

# User Manual

## Boston Acoustics BA 300



# Integrated Mixing Amplifier

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This is a detailed guide on how to use Boston Acoustic BA series amplifiers. Be sure to read and follow the instructions for optimal use.

Keep this document for reference when needed. Find more information about this product at: [www.anhduy.vn](http://www.anhduy.vn) and [www.anhduyaudio.com](http://www.anhduyaudio.com)

### INTRODUCTION

Boston Acoustics BA series amplifiers use DSP technology with a 7-band equalizer to adjust music and a 11-band equalizer to adjust vocals. The product is equipped with the world's top quality CPU and components for fast and accurate signal processing. BA series amplifiers also feature a variety of convenient audio inputs and an intuitively designed interface that makes it easy to make direct adjustments on the amplifier or by computer.

### PERCAUTIONS

1. To avoid risk of electric shock, do not open the amplifier by yourself.
2. For the amplifier to work stably, do not turn off the power abruptly or continuously
3. If the amplifier is left unused for an extended period, please disconnect the power supply to ensure safety
4. The amplifier works with speakers with an impedance of 8ohm. If you connect a speaker with an impedance of 4ohm or less, the amplifier will be overloaded
5. Never connect the audio output port of the amplifier to the input port on another amplifier
6. Use the anti-feedback feature when singing by pressing the FBX button on the front of the amplifier



## AMPLIFIER FRONT



1. **EFF VOL:** Adjust the volume of effects.
2. **KTV1 -> KTV4:** 4 default factory pre-set effects modes combining Reverb and Echo to choose from for singing.
3. **MUSIC:** Set parameters for music when singing. After pressing this button, press the FBX (Up) and IN (Down) buttons to adjust Phase options (turn MIC VOL knob to select 0 ° or 180 °), EQ BYPASS (turn MIC VOL knob to select ON or OFF), HPF frequency cut off (turn MIC VOL knob to adjust) or the 7-band EQ for music.
4. **MIC:** Set parameters for microphones when singing. After pressing this button, press FBX (Up - Up) and IN (Down - Down) buttons to adjust Phase options (turn MIC VOL knob to select 0 ° or 180 °), EQ BYPASS (turn MIC VOL knob to select ON or OFF), HPF frequency cut off (turn MIC VOL knob to adjust), or the 11-band EQ for music.
5. **FBX:** Anti-feedback function for Microphones with 8 levels.
6. **IN:** Select the source of the input signal for BGM / AUX / MP3 amplifier (Bluetooth / USB / SD Card/ HDMI / OPTICAL)... to AUTO to automatically play when any connection is available.
7. **MIC VOL:** Adjust microphone volume of all 3 MIC ports.
8. **MUSIC VOL:** Adjust music volume.
9. **Port for playing MP3 / WAV** music files from USB and SD Card. Note: to connect Bluetooth or used USB / SD Card, please select the MP3 channel input by pressing the IN button.
10. **EFF / ESC:** customize effects / exit function menu. After pressing this button, turn the MIC VOL knob and press the FBX (Up - Up) and IN (Down - Down) buttons to adjust parameters for Echo, Reverb, EQ BYPASS, HPF frequency cut-off, LPF and 5 band EQ.
11. **SYSTEM:** Select system setup options. After pressing this button, press FBX (Up) and IN (Down) buttons in combination with turning MIC VOL knob to browse through settings displayed on the screen including:
  - **Recall mode:** Recall saved adjustment modes. Turn the MIC VOL knob to cycle through the 4 available default effect modes KTV1, 2, 3, 4 (can be overwritten after custom adjustments) and 5 custom effect modes M4, 5, 6, 7, 8, 9. After selecting, press SYSTEM. The amplifier screen will show "Mode ... loaded," then, after 3 seconds, will show the mode you have selected.
  - **Save to mode:** Select the program mode you want to save after making adjustments. Turn the MIC VOL knob to select the program mode you want to overwrite (KTV1, 2, 3, 4 and M4, 5, 6, 7, 8, 9). After selecting, press SYSTEM, the amplifier screen will show "Mode ... saved!" and after 3 seconds will return to the main screen.
  - **Mode start:** A default mode will be displayed to be used right when the amplifier is turned on. Turn the MIC VOL knob to select from KTV1, 2, 3, 4 and M4, 5, 6, 7, 8, 9 modes.
  - **Music start:** The default music volume level when the amplifier is turned on, turn the MIC VOL knob to adjust 0 -> 80
  - **Music MAX:** Limit the maximum volume level for music when using the amplifier, turn the MIC VOL knob to adjust 0 -> 80
  - **Mic start:** The default microphone volume level when the amplifier is turned on, turn the MIC VOL knob to adjust 0 -> 80
  - **Mic MAX:** Limit the maximum microphone volume level when using the amplifier, turn the MIC VOL knob to adjust 0 -> 80
  - **Effect start:** The default effects volume level when the amplifier is turned on, turn the MIC VOL knob to adjust 0 -> 80
  - **Effect MAX:** Limit the maximum effects volume level when using the amplifier, turn the MIC VOL knob to adjust 0 -> 80
12. **MIC1 / 2/3:** MIC signal input port 1/2/3
13. **MIC 1A /2B/3:** Adjust the volume for each Microphone

