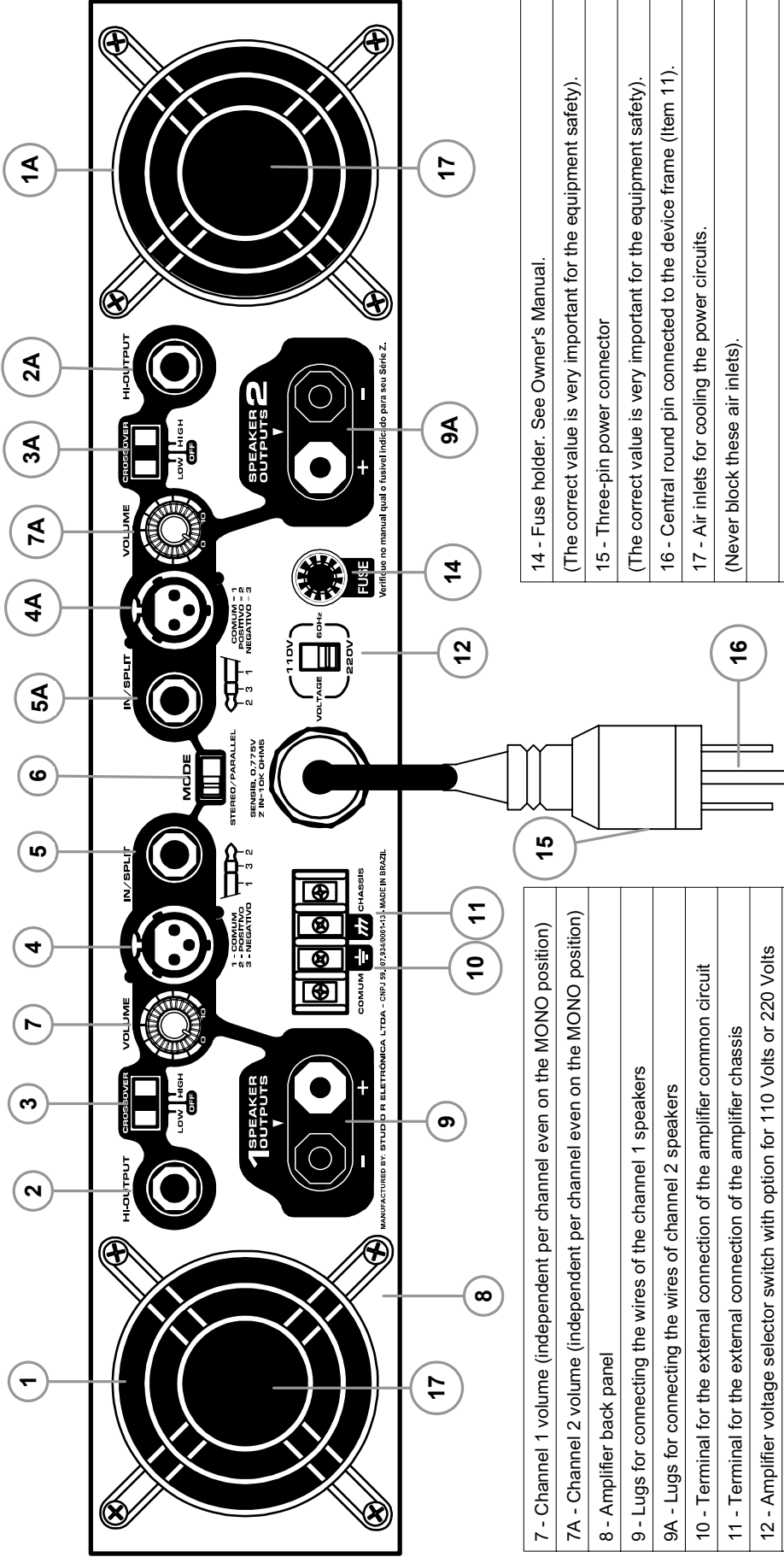


# Application Manual

## Main functions of the the 4-ohm, Z-Series amplifier control panel

1 - Channel 1 fan
1A - Channel 2 fan
2 - Channel 1 crossover treble output
2A - Channel 2 crossover treble output
3 - Cutoff frequency selector switch for channel 1 crossover
3A - Cutoff frequency selector switch for channel 2 crossover
4 - XLR balanced input for channel 1 with 10 kOhms impedance (see the table on the connection panel).
4A - XLR balanced input for channel 2 with 10kOhm impedance (see table on the connection panel).
5 - P-10 input balanced for channel 1 (Can be used as input signal distributor).
5A - P-10 input balanced for channel 2. (Can be used as input signal distributor).
6 - Operation mode selector switch, which can be either mono or stereo



