CinemiX

OWNERS MANUAL

Cinemix Manual

version: 1.3

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Letter from the Prez

Dear Cinemix owner,

The Cinemix was created using the latest in computer aided design and assembling technology and incorporates the most advanced circuit components available which results in Cinemix being another D&R product unsurpassed in the electronics industry.

In D&R's quest to "raise the standard", Cinemix is designed and manufactured to the highest degree. We are confident that Cinemix will play the central roll in producing "state of the art" recordings for many years and wish you much success.

We value your suggestions and would appreciate you taking the time to complete and return the questionnaire included at the front of this manual (once you become familiar with your Cinemix).
We listen and learn from your comments and you can be assured that our research and development department will take your comments very serious.

With kind regards,

Duco de Rijk
President D&R Electronica Weesp b.v.

RAISING
THE
STANDARD

Cinemix Recording Console

The D&R Cinemix is a 24 buss, dual path in-line format recording and mixing console designed to take the central role in a recording/mixing facility.
With up to 30 projects storable, the wasted time between sessions is a thing of the past.
An essential part of Cinemix is his ARM (Advanced Routing Multiplex).
With ARM you can digitally route any input in Cinemix to a number of places and be able to recall all stored setups by a couple of key strokes. This feature alone saves valuable time between sessions.
A first in mixing console technology is Cinemix's surround master section with the ability to mixdown a 5.1 surround mix, fully automated.
Easy monitoring of all surround outputs is standard and automated Joysticks with Virtual Vision makes 360 degrees panning very easy to lay down in the final mix.
Completely modular, Cinemix can be configured precisely to suit your particular system requirements. A Cinemix standard is the internally wired patchbay on the right end and interfaces with all external equipment using
25 pin sub D connectors, and chassis mount XLR connectors.

To become completely familiar with your Cinemix and gain the maximum benefit from his use, we recommend that you read this manual thoroughly.
It will provide important information about all aspects of Cinemix including; installation, operation, and servicing.

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Cinemix's CHASSIS SYSTEM

1.0 Cinemix's Chassis

The Cinemix is available in two frame sizes; 32 and 48. The basic frame has one blank module located on the extreme left of the frame. The three blanks positioned right from the master section can be replaced by an optional Film Stems module. This is a module that returns 24 track machine outputs directly into the CRM summing busses for monitoring pre-recordings.
The blank on the far left side of the frame cannot be replaced with an input module as they conceal mechanical constructions and internal wiring.
Included with Cinemix's frame are; the master section with associated VU metering, patchbay, all internal cable harnessing, and rack mount power supply.

Frame 32
The frame 32 will fit 32 dual path mono, 3 optional Stems modules and a miaximum of 5 dual path stereo modules, the master section, and patchbay.

Frame 32 standard configuration:
From left to right; 24 dual path mono modules, master section, 3 blank modules, 8 dual path mono modules and a maximum of 5 dual path stereo return modules (10 stereo returns), and pacthbay.

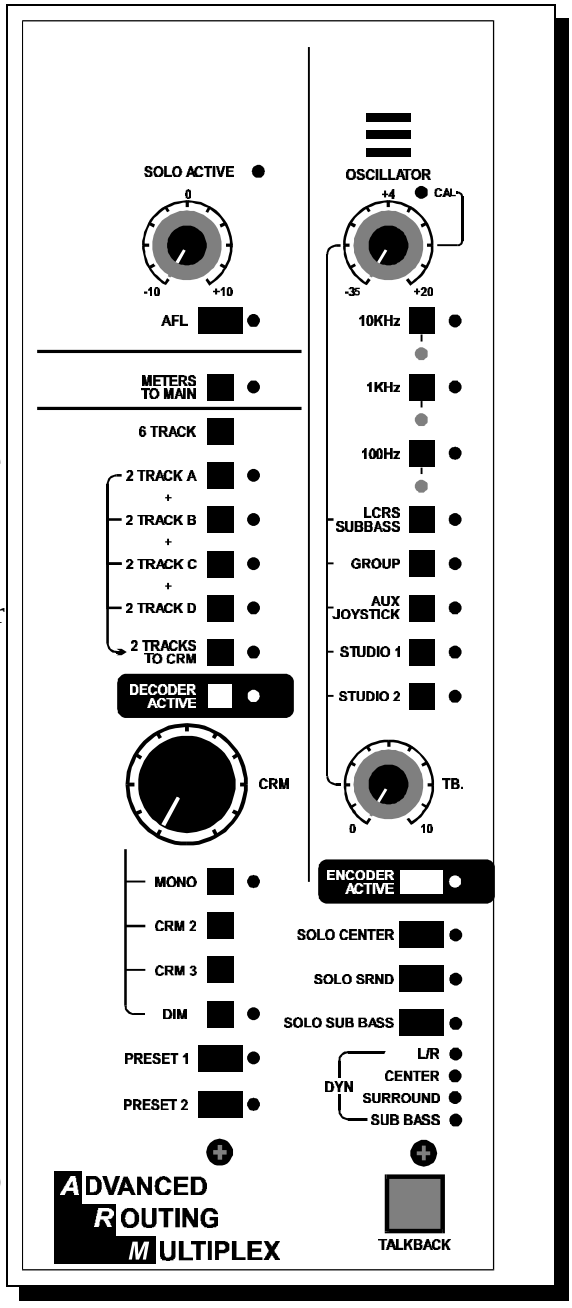
Frame 48
The frame 48 will fit 48 dual path mono, 3 optional stems modules, 3blanks and 5 dual path stereo modules, master section and patchbay.

Frame 48 standard configuration:
From left to right; 32 dual path mono modules, master section, 3 optional stems modules, 16 dual path mono modules, 5 dual stereo return modules (10 stereo returns), and patchbay.

Note: Cinemix's patchbay can be ordered on either end of the frame for a small price increase covering extra mechanical work for re-arranging of internal mounting of automation and Dynamics PCB's.

THE VIDEO MASTER SECTION

2.0 Master section - description
Cinemix's master section is equivalent (in width) to 6 input modules.
All CRM outputs are located on the rear of the console below the meter bridge.
The following paragraphs give a brief description of each section.



2.1 SOLO SECTION
The Solo section has a solo master volume control and **AFL** (after fade listen) switch.
A center detent (for nominal level) is built-in to the volume control. With the AFL switch in its up position, the Channel and Mix solo switches function in the **PFL** (pre fade listen) mode.
A Solo Active LED above the solo level control indicates a SOLO switch is depressed.
This is also shown in the LC Display for your convenience. If the **AFL** switch is depressed, any Solo switches function in the non destructive after fade listen mode.

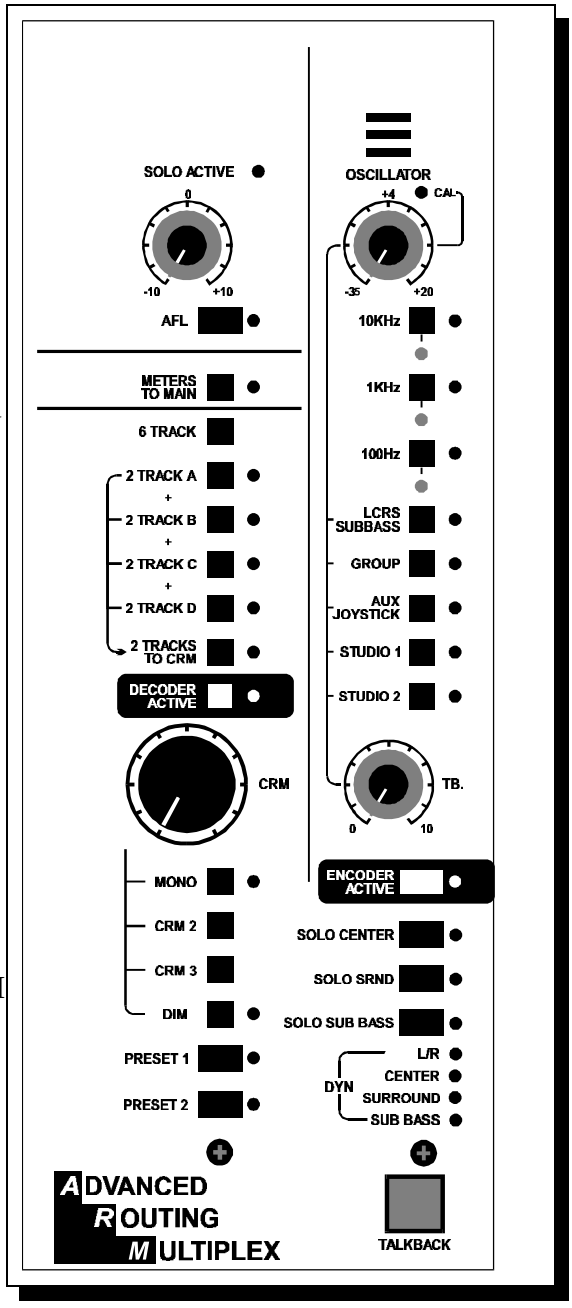
2.2 METERS TO MAIN.
In the up position, all six meters read the monitor CRM outputs prior to the Encoder insert, when the "Meters to main" is depressed both the main left and right meters will always follow the main Left and Right output without being interrupted by the solo system, the 2 Tracks and decoder active switches.
When the Encoder switch is depressed the left/Right meters will read the encoded signal.

2.3 CRM Section
The CRM (control room module) section contains the electronics for monitoring all signal paths in Cinemix as well as source switching for six track machines and four two track machines, as well as Solo-ing of Center, Surround, and Sub Woofer (except for decoder mode).

2.4 DECODER ACTIVE.
You can see the decoder active switch as a full 6 channel Dolby CP65 control room monitor insert. When this switch is in its up position a normal or eventually encoded stereo signal will be heard (If the encoder is active of course and the decoder switch is ON). When no Decoding device is connected to the Cinemix, there will be no signal when the DECODER ACTIVE switch is on

ENCODER ACTIVE.
This switch changes the Main output signal from the console to the Encoder output of an externally connected Encoder. The Surround left/Right signal will be mono summed .

2.5 CRM CONTROL ROOM MONITOR.
The large CRM knob controls the total of 6 outgoing levels to the control room monitor power amps. This encoder controls all six tracks with a superb tracking and level repeatability. Attenuation of the CRM is always shown in the LC display in the first level of the menu. It ranges from 0dB down to -63dB in 0.5dB steps and then it mutes the CRM completely. The Cinemix has three CRM systems intended for alternative stereo nearfield monitors which are switchable via the CRM 2, and 3 switches. Each alternate speaker system have their own ground compensated balanced XLR output for easy interchange of nearfields by free lance engineers. The main CRM output together with the Center Stereo Surround, and Subbass output are on a 25 pole sub D connector. Also fitted on the back of the master section are the sub D connectors for the encoding and decoding surround processors.



MONO
The mono switch lets you check mono compatability.The Mono switch allows the user to check for any out-of-phase signals or simply monitoring your mix in mono.

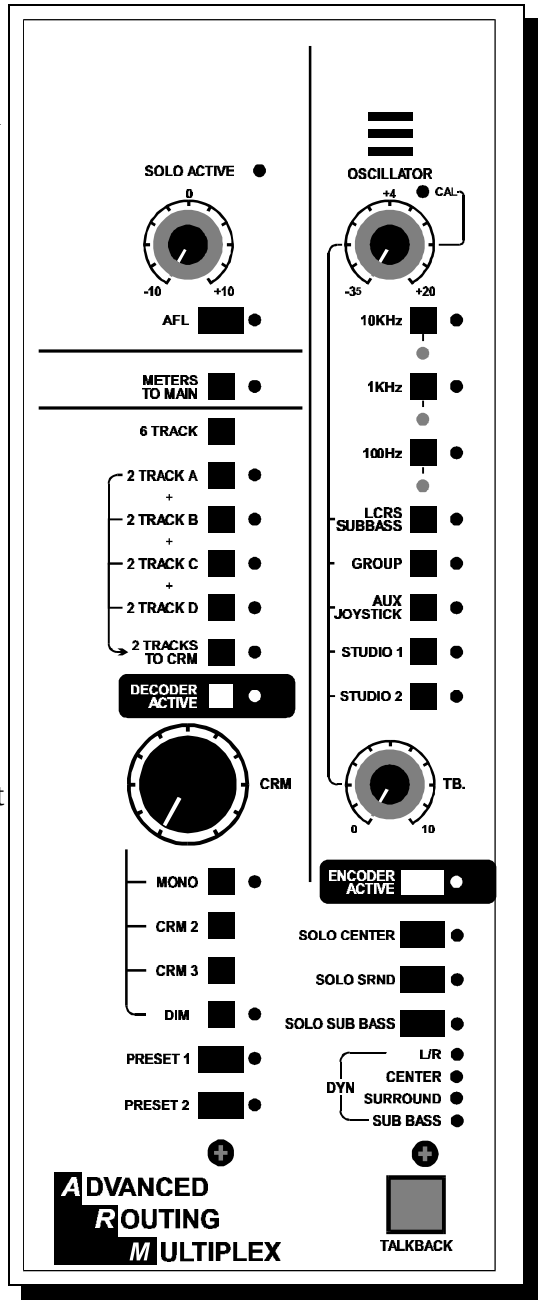
DIM
The dim switch temporarily dims Cinemix's CRM level by a pre programmable amount of attenuation. This dimming circuitry is also driven by the oscillator circuitry as well as the Talkback circuitry. The LC Display shows the amount of dimming when activated.

PRESET 1/2
These switches lets you determine a fixed CRM level, programmable in the automation. In this way it is always possible to return to a reference level of surround monitoring. By turning the CRM control to a desired level and pushing the Preset 1 or 2 for about 7 seconds the present attenuation level is stored. The preset led will lit, when storage is active. Two fixed levels can be set in this way.

SOURCE SWITCHING

Four two track return source switches and one six track return source switch is fitted to allow pre or post monitoring of a stereo mix from up to four stereo machines such as Dat, Reel to Reel, Cassette, and CD players, and/or Six track master machines.

Two track A through C are +4dBu and two track D is -10dbV (6Track is on +4dBu pro audio level). All of the 2 Tracks sources can be summed if necessary. When sourcing 2 Track machines all surround CRM monitors will be switched off, unlesss the Decoder Active switch is activated then the 2 Track signal will be decoded into full surround on all monitors.



Note: The 6 track source selector as well as the 2 Tracks to CRM will interrupt the CRM signal. The 2 Tracks A/B/C/D switches will not interrupt the CRM monitoring unless the 2 Tracks to CRM is activated!

MAIN FADER.

Located in the bottom of the master section is one 100mm PowerVCA controlled fader controlling six precision high end VCA's.

2.6 OSCILLATOR/TALKBACK SECTION

The three frequency, low distortion oscillator is a phase shift design. The frequencies are: 100Hz, 1kHz, and 10kHz. Each frequency has its own front panel alignment trimmer. A master level control is fitted to adjust the output of the oscillator for precise alignment of the console and tape machines. The level ranges from -35 dB to +20 dB with a detented mid-position of +4 dBu which can be trimmed by the CAL trimmer. There is also a pink noise generator built in for checking pan-pot movements and jopystick routing.

The oscillator can be assigned to The LCRS and Subbass busses, the Group busses, the Aux/Joystick busses, and Studio 1/2 outputs, as well as the direct output (in the patchbay). Each of the oscillator assignment switches have a LED indicator.

The CRM will dim when the oscillator is active. (there is no dimming when the pink noise generator is active.

2.7 TALKBACK SECTION

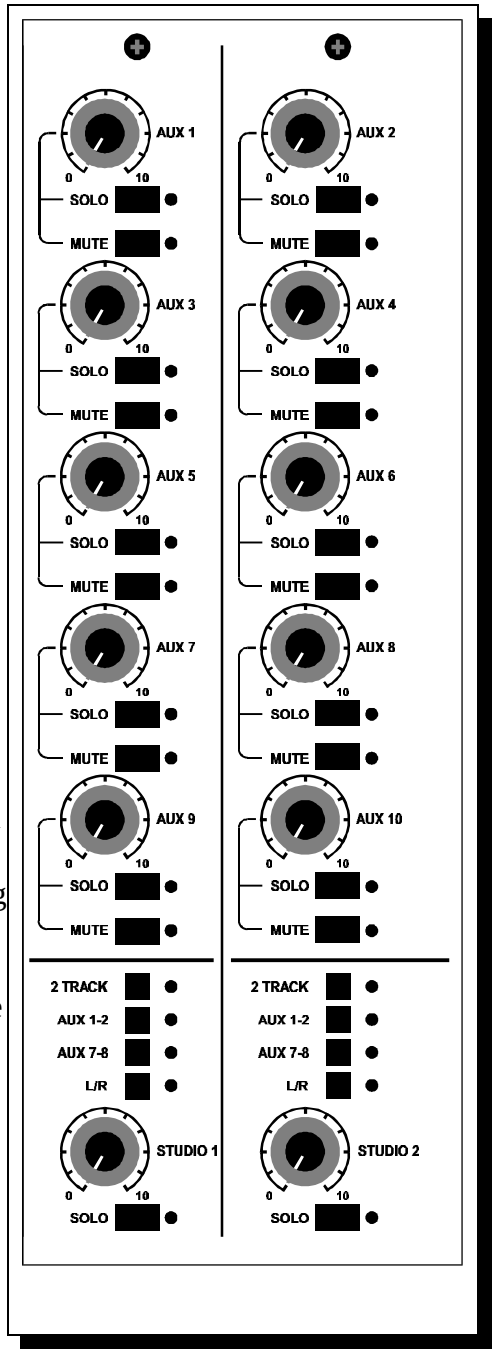
A one way communication system is built into Cinemix. The built-in talkback mic can feed the LCRS/Sub Bass Groups, Auxes/Joystick busses, and/orStudio 1/2 outputs. The momentary **TB** talkback switch activates the internal electret microphone while dimming the main CRM monitor speakers.

2.8 DYNAMICS SECTION

Four LEDS indicate whether the optional virtual dynamics is active on any of the main output signals. (How the dynamics work will be discussed later in a specific 13.00 dynamics section).

2.9 AUX MASTER SECTION

The Aux master section is located at the right side of the master module and houses the 10 Aux masters controlling the output level of the Aux sends. Aux 1 through 4 are fixed in the CHAN path and Aux 5/6 selectable between CHAN and MIX.
Aux 7/8 and 9/10 are always in the MIX path.
Each Aux master has its own solo switch.
All Aux master solo switches are **AFL** (after fade listen) switches independent of the selection made in the SOLO control section. All mutes are soft mutes and under control of the automation section. The Aux outputs are ground compensated balanced and normalled in the patchbay to the Tie-lines.



2.10 STUDIO 1 - 2 SECTIONS.

STUDIO 1 and **STUDIO 2** sections get their signal from several different places and feed two sets of stereo outputs which are also located in the master section of the patchbay. The 2 studio outputs can source the **Aux 1-2** and /or **Aux 7-8**. The **2 TRACKS** switch needs a little more explanation. With Cinemix, you can listen to stereo machines in the studio while listening to the stereo mix outputs in the control room by pressing one of the 2 track source switches and the **2 Tracks** switch. By having all the source switches in their up position no signal is fed to the Studio systems. Aux 1-2 and Aux 7-8 can be mixed (from the input modules) and fed to the **Studio 1**, **2**, or both outputs. With the **2 TRACKS** switch in the down position, a selection can be made from any or all two track source switches in the CRM section. If you would like to build up a mix from one of the Aux pairs, press **Aux 1-2 and or Aux 7-8** switches. Studio 1, 2, or both can be used for stereo headphone feeds or studio playback speakers.

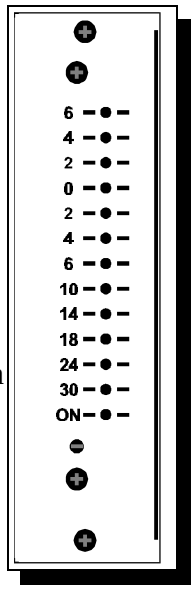
2.11 METERING

Master metering

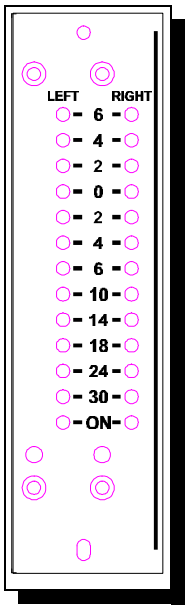
The Cinemix has a total of six VU meters above the master section in the meterbridge. Analog VU meters will indicate the average level in the signal paths.
A separate **Phase** meter indicates any phase shift between the left and right signals. In most cases, switching the phase switch on selected input modules can correct the phase shift.

Mono and Stereo module meters

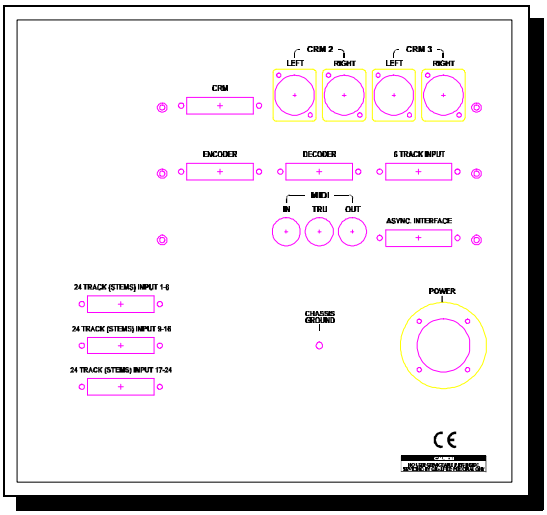
Due to the extreme transients in digital recordings, Cinemix's "**Peak**" reading channel meters have an extended range from -30dB up to a reading of +6dB. The bottom LED on all D&R LED bargraph meters is an indicator that the associated module is on. When first powering up, always check all "**ON**" LEDs under each meter.
If any "**ON**" LED is not lite, turn off the power supplies and call D&R for service advice. Both mono and stereo input module meters have peak ballistics with 13 segments. Cinemix's meters can be switched (individually) to read the **CHAN**nel section or **MIX** section of each module locally.



The channel meters are a peak reading design and read 0dB when an oscillator sine wave with a +4 dB output level is sent to the meter. Measuring the +4 dB output level of the channel or master with a AC voltmeter would give a 1.22 AC volt reading.
When monitoring the oscillator on analog VU meters, the VU meters should read "0" when the channel meters are reading 0dB. We have discontinued the habit of making peak reading meters to read -6 dB down from the actual output level for corresponding VU meter readings.
With more and more digital equipment being used for laying down tracks, the actual level is of primary importance to know to avoid digital overloads.
After all alignment procedures have been performed, playing program material will show a difference in reading on the VU meters compared to the peak reading ledbars in the channels.

