

VS4500

Wireless Time & Voice Controller

User's Manual / Installation Guide

Version 1.12

Visiplex, Inc. 2015

VS4500

Wireless Time & Voice Controller

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Notice to User Regarding Radio Frequency Interference

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

About This Manual

This VS4500 User's Manual / Installation Guide describes the installation and setup procedures of the VS4500 for wireless messaging. It also provides instructions for transmitter antenna installation.

It is imperative the manual is followed in the order it is presented to prevent damage to the equipment, as well as insuring proper system functionality.

The manual provides instructions for mounting preparation, determining system location and spacing in regard to antennas and other equipment. Information is also provided for verification of reception and transmission quality and troubleshooting of problems that may arise during installation or operation.

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Product Information

1.1 Introduction



The VS4500 offers the latest and most innovative way to incorporate PC clock or GPS synchronized time, voice and data throughout your facility, providing you with the benefits of improved productivity and reduced maintenance costs.

The VS4500 wireless controller is a sophisticated time, bell and voice management system that can synchronize all facility wireless clocks to one accurate atomic time, run a schedule of bells/alerts, initiate live or pre-recorded voice messages and send alphanumeric messages to LED displays. Additional features of the VS4500 include an optional PBX interface and optional hand held microphone.

The VS4500 uses the PC clock as a time source for wireless analog clocks, wireless digital clocks and wireless alphanumeric displays. The VS4500 can also be used to synchronize older wired clocks using a special wireless receiver. Using the connected PC clock or GPS receiver, the VS4500 updates its internal clock every few minutes and sends a wireless data signal every minute to provide time synchronization information to all system clocks.

The VS4500 is a powerful microprocessor-based desktop paging system capable of addressing up to 1000 receivers. It consists of a fully featured encoder with a 2 line by 16-character LCD display and a numeric keypad mounted in a wall or desk mountable housing.

The VS4500 is compatible with the Visiplex series of digital transmitters ranging from 6 to 300 watts. An internal 6 watt transmitter can be installed at the factory and larger transmitters are available as separate items.



1.2 Standard Features

- Generate alerts to alphanumeric and numeric devices, voice or tone devices, and wireless clocks
- User configurable 1000 devices database
- RS232 serial port for serial communication
- Built-in high-precision Real-Time clock
- Capable of synchronizing its internal clock from a PC clock or GPS (requires external GPS receiver)
- Synchronize both analog and digital wireless clocks
- User configurable Master Clock synchronization time
- External transmitter port
- Backlit LCD display
- Numeric keypad
- Built-in memory backup
- Desk or wall mountable

1.3 Optional Features

- Telephone line interface (RJ-11) for remote status change of system mode and live voice alerts
- Hand held microphone for live voice alerts
- Additional one serial port for extended serial communication
- Built-in scheduled tone activation for wireless receivers
- High power external digital transmitters (25 to 300 watt)
- Automated activation of wireless voice devices from external audio source
- 900MHz or UHF Wireless receiver for monitoring 900MHz or UHF wireless push buttons and transmitters

1.4 Package Contents

The following items are included with the VS4500:

- VS4500 Wireless Time & Voice Controller
- Power adaptor
- Manual
- USB cable (Note: RS232 null-modem communication cable supplied prior to 04/01/2014)

1.5 Key Navigation

The following keys also function in system menus as detailed below:

#	Select / Acknowledge / Enter
*	Return to previous menu / Escape
1	On / Next
0	Off / Previous

1.6 Display Indicators

Time source reception status (displayed between the hour and minutes segments) and daylight saving status (displayed to the left of the hour segment) indicators are displayed on the main menu:

.	No connection with time source
;	No GPS or PC clock data reception detected
:	GPS or PC clock data reception detected, date and time updated
*	Daylight saving time is active

1.7 Pre-Installation Test for Wireless Clocks

It is recommended to test the VS4500 and the entire system prior to installation in order to verify proper operation and get familiar with the unit operation.

Follow these steps to perform a pre-installation test:

1. If your system is equipped with an internal transmitter, connect the BNC antenna cable to the **RF-OUT** terminal at the back of the VS4500.
If your system uses an external transmitter, connect the transmitter data cable between the VS101-XX transmitter and the **DATA I/O** port at the back of the VS4500. Connect the antenna to the external transmitter's **RF-OUT** terminal.
2. Connect the provided power supply to the **POWER** jack at the back of the VS4500 and turn the power switch to **ON** position. The main menu should appear with the **PAGE TO:** displayed on the top line.
If you are using an external transmitter, make sure it is powered on.
3. Press the **B** key for the **Administration Menu** and enter the default password (4500). The menu top line should display **SELECT OPTION:**
4. Press **2** followed by the **#** key for the internal clock **Time Setup**. Enter the UTC (Universal Coordinate Time) or GMT (Greenwich Mean Time) time in 24 hours (military) format. The display will change back to **Time Setup**.
5. Press **3** followed by the **#** key for the internal clock **Date Setup**. Enter the UTC (Universal Coordinate Time) or GMT (Greenwich Mean Time) date in MMDDYY format. The display will change back to **Date Setup**.
6. Press **6** followed by the **#** key for the **Time Zone Setup** menu. Enter the offset in hours of the local time zone from UTC (Universal Coordinate Time) or GMT (Greenwich Mean Time) time. Use 01 to 23 for negative offset (GMT -1 to GMT -23), 00 or 24 for GMT time, 25 to 47 for positive offset (GMT+1 to GMT+23).
The display will change back to **Time Zone Setup**.
7. Press **A** followed by the **#** key for the **Wireless Setup** menu. Press **3** for the **Time Sync Mode** menu followed by the **#** key. Press **1** followed by the **#** key to enable time synchronization.
8. Press the ***** key to return to the **Main Menu**.
9. Press **C** to start the transmission of time synchronization every minute (installation mode).
Within a few minutes, the VS4500 will start sending the time information page every minute. Set a clock to receive signal and make sure it receives and displays the correct time as displayed on the VS4500 display.

Installation

2.1 Site Inspection and System Location

Consider the following requirements when planning system installation and choosing a location for the VS4500 and other system components:

1. If the optional GPS receiver is used, it should be installed where it is **exposed to the sky**, parallel to the horizon and unobstructed by trees, power-lines, etc.
If the GPS receiver is installed indoors, mount it at the lower edge of a window, away from Low E glass and exposed to the sky.
2. Choose a location that is easily accessible in case you need to perform maintenance on the antenna.
3. The transmitting antenna should be located as close as possible to the center of the site and should not be surrounded by large metal objects that may block the RF signal and decrease the coverage range of the system.
4. The transmitting antenna may be mounted vertically upward, **NEVER horizontally**.
5. Magnetic Mount antenna (such as VS638) should be attached to a large metal object (like an air duct, metal shelf or cabinet) to provide it with a proper grounding. It may be mounted vertically upward or downward.
6. Base Station antenna (such as included with VS654 kit) should be secured to a well-grounded metal structure or to a pole on the roof.
Locate a path for running the coax cable between the antenna and the transmitter such as a riser (if there is no existing path, create one).
Place the external transmitter in a location that is as close as possible to the roof such as in the penthouse. Keep the distance between the antenna and the transmitter as short as possible to minimize RF power loss.

2.2 GPS Receiver Installation (optional)

1. The optional GPS receiver can be mounted indoors or outdoors. **Outdoors installation is highly recommended for optimal reception.**
2. The GPS receiver should be installed where the distance to the VS4500 is **not more than 100'**.
3. If the GPS receiver is installed indoor (not recommended), mount it at the lower edge of a window, away from Low E glass and exposed to the sky.
4. If the GPS receiver is installed outdoors, mount it in a location protected from direct sun or rain.
5. If the GPS receiver is installed outdoors, secure it the structure or to the wall-mounting "L" bracket included with your system that allows mounting of the antenna on the side of a building or other structure.
6. Connect the GPS receiver to the **COM1** serial port and set the serial port to the required settings (see page 15 for more details).

2.3 Magnetic Mount Antenna (VS638) Installation

1. Secure the antenna to an adequate grounding surface, HVAC duct or metal "I" beam. The antenna should be mounted vertically upward or downward, **NEVER horizontally**.
2. Choose a mounting location that will provide an adequate grounding surface and free space for RF radiation. If the antenna is mounted too close to metal or closed heavy concrete walls room, a high VSWR may occur which in the long term may cause damage to the transmitter.
3. The optional wall-mount "L" bracket allows mounting the magnetic antenna on the side of a building or other structure, providing the roof's overhang is not excessive.

Note: The antenna should be located as far from the VS4500 and transmitter as the coax cable allows.

2.4 Base Station Outdoor Antenna Kit (VS654) Installation

1. To achieve maximum performance for your outdoor antenna choose a location that is unobstructed by trees, branches, power-lines, etc. Never mount the antenna where there is a signal-reflecting surface such as metal, power lines, mirrored glass, etc.
2. Choose a location that is easily accessible in case you need to perform maintenance on the antenna.

3. For optimal performance, make sure the antenna is installed at an elevation that will provide sufficient clearance to allow your antenna to radiate without interference.
4. It is recommended to mount the antenna where the path of the antenna cable is straight and as close as possible to the system transmitter. Do not coil up 100 feet of coaxial cable when only 20 feet of cable is required. Use a RG-8U coax cable that is specified as Low Loss to minimize power loss.
5. The antenna may be mounted vertically upward, **NEVER horizontally**.
6. Install the grounding kit provided with the VS654 antenna kit.

Note: The antenna should be located as far from the VS4500 and transmitter as the coax cable allows.

2.5 VS4500 Encoder and External Transmitter Installation

The VS4500 system encoder can be installed on a wall or shelf. Install a UPS power backup to protect the system from power outages and surges. If you are using an external transmitter, place it next to the VS4500 and use the data cable provided to connect VS4500 and the external transmitter.

Once the transmitter and antenna are placed properly, connect them to the VS4500 and the transmitter as follows:

1. If an external transmitter is used, connect the antenna to the **RF-OUT** terminal at the back of the external transmitter. Connect the transmitter data cable between the VS101-XX transmitter and the **DATA I/O** port at the back of the VS4500. Otherwise, connect the antenna to the **RF-OUT** terminal at the back of the VS4500.
2. If the optional GPS receiver is used, the internal clock of the VS4500 will be set to the UTC time and the VS4500 will start transmitting the local time every minute.
3. If the PC time is used, connect the PC serial port to the **COM1** terminal and run the **TimeSync** or **VPS** software. See **Setting Date and Time from PC** section on page 25 or **TimeSync** section on page 34 for more detailed information.
4. No additional programming is needed for the system to be fully operational. See **Advanced System Information** section on page 10 for more detailed information about the VS4500.

Note: Do not place the VS4500 on top of the external transmitter as RF feedback may cause system malfunction.

Advanced System Information

The main menu shown below appears after the VS4500 is turned on and is used for accessing the **Programming** and **Administration** menus. This menu is also used for sending a page to a receiver.

PAGE TO: 11:55

3.1 Administration Menu

From the **Main Menu** press the **B** key. Enter **4500** as password. The prompt **Select Option** will appear on the top line.

The **Administration Menu** provides access to the following available sub-menus:

1. Device Database
2. Time Setup
3. Date Setup
4. View Messages
5. Coverage Test
6. Time Zone Setup
7. Last Message
8. Reset Database
9. Sunset/Sunrise
- A. Wireless Setup
- B. Operations Modes
- C. System Setup
- D. TX Test Tone

To access a specific sub-menu, press the digit key representing it.

3.1.1 Device Database Menu

From the **Administration Menu**, select **1** followed by the **#** key. Following are the fields description:

Device to Edit	Enter 3 digit ID of the programmed device (001-899). If the device already exists, its details will be displayed for editing or deleting. Group devices (01-99) are represented and accessed by paging to devices 901-999.
Device Capcode	Enter the capcode of the programmed device. For Voice pagers, enter "0" followed by Tone A and Tone B (for example, "0110111").
Device Type	Select the type of the programmed device. 0 - Alphanumeric Pager 1 - Numeric Pager 2 - Tone Only Pager 3 - Voice Pager 4 - Wireless Speaker 5 - Widearea Pager (Note: Optional modem is required) 6 - Portable Radio 7 - Phone 8 - LED Display 9 - Intercom Station
Paging Mode	Select Mode and Baud Rate and press the # key: 1 - 512 bps, Mode 0 2 - 512 bps, Mode 1 3 - 512 bps, Mode 2 4 - 512 bps, Mode 3 5 - 1200 bps, Mode 0 6 - 1200 bps, Mode 1 7 - 1200 bps, Mode 2 8 - 1200 bps, Mode 3 9 - 2400 bps, Mode 1 0 - 2400 bps, Mode 2
Group	If the device is a member in a group, enter the group number (0-99) and press the # key. Group devices are represented and accessed by paging to devices 901-999.

DSC (Device Special Command)	Additional device parameters:			
	1. For Widearea service pagers, it contains the 3-digit area code.			
	2. For Intercom devices, this field allows override of the Full-Duplex, Auto answer and Incoming Alert Tone settings programmed in to the VNS22xx (applicable to VNS22xxversion 4.06 or later):			
	DSC Value	Full Duplex / Hand Free	Auto Answer	Incoming Call Alert Tone
	<u>0</u>	Default VNS22xx Settings	Default VNS22xx Settings	Default VNS22xx Settings
	1	X	-	-
	2	-	X	-
	3	X	X	X
4	-	-	-	
5	X	-	-	
6	-	X	-	
7	X	X	-	
Note: Underlined values indicate default values.				

After the last step is completed, the display will flash **DATA SAVED** and return to the **Device to Edit** menu. Repeat the above steps for additional devices or press the * key twice to return to the **Main Menu**.

3.1.2 Time Setup Menu

From the **Administration Menu**, select **2** followed by the # key. The following screen will be displayed:

**ENTER GMT TIME:
12:00**

Enter the UTC (Universal Coordinate Time) or GMT (Greenwich Mean Time) time in 24 hours (military) format. The display will change back to **Time Setup**.

DO NOT enter the local time as the unit uses the universal atomic time as a reference and calculates the local time based on your **Time Zone**.

If the VS4500 is connected to a PC or receives the time from a GPS receiver, it will revert back to the source time few minutes later overwriting the time changes made.

