



**Standalone Voice/IP Gateway
Model MVP200**

Proprietary Mode

Quick Start Guide



Quick Start Guide

S000336A Revision A

MultiVOIP 200 (Model MVP200)

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Patents

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Introduction

Welcome to Multi-Tech's stand-alone Voice/IP Gateway, the MultiVOIP, model MVP200. The MultiVOIP allows analog voice and fax communication over an IP network. Multi-Tech's new voice/fax gateway technology allows voice and fax communication to ride, with no additional expense, over your existing IP network, which has traditionally been data-only. To access this free voice and fax communication, all you have to do is connect the MultiVOIP to your telephone equipment, and then to your existing Internet connection. Once configured, the MultiVOIP then allows voice and fax to travel down the same path as your traditional data communications.

The MVP200 has two independent voice/fax channels (each with three voice/fax interfaces), a 10 Mbps Ethernet LAN interface, and a command port for configuration.

System management is provided through the command port using bundled Windows® software which provides easy-to-use configuration menus and online Help.

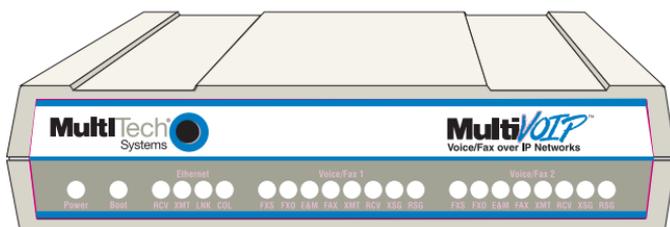


Figure 1. MultiVOIP

Related Documentation

The MultiVOIP200 Quick Start Guide is intended to be used by qualified systems administrators and network managers. This quick start provides the necessary information for a qualified person to unpack, cable, load software, and configure the unit for proper operation.

A detailed MultiVOIP200 User Guide is also provided on the system CD with your unit and provides in-depth information on the features and functionality of Multi-Tech's MultiVOIP.

The User Guide is produced using Adobe Acrobat™. To view or print your copy of a user guide, install Acrobat Reader™ on your computer. The Acrobat Reader is included on your system CD or is available as a free download from Adobe's Web site at <http://www.adobe.com>.

Once loaded on your computer, launch the Reader and select the .pdf file from the CD.

The MultiVOIP200 User Guide is also available on Multi-Tech's Web site at <http://www.multitech.com>.

Viewing and printing a user guide from the Web also requires that you have the Acrobat Reader loaded on your system. To select the MultiVOIP200 User Guide from the MTS home page, click **Support | Manuals** and then click **MultiVOIP** in the product list. All MultiVOIP documents will be displayed and you can choose User Guide (MVP200) to view or download the .pdf file.

Installing Your MultiVOIP

The basic steps of installing your MultiVOIP network involve unpacking the units, connecting the cables, and configuring the units using the included management software (MultiVOIP Configuration). The recommended installation process includes three phases that, when completed, result in a fully functional Voice Over IP network. A general description of each phase is provided below, and detailed instructions follow throughout the rest of this section.

Configure and Install Your Host MultiVOIP

As the first step, the VOIP administrator configures the MultiVOIP designated as the “Host” unit. This includes the assignment of a unique LAN IP address, subnet mask, and Gateway IP address; as well as the selection of appropriate channel interface type for each of the Voice/Fax channels. Once all connections have been made, the VOIP administrator configures the unit and builds the Phone Directory Database that will reside with the Host unit.

Configure Your Client MultiVOIPs

Once installation has been completed, the administrator moves on to configure the MultiVOIPs designated as “Client” units. Again, unique LAN IP addresses, subnet masks, and Gateway IP addresses are assigned, and each Voice/Fax channel is configured for the appropriate channel interface type. When this is done, the Phone Directory Database option is set to Client, and the IP address of the Host MultiVOIP is entered. Once all Client units are configured, the VOIP network can be deployed.

Deploy the VOIP Network

The final phase of the installation is deployment of the network. Through the first two phases, the VOIP administrator controls configuration, so when the Client MultiVOIPs are sent to their remote sites, the remote site administrators need only to connect the units to their LAN and telephone equipment. A full Phone Directory Database (supplied by the Host MultiVOIP) will be loaded into their unit within minutes of being connected and turned on.

The final task of the VOIP Administrator is to develop the VOIP Dialing Directory based on the Phone Directory Database and telephone numbers of the interfacing telephone equipment; at which point, a VOIP user can call any person on the VOIP network.

Unpacking Your MultiVOIP

Remove all items from the box (See Figure 2).

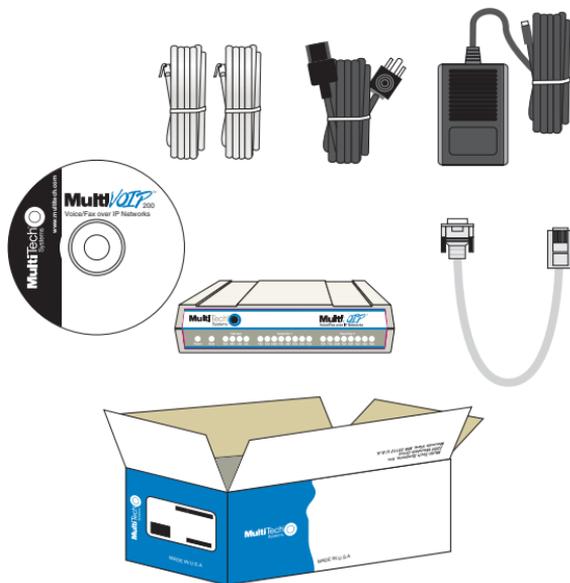


Figure 2. Unpacking

Safety Warnings

Caution: Danger of explosion if battery is incorrectly replaced.

A lithium battery on the voice/fax channel board provides backup power for the time keeping capability. The battery has an estimated life expectancy of ten years.

