

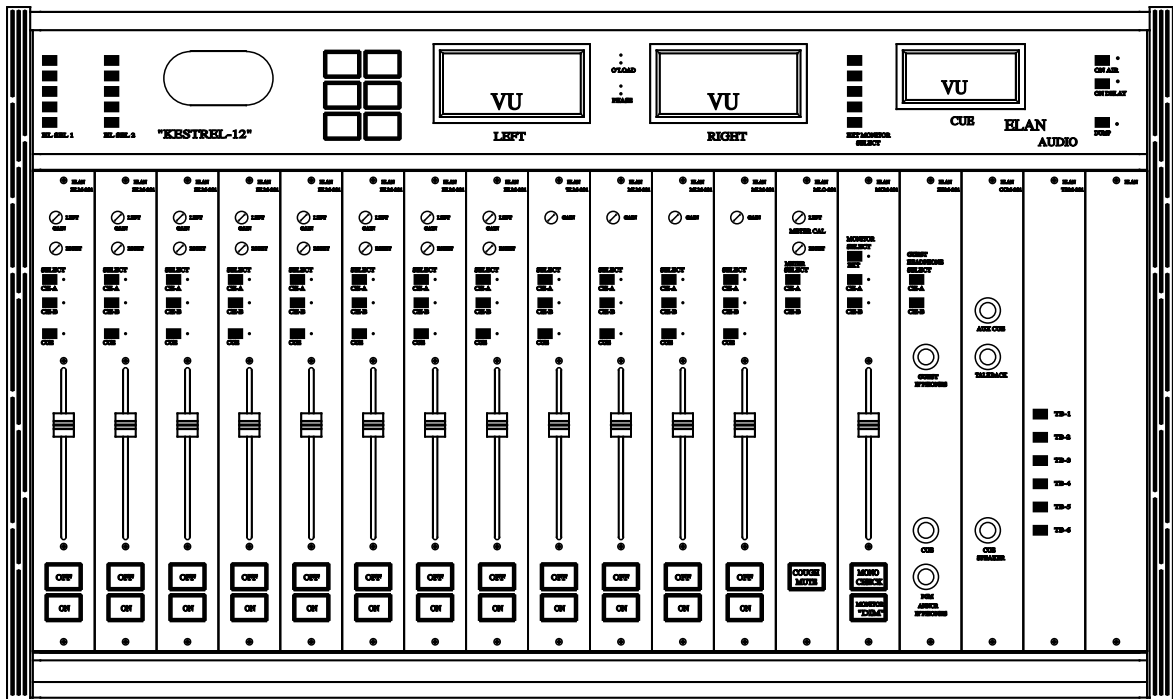
ELAN Audio

Promotional Information

"Kestrel-12" and "Kestrel-16" Modular Dual Channel Stereo "On-Air" Mixer



"Kestrel-12"



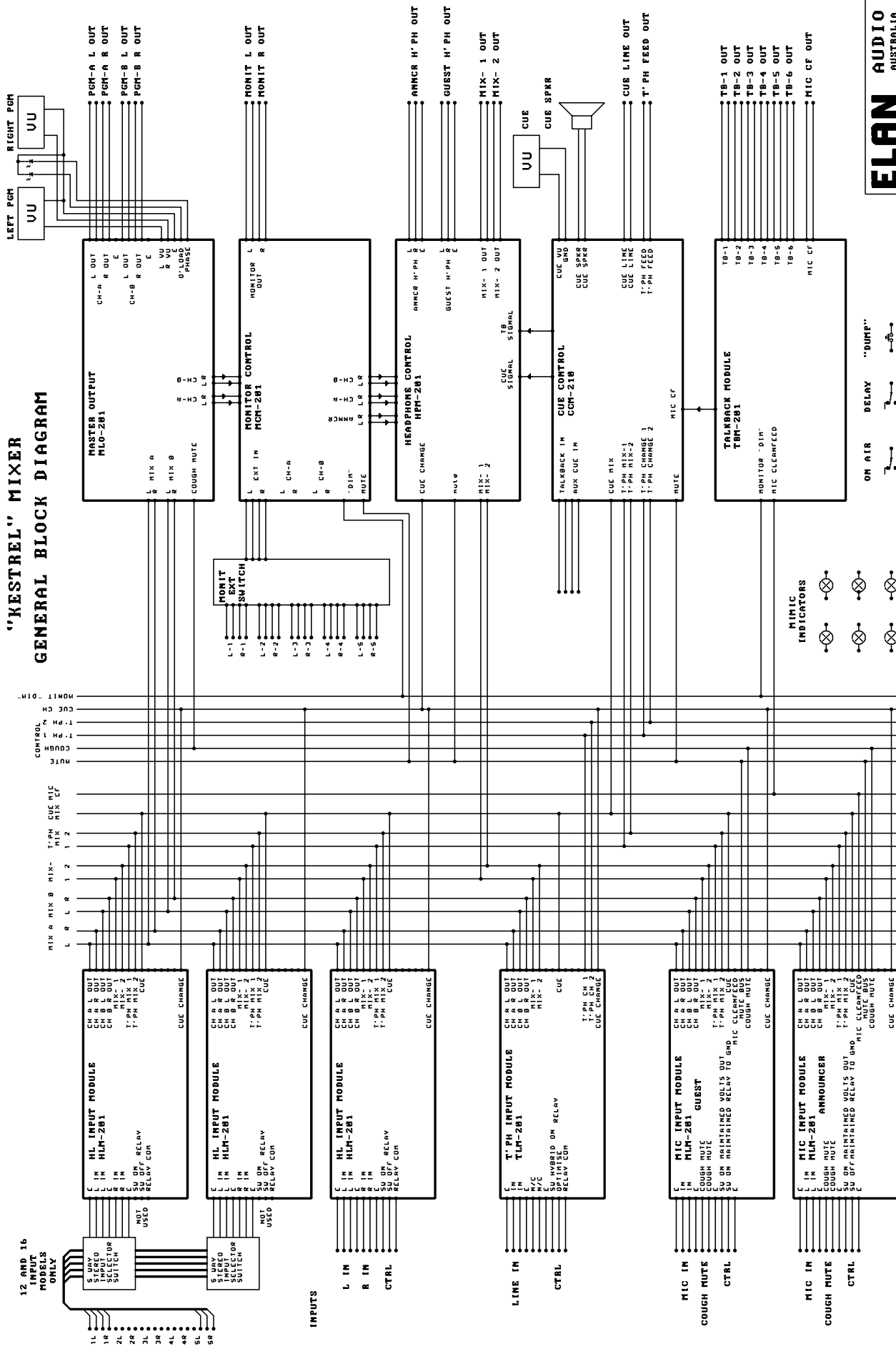
Manufactured in Western Australia by

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Phone 08 9277 3500. Fax 08 9478 2266. email sales@elan.com.au www.elan.com.au

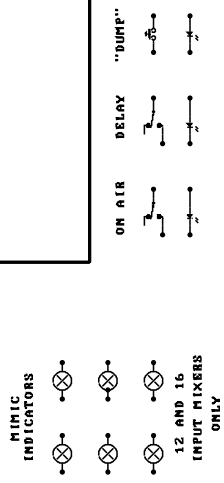


"Kestrel-12" Mixer installed at Radio 2 CS Coffs Harbour NSW

"KESTREL" MIXER GENERAL BLOCK DIAGRAM



ELAN AUSTRALIA
 BLOCK DIAGRAM "KESTREL" MIXER
 Size Number: KEST001
 Revision: 1
 Date: 15 MAY 1978
 Serial: 12-00017
 Drawn By: [Signature]



Descriptive and Technical Information

“Kestrel -12” and “Kestrel -16”

Broadcast On-Air Mixers with Dual Stereo Output Channels.

