AEQ BC-500

Broadcast Audio Mixer

USER'S MANUAL
ED 05/04

A.E.Q., S.A., manufacturer of this equipment, is a Registered Company in accordance with UNE EN-ISO-9001standard by Aenor with reg. no. ER-080/1/96

INDEX

1. GENERAL INSTRUCTIONS

1.1. General precautions

The following precautions should be observed for safety reasons during all operation and maintenance of this appliance. Failure to comply with all instructions may result in serious alterations in regard of the functions and performance of the equipment. **AEQ** will not be responsible for any damage or loss due to the incorrect handling of the equipment.

1.1.1. Read all instructions

Before connecting the unit to mains and start operating, it is absolutely necessary to carefully read all the instructions in this manual, and to do so in the established order. If these basic rules are respected you will obtain the maximum performance of the equipment from the very start, and, at the same time, you will avoid incorrect or improper operation that could cause damage to the equipment or personnel.

1.1.2. Power and ground connections

To reduce the risk of electrical shock, this equipment should be connected to mains earth. The equipment is provided with an earthed Euro-plug. If it should be necessary to change the plug, bear in mind that the green / yellow cable is earth.

1.1.3. Protection against voltage fluctuations

In some areas, where voltage fluctuations are common, it is highly recommended to connect the equipment to an external protection in order to guarantee the tension received by the equipment is the one specified in this manual.

1.1.4. Water and humidity

The operation of the equipment in humid environments, near water or wet floors should be avoided at all costs. Nor should it be used in environments where the atmospheric humidity is so high that it will produce regular condensation inside the equipment.

1.1.5. Ventilation, fire and flammable vapours

The equipment should never be placed near or over a source of heat. The use of electrical or electronic equipment in environment close to fire or flammable vapours is a risk that has to be avoided at all costs. All ventilation grills must be unobstructed to allow hot air out and assure a proper ventilation of the equipment.

1.1.6. Maintenance

Any maintenance of this equipment should be carried out by authorized technical service personnel. **AEQ** will not be responsible for any damage caused by unauthorized maintenance operations. Nor will **AEQ** be responsible for any damage caused to other equipment or persons due to such unauthorized maintenance.

Always bear in mind that the equipment contains high voltage and that there exists the risk of an electrical shock. Handle the equipment with due care and precaution.

The **AEQ BC-500** Broadcast Mixing Console does not need any pre-adjustments. Once carried out all programming described in this manual, by user or in factory, it is not necessary to carry out any additional adjustments for optimum performance.

As an advice to the user, it should be mentioned that the input transformers of the different modules should be demagnetised periodically, since this factor will influence the total distortion of the equipment. To carry out this operation it is enough to apply a 25 Hz signal at an appropriate level to achieve that the nucleus of the transformer reaches clip, and then, very slowly, reduce the level of the signal until it is cancelled. It is recommended to carry out this operation every year.

Note: In case the user needs to relocate or incorporate new input modules in the equipment, this should be carried out as follows:

1) Turn off the equipment pressing the power switch located on the rear part of the monitor module **BC-578**.
2) Take out the module(s) that you desire to change or relocate, unscrewing the screws that hold the module to the chassis.
3) Lift the module and unplug the flat cable located in the lower section of the printed circuit, to free the module form the internal bus connection. If any one is connected, unplug the connectors at the rear part of the module. Proceed the same way in inverted order, to install new modules.

1.1.7. Warranty

A.E.Q. warrants, for a period of one year since the equipment's date of purchase, the free replacement at the factory's Technical Service Department of every faulty part due to defects in labor and materials. This warranty includes the labor needed for the replacement and the equipment's tune up.

This warranty does not include shipping costs, equipment's installation and start on, neither cleaning or replacement of parts subject to normal operative wear of the product.

Also, this warranty will not apply in case of damage or defect due to misuse or manipulation of the equipment by unauthorized personnel.

2. POWER SUPPLY

2.1. General

The description of the panel where the power connectors are located can be found under Section 5. Extend the sheet including the graphics to obtain a general view and better comprehension of all connections.

2.1.1. Before connecting the equipment to mains

Warning: Do not connect the equipment to mains until you have assured yourself that the voltage selector is correctly set to the requirement in your area, as described in Section 2.1.2. It is very important to follow carefully all instructions in this section before connecting the equipment to mains and turning the power on.

2.1.2. Voltage selection

The AEQ **BC-500** is prepared to operate with voltages of 110 or 220 V AC. Select the required voltage for your area with the voltage selector (figure 1). If you choose 110 V AC, you should replace the fuse (0.8 A SLOW) that is mounted in the fuse box of the mains connector (figure 2) with a 1.6 A SLOW fuse that can be found in the plastic bag that contains this manual. To do so, take out the fuse box located on the lower part of the mains connector (figure 2) and remove the fuse mounted and replace it with the fuse that comes loose in the plastic bag, as already mentioned.

Remember: **Voltage 220 V AC = 0.8 A Fuse type T (slow)**
Voltage 110 V AC = 1.6 A Fuse type T (slow)

Note: The equipment is delivered from factory with the voltage selector set to 220 V AC and its corresponding 0.8 A fuse mounted in the fuse box.

Note: The equipment is delivered from factory with a Euro plug mains connector. In some countries, this connector must be replaced following the local requirements. If your area does not comply with Euro-plug requirements, please, replace the mains connector before continuing.

FIGURE 1

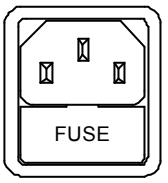


FIGURE 2

2.1.3. Equipment power on

Once carried out the eventual modifications and verifications described in Section 2.1.2., the equipment is ready to be connected to mains. Before connecting the power cord to mains, make sure that the power switch (figure 4) is set to POWER OFF. Once connected to mains set the power switch to POWER ON. If all the instructions has been followed, the power LEDs ANALOG V+ and V- will light, indicating that the equipment is receiving the correct voltage (figure 3). The power on operation has been carried out successfully. Turn off the equipment and proceed with the audio signal connections as described in Section 3.

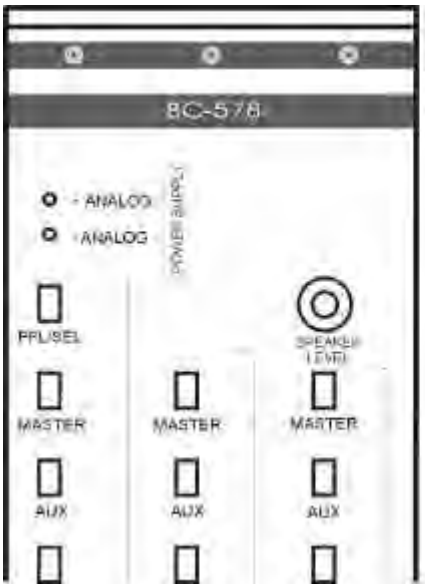


FIGURE 3

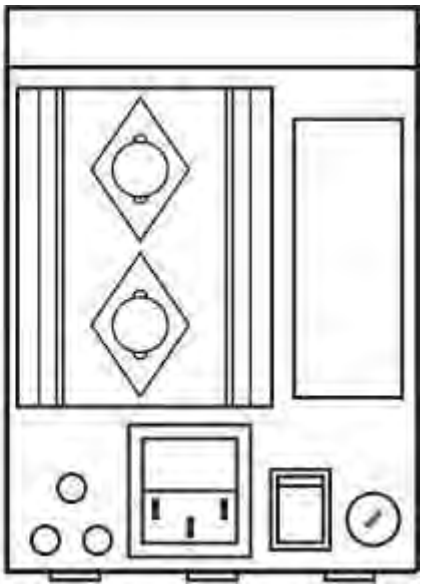
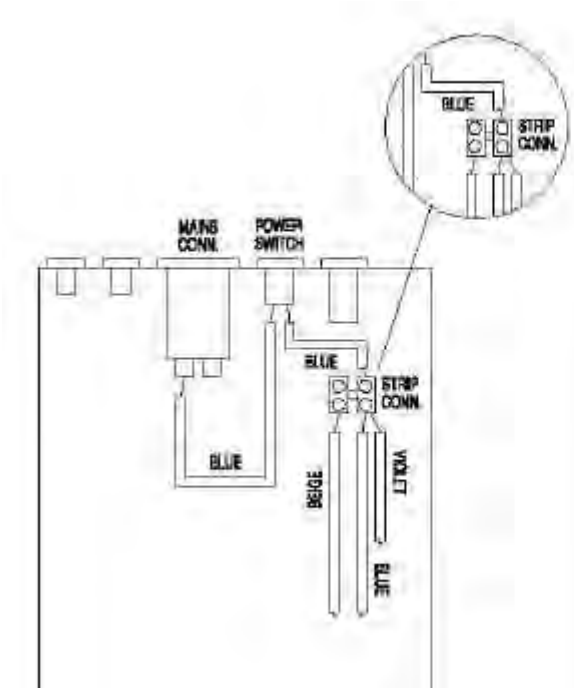


FIGURE 4

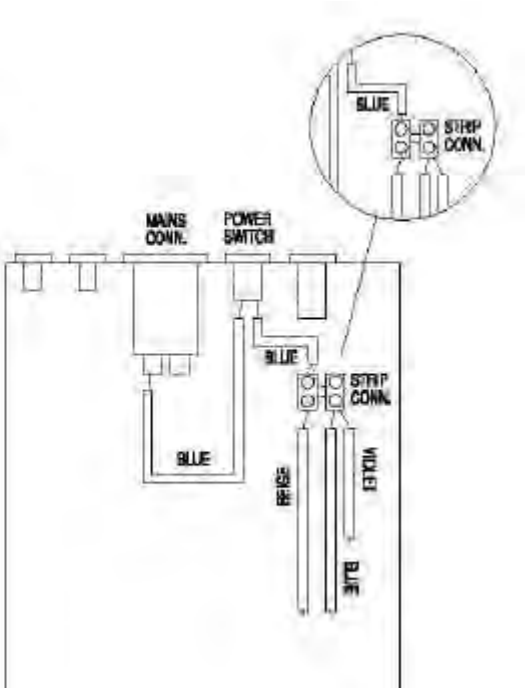
2.1.4. 125 / 240 V

The power supplies of the Mixing Console **BC-500** that were manufactured since October 1993, have a connection inside by means of which the functioning values of the mains voltage can be changed. The equipment is set up from factory for a 110 / 220 V voltage (figure 5), and with the voltage selector in the 220 V position. For a 110 V voltage, follow the instructions in this user's manual (Section 2.1.2.).

If in your area the mains voltage is 125 V or 240 V, do the connection in figure 6 for programming the equipment for 125 / 240 V. Now, if you turn the voltage selector to the 240 V position, the equipment will be set for 240 V mains voltage. In addition, if you require 125 V mains voltage, follow the same instructions in this user manual as for 110 V.



110/220 V
FIGURE 5



125/240 V
FIGURE 6

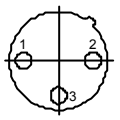
3. AUDIO CONNECTIONS

3.1. General

Note: It is recommended to extend the graphical description of audio connections (Section 5) in order to visualize and improve comprehension of the following instructions.

The connectors of the **BC-500 have been made in accordance with the recommendations of AES 14-1992 (ANSIS 4.48 - 1992)**. This recommendation is based upon the **IEC 268 - 12** of **1987**: *"**Audio Systems Equipment Part 12, Connector application for Radio Broadcasting and similar use".***

Make sure that the audio cables that you are connecting to the equipment follow these guidelines. In case the do not, they have to be replaced or modified, since they can cause problems with regard to the phase of the audio signal.



Pin connector (male)	Output
Socket connector (female)	Input

PIN ASSIGNMENT

Appliance	1	2	3	**Note 1***
Mono channel, balanced	Shield	Positive polarity	Return	If a balanced microphone is connected to an unbalanced amplifier input, the pin number 3 of the input should be connected to pin number 1.
Mono channel, unbalanced	Shield and return	Positive polarity	**Note 1***	
Mono channel, balanced, Phantom power	Shield and negative power	Positive polarity and power	Positive return and power	
Mono channel, balanced, Power A-B	Shield	Positive polarity and power	Negative return and power	

4. MIXING CONSOLE DESCRIPTION

4.1. Basic design concepts

The **AEQ BC-500 Audio Mixing Console** has been designed, mainly, to be used in radio broadcast studios, as well as in OB-vans, local TV and audio installations where the quality and reliability are basic factors.

The criteria for the development and manufacturing of this mixer has been the result of our acquired experience on radio broadcasting and the direct contact with professionals in this sector, this permitting us to compile the request for a mixing console from local radio and TV broadcasters and meet their demand with this mixing console - AEQ BC-500.

Its design and configuration assures a fast assimilation of the functions by the user. The logical distribution of the controls and the automatic functions of monitoring mute and signalling, simplifies the operators labour. Its modular concept allows the replacement of any module in a few moments. The high standards and quality of the components used in its manufacture, guarantee a long active life of this equipment.

