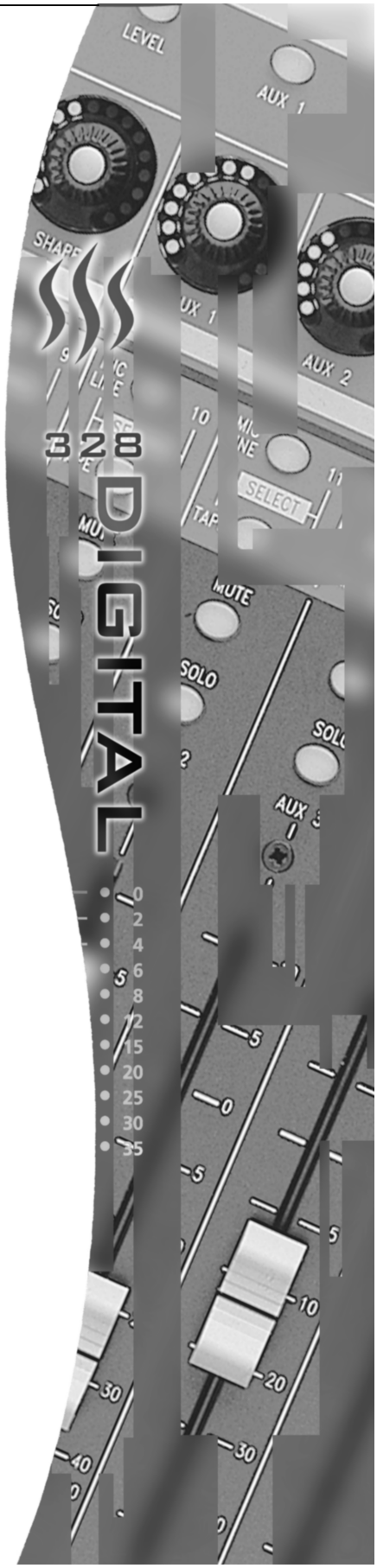
SPIRIT
BY SOUNDCRAFT

digital
three two eight
V 2.0



cakewalk

Version 9 PC

Setup Guide

Revised: 06-12-00

Digital 328 v2 and Cakewalk Version 9 PC

Contents

1	Introduction	2
2	Configuring Cakewalk	4
3	328 Instrument Definition	6
4	328 Automation Setup	8
5	Automation Tutorial	10

1 Introduction

328 Automation

The Digital 328 mixing console offers full dynamic automation. What this means is that any encoder/fader movement, button press, in-fact any control surface setting can be recorded in realtime via MIDI to Cakewalk, for playback at a later time.

The 328 allows not only every control surface audio parameter to be automated, but also full automation of both Dynamic Processors and both FX Processors.

This means that a fully automated mix track can be integrated into a recording session, containing any fades, mutes, snapshot recalls etc. that occur at certain points through your song.

As the automation data is recorded using MIDI messages, any automation event may be isolated and edited/moved/deleted from within the sequencer track, or even new automation events can be created from within the sequencer itself.

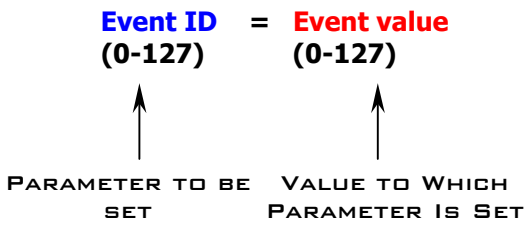
How Does The 328 Achieve Dynamic Automation?

The 328 achieves automation via standard MIDI messages, the same MIDI messages which are usually associated with MIDI keyboards, drum machines etc. The only difference when it comes to automating the 328, is in the way that the console responds to these MIDI messages: a MIDI synthesizer's response to a certain MIDI message may be to increase the resonance of a filter, the 328's response to that same message may be to move channel fader 9 to +5dB!

Continuous Controller And NRPN Messages

Many other automated devices utilize MIDI Continuous Controllers (Control Changes) to accomplish their automation. A MIDI Continuous Controller message, of which there are 128, consists of two parts (bytes): an Event ID byte describes to a receiving device which parameter to change, and an Event value data byte tells the instrument by how much to change that parameter.

