



M3

OPERATOR MANUAL

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Whilst the Company take the utmost care in ensuring that all details in the publication are correct at the time of publication, we are constantly striving for improvement and therefore reserve the right to alter specifications & equipment without notice.

This publication is for International usage.

Please also refer to the User Registration page at the end of this manual.

Please observe the following:-

After Sales Modifications.

Modifications to this equipment by any party other than Calrec Audio Limited may invalidate EMC and safety features designed into this equipment. Calrec Audio Limited can not be liable for any legal proceedings or problems that may arise relating to such modifications.

If in doubt, please contact Calrec Audio Limited for guidance prior to commencing any such work.

ESD (Static) Handling Procedures.

In its completed form, this equipment has been designed to have a high level of immunity to static discharges. However, when handling individual boards and modules, many highly static sensitive parts are exposed, therefore in order to protect these devices from damage and to protect your warranty, please observe static handling procedures (e.g. use an appropriately grounded anti-static wrist band).

All modules and cards should be returned to Calrec Audio Limited in anti-static wrapping. Calrec Audio Limited can supply these items upon request, should you require assistance.

This applies particularly to digital products due to the types of devices and very small geometries used in their fabrication, analogue parts can, however, still be affected.

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IMPORTANT HEALTH AND SAFETY INFORMATION

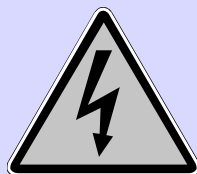
- This equipment must be **EARTHED**.
- Only suitably trained personnel should service this equipment.
- Please read and take note of all warning and informative labels.
- Before starting any servicing operation, this equipment must be isolated from the AC supply (mains).
- Fuses should only be replaced with ones of the same type and rating as that indicated.
- Operate only in a clean, dry and pollutant-free environment.
- Do not operate in an explosive atmosphere.
- Do not allow any liquid or solid objects to enter the equipment. Should this accidentally occur then immediately switch off the unit and contact your service agent.
- Do not allow ventilation slots to be blocked.
- Do not leave the equipment powered up with the dust cover fitted.
- The rack mounting parts of this equipment must be fitted into an enclosure which complies with local regulations.

Cleaning

For cleaning the front panels of the equipment we recommend anti-static screen cleaner sprayed onto a soft cloth to dampen it only.

Explanation of Warning Symbols

The triangular warning symbols below contain a black symbol on a yellow background, surrounded by a black border.



The lightning flash with arrow head symbol within an equilateral triangle is intended to alert the user to the presence of dangerous voltages and energy levels within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock or injury.



The exclamation mark within an equilateral triangle is intended to prompt the user to refer to important operating or maintenance (servicing) instructions in the documentation supplied with the product.

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TECHNICAL CUSTOMER SUPPORT

Should you require any technical assistance with your Calrec product then please contact your local distributor, if outside the U.K. and Ireland. For a list of Worldwide distributors please see the Calrec Web site at www.calrec.com or contact Calrec UK.

If you do not have a local distributor, then please contact Calrec UK.

For Technical assistance within the UK and Ireland, please contact a member of the Calrec Customer Support Team at :-

Customer Support
Calrec Audio Ltd
Nutclough Mill
Hebden Bridge
HX7 8EZ
England
UK

Tel: +44 (0) 1422 842159
Fax: +44 (0) 1422 845244
Email: support@calrec.com
Website: www.calrec.com

We can deal with all technical after sales issues, such as :-

- Arrange repairs
- Supply of replacement or loan units while repairs are being carried out
- Service / commissioning site visits
- Operational training courses
- Maintenance training courses
- Supply of replacement components
- Supply of documentation
- Technical advice by telephone

If you have any other issues regarding your Calrec purchase, then please contact us and we will do our best to help. Calrec welcomes all Customer feedback.

Stephen Brant
Senior Customer Support Engineer

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PRODUCT WARRANTY

A full list of our conditions & warranties relating to Goods & Services is contained in the Company's standard 'Terms & Conditions'. A copy of this is available on request.

CUSTOMER SUPPORT HOURS

Factory based customer support engineers can be contacted by telephone during normal office hours, or outside hours, a message can be left on the answering machine.

All messages are dealt with promptly on the next working day. Alternatively a message can be sent to them by email at: support@calrec.com

REPAIRS

If you need to return goods to Calrec, for whatever reason, please contact the Company beforehand in order that you can receive advice on the best method of returning the goods & that a repair order reference number can be issued.

STANDARD OF SERVICE

Ensuring high standards is a priority & if you have any comments on the level of service, product quality or documentation offered to you by Calrec, then the Customer Support team would be pleased to receive your comments through any of the normal contact numbers, the email address listed earlier or on the User registration form located at the end of this manual.

ISO 9001 ACCREDITATION

Calrec Audio Ltd has been issued the ISO9001: 2000 standard by the Governing Board of ISOQAR.

The award, for both UKAS and RAB registration, is the most comprehensive of the ISO9000 international standards. Granted in recognition of excellence across design, development, manufacture and after-sales support, the certification follows a rigorous and thorough review of Calrec's internal and external communication and business procedures.



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INTRODUCTION

The Calrec M3 is a high quality, mixing console which provides superior audio and operational performance in a choice of compact packages. It's ease of use makes the M3 ideal for novice operators as well as those who can make full use of the wealth of facilities provided. As with all Calrec products, the M3 has been designed for long life in real world environments, and offers high levels of reliability and excellent return on investment.

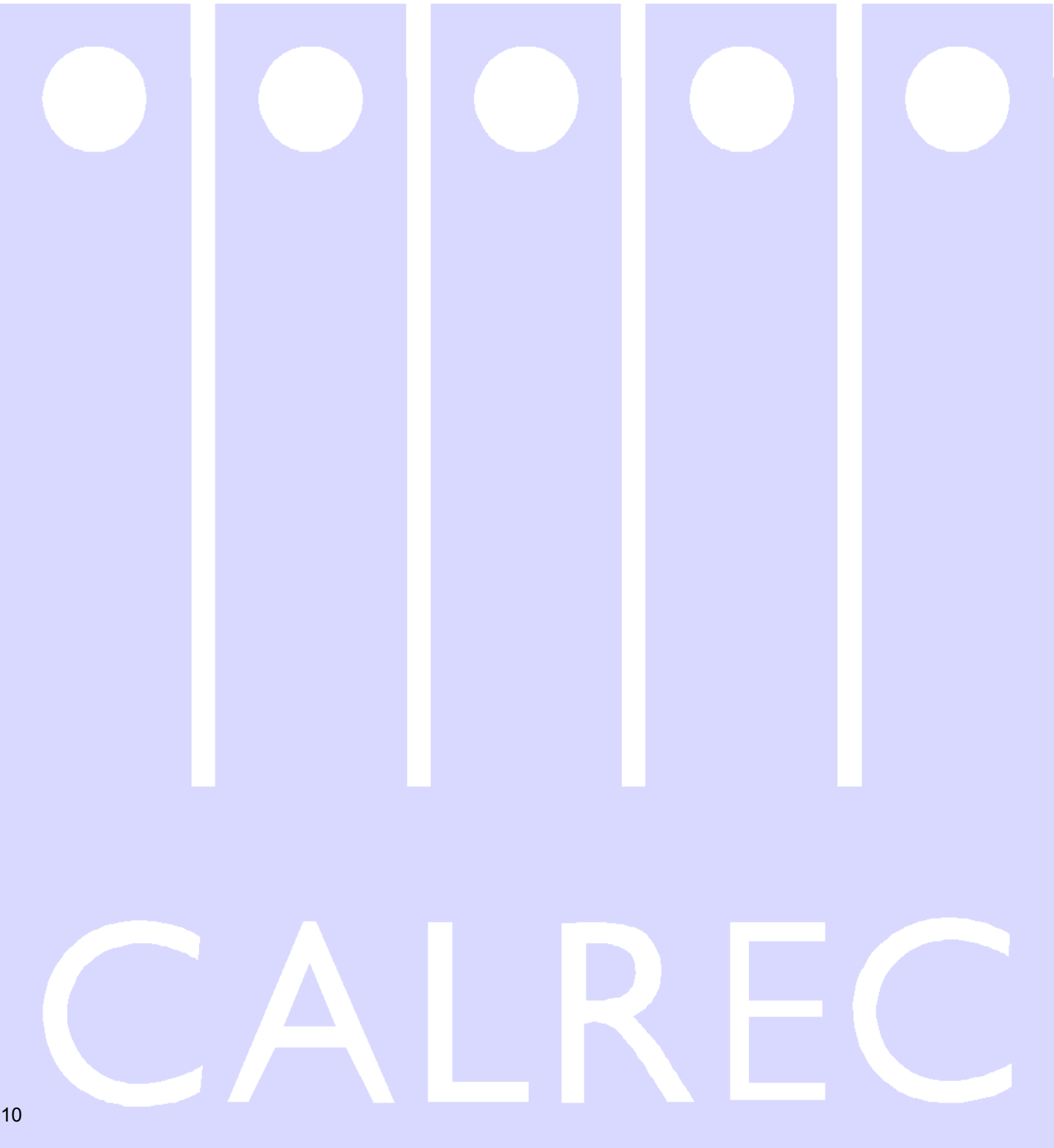
By combining sophisticated circuit designs with the latest construction techniques, the M3 provides comprehensive features which meet the increased demands of broadcasters for small format mixers. With mix-minus facilities on every channel, mono and stereo auxiliaries, routing to four groups and two main outputs with a comprehensive monitoring system, the M3 offers all that is required of a high performance broadcast mixing console. High input headroom combined with excellent noise figures means there is no sacrifice in audio performance which is so often the result on location, or in space restrictive installations.

The M3 enables Broadcasters to meet the operational needs required from small installations without compromise and with the highest level of confidence in performance and reliability.

PRINCIPLE FEATURES

- Available in three frame sizes:
 - Up to 10 Channels in the small frame
 - Up to 24 Channels in the medium frame
 - Up to 38 Channels in the large frame
- Optional Upstand Chassis
- Choice of 3 channel modules:
 - Mono with dual mic/line inputs
 - Stereo with stereo mic/line inputs
 - Stereo with line inputs
- 3-band equaliser and 2-band filters on all Channel modules
- Individual Channel bargraph level monitoring
- Mix Minus / Cleanfeed system to channel direct outputs
- Fader Cue/Start system
- Up to 4 Mono or Stereo Groups
- Mono Groups can be used as a L/R split
- 3 Mono and 1 Stereo Auxiliaries
- 2 Main Stereo Outputs with Dynamics
- Comprehensive Monitoring with external inputs
- Internal or External Power Supply options

A large, stylized version of the CALREC logo is centered at the bottom of the page. It features the word "CALREC" in a large, white, sans-serif, all-caps font, set against a light blue background. The logo is composed of four vertical bars of equal height, each topped with a small white circle, with the word "CALREC" written below them.



1.0 Installation

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INSTALLATION

Some of the checks shown below may seem obvious or unnecessary, but they are **essential** and do not take long to complete. **If at any time during the proceedings there is anything that you do not understand, please contact our Customer Support Team who will be happy to help you with any queries or problems you may have.**

- Unpack the mixer (& external power supply, if applicable), checking that all items are present & undamaged
- Complete the user registration form
- The M3 has the internal switching options set as requested in the customer questionnaire. If the questionnaire has not been submitted, then the console will be set to the standard default DIL switch settings shown in section 5. If however this is not the preferred set-up, then please refer to section 5, which explains the options available using the DIL switches.
- To change the settings, you will need to remove the module from the chassis. Lift off the graffiti strip & remove the 2 module fixing screws which are located at the top and the bottom of the module front panel, please do not remove the fader fixing screws. Use the extractor tool supplied with the console to place into the extraction hole on the front panel & carefully lift out the module. Please take care not to accidentally knock the module against any of the adjacent ones as this could result in component and/or front panel damage.
- Using the information in section 5, reset the DIL switches located on the individual module printed circuit boards (PCBs) to obtain the required set-up. **Incorrect selection of DIL switches can result in severe distortion of audio.**
- Visually check the pins in the edge connector for damage, prior to carefully replacing the module, pushing it firmly & squarely into the mating connectors in the chassis.
- If the mixer has an upstand, use the power & audio leads to connect the upstand inputs to the appropriate connectors on the rear of the main chassis
- Check that the AC voltage marked on the back of the power supply matches the local mains supply. If an internal power supply (PSU) is fitted, check the voltage detail on the console itself. The information can be found adjacent to the Mains IEC input connector, underneath the console.
- If the console has an external PSU, connect the DC cable from the power supply to the console and an earthed mains lead to the PSU. Switch on the mains supply & power up the console, checking that all the LED's illuminate on the PSU.
- If an internal supply is being used then simply connect an earthed mains cable into the IEC socket on the console.
- Finally check through the audio paths & connect the console into the rest of the audio system.

NB It is important to remember that if a module is to be refitted into a powered-up chassis, all the connector pins should connect into the chassis socket concurrently to avoid component damage.

MOUNTING THE M3

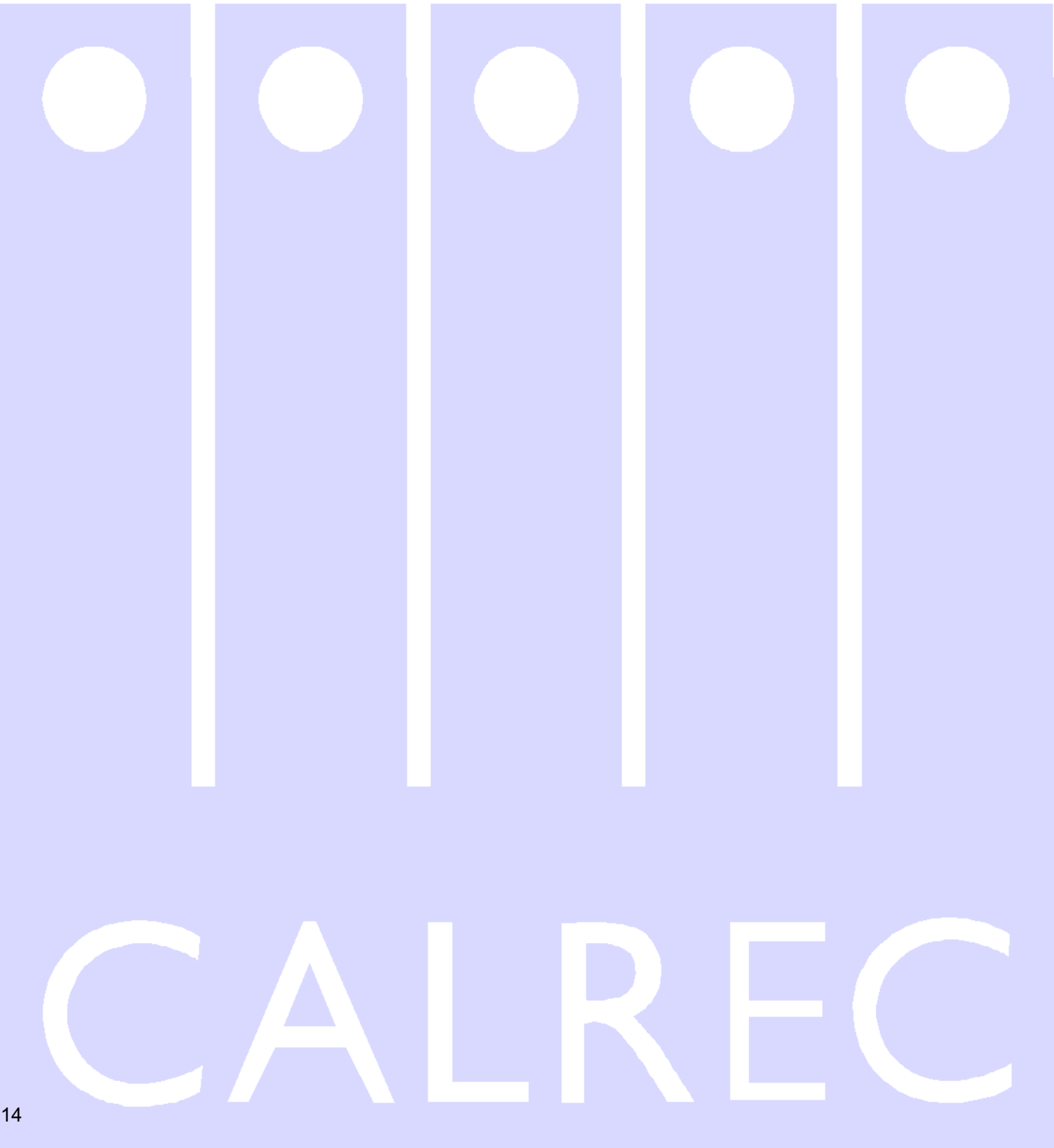
The M3 console has been designed to allow for maximum flexibility of use, in that it can be placed into a site for temporary operation, or fixed into a permanent location.

All console chassis sizes have been designed to allow for mounting in several different ways, as follows:

- Directly on top of a table top or small equipment rack/trolley.
- Vertically into equipment racking, when chassis is fitted with side support angles* .
- Horizontally into equipment racking, when chassis is fitted with side support angles* .
- Alternatively, the chassis can be 'dropped through' the control surface for a permanent location. The console can either be supported along its lower edge, or from a pair of side support angles*.
- On a factory supplied stand (Large Chassis only).

* Small and Medium chassis sizes only.

NB. During both Installation & operation, care must be taken to ensure that the ventilation holes are **not** blocked & that adequate ventilation is supplied to these areas.



2.0 Layout & Profiles

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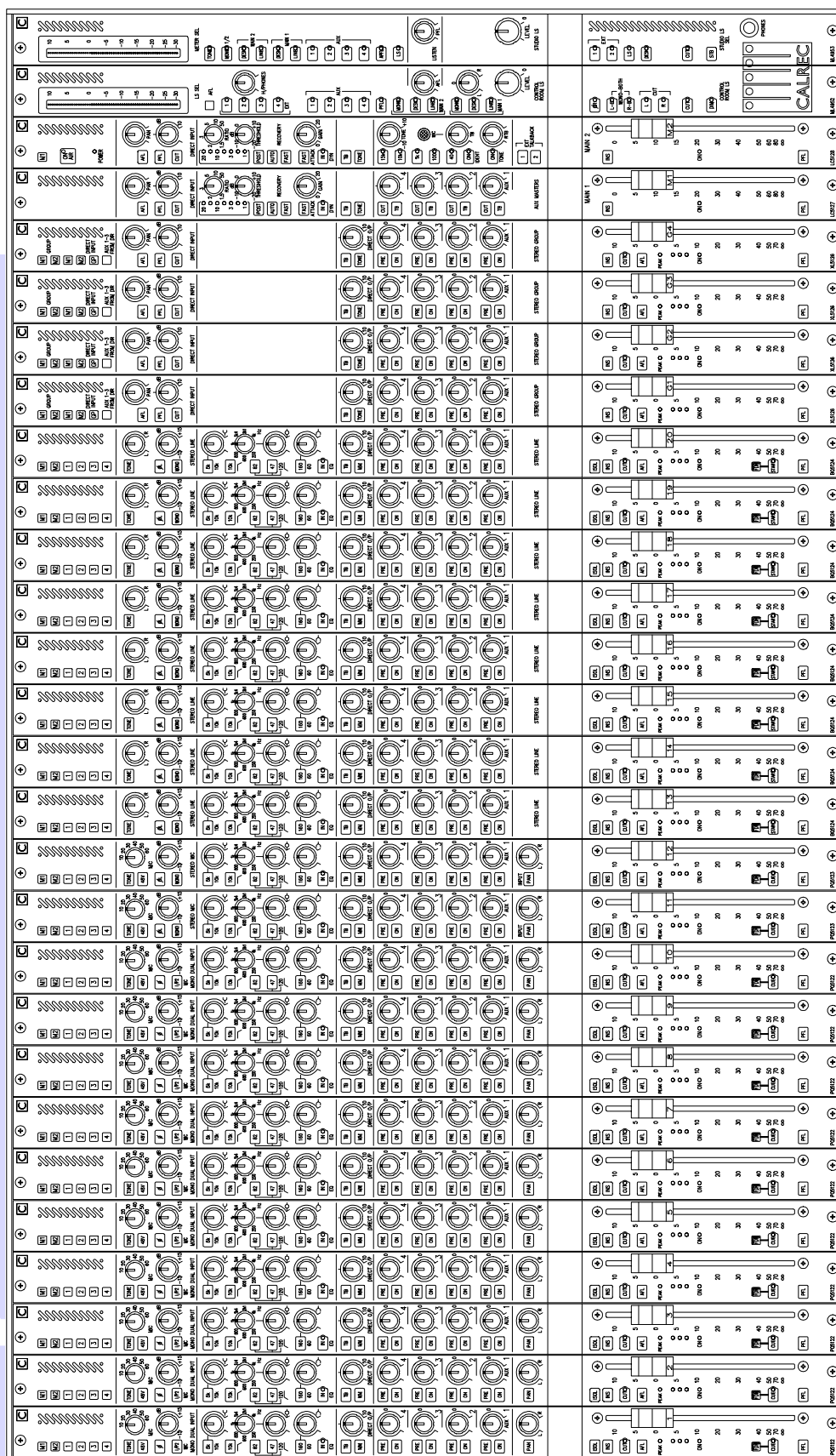
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SMALL CHASSIS MODULE OPTIONS

Small Chassis	Modules Available to be fitted into slots							
	PQ5122	PQ5123	BQ5124	XL5125	XL5126	LC5127	LC5128	ML4952
Channel Slot 1	☒	☒	☒					
Channel Slot 2	☒	☒	☒					
Channel Slot 3	☒	☒	☒					
Channel Slot 4	☒	☒	☒					
Channel Slot 5	☒	☒	☒					
Channel Slot 6	☒	☒	☒					
Channel/Group Slot 7	☒	☒	☒	☒	☒			
Channel/Group Slot 8	☒	☒	☒	☒	☒			
Channel/Group Slot 9	☒	☒	☒	☒	☒			
Channel/Group Slot 10	☒	☒	☒	☒	☒			
Main 1						☒		
Main 2							☒	
Monitor 1								☒
Monitor 2								☒

This table shows which slots each module can occupy. The greyed out areas indicate slots into which the module cannot be fitted.

MEDIUM CHASSIS TYPICAL LAYOUT



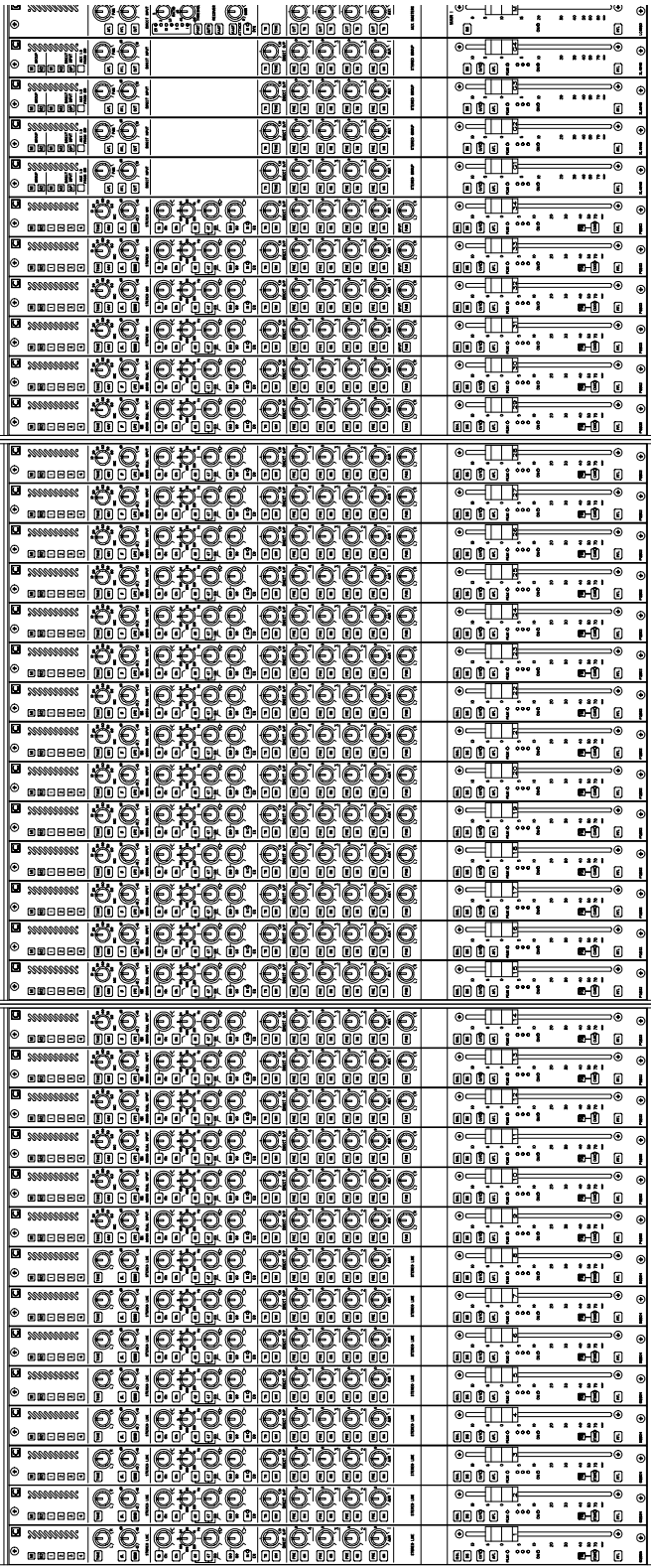
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MEDIUM CHASSIS MODULE OPTIONS

Medium Chassis	Modules Available to be fitted into slots								
	PQ5122	PQ5123	BQ5124	XL5125	XL5126	LC5127	LC5128	ML4952	ML4953
Channel Slot 1	☒	☒	☒						
Channel Slot 2	☒	☒	☒						
Channel Slot 3	☒	☒	☒						
Channel Slot 4	☒	☒	☒						
Channel Slot 5	☒	☒	☒						
Channel Slot 6	☒	☒	☒						
Channel Slot 7	☒	☒	☒						
Channel Slot 8	☒	☒	☒						
Channel Slot 9	☒	☒	☒						
Channel Slot 10	☒	☒	☒						
Channel Slot 11	☒	☒	☒						
Channel Slot 12	☒	☒	☒						
Channel Slot 13	☒	☒	☒						
Channel Slot 14	☒	☒	☒						
Channel Slot 15	☒	☒	☒						
Channel Slot 16	☒	☒	☒						
Channel Slot 17	☒	☒	☒						
Channel Slot 18	☒	☒	☒						
Channel Slot 19	☒	☒	☒						
Channel Slot 20	☒	☒	☒						
Channel/Group Slot 21	☒	☒	☒	☒	☒				
Channel/Group Slot 22	☒	☒	☒	☒	☒				
Channel/Group Slot 23	☒	☒	☒	☒	☒				
Channel/Group Slot 24	☒	☒	☒	☒	☒				
Main 1						☒			
Main 2							☒		
Monitor 1								☒	
Monitor 2									☒

This table shows which slots each module can occupy. The greyed out areas indicate slots into which the module cannot be fitted.

LARGE CHASSIS TYPICAL LAYOUT



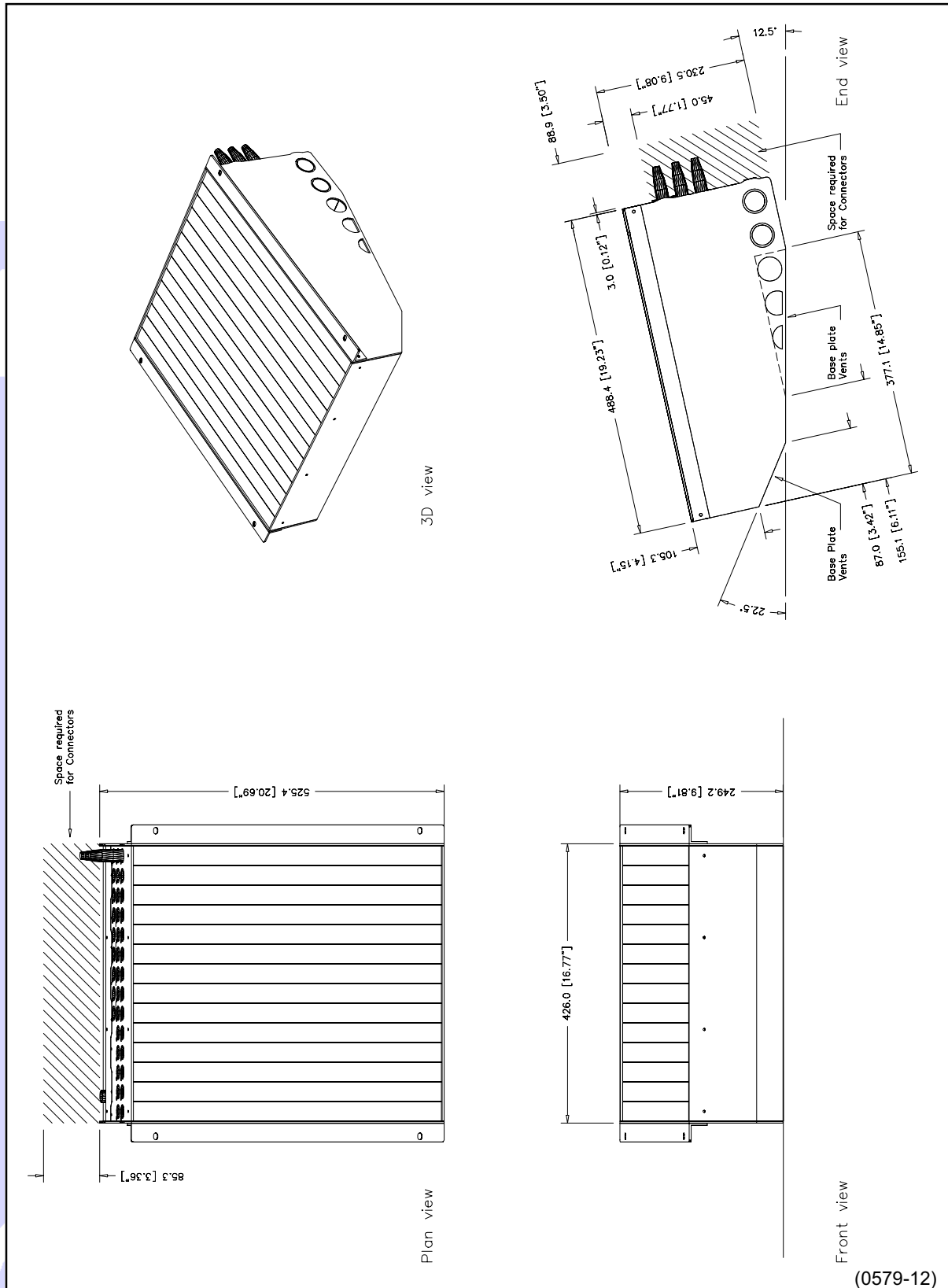
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LARGE CHASSIS MODULE OPTIONS

Large Chassis	Modules Available to be fitted into slots								
	PQ5122	PQ5123	BQ5124	XL5125	XL5126	LC5127	LC5128	ML4952	ML4953
Channel Slot 1	☒	☒	☒						
Channel Slot 2	☒	☒	☒						
Channel Slot 3	☒	☒	☒						
Channel Slot 4	☒	☒	☒						
Channel Slot 5	☒	☒	☒						
Channel Slot 6	☒	☒	☒						
Channel Slot 7	☒	☒	☒						
Channel Slot 8	☒	☒	☒						
Channel Slot 9	☒	☒	☒						
Channel Slot 10	☒	☒	☒						
Channel Slot 11	☒	☒	☒						
Channel Slot 12	☒	☒	☒						
Channel Slot 13	☒	☒	☒						
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Channel Slot 28	☒	☒	☒						
Channel Slot 29	☒	☒	☒						
Channel Slot 30	☒	☒	☒						
Channel Slot 31	☒	☒	☒						
Channel Slot 32	☒	☒	☒						
Channel Slot 33	☒	☒	☒						
Channel Slot 34	☒	☒	☒						
Channel/Group Slot 35	☒	☒	☒	☒	☒				
Channel/Group Slot 36	☒	☒	☒	☒	☒				
Channel/Group Slot 37	☒	☒	☒	☒	☒				
Channel/Group Slot 38	☒	☒	☒	☒	☒				
Main 1						☒			
Main 2							☒		
Monitor 1								☒	
Monitor 2									☒

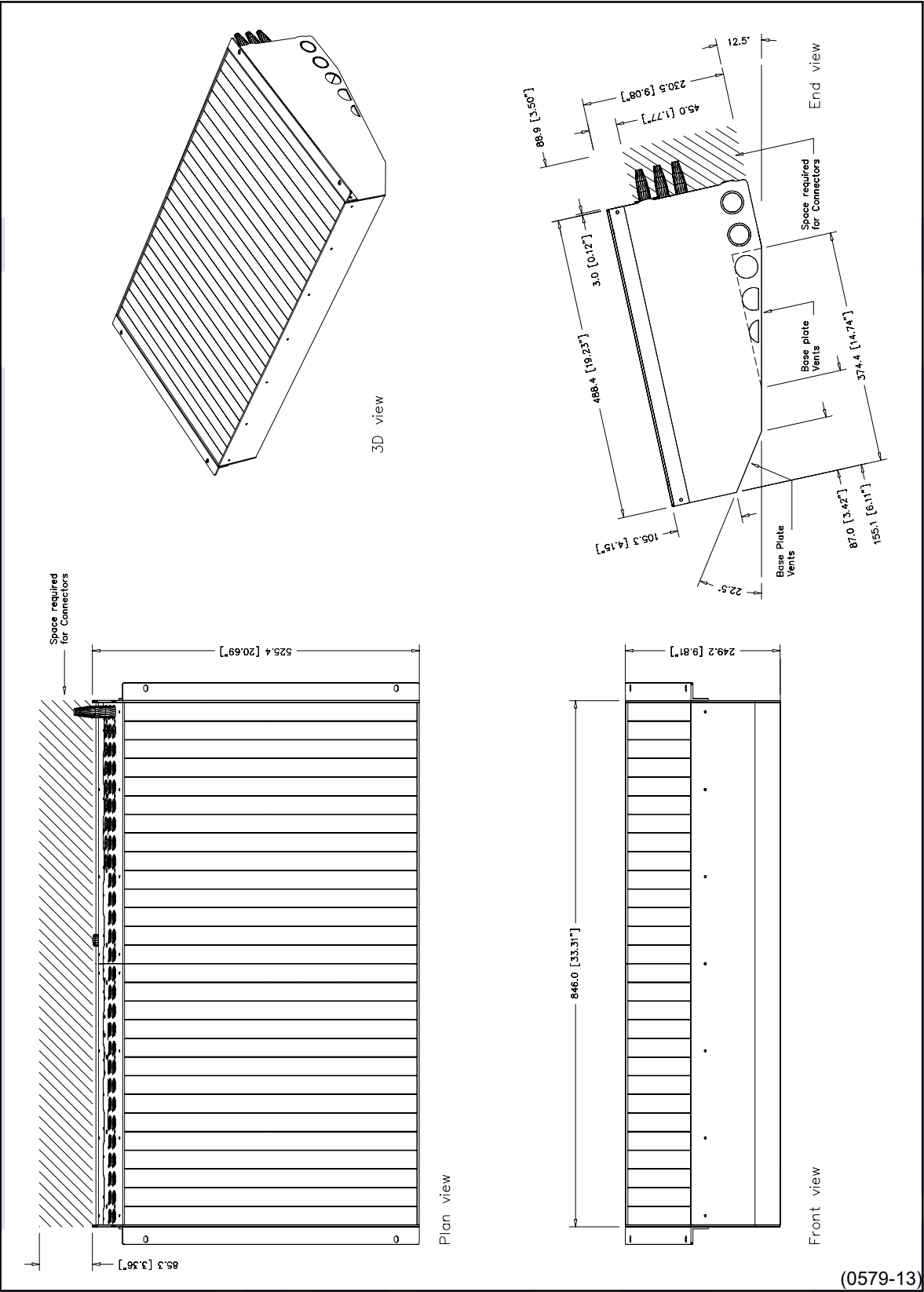
This table shows which slots each module can occupy. The greyed out areas indicate slots into which the module cannot be fitted.

