

OWNER S MANUAL

PROFESSIONAL SOUND SYSTEM

AMPLIFIER APPLE SERIES



Apple2150II/Apple2250II/Apple2350II/Apple2450/
Apple2550/Apple2650/Apple2750



Apple3450II/Apple3550II/Apple3650II/Apple3750II

Manufacturer: **WIND FORCE ELECTRONIC MANUFACTURING CO.,LTD**

5718 Kenwick St.San Antonio Texas 78238 U.S.A.

Tel:001-210-6842600 Fax:001-210-8556279 E-mail:gc@biema.us

China factory: **No.4 road 2, Caier industrial and business zone, Shiqiao town, Panyu district, Guangzhou, China**

PC:511400 Tel:86-20-66606029(export) 66606020(domestic) Fax: 86-20-66618678

E-mail:audio@biema.com



MODEL	Apple3450II	Apple3550II	Apple3650II	Apple3750II
Output power STEREO 8 OHMS	450W+450W	550W+550W	650W+650W	750W+750W
TA 1KHz THD≤1% 4 OHMS	650W+650W	800W+800W	1000W+1000W	1250W+1250W
BRIDGE 8 OHMS	1300W	1600W	2000W	2500W
Frequency response	10Hz-50KHz -1.5dB	10Hz-50KHz -1.5dB	10Hz-50KHz -1.5dB	10Hz-50KHz -1.5dB
Input sensitivity	0.77V	0.77V	0.77V	0.77V
Maximum input level	21dBV/9V	21dBV/9V	21dBV/9V	21dBV/9V
Input impedance active balanced	20KΩ	20KΩ	20KΩ	20KΩ
Signal/noise ratio a-weighted RMS	>95dB	>100dB	>100dB	>100dB
Crosstalk at rated output power 8 ohm 1kHz	> 70dB	> 70dB	> 70dB	> 70dB
Damping factor f=1kHz 8 ohms	>300	>200	>200	>200
Slew rate internal	30V/μs	35V/μs	40V/μs	40V/μs
Protection	SHORT CIRCUIT,LIMITER,OVER CURRENT,SOFT START,OVER HEAT			
Indicators	POWER(BLUE) PROT(YELLOW) CLIP(RED) BR(GREEN) PAR(GREEN)			
Cooling	SMART FAN			
Front panel controls	LEVEL ACH, BCH POWER SWITCH			
Rear panel controls	STEREO/BRIDGE/PARALLEL MODE SWITCH			
Connector	XLR BALANCED INPUT, 6.35MM BALANCED INPUT,PROFESSIONAL SPEAKON OUTPUT,PROFESSIONAL BINDING POSTS OUTPUT			
Power consumption half power 8 ohms	<600W	<750W	<900W	<1100W
Power supply	AC 220V-240V/50Hz			
Dimensions(W×D×H)mm Interior/Exterior	482x430x132(585x560x185)mm			
N.W/G.W	18.0kg / 20.3kg	19.0kg / 22.2kg	21.5kg / 23.7kg	22.0kg / 24.8kg

Technical parameter's are subject to change without informed

OWNER'S MANUAL

The information furnished in this manual does not include all of the details of design, production, or variations of the equipment, Not does it cover every possible situation that may arise during installation, operation or maintenance. If you need special assistance beyond the scope of this manual, please contact our Technical Support Group.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

TO PREVENT ELECTRIC SHOCK DO NOT REMOVE COVER
OR BACK. NO USER SERVICEABLE PARTS INSIDE REFERS
SERVICING TO QUALIFIED SERVICE PERSONNEL.

MAGNETIC FIELD

CAUTION! Do not locate sensitive high-gain equipment such as preamplifiers or tape decks directly above or below the unit. Because this amplifier has a high power density, it has a strong magnetic field, which can induce hum into unshielded devices that are located nearby. The field is strongest just above and below the unit.
If an equipment rack is used, we recommend locating the amplifier(s) in the bottom of the rack and the preamplifier or other sensitive equipment at the top.

WATCH FOR THESE SYMBOLS:



The lightning bolt triangle is used to alert the user to risk of electric shock



The exclamation point triangle is used to alert the user to important operating or maintenance instructions.



