AIRLAB MK2
User Manual

Mixing consoles
Version 2.03

1   INTRODUCTION

Dear client,

Thank you for choosing the Airlab console.

The Airlab is designed by specialists in the field of radio broadcast and is intended to be used as a 24 hour "On-Air" console as well as a production console.

We are confident that you will be using the Airlab 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 Airlab. We will certainly learn from your comments, and very much appreciate your time doing this.

With kind regards,

Duco de Rijk
PRESIDENT

2 PACKAGE CONTENTS

The Airlab package comes with the following parts inside.

- 1x Airlab
- 1x This manual
- 1x Airlab Control Center supporting Win98SE/Win2000/WinXP/WinNT4.0
- 1x Chip card
- 1x Power cable

3   SYSTEM DESCRIPTION

D&R Quality
D&R has been the largest manufacturer of mixing consoles and signal processors in the Netherlands for 26 years. More than 90% of the total production is exported worldwide. This market demands excellent pricing and quality standards.
D&R products are used in studios and live performances, both of which require 100% reliability, which is the result of 26 years of research, design and manufacturing.

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.

Airlab Quality
The high standard of quality of the Airlab is demonstrated by the welded steel RF screening and sturdy housing, the heavy duty power supply, its modular approach and locking IDC connectors mounted on high quality double sided, plated through, glass epoxy printed circuit boards.

The signal paths are electronically switched using CMOS logic and 'FET' components, ensuring reliable and smooth switching.

High quality 100mm faders control the new redesigned "THAT" VCA's. Switching is performed by isolated encapsulated reed relays guaranteeing many years of trouble free smooth switching.

Airlab flexibility
The Airlab is a specially designed production/ On-Air broadcast console. Although the design has been carefully budgeted, no compromises have been made in either quality or features, particularly in the areas of VCA control, switching, signaling, fader start/stop and communication.

The Airlab is fully modular, which means flexibility in the configuration. The Triple input modules as well as the Telco input modules can be placed anywhere in the chassis. A partially loaded Airlab can be completed using low cost 'blind modules'.

Digital programmable
Most of the important module functions such as module set-up as well as overall master settings are programmable and can be saved on a personal memory card or in the internal memory of the Airlab.
The LCD in the master section helps you with the programming. There is also a possibility to do this on your PC by way of RS232 communication.

The Airlab 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 continuously selectable). There is also no need for complex mic-on/cough switching to the announcer booth. A stereo jack, a LED and a simple push-button switch complete this task.
The optional SiCo unit is a nice looking alternative with many extras for Cough switching and monitoring.

Built-in stereo headphone amp
The Airlab contains built-in headphone amps for the Announcer and Guests. No additional amps are needed. The Studio output needs to be hooked up to a power amp that can handle +6 dBu as nominal level for full power.

Clear layout
To create a clear layout most of the switches have LED indicators, large CUE/SELECT and ON switches and the front panels are angled for visibility.

All similar functions in the triple input channels are color-coded with additional fader knobs available for personalized channel color-coding.

       Example: Microphone channels: red fader knobs
                         Telephone channels: gray fader knobs
                         Stereo channels: black fader knobs

Radio communication
On the basis that there's no radio without communication, the Airlab has extensive possibilities for signaling and communications. Every microphone channel has its own signaling and talk back circuitry and all outputs can also be connected to the talk back circuitry.

The announcer/technician/producer/director can communicate with the announcer booth, guests, monitoring system, all connected Telco modules and auxiliaries, either individually or in any combination. A very intelligent CUE system connects every activated CUE switch with each other to create a transparent and intuitive communication system. It will be explained in detail further in this manual.

Signaling
It is extremely important in broadcast to know whether a microphone channel is active.
Every channel has a red light signaling available on the remote connector.
The Airlab has two external connectors for ON-AIR (mic-on) signaling to control external relays activating high voltage ON-AIR lamps.

NEVER CONNECT 115-230 VOLT LAMPS DIRECTLY TO THE ON-AIR SIGNALING OUTPUTS IN THE MASTER SECTION!!

Broadcasting Options

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

There's a minimum of jumper settings, which can be set to suit your own needs. Most of the settings are under software control in the master section and can be stored to a chip card.
The Airlab 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 setup or a combination of several setups is possible.

More than one Broadcast Studio

There are numerous monitor facilities in the Airlab for external sources as well as internal sources. The control monitors (and meters) can be switched to follow the control room for separate (stereo) sources. These features mean that the Airlab is specially 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 Airlab is capable of being the main On-Air console due to the two main outputs it contains. These main outputs can be fully transformer balanced as an option.

Special Recording Outputs

The Airlab has a special Tape/Recording output on a 0dBu output level.

Double Stereo VU/Peak Metering

In order to achieve a good balance between spoken words and music, it's important to be able to read the recording level accurately. The Airlab has a standard 4 VU meters reading per pair the main output and the CUE output. A PPM version of the VU meter is available as an option.

SUMMARY

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

4   TRIPLE LINE INPUT STEREO MODULE

MONO
Every channel has a mono switch with LED to send a mono input signal to both outputs of the module.

>   (PHANTOM POWER, not on front panel.
>   48 volt switchable by a jumper setting (see also chapter 12))

MIC-TRIM
The trim control adds an extra 13dB of mic gain to the mic pre-amp. An optimal gain range can be accomplished in this way.

GAIN
The gain control adjusts the incoming signal level on the MIC and LINE input.

LINE A
The triple module default is in 'LINE A' mode. Operating the 'LINE B' switch or the MIC switch changes the mode.

LINE B
When line B is selected (with optional RIAA correction amp), the green LED is illuminated.

MIC
MIC input selector switch between MIC-input or Line-A/B input. When the LED is illuminated the MIC-input is activated.

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

MID
Adjusts mid frequencies with +/- 12 dB at 1 kHz bell.

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

SUB
The sub switch assigns the signal in stereo to the sub output.

PROG(RAM)
The program switch assigns the signal in stereo to the program output.

STEREO AUX
Transmits a stereo signal to the AUX master post fader. A jumper on the board determines whether this is pre or post VCA.
The channel 'ON' switch also affects the aux send (only when set to post fader).

PAN
Allows adjustment between the left and right channel outputs.

CUE/SELECT
Stereo pre-fade listening; allows pre-fade listening of the channel with the fader closed.
The CUE function will be automatically TURNED OFF when the channel becomes active.
The CUE switch also generates a start/stop pulse in the line-mode.
The CUE switch also acts as a SELECT switch for the programming of the modules functions.

ON
Channel on/off switch. The Airlab is capable of sending out a pulse by ON switch as well as by fader. This is software programmable. In any case the adjacent LED will lit when the ON switch is activated.

FADER
The linear fader controls a VCA that controls the module's overall level. Electronics sense when the fader is opened and generates (when programmed) the start for remotely connected devices.

4.1 SHORT OVERVIEW OF TRIPLE LINE MODULE FUNCTIONS

Microphone input:	Electronically balanced
Impedance:	2 kOhm
Level:	From -70 dBu microphone input to 0 dBu
Connectors:	XLR female, Pin 1 = ground. Pin 2 = in phase. Pin 3 = out of phase
48 Volt phantom:	Jumper enabled/disabled, (see chapter 12)
Mic High pass filter:	At 80 Hz internally set by a jumper, (see chapter 12)

REMOTE: *(Only when programmed)*
Remote control of the channels CUE and/or Cough/Communication
'Channel-on' light signaling. Connection by way of a stereo jack

Tip   =   Positive supply voltage, current limited at 6 mA when the channel is 'active
(fader up)'. A direct connection to a LED is possible between tip and sleeve.

Ring   =   When momentarily connected to ground, the channel will be muted and CUE
is activated creating a Cough/Communication function when the channel is in
the Mic mode. CUE can be normally activated when in LINE mode.

Sleeve =   ground.

A-Input and B-Input: The input impedance for both 'A' and 'B' are >10 kOhm, and the maximum
sensitivity ranges from -20 dBu to +20 dBu. The signal to noise ratio is -90 dBr
(R.I.A.A. = -70 dBr). Nominal level of the A input is +4dBu and for the B input
0dBu.

Connector is Jack: LINE A =   balanced wired to a female XLR connector Pin 2 is in phase,
Pin3 is out of phase and pin1 is ground
LINE B =   unbalanced on Cinch connectors.

*NOTE: By adding an optional plug-in stereo R.I.A.A. pre-amp, the B input is able to accept M.D.
phono pick-ups. See (see chapter 12)!*

START: Stereo jack plug
Tip = Center contact
Ring = Normally open
Sleeve = Normally close
Maximum voltage/current that can be handled=24 volt at 50mA

NOTE: Polarity is not important with reed relays!

DO NOT CONNECT 115/230VOLT AC TO THIS CONNECTOR!!!

Pulse or Continuous Signal: Software programmable between active or not and between pulse or
continue

Mono Microphone input

The front end of this module is designed to amplify balanced microphone signals. A +48 Volt phantom power supply is available for condenser microphones. The Airlab has the ultimate in mic amplification with a wide dynamic range and extremely low noise.
The microphone input is electronically balanced and protected against R.F. interference.
Input impedance is 2 kOhm. This is high enough to accept all modern microphones.
The Gain control can vary the input levels with a range of 40dB in one turn.
The signal to noise ratio is -127.0 dBr and is therefore well suited to low noise applications.

Phantom Powering

This +48 Volt power is required for condenser microphones and can be applied to the microphone inputs via a jumper setting on the PCB. (See also chapter 12)

When the phantom power is applied and the channel is active, a 'click' can be heard when a microphone is plugged in. This is due to a D.C. component on the input, which is suddenly interrupted and amplified by +/- 70 dB. It's therefore important **NOT** to do this with channel faders up and channel ON. It's even better to switch of the console entirely before connecting or disconnecting any kind of equipment.

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

High-Pass Filter on MIC

The high-pass filter attenuates the low frequencies below 80 Hz and can be switched on or off by jumper settings (see also chapter 12). It is only active on MIC inputs.

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

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.

A. COUGH / REMOTE / SIGNALING IN MIC MODE

This useful feature has two important functions:
1. Cough/Communication,
2. 'MIC-on' (CUE on)
Both functions are software programmable.

1. Cough/Communication

(A push-button needs to be connected to the ring and sleeve of the remote jack plug.)
Using the push-button during broadcast, the announcer can temporarily mute the microphone in order to cough (where the name comes from). 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. Cough works on every programmed mic input.

2. 'MIC-on'

When the channel is active a voltage is applied between Tip (+) and Sleeve (0V), which can be used to activate a LED (red) or an opto-coupler.
In addition to the localized 'mic-on' signaling, there's also a master signal in the master section. The ON-AIR signaling outputs 1 and 2 offer the option of driving external red light indicators in the studio by way of external high voltage relays.

B. REMOTE/SIGNALLING IN LINE MODE

In this mode CUE can be switched on/off via a remote external push-button.
When the channel is active a voltage is applied between Tip (+) and Sleeve (0V), which can be used to activate a LED (red) or an opto-coupler.

Alignment of the MIC input

With the fader in the 'down' position, and the CUE activated, the input signal is adjusted with the gain control until the 0 dB position in the master VU meter is reached. When the fader is in its 0 dB position, the signal has a nominal level in the Airlab. This way of alignment will give enough headroom to compensate for signal losses of up to 10 dB, whilst the noise floor remains well below the nominal level.

Airlab Line input module

This part of the triple input module is specially designed to accept balanced and unbalanced stereo input signals. There are two stereo inputs; line A and line B. Both inputs can have fader start functions. By changing software settings this can be accomplished.

R.I.A.A.

As an option, a stereo phono pre-amp with R.I.A.A. filter curves can be plugged onto the motherboard, in order to accept Magnetic Dynamic Phono cartridges. The Line B input will be converted.

START/STOP FUNCTIONS CONFIGURED
The 'Start' is only active when this is activated in the software.

These remote connectors are activated by the fader and/or `ON' switch in the channel module. The start jack connectors are electronically separated by use of encapsulated reed relays.

Reed relays are ideal devices for eliminating ground loops and limited life span effects of other switches and can easily be interfaced with all modern equipment.

The start connectors are connected to separate reed relays.
The maximum VOLTAGE/CURRENT is 24v/50mA. (Polarity is not important with reed relays!)

NOTE 1:   ***Nearly all of the modern devices require pulse information. Continuous signals however, can have the advantage that during broadcast a CD player 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. The cart has to finish its tape to the end and then automatically rewinds.***
NOTE 3:   ***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.***

MIC/LINE GAIN
The Gain control (only active when the line input is selected) adjusts the gain of the stereo channel pre-amps, within a range of -20 dB to +20 dB for the line level and +/-40 dB for the Mic level. The range of the fader (VCA) gives an additional 10 dB of gain when needed.

Alignment of the LINE input of a channel
To align the line input of a channel close the fader and activate the cue switch. The gain control is used to adjust the level of the incoming signal until a 0 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 reset, and its associated LED will switch off.

Equalizer
The equalizer is optimized for broadcast. Center detents on all equalizer controls indicate their flat position.
(On special demand we could manufacture modules without an EQ section)
The maximum lift and cut is 12 dB at the following frequencies:

10 kHz:	Shelve
1 kHz:	Bell
60 Hz:	Bell

SUB
The Sub switch switches the stereo modules output to a separate SUB mix amp located in the master section of the console.
This setup makes production work possible during ON-AIR broadcast due to extremely good cross talk figures achieved in the Airlab console by careful usage of high-end CAD design systems in the initial design stage of the console.

