

## Installing the RAP-10 in Windows 95

These notes are designed to help you install the Roland Audio Production Card (RAP-10) and configure it for use in Windows 95. This process will consist of the following four steps:

- I. First, we will look at computers and peripherals and how they work together. See *“Typical Hardware Setup”*.
- II. Second, we will prepare the RAP-10 for installation. See *“Changing Hardware Settings”*.
- III. Third, we will install the Windows software. See *“Installing the Roland Audio Tools Software”*.
- IV. Finally, we will test the RAP-10 to make sure it has been installed properly. See *“Testing the RAP-10 Card”*.

If you were previously using the RAP-10 successfully under Windows 3.1 in the same computer, you can skip the first two steps and go directly to Section III.

### I. Typical Hardware Setup

#### Interrupts and Addresses

IBM-compatible computers can be expanded to accept many different devices such as a mouse, modem, printer, sound card, or MIDI card. Your computer uses *interrupts* (also called IRQs) and *port addresses* (or I/O addresses) to distinguish between these different devices. Since this guide is not intended to explain the concepts of IBM computers in detail, we will not jump into the particular definitions of IRQs and addresses. Just remember that the IRQ and port address numbers must be unique for EVERY device in your computer.

#### DMA Channels

The RAP-10 card also uses two *DMA* channels (Direct Memory Access) for the recording and playback of digital audio. As with interrupts and addresses, no two devices can use the same DMAs. The RAP-10 needs a DMA for each channel of audio. This means that in order to record or play back digital audio in stereo, the RAP-10 will need two DMA channels (left and right). Other devices in your computer that may use DMA channels are scanners, SCSI interfaces, tape backup drives, and other sound cards. There are no switch or jumper settings on the RAP-10 card for DMAs – they are selected entirely with software. The default DMA settings are 5 and 6, but you will need to select a different pair if one of these is in use by another device. For monophonic playback, only one DMA channel is required.

### Conflicts

When two different devices in your computer are set to the same interrupt, address, or DMA a *conflict* results. A conflict is the most common problem encountered when installing a new device. This may result in your computer crashing, reporting an error message, or playing MIDI or audio in an unusual manner. In order to avoid conflicts, it is important to be familiar with the interrupt and address settings of the various devices in your computer. Here are some typical devices and their settings :

<u>Device</u>	<u>IRQ</u>	<u>Port Address</u>
MIDI card	2/9	330-331
COM 2 (Mouse or Modem)	3	2F8
COM 1 (Mouse or Modem)	4	3F8
Sound card	5	220-22F
Floppy drive controller	6	3F0-3F7
LPT1 (Printer)	7	378-37F
Reserved for system use	8	070-071
Video card	2/9	3D0-3DF
Reserved for system use	13	0F0-0FF
Hard disk controller	14	1F0-1F7
SCSI card (scanners, etc.)	15	330-33F

**Note:** All port addresses are written using Hexadecimal notation.

As you can see, there are many devices and settings in your computer to examine before installation. The RAP-10 is set to interrupt 2/9 and address 330 when shipped from the factory. The notation of interrupt 2/9 means that interrupts 2 and 9 are *redirected* IRQs. This means anything set on IRQ 2 also shares IRQ 9. Notice that video cards and MIDI cards typically have the same interrupt settings of 2/9. Although this is usually OK, some computers may have problems with these two devices sharing the same interrupt.

COM 1 and COM 2 refer to the 9 and 25-pin serial port connectors on the back of your computer. A mouse may be attached to one of these ports. If not, you probably have a *PS/2 style* mouse that uses a round 8-pin connector. A PS/2 style mouse typically uses IRQ 12, leaving your serial ports available for other devices. A Fax/Modem will also use one of the available serial ports. This is true whether it is connected to the computer internally or externally.

**Note:** Due to the fact that IBM computers and devices are manufactured by many different companies, default settings may vary. Contact your computer or device manufacturer for more information.

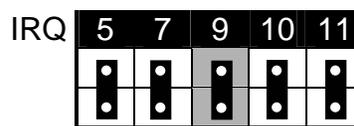
## II. Changing Hardware Settings

To change an IRQ or port address setting of a Roland MIDI card, you must change jumpers or switches on the card itself. Below are the jumper and switch settings used to change the IRQ and port address settings of the RAP-10. The settings that are shaded are the defaults.

**Note:** The default settings for the RAP-10 are usually the least likely to conflict with other cards. Therefore it is recommended that you do not change these settings unless you are sure you have a conflict with another device.

