THE FUTURE IS ALL AROUND US.

The notion of sound from a multichannel source - i.e. more than two speakers - has been with us for some time already, although until now, it has been limited mainly to the cinema. The advent of new delivery systems capable of carrying up to six channels of audio - most notably digital TV, Dolby/DTS-encoded DVD and the promised Super CD formats - mean that the demand on studios to be able to handle multichannel formats will dramatically increase, and these formats will soon become the norm.

The Cinemix 2 has been designed from the outset to be completely capable of working in 4-, 5- and 6-way formats, as well as stereo.

Other consoles in the Cinemix's price range claim to be "surround-capable", but this usually means shared busses, inadequate panning, limited monitoring, difficult interfacing - probably all of these and more. Only the Cinemix 2 truly delivers, without compromise, because Cinemix 2 includes, as standard:

v A 6-wide dedicated main buss.
v Full LCRS and 5.1 panning on every module
v Dedicated 6-way metering
v Dedicated 6-way monitor returns
v Dedicated audio interfaces for connection of outboard surround processors (e.g. Dolby CP65 or SEU4/SDU4)
v Optional 24/6 film-style monitor matrix for full stems monitoring
v Traditional film-style routing

INTRODUCTION - THE D&R PHILOSOPHY.

The Cinemix 2 brings together more than 25 years of D&R's experience in designing and building professional audio mixing consoles for all applications - music recording and mixing, sound reinforcement, TV & Radio on-air and post-production.

D&R's philosophy has always been to concentrate on customers' individual requirements rather than embarking on massive volume production runs of identical "brown-box" products. When you become a D & R user, you become a "friend of the family", and will enjoy the close support that only a specialist manufacturer can provide.

D & R consoles have always enjoyed a reputation for innovative design ideas, excellent - and musical - audio quality, high mechanical standards, and - above all - superb value-for-money. As you would expect, these qualities are all abundantly present in the Cinemix 2. But in addition, it provides a truly impressive feature set for its price range and is capable of recording and mixing in all surround formats up to 6-way.

Cinemix 2

OVERVIEW.

Cinemix 2 is a compact, automated, in-line multitrack analogue mixing console primarily intended for recording and mixing in music, TV Post and Film applications. Unlike any other console in its price range, the Cinemix 2 is completely configured and ready for surround sound work.

Cinemix 2 employs the industry-standard in-line architecture, with two signal paths per module. In common with current practice, the lower (long) fader is the Mix (or Monitor) Path, the (short) upper fader the Channel Path. However, unlike most in-line consoles, each Path has its own independent fully-swept 4-band EQ section, and an automated fader (motorised faders optional).

This means that on mixdown, Cinemix 2 can give up to 116 automated inputs (including stereo returns) with full EQ.

EXTENDED FREQUENCY RESPONSE.

In designing the audio path of the Cinemix 2, great care was taken to maintain the audio bandwidth well beyond the usual 20kHz upper limit. This is in line with the now widely-accepted idea that naturally-occurring harmonics above 20kHz play an important part in accurate reproduction, though not directly audible themselves. In particular, the effective range of the equalisers is deliberately extended beyond 20kHz to give a level of subtle HF control not apparent on most other consoles.

Many module switch functions, including all routing, are centrally-assigned using D&R's exclusive ARM System, resulting in a compact and uncluttered module. These settings may be stored and recalled, allowing different console routing setups to be instantly reset.

AUTOMATION AND DYNAMICS.

D & R's easy-to-use, proprietary timecode-based PowerVCA automation system is fitted to the Cinemix 2 as standard. PowerVCA runs on a standard PC, and all automation operations can be supervised via an external VGA monitor.

The Cinemix 2 may be fitted with the optional Dynamics system, providing a range of hardware compression and gating functions on some or all inputs as required, including stereo returns.

The console is available in two versions, optimised for Music or Film applications respectively. They are very similar, and differ in the design and facilities of the Master Section and the routing pcb's of the input modules, the Film version (Cinemix 2) giving the greater flexibility of routing options required in Film work.