The message format of a Continuous Controller message is as follows:



This gives 128 different controllers, each with a resolution of 128 values.

However, in the designing of the 328, it was decided that limiting the amount of automatable functions to 128 would be somewhat restrictive, when in-fact there are almost 1,500 functions on the 328 which could (and do!) fall under automatable operation.
To access the 'extra' Event ID's needed to automate every parameter on the 328, the 128 Continuous Controllers of all 16 MIDI channels are used (see the MIDI Specifications in the Appendix Version 2 Software Manual). Consequently you should ensure that the 328 is connected to a dedicated MIDI In and a dedicated MIDI Out port on the computer.

Snapshot Automation

The 328 also offers Snapshot automation: any Snapshot (or User Setup) can be recalled within an automation track. This is done with standard MIDI Program Changes.

You may already have used Program Change commands with a MIDI synthesizer as a means to select voices – there are 128 Program Change commands (0-127), each one corresponding to a different voice on the synthesizer: Sending Program Change 52 to the synthesizer would recall voice 52. Snapshot automation operates in the same fashion.

The following table indicates the Program Change message value required to recall each individual Snapshot and User Setup.

Program Change	Recalled
00	Snapshot 001
01	Snapshot 002
---	---
98	Snapshot 099
99	Snapshot 100
100	User Setup 01
101	User Setup 02
---	---
124	User Setup 25
125	User Setup 26

So, to recall Snapshot #1, Program Change 0 should be sent to the 328. To recall Snapshot #69, Program Change 68 should be sent to the 328, and so on.

Note that within Cakewalk it is possible to view MIDI Program Changes within the range 1-128, to avoid confusion.

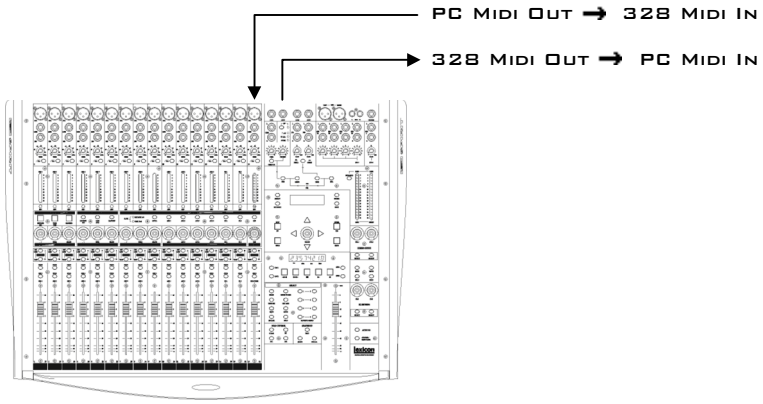
However, there is one other thing to bear in mind - every individual Snapshot has a 'MIDI Recall' selection that can be enabled/disabled. If 'MIDI Recall' is turned 'OFF' for a particular Snapshot, then it cannot be recalled via a Program Change command. Therefore, any Snapshot you wish to recall from within an automation track must have 'MIDI Recall' turned 'ON', else the Snapshot will not recall. When the Global 'MIDI Recall' of Snapshots is switched to 'ON', any Snapshot subsequently created will automatically have 'MIDI Recall' switched to 'ON'. To do this, enter the 'Snapshot Setup' menu and toggle 'MIDI Recall' to 'ON'.

2 Configuring Cakewalk

MIDI Connections

It is essential that a 2-way MIDI communication configuration is used between the 328 and Cakewalk.

Using standard MIDI cables, connect the 328 MIDI Out to the PC MIDI In, and connect the 328 MIDI In to the PC MIDI Out.



This 2-way communication configuration now allows full automation recording and playback.