The AEQ BC-500 audio mixing console, parting from a standard factory configuration, can be customized following the user's special requirements. It can easily be expanded and incorporate new input modules, or simply be redistributed following the users preferences. Some of the characteristics that make the BC-500 ideal equipment for local radio and TV stations are:

- Self-operation or studio control push button selection
- VCA signal control on fader
- Indirect control of the master send
- Electronically balanced busses
- Transformer balanced inputs and outputs (electronically balanced inputs in **BC-522** y **BC-533**)
- Electronically balanced external inputs 1 and 2
- RF filters on microphone inputs
- Latching XLR metal connectors
- Auxiliary sends pre/post fader selectable by user
- Remote mute and PFL from studio room
- Clipping indicators on input modules **BC-511**
- Stereo PFL
- External telephone hybrid I/O module, with separate PFL and I/O controls, optional internal hybrid
- Stereo outputs with simultaneous mono sum
- Separate control of studio and control room headphones
- 4-wire intercom for talkback, OB-units, micro line control, etc
- Programmable "On-Air" signalling on input modules, 24 V power supply

4.2. Standard configuration

The **AEQ BC-500 Audio Mixing Console** is delivered with the following standard configuration:

1	**BC-501**	Chassis with capacity for 20 modules, audio metering and PFL monitoring
1	**BC-578**	Monitor and intercom control for self-operation and studio control
4	**BC-511**	Mic / line mono input module
6	**BC-522**	Double stereo input module for two stereo input connections
1	**BC-533**	Input/output module for external telephone hybrid control
1	**BC-540**	Auxiliary stereo + mono sum output module
1	**BC-560**	Master programme stereo + mono sum output module
4	**BC-502**	Blank module

This initial configuration can be equipped with four additional modules, **BC-511**, **BC-522**, **BC-533** (maximum two per mixer) and **BC-577** (maximum one per mixer).

4.3. Available modules

The **AEQ BC-500 Audio Mixing Console** has a variety of modules allowing it to be configured according to each user's specific needs. Furthermore, its modular construction allows the future incorporation of other modules that the market demands.

CODE	MODEL	DESCRIPTION
732000216	**BC-511**	Mic / line mono input module
732000217	**BC-522**	Double stereo input module for two stereo input connections
732000218	**BC-533**	Input / output module for external telephone hybrid control*
732000219	**BC-540**	Auxiliary stereo + mono sum output module
732000220	**BC-560**	Master programme stereo + mono sum output module
732000221	**BC-578**	Monitor and intercom control for self-operation and studio control
732000222	**BC-577**	Power supply (24 V) for "On Air" signalling
732000223	**BC-501**	Chassis with capacity for 20 modules, audio metering and PFL monitoring
732000215	**BC-502**	Blank module
732000242	**BC-533H**	Module with internal telephone hybrid *
732000243	**BC-533H MPX**	Module with internal digital telephone hybrid *
732000224	**BC-550**	Master programme output module (without fader)

* The BC-500 audio mixer features two telephone busses. If you are using two BC-533/BC-533H/BC-533H MPX modules in the same BC-500 mixer, each one should be configured to work on a different telephone bus. Due to this, it will never be possible to work in conference (multiplex) between both BC-533/BC-533H channels.

In case you require this function, you can use either two BC-533H MPX modules or a BC-533 with an external hybrid with multiplex, like for example the digital telephone hybrid AEQ TH02-ExmkII, the ISDN audio codec AEQ Eagle or the multiconferencing system Systel 6000. This kind of equipment delivers only one send and one return audio signal for the conference.

5. MIXING MODULES DESCRIPTION

5.1. BC-511

5.1.1. Functions

The microphone / line mono input module **BC-511** allows to connect two independent inputs, one at microphone level **(14)** and one at line level **(15)**; microphone or line is selected with the MIC/LINE push button **(1)**.

Once the input is selected, its level is adjusted with the GAIN rotary control **(2)**. The module allows the insertion of an external signal through the connector **(13)** and its later equalization with the rotary controls TREBLE **(3)** and BASS **(4)**, these corresponding respectively to high frequencies and low frequencies. A signal processor, for example a compressor/limiter can be connected here.

To avoid clipping at the adjusted level a CLIP LED indicator **(5)** lights when maximum gain is reached. This metering point comes after the insertion. If it would be necessary to monitor this signal, the PFL button **(9)** has to be pressed, sending this way the signal to the PFL bus. This mode is indicated by means of the LED **(10)** being lit.

Equally, the signal can be sent to the following busses:

- Master, adjusting the send level with the fader **(12)** and pressing the MASTER selector **(8)**.
- Telephone, adjusting the send level with the PHONE rotary control **(7)**, always with the CHANNEL ON selector **(11)** activated (lit).

Whenever the CHANNEL ON **(11)** selector is pressed, the signalling (ON AIR) is also activated, and the monitor signal is muted. Likewise, when in the studio room the REMOTE MUTE button is pressed, send signals are muted and the PFL of this module is activated, and the signalling and monitor signal mute remains active. It is possible to configure if this works when the channel is in MIC or LINE position by means of the jumpers **PDP5** and **PDP6**.

The signal can also be sent to the auxiliary bus, adjusting the send level with the rotary control **(6)**. This send can be programmed with the jumpers **PDP1, PDP2, PDP6** and **PDP7:**

PDP1 and **PDP2**: Select the type of send to the auxiliary bus. If the configuration jumper is located in **PDP1** it is set to POST-fader send, and if located in **PDP2** it is set to PRE-fader send.

PDP3 and **PDP4**: Select the send to the telephone buses by means of the rotary control **(7)**, **PDP4** is for Telephone 1 and **PDP3** Telephone 2.

PDP5 (1-2): Signalling and monitor signal muting works only when the channel is in microphone position.

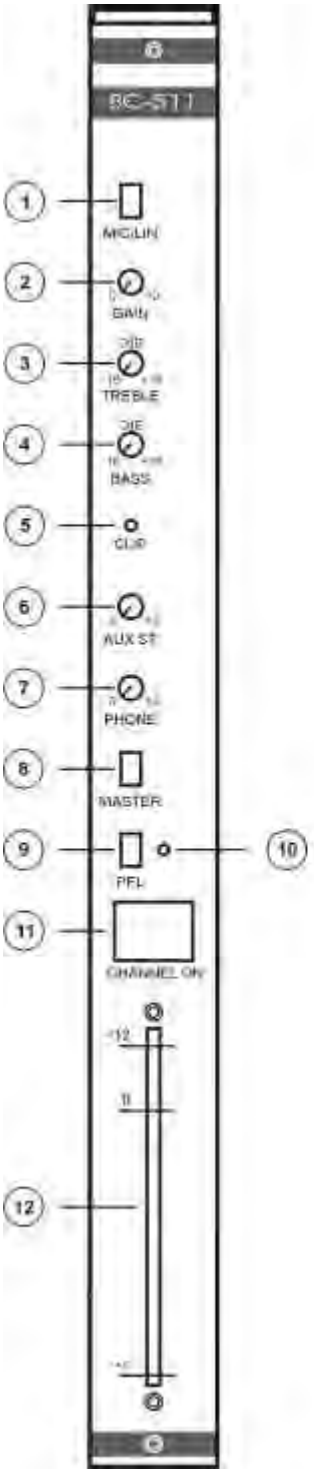
PDP5 (2-3): Signalling and monitor signal muting works also when the channel is in line position, for example, when an external microphone mixer is connected.

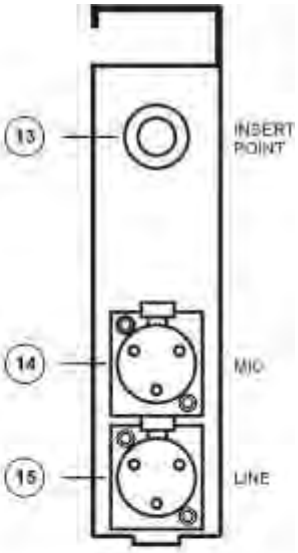
PDP6 (1-C): The send to the auxiliary bus is muted or not according to the position of the CHANNEL ON selector **(11)** or if the fader's **(12)** is at end of track position.

PDP6 (3-C): The send to the auxiliary bus is independent of the CHANNEL ON selector's **(11)** position and of the fader's **(12)** end of track position.

PDP7 (2-C): The send to the auxiliary bus is muted or not according to the CHANNEL ON selector's **(11)** position.

5.1.2. Description of controls and connectors





(1) Mic/line input selector.
(2) Input level adjustment rotary control.
(3) High frequencies equalization rotary control.
(4) Low frequencies equalization rotary control.
(5) Clip indicator.
(6) Send to auxiliary bus level adjustment rotary control.
(7) Send to telephone bus level adjustment rotary control.
(8) Send to master bus selector.
(9) PFL push button.
(10) PFL active indicator.
(11) Send activate selector.
(12) Send level adjustment fader.
(13) Insert connector.
(14) Microphone level input connector.
(15) Line level input connector.

5.2. BC-522

5.2.1. Functions

The double stereo line input module **BC-522** allows to connect two stereo inputs, **(12)** and **(13)** are for the left and right channels of line A, and **(14)** and **(15)** for the left and right channels of line B. Line A or line B is selected with the push button **(1)**. If the selector is not pressed, the input will be line A, and if depressed, line B. In this case, the yellow indicator on the selector will be activated.

Once selected the input, the level is adjusted with the rotary control **(2) GAIN**. To avoid clipping at the adjusted level, a LED indicator **(4) CLIP** lights up when the maximum gain is reached.

If it would be necessary to transform this input signal to mono, the button **(3)** has to be pressed. If it would be necessary to monitor this signal, the PFL button **(8)** has to be pressed, sending this way the signal to the PFL bus. This mode is indicated by means of the LED **(9)** being lit.

The signal can be send to the following busses:

- Master, adjusting the send level with the fader **(11)** and pressing the selector **(7)**.
- Telephone, adjusting the send level with the rotary control **(6)**, always with the selector **(10)** activated (lit).

The signal can also be sent to the auxiliary bus, adjusting the send level with the rotary control **(5)**. This send can be programmed with the jumpers **PDP1**, **PDP2**, **PDP3**, **PDP4**, **PDP5** and **PDP6**:

PDP1, **PDP2,**
PDP3 + PDP4: Select the type of send to the auxiliary bus. If the configuration jumper is located in **PDP1** and **PDP3**, it is set to POST-fader send, and if located in **PDP2** and **PDP4** it is set to PRE-fader send.

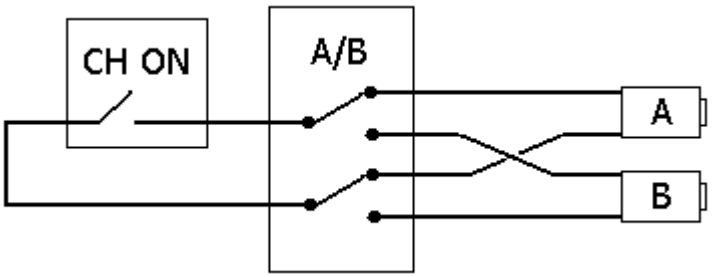
PDP5 (2-C): The CHANNEL ON selector **(10)** mutes or not the send to the auxiliary bus.

PDP6 (1-C): The CHANNEL ON selector **(10)** and the fader **(11)** mute or not the send to the auxiliary bus.

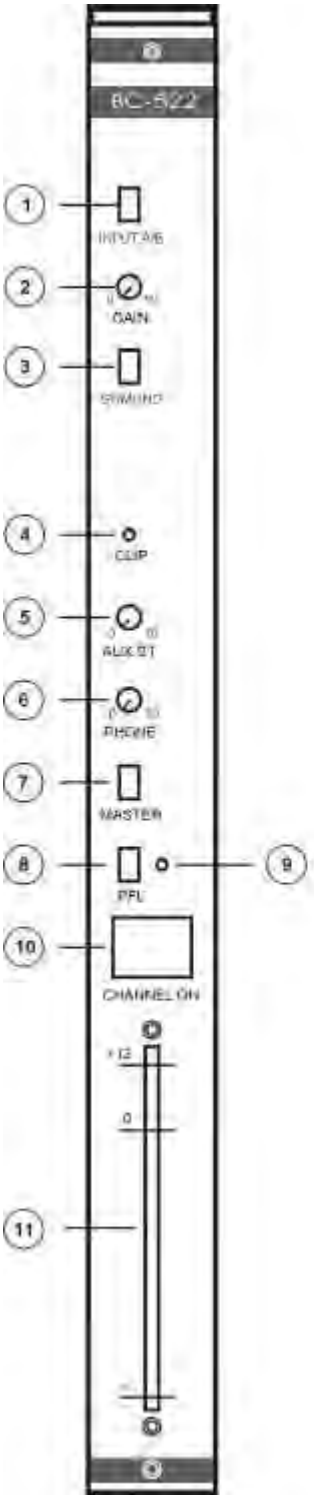
PDP6 (3-C): The send to the auxiliary bus is never muted by the CHANNEL ON selector **(10)** nor the fader's **(11)** end of track position.

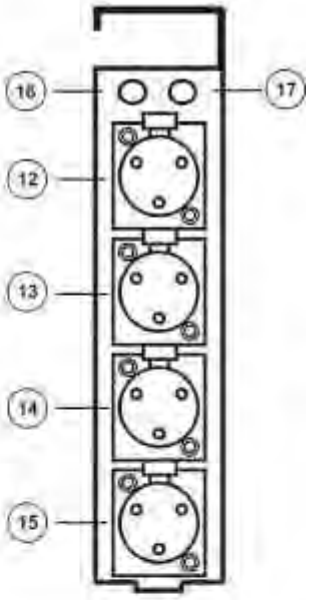
PDP7 + PDP8: Allows assigning the send signal from this module to the telephone busses. Put the configuration jumper in **PDP7** to assign to telephone bus 1, or in **PDP8** to assign to telephone bus 2, or on both to assign to both busses.

The remote control is activated (closing contacts) when the CHANNEL ON selector **(10)** is pressed. According to the position of the INPUT A/B button **(1)** the output A **(16)** or B **(17)** are activated:



5.2.2. Description of controls and connectors





(1) Line A/B selector.
(2) Input level adjustment rotary control.
(3) Stereo / mono selector.
(4) Clipping indicator.
(5) Send to auxiliary bus level adjustment rotary control.
(6) Send to telephone bus level adjustment rotary control.
(7) Send to master bus selector.
(8) PFL push button.
(9) PFL active indicator.
(10) Send active selector.
(11) Send level adjustment fader.
(12) Line A left channel input connector.
(13) Line A right channel input connector.
(14) Line B left channel input connector.
(15) Line B right channel input connector.
(16) Remote control line A.
(17) Remote control line B.