When the battery starts to weaken, the date and time may be incorrect. If the battery fails, the board must be sent back to Multi-Tech Systems for battery replacement.

The E&M, FXS, and Ethernet ports are not designed to be connected to a Public Telecommunication Network.

Cabling Your MultiVOIP

Cabling your MultiVOIP involves making the proper Power, Command Port, phone system, and Internet connections. Figure 3 shows the back panel connectors and the associated cable connections. The following procedure details the steps necessary for cabling your MultiVOIP.

Before starting to cable your MultiVOIP, perform the E&M Jumper Block Positioning Procedure, which immediately follows the Cabling Procedure, if either voice/fax channel (1 or 2) will be connected to an E&M trunk that is a Type 1, 3, 4, or 5 rather than a Type 2 (the default).

1. Connect the power supply to a live AC outlet, then connect it to the MultiVOIP as shown in Figure 3. The power connector is a 6-pin circular DIN connector.

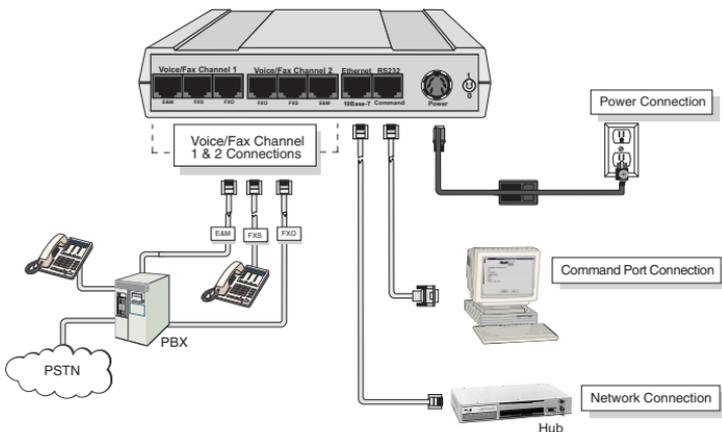


Figure 3. Cable Connections

2. Connect the MultiVOIP to a PC using the RJ-45 to DB9 (female) cable provided with your unit. Plug the RJ-45 end of the cable into the **Command** port of the MultiVOIP and connect the other end to the PC serial port you are using. See Figure 3.

3. Connect a network cable to the **Ethernet 10BASE-T** connector on the back of the MultiVOIP. Connect the other end of the cable to your network.
4. If you are connecting a station device such as an analog telephone, a fax machine, or a Key Telephone System (KTS) to your MultiVOIP, connect the smaller end of a special adapter cable (supplied) to the **Voice/Fax Channel 1 FXS** connector on the back of the MultiVOIP and the other end to the station device.

If you are connecting a PBX extension to your MultiVOIP, connect the smaller end of a special adapter cable (supplied) to the **Voice/Fax Channel 1 FXO** connector on the back of the MultiVOIP and the other end to the PBX extension.

If you are connecting an E&M trunk from a telephone switch to your MultiVOIP, connect one end of an RJ-45 phone cord to the **Voice/Fax Channel 1 E&M** connector on the back of the MultiVOIP and the other end to the trunk.

If you are connecting to an E&M trunk, you need to ensure that the E&M trunk jumper is in the correct position for the E&M type trunk. The default E&M jumper position is E&M type 2. To change the E&M jumper position, perform the E&M jumper block positioning procedure, which immediately follows this procedure.

5. Repeat the above step to connect the remaining telephone equipment to each Voice/Fax Channel on your MultiVOIP.
6. Turn on power to the MultiVOIP by setting the power switch on the back panel to the 1 (up, On) position. Wait for the Boot LED on the MultiVOIP to go off before proceeding. This may take a couple of minutes.

Proceed to the Software Loading section to load the MultiVOIP software.

E&M Jumper Block Positioning Procedure

Each voice/fax channel on the MultiVOIP has a separate E&M jumper block, located near the jacks on the back panel of the MultiVOIP. Each jumper block has 8 pairs of pins with a jumper plug on three adjacent pairs of pins. The jumper plug must be centered on the E&M type number (see Figure 4) that matches the E&M connection for that channel. Perform the following procedure if you need to move the E&M jumper block from its default (Type 2) position.

1. Ensure that the external power supply is disconnected from the MultiVOIP.
2. Turn the MultiVOIP upside down and remove the cabinet mounting screw at the center back of the cabinet.
3. Turn the MultiVOIP right side up, then slide the base out the rear of the cabinet.

Note: To change a jumper position, lift the jumper plug up off the jumper block, then move it to the new position, ensuring that the middle jumper of the jumper block is centered on the E&M type number (1, 3, 4, or 5) as shown in Figure 4.

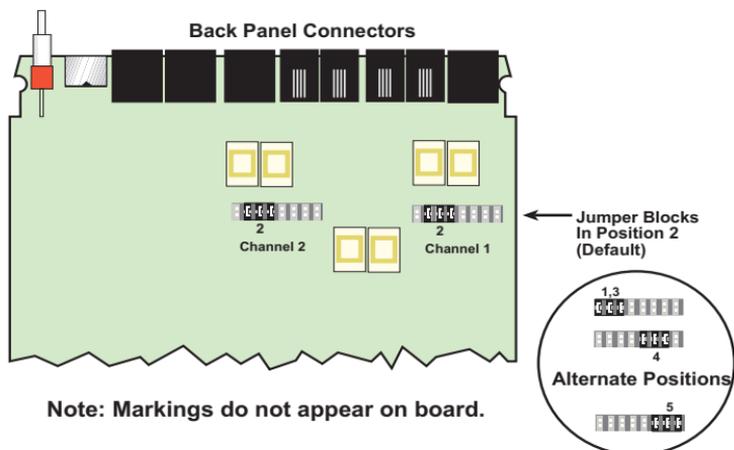


Figure 4. E&M Jumper Block Positions

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4. Change the jumper block position for any voice/fax channel to be connected to an E&M trunk that is not a Type 2 (the default position).
5. Slide the base all the way into the cabinet until it stops.
6. Turn the MultiVOIP 200 upside down and replace the cabinet mounting screw that was removed in step 2.
7. Return the MultiVOIP 200 to its upright position, then perform the cabling procedure.
8. Return to the Cabling Procedure.