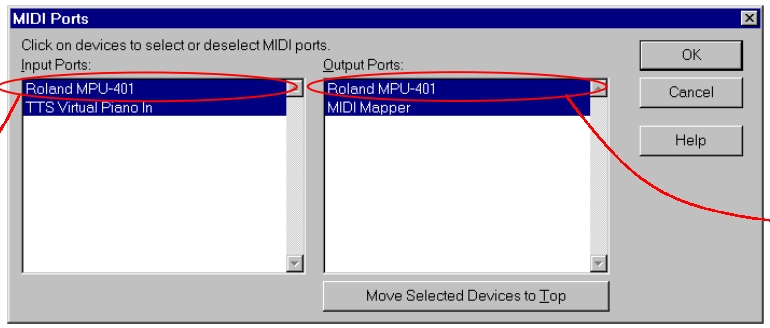
Cakewalk Setup

Now, in the 'Output Ports' selection select the MIDI Out port you are using the 328 with. Click on 'Move Selected Devices to Top' so that it moves to the top of the list.

Ensure that both the MIDI In and MIDI Out ports are enabled (highlighted) for the MIDI interface you are using the 328 with, as well as for any other devices on any other MIDI Ports.

Here, the MIDI Port being used with the 328 is 'Roland MPU401', and hence both the Input (MIDI In) and Output (MIDI Out) are selected. The other ports are selected as they are used by other MIDI devices.

Ensure that the MIDI In port being used with the 328 is selected

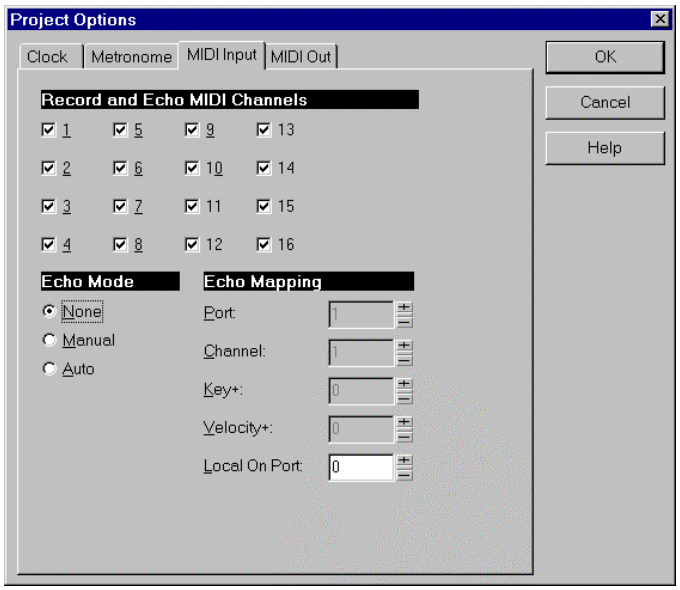


Ensure that the MIDI Out port being used with the 328 is top of the list, and selected

Click on 'OK' to confirm these settings.
When writing from the 328 with Cakewalk (and with any sequencer in fact), MIDI Echo must be disabled on the MIDI port being used by the 328. If MIDI Echo is left enabled, a MIDI feedback loop will be created, and the 328 will behave erratically.

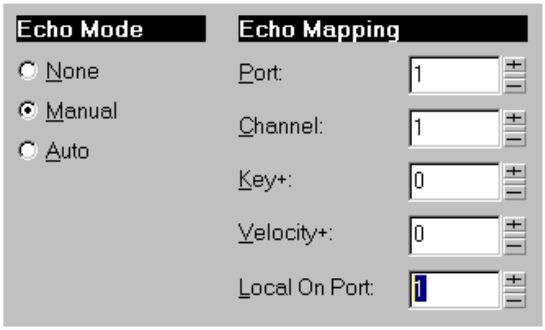
Now enter 'Project Options…' on the 'Tools' pull-down menu, and click on the 'MIDI Input' tab.

If you have no other instruments on other MIDI ports requiring MIDI Echo, simply set Echo mode to 'None' and click on 'OK':



If, however, you are using any other instruments that do require MIDI Echo, you must configure Cakewalk to disable MIDI Echo for the 328's MIDI port only:

Select 'Manual' Echo mode. Now set the 'Local On Port' to the 1 and click on 'OK'.



Note: If only one MIDI port is available on the PC, Global MIDI Echo must be disabled.

You have now created a blank environment which is '328 ready'. You are advised at this point to save the song as a .wrk file, and use this as a default blank song every time you start Cakewalk. Otherwise you will have to repeat the above procedure every time you start work on a new song.

