alert. The user is required to select from a list of voice messages stored on the PC hard drive.
    - Voice (user recorded) - activation of customized user recorded voice alert that is recorded by the user before sending the alert to the voice pager.

5. Email Notification:
    - Sending email messages to email subscribers. When the device is activated, the VNS2000 Server will send an email message to the email address assigned to the device. This feature also provides email notification to cell phones or any other device that can receive an email message.

      Note: This feature is available for the VNS5100 system only.

6. Audio Output:
    - PC Audio Output – activation of voice alert that is played thorough the PC audio output to any device connected to it.
      The alert can be selected from pre-recorded alerts stored on the PC hard drive recorded by the user.

      Note: This feature is available for the VNS5100 system only.
    - Telephone Dial Out - activation of voice alert that is played thorough the telephone line. The VNS2000 Server will initiate a call to the telephone number assigned to the device and when the call is answered, it will play the voice alert.
      The alert can be selected from pre-recorded alerts stored on the PC hard drive recorded by the user.

      Note: This feature is available for the VNS5100 system only and requires the VS5104 option.

7. Network Notification:
    - Sending alphanumeric alerts to all VNS2000 Client software users. The message is displayed on the Client user PC as a pop-up window.

      Note: This feature is available for the VNS5100 system only.

8. Modem Dial Out:
    - Sending alphanumeric alerts to pagers and cell phones that are capable of receiving messages using a 3rd party provider using TAP protocol via modem connection. The device is programmed with the 3rd party telephone access number and the subscriber ID and password. When the device is activated, the VNS2000 Server will dial out to the 3rd party modem and send the alphanumeric message using the industry standard TAP protocol.

Software and Hardware Installation

2.1 Software and Hardware Requirements

1. Minimum PC hardware: Pentium 4, 40GB Hard Drive (1GB of free space), 512MB Memory, two RS232 serial ports, Microphone (for recording voice messages).

2. Minimum PC operating system: Windows 2000 Professional or Server, Windows XP.

3. Null modem communication cable (DB9 Male to DB9 Female).

4. VNS2000 Server software. If messaging from network PC computers is required, VNS2000 Client software will be required.

   Note: VNS2000 software trial versions are intended for demonstration purposes only, and may not be used for any other purposes.
   VNS2000 software trial versions may include optional features and capabilities that may not be available with standard configuration of VNS2000 Server or VNS2000 Client software.
   VNS2000 software trial versions may be limited in total usage time and total number of alerts. When these limits are reached, the software will be disabled and will resume activity only after it restarted.

2.2 Installing VNS2000 Server Software and Slave Encoder

Follow the steps listed below to install VNS2000 software and the slave encoder:

1. Login to Windows using an account that is a member of the Administrators group on the PC.

2. If required, download the VNS2000 Server software trial version from the Download Area on the Visiplex website (www.visiplex.com). Install the VNS2000 Server software.

3. If messaging from network PC computers is required, download the VNS2000 Client software trial version from the Download Area on the Visiplex website (www.visiplex.com). Install the VNS2000 Client software.

4. Identify the serial ports installed on the PC (click on **Start**-**Control Panel**-**System**-**Hardware**-**Device Manager**-**Ports**).
   One serial (COM) port is required for communication between the VNS2000 Server and the slave encoder. A Second serial (COM) port is required in order to send serial commands from an external source to the VNS2000 Server software.
   If the required serial ports do not exist, install additional serial ports using USB to RS232 adaptors (verify that the correct drivers are installed properly).

   Note: It is recommended that the serial ports on the PC will be configured as COM1 and COM2.

5. Connect the provided communication cable to the slave encoder:
   VS4800 (DB9M to DB9F Null Modem Cable): Connect the DB9 Male end to the COM1 port of the VS4800.
   VNS2500 (RJ45 to DB9F Cable): Connect the RJ45 Male end to the RS232 port of the VNS2500.

6. Connect the other end of the communication cable to the first serial port on the PC (COM1).

7. Connect the provided power supply to the slave encoder and turn it on.

8. Confirm the serial protocol active on the slave encoder serial port (VS4800 only):
   8.1 From the VS4800 Main Menu, press 4 for Administration.

   8.2 Enter the password (default password is PASSWORD).

   8.3 Press 3 for Setup Menu.

   8.4 Press 3 for System Setup.

   8.5 Verify that COM1 is set to PC-ADMIN with 9600-N-8-1 settings.

   Note: Refer to the VS4800 manual for information on how to modify the active protocol.

2.3 Verifying Installation and Configuring VNS2000 Server

Follow the steps listed below to verify the installation and configure VNS2000 Server:

1. Run VNS2000 Server software.

   Note: If the software and encoder were installed properly, the only message displayed during the VNS2000 Server startup (except of the **Term and Conditions** applicable to Trial versions only) should be "Help is available for each screen by pressing the F1 key.
   If any other messages are displayed, review the installation process, make sure all cables are connected to the correct ports and that the slave encoder is powered on.

2. On the VNS2000 Server software, perform the following steps:
   2.1 Go to **File**-**Admin** Login. Press **Ok** (the default password is blank).

   2.2 Go to **Setup**-**System Configuration**-**Serial Ports Settings** menu:
   - Verify that COM001 is set to Local TX, 9600, 8, None, 1 (Protocol, Speed, Databits, Parity, Stopbits).
   - Verify that COM002 is set to Visiplex, 9600, 8, None, 1 (Protocol, Speed, Databits, Parity, Stopbits).

   Note: If any of the settings is incorrect, select the port, click **Edit** and modify the settings accordingly. Close the **Serial Ports Settings** screen. Click on **Save**.