Configuring Your Host MultiVOIP

Configuring your Host MultiVOIP involves software loading and configuration.

The software loading procedure does not provide every screen or option in the loading process. It is assumed that a technical person with a thorough knowledge of Windows and the software loading process is performing the installation. Additional information on the MultiVOIP software is provided in the User Guide supplied with your MultiVOIP.

If you are installing a MultiVOIP behind a firewall, you need to add the following UDP ports to your firewall.

Q.931 Signaling, Ch1 [900] Q.931 Signaling, Ch2 [902]

Status [5000]

Ch1 RTP [5004]

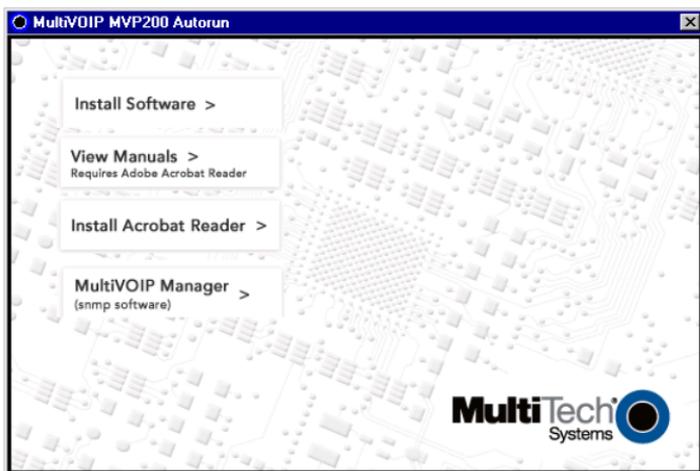
Ch1 RTCP [5005]

Ch2 RTP [5006]

Ch2 RTCP [5007]

Refer to your firewall user documentation to enter and open these ports.

1. Make certain that your MultiVOIP 200 has been properly cabled and that the power is turned on.
2. Insert the MultiVOIP 200 CD into your CD-ROM drive. The CD should start automatically. It may take 10 to 20 seconds for the MultiTech CD installation window to display.



If the Multi-Tech Installation CD window does not display automatically, click **My Computer**, then right click the **CD ROM drive** icon, click **Open**, and then click the **Autorun** icon.

3. When the Multi-Tech Installation CD dialog box displays, click the **Install Software** icon.
4. The **Welcome** dialog box displays.

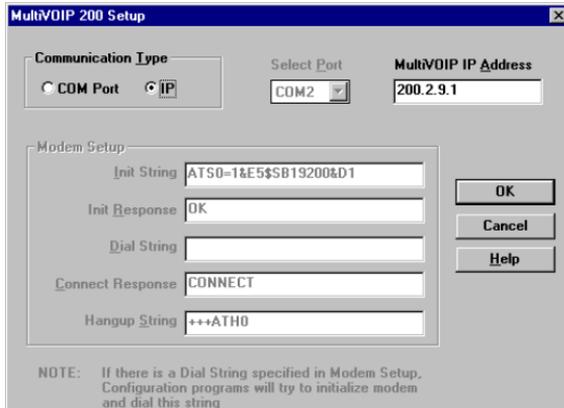


Press **Enter** or click **Next** to continue.

5. Follow the on-screen instructions to install your MultiVOIP software.

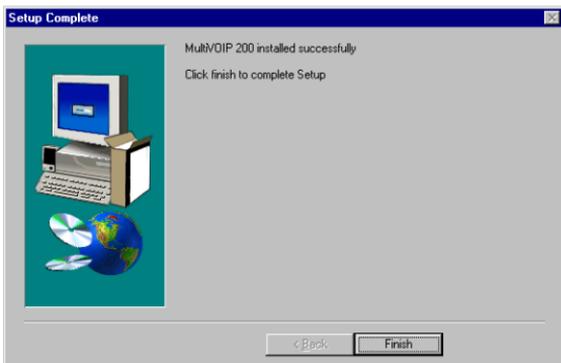


6. The following dialog box selects the COM port of your PC connected to the Command port of the MultiVOIP. From the **Select Port** list, choose the COM port of your PC.



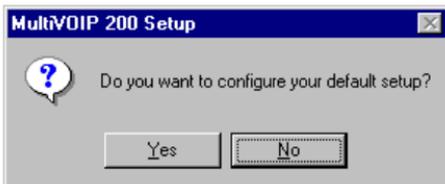
Click **OK** to continue.

7. The **Setup Complete** dialog displays.



Click **Finish** to continue.

8. The following message displays:



Click **No** to continue.

9. In the v. 201E program group, double-click **Upgrade Software**.
10. The following window displays.



Click **Yes** to continue.

11. The **IP Protocol Default Setup** dialog box displays.



- The default **Frame Type** is **TYPE_II**. If this does not match your IP network, change the Frame Type by selecting SNAP from the **Frame Type** list. The available Frame Type choices are **TYPE_II** and **SNAP**.
12. In the **Ethernet** group, enter your unique LAN IP address in the **IP Address** box, then enter the **Subnet Mask** and **Gateway Address** for your LAN in the corresponding boxes.

The IP address is your unique LAN IP address, and the Gateway address is the IP address of the device connecting your MultiVOIP to the Internet.

Click **OK** when you are finished.

13. The **Channel Setup** dialog box displays. It is used to define the voice/fax channel interface, voice coder, fax parameters, billing options, security settings, and regional phone parameters (tone pairs) for each channel.



