Digital Speaker Processor

USER'S MANUAL

Attention

Thank you for purchasing our digital speaker processor. This product is built on the basis of excellent quality, excellent product quality in the frequency division, equalization and signal processing market in a leading position.

Before using the machine, please read through the operation manual so that you can master how to use the equipment correctly. After you have read the manual, please keep it properly for future reference.

Please note: the machine is electrical products, non-professional maintenance technicians, do not disassemble the machine without authorization, so as to avoid the risk of electric shock (shock). In case of failure, please contact your distributor or manufacturer.

Function Introduction

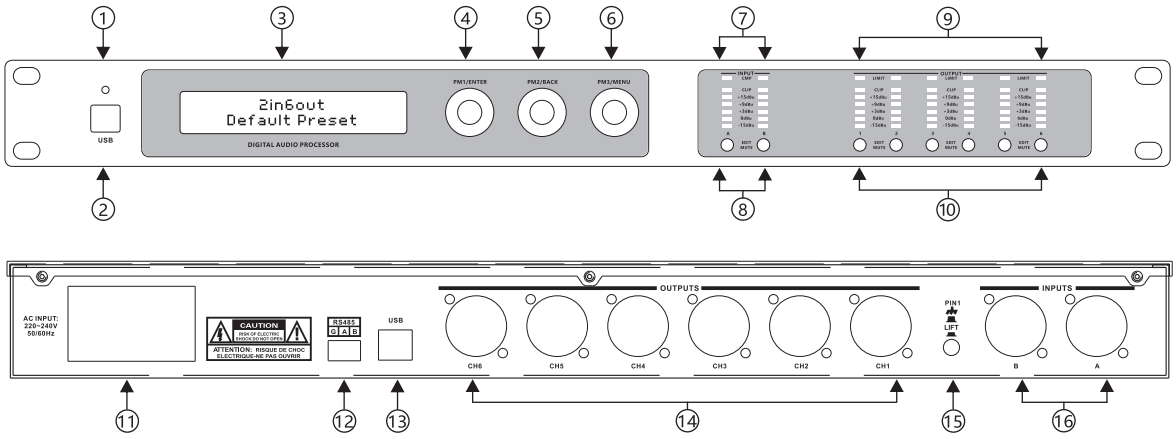
The processor adopts the most advanced DSP technology, using 24bit, 48K A/D, D/A converter, with 128k sampling rate. Digital processing includes gain, phase reversal, noise gate, equalizer, slope filter, dynamic filter, frequency division, delay, compression, clipping, and signal routing functions, all through a high-performance DSP processor. Balanced output and RF protection are used for all inputs and outputs, while the XLR connector is used.

Factory Configuration

As part of our quality control system, each product is carefully inspected before leaving the factory to make sure there are no defects in its appearance. After opening the package, please check for any physical damage. Please keep the transport wooden cases and all the packing materials, as they are specially designed for this product. If the equipment needs to be repacked for transportation, the use of these materials and wooden cases will minimize the possibility of damage during transportation. In the event of damage, please notify your dealer immediately and issue a written statement of all damage. If the carrier is not notified in time and if the carrier is unable to inspect the shipping cases and packing materials, you will lose all claims against the common carrier.

Digital audio processor	1pcs
Power line	1pcs
Computer cable	1pcs
Data disc/usb flash disk	1pcs
Product manual book	1pcs
Product qualified certificate	1pcs

