audiophony
public-address

Combo 240

USER GUIDE
9751 - Version 1 / 06-2010

1 - Safety information

Important safety information

This unit is intended for indoor use only. Do not use it in a wet, or extremely cold/hot locations. Failure to follow these safety instructions could result in fire, electric shock, injury, or damage to this product or other property.

Any maintenance procedure must be performed by a CONTEST authorised technical service. Basic cleaning operations must thoroughly follow our safety instructions.

This product contains non-isolated electrical components. Do not undertake any maintenance operation when it is switched on as it may result in electric shock.

Symbols used

This symbol signals an important safety precaution.

The WARNING symbol signals a risk to the user's physical integrity. The product may also be damaged.

The CAUTION symbol signals a risk of product deterioration.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING : This unit contains no user-serviceable parts. Do not open the housing or attempt any maintenance by yourself. In the unlikely even your unit may require service, please contact your nearest dealer.
In order to avoid any electrical malfunction, please do not use any multi-socket, power cord extension or connecting system without making sure they are perfectly isolated and present no defect.

Sound levels

Our audio solutions deliver important sound pressure levels (SPL) that can be harmful to human health when exposed during long periods. Please do not stay in close proximity of operating speakers.

Recycling your device

• As HITMUSIC is really involved in the environmental cause, we only commercialise clean, ROHS compliant products.
• When this product reaches its end of life, take it to a collection point designated by local authorities. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

Instructions and recommendations

1 - Please read carefully :
We strongly recommend to read carefully and understand the safety instructions before attempting to operate this unit.

2 - Please keep this manual :
We strongly recommend to keep this manual with the unit for future reference.

3 - Operate carefully this product :
We strongly recommend to take into consideration every safety instruction.

4 - Follow the instructions:
Please carefully follow each safety instruction to avoid any physical harm or property damage.

5 - Avoid water and wet locations :
Do not use this product in rain, or near washbasins or other wet locations.

6 - Installation :
We strongly encourage you to only use a fixation system or support recommended by the manufacturer or supplied with this product. Carefully follow the installation instructions and use the adequate tools.
Always ensure this unit is firmly fixed to avoid vibration and slipping while operating as it may result in physical injury.

7 - Ceiling or wall installation :
Please contact your local dealer before attempting any ceiling or wall installation.

8 - Ventilation :
The cooling vents ensure a safe use of this product, and avoid any overheating risk. Do not obstruct or cover these vents as it may result in overheating and potential physical injury or product damage. This product should never been operated in a closed non-ventilated area such as a flight case or a rack, unless cooling vents are provided for the purpose .

9 - Heat exposure :
Sustained contact or proximity with warm surfaces may cause overheating and product damages. Please keep this product away from any heat source such as a heaters, amplifiers, hot plates, etc...

10 - Electric power supply :
This product can only be operated according to a very specific voltage. These information are specified on the label located at the rear of the product.

11 - Power cords protection:
Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at lugs, convenience receptacles and the point where they exit from the fixture.

12 - Cleaning precautions :
Unplug the product before attempting any cleaning operation. This product should be cleaned only with accessories recommended by the manufacturer. Use a damp cloth to clean the surface. Do not wash this product.

13 - Long periods of non use :
Disconnect the unit's main power during long periods of non use.

14 - Liquids or objects penetration :
Do not let any object penetrate this product as it may result in electric shock or fire. Never spill any liquid on this product as it may infiltrate the electronic components and result in electric shock or fire.

15 - This product should be serviced when :
Please contact the qualified service personnel if :
 - The power cord or the plug has been damaged.
 - Objects have fallen or liquid has been spilled into the appliance.
 - The appliance has been exposed to rain or water.
 - The product does not appear to operate normally.
 - The product has been damaged.

16 - Inspection/maintenance :
Please do not attempt any inspection or maintenance by yourself. Refer all servicing to qualified personnel.

17 - Operating environment :
Ambient temperature and humidity: +5 - +35°C, relative humidity must be less than 85% (when cooling vents are not obstructed).
Do not operate this product in a non-ventilated, very humid or warm place.

