VS4200

Wireless Time & Voice Controller

User's Manual / Installation Guide

Version 1.25

Visiplex, Inc. 2010

VS4200

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 B 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 residential areas is likely to cause harmful interference in which case the user will be required to correct the interference at their expense.

About This Manual

This VS4200 User's Manual / Installation Guide describes the installation and setup procedures of the VS4200 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 VS4200 offers the latest and most innovative way to incorporate PC clock or WWVB synchronized time and voice and data throughout your facility, providing you with the benefits of improved productivity and reduced maintenance costs.

The VS4200 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 VS4200 include an optional PBX interface and optional hand held microphone.

The VS4200 uses the PC clock as time source for wireless analog clocks, wireless digital clocks and wireless alphanumeric displays. The VS4200 can also be used to synchronize older wired clocks using a special wireless receiver.
Using the connected PC clock or WWVB receiver, the VS4200 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 VS4200 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 VS4200 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

- Built-in high-precision Real-Time clock
- Synchronize both analog and digital wireless clocks
- Generate time synchronization data transmissions every minute
- Capable of synchronizing its internal clock from a PC clock or WWVB (requires external WWVB transceiver)
- User configurable Master Clock synchronization time
- Time source reception indicator
- Numeric keypad and four Alpha menu keys
- Built-in memory backup
- Send messages to Alphanumeric and Numeric devices or Alphanumeric LED displays
- RS232 serial connection for serial communication
- User configurable 1000 receivers database
- 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
- High power external digital transmitters (25 to 300 watt)
- WWVB wireless transceiver (to be used as time source for the VS4200)
- Built-in tone generator for wireless receivers

1.4 Package Contents

The following items are included with the VS4200:

- VS4200 Wireless Clock Synchronizer
- Power adaptor
- “L” bracket
- Manual
- VS638 Magnetic Mount antenna (for systems ordered with internal transmitter only)

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 WWVB or PC clock data reception detected
:	WWVB or PC clock data reception detected, date and time updated
*****	Daylight saving time is active

1.7 Pre-Installation Test

It is recommended to test the VS4200 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 VS4200.
   If your system uses an external transmitter, connect the transmitter data cable between the VS101-XX transmitter and the **EXT. TX** port at the back of the VS4200. Connect the antenna to the external transmitter's **ANTENNA** terminal.

2. Connect the provided power supply to the **DC** jack at the back of the VS4200 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 (4200)**.** 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.

7. The menu top line should display the current **TIME ZONE**. Use the **1** to **7** keys to select your local time zone. Press the **#** key.

8. The menu top line should display **DAYLIGHT SAVING**. Press **1** to select **ON** or **0** to select **OFF**. Press the **#** key.

9. The unit will return to the **Administration Menu**. Press the ***** key to return to the **Main Menu**.
   Within a few minutes, the VS4200 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 VS4200 display.

Installation

2.1 Site Inspection and System Location

Consider the following requirements when planning system installation and choosing a location for the VS4200 and other system components:

1. If the optional WWVB transceiver 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 WWVB transceiver 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 WWVB Transceiver Installation (optional)

1. The optional WWVB transceiver can be mounted indoors or outdoors. **Outdoors installation is highly recommended for optimal reception**.

2. The WWVB transceiver should be installed where the distance to the VS4200 is **not more than 100'**.

3. If the WWVB transceiver 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 WWVB transceiver is installed outdoors, mount it in a location protected from direct sun or rain.

5. If the WWVB transceiver 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.

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 VS4200 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 VS4200 and transmitter as the coax cable allows.

2.5 VS4200 Encoder and External Transmitter Installation

The VS4200 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 VS4200 and use the data cable provided to connect VS4200 and the external transmitter.

Once the transmitter and antenna are placed properly, connect them to the VS4200 and the transmitter as follows:

1. If an external transmitter is used, connect the antenna to the **ANTENNA** terminal at the back of the external transmitter. Connect the transmitter data cable between the VS101-XX transmitter and the **EXT. TX** port at the back of the VS4200. Otherwise, connect the antenna to the **RF-OUT** terminal at the back of the VS4200.

2. If the optional WWVB transceiver is used, the internal clock of the VS4200 will be set to the Atomic UTC time and the VS4200 will start transmitting the local time every minute.

3. If the PC time is used, connect the PC serial port to the **RS-232** terminal and run the **TimeSync** software. See **Setting Date and Time from PC** section on page 17 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 VS4200.

Advanced System Information

The main menu shown below appears after the VS4200 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.

3.1 Administration Menu

From the **Main Menu** press the **B** key. Enter **4200** 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. Record Message

A. MCS Sync Time (Master Clock Synchronizer Time Setup)
B. Tone Schedule
C. Sunset/Sunrise

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

3.1.1 Device Database Menu

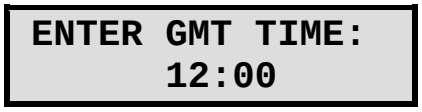
From the **Administration Menu**, select **1** followed by the **#** key. Following are the fields description:

Device to Edit	Enter 3 digit ID of the device to be edited (001-999)
Device Capcode	Enter 7 digit address as appears at the back of the device, clock or receiver
Device Type	Select the required type and press the **#** key: 1 – Alphanumeric 2 – Numeric 3 – WPA Speaker 4 – Tone / Vibrate
Device 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.

After the last step is completed, the display will flash **DATA SAVED** and go back 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 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 VS4200 is connected to a PC or receives the time from a WWVB transceiver, 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 NEW 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 VS4200 is connected to a PC or receives the time from a WWVB transceiver, 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 13 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 **#** 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.

Use this option to send cover page to device 100. This feature is useful when testing the transmitter coverage area.
Press ***** to cancel and go back to the **Coverage Test** 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:
CENTRAL TIME
```

Select the local time zone using the **1** to **7** keys:

1 – Eastern Time
2 – Central Time
3 – Mountain Time
4 – Pacific Time
5 – Alaska Time
6 – Hawaii Time
7 – Other Time (may require special factory settings)

Press **#** to confirm the displayed selection. The following screen will be displayed:

```
DAYLIGHT SAVING:
ON
```

Select the correct daylight saving time setting. Use the **1** key to select **ON** or the **0** key to select **OFF**.

After the last step is completed, the display will flash **DATA SAVED** and go back 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 go back to the **Last Message** 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 go back to the **Reset Database** menu.

3.1.9 Record Message Menu

Use this option to record a voice message that will be transmitted to wireless speakers.

From the **Administration Menu**, select **9** followed by the **#** key.

