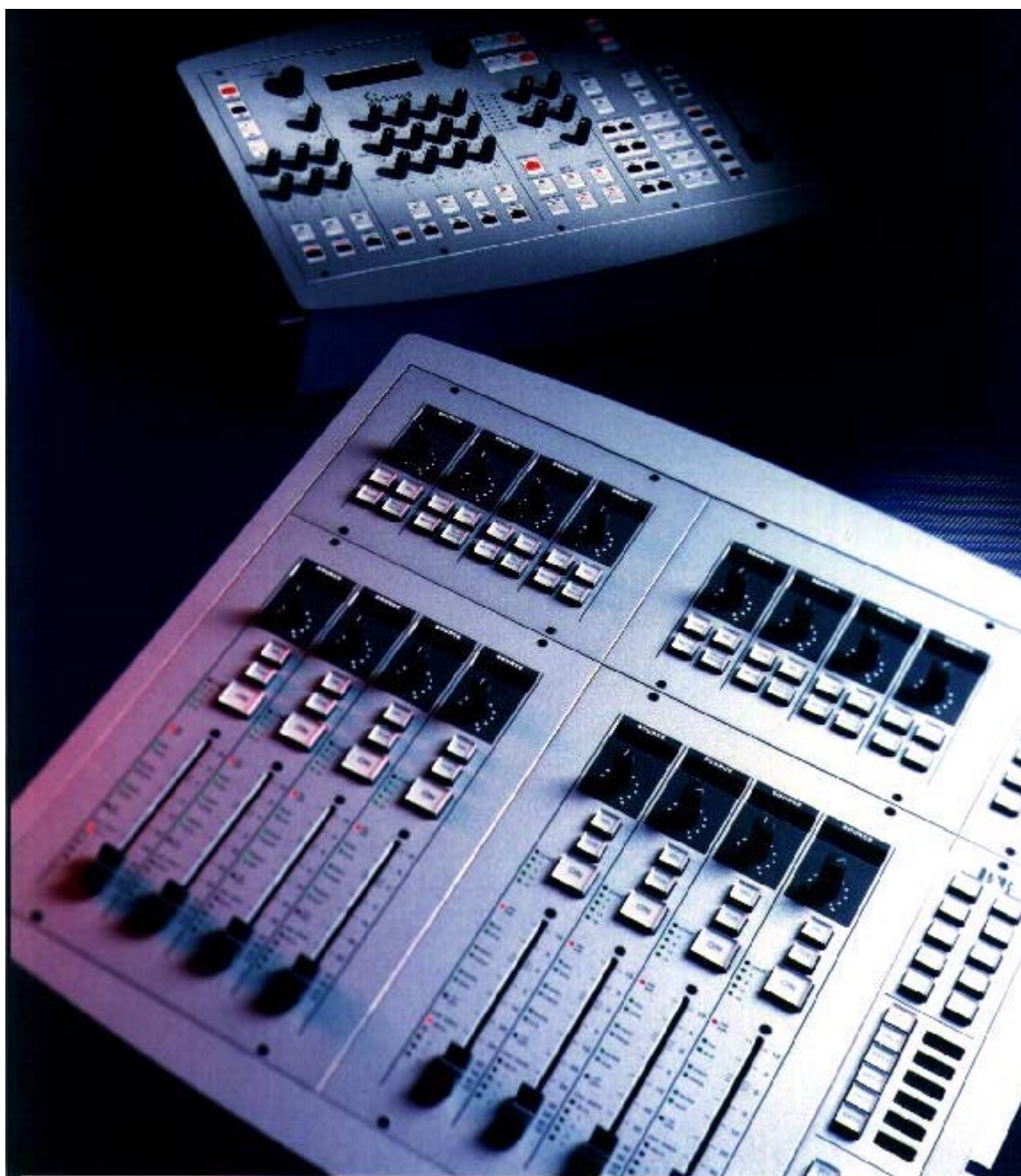


# Sirius Digital On Air Console Manual

## V1.0.0.9



**Dear Customer,**

**Thank you for choosing the SIRIUS console.**

**The Sirius is designed by specialists in the field of radio broadcast and intended to be used as a 24-hour "On-Air" console as well as a production console.**

**You are not faced with a huge manual because it is simply not necessary because of the natural recognition of all functions on the user interfaces. All functions are self-explanatory and you will certainly appreciate the ergonomics of this design. No digital layering just direct access to all relevant functions, as we think it should be in daily practice**

**Jan Betten and Anton Prins both equally responsible for the design of the Sirius always value suggestions from you once you have become familiar with your Sirius.**

**We will certainly learn from your comments, and we will very much appreciate the effort and time it will take for you to communicate your idea's and suggestions.**

**We are confident that you will be using the Sirius for many years to come, and wish you a lot of success.**

**With kind regards,**

**Duco de Rijk  
PRESIDENT**

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## 1 Introduction.

**This manual will give you a detailed explanation of all the possibilities of the Sirius.**

**It is advised to read this manual once before hitting the first knob or switch or even to hook up the entire system.**

**I know that that is actually the firsts thing you want to do but please do NOT and discipline yourself to read the manual first.**

**The manual gives all sorts of valuable information before starting and it avoids lots of unanswered questions otherwise addressed to us.**

**You can use this manual later on as a reference for your questions.**

**In the first chapters we shall try to give an overview of the Sirius and its features. In this way you can have an impression of how to implement the system in your application.**

**The next chapters will deal with interconnecting the various parts of the system and its external interfacing with your equipment**

**When the Sirius is installed and wired, you can finalize its interfacing with the instruction in the following chapters.**

**After having installed the Sirius you will have a very complete ON-AIR and production mixer with a human interface that is very intuitive and understandable thanks to its real time positioned motor-pots.**

## 2 Why is it the Sirius is a digital console?

Digital audio is slowly accepted as the new standard for audio. The Sirius is a design based on new generation software for mixing consoles with Digital Signal Processing. The Sirius is designed using the latest available technology in its field and its design simply surpasses most other digital design techniques.

The Sirius accepts all digital audio sources without any loss of quality. Use of sample rate converters on all inputs simply eliminate all problems related to different sample frequencies in older digital desks.

You can virtually connect any of today's digital and analog sources to the Sirius.

In the digital domain there are even more advantages, such as reproducing and copying signals without any loss. Patching is also a thing of the past; the built in digital router takes care of this.

All processed data through the whole system is floating point. It means infinite headroom throughout the whole system. It means that if you use extensive EQ-in, the processing could lead to signal being pushed into the red area of the led-bars and the fader, or even an output really can compensate it for send control. It's amazing is not it?

The same goes for an overdriven mix-buss; this can be corrected by lowering the output send level. Features only available in a modern up to date digital system.

In the digital domain it is possible to implement extra features. Outboard gates/compressors/limiters are a thing of the past. The Sirius has one in every input channel!

More exciting features are that every parameter of an input signal flow can be stored and retrieved later. You can build a library of snapshots and pre-sets and save them on hard disk or floppy.

Digital technology shall give you more flexibility and power than ever experienced in the analog domain. Reliability is built in by using the industrial Windows NT operating system. Special attention has been given to reliability equally well in hard and software in many areas of the design.

### 3 System Parts

The Sirius is constructed out of a number of components. The control surface, the in-output racks and the processing power with operational software.

#### 3.1 The Control Surface

The control surface is actually that part of a system that you interface with the most. The Control Surface is constructed out of different system parts that can be built into studio furniture.

It is possible to connect a maximum of two fader control units (with up to 32 faders) and a Super Module to the main processing power unit. Every unit has its own power supply (115 volts or 230 volts) and a sub-D connector for interfacing with the In-Output (I/O) rack.

#### 3.2 The in- output rack

This rack can be mounted in a rack system accepting 19" rack system parts. It can accept various I/O units all to your own individual needs. The rack mountable units are taking care of all in- output signals as well as all remote interfacing.

The main CPU that controls the entire mixer shall also be a part of this rack.

We shall discuss this in one of the next chapters in detail.

The I/O rack (including processing unit) has two power supply connectors (115V of 230V) and three connectors (9 pin SUB-D) for interfacing with the control surfaces.

#### 3.3 The Control Processing Unit and its software

This is the engine of the Sirius. It is here that all (audio) data is processed. Due to the fact that the Sirius is software based, all functions can be checked in real time. All i/o's can be routed, inputs can be labeled, equalizers set, etc.

We will extensively explain how this works in detail in the following sections of this manual.

## 4 Audio Signal Path

The Sirius is a digital On-Air mixer with incredible flexibility. It is therefore a necessity to fully understand its potentials and we will try to give you a clear picture of all the features of this mixer.

It is possible to connect a total of 64 inputs and 64 outputs to this mixer. As is standard practice in professional digital audio, there is no direct physical connection to the input modules on your control surface.

It is therefore advisable to clearly label all cables connected to the I/O units to avoid misunderstanding.

### 4.1 Input matrix

The Sirius gives you the possibility to route any or all of the 64 in- and outputs to any in or output of the control surface.

The Sirius offers you a 64 to 32 input router to interface the audio with 32 input channels. A second Matrix, the CRM input matrix is a router of all 64 inputs plus all busses to 6 stereo monitoring inputs. This gives you the possibility to listen on your CRM to a selection of inputs and /or busses (for instance Prog. 1 and an On-Air signal).

A similar matrix is used for the studio buss.

### 4.2 Buss structure

The processed 32 audio signals can be routed to different busses.

Busses that are available are;

- 2 stereo program busses
- 3 stereo aux. busses
- 8 mono/4 stereo mix-busses
- 8 mono/4 stereo cleanfeed busses
- Stereo CUE buss

The 6 CRM sources (selected from the CRM input matrix) are summed into the CRM buss. The 6 Studio sources (selected from the Studio input matrix) are summed into the Studio buss.

### 4.3 Output matrix

All busses of the Sirius can be routed via an output matrix of 32 to 64 to a selected output. It is also possible to connect more than one output to the same buss.

## 5 Processing

It is possible to process 32 channels in parallel. Every channel processing handles input, EQ, dynamics and level.

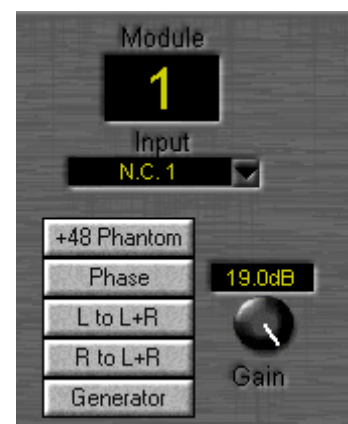
Optional there is a Send module that behaves like an output router.

Now we will give you a global view of the power of the Sirius digital mixer. All hands on possibilities described here can be found on the main screen of the system. Just like any analog system.

### 5.1 Input processing and routing

The input signal can be processed as soon as it is converted into the digital domain. But before you are able to actually change the input signal it has to be assigned to a specific input module. You can assign an input signal to a module by clicking on the input area labeled N.C. (Not Connected).

Having done this you are presented with a list of all available inputs to choose from. It is here that you decide which input source is connected to which input module. This is a matrix type of input selection that is very convenient and sources can be selected in any sequence just the way you want it to be. These settings can be saved for recall at any time.



When you are ready with selecting the input sources you need for the job, you can now trim your input level with a range of 40 dB (-20dB to +20dB) by way of the input gain potentiometer. This can be done on screen or on the gain motor potentiometer in the Super module, as is the case with the phase reverse switch.

You can assign a stereo source to a module in the same way. The software recognizes that you are assigning a stereo signal and subsequently connect these signals in stereo to a module.

The chart below here shows you all possibilities when dealing with mono or stereo signals.

'L to L+R'-knob	'R to L+R'-knob	Function
Off	Off	Stereo
On	Off	Left to left and right
Off	On	Right to left and right
On	On	Mono

The lowest knob activates the generator. This function overrides all other input selections and provides you with your own selection of test signals. These selections are made in the Global settings chapter that is discussed in one of the next chapters. For now it is good to know that you can select out of Pink Noise, White Noise and a Sine wave.

## 5.2 EQ

The Sirius has a full four band parametric Equalizer.

The LF band can be used as a low shelving band or as a “low cut” filter.

The LMF en HMF bands can be used in a “bell” or “notch” mode.

The HF Band can be used as a high shelving equalizer or “high cut” filter

All bands have adjustable level, frequency, and bandwidth with absolute values written in real time on your screen.

Each band can individually be switched on or off.

An overall EQ on/off switch overrides all individual on/off EQ switches.

All settings can be done in real time on the Super module by rotating the pots there. Or it can be done by way of a Mouse movement (the motor-pots will follow) or in case of loading settings from memory all motor-pots in the Super Module will instantly go to the memory position of the saved EQ setting.



