

AHUJA[®]

PA Mixer with ECHO-REVERB

OPERATION MANUAL

FMX-212PRO



- ◆ Please read this manual thoroughly before making connections and turning on the power. Following the instructions in this manual will enable you to obtain optimum performance from your new AHUJA PA Mixer.
- ◆ Please retain this manual for future reference.

• Safety Instructions

Read the Instructions: Please read all the instructions in this section carefully before installation or use of the product. All the safety instructions must be followed.

Retain the Instructions: Please retain this Instruction Manual for future reference.



This symbol, wherever it appears, alerts you to the presence of uninsulated hazardous voltage that may be sufficient to constitute a risk of electric shock. External wiring to any terminal marked with this symbol must be done by a trained and instructed person only.



This symbol, wherever it appears adjacent to a component, alerts you that the concerned component can only be replaced by another of the exact same specifications.

WARNING

To reduce the risk of electric shock, do not remove the cover. No user serviceable parts inside. Refer all servicing to qualified personnel only.

CAUTIONS

Water & Moisture: To reduce the risk of fire or electrical shock, do not expose this set to rain or moisture. Do not use this set near water or in a wet location. Do not keep any object filled with liquid, such as a vase, on top of this set. Do not insert or remove the AC mains plug with wet hands.

Power Source: The voltage & frequency of the AC mains supply, to which this set can be connected, is marked on the rear panel of the set. Do not connect this set to any power source other than that specified on the rear panel.

Power Cord Protection: Do not cut, kink, damage or modify the AC power cord supplied with this set. Keep the AC power cord away from heaters and harmful chemicals. Do not keep any heavy object on the power cord.

Operation on Generator: When operating this set on a generator, make sure the set is switched off till the generator voltage has stabilized.

Stability: This set must be kept in a stable and flat horizontal position, and never in a tilted position. Do not place this set on an unstable stand, tripod, bracket or mount. Do not use attachments which are not supplied or explicitly recommended by the manufacturer.

Earthing: This set must be earthed properly before use. A wire from the Earth terminal on the rear panel must be connected to electrical earth.

Cleaning: Disconnect this equipment from the AC mains before cleaning. Clean with a damp cloth, but do not allow any liquid to enter the set. Do not clean with liquids or aerosols.

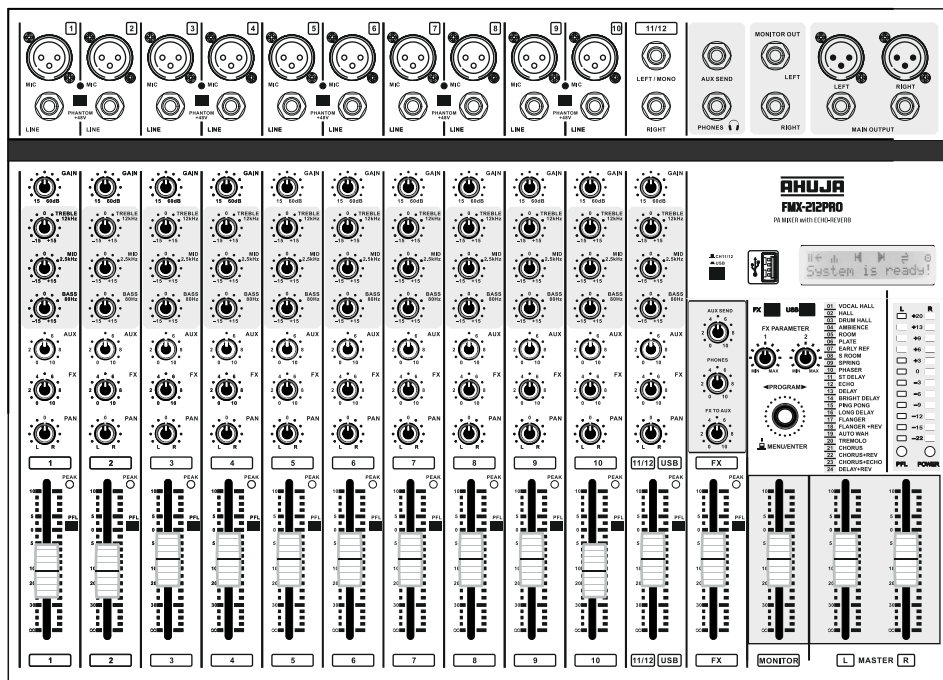
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• Features/General Description of Product