Panel Introduction



1. USB connection indicator light, which is on when connecting USB interface to PC control terminal.
2. Front panel USB interface -- can be connected to the computer special software to adjust the parameters of the device.
3. LCD screen -- displays menu options and various parameter information.
4. PM1/Enter -- parameter selection and confirmation key. Select the required parameters by rotation and press the switch to enter the parameters menu.
5. PM2/Back -- parameter adjustment and return key. Adjust the parameter value by rotating, press the switch to return to the upper menu and exit.
6. PM3/Menu -- parameter adjustment and Menu key. By rotating to adjust the parameter value, pressing the switch is to enter the function menu.
7. Input level indicates status lamp. -15dBu to +15dBu is the normal signal indicator, CLIP is the peak indicator, and CMP is the compressor starting indicator.
8. Enter mute and parameter editing button -- press this button, and the green LED indicator of the corresponding channel will be lit, indicating the parameter editing menu of the channel. Parameters can be adjusted through the display screen and three encoders. Press this button for a long time (about two seconds), and the red indicator of the channel will be lit, indicating that the mute function of the channel is started.
9. Output level indicates status lamp. -15dBu to +15dBu is the normal signal indicator, CLIP is the peak indicator, and LIMIT is the starting indicator of the voltage limiter.
10. Output mute and parameter editing button -- press this button, and the green LED indicator of the corresponding channel will be lit, indicating the parameter editing menu of the channel. Parameters can be adjusted through the display screen and three encoders. Press this button for a long time (about two seconds), and the red indicator of the channel will be lit, indicating that the mute function of the channel is started.
11. AC power input standard IEC plug and power main switch, can use AC 220V to 240V@ 50 and 60 Hz voltage, with voltage regulation and power failure protection functions.
12. RS485 interface is used to connect PC control terminal or central control platform.
13. Rear panel USB interface -- can be connected to the computer special software to adjust the parameters of the device, the front and rear USB interface can only be used at the same time.
14. Six-channel output signal XLR balanced interface.
15. The chassis ground switch is pressed to indicate the connection between the ground wire and the chassis; otherwise, it is disconnected.
16. Two-channel input signal XLR balanced interface.

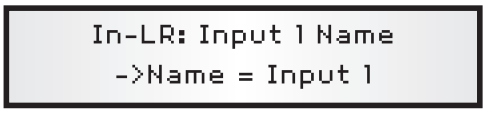
Parameter Settings

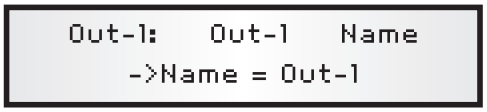
1. Mute

Press the button of the corresponding channel for a long time (about two seconds), and the red indicator of the channel will be lit, indicating that the mute function of the channel is started. Input/output no audio output. To cancel the mute, press the button of the corresponding channel for a long time (about two seconds), and the red light of the channel will go out, indicating that the mute is cancelled.

2. Edit the channel name

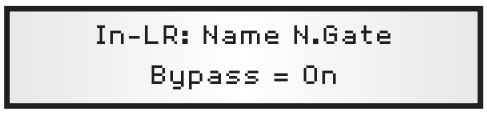
Press the corresponding input/output channel, then press Enter, edit the name through PM2, and press Back to return.indicating that the mute is cancelled.



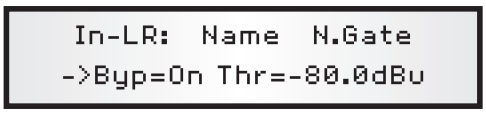


3. Noise door

Press the corresponding input channel and rotate PM1 to the following interface.

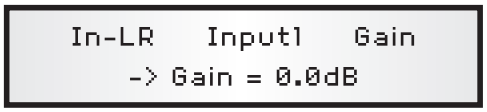


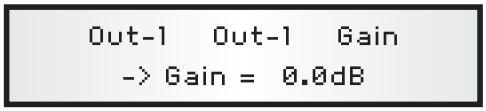
Press Enter to adjust the parameters through the three encoders. Including straight through switch (Byp) (note: On is to close the noise gate, Off is to open the noise gate), threshold value (Thr), release time (Rel), start control time (Atk), and press Back to return.



4. Gain

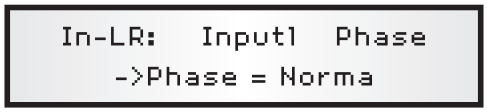
Press the corresponding input/output channel, rotate PM1 to the following interface, press Enter, adjust the parameters through PM2 and PM3, and press Back to return.

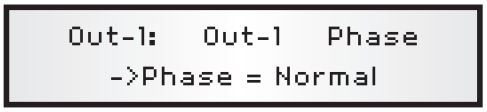




5. Phase

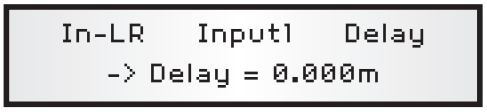
Press the corresponding input/output channel, rotate PM1 to the following interface, press Enter, adjust the phase through PM2 or PM3, positive phase(Normal), inverse phase(Invert), and press Back to return.

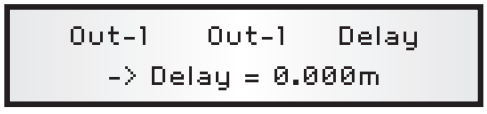




6. Delay

Press the corresponding input/output channel, rotate PM1 to the following interface, press Enter, adjust the delay time (ms) or distance (m) through PM2 and PM3, and press Back to return.

