

# PROFESSIONAL MIXING CONSOLE



***PMF600***

User' s Manual

## 1. Introduction

Congratulations! With the PMF600 you have acquired a state-of-the-art 10-channel power mixer that sets new standards . Right from the start ,our goal has been to design a revolutionary device that can be used for a great variety of applications . And indeed , this over whelming power mixer gives you plenty of functionality and a broad range of connection and expansion options .

### 1.1 Before you start

#### 1.1.1 Shipment

Your PMF600 was carefully packed at the factory and the packaging is designed to protect the unit from rough handling. Nevertheless, we recommend that you carefully examine the packaging and its contents for any signs of physical damage which may have occurred during transit .

- **If the unit is damaged , please do NOT return it to HARMAN ,but notify your dealer and the shipping company immediately . Otherwise ,claims for damage or replacement may not be granted .**

#### 1.1.2 Initial operation

Be sure that there is enough space around the unit for cooling and , to avoid overheating please do not place the PMF600 near radiators etc .

- **Before you connect the PMF600 to the mains , please make sure that the voltage setting on the unit matches the local voltage !**
- **If you set the unit to a different mains voltage , be sure to use a fuse of the correct type and rating . Please refer to the “SPECIFICATIONS” for details .**
- **Blown fuses must be replaced by fuses of the same type and rating ! Please refer to the “SPECIFICATIONS” for details .**

The mains connection is made using the enclosed power cord and a standard IEC receptacle. It meets all of the international safety certification requirements .

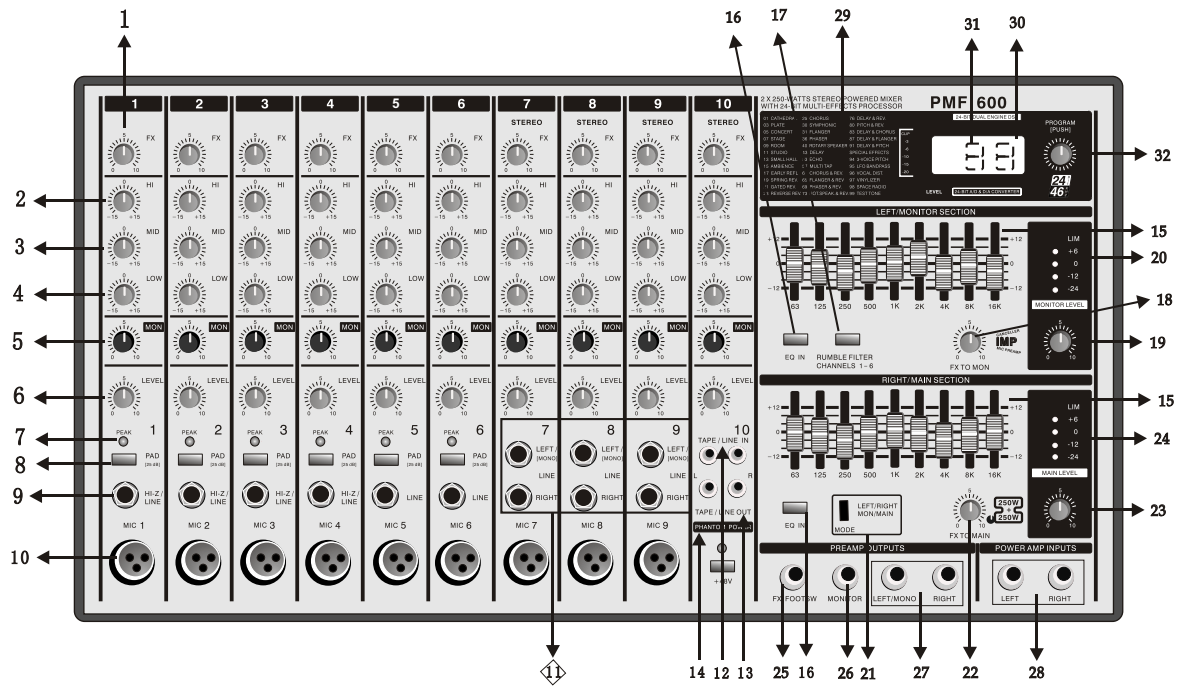
- **Please make sure that all units have a proper ground connection . For your own safety , never remove or disable the ground conductor from the unit or of the AC power cord . The unit shall always be connected to the mains socket outlet with a protective earthing connection .**

## 2. CONTROL ELEMENTS

### 2.1 Front panel

Your PMF600 comes with ten input channels , which only differ in terms of pad switch, peak LED and interface panel . Since the EQ effect, monitor and level controls are identical on all channels , they will be described only once on the enclosed sheet .