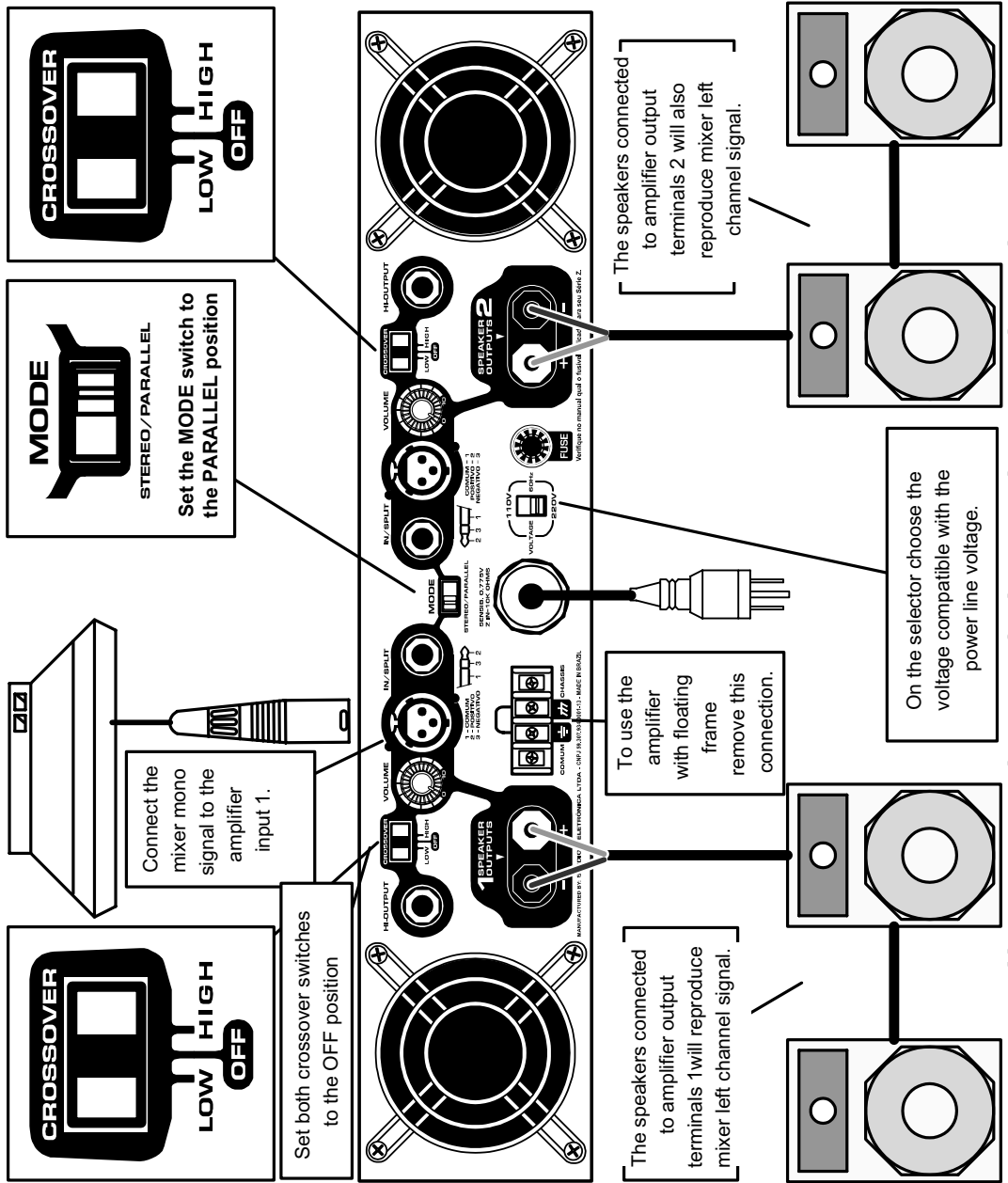
7 - Channel 1 volume (independent per channel even on the MONO position)
7A - Channel 2 volume (independent per channel even on the MONO position)
8 - Amplifier back panel
9 - Lugs for connecting the wires of the channel 1 speakers
9A - Lugs for connecting the wires of channel 2 speakers
10 - Terminal for the external connection of the amplifier common circuit
11 - Terminal for the external connection of the amplifier chassis
12 - Amplifier voltage selector switch with option for 110 Volts or 220 Volts (A wrong choice may get your amplifier blown).

14 - Fuse holder. See Owner's Manual.
(The correct value is very important for the equipment safety).
15 - Three-pin power connector
(The correct value is very important for the equipment safety).
16 - Central round pin connected to the device frame (Item 11).
17 - Air inlets for cooling the power circuits.
(Never block these air inlets).



