

## 2. MANUAL FOR STUDIO B

### 2.1 WIRING AND SETUP OF STUDIO B

Generally Studio B is used as the recording room where a singer or the musician is recorded but as we mentioned before, Studio B can also be used as an independent production studio. In the next paragraphs we list all necessary devices as well as the wiring and design in Studio B.

#### 2.1.1 *The Mixer - Tascam DM-3200*



Figure 41: Tascam Mixer DM-3200

The main unit in studio B is the digital mixing console Tascam DM-3200. Like in Studio A, all the audio signals are routed to this mixer. Besides it can be used as an audio interface connected with firewire to the PC workstation.

##### 2.1.1.a *In- and outputs of the Tascam DM-3200*

- » 16 XLR inputs with 48V phantom power
- » 4 Sends (jack plugs)
- » 4 Returns (jack plugs)
- » 2 AES/EBU

- » 2 SPDIF
- » ADAT I/O (optical audio)
- » 3 TDIF
- » MIDI In/Out/Thru
- » USB 2.0
- » Word Clock I/O

There are also two patchbays in Studio B; 16 analog inputs, coming from the stagebox in Studio A and 8 analog outputs as returns.

The mixer is also connected with:

- » the SPL surround monitor controller via 6 analog outputs
- » the Lexicon MX400 via SPDIF

## 2.1.2 *The Patchbay*

### 2.1.2.a *Patch Bay 1*

#### **1st row**

- » Channel 3-4: SPL GoldMike MK2 inputs

#### **2nd row**

- » Channel 1-2: SPL GoldMike MK2 outputs
- » Channel 7-8: Tascam MD-CD1 outputs

All the rest of the plugs are not connected.

### 2.1.2.b *Patch Bay 2*

#### **1st row**

- » Channel 1-20: Inputs coming from SB
- » Channel 21-24: Returns to Stagebox at Studio A

#### **2nd row**

- » Channel 1-14: Going to Tascam DM-3200
- » Channel 21+22: Studio out from mixer

- » Channel 23+24: Control room out from mixer

### 2.1.3 *Lexicon MX400*



Figure 42: Lexicon MX400 - surround reverberator

It is a dual stereo, surround effect processor integrated with two SPDIF cables going to the Tascam DM-3200 to Digital In/Out 1+2

### 2.1.4 *Monitor Setup*

We use the same monitor controller as in Studio A.

#### 2.1.4.a *5.1 Surround Monitors*

- » 5 Genelec 8030A-BI (2 way active monitors)
- » 1 Genelec 7060 A subwoofer (LFE)

#### 2.1.4.b *Stereo monitors*

- » 2 x Genelec 1029A (2 way active monitors)

### 2.1.5 *emagic Uitor 8 MIDI Interface*



Figure 43: emagic MIDI interface Uitor8

This MIDI Interface is used as bridge between the Nord G2X Modular Synthesizer and the HP Workstation.

2.1.5.a Nord G2X Modular Synthesizer



Figure 44: Nord G2X Modular - professional synthesizer

2.1.5.b M-Audio Trigger Finger Pad



Figure 45: M-Audio Trigger Finger

2.1.5.c Native Instruments Kore Controller



Figure 46: Kore Controller from Native Instruments

## 2.1.6 Recording

### 2.1.6.a Wiring

If you use Studio B as the central control room for your recordings we recommend to use Studio A as the recording room.

Therefore we do a single track recording session as in Studio A and need to connect the microphone with the stagebox in Studio A. We use channel 1, as usual.

There are two patchbays (chapter "Wiring and setup of studio B") in Studio B. The first one is connected with the stagebox in Studio A and the second one is used to insert effects and external preamps (e.g.: SPL GoldMike MKII).

You need two symmetric patch cables to connect the preamplifier. Ensure that the phantom power of Tascam's DM 3200 is turned off and the Mic - Line switch is set to Line.

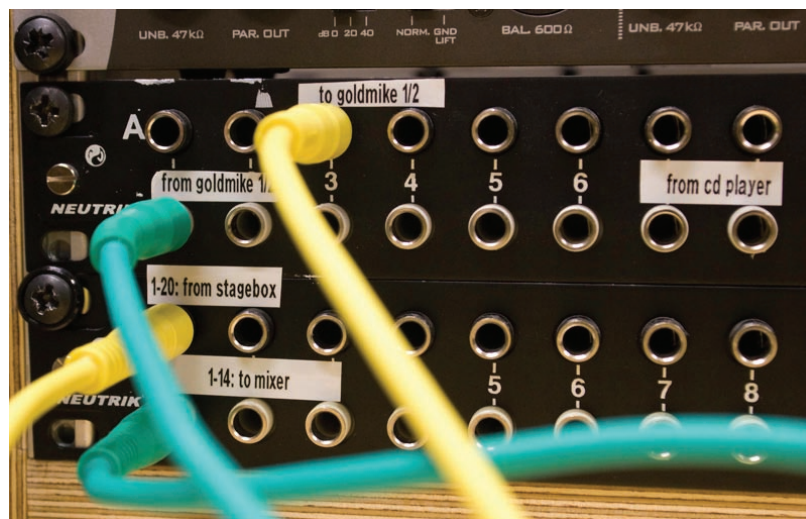


Figure 47: Use the SPL Goldmike pream in Studio B

from stagebox -> to SPL preamp

from SPL preamp -> to mixing console

**Note:** If there is no external hardware (nothing is patched) the channels of the stagebox are similar to the Tascam preamps. The patchbay is half normalized.