## 5.3 Dynamics

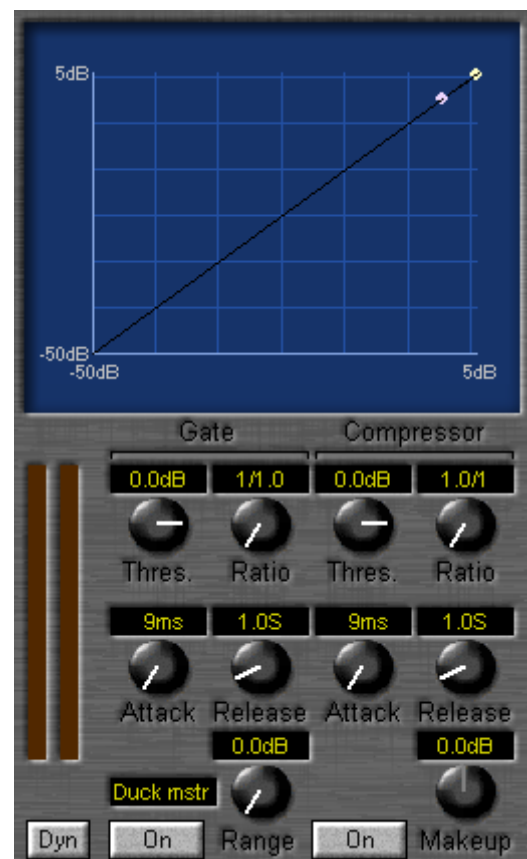
Every channel has a dynamics section with a gate and a compressor. Dynamics can be switched on or off as a “pair”, but also individually a gate can be switched off or the compressor.

### 5.3.1 Gate

Gate parameters are Threshold, Ratio, Attack, Release and Range.

The Threshold adjusts the level the gate opens. When an input signal is higher than this pre-set level the gate will open. The Attack controls the speed in which the gate opens. The Ratio control can be used to create a downward expander. The 1/20 position creates a 100% gate function. The Attack controls the speed in which the gate opens.

The Release determines the time it takes before the gate closes again.



**The Range control adjusts the amount of attenuation when the gate is closed  
An On/Off switch is implemented.**

### 5.3.2 Compressor

**The compressor can be adjusted with the Threshold, Ratio, Attack, Release and Make-up gain controls.**

**The Threshold setting controls the moment the compressor starts working.**

**The Ratio controls the in/output relationship when compression takes place. A maximum of 20:1 is equivalent to a limit function.**

**The Attack control adjusts the time it takes to respond to an increase of input signal.**

**The Release control adjusts the time it takes to recover from compression.**

**The make-up gain can adjust the lost gain when heavy compression takes place.**

**An overall On/Off switch is silently switching the compressor on or off.**

## 5.4 Level and Routing

**When the signal has been processed in level and dynamics it can be routed to one or more output busses such as the Aux. busses, Program (main) busses, Mix busses, Clean-feed busses and the stereo CUE buss. A description of individual output busses is written below.**

### 5.4.1 Aux. busses

**The Sirius has three stereo AUX busses. These busses accept signals from the input module pre or post fader, depending upon your choice.**

**Every Aux send can be adjusted in level and in left/right balance. A Mute function in the form of an ON switch is available.**



### 5.4.2 Program busses

**The Sirius has two program busses implemented. These are accessible through Program 1 and or 2. This signal is post fader of course.**

### 5.4.3 Mix busses

**When more outputs are required an extra 8 output busses are available for addressing signal to. These busses can be assigned to pre or post fader.**

**A choice can be made to use these busses as 8 mono output busses or as 4 stereo output busses.**

**This choice will be made with the mono switch. When the output busses are set to be stereo busses the balance control on the input modules will behave as expected. In case the output busses are mono, the balance control will not be active. The next step is to assign the busses.**

#### 5.4.4 Clean-feed busses

The Clean-feed busses are very similar to the mix busses with the only exception that you can switch off a Clean-feed buss avoiding signal to be send to that buss from a specific channel.

The adjustments for mono/pre/post fader are identical to the mix-buss programming.

#### 5.4.5 CUE buss

The stereo CUE buss can be fed from an input signal pre fader by way of the Cue switch.

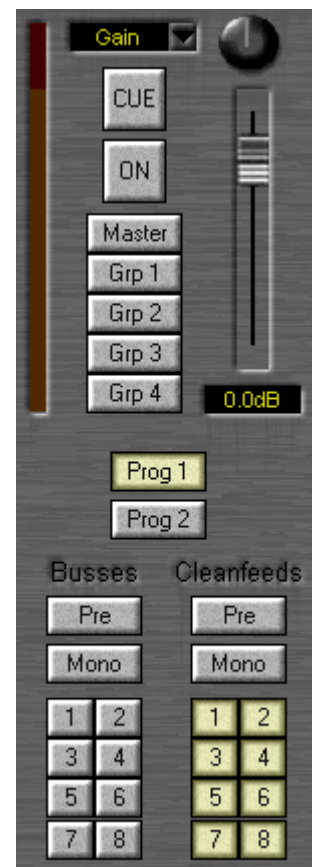
An alternative function of the CUE buss is to use it as a talkback communication switch. We will explain this later.

#### 5.4.6 Fader groups

Positioned left of the fader section you see the fader-group switches. These can be used to create fader-groups. There are four fader-groups implemented.

When you assign the Group Master (Grp-Mstr) the channel becomes the master of the group. The next step is to select of what group this becomes the master by assigning Group 1 to 4 to this master. There is of course only one master for each group.

The slave faders will not move (by its motors) being in the group to give you the possibility to continuously monitor the slave balance. Individual “slave” balancing will always be possible in a group.



## 5.5 Send modules and output routing

When you have assigned a signal to several busses no audio is to be heard yet until you have decided which outputs you are going to use for these assigned signals.

In the send module you can select which audio Source you want to use, for instance “Prog. 1” (you can make a selection from all output busses, these busses are considered to be stereo)

Further you have the possibility to adjust the level of the total buss with the knob in the software, or the hardware motor-pot on the send modules in your frame.

To have a fixed level on your buss-outputs (eg. for Prog.1) you have the button ‘0dB fixed’. This Button doesn’t set the hardware knob, but disables it and make’s the audio path unity gain.

The Mono switch makes the buss mono (summing left and right audio).

The CUE button on the send panels gives you the ability to listen to the audio signal present on these busses.

In the “Destination” section you can select which output can be used for the selected buss. This type of output matrix/router provides you with nearly unlimited possibilities for your routing needs. The associated mute function kills the sound on this dedicated output.

With the ‘L to output’ and ‘R to output’ buttons you are able to use the busses as mono channels. Below you can see the results of different settings:



<u>‘L to L+R’-knob</u>	<u>‘R to L+R’-knob</u>	<u>Function</u>
Off	Off	Stereo
On	Off	Left to left and right
Off	On	Right to left and right
On	On	Not possible

### NOTE:

To avoid any level problem it is possible to fix the output level to 0dB. The associated level pot becomes inactive then. You are certain now that the output buss level is exactly the same as the audio level on the buss.

## 5.6 Master and CRM functionality

This broadcast mixer has extensive monitoring and master features. You have a Clock, a Timer, On-Air indication, assignable meters and CRM source selection. This all is located in the upper section of the display as shown below.

### 5.6.1 Clock and Timer

Situated left in this master section you see an analog type clock producing the actual time. The next section houses the Timer and its controls. The Timer is accurate down to 1/10 of a second. You can start the Timer by clicking the Start button or by assigning the Timer to a fader-start (see 7.2 Input and output ) The Stop knob stops the Timer when started by the Start knob or fader-start. The Reset button shall reset the Timer to 00:00:00:00



### 5.6.2 Master functions

In the master section you will also find the red light signaling. This is located below the Clock itself on the screen. When a channel is activated and you have labeled this channel to generate red light (see 7.2 Input and output ) only then 'On-Air' light shall be activated.  
**NOTE:**

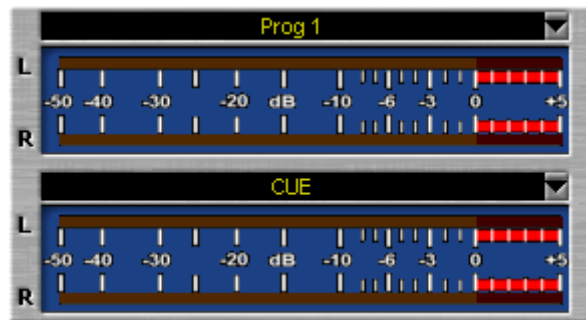
Red light signaling is active for both Red-light 1 and Red-light 2 busses, however both busses can be assigned individually to the remotes of course.

Below the Timer you see three knobs: CUE Reset, Conference talk-back and Panic. These knobs have the following functions.

CUE Reset	Resets all active Cues.
Conference Talk-back	When this knob is activated your CRM mic will be added to the CUE buss. All outputs, selected as part of the 'Conference Talk-back' (see 7.2 Input and output ) shall be switched to the CUE buss to be able to listen to the CRM Mic.
Panic	This function shall provide you with the default setting to be loaded instantly when necessary. In this way you always get a known setting back in your console when you are lost in programming.

### 5.6.3 Master meters

In the middle section are the master meters. These meters shall always present the signal that is assigned to the selected output buss. By clicking on the name of the meter a pop-up menu appears. Here you can select the signal that the meters are displaying. Selection can be made from all busses.



### 5.6.4 CRM

The far right area is the CRM section. This section determines what you are going to hear in your Control Room Monitors.

You can select out of 6 stereo sources that are labeled left from the CRM pot.



By clicking on the label (black area) a pop-up menu appears with all the inputs and busses. It is up to you how many two tracks you want directly accessible on your CRM here by activating any input available. The next step is to select which source you want to listen to. These knobs can function in two ways. Either additive or alternating, a decision made in the 'Global Settings' (see 7.1.2 Selection).

Of course you have the possibility to adjust the level, dimming and muting on the CRM buss, these knobs are located in the same area.

The dim function on the CRM is a maximum level setting. Meaning that the level adjusted by the up/down switches is the maximum level when dim is active. In this way you can tune the dim to an acceptable level (without feedback) and if the level is lower, the dim will not adjust the level or else it will be adjusted to the dim level.

As an extra feature it is also possible to switch the right CRM signal out of phase. It is a technique to check if all signals are in phase without interrupting live signals.

#### 5.6.5 *Studio*

**You can select out of 6 stereo sources that can be electronically labeled and are located left of the CRM pot.**

**By clicking on the label (None) a pop-up menu appears with all the inputs and busses. It is up to you how many two tracks you want directly accessible on your Studio output here by activating any input available.**

**The next step is to select which source you want to listen to. These knobs can function in two ways. Either additive or alternating, a decision made in the ‘Global Settings’ (see 7.1.2 Selection).**

**Follow CRM shall connect the CRM to the studio buss.**

**NOTE: The Studio selection becomes inactive then.**

## 6 Interfacing

Due to the flexibility of the Sirius all interfacing will be dealt with in separate sections. All the different I/O units shall be discussed here.

### 6.1 I/O rack

The I/O rack can be selected out of several interface units to satisfy individual needs in this matter.

Some of the units have to be part of the rack as essentials. These are the CPU, the MUX and the power-supply.

All other components can be selected based upon necessity. We are talking about 'Digital to Digital units', 'Analog to Digital units' and the 'Digital to Analog unit'.

#### 6.1.1 CPU

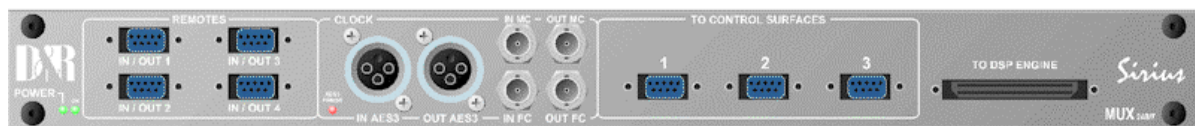
The CPU is used to manage the whole system. Via this CPU you can control the complete mixing console.

All you need is a mouse, a keyboard and a monitor. These items can be connected to the back of the unit on standard industry connectors.

Furthermore there is a large 68-pole connector (SCSI 'twisted pair' connector) on the back that needs to be hooked up to the MUX card. The maximum length tested is 1.8 meters. We suggest to have the CPU and I/O rack located together.

The 115V or 230V power connector should only be connected when the whole system is wired completely.

#### 6.1.2 MUX



The MUX unit takes care of collecting all data in the system. It is therefore that you will notice lots of cables. For you as end user only the necessary cables for performing its normal duties are accessible.

The LED's positioned on the left side indicate the status of the MUX unit:

Power	the MUX unit is powered.
OK	indicates that the software is running properly.
AES3 Error	indicates a missing AES3 synchronisation.

On the far left of the MUX unit there are 4 remote connectors (SUB-D 9 pole).

