



AIRCOM

User Manual

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A I R C O M M A N U A L

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WELCOME!

Dear client,

Thank you for choosing our product.

The Aircom is designed by specialists in the field of radio broadcast and is intended to be used as an "On-Air" console as well as a production console.

We are confident that you will be using the Aircom for many years to come, and wish you much success.

We always value suggestions from our clients, and we would therefore be grateful if you could complete and return the questionnaire included at the back of this manual, once you have become familiar with your Aircom. We will certainly learn from your comments, and very much appreciate your time to do this.

With kind regards

D. de Rijk
D&R PRESIDENT

INTRODUCTION

The Aircom.

The Aircom is a specially designed broadcast console. Although the design has been carefully budgeted, absolutely no compromises were made in either quality or features, particularly in the areas of switching, signalling, fader start/stop and communication.

The Aircom, although designed for On-Air purposes, is also excellent for production work.

A 'Self-Op' switch instantly resets the Aircom to be used by the announcer himself. This is the D.J. mode whereby the logic circuitry in the Aircom helps prevent the D.J. from making mistakes, and therefore reduces the risk of feedback.

D&R Quality.

D&R has been the largest manufacturer of mixing consoles and signal processors for ten years. More than 70% of the total production is exported world-wide, a market which demands excellent price and high quality standards. D&R products are used in studio's and for live concerts, both of which require 100% reliability, which is the result of ten years of research, design and manufacture.

These high standards of reliability are also to be found imbedded in the new line of broadcast mixers, which is particularly important for this type of product, required to work around the clock.

Aircom Quality.

The high standard of quality of the Aircom is demonstrated by the sturdy housing, the heavy duty power supply, its modular approach and locking IDC connectors mounted on high quality glass epoxy printed circuit boards.

The signal paths are electronically switched using C-Mos logic, and 'Fet' components ensure consistent and smooth switching.

High quality 100mm faders with built in switching and opto couplers guarantee many years of trouble free smooth switching.

Aircom flexibility.

The Aircom is fully modular, which means that you design the configuration. The modules and the master section can be placed anywhere in the chassis. Changing the configuration is also easily accomplished; a partially loaded Aircom can be completed using low cost 'blind modules'. In addition, input modules can be extended to suit future requirements.

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The Aircom is complete.

The Aircom is a complete and self contained piece of hardware, requiring no additional items in order to be operated. All relevant functions are built-in, such as fader start/stop (pulse or continually adjustable). There is also no need for complex mike-on/cough switching to the announcer booth, a stereo jack, a led and a simple push-button switch complete this task. All cabling can be enclosed in the masterhood, which is easily opened for installing connections. The same masterhood can accept five 9 1/2" signal processors, such as limiters and/or telephone hybrids, or specialised functions for broadcast stations.

Built-in stereo headphone amps.

The Aircom contains built-in amps for the announcer, guests and the D.J., no additional boxes are required.

Clear layout.

All switches have led indicators, and the front panels are angled to aid visibility.

All similar functions in the channels are grouped and colour coded, with additional fader knobs available for personalised channel colour coding.

Example: Microphone channels - red fader knobs
Telephone channels - grey fader knobs
Stereo channels - black fader knobs

Radio communication.

On the basis that there is no radio without communication, the Aircom has extensive possibilities for signalling and communications. Every microphone channel has its own signalling and talkback circuitry, and all outputs can also be connected to the talkback circuitry.

The announcer/producer can communicate with the announcer booth, guests, two telephone lines and two auxiliaries, either individually or in any combination.

Signalling.

It is extremely important in broadcast to know whether a microphone channel is active, and so the Aircom has an external led (lamp) connected to every microphone channel. In addition, when one or more of the microphones are open, the Aircom's 'Mike-On' lamp is illuminated. This signalling is also available on a jack plug for studio red light signalling.

INTRODUCTION

Broadcasting Options.

In designing the Aircom, D&R decided to make the system as flexible for the operator as possible, and the Aircom can therefore be used in many ways.

There are several jumper settings which can be set according to your own needs. The Aircom can be used in a traditional manner, with separate control and announcer rooms, or in a more open way, whereby announcing and engineering control are carried out in one room. A self-op set up, or a combination of several set ups is possible.

More than one Broadcast Studio.

There are numerous monitor facilities in the Aircom, for external sources as well as internal. The control monitors (and meters) can be switched to three separate (stereo) sources. Left and right can also be operated independantly.

These features mean that the Aircom is especially suited to work in a studio-complex environment, where there is more than one studio/control room being used for broadcast. In this situation, the Aircom is capable of being the main On-Air console, due to the three main outputs it contains, which are fully transformer balanced.

Separate Compressions for Mono and Stereo Outputs.

All three main outputs have their own inserts to accept signal processors such as the D&R compressor/limiters.

A significant feature of the Aircom is that separate compressions can be set for mono and stereo outputs. For example, a higher compression can be set for the mono main output, for AM portables or car radios, and a lower compression set for the main stereo outputs.

Special Recording Outputs.

The Aircom has separate stereo recording outputs which can be set to either +4 dBu or -10 dBV, according to the recording equipment being used. Jumpers also determine whether you record before or after the limiters.

INTRODUCTION

Stereo Peak Metering.

In order to achieve a good balance between spoken words and music, it is important to be able to read the recording level accurately. The Aircom has twenty-five segment fast reading peak meters, with logarithmic scaling and one led per dB in the most critical section of the scale.

SUMMARY.

Whilst using the Aircom, you will discover its many 'hidden' features, and will continue to appreciate its extensive capabilities.

Welcome to the world of Aircom.

DESCRIPTION - MICROPHONE LINE CHANNEL

Mono Microphone Line Channel.

This module is designed to amplify balanced microphone signals. A 48 Volt phantom power supply is available for condenser microphones. The Aircom has a wide and dynamic range, which enables balanced line signals to be accepted; a number of functions can also be set by jumpers.

Input.

Connector XLR female: Pin 1 = shield
Pin 2 = hot
Pin 3 = cold

The microphone input is electronically balanced and protected against R.F. interference. Input impedance is 2 kOhm - high enough to accept all modern microphones.

Input sensitivity ranges from -72 dB to +20 dB, and will therefore accept any microphone currently available. The signal to noise ratio is -129 dB, and is therefore well suited to low noise performances.

Phantom Powering.

This +48 Volt power module is required for condenser microphones, and can be applied to the microphone inputs via jumper settings, (see jumper settings 9-1-1).

When the phantom power is applied and the channel is active, a 'click' can be heard when a microphone is plugged in, and/or the pad is activated. This is due to a D.C. component on the input which is suddenly interrupted and amplified by +/- 70 dB; it is therefore important not to do this with the channel active.

DO NOT use unbalanced or electric microphones when the phantom power is applied, as it could damage the microphones.

High-Pass Filter.

The high-pass filter attenuates the low frequencies - below 80 Hz, and can be switched on or off by jumper settings (see jumper settings 9-1-1).

Microphones used for speech are usually set for high-pass filtering in order to avoid 'popping' and other unwanted low frequency rumble, and therefore improve the quality and intelligibility of the spoken word.

DESCRIPTION - MICROPHONE LINE CHANNEL

NOTE: Some microphones have built in high-pass filters and therefore do not require use of the Aircom high-pass filter.

Pad.

This switch inserts a balanced 30 dB pad between microphone input and the mike-amp, it is therefore not possible to overload the mike-amp, and the dynamic range of the channel is considerably improved. When the pad is activated the input ranges from -44 dB to +24 dBu. In this mode it is an excellent balanced line input channel with an input impedance of 10 kOhm, perfect for accepting D&R's Telephone Hybrid. The mike-on signalling of the channel can be used to indicate which Telephone line is 'On-Air'.

Insert.

When a jack is plugged into the insert jack, the signal path is interrupted. The ring of the jack sends the signal post equaliser and on the tip of the jack the signal returns just before the fader. In this way it is therefore possible to insert a D&R compressor or other signal processor.

It is also possible to use this insert jack as a direct send without interrupting the signal path. In that case you connect tip and ring with each other; this can be usefull for driving external producers desks, or for selective recording etc.

Cough.

This useful feature has two important functions:

1. Cough/communication
2. Mike-on signalling

1. Cough/Communication.

(A pushbutton needs to be connected to the ring and sleeve of the jackplug.)

Using the pushbutton during broadcast, the announcer can temporarily mute the microphone in order to cough (thus the name is derived). At the same time his microphone will be routed to the cue system, in order to give him the opportunity to communicate with the engineer/producer.

DESCRIPTION - MICROPHONE LINE CHANNEL

Gain.

The 'Gain' control adjusts the gain of the module. The range is -74 dBu to -145 dBu; when the pad is activated, the range is -44 dBu to +24 dBu.

Alignment of the Channel.

With the fader in the 'down' position, and the cue activated, the input signal is adjusted with the gain control until the ZERO dB position of the master meter is illuminated. When the fader is in its 0 dB position, the signal has a nominal level in the Aircom.

This system will give enough margin to compensate for signal losses of up to 10 dB, whilst the noise floor remains well below the nominal level.

Equaliser.

The equaliser is optimised during broadcasting. Centre detents on all equaliser controls indicate their flat position.

The maximum lift and cut is 12 dB at the following frequencies:

High : 10 kHz
Mid : 3 kHz
Low : 60 Hz

NOTE: When a microphone/line channel is used for processing a telephone Hybrid, the 'high' and 'low' controls of the equaliser will have little effect, because of the limited bandwidth of the 'phone connection. They are however, usefull for reducing 'hum' and 'hiss' from the line.

Auxiliary.

The auxiliary sends are postfader, bringing the signal to the master auxiliary sends. The channels 'on' switch will also switch the two auxiliary sends on or off.

Cleanfeed.

There are two internal cleanfeed mix busses; the channel can be connected to the cleanfeed busses using jumpers, (see jumper settings 9-1-1).

DESCRIPTION - MICROPHONE LINE CHANNEL

These cleanfeed busses, or "Mix Minus" busses, are intended to be used for driving Telephone Hybrid circuits. They fulfill the need to send the main mix to the telephone hybrid, minus its own signal.

Four Telephone Hybrids.

The Aircom can accept four telephone Hybrids by also using the auxiliary sends. In this case, the auxiliary sends are fully opened except on the channel which the Telephone Hybrid is connected to.

On!

The channel on/off switch operates in tandem with the fader start. There are two led indicators:

1. Green led : channel is on 'stand-by' mode.
2. Red led : channel is 'active'.

There are two methods of activating the channel:

- A. Depress the 'on' switch, (green led is illuminated), then by moving up the fader, the signal is sent to the master and at the same time a mike-on indication is sent to the cough connector. The red led illuminates when the green one (stand-by) goes off.
- B. When the 'on' switch is in its 'up' position, neither of the leds are illuminated. As the fader is moved upwards, the channel is put into 'stand-by', and the green led illuminates; at this point there is no 'mike-on' signalling or audio to the master. Pressing the 'on' switch activates the channel, and the red led is illuminated, 'mike-on' signalling is now present, and the green led goes out.

In order to switch the channel and mike-on signalling off, the 'on' switch should be deactivated, or the fader closed.

Mike-On Signalling.

In addition to the localised 'mike-on' signalling, there is also a master signal in the master section. A mike-on connector would offer the option of driving an external red light indicator in the studio. A jumper per channel selects which channel will activate the master mike-on signal (see jumper setting 9-1-1).

When the channel is used for a telephone hybrid, it is normal practise not to activate the mike-on signalling. Switching the channel on and off is carried out electronically, and is therefore smooth and click-free.

DESCRIPTION - MICROPHONE LINE CHANNEL

2. Mike-On Signalling.

When the channel is active a voltage is applied between Tip (+) and Sleeve (0V), which can be used to activate a led (red). It can also be used to activate a lamp (-18 Volt/50mA), but resistor R54 needs to be replaced first-contact your dealer for additional information.

NOTE: A plug must be inserted into the cough jack at all times, or the cue circuit cannot be activated; it is not necessary to wire this plug.

Whilst in 'self-op' mode, the 'cough plug' must be removed. In this mode it will guard against accidentally activating the cue switch, which could cause feedback.

Cue.

This is an automatic prefade-listen system which enables you to listen to a channel without actually opening that channel. When the cue button is activated, the channel signal will be connected to the cue output and meter circuitry (when the fader is closed); the cue led indicator will illuminate.

When the channel fader is moved upwards, the cue system will be disabled, including its associated led. For the announcers microphone it is normal practise to have the cue activated at all times ensuring that there is open communication between the engineer and the announcer. In this case, it is advisable to use a separate loudspeaker with a different sound connected to the cue output, in order to avoid confusion.