3.1.3 Date Setup Menu

From the **Administration Menu**, select **3** followed by the # key. The following screen will be displayed:

**ENTER GMT DATE:
010106**

Enter the UTC (Universal Coordinate Time) or GMT (Greenwich Mean Time) date in MMDDYY format. The display will change back to **Date Setup**.

DO NOT enter the local date as the unit uses the universal atomic time as a reference and calculates the local time based on your **Time Zone**.

If the VS4500 is connected to a PC or receives the time from a GPS receiver, it will revert back to the source time few minutes later overwriting the time changes made.

3.1.4 View Messages Menu

Use this option to view the pre-programmed messages. Pre-programmed messages allow you to send alphanumeric message via the keypad or optional telephone interface by entering * followed by the message number.

For example, if message 05 is programmed as "TEST", entering *05 will send the message "TEST" to the selected device. See **Page to Menu** section on page 17 for more detailed information.

From the **Administration Menu**, select **4** followed by the # key. The following screen will be displayed:

PPGM MESSAGE: 01

Use the **A & B** key to navigate through the pre-programmed messages.
Press the * key to return to the **Administration Menu**.

3.1.5 Coverage Test Menu

From the **Administration Menu**, select **5** followed by the # key. Enter a value between **1** and **8** to determine the cover page interval:

- 1 – Every 5 seconds
- 2 – Every 10 seconds
- 3 – Every 15 seconds
- 4 – Every 20 seconds
- 5 – Every 30 seconds
- 6 – Every 1 minute
- 7 – Every 2 minutes
- 8 – Every 4 minutes

Use this option to send cover page to device 100. This feature is useful when testing the transmitter coverage area.

Press * to cancel and return to the **Administration Menu**.

3.1.6 Time Zone Setup Menu

From the **Administration Menu**, select 6 followed by the # key. The following screen will be displayed:

TIME ZONE SETUP:
06

Enter the offset in hours of the local time zone from UTC (Universal Coordinate Time) or GMT (Greenwich Mean Time) time. Use 01 to 23 for negative offset (GMT -1 to GMT -23), 00 or 24 for GMT time, 25 to 47 for positive offset (GMT+1 to GMT+23).

For examples, for the following time zones, enter the following values:

- Eastern Time: 05
- Central Time: 06
- Mountain Time: 07
- Pacific Time: 08
- Alaska Time: 09
- Hawaii Time: 10

After the last step is completed, the display will return to the **Administration Menu**.

3.1.7 Last Message Menu

From the **Administration Menu**, select **7** followed by the # key.

Use this option to display the last message sent to a device.

Press * to cancel and return to the **Administration Menu**.

3.1.8 Reset Database Menu

NOTE: This is an **IRREVERSIBLE** command - **DO NOT** select this option unless you are absolutely sure you want to clear all devices and pre-programmed messages data.

You may want to transcribe this information to paper first or use the optional PC software to backup the data to a computer. From the **Administration Menu**, select **8** followed by the # key.

CLEAR ALL DATA..
ARE YOU SURE???

Press # to confirm the Database Reset. Press * or any other key to cancel and return to the **Administration Menu**.

3.1.9 Sunset / Sunrise Menu

Use this option to display the current settings for sunset and sunrise.

From the **Administration Menu**, select **9** followed by the # key. The following screen will be displayed:

SUNSET / SUNRISE:
R06:22 S17:43

Following is the description of the displayed information:
R: Sunrise time as indicated by the following 5 characters
S: Sunset time as indicated by the following 5 characters

Press the * key to return to the **Administration Menu**.

3.1.10 Wireless Setup Menu

From the **Administration Menu**, select **A** followed by the # key. The following screen will be displayed:

WIRELESS SETUP:
PA VOLUME

This screen allows the administrator to configure different wireless settings of the VS4500.

Press the key representing the field followed by # key to edit the settings. Following are the fields description:

1 - PA Volume	Determines the default volume used in voice messaging. Enter a value of 1 (lowest), 2 , 3 or 4 (highest) followed by # key to save the settings.
2 - PA Timeout	Determines the time period after which the transmission of voice message will be terminated. Enter a value between 1 and 8 followed by # key to save the settings: 1 – 30 seconds 2 – 60 seconds 3 – 1.5 minutes 4 – 2 minutes 5 – 2.5 minutes 6 – 3 minutes 7 – 3.5 minutes 8 – 4 minutes
3 - Time Sync Mode	Determines if time synchronization signal should be sent to wireless clocks. Enter a value between 0 and 2 followed by # key to save the settings: 0 – Disabled 1 – Enabled 2 – Controlled by a PC software
4 – DL Saving Mode	Determines if time synchronization Daylight Saving time is on or off. Enter a value between 0 and 1 followed by # key to save the settings: 0 – Disabled 1 – Enabled
5 – Time Sync Slot	Determines when the time synchronization signal should be sent. Enter a value between 0 and 6 followed by # key to save the settings: 0 – 15 seconds after top of the minute for TS4xxx and TS5xxx clocks. 1 – 30 seconds after top of the minute for TS4xxx and TS5xxx clocks. 2 – 45 seconds after top of the minute for TS4xxx and TS5xxx clocks. 3 – Top of the minute for TS4xxx and TS5xxx clocks. 4 – Top of the minute for TS-CLK-xxxx clocks, 15 seconds after top of the minute for TS4xxx and TS5xxx clocks. 5 – Top of the minute for TS-CLK-xxxx clocks, 30 seconds after top of the minute for TS4xxx and TS5xxx clocks. 6 – Top of the minute for TS-CLK-xxxx clocks, 45 seconds after top of the minute for TS4xxx and TS5xxx clocks.
6 – Daytime Sync	Determines if time synchronization signal should be sent during daytime or only during nighttime. Enter a value between 0 and 1 followed by # key to save the settings: 0 – Activate time synchronization signal during nighttime only (1:50AM to 2:10AM, 12AM to 3:30 AM on Day Light Saving change date). 1 – Activate time synchronization every minute during daytime.
7 – MC Sync Time	Determines the time when a wireless signal should be sent to a Master Clock Synchronizer to close contact. Enter a valid time in 24 hours format (for example, for 6PM, enter 1800).

8 – MC Sync Duration	Determines the Master Clock Synchronizer contact closure time interval (seconds). Enter a value between 0 and 9 followed by # key to save the settings: <u>0</u> – Disabled 1 – 1 seconds 2 – 2 seconds 3 – 3 seconds 4 – 4 seconds 5 – 5 seconds 6 – 6 seconds 7 – 7 seconds 8 – 8 seconds 9 – 9 seconds
9 – Security Mode	Determines if secure data mode should be used. This provides data encryption to secure the transmission to the wireless receivers using the security key. Enter a value between 0 and 9 followed by # key to save the settings: <u>0</u> – Disabled 1 – Mode 1 2 – Mode 2 3 – Mode 3 4 – Mode 4 5 – Mode 5 6 – Mode 6 7 – Mode 7 8 – Mode 8 9 – Mode 9
0 – Security Code	Determines the security key for secure data mode. Enter a value between 0 and 299 .
A – Schedule Paging	Indicates if the type and status of the event schedule. Enter a value between 1 and 3 followed by # key to save the settings: 1 – Weekly 2 – Calendar 3 – Idle (standby mode) Note: This setting is applicable only when the schedules events option was ordered and installed on the VS4500.
B – Schedule Slot	Determines the active weekly Event Schedule. Enter a value between 1 and 4 followed by # key to save the settings. Note: This setting is applicable only when the schedules events option was ordered and installed on the VS4500. The setting applies to weekly schedule only.
C – TX Deviation	Determines the TX deviation. Enter a value between 1 and 9 followed by # key to save the settings: 1 – ±0.5kHz 2 – ±1.0kHz 3 – ±1.5kHz 4 – ±2.0kHz <u>5</u> – ±2.5kHz 6 – ±3.0kHz 7 – ±3.5kHz 8 – ±4.0kHz 9 – ±4.5kHz
D – Call Sign	Displays the call sign assigned to you by the FCC (if any). Contact Visiplex tech support for more details.
Note: Underlined values indicate default values.	

Press the * key to return to the **Administration Menu**.

3.1.11 Operation Modes Menu

From the **Administration Menu**, select **B** followed by the # key. The following screen will be displayed:

OPERATIO S MODES :
PRE-PAGE DELAY

This screen allows the administrator to configure global settings of the VS4500.

Press the key representing the field followed by # key to edit the settings. Following are the fields description:

1 - Pre-Page Delay	Determines if a delay will be applied before the transmission of data for digital paging. Enter a value between 0 and 1 followed by # key to save the settings: <u>0</u> – Disabled 1 – Enabled
---------------------------	--

2 - Intercom	Determines the mode of the 2-way intercom feature. Enter a value between 0 and 2 followed by # key to save the settings: 0 – Disabled 1 – Enabled 2 – full-duplex mode
3 - LBT Mode	Determines if the Listen before Transmit is activated. Enter a value between 0 and 1 followed by # key to save the settings: 0 – Disabled 1 – Enabled
4 - Two-Channel Mode	Determines if different frequencies should be used for different type of transmissions. The 1st channel will be used for standard paging and PA while the 2nd channel will be used for wireless clocks. Enter a value between 0 and 1 followed by # key to save the settings: 0 – Disabled 1 – Enabled Note: This feature requires supporting transmitter with two channels set to different frequencies.
5 - Auto Speaker	Determines if the system will automatically transmit messages to the pre-assigned device (usually 898) when the microphone's PTT is activated. Enter a value between 0 and 1 followed by # key to save the settings: 0 – Disabled 1 – Enabled
6 - Auto Phone Page	Determines if the system will automatically transmit messages to the pre-assigned device (usually 899) when a call is received on the telephone interface is activated. Enter a value between 0 and 1 followed by # key to save the settings: 0 – Disabled 1 – Enabled
7 - Speaker Level	Determines the default volume level of the VS4500 internal speaker used for 2-way communication with intercom stations. Enter a value between 0 and 9 followed by # key to save the settings.
8 – TX ALC	Determines if the Automatic Level Control is activated for voice transmissions. Enter a value between 0 and 1 followed by # key to save the settings: 0 – Disabled 1 – Enabled
9 – LED Display Mode	Determines if the messages sent to alphanumeric display should overwrite the displayed message or added to the current queue of messages displayed by the alphanumeric display. Enter a value between 1 and 2 followed by # key to save the settings: 1 – New messages overwrite the currently displayed message. 2 – New messages are added to the list of messages (messages will be displayed one after the other according to the messages parameters).
0 – MIC PTT Mode	Determines if the wireless speaker controllers (such as VNS2200) should be muted when the microphone PTT is off to reduce background audio. Enter a value between 0 and 1 followed by # key to save the settings: 0 – Wireless speaker controllers are not muted when the microphone PTT is off. 1 – Wireless speaker controllers are muted when the microphone PTT is off. Note: This feature requires compatible wireless speaker controller.
A – LED Color	Determines the default color that should be used to display messages sent to alphanumeric displays. Enter a value according to the settings supported by the alphanumeric display. Note: Please refer to the alphanumeric display instructions sheet for more information.
B – LED Text Mode	Determines the default effect that should be used to display messages sent to alphanumeric displays. Enter a value according to the settings supported by the alphanumeric display. Note: Please refer to the alphanumeric display instructions sheet for more information.
C – Led Font Style	Determines the default font that should be used to display messages sent to alphanumeric displays. Enter a value according to the settings supported by the alphanumeric display. Note: Please refer to the alphanumeric display instructions sheet for more information.
D – LED Timeout Mode	Determines the default time slice that should be used to display messages sent to alphanumeric displays. Enter a value according to the settings supported by the alphanumeric display. Note: Please refer to the alphanumeric display instructions sheet for more information.

Press the * key to return to the **Administration Menu**.

3.1.12 System Setup Menu

From the **Administration Menu**, select **C** followed by the # key. The following screen will be displayed:



This screen allows the administrator to configure the VS4500 as required for the application.

Press the key representing the field followed by # key to edit the settings. Following are the fields description:

<p>1 – COM1 Protocol</p>	<p>Enter the serial communication protocol that should be used on COM1. Enter a value between 1 and 9 or A followed by # key to save the settings: 1 – TAP 2 – COMP1 3 – COMP2 4 – VISIPLEX 5 – GPS SYNC 6 – FREETEXT 7 – 900MHz Receiver 8 – VPR Receiver 9 – PC-ADMIN A – WIDEAREA</p>
<p>2 – COM1 Baud Rate</p>	<p>Enter the serial communication settings (baud rate, parity, data bits, stop bits) that should be used on COM1. Enter a value between 0 and 9, A or B followed by # key to save the settings: 0 – 300 bps, 7,E,1 1 – 300 bps, 8,N,1 2 – 1200 bps, 7,E,1 3 – 1200 bps, 8,N,1 4 – 2400 bps, 7,E,1 5 – 2400 bps, 8,N,1 6 – 9600 bps, 7,E,1 7 – 9600 bps, 8,N,1 8 – 19200 bps, 7,E,1 9 – 19200 bps, 8,N,1 A – 38400 bps, 7,E,1 B – 38400 bps, 8,N,1</p>
<p>3 – COM2 Protocol</p>	<p>Enter the serial communication protocol that should be used on COM2. Enter a value between 1 and 9 or A followed by # key to save the settings: 1 – TAP 2 – COMP1 3 – COMP2 4 – VISIPLEX 5 – GPS SYNC 6 – FREETEXT 7 – 900MHz Receiver 8 – VPR-01 Receiver 9 – PC-ADMIN A – WIDEAREA</p>
<p>4 – COM2 Baud Rate</p>	<p>Enter the serial communication settings (baud rate, parity, data bits, stop bits) that should be used on COM2. Enter a value between 0 and 9, A or B followed by # key to save the settings: 0 – 300 bps, 7,E,1 1 – 300 bps, 8,N,1 2 – 1200 bps, 7,E,1 3 – 1200 bps, 8,N,1 4 – 2400 bps, 7,E,1 5 – 2400 bps, 8,N,1 6 – 9600 bps, 7,E,1 7 – 9600 bps, 8,N,1 8 – 19200 bps, 7,E,1 9 – 19200 bps, 8,N,1 A – 38400 bps, 7,E,1 B – 38400 bps, 8,N,1</p>
<p>5 – USB Mode</p>	<p>Determines if the serial protocol used by the USB port. Enter a value between 1 and 2 followed by # key to save the settings: 1 – VISIPLEX protocol 2 – PC-ADMIN protocol</p>
<p>6 – System Password</p>	<p>Enter the new administrator password that will be required to access the Administration Menu. The default password is 4500.</p>