Configure each channel for the type of interface you are connecting to. To change the channel number, select the channel you want to configure from the **Select Channel** list.

14. The **Interface** group defaults to **FXS (Loop Start)**. Select the interface option to correspond to the interface type being connected to the Voice/Fax connector on the back panel of the MultiVOIP.

If you are connecting a station device such as an analog telephone, a fax machine, or a Key Telephone System (KTS) to the Voice/Fax connector on the back of the unit, **FXS (Loop Start)** will likely be the correct Interface option most of the time.

If the station device uses ground start, then choose the **FXS (Ground Start)** option. Refer to the device's user documentation.

If you are using an extension from your PBX, then choose

the **FXO** option. Check with your in-house telephone personnel to verify connection type.

If you are connecting to an E&M trunk on your PBX, then choose **E&M** option.

If the **E&M** interface is selected, the E&M Options group is enabled. Check with your in-house phone personnel to determine if the signaling is **Dial Tone** or **Wink** and if the connection is 2-wire or 4-wire. If Wink signaling is used, then the **Wink Timer** is enabled with a default of 250 milliseconds. The range of the Wink Timer is from 100 to 350 milliseconds. Consult with your local in-house phone personnel for this timer setting. If the **Pass Through** check box is selected, a continuously open E&M voice path is established between two channels to pass voice packets. Available if the **Dial Tone** option is selected and auto-dialing is set up for the two channels that will be doing pass-through. This is useful for Public Address systems.

If you choose an **FXO** or **FXS** interface, the Dialing Options Regeneration group is enabled. Check with your in-house telephone personnel to verify whether your local PBX dial signaling is **Pulse** or **DTMF** (tone). Set the Regeneration option accordingly. In the **Max Dial Digits** box, enter the maximum number of digits allowed when dialing a phone number. The default setting is 5. In the **Inter Digit Time** box, enter the maximum amount of time in milliseconds that the unit will wait before mapping the dialed digits to an entry in the Phone Directory Database. If too much time elapses between digits and the wrong numbers are mapped, you hear a rapid busy signal. If this happens, hang up and dial again. This option is available for all interface types. In the **Flash Timer** box, enter the time, in milliseconds, for the duration of flash hook signals output on the FXO or FXS interface.

For FXO-to-FXO communications, you can enable a

specific type of FXO Disconnect: **current loss, tone detection, or silence detection**. Check with your in-house phone personnel to verify the preferred type of disconnect to use. For **tone detection**, you can select from the lists either one or two tones that will cause the line to disconnect. The person hanging up a call must then hit the key or keys that will produce those tones. For **silence detection**, select **One Way** or **Two Way**, then set the timer for the number of seconds of silence before disconnect. The default value of 15 seconds may be shorter than desired for your application.

To dedicate a local voice/fax channel to a remote voice/fax channel, (so you will not have to dial the remote channel) select the **Auto Call Enable** check box. Enter the phone number of the remote VOIP in the **Phone Number** box.

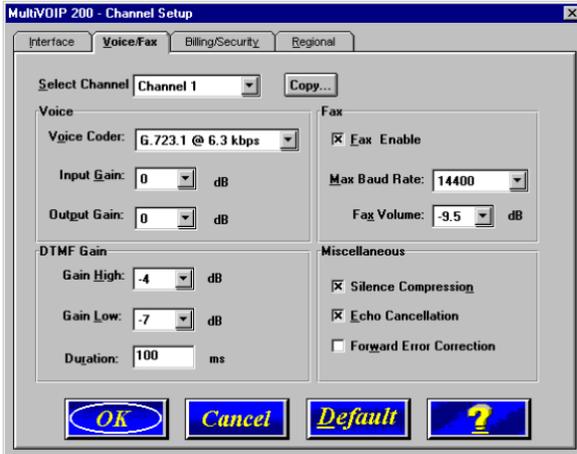
The **FXS Options** control how the selected channel interacts with answering machines. If the **Current Loss** check box is selected, the local VOIP hangs up when the electrical current is lost. The remote VOIPs must also be configured for current loss. The **Ring Count** box contains the number of rings before the caller hears a fast Busy signal. If this happens, hang up and try again. The default setting is 8 rings.

Note: After configuring a given channel, you can copy that channel's configuration to any other channel by clicking **Copy**. Everything on the **Interface** tab will be copied to the other channel.

15. Repeat the above steps to configure the interface type for each voice/fax channel.

The **Voice/Fax** tab displays the parameters for the voice coder, faxing, and DTMF gain.

- To change the voice coder, select the channel from the **Select Channel** list, then select the new voice coder entry from the **Voice Coder** list.



- If you changed the voice coder, ensure that the same voice coder is used on the voice/fax channel you are calling. Otherwise, you will always get a busy signal.
- If you selected the FXO interface and are using touchtone dialing, you can set up the DTMF gain (or output level in decibels - dB) for the higher and lower frequency groups of the DTMF tone pair. Make your selections from the lists in the **DTMF Gain** group. In the **Duration** box, enter the DTMF tone duration in milliseconds. **100** is entered by default.

Note: Only change the DTMF gain under the direction of Multi-Tech Technical Support.

- The **Fax** group enables you to send and receive faxes on the selected voice/fax channel. You can select the maximum baud rate for faxes from the list in the **Fax** group. If you do not plan to send or receive faxes on a given voice/fax channel, you can disable faxes in the Fax group.

Note: After configuring a given channel, you can copy that channel's configuration to any other channel by clicking **Copy**. Everything on the **Voice/Fax** tab will be copied to the other channel.