3 328 Instrument Definition

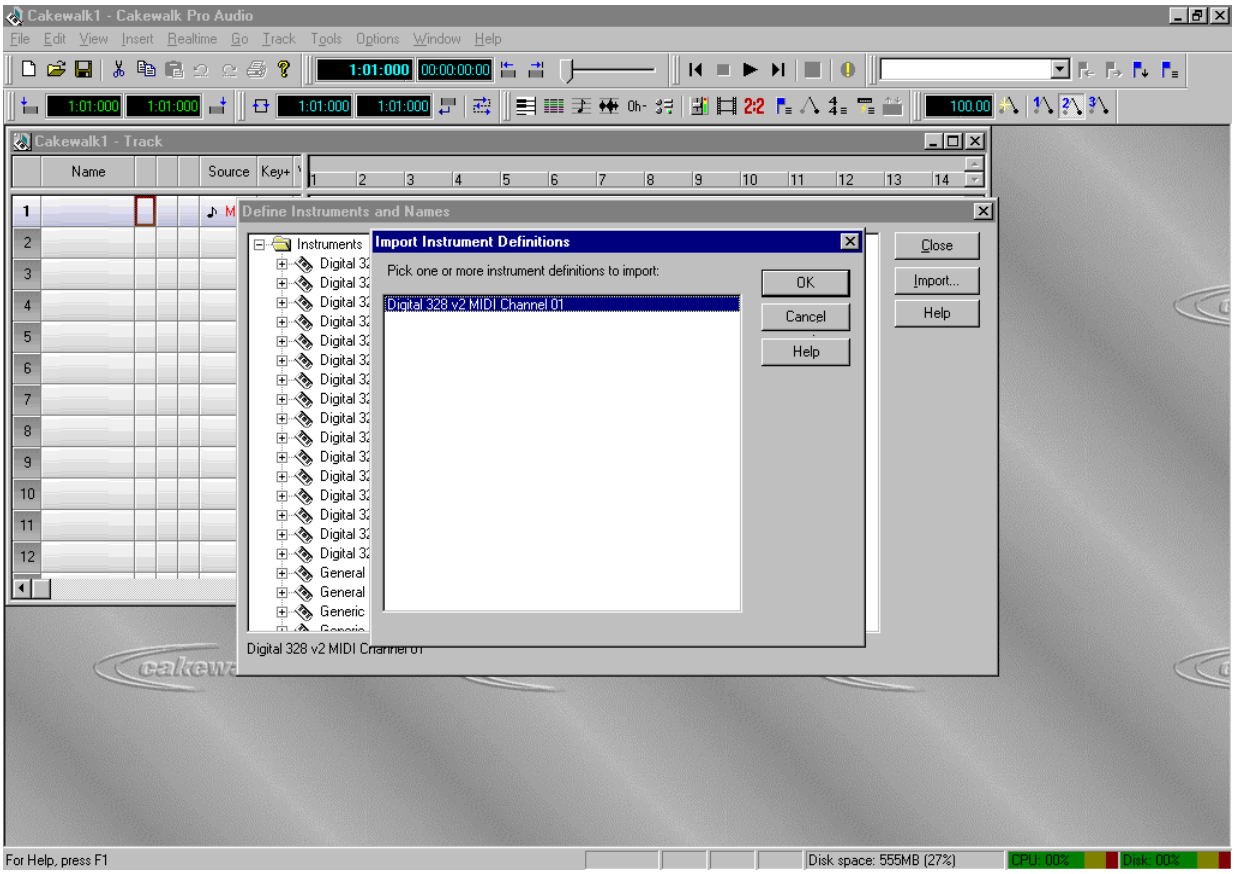
Installation Procedure

The 328 Instrument Definition comes in the format of a text based file, *Spirit328.ins*, which can be downloaded from the Spirit website *www.spiritbysoundcraft.com* or the Digital 328 webiste, *www.digital328.com*.

As described earlier, the 328 Instrument Definition essentially 'labels' the Continuous Controller values relevant to the 328's automation, meaning that any automation recorded or edited within Cakewalk will be presented as a description, i.e. 'Ch7 Level', instead of a numerical Continuous Controller value.