WARNING

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE!

INTRODUCTION

BIEMA APPLE series amplifier represents a major step forward in **Biema** power amplifier technology and design. In 1987 Mr. **Biema** collaborated with professors at Electro acoustics Research Center of Princeton University and established **Biema** Acoustics R&D Center. Under his passion at music, Mr. **Biema** has contributed most of his time and technology at the development of **Biema** audio equipments. **Biema** professional amplifiers are coming with excellent sound effect but with very reasonable price. It offers quality guarantee and technological support for the apparatus you are using.

Quiet Operation

High quality of the power transformers reduces external magnetic field radiation, which can induce audible hum into associated equipment and cabling. In addition, the up-to-dated technology components are incorporated throughout the design to ensure extremely low noise generation **Biema** all fore Series power amplifiers.

DC Voltage protection

If an amplifier channel detects DC voltage at output terminals, the output relay will immediately open to prevent loudspeaker damage. The protection LED will light.

Reliable Power Supply

The **Biema** APPLE Series amplifiers have automatic power supply protection. The power supply has experienced DC automatic regulation, which grants **Biema** APPLE Series amplifiers excessive reliability. **Biema** APPLE amplifiers can be wired for 220V-240V/50Hz AC power supply.

GENERAL

Biema's new APPLE series amplifiers are high performance and high efficiency's top quality amplifiers. To get good effecting of cooling and highest work efficiency, variable speed fan and T type heat-sink have adopted for constant cooling. Besides, APPLE series amplifiers have their comprehensive protect function.

1. Power ON/OFF transient, prevents the surge assault.
2. Thermal cut off protection, the amplifier will cut off the link with speakers when the temperature is more than 100℃.

BIEMA AMPLIFIER APPLE SERIES

PROFESSIONAL FORCE AMPLIFIER

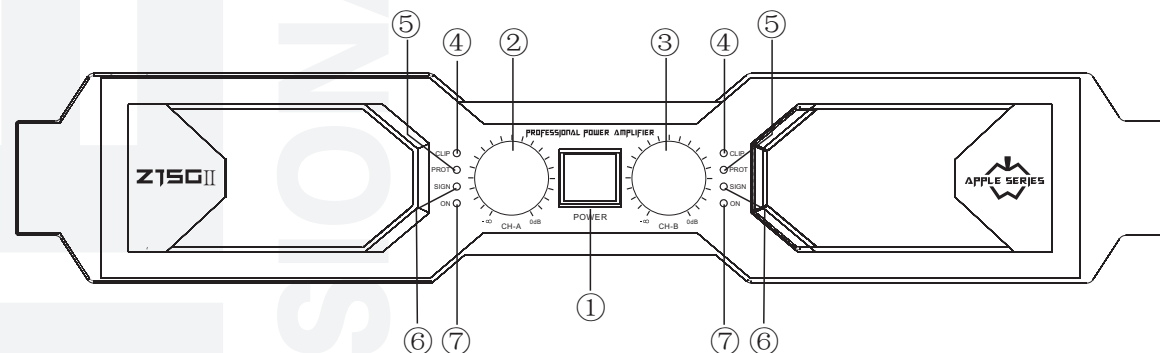
3. Short circuit current limited protection.
4. The muting circuit prevents switching noise by turning the amplifier on or off.
5. DC protection at speaker output, the amplifier will cut off the link with speakers when the amplifier is unusual.
6. Limiter protection, providing voltage of compression without distortion, the amplifier will not clip.

PRECAUTIONS

1. Don't stack anything upon the amplifier.
2. Always use a power source of adequate capacity.
3. DO NOT turn ON/OFF the power of continuously. Never allow the ventilation holes on the front of the amplifier to be obstructed in any way.
4. Input level adjust controls are provided on each channel.
5. Output can use binding posts, speakon posts.
6. When the amplifier works in stereo, bridge-mono or parallel-mono mode, the switch must be on the same.
7. Fan's variable speed may produce light noise, which is normal when continuous output large power and amplifier gives out heat.
8. To clean the amplifiers, wipe it with a dry cloth, if the case is very dirty, disconnect the AC cord from the power source and wipe it with a dry cloth. Never use solvents or chemical cloth. Never spray insecticides as they may cause discoloration or peeling.
9. If any trouble is found, disconnect the power and contract your distributor.
10. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids such as vases shall be placed on the apparatus.
11. An apparatus with class I construction shall be connected to a mains socket outlet with a protective earthing connection.
12. Where the mains plug is used as the disconnect device, the disconnect device shall remain readily operable.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