7 – VOX Mode	<p>Determines the sensitivity level and timeout interval for automated paging to the Auto Speaker Paging device (usually 898). The Auto Speaker device will be activated when audio is detected on the VOX port and transmission will be terminated when no audio is detected after the timeout interval elapsed.</p> <p>Low Sensitivity requires high audio input and High Sensitivity requires lower audio input. Enter a value between 0 and 9 followed by # key to save the settings:</p> <p><u>0</u> – Disabled 1 – VOX Mode 1 (High sensitivity, 4 seconds timeout) 2 – VOX Mode 2 (Medium sensitivity, 4 seconds timeout) 3 – VOX Mode 3 (Low sensitivity, 4 seconds timeout) 4 – VOX Mode 4 (High sensitivity, 8 seconds timeout) 5 – VOX Mode 5 (Medium sensitivity, 8 seconds timeout) 6 – VOX Mode 6 (Low sensitivity, 8 seconds timeout) 7 – VOX Mode 7 (High sensitivity, 16 seconds timeout) 8 – VOX Mode 8 (Medium sensitivity, 16 seconds timeout) 9 – VOX Mode 9 (Low sensitivity, 16 seconds timeout)</p>
8 – PABX Voice	<p>Determines if a voice prompt should be played when a user dials in to the system in order to send a message using a phone keypad. Enter a value between 0 and 1 followed by # key to save the settings:</p> <p><u>0</u> – Disabled 1 – Enabled</p>
9 – Time Stamp	<p>Determines if a time stamp should be added to outgoing message. Enter a value between 0 and 1 followed by # key to save the settings:</p> <p><u>0</u> – Disabled 1 – Enabled</p>
A – RX Data Polarity	<p>Determines if the receive data is inverted. Enter a value between 0 and 1 followed by # key to save the settings:</p> <p><u>0</u> – Normal 1 – Inverted</p>
B – TX Data Polarity	<p>Determines if the transmitter data should be inverted. Enter a value between 0 and 1 followed by # key to save the settings:</p> <p><u>0</u> – Normal 1 – Inverted</p>
C – Pre-Sunset Time	<p>Determines the time offset in minutes from the sunset time. Enter a value from 0 to 99.</p>
D – Past Sunrise Time	<p>Determines the time offset in minutes from the sunrise time. Enter a value from 0 to 99.</p> <p>Note: Sunset/Sunrise light control provides support for automated messaging to devices based on the sunset and/or sunrise time of each day. The activation and deactivation time can be set to an offset of 0 to 99 minutes before sunset and/or after sunrise time. The activated devices will receive a command from the VS4500 at these times and perform a task such as closing or opening dry-contacts.</p>
<p>Notes: 1. Underlined values indicate default values. 2. Standard paging protocols supported are Visiplex, TAP, COMP1 and COMP2.</p>	

3.2 Installation Mode Menu

Installation Mode forces the system to transmit the time information every minute. This mode is helpful when the system is being installed or when conducting a site coverage test.

NOTE: This feature is available only if Time Sync Mode was enabled. Installation Mode should be disabled after the coverage test is completed to allow proper system operation.

From the **Main Menu** press the **C** key to enable and disable the Installation Mode. The following screen will be displayed:



The display will return to the **Main Menu**. Press the **C** key again to disable the Installation Mode.

3.3 Page To Menu

The main menu shown below appears after the VS4500 is turned on and is also used for sending a page to a device.



The VS4500 supports 999 devices that are accessible by entering the device number on the above menu. The device number is a 3 digits number between 001 and 999 that uniquely represents each device. Devices 001 to 900 are devices that allow access to individual devices while devices 901 to 999 are pre-programmed as group devices. Group devices allow easy access to multiple devices that are members of the group. Follow these steps to send a page using the keypad:

1. Program a device in to the VS4500 as described in the **Device Database Menu** section (page 10).
2. Enter the device number as a 3 digit number.
3. If the selected device is a Tone / Vibrate device, the page will be sent immediately after entering the device number. If the device selected is an Alphanumeric or a Numeric device, the following screen will be displayed:



4. Enter a numeric message that will not exceed 16 characters. To send one of the preprogrammed alphanumeric messages, enter * followed by the message number (see **PABX Messages** on page 21). The page will be sent immediately after entering the 16th character or after the # is pressed.

3.4 Accessing Wireless Devices via Telephone

Note: Sending alerts using a telephone requires the optional **Telephone Line Interface** and **Alpha by Phone** features and may not be available on your VS4500.

3.4.1 Accessing Standard Devices

1. Program a device in to the VS4500 as described on **Device Database Menu** section on page 10.
2. Connect the RJ-11 **PHONE** jack located at the back of the VS4500 to an analog telephone line or extension.
3. Using another phone, dial the number of the telephone line or extension connected to the VS4500.
4. The VS4500 will answer the call with the "Please Enter Pager" prompt.
5. Enter the device number as a 3 digit number. The device number can be also entered without leading zeros but it will have to be followed by the # key. If the device number entered is not valid, the VS4500 will respond with "Invalid Pager" prompt.
6. If the selected device is Tone / Vibrate device, the page will be sent immediately after entering the device number and the VS4500 will respond with "Page Sent" prompt.
7. If the selected device is an Alphanumeric or a Numeric device, the VS4500 will respond with "Please Enter Message" prompt. For Numeric or Alphanumeric devices, enter a numeric message using the telephone keypad (to send alphanumeric messages, see **PABX Messages** on page 21).
8. If the selected device is a Voice pager or Wireless Speaker device, the VS4500 will respond with "Please Wait" prompt and shortly after that with the "Please Speak Message" prompt. To send a live voice message, speak your message.
9. To send the message, press #. The VS4500 will respond "Page Sent" prompt (for devices that are not live voice devices).

3.4.2 Accessing Wireless Voice or Tone Receivers

Follow these steps to send a voice message or a tone to a speaker by dialing in from a telephone:

1. For live voice messaging, program a Wireless Speaker device in to the VS4500. For tone only or pre-programmed voice messaging, program an alphanumeric device in to the VS4500. Verify that the speaker capcode was programmed properly (Device Type should be set to Alphanumeric Pager).
2. Using another phone, dial the number of the telephone line or extension connected to the VS4500.
3. The VS4500 will answer the call with "Please Enter Pager" prompt.
4. To send a voice message, enter a Wireless Speaker device number as a 3 digit number (for example, "105"). If required, to send a voice message in a specific volume level, enter ***vppp** where:
v is the Volume (digit between 1 and 4)
ppp is the Wireless Speaker device number

5. To send a tone, enter an alphanumeric device number as a 3 digit number (for example, "105"). If the device number entered is not valid, the VS4500 will respond with "Invalid Pager" prompt (for phone access only).
Note: The device number can be also entered without leading zeros but it will have to be followed by the # key.
6. The VS4500 will respond with "Please Wait" prompt and shortly after that with the "Please Speak Now" prompt.
7. To send a live voice message, speak your message.
8. To send a tone or pre-programmed voice, enter a message using the formats below:
For encoders supporting up to 8 tones:
t is the Alert Type (digit between 1 and 8)
l is the Length (digit between 0 and 9. **Note:** Length value is applicable to pre-programmed tones only. Use any value for all other voice or tone messages)
v is the Volume (digit between 1 and 4)
d is the Delay (optional, digit between 0 and 9)
r is the Repeat (optional, digit between 0 and 9)
For example, to send tone 4 with length 5, volume 2, 6 repeats and a delay of 4 seconds between each repeat, enter ****945246**.

For encoders supporting more than 8 tones:
t is the Alert Type (two digits number from 01 to the number of alerts supported by the receiver)
l is the Length (digit between 0 and 9. **Note:** Length value is applicable to pre-programmed tones only. Use any value for all other voice or tone messages)
v is the Volume (digit between 1 and 4)
d is the Delay (optional, digit between 0 and 9)
r is the Repeat (optional, digit between 0 and 9)
For example, to send tone 14 with length 5, volume 2, 6 repeats and a delay of 4 seconds between each repeat, enter ****8145246**.
9. To send the message, press #.
The VS4500 will respond with "Page Sent" prompt (for phone access only).

3.5 Accessing Wireless Voice Receivers via Microphone

Follow these steps to send a live voice message to a speaker using a microphone:

1. For live voice messaging, program a Wireless Speaker device in to the VS4500. Verify that the speaker capcode was programmed properly (Device Type should be set to Wireless Speaker).
2. From the VS4500 **Main Menu**, Enter a Wireless Speaker device number as a 3 digit number (for example, "105").
3. Wait for the "Speak Now" prompt at the bottom of the screen.
4. Press the PTT button on the microphone and speak your message.
5. Press the * key to end the transmission.

3.6 Initiating and Answering Intercom Calls

Note: Intercom communication allows one way communication at any given time. You must allow the other party to finish talking before you can talk back.

Some system may have been set to Full Duplex or Hands-Free operation modes (not supported by all versions, requires supporting base station and intercom station). In **Full Duplex** mode, the party on the intercom station is only required to accept the call and after that can communicate without pressing and holding the intercom station button.

In **Hands-Free** mode, the party on the intercom station is NOT required to accept the call. The communication is established automatically as soon as the call is received from the base station. As a result, when this mode is activated, the base station can listen to the intercom station area without any notification or indication to the party on the intercom station.

For additional settings, see **DSC** field on page 10.

Base Station Operation

Follow these steps to initiate a call from the base station to an intercom station:

1. From the VS4500 **Page To** menu, enter an Intercom device number as a 3 digit number (for example, "501").
2. Wait for the call to be accepted by the party on the intercom station (the intercom station will sound beeping tones to alert of the incoming call).

Note: Systems set to hands-free operation do not require the intercom station to accept the call.

3. Once the call request was accepted, the STATION IS ON message will be displayed on the VS4500. Press and hold the PTT button on the microphone while speaking.
4. Press the * key to end the conversation.

Follow these steps to answer a call from an intercom station:

1. When an intercom station is initiating a call to the base station, the base station will sound beeping tones to alert of the incoming call. Press the # key to accept the call.
2. Press and hold the PTT button on the microphone while speaking.
3. Press the * key to end the conversation.

Intercom Station Operation

Follow these steps to initiate a call from an intercom station to the base station:

1. Push the button on the intercom station.
2. Wait for the call to be accepted by the party on the base station (the base station will sound beeping tones to alert of the incoming call).
3. Once the call request was accepted, press and hold the button on the intercom station while speaking.
Note: Systems set to Full-Duplex or Hands-Free operation do not require the user to press and hold the button while speaking.

Follow these steps to answer a call from the base station:

1. When a base station is initiating a call to the intercom station, the intercom station will sound beeping tones to alert of the incoming call. Press the button on the intercom station to accept the call.
Note: Systems set to Hands-Free operation do not require the user to press the button to accept the call. The call is accepted automatically as soon as the request is received from the base station.
2. Press and hold the button on the intercom station while speaking.
Note: Systems set to Full-Duplex or Hands-Free operation do not require the user to press and hold the button while speaking.
3. For systems set to Hands-Free operation: Press the intercom button to end the conversation.

3.7 Background Music (FM Radio) Setup on Wireless Amplifiers

Note: Background FM radio music feature is supported by wireless amplifiers (such as VNS2200) equipped with the VNS2265 option). A Local dedicated FM radio transmitter is required and it has to transmit on the frequency supported by the wireless amplifier.

Since the VS4500 does not utilize a full keyboard, use the VPS software to send the alphanumeric commands (see).

Follow these steps to activate or deactivate the FM radio background music on wireless amplifiers:

1. Program an alphanumeric device in to the VS4500. Verify that the wireless amplifier / speaker capcode was programmed properly (Device Type should be set to Alphanumeric Pager).
2. Connect to the VS4500 using the VPS software and click on System Devices & Messaging.
3. On the VPS software device list, click on the alphanumeric device programmed on step 1.
4. To activate the FM radio background music for a specific time interval, enter a message using the **GMthvds** format in the VPS software message field:
t is always 95
h is hundredth digit of the time interval (digit between 0 and 9)
v is the Volume (digit between 1 and 4)
d is tenth digit of the time interval (digit between 0 and 9)
s is single digit of the time interval (digit between 0 and 9)
For example, to activate the FM background music for 125 minutes with volume 2, enter **GM951225**.
5. To deactivate the FM radio background music, enter **GM960100** in the VPS software message field.
6. On the VPS software click on **Send Page** to send the command.

Follow these steps to change the FM radio background music frequency stored on the wireless amplifiers:

1. Program an alphanumeric device in to the VS4500. Verify that the wireless amplifier / speaker capcode was programmed properly (Device Type should be set to Alphanumeric Pager).
2. Connect to the VS4500 using the VPS software and click on System Devices & Messaging.
3. On the VPS software device list, click on the alphanumeric device programmed on step 1.
4. Enter a message using the **FMsvbf*** format in the VPS software message field:
 - s** is the squelch or signal threshold level (digit between 0 and 9, 0 is Lowest, 9 is Highest)
 - v** is the Preamplifier Volume (digit between 1 and 9, 1 is Lowest, 9 is Highest)
 - b** is the Bandwidth (always 5)
 - f** is the FM radio frequency in MHz (7 digits, no decimal points)
 For example, to set the FM receive frequency to 95.7 MHz with squelch level of 3, enter **FM3150957000** followed by *.
5. On the VPS software click on **Send Page** to send the command.

3.8 Pre-Programmed Messages

The VS4500 support the following optional pre-programmed messages:

- 1 - PABX Messages
- 2 - FreeText Messages
- 3 - Wireless Devices

These messages can only be programmed using a PC software such as the **VPS** (see page 24 for more details).

3.8.1 PABX Messages

PABX (Alpha by Phone) messages provide support for user initiated alphanumeric messaging by dialing in to the VS4500 and entering the device number and message using a telephone keypad.

Typically, when users dial in to the VS4500, they will be able to send numeric messages only using the telephone keypad. The PABX messages allow the users to enter a message code, which represents an alphanumeric message. In this case, the alphanumeric message will be sent instead of the message code.

Following are the fields description:

Message	Determines the message that should be sent for the selected PABX message code. For example, if the user enters "*05", the actual message will be the alphanumeric message programmed as PABX message 5.
----------------	---

Note: The VS4500 supports 99 PABX messages.

