

Using WaveCenter/PCI with Cubase VST on the Macintosh

Released 001115

This application note was created based on:

- Cubase VST/24 version 4.1 (Cubase in this document)
- WaveCenter/PCI driver v1.0 (WCPCI in this document)

Cubase includes excellent help documents and tutorials. Please refer to them for help with topics that are not directly related to WCPCI set-up and use.

Cubase lets you use all 10 WCPCI inputs simultaneously (8 ADAT optical + 2 SPDIF coax). The number of tracks you can actually record is determined by the speed of your computer and hard drive.

Before starting Cubase

After you've downloaded the WCPCI drivers from our website (www.frontierdesign.com/pr_WCPCI_drivers.htm) and installed the driver components, open the "Install in ASIO Drivers" folder, and copy the "ASIO Frontier 16-bit" and "ASIO Frontier 24-bit" files into Cubase's ASIO Drivers folder.

To use WCPCI's MIDI ports, make sure you have the latest OMS software installed. If necessary, you can download it from Opcode's website (www.opcode.com/products/oms). Follow the instructions in 'OMS_2.3_Mac.pdf' and 'OMS Making a Studio Setup.pdf' (www.opcode.com/dl) to create your studio setup document.

Once your studio setup document has been created, use the "Test Studio" feature of OMS (in the Studio menu) to prove that the card is functioning and the output cabling is correct. When this feature is on, clicking on a device in the OMS studio setup sends random MIDI notes to the device. When you send MIDI to a port, you'll hear "MIDI received" from the Macintosh speaker.

We recommend that you set Cubase's memory size to at least 34006K, and turn off Appletalk and Virtual Memory.

To set the application memory size:

1. Make sure Cubase is not running.
2. Open the Cubase folder, and click on the Cubase icon to select it.
3. From the File menu, select 'Get Info' (or 'Get Info > Memory').
4. When the Get Info dialog appears, set the Preferred Size to at least the suggested size.
5. Close the dialog box. The new setting will be used the next time you start Cubase.

To turn off Appletalk and Virtual Memory:

1. From the Apple menu, select 'Chooser.'
2. When the Chooser window appears, set Appletalk to 'Inactive.'
3. From the Apple menu, select 'Control Panels > Memory.'
4. When the Memory window appears, set Virtual Memory to 'Off.'

Audio Set-up

In Options menu, select “Audio Setup>System...” to display the Audio System Setup window (Figure 1).

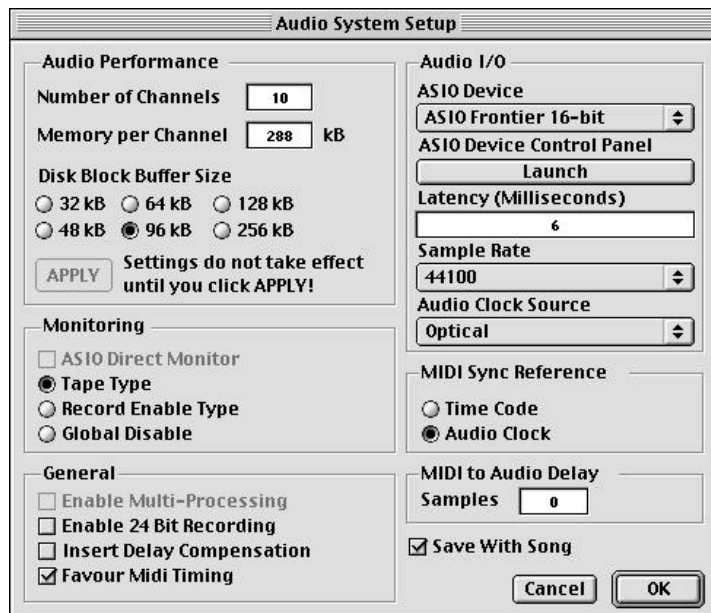


Figure 1

The Audio Performance parameters allocate memory and disk buffers for recording and playing back audio. The default settings usually work fine, but you can change them if you’re having problems with recording or playback, or if you aren’t able to record or play back as many tracks as you expect.

The Monitoring parameters let you specify the behavior for listening to audio inputs.

- With Tape Type monitoring, you can hear the track inputs whenever the sequencer is stopped or recording. The track input (the button located at the top of each mixer channel strip) is enabled when you enable the track, and is disabled when you play.
- With Record Enable Type monitoring, you can hear the track inputs when you enable a track. The track input (the button located at the top of each mixer channel strip) is enabled when you enable the track, but is not disabled when you play. You can hear the track play back only by disabling the track input.

In the Audio I/O section, you can set the ASIO Device to either ‘ASIO Frontier 16-bit’ or ‘ASIO Frontier 24-bit.’ If you’re doing 16-bit recording, you can select either ASIO driver, but the 16-bit driver is a bit more efficient. To record or play back with 24-bit resolution, you must select the 24-bit driver in the Audio I/O section, and you also need to select “Enable 24 Bit Recording” in the General section (near the bottom of the Audio System Setup window).

You can specify the Sample Rate and Audio Clock Source either in Cubase or in the WaveCenter/PCI control panel. However, Cubase doesn’t always detect changes to these parameters when you change them in the WaveCenter/PCI control panel. Therefore, we recommend that you always set the Sample Rate and Audio Clock Source from within Cubase (in the Audio System Setup window).

Cubase’s Audio System Setup window also displays the current latency, in milliseconds. To adjust the latency, quit the Cubase application, change the Buffer Size setting in the WaveCenter/PCI control panel (System tab), and then restart Cubase. Smaller buffer sizes yield lower latency; larger buffer sizes provide more protection against audio glitches. We recommend setting the buffer size as large as possible while attaining suitable latency for your audio.