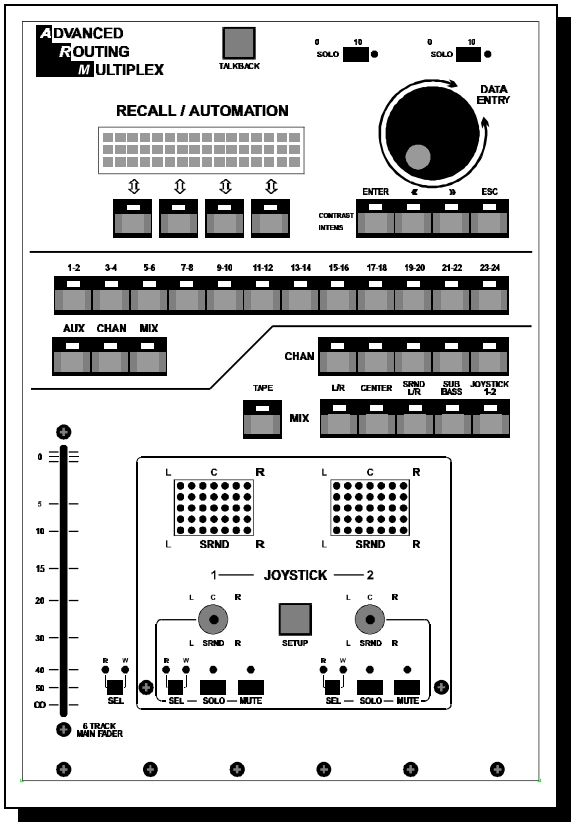


2.12 MASTER INPUTS/OUTPUTS



Cinemix interfaces easily with external equipment such as two track master machines, signal processors, headphone amps, and power amps. Interfacing is possible using the connectors on the master back panels, and through 25 pole sub D male connectors. Listed below are all inputs and outputs for the master modules.
The master backpanel houses the 24 Track Stems inputs for a maximum of two 24 track machines, the six (5.1) CRM outputs, encoder and decoder sub-D connector. A six track input CRM 2 and 3 on XLR connectors. The PC computer connector and the Midi in, thru, and out din type connectors. A Speakon type connector is used for powering up the Cinemix and a separate chassis ground is provided. A detailed connection diagram will be shown in the installation section of the manual.

2.13 RECALL / AUTOMATION



If you would like to set-up for your first Cinemix session, read the following simple steps. It is most important to understand that the **Recall** Automation is static and **PowerVCA** (faders, Mutes) automation is dynamic and completely separate. We will first discuss **Recall/Automation.**

The LC Display boots up with the same information it had when it was powered down. Press ESC until it reads as follows:

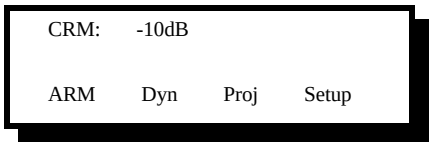
CRM:	-10dB		SOLO
ARM	Dyn	Proj	Setup

PROJ. (Project) **Numbering your Project**.
For ease of understanding we will call the four grey Switches (below the LCD display) **S1 S2 S3** and **S4.**
After pressing **S3** (Project), you can enter the project number (from 1 to 32).
You can Call and Save projects in the same manner.

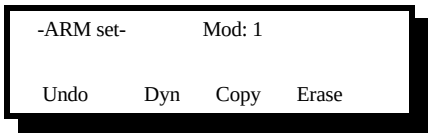
NOTE: A project saves all routing settings and the Joystick setup.

ARM

Press the ESC switch until the LCD display reads as follows:



By pressing **ARM** (S1), the ARM software will become active and the following changes take place in the LC Display: See the example printed alongside the page.
You could then turn the **DATA ENTRY** wheel (or the << >>) until the desired module's **ARM** switch is lite.
The LC Display module number changes and the **ARM** switches switch lights change to the adjacent module (in either direction) as you turn the wheel. In most cases it is faster to go to the module you would like to route from and press the **local ARM** switch. The **ARM** switch in the selected module lights up.



By pressing any **ARM** switch, new module numbering information in the LCD will appear and the corresponding routing settings will be shown by the LEDs in the **ARM** section of that module.

The ESC switch will take you out of the **ARM** menu. You can press an active **ARM** switch to achieve the same results. The **ARM** mode will show the routing settings of the selected module.

ROUTING INPUT MODULES

A more detailed explanation of input module routing is described in the next section of this manual, we will discuss a simplified version now (this makes it easier to understand other functions being discussed in this section).

Step 1: Press an **ARM** switch on any desired input module.

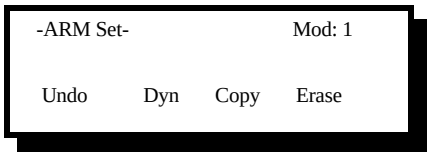
Step 2: If you would like this module's **CHAN**nel section routed to track 24, press the **CHAN** switch under the black routing switches labeled (1-2 / 3-4 / 5-6) and then press the 23-24 switch.
Now the routing you've made is stored in memory.
Step 3: If you would like this same module's **MIX** section to be routed to the stereo mix buss so you could monitor that track, press the black **L/R** switch in the mix section right from the tape switch. Now you have two different things from that input module stored.
You can assign the Aux 5-6 in the same manner. In order to have more aux send busses, you can route **AUX 5-6** to the 24 routing busses.

CHANGING CHANNEL DATA.

In the **ARM** section of the master module you can assign all module routing settings by pressing the associated switches. These settings will be stored in real time.
If new data is entered in the **ARM** section and you're not pleased press the Undo switch to restore the old data. The CLR switch will erase all data in that module.
The << and >> switches as well as the **DATA ENTRY** (encoder) knob will allow you to select another module. A faster method is to hit the **ARM** switch in the module that needs routing changes.

MODULE SETUP COPYING

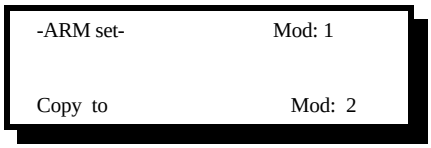
The **S3** (**Copy**) switch allows you to copy a selected module's setup to another module or to all modules. The following are easy steps describing this operation.



Step 1: Select a module, press the **S3** (**Copy**) switch and select another module by the **DATA ENTRY** (encoder) control knob.

Step 2: As soon as you hit **ENTER** all data will be copied to the selected module (or all) and the data from these modules will be stored in Cinemix's memory (on board microprocessor). S4 will also store the copying process.

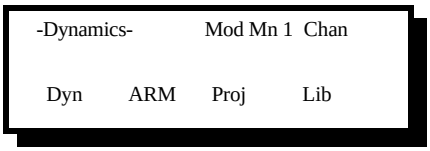
Note: Press ESC to leave the copy menu.



DYNamics

By depressing the Dyn switch S2 you enter the dynamics menues. It looks like this

The data entry knob let's you toggle between the channel and Mix part of the input modules, while the ARM switches let's you choose the module you want to ad dynamics to.



All data related to the selected module can be changed by pushing S1 up to S4. Its related LED lites and the encoder can change dynamics data. The << >> switches rolls through all the parameters that can be adjusted by the data wheel.

ESC leaves the Dynamics parameter menu and lets you move to another module by way of the local module's ARM switch or the Data entree wheel.

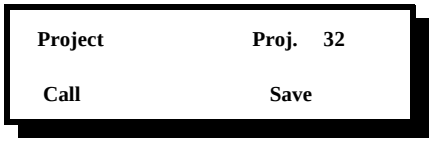
PROJECT

All settings related to a project are made in "Dynamics" display.

S3 (**Proj**) selects the project. In the project menu you can select a project number by depressing the << and >> switches or turning the **DATA ENTRY** encoder control.

A maximum of 32 projects can be stored

The **S1** (**CALL**) switch **Recalls** a project. S4 (save) saves the project.



Cinemix's SET menu

When you press Cinemix's Set (S4) switch, the LC Display reads as follows:

```
-Setup-

SetM   ResetM   Mod   Dyn
```

By pressing **SetM** (S1) all **MUTE** switches will mute.
Pressing ResetM (S2) all mute switches will un-mute.

AUTOMATION.
Paragraph 12.0 PowerVca automation will outline the setup and use of D&R's PowerVCA SMPTE based Automation. Since this section of Cinemix's manual is an insert, the page numbers will not be in sequence with the balance of this manual. Optional PowerFade (D&R's moving fader automation) is available, however not discussed in this section.

ARM/SET FOR AUTOMATED JOYSTICKS.

A unique feature in Cinemix are the two automated joysticks with its Virtual Vision concept of showing you the position of the audio signal when controlled from D&R's PowerVCA automation.
The "Set-up" switch serves actually the same purpose as the ARM switches in the modules.

ASSIGNING A CHANNEL TO A JOYSTICK

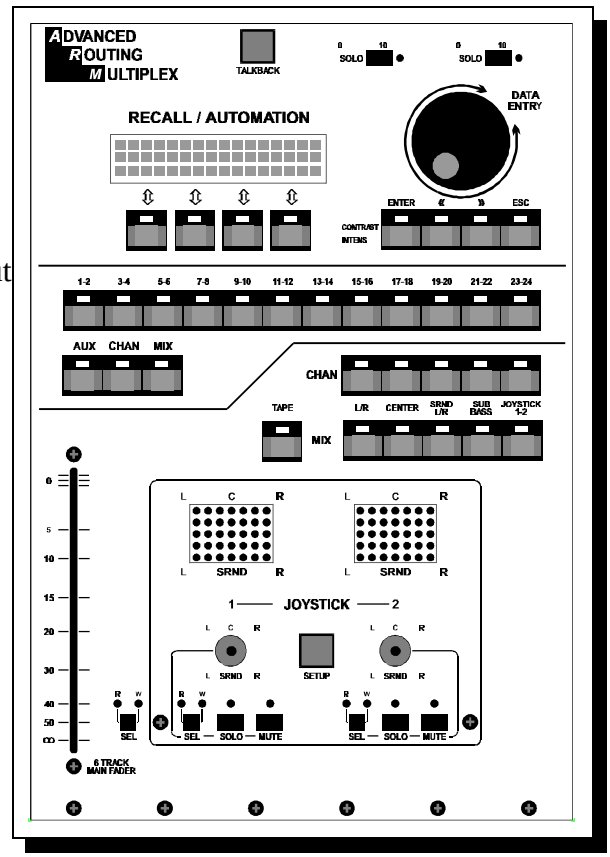
To assign a channel to a Joystick follow the next steps.

a. depress an ARM switch in a module and be sure that no master routing switch such as L/R, Center, SRND L/R, is assigned at that moment.

b. Joystick 1 output corresponds with the CHAN routing section and Joystick 2 output with the MIX routing section below the black 12 ARM routing switches.

c. Now pan in the module fully left (joystick 1) or fully right
(joystick 2) and assign the corresponding joystick switches (top row is Joystick 1 and lower row is Joystick 2). let's assume you want to use Joystick 1.

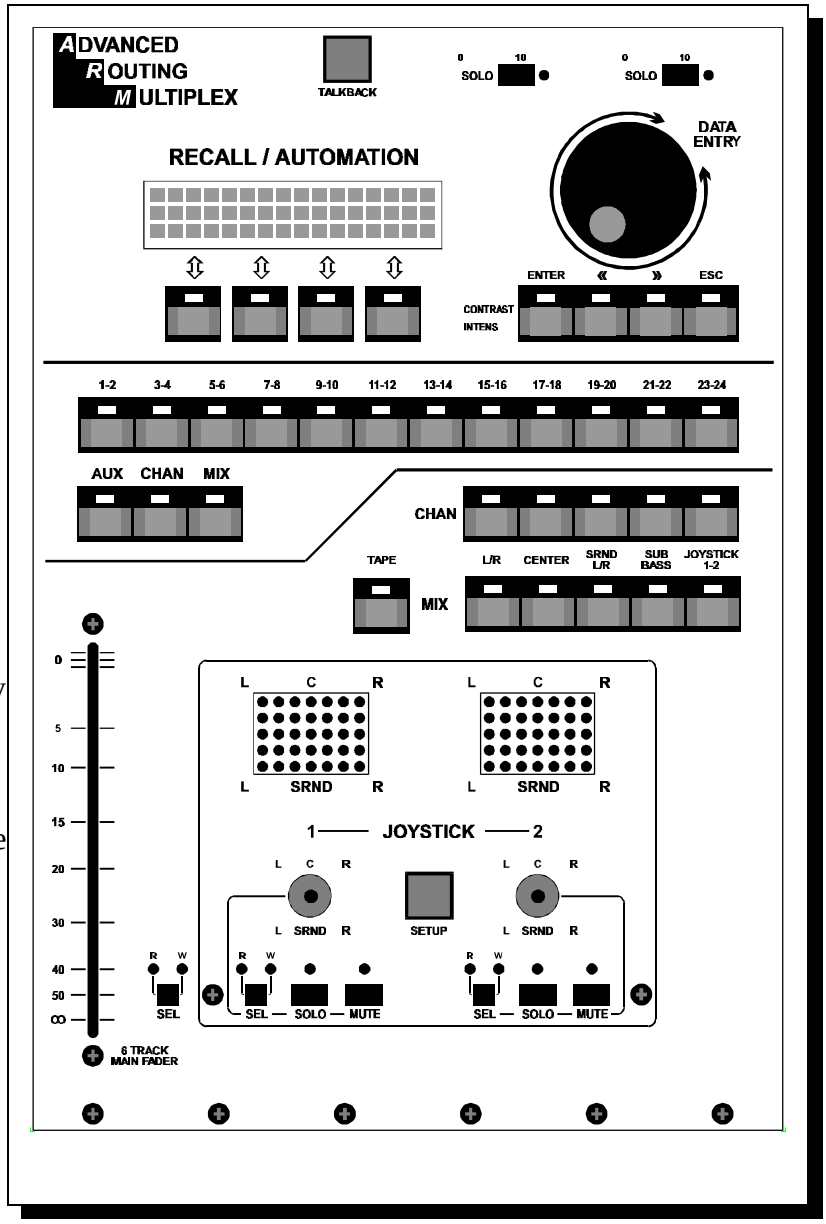
d. Pan fully left in the module (either Chan or Mix path) and depress the upper or lower yellow Joystick assign switch.
The module's signal path is now assigned to the joystick input (either 1 or 2).



e. Now depress the ARM switch in the Joystick area and assign the joystick output to L/R, Center or SRND (all or any combination).
The Virtual Vision matrix will show the panning ranges possible with corresponding assignments.
All movements will be memorized in PowerVCA together with mutes.

NOTE:
Joystick 1 output corresponds with the upper (CHAN) row for joystick output assignments.
Joystick 2 output corresponds with the lower (MIX) row for joystick output assignments.

The SubBass routing switch will not follow the joystick outputs.
All joystick routing switches can also be assigned directly from the channels pan-pots, together with the Sub Bass output of course.;
A host of possibilities are there to explore, It will take some time to manipulate all the possibilities Cinemix gives you in this area.
Features like read and write on the automation screen and Solo and Mute.

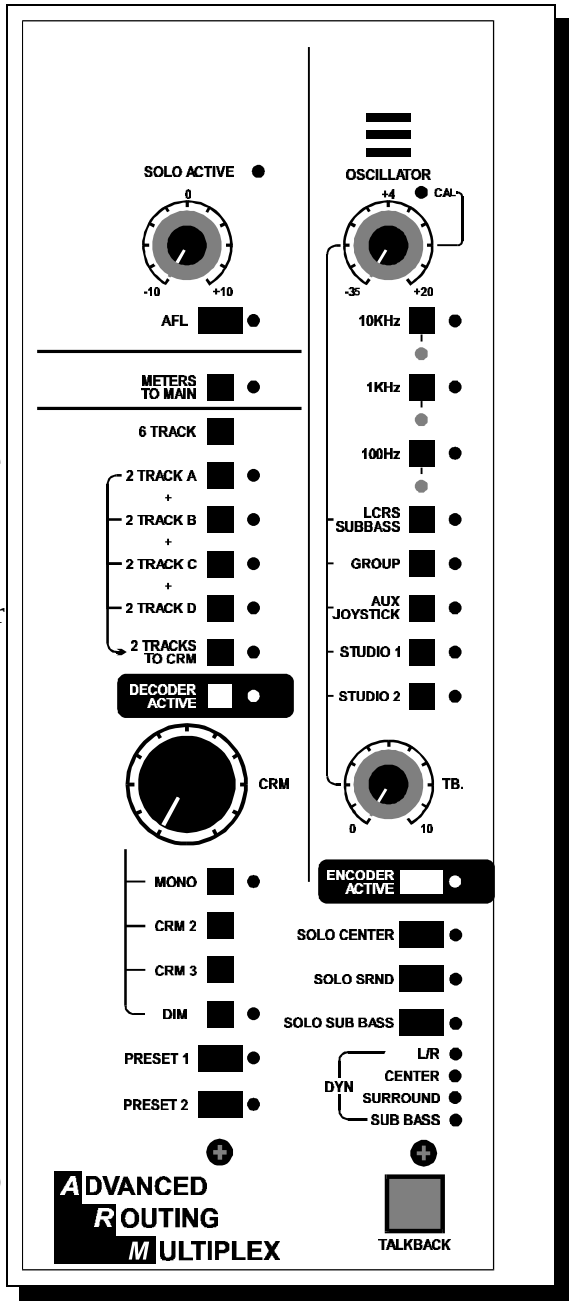


2.14 TAPE SWITCH

The tape switch will globally switch all mono dual input channels' mix sections to follow either the group output or the multitrack tape output.

THE FILM MASTER SECTION

2.15 Master section - description
Cinemix's film master section is equivalent (in width) to 6 input modules.
All CRM outputs are located on the rear of the console below the meter bridge.
The following paragraphs give a brief description of each section.



2.16 SOLO SECTION
The Solo section has a solo master volume control and **AFL** (after fade listen) switch.
A center detent (for nominal level) is built-in to the volume control. With the AFL switch in its up position, the Channel and Mix solo switches function in the **PFL** (pre fade listen) mode.
A Solo Active LED above the solo level control indicates a SOLO switch is depressed.
This is also shown in the LC Display for your convenience. If the **AFL** switch is depressed, any Solo switches function in the non destructive after fade listen mode.

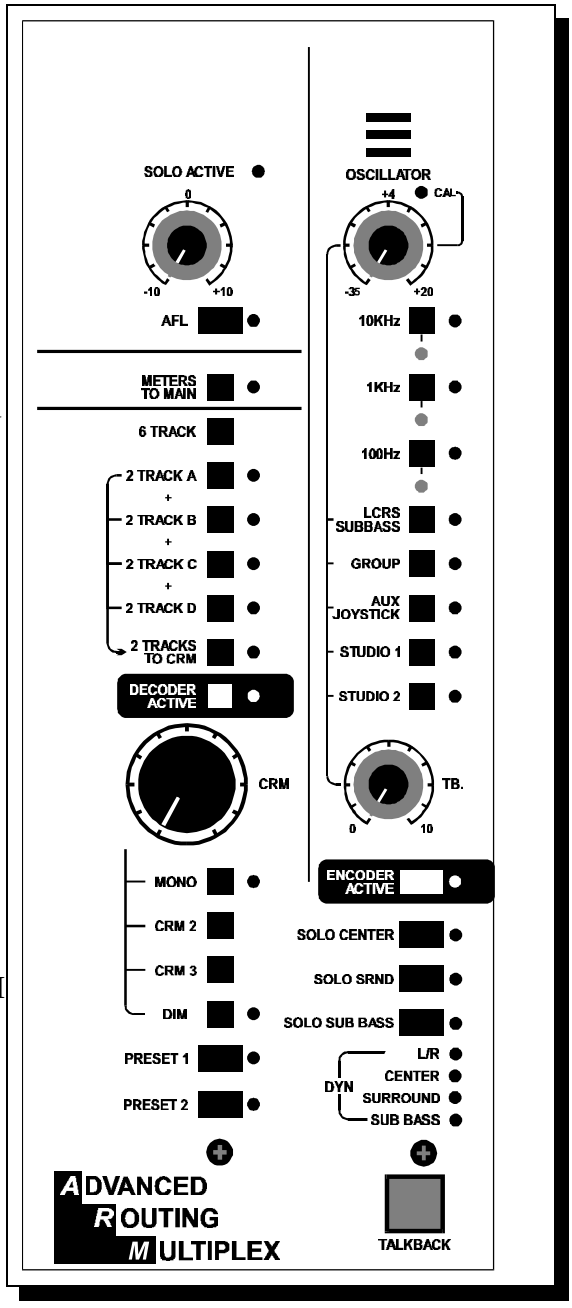
2.17 METERS TO MAIN.
In the up position, all six meters read the monitor CRM outputs prior to the Encoder insert, when the "Meters to main" is depressed both the main left and right meters will always follow the main Left and Right output without being interrupted by the solo system, the 2 Tracks and decoder active switches.
When the Encoder switch is depressed the left/Right meters will read the encoded signal.

2.18 CRM Section
The CRM (control room module) section contains the electronics for monitoring all signal paths in Cinemix as well as source switching for six track machines and four two track machines, as well as Solo-ing of Center, Surround, and Sub Bass. (except for decoder mode)

2.19 DECODER ACTIVE.
The decoder switch converts the eventually encoded stereo signal back to the CRM. You can also see it as a full 6 channel Dolby CP65 control room monitor insert. When this switch is in its up position a normal or eventually encoded stereo signal will be heard (If the encoder is active of course and the decoder switch is ON). When no Decoding device is connected to the Cinemix, there will be no signal when the DECODER ACTIVE switch is on.

ENCODER ACTIVE.
This switch changes the Main output signal from the console to the Encoder output of an externally connected Encoder. The Surround left/Right signal will be mono summed.

2.20 CRM CONTROL ROOM MONITOR.
The large CRM knob controls the total of 6 outgoing levels to the control room monitor power amps. This encoder controls all six tracks with a superb tracking and level repeatability. Attenuation of the CRM is always shown in the LC display in the first level of the menu. It ranges from 0dB down to -60dB in 0.5dB steps and then it mutes the CRM completely. The Cinemix has three CRM systems intended for alternative stereo nearfield monitors which are switchable via the CRM 2, and 3 switches. Each alternate speaker system have their own ground compensated balanced XLR output for easy interchange of nearfields by free lance engineers. The main CRM output together with the Center Stereo Surround, and Subbass output are on a 25 pole sub D connector. Also fitted on the back of the master section are the sub D connectors for the encoding and decoding surround processors.



MONO
The mono switch lets you check mono compatability.The Mono switch allows the user to check for any out-of-phase signals or simply monitoring your mix in mono.

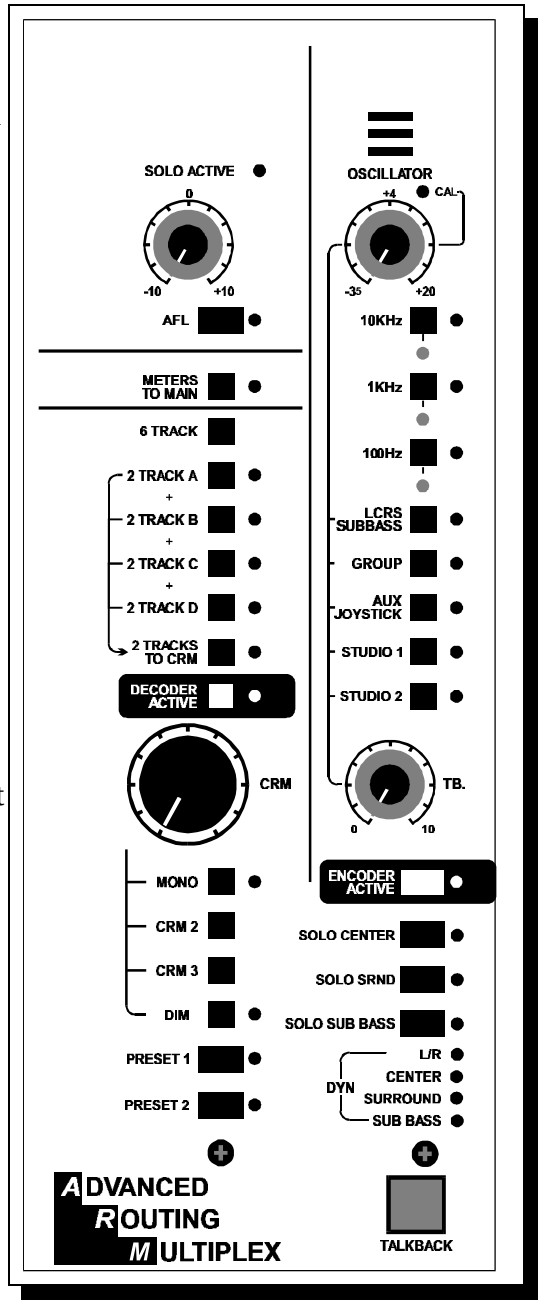
DIM
The dim switch temporarily dims Cinemix's CRM level by any amount which is programmable in the setup menu. This dimming circuitry is also driven by the oscillator circuitry as well as the Talkback circuitry. The LC Display shows the amount of dimming when activated.