PROGRAM
The Program switch switches the stereo modules output to the main mix amps located in the master section of the console.

Auxiliary
The stereo auxiliary send is post fader, bringing the signal to the master stereo auxiliary send. When the input module is used for microphone signals only both left and right signal paths are fed by the same mono mic input signal. The channels `ON' switch will also switch the Auxiliary send on or off when its jumper is set to post fader.

PAN
The PAN enables adjustment between the left and right signals. The range is not restricted in order to enable to position any incoming signal anywhere in the stereo image.

CUE
This is an automatic pre-fade-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; the red cue LED indicator will illuminate.
When the channel is active, the CUE system will be reset, including its associated LED, however it's possible to re-activate the CUE switch.
Channel Cueing on DJ channels will only be heard in the headphone outputs. The CRM output will be muted.
The CUE switch can also generate a start pulse for remotely connected machines by software programming.

The CUE signal can be heard in two ways:
1.	Through the stereo Control Room Monitors by activating the "CUE to CRM" function switch in the master section. If the cue is activated in one of the channels, the CRM and meters will be activated without interruption of the main output.
2.	By way of an externally connected cue amplifier with loudspeaker.

ON

The channel on/off switch operates in tandem with the fader.

There are two methods of activating the channel:

A. Press the `ON' switch (Green LED is on). Then by moving up the fader, the signal is sent to the master and at the same time a mic-on/channel on indication is sent to the remote connector.

B. When the 'ON' switch is 'OFF', no LED is illuminated. As the fader is moved upwards, the channel is put into 'stand-by'.
At this point there is no "mic-on/channel on" signaling or audio to the master. Pressing the 'ON' switch activates the channel and the green LED is on.

In order to switch the channel and mic-on signaling off, the 'ON' switch should be deactivated, or the fader closed.

Fader

The fader is an ultra smooth 100mm model controlling the internal high quality VCA's and sending on/off information to the logic circuitry. There is no audio going through the faders, which guarantees noise free fading forever! 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 cross talk from announcers.

5 TRIPLE DIG INPUT MODULE

MONO
Every channel has a mono switch with LED to send a mono input signal to both outputs of the module.
(PHANTOM POWER, not on the front panel. But 48 volt switch able by a jumper setting (see also chapter 12))

MIC-TRIM
The trim control adds an extra 13dB of mic gain to the mic pre-amp. An optimum gain range can be accomplished in this way.

GAIN
The gain control adjusts the incoming signal level on the MIC and DIG-LINE inputs.

LINE A
The triple-dig module default is in 'LINE A' mode (AES3). If no AES3 signal is connected or the AES3 signal can't be read, the LED will be red-flashing. Operating the 'DIG-LINE B' switch or the MIC switch changes its mode.

LINE B
When 'LINE B' is selected (S/P-dif) the green LED is illuminated. If no S/P-dif signal is connected or the S/P-dif signal can't be read, the LED will be red-flashing.

MIC
MIC input selector switch between MIC-input or Line-A/B input. When the LED is illuminated the MIC-input is activated.

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

MID
Adjusts mid frequencies with +/- 12 dB at 1 kHz bell.

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

SUB
The sub switch assigns the signal in stereo to the sub output.

PROG(RAM)
The program switch assigns the signal in stereo to the program output.

STEREO AUX
Transmits a stereo signal to the AUX master post fader. A jumper on the board determines whether this is pre or post VCA.
The channel 'ON' switch also affects the aux send (only when set to post fader).

PAN
Allows adjustment between the left and right channel outputs.

CUE/SELECT
Stereo pre-fade listening; allows pre-fade listening of the channel with the fader closed.
The CUE function will be automatically TURNED OFF when the channel becomes active.
The CUE switch also generates a start/stop pulse in the line-mode.
The CUE switch also acts as a SELECT switch for the programming of the modules functions.

ON
Channel on/off switch. The Airlab is capable of sending out a pulse by ON switch as well as by fader. This is software programmable. In any case the adjacent LED will lit when the ON switch is activated.

FADER
The linear fader controls a VCA that controls the module's overall level. Electronics sense when the fader is opened and generates (when programmed) the start for remotely connected devices.

Digital Output
The Digital output is the PROG-bus or the SUB-bus by Jumper selectable. The output level (digital headroom) can be trimmed by the internal level trimmers (see also chapter 12).
The audio signal on the AES3-out and S/P-dif-out are the same.

5.1 SHORT OVERVIEW OF TRIPLE DIG INPUT FUNCTIONS

Microphone input: Electronically balanced
Impedance: 2 kOhm
Level: From -70 dBu microphone input to 0 dBu
Connectors: XLR female, Pin 1 = ground. Pin 2 = in phase. Pin 3 = out of phase
48 Volt phantom: Jumper enabled/disabled, (see chapter 12)
Mic High pass filter: At 80 Hz internally set by a jumper, (see chapter 12)

REMOTE: *(Only when programmed)*
                       Remote control of the channels CUE and/or Cough/Communication
                       'Channel-on' light signaling. Connection by way of a stereo jack

     Tip =   Positive supply voltage, current limited at 6 mA when the channel is 'active
                       (fader up)'. A direct connection to a LED is possible between tip and sleeve.
     Ring =   When momentarily connected to ground, the channel will be muted and CUE
                       is activated creating a Cough/Communication function when the channel is in
                       the Mic mode. CUE can be normally activated when in LINE mode.
     Sleeve =   ground.

Dig. A-Input: transformer balanced 110ohm AES3 input on XLR
                       Data: 24bit, 32..96kHz. Dynamic Range, S/N: 100dB
                       Input level: -9dBFS = 0dBU preGain (gain +/-20dB)

Dig. B-Input: unbalanced 75ohm S/P-dif input on Cinch (black).
                       Data: 24bit, 32..96kHz. Dynamic Range, S/N: 100dB
                       Input level: -9dBFS = 0dBU preGain (gain +/-20dB)

Digital output: AES3: transformer balanced 110ohm on XLR
                       S/P-dif: 75ohm, unbalanced on Cinch (red).
                       Data: 24bit, 32..96kHz. Dynamic Range, S/N: 100dB
                       The digital output frame clock (sample rate) can be setup in two different ways
                       by internal jumper setting (see also chapter 12).
                       1. Fixed. Output Frame Clock (sample rate) is always 44.1kHz
                       2. PLL. Output Frame Clock (sample rate) is identical to the clock signal of
                           the digital input.
                       Jumper selectable SUB or PROG output.
                       Output level: adjustable (normal 0dBu = -9dBFS)

Connector is Jack: LINE A = AES3 balanced wired to a female XLR connector
                               Pin 2 is in phase, Pin3 is out of phase and pin1 is ground
                       LINE B = S/P-dif unbalanced on Cinch connectors.

START: Stereo jack plug
                       Tip = Center contact
                       Ring = Normally open
                       Sleeve = Normally close
                       Maximum voltage/current that can be handled=24 volt at 50mA

NOTE: Polarity is not important with reed relays!

DO NOT CONNECT 115/230VOLT AC TO THIS CONNECTOR!!!

<u>Pulse or Continuous Signal:</u>   Software programmable between active or not and between pulse or
                       continue

Mono Microphone input

The front end of this module is designed to amplify balanced microphone signals. A +48 Volt phantom power supply is available for condenser microphones. The Airlab has the ultimate in mic amplification with a wide dynamic range and extremely low noise.
The microphone input is electronically balanced and protected against R.F. interference.
Input impedance is 2 kOhm. This is high enough to accept all modern microphones.
The Gain control can vary the input levels with a range of 40dB in one turn.
The signal to noise ratio is -127.0 dBr and is therefore well suited to low noise applications.

Phantom Powering

This +48 Volt power is required for condenser microphones and can be applied to the microphone inputs via a jumper setting on the PCB. (See also chapter 12)

When the phantom power is applied and the channel is active, a 'click' can be heard when a microphone is plugged in. This is due to a D.C. component on the input, which is suddenly interrupted and amplified by +/- 70 dB. It's therefore important **NOT** to do this with channel faders up and channel ON. It's even better to switch of the console entirely before connecting or disconnecting any kind of equipment.

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

High-Pass Filter on MIC

The high-pass filter attenuates the low frequencies below 80 Hz and can be switched on or off by jumper settings (see also chapter 12). It is only active on MIC inputs.

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

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.

A. COUGH / REMOTE / SIGNALING IN MIC MODE

This useful feature has two important functions:
1. Cough/Communication,
2. 'MIC-on' (CUE on)
Both functions are software programmable.

1. Cough/Communication

(A push-button needs to be connected to the ring and sleeve of the remote jack plug.)
Using the push-button during broadcast, the announcer can temporarily mute the microphone in order to cough (where the name comes from). 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. Cough works on every programmed mic input.

2. 'MIC-on'

When the channel is active a voltage is applied between Tip (+) and Sleeve (0V), which can be used to activate a LED (red) or an opto-coupler.
In addition to the localized 'mic-on' signaling, there's also a master signal in the master section. The ON-AIR signaling outputs 1 and 2 offer the option of driving external red light indicators in the studio by way of external high voltage relays.

B. REMOTE/SIGNALLING IN LINE MODE

In this mode CUE can be switched on/off via a remote external push-button.
When the channel is active a voltage is applied between Tip (+) and Sleeve (0V), which can be used to activate a LED (red) or an opto-coupler.

Alignment of the MIC input

With the fader in the 'down' position, and the CUE activated, the input signal is adjusted with the gain control until the 0 dB position in the master VU meter is reached. When the fader is in its 0 dB position, the signal has a nominal level in the Airlab. This way of alignment will give enough headroom to compensate for signal losses of up to 10 dB, whilst the noise floor remains well below the nominal level.

Airlab Dig Line input module

This part of the triple input module is specially designed to accept balanced (AES3) and unbalanced (S/P-dif) digital input signals. There are two digital inputs; line A (AES3) and line B (S/P-dif). Both inputs can have fader start functions. By changing software settings this can be accomplished.

START/STOP FUNCTIONS CONFIGURED
The 'Start' is only active when this is activated in the software.

These remote connectors are activated by the fader and/or `ON' switch in the channel module. The start jack connectors are electronically separated by use of encapsulated reed relays.

Reed relays are ideal devices for eliminating ground loops and limited life span effects of other switches and can easily be interfaced with all modern equipment.

The start connectors are connected to separate reed relays.
The maximum VOLTAGE/CURRENT is 24v/50mA. (Polarity is not important with reed relays!)

NOTE 1:   *Nearly all of the modern devices require pulse information. Continuous signals however, can have the advantage that during broadcast a CD player 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. The cart has to finish its tape to the end and then automatically rewinds.*
NOTE 3:   *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.*

MIC/LINE GAIN
The Gain control (only active when the line input is selected) adjusts the gain of the stereo channel pre-amps, within a range of -20 dB to +20 dB for the line level and +/-40 dB for the Mic level. The range of the fader (VCA) gives an additional 10 dB of gain when needed.

Alignment of the LINE input of a channel
To align the digital-line input of a channel close the fader and activate the cue switch. The gain control is used to adjust the level of the incoming signal until a 0 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 reset, and its associated LED will switch off.

Equalizer
The equalizer is optimized for broadcast. Center detents on all equalizer controls indicate their flat position.
(On special demand we could manufacture modules without an EQ section)
The maximum lift and cut is 12 dB at the following frequencies:

10 kHz:	Shelve
1 kHz:	Bell
60 Hz:	Bell

SUB
The Sub switch switches the stereo modules output to a separate SUB mix amp located in the master section of the console.
This setup makes production work possible during ON-AIR broadcast due to extremely good cross talk figures achieved in the Airlab console by careful usage of high-end CAD design systems in the initial design stage of the console.

PROGRAM
The Program switch switches the stereo modules output to the main mix amps located in the master section of the console.

Auxiliary
The stereo auxiliary send is post fader, bringing the signal to the master stereo auxiliary send. When the input module is used for microphone signals only both left and right signal paths are fed by the same mono mic input signal. The channels `ON' switch will also switch the Auxiliary send on or off when its jumper is set to post fader.

PAN
The PAN enables adjustment between the left and right signals. The range is not restricted in order to enable to position any incoming signal anywhere in the stereo image.

CUE
This is an automatic pre-fade-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; the red cue LED indicator will illuminate.
When the channel is active, the CUE system will be reset, including its associated LED, however it's possible to re-activate the CUE switch.
Channel Cueing on DJ channels will only be heard in the headphone outputs. The CRM output will be muted.
The CUE switch can also generate a start pulse for remotely connected machines by software programming.

The CUE signal can be heard in two ways:
1.   Through the stereo Control Room Monitors by activating the "CUE to CRM" function switch in the master section. If the cue is activated in one of the channels, the CRM and meters will be activated without interruption of the main output.
2.   By way of an externally connected cue amplifier with loudspeaker.

ON
The channel on/off switch operates in tandem with the fader.

There are two methods of activating the channel:

A. Press the `ON' switch (Green LED is on). Then by moving up the fader, the signal is sent to the master and at the same time a mic-on/channel on indication is sent to the remote connector.

B. When the 'ON' switch is 'OFF', no LED is illuminated. As the fader is moved upwards, the channel is put into 'stand-by'.
At this point there is no "mic-on/channel on" signaling or audio to the master. Pressing the 'ON' switch activates the channel and the green LED is on.