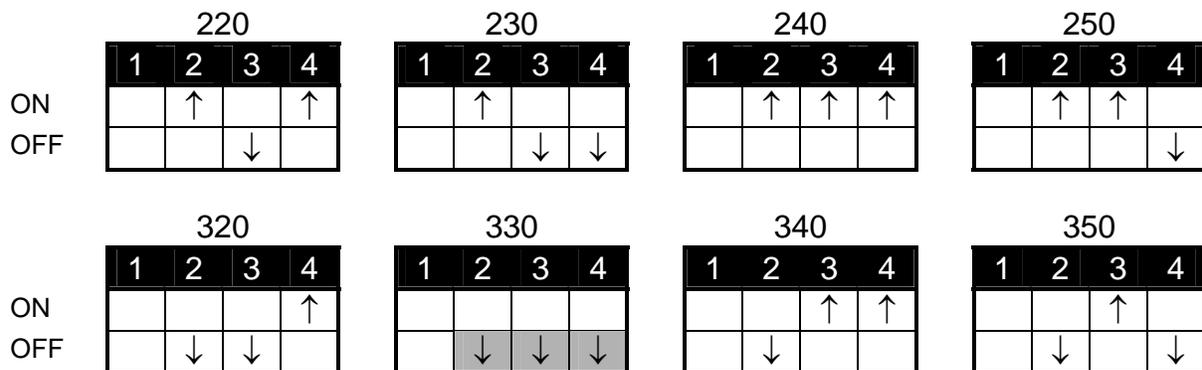
### Interrupt (IRQ)

There is a set of jumpers labeled J1 on the RAP-10 card. With the connectors of the card facing down and to the right, the J1 jumpers are located near the bottom-center. Move the jumper to the desired location using this chart to select an interrupt:



### Port Address

There is a set of switches labeled SW1 above the J1 interrupt jumpers on the RAP-10. You will find an ON and OFF position for each of the switches. The first switch does not affect the address – it enables or disables the joystick port on the card. Move switch 1 to the ON position to enable the joystick port. To set the address, move switches 2, 3, and 4 to the desired locations using this chart:



### RAP-10 Card Installation

**Note:** Since computers vary dramatically by manufacturer and type, it is a good idea to consult your computer manufacturer before installation. If you are not comfortable installing the card, please consult a local computer technician.

Now that the card is set to the appropriate IRQ and port address settings, it must be physically installed in the computer. Remove the cover of your computer - this will typically require a screwdriver and/or key. Slide the card into an available slot in the PC. Be careful not to drop anything like a screwdriver or other tool in your computer. Use a screw to fasten the card firmly in your computer. Replace the computer's cover.

### III. Installing the Roland Audio Tools Software

This will install the Roland Audio Tools software version 3.7 and the driver for Windows, necessary to control the RAP-10 card.

#### Windows 95 Drivers

The driver and software that came with the RAP-10 card supports both Windows 3.1 and Windows 95. If you were using the RAP-10 previously with Windows 3.1, you generally will need to reinstall the software in Windows 95 so that it will recognize the driver.