   2.3 Go to **File**-**Exit**. Click on Yes.

2.4 Performing Initial Test

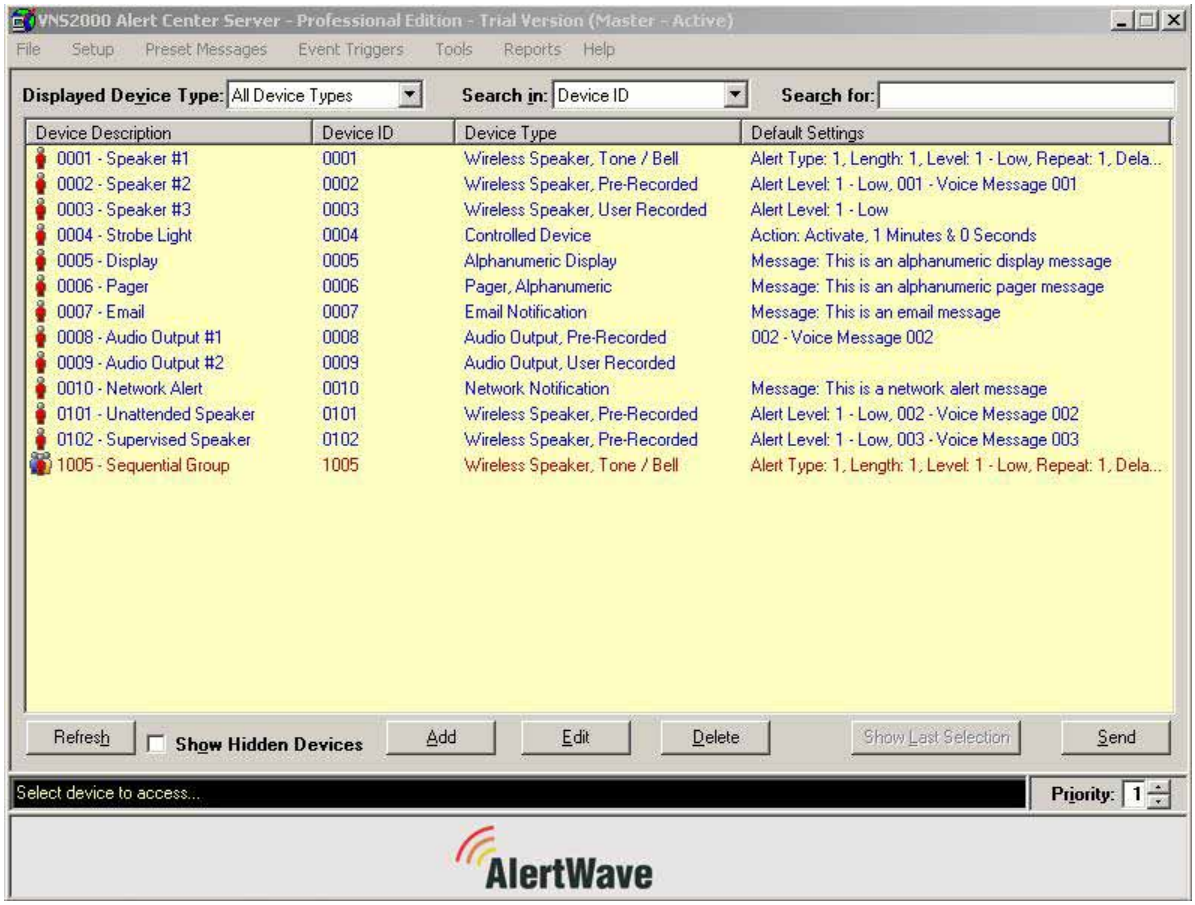
Follow the steps listed below to perform initial system test:

1. Run VNS2000 Server software.

2. Go to **File**-**Admin Login**. Press **Ok** (the default password is blank).

3. Go to **Tools**-**System Monitor**. Resize and reposition the System Monitor window so the main VNS2000 Server screen is fully visible.

4. Identify the wireless devices (receivers) and confirm that they are included in the devices list displayed on the VNS2000 Server main screen:



4.1 Identify the wireless devices by type (wireless speaker, controlled device, alphanumeric display, pager).

4.2 Locate the label at the back of each wireless device and identify its device code (Capcode).

4.3 If possible, print the list of devices from the **Reports-Device Database Report** menu. Verify that each wireless device code is listed on the printed report and the list below:

Device ID	Device Code (Capcode)
0001	0500501
0002	0500502
0003	0500503
0004	0500504
0005	0500505
0006	0500506
0007	N/A (not a wireless device)
0008	N/A (not a wireless device)
0009	N/A (not a wireless device)
0010	N/A (not a wireless device)
0101	0500502
0102	0500502
1005	N/A (sequential group)

4.4 If any of the wireless devices is not included in the list above:

- Select a device of the same type that is already displayed on VNS2000 Server main screen.
- Click on **Edit**.
- Modify the selected device code to match the device code located at the back of the wireless device (use the Tab or Enter keys to navigate through the required fields. If required, press F1 for Help).
- Click on **Save** to save the modifications.

5. Turn on all the wireless devices (receivers).

6. On the VNS2000 Server software, select a device. Click on **Send**, select the alert parameters and click on **Send**. Example:

   6.1 Select device 0006 which represents an alphanumeric pager.

   6.2 Click on **Send**.

   6.3 Review the default test message ("This is an alphanumeric pager message") and change it if required.

   6.4 Click on **Send** to send the message to the pager.

7. The System Monitor screen should display the alert, its date and time and the device it was sent to.
   The selected device should respond to the alert that was sent to it by playing an audible tone or voice message (for wireless speakers), providing a visual indication (for wireless strobe light) or displaying an alphanumeric message (for alphanumeric display or pager).

   Note: If the selected device is not responding to the command from the VNS2000 Server software, repeat section 4.

8. Repeat the test with all other devices while testing different alert parameters.

Device Activation

3.1 Device Activation Concepts

The VNS2000 Server software support multiple device types while providing almost unlimited flexibility in programming of single device activation or multiple devices activation. The device activation is based on a set of rules which determines which wireless devices will be activated, what alert will be sent to them and in which order the devices will be activated.

1. Each device is assigned with a **Device Type** which is the general category of the device. Some devices may also require an assignment of a sub-category (for example, a wireless speaker can be a Tone/Bell speaker, Pre-Recorded speaker or User Recorded speaker).

2. Each device is assigned with **Alert Default Parameters** settings. These settings are used for three purposes:
   2.1 Simplify and reduce the number of steps required to send an alert by allowing the user to apply pre-programmed parameters.

   2.2 Provide unattended activation of complex alerts by using the default parameters to send the alert.

   2.3 Determining the type of alert sent to a device when it is activated by using a sequential group. A Sequential group may include devices of different types. The **Alert Default Parameters** allow the system to activate a device even if its device type is different than the device type of the sequential group device.

3. Devices of the same type can be activated by sending an alert to their common device code. Each wireless device usually has 6-8 device codes, where the first one is used for individual access to the device and the other device codes can be used to group multiple device of the same type for group access.
   Each individual device can be a member in 5-7 common device code groups (assuming the first device code is used for individual access).