In order to switch the channel and mic-on signaling off, the 'ON' switch should be deactivated, or the fader closed.

Fader
The fader is an ultra smooth 100mm model controlling the internal high quality VCA's and sending on/off information to the logic circuitry. There is no audio going through the faders, which guarantees noise free fading forever! 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 cross talk from announcers.

Digital Output:
The Airlab Triple digital input has 2 digital outputs. AES3 on the XLR and S/P-dif on de black cinch.
Dependent on the jumper setting the output is giving the stereo PROG signal or the stereo SUB-signal.
Normal the output level is -9dBFS but the level (headroom) can be adjusted (see also chapter 12).
The digital output frame clock (sample rate) can be setup in two different ways by internal jumper setting.

1: PLL. Output Frame Clock (sample rate) is identical to the clock signal of the digital input (Select by the 'Line B' switch, 32..96 kHz). If the digital-input is not in lock (no input signal or a wrong signal) the Output Frame Clock will jump back to 44.1kHz.
2: Fixed. Output Frame Clock (sample rate) is always 44.1kHz

Be wary: In the 'PLL' mode the digital output signal will shortly be muted if you change de digital input selection ('Line B' switch) or if the digital input lose lock.
So for a Digital Main output the 'Fixed' setting is recommended. At connecting for instance a DAT or MD player/recorder, the 'PLL' setting can be used.

In PLL mode:
In the 'PLL' mode the digital output sample-rate is in sync with the digital input.
If no digital input signal is connected or selected (Line-B LED will be RED-flashing) the output frame clock will be 44.1kHz.
If a digital input signal is connected and selected the Line-B LED well be GREAN (Line B select) or off (Line A select). The output frame clock well be equal to the digital input frame clock.

In Fixed mode:
The digital output frame clock will be fixed at 44.1kHz.

6   TELCO MODULE
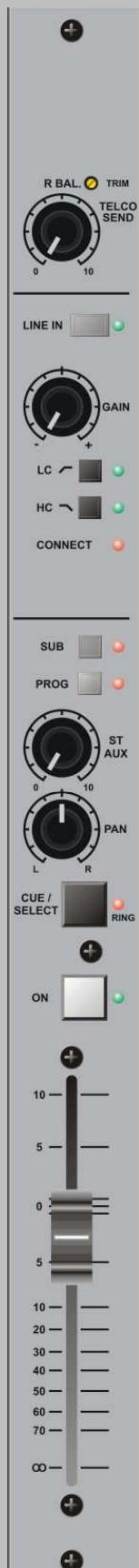
TRIM
The trim control adjusts the optimum side-tone suppression (R-balance). The trim needs to be re-adjusted with every new installation.

TELCO SEND
This gain control adjusts outgoing levels coming from the main output or the SUB output.

LINE
The Line input switches the modules input from the internal hybrid to a female XLR on the connector panel to eventually accept an external (digital) hybrid.

GAIN
This control adjusts incoming call levels.

LC/HC
Fixed low and high frequency roll off.

CONNECT
Indicates that the internal hybrid is active.

SUB
Assigns input signal to separate SUB master.

PROG(RAM)
Assigns input signal to main master busses.

ST(ereo) AUX
Transmit a signal to the aux. master pre or post fader. The channel ON switch also affects the aux send.

PAN
Allows adjustment between the left and right channel outputs.

CUE
Pre-fade listening. Allows pre-fade listening of the input signal and allows communication such as taking an incoming call with the fader closed. The CUE LED is also a ring indicator for incoming calls. When this LED flashes the "call" can be taken by pushing the CUE switch.

ON
Channel on/off switch. While in closed fader stand-by mode, i.e. when green LED is off incoming calls can be connected by pressing the "ON" switch.

FADER
Channel VCA volume-control adjusts overall channel level.

Airlab TELCO input module

This input module is specially designed to accept a telephone line. An internal telephone hybrid circuit simplifies connection of telephone lines and phone appliances.

There is a LINE input to accept external hybrids, a WALL connector for connecting to the telephone line and a "TO PHONE" output that connects to the phone device.

Jumpers

Aux send pre/post and C balance are jumper enabled/disabled. All other functions are software programmable.

TELCO SEND

The Telco send controls the outgoing signal to the caller. This can be either the MIX and/or Sub output dependent upon the SUB/PROG switch settings in the Telco module. This switch not only controls the assignment of the incoming signal to the masters but also which signal is sent to the caller.

GAIN

The Gain control adjusts the gain of the incoming phone call within a range of -20 dBu to +20 dBu. The range of the fader (VCA) gives an additional 10 dB of gain when needed.

LC (Low Cut)

The high pass filter smoothly filters out all frequencies below the pass band of the telephone line.

HC (High Cut)

The low pass filter effectively filters out all above telephone line frequencies.

CONNECT

This LED indicates the internal Hybrid being active.

SUB

The SUB switch switches the Telco modules output to the SUB mix amps located in the master section of the console.

PROGRAM

The PROGRAM switch switches the stereo modules output to the main mix amps located in the master section of the console.

Auxiliary

The stereo auxiliary sends a post fader signal, dependent upon the 'ON' switch of the input channel, to the master auxiliary busses. The PAN control creates a stereo image in the Aux masters. This setup makes production work possible during ON-AIR broadcast.

PAN
The PAN enables positioning of the incoming caller signal. The range is not restricted in order to enable to position any incoming signal anywhere in the stereo image.

CUE/SELECT/RING
Automatic pre-fade listening/post pan, or cue, allows a caller to be heard without being in the broadcast. When activating the cue switch, the caller is connected to the CUE bus and listens to the talk back MIC of the engineer (fader closed).
The CUE switch shows an incoming call by a flashing CUE LED. Hitting the CUE switch makes a connection as described above. A remote switch can pick up a call by wiring the remote connector of the Telco module.

The 'ON' switch works in conjunction with the fader switch.
If the green LED is on, the channel is 'active'.

There are two methods of activating an incoming call:

A.   If the 'ON' switch is pressed, the green ON LED and the "CONNECT"   LED will illuminate and the caller is connected to the Telco module but not yet heard in the broadcast because the fader is still down.
By opening the fader, the Telco module will be activated and the signal will enter the program. When the fader is closed again the program signal will be muted, when the fader is at its lowest position.

B.   When the `ON' switch is not pressed, no LED is illuminated even if the fader is now opened. In this situation, none of the signals are active but as soon as the ON switch is activated (with a flashing CUE/RING switch) the caller will be "On-AIR".
All switching is carried out electronically and free of noise for years to come.

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

NOTE: In the Telco module it is not possible to "Cue" when the channel is up and the module is ON.

FADER
The Airlab is fitted with a modern ultra-smooth linear fader controlling a high quality VCA and the Airlab internal logic circuitry. This system eliminates any noise from disturbing the audio signal path. When the fader is closed, the signal will be automatically muted, which provides excellent fader attenuation in excess of 100dB.

6.1   COMMUNICATION WITH TELCO MODULE

ENGINEER TO/FROM TELCO
Communication with the engineer is easily accomplished by activating the CUE switch in the Telco module. An open communication is achieved now between caller and engineer.

ANNOUNCER TO/FROM TELCO
The CUE switch on the Telco module has to be activated. The moment the Announcer hits his cough switch communication takes place between announcer and caller (Telco module).
There are several software programmable functions available here. In chapter 14 you can find detailed information about the programmable options of the Airlab.

ALIGNMENT OF THE CHANNEL
With the fader closed (or muted channel) the CUE switch will be activated; the CUE to CRM function in the master section must be activated. The gain control is used to adjust the level of the incoming signal until a 0 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 reset (turned off), and its associated LED will be switched off.

The CUE signal can be heard in two ways:

1. Through the stereo Control Room Monitors by activating the CUE to CRM function in the master section. If the CUE is activated in one of the channels, the CRM and meters will be activated without interruption of the main output.
2. By way of an externally connected CUE amplifier with loudspeaker.

7   MODULE CONNECTORS

MIC Input / From Hybrid
Connector type is female XLR: Pin1 = ground
                               Pin2 = in phase
                               Pin3 = out of phase

LINE A LEFT / DIG-IN (AES3) / WALL
Connector type is female XLR: Pin1 = ground / ground
                               Pin2 = in phase / A (wire)
                               Pin3 = out of phase / B (wire)

LINE A RIGHT / DIG-OUT (AES3) / TO PHONE (this XLR is a Male for digital)
Connector type is (fe)male XLR:Pin1 = ground/ground
                               Pin2 = in phase / phone line A-wire
                               Pin3 = out of phase / phone line B wire

The input impedance for 'Phone' is optimized for correct loading of modern telephone stations.

LINE B INPUT / DIG-B IN/OUT (S/P-dif) / TELCO OUTPUT
Connectors are Cinch: Cinch A= left in / DIG-OUT / Telco out, in phase (+)
                       Cinch B= right in / DIG-IN / Telco out, out of phase (-)

REMOTE
The remote connector lets you activate the CUE of the module / Telco module when the module is in its "off" or "standby" mode.
An ON LED can be connected to the remote to indicate the "ON" status of the Telco module. The same LED indicates incoming calls by flashing.

REMOTE - Input
Connector type is jack: Tip   =   Channel "ON" LED
                               Ring   =   CUE control
                               Sleeve =   Ground

START
Connector type is jack: REED RELAY MAX VOLTAGE 24VOLT/50mA
                               Tip   =   Center contact
                               Ring   =   Normally open
                               Sleeve =   Normally closed

MIC INSERT
Connector type is jack: Tip   =   Channel SEND
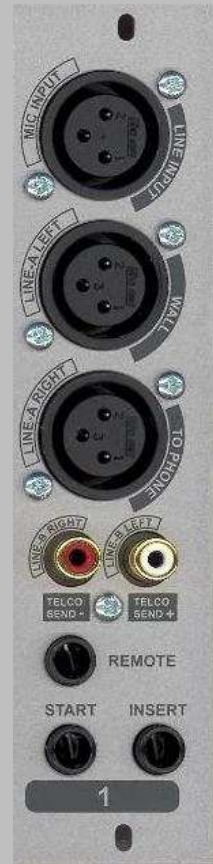   Ring   =   Channel RETURN
                               Sleeve =   Ground

Figure 1: The connections on a module

8 MASTER SECTION

TAPE SEND

This section of the master houses the switches and controlling what's going to the tape outputs.
A selection can be made between three outputs of the Airlab. With all switches up the main program signal is recorded. As soon as one of the other switches is pressed, the corresponding FROM SUB or FROM AUX. output signals are recorded.

NOTE: With this circuitry it is possible to record stereo sources from the channels assigned to the sub buss during broadcast.

AUX OUT STEREO
This is a stereo output of the AUX masters. The level is +6dBu.

The corresponding talk back switch sends the talk back signal to both outputs.

Figure 2: The Master Section

NOTE: Overall level of Aux.
outputs also affects the talk back level for these outputs only.

CRM
The CRM is normally following the Program output unless one of the input bank switches is active.

EXT(ERN)
This stereo input can be used for any stereo source that needs to be monitored in the CRM outputs. The input level is set to be 0dBu.

AUX
This input source switch lets you listen to the stereo Aux. outputs.

(FROM) AIR
This is the input select for the CRM/phones output. Either the program mix is heard in the CRM/phones or the 'from air' signal.

(FROM) SUB

This is a stereo switch bringing the Sub output into the CRM/phones output. It will override the 'from air' and other selected sources when selected.

CUE BALANCE

The CUE balance pot continuously adjusts the balance between the stereo CUE signal and the stereo input selection made with the switches described above.

(AUTO)CUE

This LED indicates that both CRM outputs are automatically connected to a selected CUE switch in stereo. When this LED is not active the CRM will monitor the main program outputs. The CUE signal will always be present at the CUE output jack when programmed.

PHONES LEVEL

This controls the overall level of the stereo headphones output.

A headphone socket is conveniently placed just beneath the armrest.

CRM

The control room monitor controls the outgoing level to the control room monitors. The level is +6dBu on a cinch connector. A mute LED indicates when the CRM is muted. This is the case when the Airlab is used as "self op" mixer. The DJ channel forces the CRM to mute when the Microphone is active in the control room itself. This is software configurable.

TALKBACK

This section houses most of the controls needed to communicate with every connected source to the Airlab. Communication is one of the most important parts of a broadcast, inside and outside the console. We have done a great deal of thought concerning this part of the console.

The talk back microphone is a built in Electret microphone with its associated level control. The mic-amp is protected against clipping.

The talk back switches are momentary so leaving talk back mics open is a thing of the past. The talk back mic can be assigned to several outputs at the same time when more than one switch is activated. The Studio, Guest and Announcer outputs are driven post their volume controls, so communication is always possible. Talk back to the SUB output is possible with the talk back switch positioned in the SUB section of the master.

STUDIO

In the Studio area are three monitor systems, which can be used as needed in your studio situation.

The studio output will give a stereo signal fed from the "PROGRAM" signal or from one of the selected other input sources, such as (from)AIR, (from)SUB or the CRM. The associated MUTE LED indicates that a microphone is opened in the Studio area avoiding feedback. The programming of this function is under software control.

The Studio Talkback switch instantly injects the talk back signal from the internal Electret microphone into the studio output independent of the studio level settings.

The studio output can be used as an overall output to monitor what's going on during broadcast in the studio room itself.