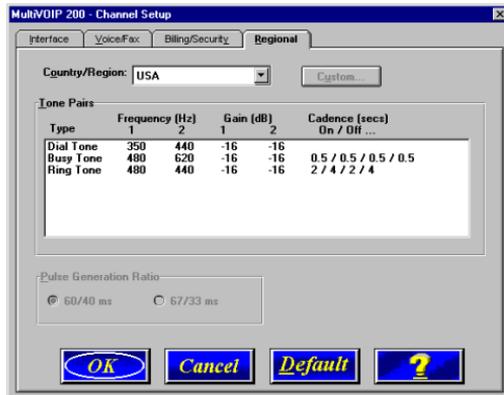
19. The **Billing/Security** tab displays the parameters for automatic disconnection, billing options, and dialing options.



20. You can set up billing options for inbound and outbound calls by selecting them in the **Billing Options** group and then entering the charge in cents per number of seconds.
21. The **Call Authentication** option enables password protection for outbound and inbound calls on the selected voice/fax channel. If you enable password protection on inbound or outbound calls, you need to also enter a password of up to 14 numeric characters in the **Password** box.
22. The **Automatic Disconnect** option limits call duration to the number of seconds entered in the **Disconnect After** box. The default value of 180 seconds can be changed to any other value up to 65,535 (roughly 18.2 hours).

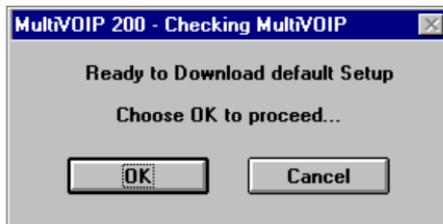
If your country/region is not the default USA, click the **Regional** tab and proceed to step 23. Otherwise, proceed to step 24 to begin building your phone directory database.

23. To change the Tone Pairs on the **Regional** tab, select your country or region from the **Country/Region** list.



The **Tone Pairs** group parameters change per your choice. Click **OK** when finished.

24. The following dialog box displays.



Click **OK**. Proceed to step 25 to begin building your phone directory database when the upgrade is complete.

25. From the Program Group, double-click **MultiVOIP Configuration**. Click **Phone Book**. The **Phone Directory Database** dialog box displays. You will build your personalized MultiVOIP Phone Directory in the following steps.

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The MultiVOIP configured as a “Host” will contain the host database. The host database has the phone numbers of all the MultiVOIPs available for communication on an IP network. This database is downloaded to each Client MultiVOIP as it comes online.



Click **Add** to begin building your phone directory database.

26. The **Add/Edit Phone Entry** dialog box displays.



In the **Station Information** group, enter the unique phone number of the local device connected to Channel 1 in the **Phone Number** box. For example phone number 101.

27. The **Description** is optional, but can be useful in associating the channel to the extension. If you want, enter a description of your local phone number. This description identifies the phone number you entered in the previous step.
28. The Permit Hunting option enables the answering unit to roll over to a second channel if the first channel is busy. Click **Permit Hunting** if you want the calls to roll over to a second voice/fax channel.

Note: The Host MultiVOIP must have a static IP address that the remote MultiVOIP can reference to obtain a downloaded copy of the host phone directory database.

29. In the **MultiVOIP Identification** group, enter the IP address of the Host MultiVOIP in the **IP Address** box. For example, 204.22.122.118. Then obtain the 12-digit Node ID# (0008005xxxxx) from the ID plate on the back panel of the MultiVOIP and enter this number in the **Ethernet Node ID** box. If the ID plate is missing or damaged, you can also Telnet to the MultiVOIP and, on the MultiVOIP Telnet Server menu enter 1 to advance to the Main Menu, then enter 3 for System Information where item 1 is the Ethernet Port Address you want to enter in the **Ethernet Node ID** box.

MultiVOIP 200 - Add/Edit Phone Entry

Station Information

Phone Number: 101

Description: New York Office

Voice Channel: Channel 1

Permit Hunting

MultiVOIP Identification

Type

Dynamic

Static

Identified By

IP Address: 204.22.122.118

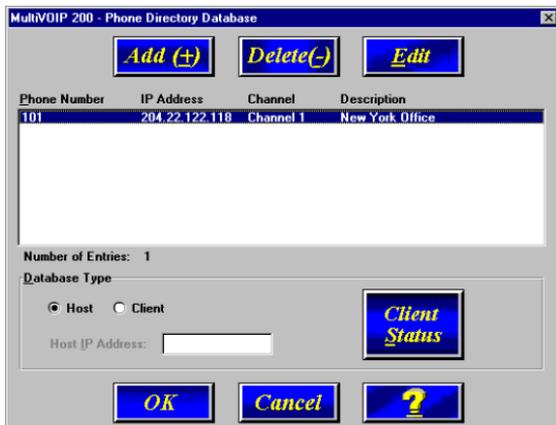
Ethernet Node ID: 000800801912

OK

Cancel

?

- Click **OK** and you are returned to the **Phone Directory Database** dialog box, which now includes phone number 101 with its IP address, channel number, and description.



- Click **Add** and the **Add/Edit Phone Entry** dialog box displays again.
- Enter the phone number for the remote MultiVOIP in the **Station Information** group **Phone Number** box. For example, 201.
- Enter a description for the remote MultiVOIP phone number for Channel 1 in the **Description** box.

Note: If the remote MultiVOIP is located behind a proxy server that uses a dynamically assigned IP address, select **Dynamic** (disabling Static IP Address) and leave the IP Address box blank. The Host MultiVOIP will learn the IP address when it is contacted by the remote MultiVOIP.

34. Enter the IP address of the remote MultiVOIP in the **IP Address** box in the **MultiVOIP Identification** group. For example, 202.56.39.100.

MultiVOIP 200 - Add/Edit Phone Entry

Station Information

Phone Number:

Description:

Voice Channel:

Permit Hunting

MultiVOIP Identification

Type: Dynamic Static

Identified By: IP Address:

Ethernet Node ID:

Buttons: **OK**, **Cancel**, ?

35. Click **OK** and you are returned to the **Phone Directory Database** dialog box, which now includes the second number and related information in the **Phone Number** list.