FRONT PANEL(Apple2150II/Apple2250II/Apple2350II):



1. Power ON/OFF switch

When you turn on the amplifier, the power ON/OFF transient protection starts working. After 3-4 minutes you can hear a voice of "kniak". And 1-2 minutes later, you can hear a voice of "kniak", once more the amplifier has been connected with the speakers.

2. CH-A input level control

Adjust this control to the voice you need. When you're far away from the speakers, you can adjust it with the calibrated marking on the front panel to indicate the amount of attention applied to the input signal. This allows proper volume setting of the speakers when the input signal source is at its rated level.

Use this control when running the amplifier in BRIDGE or PARALLEL mode only.

3. CH-B input level control.

As same as CH A.

4. CH-A.CH-B. Peak value indicator lamps(Red)

The LEDs will be light in the two situations.

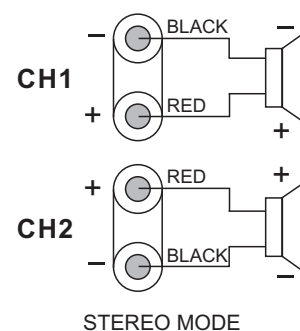
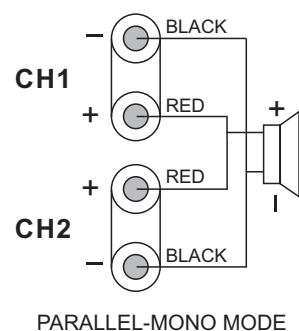
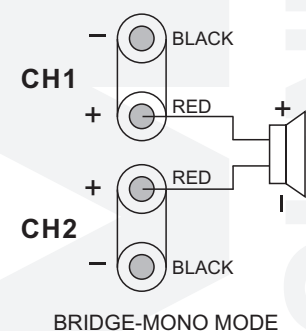
BIEMA AMPLIFIER APPLE SERIES

PROFESSIONAL FORCE AMPLIFIER

MODEL	Apple2450	Apple2550	Apple2650	Apple2750
Output power STEREO 8 OHMS	450W+450W	550W+550W	650W+650W	750W+750W
TA 1KHz THD≤1% 4 OHMS	650W+650W	800W+800W	1000W+1000W	1250W+1250W
BRIDGE 8 OHMS	1300W	1600W	2000W	2500W
Frequency response	10Hz-50KHz -1.5dB	10Hz-50KHz -1.5dB	10Hz-50KHz -1.5dB	10Hz-50KHz -1.5dB
Input sensitivity	0.77V	0.77V	0.77V	0.77V
Maximum input level	21dBV/9V	21dBV/9V	21dBV/9V	21dBV/9V
Input impedance active balanced	20KΩ	20KΩ	20KΩ	20KΩ
Signal/noise ratio a-weighted RMS	>95dB	>100dB	>100dB	>100dB
Crosstalk at rated output power 8 ohm 1kHz	> 70dB	> 70dB	> 70dB	> 70dB
Damping factor f=1kHz 8 ohms	>300	>200	>200	>200
Slew rate internal	30V/μs	40V/μs	40V/μs	40V/μs
Protection	SHORT CIRCUIT,LIMITER,OVER CURRENT,SOFT START,OVER HEAT			
Indicators	POWER(BLUE) PROT(YELLOW) CLIP(RED) BR(GREEN) PAR(GREEN)			
Cooling	SMART FAN			
Front panel controls	LEVEL ACH, BCH POWER SWITCH			
Rear panel controls	STEREO/BRIDGE/PARALLEL MODE SWITCH			
Connector	XLR BALANCED INPUT, 6.35MM BALANCED INPUT,PROFESSIONAL SPEAKON OUTPUT,PROFESSIONAL BINDING POSTS OUTPUT			
Power consumption half power 8 ohms	<600W	<940W	<750W	<1200W
Power supply	AC230V 50Hz			
Dimensions(W×D×H)mm Interior/Exterior	482×430×88/(585×560×123)mm			
N.W/G.W	16.0kg / 19.5kg	15.0kg / 17.0kg	20.0kg / 21.3kg	18.0kg / 20.0kg

