Venue
Modular Receiver System

Installation Guide

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Change Page

April 29, 2005: Added MC65 1/4" TRS (stereo) plug to 3.5mm TRS (stereo) plug; 10 ft. long to packing list and to Walk Test Recorder.
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Introduction

The purpose of this guide is to assist in the setup and operation of the Venue System. This guide assumes familiarity with the Venue System, its components and software menus and setup screens. To get the most out of the Venue System, it is suggested to review the information presented in the Reference Manual.

A detailed online Help is also available to assist in the setup and operation of the Venue System using the USB interface and a Windows® 2000 or Windows® XP computer system. In addition to assistance setting up and operating the Venue System, the Help includes a complete listing of the VR General Commands. These commands can be used to setup and operate the Venue System via external devices using either the USB or RS232 serial port.

Unpacking the unit

The Venue System can be delivered in a number of configurations. Compare the packing list enclosed with the unit with the original order to ensure the proper system with the correct configuration has been delivered.

Inspect all items for damage. Immediately call 1-800-821-1121 to report any items that are missing or damaged. The sooner we get notified, the sooner we can get any needed replacement items shipped to your location.

A basic Venue System package includes:

1. Packing List
2. Venue Quick Start Guide
4. Frequency Compatibility Sheet and holder
5. Power Supply
6. Lectrosonics Screwdriver
7. DB9-TRS stereo mini cable (BLACK) for setup or control using Windows® 2000 or XP computer system
8. DB9 to TRS stereo mini cable (RED) for setup or control using touch panel control system
9. USB cable
10. MC65 1/4” TRS (stereo) plug to 3.5mm TRS (stereo) plug; 10 ft. long
11. CD-ROM with LecNet2™ software and documentation in Adobe Acrobat PDF files

In addition to the above list, up to six receiver modules may also be included plus antenna systems and coaxial cable assemblies.

Ensure that the receiver module’s frequency block range agrees with the frequency block range of the VRM chassis and the antenna systems/coaxial cables agree with what was ordered. Again, if there are any problems, call 1-800-821-1121 and ask for anyone in sales or service.
Front Panel Controls and Functions

The Venue System consists of a VRM (VR Master) and one to six individual receiver modules. The VRM front panel provides an easy-to-use LCD interface for system setup, monitoring and troubleshooting. During normal operation, the LCD shows RF and audio levels, diversity status, pilot tone status (where applicable) and transmitter battery status (when available) for all six receivers at the same time. Individual screens for each receiver are also available to provide additional information and adjustments.

A headphone jack and level control is provided for individual channel monitoring.

POWER Button
The POWER button is used both to control the application of power to the unit and to clear (or reset) the Scan Mode spectrum analyzer.

Pressing and holding the POWER button for at least two seconds turns the unit off.

Function Button
Used for special functions in selected Setup Screens.

LCD Screen
The LCD Screen is a graphics-type Liquid Crystal Display used to set up and monitor system operation. (See Setup and Operation Using LCD.)

PUSH FOR MENU/SELECT Rotary Control
The PUSH FOR MENU/SELECT (hereafter called the MENU/SELECT control) is a dual function control for navigating and selecting Setup Menus or Setup Screens, and for setting parameters within the Setup Screens.

LEVEL Control
The LEVEL control is used to adjust the output level of the front panel PHONES jack.

PHONES Jack
The stereo PHONES jack is provided for monitoring the audio output of selected receivers. Only the audio from a single receiver (or a diversity pair) selected via the Receiver Select Buttons will be present at this jack at any given time.

Receiver Select Buttons
The six Receiver Select Buttons are used to select individual installed receiver modules either for monitoring via the PHONES jack, or for setup and adjustment.

BACK Button
The Back Button is used to return to the previous menu or setup screen.

Pressing the BACK button from the SetUpRx menu returns to whatever screen was active prior to entering SetUpRx.
Rear Panel Features

The rear panel provides six balanced XLR audio outputs, two 50 Ohm BNC antenna inputs, two 50 Ohm BNC antenna outputs from an internal multicoupler, a power jack with a locking connector, and USB and RS-232 serial ports.

Power Input Jack

The power input jack accepts +10 VDC to +18 VDC (center pin is positive and sleeve is ground). The input is diode protected to prevent damage if the power is accidentally applied with reversed polarity. The unit will not operate until the correct polarity is restored.

Receiver Modules

Up to six receiver modules in two rows of three can be installed in each VRM. Spring loaded Receiver Module Retainer Clips ensure module connections are maintained during transport and installation.

XLR Audio Output Jacks

Six balanced audio output jacks using standard XLR connectors are provided to connect the Venue System to external equipment. The default value for receiver audio output is “in phase” in regard to the audio signal from the transmitter. This can be reversed using the Phase Setup Screen. (See VR Menu Functions, Phase.)

RS-232 Port

A serial RS-232 interface is provided for setup and control of the Venue System from computers or other devices using industry standard RS-232 communication links.

Antenna Input Jacks

Two BNC input connectors are provided for right-angle whip antennas, cables from remote antennas, or cables from another VRM. An internal multicoupler ensures the RF is applied equally to all installed Receiver Modules and also to the Antenna Output Jacks.

Antenna Output Jacks

Two pairs of 50 Ohm BNC output jacks provide zero-gain antenna “loop-throughs” for an additional receivers, allowing convenient expansion without the need for an external RF multicoupler or additional antenna systems.

Note

Venue Systems can be looped together successfully only when they cover the same frequency block range. Units outside of the frequency block range will experience substantial signal loss and very short operating range.

USB Port

Standard USB Version 1.1 connector for setup and control of the VRM from computer systems (Windows® 2000 or XP only) with a USB interface.
Installing/Removing Receiver Modules

Up to six Receiver Modules can be installed in a VRM chassis. These modules may be installed at the factory or added later.