**On every connector there are 2 remote inputs and 2 remote outputs.**  
**A wiring table below shows the actual pinning of the 9 pin Sub-D connectors.**

Pin #	Pin function
<b>1</b>	<b>Common Contact 1 (CC)</b>
<b>2</b>	<b>Normally Closed 1 (NC)</b>
<b>3</b>	<b>Normally Open 2 (NO)</b>
<b>4</b>	<b>Remote 1 in (0/5V)</b>
<b>5</b>	<b>GND</b>
<b>6</b>	<b>Normally Open 1 (NO)</b>
<b>7</b>	<b>Common Contact 2 (CC)</b>
<b>8</b>	<b>Normally Closed 2 (NC)</b>
<b>9</b>	<b>Remote 2 in (0/5V)</b>

**In the area labeled “Clock” you see various connectors to drive external clock signals and connectors to accept different synchronization clocks for external equipment.**  
**The software allows for selecting different synchronization sources. The MUX unit accepts external sources with sample-rates from 20kHz up to 49kHz.**

AES3 In        **is used to synchronize the Sirius internally.**

AES3 Out      **On this connector the internal frequency is offered on AES3 format to synchronize external equipment.**

MC In         **This is the master clock input. The Master-clock is 256 times the internal sample frequency.**

MC Out        **The Master-clock output always produces the internally used master clock frequency.**

FC In          **The Frame-clock in connector (also known as “Word clock”). This input can also be used to synchronize equipment.**

FC Out        **This connector always delivers the internal Frame-clock.**

**On the MUX unit there also all connectors for the control surfaces (Control surfaces 1, 2, 3). It does not matter which Control Surface Unit (CSU) unit is connected to which CSU connector. However it is useful to consider that the system starts counting (modules) from the connector with the lowest number.**

**You can extend the SUB-D9 cable to a maximum length of 50 meters. That makes it possible to have your 19 “Rack located in a machine room**

***Note: remember that your Keyboard/Monitor/Mouse connections must be extended as well.***

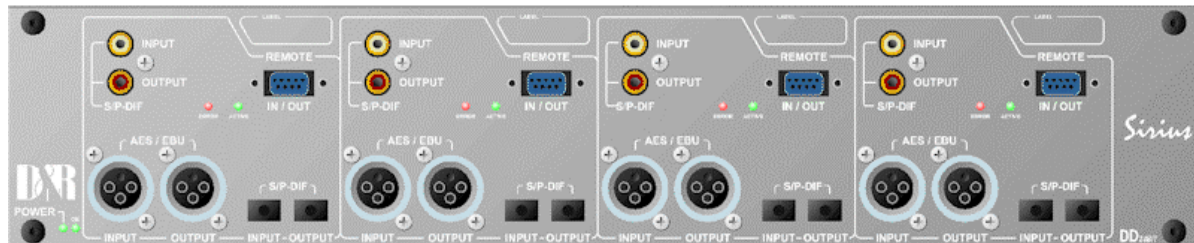
**A 68-pole connector (to interface with the CPU) is also to be found on this unit.**

### 6.1.3 Power supply + ON/OFF switch

The internal Power supply shows the power supply cord connector for accepting 115volt or 230 volts 50/60Hz.

All other units are internally connected with this unit.

### 6.1.4 Digital to digital unit



The digital input and output unit provides you with the ability to read several different types of digital signals. The software allows you to choose from SPDif (Coax), Optical or AES/EBU inputs and outputs. All outputs are giving an identical signal; so interfacing should not be a problem.

To make life easier the Sirius has sample rate converters on all inputs. It is therefore possible to connect signals with different sample rates or even asynchronous on different input channels without facing any synchronization problems. The frequency range that can be dealt with can be anything between 20kHz up to 100kHz.

The LED's on the left side are indicating the status of the DD-unit:

Power            indicates power is present.  
OK              indicates software is running.

The digital unit has four identical sections offering two input channels and two output channels.

On the top left you find the Coax input and the Coax output connector.

Beneath these two coax connectors you see two XLR connectors for interfacing with the AES/EBU (AES3 standard). To the right you will find the optical S/PDIF interface.

The LED's in these units indicate the status of the digital input:

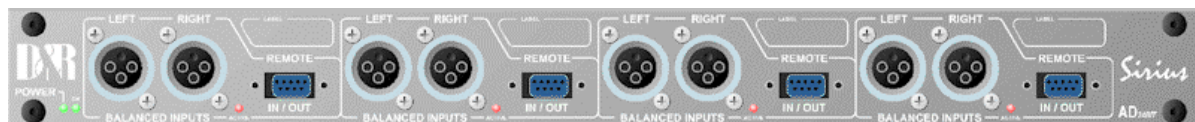
Error            indicates whether synchronization is present on the digital input.  
Active          indicates whether the input is in active.

Every section also provides for a remote connector with two inputs and two outputs. When input is assigned to a module the corresponding remotes will perform the remote functions.

An overview of the entire pin functions:

Pin #	Pin function
1	CC1
2	NC1
3	NO2
4	remote 1 in (0/5 Volt)
5	GND
6	NO1
7	CC2
8	NC2
9	remote 2 in (0/5 Volt)

### 6.1.5 Analog to digital unit.



The analog to digital input unit provides you with electronics to convert the analog input signals in very high quality into the digital domain with the proper sample frequency.

The LED's positioned far left indicate status of the AD-unit:

Power            indicates power is present  
OK               indicates software is running.

The unit has four identical sections each reading two channels. The analog audio can be presented via XLR connectors in left right pairs.

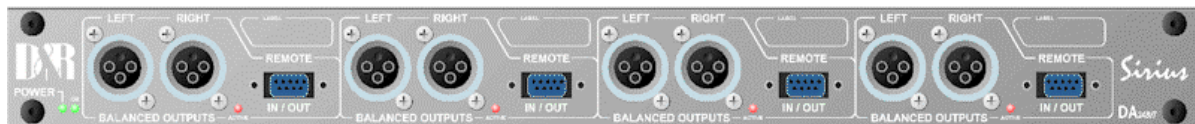
The LED's in these units indicate the status of the digital input:

Active           indicates whether the input is in actual use.

Every section also provides for a remote connector with two inputs and two outputs. When input is assigned to a module the corresponding remotes will perform the remote functions. An overview of all pinning connections.

Pin #	Pin function
1	CC1
2	NC1
3	NO2
4	remote 1 in (0/5 Volt)
5	GND
6	NO1
7	CC2
8	NC2
9	remote 2 in (0/5 Volt)

### 6.1.6 Digital to analog output unit



The digital to analog output unit converts the internal digital signals to analog signals.

The LED's positioned on the left side indicate the status of the DA unit:

Power            The DA unit is powered.

OK               Indicates that the software is running properly.

The unit has four identical sections of two channels. The analog audio is presented via XLR connectors in left right pairs.

The LED's in the sections indicate the status of the analog input:

Active           indicates whether the input is in use in the present set-up.

Every section also provides for a remote connector with two inputs and two outputs. When input is assigned to a module the corresponding remotes will perform the remote functions.

Below is a table with all connection information:

Pin #	Pin function
1	CC1
2	NC1
3	NO2
4	Remote 1 in (0/5 Volt)
5	GND
6	NO1
7	CC2
8	NC2
9	Remote 2 in (0/5 Volt)

## 6.2 Control Surfaces

There is a choice out of two control surfaces. A super module and fader control module(s). Both units have two connectors that are of importance.

- 1) The power connector accepting 230V or 115V 50/60Hz.
- 2) A SUB-D 9 pole connector to interface the unit with the MUX unit.

You will also find a main On/Off switch and a fuse-holder.

### 6.2.1 How do I connect the Control Surfaces?

One super module can be connected and several fader-control modules (fitted with 4 or 8 or 12 faders) can be connected. The Sirius automatically detects what has been connected to which connector. However it is advisable to connect the fader-control units to connector 1 and/or 2 (depends on the fact if you have one or two modules) and the Super control module to connector 2 or 3.

A practical connection scheme:

Fader Control Unit 1:      8 modules  
Fader Control Unit 2:      8 modules

If “FCU 1” is connected to ‘MUX-port 1’ and ‘FCU-2’ to ‘MUX-port 2’ then “FCU-1” shall be assigned to be module 1-8 and “FCU-2” to module 9-16.

When ‘FCU-1’ is connected to ‘MUX-port 2’ and ‘FCU-2’ to ‘MUX-port 1’ then “FCU-1” shall be assigned to module 9-16 and “FCU-2” to module 1-8

In both cases the Super Module can be connected to ‘MUX-port 3’. When the Super Module Control Surface is connected to ‘MUX-port 1’ ‘MUX-port 2’ shall start with module 1.

## 7 The Software

The Sirius mixer is totally software controlled. It means that all data is digitally processed and saved on hard disk or floppy or any other storage device. The software allows you to configure the Sirius just the way you want it.

Set-ups can be configured in just any way you want it. It is however important to carefully program this personal set-up, so benefiting from it will be a repeated pleasure.

It is very important to get familiar with all the software options that are built into this design.

The Software can be divided in several building blocks.

- 1) Global settings
- 2) Input and output set-up
- 3) Macro-switch set-up
- 4) User management.
- 5) Snapshots and pre-sets.
- 6) Work environment.
- 7) Service.

Block 1, 2, 3 and 4 are intended for one time only personal programming. Block 5 and 6 are intended for daily use. It can be seen as the main screen display.

Block 7 is a section where all options are located to monitor the internal activities of the Sirius for service purposes.

### *Directory structure*

When the Sirius software is installed on your system you will be presented with a number of typical directories (normally this should be C:\Program Files\D&R Electronica B.V.\Sirius Digital). Such as;

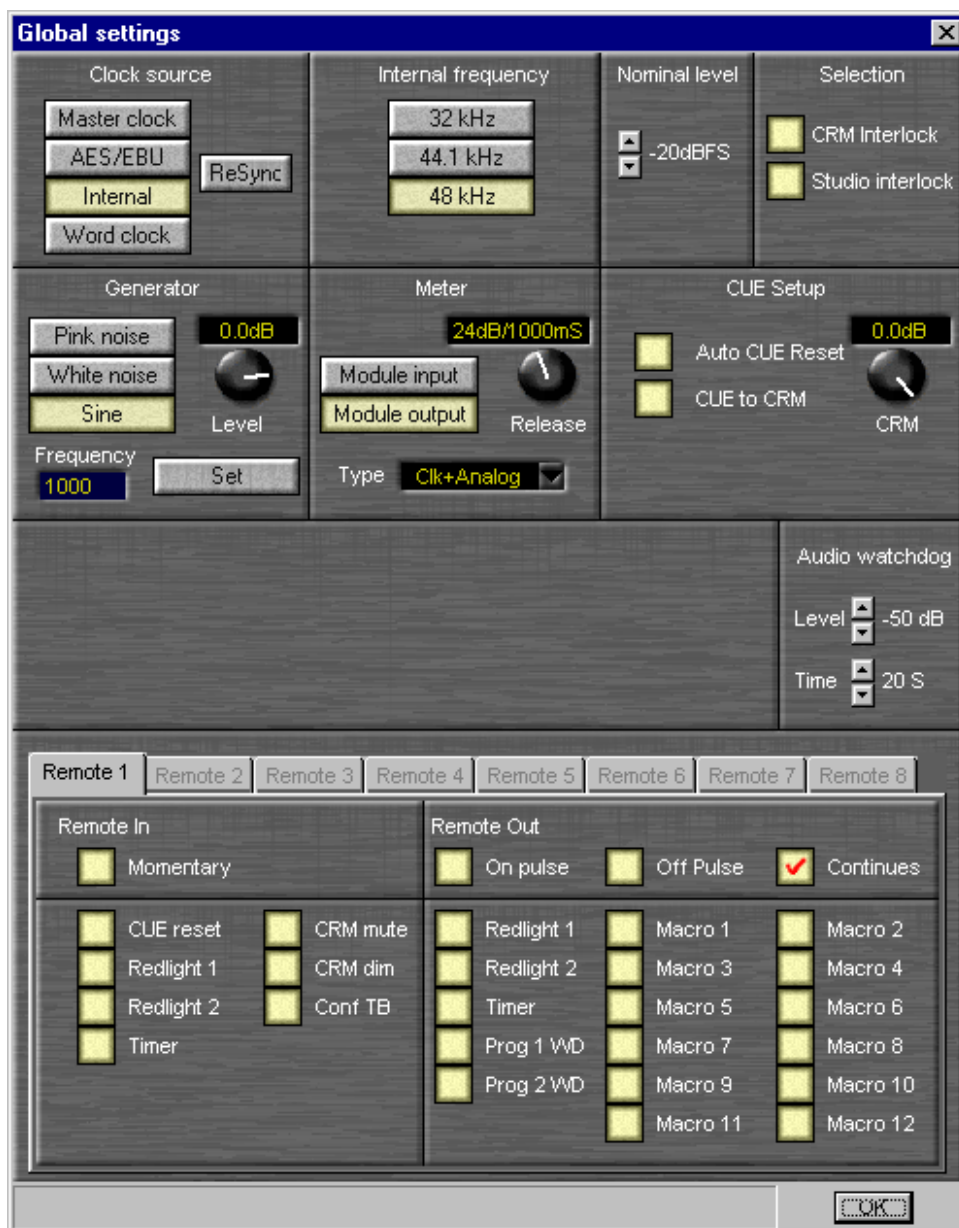
Dynamics Presets	This directory is used to save the default Dynamics presets. There are of course user directories to save personal presets. Note: The presets in the default (Dynamics Presets) are accessible for all users.
EQ Presets	This directory is used to save the default EQ presets. There are of course user directories to save personal presets. Note: The presets in the default (EQ Presets) are accessible for all users.
Firmware	In this directory you can find the software for the individual software components of the Sirius. Only during an 'update embedded software' (see 7.7.3 Update embedded software) this software is used.
Projects	This directory can be used to save snapshots. It is however advisable to create several new files for individual saving of personal snapshots. Note: The default snapshot 'Default.SRS' is always located in the installation directory of the Sirius (normally it is C:\Program Files\D&R Electronica B.V.\Sirius Digital).
Users	This final directory in the installation directory contains all data of its users. You can see a file per user ('NAME.USR') in which file all data are saved. Normally changes are not needed in this file.