```
PRESS # TO START
```

Press **#** to start recording. Press ***** to cancel and go back to the **Record Message** menu.

If recording started, press **#** again to end recording.

3.1.10 MCS Sync Time Menu

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

```
MCS SYNC TIME:
06:00
```

If you are using a master clock synchronizer, use this option set time when it is supposed to synchronize the master clock. Enter time in 24 hours (military) format. The display will change back to **MCS Sync Time** menu.

3.1.11 Tone Schedule Menu

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

```
TONE SCHEDULE:
N 10111 00:00 01
```

Use the **A** key to navigate through the 4 available tone schedules (slots). Use the **B** key to navigate through the weekdays of the displayed schedule (slot). Use the **C** key to navigate through the 48 available events for each weekday.

Below are the fields and description:

Active – Character 1	Determine if event is active
Alert Type – Character 3	Type of tone
Alert Length – Character 4	Length of tone
Alert Level – Character 5	Volume of tone
Alert Delay – Character 6	Delay between each repeat of the tone sequence
Alert Repeats – Character 7	Number of times to repeat the tone sequence (as determined by Type, Level and Length)
Time - Characters 9-13	Time of day in which a tone should be generated
Zone - Characters 15-16	Device number programmed in to the encoder with the receiver's (usually speakers) capcode

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

3.1.12 Sunset / Sunrise Menu

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

From the **Administration Menu**, select **C** 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**.

3.2 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: Installation Mode must 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:

```
INSTALLATION
MODE IS ON
```

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 VS4200 is turned on and is also used for sending a page to a device.