Although the Venue System is quite flexible, any combination of Receiver Modules installed must be within the frequency block range of the VRM chassis. The frequency block range of the VRM chassis is displayed during the PowerUp Sequence.

Installing Receiver Modules

1. Ensure the Venue System is turned off and the power source has been disconnected. Slide the Receiver Module Connector firmly onto the Receiver Module Tab on the VR Master chassis.

   **Caution**
   
   *Do not force the Receiver Module onto the VRM Receiver Module Tab. If the module does not seat properly, look to see if its position is a little off. Excessive force may damage the module’s connector or the VRM’s Receiver Module Tab.*

2. Install a Receiver Module Retaining Clip between the rear of the Receiver Module and the VR Master chassis. Ensure this clip is firmly snapped into place.

Removing Receiver Modules

1. Ensure the Venue System is turned off and the power source has been disconnected.

2. Remove the Receiver Module in the reverse order of installation, i.e., remove the Receiver Module Retaining Clip, then slide the module off the Receiver Module Tab and remove it from the VRM chassis.

Installing the Venue System

The Venue Receiver is designed for standard rack mount installation. Each VRM chassis occupies a single rack space.

1. Physically install the VRM(s) in the desired location(s). There are no special ventilation requirements.

2. Connect the antennas (or antenna cables if remote antennas are being used) to the antenna input connectors on the rear panel of the VRM.

3. For multiple unit installations, connect coaxial patch cables from the Antenna A OUT and Antenna B OUT on the rear panel of the first VRM to the Antenna A IN and Antenna B IN of the second unit. Connect additional units in the same manner (Antenna A OUT to Antenna A IN and Antenna B OUT to Antenna B IN).
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It is possible to connect multiple Venue Systems to the same antenna system using standard 50 Ohm coaxial patch cables with BNC connectors as long as all units match the same frequency block range.

4. Plug the VR power supply into a suitable outlet and plug the power connector into the Power Input Jack. Repeat for each Venue System being installed.

5. Turn down the audio inputs on all the externally connected equipment, then connect them to the appropriate Audio Output XLR Jacks.

6. If the Venue System is to be set up using a computer system using a USB interface, connect a USB cable between the USB connector on the rear panel of the VRM and the computer system or a USB hub connected to the computer system.

7. Refer to "Setting Up the Venue System via the USB Port".
Setup and Operation Using LCD

Use the following procedures to setup and operate the Venue System using the front panel LCD, pushbuttons and controls.

These procedures assume there is at least one receiver module installed and that receiver module is installed in Slot 1. If there is at least one receiver module installed, but it is not in Slot 1, then use the lowest numbered slot where a receiver module is installed as the starting point for the following procedures.

For detailed information on the functions and setup screens used for these procedures, refer to the Venue System Reference Manual.

Resetting to Factory Defaults

Resetting to Factory Defaults can be of great benefit when everything is going wrong and it’s time to start back at the beginning. This is done by powering off the Venue System, then pressing and holding Receiver Select buttons 5 and 6 while powering up the system.

The Factory Default Settings are:

- **SetUpRx**
  - Level: +00 dBu
  - Phase: NORMAL
  - TxBatt: 9V ALK
  - SmartNR: NORMAL
  - PilotBP: NORMAL
  - Comp: Dig. Hybrid
  - Tuning: NORMAL MODE
  - DivMode: Switched

- **LockSet**
  - Lockset: NOT LOCKED

System Setup Checklist

The following is a general guideline for setting up the Venue System. It assumes that inventory has been taken and the general system configuration has been determined.

- Locate Clear Channels
- Set Diversity Modes
- Set Compatibility Modes, Audio Levels, etc.
- Set Transmitter and Receiver Module Channels
- Adjusting Audio Output
- Walk Test

Locate Clear Channels

Finding clear operating frequencies for multiple channel receivers, such as the Venue System, is a bit more complicated than single channel receivers. This is due to intermodulation, or interference from other transmitters. Minimizing this problem is critical to ensure quality audio. Regardless of which procedure is used to locate a clear channel, the clear channels discovered need to be compared with those listed on the Compatible Frequency Chart to ensure minimal intermodulation problems. (See Frequency Coordination.)

Using a Tuning Group to Locate a Clear Channel

1. Ensure all associated transmitters are turned off, then press Receiver Select Button "1." (See Venue System Controls and Functions in Venue Reference Manual.)

2. Use the MENU/SELECT control to access the Tuning Setup Screen, select "GROUP a," then press the BACK button until the Overview Screen is displayed.

3. Press Receiver Select Button "1" again to display the Receiver Detail Screen.

4. Rotate the MENU/SELECT control through the eight preselected frequencies for Tuning Group "a" while observing the RF Signal Strength meter in the Receiver Detail Screen. Any signal displayed indicates RF Interference. No RF signal strength indicates a clear channel. Record the Transmitter Frequency Select Switch Setting for all clear channels found.

5. Repeat for the remaining factory tuning groups (b, c and d). Compare the frequencies of the clear channels with the Compatible Frequency Chart to determine which channels are intermodulation free and can be used for the production. (See Frequency Coordination.)

Caution

Not referring to the Frequency Compatibility Chart may result in unwanted intermodulation problems.
Using Scan to Find Clear Channels
In crowded RF environments, it may not be possible to find enough clear channels using a Tuning Group. The internal spectrum scanner can be used to find clear channels. The Scan Function automatically selects two receivers (on from each frequency block) for spectrum scanning purposes. Normally, these receiver modules are "1" and "4." (See Scan Function in Venue Reference Manual.)

1. Ensure all associated transmitters are turned off and all Receiver Modules are set to NORMAL tuning mode. (See Tuning Setup Screen in Venue Reference Manual.)

2. Use the MENU/SELECT control to access Scan. (See Scan Function in Venue Reference Manual.) Allow the spectrum scanner to make several passes, then press the Function button to enter "Stop Mode."