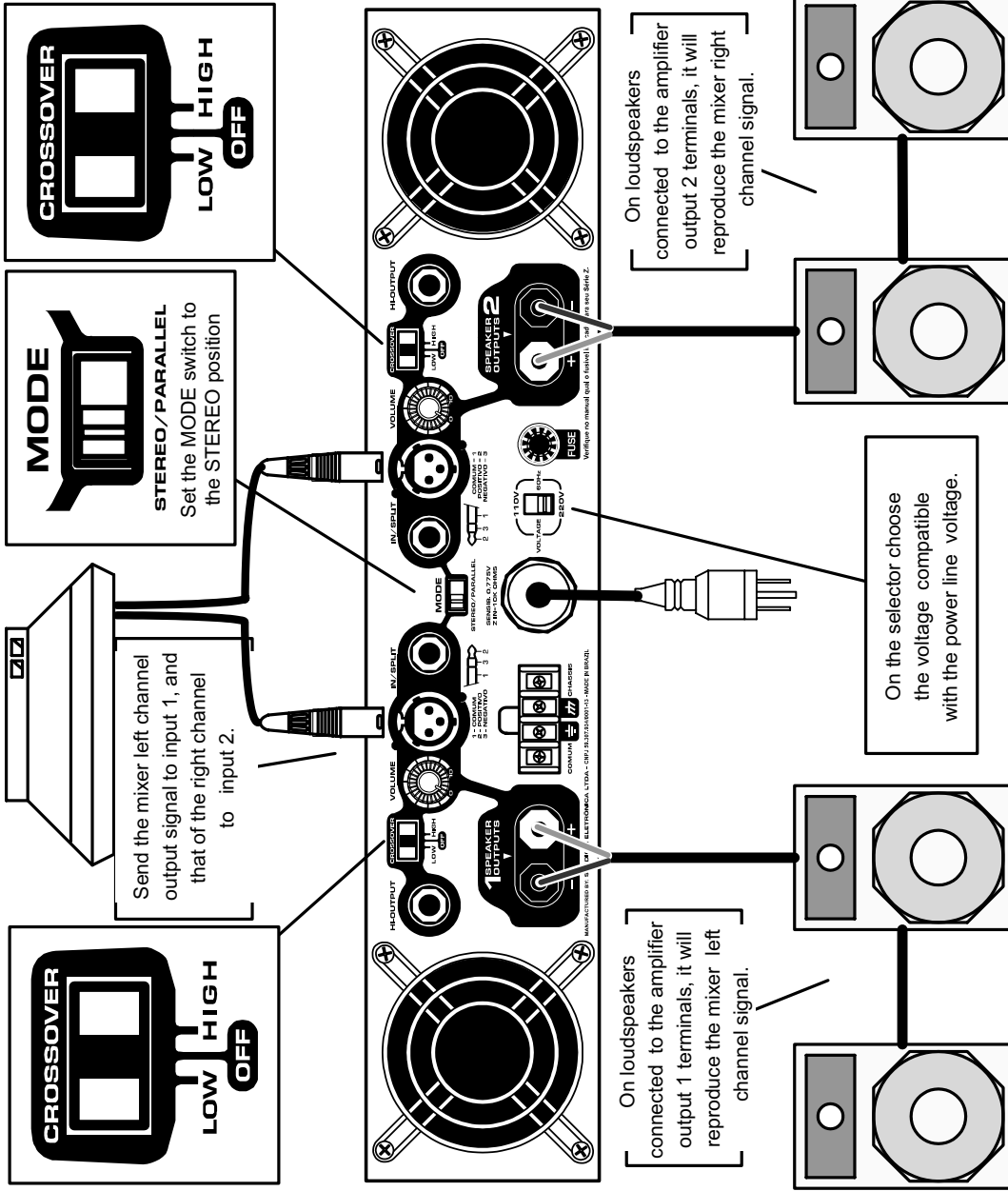
# App. 1

Mono amplifier with a flat response from 20Hz to 20KHz



# App. 2

## Stereo amplifier with flat response from 20Hz to 20KHZ

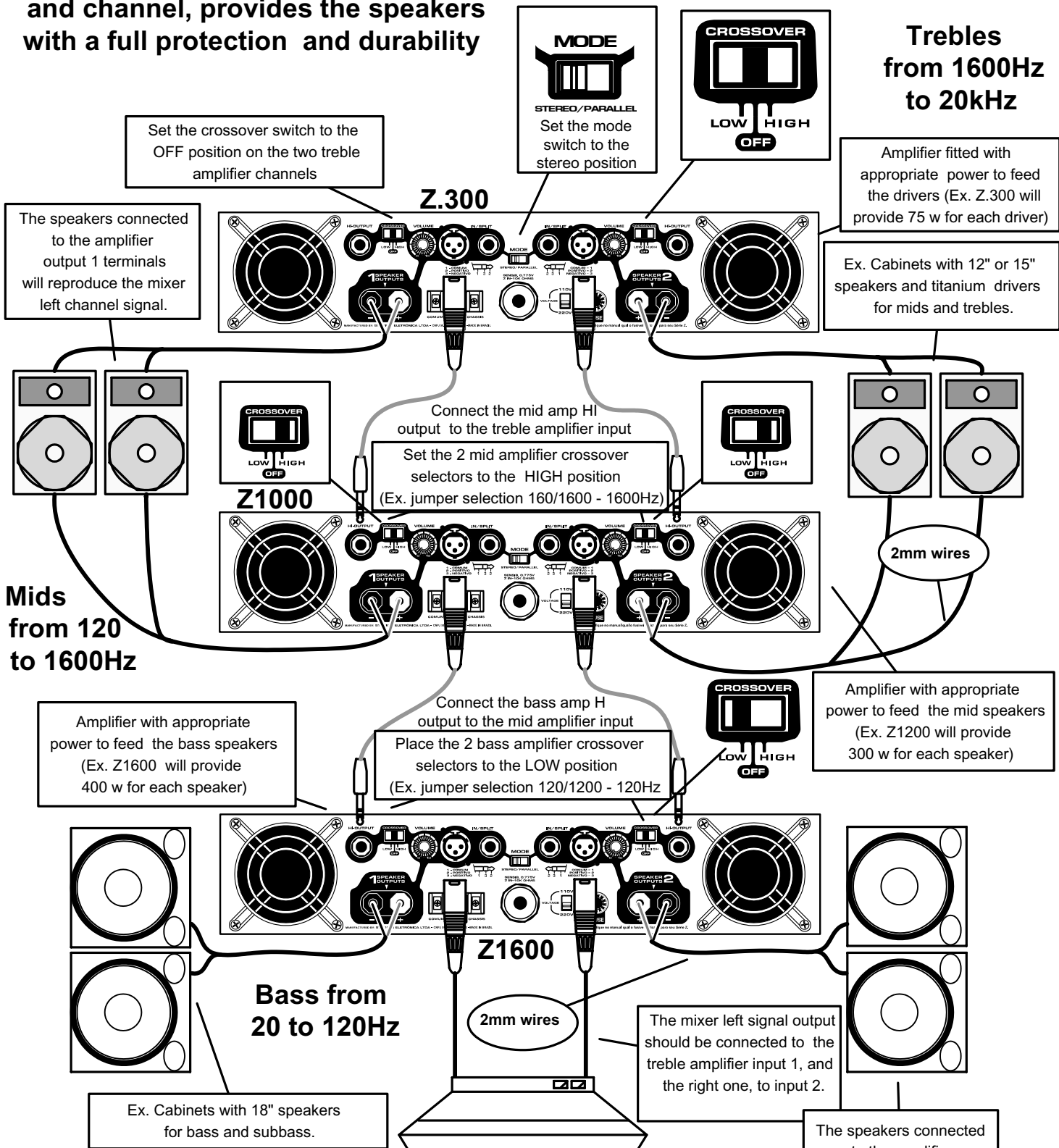


Use no more than two 8-ohm loudspeakers per channel.

