THE SHADOW

STANDBY STEREO MIXER

USERS MANUAL

THE SHADOW (STANDBY STEREO MIXER)

INTRODUCTION.

The Shadow has been designed to operate as a dedicated low cost standby stereo mixer for use in entertainment venues. All the switching required to replace the main mixer is incorporated within the Shadow.

Once installed simply switching on the Shadow causes internal signal switching relays to re-route 4 stereo music sources, one microphone and the output connections to be controlled by the Shadow. The main mixer will be switched out of the system so that it can be removed for repairs or servicing. The change over is instant and almost unnoticeable once the levels have been matched. Switching the Shadow off will switch the main mixer back into circuit.

XFader A cross-fader has been added to make the use of the Shadow as easy as possible. When switched on the cross-fader fades between channels 1&2 and 3&4 depending on the settings of the channel controls. e.g. If channel controls 1 and 3 are turned up the cross fader will fade between them; likewise if channels 2 and 3 are turned up the cross fader will fade between them. The cross fader may be turned off if not required.

Installation

The unit should be mounted in a position where it can be accessed easily in the event of a problem but in a place where if a drink is spilt over the main mixer it cannot also damage the Shadow. (In our experience 90% of faults in mixers are caused by the ingress of liquids). Careful positioning of the unit will also mean that the cabling between the main mixer and the Shadow is kept reasonably short which is desirable.

Connections

Connections to the Shadow are quite straight forward.

Good quality screened cable and connectors should be used. Particular attention should be given to phono cartridge cabling which should be as short as is practical to ensure HF losses are kept to a minimum.
The connection of phono cartridges should always be made using good quality low capacitance cable.

The four music channels have two pairs of phono sockets labelled in and out. IN is the connection from the source, OUT is the connection to the main mixer.
The microphone channel has two XLR connectors labelled in and out. IN is the connection directly from the microphone, OUT is the connection to the main mixer.
The output connections are four XLR connectors labelled in and balanced out. IN is the connection from the main mixer, OUT is the connection to the power amplifier system. The output of the Shadow is balanced and for unbalanced operation pins 1 and 3 should be joined together within the output connector and connected to the cable screen.

When the Shadow is switched off the internal relays connect all the IN sockets to the OUT sockets. Only when the unit is switched on are the sources fed into the Shadow and the amplifiers fed from the Shadow.

The Shadow is also designed to operate perfectly well on its own, in a mobile or small system when only basic facilities are required. In this case inputs will connect to the IN connectors and outputs connect to BALANCED OUT connectors. Again for unbalanced operation pins 1 and 3 should be joined together and connected to the cable screen.

Internal options

Two internal options are provided. These are changed by the position of PCB mounted jumper links. To change the options listed, firstly:-

DISCONNECT THE UNIT FROM THE MAINS SUPPLY

then remove the top case cover by removing 6 screws located at the sides of the unit and 2 screws located on the top of the unit.

DRG 781 & DRG 781A shows the positions of the jumper links.

1. Selecting channels 2&3 to be flat rather than RIAA inputs.

As factory supplied channels 2&3 are set to accept inputs from phono cartridges (equalised to RIAA). To set these inputs to line inputs (flat) re-position 2 jumper links per channel as shown
2. Selecting split cue.

As factory supplied the headphone socket will only have an output when a channel is selected to cue. Selecting more than 1 channel to cue will produce an output of the sum of the channels selected.
Re-positioning the jumper link will give the mixer output in one headphone ear piece and cue as detailed above in the other ear piece.

Refit the cover and replace and tighten all the screws.

Gain setting and testing.
Music channels

Once installed the unit may be tested. Set the master control to minimum. Connect to the mains supply.

THIS UNIT MUST BE EARTHED

Turn on the power switch.
Play one of the sources connected to the unit. Switch off XFADE. Set the appropriate channel volume to maximum and gradually turn up the master control so as not to damage the system. Adjust the channel gain control accessible through the rear panel. With the channel controls and the master at maximum the gain control should be used to set the maximum system level required. Adjust other channels in a similar way.

Microphone channel
Connect a microphone and adjust the gain control (rear panel) to provide the correct level required. Also on the rear panel HF and LF pre-set (tone controls) are provided to allow the microphone to be adjusted for the most pleasing response.

