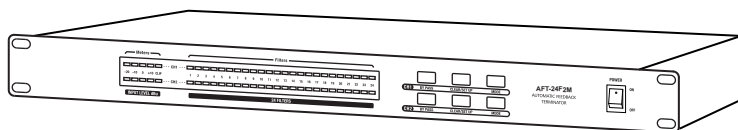


# Automatic Feedback Terminator

## AFT-24F2M



- ◆ Thank you for purchasing the Automatic Feedback Terminator.
- ◆ 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 Automatic Feedback Terminator.
- ◆ 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 top cover. No user serviceable parts inside. Refer all servicing to qualified personnel only.
- Before replacing any fuse, make sure the set is switched off and disconnected from the AC mains or any other power source. Replace a fuse only with another of exactly same specification.

### 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, and the voltage of the external battery, (if applicable) 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 those 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.

**Cleaning:** Disconnect this equipment from the AC mains and external battery 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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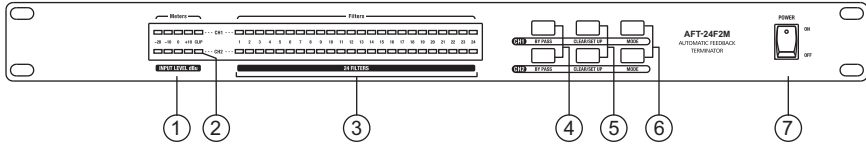
## • General Description of Product

AFT-24F2M is a Dual Channel Digital Signal Processor. It is designed to provide state of the art feedback suppression and controlled processing, for fixed installations and live events, through simple and intuitive switch interface. AFT-24F2M provides up to 24 notch filters for each channel CH1 & CH2. Each channel offers independent selectable functions like processor Bypass, clear/setup mode and filter width for music/speech.

- 24 digital notch filters with LED indicators for each channel.
- Electronically balanced inputs and outputs available through XLR connectors and 6.3mm (1/4") stereo phone sockets.
- Each channel has a Mode switch to select the filter width for music & speech applications.
- Each channel has a switch to Bypass the processor settings.
- Setup and Live mode is selectable through a switch in each channel.
- Provision of a Lock switch on rear panel enables the user to keep processor settings undisturbed during a program.
- Four segment LED indicator and a Clip LED for monitoring input signal level on each channel.
- 19" rack mountable in 1U size and usable as a table top unit also.

## • Front Panel Controls & Features

### Front Panel



#### 1. Input Level LED Array

These four LEDs in each channel indicate the level of input signal ranging from -20dBu to +10dBu. For optimum and effective performance, the average input signal levels should be at least 0dBu and occasionally it may go upto +10dBu.

#### 2. Clip LED

This LED indicates that the input signal is clipping, which can be avoided by reducing the level of input signal.

#### 3. Notch Filter LEDs

Each channel has 24 notch filter RED LEDs. Once the notch filter is active, its RED LED glows continuously. A blinking RED LED indicates that this is the last notch filter which has been inserted by the processor.

#### 4. BYPASS Switches

Each channel has a bypass switch, with built-in LED. Press & release this switch to BYPASS the processor settings, which is indicated by continuous glow of bypass switch knob LED.

#### 5. CLEAR/SETUP Switches

Each channel has a separate clear/setup switch with built-in LED. This switch has the following functions:-

- (i) Keep the switch pressed for more than three seconds & release it only when its knob starts flashing. This indicates that the processor is in SET UP mode.
- (ii) To clear SET UP mode and to select the LIVE mode, press the switch only once. This is indicated by the momentary glow of the switch knob before it goes OFF.

#### 6. MODE Switches

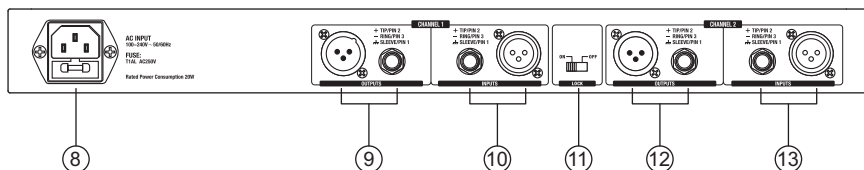
If the switch knob is not lit, then processor filters have low Q (speech mode). If the switch is pressed & the knob lights up, then processor filters have high Q (music mode).