```
PAGE TO:   11:55
```

The VS4200 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 VS4200 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. The page will be sent immediately after entering the 16th character or after the **#** is pressed.

Follow these steps to send a page using a telephone (**Page by Phone**):

NOTE: Sending a page using a telephone requires the optional **Telephone Line Interface** and **Page by Phone** features and may not be available on your VS4200. See **Accessing Wireless Speakers (via keypad or phone)** on page 14 for more detailed information.

1. Program a device in to the VS4200 as described in the **Device Database Menu** section (page 10).

2. Connect the RJ-11 **Phone** jack located at the back of the VS4200 to and analog telelphone line or extension.

3. Using another phone, dial the number of the telephone line or extension connected to the VS4200.

4. The VS4200 will answer the call with 1 beep (or the "Enter Device Number" 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 VS4200 will respond with the 1 long beep (or the "Invalid Device" prompt).

6. If the selected device is Tone / Vibrate device, the page will be sent immediately after entering the device number and the VS4200 will respond with the 3 beeps (or the "Page Sent" prompt).

7. If the selected device is an Alphanumeric or a Numeric device, the VS4200 will respond with 2 beeps (or the "Enter Message" prompt).

8. If the selected device is a WPA device, the VS4200 will respond with the 2 beeps after a short delay (or the "Please Wait" prompt and shortly after that with the "Speak Message Now" prompt).

9. For Numeric or Alphanumeric devices, enter a numeric message using the telephone keypad. For WPA device, speak your messge.

10. To send the message, press **#**. The VS4200 will respond with 3 beeps (or the "Page Sent" prompt).

3.3.1 Accessing Wireless Receivers (via keypad or phone)

Follow these steps to send a voice message or a tone to a spekaer:

1. For voice messaging, program a WPA device in to the VS4200. For tone only messaging, program an alphanumeric device in to the VS4200. Verify that the spekaer capcode was programmed properly.

If accessing via phone, follow steps 2-3. Otherwise, skip to step 5.

2. Using another phone, dial the number of the telephone line or extension connected to the VS4200.

3. The VS4200 will answer the call with 1 beep (or the "Enter Device Number" prompt).

4. To send a voice message, enter a WPA 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 WPA device number

5. To send a tone, enter an alphanumeric device number as a 3 digit number (for example, "105").

6. 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 VS4200 will respond with the 1 beep (or the "Invalid Device" prompt, for phone access only).

If accessing via phone, follow steps 7-8. Otherwise, skip to step 9.

7. The VS4200 will respond with the 2 beeps (or the "Please Wait" prompt and shortly after that with the "Speak Message Now" prompt).

8. To send a voice message, speak your messge.

9. To send a tone, , 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)
   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 **9**__**45246**__.

   For encoders supporting more than 8 tones:
   t is the Alert Type (two digits number between 1 and 15)
   l is the Length (digit between 0 and 9)
   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 **8**__**145246**__.