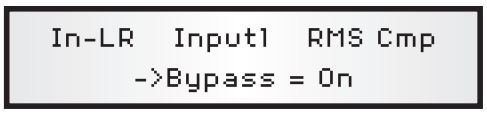


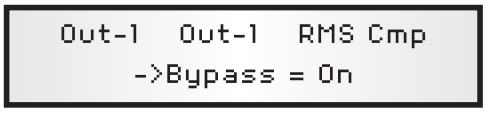


Parameter Settings

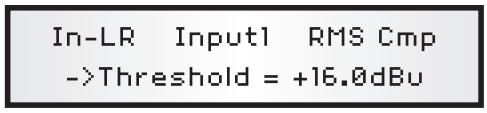
7. Compressor

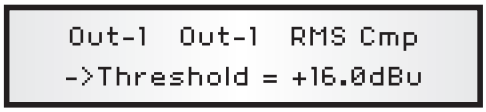
Press the corresponding input/output channel, rotate PM1 to the following interface, and press Enter to adjust the parameters through PM2 and PM3. Bypass switch (note: On is to close the compressor, Off is to open the compressor)



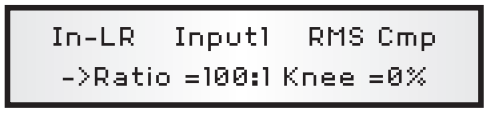


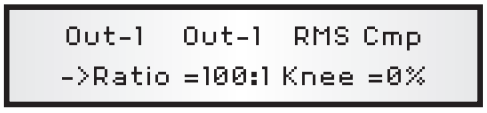
Continue to rotate PM1 to adjust the start Threshold.





Continue to rotate PM1 to adjust the compression Ratio and the compression inflection point (Knee).

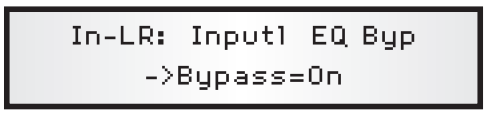


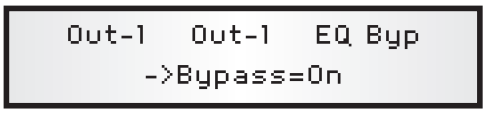


Continue to rotate PM1 to adjust the compressor's release time (Rel) (in seconds) and start time (Atk) (in milliseconds). Press Back to return.

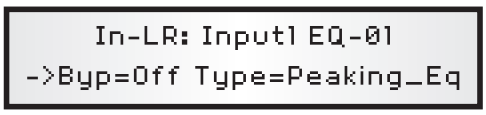
8. Parametric equilibrium

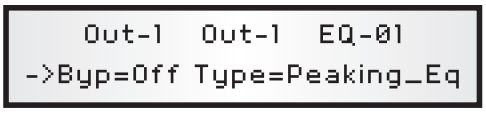
Press the corresponding input/output channel, rotate PM1 to the following interface, press Enter, and adjust Bypass (note: On is to close all EQ of this channel, Off is to open all EQ of this channel) by PM2.



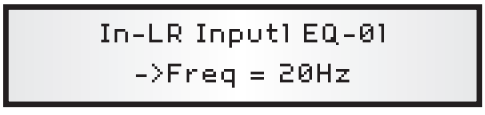


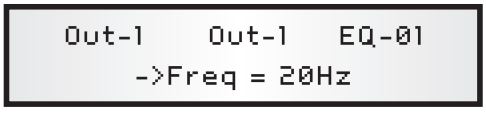
Press Back to return, continue to rotate PM1 to the following interface, and press Enter to adjust whether this section EQ is turned On by PM2 (Byp=On is straight through, Byp=Off is turned On), and PM3 to adjust the EQ type.The first and last section EQ can be set to the Peaking_EQ/ Hi-Shelv Q/ Lo-Shelv Q type, while the other sections EQ can only be adjusted to the Peaking EQ type.



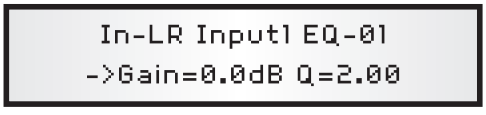


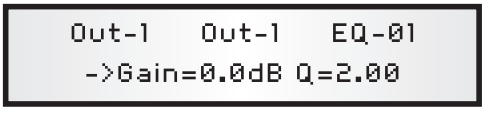
Continue to rotate PM1 to the following interface and adjust EQ frequency points through PM2 and PM3.