PRESET 1/2
These switches lets you determine a fixed CRM level, programmable in the automation. In this way it is always possible to return to a reference level of surround monitoring. By turning the CRM control to a desired level and pushing the Preset 1 or 2 for about 3 seconds the present attenuation level is stored, untill changed by another setting. Two fixed levels can be set in this way.

SOURCE SWITCHING

Four two track return source switches and one six track return source switch is fitted to allow pre or post monitoring of a stereo mix from up to four stereo machines such as Dat, Reel to Reel, Cassette, and CD players, and/or Six track master machines.

Two track A through C are +4dBu and two track D is -10dbV (6Track is on +4dBu pro audio level). All of the 2 Tracks sources can be summed if necessary. When sourcing 2 Track machines all surround CRM monitors will be switched off, unlesss the Decoder Active switch is activated then the 2 Track signal will be decoded into full surround and all monitors.



Note: The 6 track source selector as well as the 2 Tracks to CRM will interrupt the CRM signal. The 2 Tracks A/B/C/D switches will not interrupt the CRM monitoring unless the 2 Tracks to CRM is activated!

MAIN FADER.

Located in the bottom of the master section is one 100mm PowerVCA controlled fader controlling six precision high end VCA's.

2.21 OSCILLATOR/TALKBACK SECTION

The three frequency, low distortion oscillator is a phase shift design. The frequencies are: 100Hz, 1kHz, and 10kHz. Each frequency has its own front panel alignment trimmer. A master level control is fitted to adjust the output of the oscillator for precise alignment of the console and tape machines. The level ranges from -35 dB to +20 dB with a detented mid-position of +4 dBu which can be trimmed by the CAL trimmer. There is also a pink noise generator built in for checking pan-pot movements and jopystick routing.

The oscillator can be assigned to The LCRS and Subbass busses, the Group busses, the Aux/Joystick busses, and Studio 1/2 outputs, as well as the direct output (in the patchbay). Each of the oscillator assignment switches have a LED indicator. The CRM will dim a programmed amount of attenuation when the oscillator is active. (there is no attenuation when the Pink Noise generator is active.

2.22 TALKBACK SECTION

A one way communication system is built into Cinemix. The built-in talkback mic can feed the LCRS/Sub Bass Groups, Auxes/Joystick busses, and/orStudio

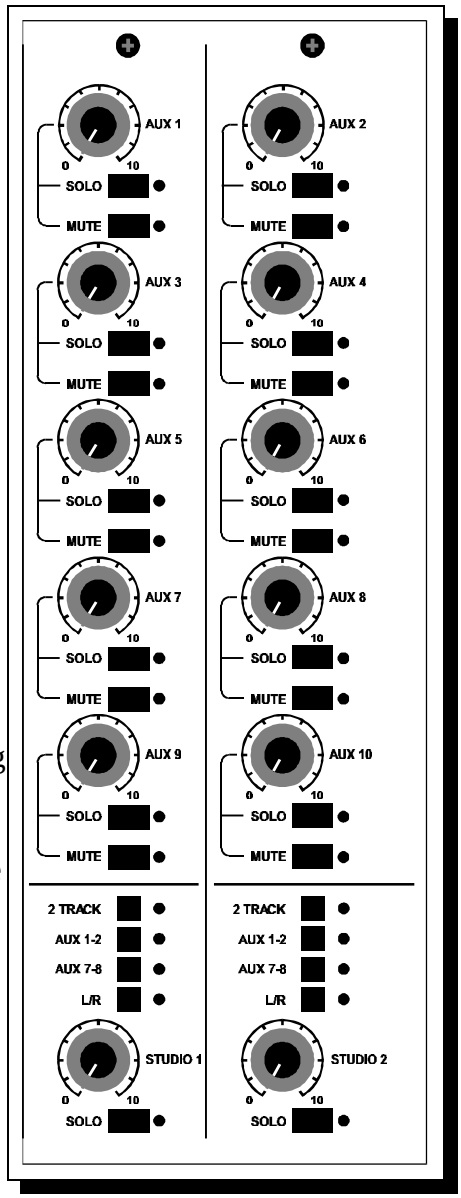
1/2 outputs. The momentary **TB** talkback switch activates the internal electret microphone while dimming the main CRM monitor speakers.

2.23 DYNAMICS SECTION

Four LEDS indicate whether the optional virtual dynamics is active on any of the main output signals. (How the dynamics work will be discussed later in a specific 13.00 dynamics section).

2.24 AUX MASTER SECTION

The Aux master section is located at the right side of the master module and houses the 10 Aux masters controlling the output level of the Aux sends. Aux 1 through 4 are fixed in the CHAN path and Aux 5/6 selectable between CHAN and MIX.
Aux 7/8 and 9/10 are always in the MIX path.
Each Aux master has its own solo switch.
All Aux master solo switches are **AFL** (after fade listen) switches independent of the selection made in the SOLO control section. All mutes are soft mutes and under control of the automation section. The Aux outputs are ground compensated balanced and normalled in the patchbay to the Tie-lines.



2.25 STUDIO 1 - 2 SECTIONS.

STUDIO 1 and **STUDIO 2** sections get their signal from several different places and feed two sets of stereo outputs which are also located in the master section of the patchbay. The 2 studio outputs can source the **Aux 1-2** and /or **Aux 7-8**. The **2 TRACKS** switch needs a little more explanation. With Cinemix, you can listen to stereo machines in the studio while listening to the stereo mix outputs in the control room by pressing one of the 2 track source switches and the **2 Tracks** switch. By having all the source switches in their up position no signal is fed to the Studio systems. Aux 1-2 and Aux 7-8 can be mixed (from the input modules) and fed to the **Studio 1**, **2**, or both outputs. With the **2 TRACKS** switch in the down position, a selection can be made from any or all two track source switches in the CRM section. If you would like to build up a mix from one of the Aux pairs, press **Aux 1-2 and or Aux 7-8** switches. Studio 1, 2, or both can be used for stereo headphone feeds or studio playback speakers.

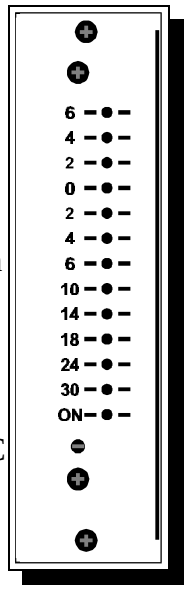
2.26 METERING

Master metering

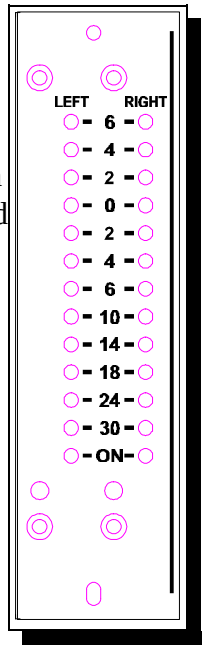
The Cinemix has a total of six VU meters above the master section in the meterbridge. Analog VU meters will indicate the average level in the signal paths.
A separate **Phase** meter indicates any phase shift between the left and right signals. In most cases, switching the phase switch on selected input modules can correct the phase shift.

Mono and Stereo module meters

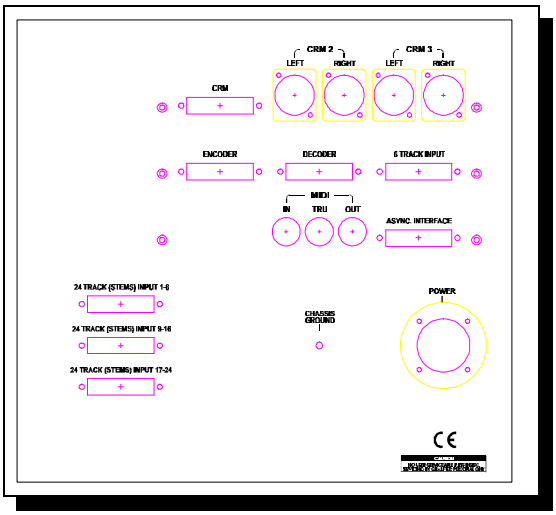
Due to the extreme transients in digital recordings, Cinemix's "**Peak**" reading channel meters have an extended range from -30dB up to a reading of +6dB. The bottom LED on all D&R LED bargraph meters is an indicator that the associated module is on. When first powering up, always check all "**ON**" LEDs under each meter.
If any "**ON**" LED is not lite, turn off the power supplies and call D&R for service advice. Both mono and stereo input module meters have peak ballistics with 13 segments. Cinemix's meters can be switched (individually) to read the **CHAN**nel section or **MIX** section of each module locally.



The channel meters are a peak reading design and read 0dB when an oscillator sine wave with a +4 dB output level is sent to the meter. Measuring the +4 dB output level of the channel or master with a AC voltmeter would give a 1.22 AC volt reading.
When monitoring the oscillator on analog VU meters, the VU meters should read "0" when the channel meters are reading 0dB. We have discontinued the habit of making peak reading meters to read -6 dB down from the actual output level for corresponding VU meter readings.
With more and more digital equipment being used for laying down tracks, the actual level is of primary importance to know to avoid digital overloads.
After all alignment procedures have been performed, playing program material will show a difference in reading on the VU meters compared to the peak reading ledbars in the channels.

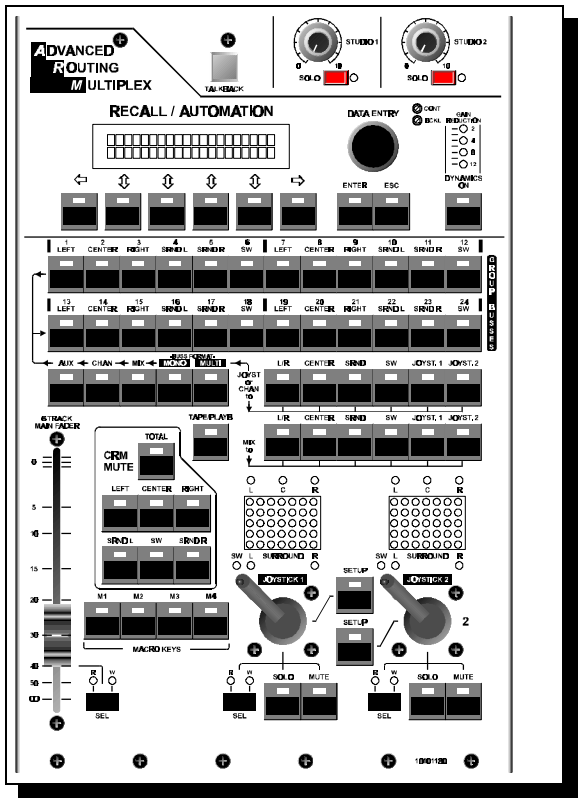


2.27 MASTER INPUTS/OUTPUTS



Cinemix interfaces easily with external equipment such as two track master machines, signal processors, headphone amps, and power amps. Interfacing is possible using the connectors on the master back panels, and through 25 pole sub D male connectors. Listed below are all inputs and outputs for the master modules.
The master backpanel houses the 24 Track Stems inputs for a maximum of two 24 track machines, the six (5.1) CRM outputs, encoder and decoder sub-D connector. A six track input CRM 2 and 3 on XLR connectors. The PC computer connector and the Midi in, thru, and out din type connectors. A Speakon type connector is used for powering up the Cinemix and a separate chassis ground is provided. A detailed connection diagram will be shown in the installation section of the manual.

2.28 RECALL / AUTOMATION



If you would like to set-up for your first Cinemix session, read the following simple steps. It is most important to understand that the **Recall** Automation is static and **PowerVCA** (faders, Mutes) automation is dynamic and completely separate. We will first discuss **Recall/Automation.**

The LCDisplay boots up with the same information it had when it was powered down. Press ESC until it reads as follows:

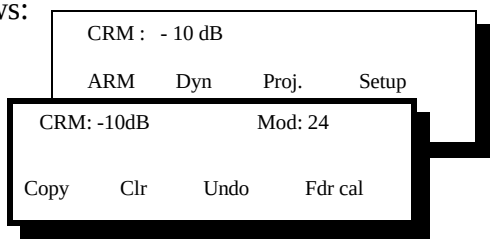
```
CRM:    -10dB

ARM     Dyn     Proj     Setup
```

PROJ. (Project) **Numbering your Project**.
For ease of understanding we will call the four of the six grey Switches (below the LCD display) **S1 S2 S3** and **S4.**
After pressing **S3** (Project), you can enter the project number (from 1 to 30).
You can Call and Save projects in the same manner.

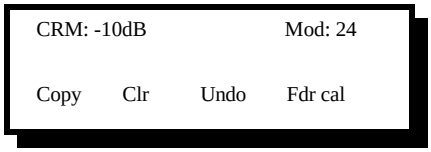
NOTE: A project stores all routing settings, Mute settings and the Joystick set-up.

ARM

Press the ESC switch until the LCD display reads as follows:

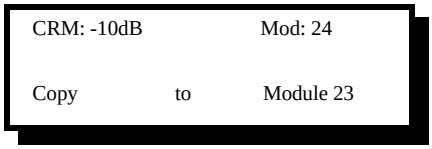


By pressing **ARM** (S1), the ARM software will become active and the following changes take place in the LC Display: See the example printed alongside the page. You could then turn the **DATA ENTRY** wheel until the desired module's **ARM** switch is lit. The LC Display module number changes and the **ARM** switches switch lights change to the adjacent module (in either direction) as you turn the wheel. In most cases it is faster to go to the module you would like to route from and press the **local ARM** switch. The **ARM** switch in the selected module lights up. By pressing any **ARM** switch, new module numbering information in the LCD will appear and the corresponding routing settings will be shown by the LEDs in the **ARM** section of that module. The LCDisplay shows the following options while in the ARM mode>



MODULE SETUP COPYING

The **S1** (**Copy**) switch allows you to copy a selected module's setup to another module or to as many (or all) modules you would prefer. The following are easy steps describing this operation.



Step 1: Select a module, press the **S1** (**Copy**) switch and select another module (or all) with the **DATA ENTRY** control knob.

Step 2: As soon as you hit **ENTER** all data will be copied to the selected module (or all) and the data from these modules will be stored in Cinemix's memory (on board microprocessor).

CLEAR

The clear switch restes all data on a module or on all modules.

UNDO

The undo switch un does all changes programmed earlier in that ARM session only.

FADER CAL

The fader cal switch bypasses the fader position and adjust the channels fader gain to unity. Motor faders will be positioned on their electrical 0dB position.

Note: Press ESC to leave the copy menu.

The ESC switch will take you out of the **ARM** menu. You can press an active **ARM** switch to achieve the same results. The **ARM** mode will show the routing settings of the selected module.

ROUTING INPUT MODULES
A more detailed explanation of input module routing is described in the next section of this manual, we will discuss a simplified version now (this makes it easier to understand other functions being discussed in this section).

Step 1: Press an **ARM** switch on any desired input module.
Step 2: If you would like this module's **CHAN**nel section routed to track 24, press the **CHAN** switch under routing switches labeled (1/2/3..../22/23/24) and then press the 24 switch.
Now the routing you've made is stored in memory.
Step 3: If you would like this same module's **MIX** section to be routed to the stereo mix buss so you could monitor that track, press the black **L/R** switch in the mix section right from the tape switch. Now you have two different things from that input module stored.
You can assign the Aux 5-6 in the same manner. In order to have more aux send busses, you can route **AUX 5-6** to the 24 routing busses.

CHANGING CHANNEL DATA.
In the **ARM** section of the master module you can assign all module routing settings by pressing the associated switches. These settings will be stored in real time.
If new data is entered in the **ARM** section and you're not pleased press the Undo switch to restore the old data. The Clear switch will erase all data in that module. The **DATA ENTRY** (encoder) knob will allow you to select another module. A faster method is to hit the **ARM** switch in the module that needs routing changes.

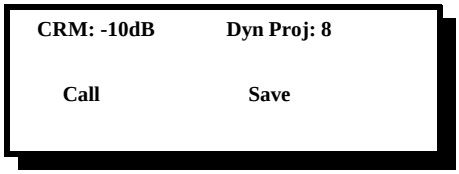
BUSS FORMAT

There are two formats to choose from Mono, Multi, or Mono+Multi off
The following assignments can be made;

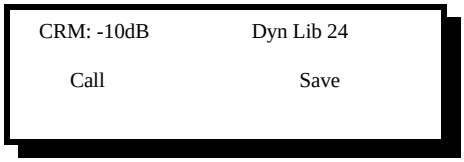
Mono	The Pan-pot is not active on the buss routing
Multi;	The buss is in multi format mode meaning that
	1,7,13,19 is Left
	2,8,14,20 is Center
	3,9,15,21 is Right
None	The buss is stereo
	1=Left, 2=Right, 3=Left, 4=Right etc.

DYNamics

By depressing the Dyn switch S2 you enter the dynamics menues. It looks like this >

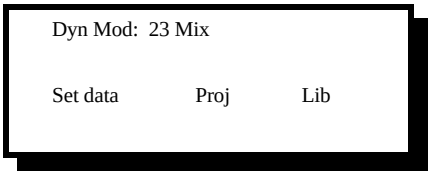


By depressing S1 (Set data) you enter the lower level of the dynamics menu and it can show like this >



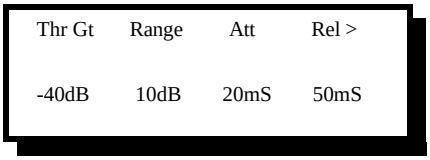
All data related to the selected module can be changed by pushing S1, S2, S3 or S4. Its related LED lites and the encoder can change dynamics data. The << and >> switches (left and right from the S1-4 switches) rolls through all the parameters that can be adjusted by the data wheel.

ESC leaves the Dynamics parameter menu and lets you move to another module.



PROJECT

All settings related to a project are made in the "Dynamics" display.
S3 (**Proj**) selects the project. In the project menu you can select a project number using the **DATA ENTRY** encoder control.
A maximum of 8 projects can be stored
The **S1** (**CALL**) switch **Recalls** a project. S4 (save) saves the project.

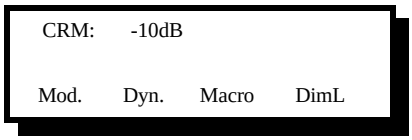


LIB

When S4 is pressed the Lib menu appears for dynamics settings you want to save. The menu looks like this >
There is a maximum capacity for saving of 24 parameter settings. These can be assigned to individual modules or to all the modules.

Cinemix's SET menu

When you press Cinemix's Setup (S4) switch, the LC Display reads as follows:

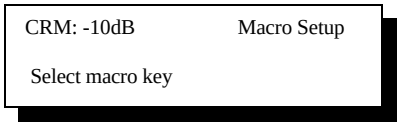


By pressing **Mod** (S1) the following display will be shown.

In this menu you can assign the module to be Mono/Stereo and you can give it a number, preferable corresponding with the module number of course.
These selections are made with S2 S3 and S4

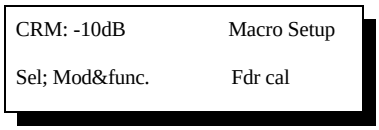
By pressing the **Dyn** switch (S2) depending upon you have that option you see " No dynamics option" or the Cinemix will enter the dynamics Setup menus.
In this menu you can give a specific VCA a name such as Mstr Rght for instance.

By pressing the Macro switch (S4) the following menu will be shown.



Now you can select one of the M1 to M4 macro keys located nearby the master fader. The LCD will change into the following display. See example>

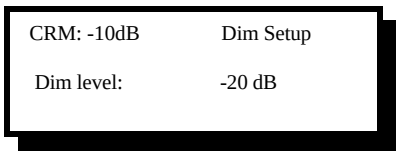
The next step is to select one or more of the input modules by pushing the ARM switches. Now the selected macro key will activate all selections made now in the ARM area, such as Tape, routing, Fdr cal etc etc. As soon as you leave the menu by hitting the esc switch the macro key will hold the programmed information.



The other possibility in the macro Setup menu is the fader calibration with S4 for the upper (channels) part of the Cinemix input modules. Every module that is selected in the fader cal mode will be set at unity gain ideal for STEMS (pre-mix) returns. It is a setup for a dir/playback macro for tape.

DimL

When the Dim level (S4) is selectedthe following menu will be shown >
The dim level will be substracted from the preset level and adjustment is made via the Data entry knob

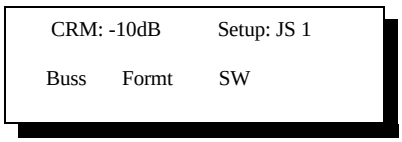


Note:
In the Setup menu (top layer) The < switch shows you the console setup, its internal Eprom version and the software date.
The > switch activates and deactivates all mutes in the console .

AUTOMATION.
Paragraph 12.0 PowerVca automation will outline the setup and use of D&R's PowerVCA SMPTE based Automation. Since this section of Cinemix's manual is an insert, the page numbers will not be in sequence with the balance of this manual. Optional PowerFade (D&R's moving fader automation) is available, however not discussed in this section

SETUP FOR AUTOMATED JOYSTICKS.

A unique feature in Cinemix are the two automated joysticks with its Virtual Vision concept of showing you the position of the audio signal when controlled from D&R's PowerVCA automation.
The "Set-up" switch serves actually the same purpose as the ARM switches in the modules.
As soon as the Setup switch is activated the following menu will be shown>



Depressing S1 (Buss) will display the following assignments.
Main busses
Group busses 1.....8
9.....16
17...24

Depresing S2 (Format) will display the following selection criteria.
Left, Right
Surround left, Surround Right
Left, Center, Right
L,C,R mono Surround
L,C,R, Stereo srnd
off

The third selection (S3) is the Sub Woofer. The level of the Sub Woofer can be adjusted between off and unity gain with a range of 63 dB in 0.5dB steps. to accomodate any requested level.

ASSIGNING A CHANNEL TO A JOYSTICK

To assign a channel to a Joystick follow the next steps.

a. depress an ARM switch in a module and be sure that no master routing switch such as L/R, Center, SRND L/R, is assigned at that moment.