10. To send the message, press **#**.
    The VS4200 will respond with 3 beeps (or the “Page Sent” prompt, for phone access only).

Software

4.1 VisiDB

The optional VisiDB software allows you to program and backup the VS4200 database, create scheduled paging and set the VS4200 date and time according to the PC clock.

4.1.1 Connections

Follow these steps to connect the VS4200:

1. Connect the provided serial cable to the **RS-232** jack and the other end to one of the serial port on the PC. Make a note of the serial port used (COM1, COM2, etc.).

2. Install the programming software. Refer to **Software Installation** section for more information.

4.1.2 Software Installation

NOTE: VisiDB software must be installed by the PC administrator or by a user with administrator privileges. VisiDB software is compatible with Windows ME, XP and 2000.

Locate the VisiDB 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 **VisiDB_Setup.exe** file.
Press **Next** on each step until the installation process is completed.

4.1.3 Software Configuration

NOTE: VisiDB software must be used by a user with full access privileges to Windows **Program Files** 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 VisiDB:

1. Make sure the VS4200 is powered on and connected to the serial port on the PC.

2. Press the Windows **Start** button. Select **Programs**, **VisiDB** program group and then select **VisiDB**.

3. The Serial Number dialog will be displayed. Enter the serial number shown on the CD-ROM and press **Ok**.

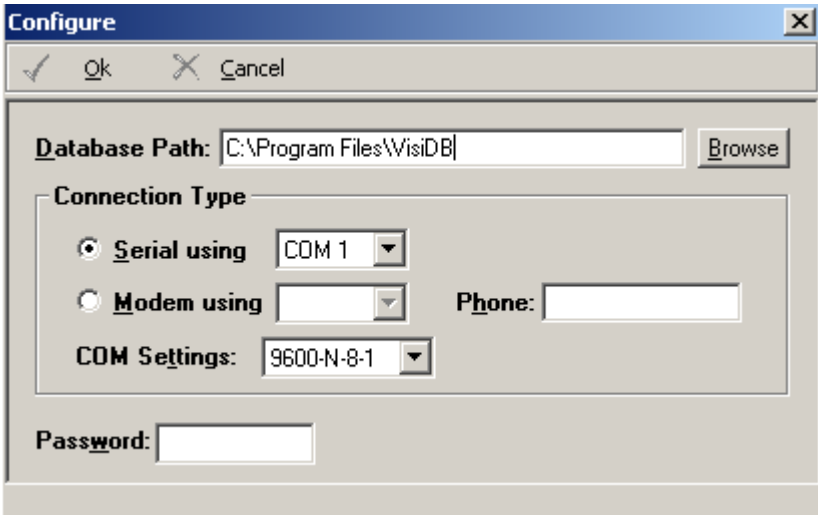
4. Press **Ok** on the next dialog box.

5. Go to **File**, **Admin Login** menu. Since the default password is blank, just press **Ok**.

6. Go to **Setup**, **Configure** menu.

7. Set the **Database Path** where all files will be stored (the default is "C:\Program Files\VisiDB").

8. Set the **Connection Type**: Select the PC serial port connected to the VS4200 (see **Connections** section). Set the **COM Settings** to **9600-N-8-1**. Press **Ok**.



9. To verify connection, go to **Help**, **About VisiDB** menu. The **Encoder Model** should show VS4200 and the **Serial Number** should show the last 5 digits of the VS4200 used. Press **Ok**.
   If this information is not displayed properly, verify all connections and go to step 6.

NOTE: To obtain further information and help for each screen, press F1 to display the online help.

4.1.4 Setting Date and Time from PC

Setting the VS4200 date and time from a PC allows you to keep the VS4200 internal clock accurate without using an external time source. This action can be performed manually or automaticaly as long as the VS4200 is connected to the PC and VisiDB is running.

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

1. Make sure the VS4200 is powered on and connected to the serial port on the PC.

2. Go to **Setup**, **Time Synchronization**.

3. To set the date and time, select **Set Date & Time from PC Now**. This will sycnronize the time of the VS4200 according the date and time on the PC.

4. To set the date and time periodically, select **Set Time from PC Automatically**. This will sycnronize the time of the VS4200 periodically according the date and time on the PC.
   The VS4200 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.
   The automatic update is performed every hour or every 24 hours, depending on the software version used.

4.1.5 Tone Schedule Programming