4. Devices of multiple types can be activated by sending an alert to a sequential group device. To create a sequential group device, set any of the VNS2000 Server devices as a sequential group device by checking the **Set as Sequential Group Device** box on the device details screen. This assignment will require the device to be associated with a group ID ranging from 01 to 99.
   Any individual members that are supposed to be accessed using this group should be marked as members of the group by entering that group ID in one of the **Membership in Sequential Groups** fields.
   Each individual device can be a member in up to 10 sequential groups.

5. Individual devices activated by a sequential group device will be activated according to their **Alert Default Parameters** if their device type is different than the sequential group device type.
   Example: If the device type of the sequential group device is Wireless Speaker and a member has a device type of Controlled Device, the member device will be activated according to its **Alert Default Parameters**. This rule will apply whenever the parameters used for the sequential group device are not applicable to the individual device.

6. Each device can be programmed to allow access using the **Alert Default Parameters** only by clearing **Allow Customization of Alert Parameters**. In that case, the device will be activated immediately without allowing the user to customize the parameters.

7. Each device can be programmed for repeated activation every time it is accessed. Use the **Repeat** field to determine the number of alert repeats.

8. Each device can be programmed with a priority that will determine the order in which it will be sent compared to other pending device activation requests. By default, the priority of the device activation is determined by the source (such as serial port, telephone line or event triggers) activating the device, but it can be overridden using the **Priority** field where a higher number means higher priority.

   Note: Prioritized messaging is beneficial when submitting multiple alert requests on the same time and when there is a need to control which alert is processed first.
   Prioritized messaging requires the **Use Paging Priorities** to be enabled (**Setup-Configure** menu, **System Settings** tab).

9. Each device can be set as hidden so it will be not accessible to other PC VNS2000 Client users. Check the **Device is Hidden** box to hide the device from other PC users. Hidden devices can still be activated by other sources such as serial port, email forwarding, telephone line or event triggers.

3.2 Device Activation using Serial Communication and VISIPLEX Protocol

Note: The following section assumes that all wireless devices were tested and can be activated manually from the VNS2000 Server software and that all previous sections were completed successfully.

Activating wireless device using serial communication is based on sending serial data from external sources such as PC or any system supporting serial communication. The data is received by the serial ports on the PC running VNS2000 Server software and processed according to the active protocol assigned to that serial port on the VNS2000 Server software.

Follow the steps listed below to activate a device using serial port communication based on VISIPLEX protocol:

1. Identify the serial ports installed on the PC (click on **Start**-**Control Panel**-**System**-**Hardware**-**Device Manager**-**Ports**).

2. Assuming the PC first serial port (usually COM1) is connected to the slave encoder, connect the communication cable to the PC second serial port (usually COM2).

   Note: Use a null modem cable between the external PC and the PC running VNS2000 Server software.

3. Connect the other end of the communication cable to the serial port on the external PC.

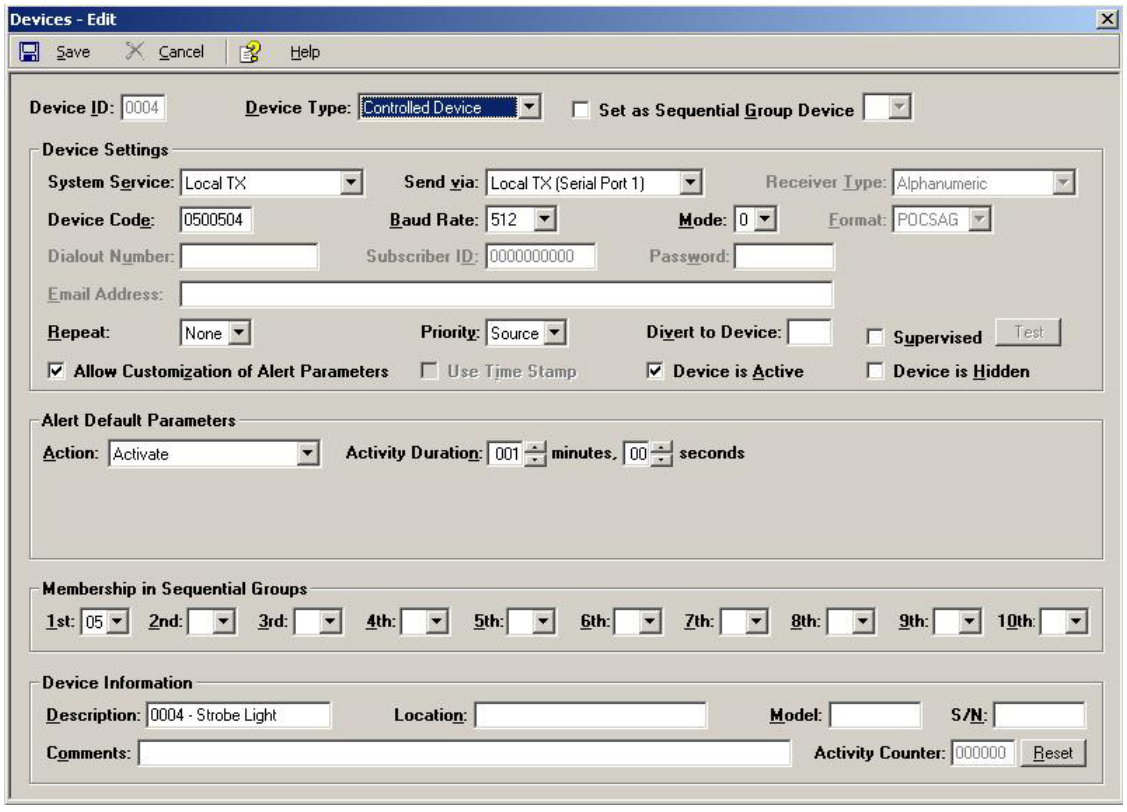
   Note: If the PC running VNS2000 Server has more than two serial ports, it is possible to use the additional serial port instead of an external PC. In that case, connect the other end of the communication cable to that serial port on the PC running VNS2000 Server (usually from COM2 to COM3).

4. On the VNS2000 Server software, perform the following steps:
   4.1 Go to **File**-**Admin** Login. Press **Ok** (the default password is blank).

   4.2 Go to **Setup**-**System Configuration**-**Serial Ports Settings** menu:
   - Verify that COM001 is set to Local TX, 9600, 8, None, 1 (Protocol, Speed, Databits, Parity, Stopbits).
   - Verify that COM002 is set to Visiplex, 9600, 8, None, 1 (Protocol, Speed, Databits, Parity, Stopbits).