THE D&R CINEMIX 2 - MAIN FEATURES.

v 32- and 48-input module frame sizes
v Timecode-based automation of all faders and mutes
v Excellent audio performance
v Two automated faders on every module

v Moving faders on either signal path (optional)
v All configurations include 5 dual stereo return modules
v Two 4-band equalisers on every module (fully swept on mono channels)
v 24 main busses, 10 aux busses and 6-way main buss
v "Film" version has enhanced routing
v Two automated joystick panners with displays
v Dedicated bypassable interfaces for encode/decode systems.
v Comprehensive integral jackfield
v Per-channel bargraph metering, either 13- or 25-segment
v Moving-coil VU meters on 6-way main outputs
v Per-channel Dynamics (Optional)
v 6ch. monitoring system with matched VCA's and individual speaker mutes
v Stems Monitoring module for traditional film-style monitoring (Optional)
v Calibrated monitor return gain mode for stems returns when Stems Module not fitted.
v 6ch. Tape Return to monitors.
v Programmable Macro buttons
v Snapshot recall of all routing assignments
v Automation Trim mode
v Off-line editing of mix data
v Switched phantom power on all mic inputs
v Heavy duty 4HE powering

CONFIGURATIONS.

Two chassis sizes are available, accepting 32 or 48 in-line modules respectively. All consoles are equipped, when fully loaded, as standard with 5 dual stereo modules, the master section, 3 blank positions (reserved for the optional Stems Module, if fitted) and a fully-equipped jackfield. Thus, the two chassis sizes provide a maximum number of 84 or 116 inputs to the mix respectively.

THE DUAL INPUT PATH MODULE - DESCRIPTION.

The dual-Path in-line input module provides two independent signal Paths, designated the Mix Path (lower fader) and the Channel Path (upper fader).

In common with standard in-line practice, the Channel Path will normally

be fed with the signals to be recorded, while the Mix Path receives either the Group output or Tape Return.

However, numerous other signal flow options can be set up, allowing the Cinemix 2 to be used in almost any recording or mixing situation.

Input stages:

The LINE button selects mic or line input levels to the Channel Path. A dedicated high-quality low-noise balanced mic amp stage, with switchable phantom power, is employed for the mic. input. CHAN GAIN and MIX GAIN adjust the input levels to the two Paths.

All external inputs are electronically balanced.

The FLIP button reverses the normal input source selection, allowing the Group/Tape signal to be fed to the Channel Path, and the Mic/Line signal to the Mix Path.

Selection of Group Output or Tape Return is part of the ARM system (see below) and is commanded from the Master section.

EQ:

Both Paths of the module have identical EQ sections. All 4 bands are swept, with generous overlap, permitting powerful and effective EQ adjustment in all situations.

The Channel Path EQ additionally includes a switched hi-pass filter, with -3dB point of 100Hz. Either EQ section can be completely bypassed with the EQ button.

VCA Faders:

Both signal Paths feature VCA faders for automation. (Motorised faders are optional). Each fader is associated with a MUTE button (also automated) and a SEL switch which selects the automation mode - Read, Write or Update - for each fader. Each signal path also has a SOLO button, which selects either the Prefade signal (PFL) or the Postfade signal (AFL) to the monitor section.

Aux. Sends:

Cinemix 2 has a total of 10 Aux. busses. Each of the two Paths has four mono Aux. sends (1-4 & 7-10), with independent LEVEL controls. One pair in each Path can be switched with the POST button to be sourced either from the Prefade or Postfade signal in its Path (the other pair is normally Post, but can be internally jumpered to be Pre).

The remaining pair (Auxes 5/6) is configured as a stereo Send, with LEVEL and PAN controls. It can be sourced from either signal Path, and can be switched Pre or Post in either Path. The Stereo send can also be switched to the 24 group routing busses, instead of Aux Busses 5 & 6. This permits the main busses to be used as additional Aux. Sends during mixdown, increasing the number of Auxes available on the Cinemix 2 to 34. The ARM System (see below) is used to set this routing.