The 328 Instrument Definition file also 'labels' Patch Change values relevant to the 328, meaning that any Snapshots or User Setups recalled within a song will be relevantly labeled.

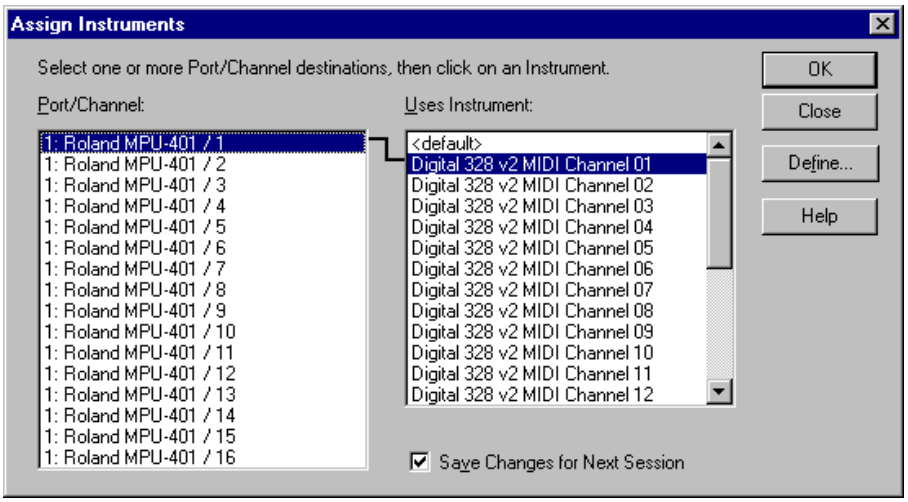
Go to the 'Tools' pull-down menu, select 'Instruments…', and then click on 'Define…'. A window should open presenting the current instrument definitions available. Click on 'Import…', then locate the 'Dig328v2.ins' file and click on 'Open'.



Now select 'Spirit Digital 328' and click on 'OK'. 'Spirit Digital 328' should now appear as an instrument selection in the 'Define Instruments and Names' window.

Now click on 'Close'. The 'Assign Instruments' window should now be displayed.

On the left hand of the screen select MIDI Channel 1 for the MIDI Port to which the 328 is connected.



Now 'connect' the selected port to the 'Spirit Digital 328 channel 1' instrument selection on the right hand of the screen. Repeat this for MIDI Channels 1-16 on the selected Port. Ensure that the MIDI Port MIDI Channels are linked to the appropriate 328 MIDI Channels.

It is suggested that the 'Save Changes for Next Session' box is ticked, otherwise this procedure must be repeated every time a new session is started.

Click on OK to finalize the settings. Now, any automation data recorded from the 328 into Cakewalk will be labeled with a relevant description, i.e. 'Ch5 Pan' or ''STE1 Mute', instead of being presented simply as a numerical Continuous Controller value.

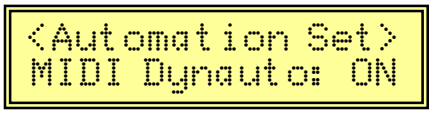
4 328 Automation

Automation Settings On The 328

The first thing to set on the 328 is which MIDI Channel on which you wish to transmit/receive Snapshot automation data. Press **<MENU>** then scroll up to 'User Options' and press **<ENTER>**. Here you can configure on which MIDI Channel the transmits/receives Snapshot/User Setup MIDI Program Changes (note that if User Options|Omni Mode is enabled then the 328 will receive and respond to Snapshot MIDI Program Changes on all 16 MIDI Channels).



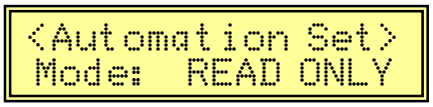
To make use of any automation facilities on the 328, 'MIDI Dynauto' must be enabled in the 'Automation Setup' menu. Press **<MENU>** then scroll to 'Automation Setup' and press **<ENTER>**. Here 'MIDI Dynauto' must be enabled otherwise the 328 will neither transmit nor respond to any received automation data.



Scroll down one page to the automation 'Mode' page. Four automation modes are available on the 328: Read Only, Write Only, Read/Write, Update. Each mode determines how the 328 will transmit/respond to automation data, and each has its own applications.