## 2.1.7 Tascam DM 3200 - Routing

The Tascam mixer distinguishes from the Yamaha O2R and so we have to consider these differences for our recording and software setups.

Once you connected the microphone with the stagebox in Studio A you need to select a channel that you want to record. Generally we use channel one, which is the channel which is routed to the first preamp of the Tascam DM3200.

To go to the home screen of Tascam's DM3200 press `MODULE` in the Home section. It displays:

- » *Dynamics*
- » *Auxiliaries/Buses*
- » *Equilaiser*
- » *Setup*

**Note:** *If you use a condenser microphone you have to switch on the phantom power of the channel. The switch is placed above the channel gain controller and the MIC/LINE switches. In opposite to Studio A there is no phantom power switch for each channel. Phantom power is subdivided into four groups for 16 channels, which means you have 1 phantom power switch for 4 channels. There should be no problem using a dynamic microphone on a group where 48 volt phantom power is turned on.*



Figure 48: Microphone groups of the Tascam mixer

Press `ROUTING` and select the register *Input*:

After that select your favorite channel - we recommend channel one - and choose `M/L` via the jog wheel and press `ENTER`.

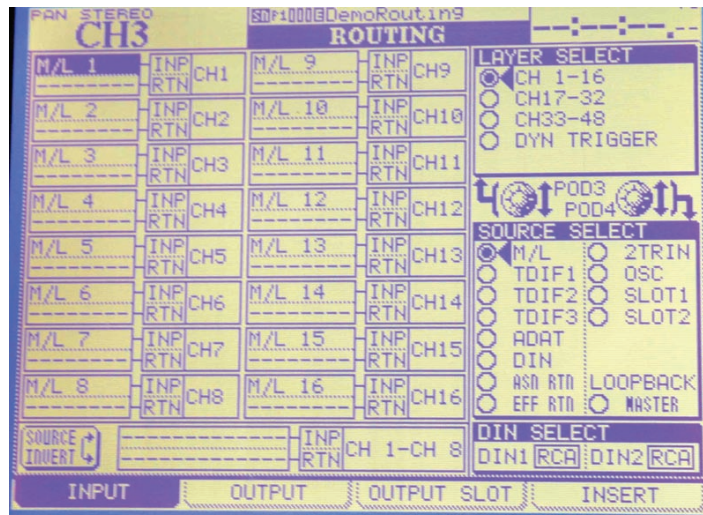


Figure 49: Input section of the Tascam mixer

Now you should be able to see a level on the meter bridge, if not, ensure that you turned on the gain controller.

Finally select the register OUTPUT SLOT and choose SLOT 1. Slot 1 is the firewire interface which is connected to the HP-workstation. Slot 2 is an analog output and is connected to the Surround Monitor Controller.

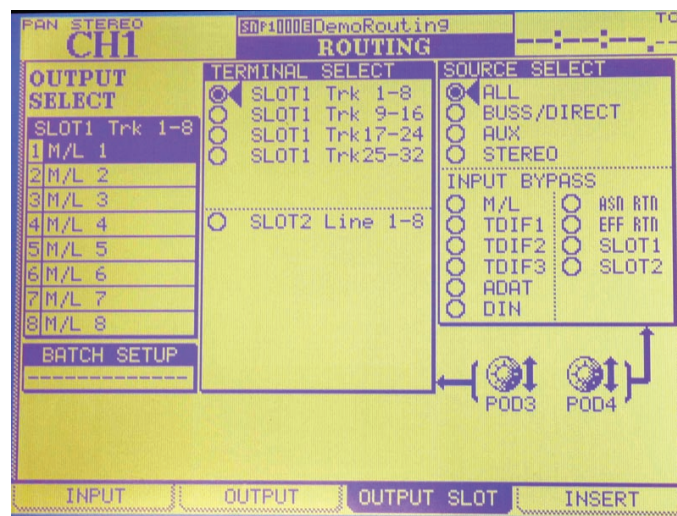


Figure 50: Output Slot section of the Tascam mixer

**The signalflow is:**

mic -> sb ch1 in-> patchbay ch1 in-> Tascam preamp1 in ->Tascam ch1 in -> Tascam slot1/1 out -> via firewire interface ch1 to daw ch?

## 2.1.8 Tascam Dm 3200 - Synchronisation

The firewire interface is integrated to the Tascam mixer so you have to change the sample rate on the DM 3200 if you want to.

Press **PROJECT** and select the register **Clock**. Now choose your desired sample rate. *INTERNAL 44.1kHz* or *INTERNAL 48kHz*

Check if the sequencer you work with has the same sample rate.