Routing and Panning:

Either signal Path, or the stereo Aux. send, can be routed to any of the 24 group busses or the 6-way main buss. using the ARM (Advanced

Routing Multiplex) System located in the Master section. The large ARM button next to the Mix fader assigns the module to the ARM section, and LED's give constant indication of routing assignments on each module.

The Mix Path is fitted with two Pan controls, LCR PAN and SRND PAN, to permit full 5-way Surround panning, either across the main mix buss, or the 24 group busses in 4 sets of 6, depending on how the routing has been set up.

The LCR button is simply not pressed if mixing is to stereo only. Automated dynamic panning may be achieved by routing the module to one of the two joysticks in the Master Channel, also done using the ARM System. The Channel Path is fitted with normal stereo panning. (Channels carrying signals destined for the sub-bass output in a 5.1 system have the Postfade signal routed to the sixth buss in each set.)

Inserts:

Each signal Path has send-and-return insert point, accessible on the jackfield. The returns are fully balanced.

DUAL STEREO MODULE - DESCRIPTION.

All Cinemix 2 consoles are fitted with 5 Dual Stereo Return modules, each of which has two Stereo Returns. Apart from the absence of a mic amplifier and surround panning, the facilities are virtually identical with those of the Dual Input path modules.

Input stages:

Each Stereo Return (A & B) has its own input accessible at the console rear and on the jackfield.

All inputs are electronically balanced. Each Return has a GAIN control, and each may be configured as a MONO return if wished.

EQ:

Each Return has an identical 4-band stereo EQ section. As the Stereo Returns will be generally used for pre-recorded stereo sources or FX returns, the full flexibility of the mono EQ is not required, and the 4 bands have fixed centre frequencies. These are at 60Hz, 250Hz, 5kHz and 10kHz. Both Returns include a switched hi-pass filter, with -3dB point of 100Hz. Either EQ section can be completely bypassed with the EQ button.

VCA Faders:

As on the Dual Input Path modules, both Returns use VCA faders for automation. (Motorised faders are optional). Each fader has an automated MUTE button, a SEL switch and a SOLO button, which function in a similar fashion to their counterparts on the Dual Input Path modules.

Aux. Sends:

The Aux. Send arrangement is also identical to that on the Dual Input Path modules.

Each Return has four mono Aux. sends, with one pair in each Return switchable Pre/Post, the other selectable Pre or Post internally. The remaining pair is a stereo Send, and can be

sourced from either Return. It can be sourced Pre or Post from either Path., and can also be switched to the 24 group routing busses using the ARM System in the same fashion as the mono channels, allowing the main busses to be used as additional Aux. Sends.

Being a Stereo Return, the L leg in each Stereo Return feeds the odd-numbered Aux. busses and the R leg the even.

Routing and Panning:

The ARM System in the Master section sets the routing from either Return, or the stereo Aux. send, to any of the 24 group busses or the 6-way main buss, using the large ARM button. Again, LED's give constant indication of routing assignments on each module. An L/R Pan control is fitted to each Return.

MASTER SECTION - DESCRIPTION.

The Cinemix's Master section is 6 modules wide and provides control of all the console's Master, Monitor, ARM System and ancillary functions. The Master section comes in two versions - for the Music and Film versions of the console, although many functions are common to both.

Master Fader:

A 6-channel main fader is situated at the bottom of the module for easy access. The fader is automated (No motorfader option here, sorry). This fader controls a bank of six carefully-matched VCA's to ensure accurate tracking (and consequent maintenance of image) over the whole gain range.

The "top" of the master fader corresponds to 0dB gain to allow the fader to be left at this position for most normal operations.

ARM System:

The Advanced Routing Multiplex System allows many mechanical switches to be removed from the input channels, allowing a smaller and simpler module, greater reliability and instant reset of routing setups.

The ARM System controls the routing (and some other functions) of the input channels.