Automation Modes On The 328

Read Only Mode



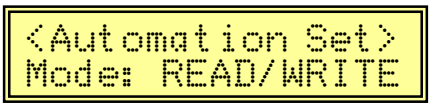
When the 328 is in Read Only mode, it only responds to automation data received and does not transmit any automation data. This mode may be useful when a final automation performance had been completed in Cakewalk, and no more automation data was to be recorded. In this case the desk could be set to Read Only as a 'safe' mode, to ensure that no further automation data was recorded over the final automation performance.

Write Only Mode



When the 328 is in Write Only mode, it only transmits automation data, and ignores any incoming automation data received at its MIDI IN port. This mode is useful for quickly recording several versions of an automation take into Cakewalk, where on each recording pass the previously recorded take is ignored by the 328. Each take can then later be previewed in turn (in Read mode), and the preferred take kept as a performance.

Read/Write Mode



Read/Write mode is simply an amalgamation of Read Only mode and Write Only mode. In this mode the 328 transmits automation data and responds to any automation data received at its MIDI IN port. Read/Write is the most commonly used automation mode – a single automation take can be recorded into a sequencer, then instantly previewed on playback.

Update Mode



The final automation mode is Update mode. This mode allows live changes to be made to any individual automation parameter within a previously recorded automation take. For example, say a complex automated mix had been recorded containing many automation parameters, which would be the perfect mix if it weren't for that inaccurate FX2 fade-out just before the end of the track! Update mode could be used here to 'punch-in' record a new FX2 fade-out at the desired point whilst preserving all other automation data.

Essentially, Update mode is identical to Read mode, only that the automation data received by the 328 is re-transmitted back to the sequencer. However, the moment a parameter change is made on the 328, that parameter only enters Write mode, whilst all other parameters continue to be passed through into the 328.

This may seem a bit complex in theory, but in practice it is a very simple concept – Update mode essentially lets you punch-in parameter specific edits into an existing automation mix.

Note: If you wish to update an automated fader movement that you must not attempt to 'take over' the moving fader when you wish to punch-in your change – always use the rotary encoder equivalent on the meter controls. This is simply due to the motorized nature of the 328's faders.

Note: Once an automatable 328 object has been adjusted in Update mode, it will not enter Read mode again until READ ONLY or READ/WRITE is selected in the 328 Automation Setup menu.

5 Automation

Getting Started

Before you continue, it is strongly suggested that you save your current desk settings as a User Setup, as you are about recall the factory defaults. You will then be able to recall this User Setup once you are finished with the guide, and return to your personal desk configuration.

To store your current settings as a User Setup, press **<MENU>,** scroll down to 'User Setups' and then press **<ENTER>**. A list of User Setups should now be displayed. Find an empty location and then press **<STORE>** (in Snapshot panel). Now press **<ENTER>**, give the User Setup a relevant name with the Master Encoder, then press **<ENTER>** once more to confirm. Press **<MENU>** to return back to the main menu.

Now to recall the factory defaults: Press **<MENU>**, then scroll down to 'User Setups'. Press **<ENTER>** to display the User Setup list, then scroll down to '27:Factory Defaults'. Press **<RECALL>** (in Snapshot panel), and the desk should reset to its factory defaults.

Press **<MENU>**, scroll up to 'User Options', and press **<ENTER>**. Ensure that the 'MIDI Channel' setting is set to the channel you have chosen to use the 328 on, i.e. the channel that you reserved as a 'MIDI Thru = Off' channel (see 'Cakewalk Setup' section). Press **<MENU>** to return to the main menu.

Now to enable automation on the 328: Scroll down to 'Automation Setup' and press **<ENTER>**. Set 'MIDI Dynauto' to 'ON'. Press **<MENU>**, and scroll up to the 'Snapshot Setup' menu. Press **<ENTER>** and set 'MIDI Recall' to 'ON'.

When using automation on the 328, it is strongly advised that before the start of your song you recall a Snapshot which initializes all automation settings to their desired state at the beginning of the song. This is easily achieved by inserting a Program Change just before the start of your song which recalls the 'initial state' snapshot. Otherwise, stopping the track mid-way through an automated sequence, then starting playback right from the beginning will cause undesired settings.