# App. 3

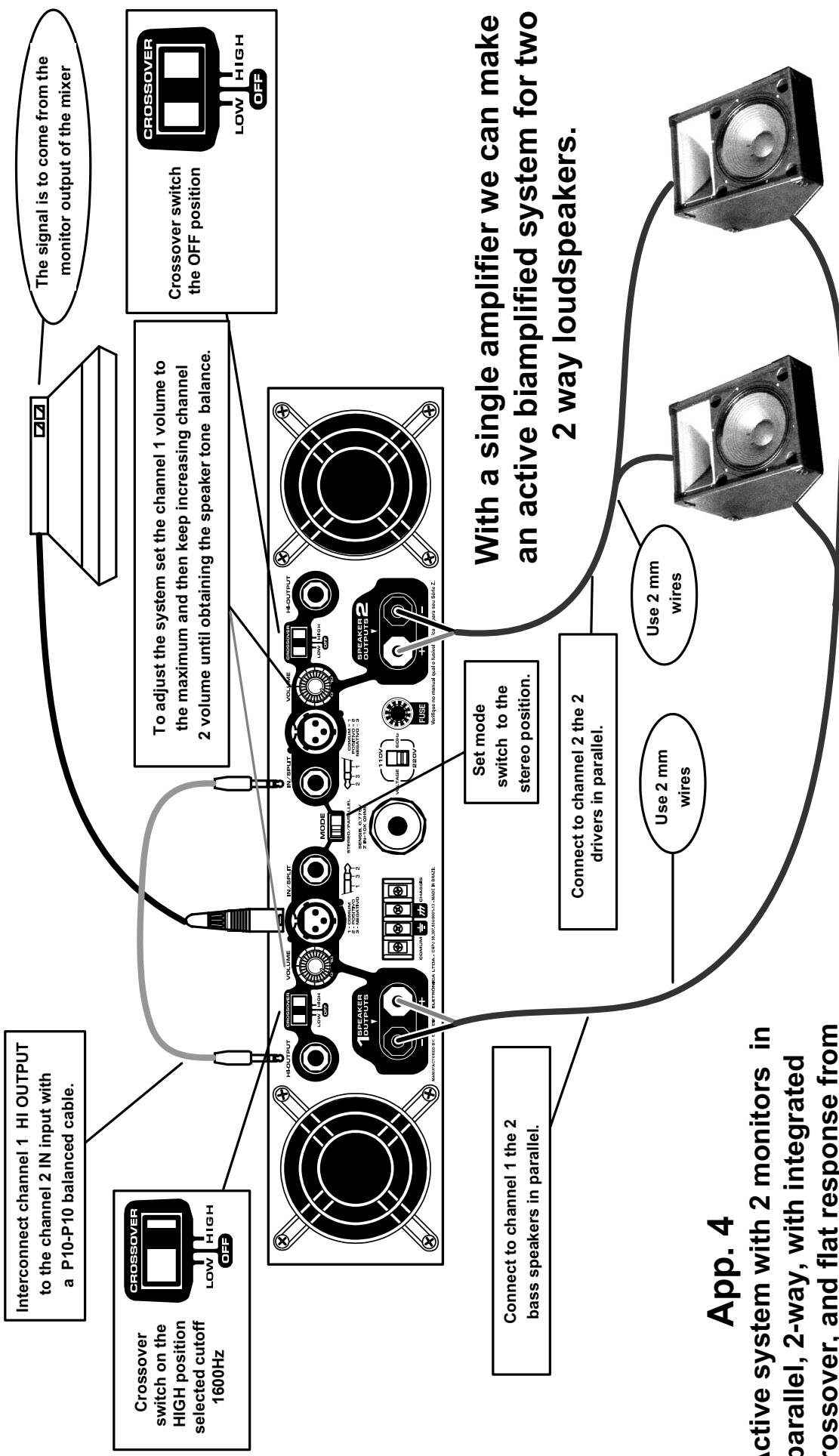
**Active 3-way system stereo with integrated crossover and flat response 20 Hz to 20 KHz Individual limiters per each way and channel, provides the speakers with a full protection and durability**

In this example, the choice of the Z1600 amplifiers for bass, Z1000 for mid and Z.300 for trebles was due to the capacity of the speakers making up the usual cabinets at the market. In this example we used 400 watts 18" speakers for bass, 250 watts 12" speakers for mids, and 75 watts drivers for trebles.



**Use no more than two 8-ohm speakers per channel**

**For more information on the selection of the frequency cutoffs, refer to jumper sets table.**



**App. 4**  
**Active system with 2 monitors in parallel, 2-way, with integrated crossover, and flat response from 20 Hz to 20 KHz, and cutoff at 1600 Hz Loudspeaker with 12" or 15" Woofer and Titanium Driver**

**Choose the amplifier power considering the channel with a greater need which, in this case, is the bass channel. E.g., the bass speakers are 300 W each, then each channel should have, at least, 600W, like model Z1200.**

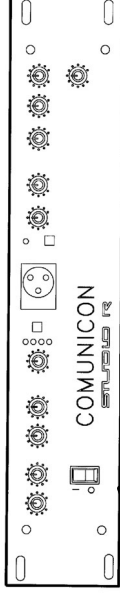
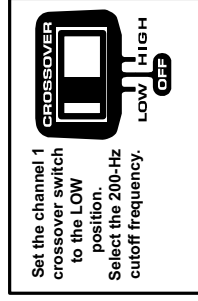
# App. 5