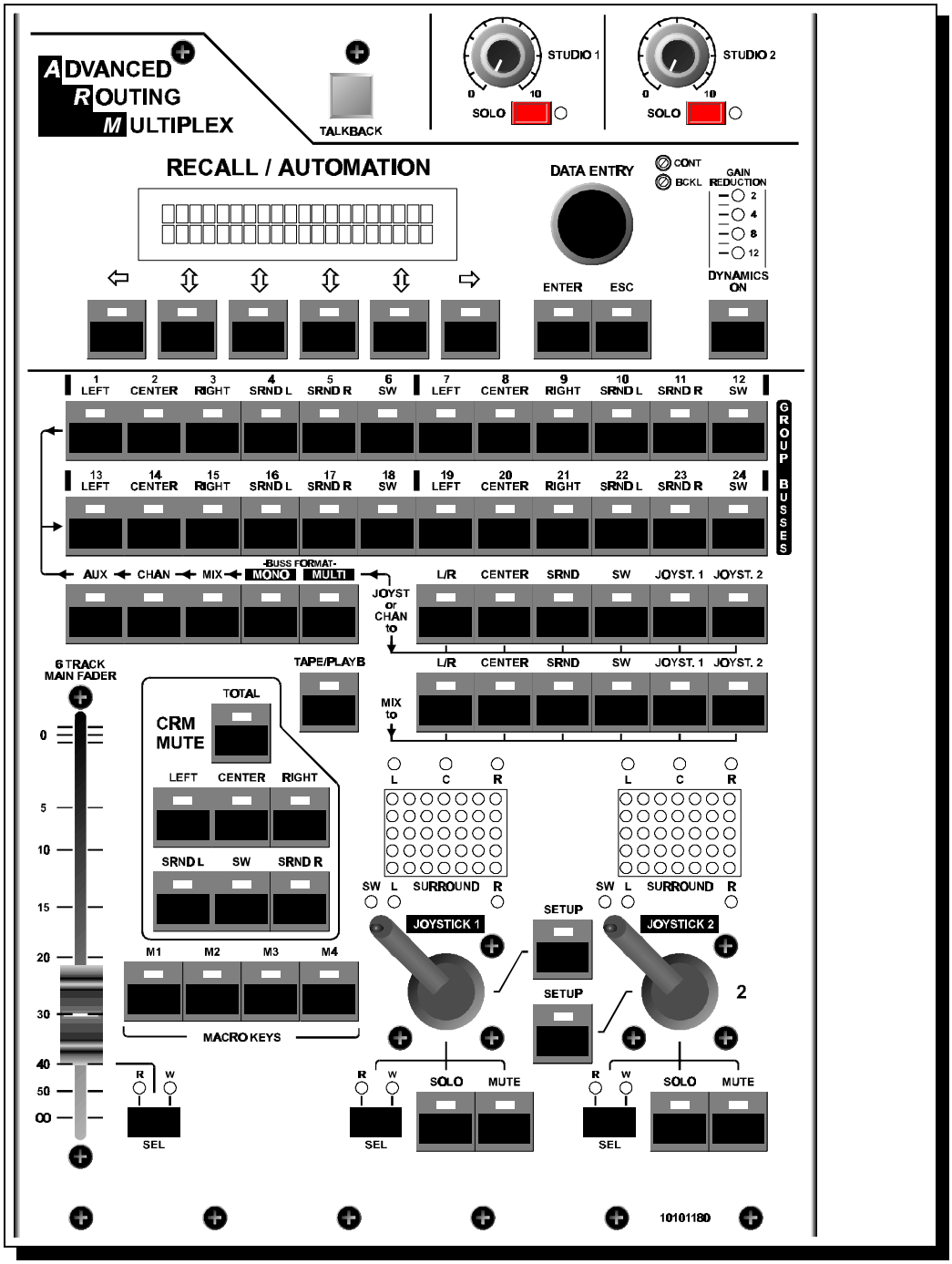
b. Select Joystick 1 or/off Joysttick 2.

The Virtual Vision matrix will show the panning ranges possible with corresponding assignments.
All movements will be memorized in PowerVCA together with mutes.

A host of possibilities are there to explore, It will take some time to manipulate all the possibilities Cinemix gives you in this area. Features like read and write on the automation screen and Solo and Mute.

2.29 TAPE SWITCH

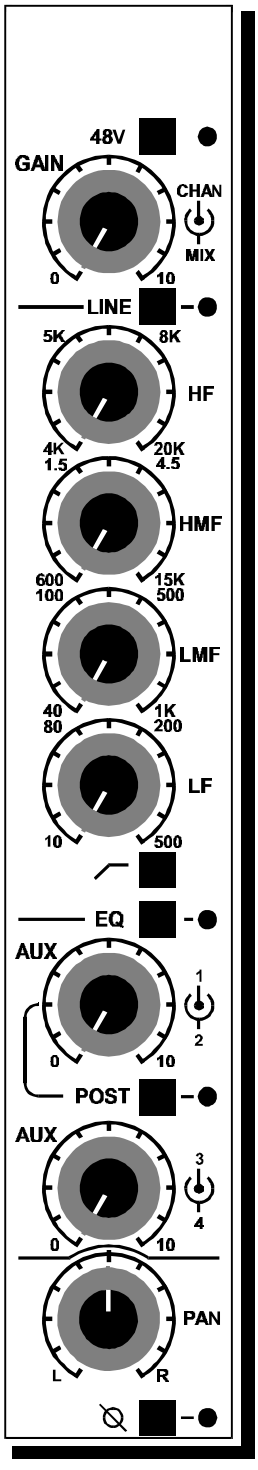
The tape switch will switch a mono dual input channels' mix section to follow either the group output or the multitrack tape output.



DUAL PATH MONO MODULE DESCRIPTION

3.0 DUAL PATH MONO MODULE - DESCRIPTION

Cinemix's Dual Path mono input module is a basic input / output design whereby all signal flow takes place from the microphone to the multitrack. Each dual path mono module is shipped with **PowerVCA** Automation and a 13 segment LED bargraph meter. The mic/line inputs are in the **CHANNEL** section of the module while the **TAPE** machine outputs are in the **MIX** section. The following sections explain the many functions and features of each section of the dual path input module.



3.1 CHANNEL SECTION

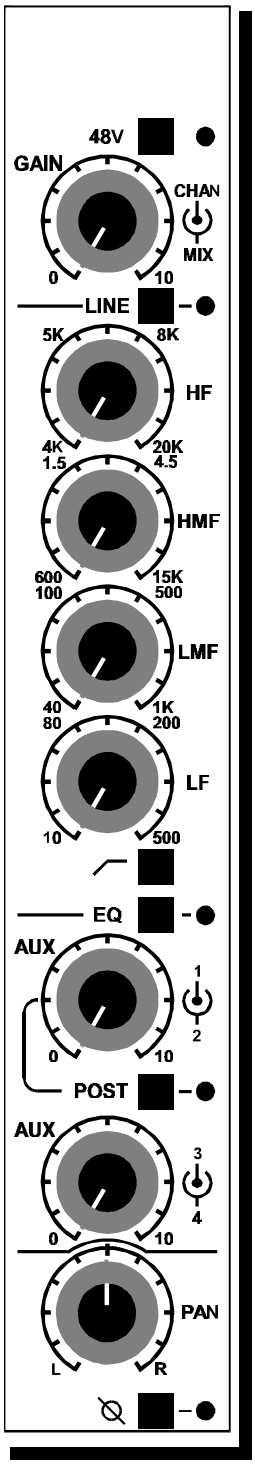
The input section controls all incoming signals from microphone, line, and multitrack outputs. A **48V** phantom power switch for condenser microphones or direct boxes can be silently switched in or out of the circuit. The **Line** switch converts the Channel input from a balanced mic input into a balanced line input. Cinemix has separate electronics for each input. The top knob of the dual concentric **GAIN** control adjusts the mic/line levels in the **CHAN**nel path and the bottom control adjusts the (**tape**) input of the **MIX** path.
When the **GAIN** control is accurately set, it is possible to achieve the very best signal to noise ratio and maximum headroom Cinemix was designed to achieve.

3.2 EQUALIZER SECTION - CHANNEL PATH

This four-band parametric equalizer is unique in its design. There are four bands, the high and low bands are sweepable frequency, shelving characteris- tics type with a boost or cut of 16 dB. The two mid bands each sweepable frequency peak/dip type with a boost or cut of 16 dB.

The **HF** (high frequency) section is a variable frequency shelving type, sweepable from 4,000 Hz to 20,000 Hz with a max. boost or cut of 16 dB.
The **HMF** (High / Mid Freq.) section has level and frequency controls with variable frequency ranges from 600 Hz to 15,000 Hz and has a maximum boost or cut of 16 dB. The bandwidth has a Q factor of 1.5.
The **LMF** (Low / Mid Freq.) section has level and frequency controls with variable ranges from 40 Hz to 1000 Hz and has a max boost or cut of 16 dB. The bandwidth has a Q factor of 1.5.
The **LF** (low frequency) section is a variable frequency shelving type, sweepable from 10 Hz to 500 Hz with a maximum boost or cut of 16 dB.

All level controls are center detented making neutral positions easy to establish. All frequency ranges have been carefully selected following extensive examination of all types of music (and noise). Test comparisons of other equalizers helped the D&R design team create an equalizer that sounds very musical , but at the same time, raising the standard in specs and sound quality. Noise and distortion are kept to an absolute minimum.
A **High Pass Filter** in / out switch is fitted to roll off the low frequencies at 100 Hertz.
An equalizer on - off switch is fitted to allow easy comparisons.



3.3 AUX 1 - 4 SECTION

Aux 1 through 4 are 4 dedicated individual aux sends from the CHAN section of the module. **PRE/POST** switching for Aux 1/2 is selected locally on every module with a LED indicator as reminder of the setting.
AUX 3/4 is factory jumpered to be post-CHAN fader.
The PCB allows for a PRE-CHAN setting when desired. Aux 3/4 are sourced always from the CHAN part of the module.

3.4 PANPOT

Cinemix's panpot is built to achieve minimum crosstalk between two selected busses. A center detent with -3 dB attenuation is standard.

3.5 PHASE

The **PHASE** switch below the CHAN pan control is used to reverse the phase of any mike or line input. A successful method of checking for out of phase signals is to press the mono switch on the master section and listen closely to the mix. If an unexpected sound is heard or if something appears to be missing from the mix, press the phase switch on the channel suspected to be in error. If the sound improves, then that channel was out of phase with the others.

3.6 INSERT

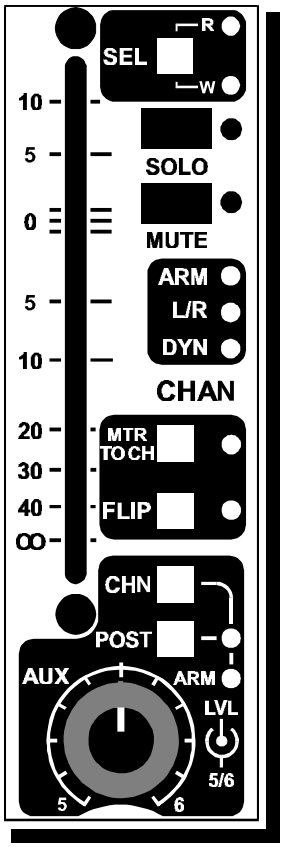
The insert can be found in the patchbay and has ground compensated balanced sends and true balanced returns.

3.7 SEL

The SEL switch determines the automation mode of the automated fader. Either off (no LED's on) Read (R), Write (W) or Update/Trim both Read and Write LED's on.
Note: These functions are only active when PowerVCA is loaded and active on your PC!

3.8 SOLO

The **SOLO** switch has an adjacent LED as an indicator for the solo.
The **SOLO** system has two modes, **PFL** (pre fade listen), **AFL** (after fade listen). Master status switching (located in the master section) selects the **PFL or AFL** mode for the entire console (except for the Aux master solo's).
Activating the solo switch in the **PFL** mode will send the prefader signal of the Channel section to the CRM speakers.
In the **AFL** mode (non destructive), the post channel panpot signal is heard, and all other modules are not muted within the stereo mix buss



3.9 MUTE

The **MUTE** system is a special soft-muting circuit, click-free and associated with the automation circuitry.
A **MUTE** indicator is fitted alongside the **MUTE** switch.

3.10 FADER

The 60 mm linear fader controls the internal VCA. An optional Motorfader can be fitted which follows the VCA control voltage. Today's VCA's have very low distortion and very impressive specs, when the VCA is in circuit, noise is kept to an absolute minimum and the ultra low distortion is of the second harmonic type responsable for a natural sound.

3.11 CHANNEL / MIX STATUS SECTION - USING ARM

There are four white sections with LED's that indicate when the **ARM** system is active and let you know what is routed. The upper ARM status section has three LED's; yellow for activated routing assignments, Green for assigned L/R busses, and another green for assigned dynamics to that section of the module. These three function indicators are associated with the input section
Pressing the **ARM** switch shows you in the Cinemix's master section what digital buss is connected to the **CHAN**nel (or **MIX)** path. If you would like to buss the **CHAN**nel and **MIX** sections from the same module - to the same busses - at the same time, there is no problem.
The **L**/**R** LED indicates that the **CHAN**nel (or **MIX)** path is routed to the main left/right mix busses.

MTR CHAN SWITCH

The **MTR CHAN** LED indicates that the channel meter (which normally follows the tape switch) is switched to follow the input (mic or line) section.

On top of this it is possible to jumper the next possibilities.
Meter follows Chan pre or post fader
Meter follows MIX pre or post fader

INPUT FLIP SWITCH.
When this LED is on, the mic or line signals are directed to the **MIX** path of the module and the tape signal is connected to the **CHAN**nel path of the module.

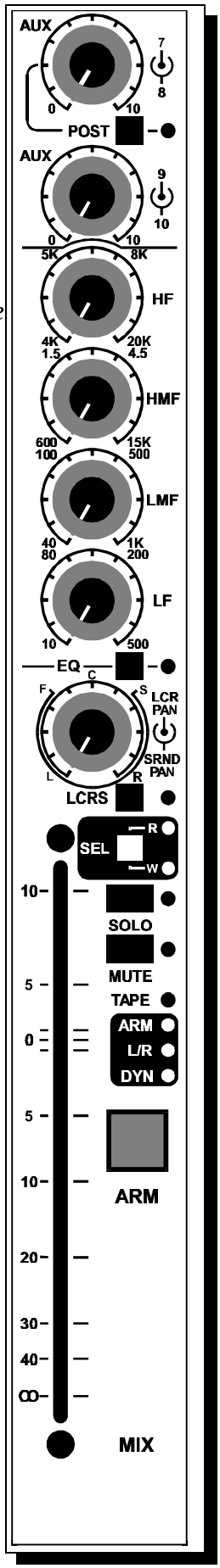
AUX ARM
The Auxes 5/6 can be assigned to the 24 busses through the ARM system. The yellow status LED indicates when **AUX 5-6** is assigned to one or more of the digital routing busses
Note: When Aux 5/6 are assigned to the routing busses, it is not possible to use the busses for anything else
The next two white indicator sections are for **CHAN**nel and **MIX.** Since both are identical, we will discuss only the **CHAN**nel section. The **ARM** LED lights when the **CHAN**nel (or **MIX)** path is assigned to one or more digital routing busses.

DYNamics
When the **green DYN** LED is on, an optional compressor, limiter, gate, or other effects / signal processors will be inserted into the signal path. The intensity of the LED is modulated by the activity of the inserted dynamics processor.
The optional **DYN**amics' master controls are the same controls used for the RECALL/AUTOMATION SECTION

Routing AUX 5 - 6 to the Multitrack Busses.
Step 1: Press **ARM** on the module you would like to route auxes from.
Step 2: Press the red AUX switch below the buss switches in the master section
Step 3: Press the Buss switch or switches you would prefer to buss to.
Step 4: From Cinemix's patchbay, patch the group outputs to your choice of signal processing equipment's inputs.

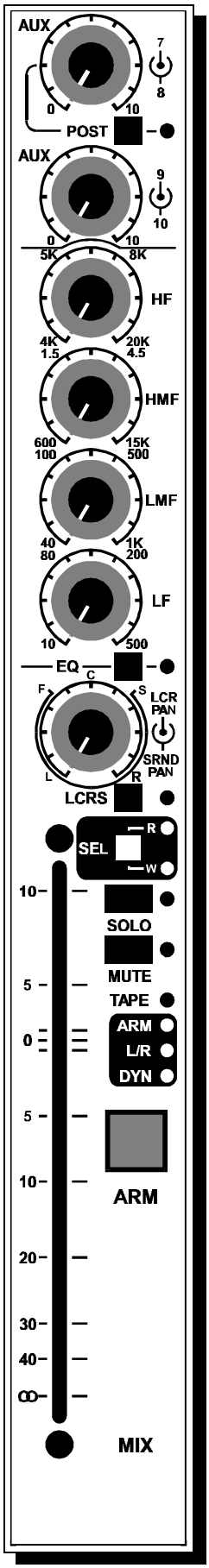
3.12 MIX PATH
The **MIX** section is the second signal path in the Cinemix dual path mono module. It has a full 4 band eq, up to 6 aux sends, insertable LCRS panpot, and Mute & Solo switches. In record mode (non activated input flip), the **MIX** section is fed by either the tape return or group output (a master tape switch selects either one of the above).

AUX SENDS - MIX PATH
Aux 5 & 6 were designed with a level and pan to for instance build up a stereo mix for headphones. The Auxes 5/6 can be sourced from either the CHAN section or the MIX section. Pre/post slection is possible and assigning to the 24 busses is also possible as earlier discussed.
Aux 7 through 10 are dedicated aux sends for the **MIX** path.
Aux 7/8 can be selected pre/post MIX fader. Aux 9/10 are factory set post Mix fader but can be jumpered to be pre MIX fader if desired.



Equalizer Section - MIX path

This four-band parametric equalizer is unique in its design.
There are four bands, the high and low are sweepable frequency with shelving characteristics with a boost or cut of 16 dB and the two mid bands each sweepable with a boost or cut of 16 dB with a fixed very musical bandwidth.
The **HF** (high frequency) section is a variable frequency shelving type, sweep- able from 4,000 Hz to 20,000 Hz with a maximum boost or cut of 16 dB.
The **HMF** (High / Mid Freq.) section has level and frequency and bandwidth controls with variable frequency ranges from 600 Hz to 15,000 Hz and maximum boost or cut of 16 dB.
The **LMF** (Low / Mid Freq.) section has level and frequency and bandwidth controls with variable frequency ranges from 40 Hz to 1000 Hz and maximum boost or cut of 16 dB.
The **LF** (low frequency) section is a variable frequency shelving type, sweepable from 10 Hz to 500 Hz with a maximum boost or cut of 16 dB.
All level controls are center detented making neutral positions easy to establish. All frequency ranges have been carefully selected following extensive examination of all types of music (and noise). Test comparisons of other equalizers helped the D&R design team create an equalizer that sounds very musical , but at the same time, raising the standard in specs and sound quality. Noise and distortion are kept to an absolute minimum.
An equalizer in - out switch with LED indicator is fitted to allow easy comparisons.



3.13 LCRS PANPOT

Cinemix's panpot is built with special circuitry to allow for left, Center, Right, and stereo Surround panning. The upper control knob pans between Left and Right. The lower control knob of the dual concentric pan-pot lets you move the input signal from front to rear. In the rear position the signal can be panned between the surround left and right monitor.
A LCRS switch toggles between a normal pan-pot with -3dB centre and a true LCRS pan-pot allowing for complex positioning of sound in every module.
Panning from left to right selects between Joystick 1 and/or 2 when assigned in the master section to the responding module.
NOTE: THE LCRS SWITCH HAS TO BE IN THE UP POSITION (OFF)

INSERT

The insert can be found in the patchbay with separate send and return tiny telephone jacks.

SEL
The **SEL** switch determines the automation mode of the automated fader. Either off (no LED's on) Read (**R** LED on), Write (**W** LED on) or Update/Trim both **Read** and **Write** LED's on.

SOLO
The **SOLO** switch has an adjacent LED as an indicator for the solo being active. The **SOLO** system has two modes, **PFL** (pre fade listen), **AFL** (after fade listen). Master status switching (located in the master section) selects the **PFL or AFL** mode for the entire console (except for the Aux master solo's). Activating the solo switch in the **PFL** mode will send the prefader signal of the Channel section to the CRM speakers. In the **AFL** mode (non destructive), the post channel panpot signal is heard, and all other modules are not muted within the stereo mix buss

MUTE
The **MUTE** system is a special soft-muting circuit, click-free and associated with the automation circuitry. A **MUTE** indicator is fitted alongside the **MUTE** switch.

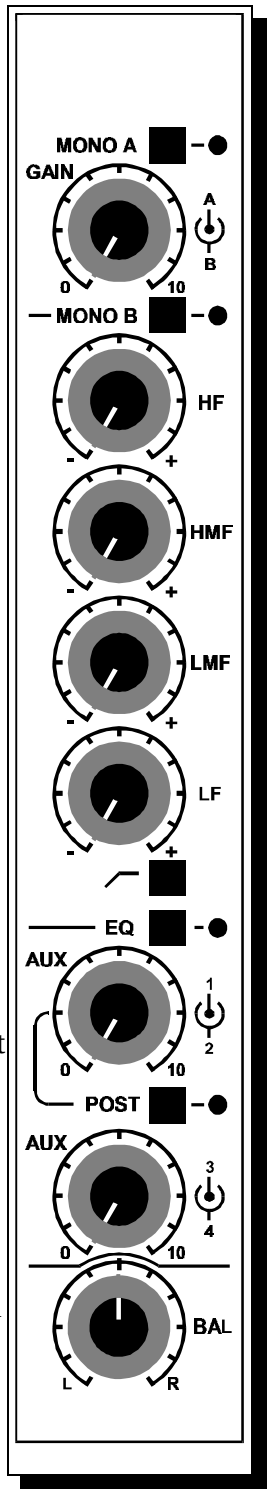
FADER
The 100 mm linear fader controls the internal VCA. An optional Motorfader can be fitted which follows the VCA control voltage.
Today's VCA's have very low distortion and very impressive specs, when the VCA is in circuit, noise is kept to an absolute minimum and the ultra low distortion is of the second harmonic type which is responsable for a natural sound.

3.14 CHANNEL & MIX PATH INPUTS / OUTPUTS
All mic inputs are interfaced via female XLR 3 pin connectors located on the module backpanels. All other module inputs and outputs are located in the patchbay and accessible via 25 pin sub "D" connectors on the back of the patchbay.

THE DUAL STEREO RETURN MODULE

4.0

Cinemix's Dual Stereo Module is one of the most comprehensive products the D&R design team has developed yet. Two completely separate stereo modules (four inputs) are fitted on the same metal strip. Although designed for effects returns, this module can be used for stereo keyboards, drum machines, stereo tape machines, or any other device needing both inputs on one fader. The maximum number of stereo input modules both frames can accept is 5. These five stereo modules are normalled to signal processor outputs in the patchbay.



4.1 Input section

The input section consists of two stereo gain controls. The gain control is a concentric dual pot (with two knobs) used to adjust the gain of two line amps, stereo **A** and stereo **B**.
The adjustment range is from -20dB to +20dB.
The Mono A and Mono B switches summ the left right signals.

4.2 Equalizer section

The D&R design team opted for a four band fixed frequency equalizer on the STEREO B input path. The selected frequencies produced the most musical sounding results.

HF 10kHz

The **HF** (high frequency) section has shelving characteristics with a boost or cut of 16dB at a fixed frequency of 10kHz.

HMF 5kHz

The **HMF** (high mid frequency) section has bell curve characteristics with a boost or cut of 16dB at a fixed frequency of 5kHz.

LMF 250Hz

The LMF (low mid frequency) section has bell curve characteristics with a boost or cut of 16dB. This band has a fixed frequency of 250 Hz.