3. Press Receiver Select button 1, then rotate the MENU/SELECT control while watching the cursor for Receiver Module 1. Stop in areas of minimal RF interference.

4. Press the Function button again to Zoom in and observe the area in greater detail. Rotate the MENU/SELECT control to zero in on an area with the least RF interference. Record the Transmitter Frequency Select Switch Setting for that frequency.

5. Press the Function button twice to return to Stop Mode and repeat Steps 3 and 4. Record the Transmitter Frequency Select Switch Settings for all the clear channels found.

6. Press Receiver Select button 4 and repeat Steps 3 through 5 for the selected receiver module in the upper frequency block.

7. Compare the frequencies of the clear channels with the Compatible Frequency Chart to determine which channels can be used for the production. (See Frequency Coordination.)

Caution
Not referring to the Frequency Compatibility Chart may result in unwanted intermodulation problems.

Set Diversity Modes
The Venue System offers three different Diversity modes of operation: SmartDiversity™ (switched), OptiBlend™ (ratio diversity) and Frequency Diversity. Regardless of which diversity mode is selected, receiver modules are always paired using the following combinations: 1-2, 3-4 and 5-6. However, in switched diversity operation, the individual Receiver Modules operate independently with each module having its own set of controls and indicators. (See SmartDiversity™ in Venue Reference Manual.)

In ratio diversity and frequency diversity modes, the paired receiver modules act as a set. Pressing the Receiver Select button for one member of the pair has the effect of selecting or operating on both receiver modules in the pair. (See OptiBlend™ and Frequency Diversity in Venue Reference Manual.)

Frequency diversity adds another facet in that it uses two transmitters requiring the transmitter outputs to be balanced in order for this mode to function correctly. (See Frequency Diversity Mode Audio Balancing.)

SmartDiversity (Switched Diversity) Setup
1. To set a receiver module pair for SmartDiversity™ operation, navigate to the DivMode Setup Screen.

2. Press the front panel Receiver Select Button for one of the receiver modules in the pair and then rotate the MENU/SELECT control to display "Switched." The Receiver Module boxes on the screen bottom will display "SWI" for both the selected receiver an its compliment. (In the example, Receiver Select button 5 or 6 was pressed.)
3. Repeat steps 2 and 3 for the remaining receiver module pairs to be set to switched diversity operation.

**OptiBlend (Ratio Diversity) Setup**

1. To set a receiver module pair for OptiBlend (ratio diversity) operation, navigate to the DivMode Setup Screen.
2. Press the front panel Receiver Select Button for either Receiver Module in the pair to be used for OptiBlend diversity. (In the example, Receiver Select button 5 or 6 was pressed.)
3. Rotate the MENU/SELECT control to display "Ratio". The Receiver Module boxes on the screen bottom will display "RAT" for both the selected receiver an its compliment.
4. Repeat steps 2 and 3 for the remaining receiver module pairs to be set to ratio diversity operation.

**Frequency Diversity Setup**

Frequency Diversity differs from the other two diversity modes in that it uses two receiver modules and two transmitters with each receiver module/transmitter combination operating on a different frequency. In order for Frequency Diversity to function properly, the audio outputs of the two transmitters must be balanced. (See Frequency Diversity Mode Audio Balancing to properly balance the audio output from each transmitter.)

**Note**

Both transmitters must be the same model.

1. To set a receiver module pair for frequency operation, navigate to the DivMode Setup Screen.
2. Press the front panel Receiver Select Button for either Receiver Module in the pair to be used for frequency diversity.
3. Rotate the MENU/SELECT control to display "Frequency". The Receiver Module boxes on the screen bottom will display "FRQ" for both the selected receiver an its compliment.
4. Repeat steps 2 and 3 for the remaining receiver module pairs to be set to frequency diversity operation.

**Set Compatibility Modes, Audio Levels, etc.**

This procedure assumes that the external equipment has already been connected to the appropriate XLR Audio Output Jacks on the VRM rear panel.

For receiver modules set to switched diversity, each receiver module in the diversity pair is set independently of the other member of the pair.

For receiver modules that are part of a ratio diversity or frequency diversity pair, setting the compatibility mode, audio levels, etc. for one member of the diversity pair, sets the same parameter for the other member of the diversity pair. The exception is for frequency diversity, battery status monitoring can be set for each individual transmitter.

**Setting Compatibility Modes**

Five compatibility modes are available for each receiver module to match various transmitter types. They are:

<table>
<thead>
<tr>
<th>Selection</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dig. Hybrid</td>
<td>HYB</td>
</tr>
<tr>
<td>Mode 3</td>
<td>M.3</td>
</tr>
<tr>
<td>200 Series</td>
<td>200</td>
</tr>
<tr>
<td>100 Series</td>
<td>100</td>
</tr>
<tr>
<td>IFB</td>
<td>IFB</td>
</tr>
</tbody>
</table>

The Compatibility Mode for each receiver module must match the transmitter associated with that module.

1. To set a receiver's compatibility mode, navigate to the Compat Setup Screen.
2. Use the Receiver Select buttons to select Receiver Module 1.
3. Rotate the MENU/SELECT control to display the desired Compatibility Mode. An abbreviation for the mode selected will be displayed in the Receiver Module box for the selected receiver(s).
5. Use the Receiver Select buttons to select the next Receiver Module, or next receiver module pair, and repeat Step 3.

**Shortcut**
It's possible to shorten setup times by copying the parameter of the currently selected receiver to other receivers. This is done by pressing and holding the Receiver Select button for current receiver module and pressing the Receiver Select buttons for all other receiver modules which are to receive the same parameter.

### Setting Audio Output Levels
This sets the audio output level at the Audio Output XLR Jacks. The front panel LEVEL control is only for setting the audio output level in the PHONES jack.

*Note*
In OptiBlend (ratio diversity) and Frequency Diversity modes, the Receiver Modules are paired (1-2, 3-4, 5-6). Setting the audio level output on one of the receivers in the pair, sets the audio output to the same level on its compliment.