   Note: If any of the settings is incorrect, select the port, click **Edit** and modify the settings accordingly. Close the **Serial Ports Settings** screen. Click on **Save**.

5. Select a device on the VNS2000 main screen and click on **Edit**.



6. Clear the **Allow Customization of Alert Parameters** box. If required, modify the **Alert Default Parameters** to reflect the desired alert parameters. Click on **Save**.

7. Select the device previously edited (see section 5) and click on **Send**. Verify that the corresponding wireless device received the alert.

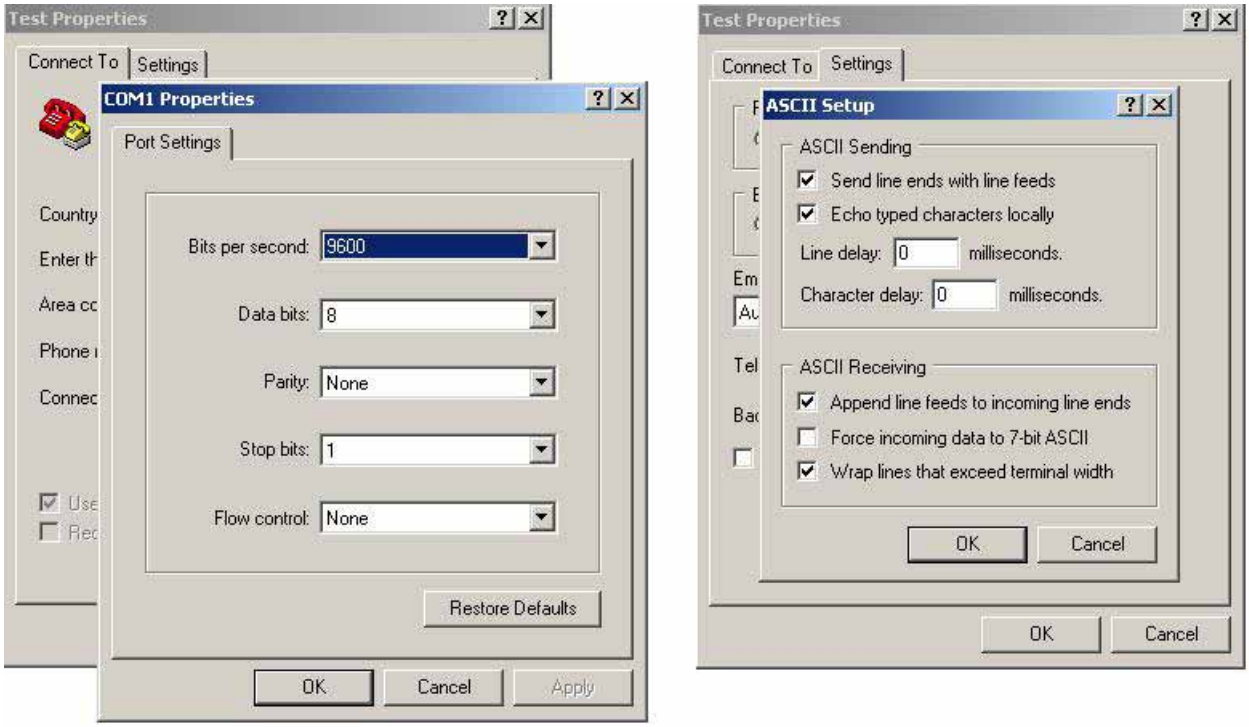
8. On the external PC, open the HyperTerminal program (usually accessible by clicking on **Start**-**Programs**-**Accessories**-**Communications**). Follow the steps listed below to set a new connection:

   8.1 Use "Test" as the connection name.

   8.2 Select **COM1** on the **Connect using** drop down list box (if COM1 is not available on the external PC, select any other available serial port).

   8.3 On the **Port Settings** dialog box, use the settings of 9600, 8, None, 1, None (Speed, Databits, Parity, Stopbits, Flow Control).

   8.4 Move to the **Settings** tab and click on ASCII Setup. Check the boxes of **Echo typed characters locally** and **Append line feeds to incoming line ends** (see images below). Click on **Ok** followed by **Ok** again.



9. The HyperTerminal program should show the "Connected" message at the bottom left corner of the screen.

10. On the external PC, press the Enter key. In response to each time you press the Enter key, the VNS2000 Server software will respond with "?99". This response indicates that the HyperTerminal session on the external PC is connected properly to the VNS2000 Server software and that it is ready to receive commands using serial communication.

    Note: If the "?99" response is not displayed on the HyperTerminal session screen, repeat and verify steps 1-9.

11. To activate the device selected on section 5, on the external PC HyperTerminal session, type "**PnnnnD**" and press the Enter key where **nnnn** is the number of wireless device to activate.
    For example: To activate device 0004, type "**P**0004**D**" and press the Enter key.

12. The VNS2000 Server will respond with "*" which will be displayed on the HyperTerminal session on the external PC. The device should be activated according to the **Alert Default Parameters** selected on section 6.

13. Assuming the wireless device was activated as expected, try activating additional wireless devices.

14. The VISIPLEX serial protocol format is listed below:
    Command format: **PnnnnM<CR>**
    P – Fixed prefix (must be capital P).
    nnnn – 4 digit valid device number. Device number can be less than 4 digits if the serial port is configured with the appropriate Device ID length.
    M – Alphanumeric message.
    Note: The message is ignored if the **Allow Customization of Alert Parameters** box on the device settings was cleared and the **Alert Default Parameters** will be used to generate the alert to the device.

It is possible to send customized numeric or alphanumeric message to a device that can accept alphanumeric text such as pager, LED display or Email. In that case, the **Allow Customization of Alert Parameters** box on the device settings should not be cleared.
If the customized message is sent to a device that requires additional information in order to format the message (such LED display), the **Alert Default Parameters** will be used to format the text message.

<CR> - Carriage Return (ASCII 13)

Serial Input and Output:

Terminal Output	VNS2000 Server Response
<CR>	?99<CR>
PnnnnM<CR>	*<CR> (if requested device is valid) ?99<CR> (if requested device is invalid)

15. Once activation of wireless devices using serial communication based on VISIPLEX protocol is accomplished, it is recommended that an application will be developed in order to implement the activation procedure and automate the messaging requests from the third party system to the VNS2000 Server.