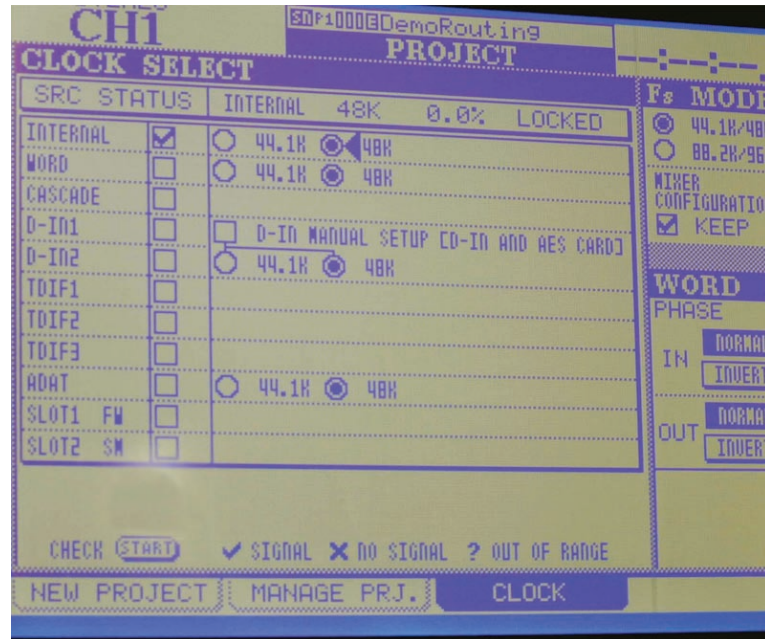


Figure 51: Clock and sync section of the Tascam mixer

## 2.1.9 SPL Surround Monitor Controller

To SPL controller is patched with the analog output card in slot 2 of the Tascam DM 3200 and the studio monitors. You can switch between:

5.1 Monitoring	Stereo Monitoring
5 x Genelec 8030A 1x Genelec 7060B (Subwoofer)	2 x Genelec 1029A

### 2.1.9.a Monitoring and Talkback

Press the **TO STUDIO** button on the Tascam DM 3200 for the talkback function. Like in Studio A the talkback microphone is integrated into the mixing console and can be controlled with the talkback level potentiometer **TB**. The **STUDIO OUT** is connected to the stagebox in Studio A, usually on channel 21 and 22.



Press (ALT) MONITOR to route the STUDIO OUT outputs. There are two options:

- » an arbitrary output like:  
STEREO, AUX 1-8, BUSS 1-16, SLOT 1-2,2TR, DIGITAL IN  
and
- » FROM CONTROL ROOM

If you choose *FROM CONTROL ROOM* the output source is the same as the monitoring in Studio B. If you want to separate the monitor mix use auxiliary outputs.

**Here is an example:**

- » Select *AUX 1&2* on Studio Out output:
- » Press (ALT) MONITOR to get route the Studio Out outputs to *AUX 1&2*
- » Route channel 1 on *AUX 1&2*, prefaded
- » Select Channel 1, press MODULE in the HOME section
- » Turn *AUX 1&2* to 0.0dB
- » Press *AUX* in the *Layer* section and turn on the master of *AUX 1&2*.

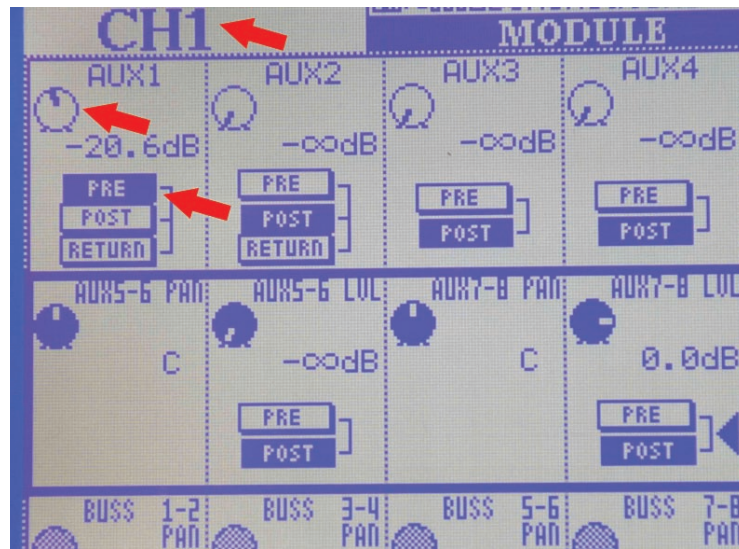


Figure 52: Open AUX 1 on CH 1

**Note:** If the talkback is active (*To Studio* is pressed) all channels are muted on Studio Out.

### Reverb on Auxiliaries

To insert reverb on the *Studio Out* output, for example for vocalists, without recording it:

- » Press **ROUTING** to create effect sends and effect returns.

The DM 3200 has two integrated effect engines, *EFF1* and *EFF2*.

- » In the *Input* register (**LAYER 3**) choose channel 33-36 as the *Effect returns: EFF 1-L and EFF 1-R, EFF 2-L and EFF2-R*
- » In *Output* register, **TERMINAL SELECT**: *EFF SEND1* on **AUX 5&6**, *EFF SEND2* on **AUX 7&8**
- » Press **AUX** in the **LAYER** section and turn on the master of **AUX 5&6**,  
7&8 with the faders 5, 6, 7 and 8.

Now there should be a signal on inputs 33-36. Route this to **AUX 1&2** to insert the reverb on the monitor mix.