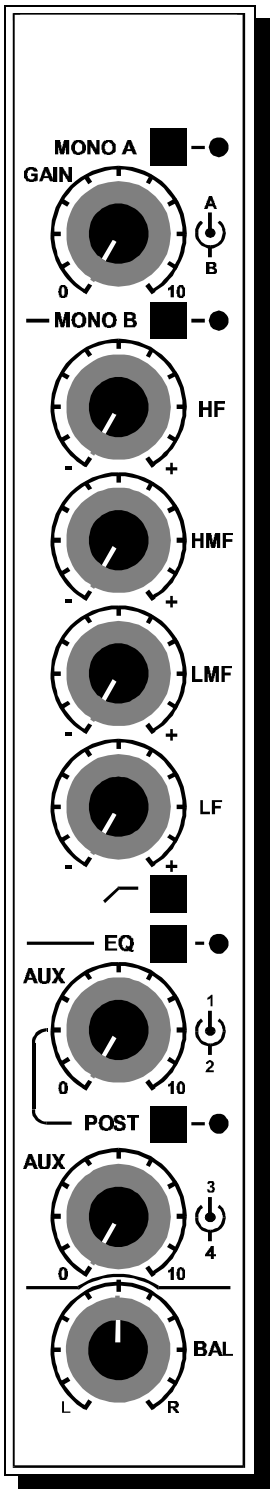
LF 60Hz

The LF (low frequency) section has shelving characteristics with a boost or cut of 16dB at a fixed frequency of 60Hz.
All level controls are center detented making neutral positions easy to establish. All frequency ranges have been carefully selected following extensive examination of all types of music (and noise). Test comparisons of other equalizers helped the D&R design team create an equalizer that sounds very musical , but at the same time, raising the standard in specs and sound quality. Noise and distortion are kept to an absolute minimum.

A **High Pass Filter** in / out switch is fitted to roll off the low frequencies at 100 Hertz.
An equalizer on-off switch is fitted to allow easy comparisons.

4.3 AUX Send Section

Aux 1 through 4 are always in the Stereo A path. Aux 1 - 4 are dual concentric controls with 1/3 being the top knob and 2/4 the bottom knob.
Aux 1/2 is switchable pre/post channel fader. Aux 3/4 is always post fader.



Pan control
Just below the Aux section is a stereo pan control. On Cinemix's stereo module, the pan control balances the left and right signals in the stereo image. It has a center attenuation of -3dB,

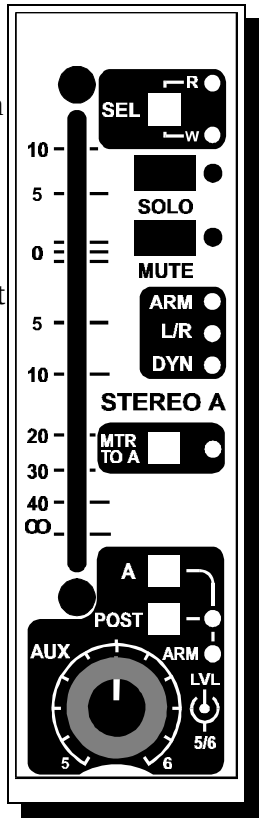
SEL
The **SEL** switch determines the automation mode of the automated fader. Either off (no LED's on) Read (**R** LED on), Write (**W** LED on) or Update/Trim both **Read** and **Write** LED's on.

SOLO
The **SOLO** switch has an adjacent LED as an indicator for the solo. The **SOLO** system has two modes, **PFL** (pre fade listen), **AFL** (after fade listen). Master status switching (located in the master section) selects the **PFL or AFL** mode for the entire console (except for the Aux master solo's).
Activating the solo switch in the **PFL** mode will send the prefader signal of the "A" section to the CRM speakers. In the **AFL** mode (non destructive), the stereo post "A" balance signal is heard, and all other modules are not muted within the stereo mix buss

MUTE
The **MUTE** system is a special soft-muting circuit, click-free and associated with the automation circuitry. A **MUTE** indicator is fitted alongside the **MUTE** switch.

FADER
The 60 mm linear fader controls the internal VCA's. An optional Motorfader can be fitted which follows the VCA control voltage. Today's VCA's have very low distortion and very impressive specs, when the VCA's are in circuit, noise is kept to an absolute minimum and the ultra low distortion is of the second harmonic type which many engineers and producers like.

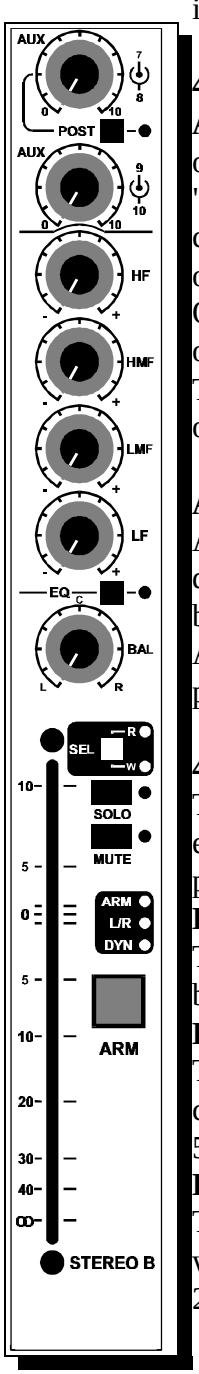
4.4 STEREO A / B STATUS SECTION - USING ARM



There is a white section with LED's that indicate when the **ARM** system is active and let you know what is routed. The section has three LED's; yellow, green and green. These three function indicators are associated with the total modules routing status. When one of these leds are on, it indicates that in the master ARM section signals are routed. The local ARM switch, when pushed, gives information in the master section what is routed to what output.

MTR TO A CHAN

The **MTR TO A** switch and LED allows for changing the meters inputs to follow the Stereo A input signals (normally following the Stereo B inputs).



4.5 AUX 5/6

AUX 5/6 can be sourced from either the Stereo B section or the Stereo A section by its local source switch labelled "A". Aux 5/6 is a stereo Aux send with level and pan control, switchable pre/post the stereo faders from stereo A or B section.

On top of all these features it is also possible to route the outputs of this stereo Aux send to the busses via the ARM system. The ARM LED indicates when **AUX 5/6** is assigned to one or more of the digital routing busses.

AUX 7-10 Send Section

Aux 7 through 10 are always in the Stereo B path. Aux 7 - 10 are dual concentric controls with 7/9 being the top knob and 8/10 the bottom knob.

Aux 7/8 is switchable pre/post Stereo B fader. Aux 9/10 is always post stereo B fader.

4.6 Equalizer section

The D&R design team opted for a four band fixed frequency equalizer on the STEREO B input path. The selected frequencies produced the most musical sounding results.

HF 10kHz

The **HF** (high frequency) section has shelving characteristics with a boost or cut of 16dB at a fixed frequency of 10kHz.

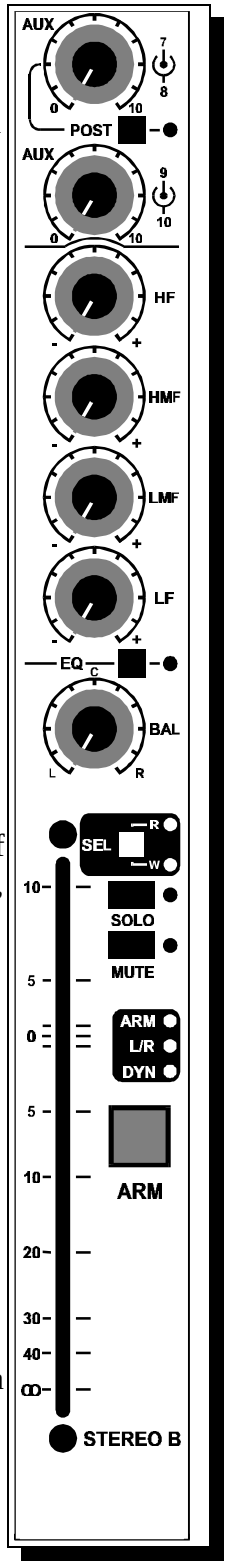
HMF 5kHz

The **HMF** (high mid frequency) section has bell curve characteristics with a boost or cut of 16dB at a fixed frequency of 5kHz.

LMF 250Hz

The LMF (low mid frequency) section has bell curve characteristics with a boost or cut of 16dB. This band has a fixed frequency of 250 Hz.

LF 60Hz
The LF (low frequency) section has shelving characteristics with a boost or cut of 16dB at a fixed frequency of 60Hz.
All level controls are center detented making neutral positions easy to establish.
All frequency ranges have been carefully selected following extensive examination of all types of music (and noise). Test comparisons of other equalizers helped the D&R design team create an equalizer that sounds very musical , but at the same time, raising the standard in specs and sound quality. Noise and distortion are kept to an absolute minimum.



4.7 Pan control
Just below the Aux section is a stereo balance control. On Cinemix's stereo module, the pan control balances the left and right signals in the stereo image. It has a center attenuation of 3dB.

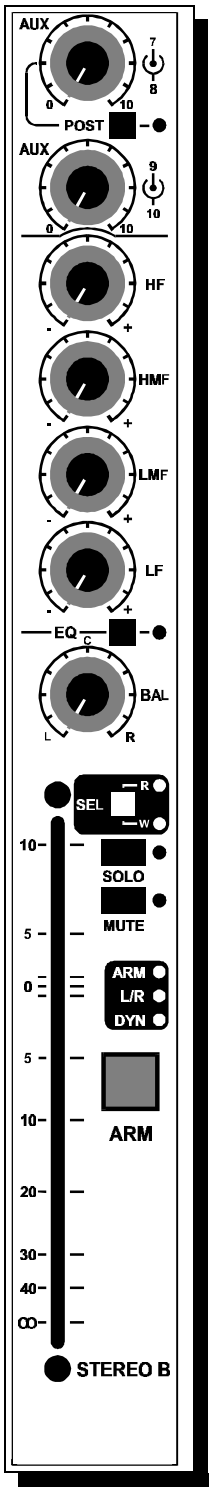
SEL
The **SEL** switch determines the automation mode of the automated fader. Either off (no LED's on) Read (**R** LED on), Write (**W** LED on) or Update/Trim both **Read** and **Write** LED's on.

SOLO
The **SOLO** switch has an adjacent LED as an indicator for the solo.
The **SOLO** system has two modes, **PFL** (pre fade listen), **AFL** (after fade listen). Master status switching (located in the master section) selects the **PFL or AFL** mode for the entire console (except for the Aux master solo's).
Activating the solo switch in the **PFL** mode will send the prefader signal of the "B" section to the CRM speakers. In the **AFL** mode (non destructive), the post "B" balance signal is heard, and all other modules are not muted within the stereo mix buss

MUTE
The **MUTE** system is a special soft-muting circuit, click-free and associated with the automation circuitry. A **MUTE** indicator is fitted alongside the **MUTE** switch.

FADER
The 100 mm linear fader controls the internal VCA's. An optional Motorfader can be fitted which follows the VCA control voltage.
Today's VCA's have very low distortion and very impressive specs, when the VCA's are in circuit, noise is kept to an absolute minimum and the ultra low distortion is of the second harmonic type which many engineers and producers like.

4.8 STEREO B STATUS SECTION - USING ARM



There is a white section with LED's that indicate when the **ARM** system is active and let you know what is routed. The section has three LED's; yellow, green and green. These three function indicators are associated with the total modules routing status. When one of these leds are on, it indicates that in the master ARM section signals are routed. The local ARM switch, when pushed, gives information in the master section what is routed to what output.

DYNamics

When the **DYN** LED is on, an optional compressor, limiter, gate, or other effects / signal processors will be active in the signal path.
The modulation of the LED indicates the amount of processing applied to this module.
The master control of the dynamics is part of the recall/automation section's menu.

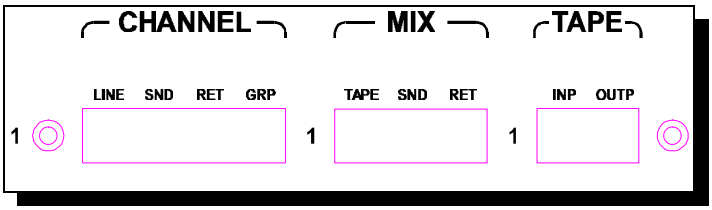
STEREO A/B ARM SWITCH.

The **ARM** switch assigns a module to the **ARM** section in the master where assignments can be made and stored. Pressing the **ARM** switch shows you in the Cinemix's master section what digital buss is connected to the **Stereo A and B** path. If you would like to buss the **A** and **B** sections from the same module - to the same busses - at the same time, there is no problem. Bussing to more than one pair is also possible.

PATCHBAY SECTION

5.0 Patchbay description

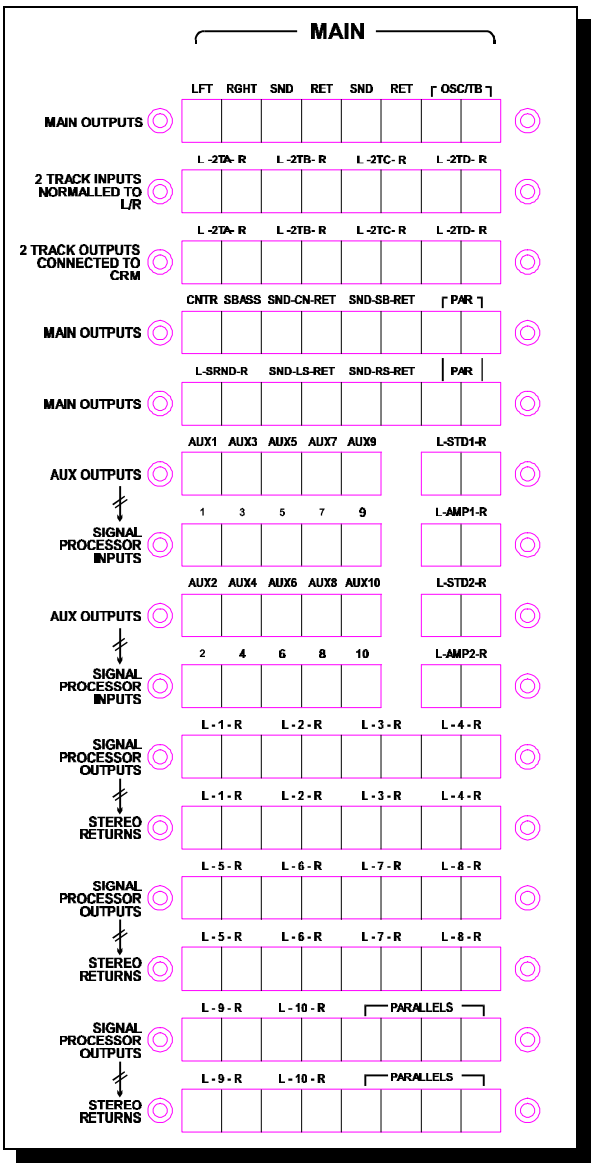
The recessed patchbay section is built around Bantam type tiny telephone jack sockets. Cinemix's patchbay is completely modular and can be expanded as your budget allows. If you order a large frame down-loaded with less modules, the patchbay can be expanded as you order more input modules or ordered complete. All master inputs / outputs and 256 tie lines (for signal processing) are standard when you order the patchbay. The entire patchbay is wired balanced and internally "star-ground" wired. Each row of CHANNEL and MIX patch points are followed by the TAPE inputs and outputs.



5.1 Patchbay - points

Channel patch points from left to right are: **Line** input - **CHAN**nel insert Send & Return - **Grp** (group) output - **MIX** (from tape) input - and **Mix** insert Send & Return . The tape input and outputs are normalized to Group outputs and MIX inputs.

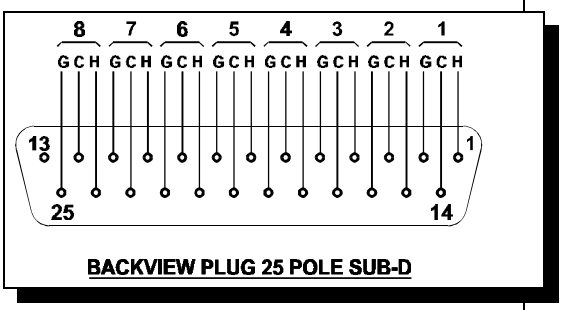
The master section contains fifteen rows of Bantam type jacks.



Row 1: Left/Right master outputs, insert send & returns, and Osc/TB.
Row 2: Tape or mastering machines A, B, C, D inputs normalled to left and right outputs.
Row 3: Tape or mastering machines A, B, C, D, outputs left & right inputs.
Row 4: Main outputs Center/Subbass, Send/returrn of Center, Subbass, and two parallels.
Row 5: Main outputs Left/Right Surround with inserts, and two parallels.
Row 6: Aux 1/3/5/7/9 ans Studio 1 left/right.
Row 7: Signal processor inputs (normalled to Aux1/3/5/7/9 outputs) and Studio amps inputs left/right (normalled to Studio 1 outputs).
Row 8: Aux 2/4/6/8/10 outputs normalized to signal processor inputs (on the next row), Studio 2 left/right outputs (normalized to AMP2 inputs).

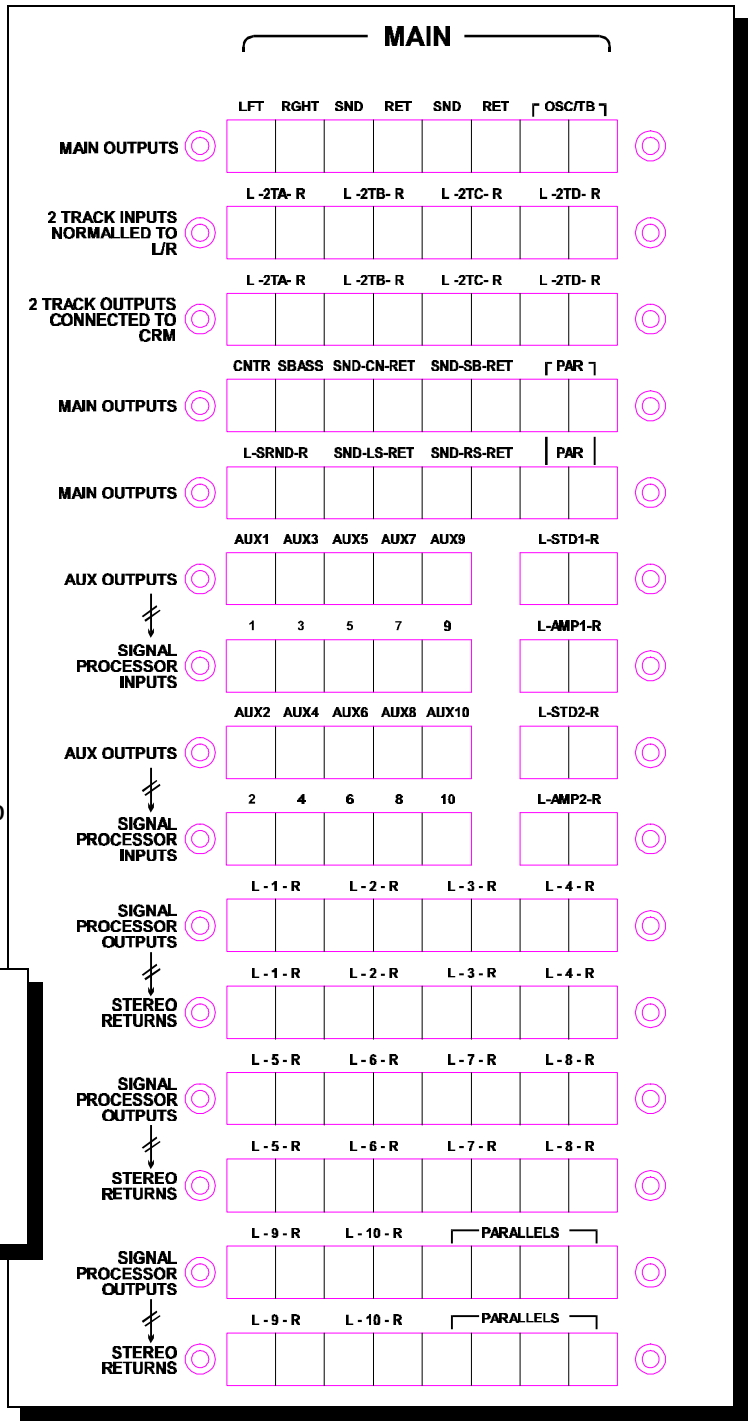
Row 9:Five signal processor inputs normalized to Aux 2/4/6/8/10 outputs, and Studio amp2 inputs (normalized to Studio2 outputs).
Row 10: Four stereo signal processor outputs normalized to the stereo return modules.
Row 11: Four stereo return inputs (normalled from signal processor outputs).
Row 12: Four stereo signal processor outputs 5-8, internally normalled to dual stereo return modules.
Row 13: Stereo retrun 5 to 8 inputs (normalized from signal processor outputs 5-8.
Row 14: Stereo signal processor outputs 9-10 plus 4 paralleled jack sockets
Row 15: Stereo returns 9-10 normalled to signal processor outputs 9/10

Cinemix has 256 tie lines mounted in 32 rows of eight. The tie lines are patch- ing the inputs and outputs of any signal processing equipment. For ease of use, all outputs are blue sockets, and all inputs are black sockets. The blue and black jack sockets can be interchanged for use with any equipment other than normal stereo (two inputs and two outputs) devices. All interfacing with external machines, effects processors, or amplifiers can be accomplished via the connector panel (rear of master section) and via the 25 pin sub "D" connectors on the patchbay connector panel. The wiring from the 25 pin sub "D" connector to the jack sockets are identical for inputs and outputs.



BACKVIEW PLUG 25 POLE SUB-D

G=Ground
C=Cold (out of phase)
H=Hot (in phase)



INSTRUCTIONS FOR OPERATION

6.0 Instructions for operation

The Cinemix is designed to be the perfect answer for Post Production, multitrack and MIDI studios. In order to get more familiar with the Cinemix, we shall discuss the entire recording process and divide it into five basic sequences. Sequence 1 through 4 are for the more conventional recording studios, and sequence 5 is for the MIDI studio.

1. The session - Recording from microphone or line input onto the multitrack machine. This could be from one or more channels at a time.
2. The playback - In this mode you would listen to what has been recorded on the multitrack machine.

3. The overdub - Overdubbing is listening to already recorded tracks and recording on empty tracks until all tracks are filled.
4. The remix - Playing of all recorded tracks together with signal processing equipment and all that is necessary to create the final mixdown.
5. The MIDI or Virtual Tracking - Programmed keyboards, drum machines, reverbs, effects, any singing and who knows what else, all at the same time direct to your Dat Machine, two track master machine, or cassette deck.

6.1 The Tracking Session

This is normally the beginning of a project. All input channels are placed in the mic mode by leaving the line switch in the up position if the microphone input is to be used in this channel. Phantom powering is applied if necessary. The EQ switch should be in the up position unless you require EQ on that channel signal. The signal flows through the Channel fader and is available postfader to be routed by way of the ARM system feeding the input to your multitrack recorder. The LED bargraph reads the outgoing signal if the master Tape switch is in its off state.