- Professional mixer with most versatile features in a compact & aesthetically superior construction.
- 10 MIC and 10 LINE Balanced Mono inputs with enhanced headroom. One STEREO Balanced input.
- Built-in digital MP3 player with recording & BT functions.
- Digital multi EFFECTS processor with 24 built-in effects.
- LCD display for viewing the EFFECTS/USB settings.
- All MIC inputs are through 3 pin F/XLR connectors.
- All LINE & STEREO inputs are through 6.3mm (1/4") stereo phone jack sockets.
- All MIC inputs are available with 48V phantom supply, with ON/OFF switch for every two MIC inputs.
- Each input channel has a GAIN control, 3 band active EQ controls, AUX, FX and PAN control.
- The STEREO channel has a GAIN control, 3 band active EQ control, AUX, FX and PAN control.
- Peak LED for signal clipping indication. PFL switch for each channel.
- Balanced Left & Right MAIN Mix outputs through M/XLR connectors as well as 6.3mm (1/4") stereo phone jack sockets.
- Monitor L&R outputs through 6.3mm (1/4") phone jack sockets and individual fader control.
- Easy and accurate monitoring of Left & Right output levels through individual 12 segment LED array.
- Headphone output with Phones Control for output monitoring.
- Operates on 240V 50Hz AC mains.

• Top and Rear Panel



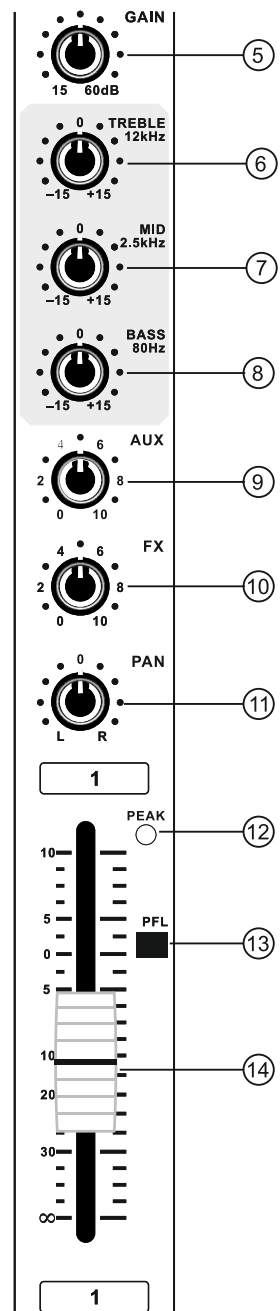
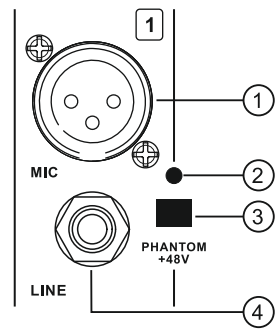
TOP PANEL