The following is written to explain the features of the “Kestrel” series of Professional Broadcast On-Air Audio Mixers and to draw the attention to quality aspects built into it, usually not found on Mixers in its price range.

The “Kestrel” is designed and built in Western Australia by Elan Audio, a wholly Australian owned company and is the culmination of more than 25 years of experience in the design and manufacture of Professional Radio Broadcast Equipment by Poul Kirk and his associates.

It is a standard modular product available in two sizes, the “Kestrel-12” and the “Kestrel-16” differing only in the number of input modules fitted.

We offer the customer the choice of three types of Input Module, the type and placement to be nominated with the order.

These are the MLM-201 Mono Microphone Input, the HLM-201 Stereo High Level Line Input, and the TLM-201 Mono Telephone Channel Input.

Elan Audio will also label the Channel “On” Switches to identify the Input Sources at no charge, provided the necessary information is supplied with the order.

The channel “On” switches can be Re-Labelled easily by the owner at a later stage if changes are made to the input sources.

Unlike some audio mixers where modules are constructed as blocks servicing several inputs or functions, all modules in the “Kestrel” mixer, including the Monitoring and Ancillary functions are constructed as individual modules interconnected by Ribbon Cable and Header Connectors to allow easy access for servicing and adjustments.

General philosophy behind the “Kestrel” mixer is the same as for all other Professional Elan Audio products.

Modern and Attractive Design, High Quality Construction, Suitable for Continuous Operation, Logical and Easy Operation, Reliability and Long Service Life.

Components and Materials are Professional Grade where appropriate, or High Quality Commercial, chosen to be readily available from normal electronics parts suppliers.

Programmed PIC Microprocessors are used freely in the “Kestrel” for various control functions.

Full circuit information is supplied with each “Kestrel” Mixer and all normal Integrated Circuits are fitted into Machined Pin IC Sockets to allow easy adjustments and maintenance by its owner.

Low maintenance is assured by the use of Penny and Giles Faders made in the UK, E. A. Olten Channel On-Off Switches made in Switzerland, VU Meters made by Sifam in the UK and a conventional Linear Power Supply large enough to power 2 Kestrel Mixers.

Overall technical performance, like all Professional Elan Audio Broadcast Equipment, will satisfy the most stringent broadcast requirements with all inputs and outputs electronically balanced,

The "Kestrel" Mixer is designed to mount "Through the Desk" and require a cut-out 425 mm x 725 mm for the 12 Input "Kestrel-12" and 425 mm x 885 mm for the "Kestrel-16".

The Chassis consists of 2 major sections, a Welded Steel Base section protruding through the desk cut-out, and a Riser Section, hinged to the Base section at the rear giving easy access to the underside of all modules as well as the Screw Terminals located in the Base Section.

All connections in and out of the "Kestrel" Mixer are provided on High Quality Screw Terminals, all readily accessible and located in the Base section with below desk, cable entry cut-out's provided.

The hinged Riser Section is fitted with decorative Timber End Plates finished in Limed American Oak.

Each module in the mixer is attached to the Riser Section by two screws for easy removal.

A steeply rising panel is located at the rear of the Riser Section providing space for the VU Meters and various Indicators and Switches as described in the following.

Access to wiring behind this panel is gained via a removable "Cowl" fixed by 3 screws.

Fitted on the "Riser Panel" are.

- ◆ 2 Banks of 5 way Interlocking High Level Selector Push Button Switches.
- ◆ Cue Loudspeaker.
- ◆ 6 Indicator Lamp Holders/Switches fitted with 12V Indicator Lamps.
- ◆ Left Channel VU Meter.
- ◆ Overload Indicator.
- ◆ Phase Reversal Indicator.
- ◆ Right Channel VU Meter.
- ◆ Monitor Selector, 1 Bank of 5 way Interlocking Push Button Selector Switches.
- ◆ CUE VU Meter.
- ◆ On Air Switch and LED Indicator.
- ◆ On Delay Switch and LED Indicator.
- ◆ Delay Dump Switch and LED Indicator.

The Layout Drawing of the "Kestrel-12" show the placement of the various components on the riser panel, and the placement of the modules.

The General Block Diagram shows the general signal flow and relationship between the modules.

The drawing KESTB1 show the relative placement of all Input-Output and Control Terminals.

Please note the 4 sets of On Air Relay Contacts, closing when a Microphone Channel is switched On.

It also shows 5 wiring examples covering most input wiring applications.

The following types of Modules exist.

- ◆ HLM-201 Stereo High Level Input.
- ◆ MLM-201 Mono Microphone Input.
- ◆ TLM-201 Mono Telephone Channel Input.
- ◆ MLO-201 Master Line Output.
- ◆ MCM-201 Monitor Control Module.
- ◆ HPM-201 Headphone Control Module.
- ◆ CCM-201 Cue Control Module.
- ◆ TBM-201 Talkback Control Module.
- ◆ BLANK Blank Module for Customising by the owner.

A total of 18 Module Slots are provided on the "Kestrel-12" and 22 Module Slots on the "Kestrel-16".

A typical input module complement for a "Kestrel-12" is, 8 x HLM-201, 1 x TLM-201 and 3 x MLM-201.

On the "Kestrel-12", the Module Placement is as follows.

◆ Slot-1	HLM-201, Feeding off HL Selector Switch in Riser.	
◆ Slot-2	HLM-201, Feeding off HL Selector Switch in Riser.	
◆ Slot-3	HLM-201, MLM-201 or TLM-201, customers choice.	
◆ Slot-4	HLM-201, MLM-201 or TLM-201, customers choice.	
◆ Slot-5	HLM-201, MLM-201 or TLM-201, customers choice.	
◆ Slot-6	HLM-201, MLM-201 or TLM-201, customers choice.	
◆ Slot-7	HLM-201, MLM-201 or TLM-201, customers choice.	
◆ Slot-8	HLM-201, MLM-201 or TLM-201, customers choice.	
◆ Slot-9	HLM-201, MLM-201 or TLM-201, customers choice.	
◆ Slot-10	HLM-201, MLM-201 or TLM-201, customers choice.	
◆ Slot-11	HLM-201, MLM-201 or TLM-201, customers choice.	
◆ Slot-12	HLM-201, MLM-201 or TLM-201, customers choice.	
◆ Slot-13	MLO-201, Master Line Output Module.	Fixed position.
◆ Slot-14	MCM-201, Monitor Control Module.	Fixed position.
◆ Slot-15	HPM-201, Headphone Control Module.	Fixed position.
◆ Slot-16	CCM-201, Cue Control Module.	Fixed position.
◆ Slot-17	TBM-201, Talkback Control Module.	Fixed position.
◆ Slot-18	BLANK, For Customising by owner.	Fixed position.