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- ① The *FX* control determines the signal level that is routed from the respective channel to the built-in effects processor .
- **Please note that the effects processor is muted as long as the *FX TO MAIN* control (22) is set fully counter-clockwise .**
- ② The *HI* control in the EQ section governs the high frequencies of the respective channel
- ③ Use the *MID* control to boost/cut the mid range .
- ④ The *LOW* control allows you to raise or lower the bass frequencies .
- ⑤ The *MON* control determines the channel's volume assigned to the monitor mix
- ⑥ Use the *LEVEL* control to set the volume level of the respective channel .
- ⑦ Use the *PEAK* LED to ensure that the input gain is set properly . The PEAK LED should light up only with peak signals , but never all the time .
- ⑧ The *PAD* button reduces the channel input sensitivity by 25 dB . Thus you can also connect high-level line signals to the respective channel input .
- ⑨ This *HI - Z/LINE* input can be used to connect line level signal sources , such as keyboards , electric and bass guitars .
- ⑩ This is the channel's balanced XLR microphone input .
- ⑪ The stereo line input of Channels 7 - 9 can be used to connect , for example keyboards with stereo outputs or a stereo drum computer .
- **Please remember to use either the microphone or the line input on a specific channel . Never use both at the same time . This rule applies to chanel 1 - 9 .**
- **When you connect a mono line signal to channels 7 - 9 , please always use the left input . The mono signal will then be reproduced on both stereo sides .**

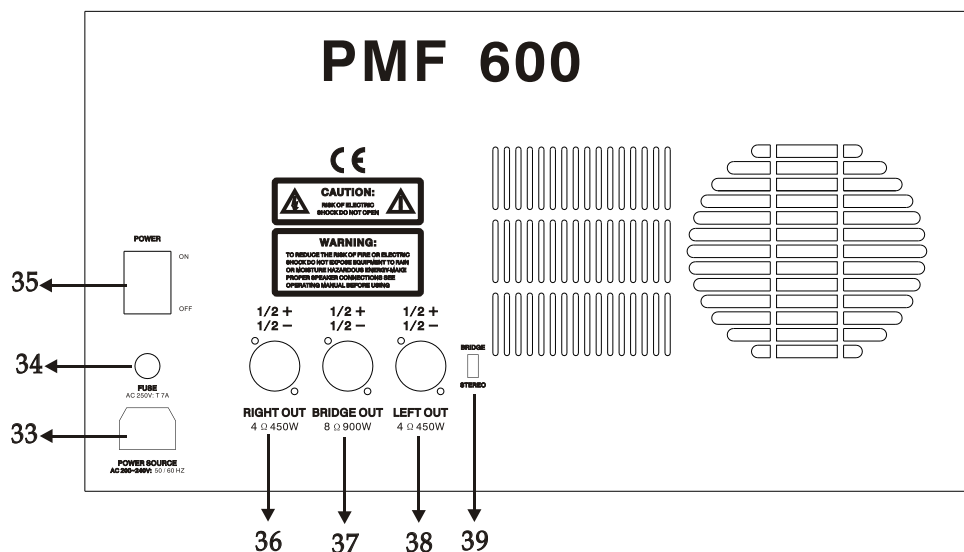
# MIXER (PMF600)