1. Set the audio input level for any equipment connected to the Venue System's Audio Output XLR Jacks to minimum. (This is to avoid annoying or loud noises during setup.
2. Set the audio input level for the equipment connected to the XLR jack associated with Receiver Module 1 to the equipment manufacturer's recommendations.
3. Navigate to the Level Setup Screen, then use the Receiver Select buttons to select receiver module 1 and set the audio output level to 0 dBu.

*Note*
The 0 dBu setting is a starting point. The key is to provide as high a level signal as possible without overdriving the input to external equipment connected to the XLR Jack associated with the receiver module, or receiver module pair. This will minimize possible noise from the cables. Generally speaking, the higher the output level in the cables, the less you need to worry about cable noise.

4. Press Function to turn on the 1 kHz Tone (the Tone indicator will reverse, or go black with white letters) and rotate the MENU/SELECT control to optimize the input to the external equipment.

5. Press Function to turn off the 1 kHz Tone (the Tone indicator will go black with white letters) and repeat Step 4 for each receiver module.

### Setting Transmitter Battery Status Monitoring
1. Determine the types of transmitters being used and the types of batteries installed in the transmitters.

*Note*
In 200 Series and Digital Hybrid (400 Series) compatibility modes, battery telemetry is available and all TxBatt modes are valid. In all other compatibility modes, only the battery timer modes are valid. (See TxBatt Setup Screen in Venue System Reference Manual.)

2. Access the TxBatt Setup Screen.

*Note*
If the selected receiver module is part of a ratio diversity pair, then setting the TxBatt type monitoring for one receiver in the pair automatically sets the TxBatt type monitoring for the other receiver in the pair. If the selected receiver module is part of a frequency diversity pair, then each receiver in the pair is matched to a different transmitter so the TxBatt type monitoring setting is set independently of the other receiver module in the diversity pair.

4. Rotate the MENU/SELECT control to display the desired transmitter battery type, or timer for the style of battery used by the transmitter (9V or AA). (See TxBatt Setup Screen in Venue System Reference Manual.)

5. Repeat Steps 3 and 4 for each receiver module.

### Setting Noise Reduction
1. Access the SmartNR Setup Screen.
2. Select Receiver Module 1.

*Note*
If the selected Receiver Module is part of a ratio or frequency diversity pair, then setting the audio output level for one receiver in the pair automatically sets the other receiver in the pair to the same setting.
3. Rotate the MENU/SELECT control to display
the desired noise reduction setting:
NORMAL, FULL or OFF. (See SmartNR
Setup Screen in Venue System Reference
Manual.)

4. Repeat Steps 2 and 3 for each receiver
module, or receiver module pair.

Setting Transmitter and Receiver
Operating Frequencies

Using the clear channels discovered and recorded in the
Locate Clear Channels section, refer to the Compatible
Frequency Chart and select channels free from inter-
modation problems. (See Frequency Coordination.)

The following procedure uses Receiver Module 1 to
describe setting up transmitter and receiver channels. In
the event there is no receiver module installed in slot 1,
the same procedure can apply to any of the receiver
modules.

Note
The following procedure does not address possible problems
associated with non-Lectrosonic equipment. Interference problems
from non-Lectrosonics equipment is beyond the scope of this quick-
start guide.

1. From the Overview Screen, press Receiver
Select button "1" to Display the Receiver
Detail Screen for a Receiver Module 1.
Select a transmitter with the same Frequency
Block as Receiver Module 1 and set the
transmitter's Frequency Select Switches to
match the operating frequency assigned to
Receiver Module 1.

Note
In switched diversity mode, each transmitter/receiver module
combination operates independently. In ratio diversity mode, one
transmitter is assigned to a receiver pair. In frequency diversity
mode, two transmitter/receiver module combinations are paired.
The diversity pairs are always 1-2, 3-4, 5-6.

2. Repeat Step 1 for all the transmitter/receiver
module combinations.

3. Turn on the transmitter one at a time and
observe the RF Signal strength meter for the
associated receiver module in the Overview
Screen.

4. Repeat Step 3 until all transmitters are turned
on and good signal strength is verified at
each of the associated receiver strength, or
receiver module pairs.

5. Turn off one of the transmitters and observe
the RF signal strength for the corresponding
receiver or receiver pair in either the
Overview Screen or the Receiver Detail
Screen. The RF signal should drop to a
minimum.

If the RF signal does drop to a minimum, turn
the transmitter back on and repeat Step 3
through 4 for all transmitter/receiver module
combinations.

If RF is still present, an intermodulation
problem may exist, or external interference
that was not detected before may be present.
Select another compatible frequency and
repeat the entire procedure.

Note
Anytime a transmitter/receiver module combination is tuned to a
new frequency, it is necessary to repeat the entire procedure to
ensure the new frequency does not introduce new intermodulation
problems.

Frequency Diversity Mode Audio
Balancing

In this diversity mode, receiver modules are paired (1-2,
3-4 or 5-6), but each receiver module of the pair is
associated with its own transmitter.

Frequency Diversity has two modes of operation: normal
mode and test mode. Test mode is automatically acti-
vated when the DivMode Setup Screen is active and
Frequency Diversity is selected. In this mode, the audio
is always blended 50/50 to allow balancing of the trans-
mitters. On exiting the DivMode Screen, normal mode is
activated and the blending ratio depends on the RF
signal strengths from each transmitter.

Note
In Frequency Diversity mode, both transmitters must be the same
type and model. For example, a Lectrosonics 200 Series transmitter
and Digital Hybrid (400 Series) transmitter will not work as a pair
in Frequency Diversity Mode regardless of the Compatibility Mode
setting. Using identical transmitters is highly recommended.

1. Verify that the compatibility modes of the
receiver modules match the associated
transmitters and that the transmitters are of
the same type and model.