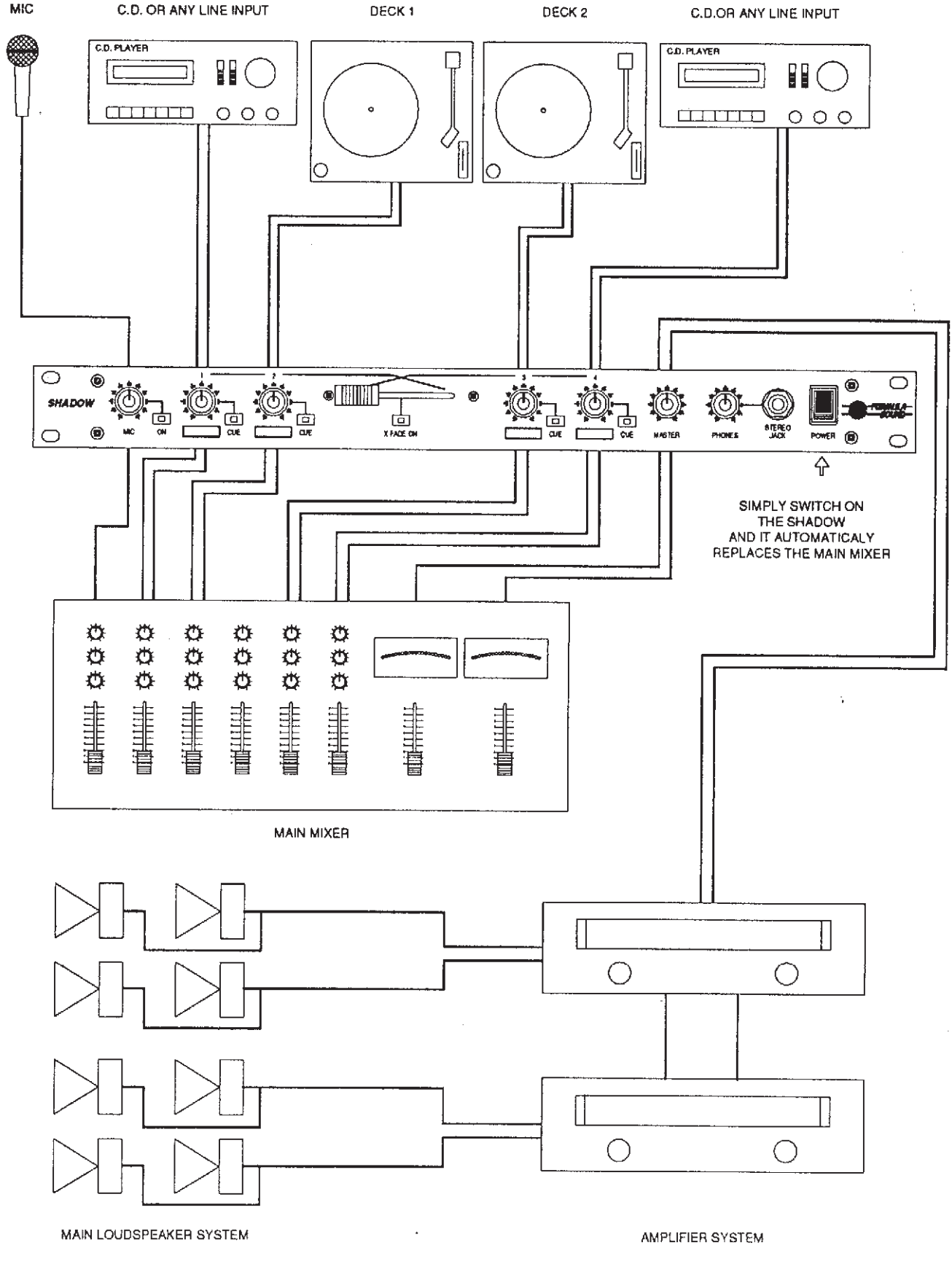
NOTE ON THE BEST USE OF GAIN

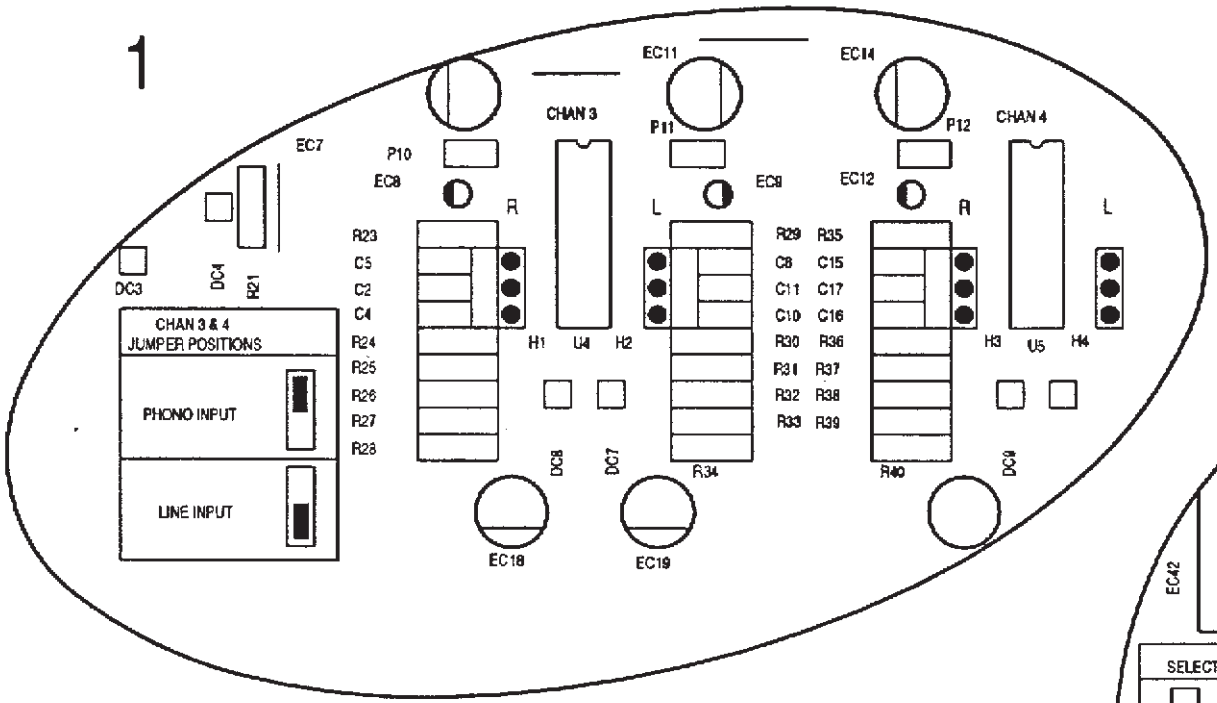
It is likely that more gain is available in the Shadow than you are likely to need. This is so that low output cartridges, microphones, etc can be used. For best performance always use the minimum amount of gain to achieve the required volume. Never set the gain controls to maximum and hold gain on the front panel controls. This will degrade the signal to noise performance and may cause overload distortion (clipping). A good rule is never to have controls set lower than 3/4 of their full rotation for normal operating.