- ◊12 The *TAPE/LINE IN* RCA input of channel 10 allows you to feed in external stereo signals from your CD player or tape deck, for example.
- ◊13 The *TAPE/LINE OUT* RCA output provides the stereo main mix signal of your PMF600 and can be routed to, say, a recording machine.
- **When the TAPE OUT signal is connected to a tape deck whose output signal is routed back to the TAPE IN on the PMF600 feedback can be produced as soon as you start recording. Be sure to interrupt the connection to the TAPE IN before recording!**
- ◊14 The phantom power supply provides the voltage necessary for the operation of condenser microphones. Use the *PHANTOM POWER* switch to activate the supply together for channels 1 - 9 (XLR connector). The LED above the switch is lit when phantom power is on.
- ◊15 This is the PMF600 graphic stereo equalizer which comprises two units and can be used to adapt the sound to the room acoustics.
- ◆ The stereo equalizer is effective on the main mix when both units have been activated with the EQ IN buttons ◊16 and the MODE switch ◊21 is set to its upper position ( "LEFT/RIGHT" ).
- ◆ The stereo equalizer use one unit each to process the main and monitor mix signals if both units are on and the MODE switch ◊21 is set to its lower position ( "MON/MAIN" ).
- ◊16 Use the *EQ IN* buttons to switch the two equalizer units on or off.
- ◊17 Press the *RUMBLE FILTER* button to activate the low -cut filter of channels 1-6. This filter eliminates unpleasant bass frequencies (e.g. Microphone pop noise)
- ◊18 The *FX TO MON IN* control determines the effects intensity of the multi-effects processor as part of the monitor mix. Turn the control fully counter-clockwise to add no effect to the monitor mix.
- ◊19 The *MONITOR LEVEL* control adjusts the volume of the monitor mix.
- ◊20 Use the *MONITOR LEVEL* display to control the monitor signal level. The upper LED (LIM) lights up when the built-in limiter is activated, thus protecting against overload.
- ◊21 With this *MODE* switch you can determine whether the PMF600 works as a stereo amplifier ( "LEFT/RIGHT" ) or as a dual mono amplifier ( "MON/MAIN" ). Please note that the equalizer function also depends on this switch setting (see ◊15).
- ◊22 The *FX TO MAIN* control functions as FX return for the built-in effects processor. Use this control to add the desired effect signal to the main mix. No effect signal is added when the FX TO MAIN is set fully counter-clockwise.
- ◊23 The *MAIN LEVEL* control governs the overall volume of the PMF600.
- ◊24 The *MAIN LEVEL* display reads the output level of the PMF600. The upper LED (LIM) lights up when the built-in limiter is activated, thus protecting against signal peaks.
- ◊25 Use the *FX FOOT SWITCH* jack to connect any commercially available foot controller. It allows you to bypass the effects unit.

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- ◇ 26 This is balanced *MONITOR* output of your PMF600 . Use it to feed an external monitor amp or active wedge .
- ◇ 27 These two 1/4” TS jacks allow you to route the output signal to an external amplifier This allows you to , say , use only the mixing and effect section of the PMF600 . The signal is taken pre-power amp . Of course , you can also use only the left jack as a mono output .
- ◇ 28 These two 1/4” TS jacks can be used to connect external signals , such as the main mix signal from an additional mixing console (pre-power amp ) .
- ◇ 29 Here , you will find a list of all multi-effect presets available .
- ◇ 30 This is the LED level meter of the effects processor . Please make sure that the clip LED lights up with signal peaks only . If it lit constantly , this indicates that the effects processor is overdrive , which can lead to unpleasant distortion .
- ◇ 31 The *EFFECT* display reads the currently selected preset .
- ◇ 32 Turn the *PROGRAM* control to select the effect presets . Press the control briefly to confirm your selection .

## 2.2 Rear panel



- ◇ 33 The mains connection is on a standard IEC receptacle . An appropriate power cord is supplied with the unit .
  - ◇ 34 *FUSE HOLDER* Before connecting the unit to the mains , ensure that the voltage setting matches your local voltage . Blown fuses should only be replaced by fuses of the same type and rating .
  - ◇ 35 Use the *POWER* switch to put your PMF600 into operation . The *POWER* switch should always be in the “off” position when you are about to connect your unit to the mains .
- **Attention : The *POWER* switch does not fully disconnect the unit from the mains . Unplug the power cord completely when the unit is not used for prolonged periods of time .**