A series of Block Diagrams shows the basic function of each Module used in the "Kestrel" Mixer.

Power Supply.

Supplied with the "Kestrel" Mixer is 1 x RPS-01 Standard Rack-Mounting Power Supply.

Format. Rack Mounting 2RU.

Dimensions. 89mm x 483mm x 260mm.

The RPS-01 is supplied with.

1 x 1.6 Meter IEC Mains Cable.

1 x 3 Meter DC Supply Cable.

Ratings and Voltages.

Input	250V AC + and – 10%	Max 80 VA
Output	+ 15V DC	1.5 A Regulated
	- 15V DC	1.5 A Regulated
	+ 12V DC	2.5 A Regulated

Power Consumption.

"Kestrel-12" Approximately 25 VA.

"Kestrel-16" Approximately 30 VA.

Shipping Weights.

"Kestrel-12" Approximately 55 Kg Including PSU-01

"Kestrel-16" Approximately 65 Kg Including PSU-01

Technical Specifications, "Kestrel-12" and "Kestrel-16".

Line Inputs	Differential Balanced	Z In appx 50 K Ohms.
Mic Inputs	Differential Balanced	Z In Greater than 1 K Ohms.
Line Outputs	Differential Balanced	Z Out appx 50 Ohms.
Line Input Level	Factory adjusted to + 4 dBu. Adjustable (300 mV) -10 dBu to +10 dBu.	
Line Output Level	Factory adjusted to + 4 dBu, or +4 dBmw into 600 Ohms. Adjustable 0 dBu to + 10 dBu.	
Output Crash Level	+24 dBmw into 600 Ohms.	

Performance. High Level Channel in, Program Line Out.

Mixer Gain Unity, input level +12 dBu, Output Level +12 dBmw into 600 Ohms

Frequency Response	+0 -0.2 dB	20 Hz to 20 KHz.
Harmonic Distortion	100 Hz	0.02%
	1 KHz	0.02%
	10 KHz	0.04%
S/N Ratio 20 Hz to 20 KHz	88 dB or Better.	
Crosstalk	80 dB at 1 KHz.	

Performance. Microphone Channel in, Program Line Out.

Mixer Gain 64 dB, Input Level - 52 dBV, Output Level +12 dBmw into 600 Ohms.

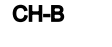
Frequency Response	+0 -0.2 dB	20 Hz to 20 KHz.
Harmonic Distortion	100 Hz	0.05%
	1 KHz	0.025%
	10 KHz	0.06%
S/N Ratio 20 Hz to 20 KHz	74 dB or Better.	

Equivalent Input Noise, EIN varies with Microphone Pre-Amp gain setting, normally expect an EIN of -120 dBV in low gain setting, EIN of -126 dBV in mid gain setting and EIN of -129 dBV in high gain setting with input terminated in a low noise 200 Ohm Resistor.

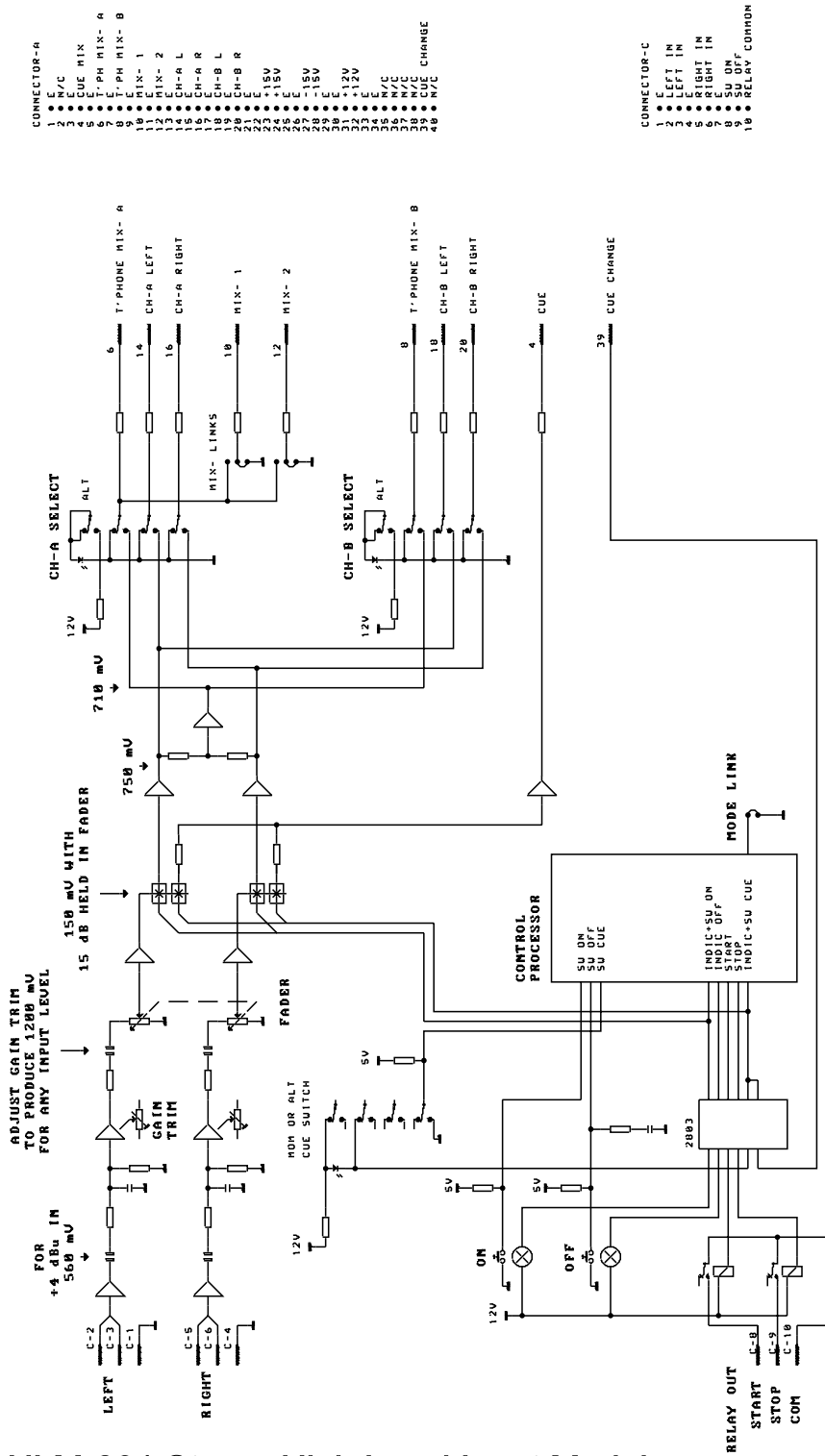
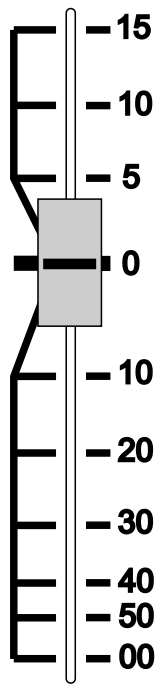
ELAN
HLM-201



SELECT



CUE



HLM-201 Stereo High Level Input Module.