2. Setup the transmitters according to the
manufacturer's recommendations.


4. Plug a set of headphones into the front panel
PHONES jack to monitor the blended output.
(It is also possible to monitor the output via
external equipment plugged into a rear panel XLR jacks corresponding to one of the members of the frequency diversity pair.)

5. Monitor the blended output while adjusting the Mic Level controls (audio volume) of one of the transmitters. If the output does not null, then reset the transmitter’s Mic Level control and press the Function button to invert (INVT) the audio output phase on the second receiver of the Frequency Diversity pair. Repeat the procedure until the deepest null is achieved.

Note
It may be necessary to toggle the INVT function several times until the deepest null is achieved.

6. Press the Function button to ensure the INVT function is in the Off position.

7. Repeat Steps 1 through 7 for each receiver module pair set to Frequency Diversity Mode.
Installing LecNet2™ Software and USB Driver

Part of the LecNet2™ software package is the VRpanel for the Venue Receiver. This Graphical User Interface (GUI) is designed to allow easy setup and monitoring of the Venue Receiver using a computer system running the Windows® 2000 or XP operating system.

Installing LecNet2™ Software

1. Remove any previously installed versions of LecNet2™ software. (This will ensure you are using the latest release.)

2. Insert the LecNet2™ program disk supplied with the Venue Receiver into the CD-ROM drive on the computer system that will be used to set up and control the Venue Receiver.

3. The CD should automatically start the installation procedure. If it doesn’t, click “Start” on the Windows Task Bar then click “Run...” Enter the Drive letter (“E” in the example) followed by “Setup.exe” as shown below.

4. Follow the on-screen instructions to install the LecNet2™ software and the VR Panel for the Venue Receiver.

Installing the LecNet2™ USB Driver

There are two ways to connect a Windows®-based computer system to the VRM: a USB cable or an RS-232 cable. Although the USB port offers increased speed and convenience over standard RS-232 links, it does require the installation of a LecNet2™ USB driver.

The LecNet2™ USB driver is not part of the standard Windows® 2000 and XP driver libraries; therefore, connecting a computer system to the VR for the first time differs from subsequent installations. There are a few differences between installing the LecNet2™ USB drivers on Windows 2000 versus Windows XP systems.

USB Driver Installation (Windows XP) - First Time

When the VR is connected to a Windows XP computer system for the very first time, the Windows® Found New Hardware Wizard automatically opens. Use the following procedure to install the LecNet2™ USB driver using the Wizard.

1. Place the LecNet2™ Installation Disk in the PC’s CD-ROM drive.

2. On the first page of the Wizard, select Install from a list or specific location (Advanced) and click “Next” to continue.

3. Select “Search for the best driver in these locations.”, then check the box for “Search removable media (floppy, CD-ROM...)” and click Next> to continue to the next page.
4. Windows will search the CD for the driver and when it has found it. If a dialog box opens warning you that the driver has not passed Windows Logo Testing, click "Continue Anyway".

5. When the driver installation is complete, the final page of the Wizard appears. Click "Finish" to close the Found New Hardware Wizard.

USB Driver Installation (Windows XP) - Subsequent Installations

The Windows XP operating system regards all LecNet2™ devices as separate USB devices because each has a unique serial number. Because of this, Windows XP will want to install the USB driver every time it encounters a LecNet2™ device whose serial number it does not recognize. However, the process is simplified if the LecNet2™ USB driver has already been installed at least once before on the same computer system. Use the following procedure if the LecNet2™ USB driver was previously installed on the computer system.

1. On the first page of the Wizard, select Install the software automatically (Recommended) then click "Next>".

2. Windows will discover the previously installed driver. If a dialog box opens warning you that the driver has not passed Windows Logo Testing, click "Continue Anyway".

3. When the driver installation is complete, the final page of the Wizard appears. Click "Finish" to close the Found New Hardware Wizard.

USB Driver Installation (Windows 2000) - First Time

Use the following procedure when LecNet2™ device is connected to the Windows 2000-based PC for the first time.

1. Connect a USB cable between the Venue Receiver's USB port and the USB power on the computer system. Place the LecNet2™ Installation Disk in the PC's CD-ROM drive and click "Next>" to display the next page.

2. Select Search for a suitable driver for my device (recommended) and click "Next>" to continue.
3. Check only **CD-ROM drives** then click "Next>" to search the LecNet2™ CD for the USB driver.

4. When the driver is found, the LecNet2™ device name will be displayed along with the location of the driver. Click "Next>" to install the driver. (The device found will actually say "VR" instead of the "DM1624" that appears in this example.)

5. Click "Finish" when the installation is complete.

**USB Driver Installation (Windows 2000) - Subsequent Installations**

Once the LecNet2™ USB driver is installed in a Windows® 2000 system device, and subsequent LectNet2 USB devices will invoke the **Found New Hardware Wizard** which will automatically load the LecNet2™ USB driver for the new device.
Setting Up the VR System Via USB Port

Once the LecNet2™ software and USB drivers have been installed (see Installing LecNet2™ Software and USB Driver), setting up the Venue System using a Windows® 2000 or XP computer system is possible.

The following procedure is designed to assist new users to access the VRpanel and provide a basic understanding of the layout. More detailed explanations concerning usage and configuration using VRpanel are contained in the online Help.

Help also documents the VR General Commands used by external devices, including those produced by AMX™ and Crestron™, that can be used to operate and control the VR system.

Opening VRpanel

1. On the computer desktop, click Start then All Programs to display the list of programs installed on the computer. Point to LecNet2 and select VRpanel for Venue Receiver from the LecNet2 submenu to load the VRpanel - How To Begin dialog.

2. Select I would like to Add VR detected via USB and click OK.

3. The Add VR(s) via USB dialog lists the ID & Serial Number of all Venue Systems connected to the computer via the USB. Click on the Venue System to be monitored or configured to display the VRpanel for that system.