PLAN, ELEVATION AND GENERAL ARRANGEMENT DETAILS SMALL CHASSIS - EM5270



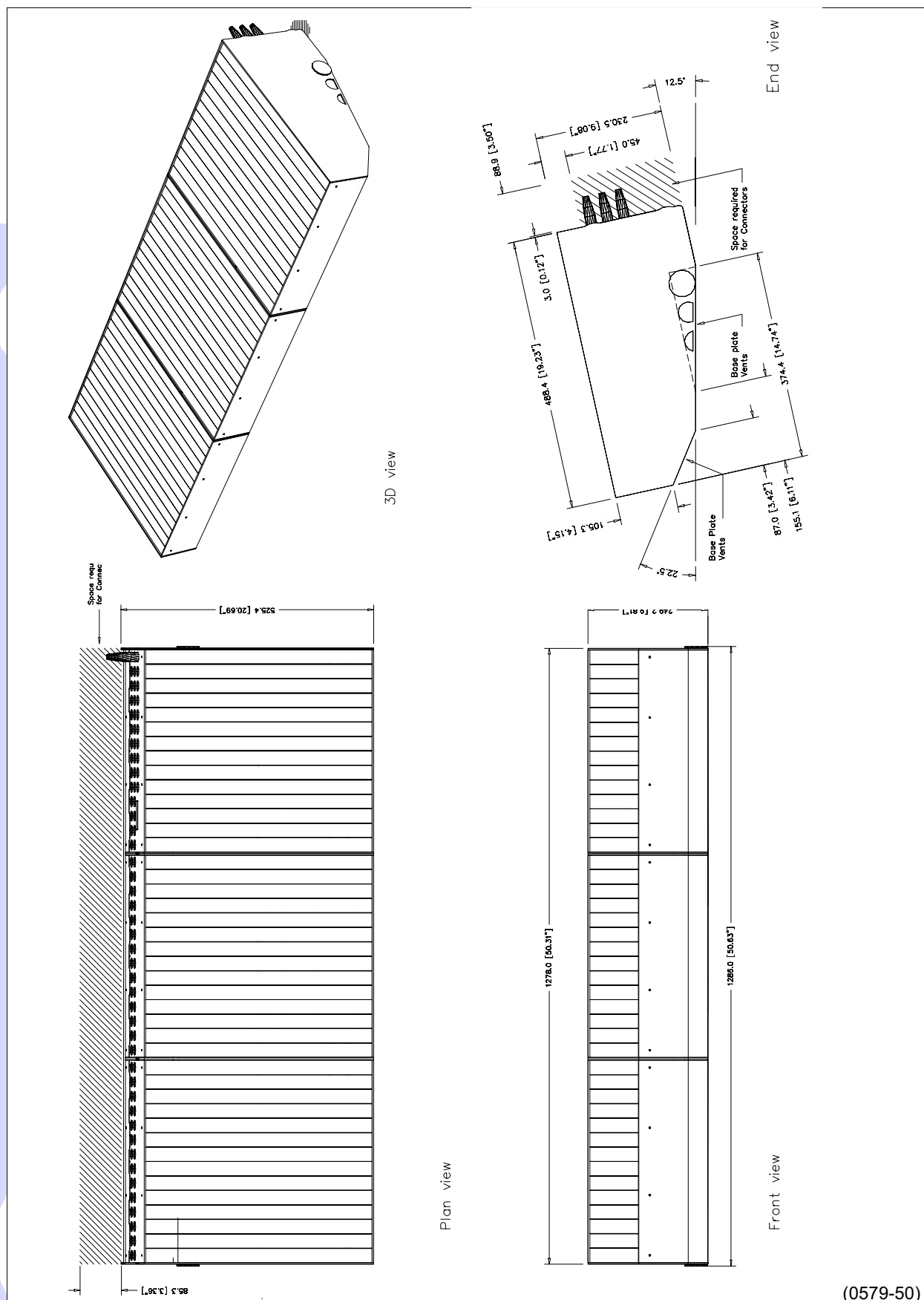
Supplied with an internal Power Supply Unit as standard, but an external version is available upon request (EM5271).

PLAN, ELEVATION AND GENERAL ARRANGEMENT DETAILS
MEDIUM CHASSIS - EM5273



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PLAN, ELEVATION AND GENERAL ARRANGEMENT DETAILS LARGE CHASSIS - EM5274



(0579-50)

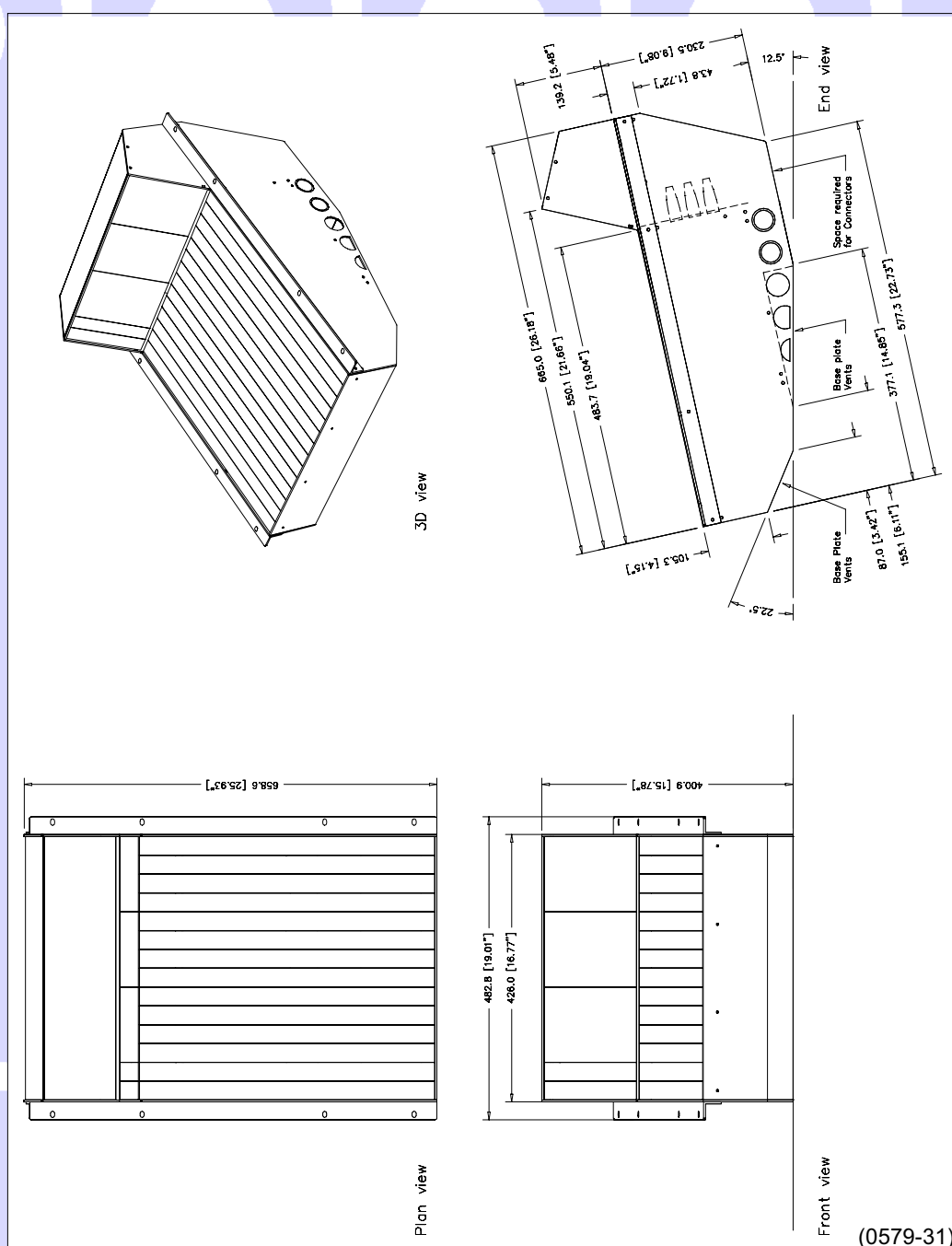
OPTIONAL UPSTAND

All chassis sizes of the M3 console may be supplied with an optional upstand which can house a selection of Calrec level meters. These units derive their audio and power interface from the main M3 chassis.

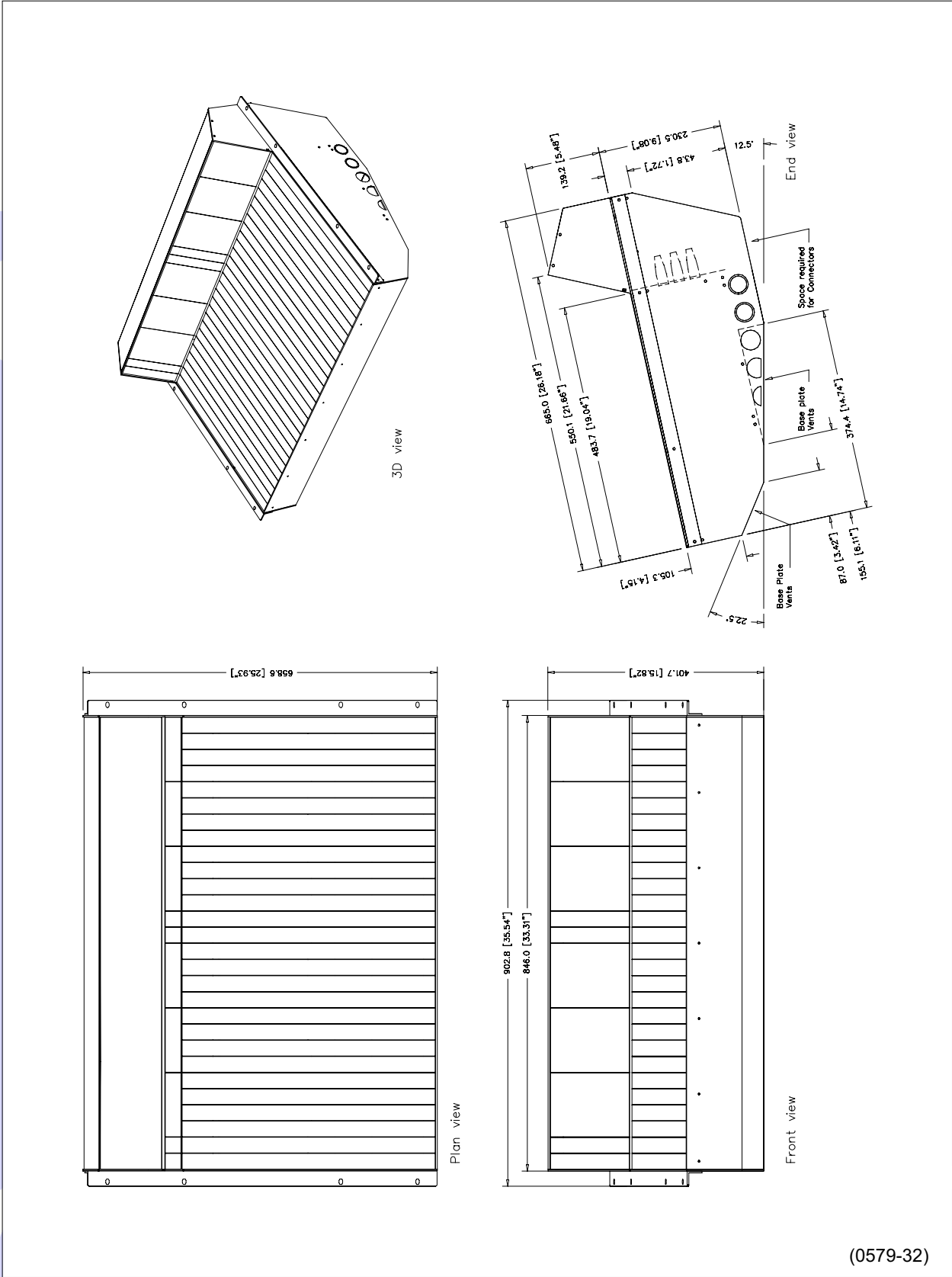
The upstand option must be specified at time of order. There is also a separate 19" rack mounted meter bridge available. Order numbers are:

19" 4RU RACK MOUNTED METER BRIDGE (Not Shown) - EM5276

SMALL CHASSIS WITH UPSTAND - EM5272

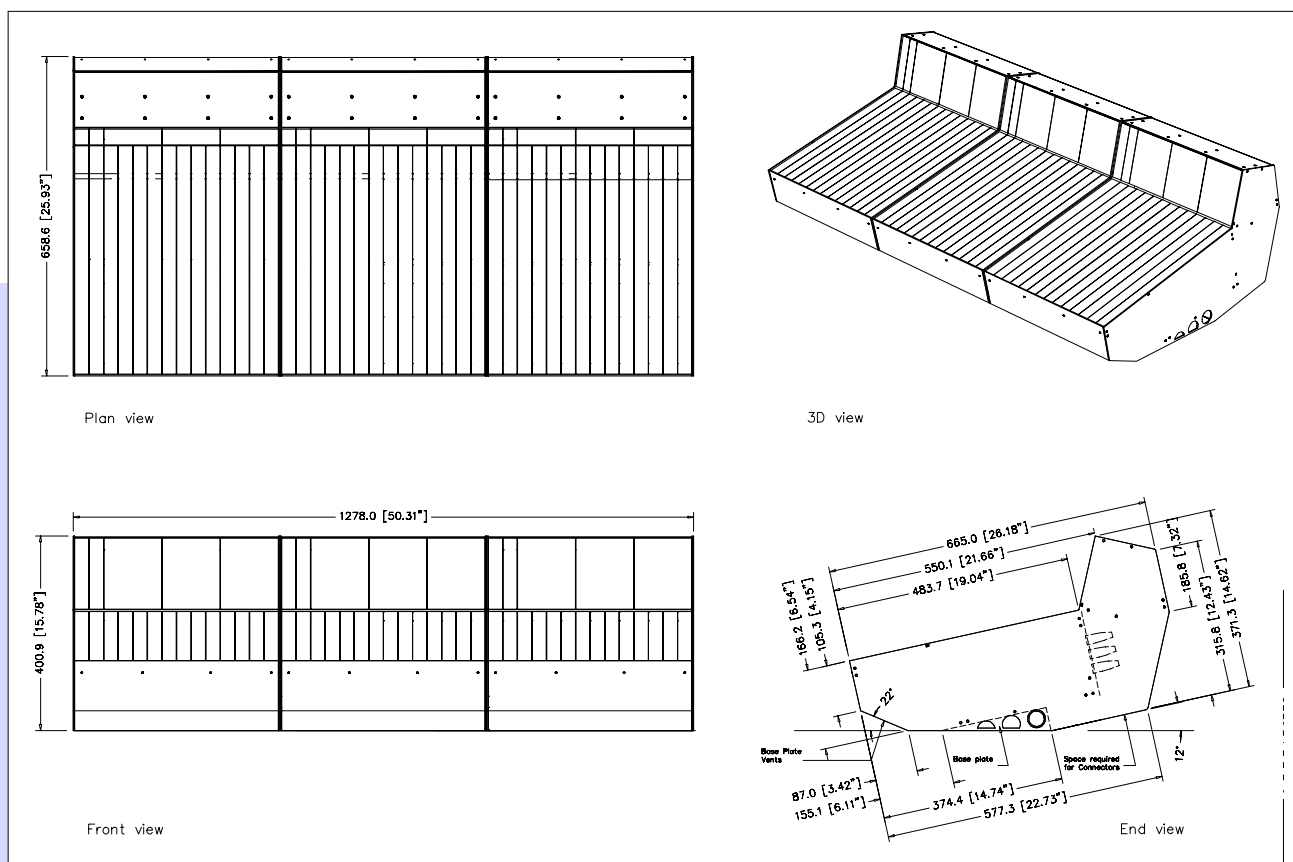


MEDIUM CHASSIS WITH UPSTAND - EM5250



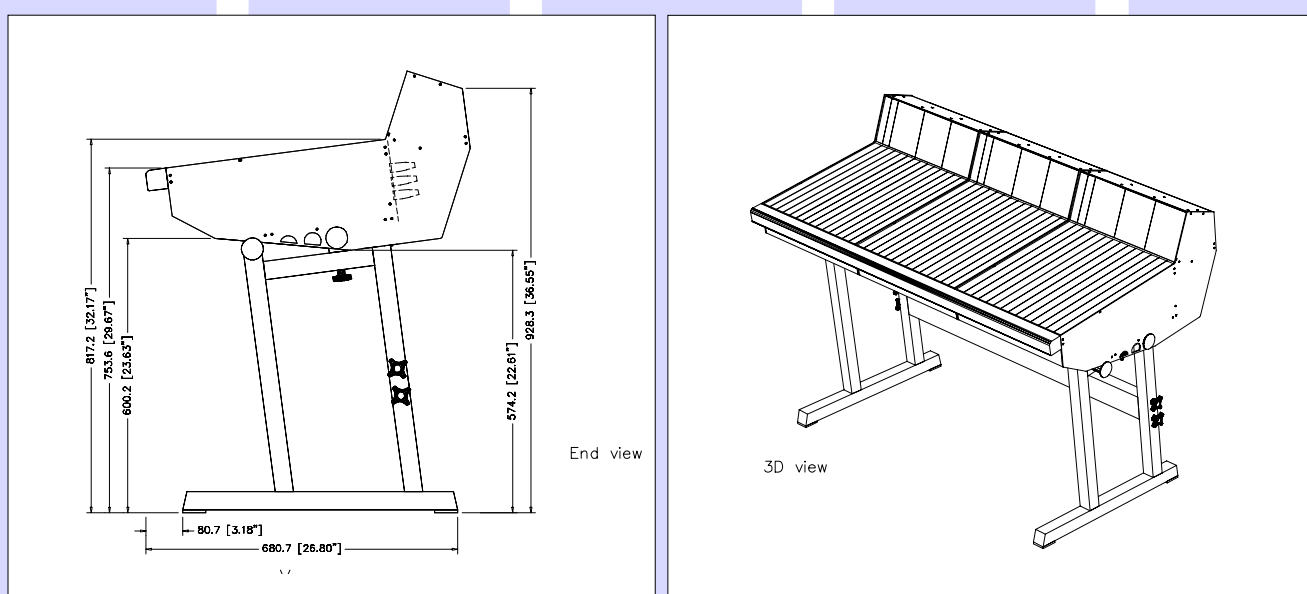
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LARGE CHASSIS WITH UPSTAND - EM5275

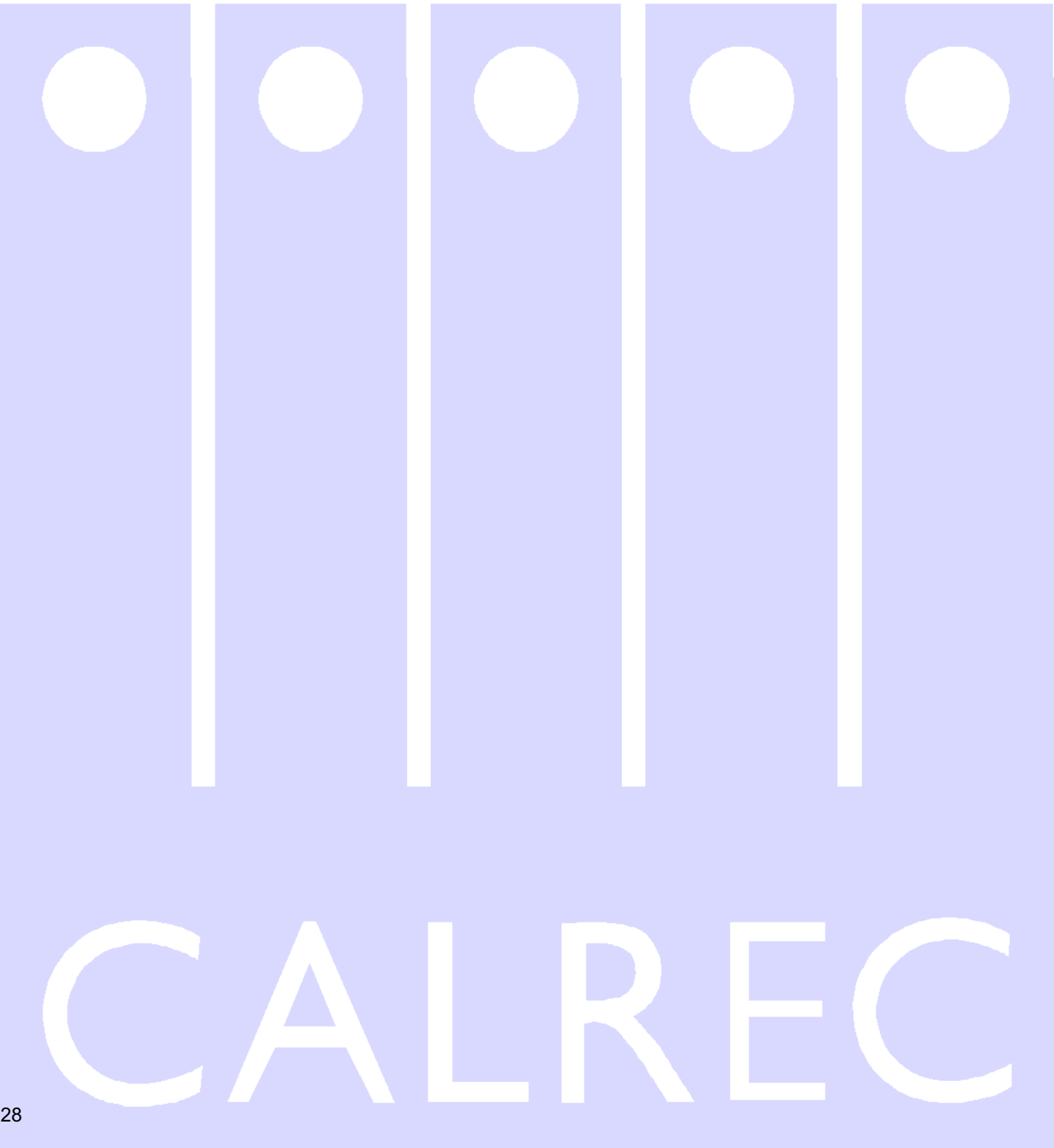


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An optional stand is available with the large chassis only.



(0579-44)



3.0 Connections & Specifications

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CONNECTIONS

The M3 uses XLR-3 fixed (panel mounted) female (socket) connectors for Channel Mic and Line level inputs and direct inputs to groups and mains.

Main, monitor and Aux outputs are on XLR-3 fixed (panel mounted) male (plug) connectors

50 way D-type fixed panel mounted) female (sockets) connectors are used for all other audio and control connections.

Recommended

Interface	Connector	Level	Nominal Impedance	Minimum Load
Microphone Inputs	XLR-3F	-75/+5dBu	1k Ω	-
Line Inputs	XLR-3F	-24/+18dBu	20k Ω	-
Insert Sends	D-50F	0dBu	40 Ω	600 Ω
Insert Returns	D-50F	0dBu	20k Ω	-
Direct Outputs	D-50F	0dBu (+10)	40 Ω	600 Ω
External Cuts/VCA Control/Fader Start	D-50F	5V/0V Operate	-	-
Group Direct Inputs	XLR-3F	0dBu	20k Ω	-
Main Direct Inputs	XLR-3F	0dBu	20k Ω	-
Auxiliary Outputs	XLR-3M and D-50F	0dBu	40 Ω	600 Ω
Main Outputs	XLR-3M and D-50F	0dBu	40 Ω	600 Ω
Monitor Inputs	D-50F	0dBu	20k Ω	-
Monitor Outputs	XLR-3M and D-50F	0dBu	40 Ω	600 Ω

WEIGHTS

Small chassis (with internal PSU)	= 19.5kg (43lb) approx
Medium chassis	= 36kg (70.5lb) approx
Large Chassis (no stand)	= 62Kg (136lb) approx
Large Chassis (with stand)	= 79Kg (173lb) approx

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SPECIFICATION

Measurements are with 22-22KHz filters unless otherwise stated. All specifications are in the frequency range 40-15KHz unless otherwise stated. Measurements specified are with EQ and dynamics out of circuit.

0dBu = 0.775 volts RMS.

dBq = CCIR QUASI PEAK.

Inputs

Microphone	Transformer balanced	1k Ω Nominal
	Sensitivity	-10/-60dBu in 10dB steps +/- 15dB Variable trim
	Input Headroom	27dB Above setting Maximum input +10dBu
Line	Electronic balanced	20k Ω Nominal
	Sensitivity	+/- 15dB Variable trim Maximum input +27dBu
Monitor/direct	Electronic balanced	20k Ω Nominal
	Sensitivity	0dBu Max I/P H/R +21

Outputs

Main Line	Transformer balanced	0dBu into 600 Ω
	Maximum output	+22dBu into 600 Ω @1kHz
	Source impedance	30 Ω nominal
Aux 1-2	Transformer balanced	0dBu into 600 Ω
	Maximum output	+23dBu into 600 Ω
	Source impedance	30 Ω nominal
Main Desk/Aux 3-4 Groups/Dir/Ins go/ Mon LS/Talkback	Electronic balanced	0dBu into 600 Ω
	Maximum output	+23dBu into 600 Ω
	Electronic balanced	+27dBu into 3.3k Ω
	Source impedance	40 Ω nominal

Performance

Noise	Microphone (EIN)	-126dB
	Line/Group/Main	$\leq$ -83dBu
Distortion	at +16dBu	$\leq$ 0.03% 40Hz-10kHz
Freq. Response	Any circuit	+/- 0.5dB, 20Hz-20kHz
Stereo Path Error Level	L,R	+/-1dB

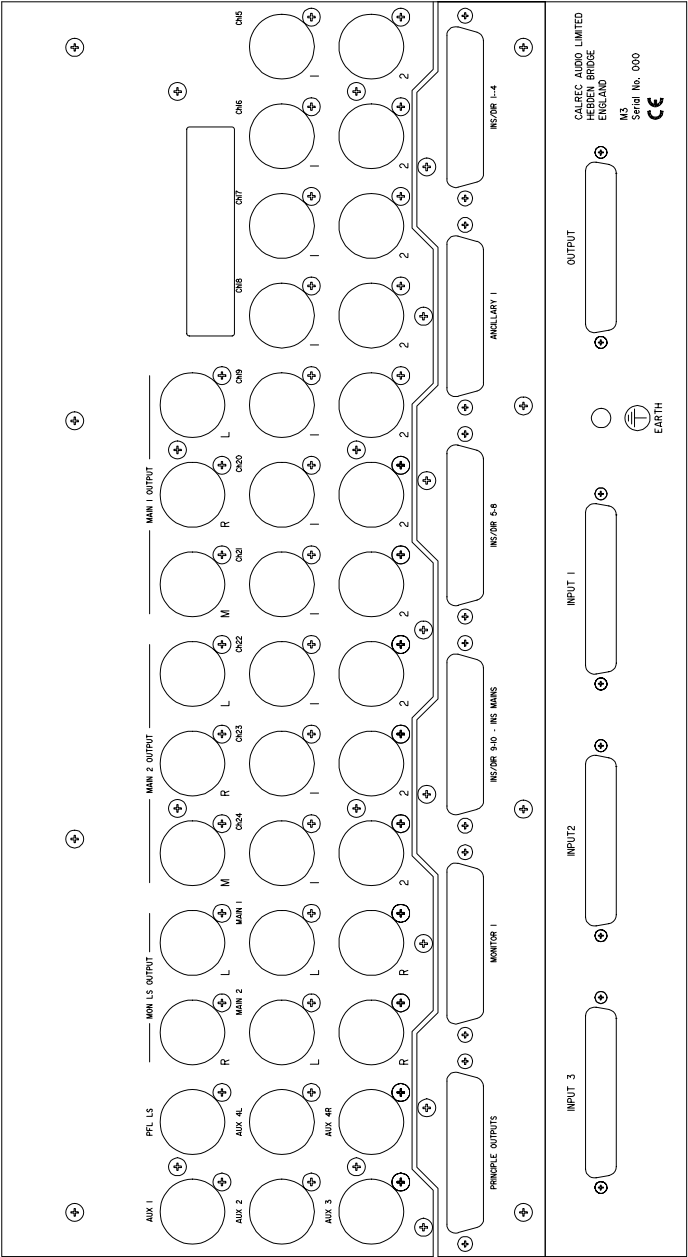
Input/Output

Balance	Microphone	$\geq$ -80dB at 1kHz, $\geq$ -70dB at 10kHz
	Line level circuits	$\geq$ -40dB
Crosstalk	Fader cut-off	$\leq$ -90dB at 1kHz, $\leq$ -85dB at 15kHz
	Adjacent channel	$\leq$ -85dB at 1kHz
		$\leq$ -70dB at 10kHz
	Stereo path	$\leq$ -60dB at 10kHz

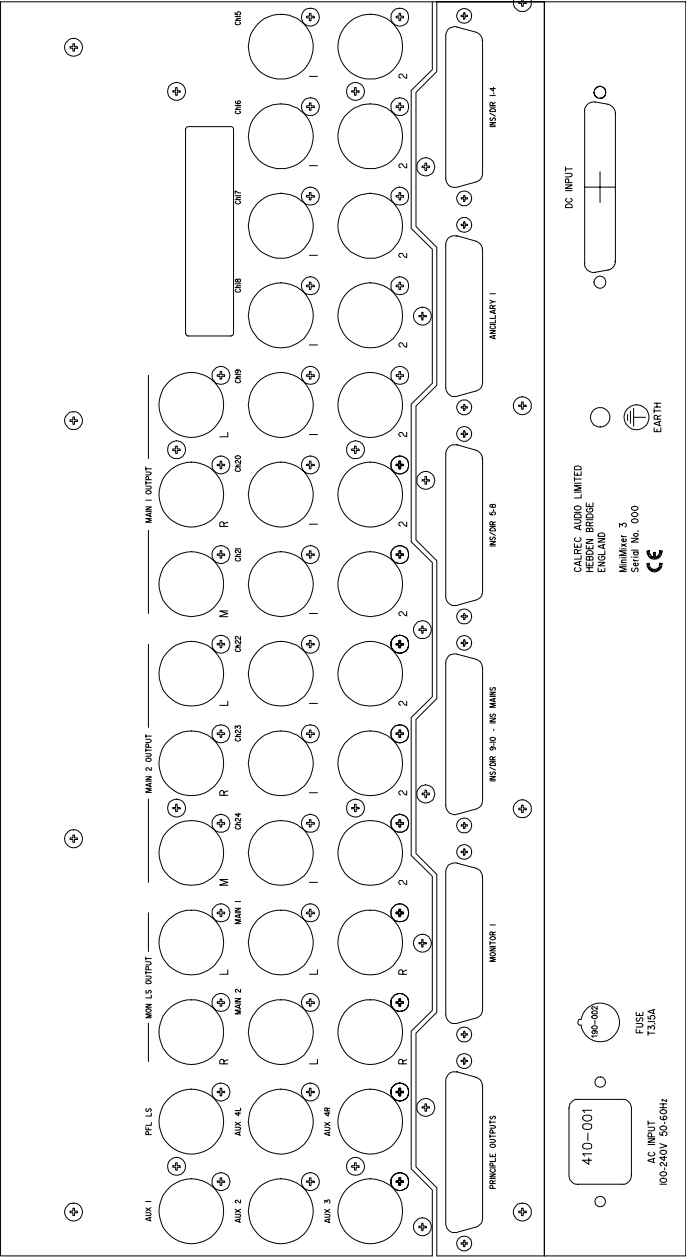
SMALL CHASSIS REAR AND METER BRIDGE INTERFACE CONNECTOR DETAILS

External PSU

Internal PSU

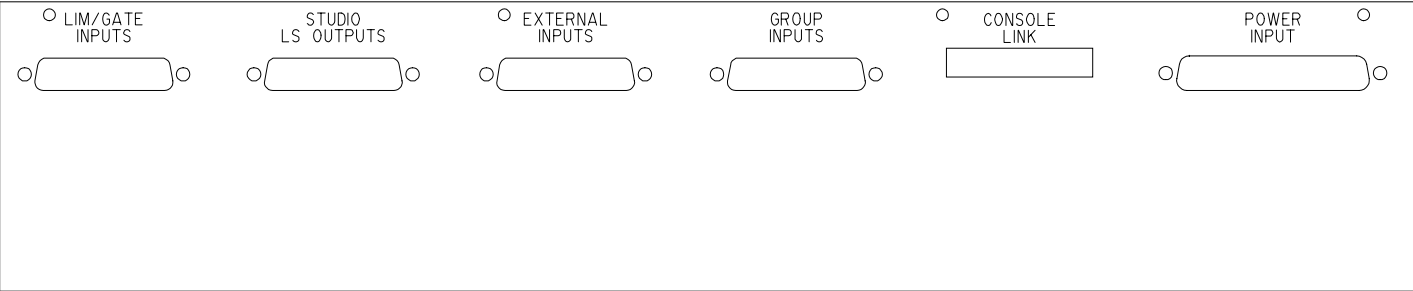


(0579-57)



(0579-56)