MultiVOIP 200 - Phone Directory Database

Buttons: **Add (+)**, **Delete (-)**, **Edit**

Phone Number	IP Address	Channel	Description
101	204.423.124.118	Channel 1	New York Office
201	202.56.39.100	Channel 1	London Office

Number of Entries: 2

Database Type: Host Client

Host IP Address:

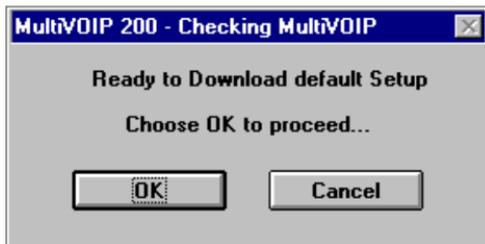
Buttons: **Client Status**, **OK**, **Cancel**, ?

Note: If only Channel 1 is active, you must enter two phone numbers. The first number will be the local MultiVOIP phone number for Channel 1, and the second number will be the remote MultiVOIP phone number for Channel 1.

If both Channels 1 and 2 are active, four phone numbers will have to be entered.

36. When you have finished, click **OK** to download the setup configuration to the MultiVOIP.

37. The **Checking MultiVOIP** dialog box displays.



Click **OK** to proceed.

38. After the setup is written to the MultiVOIP, the unit is rebooted.
39. Verify that the **BOOT** LED on the MultiVOIP is off after the download is complete. This may take several minutes as the MultiVOIP reboots.
40. You are returned to your MultiVOIP folder which is open and visible on your desktop.

At this time, your host MultiVOIP is configured. Proceed to the next section to configure the client MultiVOIPs.

Configuring Your Client MultiVOIPs

If you are installing a MultiVOIP behind a firewall, you need to add the following UDP ports to your firewall.

Q.931 Signaling, Ch1 [900] Q.931 Signaling, Ch2 [902]

Status [5000]

Ch1 RTP [5004]

Ch1 RTCP [5005]

Ch2 RTP [5006]

Ch2 RTCP [5007]

Refer to your firewall user documentation to enter and open these ports.

1. Disconnect the PC from the command port of the Host MultiVOIP and connect it to the command port on the Client MultiVOIP.
2. From your desktop, click **Start | Programs | MultiVOIP | Upgrade Software**. The following dialog box displays.



3. Click **Yes**. The **IP Protocol Default Setup** dialog box displays.



The default **Frame Type** is **TYPE_II**. If this does not match your IP network, select the Frame Type from the **Frame Type** list. The Frame Type choices are **TYPE_II** and **SNAP**.

4. In the **Port Address** group, enter the **IP Address** and **IP Mask**. In the **Gateway Address** group, enter the gateway IP address for the client unit.

The IP address is your unique LAN IP address, and the Gateway address is the IP address of the device connected to the Internet/Intranet.

Click **OK** when you are finished. The **Channel Setup** dialog box displays.

5. The **Channel Setup** dialog box defines the channel interface, voice coder, fax parameters, and regional telephone parameters for each channel.

MultiVOIP 200 - Channel Setup

Interface Voice/Fax Billing/Security Regional

Select Channel Channel 1 Copy...

Interface

FXS (Loop Start)
 FXS (Ground Start)
 FXO
 E&M

Dialing Options

Regeneration

Pulse
 DTMF

Mag Dial Digits: 5
Inter Digit Time (in ms): 2000
Flash Hook Time (in ms): 600

E&M Options

Signal

Dial Tone Wink

Mode

2-Wire 4-Wire

Wink Timer (in ms): 250
 Pass Through

FXO Disconnect On

Current Loss
 Tone Detection
 Silence Detection

None

Disconnect Tone Sequence

*+ + None

Silence Timer (in seconds): 15

Auto Call

Auto Call Enable
Phone Number

FXS Options

Current Loss
Ring Count: 8

OK Cancel Default ?

Configure each channel for the type of interface you are connecting to. To change the channel number, select the channel you want to configure from the **Select Channel** list.

6. The **Interface** group defaults to **FXS (Loop Start)**. Select the interface option to correspond to the interface type being connected to the Voice/Fax connector on the back panel of the MultiVOIP.

If you are connecting a station device such as an analog telephone, a fax machine, or a Key Telephone System

(KTS) to the Voice/Fax connector on the back of the unit, **FXS (Loop Start)** will likely be the correct Interface option most of the time.

If the station device uses ground start, then choose the **FXS (Ground Start)** option. Refer to the device's user documentation.

If you are using an extension from your PBX, then choose the **FXO** option. Check with your in-house telephone personnel to verify connection type.

If you are connecting to an E&M trunk on your PBX, then choose **E&M** option.

If the **E&M** interface is selected, the E&M Options group is enabled. Check with your in-house phone personnel to determine if the signaling is **Dial Tone** or **Wink** and if the connection is 2-wire or 4-wire. If Wink signaling is used, then the **Wink Timer** is enabled with a default of 250 milliseconds. The range of the Wink Timer is from 100 to 350 milliseconds. Check with your local in-house phone personnel for this timer setting. If the **Pass Through** check box is selected, a continuously open E&M voice path is established between two channels to pass voice packets. Available if the **Dial Tone** option is selected and auto-dialing is set up for the two channels that will be doing pass-through. This is useful for Public Address systems.

If you choose an **FXO** or **FXS** interface, the Dialing Options Regeneration group is enabled. Check with your in-house telephone personnel to verify whether your local PBX dial signaling is **Pulse** or **DTMF** (tone). Set the Regeneration option accordingly. In the **Max Dial Digits** box, enter the maximum number of digits allowed when dialing a phone number. The default setting is 5. In the **Inter Digit Time** box, enter the maximum amount of time in milliseconds that the unit will wait before mapping the dialed digits to an entry in the Phone Directory Database. If too much time

elapses between digits and the wrong numbers are mapped, you hear a rapid busy signal. If this happens, hang up and dial again. This option is available for all interface types. In the **Flash Timer** box, enter the time, in milliseconds, for the duration of flash hook signals output on the FXO or FXS interface.