The ARM area of the Master section is made active for any one module by pressing the ARM button on that module. All ARM buttons have integral LED's, to
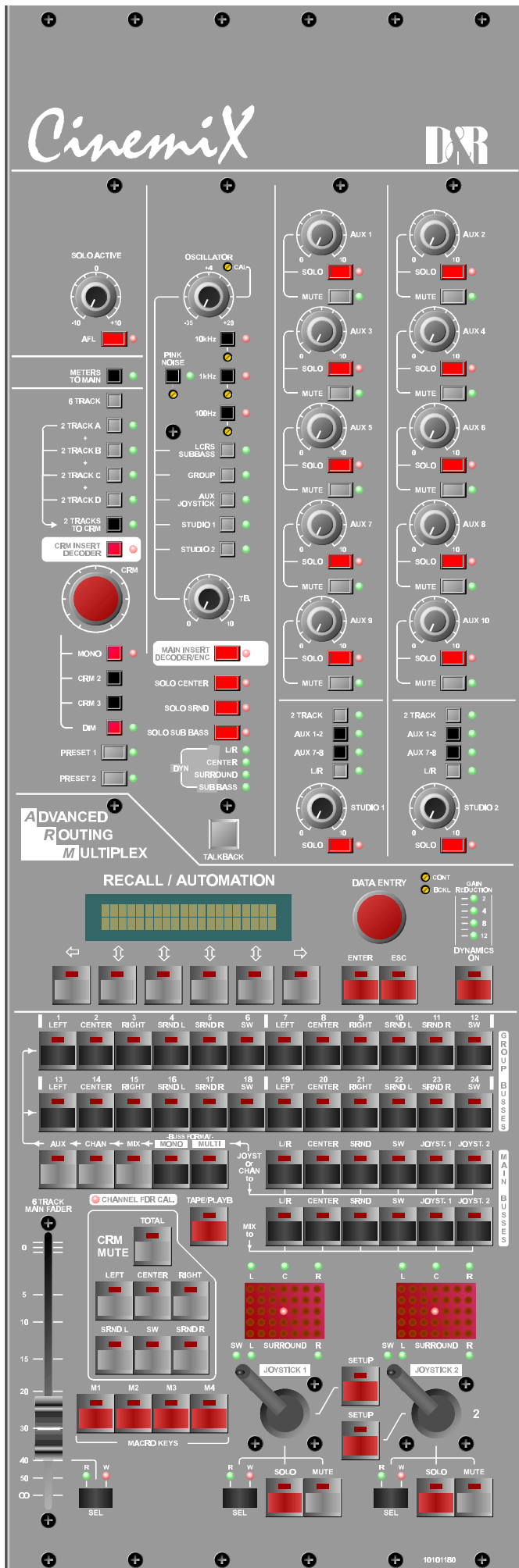
display the current routing status for that module. The Film version of the Master section has additional routing buttons; conventional pairwise routing is provided for the 24 group buses on the Music version, and individual buss routing on the Film version.

The Main Busses can be similarly accessed using the two sets of routing buttons below the group routing. The AUX/CHAN/MIX buttons determine which Path in the input module is selected to the routing.

GROUP/TAPE (A/B) source selection to the Mix Path is also commanded from the ARM System.

The ARM system also allows the assignment of the two joystick panners to any channel on the console, to permit two-dimensional dynamic panning effects to be achieved more easily than with the channels' rotary pan controls.

The joysticks are automated, so that panning movements can be recorded as part of the mix. Each joystick has a matrix of LED's to provide visual indication of the image position.

Automation & Dynamics Control:

The built-in LCD display allows entry of data into the Cinemix's automation, dynamics and recall systems, with the associated softkeys below the display and the large data entry wheel. A system of simple menus gives quick and easy access to all control parameters.

Monitoring Functions:

The Master Section also allows control of all the Cinemix's monitor functions, which are far more comprehensive than found on other consoles in this price range. The monitor system is, of course, capable of supporting the six speakers used in 5.1 work. Mono and Dim functions are provided. Two additional sets of CR (Control Room) monitors may be connected, as well as two pairs of Studio Monitors with their own independent source selections and level controls. Four stereo and a six-track returns are provided into the monitor system for final mix checking.

An important provision of the monitoring system is a 6-way insert for the connection of a surround sound decoder, and bypass switches are provided for both this and its complementary encoder (which has its own interface).