## AMPLIFIER BACK PANEL



1. **MICA / MICB:** Two-channel A / B microphone signal input port
2. **BGM / AUX:** 2-channel L / R Analog audio signal input port
3. **SUB LINE:** Subwoofer connection output port
4. **SOFTWARE CONTROL:** USB port for computer connection to adjust amplifier settings using software.
5. **SPEAKER OUT:** 2 channel L / R speaker (8ohm) port
6. **AC IN:** Power cord socket.
7. **OPTICAL:** Digital signal input port, Optical cable output for TVs or Karaoke players, HD box etc.
8. **HDMI IN:** Digital signal input port, only receives HDMI signals from TVs through HDMI cable to HDMI (ARC) port, does not receive HDMI signals from Karaoke players, HD box etc.
9. **AMPLIFIER HEAT FAN:** turns on automatically when the amplifier overheats and automatically stops when amplifiers temperature stabilizes.

## AMPLIFIER DISPLAY INTERFACE

When the power switch is pressed, the LCD displays "Karaoke System Ver: 1.01 HDMI". After 5 seconds, it will automatically enter the main system and display the user interface. The following items will be displayed:

**MUS:** displays current music volume level, adjust by turning MUSIC VOL knob.

**KTV1:** Effect mode that combines both reverb and echo with default manufacturer settings. You can select other default modes with the buttons KTV2, KTV3 and KTV4 to suit different voices.

**FBX:** displays the anti-feedback mode for microphones, choose from different levels (total of 8 levels FBX1-FBX8) or turn off by pressing FBX button.

**EFF:** displays current effect volume, adjust by turning EFF VOL knob

**MIC:** displays the current microphone volume, adjust by turning MIC VOL knob

## NAVIGATION OF AMPLIFIER MENU SECTIONS

After selecting each section (MUSIC, MIC, EFF), press FBX (up) / IN (down) to navigate to the item to be adjusted, turn the MIC VOL knob to adjust each item. If there is no additional adjustment operation, after 1 minute, the detailed adjustment interface of each section will automatically return to the default main interface of the amplifier.

## MUSIC SECTION

Navigate with the FBX (up) / IN (down) buttons, the music customizations list features the following sections:

**PHASE:** phase adjustment 0° -180° .2.

**EQ BYPASS / ON/OFF:** Turn EQ on/off

**HPF FREQ / 10 - 300HZ:** cut off excess low frequencies, typically not adjusted but left at the default level of 10Hz. (In the computer software for adjustment an LPF FREQ setting will be available, used to cut off the excess high frequencies)

**EQ 1 -> EQ 7 / F:** 10Hz -> 22000Hz; G: +/- 12dB (Gain: Intensity)

**The Music section has 7 customizable EQ bands.**

**EQ 1 -> EQ 2:** adjusts bass frequencies from 63Hz -> 160Hz

**EQ 3 -> EQ 5:** adjusts middle frequencies from 400Hz -> 2500Hz

**EQ 5 -> EQ 7:** adjusts high frequencies from -> 10000Hz



Depending on the type of music, different types of speakers, different room spaces, different adjustments will be required suit your karaoke set.