## Skins

This directory holds 4 files. Those files are Windows BMP files, which holds the background of the master meter screens. You can edit them for example with your own logo.

## 7.1 Global settings

All global settings can be found in a sub menu called “Global Settings”. You can find this menu via the main-menu-item SETUP. When you click on this option you get a screen display with all global settings that can be programmed here. See screen display. The next chapters will discuss the individual global programming blocks on the screen with its results.



### *7.1.1 Clock source*

In this field you can select the type of clock you are going to use for internal synchronization. The clock selected here shall be used in the entire system and shall be used as the overall clock for all interfacing with outside equipment.

When you select 'Internal' the clock speed will be generated internally and you can further select in the field 'Internal clock frequency' the requested sample rate.

In all other cases an external sample clock will be used and you have to choose the "external clock frequency" in another selection box.

If you want to sync to a 'External' clock you may need to re-sync if you apply a new sample rate. You can simply hit the 'Re-sync' button.

### *7.1.2 Selection*

In this field you can switch the option CRM Interlock on or off. When this option is set to "interlock" it is only possible to listen to one CRM source at the time. But when not activated a summing of CRM sources can be realized. This is also applies for the Studio input selection.

### *7.1.3 Generator*

The Sirius has an extensive audio signal generator. You can choose out of: Pink noise, White noise and Sine wave. This test tone generator can be switched on or off in every channel. Level can be adjusted (0 dB is 0dB full-scale with 24 bits) as well in this menu section, but only by way of mouse movements. There is no hardware knob available for the global setting page.

The frequency of the sine wave generator can also be set. Type the requested frequency in the edit box and hit the SET button.

### *7.1.4 Metering*

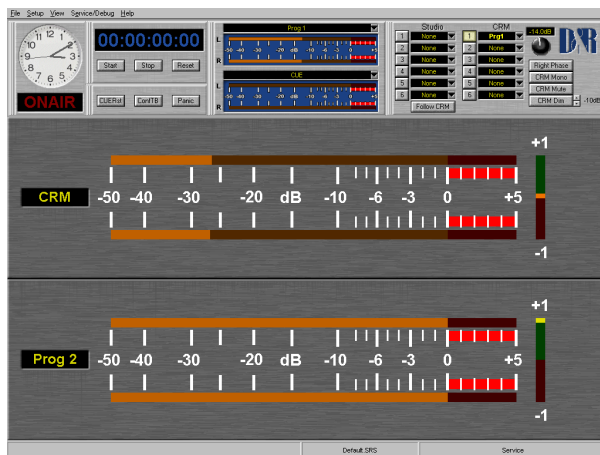
This section allows you to choose between reading the input signal pre or post-processing. The channel meters can be found on the main screen and on your control surface.

The potentiometer on the right side in this box allows you to adjust the release time of all meters of the Sirius.

The flexibility of the Sirius systems becomes clearer with the meter type selection! You are able to select your own meter standard. You have options to choose from: Analog, Digital, BBC and Analog +Clock.

Below you will see an overview of all these meter types:

## Analog meters



## Digital Meters



## BBC meters



## Analog + Clock meters



All main output meters show also a phase meter, which indicates mono compatibility. The phase meter is a center zero type. A perfect stereo signal will show 0, which is random distributed phase. A Mono signal will be indicated with +1 and an out of phase signal by -1. As long as the pointer moves within the green section the signal is mono compatible (sufficient in-phase components) when the pointer is in the red section the signal is not mono compatible (too much out of phase components).

To make this clearer the pointer shows a different color depending on the phase error. In a mono compatible situation (+1) the pointer is yellow, in an out of phase situation (-1) the pointer is colored red. For an ideal stereo signal the point should be colored orange.

### 7.1.5 CUE set-up

In this field the CUE set-up can be chosen to be very advanced in its behavior.

Auto CUE reset can be activated, in this way all CUE settings are reset the moment you choose a CUE on a channel. NOTE: to activate this function you also have to allow the Cue-reset function to be active in the local input sections! (See 7.2 Input and output)

By selecting CUE to CRM the CUE signal shall be summed on the CRM buss when CUE is activated.

The software potentiometer labelled CRM DIM adjusts the amount of dimming of the CRM signal when the CUE buss signal is activated.

### 7.1.6 Audio watchdog

The Audio watchdog permanently monitors the level of the Prog. 1 and Prog. 2 busses. When there is a detection of level below the threshold (set by the level parameter) for a specific time. The watchdog can send a signal to one of the global remotes. How this connection is made will be described in the next section.

### 7.1.7 Remotes

The last section in this global set-up screen is the remote programming options. These remotes are located on the MUX-unit in the I/O rack. These are the 'Global remotes'. By means of tabs you select which remote you want to program.

Remote 1 and 2 are located on SUB-D 9-pole connector IN/OUT 1

Remote 3 and 4 are located on SUB-D 9-pole connector IN/OUT 2

Remote 5 and 6 are located on SUB-D 9-pole connector IN/OUT 3

Remote 7 and 8 are located on SUB-D 9-pole connector IN/OUT 4

### 7.1.8 Remote in

The incoming remotes can be programmed in the filed labeled 'In'.

The first step is to decide whether the remote should have a momentary or latching action, and the next step is to assign the remote.

Options are:

CUE Reset	Reset all CUEs
Red-light 1	Activates redlight 1 buss
Red-light 2	Activates redlight 2 buss
Timer	Allows Timer Start
CRM Mute	Activates CRM Mute
CRM Dim	Activates CRM Dim
Conf TB	Activates conference talk-back

### 7.1.9 Remote out

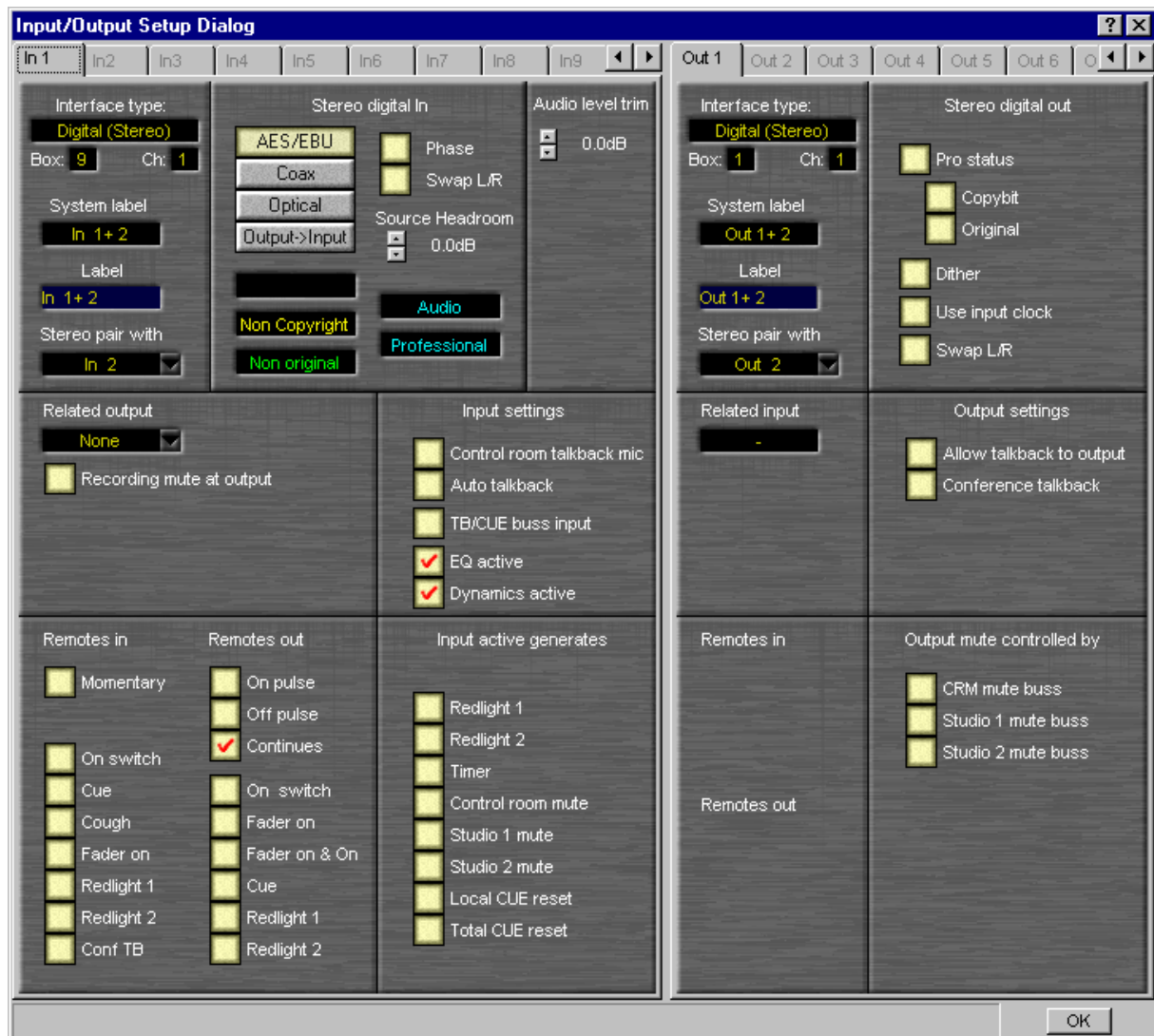
The outgoing remotes can be programmed to generate a pulse or a continues connection. When pulse is selected there is also the choice out off a pulse generation when a function is ON (On pulse) or a pulse when a function is switched off (Off pulse).

All functions global remotes can activate:

Redlight 1	Indicates status of the red-light buss 1
Redlight 2	Indicates status of the red-light buss 2
Timer	Indicates status of the timer buss (for an external timer)
Prog 1 WD	Indicates status of the audio watchdog for program 1.
Prog 2 WD	Indicates status of the audio watchdog for program 2.
Macro 1.12	Indicates status of the macro switches. These switches allow you to control your own hardware with switches located on the FCSU of the Sirius.

## 7.2 Input and output set-up

This chapter describes the initial set-up of the inputs and outputs. It is a very important



part of the initial installation of the Sirius. Things like labeling and set-up of I/O units are part of the set-up procedure. So carefully read and maybe re read this section until you are fully aware of all its do's and don'ts.

To pull up the SETUP-menu you must choose the item 'Input/output set-up'. This screen shows you on the left side the inputs and on the right side the outputs.

With tabs you can select the requested input. Now you can see the interface type in the left upper corner, which is connected, to the input. You can also find out here on which of the 16 I/O connectors on the MUX cards this unit is connected. You can also see information which channel number in this unit belongs to which input. In this way you can always find out which input you are programming.

### 7.2.1 *Input set-up*

In the ‘Input box’ you can directly type a label making it easy to recognize what has been assigned to this input. All labels typed here will be instantly shown on every display related to this input.

We have chosen for two types of labels, system labels and normal labels. System labels generate program independent labels such as MIC 1, MIC 2. You can only edit system labels when you are logged on, as ‘SUPERVISOR’ and in the file ‘DEFAULT.SRS’ (that is the default file load of the system). Make sure, while installing your system labels, that these are right before you make different presets for other purposes. Because the application also uses these system labels for the other presets/snapshots.

The user himself (if he has the appropriate license rights) (see 7.4 User management) can change the normal labels from for instance MIC 1 into “DJ whatever”. Now instantly can be seen which person is behind the console.

The final box in the Input section indicates to which input this input is tied up to form a stereo pair. On the stereo digital and analog units this is fixed, but with a mono I/O unit (microphone inputs) you can create your own stereo pairs.

### 7.2.2 *Related output*

Below the input section you see the “Related output” field. Here you can decide which output belongs to which input. If you, for instance, have connected a TAPE machine it is here that you can show which input TAPE is and which output is connected to the same machine. The same goes for microphones; you can label which output is connected to the headphones of the person that uses that microphone. In this way the Sirius can offer you extra features and avoid feedback in case of the microphone/Tape.

The following extra functions can be activated for the “related output”:

Recording mute on output:

If this option is chosen the related output shall be muted when the input is activated and the associated module is activated

### 7.2.3 Input settings

The ‘input settings’ box has five more settings directly related to this input.

***Control Room Talk-back Mic:***

Here you can decide whether this input is the control room talk-back. If so you can use this Mic input as the talk-back Mic.