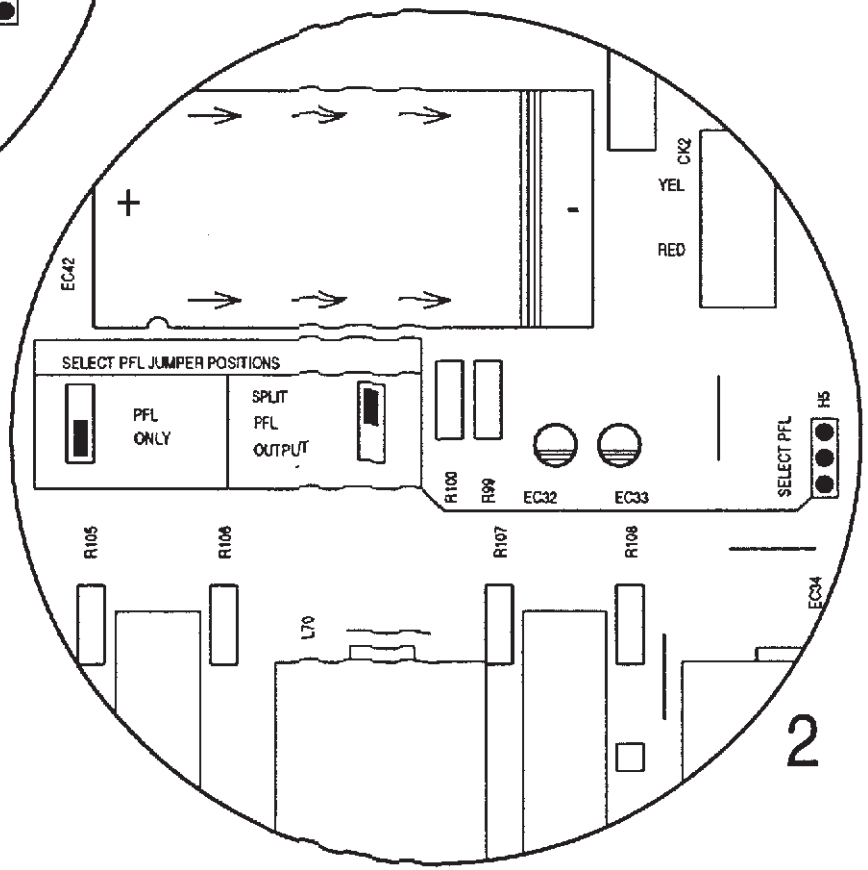
N.B. Note that on music channels the gain control can also act as an attenuator. If set at minimum the channel will appear not to be working, therefore, always check the settings of gain controls before suspecting a fault.

THE SHADOW

A TYPICAL INSTALLATION







FORMULA SOUND
TEL 061 494 5650 (+44 61 494 5650)
FAX 061 494 5651 (+44 61 494 5651)
ASHTON ROAD, BREDBURY, STOCKPORT, CHESHIRE, SK6 2SR, UK

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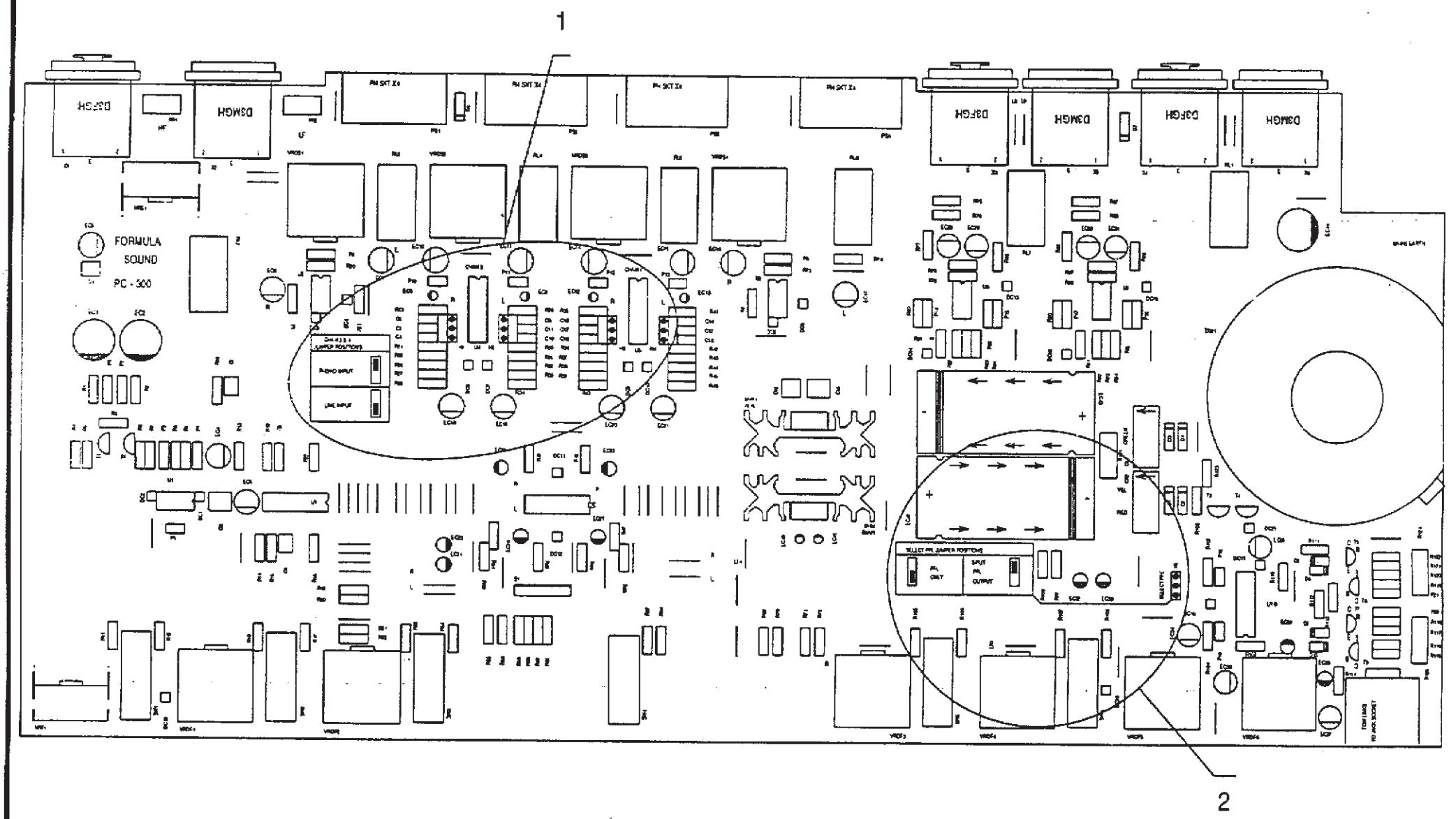