The studio output is wired to a stereo cinch connector.

GUEST

The GUEST output is stereo and follows the program signal unless the input selection of "from AIR", "from SUB" or "From CRM" is activated. A separate stereo headphone output is provided for a guest and the talk back is always addressed to both earphones independent of level settings. The program material will be dimmed when the talk back is activated. The output is identical to that of the announcer and could therefore be used as a second announcer's output.

The Guest Talkback switch instantly injects the talk back signal from the internal Electret microphone into the GUEST output independent of studio level settings.

ANNOUNCER

The ANNOUNCER output is stereo and follows the program signal unless the input selection "From air", "From sub" or "From CRM" is activated. A separate stereo jack socket is provided for the announcer and the talk back is always addressed to both earphones independent of level settings.

The Announcer Talkback switch instantly injects the talk back signal from the internal Electret microphone into the Announcer output independent of studio level settings.

COM

A COM(munication) LED is placed nearby the Announcer control to indicate that the talk back is activated. This is accomplished by pressing the Cough switch on the SiCo remote box, when installed.

9   TIMER AND SYSTEM-SETUP

This part of the Airlab is actually the most interesting part.

In this section decisions are made and stored on memory cards for later retrieval.

There are two important systems active here.

1.   Programming of your Airlab   configuration.
2.   Internal TIMER.

The following functions can be programmed per module:

- Module set as DJ mic input
- Module set as Announcer mic input
- Module set as Studio mic input
- Start/Stop plus Pulse/Continue per module
- CUE start active
- Fader start or/and "ON" start per module
- External remote (in)active per module
- Timer start pulse per module and per item
- On-Air control signal on/off per module and per item
- Auto Communication Announcer on/off
- Auto CUE reset on/off
- Auto CUE on/off

The exact programming will be dealt with in a separate chapter.

9.1 CUE RESET

Pressing this large switch resets all activated CUEs in all channels.

9.2 AIRLAB METERING

The Airlab is shipped with 4 VU meters. The 2 meters on the left always follow the main program material and the 2 meters on the right side of the meter hood follow the CRM selectors.

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

Music:	up to 0 dB
Speech:	up to +3 dB
Telephone:	up to +3 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 materials.

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

The levels of the Digital Outputs depend on the internal level trimmers on the Airlab Dig Module.
A factory default is set to: 0dBu = -9dBFF.

10 BACK PANEL CONNECTORS

The connector back panel of the master section has all the in/outputs to interface with external equipment and a PC.

SPARE 1 - 4
We have integrated 4 openings, which fit spare XLR connectors for "do it yourself" purposes. An activity extremely loved by in-house technicians.
Below these spare openings are the power on/off switch, a power inlet and the ground connector of the console to be used as central star ground point for the studio.
The other two sections are described on the next page.

Figure 3: The connections on the Master Section

===
The mains input is set for 230 volt 50/60 Hz.
The Airlab can be set to 115 volt only by qualified technicians
===

EXTERN IN/AIR IN
The next section shows the left and right input Cinch connectors for the EXTERNAL and AIR in signals.
FROM AIR is the stereo input for controlling the off air signal coming from a receiver. Input sensitivity is either 0 dBu.

GUEST/ANNOUNCER
The next connectors on the right are the stereo GUEST and ANNOUNCER headphone outputs on stereo jack sockets.

ON AIR 1/2
On the left side of these jacks are the ON-AIR 1 and ON-AIR 2 jacks.
The ON-AIR signaling jacks are connected to reed relays driven by the logic of the input channels as described in the channel sections of this manual.

When using the channel in the DJ mode it is possible to operate and be an ANNOUNCER at the same time.

If the DJ mic is ON or CUE'd, the CRM is automatically muted.

Modules can be connected via programming to the centralized ON-AIR signaling connector. We advise you to use an externally connected solid-state relay. A suitable model is the

S 201-8 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 ON-AIR 1/2 output can be connected directly to the S 201-8 04 relay in series with an external 12-volt DC power supply.

Connector:	Tip	=	Center contact (maximum 24V/50mA)
	Ring	=	Normally open
	Sleeve	=	Normally closed

NOTE:
These signaling outputs are only to be used for low voltage applications!
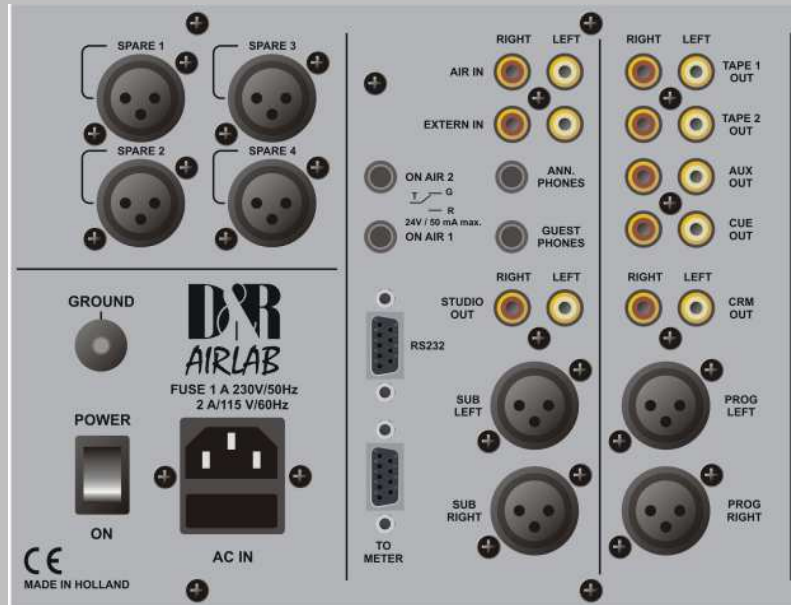
STUDIO
The two Cinch connectors are the unbalanced Studio outputs. The level is +6 dBu at 47 Ohm.

SUB OUTPUTS
These outputs are electronically balanced and wired to male XLR outputs.
Output level is +6 dBu at 47 Ohm. (Transformers are optional)

RS232
This computer type connector is the interface between the Airlab and a PC. Through this connector and the delivered software it is possible to program the Airlab on your PC.
Chapter 14 will give you detailed information about this programming.

TO METER
This SubD9 connector provides power and signal to all 4 meters.

MORE OUTPUTS
In this section of the master back panel you find the following output connectors.
Tape-1 out stereo, Tape-2 out stereo, AUX. out stereo, CUE out stereo, CRM out stereo and PROGRAM left/right.

PROGRAM OUTPUTS
The Airlab contains two electronically balanced outputs that can be transformer balanced as an option. Both outputs shall have their own line output amps with high quality output transformers as an option. The output level is +6 dB at 600 Ohm when the meter reads 0 dB.

Connectors are XLR male: Pin 1 = ground
                                            Pin 2 = in phase
                                            Pin 3 = out of phase

If the Airlab is required to drive unbalanced equipment, Pins 1 and 3 must be shorted.

PHONES OUTPUT

The engineer's stereo headphone output shall also be used as DJ output.
NOTE: DO NOT use headphones with an impedance lower than 200 Ohm. 600 Ohm is preferable. The jack is positioned on your right hand side under the armrest.

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

11 AIRLAB MASTER BACK PANEL WIRING

EXTERN IN
Connector type is Cinch. Unbalanced, level = 0 dBu 10 kOhm

AIR IN
Connector type is Cinch. Unbalanced, level = 0 dBu 10 kOhm

GUEST OUT STEREO

Connector type:	Jack	Tip	=	Left
Level:	+20 dBu/330 Ohm	Ring	=	Right
		Sleeve	=	Ground

ANNOUNCER OUT STEREO

Connector type:	Jack	Tip	=	Left
Level:	+20 dBu/330 Ohm	Ring	=	Right
		Sleeve	=	Ground

ON AIR SIGNALING 1

Connector type:	Jack	REED RELAY MAX VOLTAGE 24 VOLT/50 mA		
		Tip	=	Center contact
		Ring	=	Normally open
		Sleeve	=	Normally closed

ON AIR SIGNALING 2

Connector type:	Jack	REED RELAY MAX VOLTAGE 24 VOLT/50 mA		
		Tip	=	Center contact
		Ring	=	Normally open
		Sleeve	=	Normally close

STUDIO OUT

Connector type:	Cinch, Unbalanced
Level:	+6dBu / 47 Ohm

SUB OUTPUTS

Connector type:	Male XLR	Pin1 = ground
Level:	+6dBu	Pin2 = in phase
		Pin3 = out of phase

RS 232
Connector type: SubD9 Male
                                   1 = CD (Doesn't need to be connected)*
                                   2 = TD
                                   3 = RD
                                   4 = DTR (Doesn't need to be connected)*
                                   5 = gnd
                                   6 = DSR (Doesn't need to be connected)*
                                   7 = RTS (Doesn't need to be connected)*
                                   8 = CTS (Doesn't need to be connected)*
                                   9 = NC
                                   * (Some PC's require connection instead)

METER
Connector type: SubD9 Female
                                   1 = CRM-right (feeds meter right)
                                   2 = ground
                                   3 = External CUE LED drive
                                   4 = ground
                                   5 = Program right signal
                                   6 = CRM left signal
                                   7 = +18 volt
                                   8 = -18 volt
                                   9 = Program left signal

TAPE 1 OUT STEREO
Connector type: Cinch
Level: 0 dBu/100 Ohm

TAPE 2 OUT STEREO
Connector type: Cinch
Level: 0 dBu/100 Ohm

AUX OUT STEREO
Connector type: Cinch
Level: +6 dBu/100 Ohm

CUE OUT STEREO
Connector type: Cinch
Level: +6 dBu/100 Ohm

CRM OUT STEREO
Connector type: Cinch
Level: +6 dBu/100 Ohm

PROGRAM OUTPUTS
Connector type: Male XLR   Pin 1 = ground
Level is: +6 dBu   Pin 2 = in phase
                                      Pin 3 = out of phase

PHONES OUT STEREO
Connector type: Jack   Tip   =   Left
Level: +20dBu/330 Ohm   Ring   =   Right
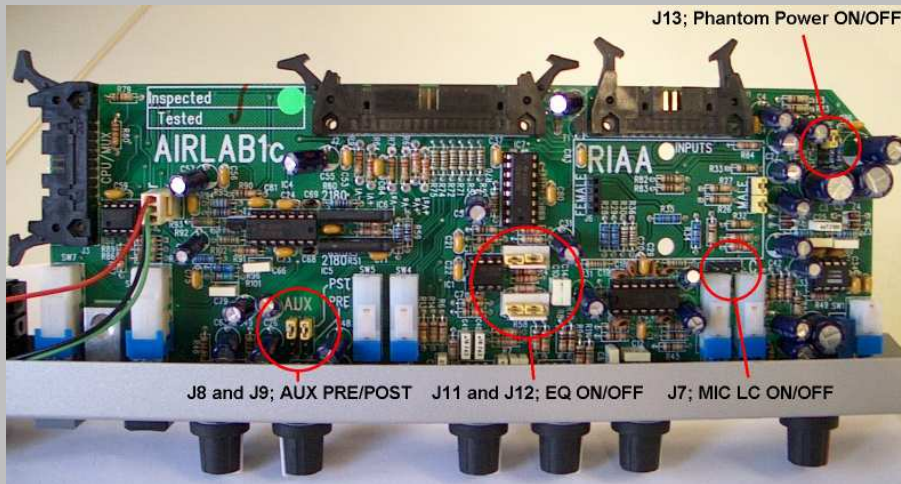   Sleeve =   Ground

12 AIRLAB JUMPER SETTINGS

12.1 TRIPLE INPUT MODULE

Figure 4: Airlab Triple Module Jumper Locations

Options	Jumpers	Settings	Settings	Default
AUX PRE/POST	J8 and J9	1 + 2 = POST	3 + 4 = PRE	POST
LC MIC only	J7	1+2 / 3+4 = ON	No Jumper = OFF	OFF
48 volt Phantom	J13	1 + 2 = OFF	3 + 4 = ON	OFF
EQ ON/OFF	J11 en J12	1+2 / 3+4 = ON	2+3 / 4+5 = OFF	ON

Table 1: Airlab Triple Module Jumper settings
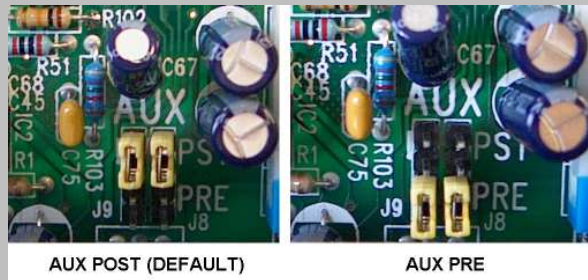
Figure 5: Triple Module AUX Jumper settings
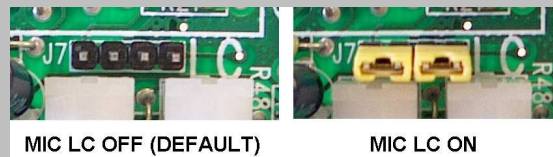
Figure 6: Triple Module MIC LC Jumpersettings
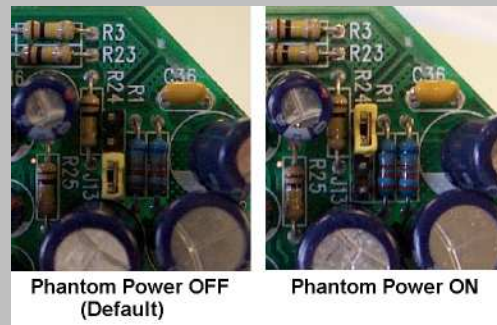
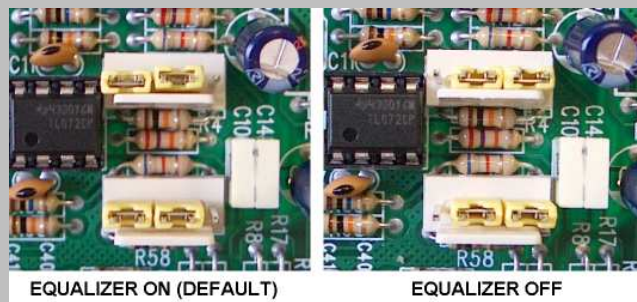**Figure 7: Triple Module Phantom Power Jumper settings**