3. STEREO mode wiring

- 1) Turn off the amplifier.
- 2) Set mode switch to STEREO mode.
- 3) Speaker "+" connect with CH1/CH2 red terminal.
- 4) Speaker "-" connect with CH1/CH2 black terminal.
- 5) Stereo input signal from CH1 and CH2 socket.
- 6) Turn on the amplifier.



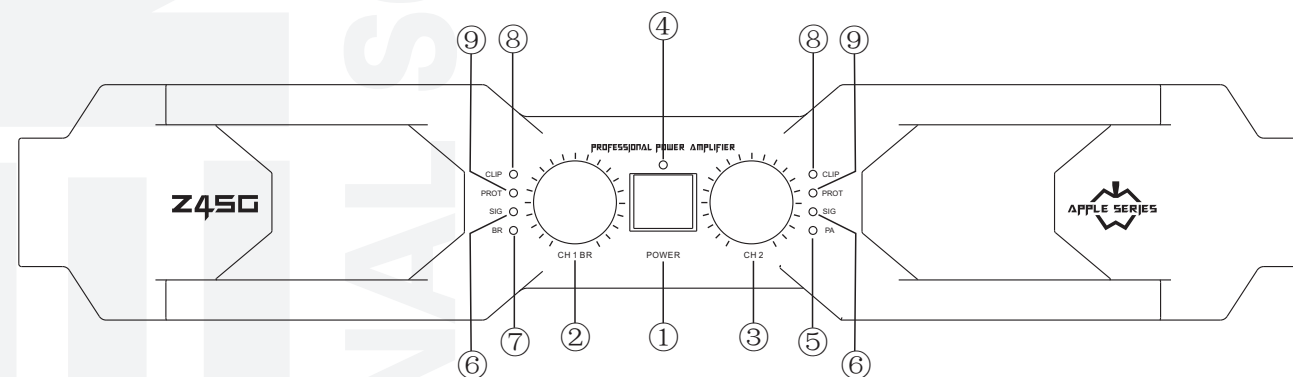
TECHNICAL DATA & INTRODUCTION

MODEL	Apple2150II	Apple2250II	Apple2350II
Output power STEREO 8 ohms	150W+150W	250W+250W	350W+350W
TA 1KHz THD≤0.1% 4 ohms	220W+220W	380W+380W	500W+500W
Frequency response	10Hz-50KHz -1.5dB	10Hz-50KHz -1.5dB	10Hz-50KHz -1.5dB
Input sensitivity	0.77V	1V	1V
Input impedance active balanced	20K ohms	20K Ω	20K Ω
Signal/ noise ratio a-weighted RMS	>85dB	> 90dB	> 90dB
Crosstalk at rated output power 8 ohm 1khz	>70dB	> 70dB	> 70dB
Damping factor f=1khz 8 ohms	>150	>150	>150
Slew rate internal	20V/μS	30V/μs	35V/μs
Protection	SHORT CIRCUIT, OVER CURRENT, OVER HEAT		
Indicators	POWER (BLUE) CLIP (RED) PROT (YELLOW)		
Cooling	SMART FAN		
Front panel controls	EVEL ACH, BCH, POWER SWITCH		
Rear panel controls	GROUND/LIFT SWITCH		
Connector	6.35MM INPUT, XLR INPUT, PROFESSIONAL SPEAKON OUTPUT, PROFESSIONAL BINDING POSTS OUTPUT		
Power consumption half power 8 ohms	<200W	<380W	<500W
Power supply	AC 220V-240V/50Hz		
Dimensions (WxDxH) mm Interior/Exterior	482x314x88(585x465x145)mm		
N.W/G.W	11.0kg/11.7kg	12.5kg / 13.0kg	13.5kg / 14.0kg