There are two ways of listening to the cue signal:

1. Control Room Monitor (CRM).

On the master section it is necessary to activate one or two "Autocue" switches. If a cue switch is activated somewhere in the console while in this mode, the Control Room Monitors will automatically follow the signal connected to the cue switch. This of course occurs without any interruption or disturbance to the broadcast outputs.

2. External mono-cue amp and loudspeaker.

NOTE: In the self-op mode, it is not possible to hear the cue output via a loudspeaker. Therefore, the CRM and the cue output will be muted when a microphone channel is opened. Cueing of signals however is possible through the headphone outputs.

DESCRIPTION - MICROPHONE LINE CHANNEL

The channel on/off switch is also active for the cleanfeeds and auxiliary sends, not for the insert jack. The cue will be automatically disabled when the channel is on.

Fader.

The fader is an ultra smooth 100mm model. The fader switch only drives the Aircom internal logic circuitry, and not the audio signal. This system gives the advantage of the manual 'feel' of switching, without the disadvantages of having audio fed through a sensitive microswitch. When the fader is closed, the signal is automatically muted, providing a cut-off in excess of 100 dB. This high dB cut-off value ensures that the main output is protected from crosstalk from announcers or fast spooling tape decks.

AIRCOM MONO MICROPHONE/LINE CHANNEL

MIKE.

Mono microphone (line) input. Electronically balanced. Impedance - mike input: 2 kOhm. Line: 10 kOhm. Level: from -74 dBu microphone input to +24 dB when the pad is activated.

Connectors: XLR female.

Pin 1 = sleeve. Pin 2 = hot. Pin 3 = cold.

(J) 48 Volt phantom powering internally set by a jumper, (see jumper settings 9-1-1) Jmp5.

(J) High pass filter at 80 Hz internally set by a jumper, (see jumper settings 9-1-1) Jmp4.

INSERT.

Insertion point, unbalanced on a stereo jack plug. Tip : return. Ring : send. Sleeve : ground. Level : 0 dbU. Send impedance is 47 Ohm, return impedance is 10 kOhm. Inserting a jack will interrupt the signal path after the equaliser.

COUGH.

Remote control of the channels on/off and cue switch's, and red light signalling. Connection by way of a stereo jack.

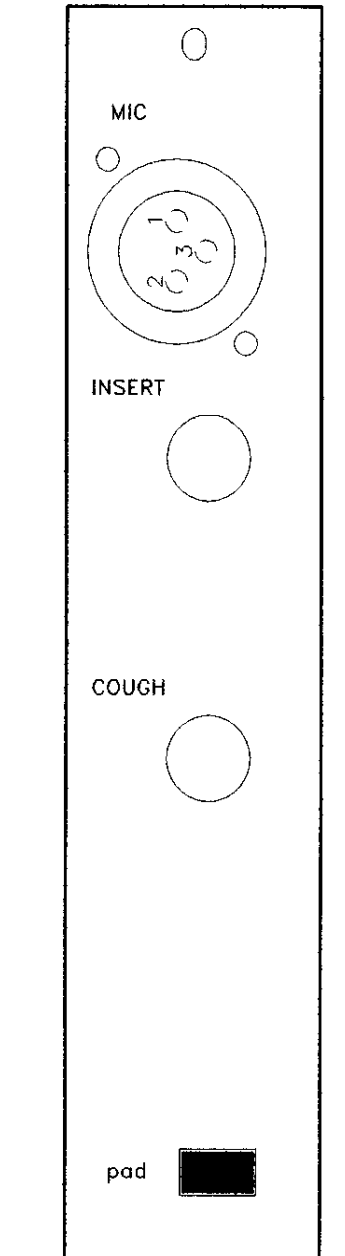
Tip : positive supply voltage, current limited on 15 mA when the channel is 'on'.

A direct connection to a led is possible between tip and sleeve.

Ring : when connected to ground, the channel will be muted and the cue activated.

Sleeve : ground.

NOTE: As a precaution against feedback when the console is in D.J. (self-op) mode, do not put a jack plug into the cough connector. This prevents the cue switch being activated, and therefore avoids feedback. When a separate announcers booth is being used, the cough logic is required; a jack plug (with or without wiring) inserted in the cough connector will enable the cue switch to be used again - a simple but effective method of avoiding misuse of the cue switch.



AIRCOM MONO MICROPHONE LINE CHANNEL

PAD.

A 30 dB balanced attenuator ahead of the microphone pre-amp, which avoids overload of the mike-pre-amp, and enables use of the mike-input as a balanced line input.

GAIN.

Pre-amp gain adjustment from -74 dBu to -14 dB, and with the pad from -44 dBu to +24 dBu.

HIGH.

Lift and cut of 12 dB at 10 kHz shelf curve.

MID.

Lift and cut of 12 dB at 3 kHz bell curve.

LOW.

Lift and cut of 12 dB at 60 Hz shelf curve.

AUXILIARY 1.

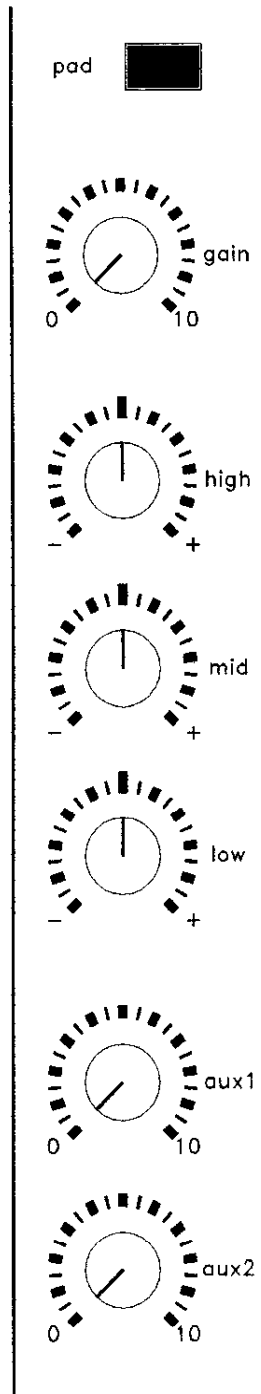
A separate post fader send to the master aux. 1 control in the master section.

AUXILIARY 2.

A second post fader send to the aux. 2 master control.

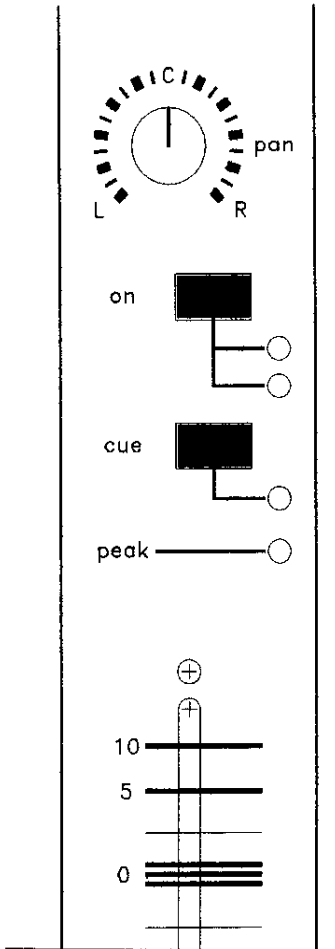
(J) CLEANFEED 1. This jumper selects the channel signal post fader to the cleanfeed 1 master control.
See jumper settings 9-1-1, Jmp1.

(J) CLEANFEED 2. This jumper selects the channel signal post fader to the cleanfeed 2 master control.
See jumper settings 9-1-1, Jmp2.



AIRCOM MONO MICROPHONE LINE CHANNEL

(J) MIKE-ON SIGNALLING. Mike-on signalling can be set on/off by a jumper (Jmp3). When the channel is 'open' a signal will be sent to the master mike-on lamp and mike-on connector. In the self-op mode the CRM and cue output will also be muted. See jumper settings 9-1-1, Jmp3.



PAN.

The 'pan' enables the signal to be precisely placed anywhere between fully left or fully right.

ON.

Channel on/off switch. Switches the channel to stand-by mode when the fader is closed; the green led will illuminate. When the 'on' switch is not activated the channel fader can be opened (green led on) without bringing the audio up and without generating a mike-on signal. The channel can now be activated, including mike-on signalling, by pressing the 'on' switch (green led off, red led on). The cue will be automatically disabled.

CUE.

Cue enables pre-fade listening in order to adjust the gain control whilst the fader is closed, or the 'on' switch is in the 'up' position. The cue will be automatically disabled when the channel fader is opened, if the 'on' switch is active, or when the 'on' switch is activated if the fader was already open.

PEAK.

The peak indicator acts as a warning that the audio signal is 4 dB below clipping.

AIRCOM MONO MICROPHONE LINE CHANNEL

FADER.

Channel switch and volume control. This fader controls the audio signal level, signalling to the cough connector and master mike-on signal.

DESCRIPTION - STEREO CHANNEL

Aircom Stereo-Line Channel.

This module is specially designed to accept unbalanced stereo signals. There are two stereo inputs, A and B, input A has fader start and stop connectors.

R.I.A.A.

As an option, stereo phono pre-amp with R.I.A.A. filter curve can be plugged onto the mother board, in order to accept magnetic Dynamic phono cartridges.

Jumpers.

A number of module functions can be activated by jumper settings, (see jumper settings 9-1-2).

A - Input.

Connector type is XLR: Pin 1 = shield
Pin 2 = signal left
Pin 3 = signal right

B - Input.

Connector type is jack: Tip = left
Ring = right
Sleeve = ground

The input impedance for both 'A' and 'B' are 10 kOhm, and the maximum sensitivity ranges from -20 dB to +20 dBu. The signal to noise ratio is -90 dBu (R.I.A.A.: -70 dBu).

Fader Start and Stop.

The fader 'Start' and 'Stop' is only activated when input A is selected.

These remote connectors are activated by the fader and/or 'on' switch in the channel module. The start and stop jack connectors are electronically separated by use of opto couplers.

Opto couplers are ideal devices for eliminating ground loops and limited lifespan effects of other switches, and can easily be interfaced with all modern equipment.

The start and stop connectors are connected to separate opto couplers; the switching elements are N.P.N. transistors and conduct when activated. The maximum current is 50 mA. Current limiting resistors of 470 Ohm are placed in series with the opto-couplers to protect them from misuse.

ADDITIONAL INFORMATION

Faderstartswitch from the stereo channel.

The 2D and 2E printedcircuitboard have a different connection than stated in the drawing.

This reads as followed:

Fader down start plug	tip --> sleeve
Fader up start plug	tip --> ring
Fader down stop plug	tip --> ring
Fader up stop plug	tip --> sleeve

Both connectors are wired now as switch over contacts.

DESCRIPTION - STEREO CHANNEL

NOTE: Polarity is important with opto-couplers!

Start connector:- Type : stereo jack plug
Tip : collector (+V)
Ring : emitter (-V)
Sleeve : not connected

Stop connector:- Type : stereo jack plug
Tip : collector (+V)
Ring : emitter (-V)
Sleeve : not connected

No damage will be caused if it is necessary to change the start and stop connector plugs.

Pulse or Continuous Signal.

Using the internal jumper, it is possible to choose between a pulse or continuous signal to the remote device.

NOTE 1: Nearly all modern devices require pulse information. Continuous signals however, can have the advantage that during broadcast a tape deck cannot be accidentally stopped. One disadvantage however is that some CD players are blocked from other functions when started with a continuous pulse.

NOTE 2: It is advisable to only use the pulse start mode with jingle machines, and not connect the stop jack. The cart has to finish its tape to the end, and then automatically rewinds.

NOTE 3: Some machines (such as the Technics SL1200) will start on the first pulse and stop on the second pulse. This could cause problems, particularly when using automatic start from a gramophone, with the fader closed, because as the fader is opened, the Technics will stop. A small modification in the Technics avoids this problem - ask your dealer for details.

NOTE 4: Some of the older products such as the A-77, require additional relays or switching transistors to operate satisfactorily - contact your dealer for more information.

Stereo/Mono Switches.

With two pushbutton switches, Mono-L and Mono-R, the incoming left and right signals can be switched to mono or stereo. When both switches are in their 'up' positions, the module will accept stereo signals. When both switches are in their 'down' positions, Mono summing of the stereo input signals occurs.

DESCRIPTION - STEREO CHANNEL

When Mono-L is in its 'down' position, the mono signal coming in from the left input will be sent to both signal paths of the stereo line module.

When Mono-R is activated, only the 'right' signal will be sent to both stereo signal paths.

Gain.

The Gain control adjusts the gain of the channel pre-amp, within a range of -20 dB to +20 dB. The range of the fader gives ample slack, with an additional 10 dB still available.

Equaliser.

The stereo equaliser has an optimum range and characteristics, the neutral position being clearly identified by a centre detent.