Two PRESET buttons set the monitor chain gain to correspond with previously-calibrated SPL's for film work.

Ancillary Functions:

Master Aux Send level controls are provided, each with mute and solo controls.

Full talkback facilities are provided and a 3-frequency line-up oscillator with variable and calibrated levels is also included.

METERING.

Bright 13-segment LED bargraph meters are fitted in the integral meterbridge, one above every channel. These normally indicate the input source to the Mix Path of each channel, but may be switched per-channel to read the Channel Path signal. The Dual Stereo Return modules each have a dual version of the bargraph fitted.

Alternatively, high-definition 25-segment bargraph meters are available as a standard option. Six moving-coil VU meters are fitted above the Cinemix's Master Section, showing the main L, R. C. LS, RS and SubWoofer outputs.

AUTOMATION.

D&R's proprietary PowerVCA automation system is fitted as standard on the Cinemix 2. PowerVCA is a simple and flexible system, providing timecode-based automation of the faders and mute switches - both upper and lower - on all input channels, including the Dual Stereo Returns.

PowerVCA runs on an external PC and a colour display gives clear graphic representation of all fader and mute statuses, as well as access to the various subroutines, such as Mix Editing, Grouping, Project Management, etc.

Up to 8 VCA Control Groups - of any combination of faders - can be formed within PowerVCA, which permit any unused fader anywhere on the console to be a VCA Master for a Group.

A useful feature of PowerVCA not normally found on simple automation systems is the provision of a Cue List, showing all mute and fader actions as timecode events. A comprehensive set of routines enabling off-line manipulation of mix data - such as level trimming and mute editing - is included. Moving Faders are available as a standard option

DYNAMICS.

The Cinemix 2 is available with D & R's flexible PowerDynamics dynamics package as an

inexpensive, standard option. PowerDynamics consists of a hardware-based, programmable dynamics processor in as many faders (in blocks of 8) as wished. PowerDynamics adds compression, limiting and gating to the Cinemix's already extensive set of features, and it should be noted that the processing is entirely analogue, thus preserving the console's excellent audio performance. The PowerDynamics on any channel can be hard-bypassed if wished, further maintaining audio integrity. Control of the Dynamics processors is simply accomplished through the LCD display and associated controls in the ARM area of the Master Section.

STEMS MODULE.

Traditional large-scale film mixing techniques invariably call for the creation of multiple "stems" or "premixes", which typically represent the dialogue, music, Foley, atmospheres, effects, etc. elements of the overall final mix. For ultimate flexibility in film mixing, stems may often be kept separate right up to the final mix, and the mixer needs to be able to mute and solo each stem as well as being able to make adjustments to the individual components within each stem. This requirement - specifically a monitoring one - necessitates a quite different architecture of the console monitoring system to that of a conventional music console, and it is for this reason that the Cinemix 2 Stems Module is available as a standard option. The Stems Module is installed in a 3-module-wide area reserved for it adjacent to the Master section, and is basically a 24/6 matrix with two selectable inputs (Pec/Direct) per input leg, which is inserted in the monitor path.

LED's provide clear, permanent indication of the mapping of the 24 matrix inputs to the 6 outputs. There are two memories for storing & resetting the most commonly-used matrix setups. Each input can be set to DIR or PLAY (Pec/Direct in film terminology, or A/B in broadcast), or can

be assigned to a TOGGLE group, for multiple Dir/Play switching. Each input can be solo'd or muted. The Stems Module may be bypassed completely when not required.

TECHNICAL SPECIFICATIONS.

Inputs:
Mic: 2kOhm bal. noise: -129 dBr, max gain 84dB.
Line: 10kOhm bal. 0dBu, +/-20dB.
Tape: 10kOhm bal. +4dBu (+/- 20dB adjustable).
Insert returns: 10kOhm bal. 0dBu.
2/6 Track: +4dBu bal., 10kOhm.
En-/decoder: 0dBu in/outputs.

Outputs:
Tape (group) outputs: +4dBu/-10dBv selectable
All outputs: +4dBu Ground compensated balanced, max output +22dBu.
Master Left/Right outputs: +4dBu balanced.
Insert sends: 0dBu (gnd. comp.) bal.