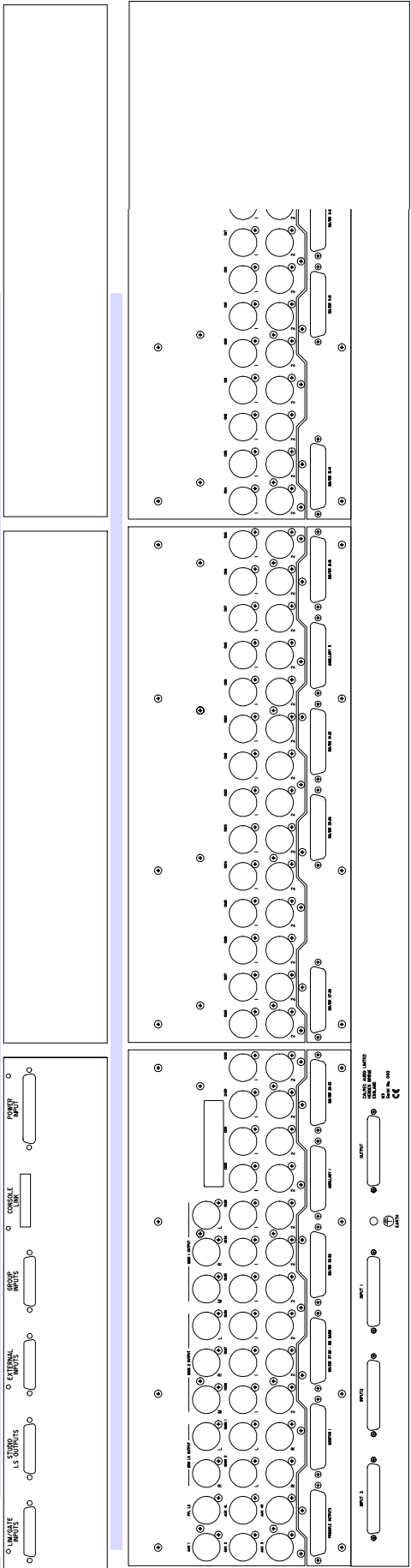
Meter Bridge



(0579-59)

[illegible]

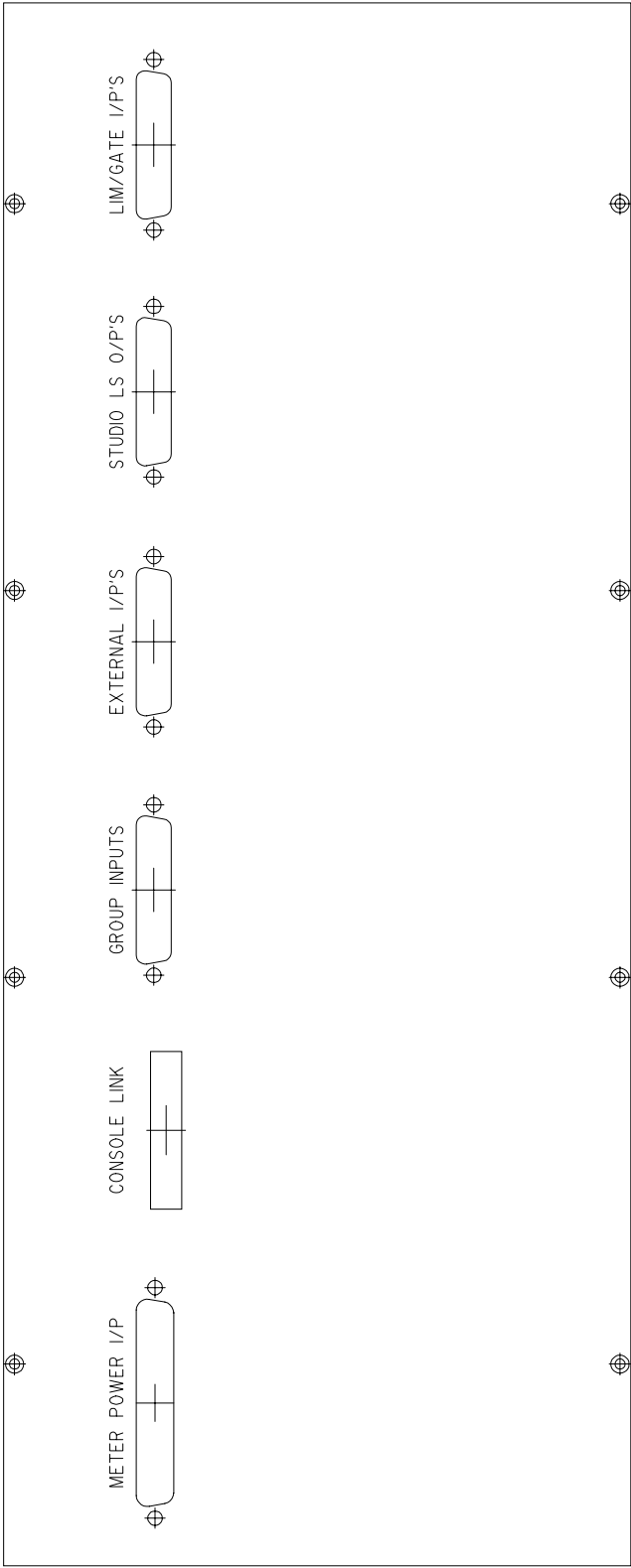
LARGE CHASSIS REAR AND METER BRIDGE INTERFACE CONNECTOR DETAILS



(0579-61)

(0579-46)

RACK MOUNTED METER BRIDGE INTERFACE CONNECTOR DETAILS



(0579-62)

INPUTS - XLR's

XLR 3 Connector Pin Information (fixed sockets on console)

Pin 2 - Hot, or Phase

Pin 3 - Cold, or Anti-phase

Pin 1 - Chassis or Earth

Channel Inputs

Module Type fitted	XLR Ref	Circuit for channel slots 1-10 (Small chassis), slots 1-24 (Medium chassis) or slots 1-38 (Large chassis - unless group modules fitted).
PQ5122	1	MIC Input
(Mono dual Input)	2	2nd Input either MIC or LINE
or		
PQ5123	1	MIC Input L
(Stereo Mic)	2	MIC Input R
or		
BQ5124	1	LINE Input L
(Stereo Line)	2	LINE Input R

Group Inputs

Module Type fitted	XLR Ref	Circuit for channel/group slots 7-10 (small chassis), slots 21-24 (Medium chassis) or slots 35-38 (Large chassis)
XL5125	1	Direct Input - M
(Mono)	2	<i>not used</i>
or		
XL5126	1	Direct Input - L
(Stereo)	2	Direct Input - R

Main Input 1

Module Type fitted	XLR Ref	Circuit for Main module in Main 1 slot
LC5127	1	Direct Input - L
(Main 1)	2	Direct Input - R

Main Input 2

Module Type fitted	XLR Ref	Circuit for Main module in Main 2 slot
LC5128	1	Direct Input - L
(Main 2)	2	Direct Input - R
or		
TB3808	1	<i>not used</i>
(Talkback)	2	<i>not used</i>

Monitor

No Inputs are available XLR Connectors

OUTPUTS - XLR's

XLR 3 Connector Pin Information (fixed plugs on console)

Pin 2 - Hot, or Phase

Pin 3 - Cold, or Anti-phase

Pin 1 - Chassis or Earth

Main Output 1

Module Type fitted	XLR Ref	Circuit for Main module in Main 1 slot
LC5127	L	LINE Output 1L
(Main 1)	R	LINE Output 1R
	M	LINE Output 1M
	AUX 1	AUX Output 1M
	AUX 2	AUX Output 2M
	AUX 3	AUX Output 3M
	AUX 4L	AUX Output 4L
	AUX 4R	AUX Output 4R

Main Output 2

Module Type fitted	XLR Ref	Circuit for Main module in Main 2 slot
LC5128	L	LINE Output 2L
(Main 2)	R	LINE Output 2R
	M	LINE Output 2M

Monitor 1

Module Type fitted	XLR Ref	Circuit for Monitor module in Monitor 1 slot
ML4952	Mon LS L	Monitor Loudspeaker Output L
(Monitor 1)	Mon LS R	Monitor Loudspeaker Output R

Monitor 2

Module Type fitted	XLR Ref	Circuit for Monitor module in Monitor 2 slot
ML4953	PFL LS	PFL Loudspeaker Output M

No other outputs are available on XLR connectors.

SMALL CHASSIS OUTPUT GUIDE

Connector Type	Interface IIS / DIR 1-4 *	Interface IIS / DIR 9-10 MH IIS 1&2 50F D-TYPE (Free Male Plug)	Interface AUXILIARY 1 50F D-TYPE (Free Male Plug)	Interface PRINCIPLE O/P'S 50F D-TYPE (Free Male Plug)	Interface MONITOR 50F D-T (Free Male Plug)
Pin No.	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT
1. 18	Ch 1 Insert Go L or M	Ch 9 or Gp 3 Insert Go L or M	Ch 1/2 Remote Out √	Main 1 DESK Output L	Monitor Bargraph
34. 2	Ch 1 Insert Go R or nc	Ch 9 or Gp 3 Insert Go R or nc	Ch 3/4 Remote Out √	Main 1 DESK Output R	Monitor Bargraph
35. 19	Ch 1 Insert Return L or M	Ch 9 or Gp 3 Insert Return L or M	Ch 5/6 Remote Out √	Main 1 LINE Output L	Talkback O/P
3. 36	Ch 1 Insert Return R or nc	Ch 9 or Gp 3 Insert Return R or nc	Ch 7/8 or Gp 1/2 Remote Out √	Main 1 LINE Output R	SLS External IP 1
20. 4	Ch 1 Direct Output L or M	Ch 9 or Gp 3 Direct Output L or M	Ch 9/10 or Gp 3/4 Remote Out √	Main 1 LINE Output M	SLS External IP 1
37. 21	Ch 1 Direct Output R or nc	Ch 9 or Gp 3 Direct Output R or nc	CR / CR	Main 2 DESK Output L	SLS External IP 2
5. 22	Ch 2 Insert Go L or M	Ch 10 or Gp 4 Insert Go L or M	Ch 1/2 VCA Control √	Main 2 DESK Output R	SLS External IP 2
38. 6	Ch 2 Insert Go R or nc	Ch 10 or Gp 4 Insert Go R or nc	Ch 3/4 VCA Control √	Main 2 LINE Output L	Monitor LS SEL O
39. 23	Ch 2 Insert Return L or M	Ch 10 or Gp 4 Insert Return L or M	Ch 5/6 VCA Control √	Main 2 LINE Output R	Monitor LS SEL O
7. 24	Ch 2 Insert Return R or nc	Ch 10 or Gp 4 Insert Return R or nc	Ch 7/8 or Gp 1/2 VCA Control √	Main 2 LINE Output M	RTB IP
40. 8	Ch 2 Direct Output L or M	Ch 10 or Gp 4 Direct Output L or M	Ch 9/10 or Gp 3/4 VCA Control √		RTB Enable √ / OL
41. 25	Ch 2 Direct Output R or nc	Ch 10 or Gp 4 Direct Output R or nc	CR / CR		Mix Minus External
9. 26	Ch 3 Insert Go L or M	Main 1 Insert Go L	Ch 1/2 Fader Start √	Monitor LS Output L	Mix Minus External
42. 10	Ch 3 Insert Go R or nc	Main 1 Insert Go R	Ch 3/4 Fader Start √	Monitor LS Output R	CR / CR
43. 27	Ch 3 Insert Return L or M	Main 1 Insert Ret L	Ch 5/6 Fader Start √	Headphone Output L	External Talkback
11. 28	Ch 3 Insert Return R or nc	Main 1 Insert Ret R	Ch 7/8 or Gp 1/2 Fader Start √	Headphone Output R	External Talkback
44. 12	Ch 3 Direct Output L or M		Ch 9/10 or Gp 3/4 Fader Start √	PFL LS Output	Monitor LS IP A11
45. 29	Ch 3 Direct Output R or nc		CR / CR	Aux 1 Output M	Monitor LS IP A11
13. 46	Ch 4 Insert Go L or M	Main 2 Insert Go L	ON-AIR relay com/no	Aux 2 Output M	Monitor LS IP A21
30. 14	Ch 4 Insert Go R or nc	Main 2 Insert Go R	Tx 'E' / OL	Aux 3 Output M	Monitor LS IP A21
47. 31	Ch 4 Insert Return L or M	Main 2 Insert Ret L	Tone √ / TB √	Aux 4 Output L	Monitor LS IP A31
15. 48	Ch 4 Insert Return R or nc	Main 2 Insert Ret R	AFL / PFL	Aux 4 Output R	Monitor LS IP A31
32. 16	Ch 4 Direct Output L or M	Studio LS EXT CUT / OL	SLS Bus √ / -	Studio LS Output L	Monitor LS IP A41
49. 33	Ch 4 Direct Output R or nc	Monitor LS EXT CUT / OL	External Tone Output	Studio LS Output R	Monitor LS IP A41
17. 50	Chassis	Chassis	Chassis	Chassis	Chassis

* IIS / DIR 1-4 also applies to circuits in connectors IIS/DIR 5-8 respectively (IIS/DIR 5-8 may also contain Group circuits in slots 7-8)

nc = not connected, if for example the mono PQ5122 or mono XL5125 is fitted

All Enable & Logic √ lines are active low and are pulled down to OL when activated or to activate.

All cable screens should be connected to chassis.

CR (Centre Rail) is a clean audio earth reference & is provided for earth reference for unbalanced circuits only and should not be used as a general cable screen.

All VCA lines should be terminated to CR when not used.

OL (0 Volts logic earth for DC switching)

L, R are the Left & Right signals of a stereo output.

M is the mono output.

MEDIUM CHASSIS OUTPUT GUIDE

Connector Type	Interface IIS / DIR 1-4* SOF D-TYPE (Free Male Plug)	Interface IIS / DIR 13-14 SOF D-TYPE (Free Male Plug)	Interface IIS / DIR 23-24 MII IIS 1&2 SOF D-TYPE (Free Male Plug)	Interface AUXILIARY 2 SOF D-TYPE (Free Male Plug)	Interface AUXILIARY 1 SOF D-TYPE (Free Male Plug)	Interface PRINCIPLE O/P SOF D-TYPE (Free Male Plug)
PHI No.	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT
1. 18	Ch 1 Insert Go L or M	Ch 13 Insert Go L or M	Ch 23 or Go 3 Insert Go L or M	Ch 1/2 Remote Out ˆ	Ch 15/16 Remote Out ˆ	Main 1 DESK Output
34. 2	Ch 1 Insert Go R or nc	Ch 13 Insert Go R or nc	Ch 23 or Go 3 Insert Go R or nc	Ch 3/4 Remote Out ˆ	Ch 17/18 Remote Out ˆ	Main 1 DESK Output
35. 19	Ch 1 Insert Return L or M	Ch 13 Insert Return L or M	Ch 23 or Go 3 Insert Return L or M	Ch 5/6 Remote Out ˆ	Ch 19/20 Remote Out ˆ	Main 1 LINE Output L
3. 36	Ch 1 Insert Return R or nc	Ch 13 Insert Return R or nc	Ch 23 or Go 3 Insert Return R or nc	Ch 7/8 Remote Out ˆ	Ch 21/22 or Go 1/2 Remote Out ˆ	Main 1 LINE Output R
20. 4	Ch 1 Direct Output L or M	Ch 13 Direct Output L or M	Ch 23 or Go 3 Direct Output L or M	Ch 9/10 Remote Out ˆ	Ch 23/24 or Go 3/4 Remote Out ˆ	Main 1 LINE Output L
37. 21	Ch 1 Direct Output R or nc	Ch 13 Direct Output R or nc	Ch 23 or Go 3 Direct Output R or nc	Ch 11/12 Remote Out ˆ	CR / CR	Main 2 DESK Output
5. 22	Ch 2 Insert Go L or M	Ch 14 Insert Go L or M	Ch 24 or Go 4 Insert Go L or M	Ch 13/14 Remote Out ˆ	Ch 15/16 VCA Control ˆ	Main 2 DESK Output
38. 6	Ch 2 Insert Go R or nc	Ch 14 Insert Go R or nc	Ch 24 or Go 4 Insert Go R or nc	CR / CR	Ch 17/18 VCA Control ˆ	Main 2 LINE Output L
39. 23	Ch 2 Insert Return L or M	Ch 14 Insert Return L or M	Ch 24 or Go 4 Insert Return L or M	Ch 1/2 VCA Control ˆ	Ch 19/20 VCA Control ˆ	Main 2 LINE Output R
7. 24	Ch 2 Insert Return R or nc	Ch 14 Insert Return R or nc	Ch 24 or Go 4 Insert Return R or nc	Ch 3/4 VCA Control ˆ	Ch 21/22 or Go 1/2 VCA Control ˆ	Main 2 LINE Output L
40. 8	Ch 2 Direct Output L or M	Ch 14 Direct Output L or M	Ch 24 or Go 4 Direct Output L or M	Ch 5/6 VCA Control ˆ	Ch 23/24 or Go 3/4 VCA Control ˆ	
41. 25	Ch 2 Direct Output R or nc	Ch 14 Direct Output R or nc	Ch 24 or Go 4 Direct Output R or nc	Ch 7/8 VCA Control ˆ	CR / CR	
9. 26	Ch 3 Insert Go L or M	Main 1 Insert Go L	Main 1 Insert Go L	Ch 9/10 VCA Control ˆ	Ch 15/16 Fader Start ˆ	Monitor LS Output L
42. 10	Ch 3 Insert Go R or nc	Main 1 Insert Go R	Main 1 Insert Go R	Ch 11/12 VCA Control ˆ	Ch 17/18 Fader Start ˆ	Monitor LS Output R
43. 27	Ch 3 Insert Return L or M	Main 1 Insert Ret L	Main 1 Insert Ret L	Ch 13/14 VCA Control ˆ	Ch 19/20 Fader Start ˆ	Headphone Output L
11. 28	Ch 3 Insert Return R or nc	Main 1 Insert Ret R	Main 1 Insert Ret R	CR / CR	Ch 21/22 or Go 1/2 Fader Start ˆ	Headphone Output R
44. 12	Ch 3 Direct Output L or M			Ch 1/2 Fader Start ˆ	Ch 23/24 or Go 3/4 Fader Start ˆ	PFL LS Output
45. 29	Ch 3 Direct Output R or nc			Ch 3/4 Fader Start ˆ	CR / CR	Aux 1 Output M
13. 46	Ch 4 Insert Go L or M	Main 2 Insert Go L	Main 2 Insert Go L	Ch 5/6 Fader Start ˆ	CR-AIR relay comho	Aux 2 Output M
30. 14	Ch 4 Insert Go R or nc	Main 2 Insert Go R	Main 2 Insert Go R	Ch 7/8 Fader Start ˆ	Tx E / OL	Aux 3 Output M
47. 31	Ch 4 Insert Return L or M	Main 2 Insert Ret L	Main 2 Insert Ret L	Ch 9/10 Fader Start ˆ	Tone ˆ / TB ˆ	Aux 4 Output L
15. 48	Ch 4 Insert Return R or nc	Main 2 Insert Ret R	Main 2 Insert Ret R	Ch 11/12 Fader Start ˆ	AFL / PFL	Aux 4 Output R
32. 16	Ch 4 Direct Output L or M	Studio LS EXT CLUT / OL	Studio LS EXT CLUT / OL	Ch 13/14 Fader Start ˆ	SLS Bus ˆ / -	Studio LS Output L
49. 33	Ch 4 Direct Output R or nc	Monitor LS EXT CLUT / OL	Monitor LS EXT CLUT / OL	CR / CR	External Tone Output	Studio LS Output R
17. 50	Chassis	Chassis	Chassis	Chassis	Chassis	Chassis

* IIS / DIR 1-4 also applies to circuits in connectors IIS/DIR 5-8, IIS/DIR 9-12, IIS/DIR 15-18, IIS/DIR 19-22 respectively (IIS/DIR 19-22 may also contain Group circuits in slots)

nc = not connected, if for example the mono PQ5122 or mono XL5125 is fitted

All Enable & Logic ˆ lines are active low and are pulled down to 0L when activated or to activate.

All cable screens should be connected to chassis.

CR (Centre Rail) is a clean audio earth reference & is provided for earth reference for unbalanced circuits only and should not be used as a general cable screen.

All VCA lines should be terminated to CR when not used.

OL (0 Volts logic earth for DC switching)

L R are the Left & Right signals of a stereo output.

M is the mono output.

LARGE CHASSIS OUTPUT GUIDE

Connector Type	Interface IIS / DIR 1-4 [*] 50F D-TYPE (Free Male Plug)	Interface IIS / DIR 13-14 ^{**} 50F D-TYPE (Free Male Plug)	Interface IIS / DIR 37-38 MH IIS 1&2 50F D-TYPE (Free Male Plug)	Interface ANCILLARY 2 ^{***} 50F D-TYPE (Free Male Plug)	Interface ANCILLARY 1 50F D-TYPE (Free Male Plug)	Interface PRINCIPLE 0/0 [†] 50F D-TYPE (Free Male Plug)
PHI No.	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT
1. 18	Ch 13 Insert Go L or M	Ch 13 Insert Go L or M	Ch 37 or Gp 3 Insert Go L or M	Ch 1/2 Remote Out °	Ch 29/30 Remote Out °	Main 1 DESK Output
34. 2	Ch 13 Insert Go R or nc	Ch 13 Insert Go R or nc	Ch 37 or Gp 3 Insert Go R or nc	Ch 3/4 Remote Out °	Ch 31/32 Remote Out °	Main 1 DESK Output
35. 19	Ch 13 Insert Return L or M	Ch 13 Insert Return L or M	Ch 37 or Gp 3 Insert Return L or M	Ch 5/6 Remote Out °	Ch 33/34 Remote Out °	Main 1 LINE Output
3. 36	Ch 13 Insert Return R or nc	Ch 13 Insert Return R or nc	Ch 37 or Gp 3 Insert Return R or nc	Ch 7/8 Remote Out °	Ch 35/36 or Gp 1/2 Remote Out °	Main 1 LINE Output
29. 4	Ch 13 Direct Output L or M	Ch 13 Direct Output L or M	Ch 37 or Gp 3 Direct Output L or M	Ch 9/10 Remote Out °	Ch 37/38 or Gp 3/4 Remote Out °	Main 1 LINE Output
37. 21	Ch 13 Direct Output R or nc	Ch 13 Direct Output R or nc	Ch 37 or Gp 3 Direct Output R or nc	Ch 11/12 Remote Out °	CR / CR	Main 2 DESK Output
5. 22	Ch 14 Insert Go L or M	Ch 14 Insert Go L or M	Ch 38 or Gp 4 Insert Go L or M	Ch 13/14 Remote Out °	Ch 29/30 VCA Control °	Main 2 DESK Output
38. 6	Ch 14 Insert Go R or nc	Ch 14 Insert Go R or nc	Ch 38 or Gp 4 Insert Go R or nc	CR / CR	Ch 31/32 VCA Control °	Main 2 LINE Output
39. 23	Ch 14 Insert Return L or M	Ch 14 Insert Return L or M	Ch 38 or Gp 4 Insert Return L or M	Ch 1/2 VCA Control °	Ch 33/34 VCA Control °	Main 2 LINE Output
7. 24	Ch 14 Insert Return R or nc	Ch 14 Insert Return R or nc	Ch 38 or Gp 4 Insert Return R or nc	Ch 3/4 VCA Control °	Ch 35/36 or Gp 1/2 VCA Control °	Main 2 LINE Output
40. 8	Ch 14 Direct Output L or M	Ch 14 Direct Output L or M	Ch 38 or Gp 4 Direct Output L or M	Ch 5/6 VCA Control °	Ch 37/38 or Gp 3/4 VCA Control °	
41. 25	Ch 14 Direct Output R or nc	Ch 14 Direct Output R or nc	Ch 38 or Gp 4 Direct Output R or nc	Ch 7/8 VCA Control °	CR / CR	
9. 26	Ch 3 Insert Go L or M	Main 1 Insert Go L	Main 1 Insert Go L	Ch 9/10 VCA Control °	Ch 29/30 Fader Start °	Monitor LS Output L
42. 10	Ch 3 Insert Go R or nc	Main 1 Insert Go R	Main 1 Insert Go R	Ch 11/12 VCA Control °	Ch 31/32 Fader Start °	Monitor LS Output R
43. 27	Ch 3 Insert Return L or M	Main 1 Insert Ret L	Main 1 Insert Ret L	Ch 13/14 VCA Control °	Ch 33/34 Fader Start °	Headphone Output
11. 28	Ch 3 Insert Return R or nc	Main 1 Insert Ret R	Main 1 Insert Ret R	CR / CR	Ch 35/36 or Gp 1/2 Fader Start °	Headphone Output
44. 12	Ch 3 Direct Output L or M			Ch 1/2 Fader Start °	Ch 37/38 or Gp 3/4 Fader Start °	PFL LS Output
45. 29	Ch 3 Direct Output R or nc			Ch 3/4 Fader Start °	CR / CR	Aux 1 Output M
13. 46	Ch 4 Insert Go L or M	Main 2 Insert Go L	Main 2 Insert Go L	Ch 5/6 Fader Start °	ON-AIR relay common	Aux 2 Output M
30. 14	Ch 4 Insert Go R or nc	Main 2 Insert Go R	Main 2 Insert Go R	Ch 7/8 Fader Start °	Tx ° / 0L	Aux 3 Output M
47. 31	Ch 4 Insert Return L or M	Main 2 Insert Ret L	Main 2 Insert Ret L	Ch 9/10 Fader Start °	Tone ° / TB °	Aux 4 Output L
15. 48	Ch 4 Insert Return R or nc	Main 2 Insert Ret R	Main 2 Insert Ret R	Ch 11/12 Fader Start °	AFL / PFL	Aux 4 Output R
32. 16	Ch 4 Direct Output L or M	Studio LS EXT OUT / 0L	Studio LS EXT OUT / 0L	Ch 13/14 Fader Start °	SLS Bus ° / °	Studio LS Output L
49. 33	Ch 4 Direct Output R or nc	Monitor LS EXT OUT / 0L	Monitor LS EXT OUT / 0L	CR / CR	External Tone Output	Studio LS Output R
17. 50		Chassis	Chassis	Chassis	Chassis	Chassis

^{*} IIS / DIR 1-4 also applies to circuits in connectors IIS/DIR 5-8, IIS/DIR 9-12, IIS/DIR 15-18, IIS/DIR 19-22, IIS/DIR 23-26, IIS/DIR 29-32, IIS/DIR 33-36 respectively (IIS/DIR 33-36 may also contain Group circuits in slots 35-36)

^{**} IIS / DIR 13-14 also applies to circuits in connectors IIS/DIR 33-36 respectively

^{***} ANCILLARY 2 also applies to circuits shown in the AIC 3 connector (AIC 3 covers channels 15-28)

nc = not connected, if for example the mono PQ5122 or mono XL5125 is fitted

All Enable & Logic ° lines are active low and are pulled down to 0L when activated or to activate.

All cable screens should be connected to chassis.

CR (Centre Rail) is a clean audio earth reference & is provided for earth reference for unbalanced circuits only and should not be used as a general cable screen.

All VCA lines should be terminated to CR when not used.

0L (0 Volts logic earth for DC switching)

L, R are the Left & Right signals of a stereo output.

M is the mono output.

COMMON POWERING SCHEDULE

External DC Back-up Power Input for
Internally powered Small Chassis only

Console External DC INPUT	
Conn Type	D8M
	(Free Female Socket)
PIN No	CIRCUIT
1	CR
2	PSU Fail Monitor 1
3	+48 V
4	+16 AUDIO
5	-16 AUDIO
6	8 L
7	0 L
8	CR

Sump Power Output to Metering

Console Power to Metering (J81)	
Conn Type	D8F
	(Free Male Plug)
PIN No	CIRCUIT
1	CR
2	PSU FAIL Ind
3	PSU FAIL Cancel
4	+16 AUDIO
5	-16 AUDIO
6	8 L
7	0 L
8	CR

DC Power Inputs for Externally powered Small, Medium or Large Chassis types

Console Power Input 1 (JA1)		Console Power Input 2 (JA2)		Console Power Input 3 (JA3)	
Conn Type	D8M	Conn Type	D8M	Conn Type	D8M
	(Free Female Socket)		(Free Female Socket)		(Free Female Socket)
PIN No	CIRCUIT	PIN No	CIRCUIT	PIN No	CIRCUIT
1	CR	1	CR	1	CR
2	PSU Fail Monitor 1	2	PSU FAIL Monitor 2	2	PSU Fail Monitor 3
3	+48 V	3	+48 V	3	+48V
4	+16 AUDIO	4	+16 AUDIO	4	+16 AUDIO
5	-16 AUDIO	5	-16 AUDIO	5	-16 AUDIO
6	8 L	6	8 L	6	8 L
7	0 L	7	0 L	7	0 L
8	CR	8	CR	8	CR

COMMON METERING SCHEDULE

Metering SCSI Lead Connections

Interface	J50
Connector	INTERNAL CONNECTIONS from MAIN CHASSIS
Type	50F SCSI II (Free Male Plug)
PIN No.	CIRCUIT
1 . 2	1L Loudspeaker
3 . 4	1L Main Line
5 . 6	1R Loudspeaker
7 . 8	1R Main Line
9 . 10	1R Desk Bargraph
11 . 12	1M Main Line
13 . 14	1L Desk Bargraph
15 . 16	2L Main Line
17 . 18	M Tone
19 . 20	2R Main Line
21 . 22	1L Group
23 . 24	2M Main Line
25 . 26	1R Group
27 . 28	4R Aux
29 . 30	2L Group
31 . 32	4L Aux
33 . 34	2R Group
35 . 36	1M PFL
37 . 38	3L Group
39 . 40	1M Aux
41 . 42	3R Group
43 . 44	2M Aux
45 . 46	4L Group
47 . 48	3M Aux
49 . 50	4R Group
CH1 . CH2	CHASSIS

Metering Power Input

I/F	J6
Conn	Meter Bridge Power Input
Type	D8M (Free Female Socket)
PIN No	CIRCUIT
1	CR
2	PSU FAIL Ind
3	PSU FAIL Cancel
4	+16 AUDIO
5	-16 AUDIO
6	8 L
7	0 L
8	CR

Meter Interface External Connections

Interface	J1	J2	J3	J4
Connector	GROUP or EXT BG IP's	EXTERNAL IP's	STUDIO LS O/P's / MISC	LIMITER / GATE IP's
Type	25F D-TYPE (Free Male Plug)	25F D-TYPE (Free Male Plug)	25F D-TYPE (Free Male Plug)	25F D-TYPE (Free Male Plug)
PIN No.	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT
1 . 14	External Bargraph Input 1L	External Meter Sel or SLS Input 1L		Limiter/Gate/Equaliser Input 1L
2 . 15	External Bargraph Input 1R	External Meter Sel or SLS Input 1R		Limiter/Gate/Equaliser Input 1R
3 . 16	External Bargraph Input 2L	External Meter Sel or SLS Input 2L		Limiter/Gate/Equaliser Input 2L
4 . 17	External Bargraph Input 2R	External Meter Sel or SLS Input 2R		Limiter/Gate/Equaliser Input 2R
5 . 18	External Bargraph Input 3L	External Meter Sel or SLS Input 3L	Talkback Input to SLS	Limiter/Gate/Equaliser Output 1L
6 . 19	External Bargraph Input 3R	External Meter Sel or SLS Input 3R	Headphone Output 1L	Limiter/Gate/Equaliser Output 1R
7 . 20	External Bargraph Input 4L	External Meter Sel or SLS Input 4L	Headphone Output 1R	Limiter/Gate/Equaliser Output 2L
8 . 21	External Bargraph Input 4R	External Meter Sel or SLS Input 4R	Loudspeaker Output 1L	Limiter/Gate/Equaliser Output 2R
9 . 22		External Meter Sel or SLS Input 5L	Loudspeaker Output 1R	Voice Over Input 1 or Key Input 1L or nc
10 . 23		External Meter Sel or SLS Input 5R	SLS Remote Out Switch Line / 0L	Voice Over Input 2 or Key Input 2L or nc
11 . 24		PFL LS Ext Input 1L	nc / 0L	nc or Key Input 1R or nc
12 . 25	- / CHASSIS	PFL LS Ext Input 1R	TB Inject Switch Line / CHASSIS	nc or Key Input 2R or nc
13	CHASSIS	CHASSIS	CHASSIS	CHASSIS

nc = not connected.

All Enable & Logic $\overline{\text{X}}$ lines are active low and are pulled down to 0L when activated or to activate.

All cable screens should be connected to chassis.

0L (0 Volts logic earth for DC switching)

L . R are the Left & Right signals of a stereo output.

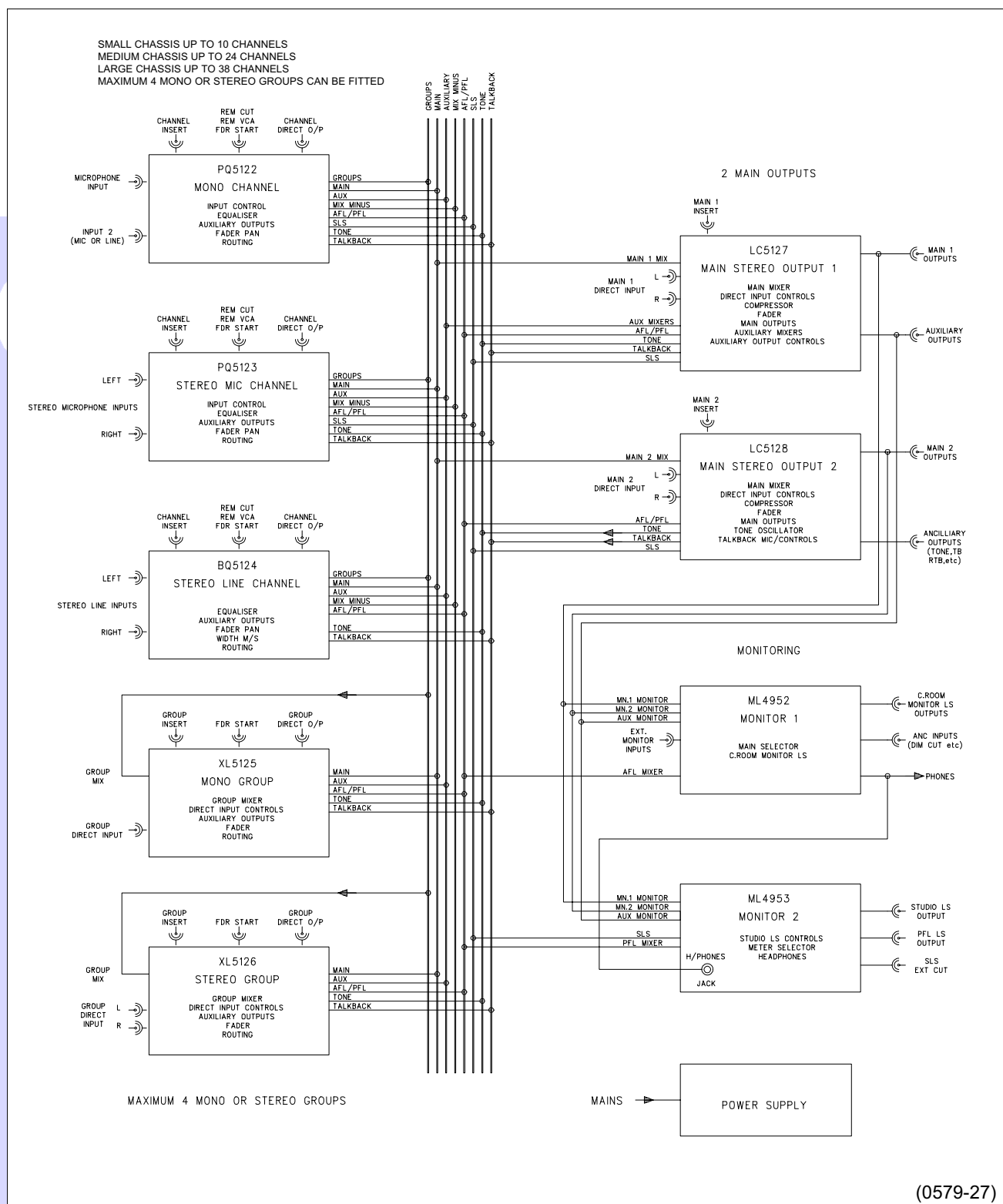
M is the mono output.