- ◇36 This is the *RIGHT/MONO MAIN* loudspeaker output of your PMF600 . Where you can connect the right loudspeaker of a stereo system . For this purpose , switch ◇21 must be set to its upper position . If however , you run a mono main mix (switch ◇21 set to its lower position ) , this loudspeaker output provides the main mix signal in mono .
- **The impedance of the loudspeaker connected here must not fall below 4 Ω .**
- ◇37 The *BRIDGE* loudspeaker output allows you to combine the left and right stereo channel in one mono output , which is useful for applications that require the use of one loudspeaker only . To use the *BRIDGE* output , switch ◇21 must be set to “LEFT/RIGHT” .
- **Always connect the BRIDGE jack to a loudspeaker with a minimum impedance of 8 Ω !**
  - **Please note that the power delivered to the speaker connected to the BRIDGE output is considerably higher than the power provided to the speakers wired to the parallel speaker outputs . Please read the information given on the rear panel of your PMF600 .**
  - **When using the BRIDGE loudspeaker output , NEVER use any of the other two connectors ( RIGHT/MONO MAIN and LEFT/MONITOR ) at the same time !**
- ◇38 This is the *LEFT/MONITOR* loudspeaker output of your PMF600 , to which you can connect the left loudspeaker of a stereo system ( switch ◇21 set to its upper position ) . If you do a main mix in mono ( switch ◇21 set to its lower position ) , this loudspeaker output provides the monitor signal in mono .
- **The impedance of the loudspeaker connected here must not fall below 4 Ω .**
  - **Information on how to properly connect your speaker with regard to polarity can be found on the rear of the unit ( PIN assignment ) .**
- ◇39 *BRIDGE/STEREO* Switch : Mode option when the switch is on *BRIDGE* , the mixer is on “BRIDGE” working mode , when in *STEREO* it is on “STEREO” working mode .

## 3. EFFECTS PROCESSOR

A special feature of your PMF600 is its built-in multi-effects processor . The processor comes with 99 different standard effects such as reverb , chorus , flanger , delay , vocal distortion as well as various effects combinations .



**Cathedral** : Simulates the dense , long reverberation of a large cathedral , which is appropriate for solo instruments or vocals in slow pieces . Please choose between two variations .

**Plate** : Simulates the sound of plate reverberators and hence is a classic for drums (snare) and vocals . In comparison with the first variation , the second one features more high-end sparkle .

**Concert** : Here , you can select between a small theater and a large hall . Although this program is similar to studio ( see below ) it features more presence which adds to its “lively” character .

**Stage** : Is well suited to dissipating the sound of a keyboard or an acoustic guitar .

**Room** : You can clearly hear the walls of the room . A useful program for reverb that isn't directly noticeable ( rap , hip hop vocals ) or to make dry recordings of instruments sound natural again .

**Studio** : This simulation of a middle to large-sized room is also available in two variations . Both variations sound very natural . Very all-round effect .

**Small Hall** : Simulates a small , lively ( strongly reflecting ) hall and is perfect for processing drums .

**Ambience** : Reproduces a middle-sized room without late reflections .

**Early Reflections** : The initial reflections of this room are clearly audible . This effect is a classic for dynamic signals ( drums , percussion , slap bass etc . ) .

**Spring Reverb** : Simulates a classic spring reverberation .

**Gated Reverb** : This effect synthetically cuts off reverberation after a period of time . It is famous in the song “In the Air Tonight ” by Phil Collins . The variations differ in the reverb length .

**Revers Reverb** : This is a reverberation in which the envelope is reversed-it slowly gets louder .



**Chorus** : This effect slightly detunes the original signal . A very pleasant detune effect is created in connection with the pitch variation . The chorus effect is quite often and extensively used for dispersing signals -in such a variety of applications that any recommendation would mean a limitation of their use . The variations available here range from slow to fast chorus effects .

**Symphonic** : This effect creates the sound of an eight-person (!) Vocal chorus .

**Flanger** : The word “flange” means “tape spool” ,and this explains the characteristics of the effect . Originally the flanger effect was generated with two tape recorders which ran synchronously . The same audio signal was recorded on both machines . If you put a finger on the left spool of the machines , the spool and the playback speed are slowed down . The generated delay results in phase shifting of the signals . Please choose either “medium flanger ” or one of the “bright flanger” programs , which feature an increase in presence .