VRpanel Main Window

There are four major elements to the VRpanel Main Window: Menu Bar, Venue System Information, Installed Receiver Modules and Information Bar. The following information provides a short description of the VRpanel. For a more detailed explanation of Venue System set up and operation via the USB port, refer to the online Help.

Menu Bar

The Menu Bar list the menus used building and editing configurations, upgrading firmware and accessing Help. These include the File menu, Configuration menu and Help menu.

File Menu

The File menu contains commands for loading and saving configurations, upgrading firmware and the EXIT command.

Configuration Menu

The Configuration menu is used to build a configuration by detecting and adding VR systems. It also allows
configurations to be constructed offline via the Add Offline command. The addition of Venue Systems to the VRpanel.

Help Menu
Help provides access to the online Help file, VRpanel demonstration mode and an About Box featuring the VRpanel's current version number.

The Help file offers users detailed information on the setup and operation of the Venue System.

Client Area
The Client Area holds one or more panes, each graphically representing one VR system. Each pane, in turn, holds from one to six plug-in receiver modules (receiver modules). An information line at the top of each pane identifies the VR System USB Identification and frequency block range.

Popup Menu
Because VRpanel is capable of monitoring and controlling more than one VR system, none of the commands available through the Menu Bar are available for individual systems. To work directly with a specific VR system, right-click anywhere in its pane to open a popup menu. This menu includes commands for configuring the VRs receiver modules, running the spectrum scanner, real-time recording of a walk test, resetting the current VR system back to factory defaults or deleting the current VR system from VRpanel.

Set Up VR
The Set Up VR dialog is used to control all the stored settings for the currently selected VR system.

This dialog allows for convenient selection and setup of all installed receiver modules in the currently selected VR system and global settings for the VRM. It consists of three sections: Plug-In Receiver Selection, Plug-In Receiver Settings and Master Settings. Changes to any of the Plug-In Receiver Settings are done in real time.

Spectrum Scan
There are three sections to the Spectrum Scan dialog box: cursors, spectrum scanner and command buttons.

Cursors controls cursor selection (and thus the tuning of the selected receiver module). The cursor for the selected receiver module appears as a dashed line in the spectrum scanning section and its frequency detail is displayed to the right of the cursor radio buttons. This information includes the frequency block number, transmitter frequency select switch settings, operating frequency and TV channel.

When this dialog initially appears, a cursor will be located at the set operating frequency for each installed receiver module, or receiver module pair. Clicking Run starts the spectrum scanner. A separate cursor moves to identify the real-time location of the scan within each frequency block.

Moving any of the cursors automatically changes the operating frequency for the corresponding Receiver Module, or module pair depending on the diversity mode.
Receivers 1&2 in Ratio Diversity Mode, Rest in Switched Diversity Mode

Clicking **Stop** suspends the scan. Clicking **Run** resumes the scan. Clicking **Clear** stops the scan and clears the spectrum data.

**Walk Test Recorder**

The Walk Test Recorder offers a convenient method of testing the operation of the selected receiver module (or receiver module pair) with their corresponding transmitters. The Walk Test Recorder makes a chart recording of the RF signal strength aligned with an audio recording of the receiver modules output.

Use the MC65 cable (supplied with unit) to connect the PHONES jack output on the Venue Receiver front panel to the computer system’s audio input.

Click the Record button to start the Walk Test Recorder and the Stop button to stop the recording process. It is suggested to mention locations frequently during this test to more easily identify problem areas.

**Factory Defaults**

Clicking this menu item restores the selected Venue System to the factory default settings.

The Factory Default Settings are:

- **SetUpRx**
  - Level: +00 dBu
  - Phase: NORMAL
  - TxBatt: 9V ALK
  - SmartNR: NORMAL
  - PilotBP: NORMAL
  - Compat: Dig. Hybrid
  - Tuning: NORMAL MODE
  - DivMode: Switched

- **LockSet**
  - Lockset: NOT LOCKED

**Delete VR**

Clicking the Delete VR menu item deletes the current Venue System from the VRpanel.
Intermodulation interference is a problem constantly lurking in the background, especially when working in environments where multiple productions are taking place simultaneously in relative close proximity. In these cases, proper frequency coordination is a must. There are basically three methods coordinate frequencies:

- Use the Compatible Frequency Chart
- Scan for clear channels (See Scan Function and Using Scan to Find Clear Channels)
- Call Lectrosonics

### Compatible Frequency Chart

Because the Venue System includes one to six Receiver Modules per unit, each unit can handle up to six independent wireless channels. Considering that multiple Venue Systems can be used in a production, coordinating frequencies to minimize interference between these channels can be a daunting process.

The Compatible Frequency Chart was designed to assist in minimizing intermodulation problems for multiple channel wireless systems. It does this by identifying potential intermodulation problems and listing compatible frequencies and frequency groups. This chart can be used with all Digital Hybrid Wireless™ (400 Series) receivers.

The Compatible Frequency Chart divides the frequency blocks used in the North American market into Row 1 and Row 2, then further divides each row into two groups of eight frequencies each. These frequency groups are labeled A and B and C and D, and correspond to the factory set frequency groups (Groups A, B, C and D) described in the Tuning Setup Screen. (See Compatible Frequency Chart.)

Understanding and using the Compatible Frequency Chart is not as difficult as it first appears. There are a few basic rules to follow:

**Rule No. 1**
Row 1 and Row 2 live in two different worlds. The frequencies in Row 1 are not compatible with the frequencies in Row 2.