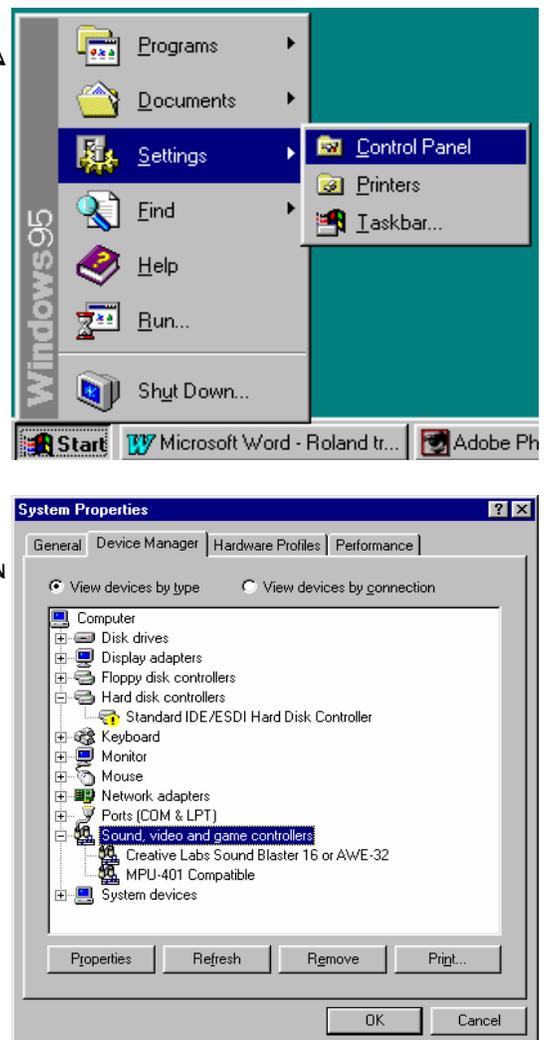
#### Roland Audio Toolworks Software

Some early versions of the RAP-10 card came with the “Roland Audio Toolworks” software. If you look at your diskettes and see that they are labeled “Toolworks” instead of “Tools”, you will need to upgrade to the newer software. The new software consists of two zip files you can download from CompuServe (Go Roland), America Online (Keyword Roland), or from the Roland US web site (<http://www.rolandus.com>). You may also receive the new software via US mail by contacting Roland at 213-685-5141, extension 289.

#### Before Installation

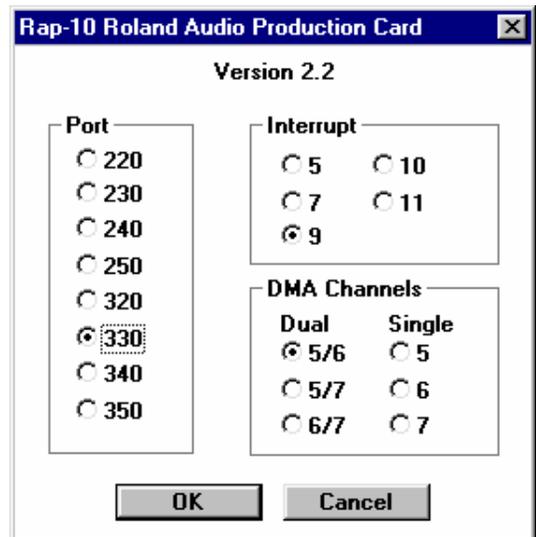
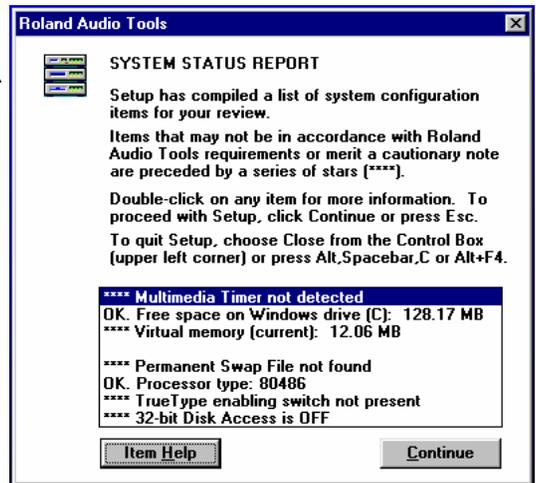
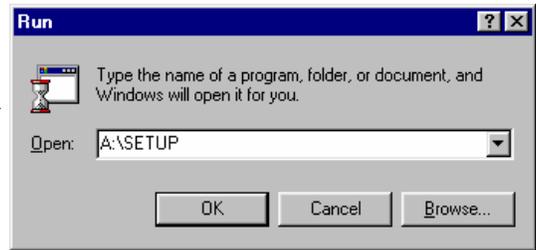
First, we need to make sure that Windows 95 did not automatically detect and misidentify the RAP-10 card.

- 1) From the Start Menu, select Settings and open the Control Panel.
- 2) In the Control Panel, double-click on the System icon to open System Properties.
- 3) Click on the Device Manager tab at the top of the System Properties window.
- 4) Double-click on Sound, video and game controllers.
- 5) Your sound cards will be displayed. If you see a driver listed for an MPU-401 card (or other sound card) that you do not have installed in your system, you will need to remove the driver to prevent it from conflicting. Click on the extra driver to select it, and then click the Remove button at the bottom of the window.
- 6) Click OK or Close to exit from System Properties.



Installing the Roland Audio Tools software and the RAP-10 driver.