5.3. BC-533

5.3.1. Functions

The telephone input/output module **BC-533** allows adapting of an external telephone hybrid, digital or analogue, to the rest of the modules in the system.

It has one audio input **(14)** that is fed by an external telephone hybrid at line level. This input can be monitored on the PFL bus if the PFL IN push button **(8)** is pressed and the LED **(9)** is lit.

The module's input signal can be sent to the master bus, adjusting the send level with the fader **(11)** and pressing the MASTER selector **(7)**, and also to the auxiliary bus, adjusting the send level with the AUX ST rotary control **(6)**, provided that the CHANNEL ON selector is activated (pressed) to allow the signal to be sent.

If the fader is put at the minimum position, it will have the same effect as if the CHANNEL ON selector **(10)** was pressed deactivating all the return sends (gone out).

The output signal **(13)** of this module is obtained by summing all signals sent to the telephone busses (PHONE 1 or PHONE 2) from the **BC-511**, **BC-522** and **BC-578** channels. The monitoring of the signal is carried out on the PFL bus, activating the PFL OUT selector **(4)**, and when the LED is lit **(5)**. This output signal is the signal that is being sent to the external telephone hybrid, adjusting its level on the GAIN rotary control **(3)**.

This module also features an interface for remote control **(12)** of external hybrids, if this would be necessary, as for example when using the **AEQ TH-02ExmkII**. In this case, an incoming call is indicated by the RING LED **(2)** being lit, and the connection of the hybrid to the telephone line (hook on / hook off) can be remote controlled by means of the CONNECT push button **(1)**. The remote control connector is a DB-9 male. This module features special functions that can be programmed through the configuration jumpers described below:

PDP1 + **PDP2**: Select the type of send to the auxiliary bus of the signal received from the hybrid. If the configuration jumper is located in **PDP1** it is set to POST-fader send, and if located in **PDP2** it is set to PRE-fader set.

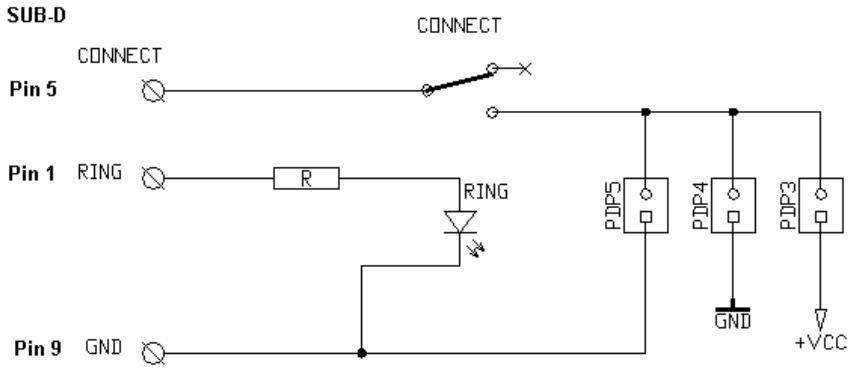
PDP3, PDP4: Select the remote modes. **PDP3** sends + Vcc through the AIR contact (pin nr.

PDP5: 5 of the connector (13)). **PDP4** sends ground through the AIR contact. **PDP5** connects contacts **GND** and **AIR** (pins nr. 9 and 5 of the connector (13)).

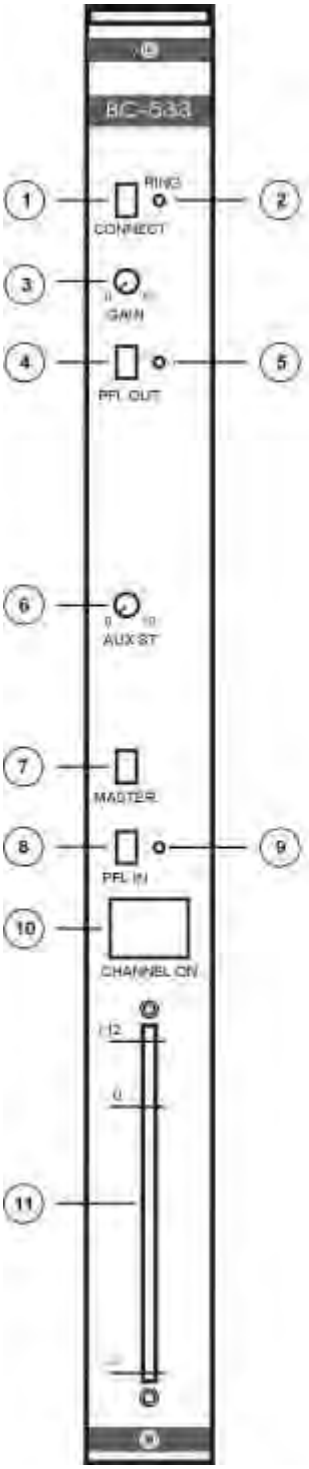
PDP6: Telephone bus 1

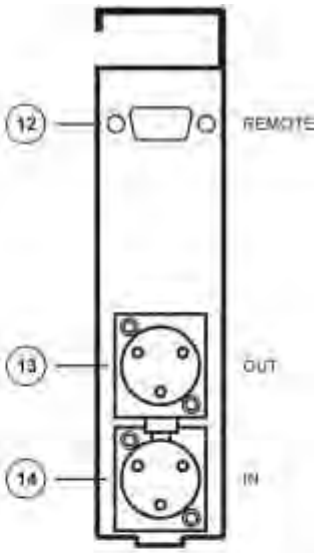
PDP7: Telephone bus 2

The **BC-533** can be connected to the telephone bus 1 or telephone bus 2. You should always bear in mind that **you must not connect two BC-533 modules to the same telephone bus**.



5.3.2. Description of controls and connectors





(1) Switch for remote control of incoming call on external hybrid.
(2) Call indicator.
(3) Send to external hybrid level adjustment rotary control.
(4) External hybrid send PFL selector.
(5) External hybrid send PFL indicator.
(6) Send to auxiliary bus level adjustment rotary control.
(7) Send to master bus selector.
(8) External hybrid PFL / input program return selector.
(9) External hybrid PFL / input program return indicator.
(10) Program return sending activate selector.
(11) Send level adjustment fader.
(12) Remote control connector.
(13) Output to telephone hybrid.
(14) Input from telephone hybrid.

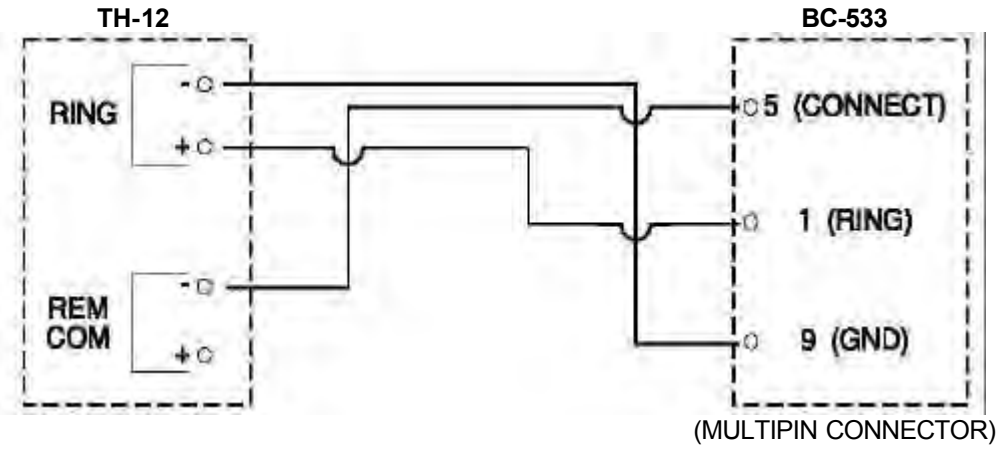
5.3.3. Example of remote connection of the AEQ TH-12 hybrid to the BC-533

Very important: **Before** carrying out the connection, pull the **BC-533** module out of the console and then:

1) Remove **PDP-4** and **PDP-5**.
2) Place **PDP-3**.

Return the **BC-533** module back into the console and carry out the connections.

CONNECTION OF THE AEQ TH-12 HYBRID TO THE BC-533 MODULE



(MULTIPIN CONNECTOR)

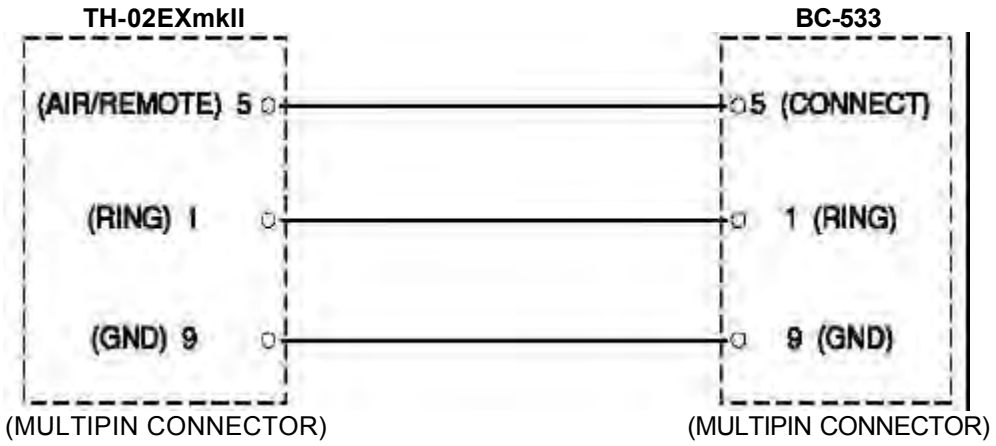
5.3.4. Example of remote connection of the AEQ TH-02EXmkII hybrid to the BC-533

Very important: **Before** carrying out the connection, pull the **BC-533** module out of the console and then:

1) Remove **PDP-3**.
2) Place **PDP-4** and **PDP-5**.

Return the **BC-533** module back into the console and carry out the connections.

CONNECTION OF THE AEQ TH-02EXmkII HYBRID TO THE BC-533 MODULE



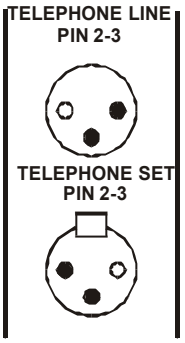
To see an example of the connection to an EAGLE audio codec, consult the user's manual of this equipment.

5.4. BC-533H

5.4.1. Functions

The BC533H channel has the same functions than the BC-533, and externally looks like it, but it includes a basic telephone hybrid. Thus, the telephone line will be connected directly to the module by way of the XLR connector with no need to use additional equipment.

Telephone line connection is made on the female XLR connector, pins 2 and 3, and the auxiliary telephone is connected on the male XLR connector, pins 2 and 3. Both connectors are located in the rear panel, and the connection is made like shown on the label on this panel:



5.4.2. Adjusting procedure

This module includes an automatic line impedance adaptation system, but an adjusting procedure is necessary during the installation.

Steps:

1.- Switch the mixer off.
2.- Remove the two screws, which hold the BC-533H module to the chassis, take the module carefully out without disconnecting the ribbon cable by putting the module in a horizontal position.
3.- Turn the power on.
4.- Connect the telephone line and auxiliary telephone set to their right connectors on the module's rear panel. Make a call. Once established, push the CONNECT switch.
5.- Send a 1 kHz tone (you must measure 0dB at PFL OUT).
6.- Press the PFL IN (reception) button to activate it and adjust VR1 on the hybrid board (PBA 472-001-209) until you get a minimum level in the PFL VU-meter.
7.- Switch the mixer off again, insert the module in the original position and tighten the screws.

5.5. BC-533H MPX

5.5.1. Functions

The BC533H MPX channel has the same functions than the BC533 module, but features a digital telephone hybrid. Thus, the telephone line will be connected directly to the module by way of the RJ-11 connectors with no need to use additional equipment. Due to the hybrid's digital processing, no adjustment is needed on installation.

The telephone line and telephone set are connected by means of RJ-11 type connectors, which are located at the rear of the module.

There are two functions that distinguish the BC533H MPX module from the BC533 module, which are multiplex and frequency extender:

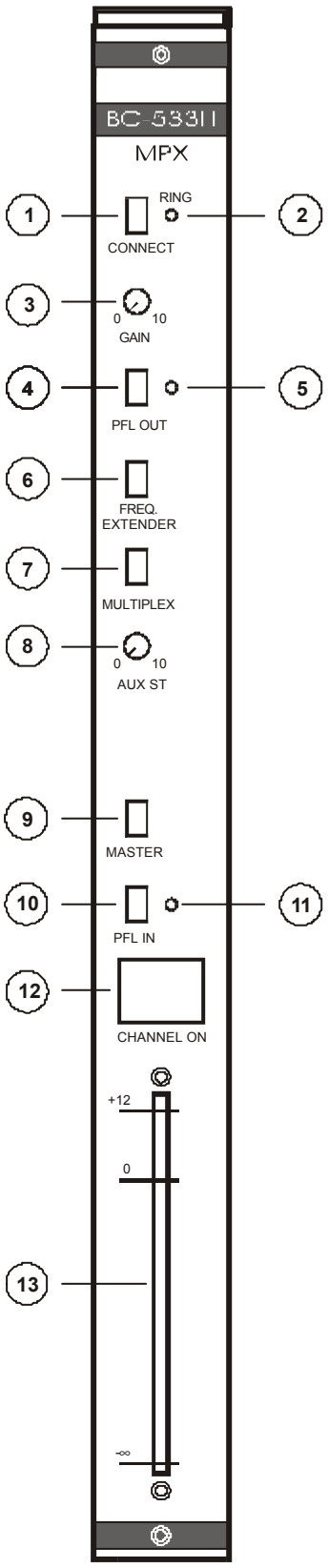
- **MULTIPLEX**: When this function is activated in both BC-533H MPX modules (if the console features two modules), both telephone lines intercommunicate.
- **FREQ. EXTENDER**: When this key is enabled, the frequency extender function is activated, and all transmitted frequencies are shifted 250 Hz upwards, and all received frequencies are shifted 250 Hz downwards. For a correct operation of this function, at the remote end has to be done the reverse procedure, by means of a AEQ **TH-02 EXMkII** or **TLE-02D** hybrid.