- 1) When the output signal has reached its clipping level, the LED lights; possibly resulting in distortion, should this occur, either adjust the input level control so that PEAK LED turns off.
- 2) As the signal has been input, the PEAK LED lights continuously, but the speakers is no voice, it is possible that it is short circuit for loading, you should turn off the amplifier, find out where is the trouble and renew the works.
5. CH-A, CH-B protect indicator lamps (yellow)
The LEDs will be Light in the three situations.
1) After turning on the power in 4-6 minutes after turn off the power .
2) As the power transistor's temperature is over 100°C.
3) Something is wrong with the amplifier.
6. Channel A, B Signal LED (Green): The LED is on, when there is signal input for channel A, B.
7. Power ON indicator lamp (blue)
Indicates that the amplifier is turned on.

FRONT PANEL

(App l e2450/ App l e2550/ App l e2650/ App l e2750/ App l e3450II/ App l e3550II/ App l e3650II/ App l e3750II) :



1. Power ON/OFF switch
When you turn on the amplifier, the power ON/OFF transient protection starts working after 3-4 minutes, you can hear a voice of "kniak". And 1-2 minutes later, you can hear a voice of "kniak", once more the amplifier has been connected with the speakers. The amplifier is working and the power LED lights.
2. CH1 input level control
Adjust this control to the voice you need. When you're far away from the speakers, you can adjust it with the calibrated marking on the front panel indicate the amount of attention applied to the input signal. Use this control when running the amplifier in BRIDGE or PARALLEL mode only.
3. CH2 input level control.
Same as CH1.
4. Power LED (blue)
The LED lights, which indicate that the amplifier is turned on.
5. Parallel mode indicator LED (green)
Indicates that the amplifiers are working in parallel mode when using parallel mode the input signal must be applied.
6. Signal LED (green)
7. Bridge mode LED (green)
The LED lights, which indicate that the amplifier is working in bridge mode when using Bridge mode the input signal must be applied the CH-1 only.

8. CH1/CH 2. Peak value LED (Red)

The LEDS will be light in the two situations.

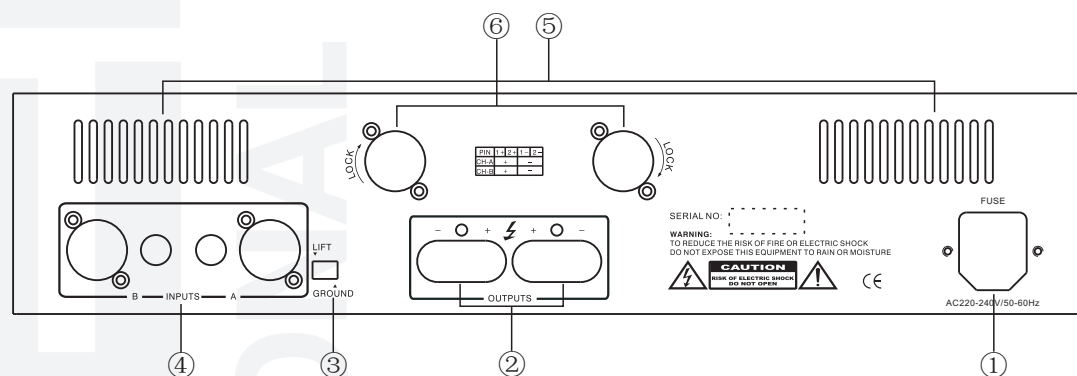
- 1) When the output signal has reached its clipping level, the LED lights; possibly resulting in distortion, should this occur, either adjust the input level control so that PEAK LED turns off.
- 2) As the signal has been input, the PEAK LED lights continuously, but the speakers is no voice, it is possible that it is short circuit for loading, you should turn off the amplifier, find out where is the trouble and renew the works.

9. CH1.CH2. Protection LED (yellow)

The LEDS will be light in the three situations.

- 1) After turning on the power in 3~5 minutes or after turning off the power, the amplifier is in unstable situation.
- 2) As the working temperature of the amplifier is over 95°C
- 3) Something is wrong with the amplifier.