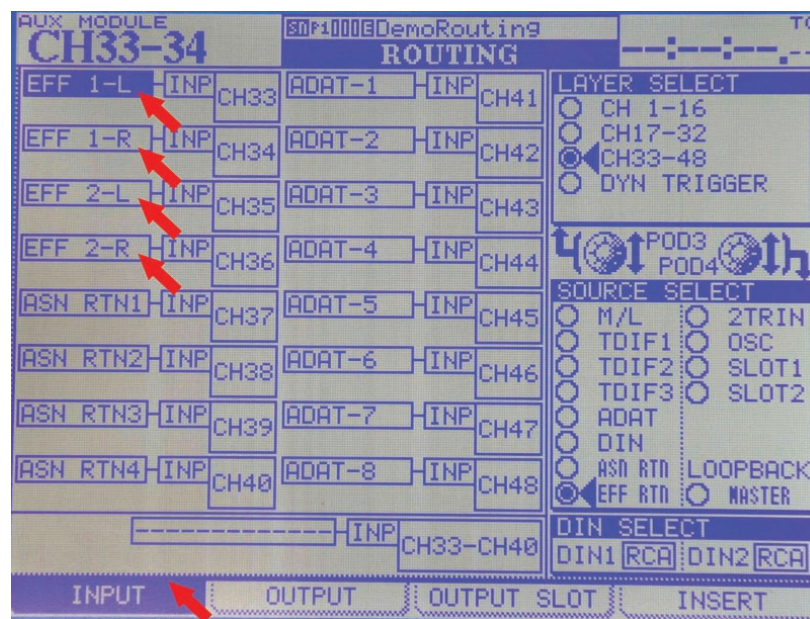


Figure 53: Effect returns

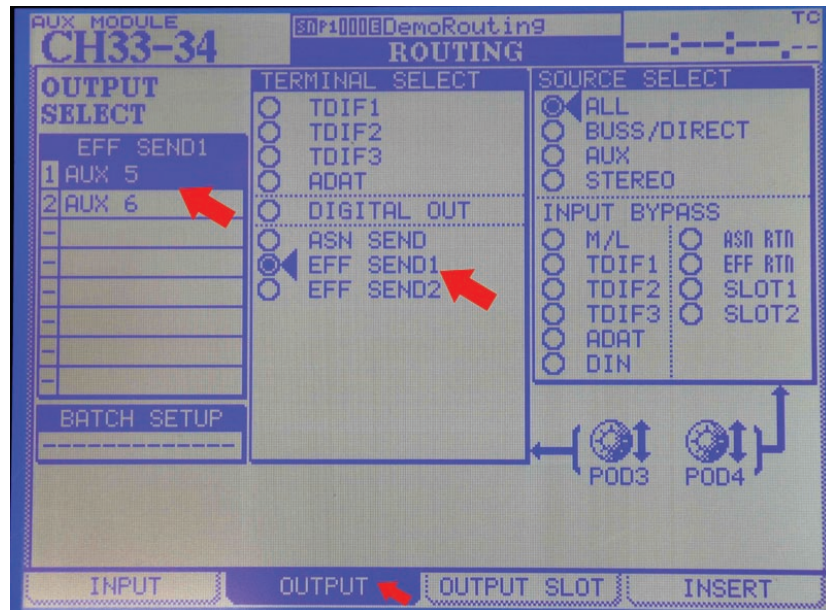


Figure 54: Effect sends

## 2.1.10 Sequencer Configuration

### 2.1.10.a Cubase: Project settings and recording

#### Step 1 - Choose correct audio driver:

Open an new project in Cubase 4 and go to PROJECT -> PROJECT SETUP and choose the sample rate you want. Click on DEVICES -> DEVICE SETUP -> VST AUDIO SYSTEM -> ASIO IF-FW/DM MKII.

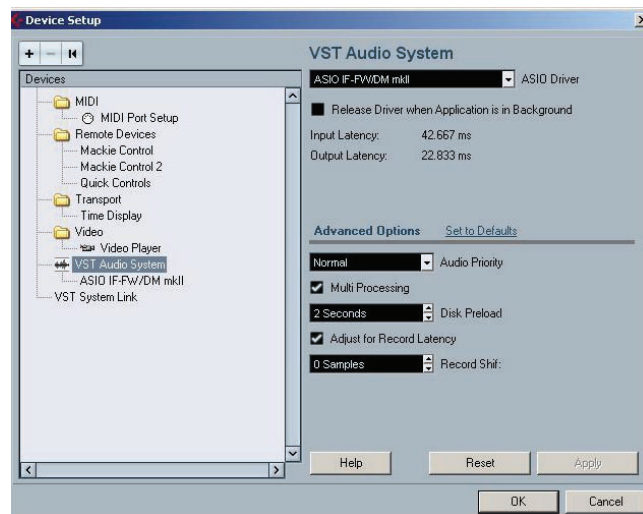


Figure 55: Screenshot 19 - Choose your Tascam asio driver

## Step 2 - VST connection:

Press **DEVICES** -> **VST CONNECTION (F4)** and create a new mono bus in the *input* section. Be sure that **ASIO IF-FW/DM MKII** in the Device Port column is selected. In the register *output* you also have to add a new stereo bus routed to the **IF-FW/DM MKII** interface of the DM 3200.

