

Owner's Manual

Professional Stereo & Group Compact Mixer

M1636FX

M1636FX-USB

M2436FX

M2436FX-USB



HPA

WARNING

1. Read these instructions - All the safety and operating instructions should be read before this product is operated.
2. Retain these instructions - The safety and operating instructions should be retained for future reference.
3. Heed all warnings - All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow all instructions - All operating and use instructions should be followed.
5. Do not use this apparatus near water - The appliance should not be used near water or moisture - for example, in a wet basement or near a swimming pool, and the like.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacture's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding plug. A polarized plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart or rack is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Servicing is required when



- the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Please keep the unit in a good ventilation environment.
16. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall not be placed on apparatus.
17. **WARNING:** The mains plug or appliance inlet is used as disconnect device, the disconnect device shall remain readily operable.
18. **Power Sources** – This product should be operated only from the type of power source indicated on the rating label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer the operating instructions.
19. **Safety Check** – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
20. Don't touch conductive parts of output terminals to prevent hazardous electrical shock. The external wiring connected to the terminals requires installation by an instructed person or the use of ready-made leads or cords.
21. This equipment is for commercial & professional use only.
22. This product is in compliance with EU WEEE regulations. Disposal of end of life product should not be treated as municipal waste. Please refer to your local regulations for instructions on proper disposal of this product.
23. To prevent hazardous electrical shock, do not touch the conductive parts of the output terminals. The external wiring connected to the terminals requires installation by an qualified technician or the use of ready made leads or cords.
24. Please locate the apparatus at places nearby power socket for quick power disconnection in emergency.



Protective earthing terminal. The apparatus should be connected to a mains socket outlet with a protective earthing connection.



This lightning flash is intended to alert the user to the presence of non-insulated "dangerous voltage" on the output terminals that may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the use of ready-made leads or cords.



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



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



The lightning flash with arrowhead symbol within the equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying this appliance.

CAUTION: To prevent electric shock, do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Table of Contents

Instructions 2

Features 3

Front Panel 4

Rear Panel 10

Using the USB I/O 11

Point to Remember 14

Connections 15

Applications 16

Block Diagram 18

Specifications 19

Service 21

Introduction



M1636FX/M2436FX M1636FX-USB/M2436FX-USB

Professional Stereo & Group Compact Mixer

Welcome

Thank you for purchasing M 6-Bus SERIES Mixing Console. The M 6-Bus Series provides an excellent balance of operability, functionally and ease of use. In order to take full advantage of the M 6-Bus Series capabilities and enjoy years of trouble - free use, please read this manual carefully.

Unpacking

Although it is neither complicated to install nor difficult to operate your set, a few minutes of your time is required to read this manual for a properly wired installation and becoming familiar with its many features and how to use them. Please take a great care in unpacking your set and do not discard the carton and other packing materials. They may be needed when moving your set and are required if it ever becomes necessary to return your set for service. Never place the unit near radiators, in front of heating vents, to direct sunlight, in excessive humid or dusty location to avoid early damage and for your years of quality entertainment. Connect your complementary components as illustrated in the following page.

Features

-8 MONO(M1636FX / M1636FX-USB),16 MONO(M2436FX / M2436FX-USB) INPUT AND 4 STEREO INPUT

Any sound source of microphones, cassette decks, electronic guitars, organs can be applied to the channel input.

- MAIN L/R AND GROUP1/2,3/4 OUTPUT

Main L/R and GROUP1/2,3/4 are provided for convenient use.

- AUX RETURN AND 2 AUX SEND

For convenient use of external equipment, AUX SEND and AUX RETURN function are provided.

- 8 MONO (M1636FX/M1636FX-USB), 16 MONO (M2436FX/M2436FX-USB) CHANNEL INSERT.

- CHANNEL EQUALIZER

The 3 band equalizer are designed for $\pm 15\text{dB}$ control on MONO input channels and 4 band equalizer for stereo input channels-- $\pm 15\text{dB}$ control on HF&LF, $\pm 12\text{dB}$ control on MID HF& MID LF .