Note: Whenever you restart Cubase, it automatically sets the audio clock source to ‘Internal.’ Therefore, if you’re using an external audio clock source (ADAT optical or S/PDIF), you need to reset the Audio Clock Source option each time you launch Cubase.

MIDI Set-up

Before setting up MIDI ports in Cubase, make sure WCPCI's MIDI ports are enabled — open the WCPCI control panel, go to the System tab, and verify that the Midi Mode is set to '2x2' (Figure 2). If they were disabled, you'll need to reboot the computer after you change the setting to '2x2'.

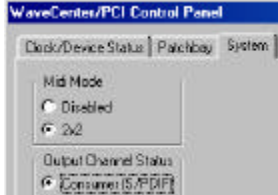


Figure 2

To use WCPCI's MIDI ports in Cubase, you must enable OMS compatibility and then enable the desired MIDI ports. To enable OMS compatibility, go to the Options > MIDI Setup menu, select 'System... ' (to display the MIDI System Setup window), and set the "OMS Compatibility" field to 'IN & OUT' as shown in Figure 3.

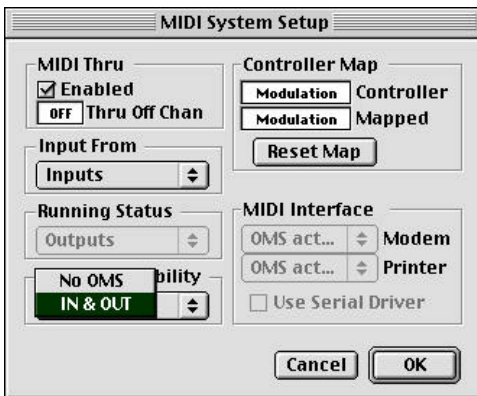


Figure 3

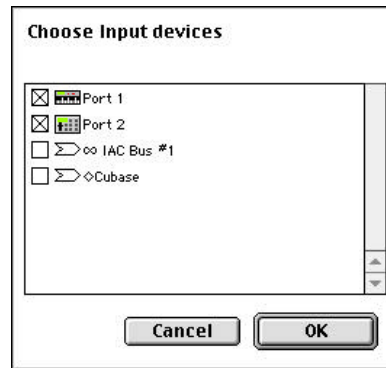


Figure 4

Click "Inputs" (in the "Input From" section of the MIDI System Setup window) to display the list of available MIDI inputs. Enable the appropriate check boxes, and then click OK (Figure 4).

The "MIDI Sync Reference" parameter in the Audio System Setup window (Figure 1) lets you select a sync source for MIDI playback. We recommend "Audio Clock" unless you are synchronizing to timecode.

The "MIDI to Audio Delay" parameter in the Audio System Setup window (Figure 1) lets you advance or delay MIDI tracks in relation to audio tracks during playback. This can be useful when compensating for delays in D/A converters when playing back MIDI tracks that have been re-recorded onto audio tracks.

Audio Recording and Playback

Before recording, you need to enable the WCPCI inputs and activate multichannel recording.

1. From the Panel menu, select the “VST Inputs” panel.
2. Click the ‘ACTIVE’ button for each WCPCI input pair you want to enable.
3. In the VST LABEL column, enter the name you want to display in all input selection fields.
4. To activate multichannel recording, select “Multirecord > Active” from the Options menu.

Use the Arrange window (Windows menu > Arrangements) to set up the tracks for recording.

1. For each track you want to record, select “Create Track” from the Structure menu.
2. For each new track, click in the column labelled ‘C’ and select “Audio Track” from the pop-up menu (see Figure 5).
3. From the Panels menu, select “VST Channel Mixer” to open the Mixer window.
4. Apple-click on the “IN” button at the top of the desired mixer strip to display a pop-up menu that lists available inputs, and select the input you want to record (see Figure 6).

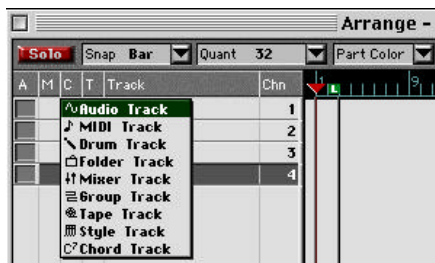


Figure 5



Figure 6

5. Click on the “IN” button to activate the input for each track you want to record (see Figure 7).



Figure 7

6. Send audio to the selected inputs, and set the appropriate input level.
7. To begin recording, click the Record button in the Transport window.

Note: Once you’ve set up all your input, output, and mixer parameters, you can save them in a song called “Autoload” in the Cubase folder. Whenever you restart Cubase, those parameters are recalled.

MIDI Recording and Playback

Use the Arrange window (Windows menu > Arrangements) to set up the tracks for recording.

1. For each track you want to record, select "Create Track" from the Structure menu.
2. To specify each new track as a MIDI track, click in the column labelled 'C' and select "MIDI Track" from the pop-up menu (see Figure 8).

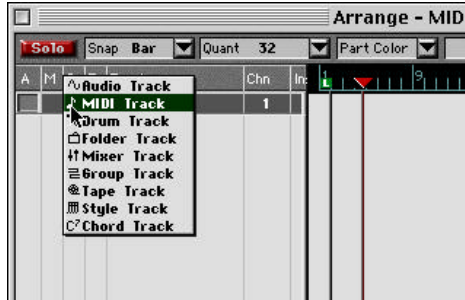


Figure 8

3. Click the Track Info button at the bottom left of the Arrange window, and select an output port and MIDI channel for the track you want to record, as shown in Figure 9. You can also specify a program change, if desired.



Figure 9

4. To start recording, click the Record button in the Transport window, play your MIDI controller.
5. Click the Stop button when you finish recording.
6. Locate to the beginning of the song, and click the Play button to play back the track.