- For Dance music, you can increase the bass frequencies (60Hz and 125Hz) about 2-3 dB to give Bass more power, reduce middle frequencies (1000Hz) about 3dB and increase high frequencies (6300Hz) by 1db help instruments and treble sound more prominent
- For Bolero music, you can reduce the middle frequencies (1000Hz) from 1 -> 3dB so that the singer does not drown out the instruments for all 3 bands.



Boston Acoustics BA series Amplifier has up to 10 savable presets (overwriting default modes: KTV1, 2, 3, 4 and additional modes: M4, 5, 6, 7, 8, 9). Making it easy to customize different profiles for different settings



## MIC SECTION

Navigate with the FBX (up) / IN (down) button, the mic customizations list features the following sections:

**Phase:** phase adjustment 0° -180° .2.

**EQ BYPASS / ON/OFF:** turn EQ on/off

**HPF FREQ / 10 - 300HZ:** cut off excess low frequencies

**EQ 1 -> EQ 11 / F:** 10Hz -> 22000Hz; G: +/- 12dB (Gain: Intensity)

**The Mic section has 11 customizable EQ bands, helping to customize signal cut off for microphones, used to cut feedback or compensate for lower signals.**

**EQ 1 -> EQ 2:** adjusts bass frequencies from 63Hz -> 125Hz

**EQ 3 -> EQ 8:** adjusts middle frequencies from 315Hz -> 630Hz

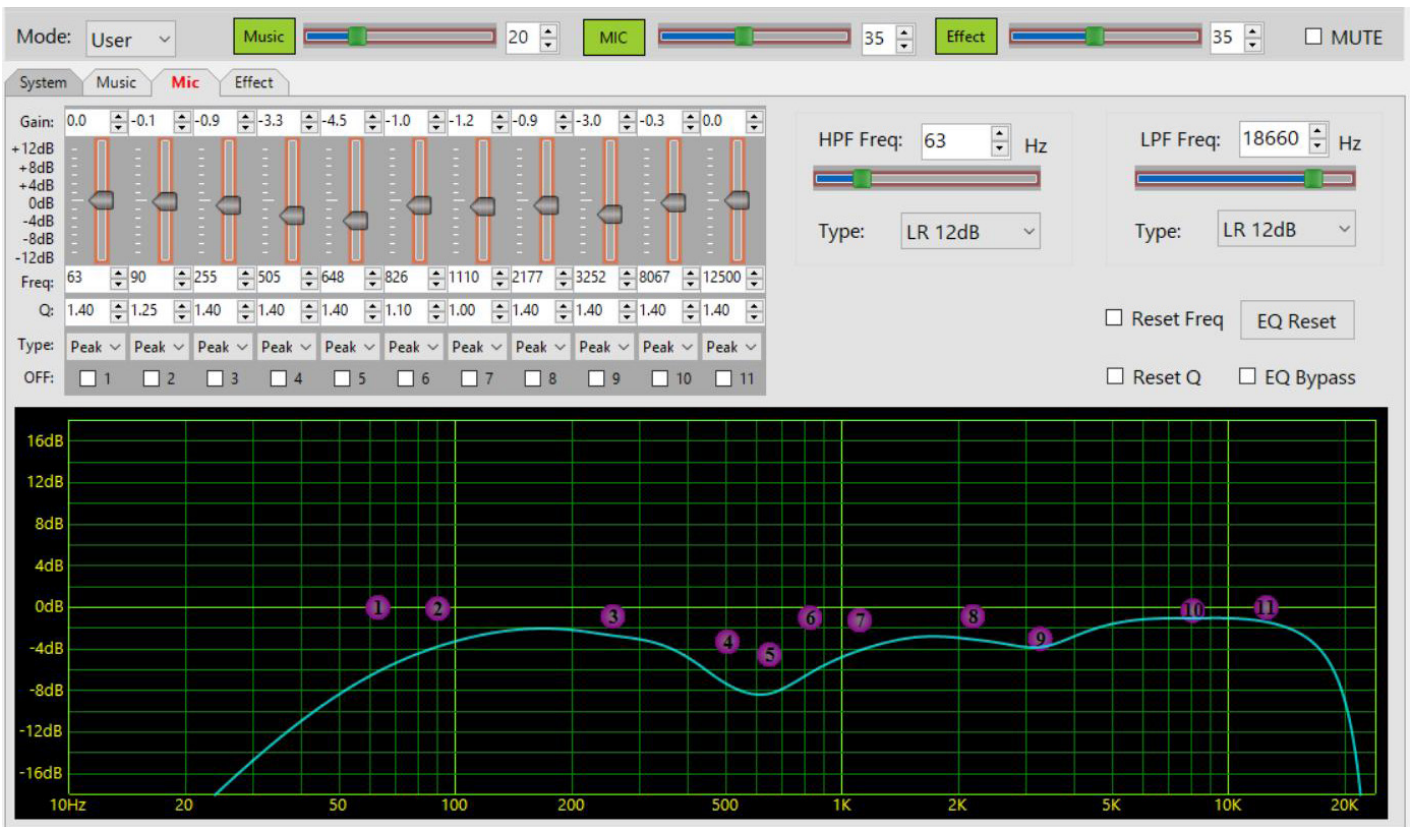
**EQ 8 -> EQ 11:** adjusts high frequencies from -> 12000hz