Features.

- Balanced Stereo Inputs
- Front Panel Gain Trim Controls
- Penny and Giles Fader
- Click Free Audio Switching
- Dual Program Outputs
- Telephone Mix- Feed
- 2 x Mix- Feeds

- Cue Facility
- Microprocessor Control
- High Quality Channel Switches
- Machine Start Contacts
- Machine Stop Contacts

- CONNECTOR-A
- 1 • N/C
 - 2 • CUE MIX
 - 3 • E-PM MIX- A
 - 4 • E-PM MIX- B
 - 5 • E-PM MIX- A
 - 6 • E-PM MIX- B
 - 7 • MIX- 1
 - 8 • MIX- 2
 - 9 • CH-A L
 - 10 • CH-A R
 - 11 • CH-A R
 - 12 • CH-B L
 - 13 • CH-B R
 - 14 • E-15V
 - 15 • E-15V
 - 16 • E-15V
 - 17 • E-12V
 - 18 • E-12V
 - 19 • N/C
 - 20 • N/C
 - 21 • N/C
 - 22 • N/C
 - 23 • N/C
 - 24 • N/C
 - 25 • N/C
 - 26 • N/C
 - 27 • N/C
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 - 36 • N/C
 - 37 • N/C
 - 38 • N/C
 - 39 • N/C
 - 40 • N/C
 - 41 • N/C
 - 42 • N/C
 - 43 • N/C
 - 44 • N/C
 - 45 • N/C
 - 46 • N/C
 - 47 • N/C
 - 48 • N/C

- CONNECTOR-C
- 1 • LEFT IN
 - 2 • LEFT IN
 - 3 • LEFT IN
 - 4 • RIGHT IN
 - 5 • RIGHT IN
 - 6 • RIGHT IN
 - 7 • E-15V
 - 8 • E-15V
 - 9 • E-15V
 - 10 • RELAY COMMON

ELAN
MLM-201



SELECT



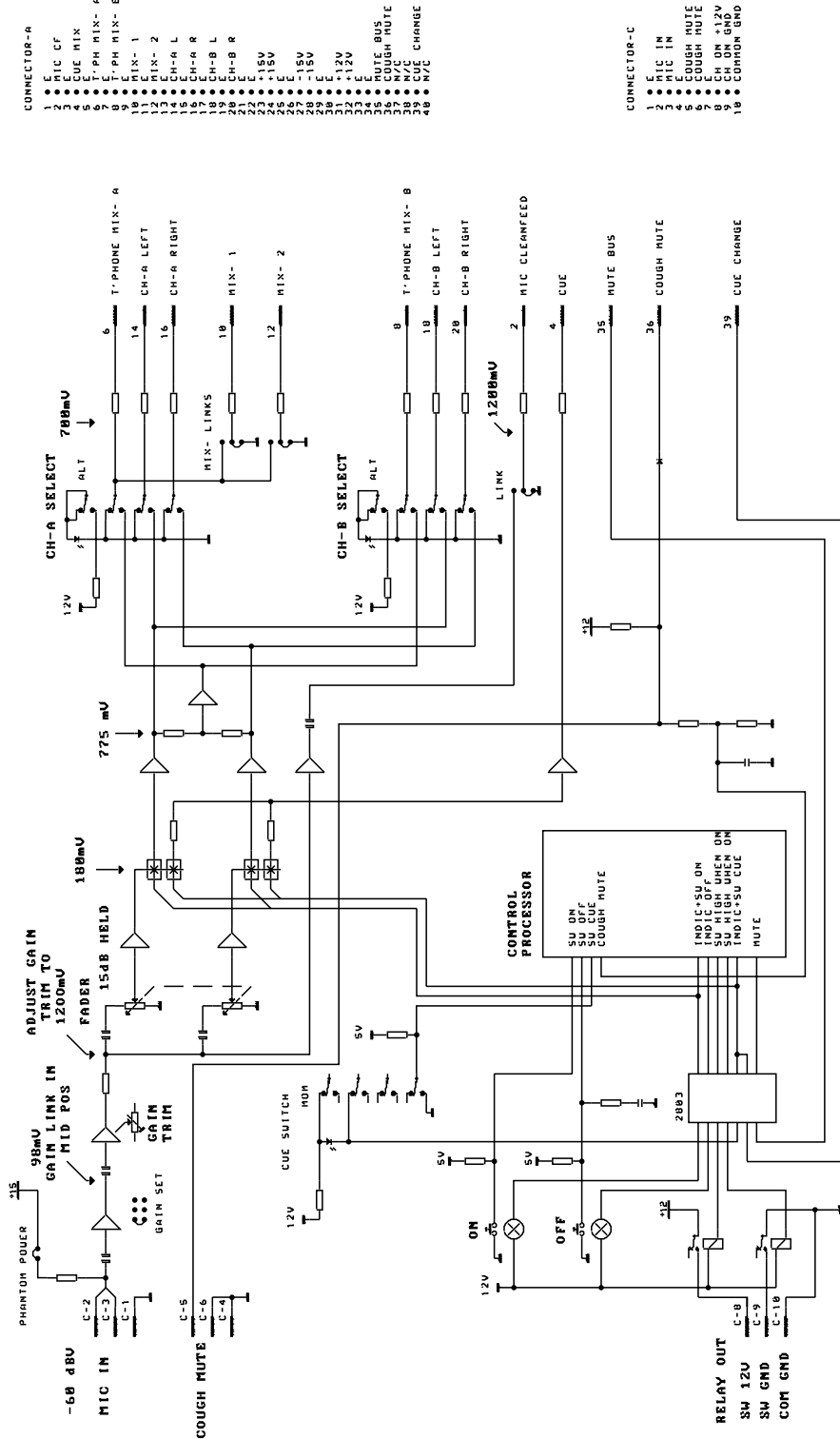
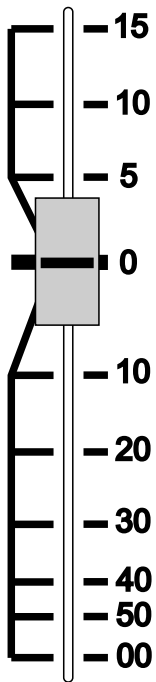
CH-A



CH-B



CUE



MLM-201 Mono Microphone Input Module.

Features.