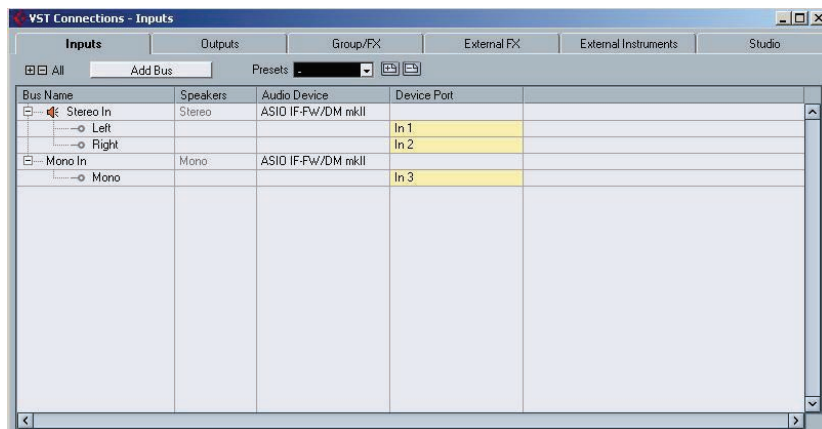


Figure 56: Screenshot 20 - VST input section in Cubase 4 at Studio B

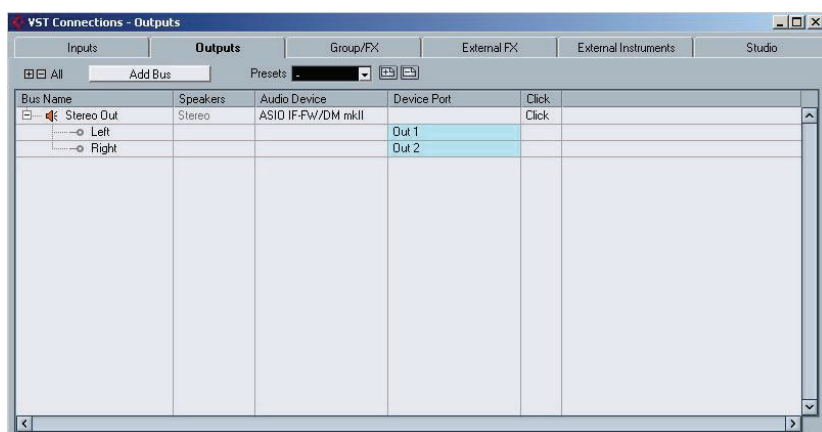


Figure 57: Screenshot 21 - VST output section in Cubase 4 at Studio A

## Step 3 - Create a new project and tracks

Create a new project in Cubase 4 and add a new audio track (mono). Open the mixer and press the "e" (edit channel) button to get into the *VST Input Channel Settings Dialog*. In the upper right corner you have to choose your audiobus to set correct input to your channel.

**Note:** In Studio B you can record up to 16 analog audio channels simultaneously.

### 2.1.10.b Cubase: External FX - Lexicon MX400

If you want to include the Lexicon MX400 in your session click on **FX CHANNEL TRACK** in **Project - Add Track** and choose *Lexicon Hall A* at *External Plug-ins*. Now a new track appears, this is the return of the Lexicon MX400. To send an **AUX bus** to the reverb press **AUDIO CHANNEL SETTINGS** of the desired track and choose *Lexicon Hall A* in the register *Sends*. Set the send-level by press the left mouse button and drag the blue line to the left or right side.

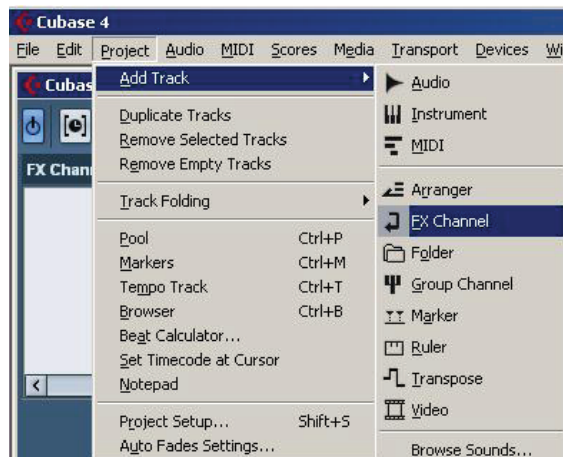


Figure 58: Screenshot 22 - Create an FX Track in Cubase 4



Figure 59: Screenshot 23 - Set FX send level on audio channel

### 2.1.10.c Samplitude: Project Settings and recording

#### Step 1: Project Setup

Click **NEW MULTI TRACK PROJECT (VIP)** to set the sample rate, the session folder. You can change all the other settings while working in the **SYSTEM OPTIONS** and **AUDIO SETUP** by pressing **Y**.