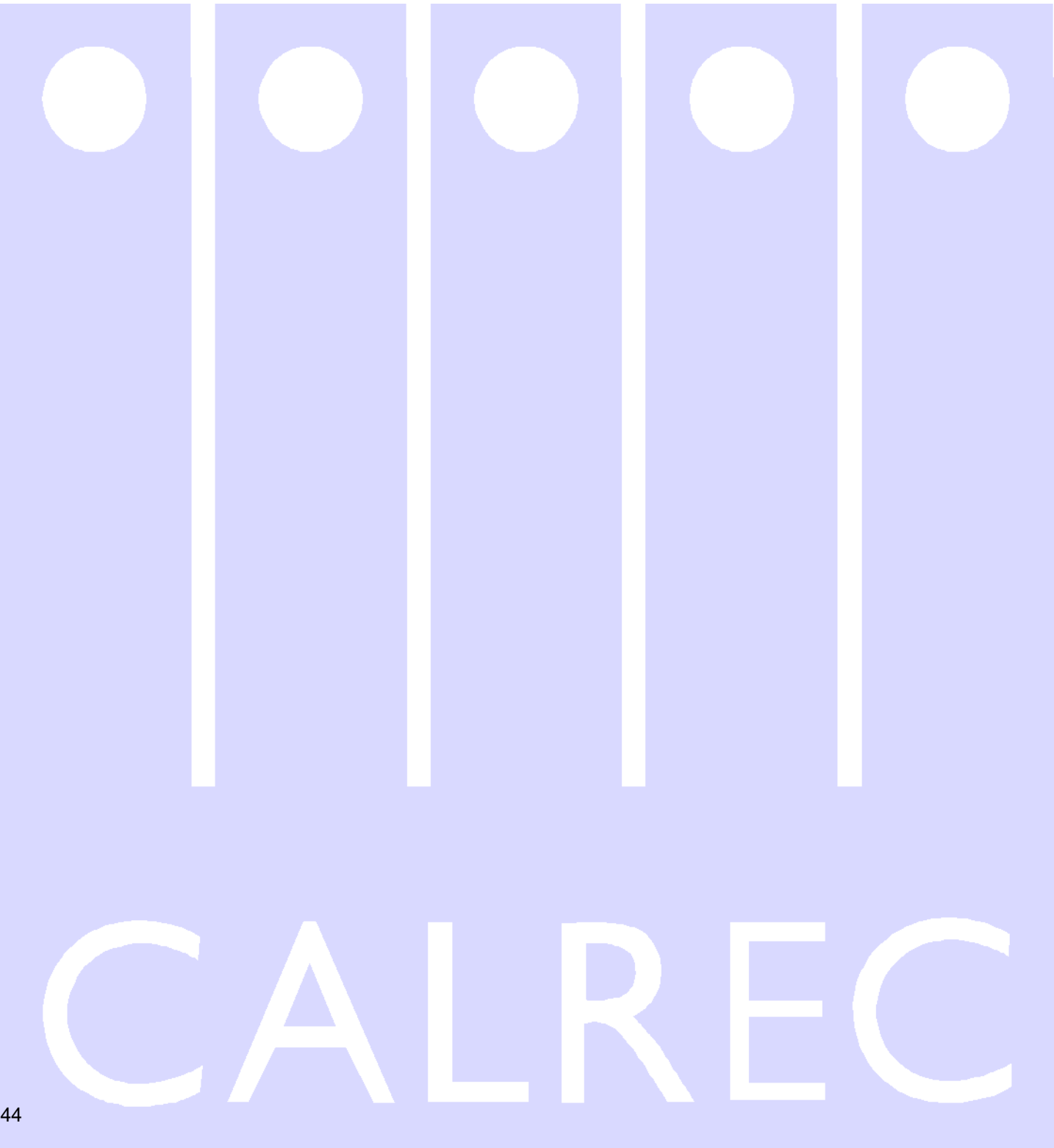
J1 Can be used for externally fed bargraphs if the Internal DIL switches have been set to remove the internal Group feeds

J2 are for external feeds for the Meter selector/s, SLS selector or Bargraph Unit.

J3 VO = Voice Over Input for the Compressor Limiter Units (if fitted)

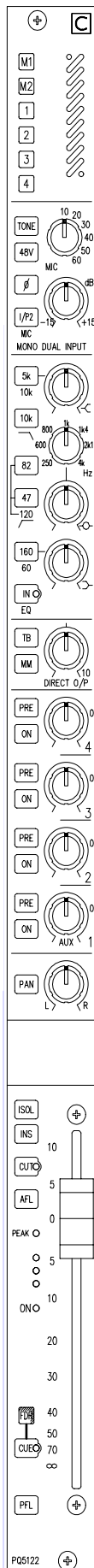
BLOCK DIAGRAM





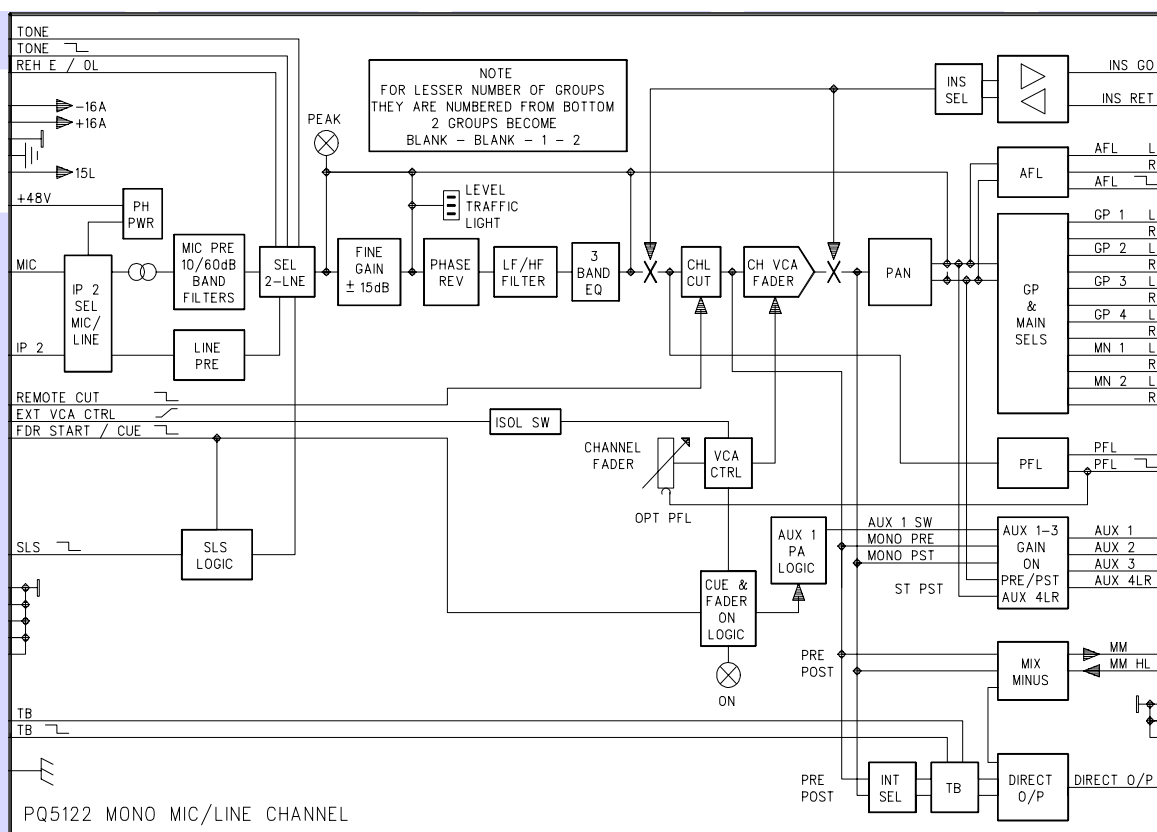
4.0 Modules & Panels Description

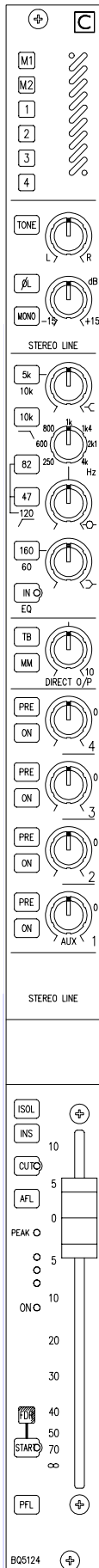
CALREC



PQ5122 MONO MIC/LINE DUAL INPUT CHANNEL

- Routing to** : 2 main Stereo outputs up to 4 Mono or Stereo groups.
- Tone** : Red button switches alignment tone to the channel post mic gain control but pre the trim - Inhibited on air, but can be internally set to be permanently enabled.
- 48V** : Microphone phantom power.
- Ø** : Phase reverse.
- I/P2** : Selects input 2 (mic or line, internal option).
- Gain** : Rotary Switch +10 to +60dB in 10dB steps (Mic only).
- Trim** : ± 15dB (applies to both Mic and Line inputs).
- HF Filter** : 1 button : 10kHz.
- LF Filter** : 2 buttons : 47Hz, 82Hz, both 120Hz.
- 3-band equaliser** :
- HF shelf** : ± 15dB at 10kHz or 5kHz (button pressed).
 - MID bell** : ± 15dB frequency variable from 250Hz to 4kHz.
 - LF shelf** : ± 15dB at 60Hz or 160Hz (button pressed).
- EQ in/out button (includes filters)** Red LED.
- Direct output gain control** 10dB in hand.
- TB** : Talkback button to direct output.
- MM** : Pushbutton selects Mix-Minus buss to either a channel direct output or as a channel contribution to a common Mix-Minus buss (both the direct o/p and the MM contribution can be internally selected pre or post fader).
- Aux 4** : Stereo output to aux 4 buss, selectable pre or post fader and on/off. Follows channel pan.
- Aux 1-3** : Mono outputs to aux 1 to 3 busses with individual level, pre/post and on/off controls.
- L/R** : Left/right pan selected by PAN button.
- Scribble strip**
- ISOL** : Isolates external VCA control.
- INS** : Selects insert circuit (pre or post fader or bypassed are internal options).
- CUT** : Latching button (Yellow LED) cuts all pre and post signals except insert send (if selected pre) and PFL.
- AFL** : Latching button routes channel left/right signal in stereo to the AFL mix which is fed to the monitor loudspeakers, automatically over-riding the normal feed.
- Peak** : Red LED illuminates when the signal anywhere in the module is within 3dB of clipping.
- 3 LEDs** : Displays pre EQ signal level relative to 0dBu.
- ON** : Green LED illuminates to show channel fader open.
- FDR** : Fires remote start/cue when fader is open.
- CUE** : Fires remote start/cue when pressed, Green LED.
- PFL** : Latching button routes pre-fader channel signal to the small PFL loudspeaker (with internal option to inject into the main monitor chain).
- Fader** : 10dB in hand.





BQ5124 STEREO LINE INPUT CHANNEL

Routing : 2 main stereo outputs and up to 4 mono or stereo groups

Tone : Red button switches alignment tone to the channel post mic gain control but pre the trim - Inhibited on air.

L/R : Input balance control. +3/0/off.

ØL : Phase reverse left leg.

Mono : Switches both inputs to both outputs.

Trim : $\pm 15\text{dB}$.

HF Filter : 1 button : 10kHz

LF Filter : 2 buttons : 47Hz, 82Hz, both 120Hz

3 band equaliser :

HF shelf : $\pm 15\text{dB}$ at 10kHz or 5kHz (button pressed)

MID bell : $\pm 15\text{dB}$ frequency variable from 250Hz to 4kHz

LF shelf : $\pm 15\text{dB}$ at 60Hz or 160Hz (button pressed)

EQ in/out button (includes filters) red LED

Direct Output gain control, 10dB in hand (can be internally selected pre or post fader).

TB : Talkback button to direct output.

MM : Push button selects Mix-Minus buss to either the channel direct output or as a channel contribution to a common Mix-Minus buss (both the direct o/p and the MM contribution can be internally selected pre or post fader).

Aux 4 : Stereo output to aux 4 buss, selectable pre or post fader and on/off. Follows channel pan.

Aux 1-3 : Mono outputs to aux 1 to 3 busses with individual level, pre/post and on/off controls.

Scribble strip

ISOL : Isolates external VCA control.

INS : Selects insert circuit (pre or post fader or bypassed are internal options).

CUT : Latching button cuts all pre and post signals except: insert send (if internally selected pre) and PFL, yellow LED.

AFL : Latching button routes channel left/right signal in Stereo to the AFL mix which is fed to the monitor loudspeakers, automatically over-riding the normal feed.

Peak : Red LED illuminates when the signal anywhere in the module is within 3dB of clipping.

3 LEDs : Bar display shows pre EQ signal level relative to 0dBu.

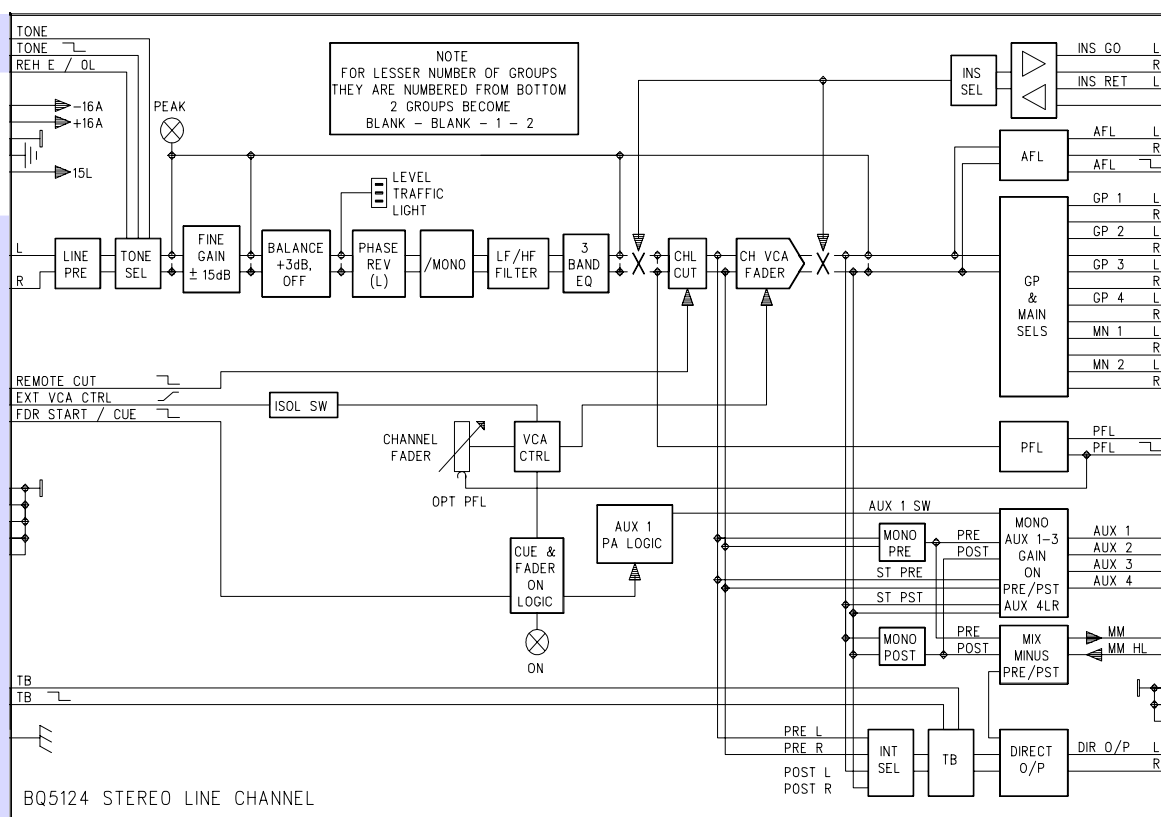
ON : Green LED illuminates to show channel fader open.

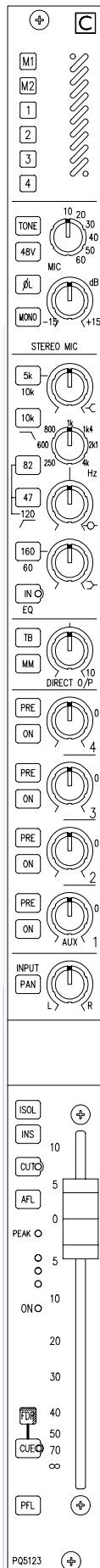
FDR : Button fires remote start/cue when fader is open.

START : Button fires remote start/cue when pressed, green LED.

PFL : Latching button routes pre-fader channel signal to the small PFL loudspeaker (with internal option to inject into the main monitor chain).

Fader : With 10dB in hand.





PQ5123 STEREO MIC INPUT CHANNEL

- Routing to** : 2 main Stereo outputs up to 4 Mono or Stereo groups. Optional routing to mono groups - left to odds, right to evens.
- Tone** : Red button switches alignment tone to the channel post mic gain control but pre the trim - Inhibited on air.
- 48V** : Microphone phantom power.
- ØL** : Phase reverse left leg.
- Mono** : Switches both inputs to both outputs.
- Gain** : Rotary Switch +10 to +60dB in 10dB steps.
- Trim** : ± 15dB.
- HF Filter** : 1 button : 10kHz.
- LF Filter** : 2 buttons : 47Hz, 82Hz, both 120Hz.
- 3-band equaliser** :
- HF shelf** : ± 15dB at 10kHz or 5kHz (button pressed).
 - MID bell** : ± 15dB frequency variable from 250Hz to 4kHz.
 - LF shelf** : ± 15dB at 60Hz or 160Hz (button pressed).
- EQ in/out button** (includes filters) Red LED.
- Direct output gain control** 10dB in hand.
- TB** : Talkback button to direct output.
- MM** : Pushbutton selects Mix-Minus buss to either a channel direct output or as a channel contribution to common mix-minus buss (both the direct output and the MM contribution can be internally selected to be pre or post fader)
- Aux 4** : Stereo output to aux 4 buss, selectable pre or post fader and on/off. Follows channel pan.
- Aux 1-3** : Mono outputs to aux 1 to 3 busses with individual level, pre/post and on/off controls.
- L/R** : Input signal left/right pan selected by INPUT PAN button.
- Scribble strip**
- ISOL** : Isolates external VCA control.
- INS** : Selects insert circuit (pre or post fader or bypassed are internal options).
- CUT** : Latching button (yellow LED) cuts all pre and post signals except insert send (if selected pre) and PFL.
- AFL** : Latching button routes channel left/right signal in stereo to the AFL mix which is fed to the monitor loudspeakers, automatically overriding the normal feed.
- Peak** : Red LED illuminates when the signal anywhere in the module is within 3dB of clipping.
- 3 LEDs** :
- ON** : Green LED illuminates to show channel fader open.
 - FDR** : Fires remote start/cue when fader is open.
 - CUE** : Fires remote start/cue when pressed, Green LED.
 - PFL** : Latching button routes pre-fader channel signal to the small PFL loudspeaker (with internal option to inject into the main monitor chain).
- Fader** : 10dB in hand.

XL5125 MONO GROUP

Group routing to 2 main Stereo outputs.

Group direct input routing to 2 main Stereo outputs to group mixer.

Aux 1-3 from direct button switches aux 1-3 to group direct input.

Direct AFL : Latching button routes direct input after fader signal exclusively to monitor loudspeaker.

Direct PFL : Latching button routes direct input pre fader signal to small PFL loudspeaker.

Direct CUT : Latching button cuts direct input signal.

Direct PAN : Pans Mono direct input signal between left & right outputs.

Direct Gain : Sets direct input signal level, 10dB in hand.

Direct output gain control 10dB in hand (direct output can be internally selected pre or post fader)

TB : Talkback button to direct output

TONE : To direct output, inhibited ON AIR

Aux 4 : Stereo output to aux 4 buss, selectable pre or post fader and on/off. Follows channel pan.

Aux 1-3 : Mono outputs to aux 1 to 3 busses with individual level, pre/post and on/off controls.

L/R : Left/right pan selected by PAN button.

Scribble strip

INS : Selects insert circuit (pre fader).

CUT : Latching button (Yellow LED) cuts all pre and post signals except insert send and PFL.

AFL : Latching button routes channel left/right signal in Stereo to the AFL mix which is fed to the monitor loudspeakers, automatically overriding the normal feed.

Peak : Red LED illuminates when the signal anywhere in the module is within 3dB of clipping.

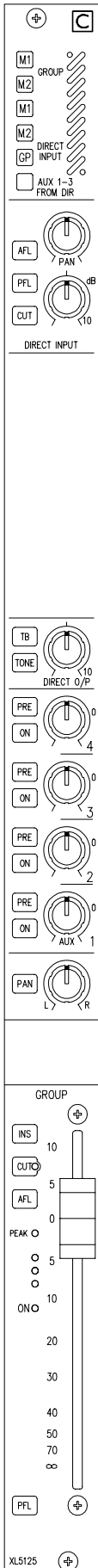
3 LEDs : Displays pre EQ signal level relative to 0dBu.

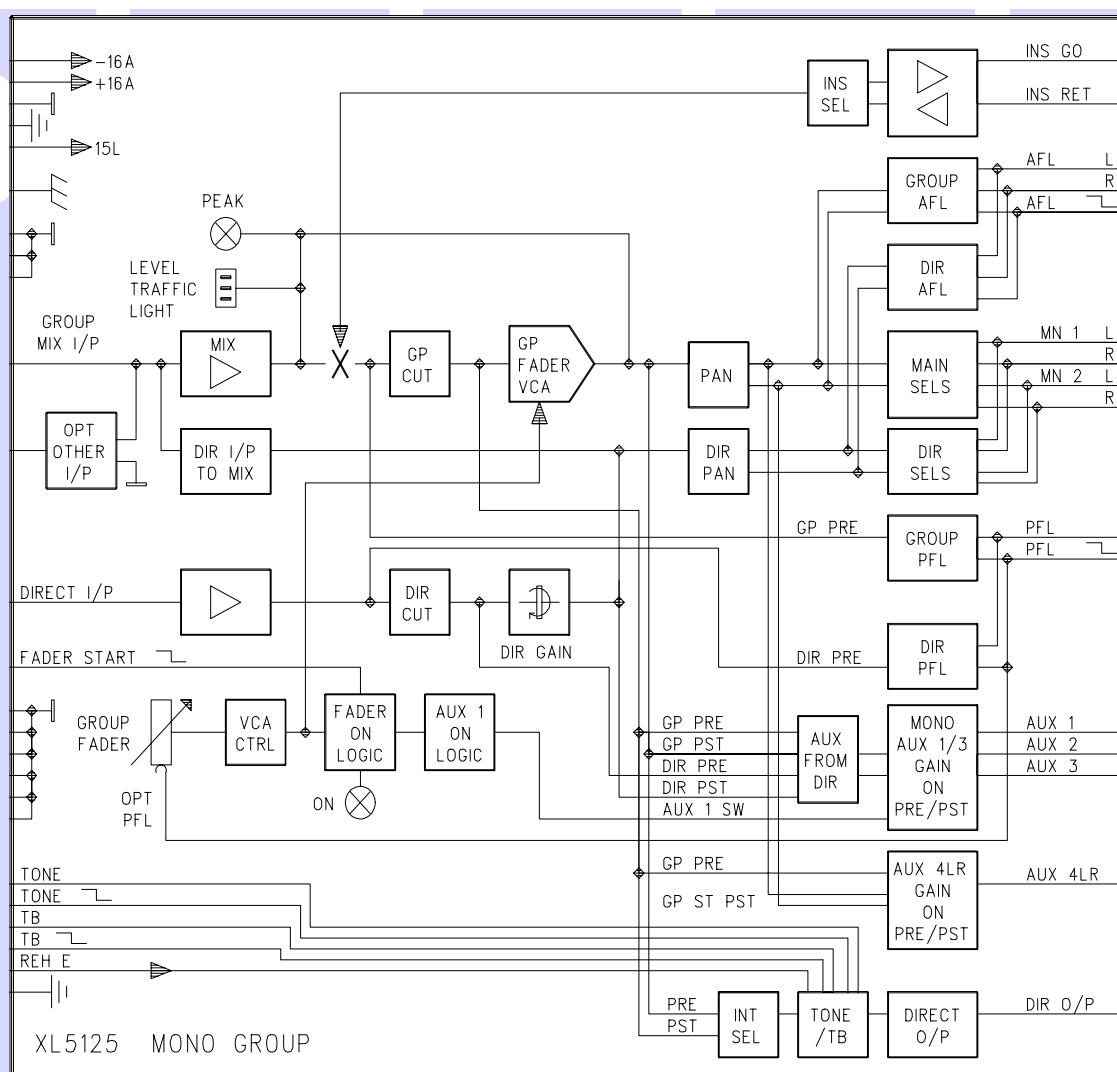
ON : Green LED illuminates to show channel fader open.

PFL : Latching button routes pre-fader channel signal to the small PFL loudspeaker (with internal option to inject into the main monitor chain).

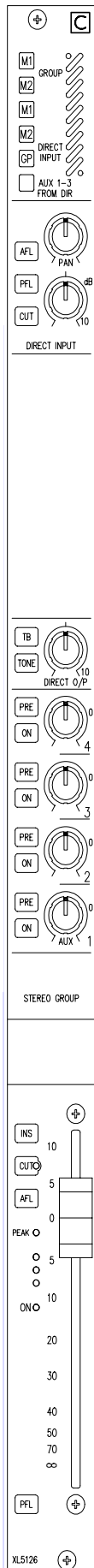
Fader : 10dB in hand

Mono groups can be internally selected to be fed with either a mono mix signal or a left/right split to pairs of group mono modules. Left to groups 1+3, right to groups 2+4.





CALREC



XL5126 STEREO GROUP

Group routing to 2 main Stereo outputs.

Group direct input routing to 2 main Stereo outputs to group mixer.

Aux 1-3 from direct button switches aux 1-3 to group direct input.

- Direct AFL : Latching button routes direct input after fader signal exclusively to monitor loudspeaker.
- Direct PFL : Latching button routes direct input pre fader signal to small PFL loudspeaker.
- Direct CUT : Latching button cuts direct input signal.
- Direct PAN : Pans Stereo direct input signal between left & right outputs.
- Direct Gain : Sets direct input signal level, 10dB in hand.

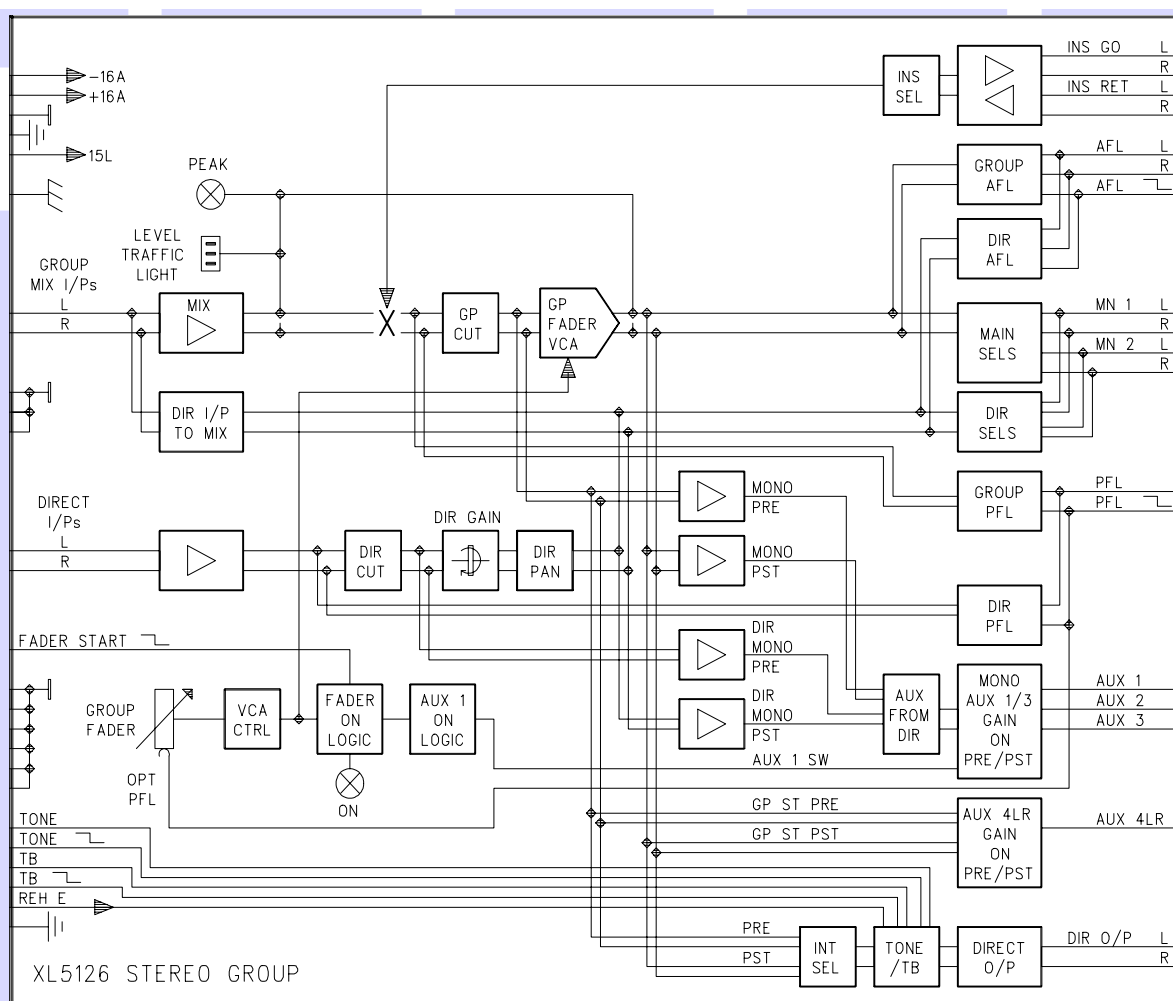
Direct output gain control 10dB in hand (direct output can be internally selected pre or post fader).

- TB : Talkback button to direct output.
- TONE : To direct output, inhibited ON AIR.

- Aux 4 : Stereo output to aux 4 buss, selectable pre or post fader and on/off. Follows channel pan.
- Aux 1-3 : Mono outputs to aux 1 to 3 busses with individual level, pre/post and on/off controls.

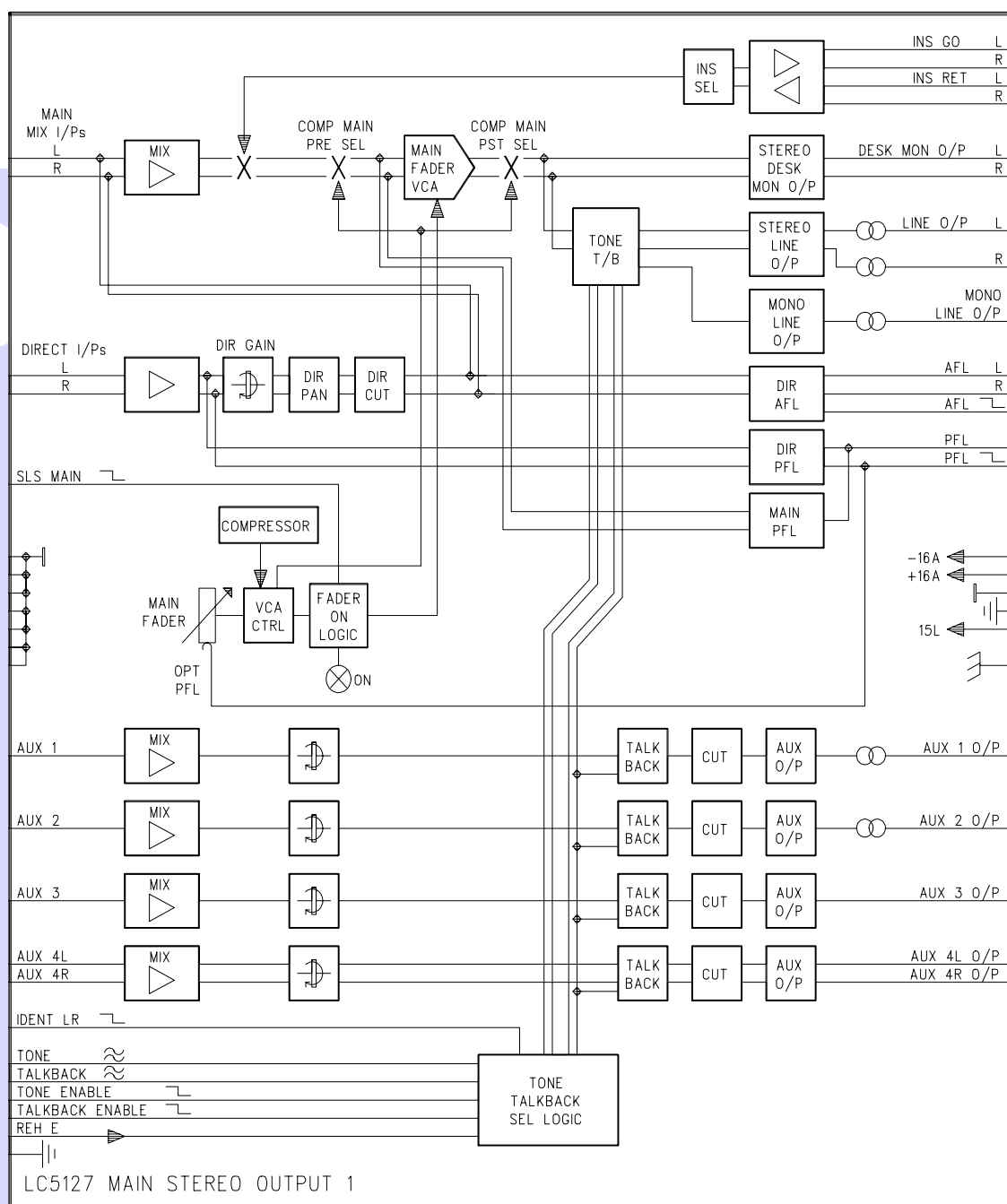
Scribble strip

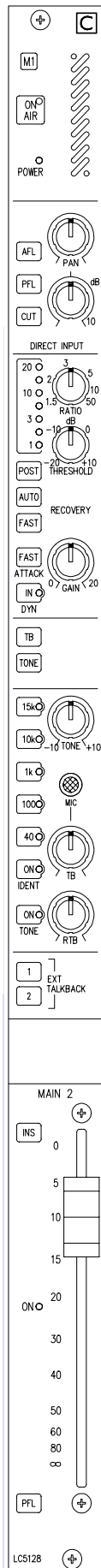
- INS : Selects insert circuit (pre fader).
- CUT : Latching button (yellow LED) cuts all pre and post signals except insert send and PFL.
- AFL : Latching button routes channel left/right signal in Stereo to the AFL mix which is fed to the monitor loudspeakers, automatically overriding the normal feed.
- Peak : Red LED illuminates when the signal anywhere in the module is within 3dB of clipping.
- 3 LEDs : Displays pre EQ signal level relative to 0dBu.
- ON : Green LED illuminates to show channel fader open.
- PFL : Latching button routes pre-fader channel signal to the small PFL loudspeaker (with internal option to inject into the main monitor chain).
- Fader : 10dB in hand.