The maximum range is approximately 12 dB at frequencies:-

10 kHz : shelf
3 kHz : bell
60 Hz : shelf

Auxiliary.

The auxiliary sends a signal to the master auxiliary busses. Both auxiliaries are post fader, and dependent upon the 'on' switch of the input channel.

Cleanfeed.

There are two internal cleanfeed mix busses, to which the stereo channels are permanently connected. When a stereo channel needs to be eliminated from the cleanfeed busses, the following resistors need to be removed: R16, R17, R35 and R36 - please contact your dealer for additional information.

On.

The 'on' switch works in conjunction with the fader switch, and has two led indicators:-

1. Green led : the channel mode is 'stand-by'.
2. Red led : the channel is 'active'.

DESCRIPTION - STEREO CHANNEL

There are two methods of activating the channel:-

- A. If the 'on' switch is pressed, the green 'stand-by' led will illuminate, then by opening the fader, the 'start' jack will be activated and the signal will enter the program, (the red led will now be illuminated instead of the green). When the fader is closed again, the program signal will be muted, when the fader is at its lowest position the 'stop' output jack will be activated, (the green led is once again illuminated, and the red led goes off).
- B. When the 'on' switch is not depressed, neither of the leds are illuminated. If the fader is now opened, the green led illuminates, and the channel is in stand-by mode. In this situation, none of the signals are active, and the 'start' jack has not yet been activated.

The channel can now be activated, with the fader open, by simply depressing the 'on' switch. The input signal will be electronically activated along with the start output jack, and the red led will illuminate (green goes off). From this position, the channel can be muted and the stop jack activated by either depressing the 'on' switch again, or closing the fader.

All switching is carried out electronically, and is therefore smooth and click-free.

The channel on switch also mutes the channel cleanfeeds and auxiliaries.

If the cue function is active, it will be disabled when the channel is activated.

NOTE: Jingle machines should only be activated using the 'on' switch option, above.

Cue.

Automatic pre-fade listening, or cue, allows a channel to be heard without being opened. When activating the cue switch, the pre-fade signal will be connected to the cue output and meter circuits, and the led indicator will come on.

Alignment of the channel. With the fade closed (or muted channel) the cue switch will be activated; the Autocue in the master section must be activated. The gain control is used to adjust the level of the incoming signal until a zero dB reading is achieved. If the 'on' switch is now activated, the signal level will be nominal. When the fader is opened, the cue signal will be automatically disabled, and its associated led will switch off.

DESCRIPTION - STEREO CHANNEL

The cue signal can be heard in two ways:-

1. Through the stereo Control Room Monitors, by activating one or two of the autocue switches in the master sections. If the cue is activated in one of the channels, the CRM and meters will be activated without disturbance to the main output.
2. By way of an externally connected cue amplifier with loudspeaker.

NOTE: The CRM and cue outputs will be switched off when the unit is in self-op mode, with an open microphone.

Balance.

The balance enables adjustment between the left and right signals. The range is restricted in order to minimise the risk of misjudgement.

Peak Indicator.

The peak indicator comes on when the left or right input signals reach -4 dB from the maximum level of +22 dB.

Fader.

The Aircom is fitted with a modern ultra-smooth stereo fader, with integrated microswitch, which only drives the Aircom internal logic circuitry, not the audio signal. This system provides the desirable 'feeling' of a switch, without the disadvantages associated with passing audio signals through such a sensitive microswitch.

When the fader is closed, the signal will be automatically muted, which provides excellent fader attenuation in excess of 100 dB. This system also negates any possibility of crosstalk from fast-wind tape recorders during broadcast.

AIRCOM STEREO LINE CHANNEL

LINE A.

Stereo line input A.
Level -20 dBu to +20 dBu unbalanced.
Input impedance: 10 kOhm.
Connector: XLR female.
Pin 1 = earth. Pin 2 = left.
Pin 3 = right.

NOTE: By adding an optional plug in stereo R.I.A.A. pre-amp, the A input is able to accept M.D. phono pick-ups. See jumper settings 9-1-2, Jmp1 and Jmp2.

LINE B.

Stereo line input B.
Level and input impedance as A.
Connector: stereo jack plug.
Tip = left. Ring = right. Sleeve = ground.

STOP.

Remote control for 'stop' command.
Opto-coupler.
Stop: N.P.N. transistor conducting.
Connector: stereo jack plug.
Tip = collector (+). Ring = emitter (-).
Sleeve = not connected.

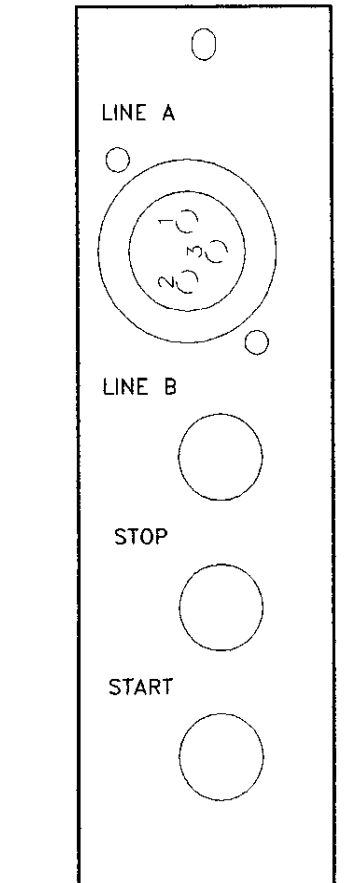
START.

Remote control for 'start' command.
Opto-coupler.
Start: N.P.N. transistor conducting.
Connector: stereo jack plug.
Tip = collector (+). Ring = emitter (-).
Sleeve = not connected.

NOTE: polarity when installing!

(J) Pulse or continuous, internally set by jumper, see jumper settings 9-1-2, Jmp3.

NOTE: The remote control only works when line A is connected.



AIRCOM STEREO LINE CHANNEL

MONO.

With both left and right switches activated, the stereo signal will be mixed to mono on both outputs.

MONO L.

With only Mono L. activated, the left signal will be sent to both left and right signal paths.

MONO R.

With only Mono R. activated, the right signal will be sent to both left and right signal paths.

STEREO.

In the 'Stereo' mode, neither Mono L. or Mono R. switches need to be activated.

A/B.

A/B input selector. When line B is selected, the red led is illuminated. In this state, the remote outputs are not activated.

GAIN.

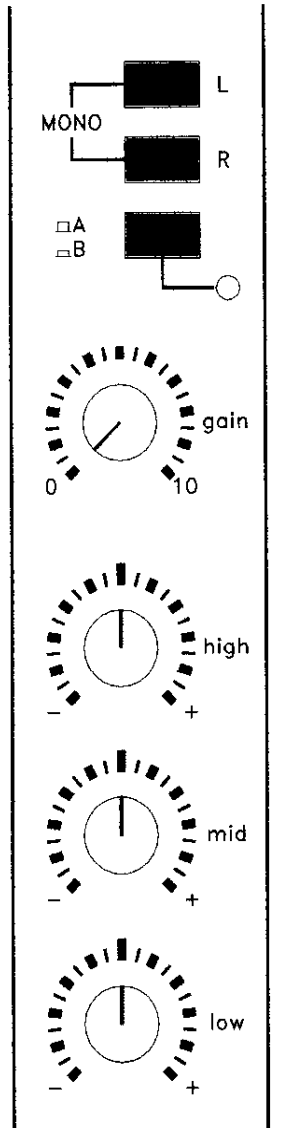
Enables adjustment of the input level of the channel, within a range of -20 dBu to +20 dBu.

HIGH.

Adjusts the high frequencies with +/- 12 dB at 10 kHz.

MID.

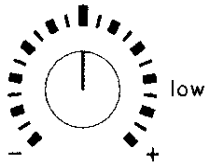
Adjusts the mid frequencies with +/- 12 dB at 3 kHz bell.



AIRCOM STEREO LINE CHANNEL

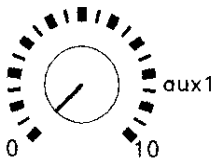
LOW.

Adjusts the low frequencies with +/- 12 dB at 60 Hz shelf.



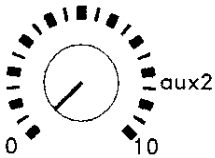
AUX. 1/2.

Transmit a mono summed signal to the aux. 1/2 master post fader. The channel 'on' switch also affects the aux. 1/2 sends.



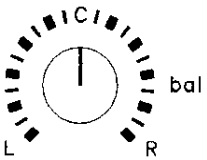
CLEANFEED 1/2.

Internal busses transmit mono summed signals to the cleanfeed master controls.



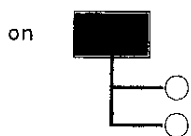
BALANCE.

Allows a limited adjustment between the left and right channel outputs.



ON.

Channel on/off switch. While in closed fader stand-by mode, i.e. when green led is illuminated. When the switch is not activated, the channel fader can be opened without activating the fader start, and without opening the program signal, the green led is illuminated.

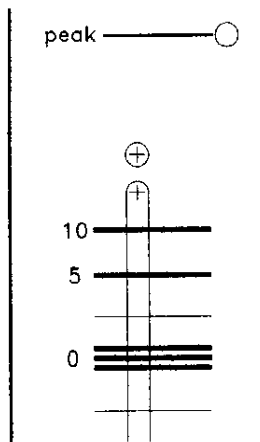


The channel can be activated (including the start/stop command) by pressing the 'on' switch, green led off, red led on. The cue switch, if active, will be automatically disabled.

CUE.

Stereo pre-fade listening. Allows pre-fade listening of the channel with the fader closed. The cue function will be automatically disabled when the channel is activated.

AIRCOM STEREO LINE CHANNEL



PEAK.

The peak indicator will indicate when the signal reaches -4 dB below the clipping point of the module.

FADER.

Channel volume control adjusts overall channel level and activates (together with the 'on' switch) all on and off switching of remote connectors.

DESCRIPTION - MASTER SECTION

Announcer.

The 'Announcer' has its own built in stereo headphone amp, via a stereo jack plug.

Tip = left
Ring = right
Sleeve = ground

The signal is powerful enough to drive several 600 Ohm headphones in tandem.

It is not possible to turn the announcer volume control completely down; this ensures that it is instantly noticeable that a headphone is connected to the announcers output.

The talkback volume to the announcers output is independant from the announcers level control; normally the announcer would listen to the main stereo program material.

Flw Monitor (Announcer).

When the follow monitor switch is depressed, the announcers output follows the Control Room Monitor. This arrangement allows the announcer to follow the cue output, in order to check a record or tape etc. This system is particularly useful for sports events, whereby it is possible for the announcer to listen to this channel, so that he can make an instant response to the action. However, it is not acceptable to lose control of the main broadcast output, so jumper settings enable the main output to be sent to the left earphone independantly of the the flw monitor setting, (see jumper settings 9-2-1, Jmp1).

In addition, by using a second jumper it is possible to choose to hear the talkback on the right earphone only, leaving the left earphone entirely for the main broadcast output, (see jumper settings 9-2-1, Jmp3).

Guest.

A separate stereo headphone output is provided for a guest, and the talkback is always adressed to both earphones. The output is identical to that of the announcer, and could therefore be used as a second announcers output.

Flw Monitor (Guest).

When this switch is activated it will follow the input selection of the Control Room Monitor. With internal jumper settings, the left side of the headphone will always follow the program material, regardless of the position of the 'flw monitor' switch, (see jumper setting 9-2-3, Jmp1).

DESCRIPTION - MASTER SECTION

Auxiliaries.

Auxiliaries 1 and 2. The summing amps, master volume controls and unbalanced output amps with +6 dB output level.

Connector = stereo jack plug
Tip = +6 dBu
Ring/Sleeve = ground

The level of the talkback signal is set by the auxiliary master controls.

Cue.

The 'Cue' switches the auxiliary output signal to the cue amps and meter circuits.

The auxiliary sends can be used for several purposes, such as driving effects, reverbs, or the D&R Querb etc.

A useful option during broadcast, is to combine all outputs of the individual channels, except the studio microphones, and to amplify the summed signal through a small loudspeaker in the studio. This enables everyone present in the studio to follow the program material. If the loudspeaker is set to a low level, it will not 'colour' the sound of an 'open' microphone.

Eventually, during broadcast, the level can be reduced further, or muted when a microphone is open, so that talkback signals will also not be heard. The external mike-on control jack is used to create this set-up.

Cleanfeed 1 & 2.

The cleanfeeds 1 and 2, or mix minus busses, are designed to drive the telephone hybrids. The signal, apart from the return, is sent to the caller, (see 11-1-1 - Telephone Hybrid adjustment).

Cleanfeed means all signals except its own.