3.8.2 FreeText Messages Menu

FreeText messages provide support for detecting keywords in data received by the serial port. If the keyword is found, the VS4500 can send a message to the assigned device.

Following are the fields description:

Send to Device	Enter the number of the device that should receive the message when the selected keyword is detected.
Replace Text	Determines if the received text should be replaced with the text in the Newtext field if the keyword is found in the received serial data.
Keyword	Determines the keyword that should be sought for in the received serial data. If the keyword is found, the whole serial data string or the text in the Newtext field will be sent to the assigned device (depending on the setting in the Replace Text field).
Newtext	Determines the text that should be sent to the assigned device if the keyword is found in the received serial data.

Note: The VS4500 supports 99 FreeText messages.

3.7.3 Wireless Devices Menu

Wireless devices messages provide support for automated messaging activated by 900MHz or UHF wireless pendants or push button transmitters.

Each pendant sends a wireless signal containing its ID (usually a 3 or 7 digit number). When a signal is received by the optional wireless receiver, it is compared to the list of ID stored in the VS4500. If a match is found, the VS4500 will send a message to the assigned device with the assigned message.

Notes: Wireless 900MHz or UHF serial receiver is required to activate these messages.

If multiple matches are found, the VS4500 will send a message corresponding to each match to respective assigned device with the respective assigned message.

Following are the fields description:

Wireless Code	Enter the ID of the wireless device that should trigger a message.
Supervised	Determines if the device is supervised. If a signal is not received from a supervised device, the VS4500 will send an alert.
Send to Device	Enter the number of the device that should receive the message when the selected wireless code is detected.
Activity Plan	Determines when the device monitoring is active. The system will send a message to the designated device only if the wireless pendant device is triggered during the monitored time. Enter a number from <u>0</u> to 9 . 0 - Always Active 1 - Daily, 6PM-8AM 2 - Weekdays Only, 6PM-8AM 3 - Daily, 8PM-6AM 4 - Daily, 10PM-6AM 5 - Daily, 10PM-5AM 6 - Daily, 6AM-10PM 7 - Weekdays Only, 6AM-10PM 8 - Daily, 8AM-6PM 9 - Weekdays Only, 8AM-6PM Note: The execution of the activity plan is dependent on the time stored the VS4500 internal clock. This clock should be kept accurate by receiving time updates from a GPS receiver or from a PC connected to the VS4500 via a serial port.
Repeat Page	Determines if the message should be repeated as long as no cancel transmission is received from pendant, and the maximum number of repeat messages. The message will be repeated every minute. Enter a number from <u>00</u> to 99 .
Cancel Code	Enter the ID of the wireless pendant device that should trigger a cancel message. Cancellation message will be sent when this ID is received and will add the word "Cancel" to the message.
Call Type	Determines if the message will be sent when a Normal call (Buttons 1-4), Cancel call, Horizontal Position / Man Down call or Tamper call is received from the pendant device. Note: This field is supported by VS4500 version 1.05 and higher. Differentiation between buttons 1-4 on multiple button pendants is supported by pendants from the EN series only and VS4500 version 3.20 and higher.
Message	Determines the message that should be sent to the assigned device when the selected pendant button is pressed or released.
Note: Underlined values indicate default values.	

Note: The VS4500 supports 500 Wireless Devices messages.

3.7.4 Voice Messages

Voice messages provide support for automated voice messaging to speakers and telephone subscribers. The VS4500 supports a total of approximately 8 minutes of voice storage memory that can be divided to 1,2,4,8,16,32 or 64 messages with identical storage space and playback time. The longer the length of the messages, the smaller is the number of messages available.

The memory configuration and programming is performed using the VPS software (see page 24). On the VPS software, click on the **VS4500** menu, **Pre-Programmed Messages & Activation** and then click on **Alerts**. Select the preferred memory configuration, select the audio files and then click on **Program** to store the audio file on the VS4500 memory.

Note: Press F1 for help on the VPS software for more details.

After the voice messages were programmed in to the VS4500 memory, they can be used to send voice messages to devices that support voice messages such as wireless speakers, voice pagers or telephone subscribers (requires VS3003 Telephone Interface). The message ID and settings are determined by the parameters stored in the DSC field. For example:

1. If device 201 is of the Wireless Speaker type, when it is accessed from the wireless messages or the keypad, the VS4500 will send the voice message stored in the DSC field to the speaker/s represented by device 201.
2. If device 401 is of the Phone type, when it is accessed from the wireless messages or the keypad, the VS4500 will dial out to the telephone number stored under that device and send the voice message stored in the DSC field to the telephone subscriber.

To program the DSC field, use the **ttrd** format where:

- t** is the Alert Type (two digits number from 01 to the number of alerts supported by the receiver).
- r** is the Repeat (digit between 1 and 9)

d is the Delay (digit between 1 and 9) in seconds between repeats

Note: For automated voice messaging to telephone subscribers, it is recommended that the **r** parameter will be set to 5 or higher.

Software

4.1 VPS

The optional VPS software allows you to program and backup the VS4500 databases, create scheduled events (tones, bells and device activation) and synchronize the VS4500 date and time to the PC clock.

Note: The VPS software supports VS4500 version 1.05 and up. If you are using a VS4500 with earlier version, refer to the VisiDB software and a previous version of the VS4500 manual for details.

4.1.1 Connections

The VPS software requires serial communication between the PC and the administered or programmed device. Serial communication can be achieved by utilizing one of the following methods:

1. Connection to a PC equipped with a serial (COM) port.
2. Using a USB to Serial Port adaptor that create a virtual serial (COM) port on the PC. After the 3rd party driver is installed, connect the serial port adapter to the null modem cable connected to the Visiplex system serial port.
3. Using a USB cable to connect the PC directly to the USB port of the Visiplex device (applicable only to devices equipped with a USB port).

Follow these steps to connect the VS4500:

1. If USB connection is used, install USB drivers applicable to the Visiplex device and the Windows OS (x86 or x64, i.e. 32-bit or 64-bit) from the shortcuts under the VPS program group.
Note: The USB drivers are also located in the **USB Drivers for VS1810-VS4500-VS48xx-VPRO1** folder under the VPS software installation folder.
2. Turn on the VS4500. **Note:** do not connect to the PC at this point.
3. Identify the COM number on the PC used for communication with the installed device:
 - a. If USB connection is used, open Windows Device Manager and expand the Port (COM & LPT) section. Connect the device to the PC using the USB cable and note the COM number newly assigned to the installed device on Windows Device Manager.
 - b. If standard serial connection is used (using DB9 cable), note the physical COM number on the PC. Connect the device to the PC using the DB9 cable.
4. Install the programming software. Refer to **Software Installation** section for more information.

4.1.2 Software Installation

Note: VPS software must be installed by the PC administrator or by a user with administrator privileges. VPS software is compatible with Windows ME, XP, 2000, Vista and Windows 7.

For Windows Vista and Windows 7, set the installation folder to "C:\Visiplex\VPS").

Download the VPS software from the Download Area of Visiplex website (www.visiplex.com), save it to the PC Desktop and double click on the saved file to start the installation.

If you purchased a copy of the VPS CD-ROM, locate the software CD-ROM and insert it to the CD-ROM drive on the PC. If the installation program doesn't start automatically within 5 seconds, use Windows Explorer to browse to the CD-ROM drive and then run the **VPS_Setup.exe** file.

Press **Next** on each step until the installation process is completed.

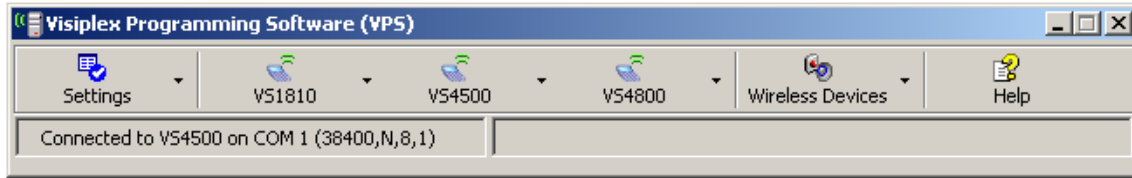
4.1.3 Software Configuration

Note: Make sure the Windows user has full access rights to the VPS installation folder and databases folders. To obtain further information and help for each screen, press F1 to display the online help.

Follow these steps to configure VPS:

1. Make sure the VS4500 is powered on and connected to the serial port on the PC.
2. Set the serial protocol on **COM1** of the VS4500 to Visiplex, 9600-8-N-1 or 38400-8-N-1 (see page 15).
3. Click on Windows **Start** button. Select **Programs**, **VISIPLEX** program group, **VPS** and then click on **VPS**.
4. The auto detection dialog box will be displayed. Press **Ok** to start device detection.

- If connection was established, the device model and connection details will be displayed on the lower left corner of the VPS main screen.



4.1.4 Setting Date and Time from PC

Synchronizing the VS4500 date and time to the PC clock allows you to keep the VS4500 internal clock accurate without using an external time source. This action can be performed manually or automatically as long as the VS4500 is connected to the PC and VPS is running.

Follow these steps to synchronize date and time to the PC date and time:

- Make sure the VS4500 is powered on and connected to the serial port on the PC.
- To set the date and time automatically, click on **Settings, Configuration & Settings**. Click on **Synchronize Connected Device to PC Clock Automatically** and then click on **Save**. This will synchronize the VS4500 clock to the PC clocks periodically every hour.
- To set the date and time manually, click on **VS4500, System Devices & Messaging, System Options & Details**. click on **Set Date & Time Now**.

4.1.5 Weekly Tone & Bell Schedule

The weekly tone and bell schedule allows the VS4500 to activate tones, bells or audible alerts stored in the memory of a wireless audio/visual controller such as the VNS2200 according to a pre-programmed weekly schedule. Some of the events are designated to special devices activation and functions.

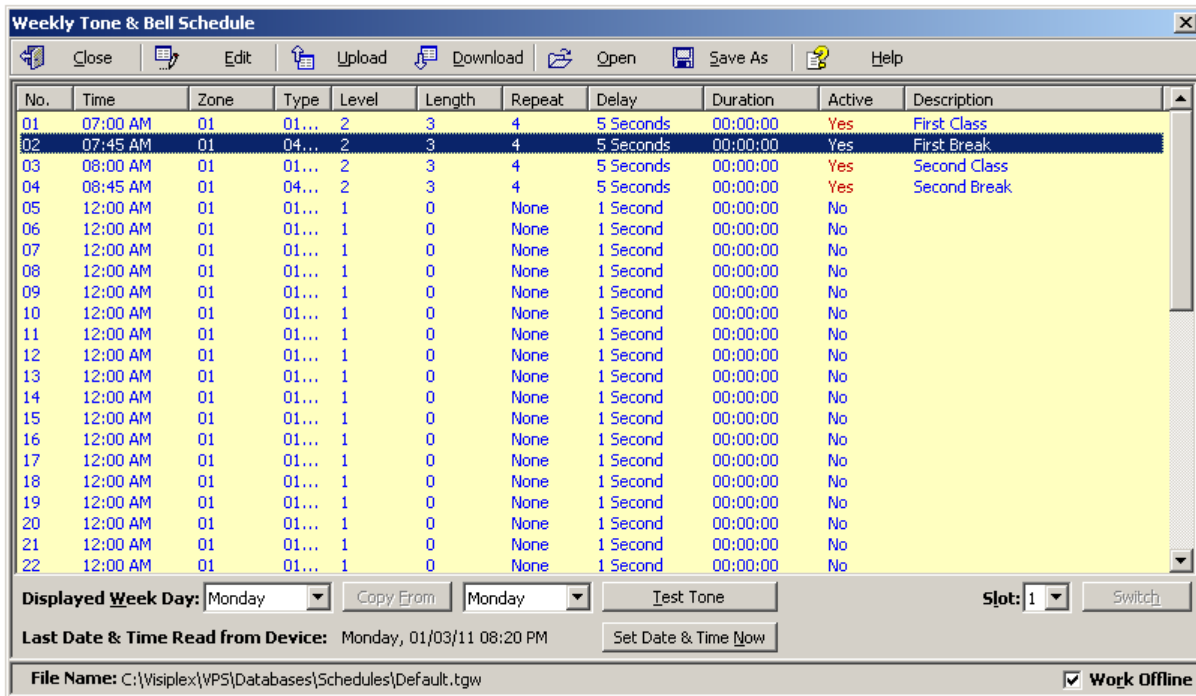
The weekly schedule consists of 48 daily events that can activate a respective tone, bell or audible alert on the wireless receiver. The VS4500 stores up to four different weekly schedules in its memory with one active schedule.

Follow these steps to program a weekly schedule (see **IMPORTANT NOTES** at the end of this section):

- Make sure the VS4500 is powered on and connected to the serial port on the PC.
- Click on **VS4500, Weekly Tone & Bell Schedule**.
- The **Weekly Tone & Bell Schedule** dialog box will be displayed. The last schedule file edited by the user will be retrieved from the disk and displayed. If this file does not exist, a new file will be created by the VPS software. Below are the fields and functions description:

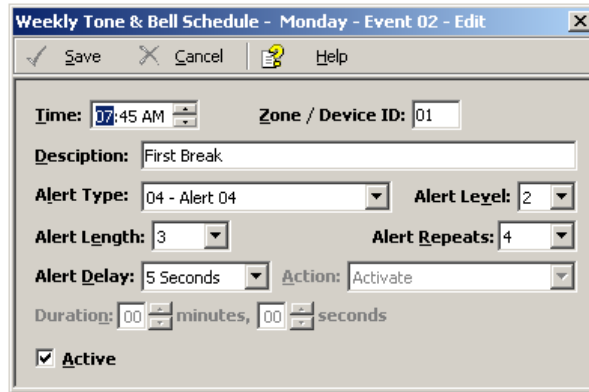
Close	Close the Weekly Tone & Bell Schedule dialog box.
Edit	Display a dialog box that allows updating the highlighted event on the schedule list (see step 4).
Upload	Upload the displayed schedule file in to the VS4500 memory. This command will overwrite the existing programming of the selected schedule.
Download	Download the active schedule from the VS4500 memory to the PC.
Open	Open and display a previously saved schedule file. Note: The schedule is not active until uploaded to the VS4500. Use the Upload command to program this schedule in to the VS4500.
Save As	Save the displayed schedule to a file on the PC for later use.
Displayed Week Day	Display the scheduled events for the selected day of the week.
Copy From	Copy the daily events of the Displayed Week Day to the selected Week Day (see step 5).
Test Tone	Test the tone or function programmed in to the highlighted event on the list.
Slot	Set and display the active weekly schedule.
Last Date & Time Read from Device	Last date and time information read from the VS4500 when the dialog was opened.
Set Date & Time Now	Synchronizes the VS4500 clock to the PC date and time.
File Name	Name of schedule file displayed.