For this reason, you must ready a 'blank' snapshot for recall just before the beginning of the tutorial song.

On the 328, select the Mic/Line fader bank. Move all of the faders down to -∞ dB. Press **<SNAPSHOT>** to enter the snapshot list. Scroll up to slot 1, then press **<STORE>** (on snapshot panel). Press enter, then scroll down two pages and set 'MIDI Recall' to 'ON' – otherwise the snapshot will not recall via Program Change.

Manually Recording Information

On the 328, press **<MENU>**, scroll to 'Automation Setup', locate 'Mode', and set it to 'Read/Write' mode. The 328 is now ready to write our new automation take to a new Track in Cakewalk whilst performing the automation data already present in Cakewalk.

You are about to record some automation data onto Track 1. To achieve this you must first prepare Track 1 within Cakewalk to record (and later on, playback) the automation data on the 328's MIDI Port and MIDI Channel.

In Cakewalk, right-click on Track 1's 'Name' box, and select 'Track Properties…':

Set 'Channel' to 1, set 'Port' to ' ♪ 1-Spirit Digital 328', and click on 'OK' to confirm.

We are now ready to record to Track 1.

Get your fingers ready to record some movements on Mic/Line Ch1 and Ch2 Faders.

You may wish to play through the sequence a few times, to practice mimicking the movements.

When you are ready to record, make sure that Track 1 is selected in Cakewalk, so that your new automation take is recorded to this track.

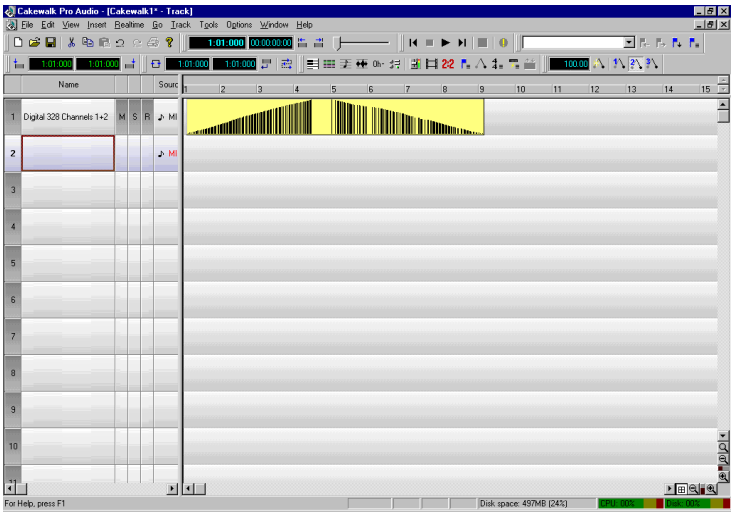
Click on Rewind to  ensure that recording begins at the beginning of the sequence.

Now click on Record  to begin recording, and perform your automation take.

Every move you make to the faders will be recorded as NRPN messages into Cakewalk.

Once the end of the sequence has been reached, click on Stop  to cease recording.

Your automation movements should now be present on Track 1. You can name the sequence if you wish, by right-clicking on the sequence and choosing 'Properties…':



Now click on Rewind  then click on Play 

Both the original and the new automation should playback on the 328. If you are not happy with the results, simply delete your automation take, and try again!

To record additional tracks, create further Digital 328 tracks within Cakewalk and repeat the processes above.

Now It's Your Turn...

This should give you an idea of how easy it is to automate the 328 from Cakewalk. Don't forget that all control surface settings are automatable – even the Lexicon FX units and the Dynamic Processing units!

This short tutorial simply shows how to automate the 328 alone from Cakewalk, using simple fader movements to present the automation capabilities.

Now, when developing compositions the 328 is completely integrated into your Cakewalk setup. A song can now be constructed using automation techniques alongside traditional sequencing techniques – you may wish to use an automated EQ sweep on a riff instead of a filter sweep, or maybe automate the delay FX send on a vocal take throughout a song – the possibilities are endless! And of course, anything you don't like, you can move/edit/delete just as with any other MIDI information.

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