CALREC

INS	:	Insert button - Selects main output insert (pre fader).
ON	:	Green LED Illuminates when fader is open.
PFL	:	Latching button routes main output pre fader signal to small PFL loudspeaker.
FADER	:	With 0dB in hand.





LC5128 MAIN OUTPUT 2, TONE & TALKBACK

- M1** : Routes to Main 1.
- ON AIR** : Pushbutton with red LED. Inhibits tone and talkback within the console and closes relay contact for interface to other areas.
- POWER** : Red LED flashes to indicate a failure of either the PSU or the fan (if fitted).
- Direct AFL** : Latching button routes direct input post fader, exclusively to monitor loudspeaker.
- Direct PFL** : Latching button routes direct input pre fader signal to small PFL loudspeaker.
- Direct CUT** : Latching button cuts direct input signal.
- Direct PAN** : Pans stereo direct input signal.
- Direct Input** : Sets signal level, 10dB in hand.

Main output Compressor, may be used as a Limiter (50:1 ratio) 20dB Gain reduction, Yellow LEDs. Normally pre fader can be set POST fader (with button pressed).

- RECOVERY AUTO** : Sets recovery to between 0.1 to 1.5 secs, programme dependant.
- RECOVERY FAST** : Changes recovery time from 1 secs to 75ms (overridden by AUTO)
- ATTACK** : Normal 4ms @ 5:1 ratio or FAST 0.2ms @ 5:1 ratio.
- Dynamics IN button** : Switches in dynamics. Red LED
- RATIO** : 1.5 to 50:1, variable control.
- THRESHOLD** : -20 to +10dBu, variable control.
- GAIN** : Make-up gain adjustable from 0 to +20dB, variable control.

- TB** : Talkback momentary button, inoperative ON AIR.
- TONE** : Latching button, inoperative ON AIR.

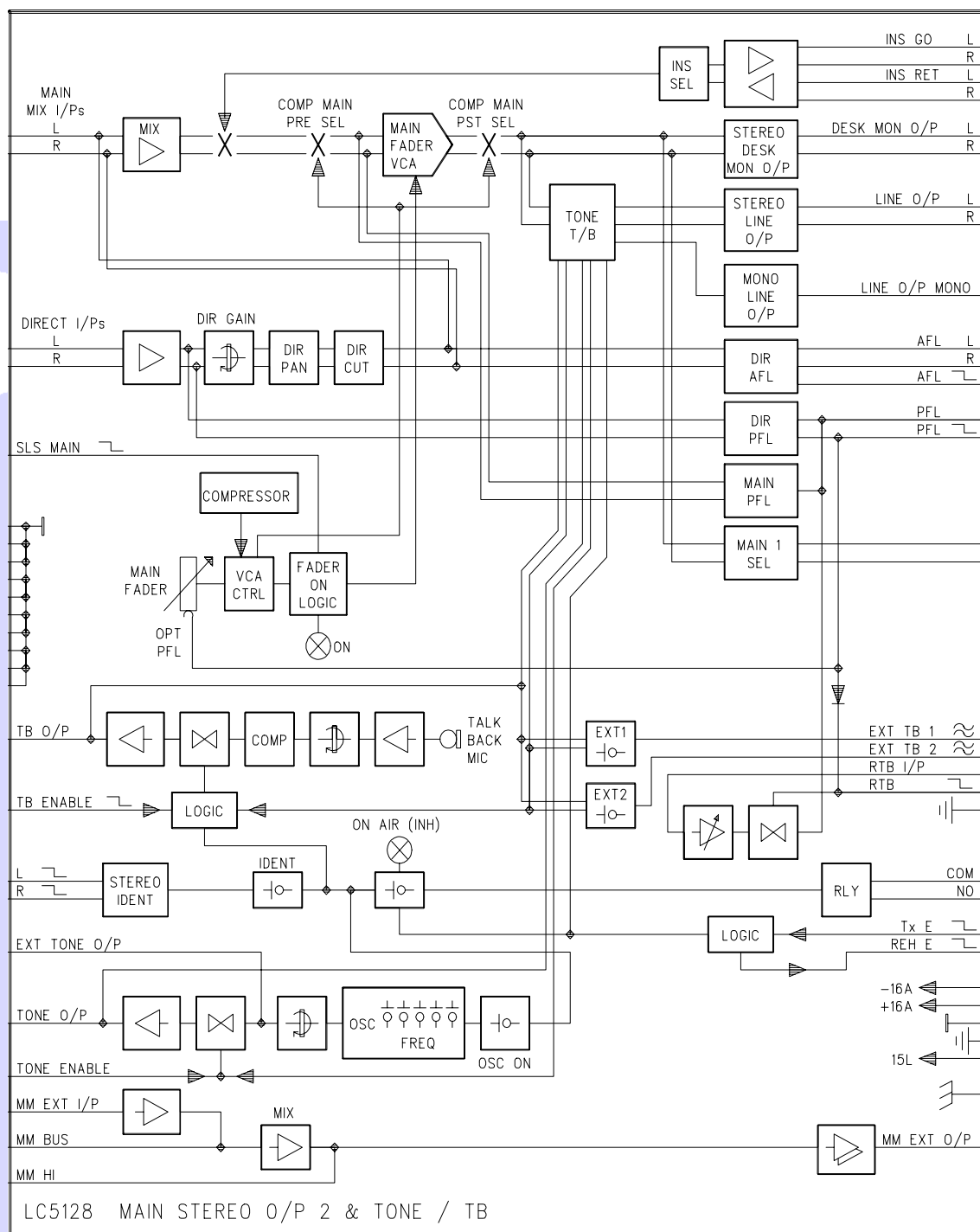
- OSCILLATOR FREQUENCY** : 5 buttons 40, 100, 1k, 10k, 15kHz
- IDENT button green LED.** : Pulses tone to main outputs only, choice of 4 sequences which include EBU & BBC GLITS specification (internally selectable).

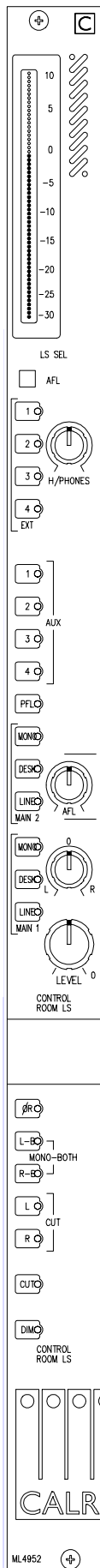
- TONE button** : Switches ON oscillator, red LED.
- TONE control** : ± 10 dB level adjustment on nominal 0dBu output.
- MIC** : Talkback microphone.
- TB** : Sets outgoing Talkback level.
- RTB** : Sets reverse (incoming) Talkback level to PFL loudspeaker.

EXT 1 & 2 TALKBACK buttons to external destinations

Scribble Strip

- INS** : Insert button. Selects main output insert (pre fader).
- ON** : Green LED. Illuminates when fader is open.
- PFL** : Latching button routes main output pre fader signal to small PFL loudspeaker.
- FADER** : 0dB in hand





ML4952 MONITOR 1

LEVEL BARGRAPH : Displays level of left channel of meter select output (internally selectable for PPM/VU and 0dB reference level).

AFL : Red indicator - illuminated when any AFL selection is made.

CONTROL ROOM MONITOR SELECTOR - 15 way selector with the following sources:

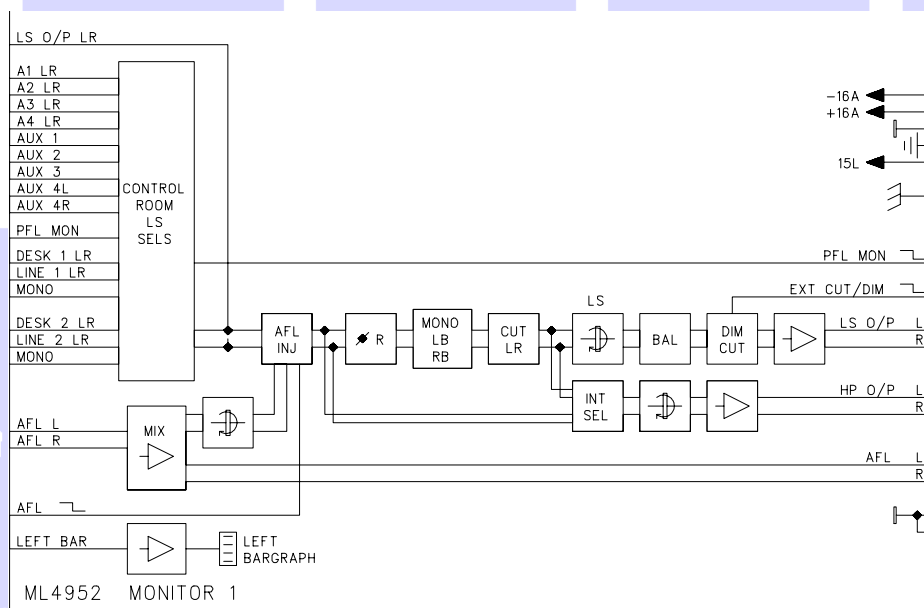
- 4 external Stereo inputs 1 to 4, Green LEDs (Labelled A1-A4 on schematic).
- Aux 1 to Aux 4, Green LEDs.
- PFL, Yellow LED.
- MAIN 2; Stereo line, Stereo desk and Mono outputs, Yellow LEDs.
- MAIN 1; Stereo line, Stereo desk and Mono outputs, Yellow LEDs.

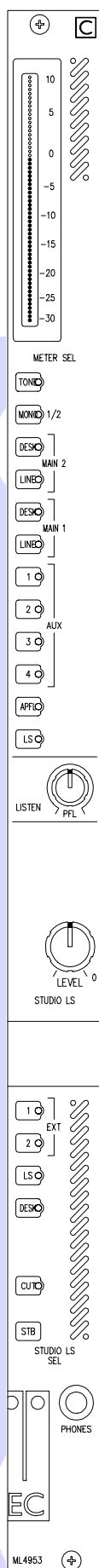
HEADPHONE level control, monitors output of control room selector (internally selectable for output to be taken either pre or post the LB, RB mono and phase reverse switching).

AFL : After Fade Listen trim control to monitor loudspeakers.

CONTROL ROOM MONITOR LOUDSPEAKER CONTROLS:

- L - R** : Balance control.
- LEVEL control** : Sets loudspeaker level.
- ØR** : Phase reverses right leg in monitor chain, Red LED.
- L-B** : Left to both outputs, Red LED (pressing both L-B and R-B gives a Mono mix to both outputs).
- R-B** : Right to both outputs, Red LED.
- CUT L** : Cuts left loudspeaker, Red LED.
- CUT R** : Cuts right loudspeaker, Red LED.
- CUT button** : Cuts both loudspeakers, Red LED.
- DIM button** : Reduces loudspeaker level by 14dB, Red LED.





ML4953 MONITOR 2

LEVEL BARGRAPH : Displays level of right channel of meter select output (internally selectable for PPM/VU and 0dB reference level).

METER SELECTOR - 12 way selector with the following sources:

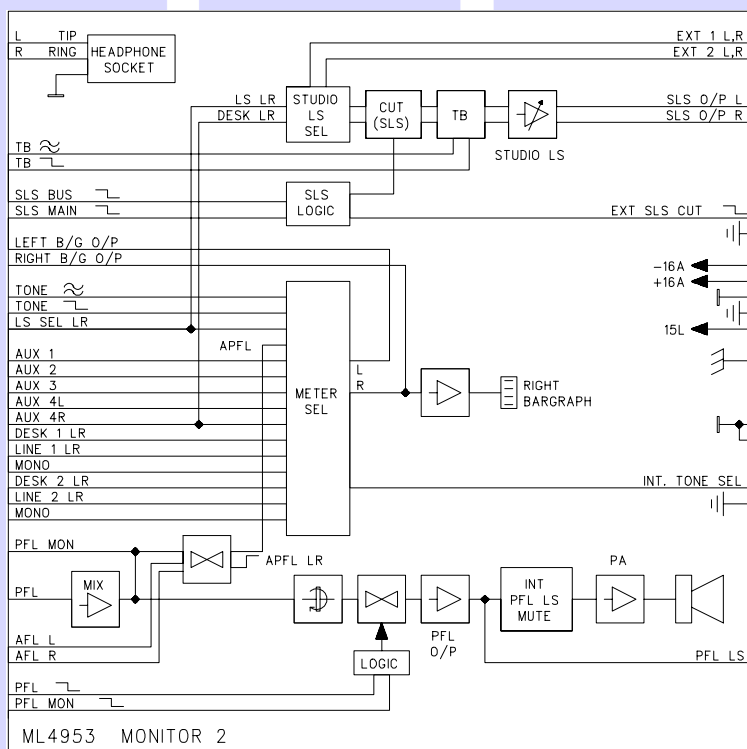
TONE	:	Sends line up tone to meters, Red LED.
LS	:	Follows control room monitor selector, Green LED.
AUX 1	:	Mono aux 1 to left meter, Green LED.
AUX 2	:	Mono aux 2 to left meter, Green LED.
AUX 3	:	Mono aux 3 to left meter, Green LED.
AUX 4	:	Stereo aux 4 to both meters, Green LED.
APFL	:	AFL plus PFL, Green LED.
MONO 1/2	:	Main outputs 1 & 2 to meters, Green LED (main 1 to left meter, main 2 to right meter).
MAIN 1 DESK	:	Green LED.
MAIN 1 LINE	:	Green LED.
MAIN 2 DESK	:	Green LED.
MAIN 2 LINE	:	Green LED.

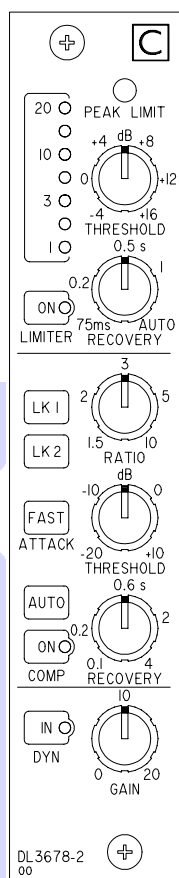
PFL	:	Pre Fade Listen level control to PFL loudspeaker.
STUDIO LS LEVEL	:	Sets studio loudspeaker level.

STUDIO LS MONITOR SELECTOR, 4 way selector with the following sources:

2 External sources	:	EXT 1 and EXT 2, Red LEDs.
LS	:	Follows control room monitor selector, Red LED.
DESK	:	Main 1 desk output, Red LED.
CUT button	:	Cuts studio loudspeaker, Yellow LED (may also be cut by the SLS logic system).
STB button	:	Studio Talkback - Momentary, selects desk Talkback to studio loudspeaker.

HEADPHONE socket for headphone monitoring.





DL3678-2 STEREO COMPRESSOR/LIMITER

Stereo Limiter:

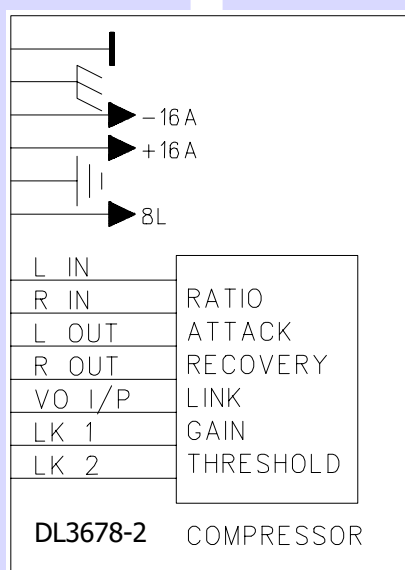
Ratio	:	Fixed 100/1.
Threshold	:	-4/+16dBu variable.
Attack	:	Fixed 100 μ s.
Recovery	:	0.075 to 4 secs variable with AUTO facility: 0.1 to 1.5 secs (programme dependent).
Peak Limit	:	Yellow LED indicator.
Limiter	:	On button with Yellow LED indication.

Stereo Compressor:

Ratio	:	1.5/10 variable.
Threshold	:	-20/+10dB variable.
Attack	:	Normal 4 msec @ 5:1 or FAST 0.2mS @ 5:1.
Recovery	:	0.1 to 4 secs variable with AUTO facility: 0.1 to 1.5 secs (programme dependent).
Make-up Gain	:	0/20dB variable.
Voice-over	:	Line level balanced input (may be used when compressor is Off).
Compressor	:	ON button with Yellow LED indicator.

Compressor & Limiter:

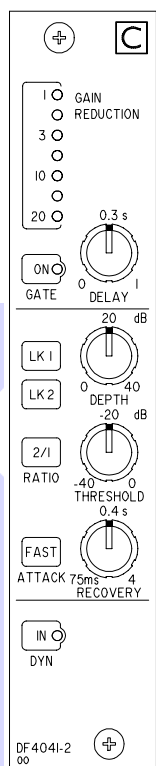
Bargraph	:	Up to 24dB gain reduction with enhanced resolution at lower reduction levels.
Links	:	Button 1 & 2 to external buss or pairs etc - links side chains together.
DYN-IN	:	Button with Red LED indication - when OUT gives total bypass condition except that bargraph operates as a preview at reduced intensity.



Balanced line input & outputs, 0dBu. Ignore right channel for mono use.

The compressor and limiter normally respond to the higher of the left and right signals. An internal option allows the mono reduction of left and right (-3dB) to take control if the Stereo coherence is such that this exceeds left or right. This renders it unnecessary to "under-drive" the stereo outputs to guard against the possibility of a higher than desired mono level.

DF4041-2 EXPANDER/GATE



Stereo Expander:

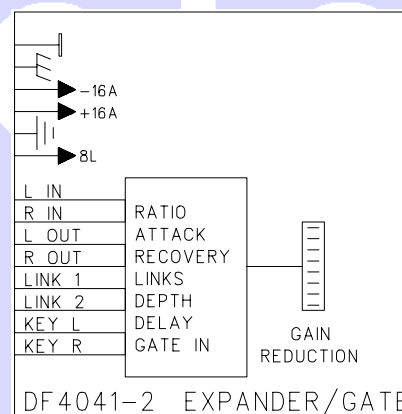
Ratio : Normal, varies with level 1.5/1 to 5/1 - Fixed 2/1 (button)
 Threshold : 0/-40dBu variable
 Attack : Normal 4 m-sec. FAST (button) 50 μ s
 Recovery : 75ms to 4 sec variable
 Depth : 0/40dB variable (extent of expansion below threshold)
 Bargraph : Up to 20dB gain reduction
 Links : 1 & 2 to external busses or pairs

Stereo Noise Gate:

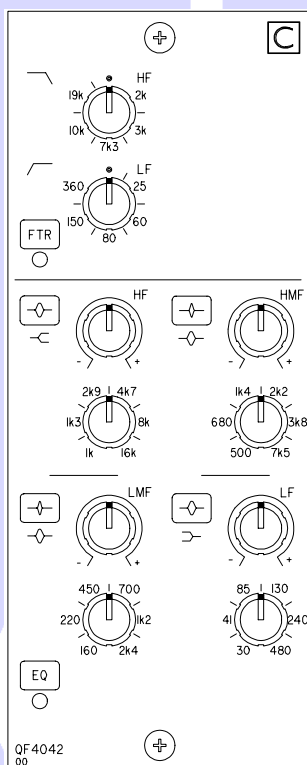
Gate : Button with LED indication. All expander controls apply except Ratio becomes infinite.
 Gate Delay : 0/1 sec variable - in addition to normal 6dB gate hysteresis

Expander & Noise Gate:

DYN-IN : Button with LED indication. When OFF gives total bypass condition except that bargraph operates as a preview at reduced intensity.



QF4042 PARAMETRIC EQ & FILTERS



Stereo Filters / Equaliser:

2 band parametric filters : HF (low pass) 12dB/octave
 : LF (high pass) 18dB/octave

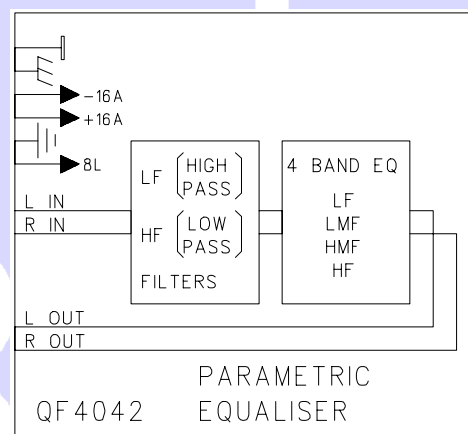
4 band parametric equaliser: $\pm$ 16dB max at selected frequencies

Exclusive lift/cut law allows fine control near centre and low noise in detent.

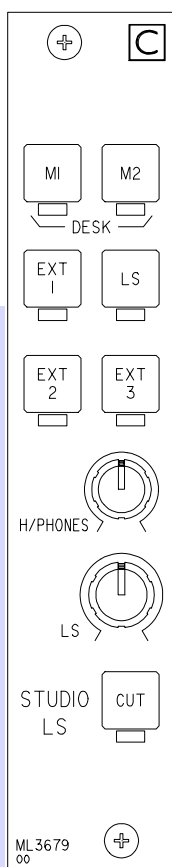
LF & HF bands can be shelf or bell (Q 1.0)

LMF & HMF bands can be normal Q (1.0) or high Q (3.5) bell.

Separate Filters & EQ in buttons.



ML3679 STUDIO LS CONTROL

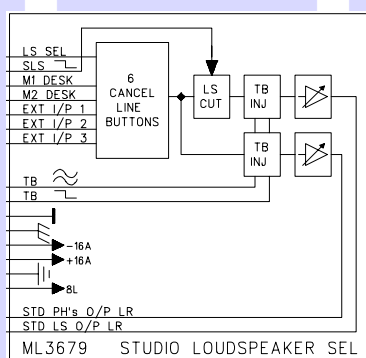


6 Electronic cancelling inputs - Yellow LEDs including 3 external inputs.

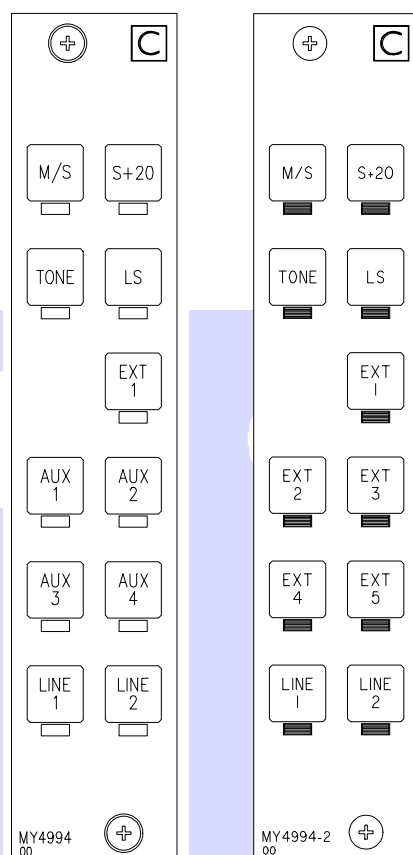
Gain controls 0dB to OFF.

CUT button with Yellow LED - cuts LS automatically when any channel selected to Mic and routed to the Main output either directly or via a group is opened.

Separate studio headphones outputs. Level control 0/-∞dB



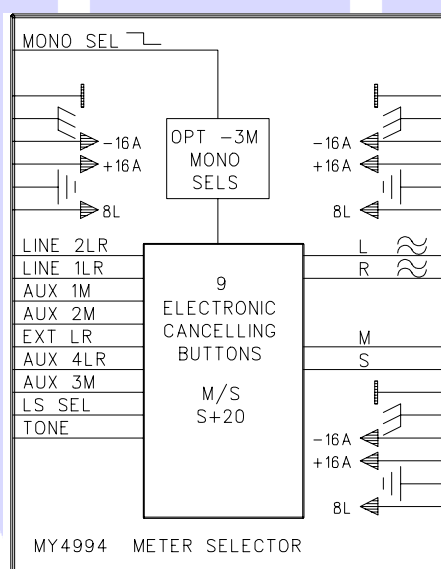
MY4994/MY4994-2 METER SELECTOR



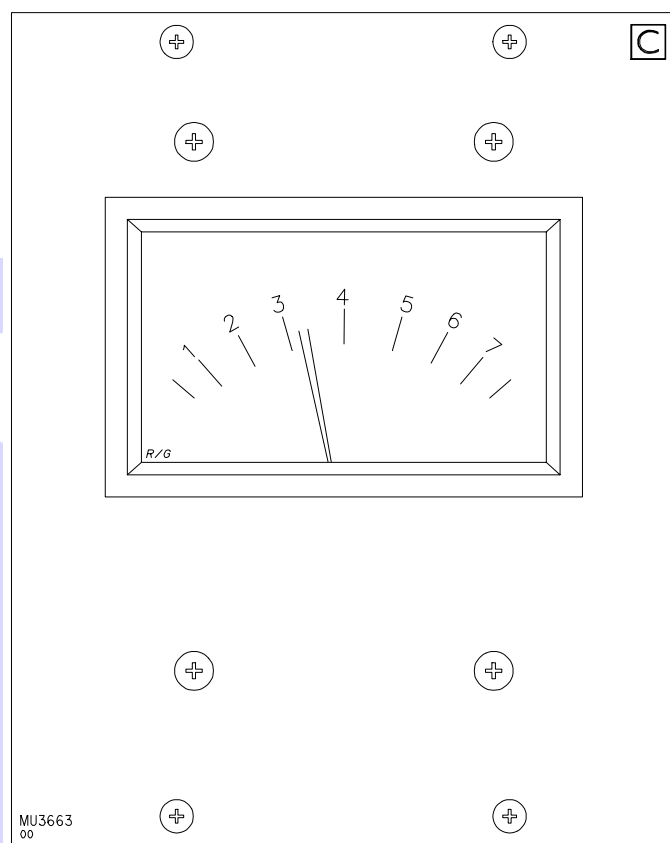
Selections from labelled sources.

Yellow LEDs - Electronic cancelling set.

M/S latching & S+20. Red LEDs meter selector can be internally selected to automatically switch the meaning to m/s when a mono source is selected and to automatically reduce the metering by -3dB if required. This is done to bring the mono and stereo signals in line with each other at 0dB.

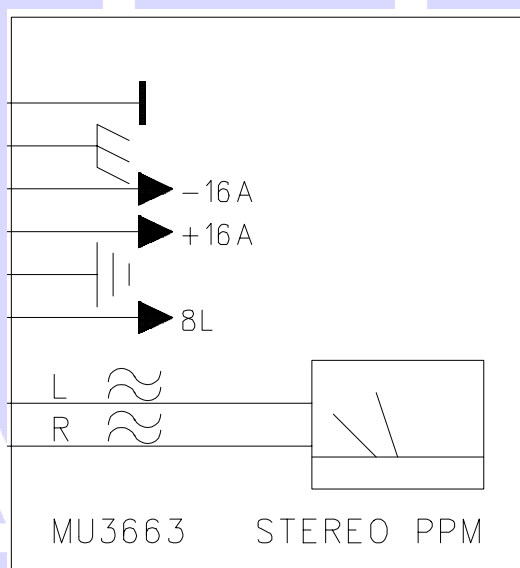


MU3663 STEREO PPM A/B

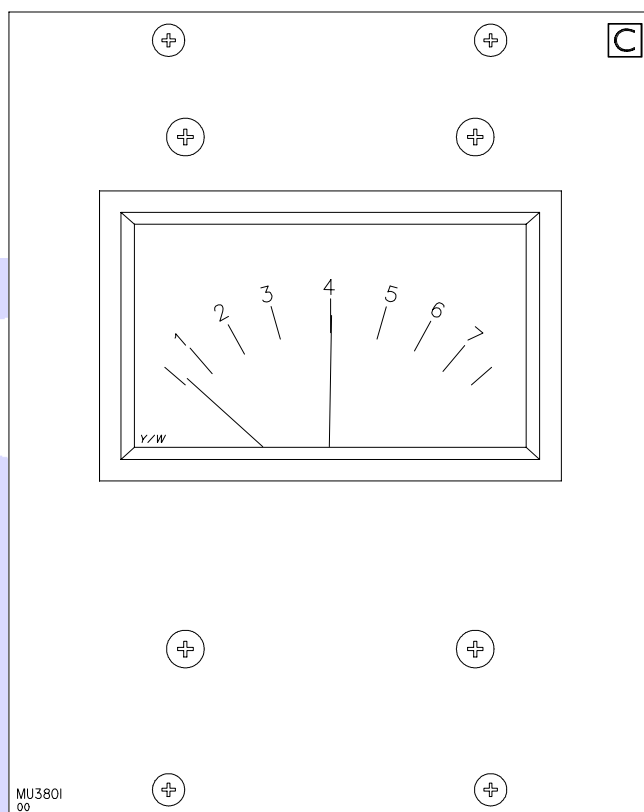


Stereo PPM with Red/Green needles and illumination.

Internal PPM driver.

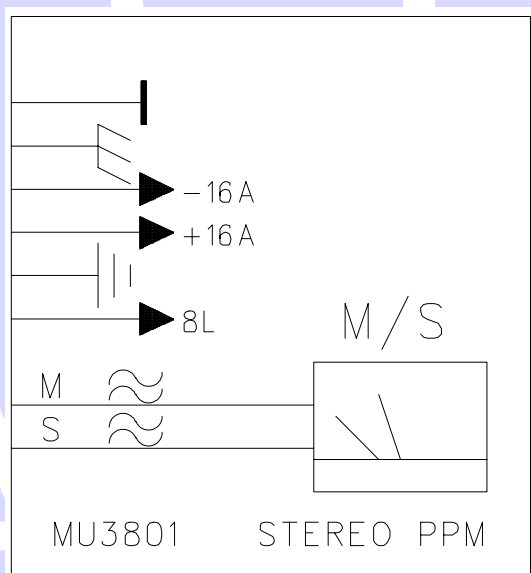


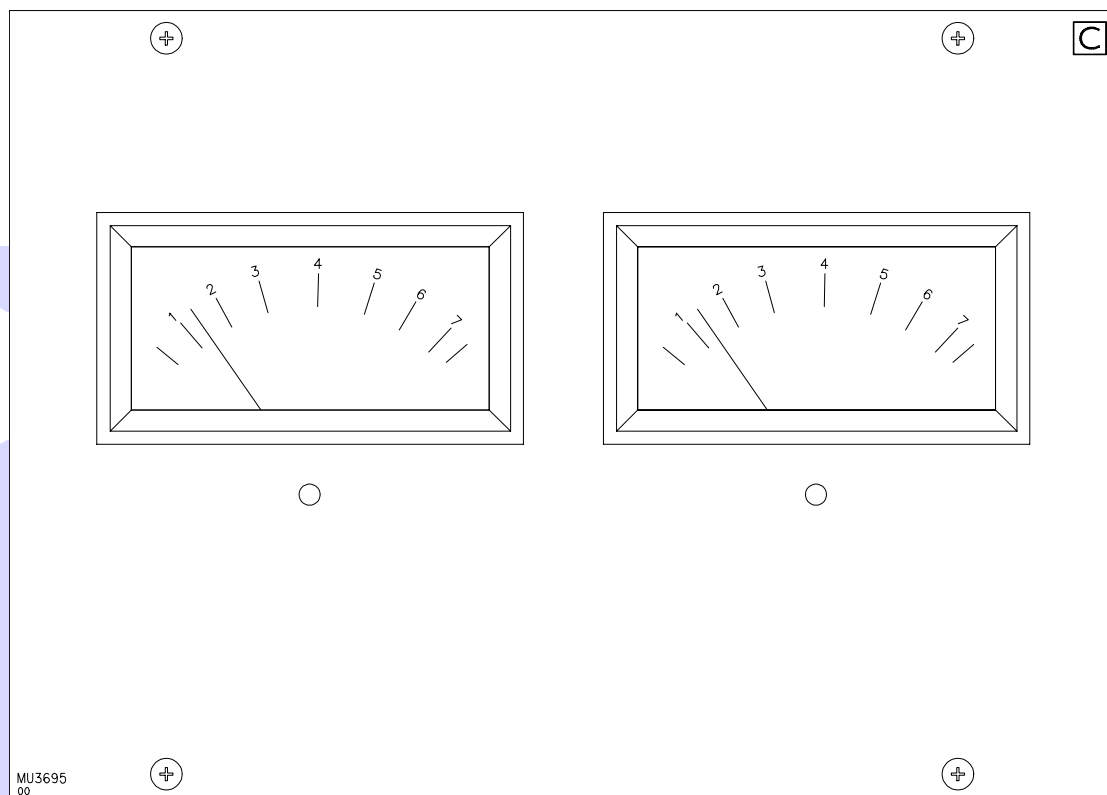
MU3801 STEREO PPM M/S



Stereo PPM with White/Orange needles and illumination.

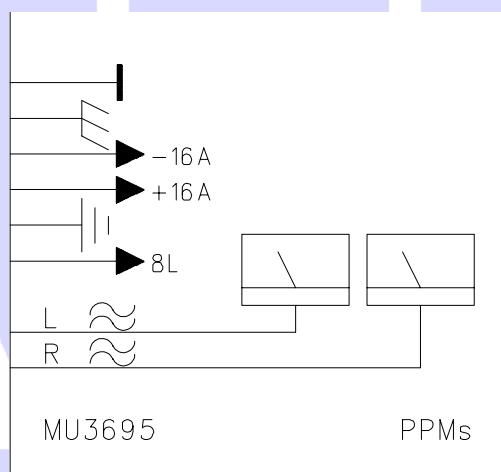
Internal PPM driver.