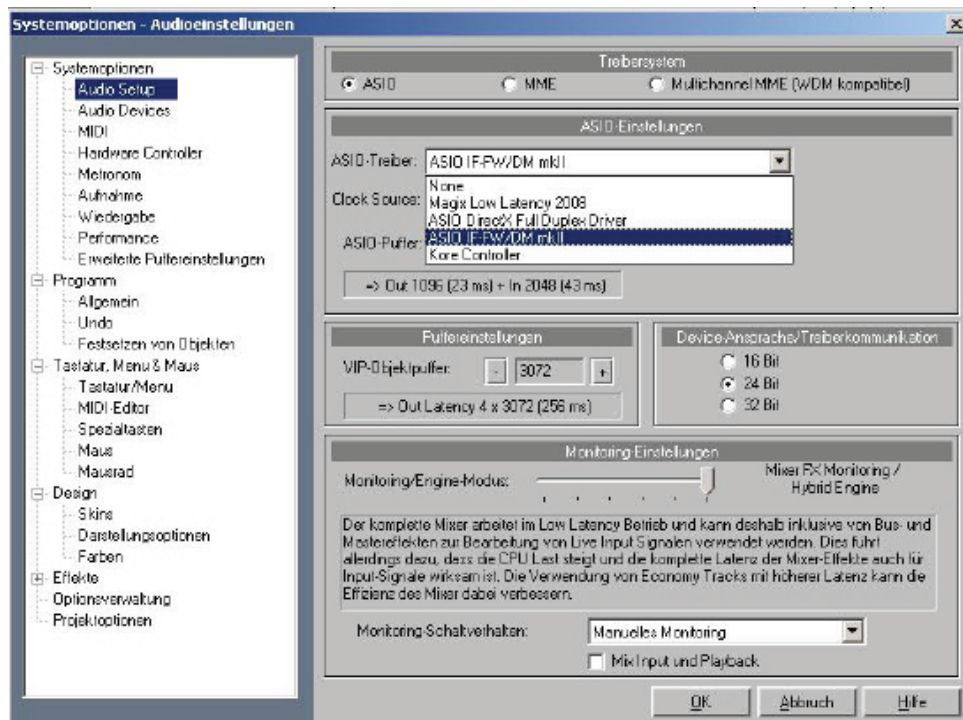


Figure 60: Screenshot 24 - Samplitude Settings

### Step 2: Create a track and select audio device

Create a new track (TRACK – INSERT NEW TRACKS), if you have not done this before. Go to the SYSTEM OPTIONS/AUDIO SETUP in the options menu. Here you can define your audio input and output devices and the driver system they work with. It is highly recommended to use only ASIO drivers.

### Step 3: Input and output section

Press **Y**, click on AUDIO DEVICES and enable all the inputs and outputs by hitting the checkboxes beside. Create new tracks and click on the **R**, the recording symbol of each track, with the right mouse button. A menu appears and you can choose the input of the interface (Tascam DM 3200) you want to record. Press **R** of your keyboard or the record button in the transport window to launch the record.

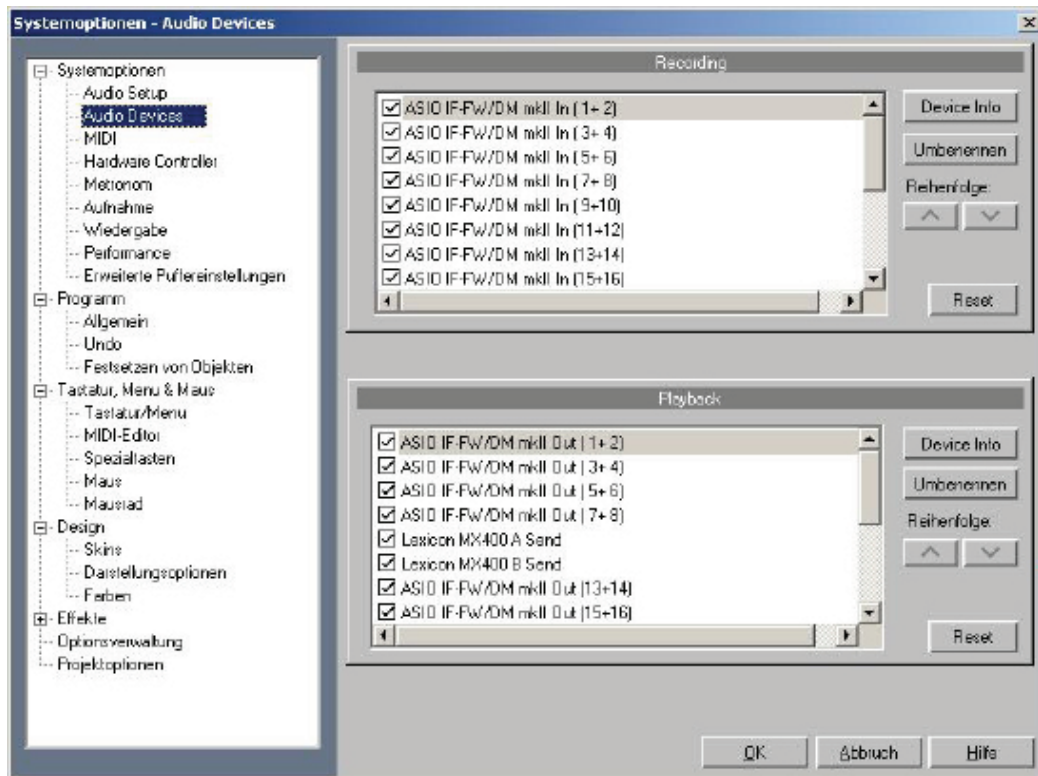


Figure 61: Screenshot 25 - Samplitude In-output section

**Step 4: If you want more channels just repeat step 3.**

#### 2.1.10.d Samplitude - External FX - Lexicon MX400

If you want to include the Lexicon MX400 or any other effect engine in your Samplitude VIP you have to create a new auxiliary output. Open the mixer, *M*, and drag one of the horizontal faders in the *AUX* region to the right to increase the aux send level. Automatically a new *AUX* track in your mixer and your arranger has been created. Now click on the output button of the *AUX* channel and hit LEXICON HALL A/B SEND. The buttons are located at the bottom of each channel or *AUX* fader.



Figure 62: Screenshot 26 - create AUX Track in Samplitude

### Create a return channel

You also have to create a return channel, it is a normal audio track. Click on the **R** button in the arranger of this track with the right mouse button and choose **LEXICON HALL A/B RETURN**. If you want to hear the reverb, please enable the monitoring for the return channel by clicking the small speaker icon.