In order to avoid feedback, a connected telephone line receives all channels except the channel the hybrid is connected to via a hybrid circuit. Therefore, all channels are connected to the cleanfeed busses, except the channels the hybrid output is connected to. Those channels have the cleanfeed jumper removed.

DESCRIPTION - MASTER SECTION

Four Telephone Lines on the Aircom.

By using the two cleanfeed busses and the two auxiliary sends, it is possible to have a maximum of four phone lines connected at any one time. The cleanfeeds are jumper selected, and the auxiliary sends via their controls. This is achieved by opening all auxiliary sends, except those connected to the outputs of the telephone hybrids. Four D&R telephone hybrids are required for this arrangement.

Talkback.

The talkback microphone is a built in Electret microphone with its associated level control and pulse 'on' switch.

When the talkback is activated the Control Room Monitor will be dimmed by 20 dB to achieve maximum intelligability. The talkback routing is latching, and can be to several outputs at the same time. The announcer and guest outputs are driven ????? their volume controls, so communication is always possible.

Talkback Inhibit.

If an amplified loudspeaker is connected to the auxiliary output or an 'open telephone hybrid connection', it could be possible to hear a talkback signal in the broadcast output. In order to avoid this possibility, an optional Talkback Inhibit circuit can be built into the system. Please contact your dealer for additional information.

Main Outputs.

The Aircom contains three transformer balanced main outputs: master left, master right and mono. All three outputs have their own line output amps with high quality output transformers.

The output level is +6 dB at 600 Ohm when the meter reads 0 dB.

Connectors are XLR male: Pin 1 = ground
Pin 2 = hot
Pin 3 = cold

If the Aircom is required to drive unbalanced equipment, Pins 1 and 3 must be short-circuited.

DESCRIPTION - MASTER SECTION

Insert L & R.

The main outputs Left and Right, each have their own insertion points.

Tip = return
Ring = send
Sleeve = ground

These inserts are intended to accept D&R limiters or compressors.

Mono Main Output.

The signal for the mono output amp is the summed left/right main output signal. By means of the jumper settings, it is possible to determine whether the signal comes from before or after the stereo insertion points, (see jumper settings 9-3-1, Jmp3).

Insert Mono.

Insertion point for the mono output.

NOTE: The mono output can have its own compressor/limiter, which would be particularly worthwhile when this output is used for transmitting through FM. It is usual to have higher compression ratios to increase the energy for small portables and car radios.

Master Mono Switch.

The master mono switch is used to make the stereo output mono. The broadcast becomes mono, and the CRM indicates the fact of it being a mono signal.

Program and Stereo Record Outputs.

The Aircom has three extra stereo program outputs - Tape Out, Stereo 1 and Stereo 2. The outputs are distributed through a 680 Ohm resistor, by one main output amp.

The signals for this output amp come before or after the stereo insertion points, according to the jumper settings.

NOTE: This jumper setting also determines the point from which the mono output amp receives its signal, (see jumper settings 9-3-1, Jmp3 and Jmp6).

It is now possible to choose whether the recorded signal, or the signal going to other studios is compressed or not.

DESCRIPTION - MASTER SECTION

The output level can be set to +6 dB or -10 dBV. (See jumper settings 9-3-2, Jmp4 and Jmp5). For the large proportion of semi-professional equipment, -10 dBV is the preferred setting, which ensures that the input circuitry is not overloaded.

Connector type is stereo jack plug: Tip = left
Ring = right
Sleeve = ground

Output impedance : 680 Ohm. Level +6 dBu or -10 dBV.

Control Room Monitor - Sources.

Tape in, Stereo 1 and Stereo 2.

The sensitivity of these inputs can be individually adjusted between -20 dB and +6 dB. The main section needs to be dismantled and lifted at the front. The adjustment pots. are located on PCB7 for the left inputs, and PCB8 for the right inputs. A long isolated screwdriver will be required to make these adjustments.

The inputs are selected via the CRM select switches.

The stereo peak meters follow the selection of the CRM source switches. If no leds are illuminated near the CRM source switches, then the main outputs are on the meters and Control Room Monitors.

The Control Room Monitor can be selected for either left or right independantly.

Autocue.

If the 'Cue' switch is activated on one of the input channels, and the autocue switches are then activated, the CRM will automatically be switched to the cue outputs. Leds indicate whether the autocue function is active.

Stereo 1 - Stereo 2 - Tape.

These inputs are designed to listen to recorders (post tape), or off-air. A stereo line from studio 2 is also possible.

NOTE 1: It is always advisable to connect an outside line to the Aircom via a transformer.

NOTE 2: When a signal is digitally connected from studio to transmitter, a delay will sometimes be introduced, due to Analog/Digital conversion. Off air checks will result in phasing effects.

DESCRIPTION - MASTER SECTION

Control Room Monitors and Headphones.

Control Room Monitor.

The selected signal can be monitored on loudspeakers and the level adjusted via the CRM potentiometer.

The output is a stereo jack plug.

Tip = left
Ring = right
Sleeve = ground

The output level is +6 dBu.

The CRM output will be muted in the self-op mode, when a microphone is opened.

NOTE: When using a HiFi amplifier, the output level of the aircom could be too high. The necessary adjustments can be made by changing the resistors R21 and R26 to 33 kOhm (for -10 dBv). External resistor networks such as 22 kOhm in series, and 6 kOhm to earth will also achieve this.

Headphones.

The `phones amplifier is capable of driving 600 Ohm phones at extremely high volume. The volume of this output amp cannot be turned down, because of failure free broadcasting.

There are two connectors for this headphone output, one beneath the meterhood, the other beneath the arm rest.

Mono.

This switch only switches the CRM to mono, and does not effect the guest and announcer outputs. It is used for checking mono compatability.

Stereo Peak Meters.

The Aircom has logarithmic peak reading meters, with 10 m sec. attack time, and 1.5 sec. release for every 20 dB. Normally these meters follow the CRM selectors, but internal jumpers can set the left meter to read the left program material at all times, (see jumper settings 9-2-1, Jmp2).

DESCRIPTION - MASTER SECTION

NOTE: The following levels should be used for a suitable sound pressure, for music, talkshows, and interviews etc.

Music : up to -4 dB
Speech : up to 0 dB
Telephone : up to +4 dB

A mild compression such as 2:1 with slow attack and a threshold of -6 dB to limiting around +8 dB will improve the relationship between different broadcast material.

NOTE: These are average settings only, presentation of modern pop music will certainly require alternative settings.

On-Air.

The on-air switch corresponds with the on-air output jack. It is a passive single pole switch, with a maximum current of 150mA at 50 Volts.

This switch can be used when more than one studio is in operation, as a centralised on-air switch for activating the studio lights etc.

Connector type is stereo jack plug: Tip = normally open
Ring = normally closed
Sleeve = centre contact

Self-Op Mode.

Using this mode, the D.J. is able to operate the Aircom himself. If the mike-on lamp illuminates, the loudspeakers and cue loudspeaker are automatically muted. Internal microphone channels can be connected via jumpers to the centralised mike-on switch connector, so that if one or more of these channels are then opened, the mike-on signal will be given.

This output can give +15 Volt level current, limited by a 470 Ohm resistor, and connection of a relay can activate a centralised mike-on signal. We advise you to use an externally connected solid state relay. A suitable model is the S 201-S 04 from 'Sharp', which switches 220 Volts/1.5 Amp click-free. A solid state relay is much safer to use, and is more reliable. The mike-on output can be connected directly to the S 201-S 04 relay.

Connector: Tip = +V
Ring & Sleeve = 0V

DESCRIPTION - MASTER SECTION

Mike-On Lamp.

This lamp illuminates when one or more of the microphone channels are active (and their jumpers are also active). The mike-on switching output is also triggered when this lamp is illuminated.

Cue Output.

The `Cue' output carries the cue output when any of the local cue switches are activated. This output is intended to be used as a cue output with its own speakers, so that the autocue switches in the CRM section need not be activated.

If only a low output is required, a small 100 Ohm loudspeaker can be connected directly to the cue output.

Connector type is stereo jack plug: Tip = signal
Ring & Sleeve = ground

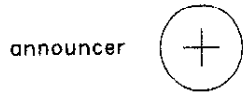
The cue output will also be muted when the Aircom is in the self-op (D.J.) mode.

AIRCOM MASTER SECTION

ANNOUNCER.

Stereo headphone output for an announcer, with level of +15 dBu. DO NOT connect headphones with a lower impedance than 200 Ohm.

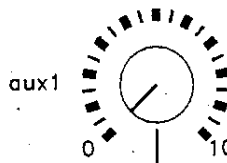
Connector type is stereo jack plug.
Tip = left. Ring = right. Sleeve = ground.



ANNOUNCER

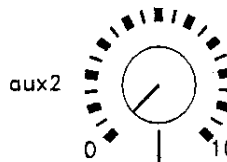


flw monitor



aux1

cue



aux2

cue

ANNOUNCER LEVEL.

Volume control of the announcers headphone amp. Usually it will follow the program output.

NOTE 1: It is not possible to fully attenuate this output.

NOTE 2: The talkback level is not dependant upon the setting of the announcers level control.

(J) (Internal). The standard jumper setting is no talkback on the left headphone output (9-2-1, Jmp3).

FLW MONITOR.

Follow monitor selection. When this switch is depressed, the Announcers output will follow the control room selection.

(J) (Internal). The default jumper setting is program signal on the left headphone output, independant of the follow monitor selection, (9-2-1, Jmp1).

AUXILIARY 1.

Auxiliaries master control.

AUXILIARY 2.

Auxiliaries master control.

CUE.

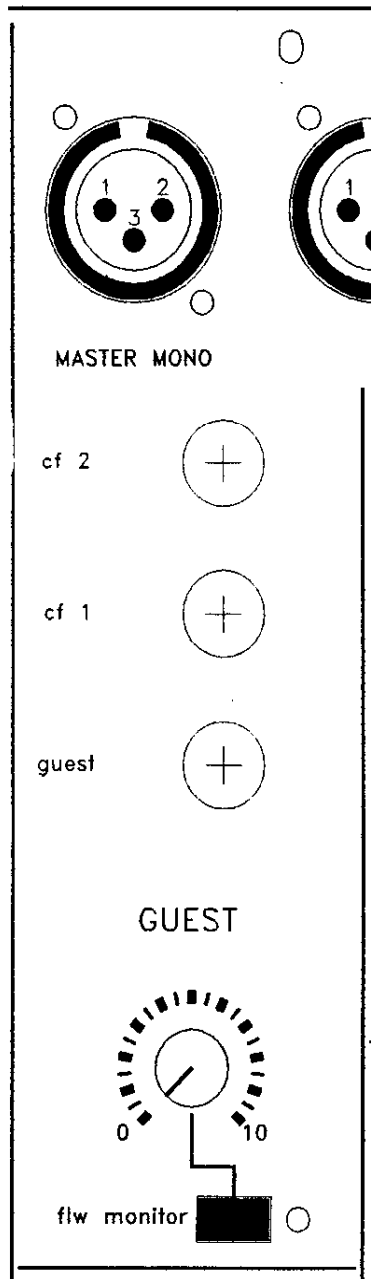
After the fade listen switch, connects the aux. output to the cue output and meters.

AIRCOM MASTER SECTION

MASTER MONO.

Main mono output, level = +6 dBu transformer balanced. Impedance = 600 Ohm.
Connector type is XLR male.
Pin 1 = ground. Pin 2 = hot. Pin 3 = cold.

(J) (Internal). Jumper settings determine whether the mono summed signal is derived PRE or POST the insertion points of the stereo outputs, (9-3-1, Jmp3 and Jmp6).



CLEANFEED 2.

Cleanfeed 2 output. Level = +6 dBu.
Impedance = 47 Ohm unbalanced.
Connector type is stereo jack plug.
Tip = signal. Ring & Sleeve = ground.

CLEANFEED 1.

Identical to cleanfeed 2.

GUEST OUTPUT.

Guest stereo headphone output.
Level = +15 dBu.

NOTE: DO NOT use headphones with a lower impedance than 200 Ohm - 600 Ohm is preferable.

Connector type is stereo jack plug.
Tip = left. Ring = right. Sleeve = ground.

GUEST.

Level control of the stereo headphone amps.
This output normally follows the main output.

NOTE 1: This output cannot be fully attenuated.

NOTE 2: The talkback volume is independent from the guest level settings.

AIRCOM MASTER SECTION

METER.

This 5 pole din connector is used to connect the peak meters inside the meterhood of the Aircom. A zero dB indication stands for +6 dBu output level.

Connector: 5 pole din plug.

Pin 1 = signal right.

Pin 2 = earth.

Pin 3 = -10 Volt.

Pin 4 = signal left.