REAR PANEL

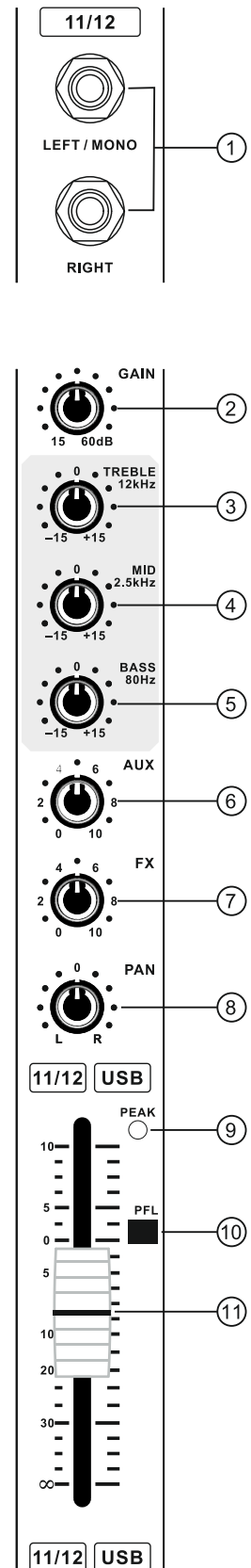
• Mic / Line Input & Control Section

1. **MIC INPUT (Channel 1 to Channel 10):** For connecting low impedance dynamic & condenser (self-powered) microphone through 3 pin XLR connector, either in balanced or unbalanced mode. For connecting phantom powered condenser microphone, keep 48V phantom switches (3) in ON position, as indicated by the glow of its LED (2). If no phantom microphone is being used, then keep phantom switch in OFF position.
2. The red LED glows when phantom switch is in ON position.
3. This push switch provides +48V phantom supply at MIC inputs of two channels together like Ch. 1&2, Ch. 2&4, Ch. 5&6, Ch.7&8 or Ch. 9&10.
4. **LINE INPUT:** For connecting signal sources like Drum Machine, Keyboards, DI for guitars etc. through a 6.3mm stereo phone jack, either in balanced or unbalanced mode.
5. **GAIN CONTROL:** The input level of both the Mic & Line signals can be adjusted by this control. Reduce the GAIN setting when PEAK LED glows continuously.
6. **TREBLE (12kHz) CONTROL:** It is used to obtain a 15dB cut or boost of high frequency input signal with 12kHz as center frequency.
7. **MID (2.5kHz) CONTROL:** It is used to obtain a 15dB cut or boost of mid frequency input signal with 2.5kHz as center frequency.
8. **BASS (80Hz) CONTROL:** It is used to obtain a 15dB cut or boost of low frequency input signal with 80Hz as center frequency.
9. **AUX CONTROL:** This control is used to adjust the level of pre-fader signal from its channel, which is then routed to AUX SEND output.
10. **FX CONTROL:** This control is used to adjust the level of post-fader signal from its channel, which is then routed to built-in effects processor and also to AUX SEND output.
11. **PAN CONTROL:** The signal of mono MIC & LINE input channels is distributed into LEFT & RIGHT MAIN line outputs.
12. **PEAK LED:** This RED LED lights up to indicate that either the signal is overloading the input circuit or the GAIN control setting is high enough to distort the signal. Both conditions can be overcome by appropriate adjustment of GAIN control so that this LED is NOT continuously ON.
13. **PFL SWITCH:** This switch, when pressed, will route the signal of its channel to the headphones output as well as the LED array. The RED LED, marked PFL, also starts blinking whenever PFL switch of any channel is pressed ON.
14. **CHANNEL FADER:** This slide volume control adjusts the level of pre-amplified mono signal which is routed to MAIN mix and post fader FX section.