If you want to bounce your project while using the reverb, open the mixer, press **ON** below the master faders and play the project from the beginning to the end. Samplitude creates a new wave file while playing. This procedure is also called "real time bouncing" in Cubase 4. If there are no external plug-ins in your session please do the mixdown by clicking the mixdown button.

## 2.2 MIXDOWN OF YOUR AUDIO FILES

### 2.2.1 Mixdown in Cubase

#### Step 1 - Set your locators

» Before the mixdown you have to locate your set your left and right locator in your arrangement window.

#### Step 2 - Select your tracks



- » You have to ensure that none of your tracks and effects you want to export are muted.

### **Step 3 - Mixdown preferences**

- » Go to `FILE -> AUDIO MIXDOWN`
- » choose your sample rate, bit rate, file format, filename and destination of your mixdown
- » At Audio Engine Output choose the stereo bus for a stereo file or the 5.1 bus for surround mixes.

### **Step 4 - Mixdown**

- » If you use lot of VST plugins you might need to create an Real-time Export.
- » press `OK`
- » Cubase creates an audio file on your harddisk

**Note:** For detailed information about Audio-Mixdown please have a look in the Cubase 4 Operation Manual, English version on page 359

## **2.2.2 Mixdown in Amplitude**

### **Step 1 - Select your audio tracks, select range**

All active (not muted) audio tracks will be bounced. Optionally you can select a range with the mouse cursor.

### **Step 2 - Bounce options**

Go to the mixer and press `MIXDOWN`. Here you can set your bounce options. Select your file type, file format, bit rate (resolution), sample rate and your bounce source, like in all other sequencers.

### **Step 3 - Bounce**

## **2.3 MIDI PRODUCTION AT STUDIO B WITH CUBASE 4**

Studio B offers a lot of features for MIDI production.

With Cubase 4 you can produce very complicated MIDI arrangements. According to that the Native Instruments Komplete 4 software package offers a huge amount of virtual instruments via VST in Cubase 4 and allows you to produce and create very realistic or specialized sounds tailored to your particular needs.

### 2.3.1 *NI Komplete 4 Collection Overview*

#### **Absynth 4**

It is a worldknown software synthesizer with a lot of parameters to create your own sounds.

#### **Akoustik Piano**

Contains samples of Steinway, Bechstein, Boesendorfer and Steingraeber pianos.

#### **B 4 II**

A virtual organ which is a emulation of one of the worlds most famous organs.

This plugin sounds very realistic!

#### **Battery 3**

Professional sample engine for drum- and percussion sounds.

#### **Elektrik Piano**

VST Instrument which offers Samples of the MK1, MK2 E7 and A200 Keyboards

#### **FM8**

Frequency modulation synthesizer with innovative handling.

#### **Guitar Rig 2**

Software emulation of worldknown guitar amplifiers, cabinets, microphones and effects.

#### **Kontakt 2**

Sample engine of Native Instruments with huge instrument library

#### **Pro-53**

This virtual instrument emulates the legendary analog synthesizer of the 80s.

#### **Reaktor 5**

Reaktor combines a modular synthesizer and sampling studio.

#### **Spektral Delay**

Delay software which allows control over 1024 spectrums.

#### **Vokator**

Vocoder and vocoding-based Synthesizer

## 2.3.2 MIDI Setup Studio B

Unlike in Studio A we use more MIDI devices in Studio B.

### 2.3.2.a emagic Unitor 8 - MIDI interface

The emagic Unitor 8 MIDI interface is connected with the HP workstation via RS 232 serial gateway and offers eight MIDI in- and eight MIDI outputs.

### 2.3.2.b Nord modular G2X Synthesizer

The Synthesizer is linked via MIDI with the emagic interface.

### 2.3.2.c M-Audio Trigger Finger

The Trigger Finger is a MIDI drum controller and is linked via USB 2.0 with the HP workstation.

### 2.3.2.d Native Instruments Kore controller

This controller allows you a remote control of the Native Instruments Kore Software which is a very helpful tool for finding and administrating your Kore sounds.

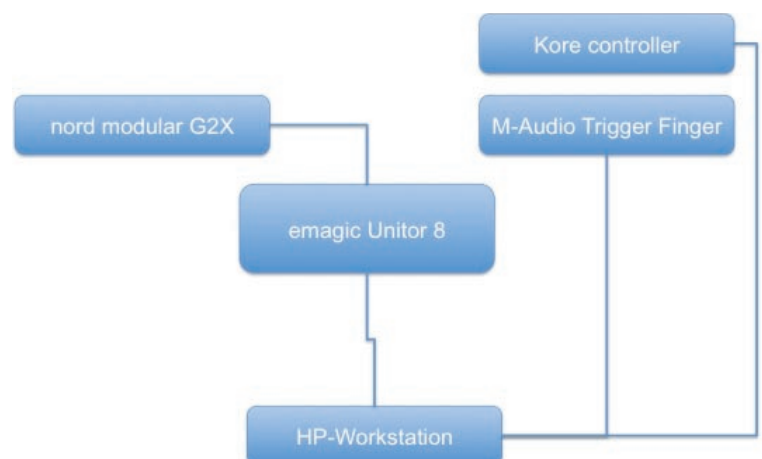


Figure 63: Screenshot 27 - MIDI setup in Studio B

### 2.3.2.e How to record MIDI data in Cubase 4

#### Step 1: Create MIDI tracks

Create a new MIDI track and choose a MIDI input source

If you want to use the Synth as a MIDI controller in Cubase 4 you have to select AMT8 as MIDI Input



Figure 64: Screenshot 28 -Select AMT8 (emagic interface) as MIDI input

**Note:** Check if MIDI-OUT of the Nord Synth is connected with MIDI-IN of the emagic interface via MIDI-cable!

### Step 2: Select MIDI input device and use software synth

Select *USB Trigger Finger In* if you choose M-Audio Trigger Finger as MIDI input.