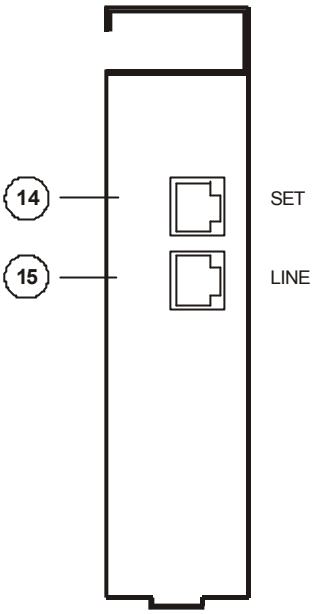
This module has special features, which are programmed by means of the jumpers described below:

PDP1: Selects how the signal received at the hybrid is sent to the auxiliary bus. Put the jumper in position 1 to send the signal post-fader, and in the opposite position to send it pre-fader.

PDP2/PDP3: If you want to connect the module to the telephone bus 1, both jumpers have to be put in position 1, and to connect it to telephone bus 2, both jumpers have to be put in the opposite position.

5.5.2. Description of controls and connectors





(1) Switch for remote control of incoming call on internal hybrid.
(2) Call LED.
(3) Send to hybrid level adjustment rotary control.
(4) Hybrid PFL send selector.
(5) Hybrid PFL send LED.
(6) Frequency extender activation key.
(7) Multiplex function activation key.
(8) Send to auxiliary bus level adjustment rotary control.
(9) Send to master bus selector.
(10) Hybrid PFL / input program return selector.
(11) Hybrid PFL / input program return LED.
(12) Program return send activation selector.
(13) Send level adjustment fader.
(14) Telephone set connector.
(15) Telephone line connector.

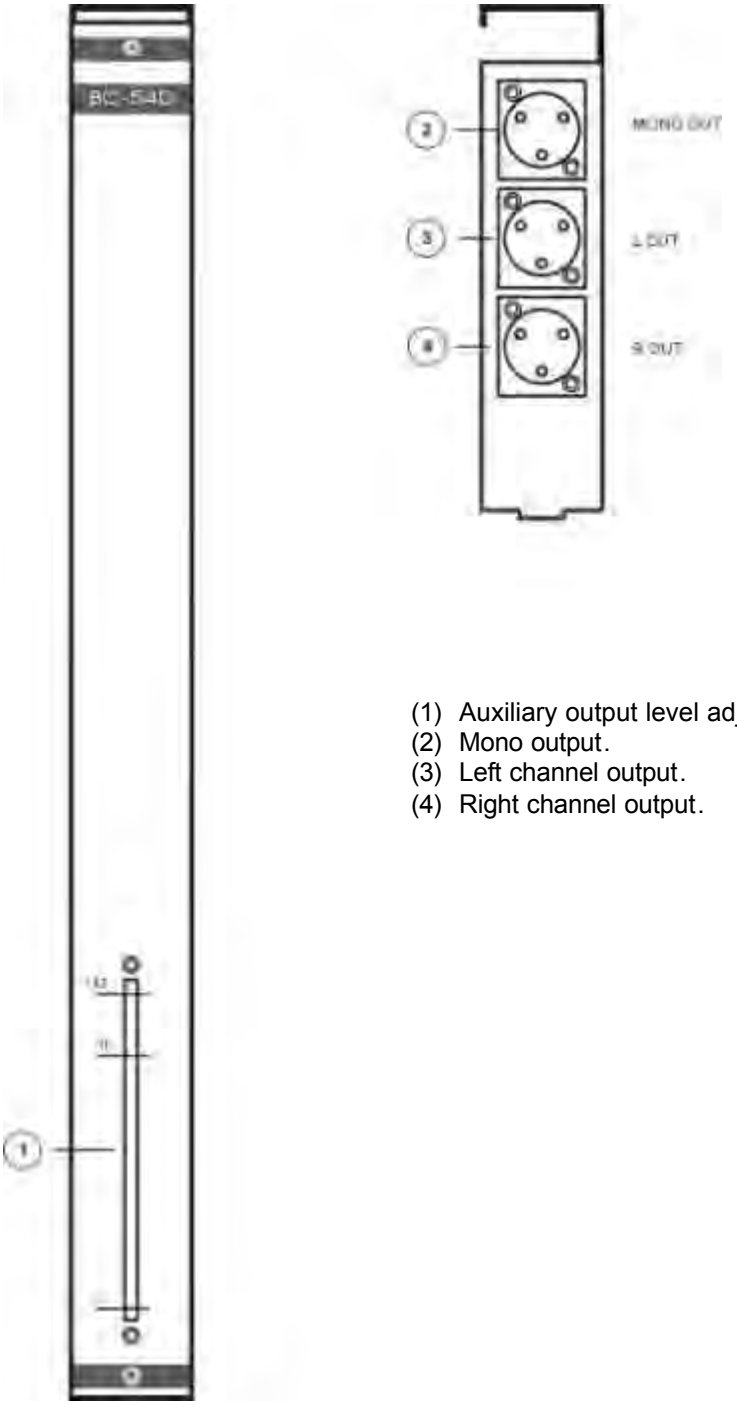
5.6. BC-540

5.6.1. Functions

The **BC-540** auxiliary stereo + mono sum output module carries out the function of summing all signal inputs assigned to its bus. The output level is controlled by means of the fader **(1)**. This module delivers the mono output signal on the connector **(2)**, as well as the stereo output signal on the connectors **(3)** (left channel) and **(4)** (right channel).

By way of the internal programming jumpers, it is possible to turn a BC-540 module into a BC-560 module.

5.6.2. Description of controls and connectors



(1) Auxiliary output level adjustment fader.
(2) Mono output.
(3) Left channel output.
(4) Right channel output.

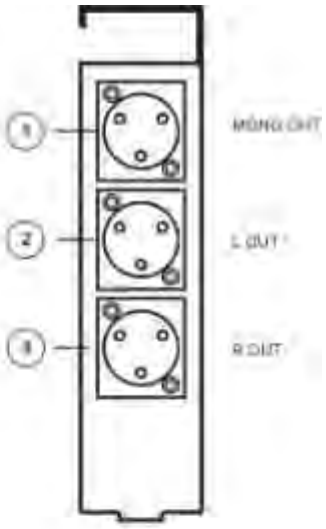
5.7. BC-550

5.7.1. Functions

The **BC-550** auxiliary stereo + mono sum output module carries out the function of summing all signal inputs assigned to its bus. This module delivers the mono output signal on the connector **(1)**, as well as the stereo output signal on the connectors **(2)** (left channel) and **(3)** (right channel).

Output level control is carried out inside the module, by means og the blue coloured potentiometer **CN2**. It is pre-adjusted in factory for a nominal output level of 4 dBm (equivalent to the fader set at 0 position).

5.7.2. Description of controls and connectors



(1) Mono output.
(2) Left channel output.
(3) Right channel output.

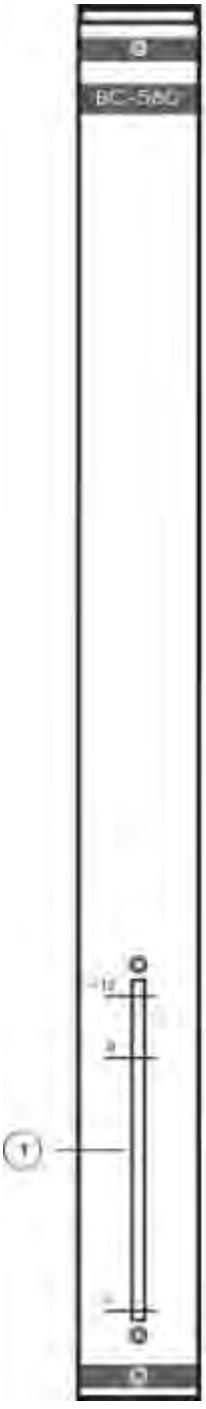
5.8. BC-560

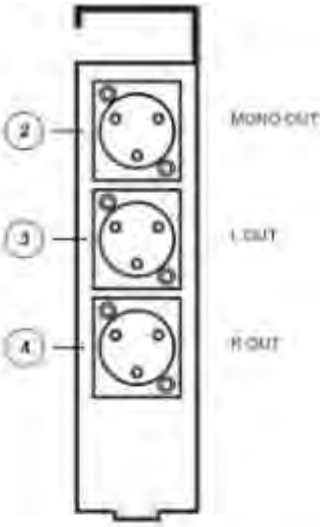
5.8.1. Functions

The **BC-560** auxiliary stereo + mono sum output module carries out the function of summing all signal inputs assigned to its bus. The output level is controlled by means of the fader **(1)**. This module delivers the mono output signal on the connector **(2)**, as well as the stereo output signal on the connectors **(3)** (left channel) and **(4)** (right channel).

By way of the internal programming jumpers, it is possible to turn a BC-560 module into a BC-540 module.

5.8.2. Description of controls and connectors





(1) Master output level adjustment fader.
(2) Mono output.
(3) Left channel output.
(4) Right channel output.

5.9. BC-577

5.9.1. Functions

The **BC-577** carries out the function of delivering the right voltage to the signalling lamps in the studio and control room in a completely stand-alone way.

It is equipped with a DC MAINS mains connector **(6)**, a protective FUSE **(5)** and a SELECT voltage selector **(4)**. The module is activated by means of the ON/OFF switch **(1)** and the direct tension of 24 V is delivered between the +24 V **(2)** and 0 V DC **(3)** contacts. This power supply can deliver up to 20 W.

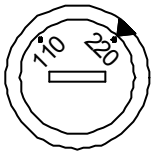
In order to simplify the wiring, and to increment the flexibility, the module is equipped with an **(7)** AC LINK, a mains output to be connected to the mains connector of the monitoring and power supply **BC-578** module.

5.9.1.1. Voltage selection

The **BC-577** is prepared to operate with voltages of 110 or 220 V AC. Select the required voltage for your area with the voltage selector (figure below). If you choose 110 V AC, you should replace the mounted fuse with the one that can be found in the plastic bag that contains this manual.

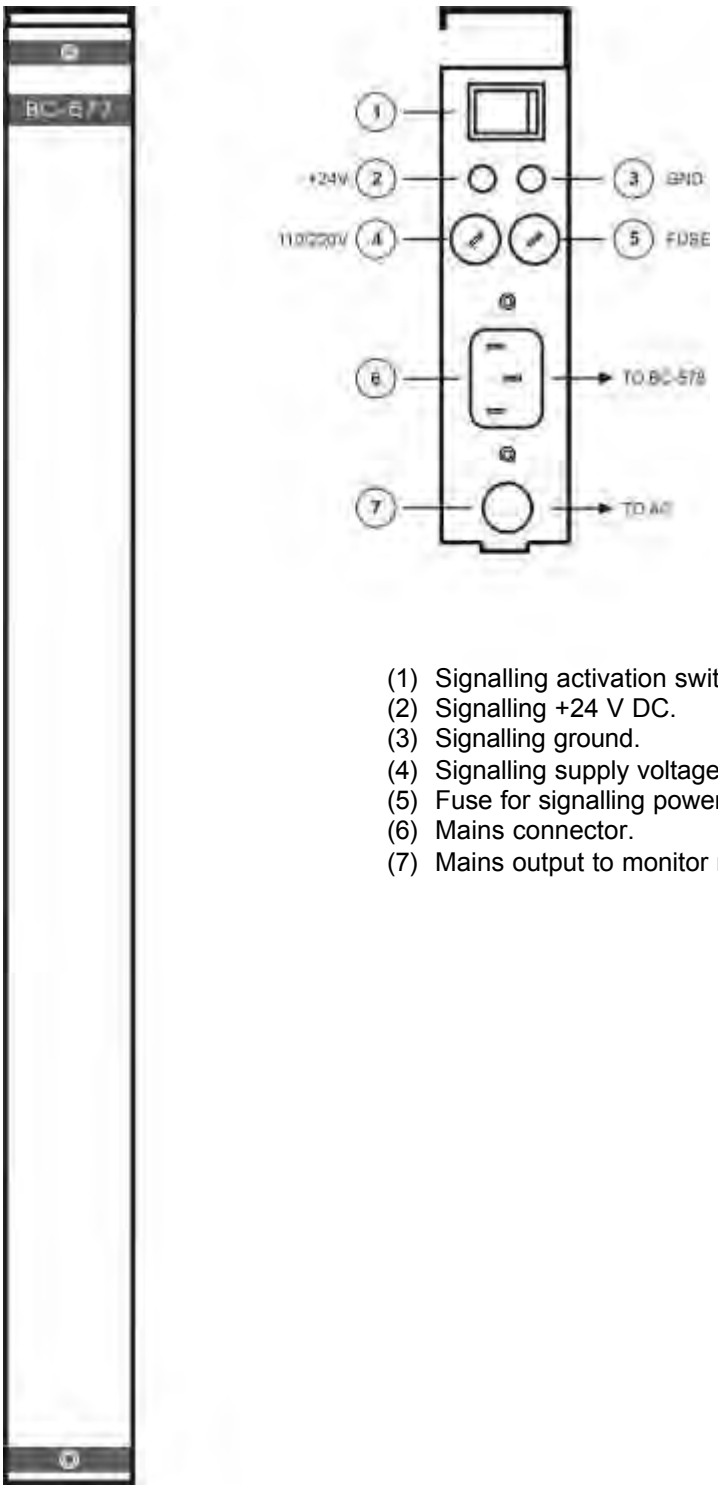
Remember: Voltage 220 V AC = 1 A fuse type T
Voltage 110 V AC = 2 A fuse type T

Note: The equipment is delivered from factory with the voltage selector set to 220 V AC, and its corresponding fuse mounted.