1 - Introduction

Thank you for purchasing an Audiophony® product.
You are now in possession of a high-quality device which will bring you satisfaction.
The Combo was inspired by the many years of experience of the Audiophony® brand.
This user guide will allow you to understand and use all of its functions.
Please keep it within reach during the first uses in order to get familiar with the unit.
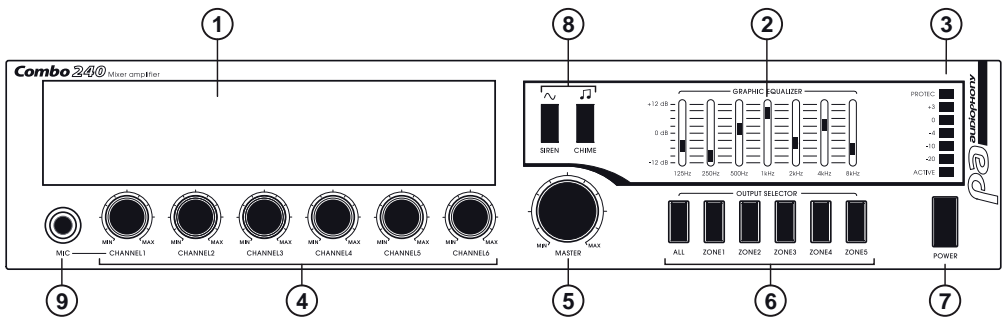
2 - Main characteristics

Amplifier:
• 4 x Mic inputs via balanced XLR sockets with gain control (including 1 with phantom power supply)
• 1 x 5-pin DIN 5 mic input with gain control and phantom power supply
• 1 x Micro/Line input via Jack 6.35 (MIC) or RCA (LiNE) with gain control
• Remote paging input via 3-pin connector
• 4-tone chime and siren
• 5-zone high-impedance outputs for a total of 240 Watts
• Short-circuit, overvoltage and overheating protection system
• Mount-rackable: 19" (2 units) with removable fins.
• 7-band equalizer (+/- 12 dB)
• AMP IN input allowing you to add a mixer
• LINK system to daisy-chain extra amplifiers
• Antenna sockets

MOD1 Multimedia module (optional)
• USB player via USB key or SD/MMC cards
• AM/FM tuner with frequency memory

4 - Description

4.1 - Front panel

[1] Module compartment
Allows you to use an optional module. Caution: please only use the module compatible with this device.

[2] 7-band equalizer
This equalizer allows you to modify the frequencies signal (+/-12 dB per frequency) before it is amplified.

[3] LED indicators
These LEDs light up to indicate the volume output of the amplifier. This level is expressed as dB.
The ACTIVE LED indicates the unit is ON.
The PROTECT LED indicates the unit is protection. The protection mode is a security system preventing the unit to be operated when a problem is detected (short-circuit, overheating or excessive sound levels).
The +3 dB LED only lits when there is a high risk of overheating or a risk of damaging the speakers due to excessive sound levels.

[4] Channels faders
These faders allow you to adjust the sound level for each input.
Each fader controls a channel (indicated by a number).
Please refer to the description of the rear view for more information.

[5] MASTER fader
Allows you to modify the volume of the amplifier. This fader affects all the sources simultaneously.

[6] Output/zone selectors
Each buttons allows you to activate/deactivate the corresponding output. To activate a zone, press the corresponding button. The ALL button allows you to activate every zones simultaneously.

[7] ON/OFF Power switch
This switch allows you to turn ON/OFF the unit. This must be done when the input level is at 0 to avoid any damage to the speakers.