Continue to rotate PM1 to the following interface and adjust the EQ gain and Q values through PM2 and PM3. When finished, press Back to return and adjust the other sections of EQ according to this method.

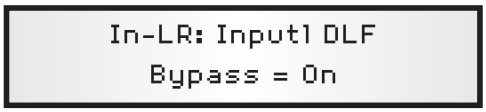


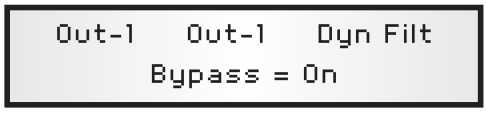


Parameter Settings

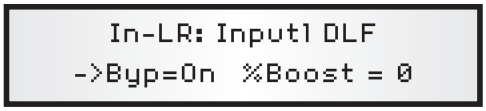
9. Dynamic filter

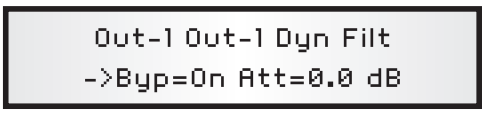
Press the corresponding input/output channel and rotate PM1 to the following screen.



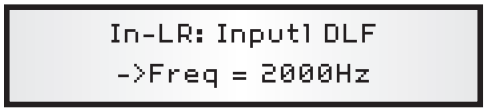


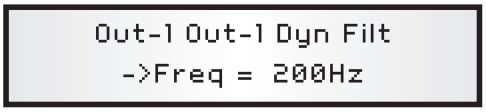
Press Enter to Enter the following screen. Rotate PM2 to adjust the pass-through switch of the dynamic filter (Byp=On, the dynamic filter is closed; Byp=Off, dynamic filter on). Rotate PM3 to adjust the size of the input dynamic scale value %Boost = 0 ~ 100.The output is to set the starting threshold Att for the dynamic filter.



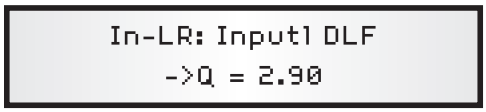


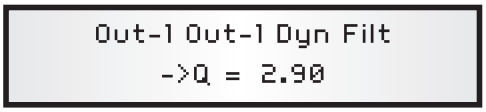
Continue to rotate PM1 to enter the following interface. Rotate PM2 and PM3 to adjust the frequency of the dynamic filter.





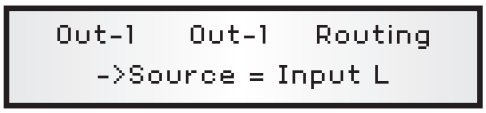
Continue to rotate PM1 to enter the following interface. Rotate PM2 and PM3 to adjust the bandwidth Q value of the dynamic filter. Press Back to exit after adjustment.





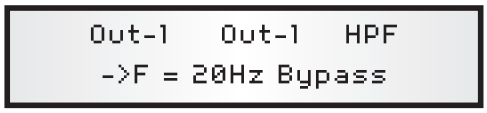
10. Input source selection

Press the corresponding output channel, rotate PM1 to the following interface, press Enter, and rotate PM2 to select the audio source of the output channel. The optional audio source have Input L/Input R/InL+InR. Press Back to exit after adjustment.

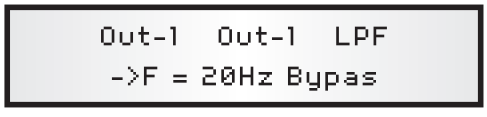


11. Points frequency

Press the corresponding output channel, rotate PM1 to the following interface, press Enter, PM1 and PM2 can adjust the frequency points of the high-pass filter, and PM3 can adjust the slope of the high-pass filter, the higher of the value, and the slope also higher, the low-frequency will be cutting more, Bypass is the through state. Press Back to exit.



Continue to rotate PM1 to the following interface, press Enter, PM1 and PM2 can adjust the frequency points of the low-pass filter, PM3 can adjust the slope of the low-pass filter, the higher of the value, and the slope also higher, the high-frequency will be cutting more, Bypass is the direct state.