**Phaser** : With the phaser , a second , phase-shifted signal is added to the original audio signal .This effect is often used for guitar sounds and keyboards .In the ' 70s, it was also extensively used for other instruments like electric pianos . The PMF600 offers you four different phaser variations .

**Rotary Speaker** : The simulation of a classic effect that is normally generated with a very heavy enclosure comprising ( slow or fast ) rotating speakers .



**Delay** : A delay of the input signal with various repetitions . Different tempo settings ( ten variations in total ) allow interesting delay effects .

**Echo** : Similar to the stereo delay , with the difference being that the repetitions have less presence . This simulates the character of the original tape echo that was used before the digital era and can be thought of as a “Vintage Sound” .

**Multi Tap** : A delay effect with changing stereo positioning . Four variations of reverb .



**Chorus & Reverb** : This algorithm combines the popular chorus with a reverb effect . Taking all variations into account , they differ in the length of reverb .

**Flanger & Reverb** : The combination of flanger and reverb effects .

**Phaser & Reverb**: The combination of a classic stereo phaser and a reverb effect . Here too , the phaser is combined with different reverb types .

**Rotary Speaker & Reverb**: A real classic , the rotary speaker effect , is processed with a reverb effect . This effect works especially well with keyboards and guitars .

**Delay & Reverb**: Delay and reverb is the most common combination for vocals , solo guitars , etc .

**Pitch & Reverb**: The pitch shifter slightly detunes the audio signal , while the reverb adds ambience to the signal .

**Delay & Chorus**: While the chorus can contribute to a wideness of the signal , interesting repetition effects can be adjusted with the delay . Vocals can be given a distinctive effect without making the voice sounding blurred .

**Delay & Flanger** : This effect is just right for creating a modem , slightly “spacey” vocal sound .

**Delay & Pitch** : A repetition of the audio signal , with an oscillatory effect added by the pitch shifter .





**3-Voice Pitch** : The pitch effect can be used to produce a cartoon-character type voice effect .

**LFO Bandpass** : Filters, in general, influence the frequency response of a signal. A low-pass filter allows low frequencies to pass and suppresses high frequencies, while a high pass filter allows high frequencies to pass and suppresses low frequencies. This LFO bandpass effect is complemented by modulation due to a LFO ( Low Frequency Oscillator).

**Vocal Distortion** : This effect is very hip when used on vocals and drum loops .

**Vinylizer** : This effect adds clicks and noise to your audio signal, simulating old vinyl records .

**Space Radio** : Here, the typical sound of scanning an FM tuner is simulated. This can be very interesting effect when sound-tracking radio plays .

**Test Tone** : Use this 1 kHz test tone to facilitate P. A .level setting .

## Specification

Item \ Model	JF844	JF842	JF666
Input Sensitivity	Mic-60dBm Line-20dBm Stereo CH In-20dB Tape In-10dB Aux Send-20dB		
Output Voltage	8V Max		
S/N	≥90dB		
THD(1kHz Full Power)	Less than 0.01%(at 1kHz)		
Frequency Response	20Hz-20kHz±2dB		
Headphone	N/A		
Power Consumption	N/A		
Parametric EQ	Hi±15dB/12kHz Mid±15dB/2.5kHz Low±15dB/80Hz		
Power Supply	AC 95-120V 60Hz / AC 220-240V / 50-60Hz		
Dimension(H×W×D)mm	280×460×270		
Weight(Kg)	14.5		

Master Mix Section			
Aux sends	+22dBu	DSP	
Impedance approx	120 Ω		
Stereo aux returns	+22dBu	46-85KHZ	24-bit Sigma-Delta
Impedance approx	20k Ω balanced/10k Ω unbalanced		64/128-times oversampling
Main outputs	+22dBu	Sampling rate	46-85KHZ
Impedance approx	240 Ω symm/120 Ω unbalanced		
Group output	+22dBu		
Impedance approx	240 Ω symm/120 Ω unbalanced		
S/N	120dB all Channels at Unity Gain		
Power Supply	AC 95V-120V/60Hz AC 220V-240V/50-60Hz		