[8] Chime and siren
The COMBO240 offers two kinds of ringtones:
- The CHIME produces 4 different tones.
- The SIREN produces a variation of tones.
The chime and siren feature the PRIORITY function (as the mic 1 and 2), regardless the volume of the other sources.
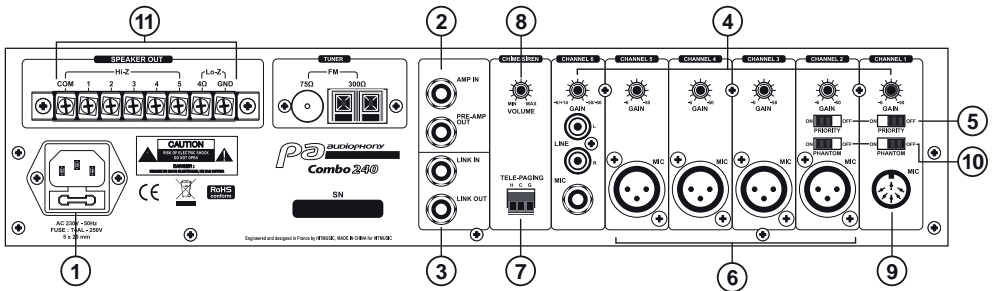Press the corresponding button to trigger the chime or the siren.

Note:
PRIORITY Function
This function, available for the mic 1/2 and the chime/siren decreases the volume of other sources to optimise the priority outputs. This function can be adjusted for the microphones (please refer to next page for more details about this).

9] MIC input:
This jack input allows you to connect a microphone to the front panel. This input is linked to the MIC1 input and is affected by the same settings.

4.2 - Rear panel

[1] AC power socket
Connect here the supplied power cord.
Connect the other end to a standard electrical outlet (16 A 230 V).
Note: If need to change the fuse, replace it with one with the exact same characteristics.

[2] AMP IN/PRE-AMP OUT sockets
This input/output system allows you to connect a digital sound processing device such as an equalizer. Connect the input of your device to the PREM-AMP OUT socket. Connect the output to the AMP IN socket.
Please use a JACK TS (Mono Jack) cable to link the two devices together.

[3] LINK IN/LINK OUT sockets
Allows you to share the incoming signals with another power amplifier. The LINK output is located right before the main volume settings and thus takes into consideration the volume of each input.

Connect the LINK OUT socket of the first amplifier to the LINK IN of the second one to daisy-chain several amplifiers.

[4] Gain control
Use these faders to configure the input sound level of your sources. This will allow you to increase low sound levels or decrease high sound levels.

[5] PRIORITY switches
Allow you to activate/deactivate the PRIORITY function to the mic 1 & 2 inputs.
When ON, using the microphone will decrase the volume of other sources, when OFF this function is deactivated.

[6] Microphone input XLR connectors
Connect here microphone with XLR plugs requiring (or not) a phantom power supply unit.

[7] Remote paging input
Connect here your remote paging system. The G pin is the mass, the C pin is the cold, while the H pin is the hot point of your PRX system.

[8] Ringtone volume
This fader allows you to configure the volume of the chime/siren.

[9] 5-pin DIN microphone input
Connect here a 5-pin DIN microphone (such as the MIC-DESK) to be able to remotely control the chime.

[10] Phantom power switch
The phantom power supply delivers a 48V voltage allow you to use particular microphones. This power supply can damage microphones which do not require any external power supply unit. Please make sure to adapt your selection to the type of microphone used.

[11] Loudspeakers output terminal

Connect your speakers here as follows:

- When using 100V speakers, connect the com to the COM connector and the positive to the connector corresponding to the chosen zone. When using a multi-zone system, connect all the coms to the COM connector. The total power of the speakers must not exceed the maximum power of the amplifier.

- When using 16 to 4 Ohms speakers (or a set of speakers), plug the GND connector and the + to the 4 Ohms connector. In this case, the total power of the speakers must be identical to the amplifier power (+/- 10%) and the total impedance must be within 4 Ohms.

WARNING: Dangerous output voltage (100V)
Please use electric cables compliant with the current safety regulations.

5 - Cable diameter depending on the installation:

WARNING :
The SPEAKER OUTPUT delivers a dangerous voltage of 100 V
Please turn your system off when changing cables.