#### 7. POWER Switch

Push the top part of the knob to switch the processor ON. Push the bottom part of the knob to switch the processor OFF.

## • Rear Panel Controls & Features

### Rear Panel



#### 8. AC socket with built-in fuse

#### 9. Output Connectors for Channel 1

Either male XLR or stereo jack socket can be used for delivering balanced/unbalanced output of channel 1.

#### 10. Input Connectors for Channel 1

Either female XLR or stereo jack socket can be used for connecting balanced/unbalanced input signal to channel 1.

#### 11. LOCK Switch

In ON position, all the equipment settings remain undisturbed. For changing these settings, the LOCK switch should be put to OFF position.

#### 12. Output Connectors for Channel 2

Either male XLR or stereo jack socket can be used for delivering balanced/unbalanced output of channel 2.

#### 13. Input Connectors for Channel 2

Either female XLR or stereo jack socket can be used for connecting balanced/unbalanced input signal to

## • Setup and Live Modes of Operation

### SETUP MODE

The SETUP mode is used to detect and remove feedback problems while the audio system is being checked before a performance begins.

1. Turn ON all the microphones and turn OFF all other input sources, if any.
2. Ensure that the lock switch on the rear panel is in OFF position.
3. To start the setup mode, press the CLEAR/SETUP button on the front panel for more than 3 seconds and release it only when the knob LED start flashing, indicating that SETUP mode has been selected.
4. Increase the microphone gain through the mixer until feedback occurs. The feedback terminator will automatically detect and remove the feedback by inserting notch filters of appropriate frequencies.
5. Slowly raise the gain until feedback is suitably reduced.
6. Exit from SETUP mode by quickly pressing and releasing the button once (make sure it is released in less than 1 second). All filter values will be stored and their LEDs will be ON.
7. Now keep the lock switch in ON position so that the terminator settings

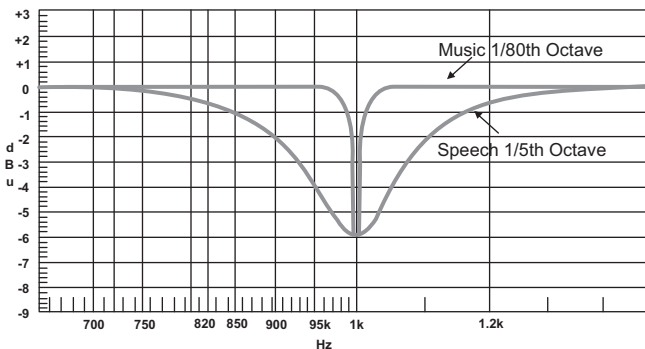
are not disturbed or changed during the programme.

### LIVE MODE

LIVE mode is used to detect and remove the feedback problem in real time i.e. during the programme.

1. All unused filters left in SETUP mode can be used in live mode. These remaining filters are automatically detected and removed whenever any feedback occurs during the programme.
2. Ensure that the lock switch on the rear panel is in OFF position.
3. If all LIVE filters are exhausted and a new feedback occurs, then the oldest LIVE filter is reset and reallocated to filter the new feedback frequency.
4. The filter selection in LIVE mode also depends on the setting of MODE switch.
5. The mode switch selects the width or sharpness of the notch filters. If it is a musical performance, this switch may be set in high Q mode ie.1/80th octave.
6. For speech applications this switch may be set in low Q mode ie.1/5th octave.