Figure 8: Triple Module EQ Jumper settings

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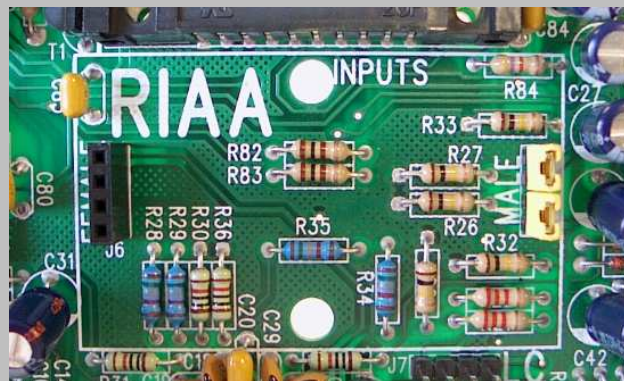

Figure 9: R.I.A.A connection on Triple module
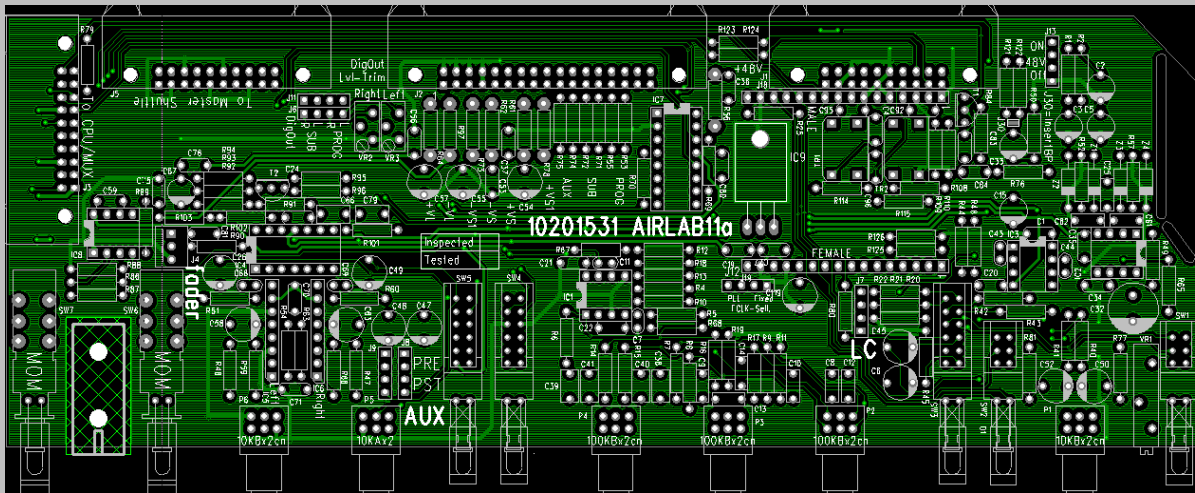
12.2 TRIPLE DIG INPUT MODULE

Figure 10: Airlab Triple Dig Module Jumper Locations

Options	Jumpers	Settings	Settings	Default
AUX PRE/POST	J8 and J9	1 + 2 = POST	3 + 4 = PRE	POST
LC MIC only	J7	1+2 / 3+4 = ON	No Jumper = OFF	OFF
48 volt Phantom	J13	1 + 2 = OFF	3 + 4 = ON	OFF
Dig-Output	J11 en J6	1+1 / 2+2 = SUB	3+3 / 4+4 = PROG	Prog
FCLK Select	J12	1 + 2 = Fixed	3 + 4 = PLL	Fixed

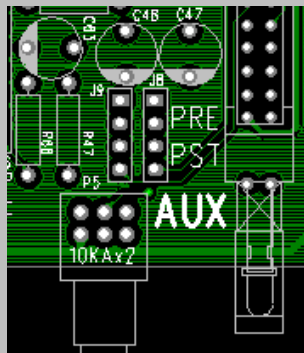**Table 2: Airlab Triple Dig Module Jumper settings**

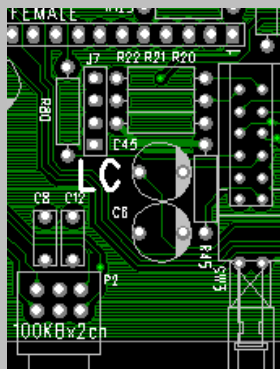**Figure 11: Triple Dig Module AUX Jumper settings**

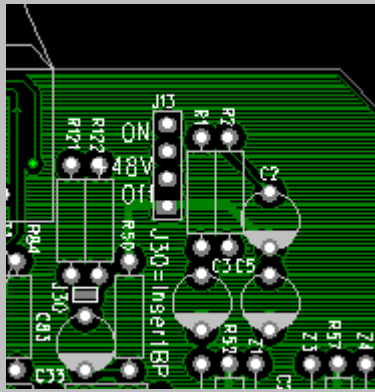**Figure 12: Triple Dig Module MIC LC Jumper settings**

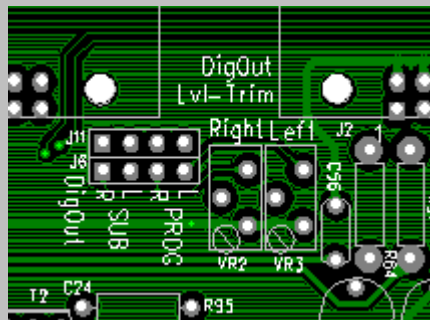**Figure 13: Triple Dig Module Phantom Power Jumper settings**

Figure 14: Triple Dig Module Digital Output Select Jumper and Digital Output Level trim

Figure 15: Triple Dig Module FCLK-Select (PLL or Fixed)

<u>**Digital Output settings:**</u>
Dependent on the jumper setting the output is giving the stereo PROG signal or the stereo SUB-signal.
Normally the output level is -9dBFS but the level (headroom) can be adjusted by VR2 and VR3.
The digital output frame clock (sample rate) can be setup in two different ways by an internal jumper setting.

> 1: PLL. Output Frame Clock (sample rate) is identical to the clock signal of the digital input
> (Select by the 'Line B' switch, 32..96 kHz). If the digital-input is not in lock (no input signal
> or a wrong signal) the Output Frame Clock will jump back to 44.1kHz.
> 2: Fixed. Output Frame Clock (sample rate) is always 44.1kHz

ATTENTION: In the 'PLL' mode the digital output signal will be muted shortly if you change the digital input selection ('Line B' switch) or if the digital input loses its lock.
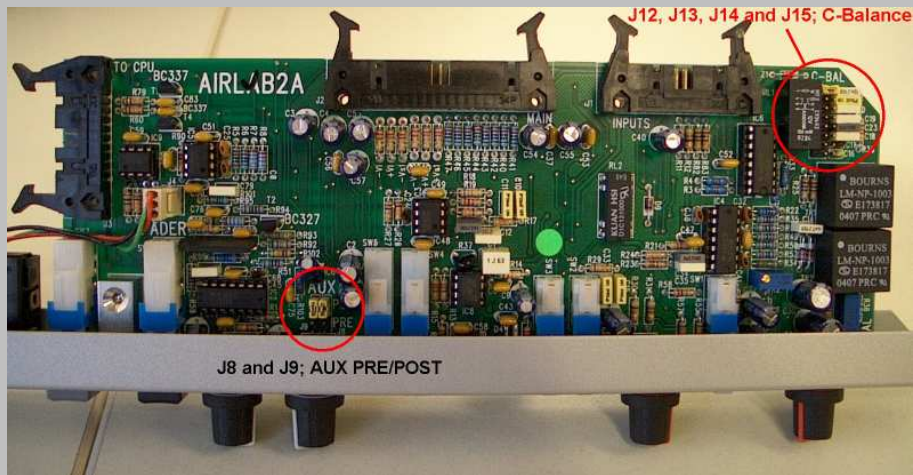
12.3 TELCO MODULE

Figure 16: Airlab Telco Module Jumper Locations

Options	Jumpers	Settings	Settings	Default
AUX PRE/POST	J8 and J9	1 + 2 = POST	3 + 4 = PRE	POST

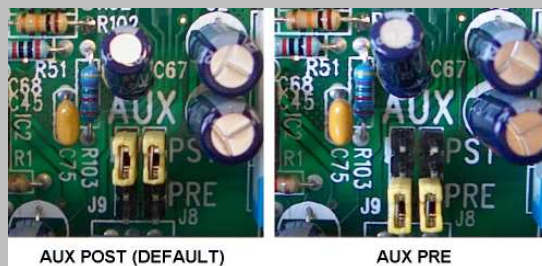**Table 3: Airlab Telco Module Jumper settings**

Figure 17: Telco Module AUX Jumper settings

Figure 18: Telco Module C-Balance Setting

OPTIONAL

It's optional to install High quality transformers on the PROGRAM outputs and on the SUB outputs. Please contact your dealer for further information.

13   INSTALLING/SERVICING THE AIRLAB

Mains
Please check that the local mains supply corresponds with the voltage selected on the Airlab mains inlet. The Airlab can be factory set for voltages between 100 - 120 Volts or 220 - 240 Volts. The Airlab is fused with a 2 Amp slow blow fuse for 110 Volt or 1.0 Amp slow blow fuse for 220 Volt. DO NOT use any other value, as this would be hazardous and the Airlab guarantee will be voided.

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 Airlab to this outlet and its associated equipment. This will act as the centralized mains and earth for the studio.
It is advisable to install several multiple mains connectors close to the Airlab, with a master power switch to shut down all power to the studio. Grounding MUST BE a star ground system.
Keep all wires as short as possible and 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 Airlab main power outlet.

Wiring
In cases where all the equipment is transformer balanced, it's usual to connect the shielding of the wiring to the source side only.
In the Airlab, many of the sources will be unbalanced, so a different strategy needs to be adopted.
Equipment, such as CD players, doesn't have a mains ground connection. In this case the shielding can be connected on both sides of the connection. There won't be a ground loop. 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.

Audio Connections to the Airlab
Prior to commencing wiring of the studio, it is advisable to obtain some labels, which will simplify trouble-shooting. (Example; "CD-1, CH 2A")
The first step is to connect the Airlab to the mains, with all faders closed, no CRM active and the CRM volume controls fully clockwise.

A.   Connect the CRM amp to the CRM output, and check whether there's any 'hum' or
        'noise' noticeable.
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 Airlab.

C.   Now connect Tape deck, Cart machines, CD/MD players etc.

NOTE:
Wiring a tuner needs special attention. If the tuner is "cabled", the coax antennae cable will probably cause a ground loop. A H.F. transformer must separate the antenna input of the tuner. Ask your dealer or any radio shop for details.

IMPORTANT

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

A.   Disconnect the mains supply.
B.   Remove the power cable from the back of the console.
C.   Remove the back panel of the meter hood.
D.   Unscrew the channel module bolts.
E.   Now lift the channel up at the fader section, and then the other side. Carefully lift the module until you see three connectors mounted to ribbon (flat) cables.
F.   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 three ribbon cable connectors into the PCB connector, ensuring that the ejectors are securely replaced.
B.   Slowly put the module down into the chassis starting from the rear.
C.   Tighten all screws and reconnect the channel.

Servicing the Master Section

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

INSTALLING / ALIGNMENT OF THE TELCO MODULE

A.   Connect the telephone line with the 'TO PHONE' labeled female XLR and a phone appliance
        to the female XLR labeled WALL. (See connector pages)

ALIGNMENT OF N-1 (MixMinus)
*NOTE: This alignment has already taken place at the factory, however if you later on extend the
AIRLAB with another TELCO module you need to follow the next steps for a correct alignment of
the N-1 signal for every new installed TELCO module.*

1.   Power down the AIRLAB.
2.   Connect the TELCO module to the right connectors and horizontally lay down the module on
        the surface of the other modules. Put an isolating material between the TELCO module and
        the surface of the other modules to avoid damage and shorts. Now locate trimmer VR2 (close
        to switch "LINE")
3.   Activate the 'LINE IN' switch on the TELCO module.
4.   Connect an audio source to the LINE IN connector, this can be music or a signal generator.
5.   Connect a headphone or power amp to the TELCO SEND CINCH + connector.
6.   Check again if there's no short between PCB of the TELCO module and the surface it's put on.
7.   Power up the AIRLAB.
8.   Move the fader to the 0 dB position. Press the ON switch. Press the PROGRAM switch.
9.   CHECK if the CRM outputs this LINE IN signal (No CRM select switches are active) to be
        sure that you have correctly connected and routed your source.
10.   Now adjust the trimmer VR2 to a position where a minimum of signal is heard out of the
        TELCO OUT Cinch + connector.
11.   If you need to adjust the RC balance continue with step 1 of the procedure described below.
        Otherwise power down the console and install the module again properly.