You will find below an indicative table of the cable diameter to use depending on the power and distance:

Amplifier power: 100V	0.75mm²	1.0mm²	1.5mm²	2.5mm²	4.0mm²
30W	800m	1000m	1600m	2600m	4200m
60W	400m	500m	800m	1300m	2100m
120W	200m	250m	400m	600m	1000m
240W	100m	130m	200m	300m	500m

The speakers should always be wired in parallel and the sum of the speakers power must never exceed the nominal power, failing which severe damages to the amplifiers may occur.
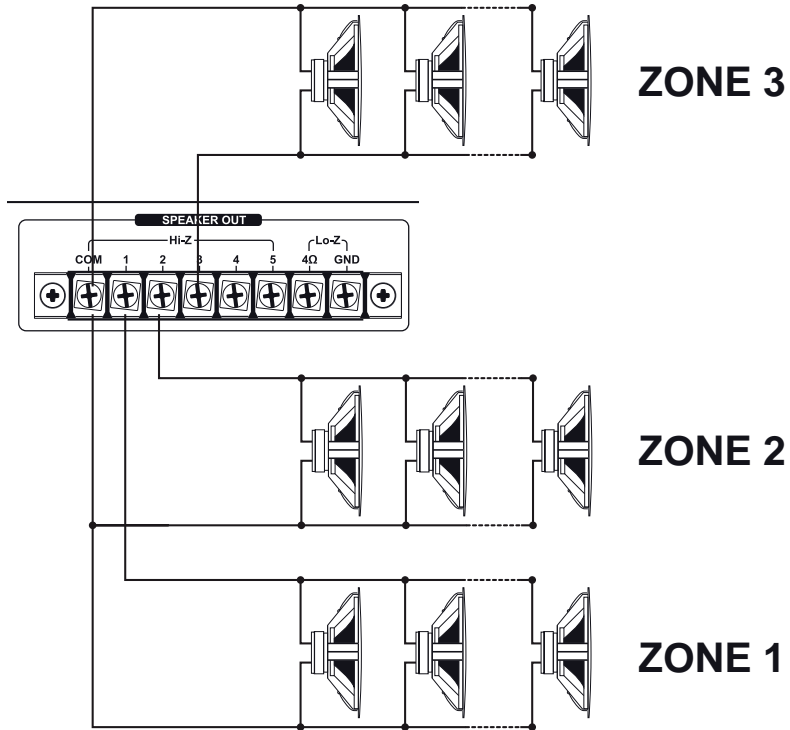
6 - Wiring a 100V line:

Wiring the speakers:

The COM terminal regroups the connectors of each zone.
The speakers can be wired in parallel.
The sum of the speakers must not exceed the power of the amplifier.

The drawing below is an exemple of wiring across 3 zones.

7 - Preparation and installation

7.1 - <u>Installation within 19" racks</u>

First of all, get the two mounting brackets and the 6 supplied screws ready. You should also get a Phillips screwdriver to perform this procedure.

• Place one of the fin to the right front edge of the chassis. The part with two holes must be oriented toward the front of the unit.
• Insert a screw in each hole of the bracket and tighten it as much as possible.
• Repeat the same process for the second bracket.
• Use the screwdriver to remove the 4 rubber feet of the unit.

When mouting your device into a rack, please make sure not to block the cooling vents.
Please check regularly the tightening of the screws to ensure a safe positioning of your device.

7.2 - <u>Installing an optional module (MOD1)</u>

Follow the steps described below to add an optional module to your COMBO240:

• Remove the 5 screws tightening the top cover (four on the sides and one at the rear).
• Remove the front panel by removing the 4 screws.
• Insert the module in the free space, please make sure not to pinch any cable.
• Connect the black cable (2 threads) to the AM terminal located at the rear of the unit (inside)
• Connect the black cable (1 thread) to the FM terminal located at the rear of the unit (inside)
• Connect the Power+Audio cable (6 threads) supplied with the module to the support of the module provided for the purpose.
• Fix the module to the side metal plate with the supplied screw.
• Fix the module to the façade with the 4 screws provided for the purpose.