Work Offline	Allows performing modifications to the schedule file without programming the VS4500 (usually followed by the Upload command).
---------------------	--



4. If the **Edit** command is selected, the **Weekly Tone & Bell Schedule – Edit** dialog box will be displayed. Below are the fields and functions description:

Save	Update the schedule file and VS4500 (when Work Offline box is cleared) with changes. Note: If the Work Offline check box is checked, changes made to the schedule programming are only saved to the disk and are not written in to the VS4500 memory. To program the VS4500, click on Upload when all changes have been applied.
Cancel	Ignore all changes and exit.
Time	Time of day when then tone should be generated or an event should be activated.
Zone / Device ID	Determines the VS4500 device number that will be activated. Enter a three-digit number representing the device number programmed in to the VS4500 with the receiver's capcode. For example, when generating a tone for zone 05, all wireless receivers programmed with the capcode of device 005 will be activated.
Description	General description for the event. Note: This field is saved on the PC database only and is not programmed in to the VS4500.
Alert Type	Type of tone or alert that will be activated by the VS4500. Alert 11 and up will activate a customized user-programmed audio alert stored in the supported receiver (such as VNS2200). Note: Alert Type with number higher than 90 are reserved for special operations.
Alert Level	Volume of tone played.
Alert Length	Length of tone (in some cases, created by repeating a shorter tone). In some cases, can also used to determine the length of dry-contact closure or opening. Note: Alert length 9 (if supported) will send the selected Alert Type three times with a one second pause between each repeat.
Alert Repeats	Number of times to repeat the selected tone sequence (as determined by Type, Level and Length).
Alert Delay	Delay between each repeat of the tone sequence.
Action	Determines the type of activation command for alerts 10 and 91-99.
Duration	Determines time interval for alerts 9-10 and 91-99.
Active	Determine if an event is active. Non active events are stored but not executed. Note: An active events must be assigned with Zone / Device ID larger than 0.



5. If the **Copy From** command is selected, the schedule will be copied from the selected displayed day to the selected **Week Day**.

IMPORTANT NOTES

1. When the **Weekly Tone & Bell Schedule** programming screen is opened, it displays the last file that was edited by the user. The displayed schedule may be different than the actual schedule data stored in to the VS4500 (unless the VS4500 was previously programmed with that schedule).
2. To ensure the schedule displayed is same as the schedule programmed in to the VS4500, press **Download** after opening the **Weekly Tone & Bell Schedule** programming screen. This will download and display the active schedule from VS4500. The schedule is downloaded and saved by default to the **Default.tws** file. Use the **Save As** to save the schedule under a different name.
3. All changes made are applied to the current active slot that represents the current active weekly schedule. Make sure you select the correct slot before using the **Edit**, **Download** and **Upload** commands.
4. Every time the **Slot** is changed, the appropriate schedule is downloaded from the VS4500 and displayed.
5. Unless the Work Offline check box is cleared, changes made to the schedule **DO NOT** update the schedule stored in the VS4500 until the **Upload** command is used. Always upload the schedule to the VS4500 after schedule changes are completed.
6. Use the **Upload** command to program a schedule that was loaded using the **Open** command.
7. It is recommended that each schedule used will be downloaded from the VS4500 and saved to the disk with a name that will describe it appropriately. If required, saved schedules can be loaded to the VPS using the **Open** command and then programmed in to the VS4500 using the **Upload** command.
8. The execution of the schedule programmed in to the VS4500 is dependent on the date and time stored in its internal clock. This clock **MUST** be kept accurate by receiving time updates from a GPS receiver or from a PC connected to it via a serial port.

4.1.6 Calendar Tone & Bell Schedule

The calendar tone & bell schedule allows the VS4500 to activate tones, bells or audible alerts stored in the memory of a wireless audio/visual controller such as the VNS2200 according to a pre-programmed annual schedule. Some of the events are designated to special devices activation and functions.

The schedule calendar consists of 8 to 100 daily events (depending on the VS4500 version) that can activate a respective tone, bell or audible alert on the wireless receiver. Days with active events are marked with an Orange indicators to the left of the date on the calendar.

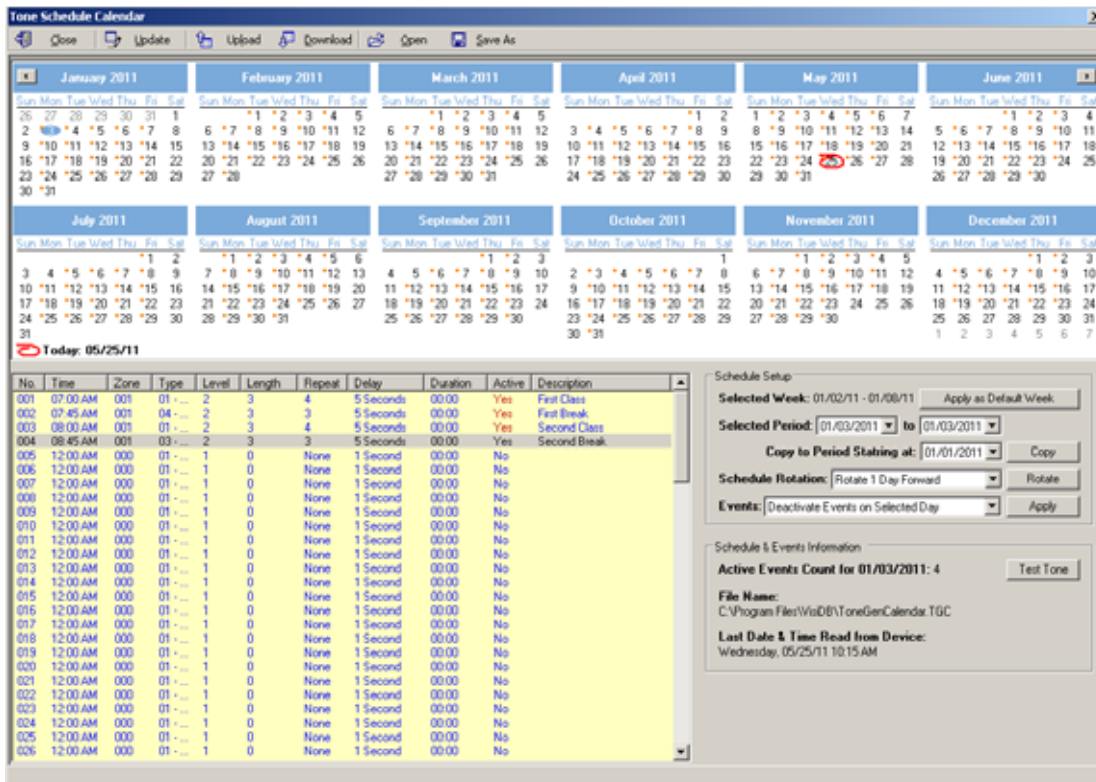
Unlike the weekly schedule, events have be programmed for each day of the calendar year and there is only one active schedule. When required, events can be copied from one period the other periods for easy programming.

Follow these steps to program a schedule calendar (see **IMPORTANT NOTES** at the end of this section):

1. Make sure the VS4500 is powered on and connected to the serial port on the PC.
2. Click on **VS4500, Calendar Tone & Bell Schedule**.
3. The **Calendar Tone & Bell Schedule** dialog box will be displayed. The last schedule file edited by the user will be retrieved from the disk and displayed. If this file does not exist, a new file will be created by the VPS software.
4. If you prefer to have a schedule that starts with a month other than January, use the **Rotate** command to change the first month of the schedule before creating any daily events. Select Rotate 1 Month Forward on the **Schedule Rotation** drop down list and click on **Rotate** until the desired first month is displayed.
Below are the fields and functions description:

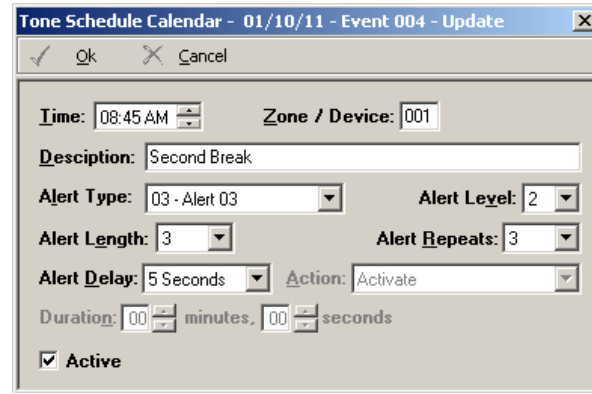
Close	Close the Calendar Tone & Bell Schedule dialog box.
Edit	Display a dialog box that allows updating the highlighted event on the schedule list (see step 5).
Upload	Upload the displayed schedule file in to the VS4500 memory. This command will overwrite the existing programming of the schedule.
Download	Download the schedule from the VS4500 memory to the PC.
Open	Open and display previously saved schedule file. Note: The schedule is not active until uploaded to the VS4500. Use the Upload command to program this schedule in to the VS4500.
Save As	Save the displayed schedule to a file on the PC for later use.
Apply as Default Week	Copy the events programmed in to the days indicated by the Selected Week field to all other weeks of the year.
Selected Period	Indicate the range of dates of the currently selected calendar days. This range can also be selected by clicking on the first day of a period, holding the Shift key, and clicking on the last day of a period.
Copy	Copy the events of the days in the Selected Period to the period starting at the Copy to Period Starting at date.
Schedule Rotation	Rotate the schedule forward or backwards by a day or a month. Use the Rotate command to apply the required changes. When the schedule is rotated by one day forward, all events are moved forward by one day and the events of the last day of the year are copied to the first day of the year. When the schedule is rotated by one month forward, the first month of the calendar is removed and a new month is added at the end of the calendar. The events of the removed month are copied to the added month at the end of the calendar. When the schedule is rotated by one day backwards, all events are moved backwards by one day and the events of the first day of the year are copied to the last day of the year. When the schedule is rotated by one month backwards, the last month of the calendar is removed and a new month is added at the beginning of the calendar. The events of the removed month are copied to the added month at the beginning of the calendar.
Apply	Allow activation or deactivation of events on a selected day or month as indicated by the Events drop down list. Note: Only events with Zone / Device ID larger than 0 can be activated.
Active Events Count for	Display the number of active events on the selected day.
Test Tone	Test the tone or function programmed in to the highlighted event on the list.
File Name	Name of schedule file displayed.
Last Date & Time Read from Device	Last date and time information read from the supported system when this dialog was opened.
Set Date & Time Now	Synchronizes the VS4500 clock to the PC date and time.

The schedule below is an example of a daily schedule for the year of 2011 with no events on the major holidays (05/30/11, 07/04/11, 09/05/11 and 12/26/11 to 12/31/11).

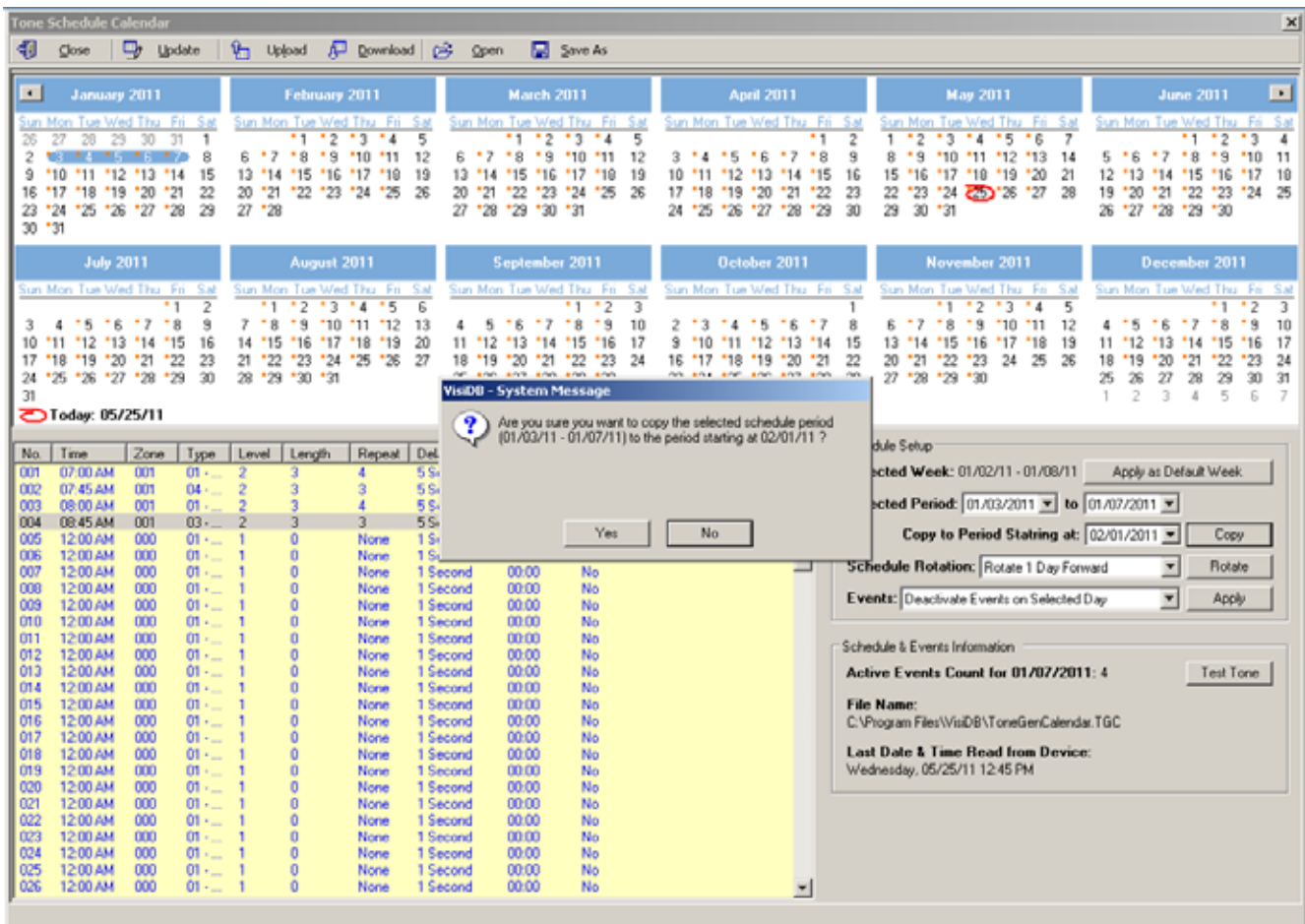


5. If the **Edit** command is selected, the **Calendar Tone & Bell Schedule – Edit** dialog box will be displayed. Below are the fields and functions description:

Save	Update the schedule file with changes.
Cancel	Ignore all changes and exit.
Time	Time of day when then tone should be generated or an event should be activated.
Zone / Device ID	Determines the VS4500 device number that will be activated. Enter a three-digit number representing the device number programmed in to the VS4500 with the receiver's capcode. For example, when generating a tone for zone 05, all wireless receivers programmed with the capcode of device 005 will be activated.
Description	General description for the updated event. Note: This field is saved on the PC database only and is not programmed in to the VS4500.
Alert Type	Type of tone or alert that will be activated by the VS4500. Alert 11 and up will activate a customized user-programmed audio alert stored in the supported receiver (such as VNS2200). Note: Alert Type 98 will send a command to start a countdown on supported digital clocks. The time should be set to the minute before the time when the countdown is supposed to start. For example, if the countdown supposed to start at 10:00 AM, set the time to 09:59 AM. The countdown interval is determined by Duration. Alert Type 99 will send a command to activate a device such a strobe light or dry-contact closure. The type of activation and timeout interval are determined by Action and Duration.
Alert Level	Volume of tone played.
Alert Length	Length of tone (in some cases, created by repeating a shorter tone). In some cases, can also used to determine the length of dry-contact closure or opening. Note: Alert length 9 (if supported) will send the selected Alert Type three times with a one second pause between each repeat.
Alert Repeats	Number of times to repeat the selected tone sequence (as determined by Type, Level and Length).
Alert Delay	Delay between each repeat of the tone sequence.
Action	Determines the type of activation command for alerts 91-99.
Duration	Determines time interval for alerts 91-99.
Active	Determine if an event is active. Non active events are stored but not executed. Note: An active events must be assigned with Zone / Device ID larger than 0.



- If the **Copy** command is selected, the schedule will be copied from the **Selected Period** (01/03/2011 to 01/07/2011) to the period starting at the date indicated by the **Copy to Period Starting at** field (02/01/2011).



7. If the **Rotate** command is selected, the schedule will be rotated by one day or one month forward or backwards. In the following example, the schedule was rotated one day forward (the first event if moved from 01/03/2011 to 01/04/2011).

The screenshot displays the 'Tone Schedule Calendar' application. At the top, there are navigation buttons: Close, Update, Upload, Download, Open, and Save As. Below this is a calendar grid for the year 2011, with months from January to December. The current date is 05/25/11. Below the calendar is a table of events:

No.	Time	Zone	Type	Level	Length	Repeat	Delay	Duration	Active	Description
001	07:00 AM	001	01	2	3	4	5 Seconds	00:00	Yes	First Class
002	07:45 AM	001	04	2	3	3	5 Seconds	00:00	Yes	First Break
003	08:00 AM	001	01	2	3	4	5 Seconds	00:00	Yes	Second Class
004	08:45 AM	001	03	2	3	3	5 Seconds	00:00	Yes	Second Break
005	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
006	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
007	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
008	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
009	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
010	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
011	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
012	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
013	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
014	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
015	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
016	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
017	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
018	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
019	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
020	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
021	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
022	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
023	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
024	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
025	12:00 AM	000	01	1	0	None	1 Second	00:00	No	
026	12:00 AM	000	01	1	0	None	1 Second	00:00	No	

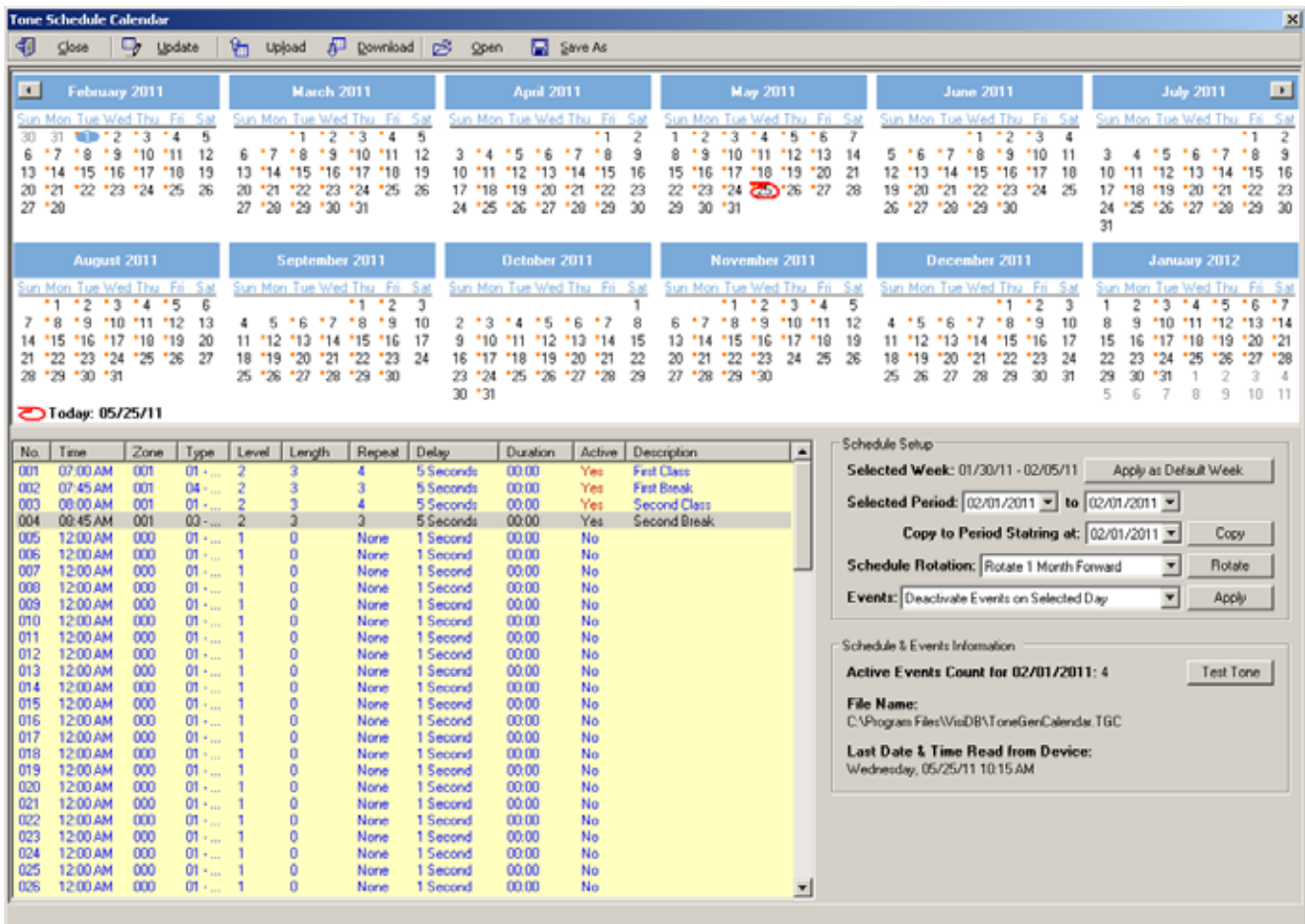
The bottom right panel shows 'Schedule Setup' options:

- Selected Week: 01/02/11 - 01/08/11 (Apply as Default Week)
- Selected Period: 01/04/2011 to 01/04/2011
- Copy to Period Starting at: 01/01/2011 (Copy)
- Schedule Rotation: Rotate 1 Day Forward (Rotate)
- Events: Deactivate Events on Selected Day (Apply)

Schedule & Events Information:

- Active Events Count for 01/04/2011: 4 (Test Tone)
- File Name: C:\Program Files\WisDB\ToneGenCalendar.TGC
- Last Date & Time Read from Device: Wednesday, 05/25/11 10:15 AM

In the following example, the schedule was rotated one month forward to accommodate a schedule that starts with a month other than January. In that case, the daily events of January 2011 were applied to the January 2012. Since January 3rd on 2012 is a Tuesday (compared to a Monday on 2011), the range of 01/03/2012 to 01/28/2012 may be copied to the period starting at 01/02/2012 in order have the events start at Monday 01/02/2012 using the **Copy** command. In addition, the events of 01/31/2012 may be copied to 01/30/2012 and the events for 01/31/2012 may have to be edited as required.



IMPORTANT NOTES

1. When the **Calendar Tone & Bell Schedule** programming screen is opened, it displays the last file that was edited by the user. The displayed schedule may be different than the actual schedule data stored in to the VS4500 (unless the VS4500 was previously programmed with that schedule).
2. To ensure the schedule displayed is same as the schedule programmed in to the VS4500, press **Download** after opening the **Calendar Tone & Bell Schedule** programming screen. This will download and display the schedule from VS4500. The schedule is downloaded and saved to the **Default.tgc** file. Use the **Save As** to save the schedule under a different name.
3. Changes made to the schedule **DO NOT** update the schedule stored in the VS4500 until the **Upload** command is used. Always upload the schedule to the VS4500 after schedule changes are completed.
4. The execution of the schedule programmed in to the VS4500 is dependent on the date and time stored in its internal clock. This internal clock **MUST** be kept accurate by receiving time updates from a GPS receiver or from a PC connected to it via a serial port.

4.1.7 Scheduled Paging Activation

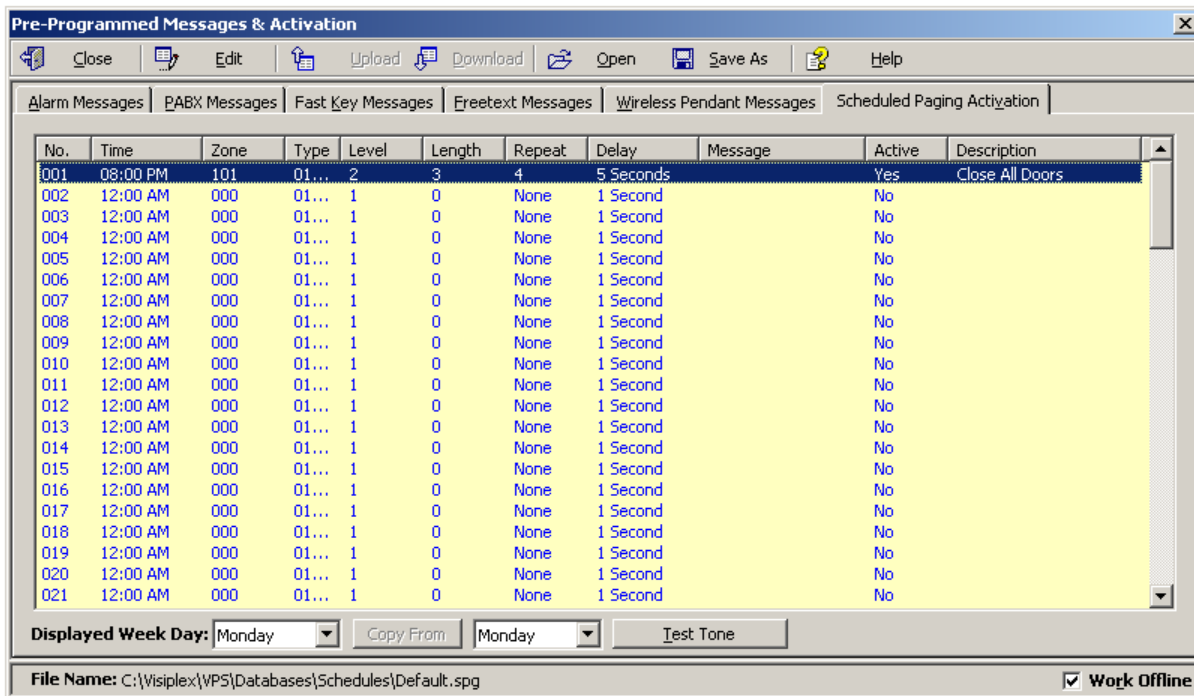
Scheduled paging allows you to send tones or messages to devices or speakers based on a preprogrammed schedule. This feature can be used as long as the VS4500 is connected to the PC and VPS is running. The tones or messages are generated by the VPS software.

Unlike the weekly and calendar tone & bell schedules, no data is stored by in the VS4500 and the schedule is executed by the VSP software.

Follow these steps to set scheduled paging:

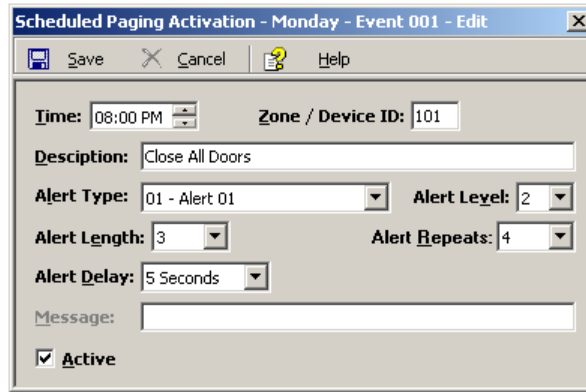
1. Make sure the VS4500 is powered on and connected to the serial port on the PC.
2. Click on **VS4500, Pre-Programmed Messages & Activation, Scheduled Paging Activation**.
3. The **Scheduled Paging Activation** dialog box will be displayed. The last schedule file edited by the user will be retrieved from the disk and displayed. If this file does not exist, a new file will be created by the VPS software. Below are the fields and functions description:

Close	Close the Pre-Programmed Messages & Activation dialog box.
Edit	Display a dialog box that allows updating the highlighted event on the schedule list (see step 4).
Displayed Week Day	Display the scheduled events for the selected day of the week.
Copy From	Copy the daily events of the Displayed Week Day to the selected Week Day .
Test Tone	Test the tone or function programmed in to the highlighted event on the list.