3.3 Device Activation using Serial Communication and Data Stream Analyzer Protocol

Follow the steps listed below to activate a device using serial port communication:

1. Identify the serial ports installed on the PC (click on **Start**-**Control Panel**-**System**-**Hardware-Device Manager**-**Ports**).

2. Assuming the PC first serial port (usually COM1) is connected to the slave encoder, connect the communication cable to the PC second serial port (usually COM2).

   Note: Use a null modem cable between the external PC and the PC running VNS2000 Server software.

3. Connect the other end of the communication cable to the serial port on the external PC.

   Note: If the PC running VNS2000 Server has more than two serial ports, it is possible to use the additional serial port instead of an external PC. In that case, connect the other end of the communication cable to that serial port on the PC running VNS2000 Server (usually from COM2 to COM3).

4. On the VNS2000 Server software, perform the following steps:
   4.1 Go to **File**-**Admin Login**. Press **Ok** (the default password is blank).

   4.2 Go to **Setup**-**System Configuration**-**Serial Ports Settings** menu:
   - Verify that COM001 is set to Local TX, 9600, 8, None, 1 (Protocol, Speed, Databits, Parity, Stopbits).
   - Verify that COM002 is set to Data Stream Analyzer, 9600, 8, None, 1 (Protocol, Speed, Databits, Parity, Stopbits).

   Note: If any of the settings is incorrect, select the port, click **Edit** and modify the settings accordingly. Close the **Serial Ports Settings** screen. Click on **Save**.

5. Select a device on the VNS2000 Server main screen and click on **Send**. Verify that the corresponding wireless device received the alert.

6. Go to **Event Triggers-Serial Port Data Stream** menu. Select the first record and click on **Edit**. Follow the steps listed below to set a new event trigger:
   6.1 In the **Send to Device** field, enter the selected device number.

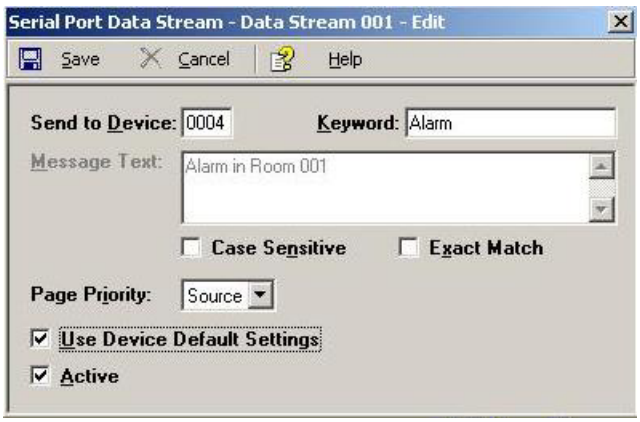
   6.2 In the **Keyword** field, enter the keyword that will activate the event once it is detected in data received on the serial port (for example, “Alarm”).

   6.3 In the **Message Text** field, enter the alphanumeric message that should be sent when the keyword is detected in data received on the serial port (for example, “Alarm in Room 001”).

   Note: The **Message Text** is applicable only if the selected wireless device can accept alphanumeric messages. In all other cases, the device will be activated according to its **Alert Default Parameters**.

   6.4 Click on **Save**

   Note: If the selected wireless device cannot accept alphanumeric messages, the VNS2000 Server will display a message verifying that **Alert Default Parameters** will be used. Click **Yes** to confirm and proceed.
   For information on the optional **Case Sensitive** and **Exact Match** option, press F1 and review the Help information.



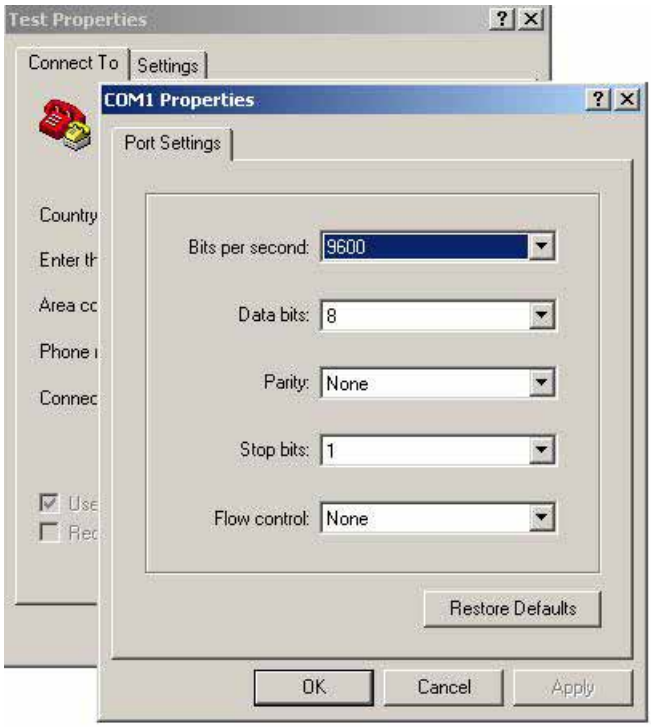
7. On the external PC, open the HyperTerminal program (usually accessible by clicking on **Start**-**Programs**-**Accessories**-**Communications**). Follow the steps listed below to set a new connection:

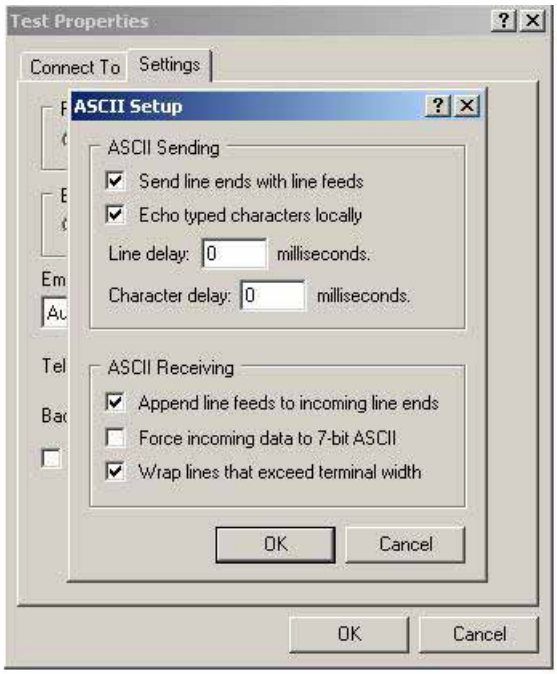
7.1 Use "Test" as the connection name.