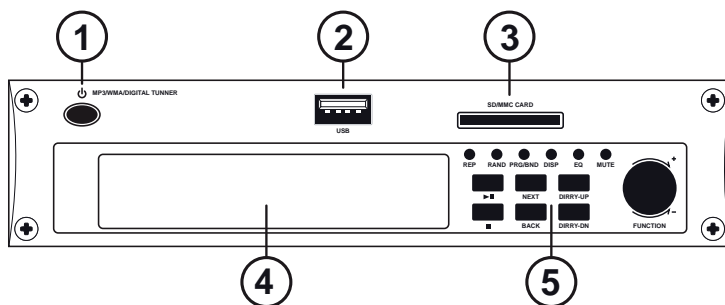## 8 - Using the MOD1 optional module

8.1 Specifications

The MOD1 is a multi support player able to read Mp3/WMA files via USB key or SD/MMC cards.
It also features an AM-FM tuner.
Note:
We strongly recommend to only use modules recommended by Audiophony with your COMBO240.
Similarly, we strongly recommend to use the Audiophony modules only with recommended amplifiers.

• MPEG 1/2/2.5 Layer 2/3, WMA9 L1/L2 decoder on USB and SD/MMC support.
• 64K NOR flash memory for the storage program.
• 32 stps for the electronic volume.
• EQ Program (Classical/Pop/Jazz/ Rock) with LOUD function.
• Detects more than 2000 files and 200 folders.
• ID3 available up to 32 characters (Folder name/ Track/ Artist/ Album).

8.2 Front panel

[1] Power button
Turns the player ON/OFF.

[2] USB port
Connect your USB Mass Storage device here (key or HDD).

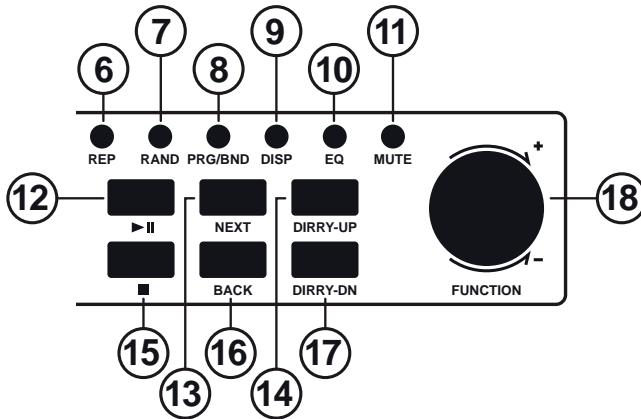**[3] SD/MMC port**
Connect your SD or MMC device here.

[4] LCD display
Indicates detailed information about the player status.

[5] Control panel
Control your module with the control panel buttons.

8.3 Description of the control panel

[6] REP (repeat) button
In USB or SD/MMC mode:
Switches to another "repeat" mode:
- Repeat ONE plays the current track in a loop.
- Repeat all repeats all the tracks on the storage device.
- Repeat Folder allows you to repeat the current album/folder.
- Repeat OFF deactivates the repeat mode.
The modes are displayed in the following order:
REPEAT ONE >> REPEAT FOLDER >> REPEAT ALL >> REPEAT OFF

Tuner mode:
No function

[7] RAND (Random) button
In USB or SD/MMC mode:
Activates or deactivates the shuffle mode.

Tuner mode:
No function

[8] PRG/BND button
In USB or SD/MMC mode:
Allows you to create programs (playlists).
To create a program, stop the track being played and press the **PGR/BND** button.
- The screen indicates **P01**.
- Select a folder and file.
- Press **PGR/BND** to confirm your choice. The screen indicates **P02**.
- Select a folder and file.
- Press **PGR/BND** to confirm your choice. The screen indicates **P03**.

Repeat the same steps until the playlist includes all the tracks you want.
Press the **PLAY/PAUSE** button to launch the playlist.