***Auto talk-back:***

When activated the CUE switch on this module shall initiate a talk-back in a way that the CRM Mic shall be activated as well. If a related output is activated this output also shall be switched to the CUE buss.

***TB/CUE buss input:***

This input can be used to connect, for example, a CRM mic to the Sirius system. When this input is used you don’t need to assign the CRM Mic to a module to have TB facilities. When you enable this setting also the Remote IN CUE selection will be active.

You can now enable the CUE buss input (to the CUE buss) by using an external switch at the remote input for this particular channel.

***EQ active:***

Here you can switch the EQ section on or off.

***Dynamics active:***

Here you can switch the Dynamics section on or off.

### 7.2.4 Remotes

In the ‘remotes’ field you can program the remotes belonging to this input. The following options are programmable:

Momentary:	A selection between latching or momentary action for all functions below.
On switch	The ON switch shall be activated.
CUE	The Cue switch shall be activated.
Cough	The channel shall be muted when remote is active. Note: this should always be a momentary function.
Fader on	The fader shall be positioned to unity gain (0dB) or fully down. Momentary action alternates the two positions (down is 0dB). A latching action switches between the two positions.
Red-light 1	Red-light buss 1 shall be activated.
Red-light 2	Red-light buss 2 shall be activated
Conference TB	Conference talk-back shall be activated, including the module where this input is routed to shall be switched to the CUE buss.

**The output remotes can be continuously switching or momentary (pulse). In the pulse mode you can decide to have this pulse during the ON action or during the OFF action or during both switching actions.**

**The following functions can be carried out by the remotes:**

On switch	<b>indicates status of the switch.</b>
Fader On	<b>indicates status of the fader (open or closed).</b>
Fader On & On	<b>indicates status of the module (active or non-active).</b>
CUE	<b>indicates status of the CUE switch.</b>
Red-light 1	<b>indicated status of the red-light buss 1.</b>
Red-light 2	<b>indicates status of the red-light buss 2.</b>

#### *7.2.5 Input active generates:*

**When an input is active (fader up and On active) several activities can be programmed to be carried out. Functions such as:**

Red-light 1	<b>when the module is active red-light 1 buss is activated.</b>
Red-light 2	<b>when the module is active red-light 2 buss is activated</b>
Timer	<b>when the module is active the Timer (buss) is activated.</b>
Control room mute	<b>when the module is active the CRM mute buss is activated. In this way CRM speakers can be muted (Note: only when you have programmed the output mutes to be controlled by the CRM mute buss)</b>
Studio 1 mute	<b>when the module is active Studio 1 mute buss is activated. In this way Studio-1 speakers can be muted (Note: only when you have programmed the output mutes to be controlled by the Studio 1 mute buss)</b>
Studio 2 mute	<b>when the module is active Studio 2 mute buss is activated. In this way Studio 1 speakers can be muted (Note: only when you have programmed the output mutes to be controlled by the Studio 2 mute buss).</b>
Local CUE reset	<b>when the module is active the CUE (when On) of the related channel shall be switched off when necessary.</b>
Total CUE reset	<b>when the module is active, the CUE off all channels shall be switched off, so the CRM can monitor the broadcast directly.</b>

### 7.2.6 Digital to digital input set-up

In the upper left hand corner you find selections you can make that are specific for connected I/O boxes. Below are the possible settings for the stereo digital input box.

You can choose between AES/EBU, S/PDIF (Coax), S/PDIF (Optical), and Output to Input. Furthermore you have the possibility to change the phase of this channel.

For digital signals it is also possible here to swap left and right.



The 'Source Headroom' is a very useful function. This setting gives an indication of the headroom, which is used, at the applied audio signal. The Sirius system is now able to make a correction to the internal nominal headroom level.

A number of fields are to be seen to indicate statuses of the incoming audio such as:

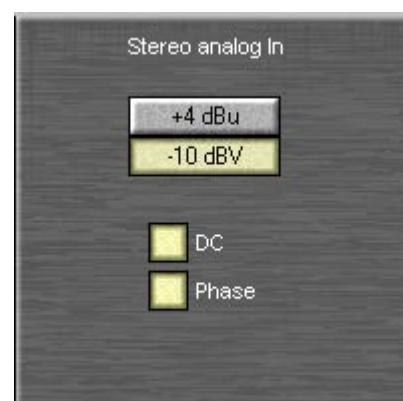
Error	active when no synchronization is present (equal to the hardware box LED)
Audio	indicates whether the signal is audio or data (no-audio).
Copyright	indicates whether the copy-bit is On or Off of the incoming audio.
Original	indicates if the original bit of the incoming audio is On or Off.
Professional	indicates if the audio data stream is a professional or consumer format.

**Note:** The indication of copy-bit and original bit is of no-importance when dealing with professional formats.

### 7.2.7 Analog to digital input set-up

Fields can change depending upon connected I/O units. We now describe the Stereo Analog input unit. First choice is to set the input level to be +4dBu or – 10dBV.

You can activate DC blocking filter with the function DC. The same goes for Phase switching.



### 7.2.8 MIC to digital input set-up

This field is shown when you select a MIC input. You can see here several fields, which control the analog signal (before conversion).

**Pre-Gain** Set the pre gain of the microphone amplifier. The gain trim in the DSP is still available.

**+48V Phantom** Switches the phantom power on or off at the corresponding input.

**Low-Cut** These selections can set the low-cut filter at several frequencies to avoid sub noise consuming energy within your analog to digital conversion.

**Phase** The Phase function is the only in DSP function, to change the phase of the incoming signal.



### 7.2.9 Output set-up

In the 'Output Box' output field you can directly type a label text to indicate what signal is on this output. If you are logged on as a 'SUPERVISOR' and your present file is 'DEFAULT.SRS' (that is the default file) all system labels shall be instantly changed.

We have chosen for two types of labels, system labels and normal labels. System labels are program independent labels such as PHONES 1, PHONES 2.

The engineer can change the normal labels (if he has the proper rights to do so, see 7.4 User management) so he can type instead of words like PHONES 1 for instance DJ "X"

The last field in the 'output' field indicates to which other output this output is linked for stereo purposes. With a digital I/O unit this is fixed but with a mono unit you can create your own pairs.

### 7.2.10 Related input

This field indicates which input is related to the present output. You can not change this here, only at the corresponding input.

### 7.2.11 Output settings

In the 'Output Settings' field you can select if you allow the talk-back to be heard in this output. Here you can globally protect this output from talk-back signals. Furthermore you are able to assign this output to the conference talk-back group. That means this output will be switched to the CUE buss when conference talk-back is activated.

### 7.2.12 Remote

This field is only active (visible) when an analog output unit is connected in the system. An indication of what all remote functions are is shown. These functions are already pre-programmed in the analog output unit.

### 7.2.13 Output mute controlled by

The selected output could be a speaker that needed to be muted when a microphone is activated. The Sirius has three mute busses for this functionality. A CRM, Studio 1 and Studio 2 mute buss. Here you can decide which mute buss should respond.

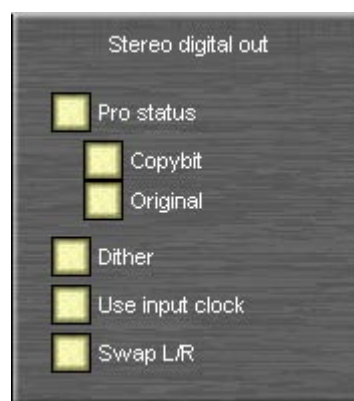
### 7.2.14 Digital to digital output set-up

In the upper right hand corner you see selections that can be made specific for user definable output units.

Below are the specific options for the stereo digital output box.

You can select which data format all outgoing data should have. This could be professional (AES/EBU) or consumer (Coax and Optical). When you have selected pro status Copy-bit and Original are not active anymore.

In the consumer mode you have the option of activating Copy-bit and Original.



Then you also have the possibility to activate dither on the output.

The next option is 'Use input clock'. If activated you can insert the sample rate converter between internal output and external output. The external output is "clocked" according to the clock frequency found on the corresponding digital input.

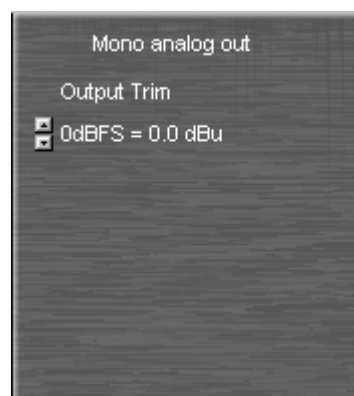
**NOTE:** When this option is activated it is not possible to use audio data of the digital input.

The final option is "Swap L/R". Left and right channels are swapped before hooked up to the outputs.

### 7.2.15 Digital to analog output set-up

Another possible output option set-up is now described for the Mono Analog Output unit. See Drawing.

You have the possibility to trim the output level to interface with the correct level to external analog equipment. This is a global setting that needs to be done carefully to work with correct levels!

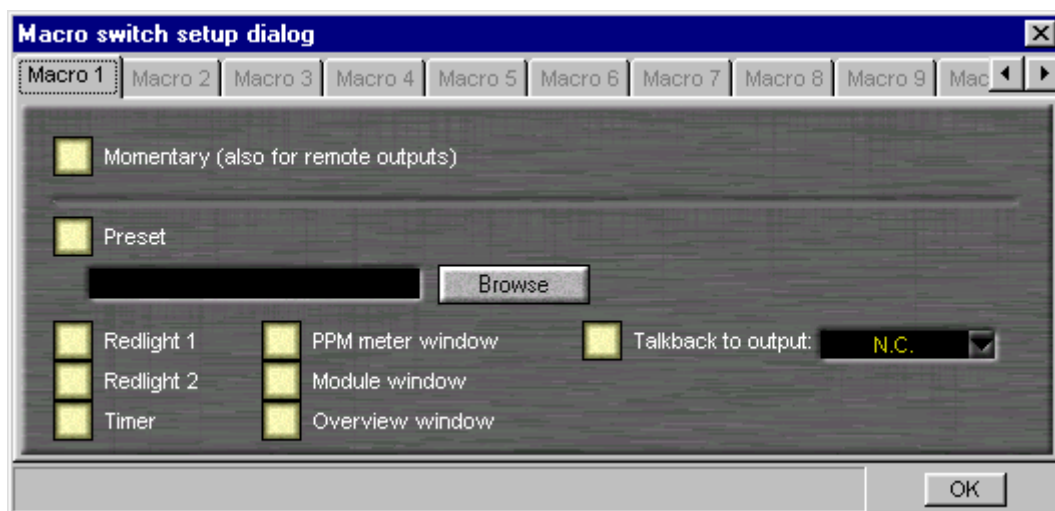


### 7.3 Macro switch set-up

When you have ordered a section with Macro switches it is here that you can program specific functionality. The Macro switches shall always control the global remote independent upon its own settings (see 7.1.9 Remote out). The fill in form can be reached via the menu 'Micro-switch set-up' in the SETUP-menu.

By clicking the TAB you select for which Macro you want to make these settings. You can choose between a latching or a momentary action by activating the menu item Momentary (also for remote outputs).

The next step is to tie a function to this switch. You can choose from:



Preset	A preset/snapshot can be downloaded instantly by scrolling through the brow options you can select the file that needs to be loaded.
Red-light 1	Red-light 1 can be switched on or off by a macro switch.
Red-light 2	Red-light 2 can be switched on or off by a macro switch.
Timer	The internal Timer can be started or stopped by macro switch.
PPM meter window	Selects the PPM meter window on the screen
Module window	Selects the module window on the screen
PPM meter window	Selects the PPM window on the screen
Overview window	Selects the overview window on the screen
Talk-back to output	The selected output will get the TB / CUE buss signal when this function is activated by the switch.

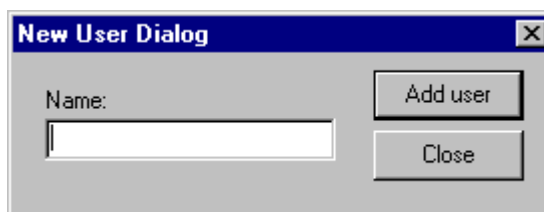
## 7.4 User management

The Sirius has an extensive user management section. It is to be expected that many individuals shall use the Sirius. People with different needs and skilled levels. Also productions made with the Sirius shall differ from person to person. So we have opted for personal persist with passwords and tailor made access to various sections of the software. We shall explain how this users management is implemented and what possibilities you can expect.