Depending on the type of music, different types of speakers, different room spaces, different adjustments will be required suit your karaoke set

Depending on each person's voice and depending on the type of microphone, you can use the following basic adjustments:

- For people with a deeper voice, you should reduce the intensity of bass (in the frequency range of 125Hz and 250Hz) to avoid the sound being Um.
- For those who have a thinner voice, you should increase the level of bass (in the frequency range of 60hz and 125Hz) to thicken and add warmth to their voice
- If your speakers have mid frequencies that are more pronounced than bass and treble, you can reduce the mid frequencies (250-Hz-1000Hz) to get a more even sound. Conversely, if the speaker has bass and treble that over power mid frequencies, you lower these 2 frequencies so that vocals do not "boom" and are less harsh. This helps cut feedback on microphones, enhance singing voices.



## EFF/ESC SECTION

Press the EFF / ESC button to enter the effects customizations list. Hold this button for 3 seconds to return to the main screen.

Navigate with the FBX (up) and IN (down) buttons, the effects customizations list features following sections:

**Echo:** the echo of your voice

**Reverb:** the reflection/repetition of your voice

If you make detailed adjustment to both Echo and Reverb, your vocals will have a better resonance when singing.

**Echo Vol:** the intensity and loudness of the echo, should be at level 50 -> 70 is so that the echo does not over power the mic.

**Echo Rep (Echo Repeat):** the level of repetition of vocal echo, for example if you say "one", the echo effect with repeat will create the repetition "One-One-One-One ...". The amount of repetition depends on your adjustment. It is recommended to keep this setting somewhat high (level 60 or 70) to help prevent a dry sound and prevent the echo repeat from being over powered by music.