- PFL FUNCTION OF ALL CHs

The PFL function allows you to monitor any input channels through headphone outputs and control room outputs before the channel fader.

- DSP FUNCTION : 100 SELECTABLE PRESETS

A built-in 24bit DSP(Digital Signal Processor) with 100 selectable presets including Reverb, Delay and Chorus, offers dazzling studio quality effects.

- FOOT SWITCH

- PHANTOM POWER (+48V)

Phantom power is provided for easy connection of condenser microphones requiring an external power supply.

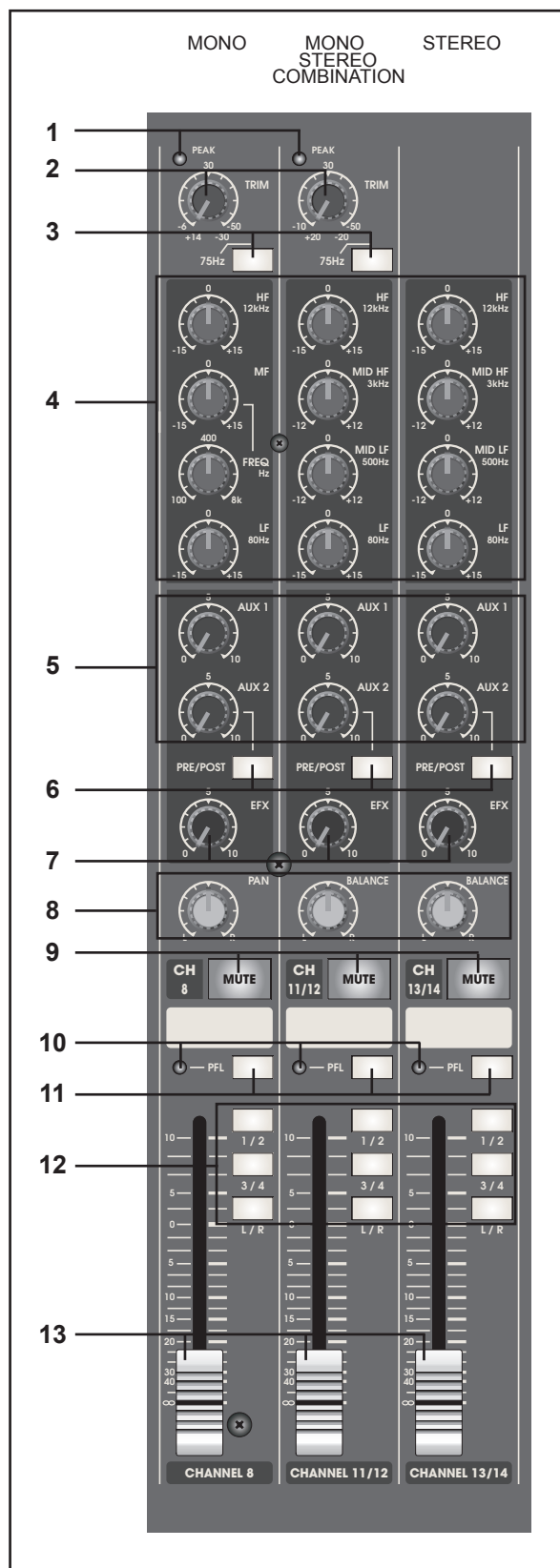
- RACK MOUNTING

Detachable rack ears for mounting in a standard 19" rack enclosure

- EXTERNAL AC POWER

Front Panels Controls

1. CHANNEL CONTROL SECTION



(1). PEAK LED INDICATOR

This LED indicators let you check the level of the signal input to the channel. The peak indicator lights when the input signal reaches 5dB below the channel's clipping point. This indicator show the level of the Post-EQ/ pre-fader signal. If the PEAK indicator lights more than briefly on high-level transients, you should use the TRIM control to decrease the input sensitivity of the channel. If this dose not work, reduce the output level of the connected source.