ADJUSTMENT OF SIDETONE OR R/C BALANCE
*The R/C is a one time only adjustment. Only in those situations where the TELCO module is
connected to another telephone line a repeated adjustment could be necessary.
NOTE: The R/C balance trimming can only be performed after you have correctly followed the N-1
alignment procedure.*

1.   Power down the AIRLAB.
2.   Connect the TELCO module to the right connectors and horizontally lay down the module on
        the surface of the other modules. Put an isolating material between the TELCO module and
        the surface of the other modules to avoid damage and shorts.
3.   Connect an audio source to one of the modules and activate the **SUB switch only!!**
4.   Connect the telephone system to the TELCO module's WALL connector.
5.   Connect a Phone appliance to the "TO PHONE" connector.
6.   Check if there is no short between PCB of the TELCO module and the surface it is put on.
7.   Power up the AIRLAB.
8.   Now dial on the connected Phone appliance a number outside the building.

9.   Move the TELCO modules fader to its 0 dB position. Press the ON switch and activate the **PROG and SUB switch** only. The LINE IN switch should be off (up).
10.   CHECK if the CRM outputs this PHONE IN signal coming from the PROG buss, (No CRM select switches are active) to be sure that you have correctly connected and routed your source.
11.   Now open the fader on the channel where you have connected your audio and Press the ON switch on that channel.
12.   Now you shall hear the audio signal through the TELCO module that is fed from that channel.
13.   Now adjust the front panel trimmer VR1 (labeled R-BAL) to a minimum audio position and look for the best combination of C jumper settings and trimmer position.
14.   Power down the console and install the module again properly.

As long as the hybrid remains connected to the same "Phone Company", no changes need to be made to this setup. If more TELCO modules need to be aligned the same capacitor value shall be used for all modules so front panel trimming is the only trimming that is left to do for the other modules.

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 best results.

NOTE: INSTALLATION OF NEW (EXTRA) MODULES

When installing new (extra) modules in your Airlab it's necessary to re-adjust the internal power supply voltages to guarantee a stable performance at all times.
More current is taken from the internal power supply because you have put in more modules now. It's necessary to adjust the power supply voltage to a precise level of 18 volts for both the positive and negative rails with all modules connected.
Adjustment is performed on the power supply PCB mounted on the bottom of the console located beneath the master section.
Power supply voltage is measured across the output terminals of the power supply PCB inside the console.

NOTE: If the power supply voltage is not adjusted to 18 volts again, it may be possible that certain logic functions may not work properly at all times.

14 HOW TO PROGRAM THE AIRLAB

As you might have noticed the Airlab has a LCD in the center section of the master panel with a number of switches positioned below that display.
If you turn on the Airlab you'll notice the following text in the display.

00:00:00

TIMER

This is the menu that's normally active. But before we go
into this menu we need to program the Airlab conform to your requirements. This can be done without opening the frame. Very convenient, isn't it?

BEFORE YOU START TAKE NOTICE OF THE FOLLOWING INFORMATION

To save all the work you've done you simply hit the ENTER switch and all settings are stored in the internal memory of the Airlab. If you leave the modules set-up section with the ESC switch, all previously stored data (before you changed it) will still be active.

MAIN MENUS
To leave the timer menu you have to press the UP or DOWN switches in the center of the programming area. If you do this you'll notice the following four main menus.

> **TIMER** (default)
> **MODULE SETTINGS**
> **MASTER SETTINGS**
> **SYSTEM**

The sequence of these main menus can be different whether you hit the UP or DOWN button, but it will never be more than these four activities.
The Module settings for the Triple Line Module and de Triple Dig Module are the same and therefore you don't see a difference between the two models in programming.

14.1 MODULE SETTINGS

LINE A ENABLES START TIMER
To see what's under these names you hit the ENTER switch.
Lets go to MODULE SETTINGS first and then hit ENTER.
The following display on the right will be shown:
This option allows you to select one or more modules, which need to be able to activate the internal TIMER when in Line A input position.

LineA Timerstrt?

Toggle by SELECT

HOW TO PROGRAM
The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between starting the timer (LED on) and not starting the timer (LED off) in that module. This is a very quick way of programming.
If you have already programmed several modules, the moment you enter this menu the LED's located near the SELECT switch will light up on those modules that are programmed to start the TIMER (when the fader is up or the ON switch is activated).

LINE B ENABLES START TIMER

To enter the next programming possibility you simply hit the DOWN button again and you'll see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to activate the internal TIMER when in Line B input position.

LineB Timerstrt?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up, on those modules that are programmed to start the TIMER.

MIC ENABLES TIMER START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to activate the internal TIMER when in Mic input position. **Not available for Telco Module.**

Mic. Timerstrt?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up, on those modules that are starting the TIMER

LINE A ENABLES START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start pulse, when set in Line A input mode. **Always on for Telco module.**

LineA Start?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled to trigger the fader start.

LINE B ENABLES START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start, when set in Line B input mode. **Always on for Telco module.**

```
LineB Start?

Toggle by SELECT
```

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled for the Line B position to trigger the fader start.

MIC ENABLES START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start pulse, when set in Mic input mode. **Not available for Telco Module.**

```
Mic. Start?

Toggle by SELECT
```

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled to trigger the fader start when the MIC input is selected.

FADER ACTIVATES START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start pulse when the fader is opened. **Always off for Telco module.**

```
Start by Fader?

Toggle by SELECT
```

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled to generate a fader start.

ON SWITCH GENERATES A START PULSE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start pulse when the ON switch is activated. **Always on for Telco module.**

```
        Start by On?

     Toggle by SELECT
```

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled to generate a "start" by way of the ON switch.

CUE SWITCH GENERATES A START PULSE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start pulse when the CUE switch is activated. **Always on for Telco module.**

```
        Start by Cue?

     Toggle by SELECT
```

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled to generate a start by way of the CUE switch.

PULSE OR CONTINUE ON START CONNECTOR

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set the type of start signal on the Start jack of one or more modules. You can choose between Pulse and Continues. **Always Continues for Telco module.**

```
      Pulse */ Cont 0?

     Toggle by SELECT
```

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are giving a Pulse on the start jack.

REMOTE CUE POSSIBLE IN LINE A MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set if the CUE must be activated by an incoming remote on one or more modules, when set in Line A input mode.

```
LineA Rem. Cue?

Toggle by SELECT
```

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are capable of activating the CUE by a remote switch.

REMOTE CUE POSSIBLE IN LINE B MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set if the CUE must be activated by an incoming remote on one or more modules, when set in Line B input mode.

```
LineB Rem. Cue?

Toggle by SELECT
```

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are programmed to activate the CUE by a remote switch in line B input mode.

REMOTE CUE POSSIBLE IN MIC MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set if the CUE must be activated by an incoming remote on one or more modules, when set in Mic input mode. This option is necessary for COUGH/COMM. **Not available for Telco Module.**

```
Mic. Rem. Cue?

Toggle by SELECT
```

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. If you had already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will go on, on those modules that are capable of activating the CUE by a remote switch when the MIC input is selected.

WHICH CHANNEL IS YOUR DJ CHANNEL
To enter the next programming possibility you simply hit the
DOWN button again and you will see a new item. See on the
right what the LCD shows:
This option allows you to set one or more modules in DJ
mode. **Not available for Telco Module.**

```
        DJ. Module?


    Toggle by SELECT
```

HOW TO PROGRAM
The SELECT switches in the modules have a dual function. They select the module you are programming
and at the same time you can toggle between the active and not active setting. This is a very quick way of
programming this function. If you have already programmed several modules, the moment you enter this
menu again the LED's located near the SELECT switch will light up on the modules that are set in DJ
mode.

ON WHICH CHANNEL IS YOUR ANNOUNCER MIC
To enter the next programming possibility you simply hit the
DOWN button again and you will see a new item. See on the
right what the LCD shows:
This option allows you to set one module in Announcer mode.
Note: you can't select more than one Announcer module.
Not available for Telco Module.

```
       Ann. Module?


    Toggle by SELECT
```

HOW TO PROGRAM
The SELECT switches in the modules have a dual function. They select the module you are
programming and at the same time you can toggle between the active and not active setting. This is a
very quick way of programming this function. If you have already programmed several modules, the
moment you enter this menu again the LED's located near the SELECT switch will light up on the
modules that are programmed to be an Announcer module.

ON WHICH CHANNEL IS YOUR STUDIO MIC
To enter the next programming possibility you simply hit the
DOWN button again and you will see a new item. See on the
right what the LCD shows:
This option allows you to set one or more modules in Studio
mode. **Not available for Telco Module.**

```
      Studio Module?


    Toggle by SELECT
```

HOW TO PROGRAM
The SELECT switches in the modules have a dual function. They select the module you are
programming and at the same time you can toggle between the active and not active setting. This is a
very quick way of programming this function. If you have already programmed several modules, the
moment you enter this menu again the LED's located near the SELECT switch will light up on the
modules that are programmed to handle the Studio MIC input.

ON AIR-1 ACTIVE FOR LINE A

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules to toggle the ON-AIR-1 relay, when in Line A input mode.

LineA On Air-1?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are toggling the ON-AIR 1 relay when line A is selected.

ON AIR-1 ACTIVE FOR LINE B

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules to toggle the ON-AIR-1 relay, when in Line B input mode.

LineB On Air-1?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are toggling the ON-AIR 1 relay when line B is selected.

ON AIR-1 ACTIVE FOR MIC

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules to toggle the ON-AIR-1 relay, when in Mic input mode. **Not available for Telco Module.**

MIC On Air-1?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function, they select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you had already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will go on, on those modules that are toggling the ON-AIR 1 relay when MIC is selected.

ON AIR-2 ACTIVE FOR LINE A
To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:
This option allows you to set one or more modules to toggle the ON-AIR-2 relay, when in Line A input mode.

> # LineA On Air-2?
>
> # Toggle by SELECT

HOW TO PROGRAM
The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are toggling the ON-AIR 2 relay when line A is selected.

ON AIR-2 ACTIVE FOR LINE B
To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:
This option allows you to set one or more modules to toggle the ON-AIR-2 relay, when in Line B input mode.

> # LineB On Air-2?
>
> # Toggle by SELECT

HOW TO PROGRAM
The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are toggling the ON-AIR 2 relay when line B is selected.

ON AIR-2 ACTIVE FOR MIC
To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:
This option allows you to set one or more modules to toggle the ON-AIR-1 relay, when in Mic A input mode. **Not available for Telco Module.**

> # Mic OnAir-2?
>
> # Toggle by SELECT

HOW TO PROGRAM
The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are toggling the ON-AIR 2 relay when MIC is selected.

ON AT START UP
To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:
This option allows you to set one or more modules to be default ON when powering up the console.

<div style="border:1px solid">

On at Power up?

Toggle by SELECT

</div>

HOW TO PROGRAM
The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are turning to their ON mode when the power comes up.

MIC CONNECTED AT LINE A
To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:
This option allows you to hook up a Mic to Line A on one or more modules. The COUGH/COMMUNICATION feature automatically becomes available when the module is in Line A mode. **Not available for Telco Module.**

<div style="border:1px solid">

MIC at Line A?

Toggle by SELECT

</div>

HOW TO PROGRAM
The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting.
This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are assigned for MIC-mode in LINE A.

MIC CONNECTED AT LINE B
To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:
This option allows you to hook up a Mic to Line B on one or more modules. The COUGH/COMMUNICATION feature automatically becomes available when the module is in Line B mode. **Not available for Telco Module.**

<div style="border:1px solid">

MIC at Line B?

Toggle by SELECT

</div>

HOW TO PROGRAM
The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are assigned for MIC-mode in LINE B.

REMOTE ON POSSIBLE IN MIC MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This allows you to operate the ON switch on one or more selected modules by corresponding remote, when the Mic input is selected. **Not available for Telco Module.**

> # MIC Rem. On?
>
> # Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are capable of activating the ON by a remote switch when the MIC input is selected.

REMOTE ON POSSIBLE IN LINE A MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This allows you to operate the ON switch on one or more selected modules by the corresponding remote, when the Line A input is selected. **Always off for Telco module.**

> # LineA Rem. On?
>
> # Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are capable of activating the ON by a remote switch.

REMOTE ON POSSIBLE IN LINE B MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This allows you to operate the ON switch on one or more selected modules by the corresponding remote, when the Line B input is selected. **Always off for Telco module.**

> # LineB Rem. On?
>
> # Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are capable of activating the ON by a remote switch in line B input mode.

SWITCH START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

With this option active the module is always ON and operation On-switch will only trigger the start-remote. **Not available for Telco Module.**

> # Switch Start?
>
> # Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are capable of Switch Start.

IMPORTANT INFORMATION
To save all the work you have done you simply hit the ENTER switch and all settings are stored in the internal memory of the Airlab.
Pressing the ESC switch instead will discard all the changed settings in the last session.

You have now completed the modules set-up and it is now time to go to the Master settings.

14.2 MASTER SETTINGS

To enter this part of the programming hit the EXIT button and you will see that the LCD returns to its TIMER menu.
Now hit the UP or DOWN switch again until you see the text MASTER SETTINGS. This brings you into the master settings menu. Now push the ENTER switch to enter the four master programming possibilities.