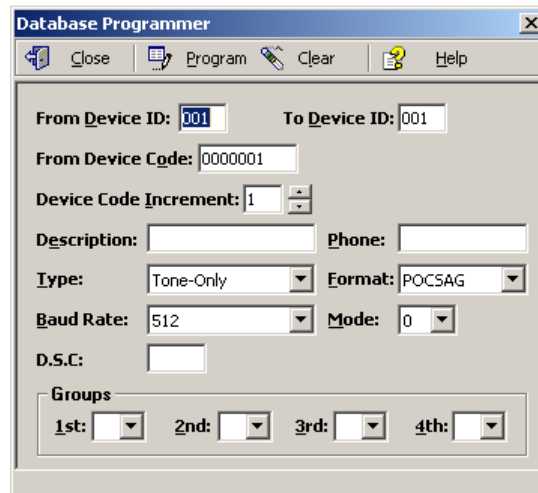
4. If the **Edit** command is selected, the **Scheduled Paging Activation – Edit** dialog box will be displayed. Below are the fields and functions description:

Save	Update schedule file and with changes.
Cancel	Ignore all changes and exit.
Zone / Device ID	Determines the VS4500 device number that will be activated. Enter a three-digit number representing the device number programmed in to the VS4500 with the receiver's capcode. For example, when generating a tone for zone 05, all wireless receivers programmed with the capcode of device 005 will be activated.
Description	General description for the updated event.
Alert Type	Type of tone or alert that will be activated by the VS4500. Alert 11 and up will activate a customized user-programmed audio alert stored in the supported receiver (such as VNS2200). To send alphanumeric commands or messages, select 97 – User Defined Message and enter text in the Message field. Note: Alert Type with number higher than 90 are reserved for special operations.
Alert Level	Volume of tone played.
Alert Length	Length of tone (in some cases, created by repeating a shorter tone). In some cases, can also used to determine the length of dry-contact closure or opening. Note: Alert length 9 (if supported) will send the selected Alert Type three times with a one second pause between each repeat.
Alert Repeats	Number of times to repeat the selected tone sequence (as determined by Type, Level and Length).
Alert Delay	Delay between each repeat of the tone sequence.
Message	Alphanumeric command or message that will be sent on to the device.
Active	Determine if an event is active. Non active events are stored but not executed. Note: An active events must be assigned with Zone / Device ID larger than 0.



4.1.8 System Devices Database Programmer

The System Devices Database Programmer allows you to easily add a multiple devices to the devices database. Click on **VS4500, System Devices & Messaging**. Click on **Programmer** to display the Database Programmer dialog box.



Enter the required information into the fields and click on **Program** button to update/program the devices database.

Note: If the **Work Offline** check box is cleared, devices are not programmed in to the VS4500. In that case, use the **Upload** command to program the VS4500 with the device displayed.

4.2 TimeSync

The optional TimeSync software provides central control from a management PC of up to 16 synchronized devices by using serial communication (RS232) between the PC and the device. This software provides the following functionality:

1. Write the PC time and date to the VS4500. This time will be used as the reference time for these devices.
2. Read the time from the VS4500 and synchronize the PC date and time accordingly.

The serial communication can be established in one of the following methods:

1. Using a local RS232 (serial) port on the management PC (usually COM1 to COM4). The encoder or tone generator must be connected via null modem cable to the PC (usually no more than 6' long).
2. Using a virtual RS232 port (such as TS-ADA-051, LAN to RS232 adaptor). This will allow the synchronized device to be located anywhere in the facility as long as it accessible via the LAN to which the PC is connected to.

Each TS-ADA-051 is assigned with an IP address and creates a virtual serial port on the PC. This virtual serial port can be used by the TimeSync software to write or read the time from the synchronized device.

Typical solution packages:

1. Synchronize encoder or tone generator according to PC time:
 - VS4500
 - TimeSync (VSPS-02) software
 - TS-ADA-051 (optional, required only if the encoder or receiver are not connected directly to the PC)

2. Synchronize PC time according to encoder or receiver time:
 VS4500 or
 TimeSync (VSPS-02) software
 TS-ADA-051 (optional, required only if the encoder or receiver are not connected directly to the PC)

4.2.1 Connections

Follow these steps to establish communication between a device (receiver, tone generator or encoder) and the PC:

1. If you intend to retrieve or update the time of remote devices, install the LAN to RS232 adaptor on a designated PC that will be running the TimeSync software.

The installation of the LAN to RS232 adaptor is usually performed as follows:

Connect the LAN to RS232 adaptor to your network and to the power. Run the LAN to RS232 adaptor configuration software that will detect all adaptors on the network and display them. Assign a port (RS232/COM) number to each IP address that was detected as a LAN to RS232 adaptor.

For detailed information, please refer to the installation instructions provided with the LAN to RS232 adaptor.

2. Connect the provided null modem cable to the **COM1** port on the device and the other end to one of the serial ports on the PC. Make a note of the serial port used (COM1, COM2, etc.).
 If a LAN to RS232 adaptor is used, connect it's serial port to the synchronized device.
3. Install the programming software. Refer to **Software Installation** section for more information.

4.2.2 Software Installation

Note: TimeSync software must be installed by the PC administrator or by a user with administrator privileges. TimeSync software is compatible with Windows ME, XP, 2000, Vista and Windows 7.

Locate the TimeSync software CD-ROM and insert it to the CD-ROM drive on the PC. If the installation program doesn't start automatically within 5 seconds, use Windows Explorer to browse to the CD-ROM drive and then run the **TimeSync_Setup.exe** file.

Note: For Windows Vista and Windows 7, it is recommended that the installation folder will be changed to "C:\TimeSync").

Press **Next** on each step until the installation process is completed.

4.2.3 Software Configuration

Note: TimeSync software must be used by a user with full access privileges to the selected installation folder. Depending on your operating systems and PC configuration, administrator privileges may be required in some cases while in other Standard or Power user privileges may be sufficient.

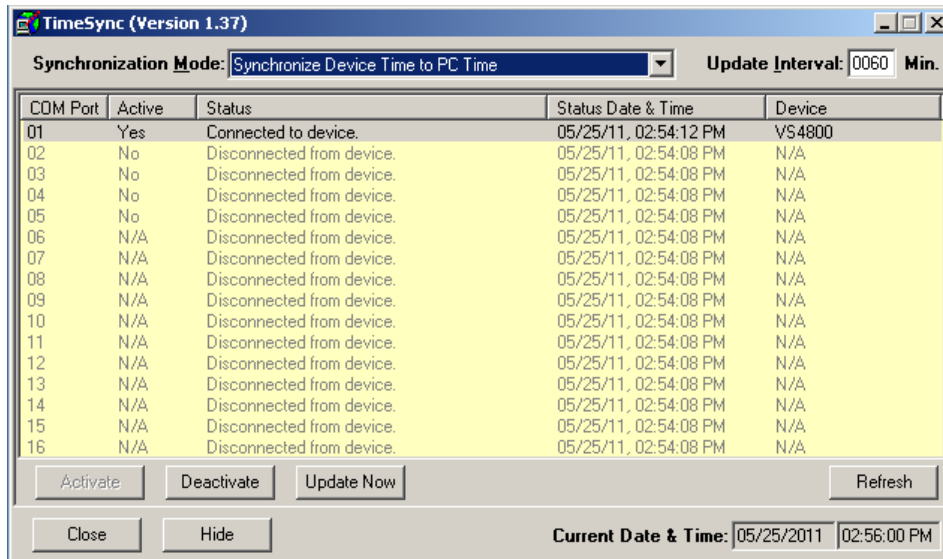
Follow these steps to configure TimeSync:

1. Make sure the VS4500 is powered on and connected to the serial port on the PC.
2. Set the serial protocol on **COM1** of the VS4500 to Visiplex, 9600-8-N-1 or 38400-8-N-1.
3. Press the Windows **Start** button. Select **Programs, TimeSync** program group and then select **TimeSync**.
4. Select the **Synchronization Mode**:
 To update the VS4500 according to the PC date and time, select **Synchronize Device Time to PC Time**.
 To update the PC according to the VS4500 date and time, select **Synchronize PC Time to Device Time (Single COM Port)**.
5. Select the **COM Port** assigned to the device on the computer from the list.
6. Click **Activate** to activate the selected **COM Port** and connect to the device (encoder, tone generator or receiver).
7. TimeSync software will try to connect to the device and display the type of device detected.
8. Depending on the **Synchronization Mode** selected, TimeSync will write or read the time to or from the connected device automatically according to the selected **Update Interval** (default is 60 minutes, maximum is 9999 minutes).

Below are the fields and functions description:

Synchronization Mode	Determine if time is read from or send to the connected device.
Update Interval	Time interval to update the devices time or PC time automatically (minimum is 60 minutes, maximum is 9999 minutes).
Activate	Activate the selected COM port and connect to the device (encoder, tone generator or receiver).

Deactivate	Deactivate the selected COM port and disconnect from the device (encoder, tone generator or receiver).
Update Now	Depending on the Synchronization Mode selected, TimeSync will read or write the time from or to the selected device. The device or PC time will be updated accordingly.
Refresh	Disconnect from all devices, reload all COM ports and reconnect to all active devices.
Close	Terminate the TimeSync program.
Hide	Hide the TimeSync window and place to the system tray.
Current Date & Time	Displays the current date and time of the PC.
Device List	Information on the available devices and their status: COM Port - COM (RS232) port number Active - Indicates if the COM port is active (connected to a device) Status - Last connection status with the device Status Date & Time - Date and time of the last connection status Device - The type of device detected.



4.2.4 Setting the PC Clock from Encoder

Setting the PC clock according to the VS4500 date and time allows you to keep the PC internal clock accurate and therefore use it as a reference for network time (see Windows **Net Time** command). This action can be performed manually or automatically as long as the encoder is connected to the PC and TimeSync is running.

Follow these steps to set the date and time according to the date and time of the VS4500:

1. Make sure the VS4500 is powered on and connected to the serial port on the PC.
2. Set the **Synchronization Mode** to **Synchronize PC Time to Device Time (Single COM Port)**.
3. To set the PC date and time manually, press **Update Now**. This will synchronize the PC clock according to the date and time of the connected device. Note that in some cases this operation may require more than one retry due to other functions performed by the encoder.
4. The automatic update is performed periodically according to the **Update Interval** . The **Status Date & Time** field displays the last date and time when the PC clock was updated.

4.2.5 Setting the Encoder Clock from PC Clock

Setting the VS4500 date and time from a PC allows you to keep its internal clock accurate. This action can be performed manually or automatically as long as the encoder or tone generator is connected to the PC and TimeSync is running.

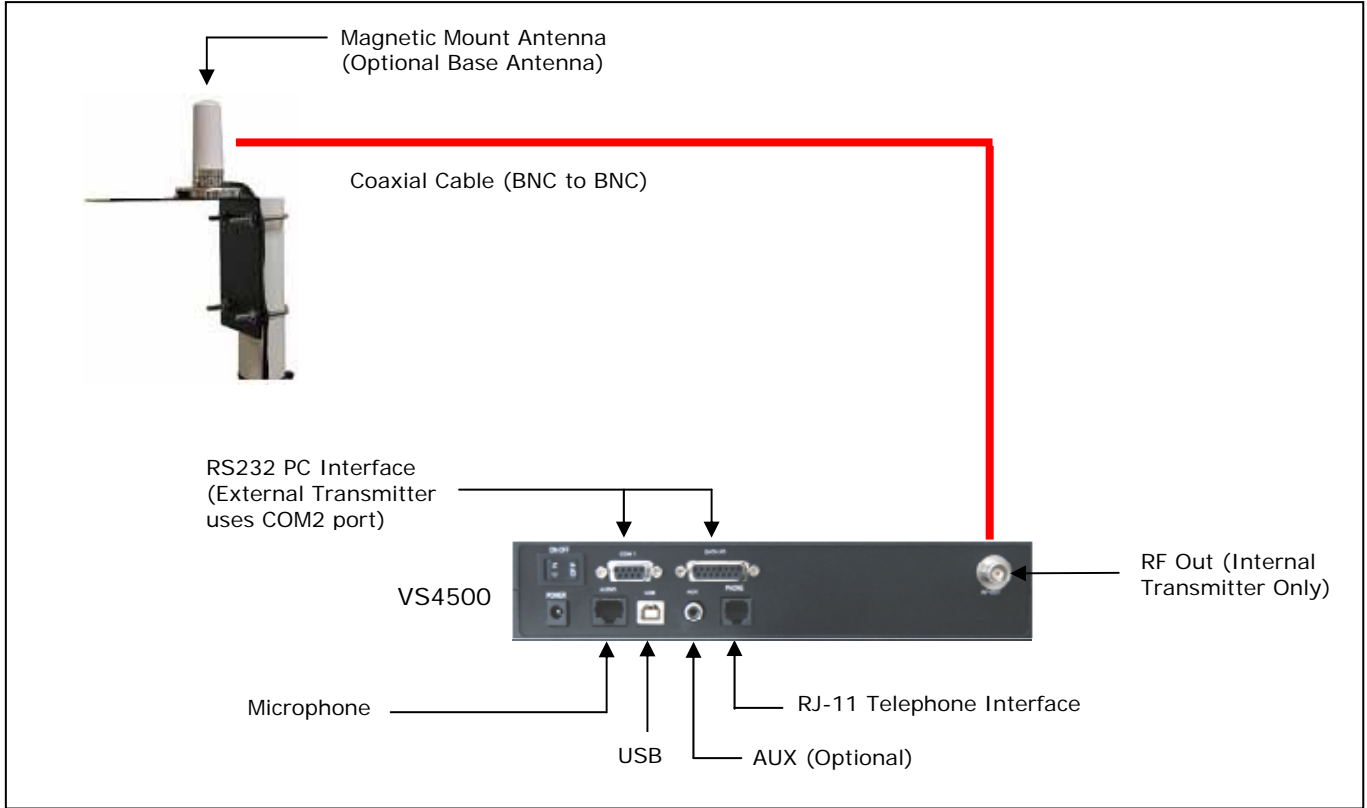
Follow these steps to set the date and time of the VS4500 according to the PC date and time:

1. Make sure the VS4500 is powered on and connected to the serial port on the PC.
2. Set the **Synchronization Mode** to **Synchronize Device Time to PC Time**.