7.2 Select **COM1** on the **Connect using** drop down list (if COM1 is not available on the external PC, select any other available serial port).

7.3 On the **Port Settings** dialog box, use the settings of 9600, 8, None, 1, None (Speed, Databits, Parity, Stopbits, Flow Control).

7.4 Move to the **Settings** tab and click on ASCII Setup. Check the boxes of **Echo typed characters locally** and **Append line feeds to incoming line ends** (see images below). Click on **Ok** followed by **Ok** again.





8. The HyperTerminal program should show the "Connected" message at the bottom left corner of the screen.

9. To activate the device selected on section 5, on the external PC HyperTerminal session, type the keyword entered on section 6.2 and press the Enter key. For example, "Alarm" followed by the Enter key.

10. The device selected on section 5 should be activated according to the **Alert Default Parameters** selected on section 5.

11. Assuming the wireless device was activated as expected, try activating additional wireless devices (programming of additional event triggers may be required).

12. The Data Stream Analyzer serial protocol format is listed below:

Command format: **K**<CR>

K – Alphanumeric keyword.

<CR> - Carriage Return (ASCII 13)

Serial Input and Output:

Terminal Output	VNS2000 Server Response
<CR>	None
Keyword<CR>	None

13. Once activation of wireless devices using serial communication based on Data Stream Analyzer protocol is accomplished, it is recommended that an application will be developed in order to implement the activation procedure and automate the messaging requests from the third party system to the VNS2000 Server.

3.4 Device Activation using Serial Communication and TAP Protocol

Follow the steps listed below to activate a device using serial port communication based on TAP protocol:

1. Identify the serial ports installed on the PC (click on **Start**-**Control Panel**-**System**-**Hardware**-**Device Manager**-**Ports**).

2. Assuming the PC first serial port (usually COM1) is connected to the slave encoder, connect the communication cable to the PC second serial port (usually COM2).

   Note: Use a null modem cable between the external PC and the PC running VNS2000 Server software.

3. Connect the other end of the communication cable to the serial port on the external PC.

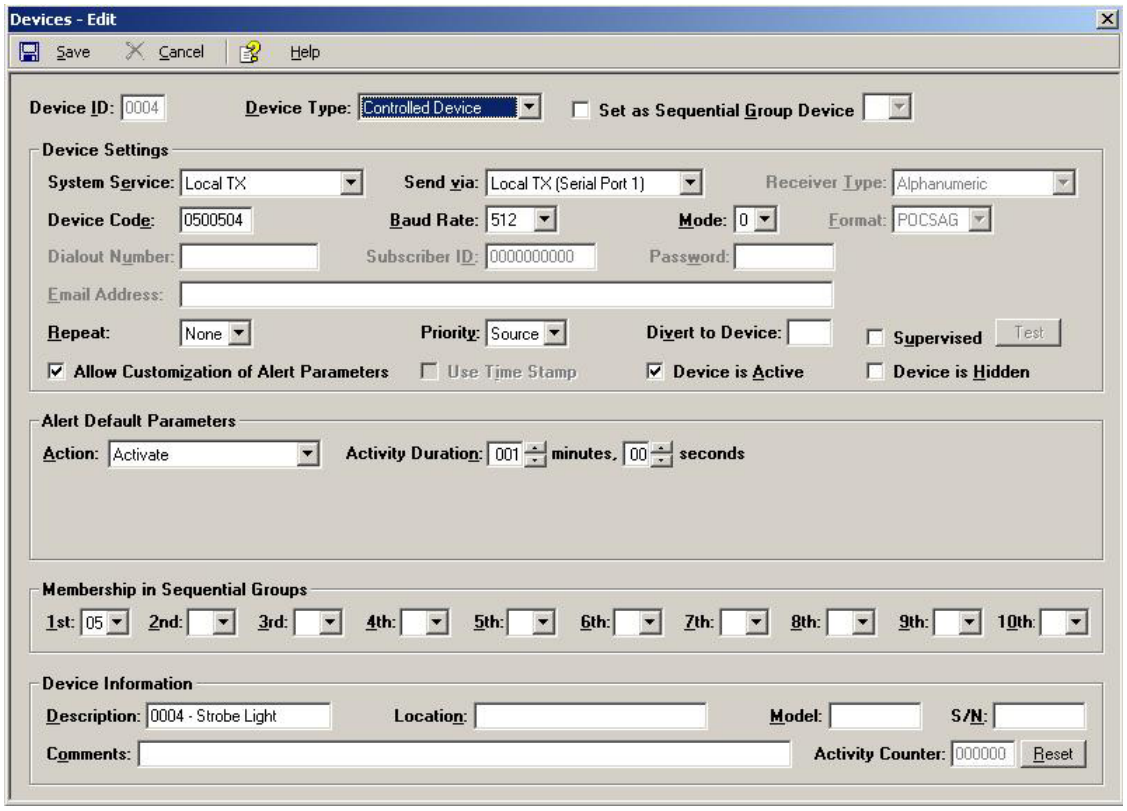
   Note: If the PC running VNS2000 Server has more than two serial ports, it is possible to use the additional serial port instead of an external PC. In that case, connect the other end of the communication cable to that serial port on the PC running VNS2000 Server (usually from COM2 to COM3).

4. On the VNS2000 Server software, perform the following steps:
   4.1 Go to **File**-**Admin Login**. Press **Ok** (the default password is blank).

   4.2 Go to **Setup**-**System Configuration**-**Serial Ports Settings** menu:
   - Verify that COM001 is set to Local TX, 9600, 8, None, 1 (Protocol, Speed, Databits, Parity, Stopbits).
   - Verify that COM002 is set to TAP, 9600, 8, None, 1 (Protocol, Speed, Databits, Parity, Stopbits).

   Note: If any of the settings is incorrect, select the port, click **Edit** and modify the settings accordingly. Close the **Serial Ports Settings** screen. Click on **Save**.

5. Select a device on the VNS2000 main screen and click on **Edit**.



6. Clear the **Allow Customization of Alert Parameters** box. If required, modify the **Alert Default Parameters** to reflect the desired alert parameters. Click on **Save**.