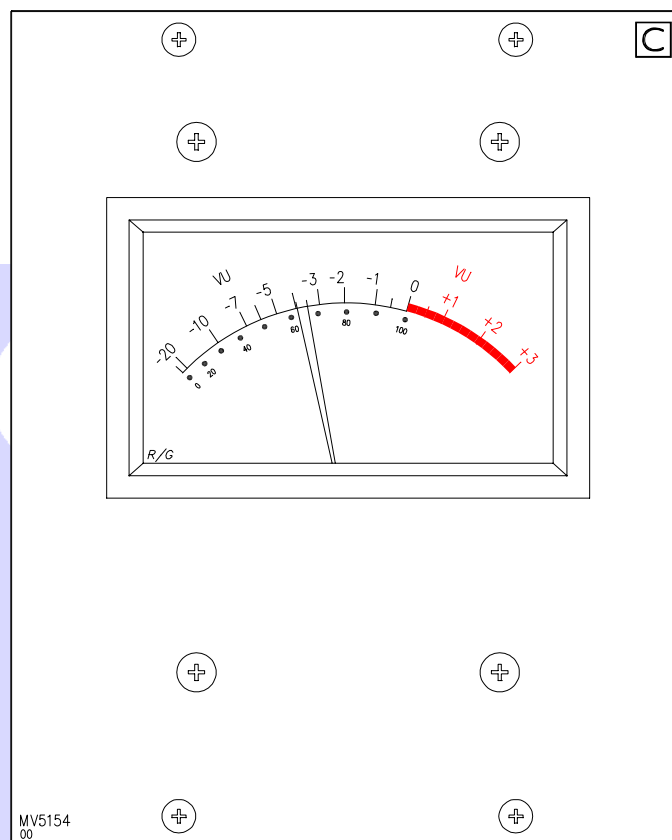


MU3695 TWIN MONO PPM

Stereo PPM with Red/Green needles and illumination.

Internal PPM driver.



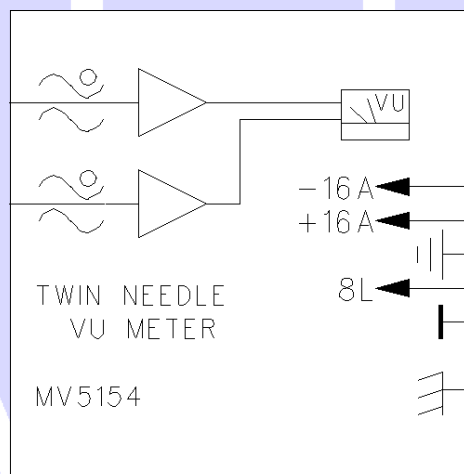
MV5154 SINGLE STEREO VU METER

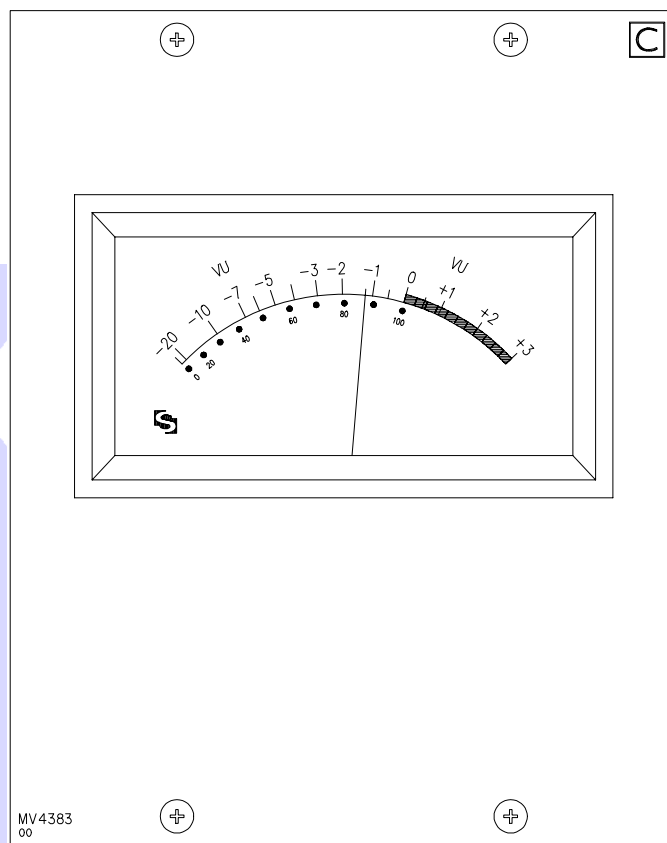
Large VU Meter with illumination.

Meter has Red and Green needles.

0VU selectable to +4dBu (Normal).

Internal buffer amplifier.

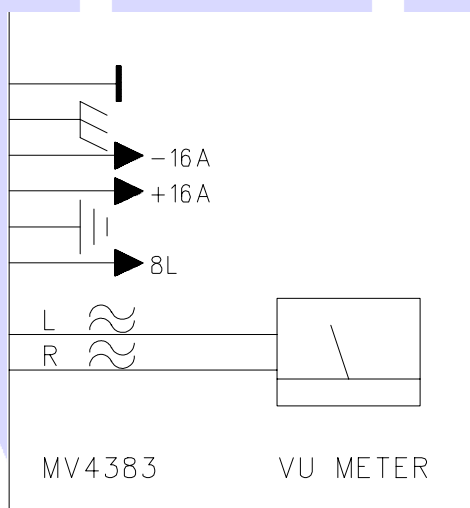


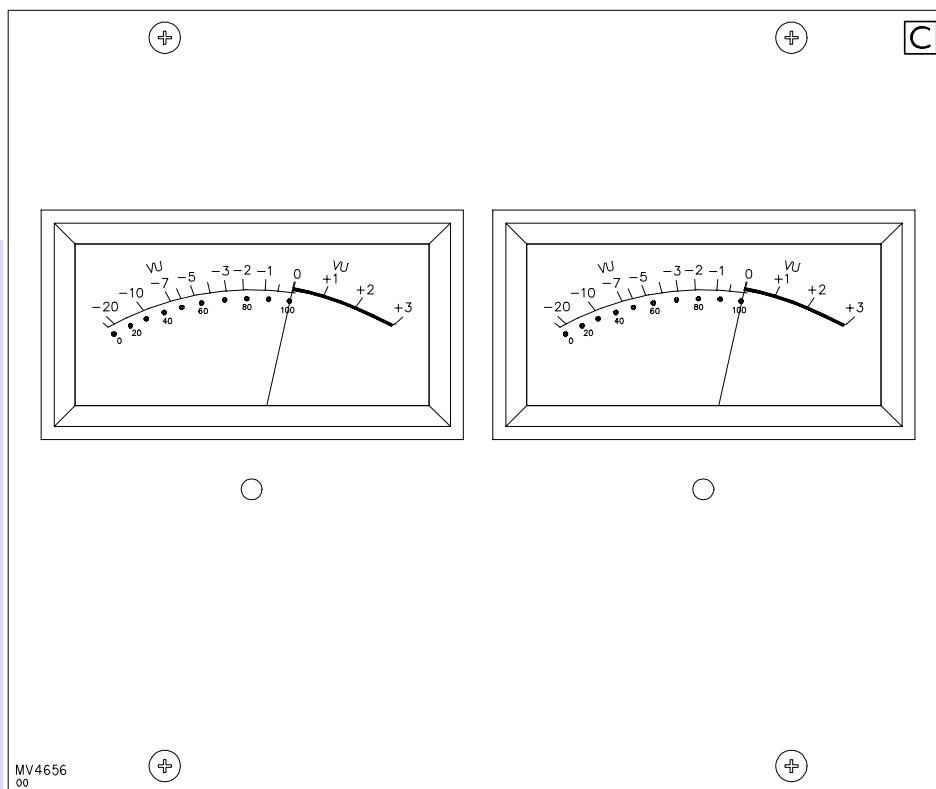
MV4383 SINGLE MONO VU METER

Large VU Meter with illumination.

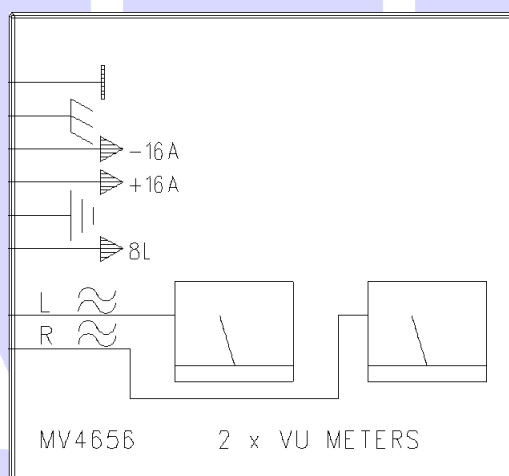
0VU represents +4dBu.

Internal buffer amplifier.



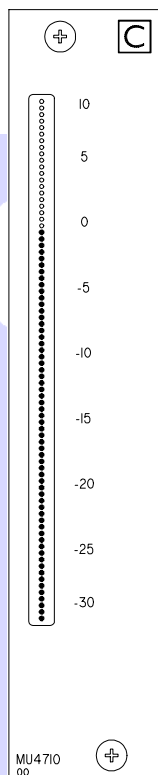
MV4656 TWIN MONO VU METER

VU meters with illumination. Internal buffer amplifiers.

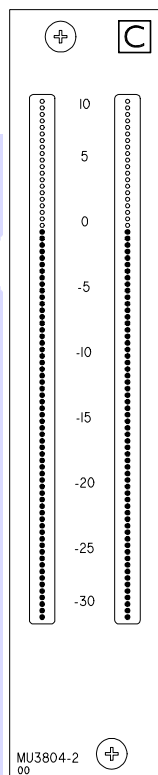


BARGRAPH OPTIONS

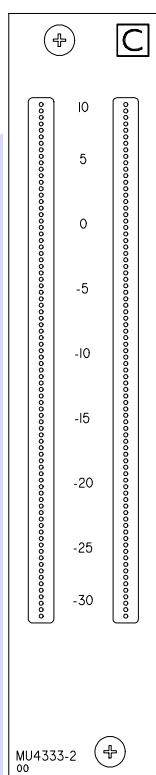
MU4710
MONO
BARGRAPH
(Green)



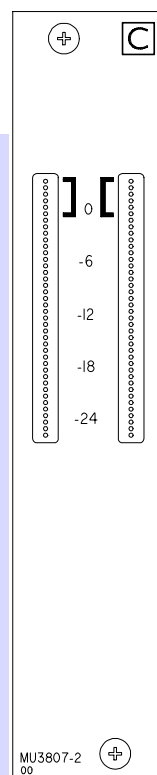
MU3804-2
LARGE STEREO
BARGRAPH
(Red/Green)



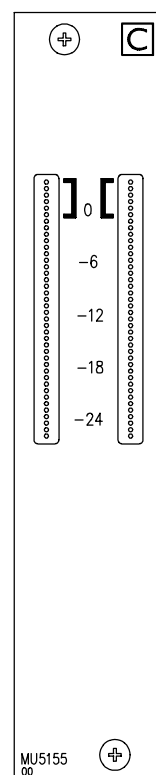
MU4333-2
LARGE STEREO
BARGRAPH
(Green/Red)



MU3807-2
SMALL STEREO
BARGRAPH
(Red/Green)

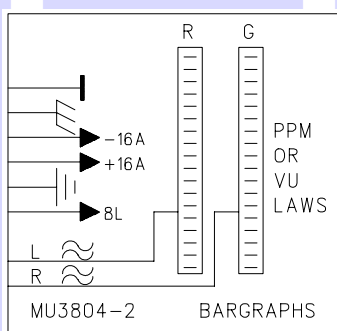
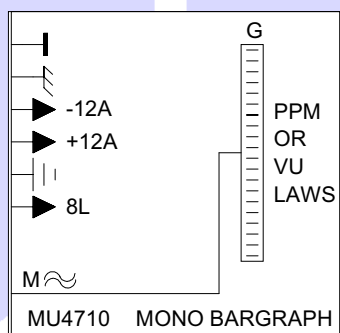


MU5155
SMALL STEREO
BARGRAPH
(Green/Red)

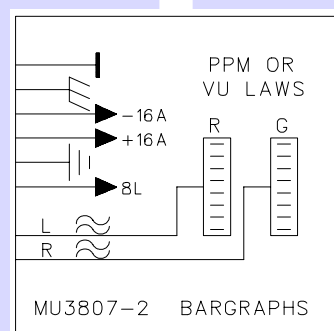


Twin LED bargraphs - 40 LEDs each for good resolution.

Bars brighten at 0dB representing +6 or +8 dBu for PPM or +4dBu (SCALE 0) for VU (set internally).

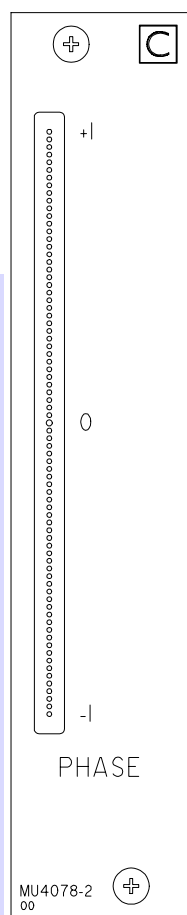


MU4333-2 (G/R Version)



MU5155 (G/R Version)

MU4078-2 PHASE BARGRAPH

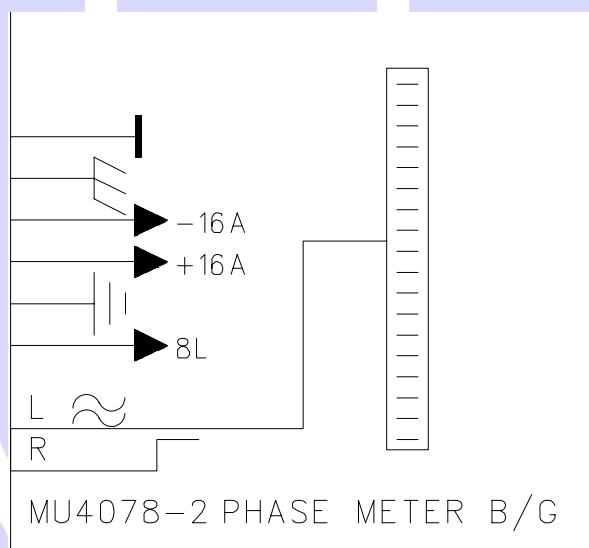


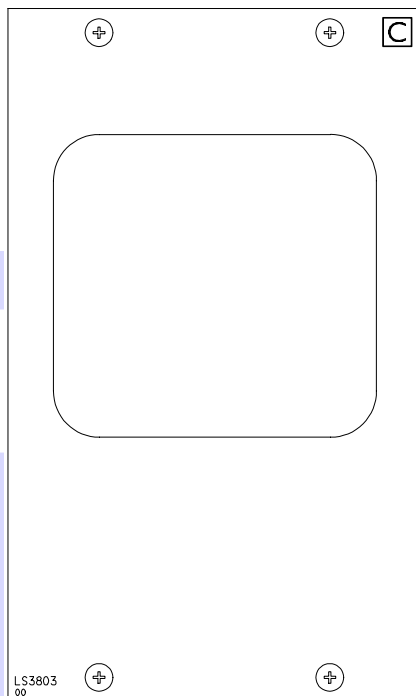
LED Bargraph.

Upper section representing good phase coherence is GREEN.

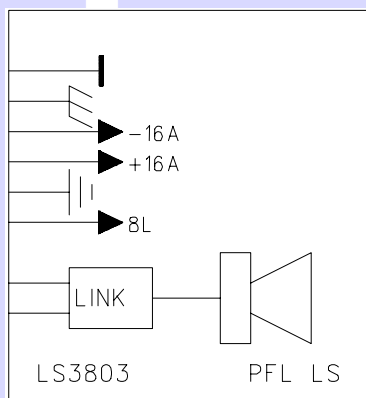
Lower section representing poor phase coherence is RED.

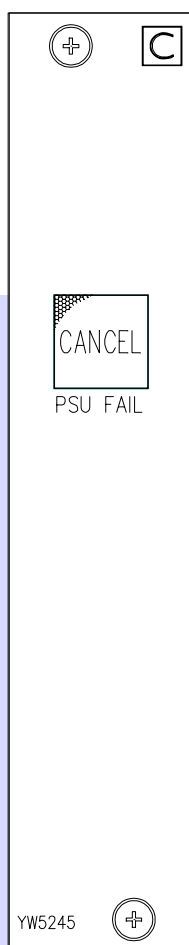
Spot moves dynamically.



LS3803 PFL LOUDSPEAKER

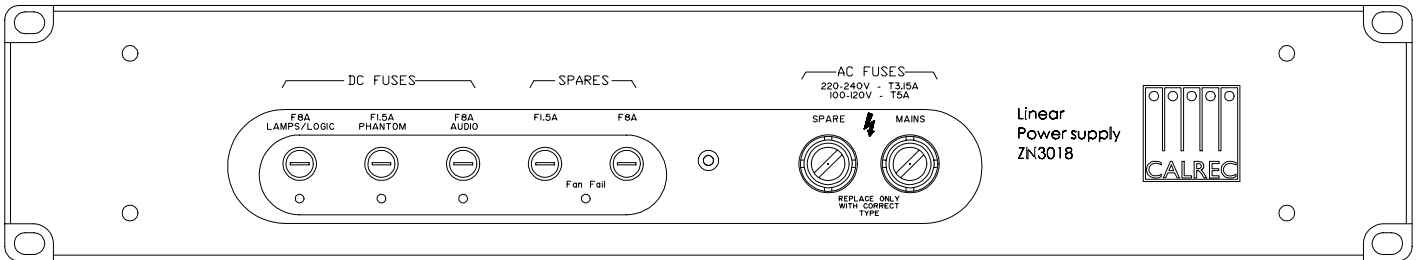
Module can be set for Left, Right or Mono use.
Module can receive Reverse Talkback plus an
extra intercom signal if required.



YW5245 BROADCAST FACILITIES PANEL

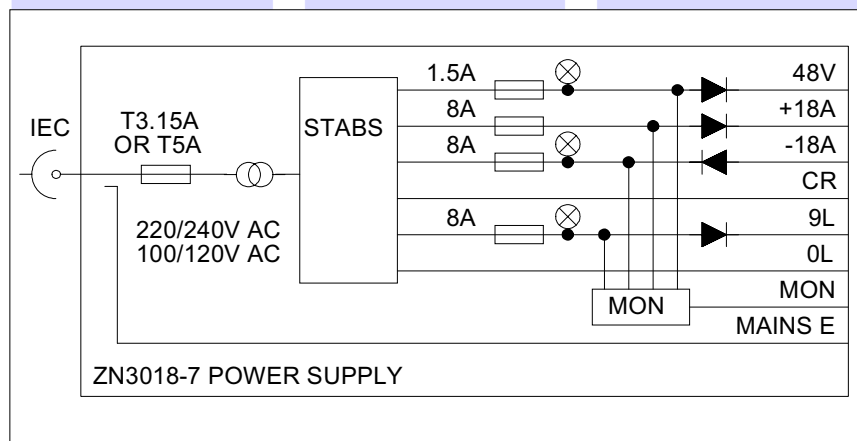
PSU FAIL / CANCEL - Red LED flashes when a PSU or part of a PSU has failed. Flashing may be cancelled by button but will resume with a further failure or if the console is switched off and on again.

ZN3018-7 2RU EXTERNAL POWER SUPPLY UNIT



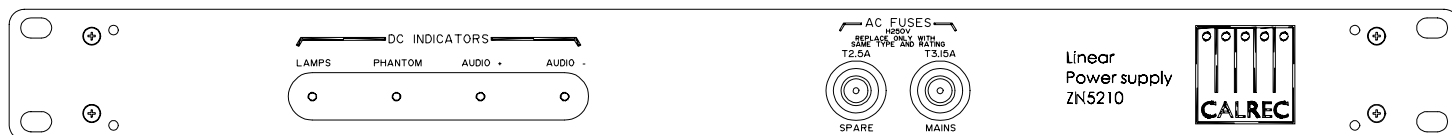
A Calrec designed special unit to provide ± 16 volts audio power, 8 volts logic power (stabilised in modules at 5 volts where required), and 48 volts phantom power suitable for approximately 16 channels each in a typical console. It is recommended that there be a second external power supply in the system to act as a "Hot" spare which in addition will share the load.

The 2U units include a monitor of the 4 outputs and send a fault signal to the console in the event of a failure. The units operate in parallel via internal diodes and are designed to operate at mains voltages 10% below that set.



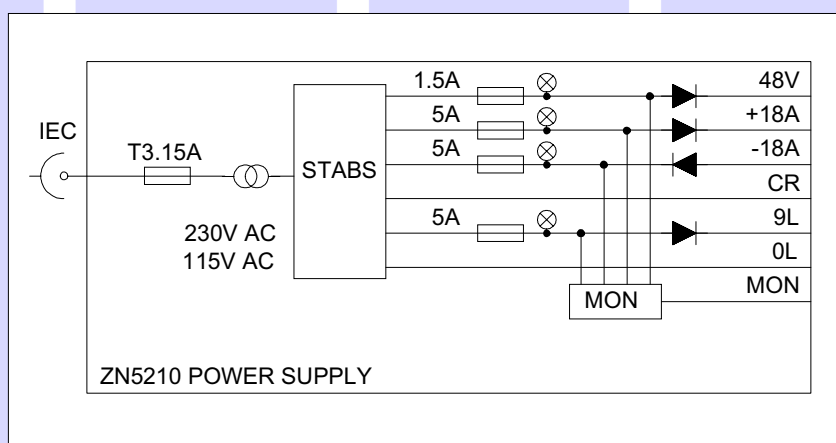
Please note : The small frame M3 is supplied with an internal Power Supply Unit. Should an external Power Supply Unit be used as a "hot" spare for this, then load-sharing will not occur.

ZN5210 1RU EXTERNAL POWER SUPPLY UNIT

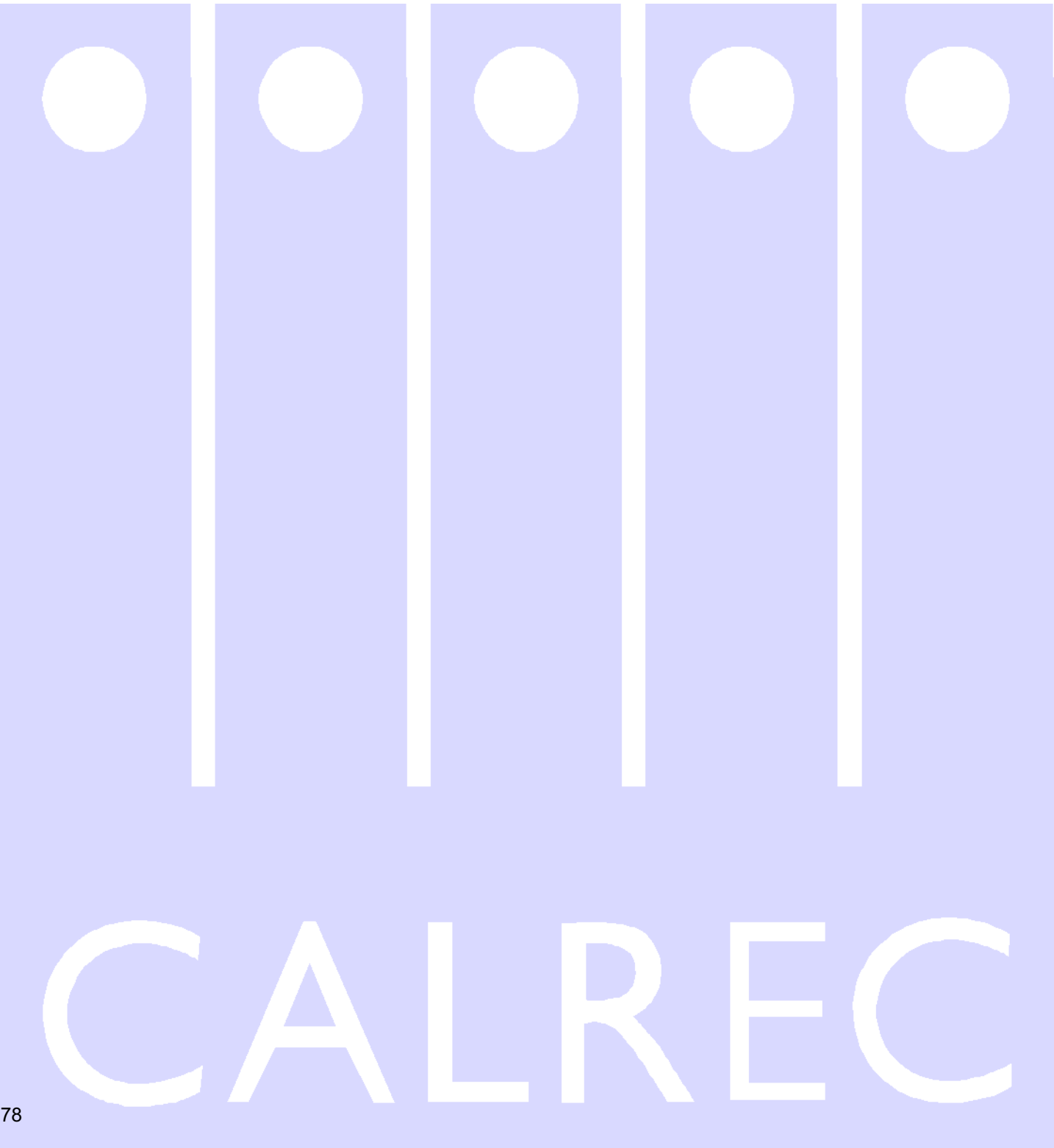


A Calrec designed PSU to provide ± 18 volts audio power, 9 volts logic power (stabilised in modules to 5 volts where required) and 48 volts phantom power. It is recommended that there be a second external power supply in the system to act as a “Hot” spare which in addition will share the load.

The 1U units operate in parallel via internal diodes and are designed to operate at mains voltages 10% below that set.



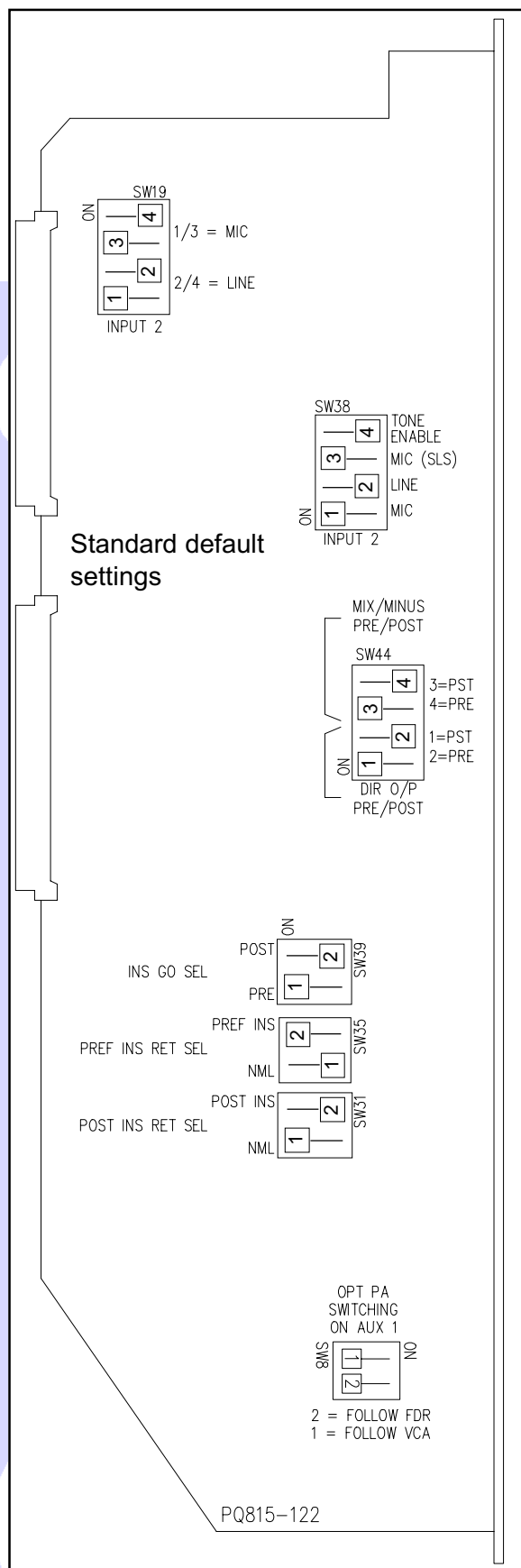
Please note : The small frame M3 is supplied with an internal Power Supply Unit. Should an external Power Supply Unit be used as a “hot” spare for this, then load-sharing will not occur.



5.0 DIL Switch Information

CALREC

DIL SWITCH SETTINGS - PQ5122 MONO MIC/LINE DUAL INPUT CHANNEL



Mono channel 2nd Input can be internally set to either Mic or Line. (Selection of either Input 1 or 2 is done via a switch on the front panel).

MIC	SW 19	1 - ON	Standard default settings
		2 - OFF	
		3 - ON	
		4 - OFF	
	SW 38	1 - ON	
		2 - OFF	
		3 - ON	
LINE	SW 19	1 - OFF	
		2 - ON	
		3 - OFF	
		4 - ON	
	SW 38	1 - OFF	
		2 - ON	
		3 - OFF	

Each channel can have the alignment Tone to the mic gain control internally set to be either continuously enabled or to follow the Transmission / Rehearsal logic

Tone - Permanently enabled **SW 38 4 - ON**

Tone - Follows Tx / Reh logic **SW 38 4 - OFF**
(default)

Each channel has the option of sending to a Direct Output or to the Mix Minus Bus (via a switch on the front panel). Both options can be set internally to be either pre or post fader.

Direct Output - Post fader	SW 44	1 - ON 2 - OFF	☐	Standard default settings
Direct Output - Pre fader	SW 44	1 - OFF 2 - ON		
Mix Minus - Post fader	SW 44	3 - ON 4 - OFF	☐	Standard default settings
Mix Minus - Pre fader	SW 44	3 - OFF 4 - ON		

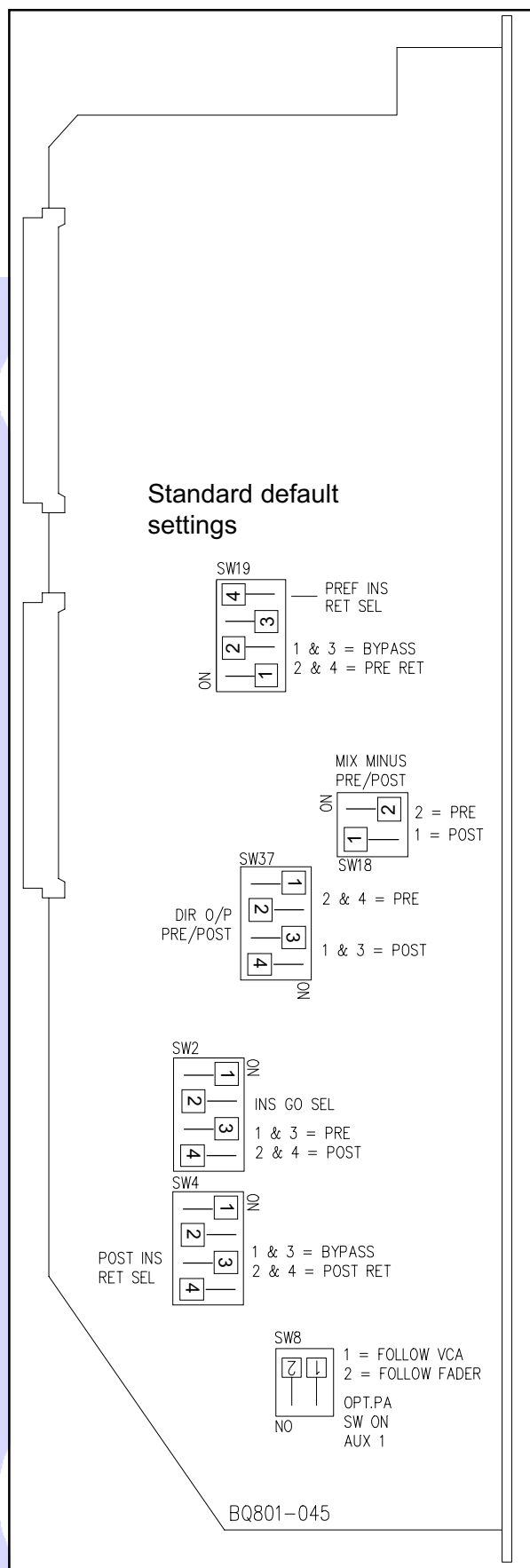
Channel Insert Go can be taken either Pre or Post fader, or bypassed altogether if not required for use. The signal is always present at the Insert Go connector in all conditions.

Insert - Pre fader	SW 39	1 - ON 2 - OFF	☐	Standard default settings
	SW 35	1 - OFF 2 - ON		
	SW 31	1 - ON 2 - OFF		
Insert - Post fader	SW 39	1 - OFF 2 - ON		
	SW 35	1 - ON 2 - OFF		
	SW 31	1 - OFF 2 - ON		
Insert - Bypassed	SW 35	1 - ON 2 - OFF		
	SW 31	1 - ON 2 - OFF		

When Aux 1 PA Inhibit is enabled, it allows a signal only to be fed to the audience PA system only whilst either the channel fader is open or under external VCA control. It works regardless of whether the signal is being taken pre or post fader.

Aux 1 PA Inhibit enabled to follow fader	SW 8	1 - OFF 2 - ON		
Aux 1 PA Inhibit enabled to follow ext. VCA control	SW 8	1 - ON 2 - OFF		
Aux 1 PA Inhibit not selected	SW 8	1 - OFF 2 - OFF	☐	Standard default settings

DIL SWITCH SETTINGS - BQ5124 STEREO LINE INPUT CHANNEL



Channel Insert Go signal can be taken either Pre or Post fader, or bypassed altogether if not required for use. The signal is always present at the Insert Go connector in all conditions.

Insert - Pre fader	SW 2	1 - ON
		2 - OFF
		3 - ON
		4 - OFF
Default	SW 19	1 - OFF
		2 - ON
		3 - OFF
		4 - ON
	SW 4	1 - ON
		2 - OFF
		3 - ON
		4 - OFF
Insert - Post fader	SW 2	1 - OFF
		2 - ON
		3 - OFF
		4 - ON
	SW 19	1 - ON
		2 - OFF
		3 - ON
		4 - OFF
	SW 4	1 - OFF
		2 - ON
		3 - OFF
		4 - ON
Insert - Bypassed	SW 19	1 - ON
		2 - OFF
		3 - ON
		4 - OFF
	SW 4	1 - ON
		2 - OFF
		3 - ON
		4 - OFF

Each channel has the option of sending to a Direct Output or to the Mix Minus Bus (via a switch on the front panel). Both options can be set internally to be either pre or post fader.