### 7.4.1 New user

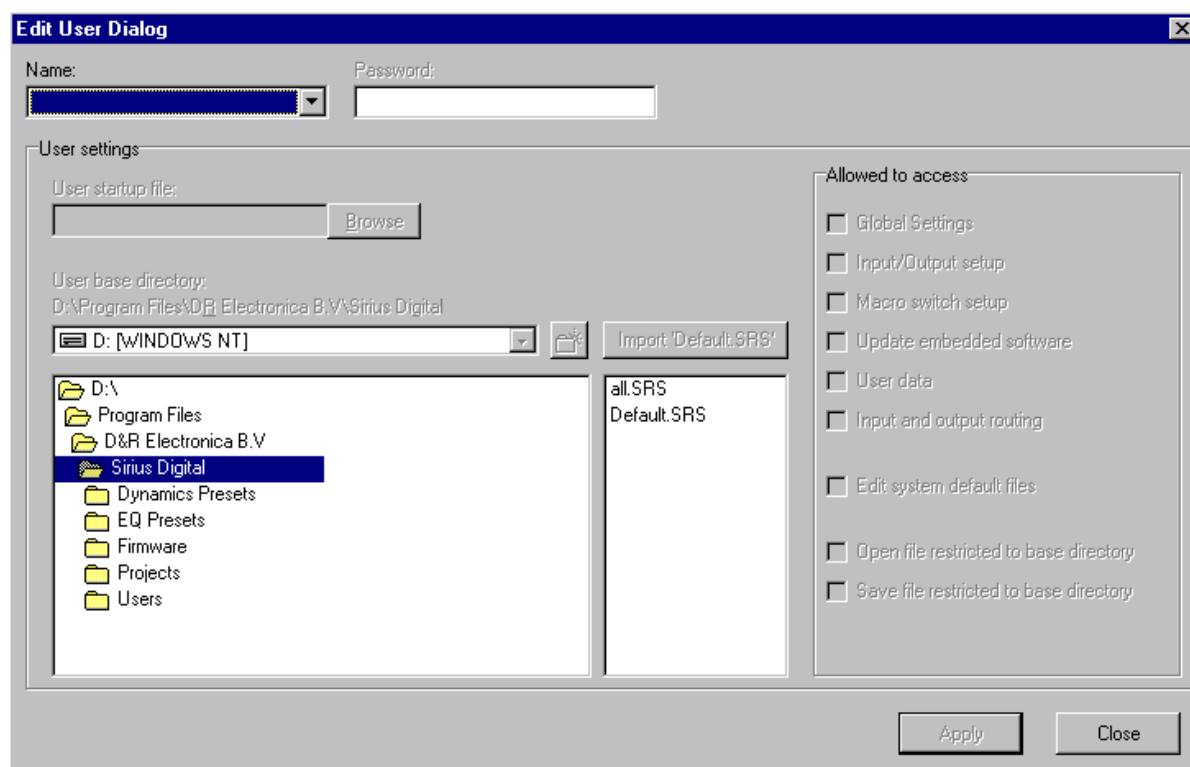
Via SETUP-menu and item “User management” you can choose the menu “New user”. It shows the dialog as seen on the right. A name can be typed in and by clicking the [Add user] field a new user is created.

You can close the window now or adding another user. After having created a new user it is advisable to immediately determine what the rights are for this user. (See 7.4.2 Edit user).



### 7.4.2 Edit user

Via SETUP-menu and the item user management choose the menu item ‘Edit user’. You will see the dialog box as shown on this page. It is in this dialog box that you can change the information about a user.



On the left you see a list box ‘Name:’ Here you can select the user of which you want to change his/her rights.

The field ‘Password’ allows you to fill in or changes an existing password. NOTE: when nothing is typed here no password is necessary to enter these users set-ups. When a password is entered when no password is requested information will be shown that this is the wrong password.

When a user is entering his name Sirius shall look for the corresponding start-up load file and consequently load this file.

NOTE: this file is also that will be loaded when the PANIC button is activated.

When faults are detected during load of the user start-up file, the DEFAULT.SRS (system file) shall be loaded.

You can set-up the ‘user management’ to your own ideas. You have the possibility to give every user its own directory. You can instruct the Sirius to always start-up in this directory. This is the ‘User base directory’. It is strongly advisable to create such directories to keep the system clean and transparent. With the button next to the drive-selection you can create new maps/directories.

The directory selection can be used to select the ‘User base directory’. The button “Import ‘Default.SRS’ imports a copy of the Default.SRS in the user base directory. It is good practise to start like this and edit in this set-up to create your own users file.

On the right side you see a box where all the rights can be selected per user. Below we have made a list of all the “rights”.

Global settings

You can give the user permission to enter the ‘global settings’ menu where he can change global settings. See 7.1 Global settings).

Input/output set-up

Here you can give the user permission to enter the ‘input/output set-up’ menu where in and output settings can be changed. (See 7.2 Input and output ).

Macro switch set-up

Here you can give the user permission to enter the ‘macro-switch set-up’ menu where macro functions can be edited. (See 7.3 Macro switch ).

Update embedded software

Here you can give the user permission to update the Embedded Software (software in the MUX and I/O units, (see 7.7.3 Update embedded software)).

User data

Here you can give the user permission to enter the ‘User management’.

Input/output routing

Here you can give the user permission to edit/change the input/output routing on the modules. (See 5.1 Input processing and routing en 5.5 Send modules and output routing).

Edit system default

Here you can give the user permission to edit the system default file ‘Default.SRS’. This means that this user also can change system labels.

Open file restricted to base directory

Here you can give the user a limited permission to access the hard-disk. When this option is

Save file restricted to base directory

activated a higher directory then its own directory cannot be opened to download a file. Here you can give the user a limited permission to access the hard-disk. When this option is activated a higher directory then its own directory cannot be selected to save a file.

With the button 'Apply' you activate all settings and you can proceed by selecting another user or "close" this session.

### 7.4.3 Delete user

Via SETUP-menu and the item user management you can select 'Delete user'. A box shown on this page will be seen. Here you can select the name of a user and you can delete this user when necessary.

**NOTE:** All files of this user are still on the system in case you have second thoughts about this deletion. You can leave this menu by hitting 'Close' or delete another user.



## 7.5 Snapshots and pre-sets

The Sirius is a digital mixer allowing you to use pre-sets and snapshots of all settings. It means you can load complete settings from hard-disk. All pre-sets including labels, EQ positions etc is loaded instantly.

In the chapter '7.4 User management' you have read about the possibility to give every users its own directory with its own start file/snapshots.

### 7.5.1 Total snapshots

The use of these Snapshots is very easy and similar to the way you are used to work with your word processor with menu options like 'Save' or 'Save as' in the 'File' menu you can save the current configuration on your hard-disk.

A snapshot can be recalled via the menu option 'Open' in the 'File' menu. Here you select which file you want to recall.

You can also program basic snapshots under the Macro keys. (See 7.3 Macro switch ). Hitting a programmed Macro key instantly loads the programmed set-up file.

If you correctly enter the permissions of the users, snapshots can be saved/recalled exclusively for a specific user. This means that users can only load and save snapshots in their own directory. (See 7.4 User management).

### 7.5.2 EQ pre-sets

**You have the possibility to make standard pre-sets of all EQ settings. In these pre-sets are all settings stored and these can be loaded any time when needed.**

**When you have the ultimate EQ setting and you want to save this for later, simply hit the right hand mouse switch when you are in the blue EQ window. Now you have three options to choose from.**

Load system EQ pre-set	<p><b>This option opens the standard ‘EQ Pre-set’ directory. Here you can select the EQ pre-set you want and by pressing the OK label the pre-set will be loaded.</b></p> <p>NOTE: This immediately affects the audio.</p>
Load user EQ pre-set	<p><b>This option opens the users default directory. Now you can choose a pre-set and by pressing the OK label the selected EQ setting will be loaded.</b></p> <p>NOTE: This immediately affects the audio.</p> <p><b>According to the permissions of the users it is possible to enter other user directories and get some nice EQ settings from another DJ.</b></p>
Save user EQ pre-set	<p><b>This options opens the users default directory. Here you can save the current EQ setting when the need arises. You can also create new directories and if the Authorizations are sufficient you can save these settings into other users directories.</b></p> <p><b>To save a system pre-set you can go to the ‘EQ Pre-sets’ directory in the installation directory (normally C:\Program Files\D&amp;R Electronica B.V.\Sirius Digital). All pre-sets here are visible for all users as system pre-sets.</b></p>

### 7.5.3 Dynamics pre-sets

**You have the possibility to create standard pre-sets for the dynamics section. These pre-sets save all settings of the entire dynamics section. A recall can be made any time.**

**When you have a setting that needs filing simply click the right mouse button when being in the blue dynamics curve window.**

**The following three options are visible.**

Load system dynamics pre-set	<p><b>This option opens the standard ‘Dynamics Pre-set’ directory. Here you can select the Dynamics pre-set you want and by pressing the OK label the pre-set will be loaded.</b></p> <p>NOTE: This immediately affects the audio.</p>
Load user dynamics pre-set	<p><b>This option opens the users default directory. Now you can choose a pre-set and by pressing the OK label the selected Dynamics setting will be loaded.</b></p> <p>NOTE: This immediately affects the audio.</p> <p><b>According to the permissions of the users it is possible to enter other users directories and get some nice Dynamics settings from a friend.</b></p>
Save user dynamics pre-set	<p><b>This options opens the users default directory. Here you can save the current Dynamics setting when the need arises. You can also create new directories and if</b></p>

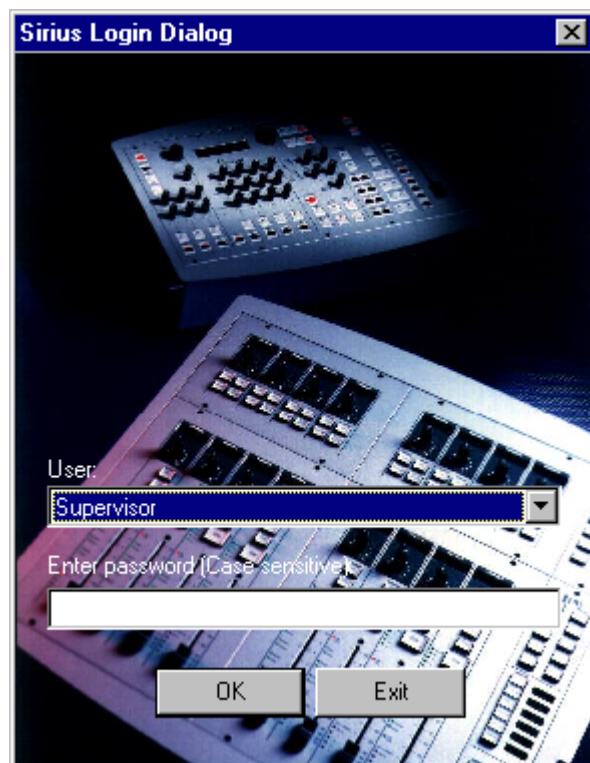
the Authorizations are sufficient you can save these settings into other users directories.

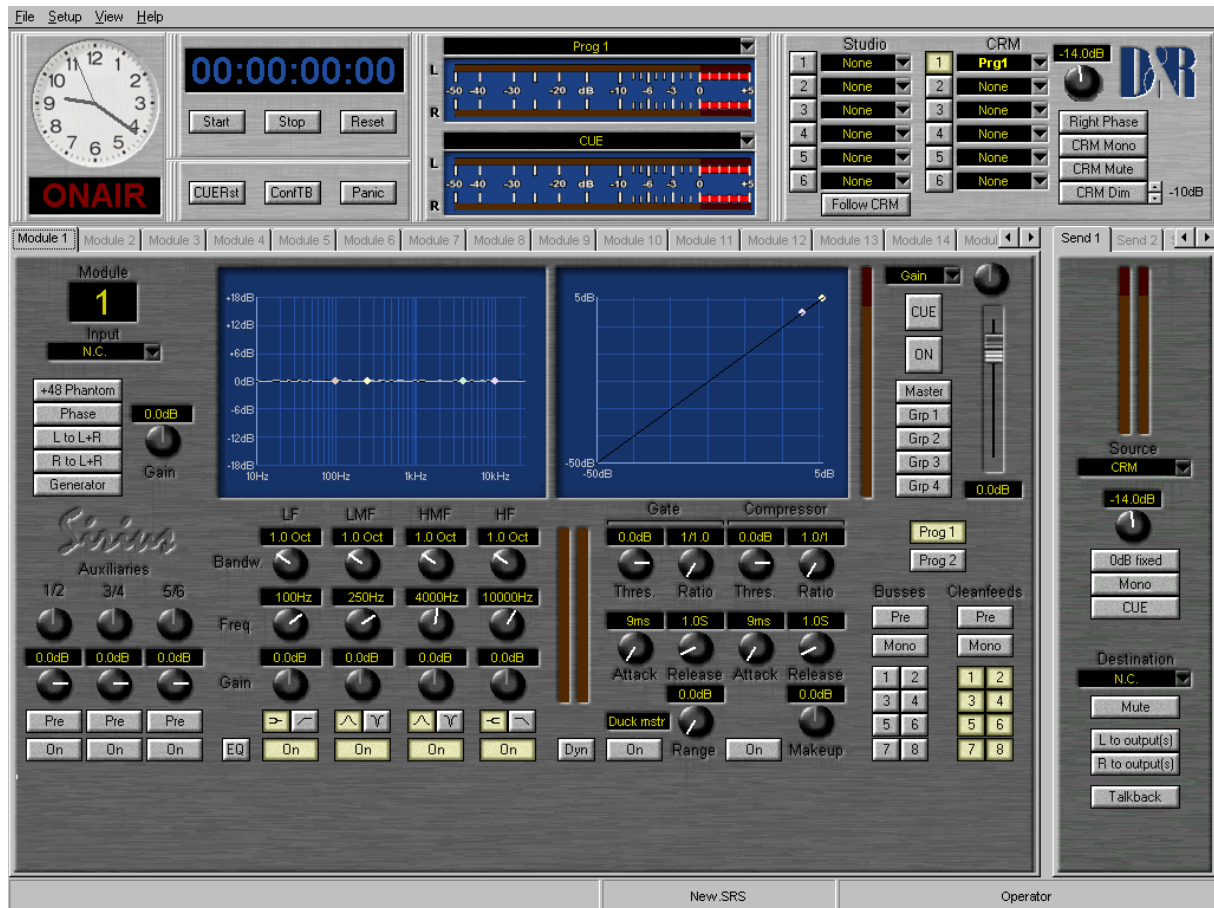
To save a system pre-set you can go to the 'Dynamics Pre-sets' directory in the installation directory (normally C:\Program Files\D&R Electronica B.V.\Sirius Digital). All pre-sets here are visible for all users as system pre-sets.