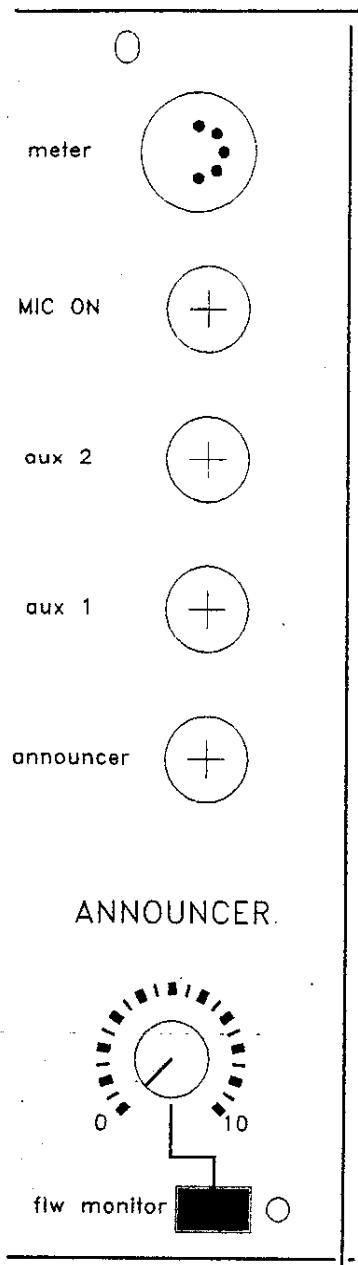
Pin 5 = +18 Volt.

The meter will indicate the signal chosen by the CRM input select switches.

(J) Jumper selections (internal).

The left meter (top section) will always indicate the main output left signal, regardless of the selection of the CRM selectors.

See jumper settings 9-2-2, Jmp2.



MIKE-ON.

Microphone on switch connector. This connector provides a current limited voltage when one or more microphone input channels are open - if the mike-on jumper on the channel module is correctly selected.

Connector type is stereo jack plug.

Tip = +18 Volt. Ring & Sleeve = ground.

AUXILIARY 2.

Main auxiliary 2 output with a level of +6 dBV.

Impedance is 470 Ohm unbalanced.

Connector type is jack plug.

Tip = signal. Ring & Sleeve = ground.

AUXILIARY 1.

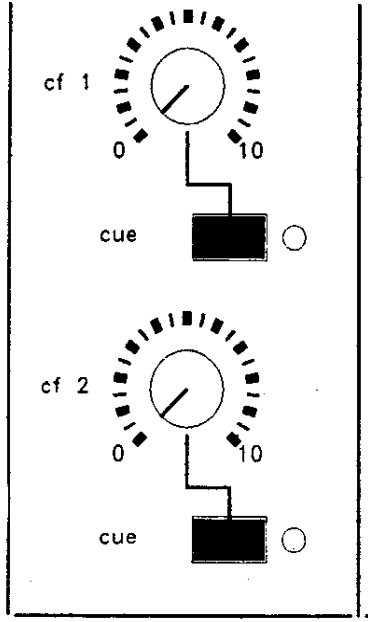
Main auxiliary 1 output - identical to auxiliary 2.

AIRCOM MASTER SECTION

FLW MONITOR.

When this switch is depressed, the guest output will follow the Control Room Monitor selection.

(J) Internal default jumper setting is to always hear the program signal on the left headphone output, regardless of the flw monitor setting, (9-2-3, Jmp1).



CLEANFEED 1.

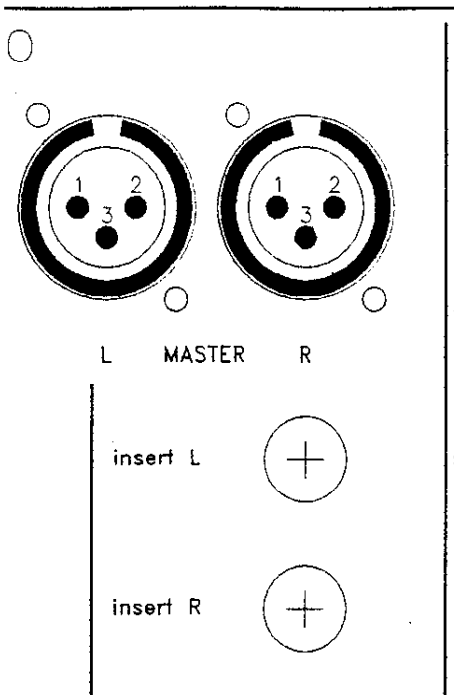
Cleanfeed 1 main output level control.

CLEANFEED 2.

Cleanfeed 2 main output level control.

CUE.

Selects the cleanfeed signal, after the volume control, to be sent to the cue output and meters.



MASTER L. AND R.

Main outputs left and right.

Level = +6 dBu, transformer balanced.

Impedance = 600 Ohm.

Connector type is XLR male.

Pin 1 = ground. Pin 2 = hot. Pin 3 = cold.

INSERT LEFT.

Insertion connector of left output, unbalanced.

Connector type is stereo jack plug.

Tip = return, 0 dBu, imp. 10 kOhm.

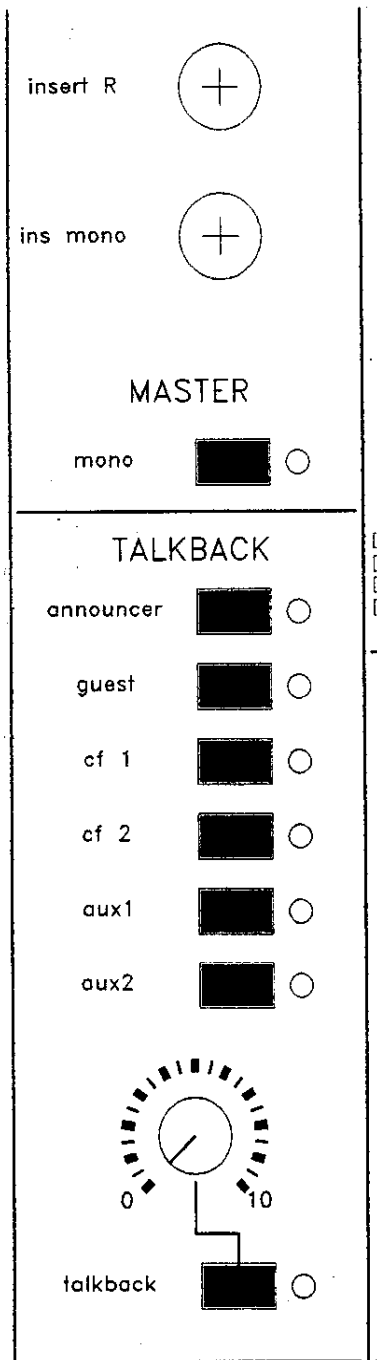
Ring = send, 0 dBu, imp. 47 Ohm.

Sleeve = ground.

INSERT RIGHT.

Identical to insert left.

AIRCOM MASTER SECTION



INSERT MONO.

Identical to insert left.

MASTER MONO.

Sums the left and right signal to be mono on both outputs.

TALKBACK ROUTING.

Routes the talkback signal to any combination of outputs.

TALKBACK LEVEL.

Sets the talkback level.

TALKBACK SWITCH.

Activates the built in talkback microphone, and attenuates the Control Room Monitors by 20 dB.

TAPE OUT, STEREO OUT, STEREO OUT.

These are stereo recording outputs.
Level = +6 dBu or -10 dBV.

Output impedance = 600 Ohm.
Connector type is jack plug.
Tip = left. Ring = right. Sleeve = ground.

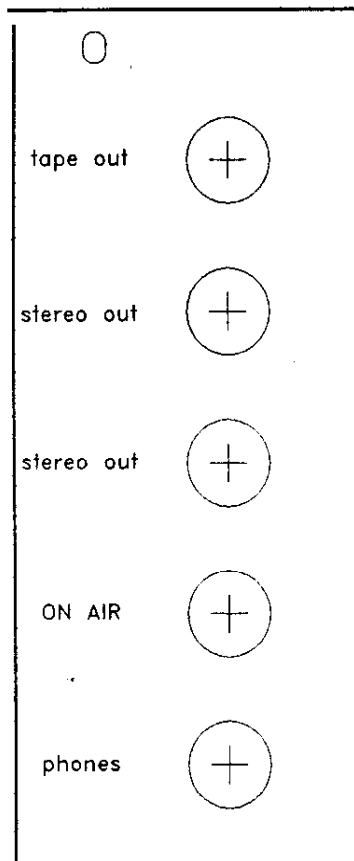
(J) (9-3-2, Jmp4 and Jmp5).

(J) Jumper settings can change the recording signals coming pre or post the master left/right inserts, (9-3-1, Jmp3 and Jmp6).

TAPE IN, STEREO IN 2, STEREO IN 1.

Inputs for external sources.
Level can be adjusted between -20 dBu and +6 dBu. Impedance = 10 kOhm.
Connector type is stereo jack plug.
Tip = left. Ring = right. Sleeve = ground.

AIRCOM MASTER SECTION



ON-AIR.

Output for on-air signalling. This is a single pole switch over contact, able to switch 50 Volt/150 mA maximum. Connector type is stereo jack plug. Tip = default on. Ring = active on. Sleeve = change over contact.

CUE.

Mono cue output. Level = 0 dBv. Impedance = 47 Ohm. Connector type is stereo jack plug. Tip = signal mono. Ring & Sleeve = ground.

NOTE: This output will be muted in the 'self-op' mode, in case a mike channel is opened (mike-on lamp illuminates).

PHONES.

The engineers stereo headphone output, also to be used as D.J. output. Level = +15 dBv. Impedance = 47 Ohm.

NOTE: DO NOT use headphones with an impedance lower than 200 Ohm - 600 Ohm is preferable.

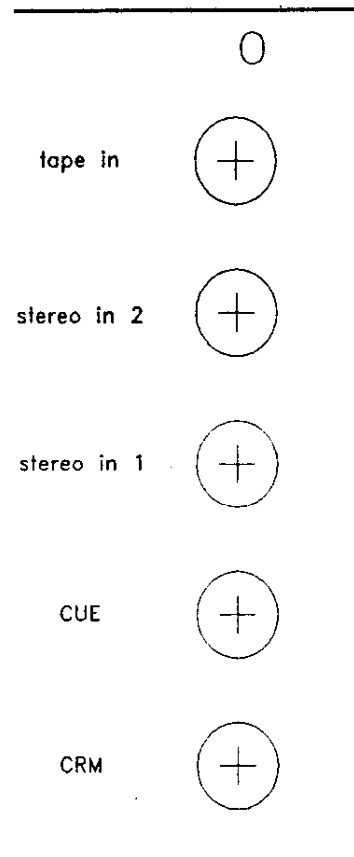
Connector type is stereo jack plug. Tip = left. Ring = right. Sleeve = ground.

NOTE: Under the arm rest, there is another parallel connector for connecting headphones.

C.R.M.

Control Room Monitor output. Connector type is stereo jack plug. Level = 0 dBv. Impedance = 47 Ohm. Tip = left. Ring = right. Sleeve = ground.

NOTE: This output will be muted in the 'self-op' mode, when a mike channel is opened (mike-on light illuminates).



AIRCOM MASTER SECTION

CRM.

Level control of Control Room Monitor. This output will be muted in the 'self-op' mode when a mike channel is opened. During talkback, the CRM is dimmed by 20 dB.

MONO.

Switches meters and CRM to mono. (Also Phones, Announcer and Guest). The main outputs will not be switched to mono.

D&R BROADCAST - AIRCOM JUMPER SETTINGS

9-1-1 MIKE/LINE CHANNEL.

Jmp 1 = Cleanfeed 1	1 + 2 = ON	3 + 4 = OFF
Jmp 2 = Cleanfeed 2	1 + 2 = ON	3 + 4 = OFF
Jmp 3 = Mike-On logic	1 + 2 = ON	3 + 4 = OFF
Jmp 4 = Lo-cut filter	1 + 2 = OUT	3 + 4 = IN
Jmp 5 = 48 Volt Phantom	1 + 2 = OFF	3 + 4 = ON

9-1-2 STEREO LINE CHANNEL.

Jmp 1 = 1 + 2 connects A input LEFT to the channel.
Jmp 2 = 3 + 4 connects A input RIGHT to the channel.

NOTE

An optional R.I.A.A. phono pre amp can be plugged in here. The 'A' input of the channel can thus be connected directly to a phono cartridge. Jumpers should be removed from the channel completely.

!DO NOT!

plug the jumpers on the lower connecting pins, as this will short out the positive and negative channel power supply lines to earth!

REMOTE CONTROL OPERATION MODE.

Jmp 3 = 1 + 2 = pulse
 3 + 4 = continuous

NOTE

Remote control is active only when the 'A' input is selected.