The diagram for signalling wiring can be seen in section **5.9.1.5. Signalling.**

5.9.2. Description of controls and connectors



(1) Signalling activation switch.
(2) Signalling +24 V DC.
(3) Signalling ground.
(4) Signalling supply voltage selector 110/220 V AC.
(5) Fuse for signalling power supply.
(6) Mains connector.
(7) Mains output to monitor module.

5.10. BC-578

5.10.1. Functions

The monitoring and power supply module, **BC-578**, carries out the functions of:

- Studio and control room monitoring
- Talkback management
- System general power supply
- Master and PFL Vu-meters control, located up-front on the chassis
- Feeds the PFL speakers located beside the Vu-meters

Due to this, this module can be divided in the following sub-blocks:

- Control room monitor and metering module 'CONTROL MONITOR'
- Studio room monitor module 'STUDIO'
- Talkback, PFL and intercom module 'TALKBACK'
- Power supply

5.10.1.1. Control room monitor and metering block 'CONTROL MONITOR'

This block manages the signal sends to the control room monitors.

The master output signal is sent pressing the MASTER selector **(4)**, the auxiliary output signal is sent by means of the AUX selector **(3)**, the PFL by means of the PFL selector **(6),** and the external signals that are coming in through the I/O CONNECTOR **(36)** are sent by means of their respective EXT1 **(7)** and EXT2 **(8)** selectors.

The level of the signal or signals selected for control room monitoring is adjusted by means of the MONITOR LEVEL rotary control **(9)**, for the control room speakers, and by means of the H/PHONES LEVEL rotary control **(10)** if the H/PHONES headphones outputs **(12** and **13)** (located on the lower part of the module) are used. This level can be metered on the PFL/SEL VU-Meter if the switch **(3)** PFL/SEL is pressed selecting SEL.

In this block two function modes can be selected, studio control or self-operation, by means of the NORMAL/AUTOCONTROL selector **(11)**. The NORMAL mode allows the muting of the studio room speakers and the connection of signalling on opening any microphone module. If AUTOCONTROL (self-operation) mode is selected by means of the selector **(11)**, the control room speakers are also muted when any microphone channel is opened.

This block also delivers the signal to the PFL speakers and the metering instruments. The mixer is fitted with two VU-meters. One of them is assigned permanently to master (L and R), and the other one to PFL/SEL.

Nonetheless, the function of both VU-meters can be modified by means of the configuration jumpers located on the rear part of the VU-meter board:

PDP3 (1-C), PDP1 (1-C): Master assignment
PDP3 (3-C), PDP1 (3-C): PFL/SEL assignment
PDP4 (2-C), PDP2 (2-C): Auxiliary assignment

The 0 Vu adjustment is carried out by means of the potentiometers P1 and P2 on the same board. To access this board, remove the mixer's rear panel.

5.10.1.2. Studio room monitor block 'STUDIO'

The 'STUDIO' block manages the signal sends to the studio room monitors.

The master output signal is sent pressing the MASTER selector **(14)**, the auxiliary output signal is sent by means of the AUX selector **(15)**, the PFL by means of the PFL selector **(16),** and the external signals that are coming in through the I/O CONNECTOR **(36)** are sent by means of their respective EXT1 **(17)** and EXT2 **(18)** selectors.

The level of the signal or signals selected for monitoring in the control room is adjusted by means of the MONITOR LEVEL rotary control **(19)**, for the studio room speakers, and by means

of the H/PHONES LEVEL rotary control **(20)** for the studio room headphone outputs, located on the I/O CONNECTOR **(36)**. There are two outputs for headphone connection, named PRIMARY HEADPHONES and SECONDARY HEADPHONES. The signal is the same on both outputs.

This block also cancels all PFL assignments on the various channels, when the PFL RESET button **(21)** is pressed.

5.10.1.3. Talkback, PFL and intercom block 'TALKBACK'

This module manages a series of functions that complete the **AEQ BC-500** functionality and performance. Below, each one of them is explained in detail.

This block allows talkback by means of the included MIC T'BACK microphone **(28)** to:

- Master outputs (to BC560), pressing the MASTER selector **(23)**. If you want to deactivate this function, remove the jumpers from **PDP3** and **PDP4** and place them on **PDP5** and **PDP6**.
- Auxiliary outputs (to BC540), pressing the AUX selector **(24)**. If you want to deactivate this function, remove the jumpers from **PDP7** and **PDP8** and place them on **PDP9** and **PDP10**.
- Telephone outputs (to BC533), pressing the PHONE selector **(25)**. The jumpers **PDP1** and **PDP2** allow (when they are placed) the talkback to be sent to the telephone bus 1 and/or 2 respectively.
- Studio room monitors and headphones (on I/O CONNECTOR **(36)**), pressing the STUDIO selector **(26)**.
- 4-wire intercom mode communication (on I/O CONNECTOR **(36)**), pressing the INTERCOM selector **(27)**.

It also allows the PFL speaker level adjustment by means of the SPEAKER LEVEL rotary control **(22)**. This rotary control also controls the level of the input signal of the intercom I/O CONNECTOR **(36)** when this input is activated by means of the INTERCOM switch **(29).** The intercom input and output is only active when the INTERCOM INPUT ON switch **(29)** is pressed.

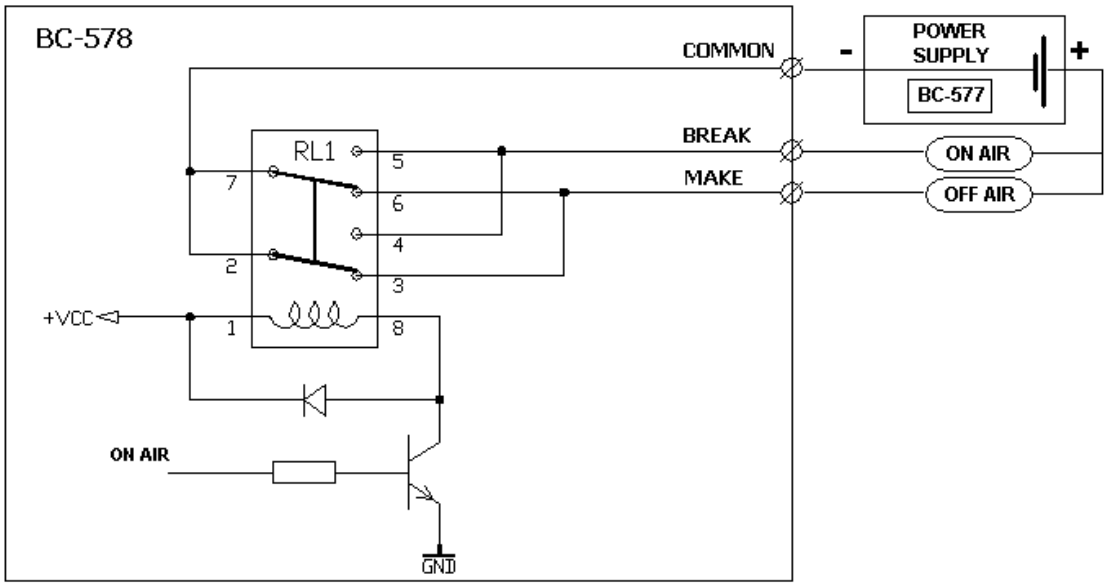
5.10.1.4. Power supply

This module contains the power supply that delivers the correct voltage to all the other modules in the system. This power supply is fitted with the mains AC MAINS connector with an EMI filter and a fuse **(35)**, the voltage input SELECT selector **(34)**, POWER switch **(33)**, as well as two status indicators, + V ANALOG **(1)** and - V ANALOG **(2)**, located in the front of the module. Their task is to indicate the internal system voltages. To allow optimum heat dissipation, the power supply's heat sink is located externally **(37)**. The toroidal transformer is located inside the chassis.

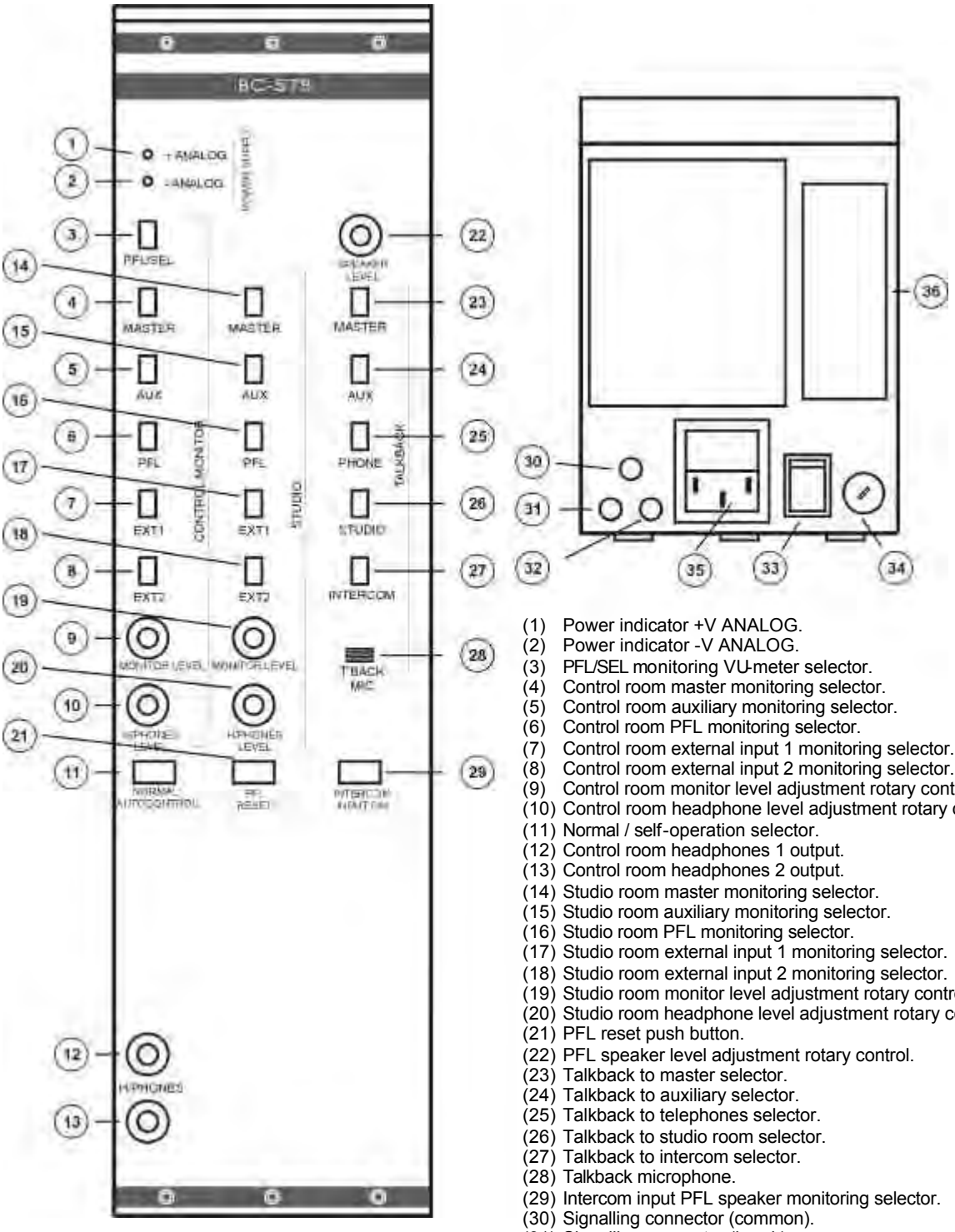
In the control room monitor module, when jumper **PDP1** is short-circuited, it connects the appliance's analogue ground with the mains earth.

5.10.1.5. Signalling

Below is shown the connection and wiring diagram of the signalling system.