## 7.6 Work environment

When powering up the Sirius the software will ask you to identify yourself (see figure on the right). Select the type of user you are and type your password (if needed). Now the software will start loading its system files and user related files. The Sirius is now ready to work with.

When there is no request for login the last user backup file will be loaded. After you went in this mode you can go to the File menu and do Logon/Logoff to change to the right user.





The main screen shows you the Master, a selected module and a selected Send (see figure above).

The layout of this screen is very similar to the layout of the Super Control Module. You can access all options of the Sirius via this screen. In this screen you find all information necessary to use all advanced possibilities of the Sirius.

**NOTE:** remember that it is not necessary to use this screen for adjusting audio parameters, but it is easy to have an overall view of all settings.

However the screen is essential during installation/set-up of the console.

## 7.7 Service

In the 'SETUP' is a menu item called "Service". You can use this menu item for service and updates when necessary.

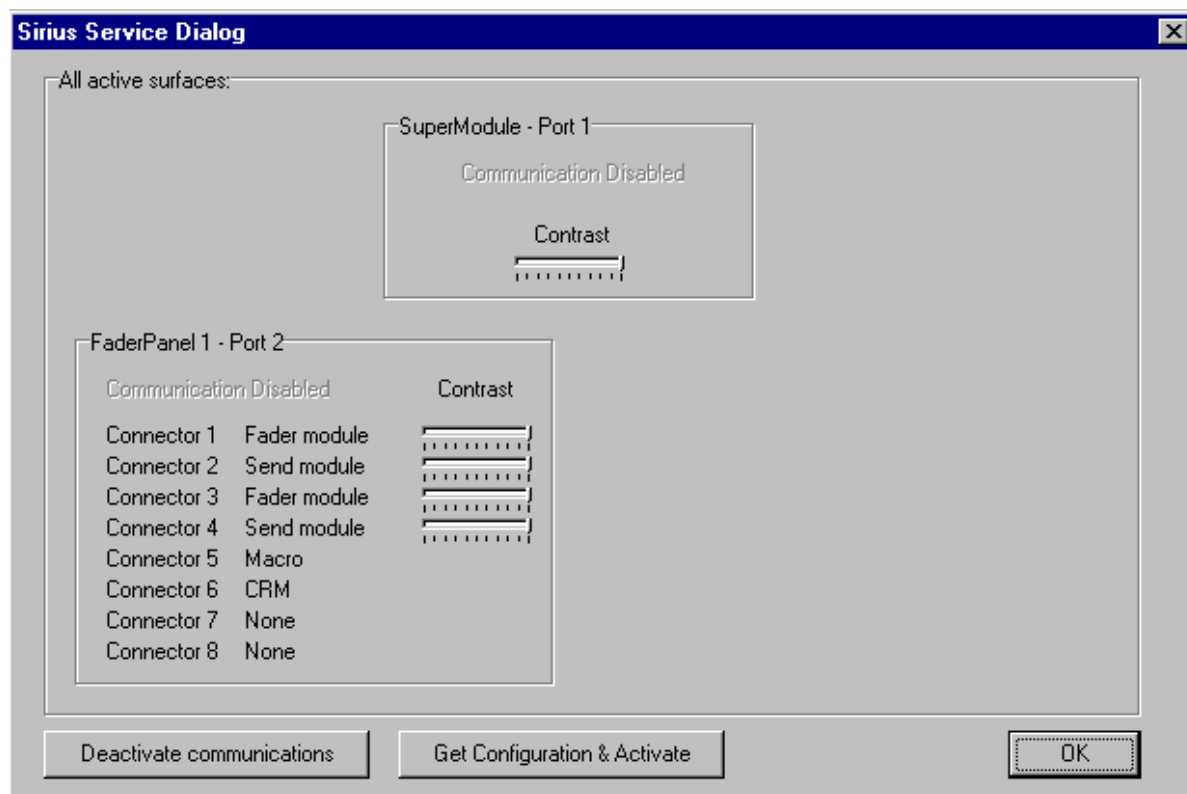
### 7.7.1 Control surface

When you choose the option 'Control surface' a window as shown below will popup. The screen will show which control surfaces have been found and how they are connected to the MUX unit.

In the example fader panel 1 is connected to connector 2 van de MUX unit.

These boxes show the configuration of the fader panel. In the group box can be seen which configuration is built into the fader panel. The example shows two fader modules (8 faders), two Send modules (8 sends), Macro module and a CRM module.

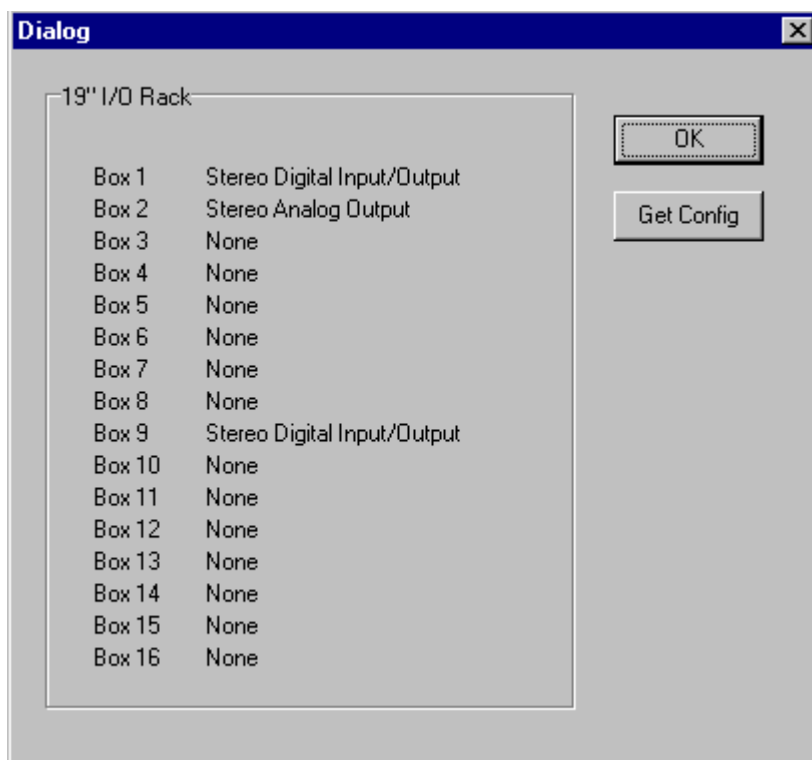
LCD contrast can be adjusted by means of a bar. These settings are stored in the snapshots as well.



The two buttons on the bottom end of the screen can be used to replace a control surface while on the Air. Push 'Deactivate communication' and the software shall no longer make use of the Control surfaces. Now you can replace one or all Control Surfaces. If a unit needs replacement and everything is hooked up again simply push the label 'Get configuration & Active' and the software will start identifying what has been connected again and initialize all the values on the hardware and the broadcast can continue without any interruptions. De-activating the communications does not affect the audio signal.

### 7.7.2 19" Rack

With the menu option '19" rack' you get a visual representation of the I/O rack. Shown will be all connected I/O racks. The Unit Nr is the same as the connector number in the MUX unit.



With the button ‘Get Config’ you can request the actual configuration.

### 7.7.3 Update embedded software

The menu option ‘Update embedded software’ shall implement new (or present) software on all I/O units and the MUX unit, (program files are located in the directory ‘Firmware’ in the install directory normally located in C:\Program Files\D&R Electronica B.V.\Sirius Digital is).

**NOTE:** This option could cause malfunctioning of the system when applied, be careful!

If the Sirius starts replacing its own software the mixer will be put in an ‘idle’ mode. It means that noise could become present on outputs. Switch off any connected speaker to avoid possible damage to amps and or voice coils.

## 8 Installing Windows NT on a Sirius/Scorpius PC

### What you need for this installation:

A) The Windows NT CDROM

B) Service Pack 6 (You need this otherwise the Sirius software will not run correctly)

You can get it for free at this place:

<http://www.microsoft.com/ntserver/nts/downloads/recommended/SP6/x86DLType.asp>

It is +/- 35 Mb. You need to burn this on a CDR.

C) Arbor Driver CDROM. You can find it in the PC Box.

Before starting the installation you need to make backup of all user files, snapshots and presets that you want to keep, on a diskette.

(Reinstalling Windows will remove these files!)

### 8.1 Starting the installation.

Switch on the PC.

Place the Windows NT CDROM in the CDROM drive.

The setup program will now automatically start.

Note: In the BIOS you need to make the system boot from CDROM.

Making the System boot from CDROM, Power on the PC and press "Del" to enter the BIOS.

Go to "Advanced BIOS Features". Scroll down until you get to "First Boot Device".

Press "Enter" and Press down until you reach CDROM. Press "Enter".

Your system will now boot from CDROM.

Press down until you reach "Second Boot Device". Change this to "HDD-0" in the way described above. Press "Esc" to leave the "Advanced BIOS Features" menu.

Now press F10 to "Save to CMOS and EXIT (Y/N)?" Press "Y" and then "Enter".

NOTE: Do not change any thing else in the BIOS.

If you do you could prevent the system from Booting up or making the system Unstable. The system will now reboot.

You will see a screen called "Windows NT Workstation Setup"

Press "Enter". The installation will now begin.

The setup program will now show the following line:

Setup has recognized the following mass storage devices in your computer.

IDE CD-ROM (ATAPI 1.2)/PCI IDE Controller.

Press "Enter" to continue.

The setup program will now show the following line:

Setup has determined that one or more of your hard disks has more than 1024 Cylinders.

Press "Enter" to continue.

On the next screen you will see the End User License Agreement.

Press "PgDn" several times until you reach the end, then Press F8.

Note: Pressing F8 means that you agree to the terms written in the Agreement.

On the next screen you will see the following:

Setup has found Windows NT on your hard disk in the directory shown below.

C:\WINNT "Windows NT Workstation Version 4.0"

Press "N" (New version)

On the next screen you will see the following:

Setup has determined that your computer contains the following hardware and software components.

Computer: Standard PC Display: Auto Detect

Keyboard: XT, AT, or Enhanced Keyboard (83-104 keys)

Keyboard: US (Depending on your keyboard)

Pointing Device: Logitech Mouse Port Mouse (depending on your mouse type)

No Changes: The above list matches my computer.

Press "Enter"

On the next screen you will see the following:

The list below shows existing partitions and spaces available for creating new partitions.

On this screen you can Delete and Create partitions. It's best to delete the partition so you can start with a clean hard disk.

To delete the partition press "D". Note: You will lose all information on the hard disk.

On the next screen you will see the following:

The partition you have asked to delete is a system partition.

Press "Enter".

On the next screen you will see the following:

You have asked Setup to remove the partition

C: NTFS 4095 MB

on 8057 MB Disk 0 at Id 0 on bus 0 on atapi.

Press "L" to confirm the deletion of the partition.

On the next screen you will see the following:

The list below shows existing partitions and spaces available for creating new partitions.

Now press "C" to create a new partition.

On the next screen you will see the following:

You have asked Setup to create a new partition on 8057 MB Disk 0 at Id 0 on bus 0 on atapi.

Create partition of size (in MB): 8057 you need to fill in 4096

On the next screen you will see the following:

The list below shows existing partitions and spaces available for creating new partitions.

C: New (Unformatted) 4095 MB

Press "Enter" to start the Windows NT installation on this partition.