(2). TRIM CONTROL

According to the level of the input signal, use this knob to adjust the input to an appropriate level. The best balance of S/N and dynamic range will be achieved if you adjust the TRIM control so that the peak indicator lights occasionally. This control adjusts the channel's MIC input sensitivity between -50dB and -6dB and the line input sensitivity between -30dB and +14dB. The mono/stereo combination input channel have a sensitivity of +20dB to -20dB

(3). HPF(High-Pass Filter)

This switch toggles the HPF on or off. To turn the HPF on, press the switch In (). The HPF cut frequencies below 75Hz

(4). EQUALIZER

MONO CHANNEL

This 3-band equalizer adjusts the channel's high, mid and low frequency bands. Setting the knob to the "0" position produces a flat frequency response .Turning the knob to the right boosts the corresponding frequency band ,while turning to the left cuts the band. The following tables shows the EQ type, base frequency , and maximum cut/boost for each of the three bands.

CONTROL	MAX. BOOST/CUT	FREQUENCY	TYPE
HIGH	±15dB	12kHz	Shelving
MID	±15dB	100HZ-8KHZ (Variable)	Peaking
LOW	±15dB	80Hz	Shelving

STEREO CHANNEL

This 4-band equalizer adjusts the channel's high, mid and low frequency bands. Setting the knob to the "0" position produces a flat frequency response .Turning the knob to the right boosts the corresponding frequency band ,while turning to the left cuts the band. The following tables shows the EQ type, base frequency , and maximum cut/boost for each of the three bands.

CONTROL	MAX. BOOST/CUT	FREQUENCY	TYPE
HIGH	±15dB	12kHz	Shelving
HIGH MID	±12dB	3kHz	Peaking
LOW MID	±12dB	500HZ	Peaking
LOW	±15dB	80HZ	Shelving

Front Panels Controls

(5). AUX 1 AND AUX 2 CONTROLS

This AUX1 knob controls the signal level that the channel sends to the AUX1 bus; the AUX2 knob controls the signal level to the AUX2 bus.

If you are using stereo channels, the signals from the L and R channels are mixed and send to the AUX1 and AUX2 buses.

These controls are placed before the channel fader, so they control the AUX outputs regardless of the setting of the channel fader.

(6). PRE/POST SWITCH

This button determines whether the AUX2 signal is Pre or Post fader. Pre means not affected by the position of the channel fader. Post means is affected by the position of the channel fader.

Note that switch applies to AUX2 only. The signal to the AUX1 bus always passes through the channel fader first

(7). EFX CONTROL.

This knobs control the level of the signals sent to EFX bus. The channel signals mixed by this bus have their overall level set by the EFX SEND Control to the EFX SEND jack on the front panel. The EFFECT bus signal is also fed into the internal digital signal processor (100PRESET DSP).

Since this control is placed after the channel fader, the signal level will be affected by the channel fader's setting.

(8). PAN /BAL CONTROL

PAN (Mono Channel)

This control pans the channel signal across the master L and R buses, thus determining the perceived position of the sound from that channel in the output stereo sound field. If a PAN control is set all the way to the left, for example, the sound from that channel will be heard from the left speaker system only.

If it is set all the way to the right, the sound will be heard from the right speaker system only.

Intermediate settings will cause the sound to appear at corresponding locations in the stereo sound field.

BALANCE (Stereo Channel)

This control adjusts the balance or the L/R position of the stereo input signal.

Turning the BALANCE control to the left of center moves the apparent source toward the MAIN MIX L bus, turning it to the right moves the source toward the MAIN MIX R bus.

(9). MUTE SWITCH

Set this switch on by pressing it in (■), you will cut off all of its signal feed into the MAIN L/R GROUP1-2/3-4, AUX2(POST), EFX buses. The switch lights up orange to indicate that it is on.

(10). PFL INDICATOR

This indicator lights when the PFL switch is turned on.

(11). PFL SWITCH

When these switch is depressed, the channel input signal can be routed to the PFL bus.