### Compatible Frequency Chart

<table>
<thead>
<tr>
<th>BLOCK 21</th>
<th>BLOCK 22</th>
<th>BLOCK 23</th>
<th>BLOCK 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREQ</td>
<td>SW SET</td>
<td>US TV CH</td>
<td>FREQ</td>
</tr>
<tr>
<td>538.100</td>
<td>0.5</td>
<td>tv25</td>
<td>563.700</td>
</tr>
<tr>
<td>538.700</td>
<td>0.8</td>
<td>tv25</td>
<td>564.300</td>
</tr>
<tr>
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<td>1.4</td>
<td>tv25</td>
<td>565.200</td>
</tr>
<tr>
<td>540.200</td>
<td>1.8</td>
<td>tv25</td>
<td>565.800</td>
</tr>
<tr>
<td>541.500</td>
<td>2.7</td>
<td>tv25</td>
<td>567.100</td>
</tr>
<tr>
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<td>3.0</td>
<td>tv26</td>
<td>568.000</td>
</tr>
<tr>
<td>542.900</td>
<td>3.5</td>
<td>tv26</td>
<td>568.500</td>
</tr>
<tr>
<td>543.700</td>
<td>3.9</td>
<td>tv26</td>
<td>569.300</td>
</tr>
<tr>
<td>550.100</td>
<td>7.0</td>
<td>tv27</td>
<td>575.700</td>
</tr>
<tr>
<td>552.300</td>
<td>9.3</td>
<td>tv27</td>
<td>577.900</td>
</tr>
<tr>
<td>553.000</td>
<td>9.8</td>
<td>tv27</td>
<td>578.600</td>
</tr>
<tr>
<td>554.300</td>
<td>A,7</td>
<td>tv28</td>
<td>579.900</td>
</tr>
<tr>
<td>556.100</td>
<td>B,9</td>
<td>tv28</td>
<td>581.700</td>
</tr>
<tr>
<td>557.000</td>
<td>C,2</td>
<td>tv28</td>
<td>582.600</td>
</tr>
<tr>
<td>559.600</td>
<td>D.C</td>
<td>tv28</td>
<td>585.200</td>
</tr>
<tr>
<td>561.900</td>
<td>F,3</td>
<td>tv29</td>
<td>587.500</td>
</tr>
</tbody>
</table>

### Note

Refer to the Compatibility Frequency Chart’s Compatible and Incompatible frequency combinations. (Only frequency blocks 21 and 22 are shown for illustrative purposes.)
### Compatible

The following frequency combinations have no intermodulation problems.

### Incompatible

The following frequency combinations have intermodulation problems and should not be used.

#### Compatible Frequency Chart (cont.)

<table>
<thead>
<tr>
<th>BLOCK 25</th>
<th>BLOCK 26</th>
<th>BLOCK 27</th>
<th>BLOCK 28</th>
<th>BLOCK 29</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREQ</td>
<td>SW SET</td>
<td>US TV CH</td>
<td>FREQ</td>
<td>SW SET</td>
</tr>
<tr>
<td>640.500</td>
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<td>tv42</td>
<td>666.100</td>
<td>0.5</td>
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<tr>
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<td>1.4</td>
<td>tv42</td>
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<td>1.4</td>
</tr>
<tr>
<td>642.600</td>
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<td>1.9</td>
</tr>
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<td>2.7</td>
</tr>
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<td>670.400</td>
<td>3.0</td>
</tr>
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<td>670.900</td>
<td>3.5</td>
</tr>
<tr>
<td>646.100</td>
<td>3.0</td>
<td>tv43</td>
<td>671.700</td>
<td>3.0</td>
</tr>
<tr>
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<td>tv44</td>
<td>678.100</td>
<td>7.0</td>
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<td>680.100</td>
<td>9.4</td>
</tr>
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<td>A.7</td>
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<td>tv45</td>
<td>684.100</td>
<td>B.9</td>
</tr>
<tr>
<td>659.400</td>
<td>C.2</td>
<td>tv45</td>
<td>685.000</td>
<td>C.2</td>
</tr>
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<td>687.600</td>
<td>D.C</td>
</tr>
<tr>
<td>664.300</td>
<td>F.3</td>
<td>tv46</td>
<td>689.900</td>
<td>F.3</td>
</tr>
</tbody>
</table>

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**Modular Digital Hybrid Wireless™ Receiver System**
frequencies in Row 2. If you are forced to use frequencies from Row 1 with frequencies from Row 2, be aware that intermodulation problems may exist.

**Rule No. 2**

Frequencies within an individual frequency block in the same row are compatible. For example, all 16 frequencies within Row 1, Block 21 are compatible, and all frequencies in Row 2 Block 21 are compatible. However, frequencies in Row 1, Block 21 are not compatible with the frequencies in Row 2, Block 21. If possible, it is highly recommended to choose frequencies that are in the same row and same group. For example, stick with frequencies in Row 1 Group A, or Row 2 Group D rather than choosing frequencies from Row 1 Groups A and B.

**Rule No. 3**

Some frequencies in adjacent blocks are compatible and some are not. Refer to the "Compatible/Incompatible" illustration on previous page which shows compatible and incompatible frequency relationships.

By following the three rules, it is possible to locate a number of potential clear operating frequencies early in the production that are intermodulation free, then refine the list during system setup.

**Using the Scan Function**

Refer to the section titled "Using Scan to Find Clear Channels" for details on how to use the built-in spectrum scanner.

Interference can result from a wide variety of sources including TV station signals, other wireless equipment in use nearby, or from intermodulation within the Venue system itself. The RF spectrum analyzer built into the Venue system uses a receiver in each frequency block to scan the tunable spectrum and find clear channels with little or no interference. After scanning and finding the needed number of clear channels, one final procedure is necessary to verify the compatibility of the chosen frequencies.

Turn on all transmitters and receivers and verify there is a strong RF signal for each receiver. Turn each transmitter off one at a time and observe the RF level indicator on the matching receiver. The RF level should disappear or drop to a very low level. If it does not, change frequency on that receiver and transmitter and try it again. Any time a frequency is changed on any of the systems in use, you must start at the beginning and go through this procedure for all systems. This will test for higher order intermodulation from all signal sources and avoid interference.