**Echo PreD (Echo Pre-Delay):** the delay before the start of repetition, usually we will 5.0ms

**Echo Ldly (Echo LCh Delay):** the speed of echo for the left speaker channel

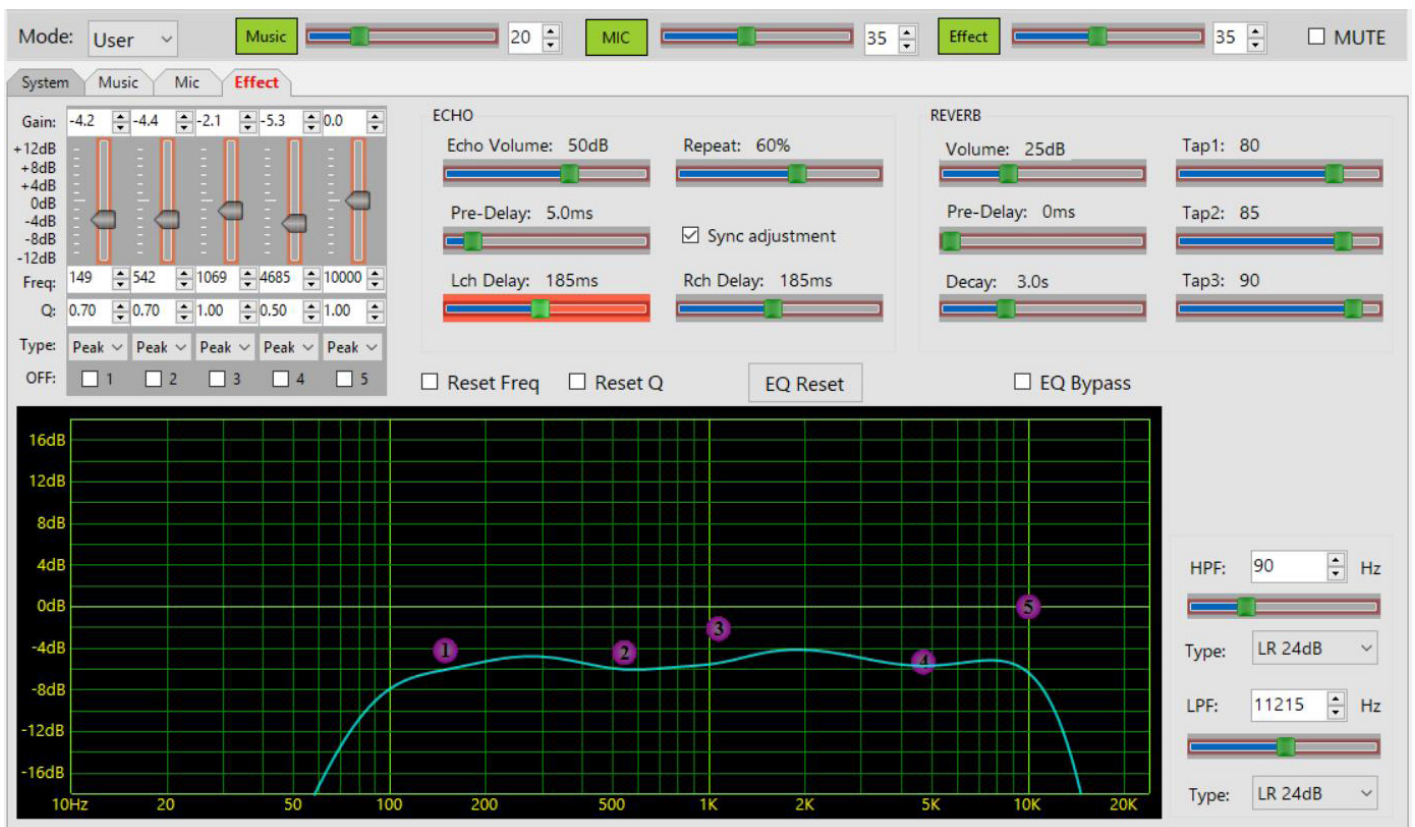
**Echo Rdly (Echo RCh Delay):** the speed of echo for the right speaker channel

On the adjustment interface on the computer adjustment software, you will see a "Sync adjustment" option, clicking this will synchronize the delay for both left and right speaker channels.

Depending on your available space and specific music genre, you can apply echo repeat speed adjustments as follows:

- For Bolero music and slow tempo ballads echo repeat speed should be slow (185ms)
- For dance music, rock and fast tempo music speed up the echo repeat speed (157ms)





## OTHER SECTIONS

**Rev Vol (Reverb Volume):** the volume of reverb

**Rev Pre Dly (Reverb Pre-Delay):** is amount of delay before reverb starts, usually left at 0 because reverb does not need delay

**Rev Decay (Reverb Decay):** the length of time the reverb continues

**TAP1** 80

**TAP2** 85

**TAP3** 90

These 3 TAPs are 3 types of echo delay with different styles: short echo, medium echo and long echo. Blending these 3 types of echo at different levels will help you create new echo styles to your liking.