This switch allows you to monitor the pre-fader channel input signal through headphone outputs and control room outputs.

(12). ASSIGN SWITCHES

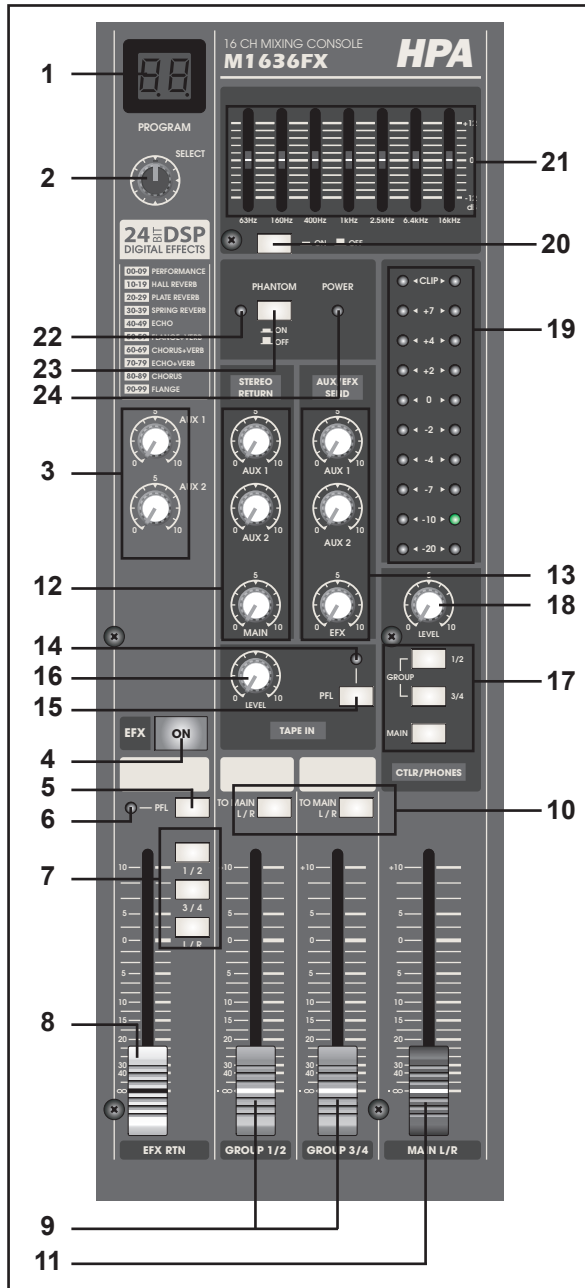
Use these switches to send the channel's signal to the Group1-2, Group 3-4 and/or MAIN L/R buses. Setting the switch on (■) causes the signal to be sent to the corresponding group buses.

(13). CHANNEL FADER

This is the channel's main level control. It determines the level of the signal that is sent from the channel to the master mixing, group outs and effect buses. It is the settings of the input channel faders that determine the mix, or the balance of sound levels between the instruments or other sources connected to the inputs. When a channel is not being used, its fader should be set at the minimum position to prevent the addition of unwanted noise to the main program signal.

Front Panels Controls

1. MAIN CONTROL SECTION



(1). DSP PROGRAM DISPLAY

The Program Number LED displays the number of the selected effects program.

(2). DSP PROGRAM SELECT SWITCH

The program knob selects one of the 100 built-in digital effects, for each number you select. 24 Bit Digital Effects processor with high quality, studio grade effects like Delay, Chorus and Reverb.

(3). AUX PRE CONTROL

Adjust the level of the signal sent from the internal

digital effect to the AUX1 and AUX2 buses.

(4). DSP ON/OFF SWITCH

This switch turns the internal digital effect on/off.

(5). PFL SWITCH

Set this switch on if you wish to output the effect signal to the PFL bus.

(6). PFL INDICATOR

This indicator lights when the PFL switch is turned on.