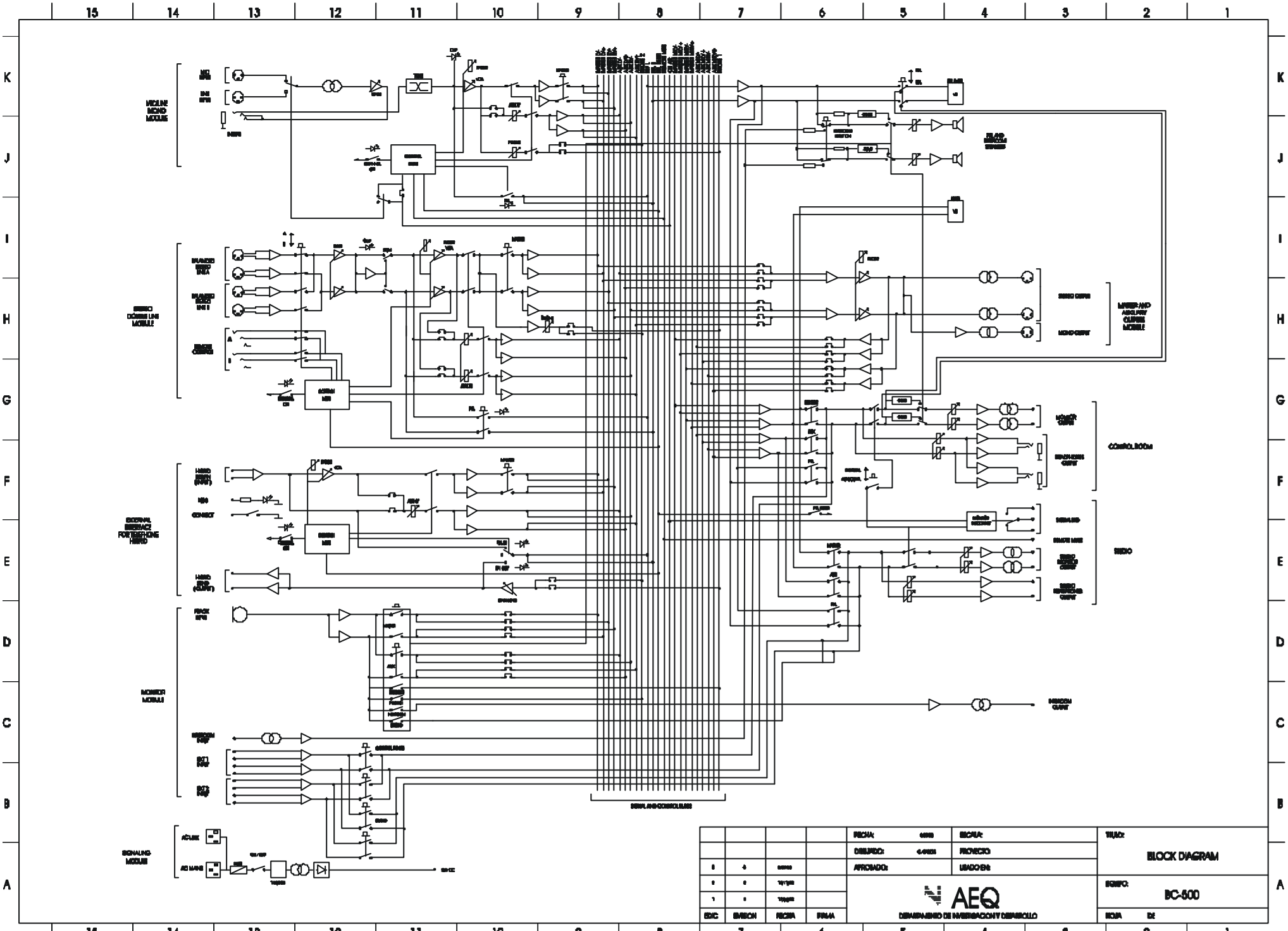
5.10.2. Description of controls and connectors



(1) Power indicator +V ANALOG.
(2) Power indicator -V ANALOG.
(3) PFL/SEL monitoring VU-meter selector.
(4) Control room master monitoring selector.
(5) Control room auxiliary monitoring selector.
(6) Control room PFL monitoring selector.
(7) Control room external input 1 monitoring selector.
(8) Control room external input 2 monitoring selector.
(9) Control room monitor level adjustment rotary control.
(10) Control room headphone level adjustment rotary control.
(11) Normal / self-operation selector.
(12) Control room headphones 1 output.
(13) Control room headphones 2 output.
(14) Studio room master monitoring selector.
(15) Studio room auxiliary monitoring selector.
(16) Studio room PFL monitoring selector.
(17) Studio room external input 1 monitoring selector.
(18) Studio room external input 2 monitoring selector.
(19) Studio room monitor level adjustment rotary control.
(20) Studio room headphone level adjustment rotary control.
(21) PFL reset push button.
(22) PFL speaker level adjustment rotary control.
(23) Talkback to master selector.
(24) Talkback to auxiliary selector.
(25) Talkback to telephones selector.
(26) Talkback to studio room selector.
(27) Talkback to intercom selector.
(28) Talkback microphone.
(29) Intercom input PFL speaker monitoring selector.
(30) Signalling connector (common).
(31) Signalling connector (break).
(32) Signalling connector (make).
(33) Power switch ON / OFF.
(34) Voltage input selector 110/220 V.
(35) Mains connector with fuse.
(36) I/O connector.

6. FIGURES AND DIAGRAMS

6.1. Block diagram



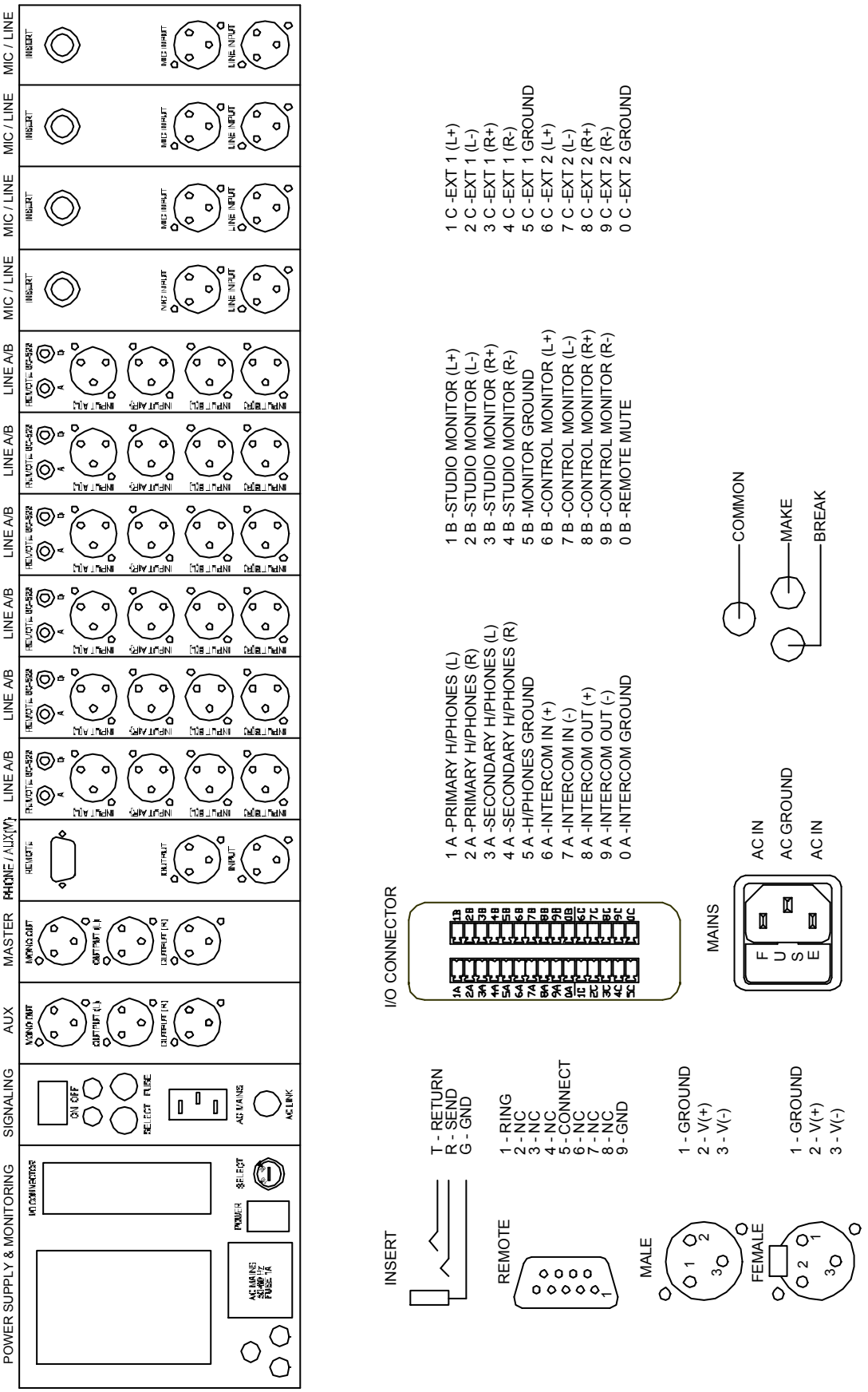
				FECHA:	ESCALA:
				DIBUJADO:	PROYECTO:
				APROBADO:	USADO EN:
EDIC	EMISION	FECHA	FIRMA	AEQ DEPARTAMENTO DE INVESTIGACION Y DESARROLLO	

TITULO: BLOCK DIAGRAM

SISTEMA: BC-600

HOJA: DE

6.2. Rear connection panel



7. TECHNICAL SPECIFICATIONS

Microphone inputs	Transformer balanced.
Input impedance:	> 3 kΩ
Input range:	- 94 dBv Fader max. Master 0. / - 17 dBv
Equivalent noise:	< -123 dBv, 200 Ω, 20 Hz-20 kHz
Fader attenuation:	- 00 / +12 dB.
Line input	Transformer balanced. Electronic symmetry on BC-522.
Input impedance:	> 6,5 kΩ
Input range:	-32 dBv Fader max. Master 0. / + 25 dBv
Fader attenuation:	- 00 / +12 dB.
Insert input / output on BC-511	
Output impedance:	< 1,8 kΩ
Nominal output level:	- 6 dBv Input 0 dBv Fader 0. Master 0. Output master + 4 dBv
Input impedance:	> 50 Ω
Input range:	-12 dBv Fader max. Master 0. / +25 dBv
Input / output telephone hybrid interface BC-533	
Output impedance:	< 100 Ω
Output level:	+2 dBv Output master + 4 dBv Master fader 0. Channel fader 0. Phone channel send max. gain 533 max.
Input impedance:	> 8 kΩ
Input range:	-18 dBv Fader channel max. Master 0. / +25 dBv
External Inputs 1 and 2	Electronic symmetry.
Input impedance:	> 5 kΩ
Input level:	-2 dBv For 0 dBv at monitor output.
Send and equalization	
Auxiliary send:	- 00 / +12 dBv - 00 / 0 dBv on pre-fader.
Phone send:	- 00 / +12 dBv
Master send:	- 00 / +12 dBv
Equalization BC-511:	Low frequencies: +/- 16 dBv High frequencies: +/- 16 dBv
Master and Auxiliary stereo outputs	
Output impedance:	< 75 Ω
Nominal output level:	+4 dBv
Maximum output level:	+18 dBv: D < 0.2%, 30 Hz-20 kHz +25 dBv: D < 0.2%, 60 Hz-20 kHz +27 dBv: D < 0.2%, 72 Hz-20 kHz
3 dB Bandwidth:	20 Hz-20 kHz
Absolute output noise:	< - 70 dBv / 20 Hz / 20 kHz Fader master Max. All sends muted. < - 80 dBv / 20 Hz/ 20 kHz Fader master 0. All sends muted. < - 85 dBv / 20 Hz/ 20 kHz Fader master - 70. All sends muted.
Control room / studio room monitor outputs	
Control room mon. output impedance:	< 75 Ω
Output level:	+4 dBv Max. monitor level. Master output +4 dBv
Absolute noise:	< -72 dBv
Headphones output impedance:	< 70 Ω
Output level:	+20 dBv H/Phones level max. Master output + 4 dBv
Intercom	
Input impedance:	> 4 kΩ
Input sensitivity:	10 dBv
Output impedance:	< 75 Ω
Output level:	+25 dBv max.
Signalling BC-577	
Power requirements:	110/220 V AC, +6% - 10%, 50 - 60 Hz.
Signalling voltage:	+24 V DC, 20 VA.
Power supply	
Power requirements:	110/220 V AC, +6% - 10%, 50 - 60 Hz, 160 VA.
Dimensions	
Height:	310 mm (12.20").
Width:	830 mm. (32.67").
Depth:	590 mm. (23.22").
Weight	
Weight:	30 kg

8. EXAMPLES OF CONNECTIONS

8.1. Examples of connections for broadcasting and similar purposes

In this section, we are going to give you a series of application examples for the **AEQ BC-500** audio mixing console. These can also be seen graphically as the figures are enclosed at the end of this section.

The main application of this mixing console is in radio broadcast studios. Due to this fact, and although it has possible application in other environments as mobile units, radio and TV broadcasting, sound reinforcement, auxiliary microphone mixer, stereo line mixer, small production, etc., we will describe the different wiring of progressive complexity, that connects the console with the circuits and equipment that normally accompany the mixing console.

8.2. Figures 1A y 1B

The figures **1A** and **1B** are describing the same connections of the mixing console.

In figure **1A** the rear part of the console has been reproduced in its real proportions. Every connector is accompanied by a number and an arrow that indicates the direction of the signal, in or out. In this figure, we have also reproduced peripheral equipment that receives or sends signals to the console. If we connect the numbers on the console and the peripherals, we obtain the way the cable should be connected. This cable should be balanced and screened, and connected to the console following the terminal numbering, serigraphed on its rear part for each type of connector (see Section 6.2.), and to the peripheral as indicated by the manufacturer.

Figure **1B** represents the same system as figure **1A**, but with different and more schematic symbols, and console and peripherals are physically connected with a line. As you can see, the numbers and the arrows are identical to the ones in figure **1A**.

The positioning of the devices that are described in figure **1B** will introduce us to the later comprehension of figure **2** and figure **3**, these describing somewhat more complex situations.

Now we proceed with the description of the studio represented in figures **1A** and **1B**.

8.2.1. The mixer

The **BC-500** audio mixing console, in its standard configuration, for which the examples of connections has been elaborated, is assembled on a chassis with capacity to house 20 modules, one of them, the monitor module, in a special width (3 times the other modules).

The first 4 modules are mono mic/line modules (**BC-511**).

The fifth module is a blank module (**BC-502**) to give space for future expansion of additional input modules.

The sixth to the eleventh are double stereo line input modules (**BC-522**).

The twelfth module is a blank module (**BC-502**) to give space for future expansion of additional input modules.

The thirteenth module is a telephone line I/O module (**BC-533**).

The fourteenth module is an auxiliary stereo + mono sum output module (**BC-540**).

The fifteenth module is a master program stereo + mono sum output module (**BC-560**).

The sixteenth and seventeenth module included are blank modules (**BC-502**).

The eighteenth module is the power supply and monitoring module (**BC-578**).

8.2.2. The connections

Bear in mind that the symbol (E) represents an incoming signal, (S) an outgoing signal and (E/S) and incoming / outgoing signal.