Overall:
Headroom: no less than 22dB.
Freq. resp: 10Hz - 100,000Hz (-2dB).
Harmonic distortion: 0.007% (VCA out)
Harmonic distortion: 0.016% (VCA in, That 2180B, 2nd harmonic dist.)
Noise: 32 channel routed -89dBr.
Crosstalk: no less than 90 dBr.
OPTIONS.
"Film style master section"
"Stems pre-recording module"
"PowerFade" Motorfaders (follow VCA's).
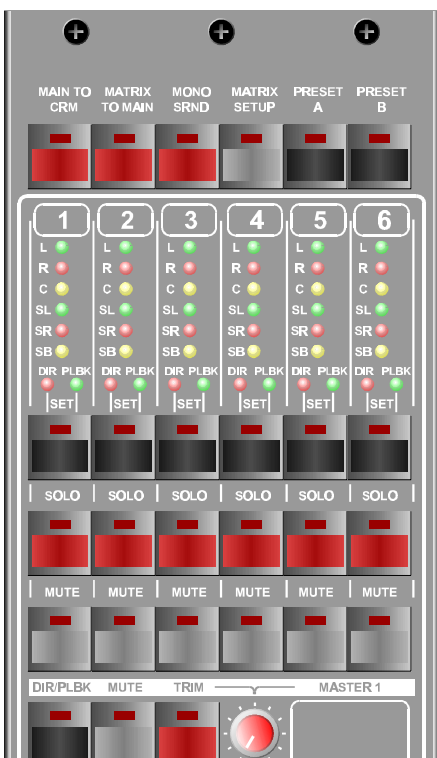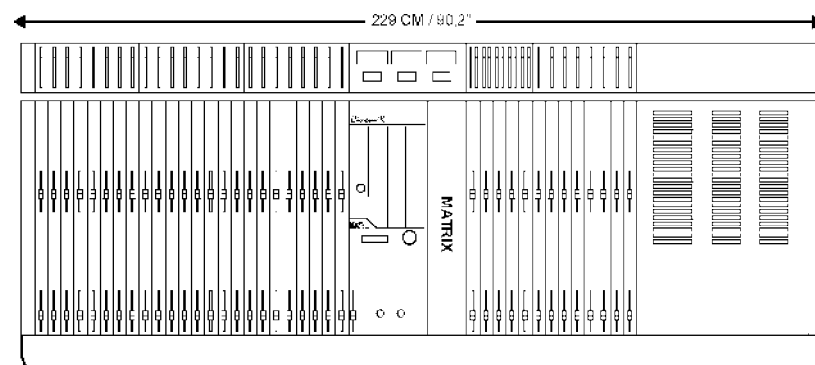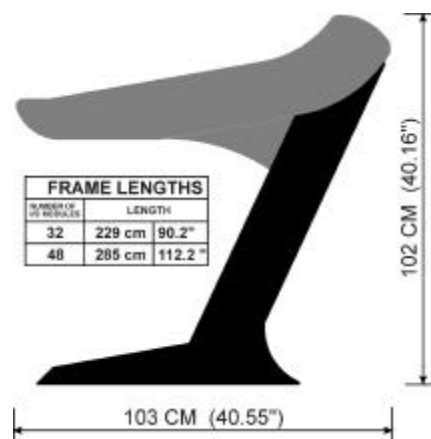"PowerDynamics" (Virtual dynamics).
"25 segments LEDbars"

CONFIGURATIONS: (suggested)

Cinemix-2 32:
24 dual-line modules / master/
3 blanks(or STEMS module) / 5 stereo-returns /
8 dual-line modules / patchbay.