Function Menu

1. System Application

Press the MENU key to enter the system application setting interface:

At this point, press Enter key, and Enter the sub-menu of system application, and then use three encoders and keys to achieve the purpose of setting parameters.Submenu features include the following types:

A. Input Source selection. To enter the menu, you can choose Analog input or Noise Gen.

B. Noise Generator. Enter the menu to select White noise or Pink noise. The output level of the noise generator can also be adjusted.

C. Link Input L&R. Enter the menu to select whether the L and R channels are interlocked. When the linkage function is turned on, the parameters of one channel can be adjusted arbitrarily, and the parameters of the other channel can be edited together. On is to turn on input linkage, and Off is to turn off input linkage

D. Output compression stereo (Link Cmp/Lim 1&2).Enter the menu to turn on or off 1&2 stereo mode. Continue to rotate PM1 to adjust 3&4,5&6 stereo mode.

E. Compression mode selection (Set Output 1 Cmp/Lim).Enter the menu to change the compression mode of output 1, RMS Compressor(RSM compression mode) or Peak Limiter(Peak compression mode).Continue to rotate PM1 to output the 2/3/4/5/6 channel in compression mode.

F. Delay unit setting (Delay Units).Enter the menu to change the delay device's representation unit, Time(ms) represents Time milliseconds, Distance(m) represents Distance meters.

Function Menu

G. Set Default Value. Enter the menu to restore the factory default Settings.

2. Preset setting

Press the MENU key and rotate PM1 to enter the preset setting interface:

At this point, press Enter to Enter the submenu of preset Settings, and then use three encoders and buttons to achieve the purpose of setting parameters. Submenu features include the following types:

A. Recall A Preset. If you enter the submenu, you can call the preset saved by the user. If the user has not saved the preset, it will show that it cannot be retrieved.

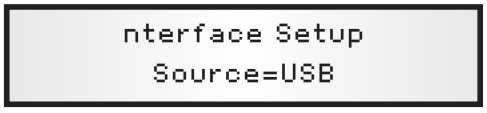
B. Save a Preset. Enter the submenu to save the current parameters to the preset, you can also edit the preset name, easy access. A total of 48 presets can be saved.

C. Delete a Preset. You can delete 48 presets by entering the submenu.

3. Interface Setting

Press the MENU key and rotate PM1 to enter the interface setting interface:

At this point, press Enter to Enter the sub-menu of interface setting, and you can choose the online mode USB or RS485. When you select RS485, the PC software also needs to change to RS485 mode and select the corresponding ID(01-32).



Function Menu

4. Security Setting

Press the MENU key to enter the safety setting interface:

At this point, press Enter to Enter the sub-menu of system application, and then use three encoders and keys to achieve the purpose of setting parameters. Submenu features include the following types:

A. Show Parameter. Be shown indicates that when the device is locked, the parameters are displayed, but cannot be adjusted; No be shown indicates that when the device is locked, the parameters are not shown.

B. Lock Unit. If the device is not locked, all parameters can be edited. If the machine is locked (the Lock Interface is set ON), all parameters cannot be modified.

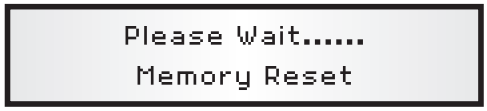
C. User Password. Press Enter to Enter the password submenu and set the user password. The initial password of machine is "000000".

5.factory data reset

If the password is lost or otherwise, the user can restore the machine to its original factory state by restoring the factory Settings.

Note: restoring factory Settings means that all saved parameters will be lost!

The specific operation is as follows: under the shutdown state of the processor, press and hold the panel Enter+Back+Menu button at the same time, and then turn on the computer until the display screen shows the following interface, and you can release the button.



Technical Parameter

Input: two - channel electronic balance

Impedance: > 10 k ohms

Maximum input level: +12dBu

Output: six - channel electronic balance

Impedance: < 80 ohms

Maximum output level: +18dBu

Frequency response: ± 0.5dB 20Hz-20KHz

S/N: > 100 dBA

THD + N: < 0.005%

Parametric equalizer: input 11 segments, output 7 segments

High pass (low cut) and low pass (high cut) filters

Frequency range: 20Hz ~ 20KHz, 1/36 octave

Filter slope: -6dB, -12dB, -18dB, -24dB, -36dB, -48dB.

Type selection: Butterworth, Linkwitz-Riley, Bessel

12dB Variable Q value.