Direct Output - Post fader	SW 37	1 - ON 2 - OFF 3 - ON 4 - OFF	☐	Standard default settings
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Direct Output - Pre fader	SW 37	1 - OFF 2 - ON 3 - OFF 4 - ON		
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Mix Minus - Post fader	SW 18	1 - ON 2 - OFF	☐	Standard default settings
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Mix Minus - Pre fader	SW 18	1 - OFF 2 - ON		
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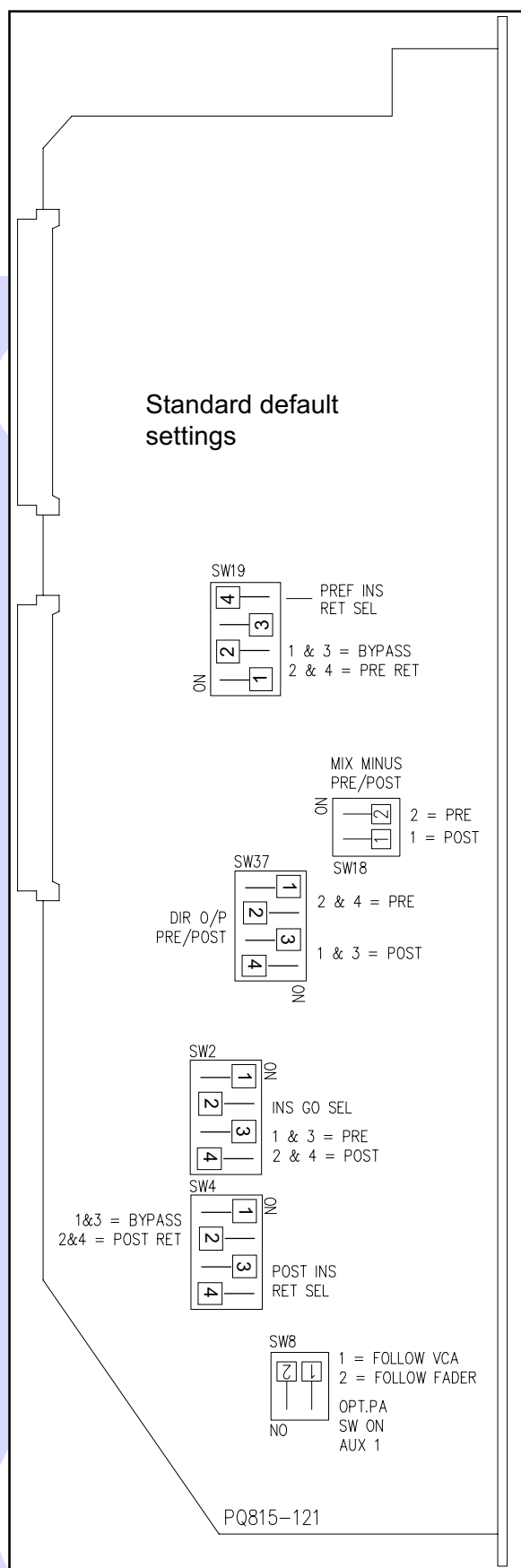
When Aux 1 PA Inhibit is enabled, it allows a signal only to be fed to the audience PA system only whilst either the channel fader is open or under external VCA control. It works regardless of whether the signal is being taken pre or post fader.

Aux 1 PA Inhibit enabled to follow fader	SW 8	1 - OFF 2 - ON		
--	-------------	-------------------	--	--

Aux 1 PA Inhibit enabled to follow ext. VCA control	SW 8	1 - ON 2 - OFF		
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Aux 1 PA Inhibit not selected	SW 8	1 - OFF 2 - OFF	☐	Standard default settings
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DIL SWITCH SETTINGS - PQ5123 STEREO MIC INPUT CHANNEL



Channel Insert Go signal can be taken either Pre or Post fader, or bypassed altogether if not required for use. The signal is always present at the Insert Go connector in all conditions.

Insert - Pre fader	SW 2	1 - ON
		2 - OFF
		3 - ON
		4 - OFF
	SW 19	1 - OFF
		2 - ON
		3 - OFF
		4 - ON
Insert - Post fader	SW 4	1 - ON
		2 - OFF
		3 - ON
		4 - OFF
	SW 19	1 - ON
		2 - OFF
		3 - ON
		4 - OFF
Insert - Bypassed	SW 4	1 - OFF
		2 - ON
		3 - OFF
		4 - ON
	SW 19	1 - ON
		2 - OFF
		3 - ON
		4 - OFF
	SW 4	1 - ON
		2 - OFF
		3 - ON
		4 - OFF

Each channel has the option of sending to a Direct Output or to the Mix Minus Bus (via a switch on the front panel). Both options can be set internally to be either pre or post fader.

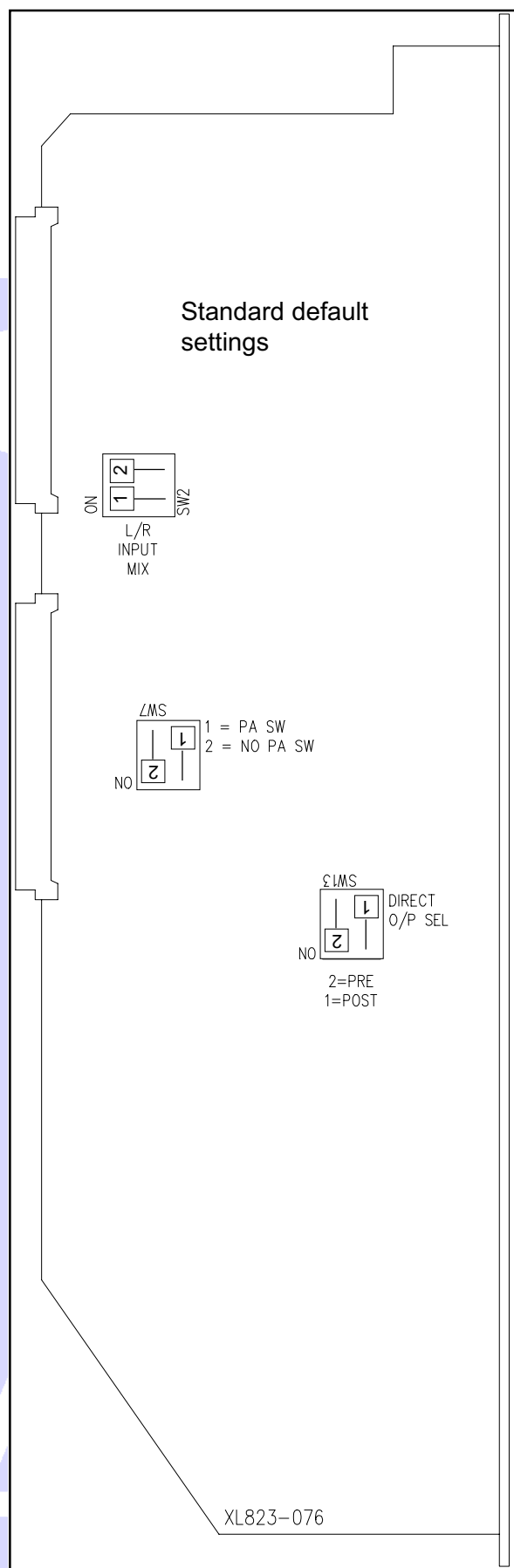
Direct Output - Post fader	SW 37	1 - ON 2 - OFF 3 - ON 4 - OFF		Standard default settings
----------------------------	--------------	--	--	---------------------------

Direct Output - Pre fader	SW 37	1 - OFF 2 - ON 3 - OFF 4 - ON
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Mix Minus - Post fader	SW 18	1 - ON 2 - OFF		Standard default settings
Mix Minus - Pre fader	SW 18	1 - OFF 2 - ON		

When Aux 1 PA Inhibit is enabled, it allows a signal only to be fed to the audience PA system only whilst either the channel fader is open or under external VCA control. It works regardless of whether the signal is being taken pre or post fader.

Aux 1 PA Inhibit enabled to follow fader	SW 8	1 - OFF 2 - ON		Standard default settings
Aux 1 PA Inhibit enabled to follow ext. VCA control	SW 8	1 - ON 2 - OFF		
Aux 1 PA Inhibit not selected	SW 8	1 - OFF 2 - OFF		

DIL SWITCH SETTINGS - XL5125 MONO GROUP

Mono Groups have the option of being fed with either a mono mix signal or a Left /Right split to pairs of group mono modules. Left signal going to positions 1 & 3, Right to 2 & 4.

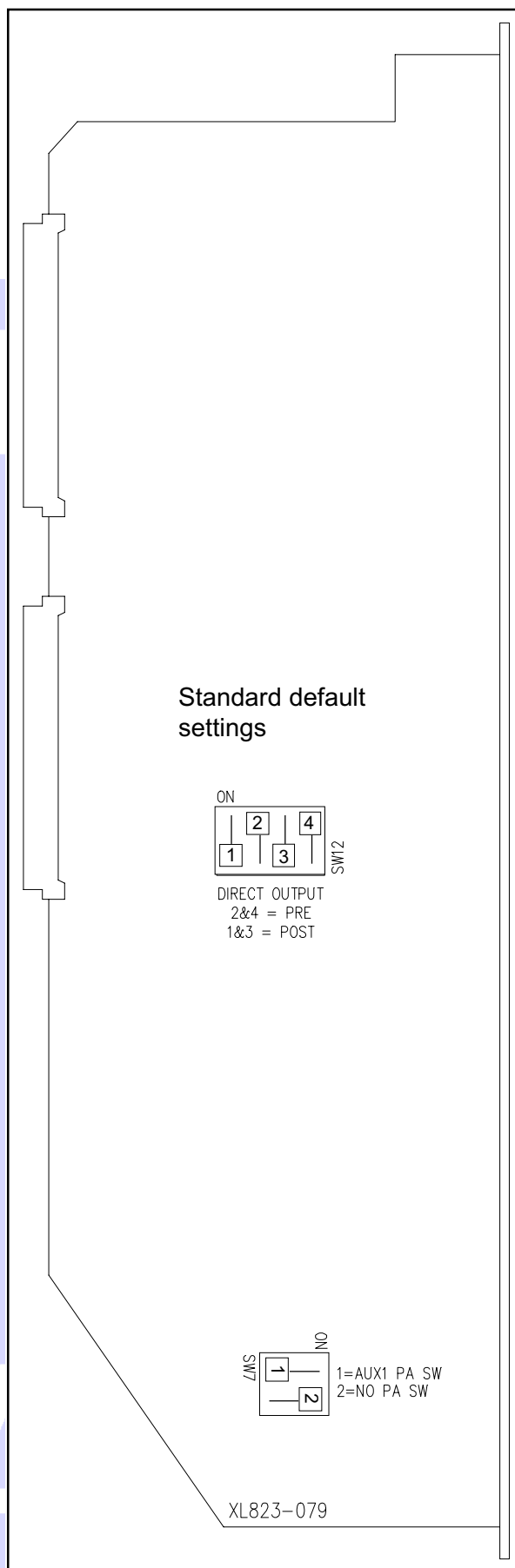
L/R Input Mix ON	SW 2	1 - ON	☐	Standard default settings
		2 - ON		
L/R split to gps 1&3 / 2&4	SW 2	1 - OFF	☐	
		2 - OFF		

When Aux 1 PA Inhibit is enabled, it allows a signal only to be fed to the audience PA system only whilst the fader is open.

Aux 1 PA Inhibit enabled to follow fader	SW 7	1 - ON	☐	
		2 - OFF		
Aux 1 PA Inhibit not selected	SW 7	1 - OFF	☐	Standard default settings
		2 - ON		

Each group has the option of sending to a Direct Output. The signal can be set internally to be either pre or post fader.

Direct Output - Post fader	SW 13	1 - ON	☐	
		2 - OFF		
Direct Output - Pre fader	SW 13	1 - OFF	☐	Standard default settings
		2 - ON		

DIL SWITCH SETTINGS - XL5126 STEREO GROUP



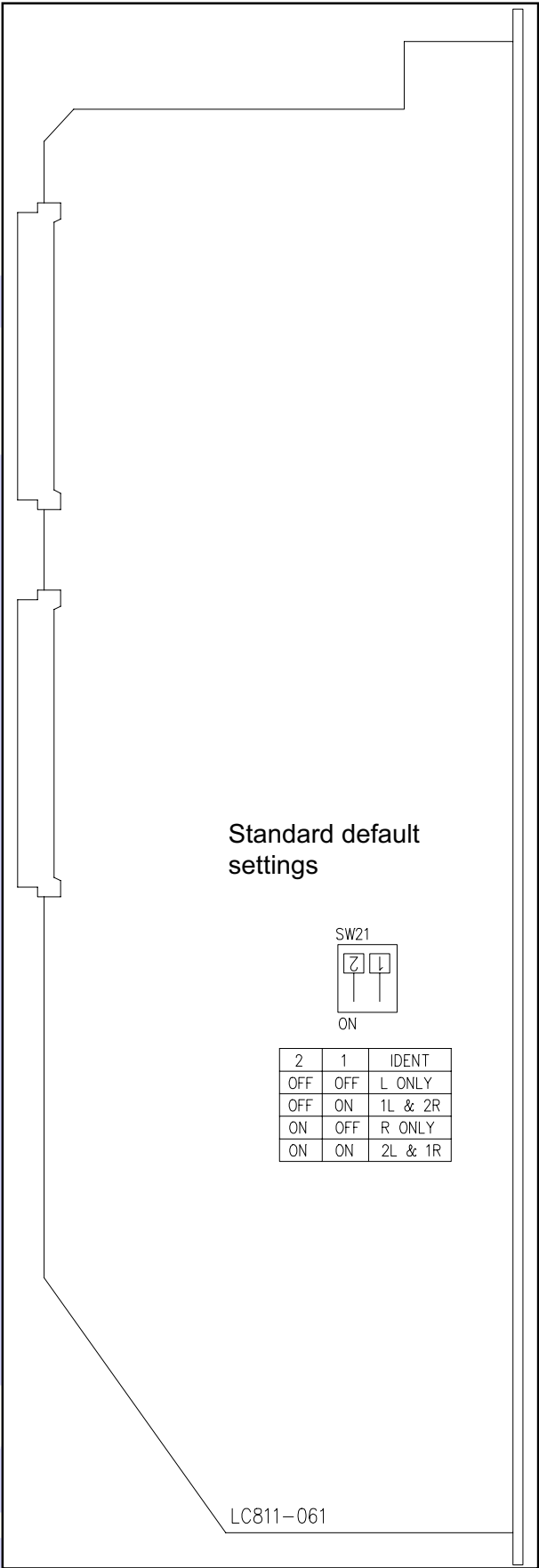
When Aux 1 PA Inhibit is enabled, it allows a signal only to be fed to the audience PA system only whilst the fader is open.

Aux 1 PA Inhibit enabled to follow fader	SW 7	1 - ON 2 - OFF		
Aux 1 PA Inhibit not selected	SW 7	1 - OFF 2 - ON	☐	Standard default settings

Each group has the option of sending to a Direct Output. The signal can be set internally to be either pre or post fader.

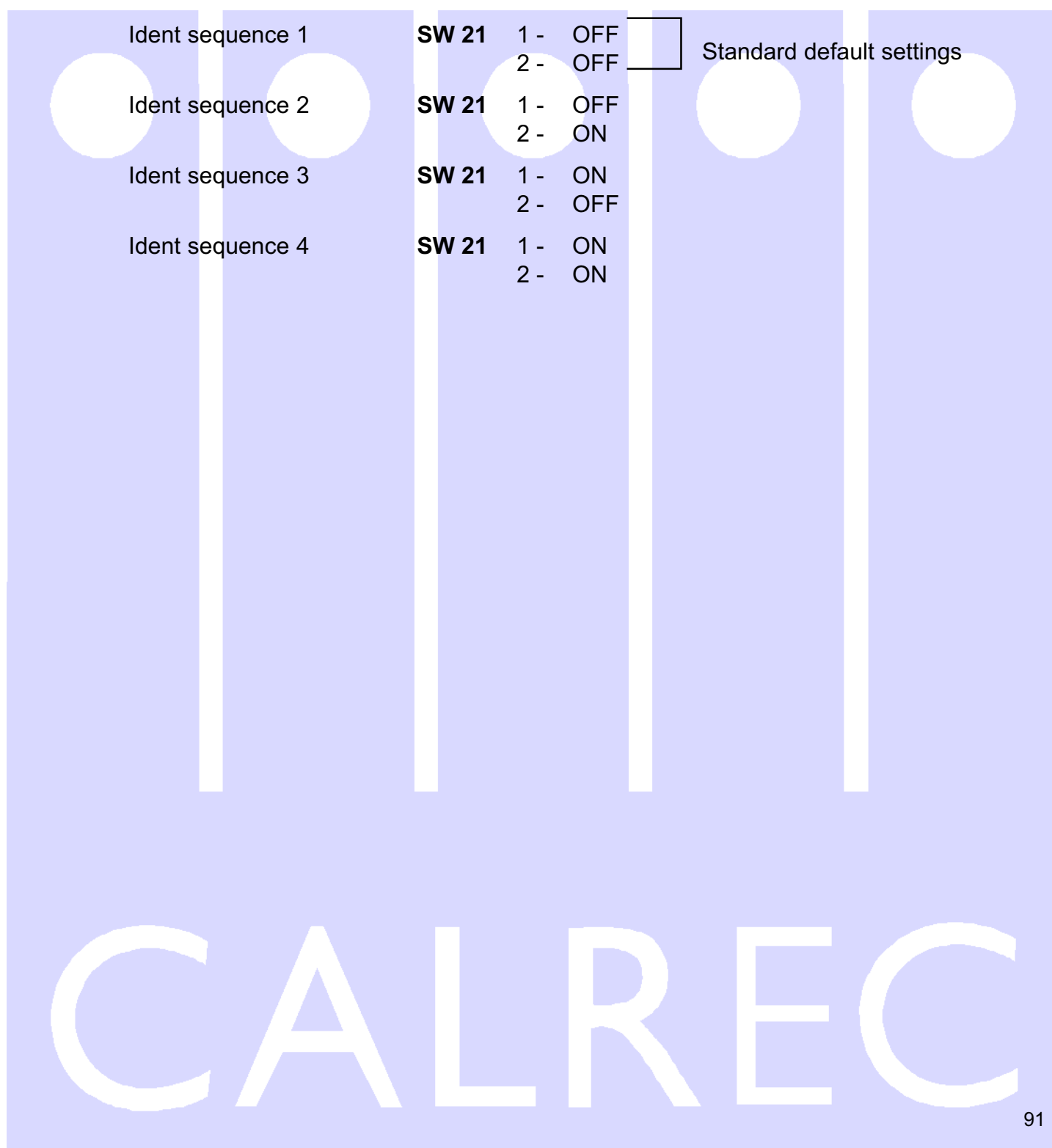
Direct Output - Post fader	SW 12	1 - ON 2 - OFF 3 - ON 4 - OFF		
Direct Output - Pre fader	SW 12	1 - OFF 2 - ON 3 - OFF 4 - ON	☐	Standard default settings

DIL SWITCH SETTINGS - LC5128 MAIN OUTPUT 2, TONE & TALKBACK



Main stereo Line-up tone can be set to sequence in several styles, which are:

1. Left signal only interrupted once every 3 seconds. (EBU)
2. Left signal interrupted once every 4 seconds and the Right signal twice in the intervening period. (GLITS)
3. Right signal only interrupted once every 3 seconds.
4. Right signal interrupted once every 4 seconds and the Left signal twice in the intervening period.



Ident sequence 1

SW 21 1 - OFF
2 - OFF

Standard default settings

Ident sequence 2

SW 21 1 - OFF
2 - ON

Ident sequence 3

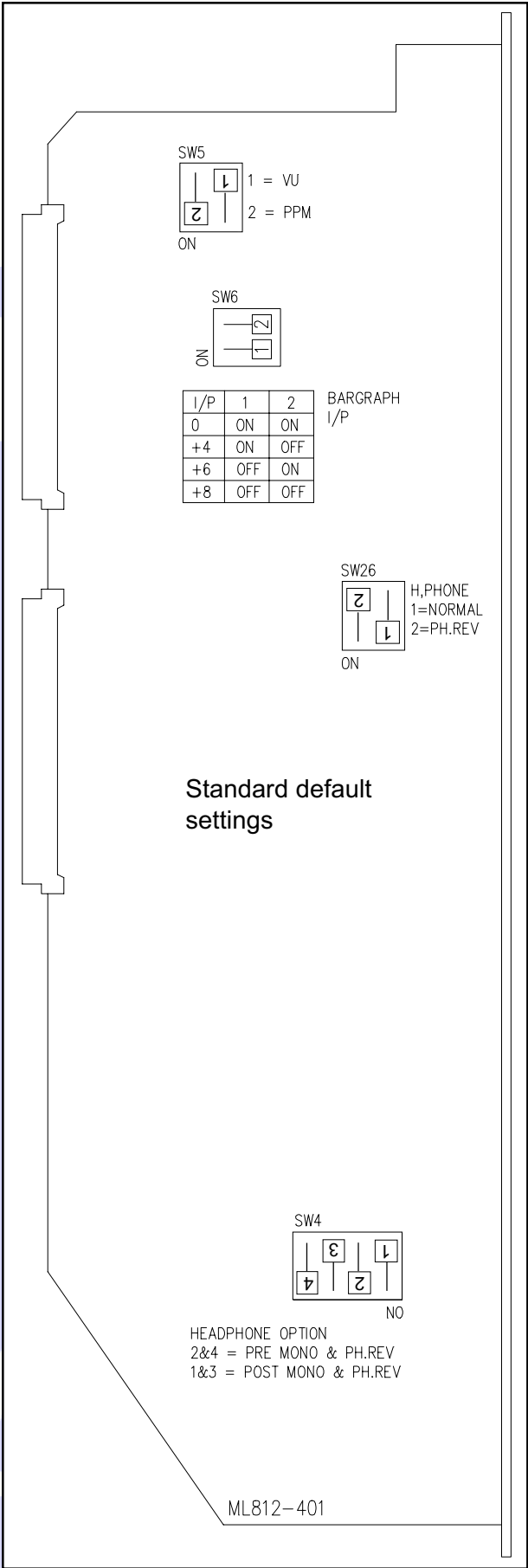
SW 21 1 - ON
2 - OFF

Ident sequence 4

SW 21 1 - ON
2 - ON

CALREC

DIL SWITCH SETTINGS - ML4952 MONITOR 1



The bargraph characteristics can be set to display as either PPM or VU.

PPM	SW 5	1 - OFF	☐	Standard default settings
		2 - ON		
VU	SW 5	1 - ON		
		2 - OFF		

On the bargraph display the bar at the '0' position can be set to brighten, when the signal is either 0dBu, +4dBu, +6dBu or +8dBu.

0dBu	SW 6	1 - ON	☐	Standard default settings
		2 - ON		
+4dBu	SW 6	1 - ON		
		2 - OFF		
+6dBu	SW 6	1 - OFF		
		2 - ON		
+8dBu	SW 6	1 - OFF	☐	Standard default settings
		2 - OFF		

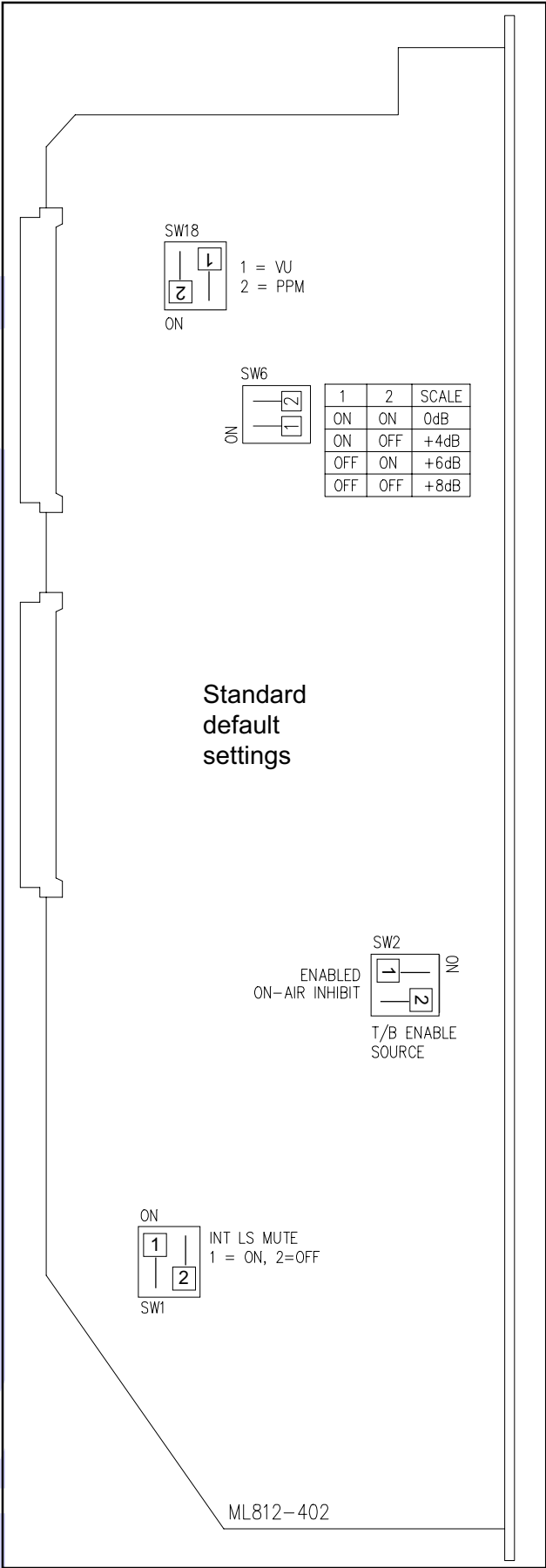
The headphone output is set to follow the monitor LS outputs. However it can be selected to be taken either pre or post the LB, RB, Mono & Phase Reverse switching.

Headphone O/P - Pre	SW 4	1 - OFF	☐	Standard default settings
		2 - ON		
		3 - OFF		
		4 - ON		
Headphone O/P - Post	SW 4	1 - ON		
		2 - OFF		
		3 - ON		
		4 - OFF		

The headphone output can be as normal, (no phase reverse) or can have a phase reverse on the Right Signal.

NML	SW 26	1 - ON	☐	Standard default settings
		2 - OFF		
Phase Reverse on Right	SW 26	1 - OFF		
		2 - ON		

DIL SWITCH SETTINGS - ML4953 MONITOR 2



The bargraph characteristics can be set to display as either PPM or VU.

PPM	SW 18	1 - OFF	☐	Standard default settings
		2 - ON	☐	
VU	SW 18	1 - ON	☐	
		2 - OFF	☐	

On the bargraph display the bar at the '0' position can be set to brighten, when the signal is either 0dBu, +4dBu, +6dBu or +8dBu.

0dBu	SW 6	1 - ON	☐	Standard default settings
		2 - ON	☐	
+4dBu	SW 6	1 - ON	☐	
		2 - OFF	☐	
+6dBu	SW 6	1 - OFF	☐	
		2 - ON	☐	
+8dBu	SW 6	1 - OFF	☐	
		2 - OFF	☐	

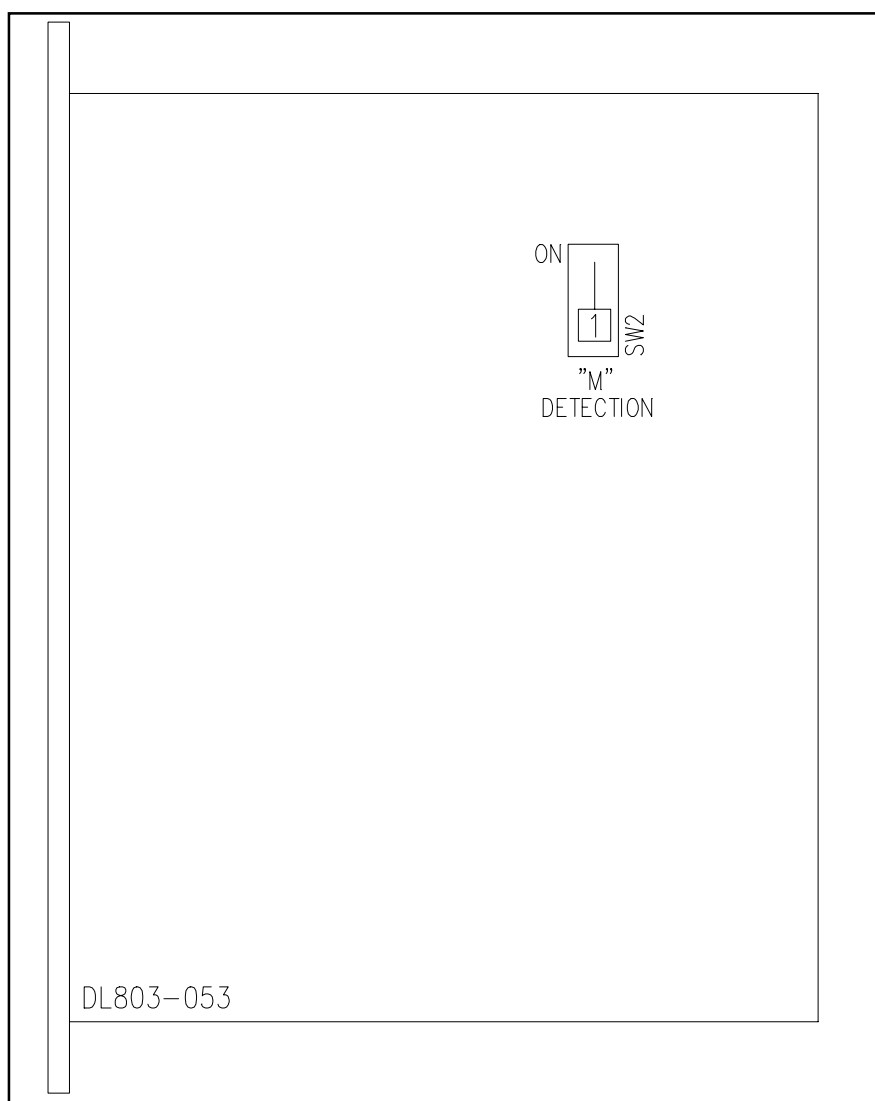
The talkback enable switching can be set to be ON permanently, regardless of transmission status, or ON only when the desk is in Rehearsal mode, or permanently OFF

ON	SW 2	1 - ON	☐	Standard default settings
		2 - OFF	☐	
ON in Rehearsal mode	SW 2	1 - OFF	☐	
		2 - ON	☐	
OFF	SW 2	1 - OFF	☐	
		2 - OFF	☐	

The small internal PFL loudspeaker can be either ON, or MUTED if the output is to be fed to an external PFL LS

ON	SW 1	1 - ON	☐	Standard default settings
		2 - OFF	☐	
MUTED	SW 1	1 - OFF	☐	
		2 - ON	☐	

DIL SWITCH SETTINGS - DL3678-2 STEREO COMPRESSOR LIMITER



SW2 "M" detection:-

DOWN = OFF.
UP = ON =

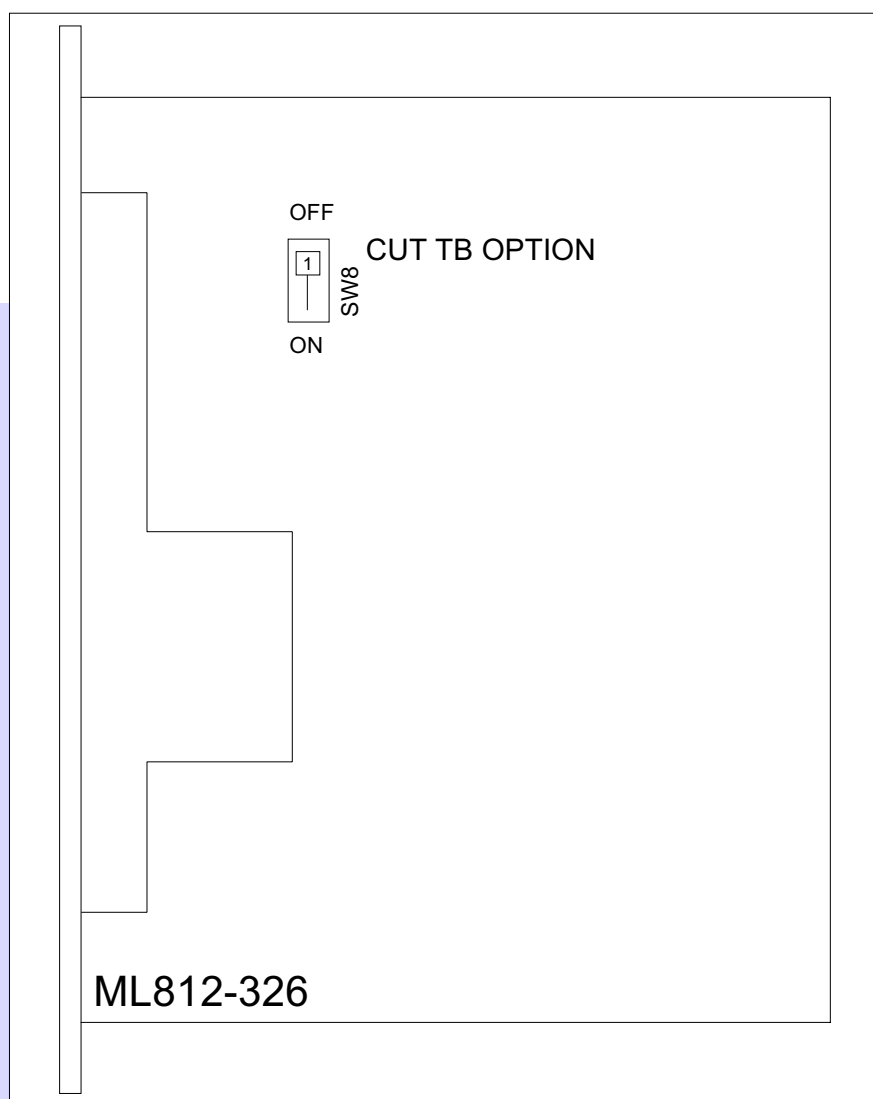
Detection of reduced mono
signal into side chain.



Standard default setting

The compressor and limiter normally respond to the higher of the left and right signals. SW2 allows the mono reduction of left and right (-3dB) to take control if the stereo coherence is such that this exceeds left or right. This renders it unnecessary to "under-drive" the stereo outputs to guard against the possibility of a higher than desired mono level.