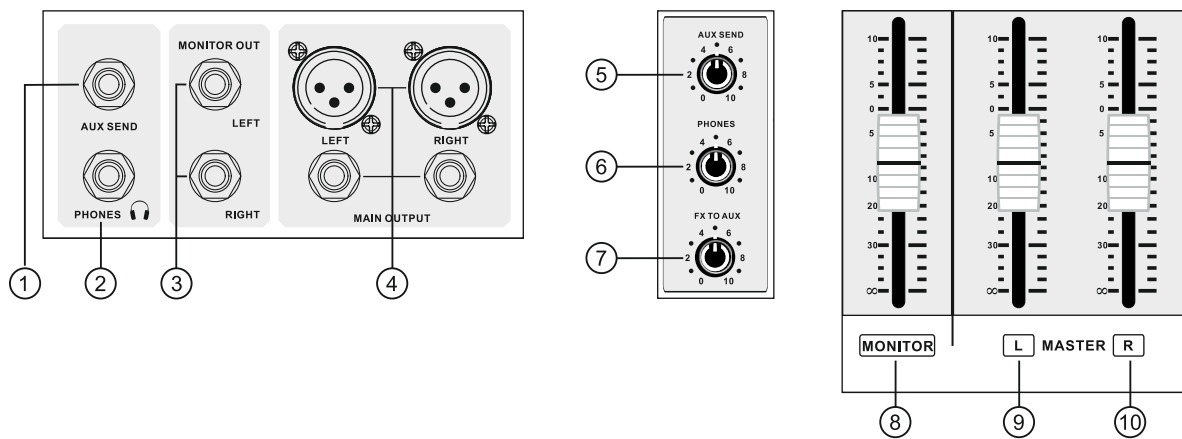


• Stereo Input & USB Control Section

- STEREO L/MONO & R INPUTS:** For accepting balanced stereo line level signals through 6.3mm stereo phone jack sockets. However, these inputs can also accept either unbalanced stereo signals, balanced mono signals or unbalanced mono signals. Sources like CD Player, DJ Mixer Synthesizes etc. can be connected to this channel.
- GAIN CONTROL:** The input level of the stereo line signal or USB playback signal can be adjusted by this control.
- TREBLE (12kHz) CONTROL:** It is used to obtain a 15dB cut or boost of high frequency input signal with 12kHz as center frequency.
- MID (2.5kHz) CONTROL:** It is used to obtain a 15dB cut or boost of mid frequency input signal with 2.5kHz as center frequency.
- BASS (80Hz) Control:** It is used to obtain a 15dB cut or boost of low frequency input signal with 80Hz as center frequency.
- AUX CONTROL:** This control is used to adjust the level of pre-fader signal from its channel, which is then routed to AUX SEND output.
- FX CONTROL:** This control is used to adjust the level of post-fader signal from its channel, which is then routed to built-in effects processor and also to AUX SEND output.
- PAN CONTROL:** The signal of stereo L&R input or USB input is distributed into LEFT & RIGHT MAIN line outputs.
- PEAK LED:** This RED LED lights up to indicate that either the signal is overloading the input circuit or the GAIN control setting is high enough to distort the signal. Both conditions can be overcome by appropriate adjustment of GAIN control so that this LED is NOT continuously ON.
- PFL SWITCH:** This switch, when pressed, will route the signal of its channel to the headphones output as well as the LED array. The RED LED, marked PFL, also starts blinking whenever PFL switch of any channel is pressed ON.
- CHANNEL FADER:** This slide volume control adjusts the level of pre-amplified signal which is routed to MAIN mix and post fader FX section.

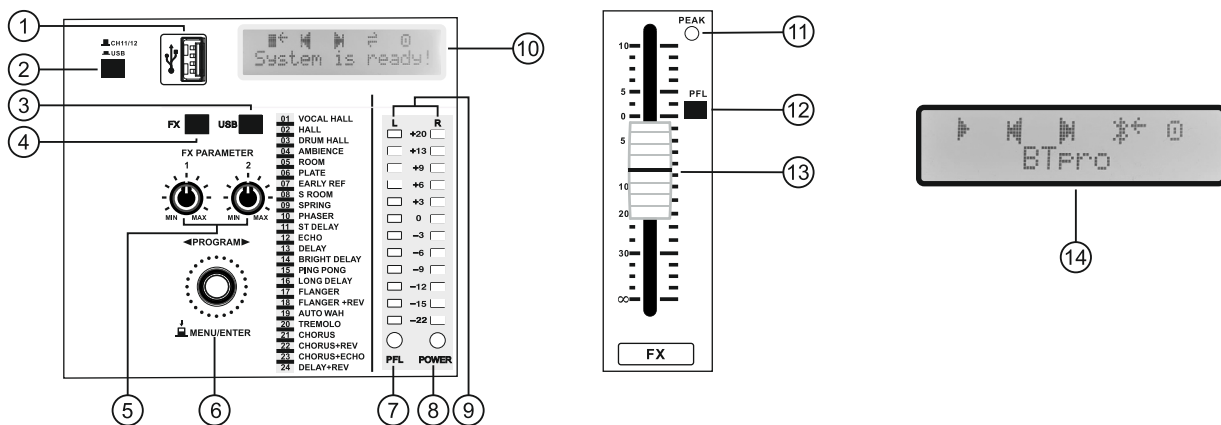


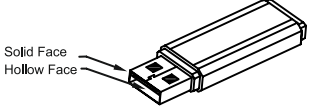
• Main Output, Monitor Output and Headphones Section



- AUX SEND OUTPUT:** It provides the combined AUX output of all the input channels through a 6.3mm phone jack. This output is mainly used for stage monitoring applications.
- PHONES OUTPUT:** For connecting a stereo headphone (not less than 8Ω impedance) through a 6.3mm stereo phone jack. The headphone output is used for personal monitoring & its level is not affected by the setting of master control.
- MONITOR L&R OUTPUTS:** For obtaining L&R Main or PFL outputs for monitoring purposes. If PFL switch of any channel is ON, then PFL signal of that channel is available at MONITOR output.
- MAIN L&R OUTPUTS:** Balanced Line level outputs have been provided for the LEFT & RIGHT channels through individual 3 Pin M/XLR connectors as well as 6.3mm phone jack sockets. For making balanced and unbalanced output connections, refer to "Plugs Wiring Details" page no. 9 of this manual.
- AUX SEND CONTROL:** For adjusting the output level of the signal, which is taken from AUX SEND Output phone jack socket.
- PHONES CONTROL:** It is used for adjusting the level of stereo signal which is available through Headphone output.
- FX TO AUX CONTROL:** For routing the desired level of FX signal to AUX SEND output.
- MONITOR FADER CONTROL:** For controlling the signal level of MONITOR L&R outputs.
- MAIN MIX L FADER CONTROL:** It controls the signal level of the LEFT channel MAIN output.
- MAIN MIX R FADER CONTROL:** It controls the signal level of the RIGHT channel MAIN output.