**Call Lectrosonics**

Lectrosonics uses a proprietary computer program to perform thousands of calculations and identify various interfering signals. Potential problems and trouble areas can be identified in advance, and proposed new frequencies or other solutions can be suggested. This service is offered to authorized Lectrosonics dealers and other customers who are using Lectrosonics® wireless microphone and wireless IFB systems.
The Venue System is designed for rack mounting. Although it can be operated with two right angle BNC antennas, it is suggested for maximum reception to use remote antennas such as the SNA600 or ALP700. Position the remote antennas at least three or four feet apart and not within three or four feet of large metal surfaces. If this is not possible, try to position the antennas so that they are as far away from the metal surface as is practical. It is also good to position them so that there is a direct “line of sight” between the transmitter and the receiver antennas.

In situations where the operating range is less than about 100 feet, the antenna positioning is much less critical. However, the length of the cabling between antennas and the system is critical. Long cable runs can experience serious signal loss. Lectrosonics offers in-line RF amplifiers suitable for compensating for this signal loss. Contact your dealer or the factory for more information.

A wireless transmitter sends a radio signal out in all directions. This signal will often bounce off nearby walls, ceilings, etc. and a strong reflection can arrive at the receiver’s antennas along with the direct signal. If the direct and reflected signals are out of phase with each other a cancellation may occur. The result is a “dropout.” A dropout can sound like audible noise (hiss or swishing), or in severe cases, it may result in a complete loss of both the carrier and the sound. Moving the transmitter even a few inches will change the sound of the dropout, or may even eliminate it. A dropout situation also may be either better or worse as a crowd fills or leaves the room.

The Venue System offers a several sophisticated diversity designs which can overcome most dropout problems. In the event, however, that you do encounter a dropout problem, first try moving the one of the remote antennas at least three or four feet from its current location. This may alleviate the dropout problem at that location. If dropouts are still a problem, try moving the antennas to entirely different locations.

Lectrosonics transmitters radiate power very efficiently, and our receivers are very sensitive. This reduces dropouts to an insignificant level. If, however, you do encounter dropouts frequently, call the factory or consult your dealer. There is probably a simple solution.
Service and Repair

If your system malfunctions, you should attempt to correct or isolate the trouble before concluding that the equipment needs repair. Make sure you have followed the setup procedure and operating instructions. Check out the interconnecting cords and then go through the TROUBLESHOOTING section in the manual.

We strongly recommend that you do not try to repair the equipment yourself and do not have the local repair shop attempt anything other than the simplest repair. If the repair is more complicated than a broken wire or loose connection, send the unit to the factory for repair and service. Don’t attempt to adjust any controls inside the units. Once set at the factory, the various controls and trimmers do not drift with age or vibration and never require readjustment. There are no adjustments inside that will make a malfunctioning unit start working.

LECTROSONICS’ service department is equipped and staffed to quickly repair your equipment. In warranty repairs are made at no charge in accordance with the terms of the warranty. Out-of-warranty repairs are charged at a modest flat rate plus parts and shipping. Since it takes almost as much time and effort to determine what is wrong as it does to make the repair, there is a charge for an exact quotation. We will be happy to quote approximate charges by phone for out-of-warranty repairs.

Returning Units for Repair

You will save yourself time and trouble if you will follow the steps below:

A. DO NOT return equipment to the factory for repair without first contacting us by letter or by phone. We need to know the nature of the problem, the model number and the serial number of the equipment. We also need a phone number where you can be reached 8 am to 4 pm (Mountain Standard Time).

B. After receiving your request, we will issue you a return authorization number (R.A.). This number will help speed your repair through our receiving and repair departments. The return authorization number must be clearly shown on the outside of the shipping container.

C. Pack the equipment carefully and ship to us, shipping costs prepaid. If necessary, we can provide you with the proper packing materials. UPS is usually the best way to ship the units. Heavy units should be “double-boxed” for safe transport.

D. We also strongly recommend that you insure the equipment, since we cannot be responsible for loss of or damage to equipment that you ship. Of course, we insure the equipment when we ship it back to you.

Mailing address:
Lectrosonics, Inc.
PO Box 15900
Rio Rancho, NM 87174
USA

Shipping address:
Lectrosonics, Inc.
581 Laser Rd.
Rio Rancho, NM 87124
USA

Telephones:
Regular: (505) 892-4501
Toll Free (800) 821-1121
FAX: (505) 892-6243

Web: http://www.lectrosonics.com
Email: sales@lectrosonics.com
LIMITED ONE YEAR WARRANTY

The equipment is warranted for one year from date of purchase against defects in materials or workmanship provided it was purchased from an authorized dealer. This warranty does not cover equipment which has been abused or damaged by careless handling or shipping. This warranty does not apply to used or demonstrator equipment.

Should any defect develop, Lectrosonics, Inc. will, at our option, repair or replace any defective parts without charge for either parts or labor. If Lectrosonics, Inc. cannot correct the defect in your equipment, it will be replaced at no charge with a similar new item. Lectrosonics, Inc. will pay for the cost of returning your equipment to you.

This warranty applies only to items returned to Lectrosonics, Inc. or an authorized dealer, shipping costs prepaid, within one year from the date of purchase.

This Limited Warranty is governed by the laws of the State of New Mexico. It states the entire liability of Lectrosonics Inc. and the entire remedy of the purchaser for any breach of warranty as outlined above. NEITHER LECTROSONICS, INC. NOR ANYONE INVOLVED IN THE PRODUCTION OR DELIVERY OF THE EQUIPMENT SHALL BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL, OR INCIDENTAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THIS EQUIPMENT EVEN IF LECTROSONICS, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL THE LIABILITY OF LECTROSONICS, INC. EXCEED THE PURCHASE PRICE OF ANY DEFECTIVE EQUIPMENT.

This warranty gives you specific legal rights. You may have additional legal rights which vary from state to state.