DIL SWITCH SETTINGS - ML3679 STUDIO LS CONTROL



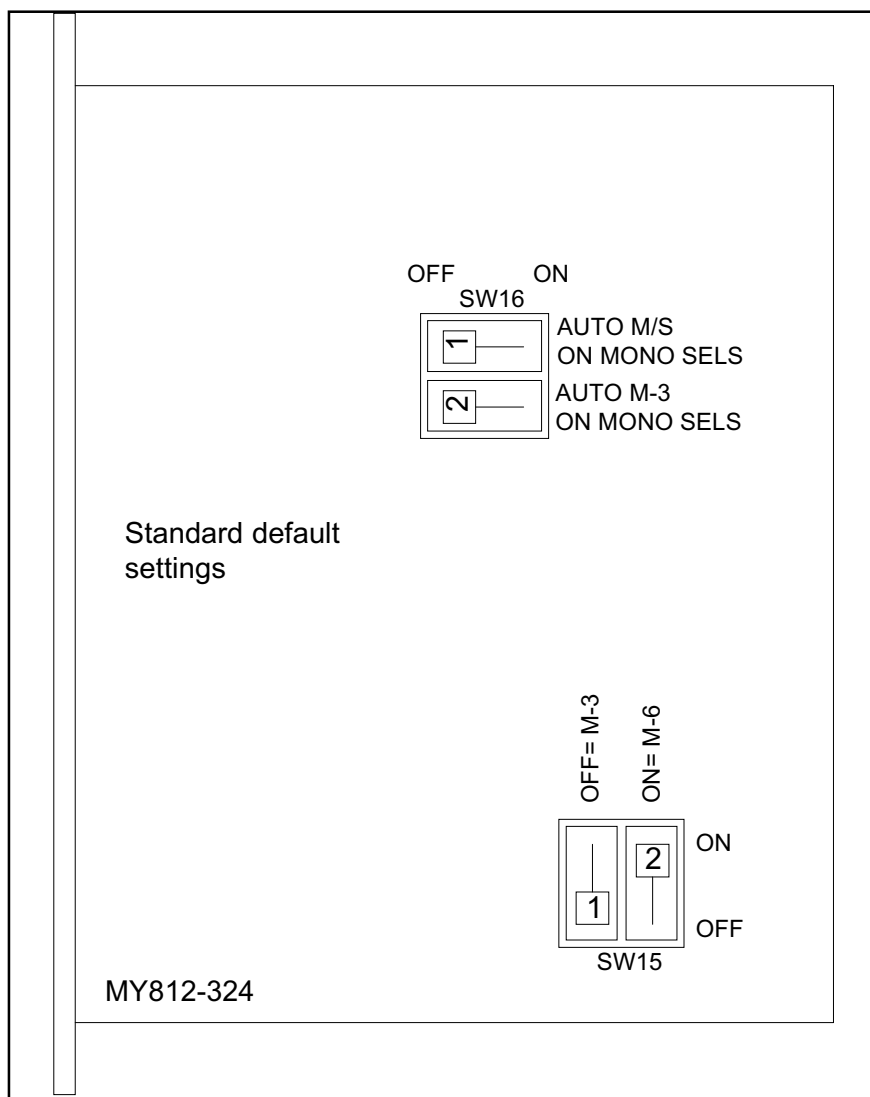
SW8 Cut Talkback

UP = OFF = No effect = TALKBACK heard.
 DOWN = ON = TALKBACK as well as loudspeaker signals
 cut by cut button and REMOTE CUT.



Standard default
setting

DIL SWITCH SETTINGS - MY4994 / MY4994-2 METER SELECTOR



The meter selector can be set to automatically switch the metering to M/S when a mono source is selected. (The M/S switch LED will also illuminate on the front panel)

M/S switching AUTO	SW 16	1 - ON	
M/S switching OFF	SW 16	1 - OFF	—— Standard default setting

The meter selector can be set to automatically reduce the metering of the mono signal by -3dB when a mono source is selected. This will bring the mono and stereo signals in line with each other at 0dB.

-3dB automatic reduction	SW 16	2 - ON	
Mono signal unchanged	SW 16	2 - OFF	—— Standard default setting
	SW 15	OFF = M - 3	
		ON = M - 6	—— Standard default setting

Mono M & S can be either set for -3dB mix or -6dB

DIL SWITCH SETTINGS - HN5255 METER BACKPLANE

If group or PFL circuits are fed from external connectors, the internal circuit switches 4, 5 and 6 must be opened to remove the internal feeds.

GROUP OR EXTERNAL DIGITAL INPUTS FED EXTERNALLY:

SW6	1-4	OFF =	GROUP 4
	5-8	OFF =	GROUP 3
SW4	1-4	OFF =	GROUP 2
	5-8	OFF =	GROUP 1

PFL INPUT FED EXTERNALLY:

SW5	1-2	OFF =	PFL
-----	-----	-------	-----

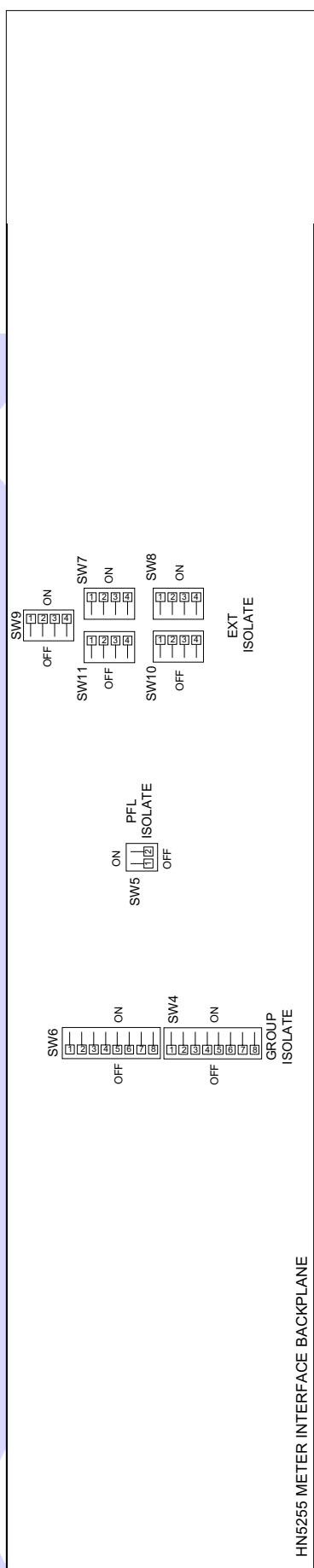
The Standard default settings for switches 4, 5 and 6 is all ON for internal feeds

TO SWITCH EXTERNAL INPUTS TO METER SELECTOR 2:

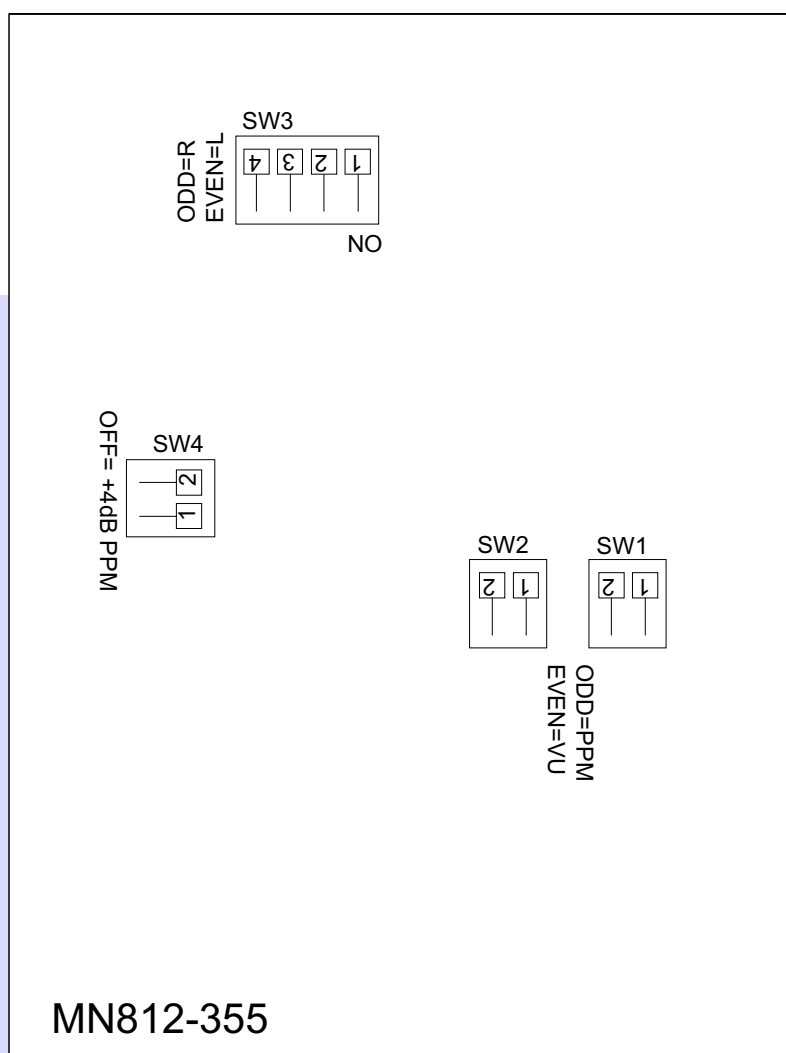
SW7	1-4	ON =	EXT2
SW8	1-4	ON =	EXT 3
SW9	1-4	ON =	EXT 1
SW10	1-4	ON =	EXT 5
SW11	1-4	ON =	EXT 4

Switches 7-11 should be all ON for normal operation

The Standard default settings for switches 7-11 is all ON to switch external inputs to Meter Selector 2.



DIL SWITCH SETTINGS - MV4383 SINGLE MONO VU METER

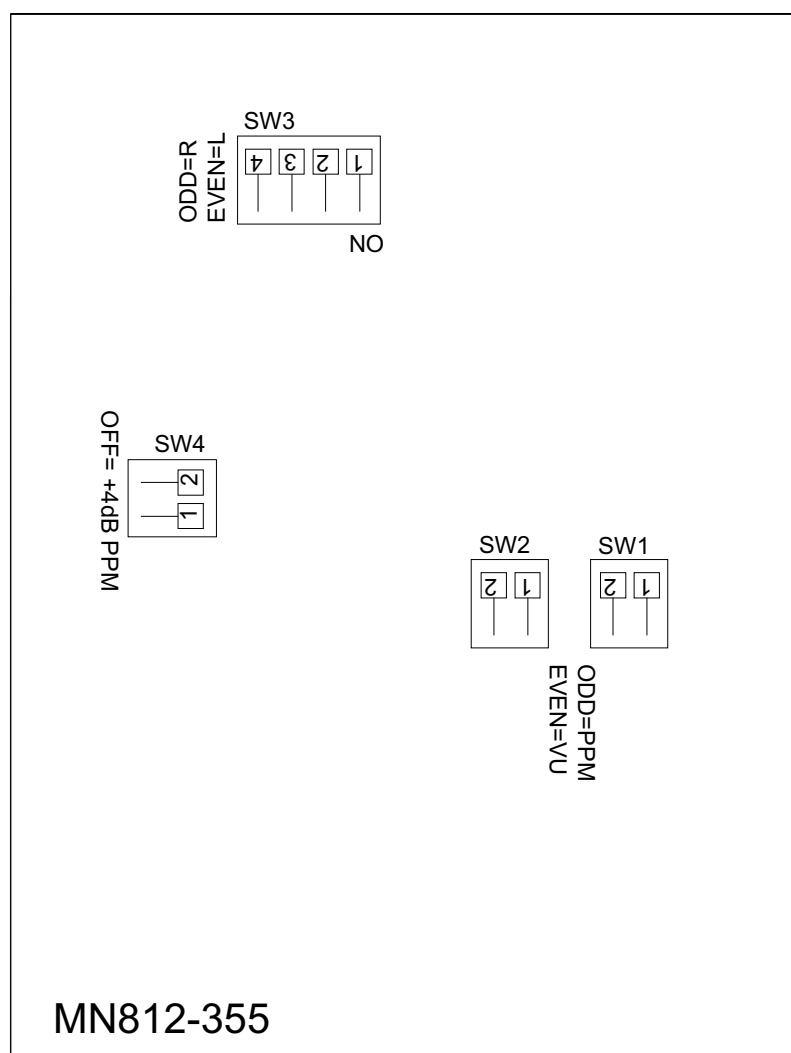


1 Card fitted per unit.

- SW 3** Section 1 & 3 - ON - Select RIGHT meter feed to be source. ☐ Standard default setting for L/R
 Section 2 & 4 - ON - Select LEFT meter feed to be source. ☐
- SW 1** Section 1 - ON - PPM Characteristic. ☐
 Section 2 - ON - VU Characteristic. ☐ Standard default setting
- SW 2** Section 1 - ON - PPM Characteristic. ☐
 Section 2 - ON - VU Characteristic. ☐ Standard default setting
- SW 4** Section 1 - ON - Reduces gain to Unity. ☐
 Section 1 - OFF - Increases gain by 4dB. ☐ Standard default setting

Switches 1 & 2 must both be switched to either VU or PPM.

DIL SWITCH SETTINGS - MV4656 TWIN MONO VU METER



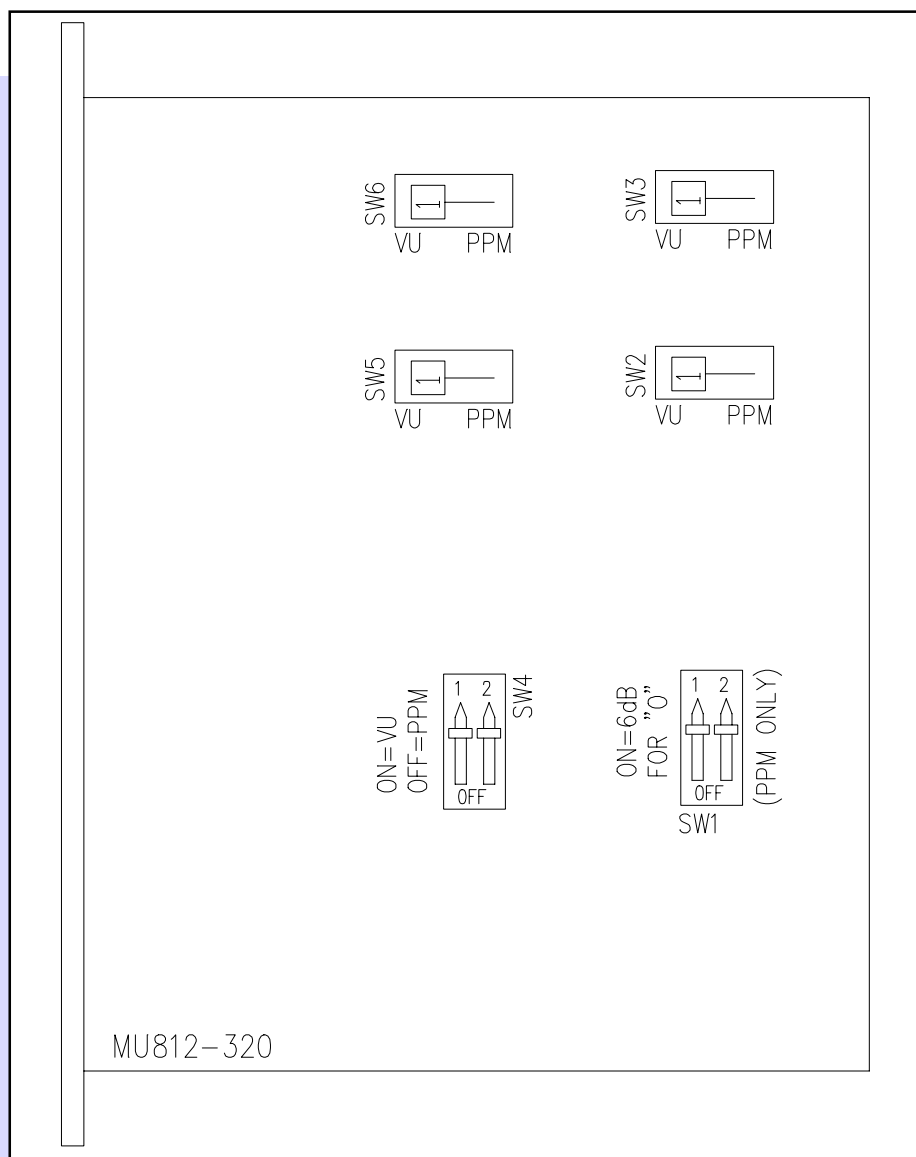
2 Cards fitted per unit - 1 for each meter.

- SW 3** Section 1 & 3 - ON - Select RIGHT meter feed to be source.
Section 2 & 4 - ON - Select LEFT meter feed to be source.  Standard default setting for L/R
- SW 1** Section 1 - ON - PPM Characteristic.
Section 2 - ON - VU Characteristic.  Standard default setting
- SW 2** Section 1 - ON - PPM Characteristic.
Section 2 - ON - VU Characteristic.  Standard default setting
- SW 4** Section 1 - ON - Reduces gain to Unity.
Section 1 - OFF - Increases gain by 4dB.  Standard default setting

Switches 1 & 2 must both be switched to either VU or PPM.

DIL SWITCH SETTINGS - BARGRAPH OPTIONS

- MU3804-2 LARGE STEREO BARGRAPH
- MU4333-2 LARGE STEREO BARGRAPH - REVERSED COLOURS
- MU3807-2 STEREO BARGRAPH
- MU5155 STEREO BARGRAPH - REVERSED COLOURS
- MU4710 MONO BARGRAPH (SWITCHES 4, 5 AND 6 DO NOT FUNCTION)



PLEASE NOTE

The following switches should be set to all VU or all PPM to achieve proper performance. It is remotely possible to have different characteristics on left and right bars of the bargraph when used for anything other than stereo metering

SW1 +6dBu at the scale "0" position (PPM only):-

1	=	LEFT BAR	}	UP	=	ON	=	+6dBu at scale "0".
2	=	RIGHT BAR	}	DOWN	=	OFF	=	+8dBu at scale "0".

SW2 PPM/VU characteristics, LEFT BAR :-

LEFT	=	PPM
RIGHT	=	VU

SW3 PPM/VU characteristics, LEFT BAR :-

LEFT	=	VU
RIGHT	=	PPM

SW4 PPM/VU characteristics (Not available on MU4710):-

1	=	LEFT BAR	}	UP	=	ON	=	VU
2	=	RIGHT BAR	}	DOWN	=	OFF	=	PPM

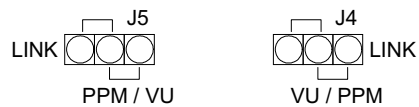
SW5 PPM/VU characteristics, RIGHT BAR(Not available on MU4710) :-

LEFT	=	VU
RIGHT	=	PPM

SW6 PPM/VU characteristics, RIGHT BAR (Not available on MU4710):-

LEFT	=	VU
RIGHT	=	PPM

The Standard Default settings for all bargraphs will follow other metering or be set for VU.

DIL SWITCH SETTINGS - MU3695 TWIN MONO PPM

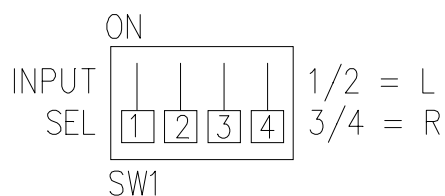
812 - 335

J4 & J5 LINKS:-

Add links as indicated for PPM or into centre and end slot for VU.

The Standard Default settings will be set for PPM.

CALREC

DIL SWITCH SETTINGS - LS3803 PFL LOUDSPEAKER

811-048

IF LS IS FOR USE IN EITHER THE STEREO LEFT POSITION OR MONO

SW1

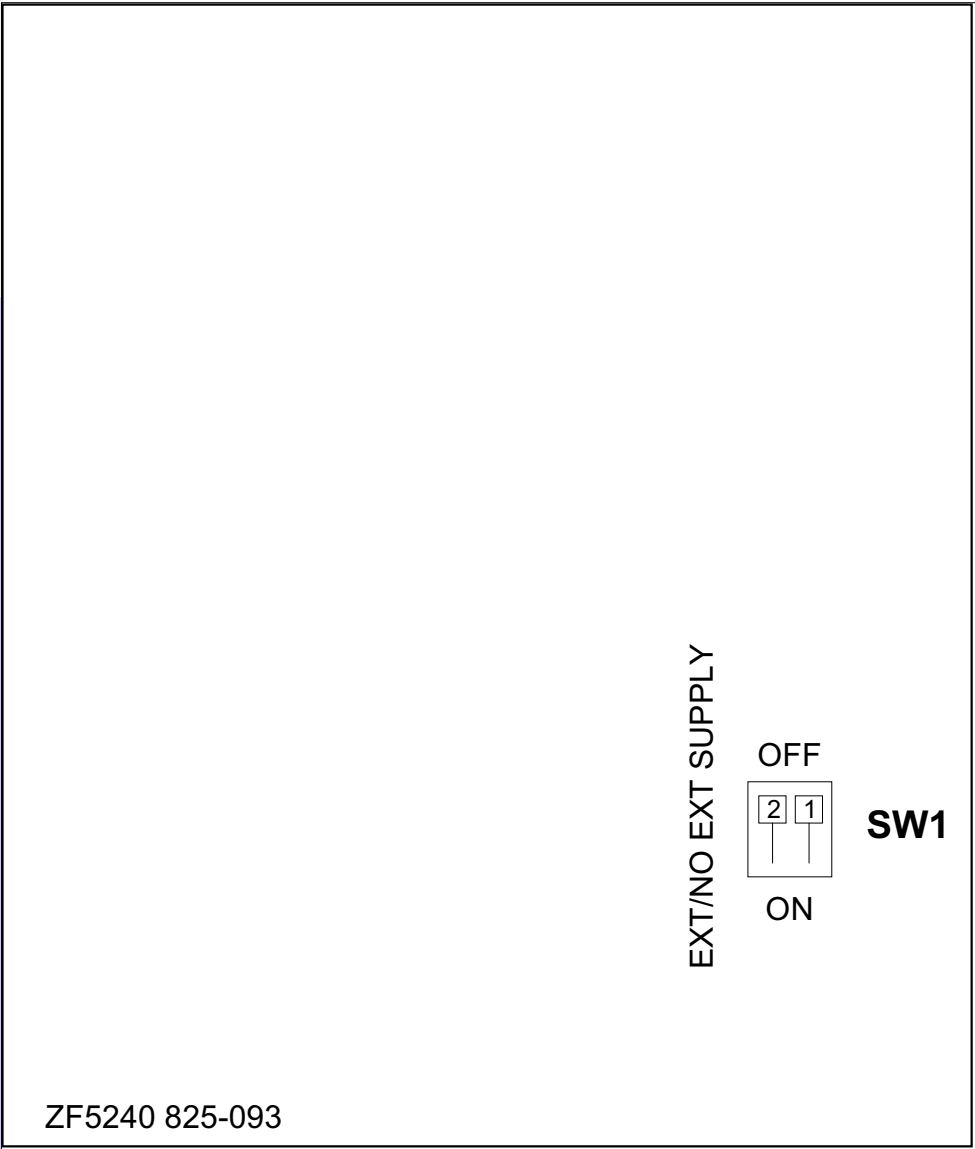
1 =	ON
2 =	ON
3 =	OFF
4 =	OFF

IF LS IS FOR USE IN THE STEREO RIGHT POSITION

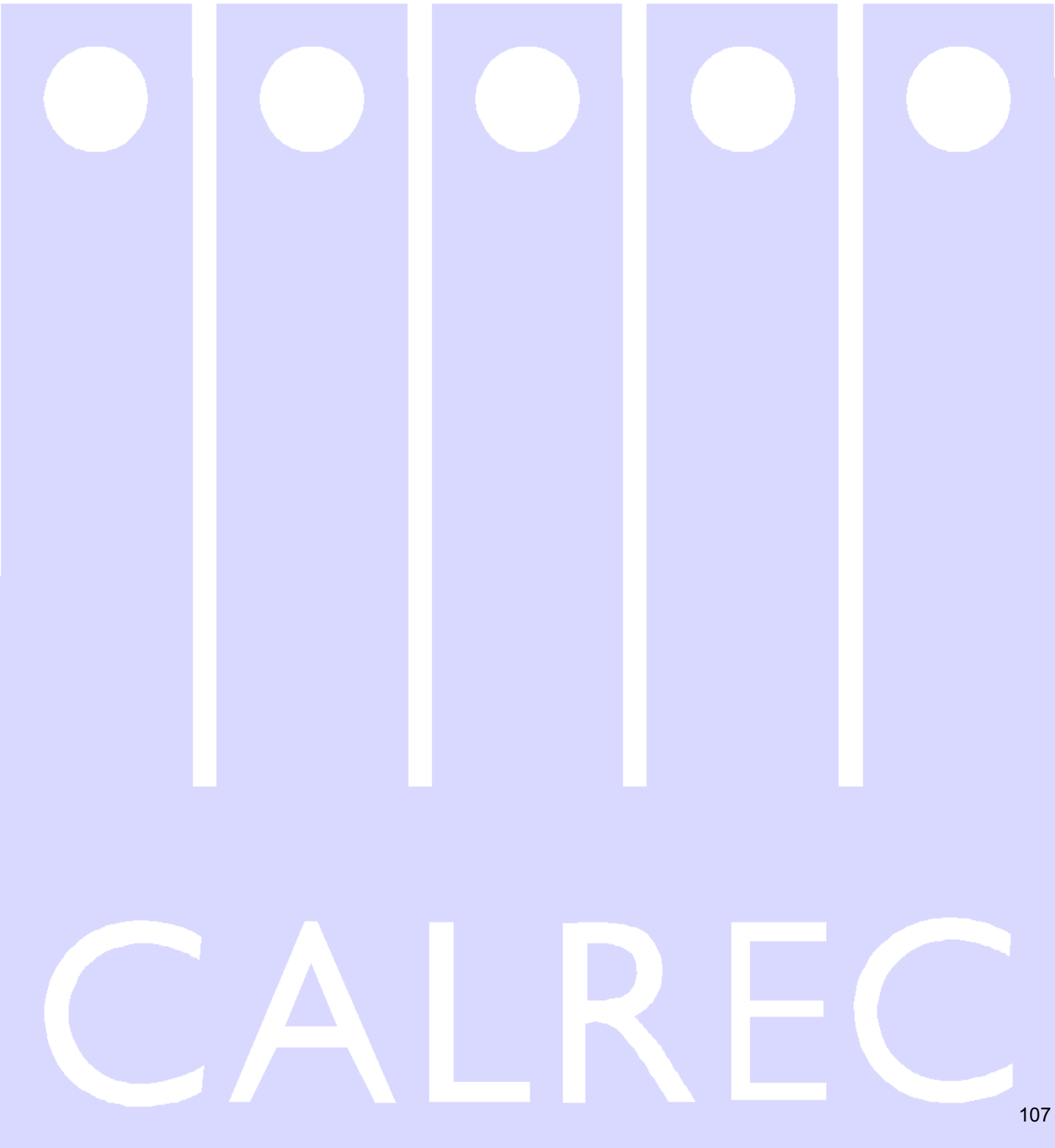
SW1

1 =	OFF
2 =	OFF
3 =	ON
4 =	ON

DIL SWITCH SETTINGS - ZF5240 SUMP PSU FILTER



SW1 1 & 2 = SWITCH ON IF EXTERNAL SUPPLY IS USED





USER REGISTRATION

Please complete this end user registration form as soon as you receive this manual. This will allow us to not only provide you with any manual update sheets &/or modification information, but also with information on new product developments which may be of interest to you. Completion of this registration form will ensure that we send all technical correspondence directly to you at the address you have indicated.

The form, once completed should be returned to Calrec at the following address.

User Registrations

Calrec Audio Ltd
Nutclough Mill
Hebden Bridge
West Yorkshire
HX7 8EZ
England
UK

or alternatively it can be faxed back to us on +44 (0) 1422 845244

Console Type: M3

Serial Number (located on the base panel):

Date Received:

Name:

Department:

Company:

Address:

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Post/Zipcode:

Tel No:

Fax No:

Email:

Customer comments:

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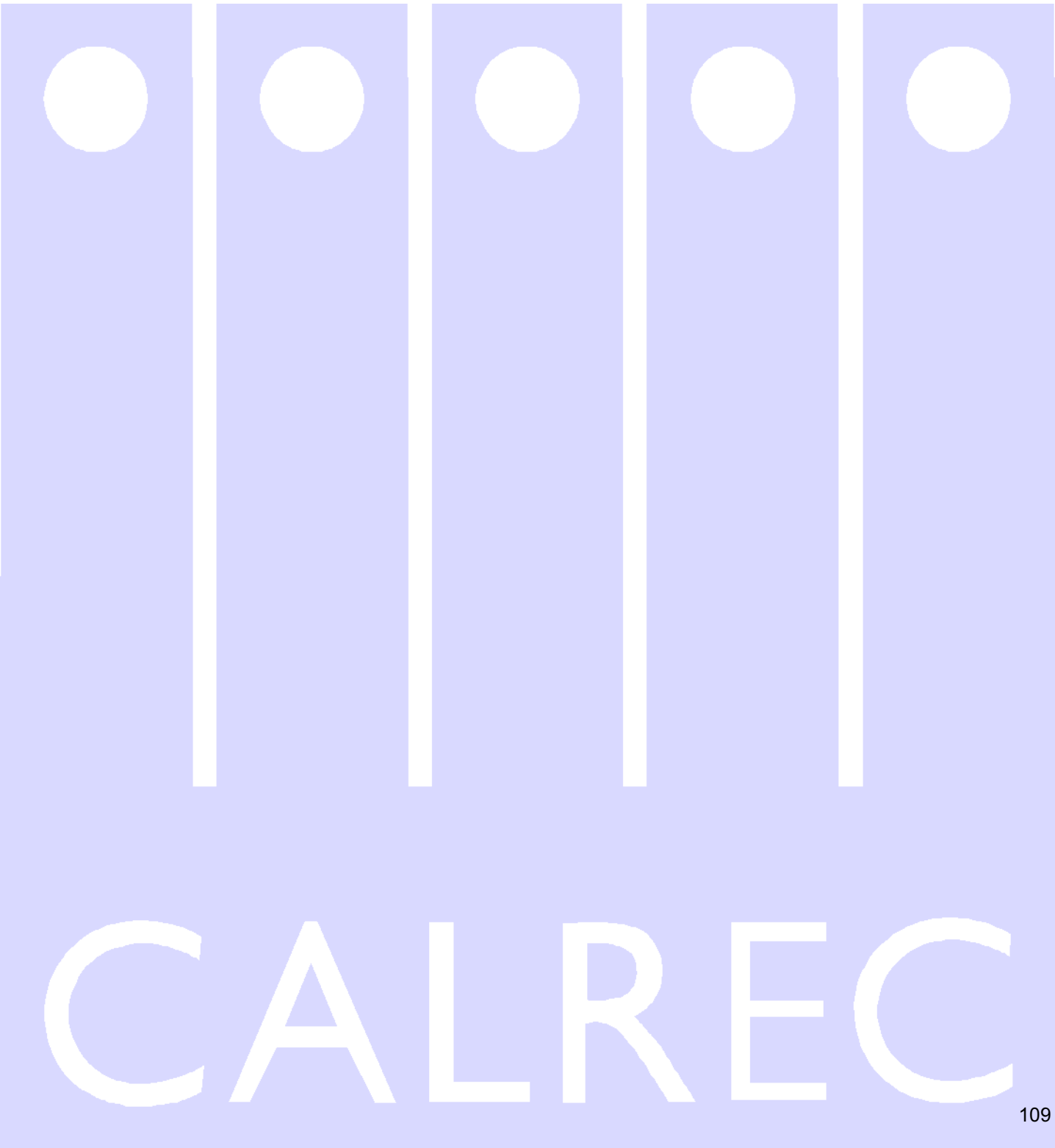
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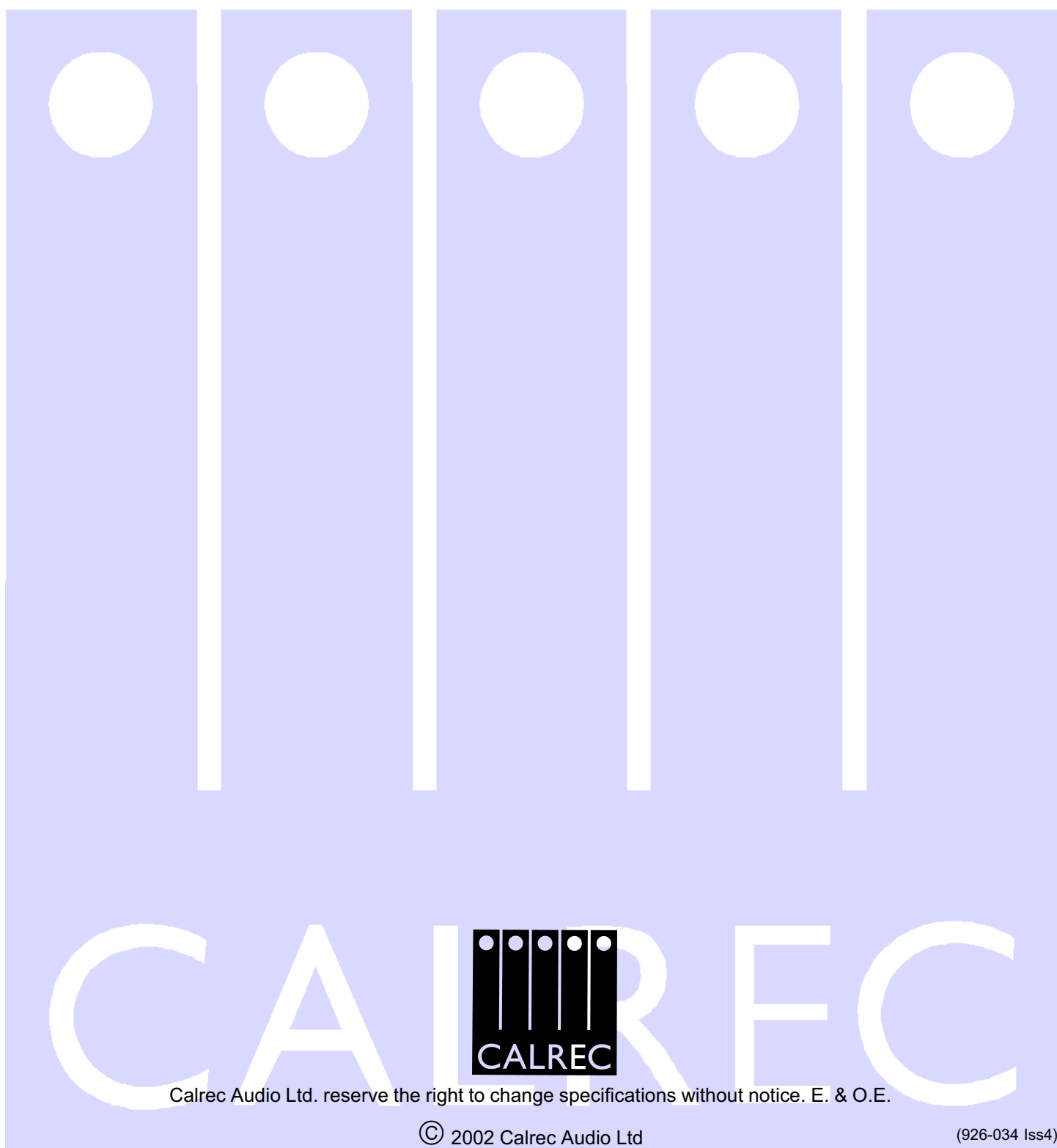
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Notes





Calrec Audio Ltd. reserve the right to change specifications without notice. E. & O.E.

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