Microphone / Line Gain

The amount of gain required may depend on the type of microphone being used, the sound pressure level, and the distance between the sound source and microphone. When the line switch is activated, the same (upper) gain control varies the gain of the separate electronics for the balanced line input.
The "phase" switch affects both mike and line inputs. After plugging in a mike or line signal, depress the channel solo switch alongside the channel fader you are setting, set the solo status switch to pfl in the master section, then turn the gain control (of that channel) clockwise until a "0" output level is reached on the master ledbargraph/VU meters. Now slide up the channel fader to "0". Now switch the solo out. If the signal source gets louder or softer, it may be necessary to re-check this setting.
The volume will also fluctuate if you boost or cut the equalizer section.

Monitoring with the Cinemix series, you are able to monitor your multitrack by way of the separate MIX section. The MIX section of the dual path module allows you to have two usable inputs, both with EQ, both being able to send to the aux. busses, both with their own volume control, panpots, mutes and solos, and able to be routed at the same time.

Multiple Modules Assigned to One or Two Tracks
When more than one microphone or line signal has to be recorded on a single track or in stereo on two tracks, a submix facility is required. This can be done easily on the CINEMIX by way of the internal subgroup amplifiers located on every channel module and controlled by the ARM system.
Simply route to one of the 24 subgroups by activating routing switches in the master's ARM section on as many input modules as required. Decide on which track you wish to record these signals and activate the related number. The channel metering will show the subgroup level which can be changed overall by applying a PowerVCA's subgroup fader. In order to monitor these tracks on the modules, the master tape switch should be in the off position for monitoring pre-tape (console out) and in the On position for monitoring post-tape (master tape switch lites).

Insert Channel / Group
For high dynamic range types of inputs, a signal processor such as a compressor / limiter can be inserted in the channel insert or in the MIX insert or activate the optional Dynamics package.

Headphone (Cue)
During recording it is essential that the talent hears an independent mix of what the engineer and producer are hearing. Headphone mixes are usually derived from pre-fader auxiliaries.
In the CINEMIX the Aux 1/2 and Aux 7/8 are ideal for this purpose.
The best way to build a mix for the headphones is to have the MIX section of the dual line module feed Aux busses 7/8. When there is limited time to set up a headphone mix, give the talent the CRM mix (L/R) in the Control Room section of the master modules and build up an independent headphone mix on aux. 7/8 when time allows.

Effect Sends
All unused Aux. sends can be used to send signals to signal processors such as the D&R "Qverb" 16 bit digital reverb, effects processors, and digital delays. The aux. sends are usually post-fader in order that the right balance between untreated and treated signals is maintained however, it is possible to switch to pre-fader.

Effects Returns
In the modern recording or MIDI studios of today, there is a demand for many effect returns and inputs for MIDI related gear.

For that reason D&R has designed the Cinemix with stereo effects return modules. See section 4.0 of this manual for a complete description of this module.
Any unused channel or mix input can also be used for returning effects. Every channel can accept two returns with equalization and aux. send capabilities.

6.2 The Playback session

Multitrack playback. The Cinemix gives you a convenient way of monitoring your multitrack recorder. Switch your master TAPE switch to tape.
Now the tape outputs are feeding the MIX path and you can adjust the amount of signal you desire and pan it within the stereo image. Auxiliary sends and equalization can be inserted in both signal paths whenever needed.
Control over this processing is carried out by independent solo / mute systems in both signal paths.

6.3 The Overdub session

Multitrack synchronizing. Overdubbing is the process of building up a recording track by track while listening to previously recorded tracks.
The Cinemix has an in-line monitor for each track of the recorder making it easy to overdub. Connected to the MIX section of the dual path module, you select the master TAPE switch to follow the tape machine and do all your sync switching from the tape machine or remote.
The headphone mix is on the aux. send 1/2 or 7/8 busses. Aux 7 & 8 should get their signal from the MIX section. It is best to activate aux. 7/8 to pre fader at anytime you're using Aux 7/8 for a headphone mix.

6.4 The Remix session

Remix is the process of combining all recorded tracks with (keyboards and drum machines for MIDI) signal processing and sending the mix to a two track master machine, DAT machine, or cassette recorder. On the dual path module your multitrack is connected to the MIX path. This routes the tape return to the MIX input and leaves the mike/line inputs to the channel section of the module. At this point you can use either a mike or line input in the channel section which will feed the stereo mix buss. This will give you two inputs per module in the final mix. You can activate the desired EQ on the channel or Mix path. The incoming signals can be routed to the stereo mix buss via the ARM system in the channel assign section. VCA sub groups can be made up (as required) in the same way as during recording. Aux sends 7 - 10 can get their signal from the MIX section and Aux 1 to 4 from the channel or MIX path with global pre/post switching. Aux sends 5 / 6 get their signal from the channel section in the pre or post fader position.

6.5 The MIDI or Virtual session

In most MIDI studios there will be an eight-track rather than a sixteen or twenty four track tape machine. The majority of music production is programmed on a sequencer using MIDI keyboards, sound modules, drum machines, or other MIDI related equipment.

Therefore, you will only require tape tracks for vocals and those instruments not adequately reproduced on today's keyboards. If there is a multitrack recorder in the MIDI studio, one of the tracks would be used to record a time code (SMPTE or MIDI code). This will allow your sequencer to keep keyboards, drum machines, and other MIDI equipment synchronized.

Cinemix was designed with the digital or analog multi-track and MIDI studio in mind. In today's medium to large MIDI studio, there is a need for as many as 100 inputs to be used for everything from tape tracks to keyboards and drum machines. For this reason, the Cinemix, when fitted with both Dual Path modules and stereo return modules, can net over 106 inputs in the virtual track session or mix down.

6.6 Surround mixing

The Cinemix is the perfect mixer for laying down surround tracks.
As already mentioned mixing down on 4 tracks (Pro-logic standard) is very easy. Use the Left/Right and Center outputs and the Surround left or right output which both give the same signal when the Encoder is on.
These signals are fed to the encoder unit by way of the 25 pole sub D connector and the stereo outputs are fed back into the mixer for checking purposes.
By depressing the Encoder Active switch the four output signals will be fed to the external Encoder and not to the 4 CRM outputs anymore.
At that very moment the stereo output of the Encoder is fed to the main CRM monitors. The Center and Surround monitors will be muted at the same time.
By activating the external Decoder(depress the DECODER ACTIVE switch), the encoded stereo signal will be decoded to full surround and fed to Left/Center/Right and surround monitors for checking.
When the Decoder Active switch is in its up position a full stereo signal (Left total, Right total) will be heard and mono compatibility is checked with the Mono switch.
This easy set-up of surround sound coding and decoding makes a mix-down into surround sound very easy to accomplish.

SIX CHANNEL 5.1 (DTS DOLBY DIGITAL)

When mixing down in 5.1 all signals (Left/Center/Right/ Surround left/Surround Right/ and Sub Bass) are mixed down onto a six channel recorder and monitored back through the 6 Track input (eventually with the CP65 Dolby decoder).

7.0 Installation - Electrical

7.1 Local Electrical Voltage

Before connecting the Cinemix, check the AC supply voltage setting by looking at the sticker on the back of the rack mount power supply. This should be 115V for use in areas with an AC supply between 100V and 120V, and 230V for use in areas with an AC supply between 220V and 240V.
Allow for a 30second wait between switching the Cinemix power supply(s) on or off.
The main fuse is a 6.3 amp fuse with a 250 volt rating (10 amp fuse in America with a 125 volt rating). After replacing a blown fuse with the correct size and rating, turn the power supply on and check the three LED indicators. If you are still missing one or more of the power rails, turn off the power supply and call the D&R Technical Support Department.

NOTE: DO NOT REPLACE THE FUSE WITH ANY OTHER TYPE AS THIS CAN BECOME A SAFETY HAZARD AND WILL VOID YOUR WARRANTY.

7.2 Electrical Wiring

To take full advantage of the excellent signal to noise ratio of the Cinemix, it is necessary to read this part of the manual carefully.
Hum, radio frequency interference, buzzes and instability are often caused by improper wiring and poor grounding. All equipment using three wire ac connectors should have a ground lift adapter on each cable before plugging into the ac outlet. In most cases, the incoming electrical ground is inadequate and a dedicated ground system should be installed for the audio equipment. Your local electric power company will provide you with all local electrical codes and safety regulations.

There are some ground rules to follow. All signals in a recording studio are referenced to ground. This ground must be clean and free of noise. A central place (central to <u>all</u> equipment) should be selected as the "central star ground point" and all grounds should terminate at this point. This point can be a solid metal plate with at least 50 places to hookup all incoming grounds.
This is commonly referred to as a "star ground system".
In some instances electrical contractors will daisy chain ground connections in the AC distribution system. This is <u>not</u> suitable for a studio. Ideally, run a separate ground wire from each piece of equipment to the "central star ground point". The "central star ground point" should be connected to a pair of eight foot ground rods using larger (#10) wire than your equipment ground wires.

Separate and identify "clean" and "dirty" AC outlets. Use clean outlets for audio equipment and the dirty ones for lighting, air conditioning, cola machines etc. Do not intermix these two types of outlets. AC interference can be greatly reduced by using an isolation transformer or some type of balanced ac power device to power outlets. Ground this transformer directly to the "central star point".

After all equipment is connected to the ac power, check with a ohm meter or continuity tester to be sure of no possible chance of ground loops.

All equipment should be physically located as far as possible from the main breaker panel and should be totally isolated from the equipment rack and other equipment so ground loops are avoided. Equipment can be mounted in wood rack rails to avoid ground loops or you can use "HUMFREES"

Now you can run a #12 stranded wire with jacket from each piece of equipment to the "central star ground point". All ground wires should be the same length with a tolerance of plus or minus 10% in order to have the same ground potential everywhere. On the equipment ends of each ground wire you should solder a round hole screw terminal.

Remove a chassis screw from each piece of equipment and file the paint in that area so it will make good contact when you connect the terminal. Next, connect the ground wire terminal to each piece of equipment and connect each wire at the other ends to the "central star ground point".

8.0 Installation - audio

8.1 Interface Power Amps

The Cinemix in its standard configuration can interface with all available equipment. Attention concerning the CRM output must be noted.
This output delivers a nominal +4 dBu level which is sometimes too high for power amps rated at 300mV sensitivity for full output. In some instances an input attenuator at the power amp's input is required to reduce this +4 dBu level by up to 12 dB. Contact the D&R Technical Support Department for details.
NOTE: This alignment is imperative in order to avoid damage to the speakers, or in some cases, damage to the ears of the listener.

8.2 The Initial Hook-Up

First connect the rack-mounted power supplies to the console. All faders, monitors, and effect returns must be in the "down" or "off" position.
In order to ensure the best signal to noise ratio for your system, the next steps should be performed in the order they are printed.

a. Connect the CRM outputs (located on the master section backplate) to the inputs of your control room speaker power amps. Now turn on the console power supplies and then turn your main power amp on and check for any hum, buzz, or interference. Slowly turn the CRM control clockwise until it is wide open while listening for excessive noise. You should only hear a faint "hiss". If everything is O.K., continue. If any hum or excess noise is present, stop and try different ground and shielding arrangements until the system is clean.
After checking the main power amp and speakers, check CRM 2 and 3.

b. Before making any other connections, move each monitor fader to the 0 dB position with the master tape switch ON. Connect the multitrack cables to the 25 pole sub-D connectors on the rear of the patchbay, then connect each connector on the tape output of your multitrack. Check for hum or noise after each track has been hooked up. "Hiss" will normally increase slightly with each track. Connect the tape input jacks to the inputs of the multitrack. Carefully listen for excessive noise or hum. If after hooking up an input or output excessive noise or hum is detected, stop and take corrective action before proceeding. Do not hook up all 16, 24, 32, or 48 tracks and then listen.
You may need to rewire the entire cable harness to make the system clean.

c. Connect stereo tape recorders (inputs and outputs), stereo headphone amp, and all signal processors.

NOTE: MAKE SURE THAT YOU CHECK FOR HUM OR NOISE AS EACH INPUT OR OUTPUT IS CONNECTED.

8.3 Shields & Grounds of Equipment

The shield of any audio cable connection should be connected at one end only. If not, ground loops and high frequency cross-talk could result.
Connect the shield as a general rule to the signal source (output) of anything. In high RF areas it is wise to connect the other end of the shield through a 0.01 microFarad capacitor. This will ground the RF but will not affect audio frequencies.

When connecting balanced microphones, use two conductor shielded audio cable and connect both conductors and the shield at both ends.
When connecting line level cables, use two conductor shielded cable and follow the instructions in the paragraph above. Remember, the shield is not considered to be "ground" and it should only be connected at the output of any device. There are only a couple of exceptions to this rule, one is patch cords and the other is microphone cables. We realize that the correct interfacing of different equipment is difficult, but once properly installed, the system will be clean and noise free.

It is important to understand the term balanced. Balanced does not mean the input or output is professional, the single factor that normally determines whether something is professional is the level of the input or the output. +4 dBu is considered professional. -10 dBv is considered to be consumer level semi-professional. Because many semi-professional tape machines are built to professional specifications, D&R builds into the Cinemix console the ability to interface with both levels.

Note: When checking your new Cinemix console for noise, you will notice that the console is extremely quiet without any external equipment hooked up. D&R is not responsible for the noise you will experience when interfacing other equipment. Since you are use to other consoles when first encountering a D&R, the lack of noise from your Cinemix makes you more aware of noise from other equipment as you hook it up. D&R recommends using the highest quality external equipment with the Cinemix. Because high quality sound must be monitored with speakers and amps with extreme specs, D&R suggests using only the best amps to drive your speakers.

9.0 TROUBLE SHOOTING AND SERVICING

9.1 Troubleshooting

It is essential to study the signal flow chart in paragraph 12.0/13.0 carefully, only then can you hope to isolate problems. By tracing the signal from input to output jacks, it is possible to locate a problem. If for any reason you are unable to isolate a problem, contact the D&R Technical Support Department for advice. If the problem cannot be corrected over the phone, D&R will dispatch a replacement module the same day. Most problems can be found using logical thinking and simply replacing socketed integrated circuits.

9.2 Removing a Module

The Cinemix is a complex piece of equipment and some understanding of its internal layout is necessary before removing a module. An input module has wiring to the LEDbar, master section and backplates. All of these wires must be removed before withdrawing a module from the console.

Each module has computer grade connectors for ease of the disconnect.
Turn off the power supply. It is often easier to loosen the modules positioned left and right of the module under test. Remove the LEDbar wiring and remove the metal cover underneath the ledbar front which conceals the screws retaining the module. It is now possible to remove the two module retaining screws and carefully lift the module until the flatcable wiring can be unplugged.
At this point extender cables (if ordered) can be connected. The master sections can be removed from the frame in the same way. Because of the many flat cables on the bottom of the master section, it is wise to remove all retaining screws from all master sections.
This will allow all the master modules to be moved slightly without unplugging all the flat cables. A qualified service technician will be able to service the modules in this way.

9.3 Patchbay - servicing

The patchbay is fully modular and can be serviced after first removing the backplates, then removing the cables attached to the card that needs servicing. The card can be removed after unscrewing two screws that push the patchpanel card downwards.
The card will still be connected to the internal star ground system which will need to be unconnected before the card can be removed from the console.

10.0 CONNECTORS

10.1 Master Section

CRM main connector is a 25 pole female Sub D

1 = CRM 1 left, in phase
14 = CRM 1 left, out of phase (ground compensated)
2 = Ground

15 = CRM 1 right, in phase
3 = CRM 1 right, out of phase (ground compensated)
16 = Ground

4 = CRM 2 left, in phase
17 = CRM 2 left, out of phase (ground compensated)
5 = Ground

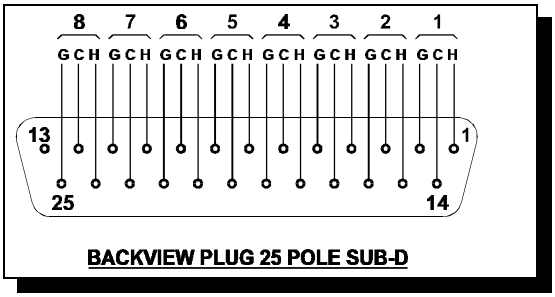
18 =CRM 2 right, in phase
6 =CRM 2 left out, of phase (ground compensated)
19 =Ground

7 = CRM center, in phase
20 = CRM center, outof phase (ground compensated)
8 = Ground

21 = CRM surround left, in phase
9 = CRM surround left, out of phase (ground compensated)
22 = Ground

10 = CRM surround right, in phase
23 = CRM surround right, out of phase (ground compensated)
11 = Ground

24 = CRM sub bass, in phase
12 = CRM sub bass, out of phase (ground compensated)
25 = Ground



BACKVIEW PLUG 25 POLE SUB-D

CRM 2 / 3

CRM 2,3 XLR male

1=gnd
2=in phase
3=out of phase (ground compensated)

ENCODER

25 POLE FEMALE SUB D CONNECTOR

1 = To Encoder Left, in phase
14 = To Encoder Left, out of phase (ground compensated)
2 = Ground

15 = To Encoder Right, in phase
3 = To Encoder Right, out of phase (ground compensated)
16 = Ground

4 = To Encoder Center, in phase
17 = To Encoder Center, out of phase (ground compensated)
5 = Ground

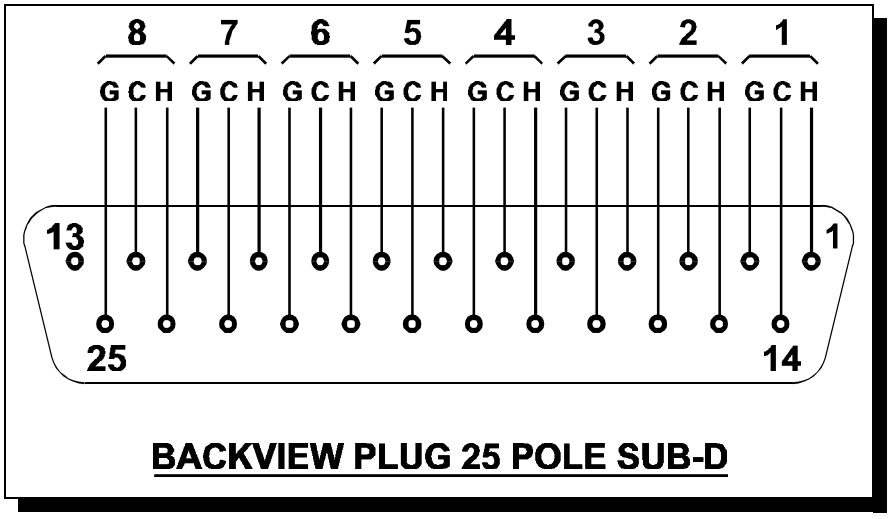
18 = To Encoder Surround (mono), in phase
6 = To Encoder Surround (mono), out of phase (ground compensated)
19 = Ground

7 = From Encoder Surround right (mono), in phase
20 = From Encoder Surround right (mono), out of phase (gnd comp.)
8 = Ground

21 = From Encoder Center, in phase
9 = From Encoder Center, out of phase (ground compensated)
22 = Ground

10 = From Encoder Left, in phase
23 = From Encoder Left, out of phase
11 = Ground

24 = From Encoder Right, in phase
12 = From Encoder Right, out of phase
25 = Ground

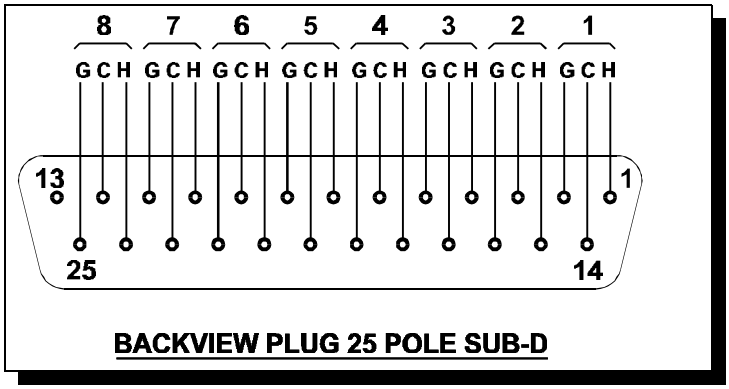


DECODER (from decoder to Cinemix on 25 pole Sub D)

1 = From Decoder Left, in phase
14 = From Decoder Left, out of phase (ground compensated)
2 = Ground
15 = From Decoder Right, in phase
3 = From Decoder Right, out of phase (ground compensated)
16 = Ground
4 = From Decoder Center, in phase
17 = From Decoder Center, out of phase (ground compensated)
5 = Ground
18 = From Decoder Surround left, in phase
6 = From Decoder Surround left, out of phase (ground compensated)
19 = Ground
7 = From Decoder Surround right, in phase
20 = From Decoder Sutrround right, out of phase (ground compensated)
8 = Ground
21 = From Decoder Sub Bass: in phase
9 = From Decoder Sub Bass: out of phase

DECODER (To decoder from Cinemix on 25 pole Sub D)

1 = To Decoder Left, in phase
14 = To Decoder Left, out of phase (ground compensated)
2 = Ground
15 = To Decoder Right, in phase
3 = To Decoder Right, out of phase (ground compensated)
16 = Ground
4 = To Decoder Center, in phase
17 = To Decoder Center, out of phase (ground compensated)
5 = Ground
18 = To Decoder Surround left, in phase
6 = To Decoder Surround left, out of phase (ground compensated)
19 = Ground
7 = To Decoder Surround right, in phase
20 = To Decoder Sutrround right, out of phase (ground compensated)
8 = Ground
21 = To Decoder Sub Bass: in phase
9 = To Decoder Sub Bass: out of phase
11 = Ground



6 TRACK INPUT

25 POLE FEMALE SUB D CONNECTOR

1 = Left, in phase
14 = Left, out of phase
2 = Ground

15 = Right, in phase
3 = Righ, out of phase
16 = Ground

4 = Center, in phase
17 = Center, out of phase
5 = Ground

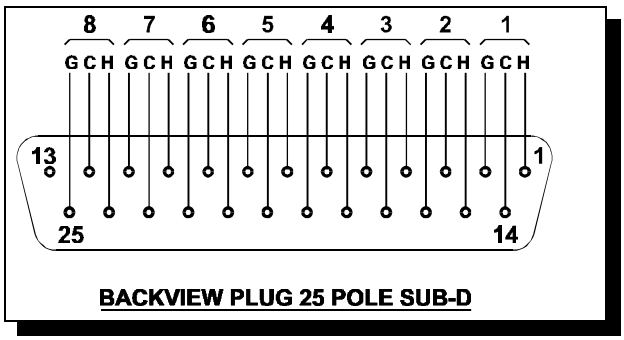
18 = Surround left, in phase
6 = Surround left, out of phase
19 = Ground

7 = Surround right, in phase
20 = Surround right, out of phase
8 = Ground

21 = Sub Bass, in phase
9 = Sub Bass, out of phase
22 = Ground

10 = Not connected
23 = Not connected
11 = Ground

24 = Not connected
12 = Not connected
25 = Ground

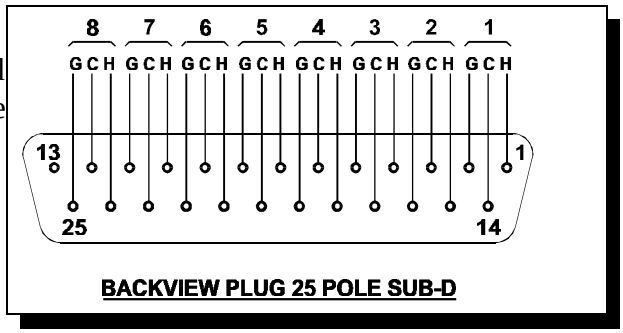


MIDI CONNECTORS

MIDI IN	Din Conn.	1= none
		2= none
		3= none
		4= to midi in +
		5= to midi in -
MIDI THRU	Din conn.	1= Ground
		2= Ground
		3= Ground
		4= to midi thru +
		5= to midi thru -
MIDI OUT	Din conn.	1= Ground
		2= Ground
		3= Ground
		4=Midi Out +
		5=Midi Out -

ASYNC. INTERFACE 25 pole sub D
Connection is a one to one flatcable to D&R's own PC interface card

24 TRACK STEMS INPUTS



There are 6 Sub-D connectors on the master back panel that n eed to be wired to the direct and playback outputs of the Stems recorders.
1-4 are the direct inputs and 5-8 are the 1-4 playback inputs. See the connector at the right side of the page.
Every connector takes care of 4 inputs (dir/playback) Meters can also be connected on the 4 extra Stems meter sub-D connector outputs.