- 1) Place the Roland Audio Tools Disk 1 in your drive.
- 2) From the Start Menu, select Run.
- 3) In the “Open” box, type in A:\SETUP (If your 3½” drive is drive B, type in B:\SETUP). →
- 4) On the introductory screen, click Continue.
- 5) By default, the program will install its files in a directory named “Roland”. Change this if you like, then click Continue.
- 6) A System Status Report will be displayed. With many Windows 95 systems, the software may misidentify settings of your computer. Click Continue. →
- 7) When asked if you want to install the MIDI mapper, click Yes.
- 8) Click Yes if you want to install the demo files.
- 9) The files will now be copied from the diskettes to the directory you specified in step 5. If you chose to install the demo, the files from disks 2-4 will be copied. Otherwise, only disks 1 and 5 will be required.
- 10) When the copying is complete, the program will report that the driver has been installed. Click Continue.
- 11) Set the Address Port and Interrupt to match the jumper and switch settings you made on the card. Also, select the DMA channels you want to use (usually 5/6). Click OK. →
- 12) Finally, you will see a message indicating that installation is complete. Click OK.
- 13) Click Yes to restart Windows.



Selecting the RAP-10 Card as the Primary Windows MIDI Device

- 1) From the Start Menu, select Settings and open the Control Panel.
- 2) Double-click on the Multimedia icon. →
- 3) Click the MIDI tab at the top of the window.
- 4) Click the dot to the left of Single Instrument.
- 5) Click on RAP-10 Roland Audio Production in the white box under Single Instrument.
- 6) Click OK at the bottom of the window.



Selecting the RAP-10 Card as the Primary Wave Audio Device

- 1) From the Start Menu, select Settings and open the Control Panel.
- 2) Double-click on the Multimedia icon.
- 3) Change the Preferred device to "RAP-10 Roland Audio Production" for both the playback and the recording devices.
- 4) Click OK at the bottom of the window.



**IV. Testing the RAP-10 Card**

At this point we will test the RAP-10 to make sure it is installed and configured properly. We will be using the Media Player program included with Windows.

Testing the MIDI Playback

- 1) From the Start Menu, select Programs, then Accessories, and Multimedia, followed by Media Player.
- 2) Under the Device menu, select MIDI Sequencer.
- 3) A window to open a file will be displayed. If you upgraded from Windows 3.1, you should be able to find the CANYON.MID file in the Windows directory. If you loaded the demo with the Roland Audio Tools, you can open the ATMID.MID file in the \ROLAND\DEMO directory. Otherwise, you'll need to locate and open a MIDI file of your own.
- 4) To make sure the correct MIDI device has been chosen, select Properties under the Device menu.
- 5) Under Single Instrument, click on the MIDI device you wish to test (the RAP-10 Roland Audio Production).
- 6) Click OK at the bottom of the window.
- 7) In the Media Player, click the Play button (the button on the far left that looks like a sideways triangle) and the MIDI file will begin playing.



Testing the Digital Audio Playback

- 1) From Media Player, select Sound under the Device menu.
- 2) The open window will be displayed. Open the "The Microsoft Sound.wav" file in your \WINDOWS\MEDIA directory.
- 3) Click the Play button and the wave file will begin.

## **Troubleshooting**

If you are not getting any output, check the following:

- Is your output device (speakers, headphones, etc.) attached to the correct connector?
- Are the speakers or headphones working properly? Try connecting them to another audio device to test them.
- If the signal is going through a mixer or an amplifier, are the volume levels turned up?
- If you are controlling an external MIDI device, are the MIDI connections correct? Can it be verified that the device is receiving MIDI data?

If the MIDI is OK, but wave files are not playing correctly, you probably have a conflict with the IRQs or DMAs you selected. Determine what other available settings for the card you can use. Change the jumpers or switches on the card (for the interrupt), and change the corresponding values in Windows to reflect these updates. Then, try testing the card again.

## **Windows 95 Notes**

Device Manager : The driver used by the RAP-10 is referred to as a *legacy* driver. While Windows 95 fully supports legacy drivers, you will NOT see it listed under Sound, video and game controllers in the Device Manager. To make changes to the driver (or to remove it completely), do the following:

- From the Start Menu, select Settings and open the Control Panel.
- Double-click on Multimedia.
- Click on the Advanced tab at the top of the screen.
- Double-click on Audio devices.
- Double-click on Audio for MIDI and wave driver for Roland RAP card.

Multimedia Properties – Audio: You will not be able to control the volume of the RAP-10's wave output using the slider on this screen. Instead, you can use the level mixer in the Roland Audio Tools to control the volumes of the individual components.