- Balanced Low Noise Input
- Phantom Power
- 3 Stage Gain Control Links
- Front Panel Gain Trim Control
- Cough Mute Input
- Mic On Indicator Output

- Penny and Giles Fader
- Click Free Audio Switching
- Dual Program Outputs
- Telephone Mix- Feed
- 2 x Mix- Feeds
- Cue Facility
- Microprocessor Control
- High Quality Channel Switches

ELAN
TLM-201



SELECT



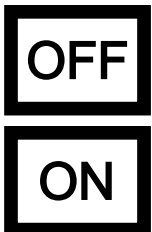
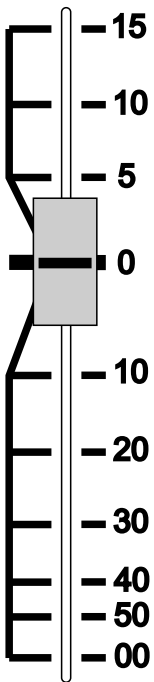
CH-A



CH-B

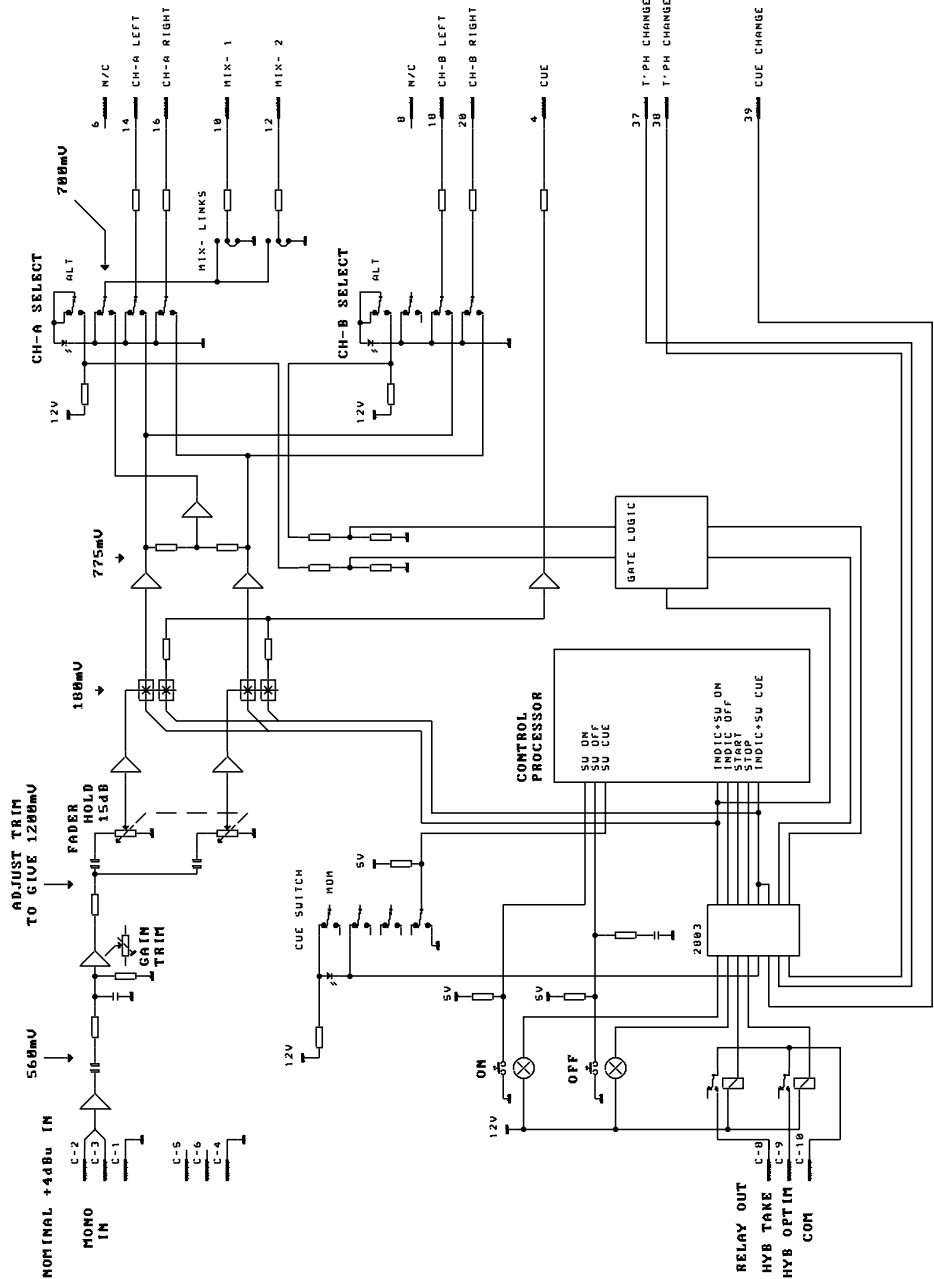


CUE



- CONNECTOR-A
- 1 E
 - 2 N/C
 - 3 CUE MIX
 - 4 E
 - 5 E
 - 6 E
 - 7 N/C
 - 8 N/C
 - 9 MIX-1
 - 10 MIX-2
 - 11 CH-A L
 - 12 CH-A R
 - 13 CH-B L
 - 14 CH-B R
 - 15 E
 - 16 +15V
 - 17 -15V
 - 18 E
 - 19 +15V
 - 20 -15V
 - 21 E
 - 22 +12V
 - 23 E
 - 24 N/C
 - 25 N/C
 - 26 N/C
 - 27 N/C
 - 28 T-PH CHANGE 1
 - 29 T-PH CHANGE 2
 - 30 E
 - 31 CUE CHANGE
 - 32 N/C

- CONNECTOR-C
- 1 E
 - 2 LINE IN
 - 3 E
 - 4 LINE IN
 - 5 N/C
 - 6 N/C
 - 7 E
 - 8 HYB OPT IN
 - 9 HYB OPT IN
 - 10 RELAY COMMON
 - 11 RELAY COMMON



TLM-201 Mono Telephone Channel Input Module.

Features.

Balanced Input
Front Panel Gain Trim Control
Penny and Giles Fader
Click Free Audio Switching
Dual Program Outputs
2 x Mix- Feeds

Cue Facility
Microprocessor Controls
High Quality Channel Switches
Hybrid Unit Control Relays
Automatic Control of Telephone
Mix-Feed to Hybrid