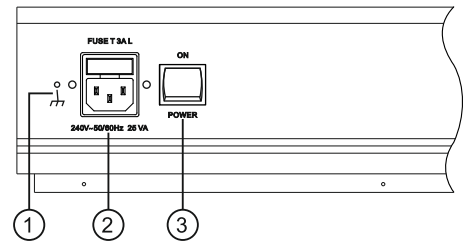
• Multi Effect/USB Processor



1. **USB Connector:** Insert the USB drive here. While inserting USB drive into the USB connector, hold the USB drive in such a way that hollow part of the USB drive is downwards as shown in Figure.
 
2. **SELECTOR SWITCH:** Keep this switch in released position when stereo input channel 11/12 is being used. Keep this switch in pressed position when USB input is being used.
3. **USB SWITCH:** If processor display is in FX mode then press USB switch once to obtain USB function icons in the LCD display. Long press the USB switch to select BT mode (refer #14 for more details)
4. **FX SWITCH:** If processor display is in USB mode then press FX switch once to obtain name of effects and its two parameters in the LCD display.
5. **FX Parameter Controls:** Each built-in effect has two variable parameters. These parameters can be adjusted through FX parameter controls 1 & 2. The range of these parameters, for each built-in effect, is listed in Effect table on page 9.
6. **PROGRAM Selector**
 - (i) In FX mode, this rotary program selector is used to select and confirm any one effect, out of 24 built-in effects.
 - (ii) In USB mode, this rotary program selector is used to select and confirm various USB functions, as displayed in the LCD display. These functions are explained below:
 - ←: When USB switch is pressed, the pointer will be at STOP (■) symbol. Now, press the program selector once and USB module switches to Play (▶) mode. Press again to change to PAUSE (||) mode. On long press of program selector, USB module goes in STOP (■) mode.
 - ⏪: Bring the pointer to previous (⏪) icon to playback previous track.
 - ⏩: Bring the pointer to next (⏩) icon to playback next track.
 - ⇌: Initially, the display will show REPEAT ALL (⇌) mode. Bring the pointer on this symbol & press program selector once to obtain REPEAT RANDOM (⇒) mode. Press again to obtain REPEAT ONE (⇒) mode.
 - 📁: To start USB recording, bring the pointer to (📁) icon.
7. **PFL LED:** This RED LED blinks to indicate that a PFL switch has been pressed to ON Position.
8. **POWER LED:** This GREEN LED glows to indicate that the 240V AC mains supply has been switched ON by the mixer's power switch.
9. **LED ARRAY L&R:** The output signal level from Left & Right channels is indicated by an individual 12 segment LED array. Each LED array is calibrated to display output signal levels varying from -22dB to +20dB. 0dB LED glows to indicate the rated output level of +4dBu.
10. **LCD DISPLAY:** Facilitates selection of various functions & parameters in FX & USB modes.
11. **FX PEAK LED:** This RED LED lights up whenever excessive input signal is fed to FX processor. This can be controlled by individual FX control & Channel fader control.
12. **FX PFL Switch:** Press this switch to route effects signal to headphones output.
13. **FX Fader Control:** To control the level of effects signal fed the Main output.
14. **LCD BT Mode Display :** Long press (more than 2 sec.) USB switch to obtain BT mode. Pairing code BT pro with BT symbol is displayed. This blinking symbol becomes stationary when BT pairing is completed.

• Power Supply Section

1. **EARTHING SCREW**
2. **AC Inlet Socket With Built-in Fuse Rating 3 AMP. 250V (FUSE T 3AL)**
Connect the provided AC Mains cable in this socket for AC mains operation. The built-in fuse protects the mixer from any excessive current flow.
3. **POWER SWITCH**
Push the top part of the knob to switch the mixer ON. Push the bottom part of the knob to switch the mixer OFF.



• 24 Effects Table

S.No.	Effects Name	Parameter 1 (Min-Max)	Parameter 2 (Min-Max)
1.	VOCAL HALL	00mS – 499mS	0 – 100mS
2.	HALL	00mS – 800mS	0 – 100mS
3.	DRUM HALL	00mS – 6.50S	0 – 100mS
4.	AMBIENCE	00mS – 10.49S	0 – 100mS
5.	ROOM	00mS – 15.00S	0 – 100mS
6.	PLATE	00mS – 15.00S	0 – 100mS
7.	EARLY REF	00mS – 15.00S	0 – 100mS
8.	S ROOM	00mS – 15.00S	0 – 100mS
9.	SPRING	00mS – 8.50S	0 – 100mS
10.	PHASER	0.0Hz – 9.9Hz	0 – 100%
11.	ST DELAY	10mS – 2.00S	0 – 100%
12.	ECHO	10mS – 2.00S	0 – 100%
13.	DELAY	00mS – 2.00S	0 – 100%
14.	BRIGHT DELAY	10mS – 2.00S	0 – 100%
15.	PING PONG	10mS – 2.00S	0 – 100%
16.	LONG DELAY	1.0S – 4.00S	0 – 100%
17.	FLANGER	0.0Hz – 9.9Hz	0 – 100%
18.	FLANGER + REV	10% – 45%	0 – 100%
19.	AUTO WAH	0.0Hz – 9.9Hz	0 – 100%
20.	TREMOLO	0.0Hz – 9.9Hz	0 – 100%
21.	CHORUS	0.0Hz – 9.9Hz	0 – 100%
22.	CHORUS + REV	10% – 50%	0 – 100%
23.	CHORUS + ECHO	10mS – 2.00S	0 – 100%
24.	DELAY + REV	10mS – 2.00S	0 – 100%