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

1. Make sure the VS4200 is powered on and connected to the serial port on the PC.

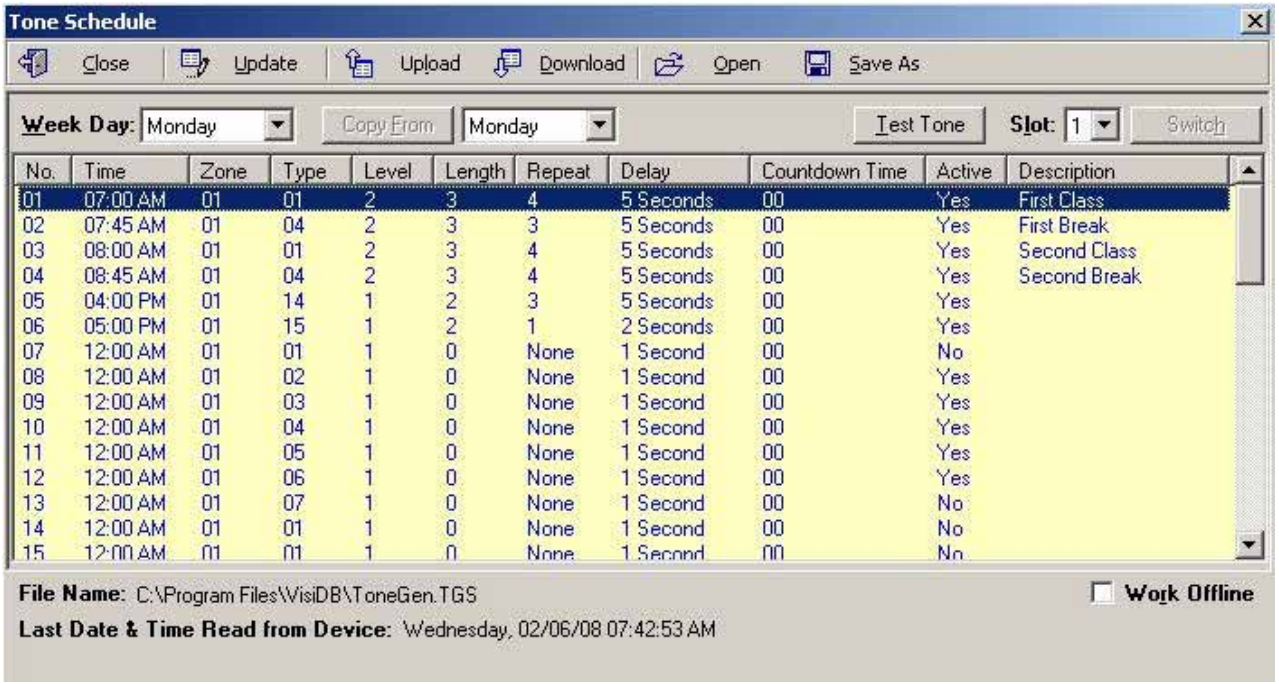
2. Go to **File**, **Admin Login** menu. Enter password and press **Ok** (default password is blank).

3. Go to **Setup, Time Synchronization** menu. Select **Set Date and Time from PC Now**.

4. Go to **Setup, Tone Generator Programming**, **Schedule Programming** menu.

5. The **Tone Schedule** dialog box will be displayed. The last schedule file edited by the user will be retrieved from the hard drive and displayed. If this file does not exist, it will be automatically downloaded from the VS4200. Below are the fields and functions description:

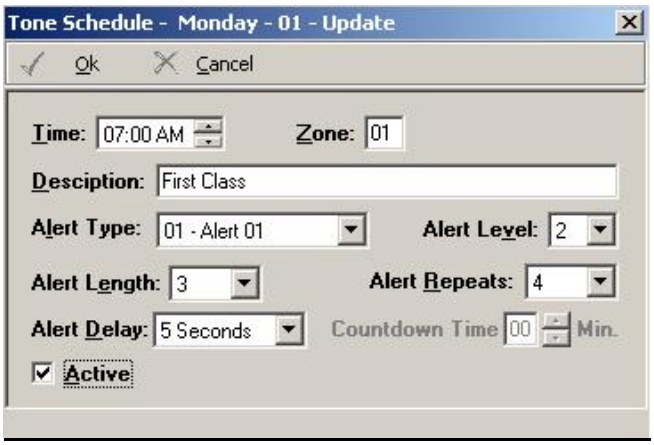
Close	Close the Tone Schedule dialog box
Update	Display a dialog box that allows updating the specific highlighted event on the schedule list (see step 5)
Upload	Upload the displayed schedule file in to the VS4200 memory. This command will overwrite the existing programming of the selected schedule
Download	Download the active schedule from the VS4200 memory to the PC
Open	Open and display previously saved schedule file. **Note**: The schedule is not active until uploaded to the VS4200. Use the **Upload** command to program this schedule in to the VS4200
Save	Save the displayed schedule to a file on the PC for later use
Week Day	Display the scheduled events for the selected day of the week
Copy From	Copy the daily schedule on to the selected **Week Day** (see step 6)
Test Tone	Test the tone programmed in to the highlighted event on the list.
Slot	Display the active weekly schedule. Also used to set active weekly schedule
File Name	Name of schedule file displayed
Last Date & Time Read from Device	Last date and time information read from the tone generator when this dialog was opened (usually used for troubleshooting)
Work Offline	Allows performing event updates to schedule file only without programming the VS4200 (usually followed by the **Upload** command)

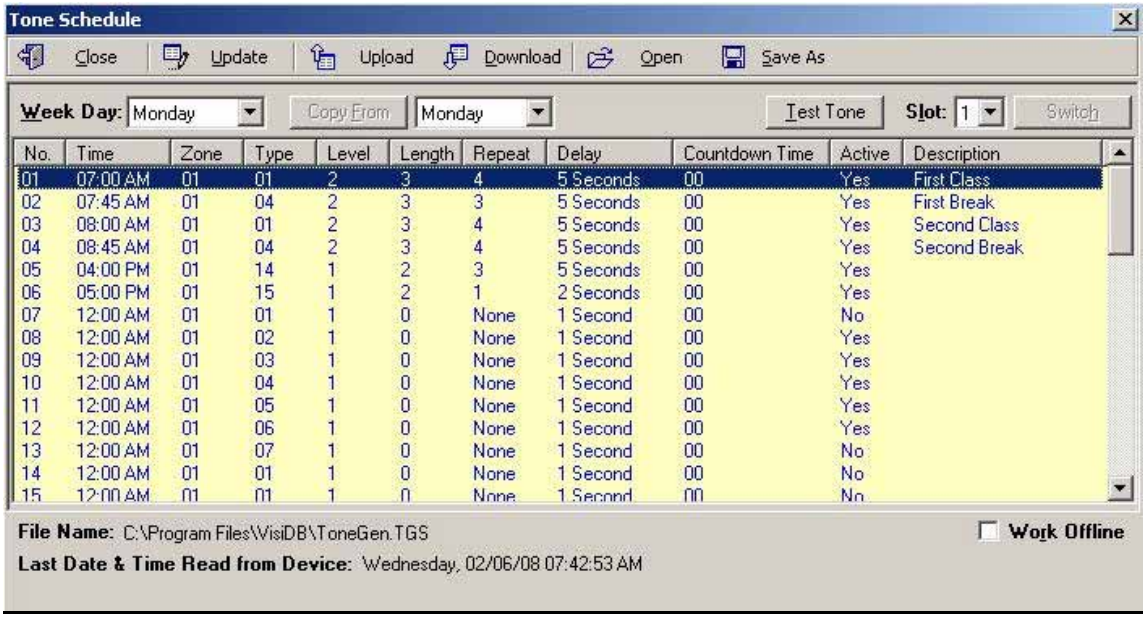


6. If the **Update** command is selected, the **Tone Schedule – Update** dialog box will be displayed. Below are the fields and functions description:

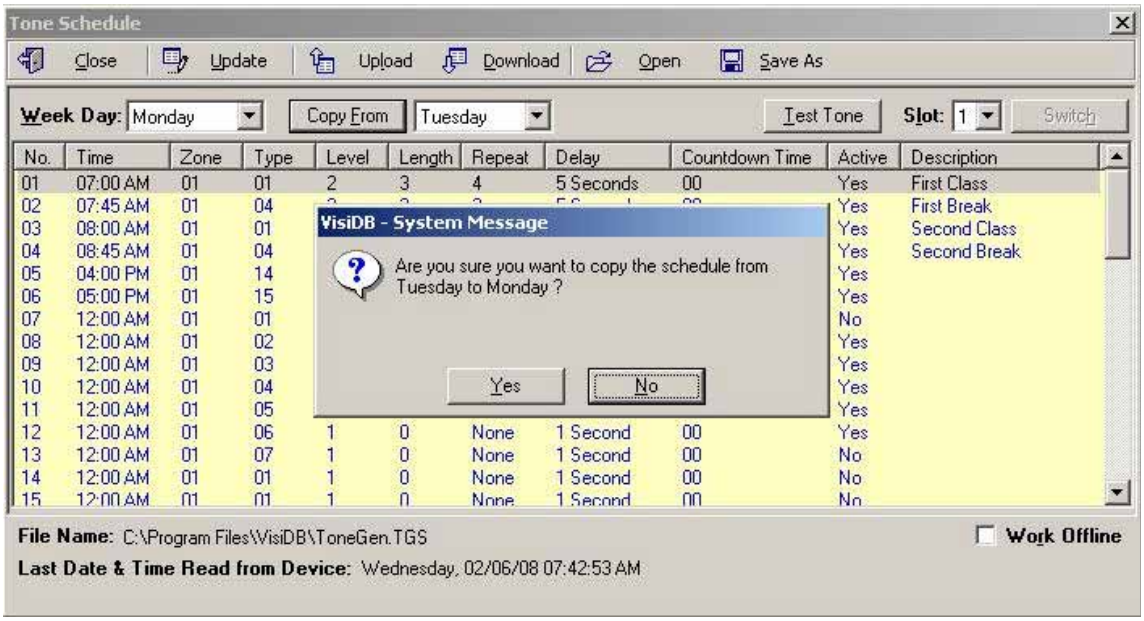
Ok	Update schedule file and tone generator (if connected) with changes
Cancel	Ignore all changes and exit
Time	Time of day in which a tone should be generated or dry-contact should be closed or opened
Zone	Define zone used for generating tones. The zone number represents a pager number from 001 to 099. For example, when generating a tone for zone 05, all wireless receivers programmed with the capcode of pager 005 will be activated.
Description	General friendly description for the updated event
Alert Type	Type of tone

Alert Level	Volume of tone
Alert Length	Length of tone (in some cases, created by repeating a shorter tone). Also used to determine the length of dry-contact closure or opening
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
Active	Determine if event is active. Non active events are stored but not executed





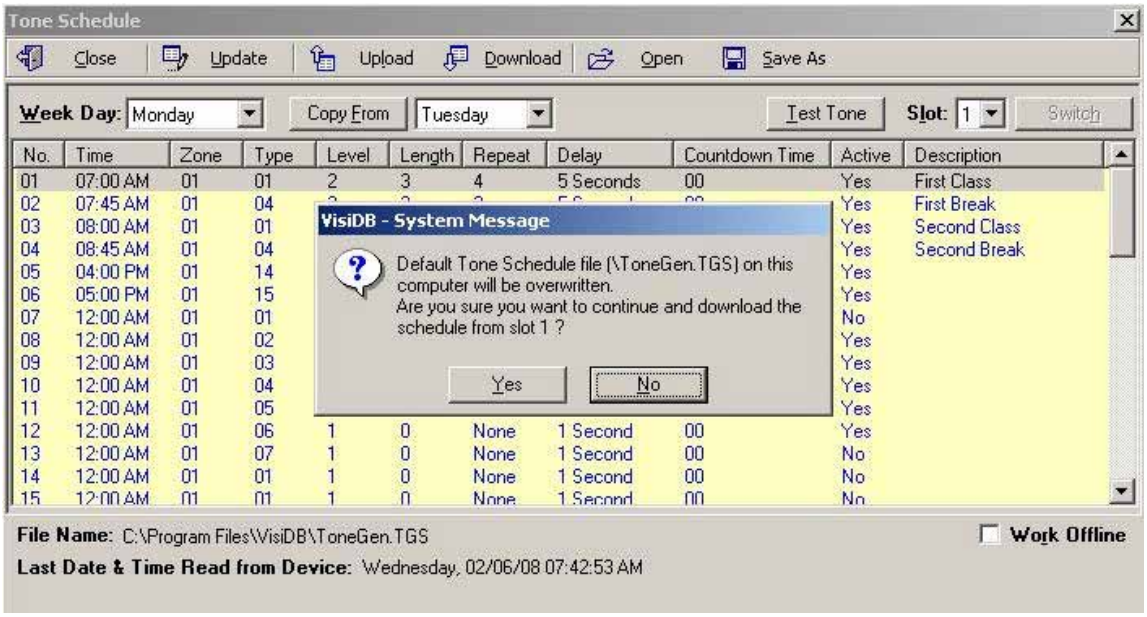
7. If the **Copy From** command is selected, the schedule will be copied from the selected day to the to the selected **Week Day**.



IMPORTANT NOTES

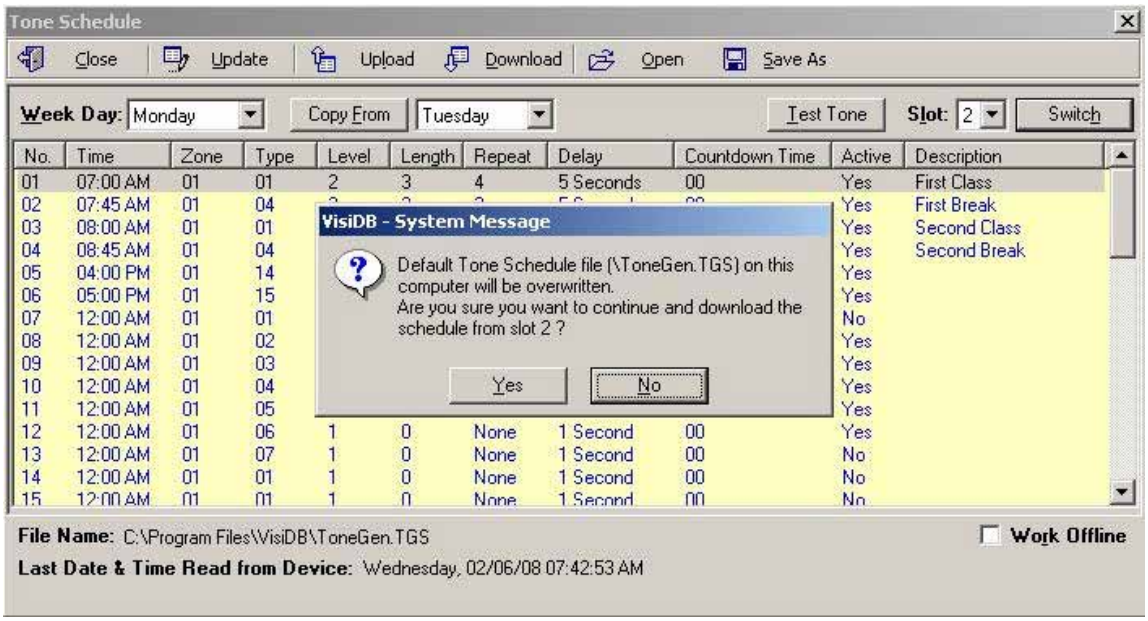