To dedicate a local voice/fax channel to a remote voice/fax channel, (so you will not have to dial the remote channel) select the **Auto Call Enable** check box. Enter the phone number of the remote VOIP in the **Phone Number** box.

For FXO-to-FXO communications, you can enable a specific type of FXO Disconnect: **current loss**, **tone detection**, or **silence detection**. Check with your in-house phone personnel to verify the preferred type of disconnect to use. For **tone detection**, you can select from the lists either one or two tones that will cause the line to disconnect. The person hanging up a call must then hit the key or keys that will produce those tones. For **silence detection**, select **One Way** or **Two Way**, then set the timer for the number of seconds of silence before disconnect. The default value of 15 seconds may be shorter than desired for your application.

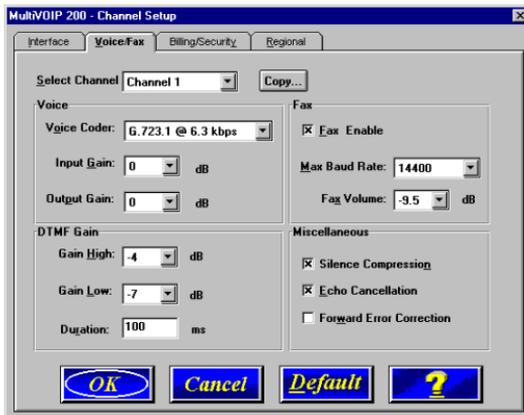
The **FXS Options** control how the selected channel interacts with answering machines. If the **Current Loss** check box is selected, the local VOIP hangs up when the electrical current is lost. The remote VOIPs must also be configured for current loss. The **Ring Count** box contains the number of rings before the caller hears a fast Busy signal. If this happens, hang up and try again. The default setting is 8 rings.

Note: After configuring a given channel, you can copy that channel's configuration to any other channel by clicking **Copy**. Everything on the **Interface** tab will be copied to the other channel.

7. Repeat the above steps to configure the interface type for each voice/fax channel.

The **Voice/Fax** tab displays the parameters for the voice coder, faxing, and DTMF gain.

8. To change the voice coder, select the channel from the **Select Channel** list, then select the new voice coder entry from the **Voice Coder** list.



If you changed the voice coder, ensure that the same voice coder is used on the voice/fax channel you are calling. Otherwise, you will always get a busy signal.

9. If you selected the FXO interface and are using touchtone dialing, you can set up the DTMF gain (or output level in decibels - dB) for the higher and lower frequency groups of the DTMF tone pair. Make your selections from the lists in the **DTMF Gain** group. In the **Duration** box, enter the DTMF tone duration in milliseconds. 100 is entered by default.

Note: Only change the DTMF gain under the direction of Multi-Tech Technical Support.

10. The **Fax** group enables you to send and receive faxes on the selected voice/fax channel. You can select the

maximum baud rate for faxes from the list in the **Fax** group. If you do not plan to send or receive faxes on a given voice/fax channel, you can disable faxes in the Fax group.

Note: After configuring a given channel, you can copy that channel's configuration to any other channel by clicking **Copy**. Everything on the **Voice/Fax** tab will be copied to the other channel.

11. The **Billing/Security** tab displays the parameters for automatic disconnection, billing options, and dialing options.

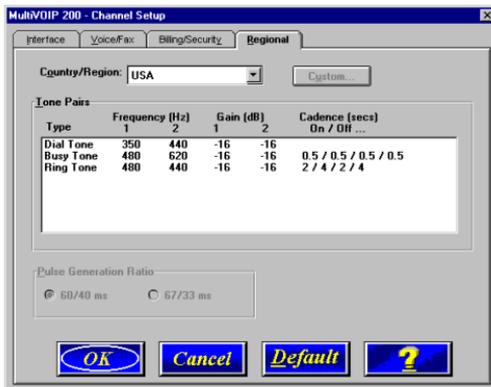


12. You can set up billing options for inbound and outbound calls by selecting them in the **Billing Options** group and then entering the charge in cents per number of seconds.
13. The **Call Authentication** option enables password protection for outbound and inbound calls on the selected voice/fax channel. If you enable password protection on inbound or outbound calls, you need to also enter a password of up to 14 numeric characters in the **Password** box.
14. The **Automatic Disconnect** option limits call duration to the number of seconds entered in the **Disconnect After**

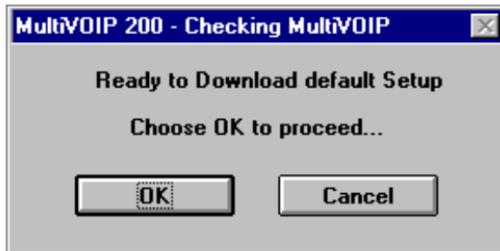
box. The default value of 180 seconds can be changed to any other value up to 65,535 (roughly 18.2 hours).

If your country/region is not the default USA, click the **Regional** tab and proceed to step 15. Otherwise, proceed to step 16 to begin building your phone directory database.

15. To change the Tone Pairs on the **Regional** tab, select your specific country or region from the **Country/Region** list.



The **Tone Pairs** group parameters change per your selections. Click **OK**. The following dialog box displays.

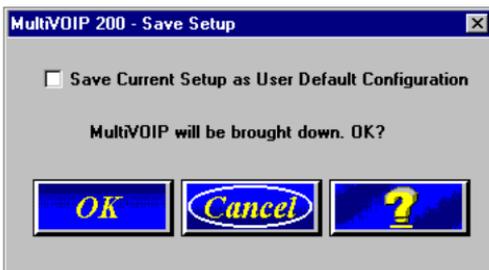


16. Click **OK** after the upgrade is completed. Click **Start | Programs | MultiVOIP | MultiVOIP Configuration**. On the main menu, click **Phone Book** to display the **Phone Directory Database** dialog box.