## Design with the Z 300 amplifier

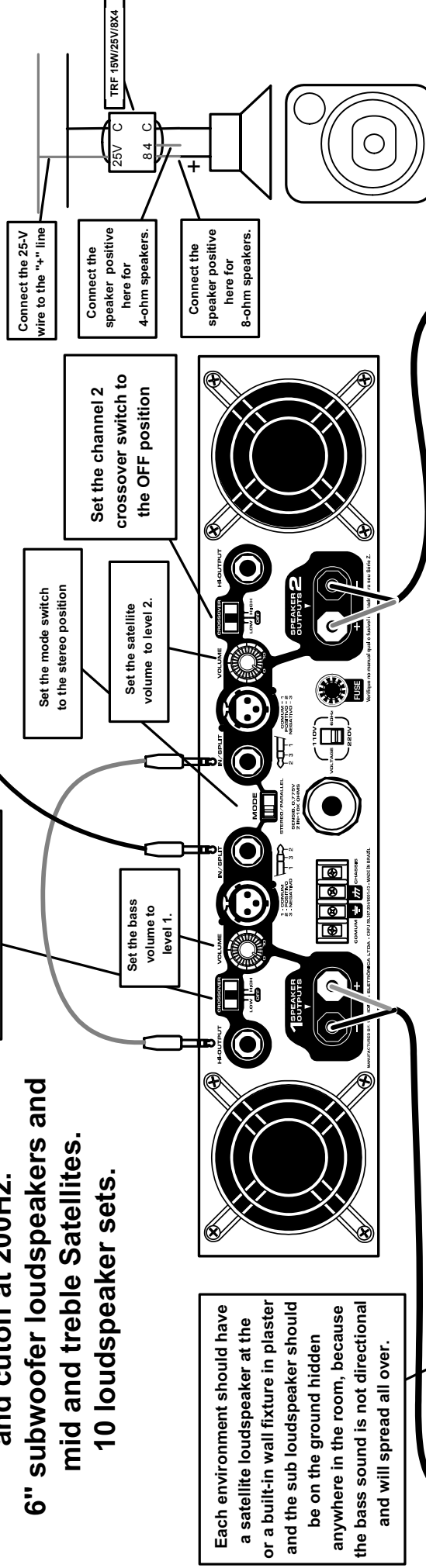
High quality ambient sound system for sophisticated environments.

An active 2 way system with integrated crossover, and flat response from 20Hz to 20KHz and cutoff at 200Hz. 6" subwoofer loudspeakers and mid and treble Satellites. 10 loudspeaker sets.

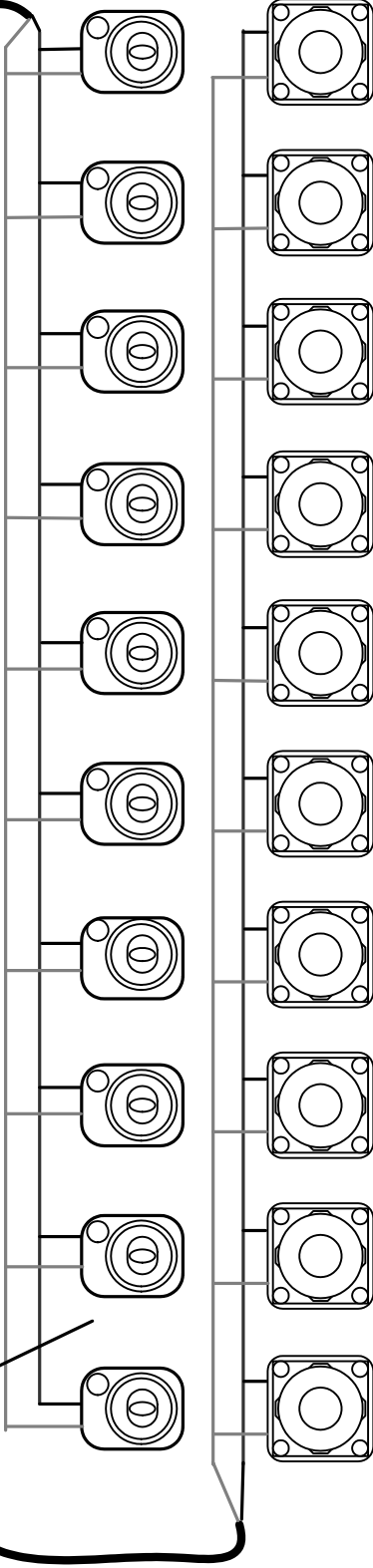
As a pre-amp or mixer, use the Comunicon call center or another appropriate equipment for the sound system.



- This design was calculated for 15-Watt loudspeakers both on bass and satellites.
- Each satellite speaker as well as the subwoofer speaker should contain line matching transformer model as the Studio R - TRF 15W/25V/8X4

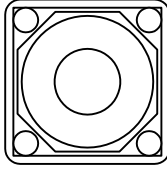


Connect all satellites in parallel on the line as per the drawing



Connect all subwoofers in parallel on the line as per the drawing

- Loudspeaker with a 1.5 liter volume or wall fixture with a 4" to 6" or coaxial speaker