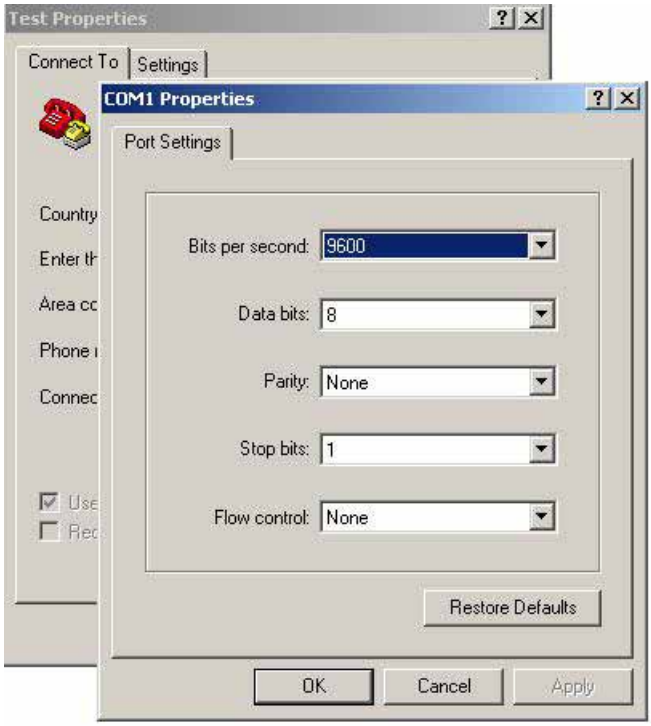
7. Select the device previously edited (see section 5) and click on **Send**. Verify that the corresponding wireless device received the alert.

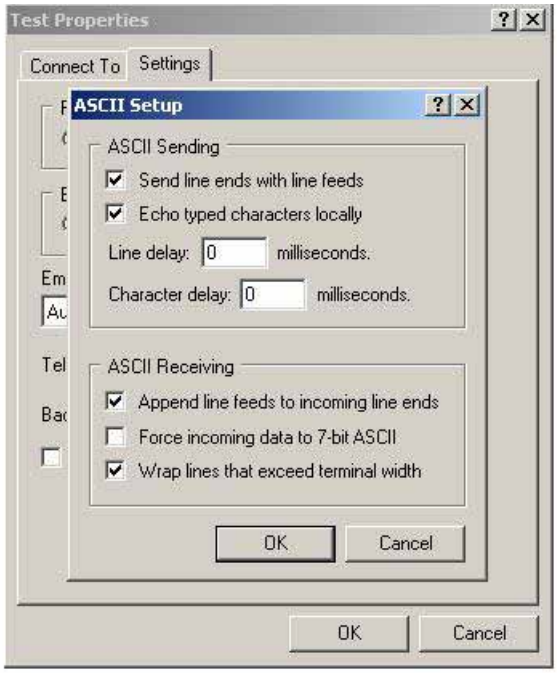
8. On the external PC, open the HyperTerminal program (usually accessible by clicking on **Start**-**Programs**-**Accessories**-**Communications**). Follow the steps listed below to set a new connection:
   8.1 Use “Test” as the connection name.

8.2 Select **COM1** on the **Connect using** drop down list box (if COM1 is not available on the external PC, select any other available serial port).

8.3 On the **Port Settings** dialog box, use the settings of 9600, 8, None, 1, None (Speed, Databits, Parity, Stopbits, Flow Control).

8.4 Move to the **Settings** tab and click on ASCII Setup. Check the boxes of **Echo typed characters locally** and **Append line feeds to incoming line ends** (see images below). Click on **Ok** followed by **Ok** again.





9. The HyperTerminal program should show the “Connected” message at the bottom left corner of the screen.

10. On the external PC, press the Enter key. In response to each time you press the Enter key, the VNS2000 Server software will respond with “ID=”. This response indicates that the HyperTerminal session on the external PC is connected properly to the VNS2000 Server software and that it is ready to receive commands using serial communication.

    Note: If the “ID=” response is not displayed on the HyperTerminal session screen, repeat and verify steps 1-9.

11. To activate the device selected on section 5, send a TAP protocol message to the device.

    Note: TAP protocol is more detailed than the basic format of the previous protocols. Therefore, please refer to documented literature regarding this protocol.

12. The device should be activated according to the **Alert Default Parameters** selected on section 6.

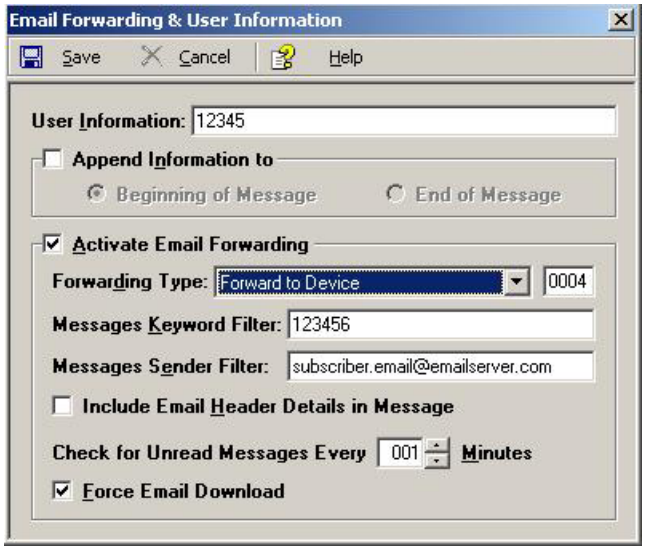
13. Assuming the wireless device was activated as expected, try activating additional wireless devices.

14. Once activation of wireless devices using serial communication based on TAP protocol is accomplished, it is recommended that an application will be developed in order to implement the activation procedure and automate the messaging requests from the third party system to the VNS2000 Server.

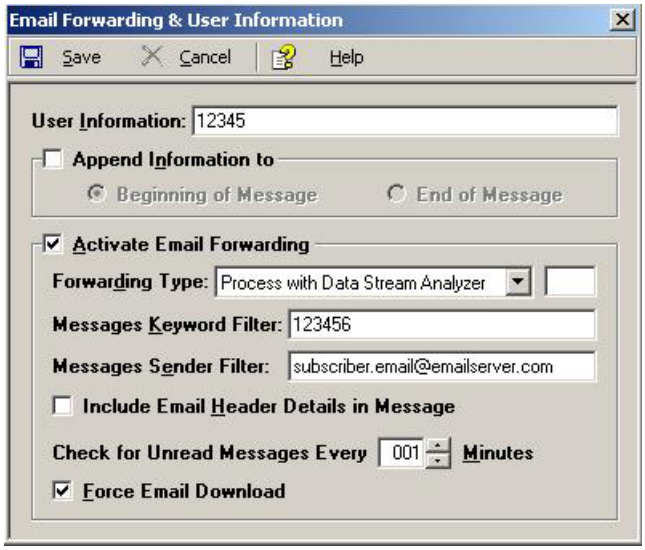
3.5 Device Activation using Email

Activating device using email is based on sending an email from any source to the MAPI compatible email software (like Outlook Express) that is set up on the PC running VNS2000 Server software. The VNS2000 Server will check the Inbox for unread messages and then will process all messages that meet the conditions determined by the **Message Keyword Filter** and / or **Message Sender Filter** according to one of the following two options:

1. **Forward to Device**: The message body will be forwarded as is to the selected device. If the device cannot receive alphanumeric messages, it will be sent an alert according to its **Alert Default Parameters**.