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SHADOW SPECIFICATIONS

All inputs and outputs have a connector of the same type provided, with the unit un-powered these sockets are connected to each other to provide the normal signal routing.
Once the SHADOW is powered the input and output connections are routed via the SHADOW.

Signal switching relays with gold plated silver contacts are used throughout to ensure reliability.

FREQUENCY RESPONSE
20Hz - 20KHz +/- 0.5dB

Distortion THD @ 1KHz O/P +26dBV < .01% (typicaly .004%)

OUTPUTS
Connector type 2 XLR's
Balanced output
Output impedance <100R Balanced
Max O/P level +26dBV into 600R load

Balanced output is self compensating and may be linked for unbalanced operation without degradation in performance

MICROPHONE INPUT
Connector type XLR

Gain max +70dB
Noise ref 150R EIN -127dBV
Max I/P level
Mic at min gain 0dBV
Input impedance (Mic) >2K ohms active balanced

Mic E.Q. (via pre sets on the rear panel)
Treble +/- 10dB @ 10KHz (shelving)
Bass +/- 10dB @ 120Hz (Bell)

STEREO INPUTS 1 - 4
Connector type gold plated phono sockets
Stereo Input channels 2 and 3 are internally selectable to RIAA inputs

Gain max +20dB
Noise (Din audio band)
@ 10dB gain EIN -90dBV
Max I/P level +20dBV

Input impedance
Line 10K ohms
RIAA 47K ohms

POWER
220-240V AC (110V to order). Mains fuse 250ma slow blowI.E.C. Mains connector.

FINISH
Front and Rear panels Bordeaux anodised aluminium with etched silver notation which will not rub off in use.Case black plastic coated steel.

DIMENSIONS
19" rack mounting. 1RU
Width 482mm (19"). Depth 200mm (7.9"). Height 44mm (1.75")

FORMULA SOUND LIMITED
STUART ROAD, ASHTON ROAD, BREDBURY, STOCKPORT, CHESHIRE SK6 2SR
TELEPHONE +44 (0)161-494-5650. FAX +44 (0)161-494-5651

CE

E. U. CERTIFICATE OF CONFORMITY

We declare that the products listed conform to the following directives and standards

89/336/EEC amended by 92/31/EEC and 93/68/EEC

BS EN 50082-1 BS EN 50081-1

PRODUCT TYPE
AMX6,FSM8,SHADOW. 1RU MIXERS

The CE mark was first applied in 1995

Signed .....

R. A. Cockell Managing Director

ATTENTION

The attention of the specifier, purchaser, installer, or user is drawn to the fact that good wiring practice must be observed when connecting the above equipment. Good quality connectors and screened cables must be used for all audio connections. Twin screened cables should be used for all balanced lines.

THE EQUIPMENT MUST BE EARTHED

CONSULT THE USERS MANUAL FOR TECHNICAL DETAILS