• Operations

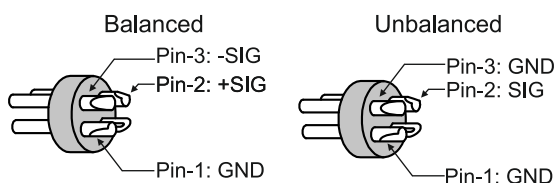
1. Please ensure that AC mains supply to all the equipments is initially switched OFF.
2. Connect the desired number of input sources like phantom powered microphones, wired microphones, wireless microphone receivers, keyboard, guitars, DJ mixer etc., to the appropriate input sockets of the mixer.
3. Connect the power amplifiers, external processors, recording equipment, powered speakers, headphone etc., to the appropriate output sockets of the mixer.
4. All the rotary & slide volume controls of the mixer as well as that of the peripheral equipments should be set to minimum position.
5. All the tone controls, PAN controls & BAL controls should be set at center (FLAT) position.
6. Keep all the PFL push switches of the mixer in released (OFF) position.
7. Connect all the equipments to their respective AC mains supply sockets.
8. Always switch ON the mixer first and all the power amplifiers & powered speakers in the end. In between, other equipments can be switched ON.
9. Now, GAIN control setting should be carried out for channels which have microphone as an input source. The microphone XLR input is designed to accept dynamic and condenser (self powered) microphones in balanced as well as unbalanced mode of connection.

NOTE: If phantom powered microphones are connected to some MIC inputs, then it is advisable to connect the dynamic microphones to other MIC inputs only through balanced XLR cables. Refer "Plugs Wiring Details" on page no. 15 of this manual.

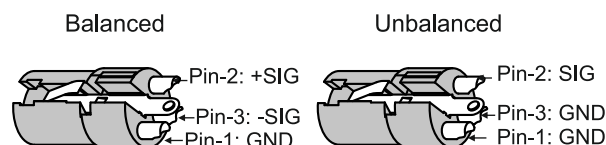
10. Switch the microphone ON and speak a few words through it while turning up the GAIN control to a position where PEAK LED just starts to flicker.
11. Now speak loudly into the microphone and then readjust the GAIN control to a position where the PEAK LED flickers occasionally.
12. For desired tonal balance, adjust 3 band EQ controls and then carry out the final setting of GAIN control as explained in point #12 above. The setting of tone controls can be different for each microphone input channel.
13. Similarly, the setting of GAIN control for LINE input channels should be done with reference to the setting of tone controls & flickering of the PEAK LED.
14. The setting of GAIN control for STEREO input channels should also be done in a similar way as explained in point #14 above.
15. After completing the GAIN setting of all the channels, adjust the slide control of each channel to obtain the desired mix at the output.
16. The overall level of LEFT & RIGHT MAIN output signals should be adjusted through respective MASTER slide controls.
17. Use PAN control to adjust the level of mono input signal which is contributed to LEFT & RIGHT channels.
18. The level of pre-fader output of each input channel, that is contributed to the main AUX Send output, should be adjusted through corresponding control of that channel.
19. For operating built-in MULTIEFFECTS/USB processor, refer page no.8 of this manual.
20. Always use interconnecting cables with appropriate connectors which are suitably wired for proper functioning of the mixer & its peripheral equipments.