Notch Filter Q Diagram

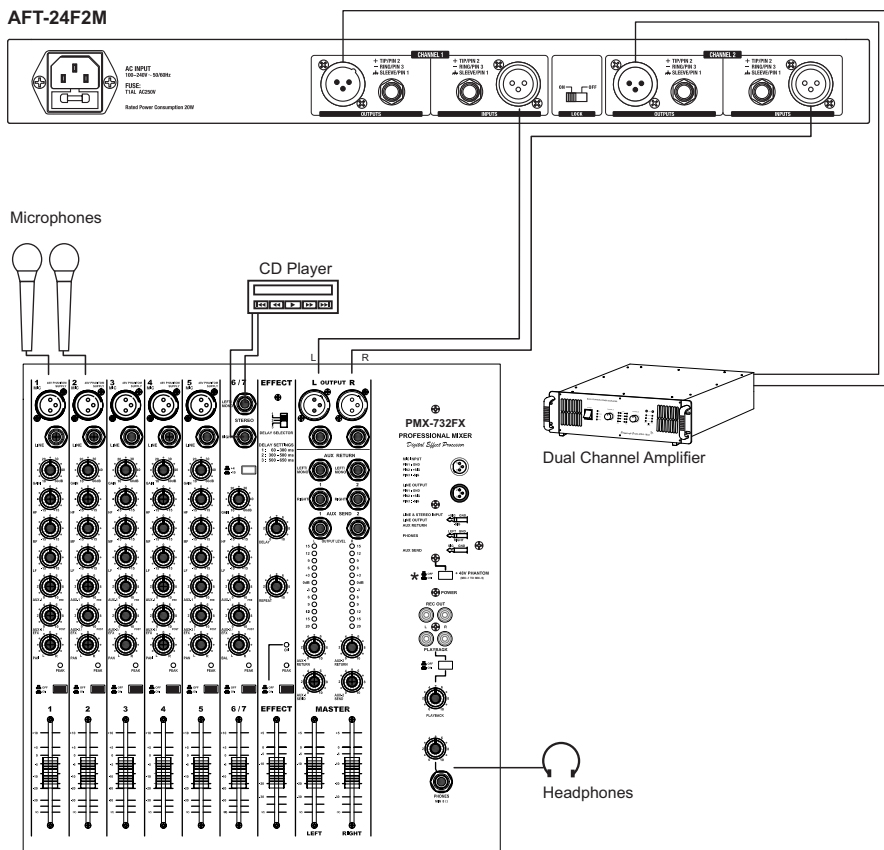


## • Typical Applications - Live Programme

### Using in line with an audio mixer and an amplifier

- Connect balanced L&R line outputs of an Ahuja Audio Mixing Console to balanced XLR/Stereo Jack inputs in channel 1 and channel 2 of AFT-24F2M respectively, through suitable connecting cables.
- Connect balanced outputs of AFT-24F2M to balanced inputs of a dual channel power amplifier, through suitable connecting cables.
- For optimum operation of the system, ensure that the level of input signals is enough so that 0dB LED of AFT-24F2M lights up continuously.

### AFT-24F2M





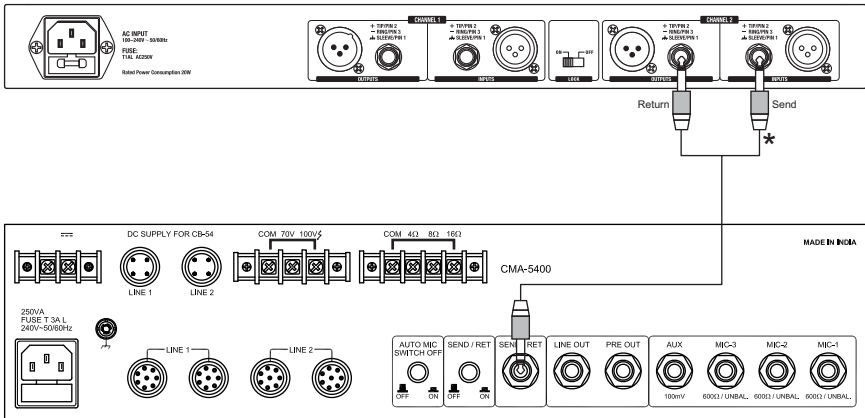
## • Typical Applications - Conference System Setup