1. When the **Tone Schedule** programming screen is opened, it displays the last file that was edited by the user. It **DOES NOT** display the actual data stored in to the VS4200.

2. To ensure the schedule displayed is same as programmed in to the VS4200, always press **Download** after opening the **Tone Schedule** programming screen. This will download and display the active schedule from VS4200. The schedule is downloaded and saved by default to the **ToneGen.TGS** 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 **Update**, **Download** and **Upload** commands.

4. Every time the **Slot** is changed, the appropriate schedule is downloaded from the VS4200 and displayed. Any changes made are programmed in to the VS4200 immediately (if connected to the PC).



5. There is no need to press **Upload** after each change made. If the VS4200 is connected properly to the PC, each modification made from the **Tone Schedule – Update** screen is applied immediately when you press **Ok**.
6. Use the **Upload** command to upload a schedule that was prepared while not connected to the VS4200 or to program a schedule that was loaded using the **Open** command.

7. It is recommended that each schedule used will be downloaded from the VS4200 and then saved to the PC hard drive with a name that will describe it appropriately. If required, saved schedules can be loaded to VisiDB using the **Open** command and then programmed in to the VS4200 using the **Upload** command.

8. The execution of the schedule programmed in to the VS4200 is dependent on the date and time stored in its internal clock. This clock **MUST** be kept accurate by either receiving time updates from a wireless time synchronization encoder (such as the VS4200) or from a PC connected to it via a serial port.

4.1.6 Scheduled Paging

Scheduled paging allows you to send tones or messages to device or speaker based on a preprogrammed schedule. This feature can be used as long as the VS4200 is connected to the PC and VisiDB is running and the tones or messages are generated by the VisiDB software.

Follow these steps to set scheduled paging:

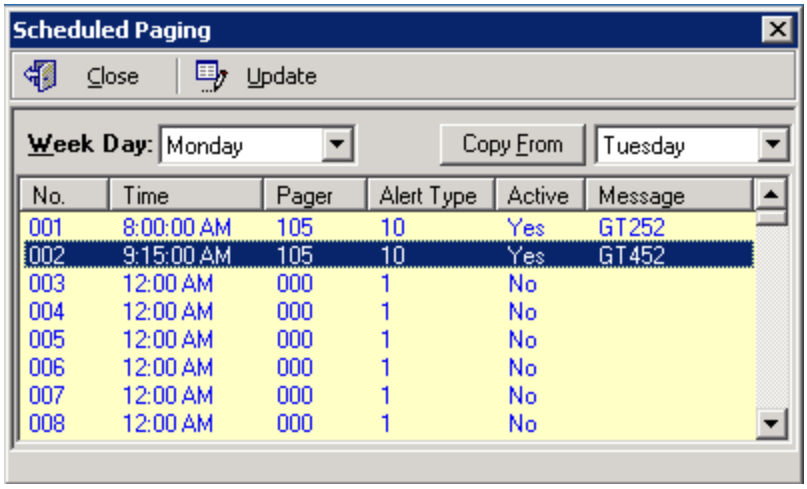
1. Make sure the VS4200 is powered on and connected to the serial port on the PC.

2. Go to **File**, **Admin Login** menu. Enter password and press **Ok** (default password is blank).

3. Go to **Setup, Scheduled Paging** menu.

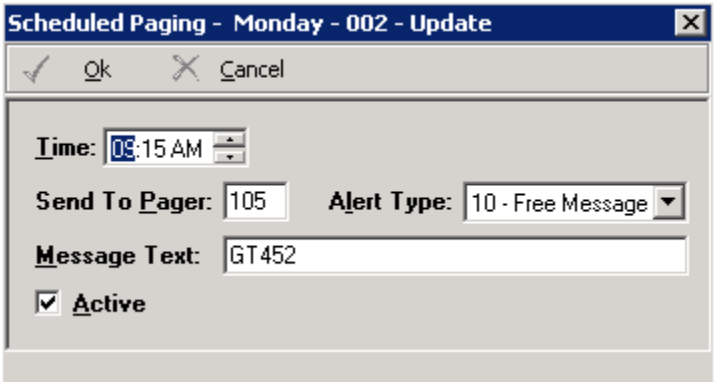
4. The **Scheduled Paging** dialog box will be displayed and the schedule file edited by the user will be retrieved from the hard drive and displayed. Below are the fields and functions description:

Close	Close the Tone Schedule dialog box
Update	Display a dialog box that allows updating the specific highlighted event on the schedule list (see step 5)
Week Day	Display the scheduled events for the selected day of the week
Copy From	Copy the daily schedule on to the selected **Week Day** (see step 6)



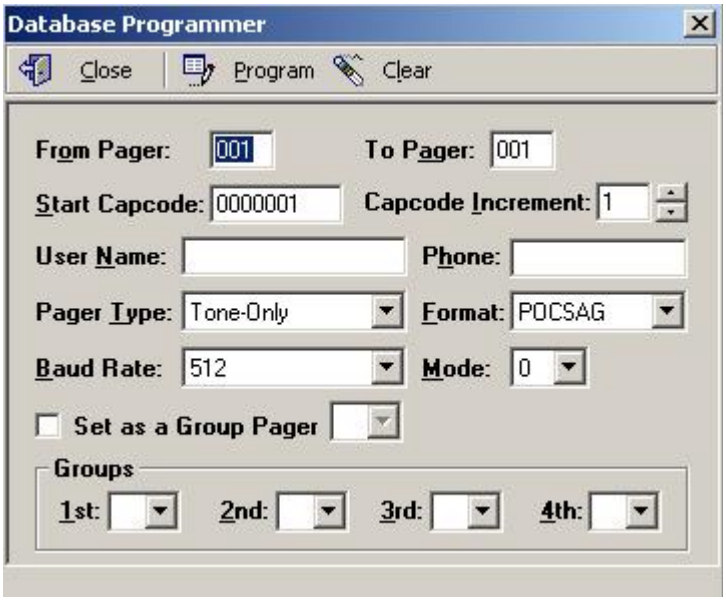
5. If the **Update** command is selected, the **Scheduled Paging – Update** dialog box will be displayed. Below are the fields and functions description:

Ok	Update schedule file and with changes
Cancel	Ignore all changes and exit
Time	Time of day in which a tone should be generated
Send to Device	Device number of the speaker to be accessed