METER CAL
LEFT



RIGHT



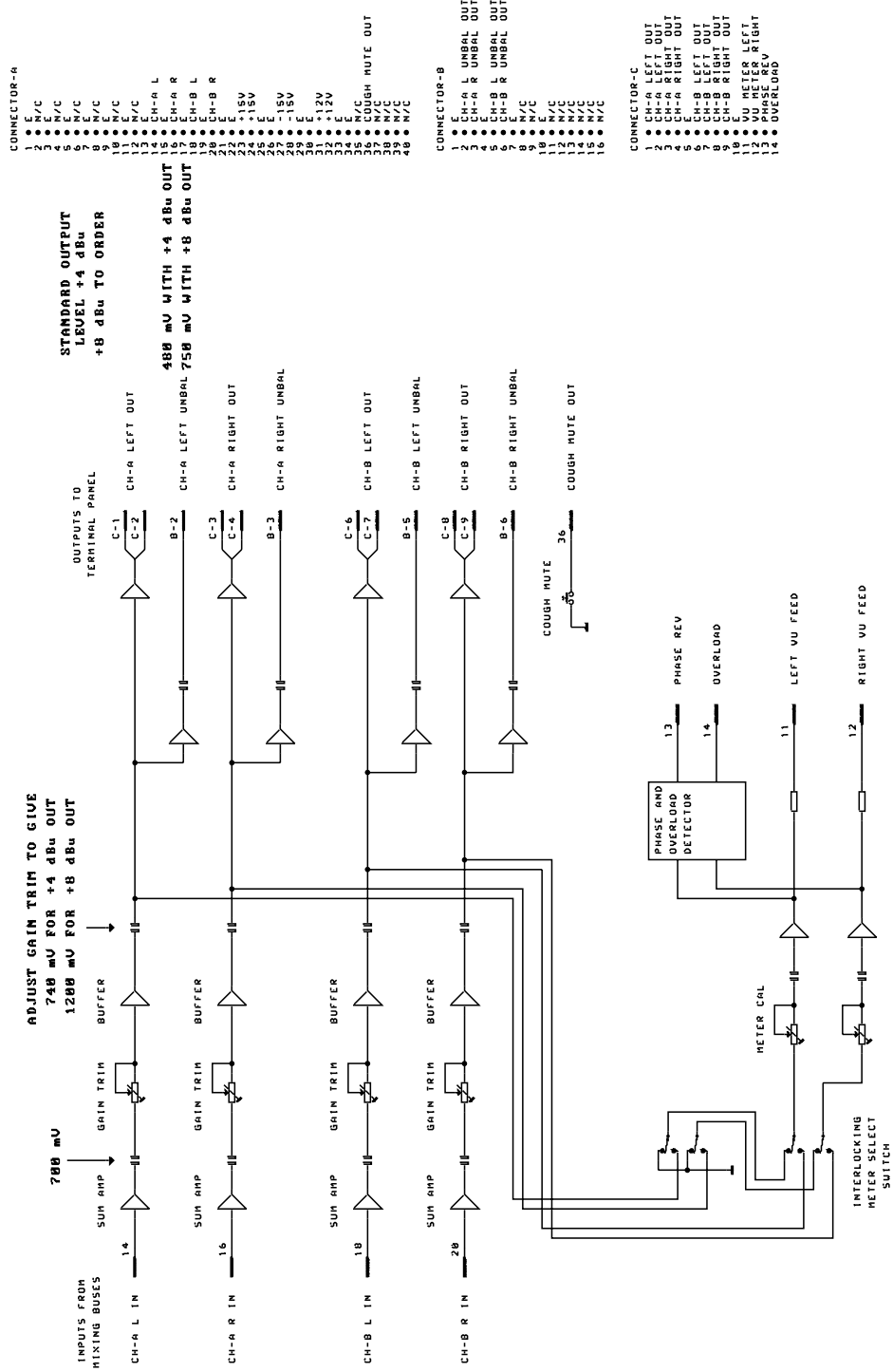
METER SELECT



CH-A



CH-B



MLO-201 Master Line Output Module

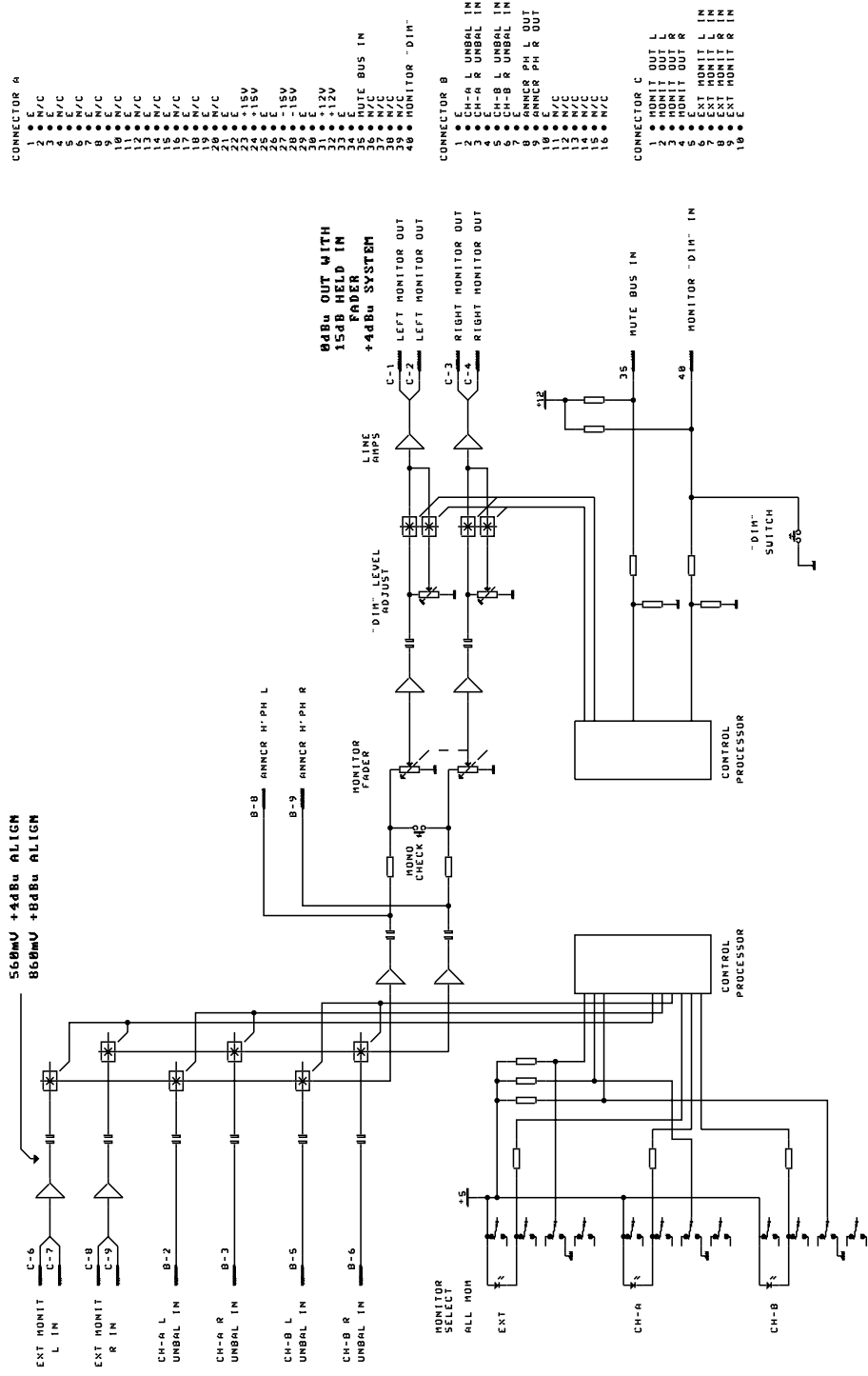
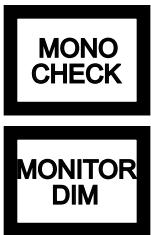
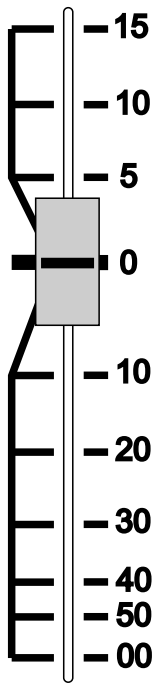
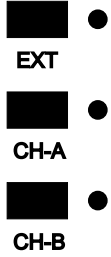
Features.