**EQ BYPASS / ON/OFF:** Turn EQ on/off

**HPF FREQ / 10 - 300HZ:** cut off excess low frequencies

**LPF FREQ / 22000Hz - 100Hz:** cut off excess high frequencies

**EQ 1 -> EQ 5/ F:** 10Hz -> 22000Hz; G: +/- 12dB (Gain: Intensity)

**The Effect section has 5 customizable EQ bands.**

**EQ 1 -> EQ 2:** adjusts bass frequencies from 100Hz -> 315Hz

**EQ 2 -> EQ 4:** adjusts middle frequencies from 315Hz -> 3150Hz

**EQ 5 -> EQ 7:** adjusts high frequencies from 3150Hz -> 10000h

## CREATING AND SAVING CUSTOM PROFILES

After you have made custom adjustments on the amplifier, press the SYSTEM button, the screen will display "Recall mode ..." -> then press the FBX/up button -> the screen will display "Save to mode ...", use the MIC VOL knob to select the open program mode slot you want to save to (M4, 5, 6, 7, 8, 9) or overwrite the one of the default programs (KTV1, 2, 3, 4). After selecting, press SYSTEM, the screen will display "Mode ... saved!" and return to the main screen after 3 seconds.

On your computer software, select Copy Current => Mode (KTV1, 2, 3, 4, M4, 5, 6, 7, 8, 9) or save the program to your computer by selecting the save to file option. To access and use the file after saving select Open file -> then Update to Device.





## RECALLING YOUR SAVED CUSTOM PROFILE

Press the SYSTEM button on the amplifier, the screen will display “Recall mode ...” then turn the MIC VOL knob to select one of the 10 modes (KTV1, 2, 3, 4, M4, 5, 6, 7, 8, 9). After selecting, click on SYSTEM. the screen will display “Mode ... loaded” and return to the main screen after 3 seconds to show mode that you have just selected.

On the computer software, click on the “mode” option (top left corner of the user interface screen) and proceed to choose the mode you need.



On the computer software for adjustment, in the **SYSTEM** section, you will see the following items:

**Music Init:** The default volume level for music when the amplifier is turned on, turn the MIC VOL knob to adjust 0 -> 80

**Music Max:** Maximum volume limit for music, rotate the MIC VOL knob to adjust 0 -> 80

**Mic Init:** The default volume level for microphones when the amplifier is turned on, turn the MIC VOL knob to adjust 0 -> 80

**Mic Max:** The maximum volume limit for microphones when using the amplifier, turn the MIC VOL knob to adjust 0 -> 80

**Effect Init:** The default volume level for effects when the amplifier is turned on, turn the MIC VOL knob to adjust 0 -> 80

**Effect Max:** Maximum volume limit for effects, rotate the MIC VOL knob to adjust 0 -> 80

**Mic FBX:** enable anti-feedback for microphones with 1 of 8 levels or turn OFF

**Mode Init:** Select one of the program modes (KTV1, 2, 3, 4, M4, 5, 6, 7, 8, 9). The amplifier will display a default mode immediately when turned on.

**Panel Lock:** locks the amplifier panel and does not allow direct manual adjustment, with the exception of volume

**Advance setting:** to access addition adjustments for reverb, enter the password 1-2-3-4, and press "enter advance" to enter the default adjustment panel. These adjustments are not typically necessary.



**Resetting Amplifier:** Resets all custom settings and adjustments to factory default settings.

Press and hold the **SYSTEM** button for 2 seconds, the screen will display "Reset all data - Yes/No", turn the **MIC VOL** knob to select Y (Yes). After selecting Yes, hold down the **SYSTEM** button for about 4 seconds, the screen will display "Recovering ....OK!".

On the computer software, select **Factory Data**.



## SPECIFICATIONS

Model	BA300
Wattage RMS (8 Ohms)	300W / channel
Microphone input sensitivity	10MV
Frequency response range	20hz - 20kHz (-0.5dB)
Total harmonic distortion	0.1%
Wireless connection	Bluetooth
Analog input	RCA x 2 Left / Right, microphone x 5
HDMI input	1
Optical input	1
USB type A port for music	1
SD card input	1
USB type A port computer connection	1
Dimensions (Height x Width x Depth)	120 x 435 x 410mm
Net weight	13kg