Alert Type	Select **10 – Free Message** and enter **Message Text** using the **GTtlv** format where: **t** is the Alert Type (digit between 1 and 8) **l** is the Length (digit between 0 and 9) **v** is the Volume (digit between 1 and 4) **d** is the Delay (digit between 1 and 9) **r** is the Repeat (digit between 1 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 **GT45246**. For devices that support more than 8 tones, use the **GMtlvdr** format where: **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) **v** is the Volume (digit between 1 and 4) **d** is the Delay (digit between 1 and 9) **r** is the Repeat (digit between 1 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 **GM145246**.
Active	Determine if event is active. Non active events are stored but not executed



4.1.7 Wireless Device Database Programmer

The Wireless Device Database Programmer allows you to add/edit a single or groups of wireless devices into the VS4200 database. From the Devices menu of the main screen select the Device Programmer. The Wireles Device Database Programmer dialog box will be displayed.



Enter the required information into the form and select the Program button to update/program the VS4200 unit. To upload or download the device database from the VS4200 to the PC use the Upload and Download options from the Devices Menu in the main screen.

4.2 TimeSync

The optional TimeSync software provides central control from a management PC of up to 16 synchronized devices (encoders such as the VS4200, tone generator such as the TS-ADA-029 and a receiver such as the TS-ADA-028) 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 VS4200 or TS-ADA-029. This time will be used as the reference time for these devices.

2. Read the time from the VS4200 or TS-ADA-028 time 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 serial 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:
   VS4200 or TS-ADA-029
   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:
   VS4200 or TS-ADA-028
   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 serial cable to the **RS-232** jack 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 and 2000.

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.
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 Windows **Program Files** 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 device (receiver, tone generator or encoder) is powered on and connected to the serial port on the PC.

2. Press the Windows **Start** button. Select **Programs**, **TimeSync** program group and then select **TimeSync**.

3. Select the **Synchronization Mode**:
   To update the connected device (**VS4200** or **TS-ADA-029**) according to the PC date and time, select **Synchronize Device Time to PC Time**.
   To update the PC according to the connected device (**VS4200** or **TS-ADA-028**) date and time, select **Synchronize PC Time to Device Time (Single COM Port)**.

4. Select the **COM Port** assigned to the device on the computer from the list.

5. Click **Activate** to activate the selected **COM Port** and connect to the device (encoder, tone generator or receiver).

6. TimeSync software will try to connect to the device and display the type of device detected.

7. 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 or Receiver

Setting the PC clock according to the **VS4200** or **TS-ADA-028** date and time allows you to keep the PC internal clock accurate and threfore use it as a reference for network time (see Windows **Net Time** command). This action can be performed manually or automaticaly 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 encoder (**VS4200**) or receiver (**TS-ADA-028**):