In the **Database Type** group, click the **Client** option. The **Update Database From** group becomes active.

17. Enter the IP address of the host MultiVOIP in the **Host IP Address** box.
18. Click **OK** and you are returned to the main menu.
19. Click **Download Setup** to write the new configuration to the client unit. The **Save Setup** dialog box displays.



20. Select the **Save Current Setup as User Default Configuration** check box and click **OK**. After the setup is written to the MultiVOIP, the unit reboots.
22. Check that the **Boot** LED on the MultiVOIP is off after the download is complete. This may take several minutes as the MultiVOIP reboots.
23. You are returned to the main menu.
Your MultiVOIP is operational at this time.

Repeat this procedure for each of the client units. When all clients have been configured, proceed with deploying the VOIP network.

Deploying the VOIP Network

Deploying the VOIP network involves the VOIP Administrator developing the VOIP Dialing Directory and deploying the pre-configured client MultiVOIPs to their remote sites. The remote site administrators need only connect power to the pre-configured MultiVOIP, connect it to their Ethernet LAN and predefined telephone equipment, and then wait for the phone directory database to be downloaded.

Perform the following procedure to deploy your VOIP network.

VOIP Administrator

1. Establish your VOIP Dialing Directory based on your Phone Directory Database for the numbers to connect the MultiVOIPs to your VOIP network and the telephone extension number you need to connect the Voice/Fax channels. A sample VOIP Dialing Directory is provided below for your consideration and use.

VOIP Dialing Directory		
To call from	Call Process	Dialing Sequence

2. Send the client MultiVOIPs to their remote sites.

Remote Site Administrator

3. Unpack your MultiVOIP.
4. Connect one end of the power supply to a live AC outlet and connect the other end to the **Power** connection on your MultiVOIP.

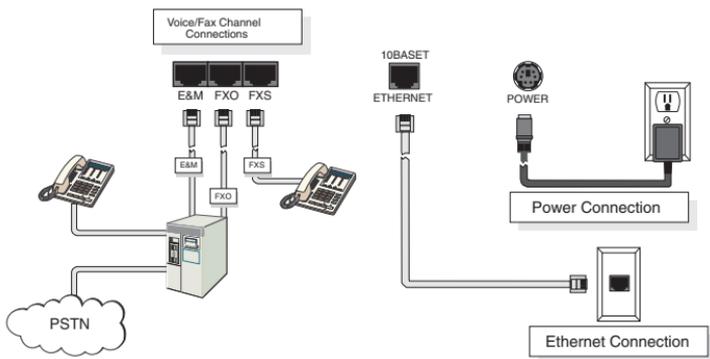


Figure 5. Remote Site Cable Connection

5. Connect a network cable to the **ETHERNET 10Base-T** (RJ-45) connector on the back of your MultiVOIP.
6. If you are connecting a station device such as an analog telephone, a fax machine, or a Key Telephone System (KTS) to your MultiVOIP, connect the smaller end of a special adapter cable (supplied) to the **Voice/Fax Channel 1 FXS** connector on the back of the MultiVOIP and the other end to the station device.

If you are connecting a PBX extension to your MultiVOIP, connect the smaller end of a special adapter cable (supplied) to the **Voice/Fax Channel 1 FXO** connector on the back of the MultiVOIP and the other end to the PBX extension.

If you are connecting an E&M trunk from a telephone switch to your MultiVOIP, connect one end of an RJ-45 phone cord to the **Voice/Fax Channel 1 E&M** connector

on the back of the MultiVOIP and the other end to the trunk phone jack.

7. Repeat the above step to connect the remaining telephone equipment to each Voice/Fax Channel on your MultiVOIP.
8. Turn on power to the MultiVOIP by placing the ON/OFF switch on the back panel to the ON position. Wait for the Boot LED on the MultiVOIP to go off before proceeding. This may take a couple of minutes.
9. At this time your VOIP network should be fully operational. Dial one of the sites in your network using the dialing directory supplied by your Network Administrator.

Limited Warranty

Multi-Tech Systems, Inc. (“MTS”) warrants that its products will be free from defects in material or workmanship for a period of two years from the date of purchase, or if proof of purchase is not provided, two years from date of shipment. **MTS MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.** This warranty does not apply to any products which have been damaged by lightning storms, water, or power surges or which have been neglected, altered, abused, used for a purpose other than the one for which they were manufactured, repaired by the customer or any party without MTS’s written authorization, or used in any manner inconsistent with MTS’s instructions.

MTS’s entire obligation under this warranty shall be limited (at MTS’s option) to repair or replacement of any products which prove to be defective within the warranty period, or, at MTS’s option, issuance of a refund of the purchase price. Defective products must be returned by Customer to MTS’s factory transportation prepaid.

MTS WILL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES AND UNDER NO CIRCUMSTANCES WILL ITS LIABILITY EXCEED THE PURCHASE PRICE FOR DEFECTIVE PRODUCTS.

Technical Support

Multi-Tech Systems has an excellent staff of technical support personnel available to help you get the most out of your Multi-Tech product. If you have any questions about the operation of this unit, or experience difficulty during installation you can contact Tech Support via the following:

Contacting Technical Support

Country telephone	By E-mail	By
France:	support@multitech.fr	(33) 1-64 61 09 81
India:	support@multitechindia.com	(91) 124-340778
U.K.:	support@multitech.co.uk	(44) 118 959 7774
U.S. & Canada:	support@multitech.com	(800) 972-2439
Rest of World:	support@multitech.com	(763) 785-3500

Internet:

<http://www.multitech.com/>

Please have your product information available, including model and serial number.

FCC Declaration

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

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