Cinemix-2 48:
24 dual-line modules / master /
3 blanks (or STEMS module) / 5 stereo-returns /
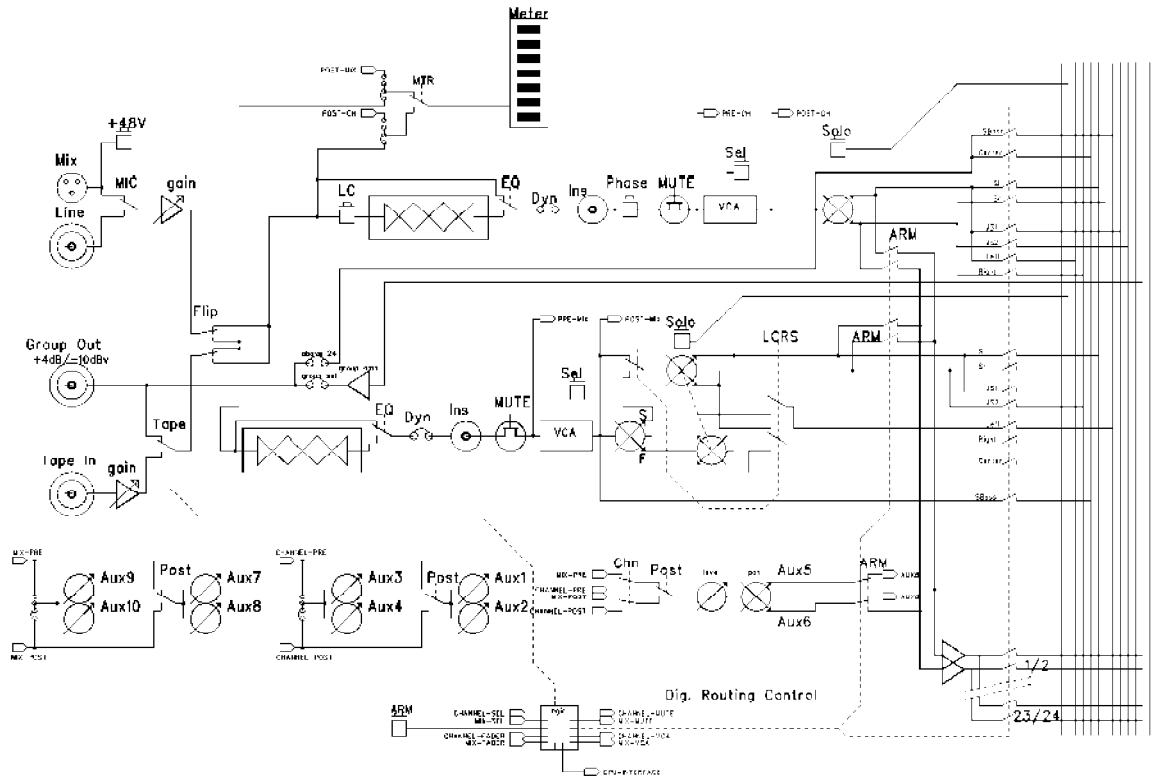24 dual-line modules / patchbay.

SIZES AND WEIGHTS.
Cinemix 2 32: 300kg / 660 Lbs.
Cinemix 2 48: 400kg / 880 Lbs.

CONNECTIONS & PATCHBAY.

All connections to and from the Cinemix 2 - apart from the mic inputs - are on multiway connectors located at the console rear, either behind the Master Section, or behind the patchbay. The mic inputs are on XLR's at the rear of each Dual Input module.

The Cinemix 2 is supplied as standard with a Bantam (TT) patchbay of a modular design for ease of maintenance. High quality goldplated TRS (tip-ring-sleeve) jacks are used throughout. The patchbay provides access to all normally-needed console inputs, outputs and insert points, and full and half-normalling is used in most cases to permit normal console operation with a minimum of patchcords.256 free jacks (FX ties) are included on every patchbay for connection of external studio processors, tielines, etc. These are conveniently terminated on additional multiway connectors at the console rear.

The patchbay is normally fitted at the right-hand end of the chassis, but may be specified to be at the left-hand end to special order.

FRAME LENGTHS	
NUMBER OF I/O MODULES	LENGTH
32	229 cm 90.2"
48	285 cm 112.2"

102 CM (40.16")
103 CM (40.55")

For more information about Cinemix 2, contact D&R's support staff.

Cinemix input module signal flow

Cinemix master module signal flow