D&R BROADCAST AIRCOM JUMPER SETTINGS

9-2-1 MASTER MODULE ANNOUNCER & METER.

Jump 1 = Announcer phones LEFT select.
1 + 2 = Phones LEFT will follow monitor select,
IF the 'flw monitor' switch is operated.
3 + 4 = Phones LEFT is ALWAYS connected to the
mixer output (regardless of the selection).

Jump 3 = Announcer phones LEFT, Talkback select.
1 + 2 = Talkback to phones RIGHT only.
3 + 4 = Talkback to phones LEFT and RIGHT.

9-2-3 METER SELECT.

Jump 2 = 1 + 2 = Meter LEFT ALWAYS displays the mixer
output (regardless of the monitor selection).
3 + 4 = Meter LEFT follows monitor selection.

9-2-3 MASTER MODULE GUEST.

Jump 1 = Guest phones LEFT select.
1 + 2 = Phones LEFT will follow monitor select,
IF the 'flw monitor' switch is operated.
3 + 4 = Phones LEFT is ALWAYS connected to the
mixer output (regardless of the monitor
selection).

D&R BROADCAST AIRCOM JUMPER SETTINGS

9-3-1 MASTER MODULE MAIN LEFT & RIGHT OUTPUTS.

Jmp 6 = Selects the signal for the recording outputs
TAPE and STEREO from pre or post the insert of
the stereo output master (e.g. before or after
a comp/lim).

1 + 2 = pre insert (left)

3 + 4 = post insert (left)

Jmp 3 = Same as above, but for the right stereo output
master.

1 + 2 = pre insert (right)

3 + 4 = post insert (right)

NOTE

This selection also determines the signal sent to
the MONO output.

NOTE

For normal operation Jmp 6 and Jmp 3 should be in
identical positions!

LEVEL SETTING OUTPUTS STEREO 1 & 2, TAPE OUT.

Jmp 4 = Sets level of the left (recording) outputs.
TAPE and STEREO to either -10 dB or +6 dB.

1 + 2 = -10 dB (left)

3 + 4 = +6 dB (left)

Jmp 5 = Same as above, but for right channel.

1 + 2 = -10 dB (right)

3 + 4 = +6 dB (right)

NOTE

For normal operation Jmp 4 and Jmp 5 should be in
identical positions!

INSTALLING THE AIRCOM

Mains.

Please check that the local mains supply corresponds with the voltage selected on the Aircom mains inlet. The Aircom can be factory set for voltages between 100 - 120 Volt or 220 - 240 Volt.

The Aircom is fused with a 2 Amp slow blow fuse for 110 Volt or 1.2 Amp slow blow fuse for 220 Volt.

DO NOT use any other value, as this would be hazardous, and the Aircom guarantee will be void.

Clean Power Connection.

Be sure to use a 'clean' power outlet, i.e. one that is fed directly from the mains, including earth.

Only connect the Aircom to this outlet and its associated equipment. This will act as the centralised mains and earth for the studio.

It is advisable to install several multiple mains connectors close to the Aircom, with a master power switch to shut down all power to the studio. Grounding MUST BE a starground system.

Keep all wires as short as possible, but never install audio next to power cables.

"Polluted" mains are caused by changing currents on the outlets, such as air-conditioners, coffee machines, fridges, computers, dimmer packs etc. DO NOT connect any of these types of items to the Aircom main power outlet.

Wiring.

In cases where all the equipment is transformer balanced, it is usual to connect the shielding of the wiring to the source side only.

In the Aircom, many of the sources will be unbalanced, so a different strategy needs to be adopted.

Equipment such as CD players do not have a mains ground connection. In this case the shielding can be connected on both sides of the connection - a ground loop will not occur. Try to choose a CD player with metal housing. If you experience problems with the transmitter interfering with the CD sound, connect the CD housing to a ceramic capacitor of 0.01 uF/250 V to the mains earth.

INSTALLING THE AIRCOM

Audio Connections to the Aircom.

Prior to commencing wiring of the studio, it is advisable to obtain some labels, which will simplify trouble-shooting. Label such as "CD-1, ch12A".

The first step is to connect the Aircom to the mains, with all faders closed, no CRM active and the CRM volume controls fully clock-wise.

- A. Connect the CRM amp to the CRM output, and check whether there is any 'hum' or 'noise'.
- B. Now connect the phono players, and check again for 'hum' and 'noise'.

NOTE: In most cases it is a matter of finding the best grounding for the phono ground by trial and error. This might be directly to the audio ground or to the chassis of the Aircom.

- C. Now connect Tapedeck, Cartmachines, CD players etc.

NOTE: Wiring a tuner needs special attention.
If the tuner is "cable", the coax antennae cable will probably cause a ground loop. The antennae input of the tuner must be separated by an H.F. transformer - ask your dealer or any radio shop for details.

IMPORTANT

SAFETY PRECAUTION - All 'outside' connections to the Aircom, even from the same building, must be connected via a transformer. This avoids the possibility of ground loops and 'hum'.

The shielding must be connected to the source side.

In areas with a strong H.F. interference, it is wise to connect the other side of the shielding through a 0.1 uF/250 Volt ceramic capacitor. The capacitor will not affect the audio, but will reduce H.F. signals.

Servicing the Aircom.

- A. Disconnect the mains supply.
- B. Remove the power cable from the back of the console.
- C. Lift the meterhood.
- D. Remove cabling as necessary.

INSTALLING THE AIRCOM

- E. Unscrew the channel module bolts.
- F. Firstly lift the channel down by the fader section, and then the other side. Carefully lift the module until you see a connector mounted to a ribbon (flat) cable.
- G. On the PCB part of the connector you will see two ejectors, with which to eject the cable header.

Installing the Channel Module.

- A. Plug the ribbon cable connector into the PCB connector, ensuring that the ejectors are securely replaced.
- B. Slowly put the module down into the chassis, rear first.
- C. Tighten all screws, and reconnect the channel.

Servicing the Master Section.

- A. Disconnect the Aircom from the mains supply.
- B. Remove all cables.
- C. Remove all holding screws.
- D. Lift the master section, from the fader side first.
- E. Remove the connector to the power PCB.
- F. Lift the section upwards until you are able to remove the ribbon cable from the PCBs.
- G. Reverse this procedure to re-mount the master section.

D&R Telephone Hybrid.

A telephone hybrid is required in order to connect the two wire telephone system to the input and output of the Aircom.

The internal circuitry splits the in-going and out-going signals using balancing transformers and capacitors.

Due to the fact that the resistance and capacitance of the nearest phone company distribution point varies from place to place, it is necessary to align the Telephone Hybrid.

INSTALLING THE AIRCOM

Installing the Telephone Hybrid.

- A. Connect a wire from the Cleanfeed 1/2 or Aux. 1/2 outputs to the Hybrid input.
- B. Connect a wire from the hybrid output to a mike/line channel with an activated 'pad' and with the gain control set to 12 o'clock.

NOTE: Put the mike-on jumper on that channel to 'OFF'.
The cough/mike-on output of the channel can be used to indicate that the hybrid is open.

- C. Connect the telephone line and 'phone to the hybrid.

Alignment of the Hybrid.

1. Call the weather forecast!
2. Activate the hybrid connect switch.
3. Open the hybrid channel and adjust the level to 0 dB with the gain control.
4. Put some music on another channel and level this to the output.
5. Activate the autocue switches in the master. Activate the cue of the Cleanfeed 1/output and adjust the Cleanfeed 1 output for a 0 dB reading. Now deactivate the Cleanfeed 1 cue.
6. Activate the hybrid channel cue.
7. Adjust the R control to decrease the music level.
8. Adjust the C balance control to further decrease the music level.

NOTE: Repeat steps 7 and 8 several times, until the maximum attenuation is achieved.

The hybrid is now aligned. Mark the two settings of the R and C balance controls. All the time the hybrid remains connected to the same 'phone company, no changes need be made to this set up.

NOTE: Try to by-pass the in house telephone system if possible, otherwise it will be extremely difficult to achieve a good alignment. A direct connection with the incoming 'phone company gives the best results.

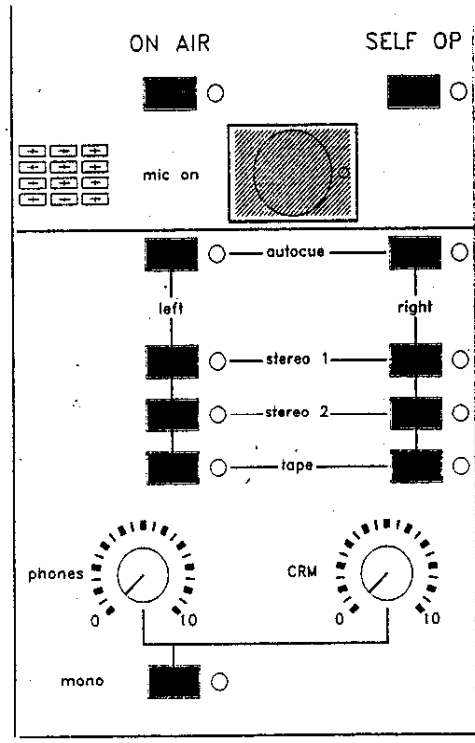
SPECIFICATION

INPUTS	Mike inputs: balanced 2 kOhm, R.F. protected. C.M.R.R. at 50 Hz: -76 dB. Sensitivity: -70 dBv to -28 dBv for +6 dBv out. Signal to noise ratio: - 129.00 dB. Line (stereo) inputs: unbalanced 10 kOhm minimum. Signal to noise ratio: - 90 dB.
	Sensitivity: -20 dBv to +20 dBv active controlled for +6 dBv output. Insert: input unbalanced at 10 kOhm. Sensitivity: 0dBv. Tape returns in master: -20 dBv to +6 dBv at 10 kOhm minimum.
OUTPUTS	Left/right/mono +6 dBv transformer balanced. Aux. 1/2, Cleanfeed 1/2, Cue, CRM, +6 dBv at 47 Ohm unbalanced.
	Phones / announcer / quest, +15 dBv at 47 Ohm.
EQUALISATION	+/- 12 dB at 10 kHz shelf. +/- 12 dB at 3 kHz bell curve. +/- 12 dB at 60 Hz shelf.
OVERALL	Frequency response: 20-20.000 Hz +/- 0.5 dB. Harmonic distortion: less than 0.02% at all levels. Max gain through desk: 86 dB. Cross talk: channel to channel: - 90dB at 1 kHz.
	Noise: -86 dBv (one channel @ 0dB). A/B line cross talk: -80 dB. Max output: +26 dBv into 2 kOhm. Headroom: +22 dB above internal nominal level.
REMOTES	All control inputs are on jack sockets. Channel/master mike-on signalling is via buffered transistors and or opto-couplers.
	Machine remote control is via separate opto couplers for start and stop pulse or continuous signals.

AIRCOM MASTER SECTION

ON-AIR.

Switch to activate the on-air output.



SELF-OP.

Self operate, enabling the announcer to do the mixing himself. In this mode all loudspeaker outputs are automatically muted when a mike channel is opened (CRM/Cue). The mike-on jumper needs to be set to activate the master logic.

MIKE-ON.

Mike-on signalling to indicate that one or more mike channels are open.

MONITOR SELECT SWITCHES.

The left and right inputs of the CRM can be selected separately.

AUTOCUE.

When this switch is activated, the left, right, or both CRM outputs are automatically connected to a selected cue switch. The corresponding leds indicate that the autocue is active.

STEREO 1, STEREO 2, TAPE.

Selects the external sources.

PHONES.

Level control for the engineers headphone outputs.

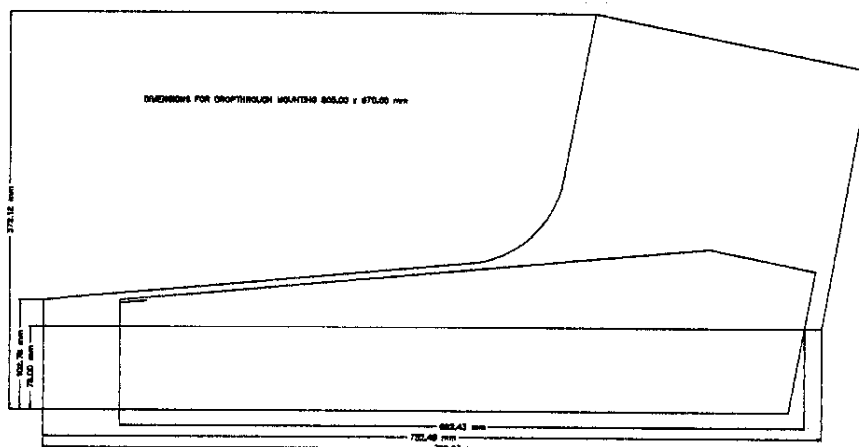
NOTE: It is not possible to fully attenuate this output.