- Suspension loudspeaker with a 3.5-liter volume and 6" or 8" heavy-duty speaker

## App. 6

**Bi-amplified system, high-performance mono, with a flat response from 20Hz to 20kHz.**

**Consisting of Subwoofer (bass speaker) and Satellite (bass and treble speakers).**

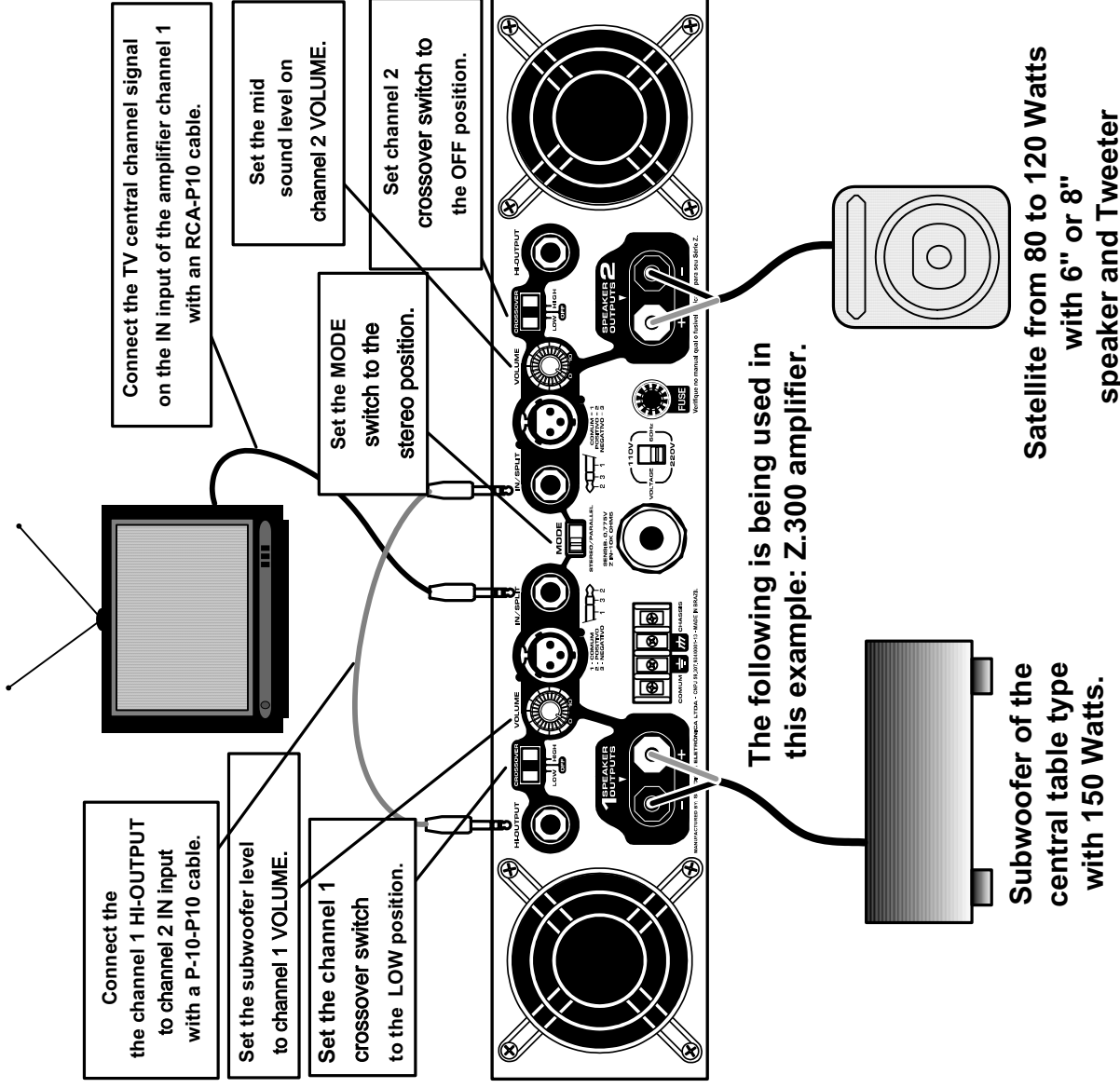
All kinds of cables suggested in this project can be found ready to use at stores specialized in sound equipment.

This project can be implemented with various power values. And it will depend on the amplifier being used and, thereby, on the loudspeaker capacity. As we increase the amplifier and loudspeaker power we will be able to provide sound for larger environments. Therefore, it will serve medium and large residential environments with television (Home-Theater) and even for conference rooms with DATA SHOW.

### TABLE WITH POWER PER CHANNEL

Z.300 feeds speakers with up to 75 Watts  
 Z.600 feeds speakers with up to 150 Watts  
 Z.800 feeds speakers with up to 200 Watts  
 Z1000 feeds speakers with up to 250 Watts  
 Z1200 feeds speakers with up to 300 Watts  
 Z1600 feeds speakers with up to 400 Watts  
 Z2400 feeds speakers with up to 600 Watts  
 Z3200 feeds speakers with up to 800 Watts

All models are fitted with the same crossover features, 8 or 4-ohm output impedance per channel and balanced inputs and outputs.



The following is being used in this example: Z.300 amplifier.