In examples **1A** and **1B** we have made the following connections:

FIRST CHANNEL (BC-511).

Cable **M1**(E) connects the self-operation microphone used in the control room to the MIC input.

Cable **01**(E) connects, for example, a microphone line, dedicated line or point to point line to the LINE input.

Cables **41**(S) and **42**(E) connect, for example, a personal multi-effect for the announcers voice to the insertion point of the channel to insert a loop.

SECOND CHANNEL (BC-511).

Cable **M2**(E) connects the main studio microphone for use in studio room to the MIC input.

Cable **02**(E) connects, for example, a microphone line, dedicated line or point to point line input to the LINE input.

Cables **43**(S) and **44**(E) connect, for example, a personal multi-effect for the announcers voice to the insertion point of the channel to insert a loop.

THIRD CHANNEL (BC-511).

Cable **M3**(E) connects a guest studio microphone for use in studio to the MIC input, without selecting self-operation mode when it is used, thus muting studio monitors when this microphone is opened.

Cable **03**(E) connects, for example, a microphone line, dedicated line or point to point line input to the LINE input.

No connection to the insertion point has been made.

FOURTH CHANNEL (BC-511).

Cable **M4**(E) connects a guest studio microphone for use in studio room to the MIC input.

Cable **04**(E) connects, for example, a microphone line, dedicated line or point to point line input to the LINE input.

No connection to the insertion point has been made.

SIXTH CHANNEL (BC-522).

Cables **05**(E) and **06**(E) connect a stereo line (in this case a tape recorder output) to line input A.

Cables **07**(E) and **08**(E) connect a stereo line (in this case an external stereo line) to line input B.

SEVENTH CHANNEL (BC-522).

Cables **09**(E) and **10**(E) connect a stereo line (in this case a DAT player output) to line input A.

Cables **11**(E) and **12**(E) connect a stereo line (in this case a satellite receiver output) to line input B.

EIGHTH CHANNEL (BC-522).

Cables **13**(E) and **14**(E) connect a stereo line (in this case compact disc player 1 output) to line input A.

Cables **15**(E) and **16**(E) connect a stereo line (in this case the RIIA output of turntable 1) to line input B.

NINTH CHANNEL (BC-522).

Cables **17**(E) and **18**(E) connect a stereo line (in this case compact disc player 2 output) to line input A.

Cables **19**(E) and **20**(E) connect a stereo line (in this case the RIIA output of turntable 2) to line input B.

TENTH CHANNEL (BC-522).

Cables **21**(E) and **22**(E) connect a stereo line (in this case a cartridge recorder output) to line input A.

Cables **23**(E) and **24**(E) connect a stereo line (in this case a cassette deck output) to line input B.

ELEVENTH CHANNEL (BC-522).

Cables **25**(E) and **26**(E) connect a stereo line (in this case a cartridge player output) to line input A.

Cables **27**(E) and **28**(E) connect a stereo line (in this case a video recorder or TV set stereo audio output) to line input B.

THIRTEENTH CHANNEL (BC-533).

Cable **H1**(S) connects the audio input of a telephone hybrid to the channel output.

Cable **H2**(E) connects the audio output of a telephone hybrid to the channel input.

Cable **RI**(E/S) connects the remote control of the telephone hybrid.

FOURTEENTH CHANNEL (BC-560).

Cable **29**(S): in this specific case, this output is not being used. However, it can be used to send a mono program signal to a spare link, for example.

Cable **30**(S) connects the left input of a compressor-limiter to the left program output.

Cable **31**(S) connects the right input of a compressor-limiter to the right program output.

FIFTEENTH CHANNEL (BC-540)

Cable **32**(S) connects the auxiliary mono output to an outgoing mono line, for example, dedicated or point to point line.

Cable **33**(S) connects the left auxiliary programme output to the left input of recording devices (tape recorders, DAT, cartridge recorders, cassette decks, etc.).

Cable **34**(S) connects the right auxiliary programme output to the right input of recording devices (tape recorders, DAT, cartridge recorders, cassette decks, etc.).

Signals **33** and **34** are distributed to all recording devices.

SIXTEENTH CHANNEL (BC-578) (occupies the space of three modules)

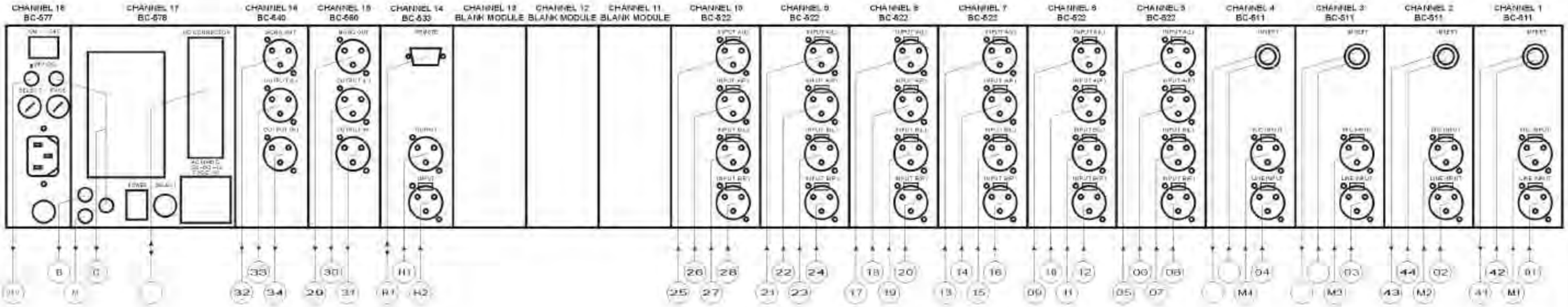
Cables **35**(E) and **36**(E) are connected to the stereo output of the tuner for program monitoring.
Cables **37**(E) and **38**(E) are connected to the stereo output of a second tuner for program monitoring.
Cable **39**(E) is connected to the output of an intercom control.
Cable **40**(S) is connected to the input of an intercom control.
Cable **AS**(S) is connected to the headphone level control for the guests in the studio room.
Cable **RM**(S) is connected to the remote mute switch.
Cable **AC1**(S) is connected to the left input of the control room monitor amplifier.
Cable **AC2**(S) is connected to the right input of the control room monitor amplifier.
Cable **AL1**(S) is connected to the left input of the studio room monitor amplifier.
Cable **AL2**(S) is connected to the right input of the studio room monitor amplifier.
Cable **C**(S) is connected to one of the 24 V connectors on the **BC-577**.
Cable **M**(S) is connected to the “on air” signalling lamps.
Cable **B**(S) is connected to the “off air” signalling lamps.
The physical connections are described in Section 6.2.

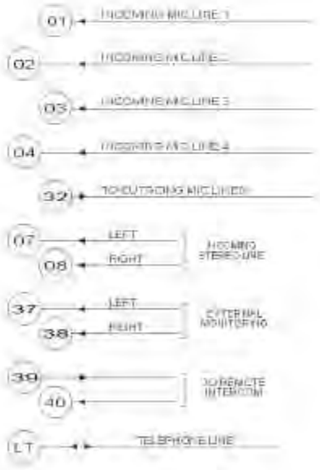
NINETEENTH CHANNEL (BC-577)

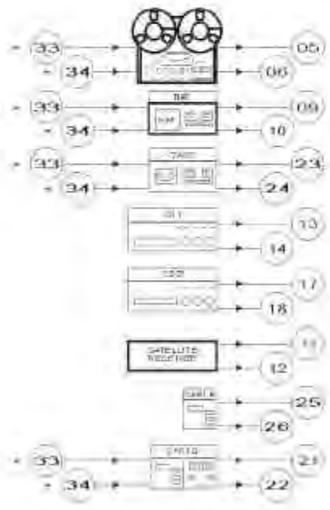
Cable **24V**(S) connects to ground of the signalling lamps to the free 24 V connector.

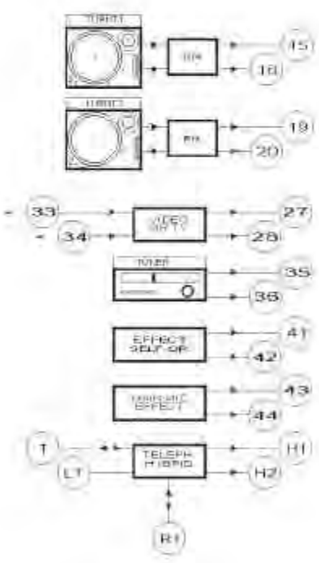
OTHER CONNECTIONS NOT IN RELATION WITH THE MIXING CONSOLE

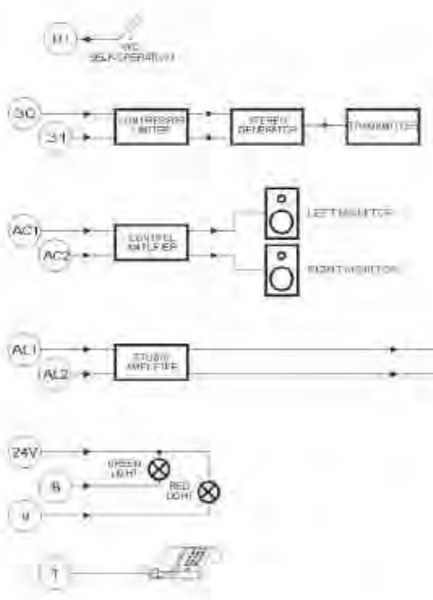
Cable **T**(E/S) connects the telephone line output of the telephone hybrid with the telephone set.
Cable **LT**(E/S) connects the telephone line input of the telephone hybrid with the telephone line.

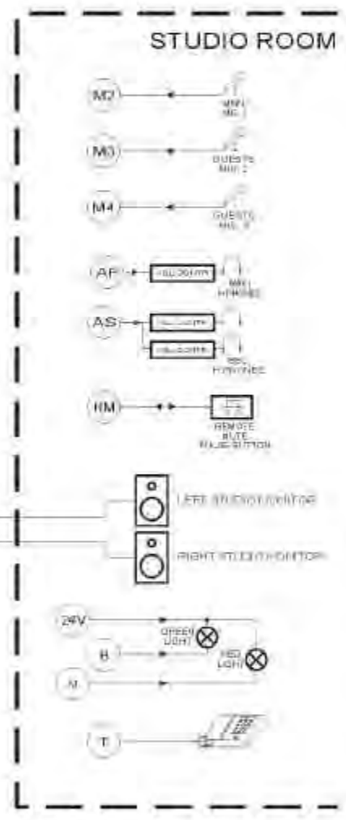












* SIGNALS SHOULD BE DISTRIBUTED FROM THE PARALELL CHANNEL OUTPUT OR THROUGH AN ACTIVE DISTRIBUTOR TO THE DIFFERENT RECORDING DEVICES.

BC-500 APPLICATION
FIG. 1A
CONNECTION EXAMPLE

STUDIO ROOM

CHANNEL 1 511
CHANNEL 2 511
CHANNEL 3 511
CHANNEL 4 511
CHANNEL 5 522
CHANNEL 6 522
CHANNEL 7 522
CHANNEL 8 522
CHANNEL 9 522
CHANNEL 10 522
CHANNEL 11 T.CIE
CHANNEL 12 T.CIE
CHANNEL 13 T.CIE
CHANNEL 14 533
CHANNEL 15 560
CHANNEL 16 540
CHANNEL 17 578
CHANNEL 18 577

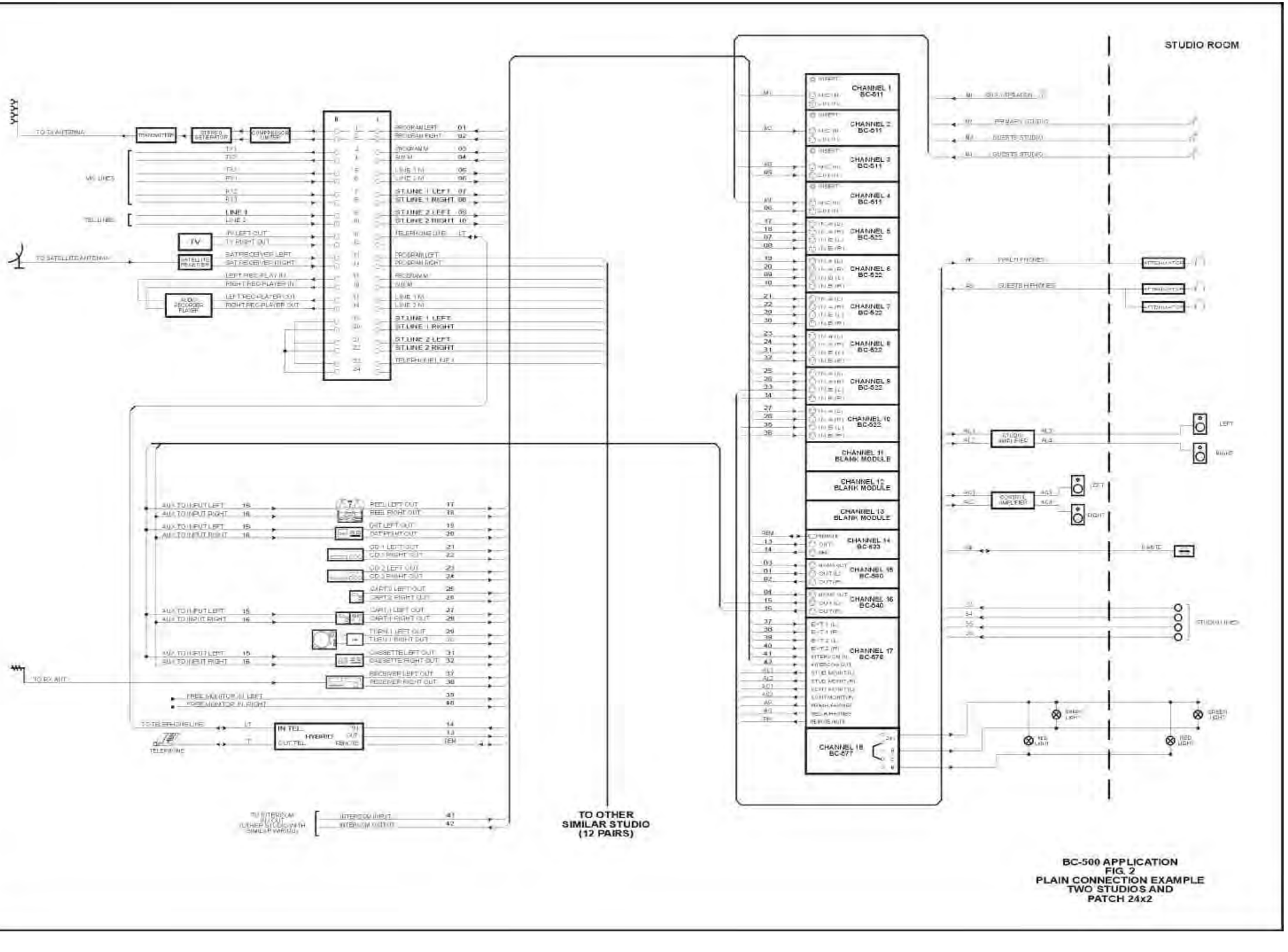
LEFT
RIGHT
LEFT
RIGHT
RED LIGHT
RED LIGHT