MIC inputs

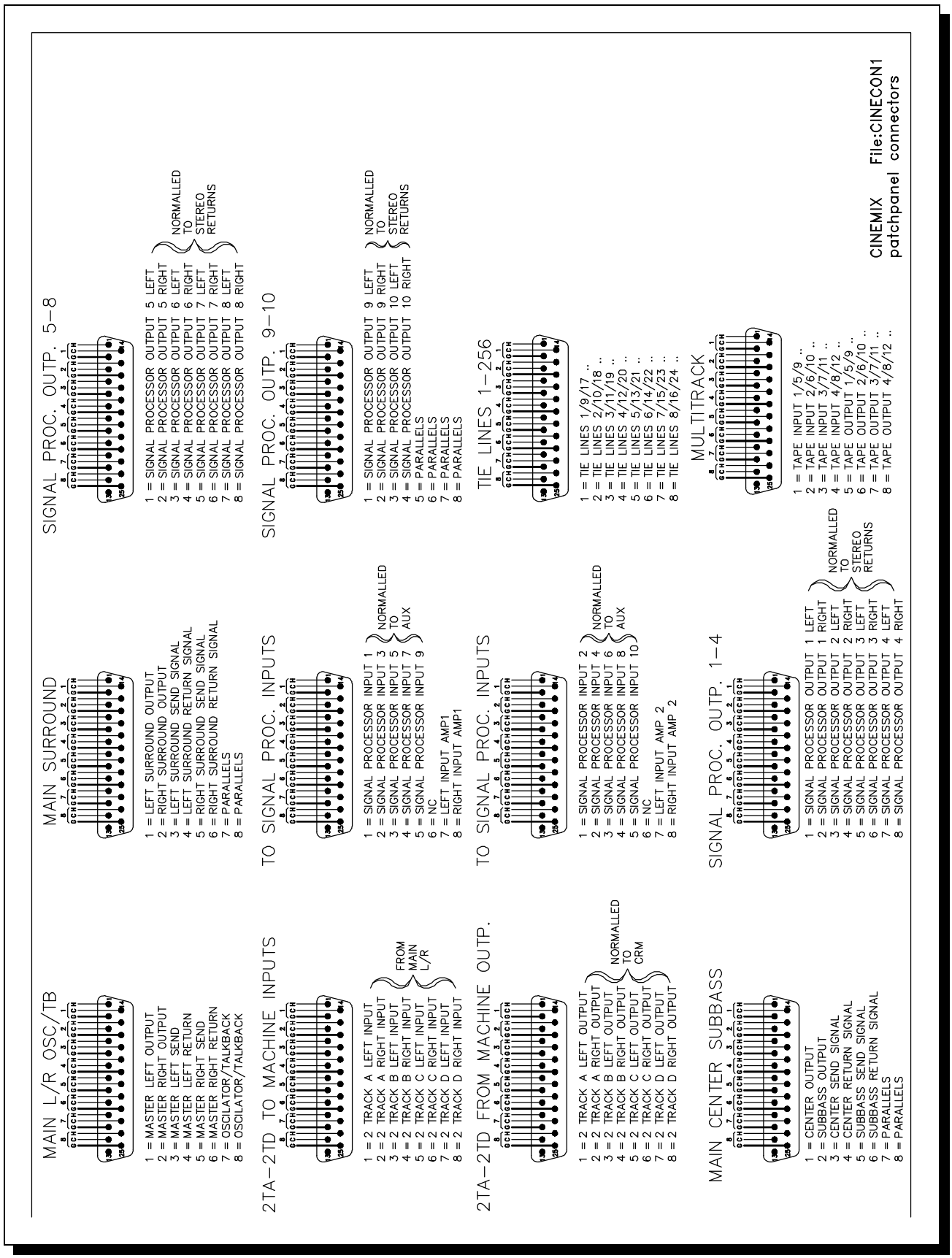
XLR 3 pole female	1=Ground
	2=Hot (in phase)
	3=Cold (out of phase)

ANALOG POWER	8 pole speakon	-1	= +12 volt (digital)
		+1	= +18 volt
		-2	= -12 volt (digital)
		+2	= -18 volt
		- 3	= Ground digital
		+3	= +48 volt
		-4	= Ground
		+4	= Ground

CHASSIS GROUND Binding terminal connected to chassis.

10.2 PATCHPANEL CONNECTORS

All in/outputs are connected via 25 pole sub D connectors in an identical way,see diagrams



11.0 SPECIFICATIONS

INPUTS

Mic inputs	2kOhm balanced -129 dBr input noise A weighted, gain 84 dB
Line inputs	10kOhm balanced +/- 20dB gain control, max 34dB gain
Tape inputs	10kOhm balanced +4dBu, unbalanced -10dBV
Insert returns	10kOhm balanced 0 dBu

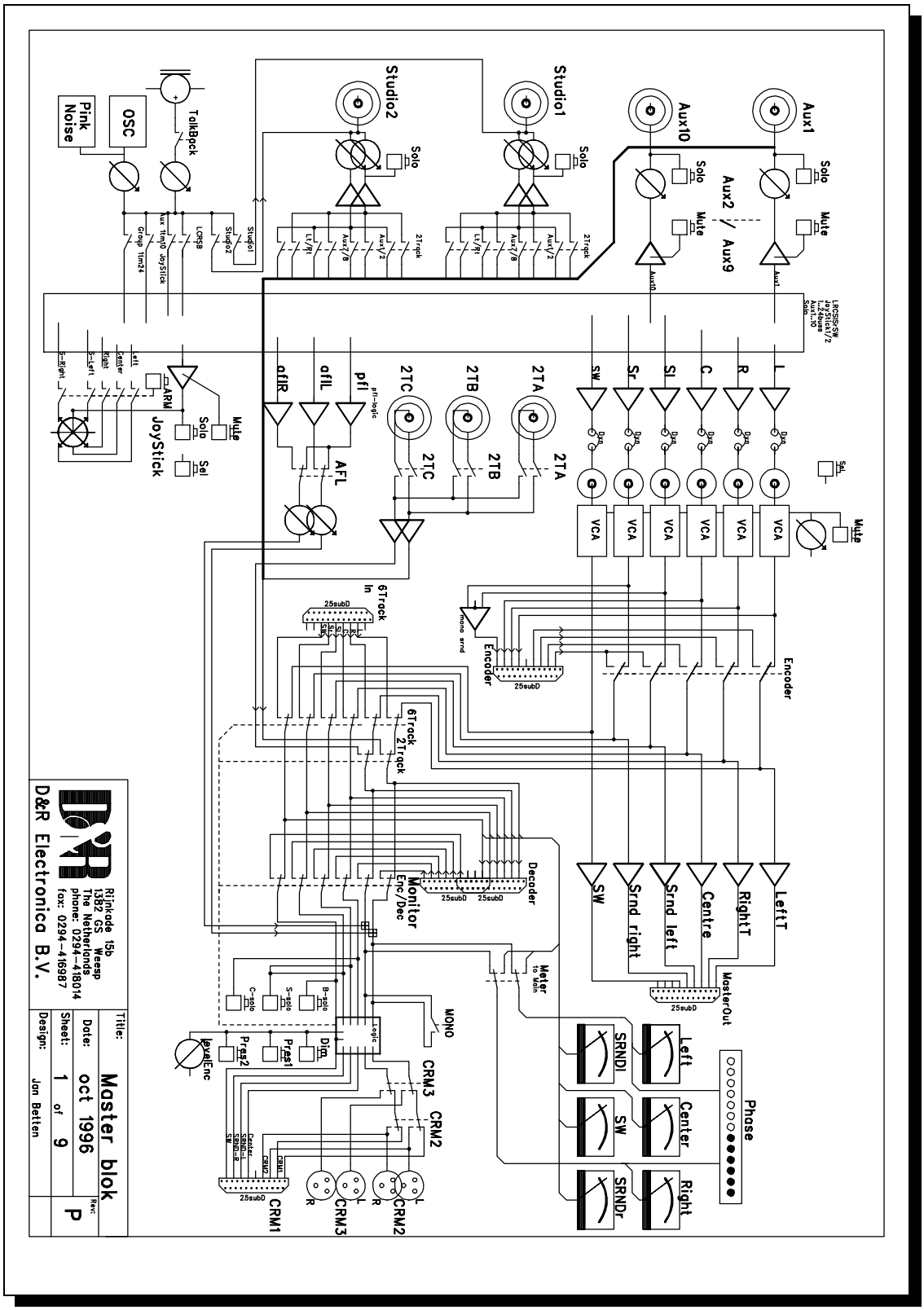
OUTPUTS

Tape outputs	47 Ohm +4dBu balanced /-10dBV unbalanced (selectable).
Insert sends	47 Ohm ground compensated 0 dBu level.
All other outputs	47 Ohm balanced +4dBu, max. +22dBu.

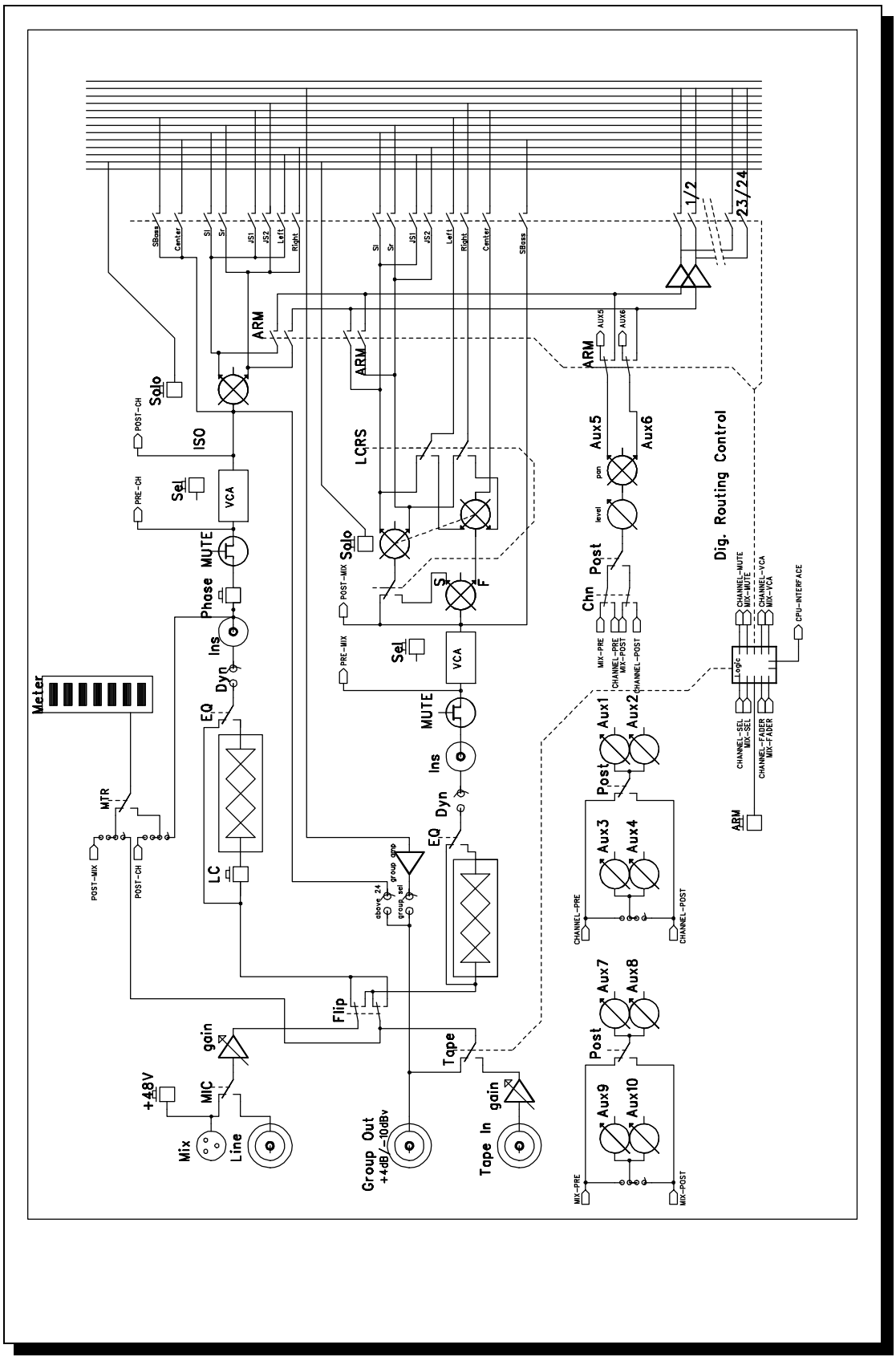
OVERALL

Headroom:	no less than 22 dB
Frequency response:	10-200,000 Hz -2dB (VCA out) 10-30,000 Hz -2dB (VCA in)
Harmonic distortion	0.007% (VCA out) 0.016% (VCA in)
Noise	32 channels assigned -89dBr
Crosstalk	No less than 90dBr