2. **Process with Data Stream Analyzer**: The message body will be analyzed as a **Keyword** according to the **Serial Port Data Stream** event triggers. If a match to the message body is found, an alert will be sent according to the settings for that keyword.



Follow the steps listed below to activate a device by sending an email message to an email address monitored by the email software on the VNS2000 Server PC:

1. Go to **Setup-Email Forwarding & User Information**. Follow the steps listed below to set up email forwarding:
   1.1 Check the **Activate Email Forwarding** box.

   1.2 Select **Forward to Device** in the **Forwarding Type** drop down list. Enter the device number that should be activated.

   1.3 If required, enter a **Message Keyword Filter**. The VNS2000 Server software will process only incoming emails that contain that keyword in their subject line. Emails that do not contain this keyword will be ignored.

Note: Leave this field empty to forward all emails.
The keyword cannot contain spaces and can be as long as 20 characters. The email will be considered valid for forwarding if the keyword is found at any location in the email subject.

1.4 If required, enter an email address in the **Message Sender Filter**. The VNS2000 Server software will process only incoming emails that were received from that email address. Emails that were not received from that email address will be ignored.

Note: Leave this field empty to forward all emails.
The sender's email address can be as long as 100 characters.

1.5 For fast forwarding of emails to the device, set the **Check for Unread Messages Every** to 1 minute.

1.6 Check the **Force Email Download** box.

Note: If the **Force Email Download** box is checked, VNS2000 Server will automatically try to connect to your email service and download new messages. If this box is cleared, you will have to download the messages manually or leave your email software running and configure it to check for new messages periodically.
VNS2000 Server will send the unread message only (these messages appear in bold font in your Inbox) to the selected device.
After a message is processed, it will be marked as read in your inbox.

1.7 Click on **Save**.

Note: If the selected wireless device cannot accept alphanumeric messages, the VNS2000 Server will display a message verifying that **Alert Default Parameters** will be used. Click **Yes** to confirm and proceed.

2. Send an email message to one of the email addresses (accounts) that were set up on the PC running VNS2000 Server. Within 1 minute, the device entered on the **Send to Device** field should be activated.

Note: If the device is alphanumeric, it will display the message text entered in the **Message Text** field. Otherwise, it will be activated according to its **Alert Default Parameters**.
If you entered a **Message Keyword Filter** or **Message Sender Filter**, make sure that the email message has the required information in the message subject and that it is sent from the email address entered in **Message Sender Filter**.

3. Once activation of wireless devices using email is fully understood, it is recommended that an application will be developed in order to implement the activation procedure and automate the messaging requests from the OEM system to the VNS2000 Server.

Follow the steps listed below to activate a device according to keywords defined by the **Serial Port Data Stream** event triggers by sending an email message to an email address monitored by the email software on the VNS2000 Server PC:

1. Go to **Setup-Email Forwarding & User Information**. Follow the steps listed below to set up email forwarding:
   1.1 Check the **Activate Email Forwarding** box.

   1.2 Select **Process with Data Stream Analyzer** in the **Forwarding Type** drop down list.

   1.3 If required, enter a **Message Keyword Filter**. The VNS2000 Server software will process only incoming emails that contain that keyword in their subject line. Emails that do not contain this keyword will be ignored.

   Note: Leave this field empty to process all emails.
   The keyword cannot contain spaces and can be as long as 20 characters. The email will be considered valid for forwarding if the keyword is found at any location in the email subject.

   1.4 If required, enter an email address in the **Message Sender Filter**. The VNS2000 Server software will process only incoming emails that were received from that email address. Emails that were not received from that email address will be ignored.

   Note: Leave this field empty to forward all emails.
   The sender's email address can be as long as 100 characters.

   1.5 For fast processing of emails, set the **Check for Unread Messages Every** to 1 minute.

1.6 Check the **Force Email Download** box.

Note: If the **Force Email Download** box is checked, VNS2000 Server will automatically try to connect to your email service and download new messages. If this box is cleared, you will have to download the messages manually or leave your email software running and configure it to check for new messages periodically.
VNS2000 Server will send the unread message only (these messages appear in bold font in your Inbox) to the selected device.
After a message is processed, it will be marked as read in your inbox.

1.7 Click on **Save**.

2. Go to **Event Triggers-Serial Port Data Stream** menu. Select the first record and click on **Edit**. Follow the steps listed below to set a new event trigger:
   2.1 In the **Send to Device** field, enter the selected device number.

   2.2 In the **Keyword** field, enter the keyword that will activate the event once it is detected in an email message received by the email software (for example, “Alarm”).

   2.3 In the **Message Text** field, enter the alphanumeric message that should be sent when the keyword is detected in email message received by the email software (for example, “Alarm in Room 001”).

   Note: The **Message Text** is applicable only if the selected wireless device can accept alphanumeric messages. In all other cases, the device will be activated according its **Alert Default Parameters**.

   2.4 Click on **Save**.

3. Send an email message to one of the email addresses (accounts) that were set up on the PC running VNS2000 Server. The message text should include the keyword entered on 2.2. Within 1 minute, the device entered on the **Send to Device** field should be activated.

   Note: If the device is alphanumeric, it will display the message text entered in the **Message Text** field. Otherwise, it will be activated according to its **Alert Default Parameters**.
   If you entered a **Message Keyword Filter** or **Message Sender Filter**, make sure that the email message has the required information in the message subject and that it is sent from the email address entered in **Message Sender Filter**.

4. Once activation of wireless devices using email is fully understood, it is recommended that an application will be developed in order to implement the activation procedure and automate the messaging requests from the OEM system to the VNS2000 Server.

This page was intentionally left blank

This page was intentionally left blank