To cancel a program, press **STOP**, then press **STOP** a second time. The program has been erased.

Tuner mode:
This button allows to modify the number assigned to a frequency.
Press the **PGR/BND** button (the number will flash on the screen) then turn the **FUNCTION** fader until you find the desired number.
Press to confirm your choice.

[9] DISP button
In USB or SD/MMC mode:
This button allows you to display some data when playing a track.
The MOD1 can display the title, album and artist if these information have been indicated.

Tuner mode:
No function

[10] EQ button
Allows you to modify the equalizer. Press this button to switch from one mode to another. The following modes are available: normal, classical, pop, jazz and rock. Choosing one of these modes will change the tone of your tracks.

[11] MUTE button
Mutes the MOD1.
Once this function has been activated, the display will indicate **MUTE ON**. Press again to deactivate this mode.

[12] Play/Pause button
In USB or SD/MMC mode:
Plays/pauses the current track.

Tuner mode:
Switches from MONO to STEREO mode.

[13] NEXT button
In USB or SD/MMC mode:
Skips to the next file.

Tuner mode:
Press this button to modify the tuner frequency (0.1 MhZ for each pressure).
By holding down this button, the tuner will search automatically for the closest frequency used (above the current frequency).

[14] DIRRY-UP button
In USB or SD/MMC mode:
Skips to the next folder.

Tuner mode:
Press this button to skip to the next frequency memory.
Hold down this button to browse through the memories.

[15] STOP button
In USB or SD/MMC mode:
Stops the track currently playing.
By pressing STOP a second time you will erase your playlists and reading mode (Repeat, random).

Tuner mode:
Switches from AM to FM.

[16] BACK button
In USB or SD/MMC mode:
Use this button to move to the previous file.

Tuner mode:
Press this button to modify the tuner frequency (0.1 MhZ for each pressure).
By holding down this button, the tuner will search automatically for the closest frequency used (below the current frequency).

[17] DIRRY-DN button
In USB or SD/MMC mode:
Skips to the previous folder.

Tuner mode:
Press this button to skip to the next frequency memory.
Hold down this button to browse through the memories.

[18] Function control knob
Allows two kinds of actions:
- By turning it you will modify the main volume.
- By pressing it you will change your source (TUNER -> USB -> SD/MMC Card)

8.4 MOD1 module specifications
- Signal-to-noise ratio: < 70 dB
- Frequency reponse: 20Hz - 20kHz
- THD: < 0.1%
- Max. power consumption: 500 mA
- Operating temperature: 0°- 40°C (humidity: 95% max.)

9 - Technical specifications

• Max. input sensitivity:
- Balanced mic input: - 50dB +/- 3dB
- Balanced line input: -6dB +/- 3dB
- RCA line input: -50dB -6dB 3dB (-30dB -/+ 14dB -/+ 3dB)
- Tele-paging input: -21dB -/+ 3dB
- Unbalanced Link In: -17dB -/+ 3dB
- Unbalanced amplifier input: 0dB -/+ 3dB

• Frequency response:
- At 1 Watt for the loudspeaker outputs. 100Hz~10kHz : +1.5dB / -3dB

• Graphic equaliser:
- Graphic equaliser: 125Hz,250Hz,500Hz,1kHz,2kHz,4kHz,8kHz : -/+ 12dB
- S/N ratio: + 75 dB
- Max crosstalk: -60dB at 1kHz
- THD 0.5% power output: 240 watts
- THD power at 1 Khz : > 0.5%
- Power supply: 15V DC
- Operating temperature: 0 ~40°C, with a humidity of95%

• Voltage output and impedance:
- 4 Ohms : 31V
- 25V : 2.6 Ohms
- 70V : 21 Ohms
- 100 V : 42 Ohms

• Additional characteristics:
- Cooling system: Convection-cooled
- Dimensions (Width, Height, Depth): 420(W) x 88(H) x 320(D) mm
- Net weight: 10.8 kg