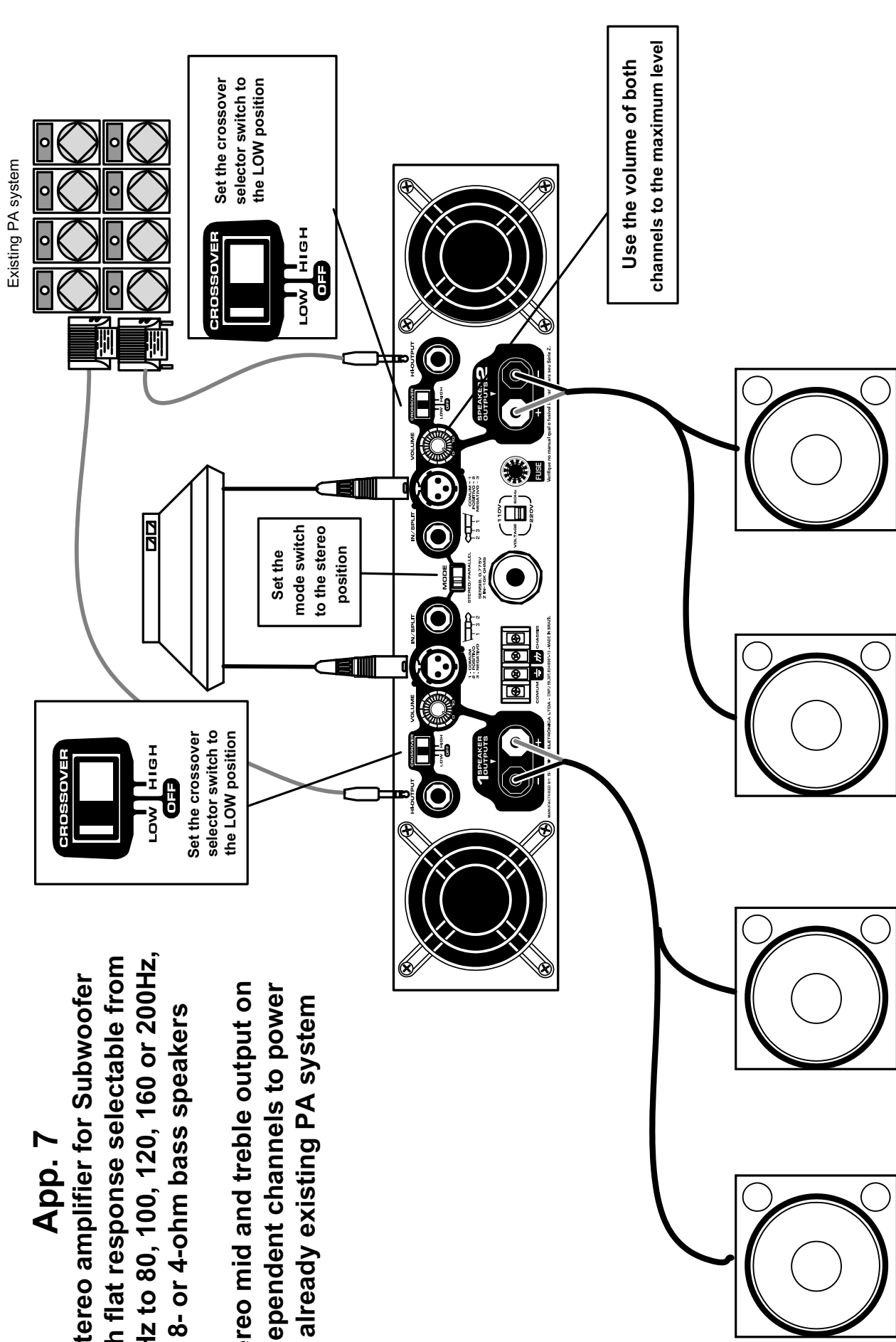
Subwoofer of the central table type with 150 Watts.

Satellite from 80 to 120 Watts with 6" or 8" speaker and Tweeter

## App. 7

Stereo amplifier for Subwoofer with flat response selectable from 20Hz to 80, 100, 120, 160 or 200Hz, for 8- or 4-ohm bass speakers

Stereo mid and treble output on independent channels to power an already existing PA system



Use no more than two 8-ohm speakers per channel or a 4-ohm speaker per channel.

# App. 8 4-way, StereoActive PA system with integrated crossover and flat response from 20Hz to 20KHz Individual limiters per each channel provide the speakers with full protection and durability.

To make the PA setting easier, we should set the PA tonal balance via VOLUME control of each channel.

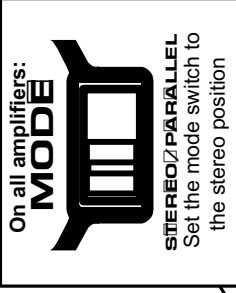
- Suggestion 1 - Set the bass volume to the maximum,** and all the others to approximately halfway.
- 2- Open only one mixer channel and place a known program** or pink noise, in case you have an analyzer for the alignment.
- 3- Then set the volume for the mid bass, mids and finally trebles.**
- 4- Once the PA is aligned, then you just have to use an EQUALIZER** with the mixer in order for the final result to have the operator's signature.

Select on each amplifier the desired cutoff for each way, using the table in sheet 20; for a PA with two equal channels, the cutoff of each channel should have the same frequency.

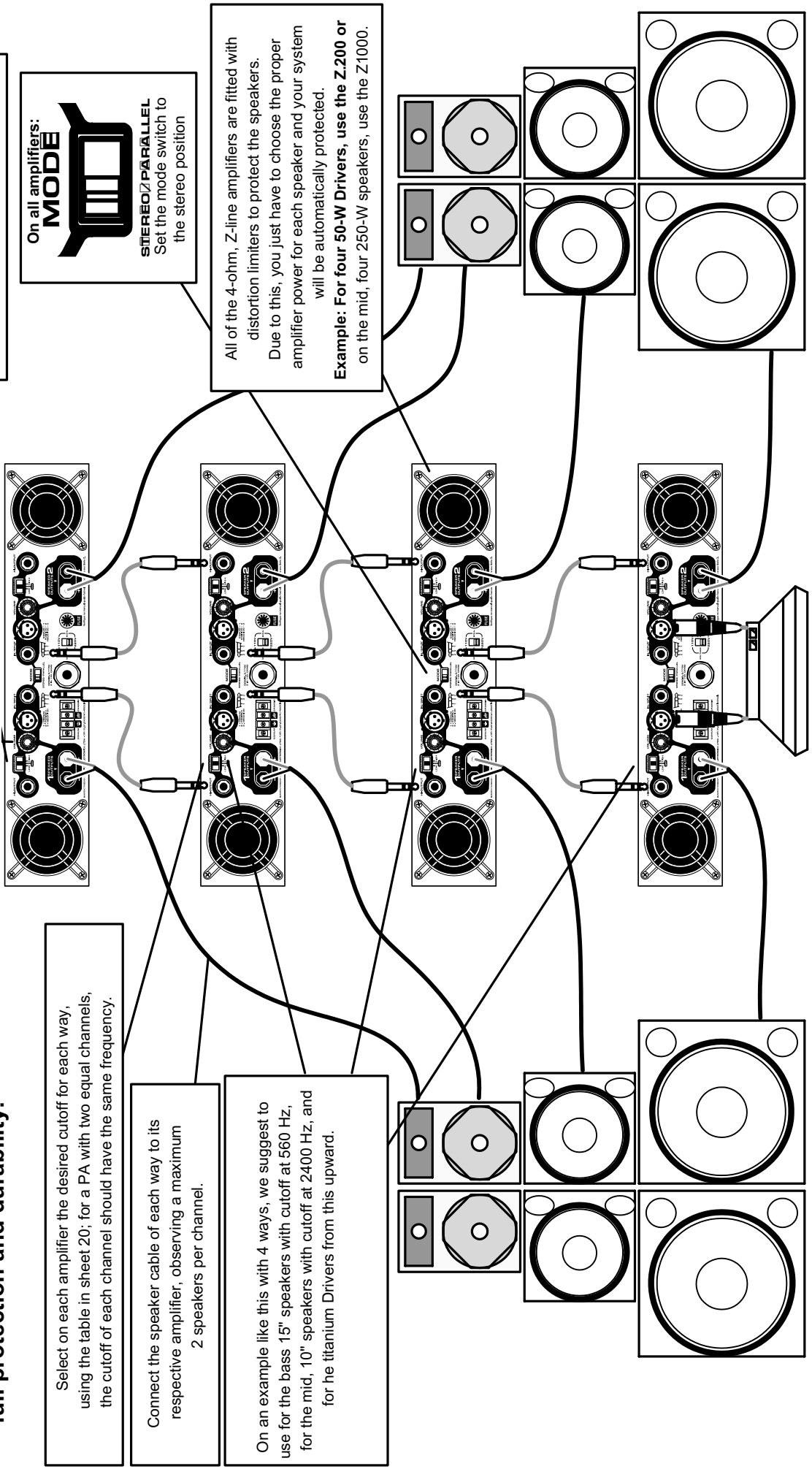
Connect the speaker cable of each way to its respective amplifier, observing a maximum 2 speakers per channel.