SPECIFICATION

WEIGHT Aircom 16: 40 kg (88 lb).

OPTIONS Conductive plastic faders.

DIMENSIONS



HEAD OFFICE
D&R Electronics b.v.
Rijnkade 15B
1382 GS WEESP
THE NETHERLANDS

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D 5100 Aachen
B.R.D.

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AIRCOM USER QUESTIONNAIRE

Dear Aircom user,
We care very much about your opinion of our product, and would very much appreciate if you could complete the following questionnaire, and return it to the address below. Please use the reverse, or additional paper if required.

USER NAME

ORGANISATION

ADDRESS TOWN

POST CODE COUNTRY

AIRCOM SERIAL NO:

CONFIGURATION

DEALER

HOW DID YOU HEAR ABOUT THE 'AIRCOM'?
(Dealer / Advertisement / Exhibition / Other user / Other)

WHAT JOURNALS DO YOU TAKE ON A REGULAR BASIS?

WHAT IS YOUR OPINION OF THE PRICE/QUALITY OF THE 'AIRCOM'?

WHAT PRICE WOULD YOU CONSIDER SUITABLE FOR THE 'AIRCOM'?

ANY OTHER SUGGESTIONS?

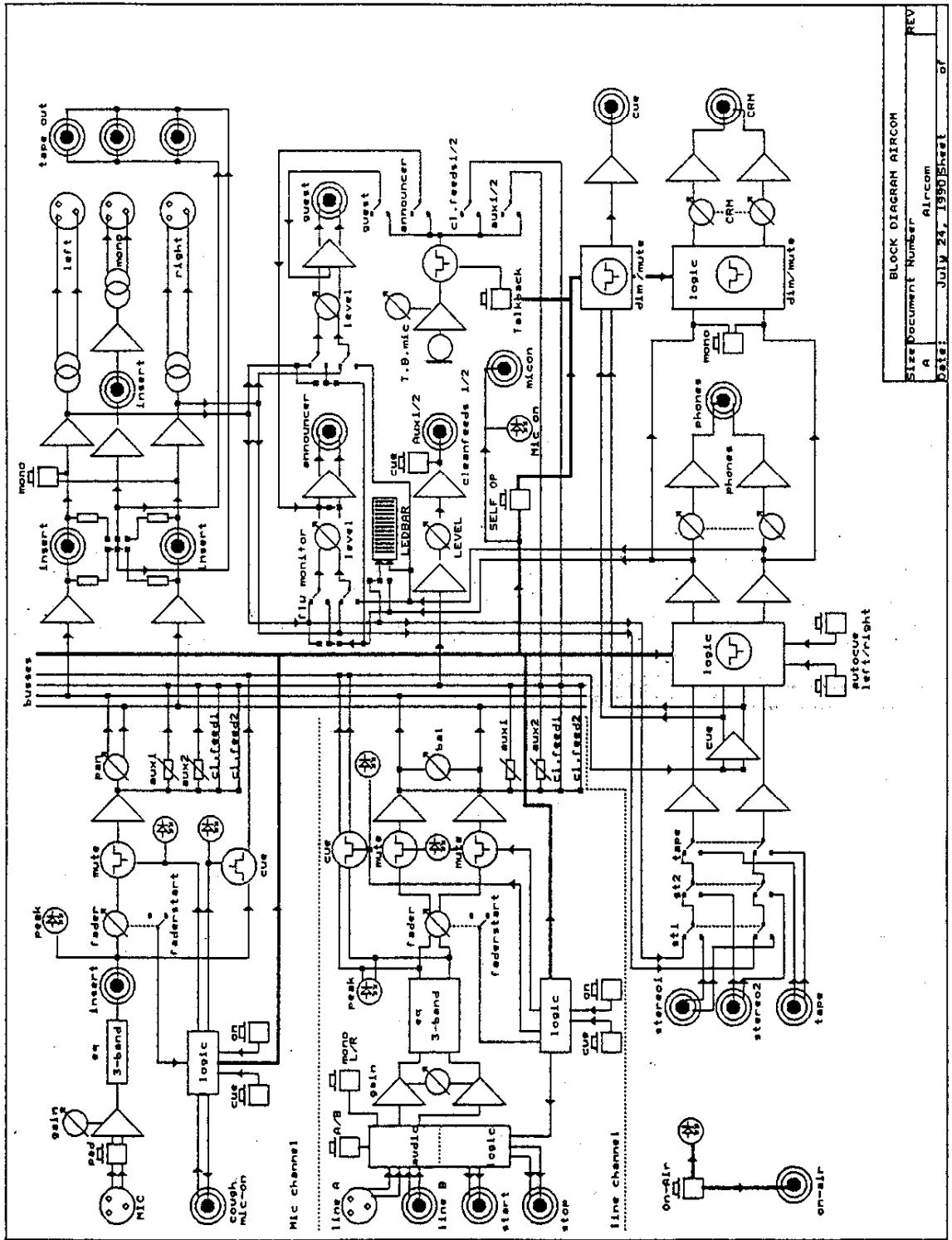
"I REQUIRE INFORMATION ABOUT....."?

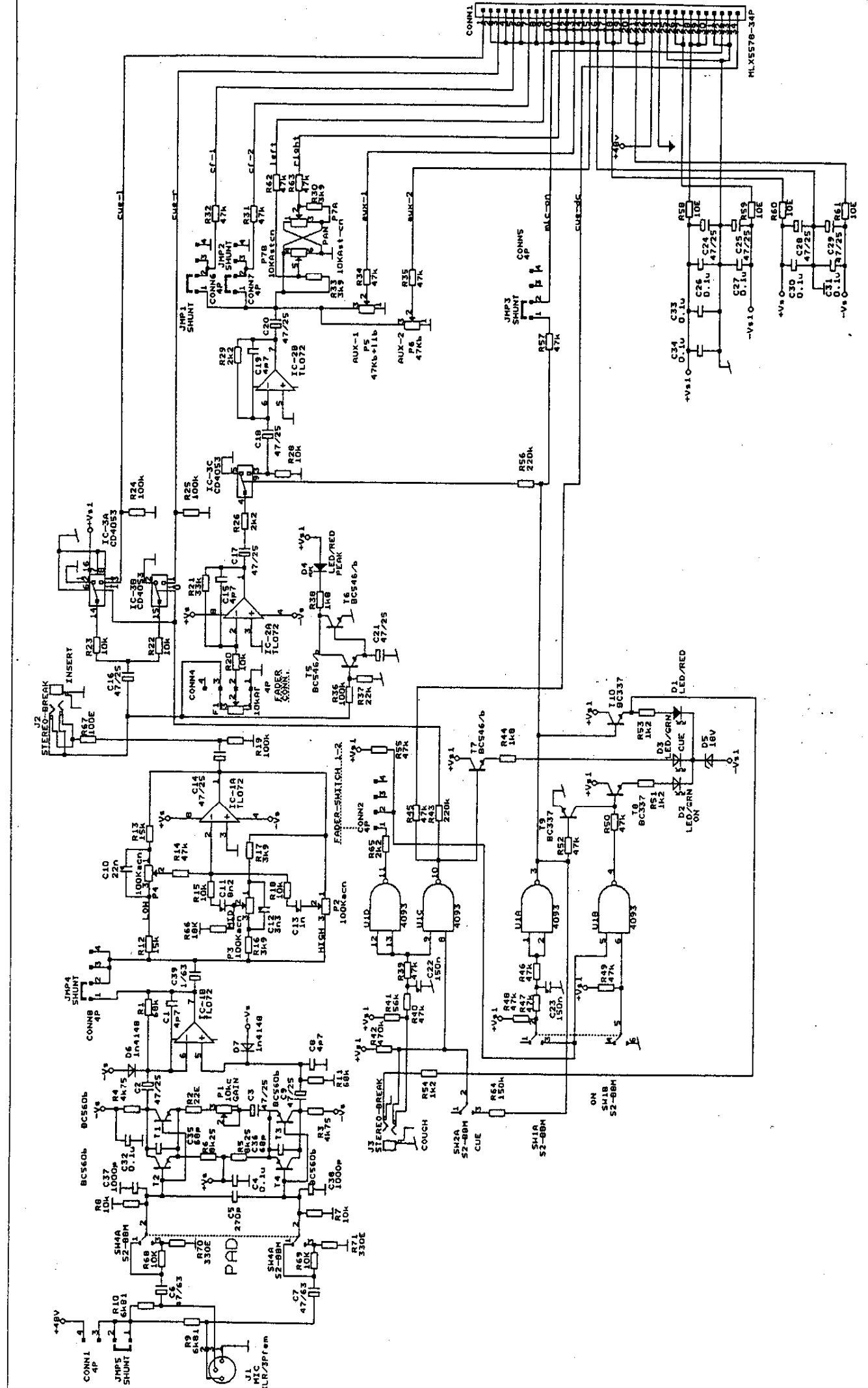
WHAT OTHER EQUIPMENT DO YOU USE?

PLEASE SEND TO: D&R Electronics b.v., Rijnkade 15B, 1382 GS WEESP

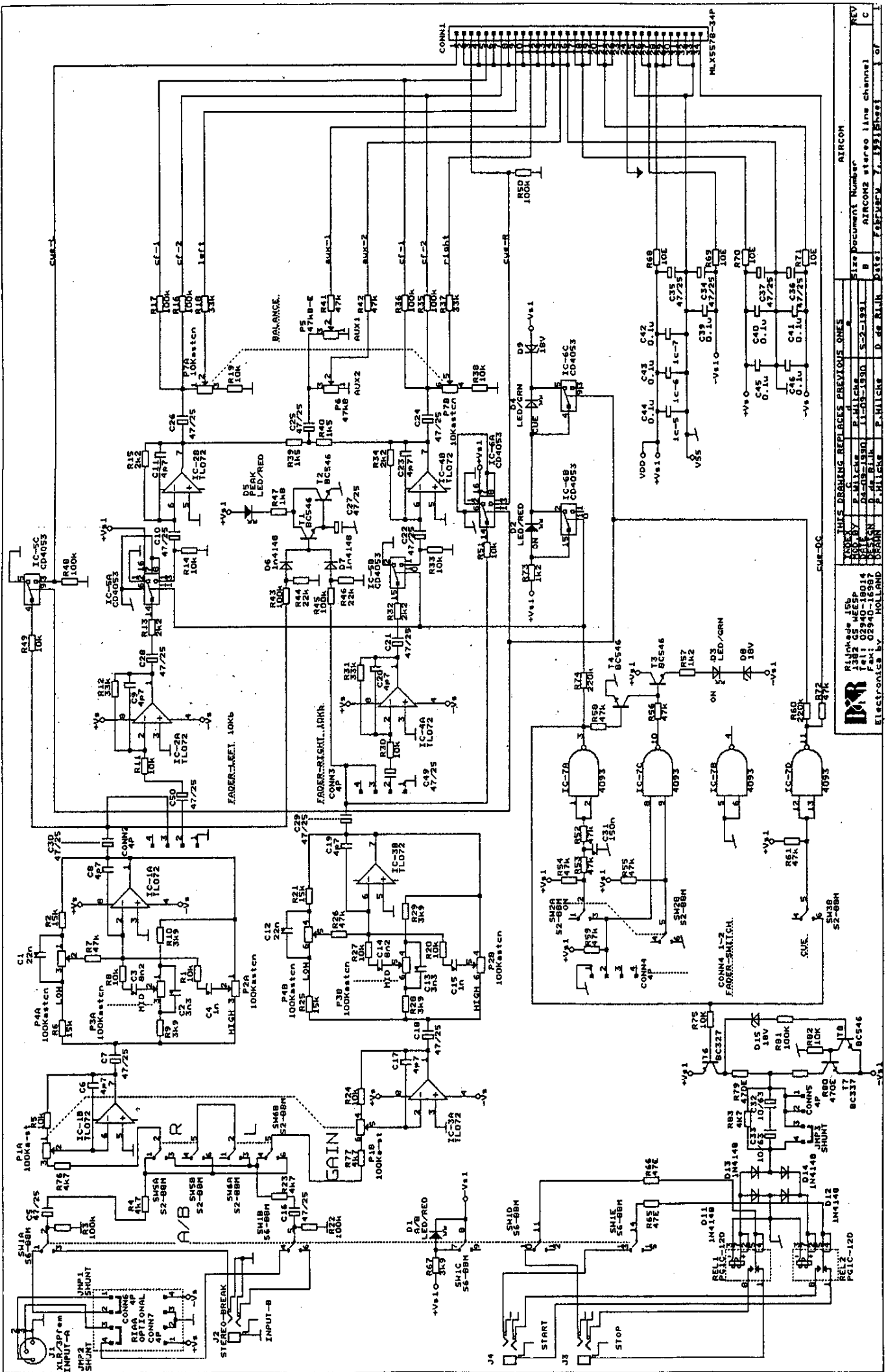
SERVICE MANUAL

AIRCOM



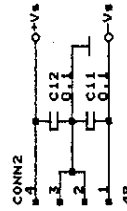
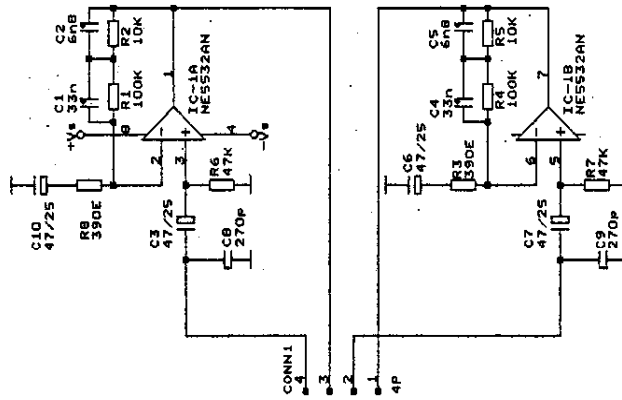