### Using with SEND/RETURN Facility in Ahuja Conference Systems CM-4000 and CM-5000.

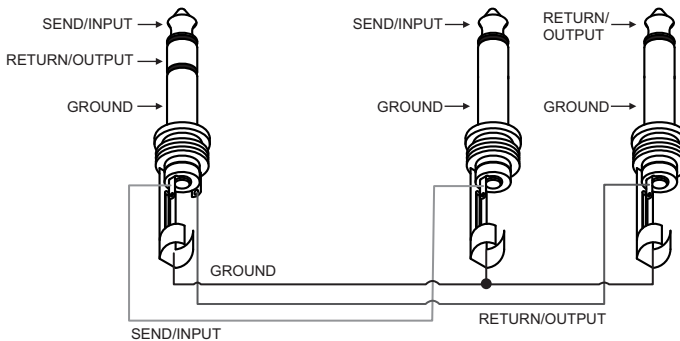
- AFT-24F2M can be used to control the feedback problem in any conference setup. This can be done by interconnecting the SEND/RETURN socket of Central Amplifier CMA-4400 or CMA-5400 to any one channel of AFT-24F2M.
- Use an interconnecting cable terminated with 6.3mm (1/4")

stereo jack plug on one end and two numbers of 6.3mm (1/4") mono jack plug on the other end, should be made according to pin connections detailed below.

- For optimum operation of the system, ensure that the level of input signals is enough so that 0dB LED of AFT-24F2M lights up continuously.



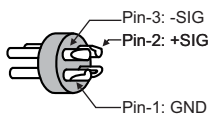
\* Pin connections of SEND/RETURN cable to be used in conference system application.



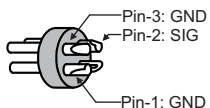
## • Connector Wiring

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

a) Input (Balanced)

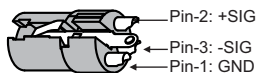


b) Input (Unbalanced)

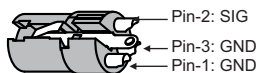


2. Pin connections of a 3 pin female XLR plug:

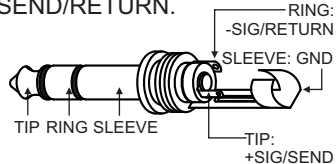
a) Output (Balanced)



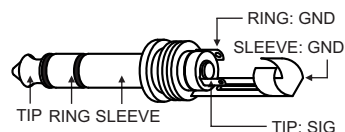
b) Output (Unbalanced)



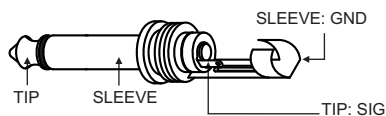
3. Pin connections of a 6.3mm (1/4") Stereo Phone Plug for balanced Input, balanced Output and SEND/RETURN.



4. Pin connections of a 6.3mm (1/4") Stereo Phone Plug for unbalanced Input & unbalanced Output.



5. Pin connections of a 6.3mm (1/4") Mono Phone Plug for connecting unbalanced signal in Input & Output.



## • Specifications

<b>INPUT IMPEDANCE</b>	5.6k $\Omega$ Balanced/2.7k $\Omega$ Unbalanced
<b>MAX INPUT LEVEL</b>	+15dBu
<b>INPUT CONNECTORS</b>	2 $\times$ Female XLR and 2 $\times$ 6.3mm (1/4") stereo jack socket
<b>OUTPUT IMPEDANCE</b>	100 $\Omega$ Balanced/50 $\Omega$ Unbalanced
<b>MAX OUTPUT LEVEL</b>	+15dBu
<b>OUTPUT CONNECTORS</b>	2 $\times$ Male XLR and 2 $\times$ 6.3mm (1/4") stereo jack socket
<b>SIGNAL TO NOISE RATIO</b>	106dB
<b>FREQUENCY RESPONSE</b>	20-20,000Hz (-1dB)
<b>DISTORTION</b>	0.01%
<b>CROSSTALK</b>	100dB
<b>A/D &amp; D/A CONVERSION</b>	24 bit
<b>SAMPLING RATE</b>	48kHz
<b>POWER REQUIREMENT</b>	220-240V AC 50/60Hz
<b>DIMENSION</b>	W483 $\times$ H45 $\times$ D200 mm
<b>WEIGHT</b>	2.40kg