AUTO CUE RESET
Use the YES and NO button to switch 'Auto cue Reset' option on and off.

HOW TO PROGRAM
With the YES and NO switches you can activate or de-activate this option. Don't forget to confirm changes you made in software with the enter switch.

> **Auto CUE Reset?**
>
> **YES**

CUE TO CRM
CUE to CRM is an option, which enables you to route the CUE signal to the CRM speakers.

HOW TO PROGRAM
With the YES and NO switches you can activate or de-activate this option. Don't forget to confirm changes you made in software with the enter switch.

> **CUE to CRM?**
>
> **YES**

AUTO COMMUNICATION
When this feature is activated you can create a communication link from a remotely connected SiCo box to an announcer module.
To make this work the 'Mic Rem. CUE' option needs to be activated.

> **Auto Comm?**
>
> **YES**

HOW TO PROGRAM
With the YES and NO switches you can activate or de-activate this option. Don't forget to confirm changes you made in software with the enter switch.

RS232
The RS232 option enables you to connect the Airlab to a PC. Basically The Airlab software is a graphical user interface version of the software structure inside the Airlab.

> **Enable RS 232?**
>
> **YES**

HOW TO PROGRAM
With the YES and NO switches you can activate or de-activate this option. Don't forget to confirm changes you made in software with the enter switch.

IMPORTANT INFORMATION
To save all the work you have done you simply hit the ENTER switch and all settings are stored in the internal memory of the Airlab.
Pressing the ESC switch instead will discard all the changed settings in the last session.

14.3 SYSTEM SETUP

You have now completed the master set-up and it is now time to go to the System settings. To enter this part of the programming hit the EXIT button to leave the master settings without saving changes or hit the ENTER switch to leave the master settings with saving changes.

The System menu consists out of 5 submenus, which are:

CONFIGURATION
RECALL
STORE
RECALL Memory CARD   (only visible with inserted memory card)
STORE Memory CARD   (only visible with inserted memory card)

Select these sub menus by pushing the UP or DOWN buttons.

CONFIGURATION
The first item in the System menu is the configuration screen. This screen displays the current configuration of the Airlab. XX represents the number of Stereo modules available on the console and YY represent the number of Telco modules available on the console.

> **Config**
>
> **StMod:XX Telco:YY**

RECALL
In the Recall menu you can recall a stored setup from the internal Airlab memory.
By pressing the ENTER switch the data will be recalled from the internal memory. Subsequently pressing the ESC switch, the Recall menu will be left without recalling.

> **Recall**
>
> **Press Enter/Esc**

STORE

In the Store menu you can store a setup to the internal memory. By pressing the ENTER switch the actual data will be stored to memory. Subsequently by pushing the ESC switch, the Store menu will be left.

> **Store**
>
> **Press Enter/Esc**

RECALL Memory Card

In the Recall memory card menu you can recall a stored setup from a Memory card. By pressing the ENTER switch the actual data will be recalled from an inserted memory card. Subsequently by pushing the ESC switch the Recall Memory card menu will be left.

> **Recall Mem. Card**
>
> **Press Enter/Esc**

STORE Memory Card

In the Store Memory Card menu you can store a set-up to an inserted memory card. By pressing the ENTER switch the actual data will be stored to an inserted Memory Card. Subsequently by pushing the ESC switch the Store Memory card menu will be left.

> **Store Mem. Card**
>
> **Press Enter/Esc**

All the above explained programming and storing of data can be performed on a Windows PC. You need to connect the RS232 SubD9 connector of the Airlab to the RS232 connector of your PC and load the Airlab software. All module and master programming can be dealt with on one PC screen. In this way you will have a total view of your settings on one screen. This can be edited and when you sorted out all your settings it can be downloaded to the Airlab's memory and subsequently stored on a memory card.

14.4 TIMER

As earlier mentioned the Airlab has a built in Timer, which is practical and easy to use.The Timer menu is the basic menu that the Airlab always shows.
To activate the timer it is necessary to first program the modules and make up your mind which modules and in which mode they should trigger the Timer.

Any module that has been programmed to start the timer shall trigger the timer and the clock is running, reading from left to right: hours, minutes and seconds.

The moment you pull down a fader or switch an ON switch off the timer stops showing the exact time the module has been active.

As soon as you open the module again, the timer will be reset it and starts all over again.
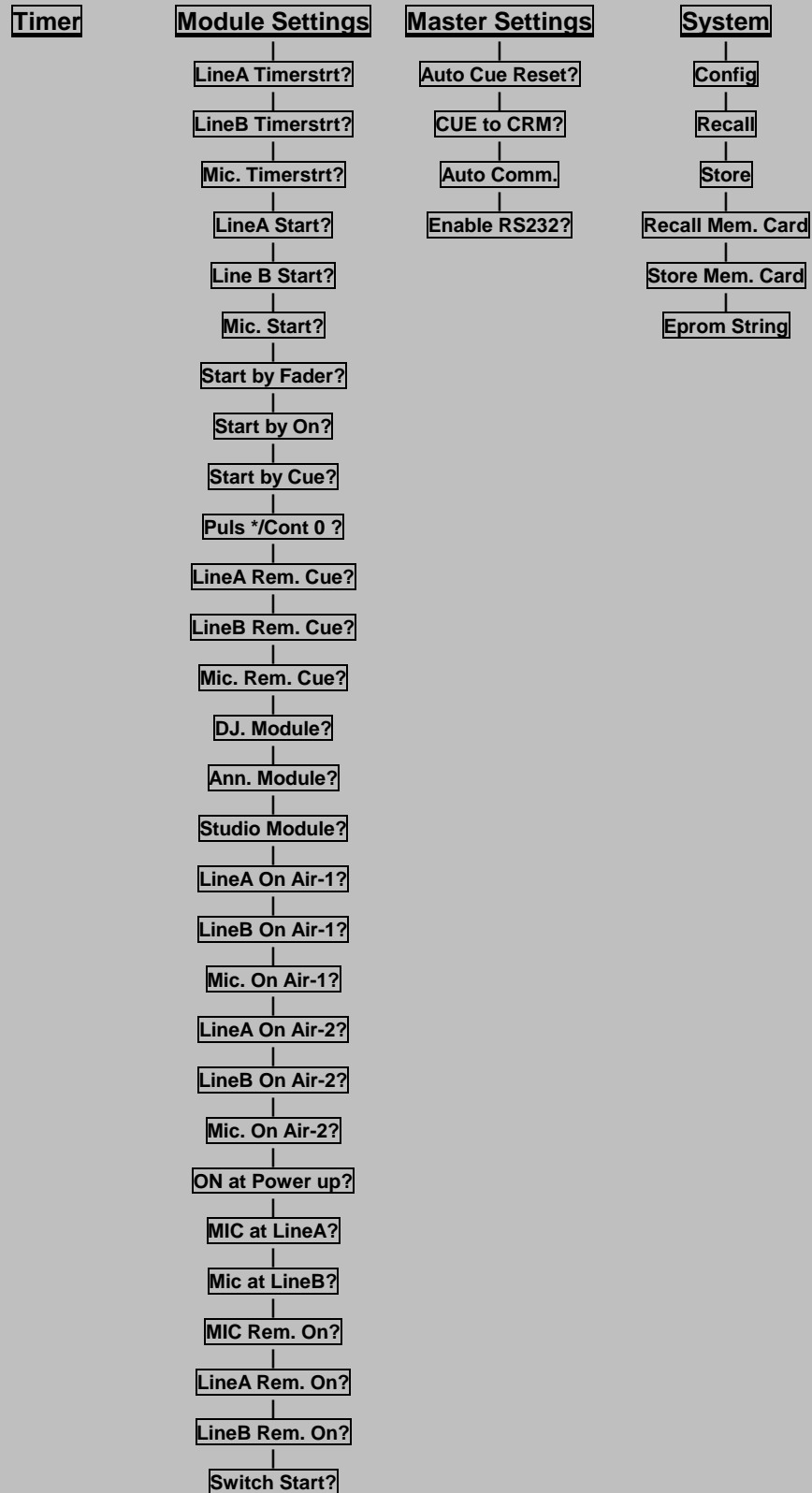
The Timer can also be started and stopped by the ENTER switch.
It goes like this:

1. With ENTER the timer will be reset and starts or continues to run.

2. With ESC the timer will be reset and when it runs it continues to do so.

<div style="border:1px solid black; text-align:center;">

00:00:00

TIMER

</div>
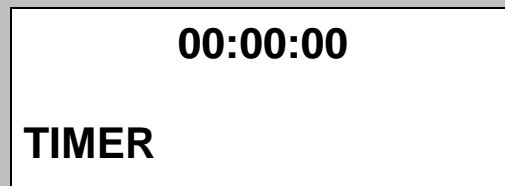
14.5 MENU DIAGRAM

The menu diagram displays the menu structure as it is programmed in the Airlab.

__Timer__	__Module Settings__	__Master Settings__	__System__
	LineA Timerstrt?	Auto Cue Reset?	Config
	LineB Timerstrt?	CUE to CRM?	Recall
	Mic. Timerstrt?	Auto Comm.	Store
	LineA Start?	Enable RS232?	Recall Mem. Card
	Line B Start?		Store Mem. Card
	Mic. Start?		Eprom String
	Start by Fader?		
	Start by On?		
	Start by Cue?		
	Puls */Cont 0 ?		
	LineA Rem. Cue?		
	LineB Rem. Cue?		
	Mic. Rem. Cue?		
	DJ. Module?		
	Ann. Module?		
	Studio Module?		
	LineA On Air-1?		
	LineB On Air-1?		
	Mic. On Air-1?		
	LineA On Air-2?		
	LineB On Air-2?		
	Mic. On Air-2?		
	ON at Power up?		
	MIC at LineA?		
	Mic at LineB?		
	MIC Rem. On?		
	LineA Rem. On?		
	LineB Rem. On?		
	Switch Start?		

15 Windows Software

The RS232 communication option enables you to manage the Airlab programming from a remotely connected PC. The main advantage is that this gives you a much better overview on all the available settings that can be made. All the custom settings made can be saved in a file. That way you can create you own presets.
The settings made can be saved to chipcard. Each user can have a personal chipcard with his or hers customized setting for the Airlab.

15.1 INSTALLATION

The installation software comes on a 3.5" floppy disk. Please run the setup.exe file to begin the installation. During the setup you can choose the path for the installation directory.
During the installation process a program folder will be created together with a desktop icon. From these locations you can startup the application.

15.2 GETTING STARTED

Before you run the software be sure to connect the Airlab to the PC correctly. If this isn't the case you'll see the following error message:

Clicking the OK button continues to startup the Airlab application but without any software control.
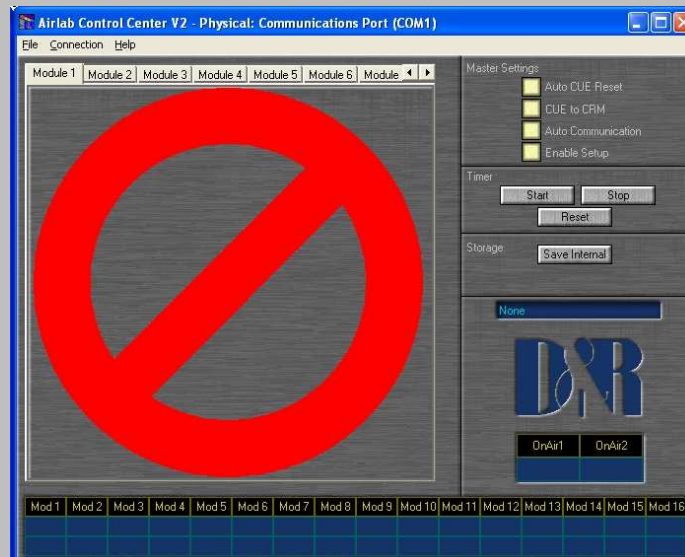The screen looks like this:

Figure 19: No Airlab found

Figure 20: Airlab not connected

After you have connected the Airlab console correctly you have two options. You can reconnect to the Airlab using the 'Connection' menu or you can reboot the application.

If the Airlab is connected correctly you'll see the following screen (Figure 21). You'll notice that the screen is divided in multiple sections. Each section is individually discussed in this chapter.
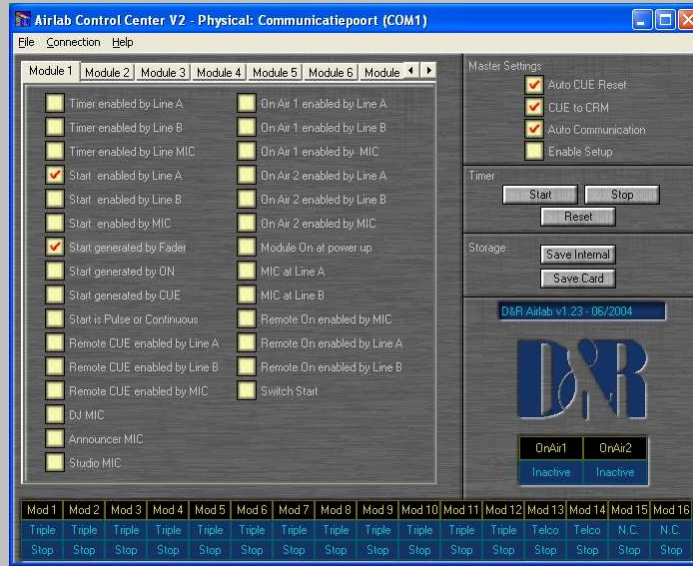

Figure 21: Airlab Main Screen

Figure 22 displays a summary of all the modules in the Airlab.