Noise gate

Threshold value: -90~ -60dB

Startup time: 1~1000ms

Release time: 1~1000ms

Limiter

Threshold value: -14dB ~16dB, adjusting step distance is 0.2dB.

Startup time ranges from 5 to 200mS.

The release time was 0.1~3S

Connector

Input: 3-pin XLR female socket

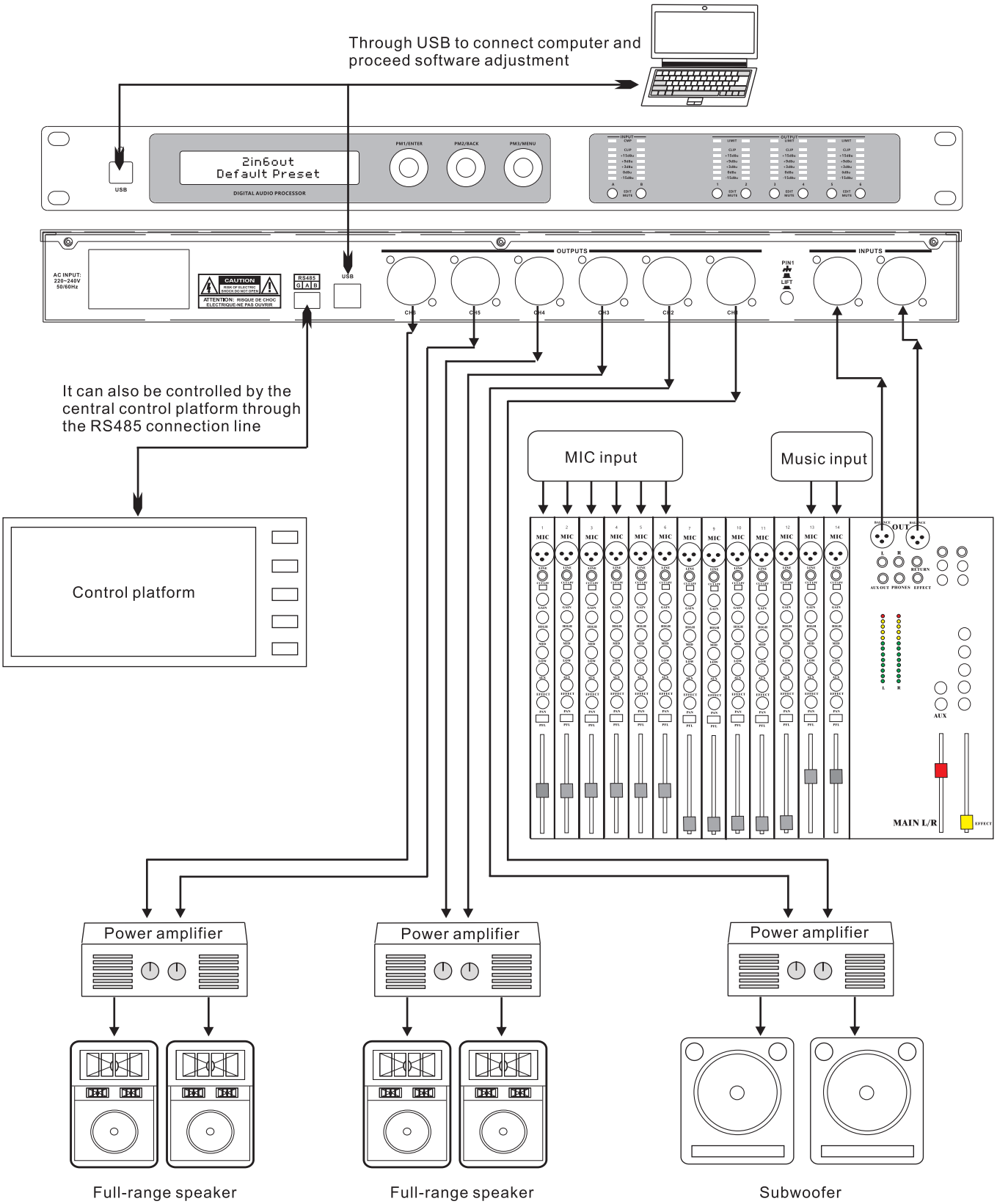
Output: 3-pin XLR male socket

Communication port: RS485 USB

Power supply: AC220V~240V @ 50/60Hz

Power consumption: < 30 watts

Audio Connection



DIGITAL SPEAKER PROCESSOR