1. Make sure the encoder or receiver is powered on and connected to the serial port on the PC.

2. To set the PC date and time manually, press **Update Now**. This will sycnronize 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.

3. 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 or Tone Generator Clock from PC Clock

Setting the encoder (**VS4200**) or tone generator (**TS-ADA-029**) date and time from a PC allows you to keep it's internal clock accurate. This action can be performed manually or automaticaly 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 encoder (**VS4200**) or tone generator (**TS-ADA-029**) according to the PC date and time:

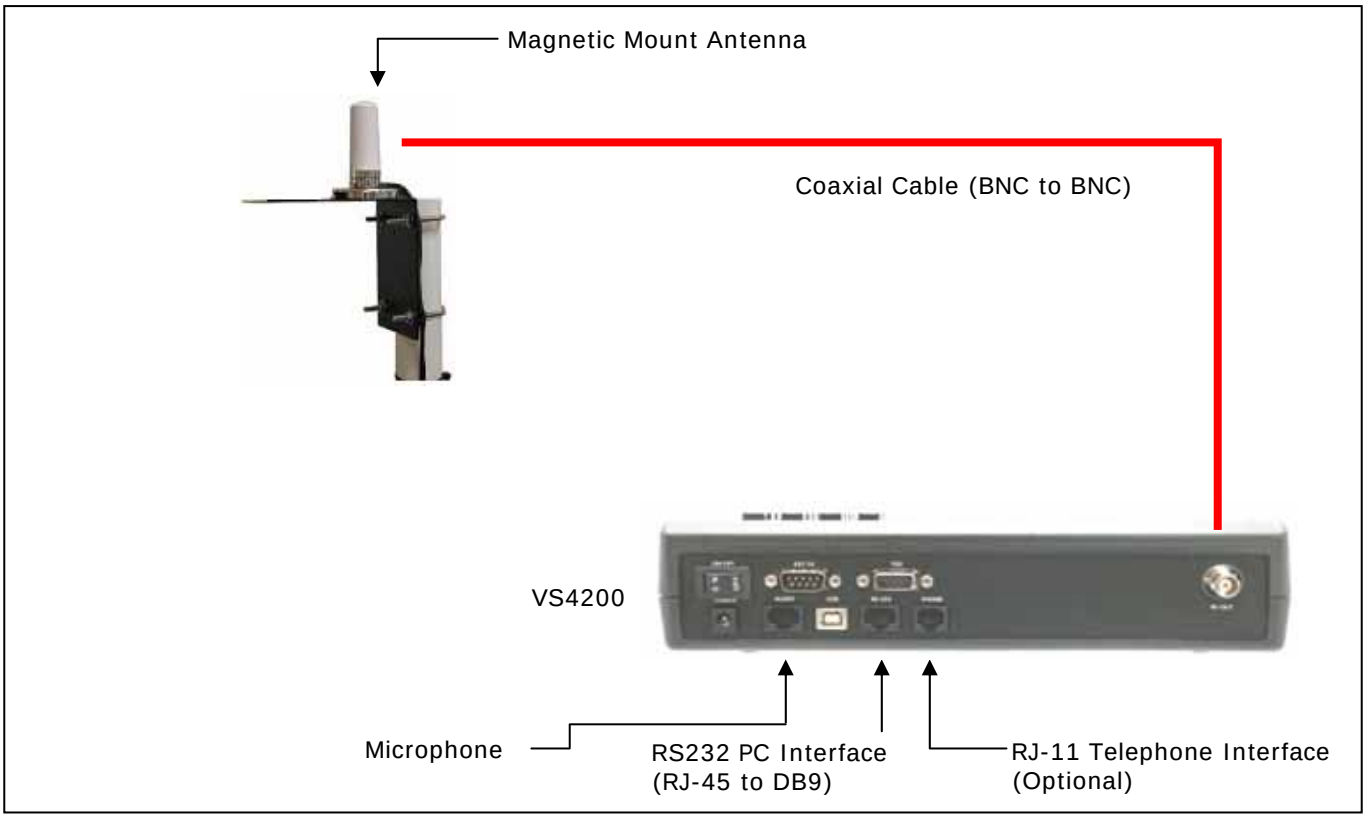
1. Make sure the encoder or tone generator is powered on and connected to the serial port on the PC.

2. To set the PC date and time manually, press **Update Now**. This will sycnronize 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.

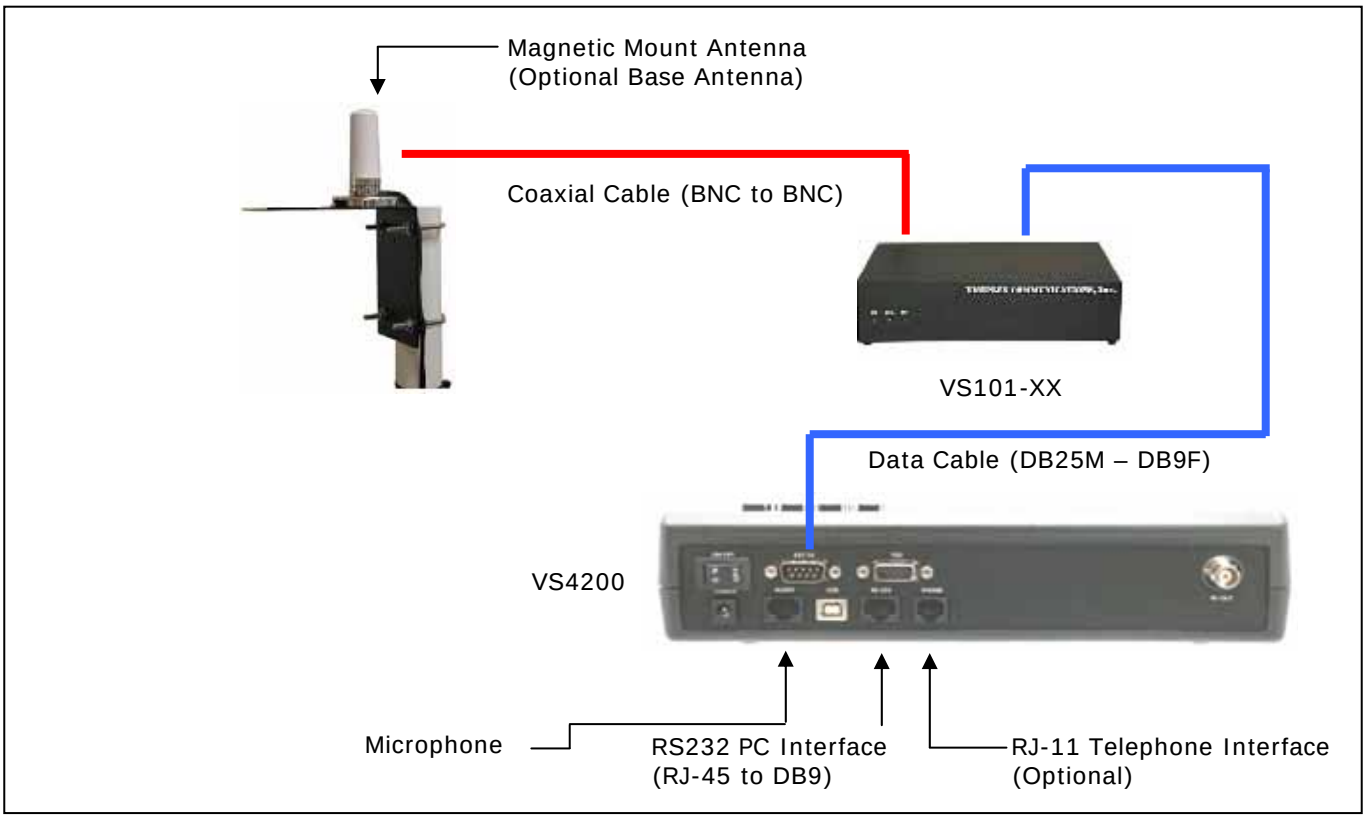
3. The automatic update is performed periodically according to the **Update Interval** . The **Status Date & Time** field displays the last date and time when the connected device clock was updated.

Appendices

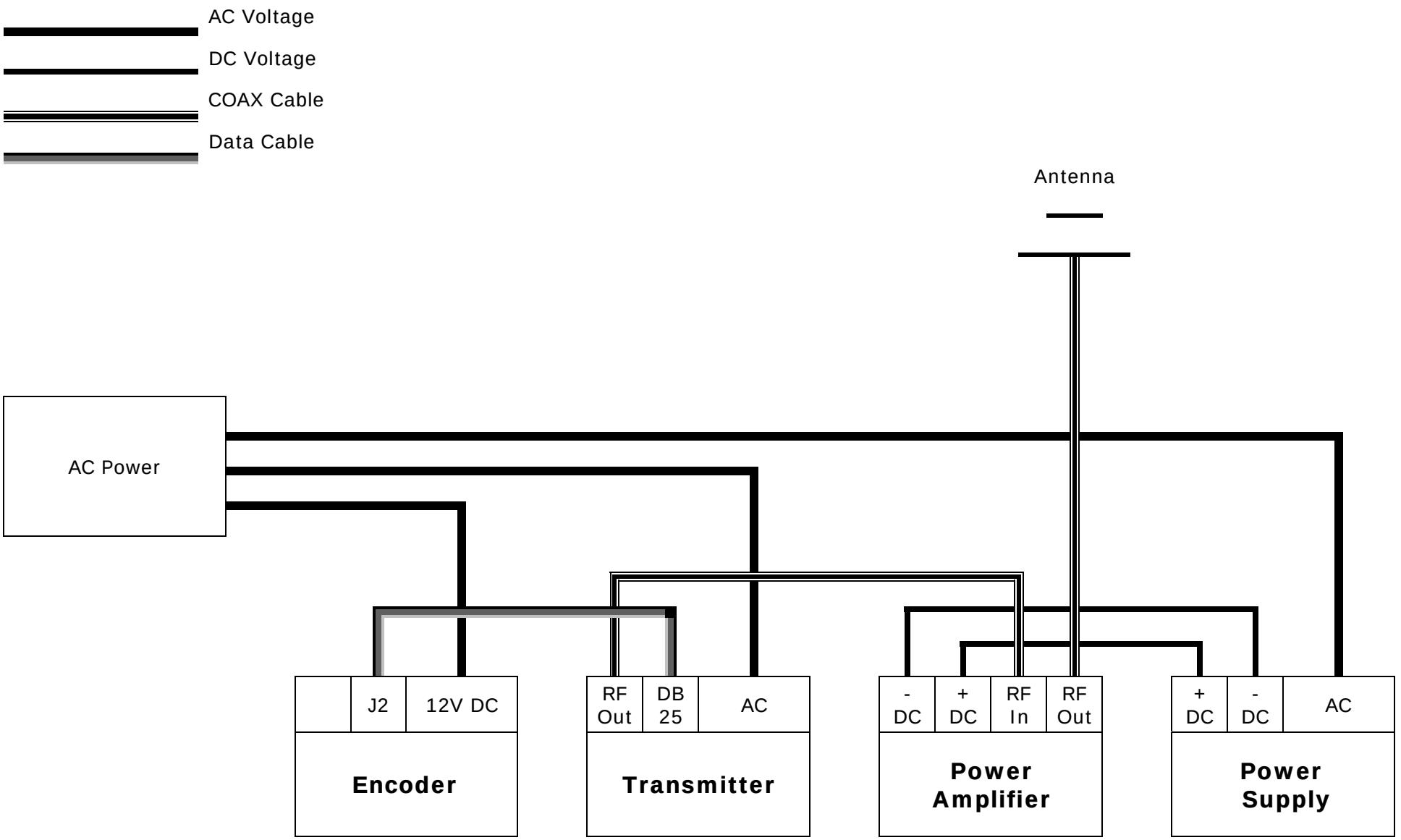
5.1 Appendix A – Installation Diagrams



Low Power System Installation Diagram



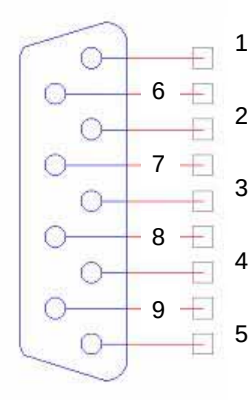
Medium Power System Installation Diagram



High Power System Installation Diagram

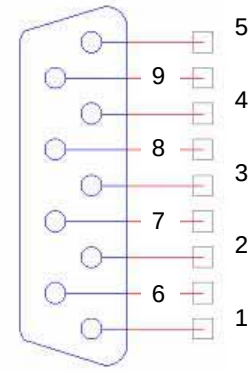
5.2 Appendix B – Connections, Wiring and Pin Out

5.2.1 External Transmitter Port Pin Out (EXT. TX)



1 – DIGITAL DATA (OUT)	6 – DATA IN (IN)
2 – DIGITAL PTT (OUT)	7 – INHIBIT (IN)
3 – N.C.	8 – N.C.
4 – N.C.	9 – N.C.
5 – GND	

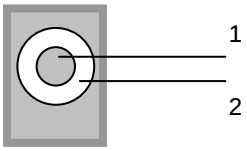
5.2.2 TSD Port Pin Out (TSD)



1 – PWR (OUT) / PTT (IN)*	6 – AUDIO IN*
2 – RX (RS232 IN)	7 – RTS (RS232 OUT)
3 – TX (RS232 OUT)	8 – N.C.
4 – DSR (RS232 OUT)	9 – N.C.
5 – GND	

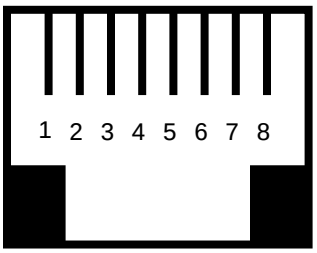
* Pin 1 and a GND pin are used to activate the VS4200 from an external system. The audio provided via Pin 6 will be transmitted according to the settings of device 200 in the VS4200 devices database.

5.2.3 Power Port Pin Out (POWER)



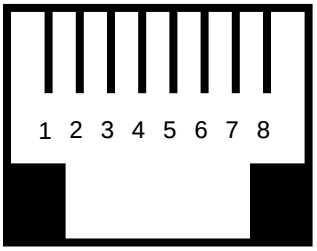
1 – POS (CENTER)
2 – GND

5.2.4 Audio Port Pin Out (AUDIO)



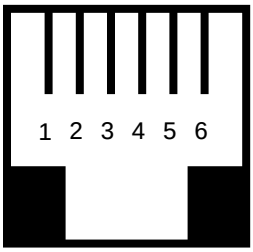
1 – N.C.	5 – GND
2 – N.C.	6 – N.C.
3 – MIC PTT (IN)	7 – N.C.
4 – MIC AUDIO (IN)	8 – N.C.

5.2.5 Serial Port Pin Out (RS-232)



1 – N.C.	5 – GND
2 – TX (OUT)	6 – DSR (OUT)
3 – RX (IN)	7 – GND
4 – N.C.	8 – N.C.

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
Paging Type	Wireless Bell/PA Speakers, Tone, Numeric, Alphanumeric
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	32º to 104º F / 0º to 40º C
Storage Temperature	14º to 140º F / -10º to 60º 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.
Warranty	1 Year, Parts and Labor

Internal Transmitter

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

Telephone Line (optional)

Input Impedance	600Ω 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, ± 1.5%,± 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.
100 N Fairway Drive, Suite 120
Vernon Hills, IL 60061
Phone: (847) 918-0250 or (877) 918-7243
Fax: (847) 918-0259
E-mail: support@visiplex.com
Website: www.visiplex.com
Business Hours: Monday-Friday, 9:00 AM - 5:00 PM Central Time.