BC-500 APPLICATION
FIG.1B
SIMPLE
CONNECTION EXAMPLE

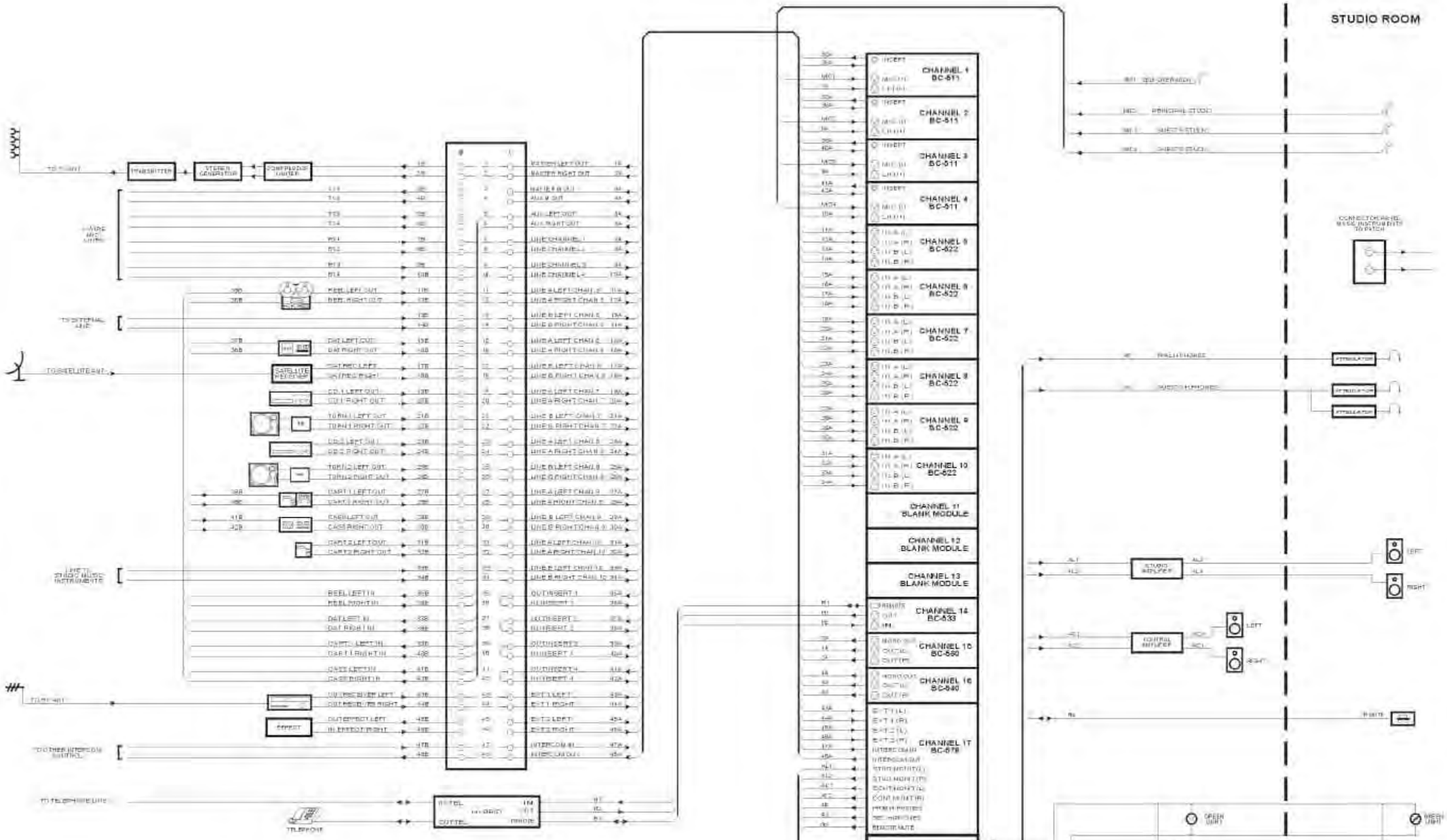
8.3. Figures 2 and 3

Figure 2, with similar symbols as figure **1B**, shows a main studio corresponding to a small station consisting in two studios. A 2x24 connector patch panel receives all signals from the studios and interconnects them and the outside.

Figure 3, with equal symbols, shows a single studio with its equipment. A 2x48 connector patch panel connects all equipment for internal studio use.

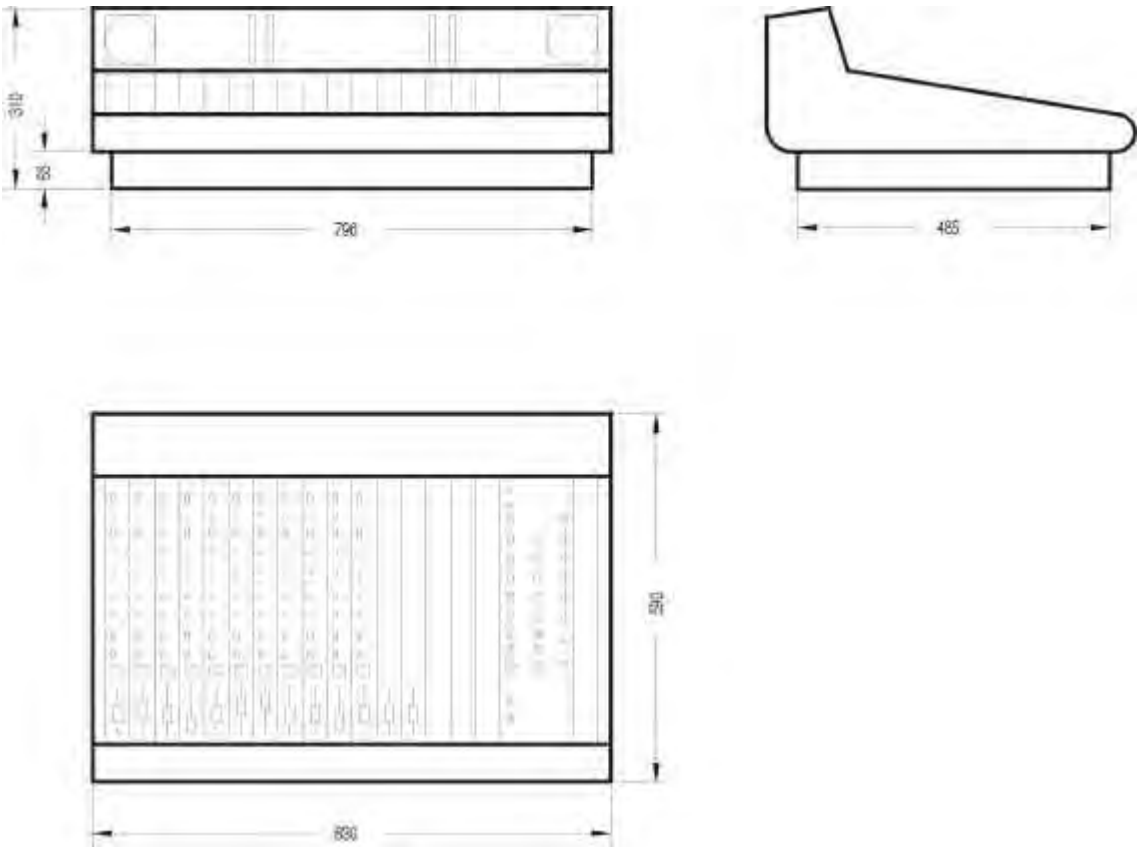


BC-500 APPLICATION
FIG. 2
PLAIN CONNECTION EXAMPLE
TWO STUDIOS AND
PATCH 24x2



BC-500 APPLICATION
FIG. 3
CONNECTION EXAMPLE
WITH PATCH 48x2

9. DIMENSIONS



NOTE: All dimensions are in millimetres.

10. DELIVERY PART LIST

10.1. Jumper programming configuration

JUMPER STANDARD CONFIGURATION

Module **BC-511**	PDP 1 **ON**	PDP 2 **OFF**	PDP 3 **OFF**	PDP 4 **ON**	PDP 5 (1-2) **ON**	PDP 5 (2-3) **OFF**	PDP 6 (1-C) **ON**	PDP 6 (3-C) **OFF**	PDP 7 (2-C) **OFF**	
Module **BC-522**	PDP 1 **ON**	PDP 2 **OFF**	PDP 3 **ON**	PDP 4 **OFF**	PDP 5 (2-C) **OFF**	PDP 6 (1-C) **ON**	PDP 6 (3-C) **OFF**	PDP 7 **ON**	PDP 8 **OFF**	
Module **BC-533**	PDP 1 **ON**	PDP 2 **OFF**	PDP 3 **OFF**	PDP 4 **OFF**	PDP 5 **OFF**					
Module **BC-560**	PDP 1 **ON**	PDP 3 **ON**	PDP 5 **ON**	PDP 7 **ON**	PDP 9 **ON**	PDP 11 **ON**	PDP 13 **ON**	PDP 15 **ON**		
Module **BC-540**	PDP 2 **ON**	PDP 4 **ON**	PDP 6 **ON**	PDP 8 **ON**	PDP 10 **ON**	PDP 12 **ON**	PDP 14 **ON**	PDP 16 **ON**		
Module **BC-578** (Control)	PDP 1 **ON**									
Module **BC-578** (Talkback)	PDP 1 **ON**	PDP 2 **OFF**	PDP 3 **ON**	PDP 4 **ON**	PDP 5 **OFF**	PDP 6 **OFF**	PDP 7 **ON**	PDP 8 **ON**	PDP 9 **OFF**	PDP 10 **OFF**
Module **Vu-Master**	PDP 1 (1-C) **ON**	PDP 2 **OFF**	PDP 3 (1-C) **ON**	PDP 4 **OFF**						
Module **Vu-PFL**	PDP 1 (3-C) **OFF**	PDP 2 **ON**	PDP 3 (3-C) **OFF**	PDP 4 **ON**						

10.2. Delivery part list

The **BC-500** audio mixing console is delivered in a standard configuration as described in section 4.2, but can also be delivered with the configuration the customer requests.

Together with the mixing console is delivered a user's manual and spare fuses for both 110 and 220 V AC.

APPENDIX: A.E.Q. WARRANTY

AEQ guarantees that this product has been designed and manufactured under a certified Quality Assurance System and according to the ISO 9001/2002 Standard. AEQ therefore Guarantees that the necessary test protocols to assure the proper operation and the specified technical characteristics of the product have been followed and accomplished. This includes that the general protocols for design and production and the particular ones for this product are conveniently documented.

1. - The present guarantee does not exclude or limit in any way any legally recognized right of the client.

2. - The period of guarantee is defined to be twelve natural months starting from the date of purchase of the product by the first client. To be able to apply to the established in this guarantee, it is compulsory condition to inform the authorized distributor or –to its effect- an AEQ Sales office or the Technical Service of AEQ within thirty days of the appearance of the defect and within the period of guarantee, as well as to facilitate a copy of the purchase invoice and serial number of the product.

It will be equally necessary the previous and expressed conformity from the AEQ Technical Service for the shipment to AEQ of products for their repair or substitution in application of the present guarantee. In consequence, return of equipment that does not comply with these conditions will not be accepted.

3. -AEQ will at its own cost repair the faulty product once returned, including the necessary labour to carry out such repair, whenever the failure is caused by defects of the materials, design or workmanship. The repair will be carried out in any of the AEQ authorized Technical Service Center. This guarantee does not include the freight charges of the product to or from such Authorized Technical Service Center.

4. – No Extension of the Guarantee Period for repaired product shall be applied. Nor shall a Substituted Products in application of this Guarantee be subject to Guarantee Period Extension.

5. - The present guarantee will not be applicable in the following situations:
Improper use or Contrary use of the product as per the User or Instruction Manual; violent manipulation; exhibition to humidity or extreme thermal or environmental conditions or sudden changes of such conditions; electrical discharges or lightning; oxidation; modifications or not authorized connections; repairs or non-authorized disassembly of the product; spill of liquids or chemical products.

6. - Under no circumstances, whether based upon this Limited Guarantee or otherwise, shall AEQ, S.A. be liable for incidental, special, or consequential damages derived from the use or from the impossibility of using the product.

AEQ shall not be liable for loss of information in the disks or data support that have been altered or found to be inexact, neither for any accidental damage caused by the user or other persons manipulating the product.