On an example like this with 4 ways, we suggest to use for the bass 15" speakers with cutoff at 560 Hz, for the mid, 10" speakers with cutoff at 2400 Hz, and for the titanium Drivers from this upward.

Only on the treble amplifier there is a noise cutoff selection as this already comes from the mid amplifier; therefore, on the last way, we can use an amplifier without crossover such as the Z.200, but in case an amplifier with crossover is used, the crossover switches should be on the OFF position.



All of the 4-ohm, Z-line amplifiers are fitted with distortion limiters to protect the speakers. Due to this, you just have to choose the proper amplifier power for each speaker and your system will be automatically protected.  
**Example: For four 50-W Drivers, use the Z.200 or on the mid, four 250-W speakers, use the Z1000.**

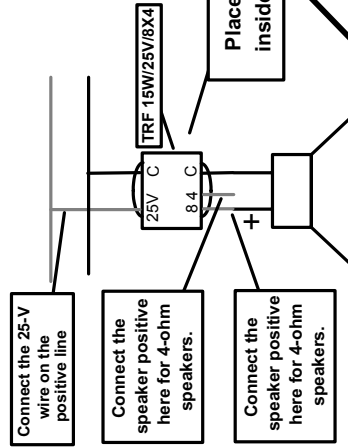


# App. 9

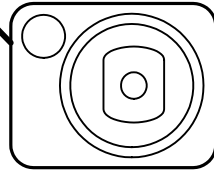
## HIGH-QUALITY AMBIENT SOUND

For small, medium, and large environments  
Results with flat response, very pleasing.

Calculation for various quantities of speakers and different powers



Place the transformer inside the loudspeaker



Example of how to order a transformer through the code to make the happy hour in a bar more attractive.  
 "I want to install fourteen 5-W speakers distributed by the environment connected to a Z.200 amplifier."  
 The transformer code will be: TRF 05W / 20V / 8X4  
 Another example: 50-Watt transf. to use on the Z1000  
 The code is : TRF 50W / 45V / 8X4

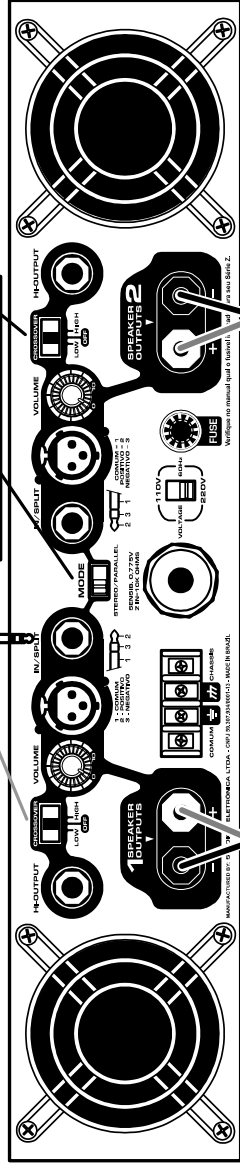
As a program source for an ambient sound we use music and voice to transmit information as well as instructions in case of emergencies. As these are different and varied issues in terms of use, so it is usual to add some special devices to the PRE commanding the ambient sound system. Due to this reason, it is common to find at an ambient sound control center the ELECTRONIC GONG. It is especially useful to draw the listeners attention to the changes in the type of the ambient informative contents, and this is particularly important in public locations where the ambient music is normally used to calm down and entertain; however, a fire warning is instead to warn people.

Connect to the mixer output or call center



Set the crossover switches to the OFF position

MODE switch on the PARALLEL position



The sum of the power in the speakers per channel should be lower than or equal to the maximum power of each channel.  
 Ex: Ten 15-W speakers for one 150-W channel.

How to order the transformer for the ambient sound speaker:  
 The Transformer Code has the following composition:

TRF xxW / yyV / 8X4

This part refers to the speaker power

Speaker power	XX
5 Watts	05
10 Watts	10
15 Watts	15
20 Watts	20
25 Watts	25
35 Watts	35
50 Watts	50
100 Watts	00
Other	

this part refers to the amplifier model

Amplifier model	yy
Z.200	20
Z.300	25
Z.500	32
Z.600	35
Z.800	40
Z.1000	45
Z.1200	50
Z.1600	57
Z.2000	63