- 4 x Program Summing Amplifiers
- Program Master Gain Trim Controls
- 4 x Program Summing Amplifiers
- Master Module for Channels A and B
- Interlocking Meter Selector Switches
- VU Meter Calibration Controls
- VU Meter Drivers

- Overload Detector
- Phase Fault Detector
- Cough Mute Switch

ELAN
MCM-201

MONITOR
SELECT



MCM-201 Monitor Control Module.

Features.

- Click Free 3 Way Monitor Switching
- Penny and Giles Fader
- Automatic Select to EXT Input on Power Up
- Mono Compatability Check Switch
- Monitor "Dim" Switch
- Automatic Monitor "Dim" From Talkback Module
- Automatic Monitor "Mute" With Microphone On
- Balanced Line Level Monitor Outputs

GUEST
H'PHONE
SELECT



CH-A



CH-B



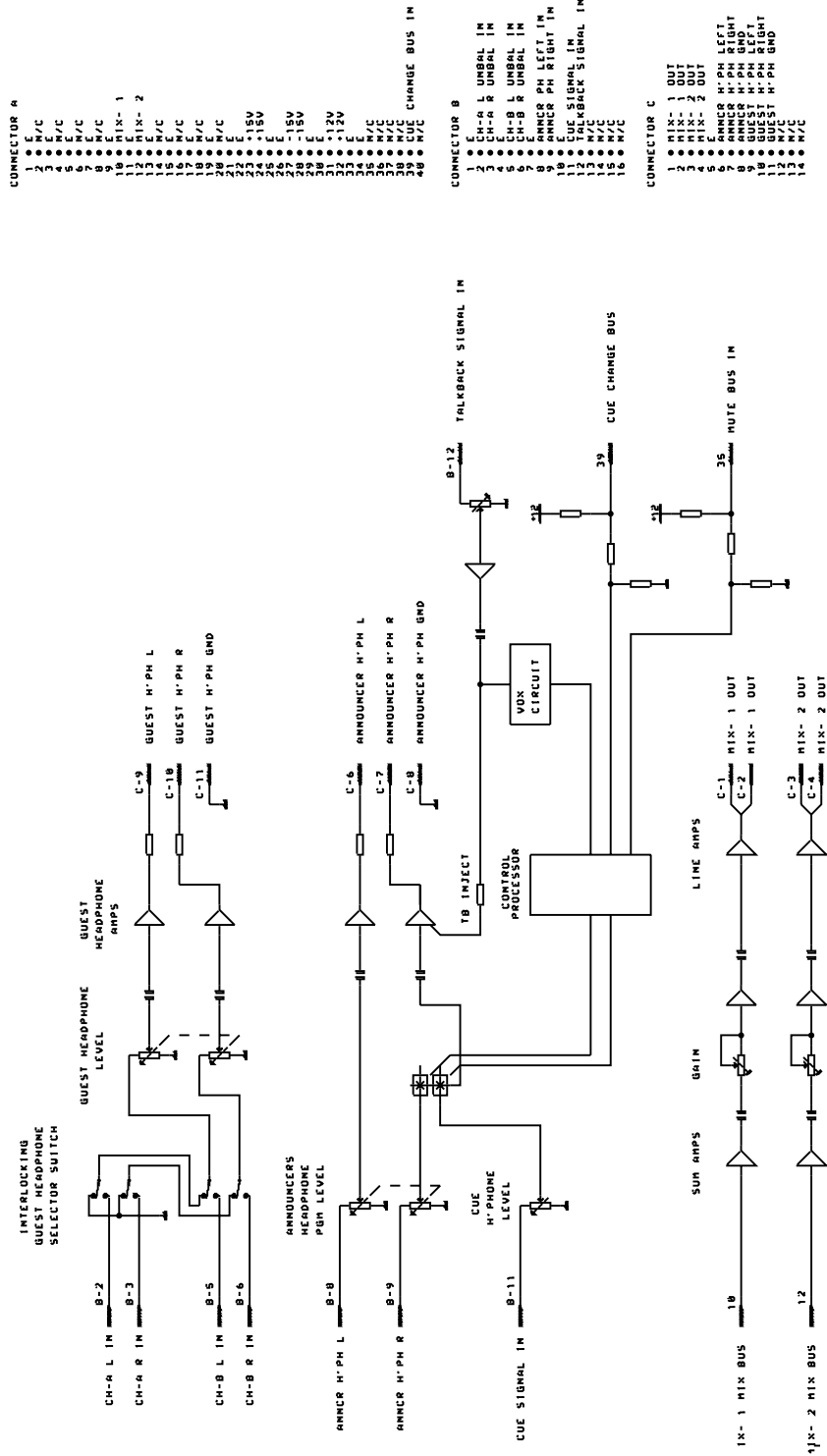
GUEST
H'PHONES



CUE



PGM
ANCR
H'PHONES



HPM-201 Headphone Control Module.

Features.

- Announcers Headphone Follows Monitor Selector
- Rotary Program Headphone Level Control
- Automatic Split Headphone Cue Operation
- Rotary Cue To Headphone Level Control
- Talkback Inject into Headphone Controlled By VOX
- Announcers Headphone Driver Amplifiers
- 2 x Mix- Sum and Line Amplifiers
- Guests Headphone Selector, Level Control and Driver Amplifiers