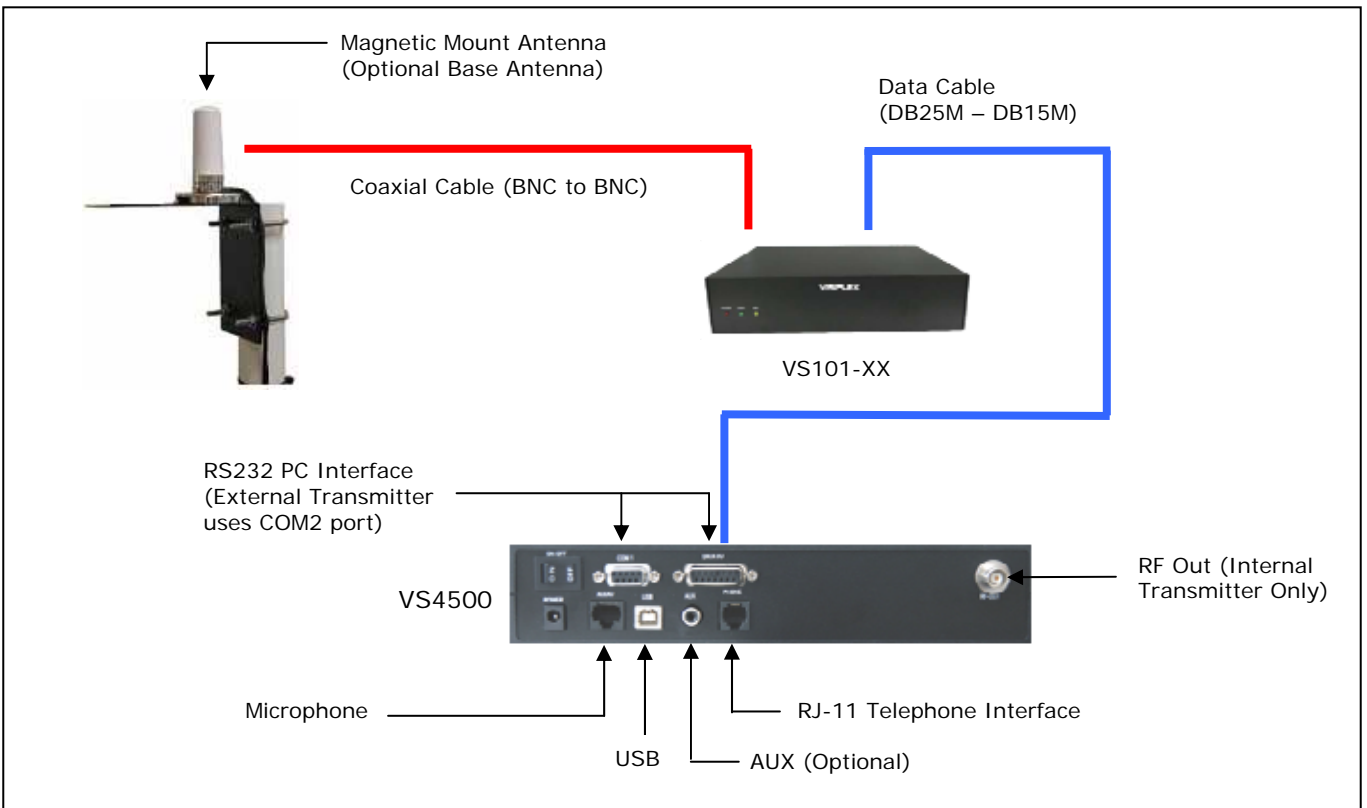
3. To set the PC date and time manually, press **Update Now**. This will synchronize the encoder or tone generator clock according to the date and time of PC. Note that in some cases this operation may require more than one retry due to other functions performed by the encoder.
The encoder or tone generator internal clock will be updated with this data and it will be used as the reference date and time sent to clocks and other receivers or used for the tone schedule.
4. The automatic update is performed periodically according to the **Update Interval** . The **Status Date & Time** field displays the last date and time when the connected device clock was updated.

Appendices

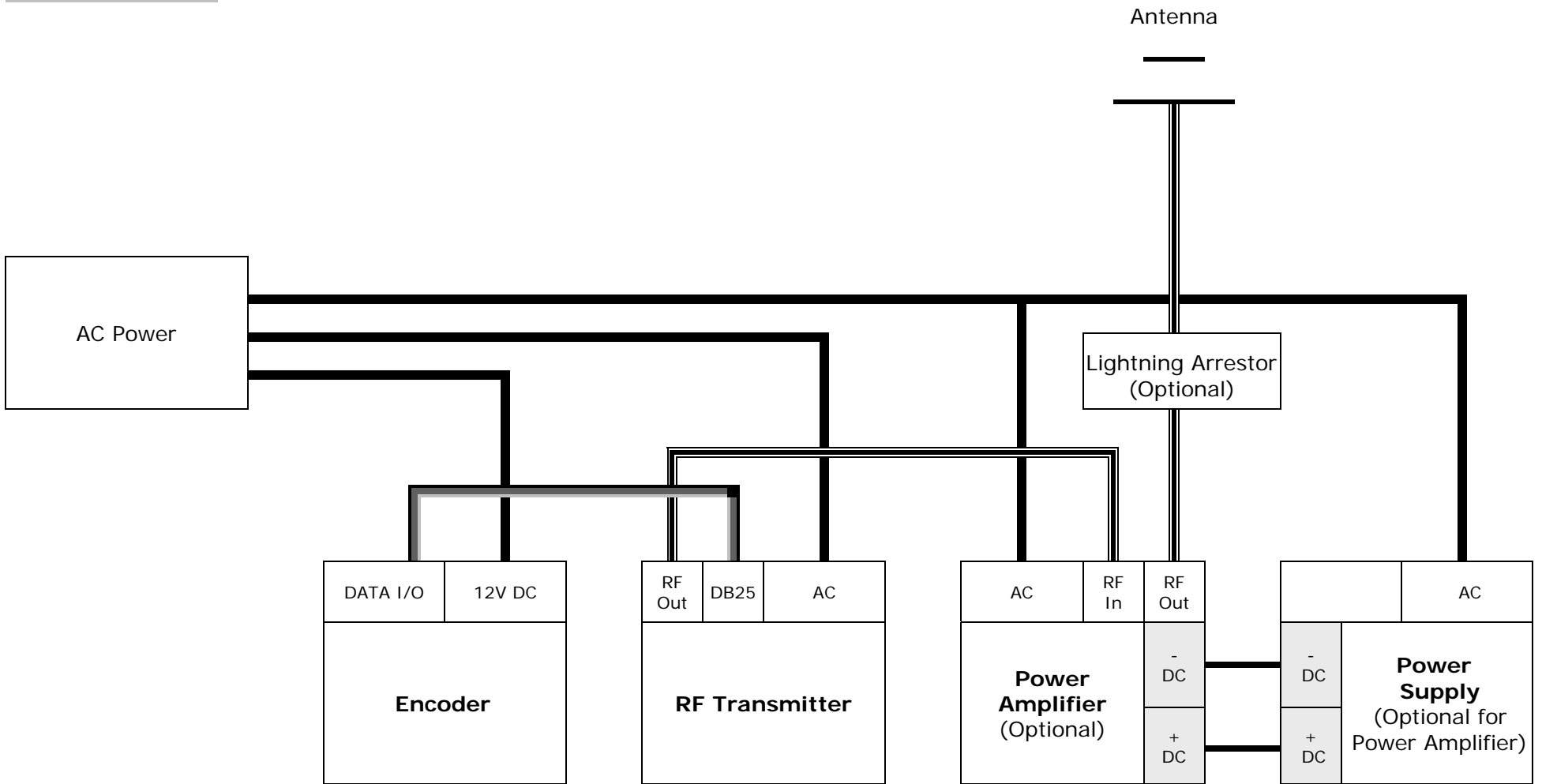
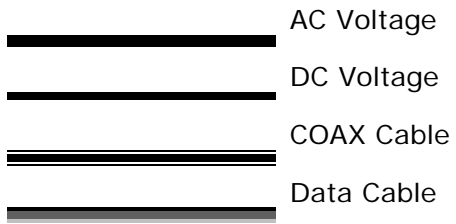
5.1 Appendix A – Installation Diagrams



Low Power System Installation Diagram



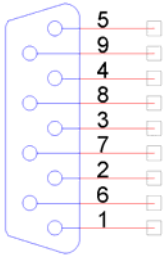
Medium Power System Installation Diagram



High Power System Installation Diagram

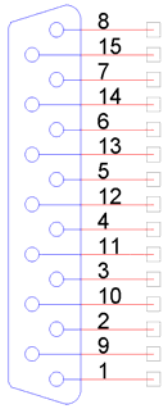
5.2 Appendix B – Connections, Wiring and Pin Out

5.2.1 Serial Port Pin Out (COM1)



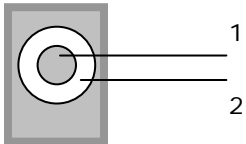
1 – N.C.	6 – N.C.
2 – RX (IN)	7 –PWR (OUT, 5VDC)
3 – TX (OUT)	8 – N.C.
4 – RTS (OUT)	9 – PWR (OUT, 12VDC)
5 – GND	

5.2.2 External Transmitter / Serial Port 2 Pin Out (DATA I/O)



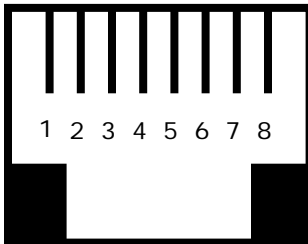
1 – GND	6 – DATA IN (IN)	11 – GND
2 – DIGITAL DATA (OUT)	7 – CHANNEL CONTROL (OUT)	12 – GND
3 – DIGITAL PTT (OUT)	8 – PWR (OUT, 12V)	13 – PWR (OUT, 5V)
4 – ANALOG DATA (OUT)	9 – RX (COM2)	14 – GND
5 – INHIBIT (IN)	10 – TX (COM2)	15 – ANALOG (IN) / AUDIO (IN)*

5.2.3 Power Port Pin Out (POWER)



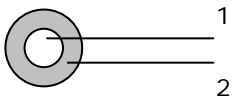
1 – POS (CENTER)
2 – GND

5.2.4 Audio Port Pin Out (AUDIO)



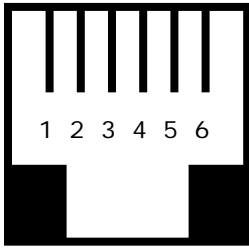
1 – N.C.	5 – GND
2 – N.C.	6 – N.C.
3 – MIC PTT (IN)	7 – N.C.
4 – MIC AUDIO (IN)	8 – N.C.

5.2.5 External Activation Control Pin Out (AUX)



1 – AUDIO (IN)
2 – GND

5.2.6 Phone Port Pin Out (PHONE)



1 – N.C.	4 – RING
2 – N.C.	5 – N.C.
3 – TIP	6 – N.C.

General Information

6.1 Specifications

Encoder

Frequency Range	VHF: 148-174 MHz, UHF: 403-433 MHz, 438-470 MHz
Data Baud Rate	512, 1200, 2400 BPS
Paging Format	POCSAG (Narrow or Wide Band), 2-Tone
Paging Type	Wireless Alphanumeric, Voice and Tone
Channel Spacing	12.5 kHz or 25 kHz
Power	AC Adaptor - Input: 100-240VAC, 50/60Hz Output: 12VDC, 3A
Approvals	UL/CSA listing (power supply)
Operating Temperature	32° to 104° F / 0° to 40° C
Storage Temperature	14° to 140° F / -10° to 60° C
Operating Humidity	10%-65%
Dimensions (W x H x D)	9.75" x 2.5" x 5.5" / 248mm x 63mm x 140mm
Weight	2.10 lbs. / 2.60 lbs with power supply
Warranty	1 Year, Parts and Labor

Internal Transmitter

RF Power Output	VTX-6: 6W
Modulation	Data and Tone: \pm 3.5 kHz, Voice: \pm 5.0 kHz
Frequency Stability	\pm 0.0025%, -22° to 140° F / -30° to 60° C Reference Temperature: 77° F / 25° C
FM Noise	Minimum 40dB below \pm 3.0 kHz deviation at 1000 Hz
Spurious & Harmonic	75 dB
FCC Registration	AIERIT11-450 (6W transmitter)

Telephone Line (optional)

Input Impedance	600 Ω Nominal (Off-Hook)
Line Type	Line Level (End to End Station Level), DTMF
Telephone Audio	DTMF Receive Level Dynamic Range: -26 dBm minimum DTMF Receive Frequencies Tone (Nominal, \pm 1.5%, \pm 2 Hz): 697, 770, 852, 941, 1209, 1336, 1477, 1633

6.2 Warranty

Unless otherwise specified at the time of original purchase, all equipment is warranted as to quality and performance for one year from the date of original shipment from our factory.

This factory warranty covers all parts, software, and/or labor (as specified at time of purchase) at our factory, as well as return shipping to you, the customer, but does not apply to any batteries or other damage resulting from abuse of the equipment. Warranty coverage excludes free replacement of cosmetic items such as clips, logos, etc.

The warranty is void if:

1. There is evidence of abuse to the equipment (i.e., corrosion, unusual physical damage, signs of exposure to temperatures outside the range of specifications, etc.)
2. The equipment contains an unauthorized modification.
3. Identification numbers on the printed circuit boards or chassis have been altered or removed.
4. Evidence of the product having been exposed to or submerged in water.
5. Equipment is damaged through acts of God, including, but not limited to: flood, lightning, hurricane, tornado, sustained high winds, acts of war, natural disasters, etc.

Should you experience problems with any product, we would suggest consulting your system or clock maintenance guide to correct any routine problems such as replacing batteries, cleaning contacts, checking AC voltage, etc.

If the problem persists, please call our technical support department for additional assistance, remote diagnostics help, etc. If your product must be returned for repair, our technical service department will provide you with a Returned Material Authorization (RMA) number and any other special instructions that will allow the repair to be handled as quickly as possible.

All non-warranty products require a purchase order number in addition to an RMA number for repair work to be started.

For more information, or to obtain technical assistance on any warranty or non-warranty product, please write, call, fax or email to:

Visiplex, Inc.

1287 Barclay Boulevard

Buffalo Grove, IL 60089

Phone: (847) 229-0250 or (877) 918-7243

Fax: (847) 229-0259

E-mail: support@visiplex.com

Website: www.visiplex.com

Business Hours: Monday-Friday, 9:00 AM - 5:00 PM Central Time.