REAR PANEL(Apple2150II/Apple2250II/Apple2350II):



1. Standard power connector(w/fuse socket)

Attention: use the correct fuse when changed.

2. CH-A/CH-B output connector

Banana plug or bare wire is used for speaker connection through binding post

3. Ground/lift switch

4. CH-A/CH-B input connector

Using the 1/4 "MIC plug and standard XLR socket for connection.

5. Air hole

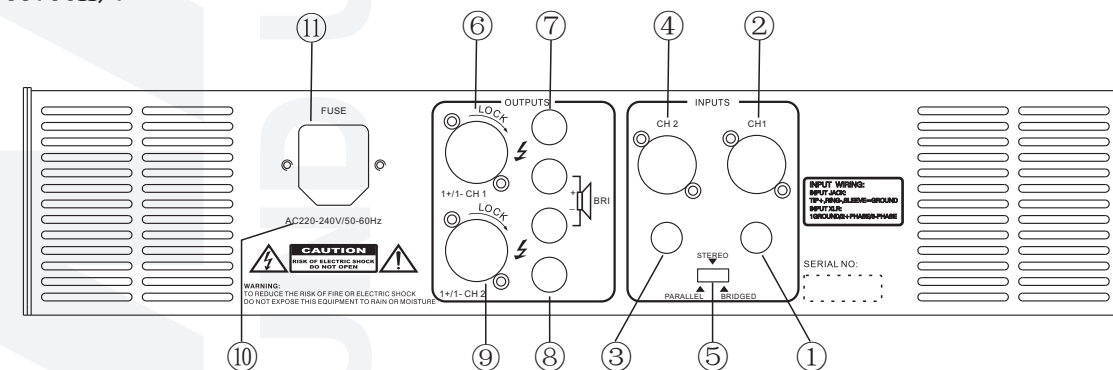
The heat goes off air hole when amplifier works, please keep air hole ventilated.

6. spoken output socket

As the work is in stereo mode, can use speakon socket for connecting , the way of connecting is (1+,2+)+; (1-,2-)-.

REAR PANEL

(App le2450/App le2550/App le2650/App le2750/App le3450II/App le3550II/App le3650II/App le3750II) :



1. CH1 input

Accepts 1/4" balanced and unbalanced input. Tip:+ Ring:- Sleeve: Ground

2. CH1 input

Accepts XLR input. Pin 1:Ground Pin 2: + Pin 3: -

3. CH2 input

Accepts 1/4" balanced and unbalanced input. Tip:+ Ring:- Sleeve: Ground

4. CH2 input

Accepts XLR input. Pin 1:Ground Pin 2: + Pin 3: -

5. Amplifier working mode switch

There modes optional

- 1) Stereo mode: CH1 in / CH1 out, CH2 in/ CH2 out
- 2) Bridge mode: Signal input only at CH1
- 3) Parallel- mono mode: Signal input only at CH1

6. CH 1 SPEAKEN output to speaker

As the amplifier is working at stereo mode, SPEAKON socket is available for connection to speakers. The way of connection is 1+ to +; 1- to - .

7. CH1 binding post for speaker connection

Red: + Black: -

8. CH2 binding post for speaker connection

Red: + Black: -

9. CH 2 SPEAKEN output to speaker

As the amplifier is working at stereo mode, SPEAKON socket is available for connection to speakers. The way of connection is 1+ to +; 1- to - .

10. Power input socket

11. Fuse

Operation procedure for bridge-mono parallel-mono and stereo mode

1. BRIDGE-MONO wiring

- 1) Turn off the amplifier.
- 2) Set mode switch to BRIDGE-MONO mode.
- 3) Speaker "+" connect with CH1 output red terminal.
- 4) Speaker "-" connect with CH2 output red terminal.
- 5) Input signal from CH1 socket.
- 6) Turn on the amplifier.

2. PARALLEL-MONO wiring.

- 1) Turn off the amplifier.
- 2) Set mode switch to PARALLEL-MONO mode.
- 3) Speaker "+" connect to CH1 and CH2 red terminal.
- 4) Speaker "-" connect to CH1 and CH2 black terminal.
- 5) Input signal from CH1 socket.
- 6) Turn on the amplifier.