**On the next screen you will see the following:**

**The partition you have chosen is newly created and thus unformatted.**

**Setup will now format the partition.**

**Choose:**

**Format the partition using the NTFS system.**

**Setup will start to format the chosen partition.**

**On the next screen you will see the following:**

**Setup installs Windows NT files onto your hard disk. Choose the location where you want these files to be installed:**

**\WINNT**

**Press "Enter" to accept.**

**On the next screen you will see the following:**

**Setup will now examine your hard disk(s) for corruption.**

**You may press "Enter" but because the hard disk is reasonably new it is not necessary.**

**If you don't want this you can press "Esc"**

**The first part of the installation is complete. Remove the Windows NT CDROM from the CDROM Drive and also any diskettes in the floppy drive.**

**And press "Enter" to restart the computer.**

**When the system starts for the first time Setup will run CHKDSK so you will see some numbers on screen. This is Ok.**

**Insert the Windows NT CDROM in to the CDROM Drive and press Click "Ok"**

**Setup will copy some files and then click the "Next" button.**

**Setup will ask you which type of install you prefer. Choose "Typical" and click "Next"**

**Type your name and organization and click "Next"**

**Enter your Product ID (registration) code. You can find it on the side/back of the PC housing.**

**Enter a name for the Computer.**

**Now you are being asked to type a password for the "Administrator Account". You need to fill in Administrator. This is because the Sirius/Scorpius Software Sets auto logon for this Account. Click "Next".**

**Setup now asks if you want to make "Emergency Repair Disks". It is up to you to decide if you want this. It is recommended. Click "Next".**

**Setup now asks which components should be installed. Choose "Install the most common components (recommended)". Click "Next".**

**If you click "Next" again Setup will ask you if you want to install networking. Select "Do not connect this computer to a network at this time." Click "Next".**

The second part of the Windows NT installation is complete. Click "Finish".

Choose your time zone. And click "Close".

Setup now tells you what kind of video card he has found. Click "Ok".

You will now see the "Display Properties" window. Because we are going to install new drivers for this video card it's best to leave it the way it is. Click "Ok".

Setup will copy some files. And then ask you to restart. The Third part of the installation is now complete. Click "Restart".

When Windows NT is restarted you need to press CTRL+ALT+DEL to enter windows. Windows will ask for you password. If you installed a password type it and click "Ok" else leave it blank and click "Ok".

Windows NT will show a screen "Welcome to Windows NT". Click "Close".

Open the start menu and start up the "Windows NT Explorer".

Insert the Windows NT Service Pack 6 CD Rom into the CD Rom Drive. If it starts automatically choose "Install Service Pack 6". On the next screen click "Install service Pack 6 for Intel based systems". Setup will now show a message asking you to confirm opening this file. Click "Open". Continue to 40)

If it does not start automatically open the "Windows NT Explorer" in the start menu and go to the CD Rom drive. Now click on the files called "sp6i386".

You will now see a window, which asks you to " Accept License Agreement (must accept before installing the Service Pack)". Check this box. (Note: By checking this box you accept the license agreement.)

And " Backup files necessary to uninstall this Service Pack at a later time (requires approximately 60MB additional disk space)". Uncheck this box.

Now click "Install". Setup will start copying files.

When Setup is finished with copying the files click "Restart".

Service Pack 6 is now installed.

When Windows NT is restarted you will again see the "Welcome to Windows NT" window. Now uncheck the "Show this Welcome Screen next time you start Windows NT". Click "Close".

Now we need to install the correct drivers for your Display adapter.

Right Click on the desktop and select "Properties". Click on the "Settings" Tab and click on the "Display type..." button. Click on the "Change" button. Now click "Have Disk". Now double click the "6313" Directory. Double click the "VGA" directory and finally the "winnt" directory. Select the "S3nb" file and click "Open". On the "Install From Disk" window click "Ok".

**On the "Change Display" window also click "Ok".**

**Windows NT will now ask you if you want to install a Third Party driver. Click "Yes".**

**On the "Installing Driver" window click "Ok". The installation of the video driver is complete.**

**Close the "Display Type" window and the "Display Properties" window.**

**Now click "Yes" to restart the computer.**

**When Windows NT is restarted Windows will show a window called "Invalid Display Settings" click "Ok". Adjust the display settings to:**

**1024 by 768 pixels**

**65536 colors**

**And a 60 Hz refresh frequency. If you use a CRT Monitor instead of a LCD Monitor you can increase the refresh frequency to the desired frequency.**

**When you are done click "Test". You will now see a window called "Testing Mode" click "Ok".**

**Windows will ask you if you have seen the Bitmap correctly. Answer "Yes" (Probably).**

**Now Click "Apply". Windows will now adjust the screen resolution, the number of colors and the refresh rate.**

**Click "Ok".**

**The last thing to do is to set the Boot Delay from 30 seconds to 0 seconds.**

**Double click the "My Computer" icon. Then double click the "Control Panel". Then double click the "System" icon. Select the "Startup/Shutdown" tab. On this tab you can see the boot delay. Default it will be 30 Seconds. Click the down arrow to reduce it to 0 seconds. Click "Apply" and then "Ok". When the Sirius/Scorpius software is installed you will no longer need to log on. And the Sirius/Scorpius software will automatically start.**

**Windows NT is now completely installed. Now you can install the Sirius or Scorpius software.**

**This concludes the Installation of Windows NT.**

## 9 SPECIFICATIONS

### GENERAL SYSTEM PARAMETERS.

**Level specs in dB full scale for digital and dBu for analog data.**

**0dBu=0.775Vrms**

**Sampling rate: 48kHz, 20ppm (internally synchronized).**

**Headroom: internally floating and adjustable: 0...20dB default setting: 18 dB**

### A/D and D/A CONVERTERS.

**A/D Crystal 24 bit Delta Sigma, 128x over sampling**

**Dynamic range: typically 105 dB**

**THD+Noise: <-95dBfs**

**D/A Burr-Brown 24 bit delta-sigma converter.**

**Dynamic range: typically 106 dB**

**THD+Noise: <-96dBfs**

### MICROPHONE INPUTS:

**Mic INP. Bal. 2kOhm - 128dBr (60dB gain range)**

**CMRR: Mic input max. Gain: 50Hz 75dB**

**Phantom is switchable +48volt**

### LINE INPUTS

**Input sensitivity: -20dB to.+20dB**

**Line inp. bal 10kOhm**

**CMRR: Line input max.. gain: 50Hz 50dB**

### LINE OUTPUTS

**+4dBu / -10dBV electronically balanced or transformers (optional).**

### EQUALIZATION:

**LF: +/- 18 dB @10Hz to 20kHz shelving/low cut**

**Q: 0.1 to 3 variable.**

**LMF: +/- 18 dB @10Hz to 20kHz bell/notch**

**Q: 0.1 to 3 variable.**

**HMF: +/- 18 dB @10Hz to 20kHz bell/notch**

**Q: 0.1 to 3 variable.**

**LF: +/- 18 dB @10Hz to 20kHz shelving/high cut**

**Q: 0.1 to 3 variable.**

## Specifications

### DYNAMICS

#### Compressor

**Threshold: -80dB to +18dB**

**Ratio: 1:1 to 20:1**

**Attack: 1mSec to 10 Sec**

**Release: 1mSec to 10Sec**

#### Gate:

**Threshold: -80dB to +18dB**

**Ratio: 1:1 to 20:1**

**Attack: 1uSec to 10 Sec**

**Release: 1mSec to 10Sec**

### DIGITAL INPUTS

**AES/EBU (AES3), S/P-DIF, Optical (toslink)**

**16/20/24 bit 32kHz to 96kHz (built in sample rate converter).**

**THD+N: -105dBfs @1kHz, 0dBfs**

**Frequency response: 20-20kHz, +/- 0.1 dB**

**Input impedance: 110 Ohm (XLR) 75Ohm (cinch)**

**Clock input: 75Ohm TTL.**

### DIGITAL OUTPUTS.

**AES/EBU/AES3, S/P-DIF, Optical (toslink)active at the same time.**

**16/20/24 bit, 32kHz to 96kHz (System clock or sample rate conversion to corresponding input clock).**

**Output level: 2 to 5 volts**

**Output impedance: 110 Ohm**

**Clock output: 75Ohm TTL.**

### CLOCK

**System clock internally 32kHz, 44.1kHz, 48kHz, 20ppm.**

**Frame clock: BNC in/out 75Ohm TTL**

**Master clock: BNC in/out 75Ohm, TTL 256 frame clock**

### OVERALL:

**Frequency response: 20-20.000 Hz +/-0.5dB**

**Cross-talk: less than -90dBr**

**fader attenuation >100dB**

### REMOTES:

**All channel remotes are isolated on relays and interfaced on 9 pin Sub-D connectors.**

### DIMENSIONS AND WEIGHT.

**Drop through mounting hole dimensions:**

**Fader Module: 435mm x 490mm Depth: 130mm**

**Super Module: 435mm x 270mm Depth: 130mm**

Specifications
----------------

**Notes:**

**0dBu=775 mV.**

**All measurements were made on an Audio Precision System Two.**

**For more info on this and many other broadcast consoles contact your nearest dealer or D&R HQ.**

**D&R Electronica Weesp b.v.**  
**Rijnkade 15B,**  
**1382GS Weesp-The Netherlands**

**Phone: +31 - 294-418 014**

**Fax: +31 - 294-416 987**

**Website: <http://www.d-r.nl>.**

**Mail to: [info@d-r.nl](mailto:info@d-r.nl)**

**D&R reserves the right to change these specs at any time, due to new product improvements and new components.**

## **DECLARATION OF CONFORMITY**

Manufacturers Name: **D&R Electronica Weesp b.v.**

Manufacturers Address: **Rijkade 15B,  
1382 GS Weesp,  
The Netherlands**

**Declares that the product**

Sirius series

**conforms to the following product specifications:**

EMC:	NEN-EN 55103-1	<b>1995</b>
	NEN-EN 55103-2	<b>1995</b>
	NEN-EN 55013-1	<b>1994</b>

### **Supplementary Information:**

The products herewith complies with the requirements of the EMC Directive 89/336/EEC (1989) as amended by the CE Marking Directive 93/68/EEC (1993).

**D&R Electronica Weesp b.v.  
Rijkade 15 B  
1382 GS WEESP  
The Netherlands  
President of Engineering**

**(\*) The product is tested in a normal users environment.**

## PRODUCT SAFETY

### 10 PRODUCT SAFETY

This product is manufactured with the highest standards and is double-checked in our quality control department for reliability in the "HIGH VOLTAGE" section.

#### CAUTION

**Never remove any panels, or open this equipment. No user service-able parts inside.  
Equipment power supply must be grounded at all times.  
Only use this product as described, in user manual or brochure.  
Do not operate this equipment in high humidity or expose it to water or other liquids.  
Check the AC power supply cable to assure secure contact.  
Have your equipment checked yearly by a qualified dealer service center.  
Hazardous electrical shock can be avoided by carefully following the above rules.**

#### EXTRA CAUTION FOR LIVE MIC RECORDING

**Ground all equipment using the ground pin in the AC power supply cable. Never remove this pin. Ground loops should be eliminated only by use of isolation transformers for all inputs and outputs. Replace any blown fuse with the same type and rating only after equipment has been disconnected from AC power. If problem persists, return equipment to a qualified service technician.**

#### PLEASE READ THE FOLLOWING INFORMATION

**Especially in sound equipment the following information is essential to know.  
An electrical shock is caused by voltage and current, actually it is the current that causes the shock.  
In practice the higher the voltage the higher the current will be and the higher the shock. But there is another thing to consider and it is resistance. When the resistance in Ohms is high between two poles, the current will be low and vice versa.  
All three of these; voltage, current and resistance are important in determining the effect of an electrical shock.**

*However, the severity of a shock is primarily determined by the amount of current flowing through a person.*

**A person can feel a shock because the muscles in a body respond to electrical current and because the heart is a muscle it can affect, when the current is high enough. Current can also be fatal when it causes the chest muscles to contract and stop breathing.**

**At what potential is current dangerous.**

**Well the first feeling of current is a tingle at 0.001 Amp of current. The current between 0.1 Amp and 0.2 Amp is fatal.**

**Imagine that your home fuses of 20 Amp can handle 200 times more current than is necessary to kill. How does resistance affect the shock a person feels. A typical resistance between one hand to the other in "dry" condition could well over 100,000 Ohm.**

*Always earth all your equipment by the grounding pin in your main plug.*

*Proper wiring and isolation input/output transformers should only cure hum-loops.*

**Replace fuses always with the same type and rating after the equipment has been turned off and unplugged.**

**If the fuse blows again you have an equipment failure, do not use it again and return it to your dealer for repair.**

**And last but not least be careful not to touch a person being shocked as you, yourself could also be shocked. Once removed from the shock, have someone send for medical help immediately**

*Always keep the above-mentioned information in mind  
when using electrically powered equipment.*

**Dear Sirius owner,**

**In this manual we have tried to give you an overview of all that the Sirius has to offer. As it is our policy to continuously improve on our products this manual will be updated regularly. Please visit our web-site to download the latest version of this manual. If you have any questions, do not hesitate to contact us.  
We wish you many years of enjoyable mixing.**

**Best regards,**

**Duco de Rijk  
President**

**Jan Betten  
Chief designer**

**Anton Prins  
Software engineer**

**Peter Wilcke  
Mechanical /Lay-out engineer**

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**We hope you find this manual useful and easy to understand. As always, we are open to any suggestions about this manual or any D&R products.**

***Due to a policy of continuous product improvement, D&R reserves the right to change specifications and appearance without prior notice***