• Plugs Wiring Details

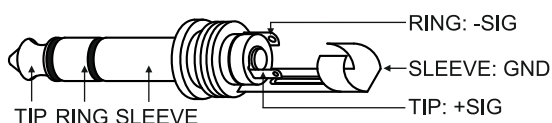
1. Pin connections of a 3 pin XLR male plug:



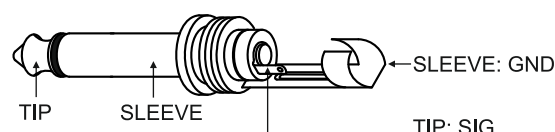
2. Pin connections of a 3 pin XLR female plug:



3. Pin connections of a 6.3mm (1/4") Stereo Phone Plug for balanced signal:

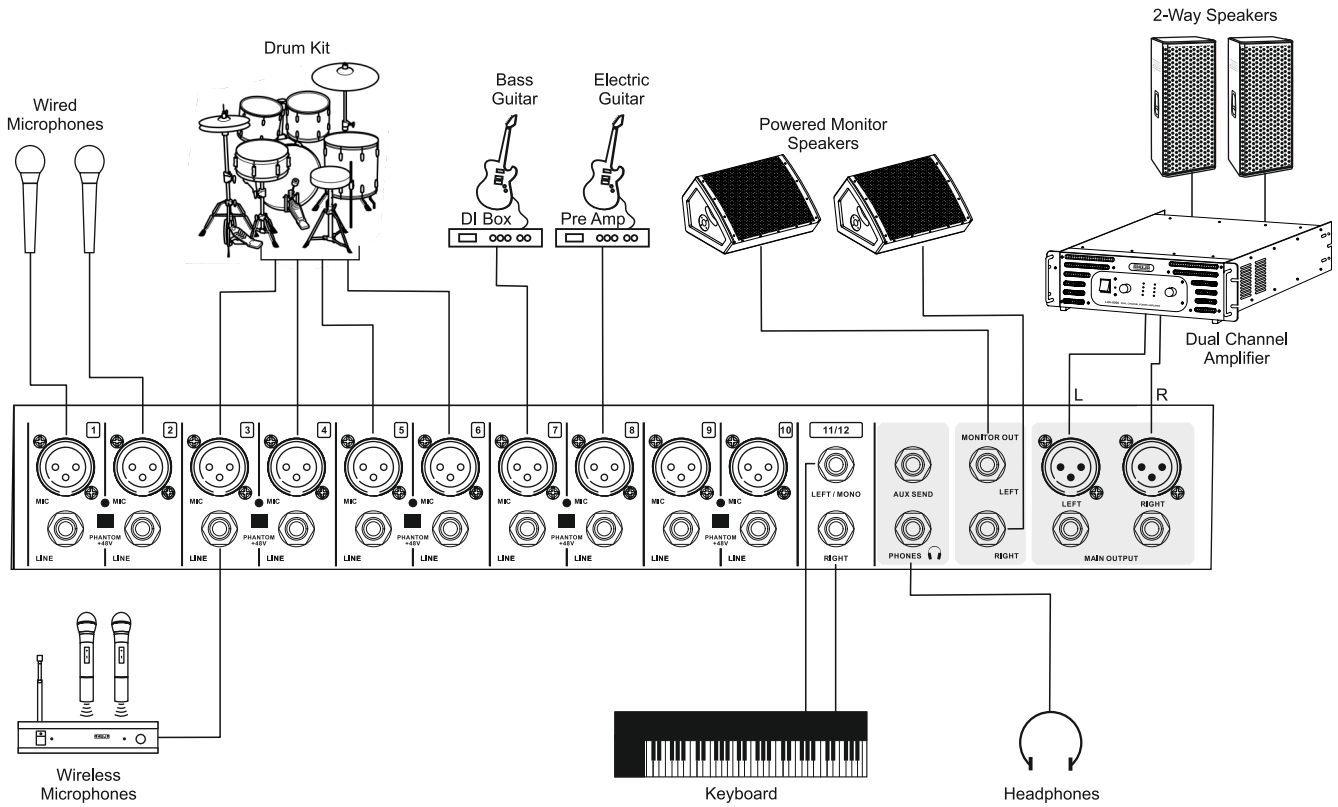


4. Pin connections of a 6.3mm (1/4") Mono Phone Plug for unbalanced signal:

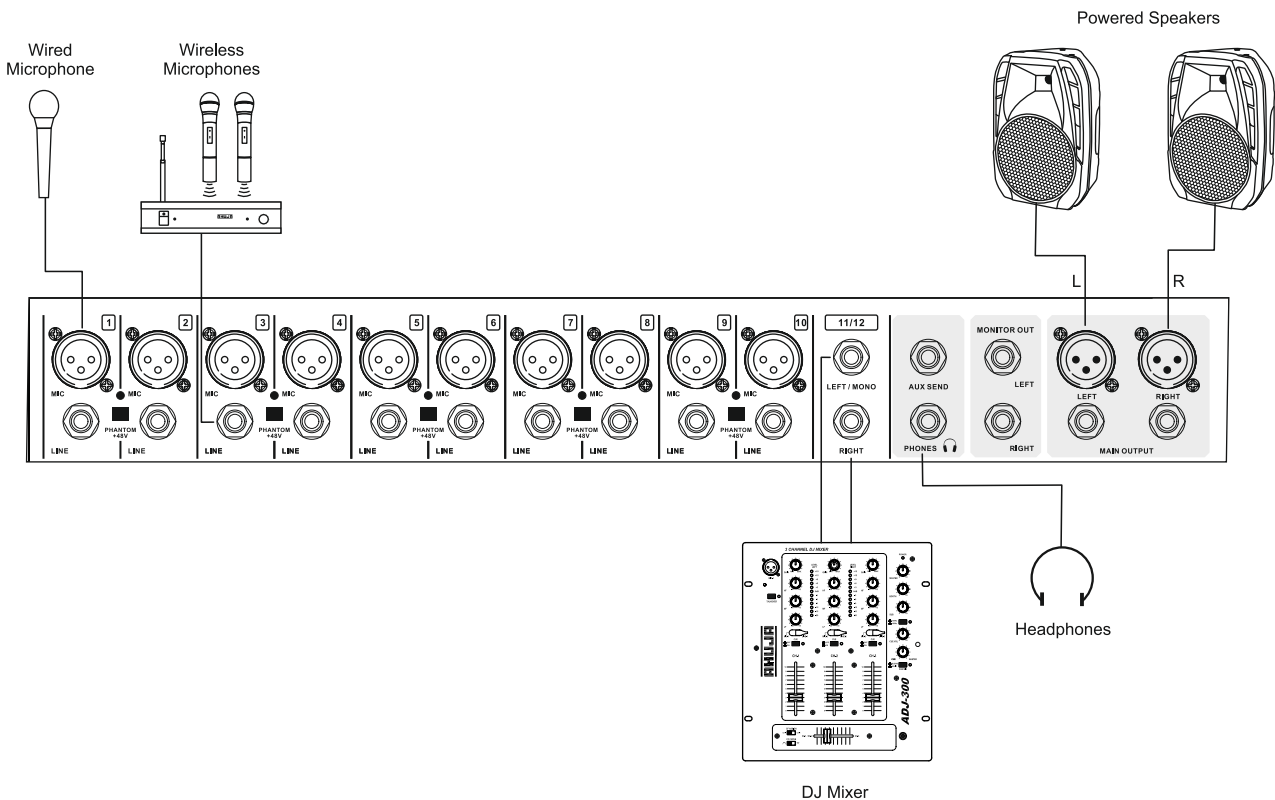


• Typical Applications

SET-UP FOR LIVE PERFORMANCE



SET-UP FOR EVENTS & PARTIES



• Specifications

MIC INPUT	
Impedance/Gain	: 2kΩ Balanced/65dB
LINE INPUT	
Impedance/Gain	: 20kΩ Balanced/45dB
STEREO INPUT (L/Mono & R)	
Impedance/Gain	: 10kΩ Balanced/20dB
THD	: <0.08%
FREQUENCY RESPONSE	
L/R Line Output	: 25Hz - 20kHz (+0, -1dB)
EQUALIZATION	
TREBLE/MID/BASS	: ±12dB at 12kHz/2.5kHz/80Hz
CLIP LED INDICATION	: 4 dB prior to true clip
LINE OUTPUT	
Nominal/Max Level	: 4dBu/21dBu (1.22V/9V)
Impedance	: 600Ω
DIGITAL EFFECTS	: 24 Effects Digital Processor
DIGITAL PLAYER	: MP3 Player/Recorder with USB Reader, Bluetooth
HEADPHONE OUTPUT	: 200mV at 8Ω, THD <1%
MAXIMUM GAIN	
Mic Input to Line Outputs	: 90dB
Line Input to Line Outputs	: 70dB
Stereo Input to Line Outputs	: 20dB
AUX Send (Pre) Unbalanced	: 5V
MONITOR OUTPUTS (L&R)	: 1.6V
SIGNAL TO NOISE RATIO	: >80dB
POWER SUPPLY	: AC: 220-240V, 50/60Hz
DIMENSIONS	: W522 × H135 × D385mm
WEIGHT	: 5.45kg Approx.

Design and Specifications are subject to change without notice owing to continuous product up-gradation. Technical specifications are subject to production tolerances.

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AHUJA RADIOS

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