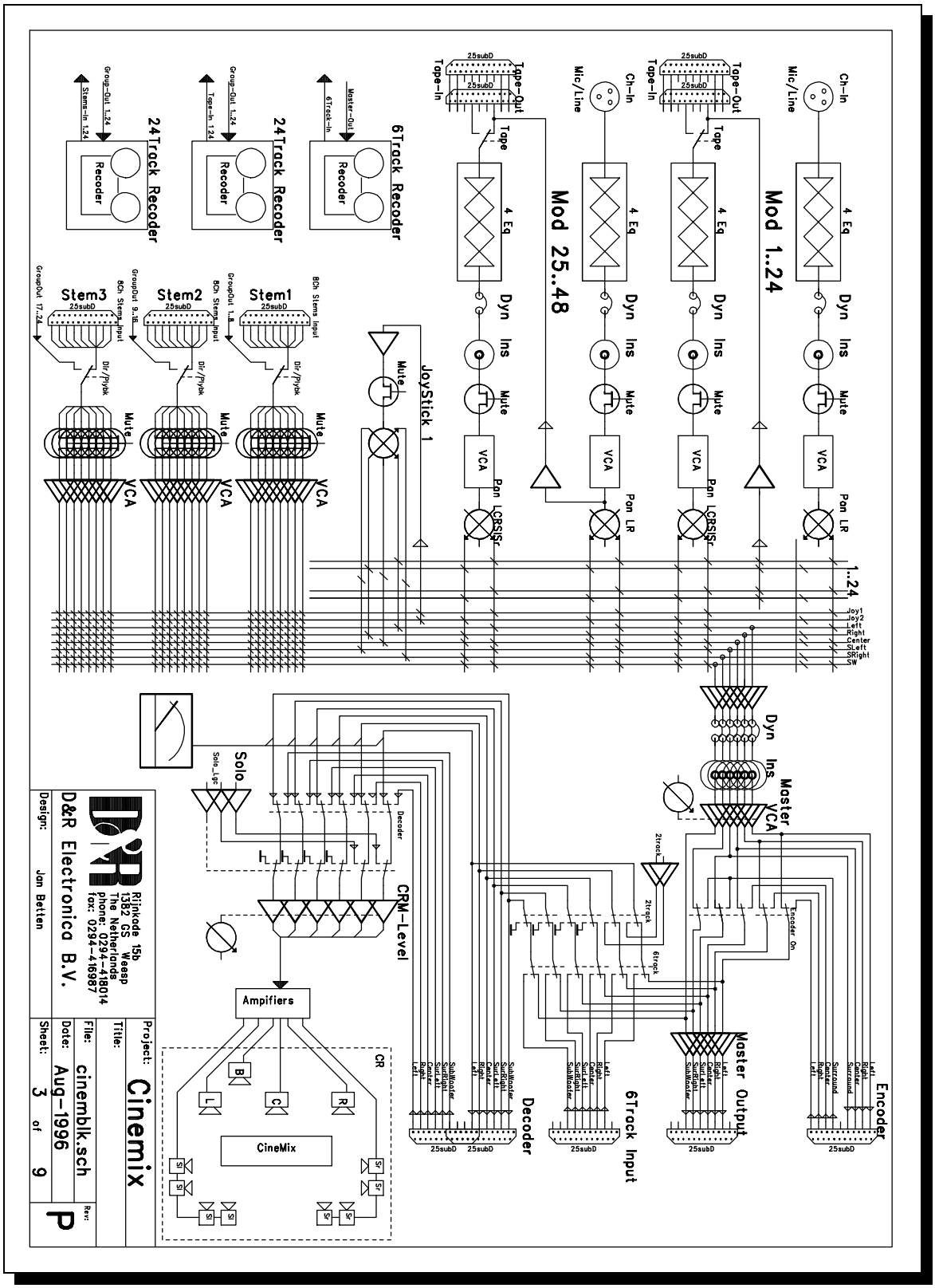
12.0 SIGNAL FLOW MASTER SECTION



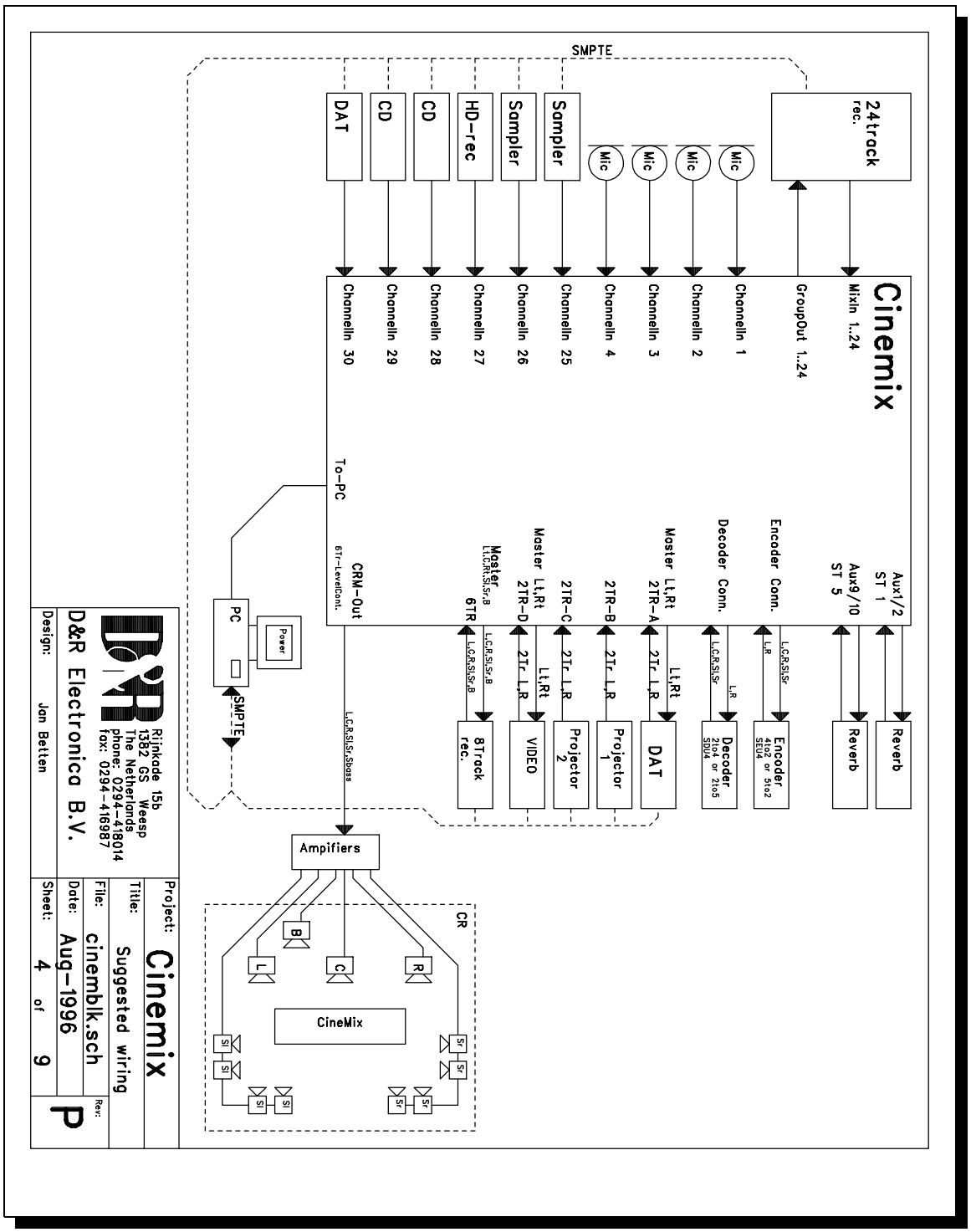
13.0 SIGNAL FLOW INPUT MODULE



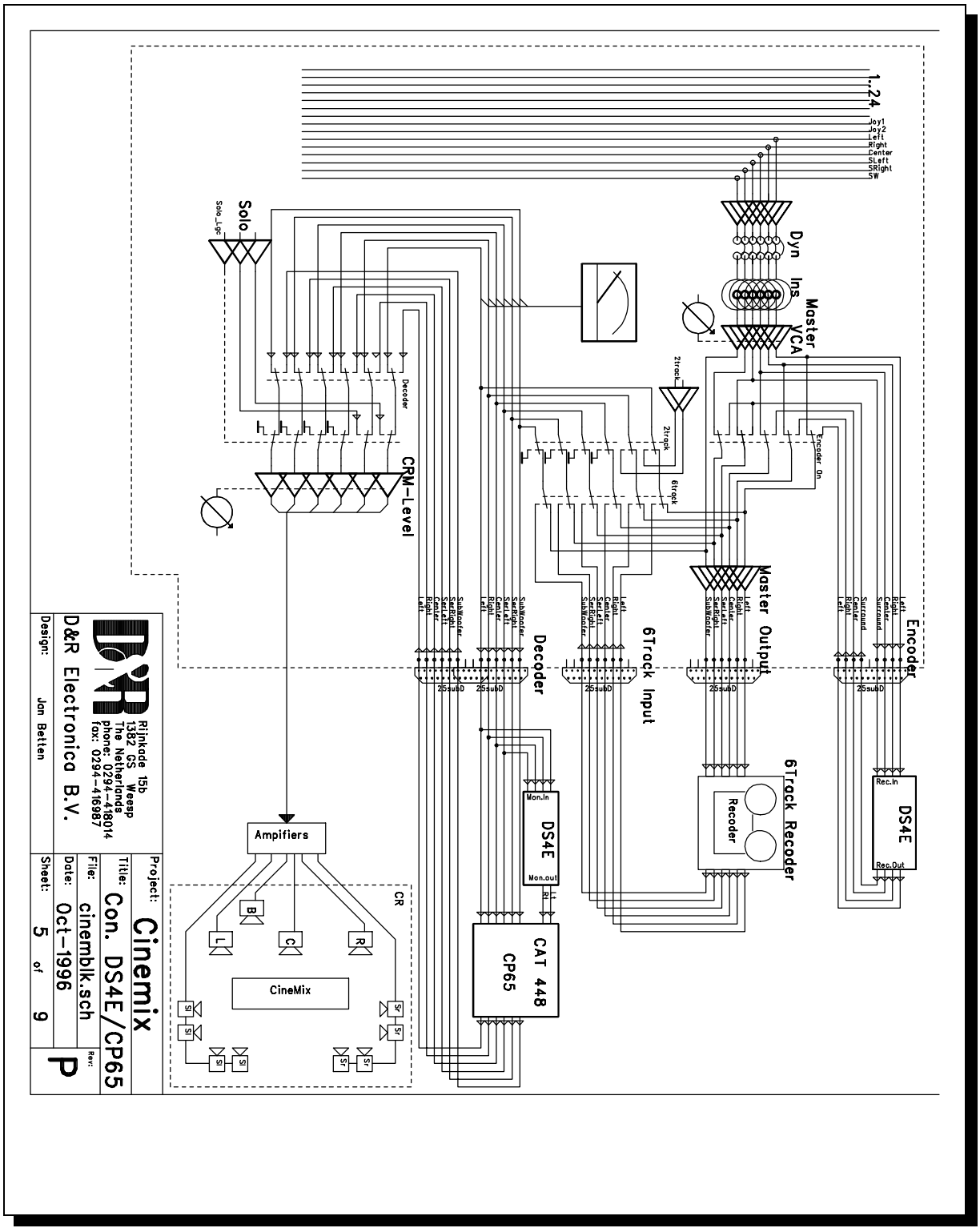
14.0
System signal flow Cinemix



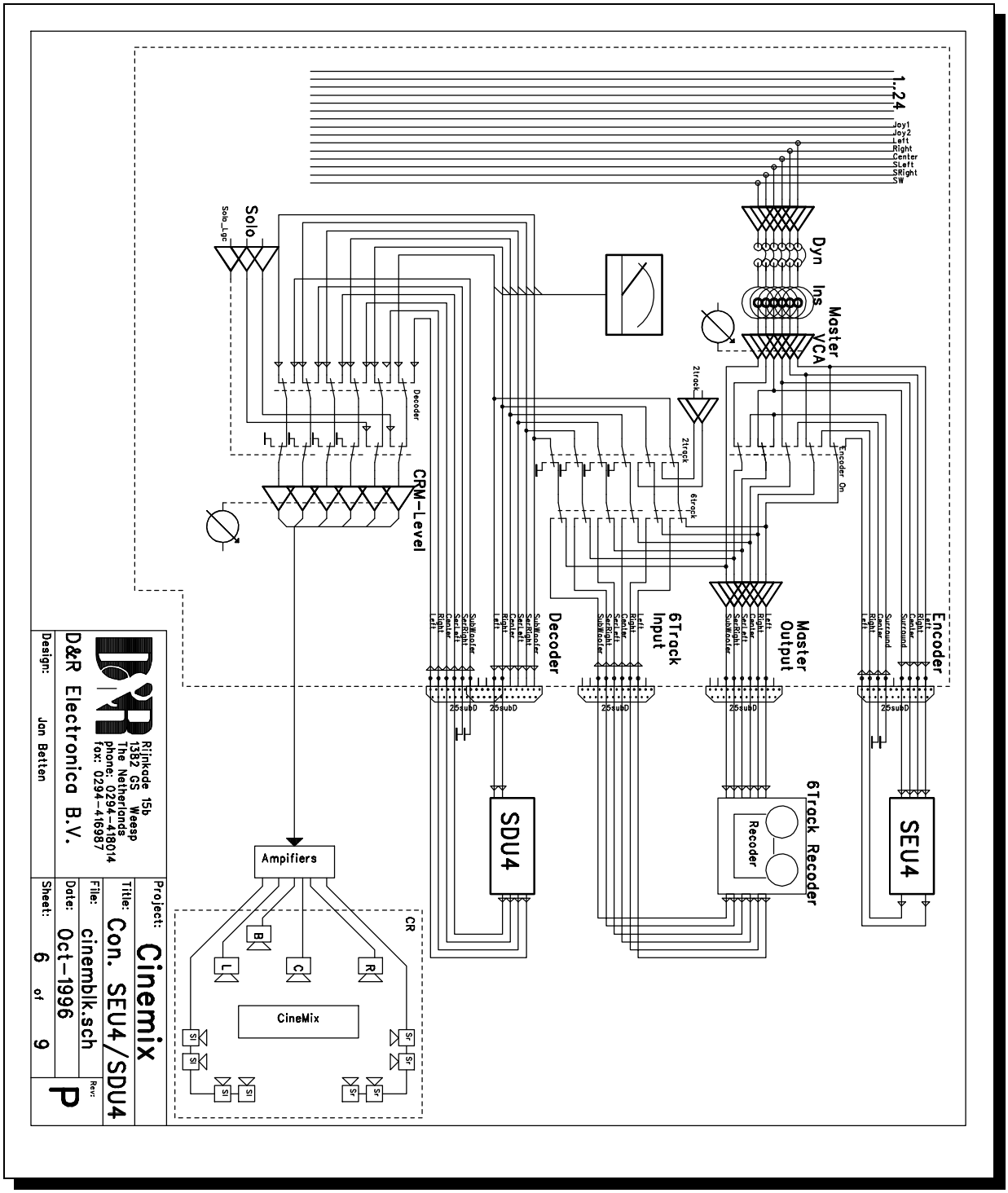
15.0
Interfacing with external equipment



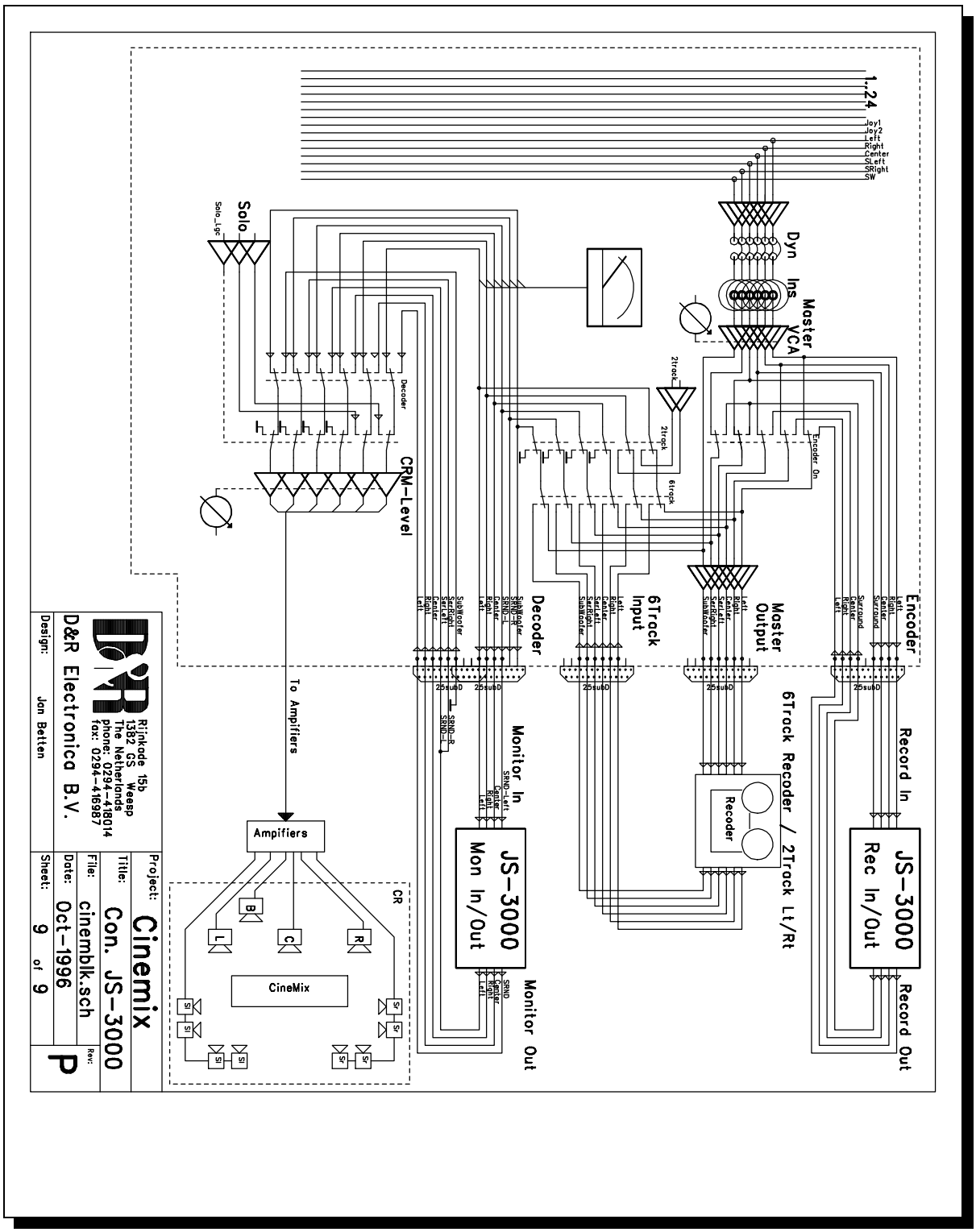
16.0
Interfacing with DS4E / CP65 17.0



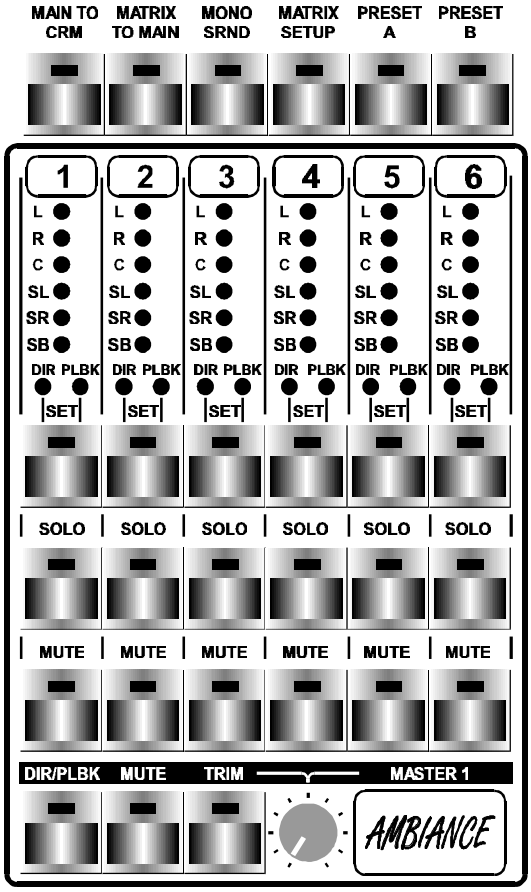
17.00
Interfacing with "Dolby" SEU4 / SDU4



18.00
Interfacing with JS-300



19.0 "Control Room Monitor Matrix" (for Stems/pre-recording)



1. The CRM (STEMS/pre-recording) module fits into 3 blind spaces positioned next to Cinemix's master section.

2. The STEMS module is able to mix down a maximum of 24 tracks (4 x 6 tracks or 24 tracks) into 4 Stems. (4x6x2)

3. The 24 tracks recording system can either be fed from the group outputs or, preferable from the 6 master outputs (Left / Center / Right / Left-surround / Right-surround / Subbass).
Its tape outputs and input shall be fed back into the STEMS module.

4. The output of the STEMS module is inserted in the Matrix insert (see Cinemix block diagram) or assigned to the 6 main busses for final track lay down in various formats such as 5.1 / 4 / stereo.

5. The STEMS module is divided into 4 identical sections for STEMS like Ambiance, Effects, Music and Dialogue.

6. On top of the STEMS module is a general programming area of 6 buttons.

7. The programming switches have the following functions:

8. **MAIN TO CRM** connects the main outputs (L, C, R. Sl, Sr, SB) to the CRM outputs as is default when no STEMS (matrix) module is fitted inside Cinemix's chassis.

9. **MATRIX TO MAIN** connects the summed outputs of the matrix to the summing busses (L, C, R, Sl, Sr, SB) of the Cinemix for final track lay down in the recording process.

10. **MONO SRND** switches the stereo surround output of the Matrix into mono to both surround outputs for 4 channel mixdown.

11. **MATRIX SETUP** puts the matrix in a programming mode. In this mode all inputs 1-24 can be individually assigned to one of the matrix outputs (L, C, R, Sl, Sr, SB) or to no output at all. Programming is done via the SET switch below the six assign LED's by stepping through all choices.

12. **PRESET A and PRESET B** is capable of putting the whole matrix in a preprogrammed mode instantly. Storing of a setup is done by holding down the PRESET A or B switch by more than 3 seconds.

13. **SET** is located below the 6 assign LED's and switches between Direct, Playback and Toggle mode. In Toggle mode the LED of the SET switch is off and the channel can be switched by the master DIR/PLBK switch.
Any combination of individual switching between direct (DIR) and playback (PLBK) and master DIR/PLBK switching can be programmed in this way.
The **SET** switch is also to be used for MATRIX SETUP (see point 12)

14. **SOLO** puts one input (either Direct or Playback) on Cinemix's Solo buss, post TRIM control.

15. **MUTE** cancels the output of a track

16. **DIR/PLBK** switches all six outputs between direct and playback of all input channels that are put in TOGGLE mode (**SET** led in switch is off).

17. **MASTER MUTE** mutes a whole group of 6 (complete STEMS)

18. **TRIM** activates the, otherwise fixed, master trim control for an overall adjustment of the complete 6 track (STEMS) level, when necessary.

19.1
INSTALLATION AND ALIGNMENT OF THE MATRIX MODULE

The STEMS/MATRIX module is built out of a number of horizontal PCB's with very complex electronics, and we advice you to be very careful when positioning the module inside the Cinemix console.

1) Power down the console.
Take out the 3 Blank modules positioned right of the Mastersection.

2) Connect the 10 wide flatcables to the corresponding 25pin Sub-D connectors on the backpanel of the Mastersection*.
Connect the 16 pole flatcable coming from p.c. board "Matrix 7" (connector J3 , remove jumpers) in the STEMS module, to connector J11 ("to pre recording") on p.c. board
"Cinem 3" (starting from the left, this is the first p.c. board in the mastersection).
Now connect both 64 pole flatcables** of the console to the two 64 pole connectors of the STEMS modules.

3) Check if everything is back on it's place again. Now power up the console. If there are signs of fire, explosions or any other things you normally would not expect from a mixing console, call D&R HQ.

4) Switch "Matrix to CRM" on.
Feed a balanced signal of +4dBu to input "Dir. 1" on the backpanel of the Mastersection.
With the switches DIR/PLBK on the frontpanel you can switch between the Direct and Playback inputs.
Route the signal to the CRM Left, Right or Center output of the Mastersection.
The level of the input now has to trimmed with the trimpot on the p.c. boards "Matrix 5". These are the 2 p.c. boards at the bottom of the STEMS module. Both these boards are totally equal to eachother.
The upper one is for the inputs 1-12 , the lower one is for the inputs 13-24. To trim the level of input "Dir. 1" you have to adjust trimpot "Dir1/13" on the upper p.c. board.
The input must be trimmed in such a way that the Master VU meters are at 0dB with an input signal of +4dBu (***).
Repeat this procedure for all remaining 23 "Dir." inputs and all 24 "Plbk" inputs.

5) After the installation of the STEMS module the communication between the module and the mastersection must be checked. See if the SOLO and MATRIX TO MAIN functions are working properly.

NOTES:
Depending if a new backpanel is supplied with retrofit kits for older consoles the cables may already be connected to the backpanel. These are the flatcables that are lying on the bottom of the console.
Several connectors are provided which all can be used.

*** This also applies for any external meters if used.

FUNCTIONS:

The STEMS/Monitoring Matrix Module is built up of 4 identical sections.
Each section consists of 6 tracks, each track with a "Direct" and a "Playback"input.
Each track has a dedicated "SET" , "SOLO" and "MUTE" switch.
A master "Direct/Playback" switch and a master "Mute" switch are positioned at the bottom of each section together with the "Trim switch and pot.
At the top of the module 6 masterfunction switches are positioned called "Main to CRM" , "Matrix to Main" , "Mono Surround" , "Matrix Setup" , "Preset A" and "Preset B".

INDIVIDUAL FUNCTIONS PER TRACK:

Each track consists of a strip starting at the top with a square indicating the track number (1-24).
Under the tracknumber 6 assign Led's are positioned which show if the output of the track is routed to either the Left , Right , Center , Surround Left, Surround Right or Subbass master buses or CRM outputs.

- SET.
The SET switch is located under the 6 assign led's. The SET switch enables the engineer to switch between the Direct and Playback signal. If the switch is put in Toggle mode (led in the switch off) the track output can be switched between Direct and Playback using the master Dir/Playback switch positioned at the bottom of the section.
The 3 following modes are programmed in sequence under the SET switch.

1)-Direct : the led in the SET switch and the red led at the left above the SET switch are lit.
2)-Playback : the led in the SET switch and the green led at the right above the SET switch are lit.
3)-Toggle : the led in the SET switch is off. The green or red led is on, depending of the position of the DIR/PLBK switch.

The SET switch is also used during the setup procedure of the module.
When the module is in setup mode the SEL switch is used to route the output of the individual tracks to the 6 master outputs.

-SOLO When the SOLO switch is activated the corresponding input (either Direct or Playback) is put on the Cinemix's Solo buss, post TRIM control.

-MUTE Each individual track has it's own Mute switch which mutes the output
of the track when activated.

Under the control switches of the individual tracks 3 more switches and a trimpot
are positioned for control functions for the corresponding group of 6 inputs.

-DIR/PLBK The DIR/PLBK switch switches all 6 outputs between direct and playback of all input channels that are put in TOGGLE mode (led in SET switch off, see explanation SET switch).

-Master MUTE When activated this switch mutes all 6 tracks of the corresponding group regardless the status of the individual mute settings. When the Master MUTE switch is deactivated again all settings will be the same as before the Master MUTE was activated.

-TRIM When the TRIM switch is activated, the master TRIM control pot can be used to adjust the overall level of the corresponding 6 tracks when necessary.
If the TRIM switch is deactivated the outputs are at a fixed level.

MODULE MASTER FUNCTIONS:

At the top of the module 6 master programming function switches are located. These switches are used to define and program the master status of the complete module.

-MAIN TO CRM When activated all main outputs (Left, Center, Right, Surround Left, Surround Right and Subbass) are connected to the CRM outputs.

-MATRIX TO MAIN When the MATRIX TO MAIN switch is activated the summed outputs of the matrix are connected to the master summing buses (L,C,R, Sl, Sr and SB) of the Cinemix. This feature can be used for final tracklaydown in the recording process.

-MONO SRND With this switch the stereo surround outputs of the matrix can be switched into mono signals to the Surround Left and Surround Right outputs.

-MATRIX SETUP the MATRIX SETUP switch puts the matrix module in a programming mode. In this mode all 24 individual tracks can be assigned to any of the 6 (L,C,R,Sl,Sr,SB) matrix outputs using the SET switches on each track.

-PRESET A and PRESET B.
The matrix module can be put in two different pre-programmed setups. When a setup has been programmed in the MATRIX SETUP mode, this setup can be stored by pressing either PRESET A or PRESET B. When working with the module, either PRESET A or PRESET B must be activated.

If there is any question left do not hesitate to call our service department at 0031 294 418014 or preferrably send a fax with your questions to 0031 294 416987 an E-mail is also possible to info@d-r.nl

19.2. ALIGNMENT OF VCA's:

a. Activate all the TRIM pots by activating the TRIM switch and position the pots in their mid position.
b. Connect a voltmeter between pin 2 and 3 of VCA IC-8
c. Now adjust with the small blue adjustment trimmer pots on PCB 5 the reading to be 0 volt.
d. Repeat this procedure for IC-30 and all for all other VCA banks.
e. Now the VCA's are controlled by the trimmer pots on the Matrix 4 PCB
f. Now adjust the 4 trimmer pots on matrix 4 PCB (CPU) by adjusting the trimmer pots on matrix 5, VCA-IC8 and VCA IC30. Measure between pin 2 and 3.
g. Now all VCA's are trimmed for 0 dB unity gain.
h. Now connect a +4dBu signal on the dir/playback output and select via the frontpanel switches an input (dir or playback) and assign this to an output of J3 Matrix 7 PCB. The input can be trimmed with the trimmer pot near the VCA. The output should read 0dB with an input of +4dBu balanced.
i. First trim the input level and check whether this signal can be assigned to all outputs.
j. Check if both inputs (DIR/PLAYBACK) are properly working
k. Check if the meter output has a level of 0 dBu.
l. Check if SOLO works.
m. Check if the VCA leveling works.
n. Repeat this procedure for all 24 inputs.
o. Check if the switches Main to CRM / Matrix to main / and Mono surround work properly.
p. If there is only signal on Surround Left or Right and the Surround outputs are set to mono surround the output level should read -6dB.

20.0

Conformity statement according to ISO/IEC Nr 22 and EN 45014

Name Manufacturer	D&R Electronica Weesp b.v.
Addres manufacturer	Rijnkade 15B, 1382 GS Weesp, The Netherlands

declares that this product

Name product	CINEMIX
Modelnumber	n.a.
Produktoptions	All

passed the following product specifications:

Security	EN 60950: 1988 +A1, A2
EMC:	CISPR-22: 1985 / EN 55022: 1988 class B (*) EN 50082-1: 1992 IEC 801-2:1991 / prEN 55024-2:1992 - 3kV CD, 8kV AD IEC 801-3:1984 / prEN 55024-3:1991 - 3 V/m IEC 801-4:1988 / prEN 55024-4:1992 - 0.5kV signalcables, 1 kV powercables.

Extra information:

The product passed the specifications of the following regulations;

Low voltage 73 / 23 / EEG
EMC-regulations 89 / 336 / EEG.

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

21.0

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 servicable 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 SOUND

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 **qualified service technician**

PLEASE READ THE FOLLOWING INFORMATION

Especially in sound equipment on stage 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 practise 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 vica 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 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 dangereous.
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.

If you are playing on stage your body is perspiring extensively and your body resistance is lowered by more than 50%. This is a situation in which current can easily flow.
Current will flow when there is a difference in ground potential between equipment on stage and in the P.A. system. Please do check if there is any potential between the housing of the mikes and the guitarsynth amps, which will be linked by your body on stage. Imagine, a guitar in your hand and your lips close to the mike! A ground potential difference of above 10 volts is not unusual, in improperly wired buildings it can possibly be as high as 240 volts.

Allthough removing the ground wire sometimes cures a system hum, it will create a very hazardeous situation for the performing musician.
Always earth all your equipment by the grounding pin in your mains plug. Hum loops should be only cured by proper wiring and isolation input/output transformers.

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 carefull 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 inmediately

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

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The Netherlands
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FAX: ++31 294-416-987

Website: http:///www.d-r.nl
E-mail: info@d-r.nl

Dear Cinemix owner,

In this manual we have tried to give you an overview of all that the Cinemix has to offer. If you have any questions, do not hesitate to contact us or the D&R USA customer support department.
With the Cinemix series there is no limit to your creativity.
We wish you many years of enjoyable mixing.

Best regards,

Duco de Rijk
PRESIDENT D&R, HOLLAND

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.