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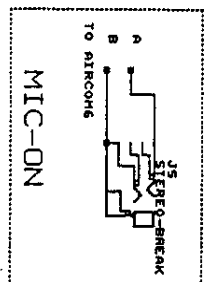
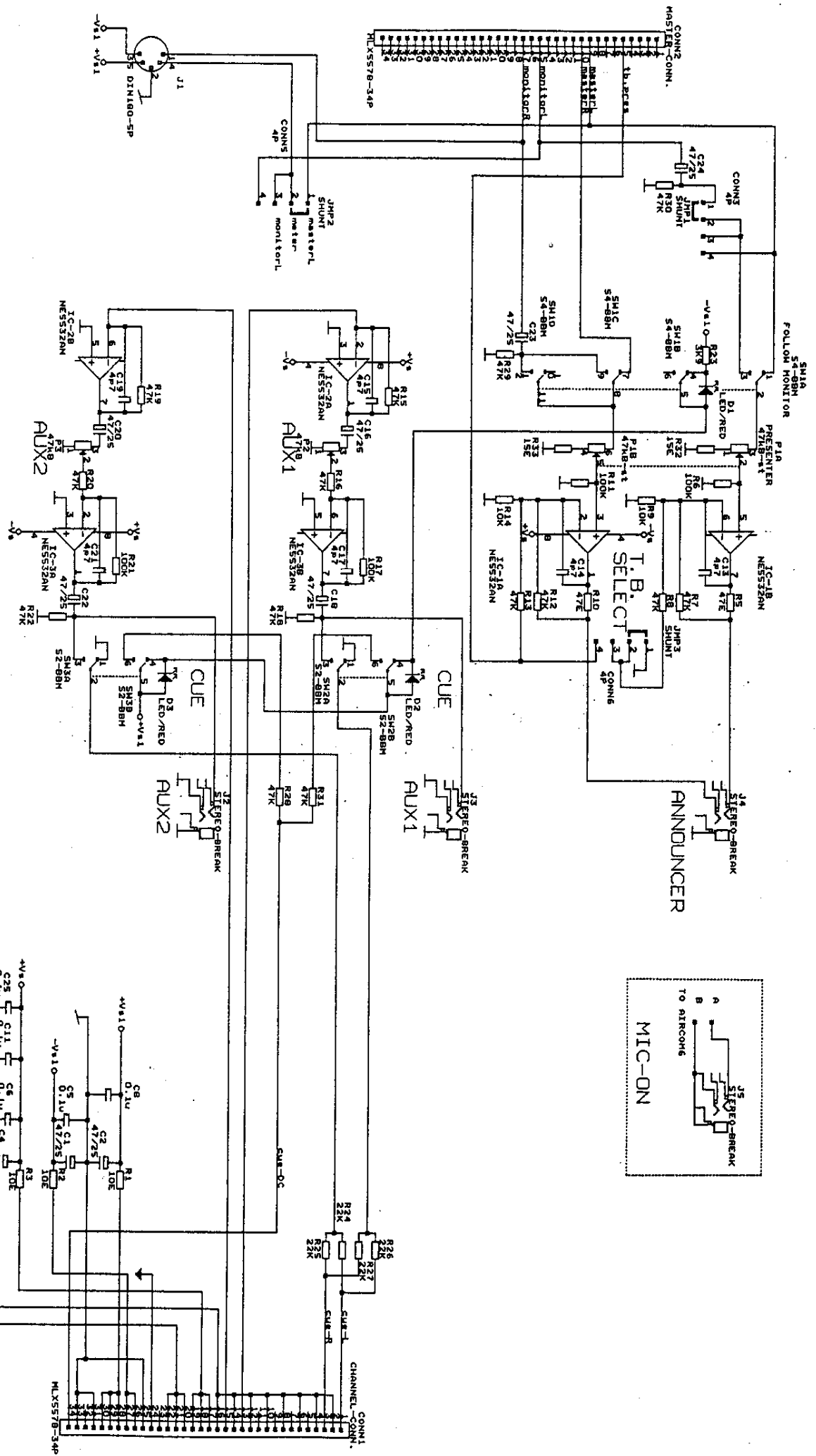


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 AIRCON2 stereo line channel
 AIRCON
 P. MILICHA
 D. de RIJK
 DATE 7. 1931
 P. MILICHA

DR
 RIJswaade 15B
 1382 CS WEESP
 Tel. 02940-1904
 02940-1905
 Electronics by
 HOLLAND
 AIRCON



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Rijksweg 15C

 1360 CS WEESP

 Tel: 02940-18014

 Fax: 02940-16987

 DR Electronics BV

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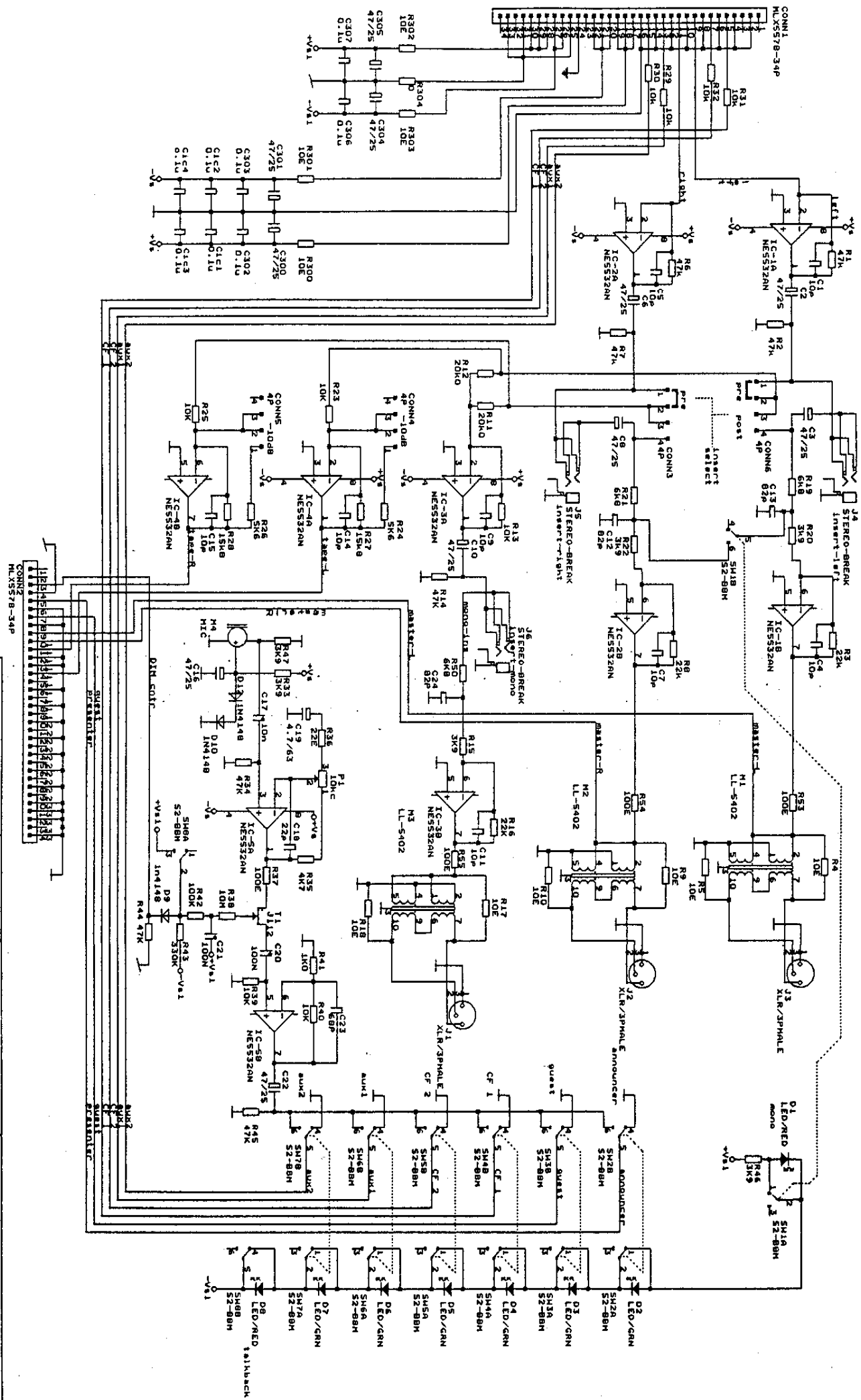
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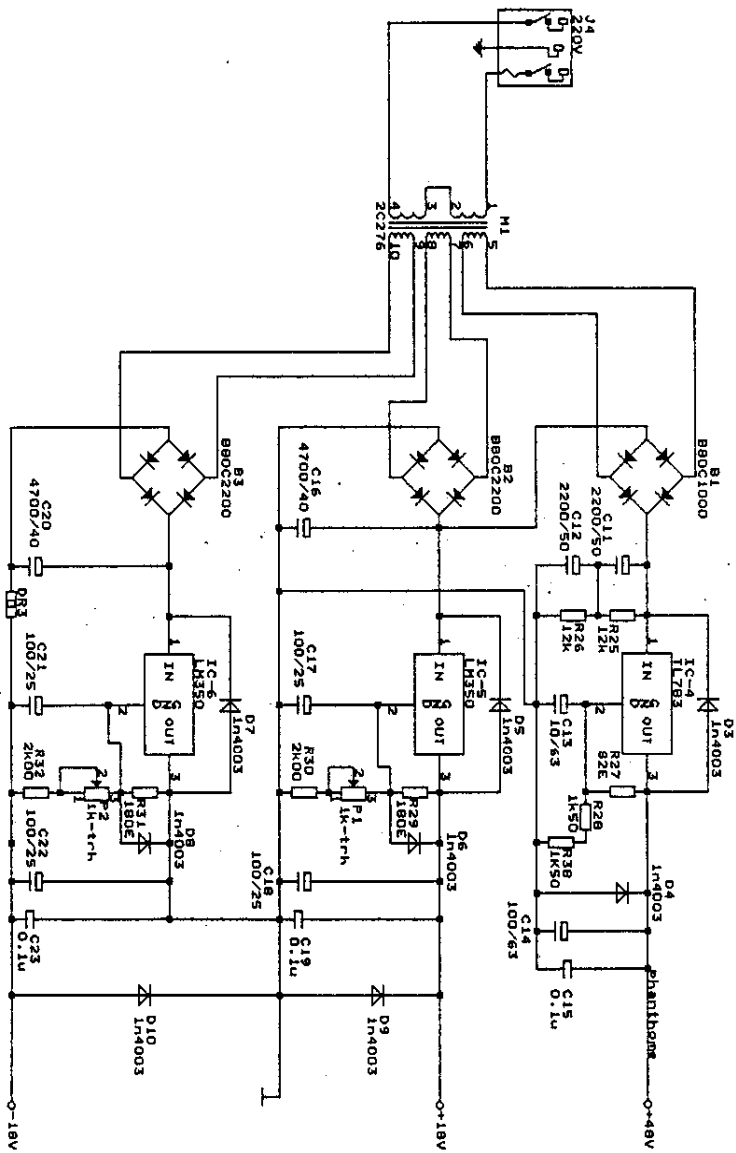
 AIRCOM's master module

 June 12, 1980



DOR R. B. DORR, INC. 1250
 16-04-1390
 TEL: 02940-18014
 FAX: 02940-16987
 ELECTRONICS BY MAIL
 HOLLAND, MISSISSIPPI 39201
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