Now you can add a virtual instrument by pressing **F11** and choose an installed software synthesizer or sampler.

Cubase asks you if you want to create a new MIDI track. Press cancel and select the instrument you have just opened as a MIDI output on your created MIDI track.

Now you are able to produce your MIDI arrangements in cubase.

### Tip - Freeze unused VST Tracks

Sometimes you may use a lot of VST instruments, all these instruments need memory and if the memory is full you cannot load another VST instrument. In such cases it useful to freeze those VST tracks you are not working on.

- » Press **F11** and choose your Instrument you want to freeze.
- » Click on the left button which looks like a small pentagon with a snowflake.
- » Select *Freeze Instrument and Channels* and press **OK**



Figure 65: Screenshot 29 - Freeze an unused VST track

What now happens is that Cubase creates an audio file in the background and deletes the instrument from used memory. If you want to edit the frozen VST track you can *unfreeze* the track by clicking again on the FREEZE button.

Once you've finished your arrangement, create a mixdown and cubase

creates a audio file on the basis of your MIDI arrangement.

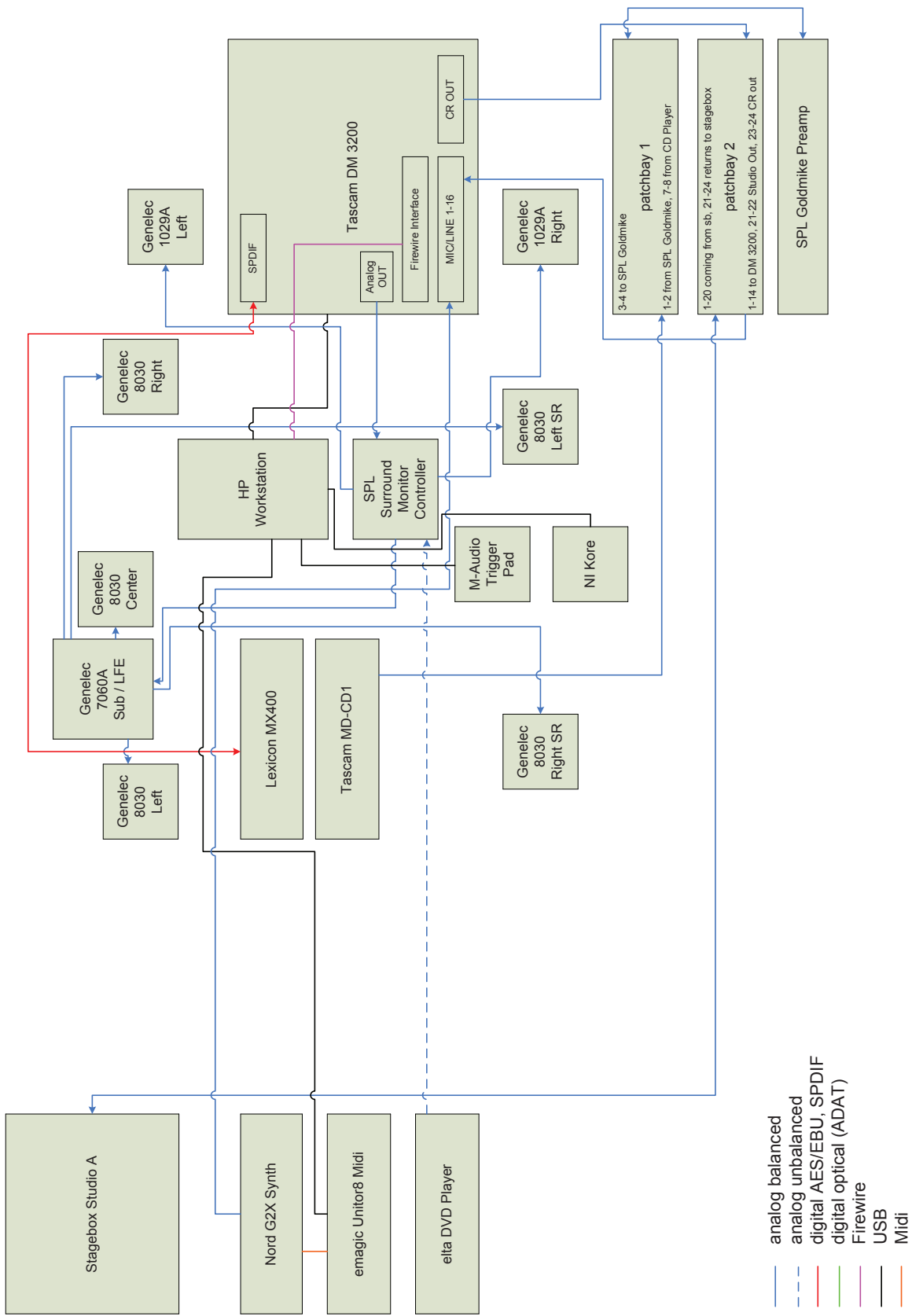


Figure 66: Wiring Diagram Studio B