AUX CUE

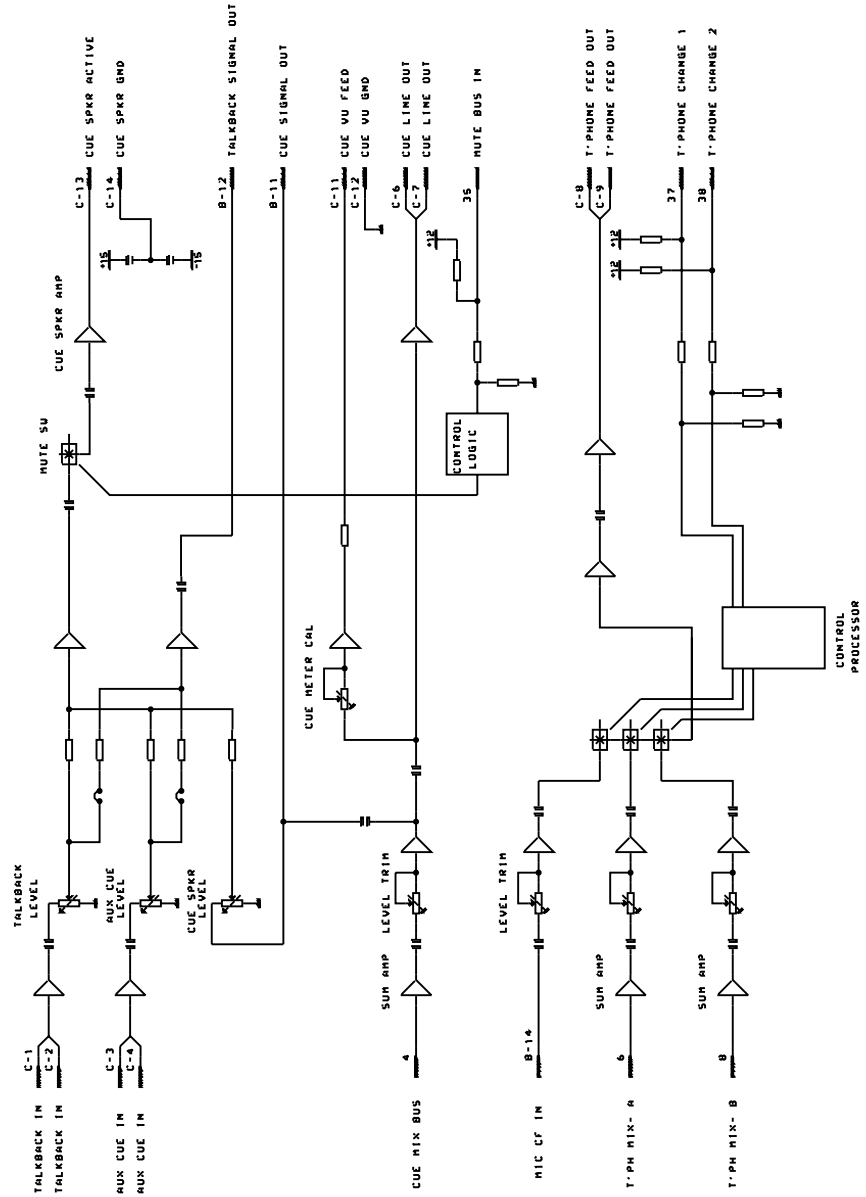


TALKBACK



CUE
SPEAKER

- CONNECTOR A**
- 1 ● N/C
 - 2 ● CUE MIX
 - 3 ● 1-PH MIX - A
 - 4 ● 1-PH MIX - B
 - 5 ● N/C
 - 6 ● C
 - 7 ● N/C
 - 8 ● N/C
 - 9 ● N/C
 - 10 ● N/C
 - 11 ● N/C
 - 12 ● N/C
 - 13 ● N/C
 - 14 ● N/C
 - 15 ● N/C
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 - 32 ● N/C
 - 33 ● N/C
 - 34 ● N/C
 - 35 ● N/C
 - 36 ● N/C
 - 37 ● N/C
 - 38 ● N/C
 - 39 ● N/C
 - 40 ● N/C
- CONNECTOR B**
- 1 ● N/C
 - 2 ● N/C
 - 3 ● N/C
 - 4 ● N/C
 - 5 ● N/C
 - 6 ● N/C
 - 7 ● N/C
 - 8 ● N/C
 - 9 ● N/C
 - 10 ● N/C
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 - 14 ● N/C
 - 15 ● N/C
 - 16 ● N/C



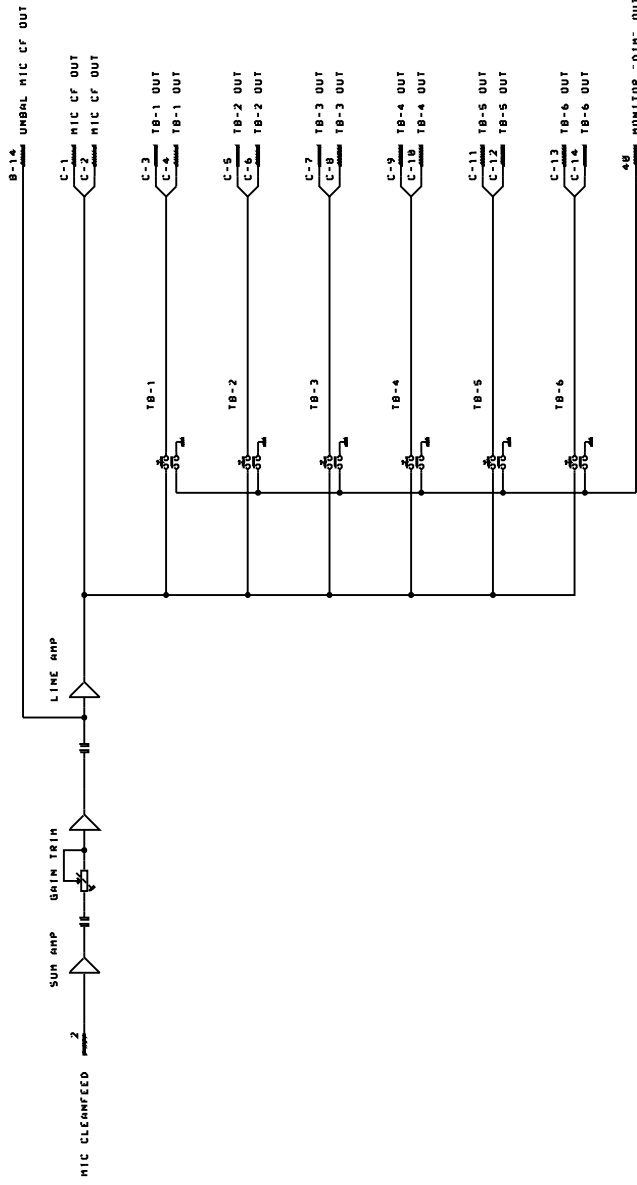
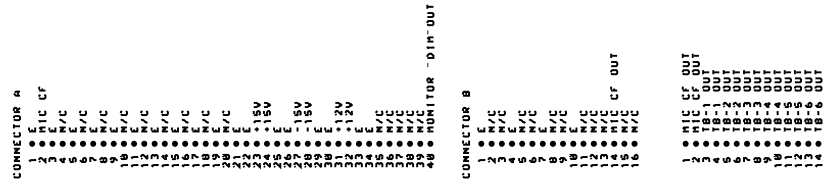
CCM-201 Cue Control Module

Features.

- Cue Bus Sum Amplifier
- Cue Line Amplifier
- Cue Meter Driver
- Cue Speaker Volume Control
- Cue Speaker Amplifier
- Automatic Cue Speaker Mute With Mic On
- Balanced Talkback Input With Volume Control
- Balanced Aux Cue Input With Volume Control

- Automatic Phone Feed Switching
- Controlled By Microprocessor
- Phone Feed Line Amplifier

- TB-1
- TB-2
- TB-3
- TB-4
- TB-5
- TB-6



TBM-201 Talkback Module

Features.

- Microphone Cleanfeed Sum Amp
- Talkback and Cleanfeed Line Amp
- 6 x Talkback Control Switches
- Monitor "Dim" Switching.