Figure 22: Status bar

As you can see we can have a total of 16 modules in the Airlab. The configuration, as shown in the second column, consists from 12 triple line modules and 2 Telco modules. The last two slots aren't used in this case. The third column represents the status of the start remote on the rear side of each channel.

The section displayed by Figure 23, displays the On Air status of the Airlab. There's also a small window in this section, which displays the software version present in the Airlab.
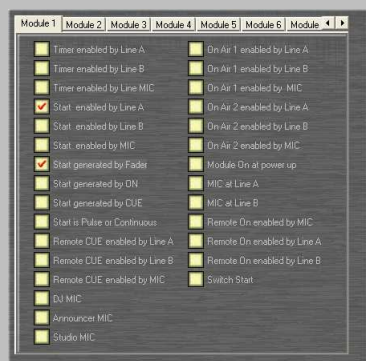

Figure 23: On Air Status
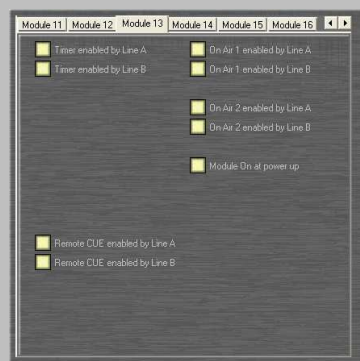
Figure 24: Triple Module Settings

Figure 25: Telco Module Settings

Figure 24 and Figure 25 display the module settings for the Telco and the Line modules. Basically this is a graphical overview of the menu structure in the Airlab. The graphical user interface allows you to make changes very easily and very fast.
For a detailed overview off all module settings you can read section 14.1 of this manual.

The Master settings in the application are nearly identical to the Master setting of the Airlab. The main difference is the fourth option.
The fourth Master Setting in the Airlab is the Enable 'RS232' setting. This option enables or disables the COM port on the rear side of the airlab.
The fourth Master Setting in the application is the 'Enable Setup' setting. This option allows or denies users to enter the menu of the Airlab from the console. This is a protection feature.

Figure 26: Master Settings

For more detailed information on the Master Settings you can read section 14.2 of this manual.

The Timer section (Figure 27) allows you to control the Timer on the Airlab from the PC.

Figure 27: Timer

The Storage section (Figure 28) allows you to save the changes you made in the Airlab memory or on a chipcard. The 'Save Card' button is only available when a chipcard is inserted. The main advantage of the chipcard is that you can make presets for multiple users. And thanks to the 'Enable Setup' option you can make sure that they won't mess around with the settings in the console.

Figure 28: Storage

The File => Save and the File => Open options allow you to save the changes you've made to one or more files so that you can re-open them later again to restore your personal setting again.

16 SPECIFICATIONS

INPUTS:
Mic inp. bal. 2 kOhm - 128 dBr (+/- 40 dB gain range plus 30 dB of trim range).
Line inp. bal 10 kOhm +/- 20 dB gain range.
Insert level: -10dbV
Telco input (XLR) 10 kOhm bal. +4 dBu nominal.
CMRR: mic input max. gain: 1kHz 85 dB.
Line input max. gain 1 kHz 30 dB.

EQUALISATION:
+/- 12 dB @ 10 kHz shelving.
+/- 12 dB @ 1 kHz bell curve.
+/- 12 dB @ 60 Hz bell curve.
Low Cut: 80 Hz, 12 dB per octave (Mic only)
Low Cut: 200Hz, 6 dB per octave (Telco only).
High Cut: 8 kHz, 6 dB per octave (Telco only).

OUTPUTS:
Program left/right: +6 dBu electronically balanced (transformer balancing optional).
Sub: +6 dBu electronically balanced. (transformer balancing optional)
All other outputs: +6 dBu unbal.

OVERALL:
Frequency response: 20-20.000 Hz +/-0.5 dB.
Harmonic distortion: 0.035% (VCA in, 2nd harm).
Crosstalk: less than -90 dBr.
Noise: -86 dBr.
Headroom: +22 dB internal, 20 dB on outputs.
Mix-Minus rejection: @1 kHz -60 dB.
Channel fader attenuation: 1 kHz, 100 dB.

WEIGHT: Airlab loaded with 16 modules: 50 kg (110 lb).

DIMENSIONS

Drop though mounting   775 mm Width
                            590 mm Depth

When inserting the Airlab in its mounting hole first position the armrest side in the hole and slowly lower the back side holding the wood ends on either side of the console. Mount the back panel after installation to finish the job neatly.

Color scheme before 2002:
Front panels: RAL 7012 / 9016
Frame: RAL 7016
Wood ends: RAL 7042

Color scheme after 2002:
Front panels: GISPEN 103
Frame: GISPEN 103
Wood ends: GISPEN 103

17 SICO REMOTE UNIT

The Airlab Sico Remote unit is designed to be the communication interface between the control room and the announcer or guest. It has a built in headphone amp, a remote connector to be wired via a shielded stereo cable to the related Airlab channel, and a very convenient CHOUGH/COMMUNICATION button.

We shall describe all functions in detail now.

COUGH/SIGNALLING IN MIC MODE
This useful feature has two important functions:
1. Cough/communication,
2. 'Mic-on'

1. Cough/Communication,
A shielded stereo cable has to be connected between the Sico remote unit and the Airlab input channel that needs to be communicated to.
Using the push-button during broadcast, the announcer can temporarily mute the microphone in order to cough (where the name comes from). 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.

2. 'Mic-on',
When the channel is active a voltage is applied between Tip (+) and Sleeve (0V), which can be used to activate a LED (red) (in this case the internal LED of the SiCo remote unit.

In addition to the localized 'mic-on' signaling, there is also a master signal in the master section. The ON-AIR signaling outputs 1 and 2 offer the option of driving external red light indicators in the studio by way of a relay.

The input jack of the Sico Remote unit needs to be wired to the master of the Airlab, Guest or Announcer outputs or whatever suits your purpose mostly.
The output jack is a parallel jack to the input jack to simplify wiring to more than one SiCo remote unit in the presentation room.

18 DIRECTOR UNIT (discontinued)

The Director is designed to be the answer for the need of the Station manager to manage the live broadcast and have control over in and outputs as well as communication to all essential in and outputs of the Airlab ON-AIR mixing console.

Figure 29: Director front and rear view

The director of the broadcast station can use the 'Director box'. By having this unit in front of him/her, he/she is capable of sending verbal instructions by Mic to the engineer, announcer, Guests and Studio or with one button to all outputs. There is also a Talkback output to and external output that can be used for local situations.
Listening to Program outputs, SUB outputs, On-Air signals, CRM output, External inputs 1 and 2 is of course possible.
Four Telco module incoming signals can be taken, talked to and muted if necessary. A standard 5-pole XLR connector is provided for the headset. A separate Mic input and headphone output is also available.

Figure 30: Director

Two large On-Air LEDS are indicating that the Airlab console is ON-Air.
Level control for Headphone, Mic input and internal speaker are provided for. The back panel has 4 adjustments for the Telco levels and all interfacing with the Airlab.
An external power supply is part of the package

Warning: The director option is only supported by Airlabs build after 01-01-2005. All Airlabs build before this date can be upgraded to support the Director. Please contact your dealer for further information.

19 LIST OF FIGURES

20 LIST OF TABLES

21 AIRLAB USER QUESTIONNAIRE

Dear Airlab 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 ....
ORGANIZATION ....
ADDRESS ....
TOWN ....
POST CODE ....
COUNTRY ....
EMAIL: info@d-r.nl...

AIRLAB SERIAL NO:
....
CONFIGURATION ....
DEALER ....

HOW DID YOU HEAR ABOUT THE "AIRLAB"? (please circle)
(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 'AIRLAB'?

....
WHAT PRICE WOULD YOU CONSIDER SUITABLE FOR THE 'AIRLAB'?

....
ANY OTHER SUGGESTIONS?

....
I REQUIRE INFORMATION ABOUT

....
WHAT OTHER EQUIPMENT DO YOU USE?

....

PLEASE SEND/FAX TO:
D&R Electronica Weesp bv, Rijnkade 15B, 1382 GS WEESP, The Netherlands
FAX: +31 294 416987 Email: info@d-r.nl

22 PRODUCT SAFETY

This product is manufactured with the highest standards and is double checked in our quality control department for reliability in the "HIGH VOLTAGE" section.

CAUTION
Never remove any panels, or open this equipment. No user serviceable parts inside. Equipment power supply must be grounded at all times. Only use this product as described, in user manual or brochure. Do not operate this equipment in high humidity or expose it to water or other liquids. Check the AC power supply cable to assure secure contact. Have your equipment checked yearly by a qualified dealer service center. Hazardous electrical shock can be avoided by carefully following the above rules.

PLEASE READ THE FOLLOWING INFORMATION VERY CAREFULLY
Especially in sound equipment on stage the following information is essential to know. Voltage and current cause an electrical shock. Actually it's the current that causes the shock. In practice the higher the voltage the higher the current will be and the higher the shock. But there is another thing to consider and it is resistance. When the resistance in Ohms is high between two poles, the current will be low and visa versa. All three of these; voltage, current and resistance are important in determining the effect of an electrical shock.

However, the severity of a shock is primarily determined by the amount of current flowing through a person.

A person can feel a shock because the muscles in a body respond to electric current. Current can also be fatal when it causes the chest muscles to contract and stop breathing.

At what potential is current dangerous? Well the first feeling of current is a tingle at 0.001 Amp of current. The current between 0.1 Amp and 0.2 Amp is fatal. Imagine that your home fuses of 16 Amp can handle 200 times more current than is necessary to kill.
How does resistance affect the shock a person feels? A typical resistance between your two hands "dry" condition could be well over 100,000 Ohm. But if you are playing on stage your body is transpiring extensively and your body resistance is lowered by more than 50%. This is a situation in which current can easily flow.

Current will flow when there is a difference in ground potential between equipment on stage and in the P.A. system. Please do check if there is any potential between the housing of the mics and the guitar synth amps, which will be linked by your body on stage.
Imagine, a guitar in your hand and your lips close to the mic! A ground potential difference of above 10 volts is not unusual. In improperly wired buildings it can possibly be as high as 240 volts. Although removing the ground wire sometimes cures a system hum, it'll create a very hazardous situation for the performing musician.

Always earth all your equipment by the grounding pin in your mains plug Hum loops should be only cured by proper wiring and isolation input/output transformers.

Replace fuses always with the same type and rating after the equipment has been turned off and unplugged. If the fuse blows again you have an equipment failure. Do not use it again and return it to your dealer for repair.

And last but not least be careful not to touch a person being shocked as you, yourself could also be shocked. Once removed from the shock, have someone send for medical help immediately

Always keep the, on the previous page, mentioned information in mind when using electrically powered equipment.

D&R ELECTRONICA B.V. WEESP

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D&R Electronica Weesp b.v.
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1382 GS WEESP
THE NETHERLANDS

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Fax: +31 (294) 416 987
Website: http//www.d-r.nl
E-mail: info@d-r.nl

23 DECLARATION OF CONFORMITY

DECLARATION OF CONFORMITY

Manufacturers Name: D&R Electronica Weesp b.v.

Manufacturers Address: Rijnkade 15B
                                 1382 GS Weesp
                                 The Netherlands

Declares that the product   **AIRLAB series**

Conforms to the following product specifications:

	EMC:	NEN-EN 55103-1	1995
		NEN-EN 55103-2	1995
		NEN-EN 55013-1	1994

Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 89/336/EEC (1989) as amended by the CE Marking Directive 93/68/EEC (1993).

D&R Electronica Weesp b.v.
Rijnkade 15 B
1382 GS WEESP
The Netherlands
President of Engineering

May 8, 2008	Duco de Rijk	Compliance Program Manager	Signature
Date	Name	Title	

24 DISCLAIMER

Due to a policy of continuous product improvement, D&R Electronica Weesp B.V. reserves the right to change specifications, appearance and performance without prior notice.
Since the use of this information, and the conditions by which the products are used are beyond the control of D&R Electronica Weesp B.V., it is the obligation of the owner and/or the equipment operator to determine the correct and safe selection, settings and conditions of use of the equipment and products. To the extent that the law permits, any liability which may be incurred as a result of the use or future use of a product manufactured or sold by D&R Electronica Weesp B.V. is limited to the cost of repairing or replacing the failed product or component at the discretion of D&R Electronica Weesp B.V., either within, or outside of warranty periods, and does not extend to any loss or damage which may be caused as a consequence of misuse or failure of the equipment or products. D&R Electronica Weesp B.V. shall not in any event be liable for economic lost of profits including without limitation any incidental or consequential damage, expenses or other damages arising out of the use or inability to use the product and/or software even if D&R Electronica Weesp B.V. has been advised of the possibility of such a damage or for any claim by another party.

You agree to indemnify, hold harmless, and defend D&R Electronica Weesp B.V., its parent, and their licensors, suppliers, officers, directors, employees, agents, affiliates, subsidiaries (collectively "Indemnified Parties") from and against any and all liability incurred by or made against the Indemnified Parties in connection with any claim arising from or related to your use.