(7). ASSIGN SWITCHES

Set these switches on (■) to output the internal effect Signal to its corresponding buses (GROUP 1-2, GROUP 3-4 and/or MAIN L/R).

(8). EFX RTN Fader

Adjust the level of the signal sent from the internal digital effect to the MAIN and GROUP buses.

(9). GROUP FADER (1-2,3-4)

This fader adjusts the final level to the GROUP OUTPUT 1 to 4 JACKS.

(10). TO MAIN SWITCH

If this switch is on (■), the mixer sends the signals processed by the GROUP faders onto the MAIN L/R bus. The Group 1/3 signal go to MAIN L and the Group 2/4 signal go to MAIN R.

(11). MAIN L/R MASTER FADERS

Adjusts the final signal level to the MAIN L/R OUT jacks.

(12). RETURN (AUX1, AUX2 AND MAIN L/R CONTROLS)

• AUX1 and AUX2 Controls

Adjust the level of the mixed L/R signal sent from the RETURN jacks (L (MONO) and R) to the AUX1 and AUX2 Buses.

• MAIN L/R Control

Adjusts the level of the signal sent from the RETURN jacks (L (MONO) and R) to the MAIN L/R bus.

(13). MASTER SEND

• AUX1 and AUX2 Controls

Adjust the level of the signal output to the AUX1 SEND and AUX2 SEND jacks.

• Master EFFECT Control

Adjusts the level of the signal on the EFFECT bus. This is the signal that is output through the EFFECT jack.

(14). TAPE IN PFL INDICATOR

This indicator lights when the TAPE IN PFL switch is turned on

Front Panels Controls

(15). TAPE IN PFL SWITCH

Set this switch on if you wish to output the TAPE IN signal to the PFL bus

(16). TAPE IN CONTROL

This knob control the level of the playback signal that is inserted to the master mixing bus from the TAPE IN RCA jacks on the top panel.

(17). LEVEL-METER SIGNAL SWITCHES

These level-meter switches, together with the channel PFL switches, select the signal that is sent through the CTRL ROOM/PHONES control to the CTRL ROOM OUT jacks, the PHONES jack, and the level meter.

NOTE: (1). If the input channel's PFL switch is on (■), then only the channel's PFL output is sent to the C-R OUT jacks, the PHONES and the LEVEL METER.
(2). If the input channel's PFL switch is off (□), then either the main ,GROUP1-2, or GROUP 3-4 signal is sent to the C-R jacks, PHONES and the LEVEL METER determined by the MAIN and GROUP toggle switches.

18. CTRL ROOM /PHONES CONTROL

Controls the level of the signal output to the PHONES jack and the CTRL ROOM L and R jacks.

19. LEVEL METER

This LED display shows the level of the signal selected by the selection switches described in the 17 above (LEVEL METER SIGNAL SWITCHES). The "0" point corresponds to the standard output level of +4dB for +4dB output (that's the rated level) . The indicator lights up red when the output hits the clipping level.

20. MAIN EQ ON/OFF Switch

The EQ ON/OFF switch is used to engage or bypass the MAIN EQUALIZER. When the switch is in the down position, the EQ is on and when the switch is up, the EQ is bypassed.

21. MAIN STEREO EQUALIZER

The M1636FX / M1636FX-USB / M2436FX / M2436FX-USB provide a seven-band MAIN STEREO EQUALIZER allowing you to control the frequency response of the MAIN stereo mix bus signal. Providing a maximum of 12dB of cut/boost for each frequency band , this Graphic EQ is also extremely useful tool for cutting the frequencies that cause annoying feedback. The frequency is flat when the sliders are in the center position. Moving a slider in the positive direction will boost that frequency by as much as 12dB, and moving the slider in the negative direction will cut that frequency by up to 12dB. And since the MAIN GRAPHIC EQUALIZER is stereo, the EQ curve is applied to both the left and right signal at the MAIN OUTPUT.

22. PHANTOM POWER INDICATOR

This indicator lights when the phantom power switch is

turned on.

23. PHANTOM POWER SWITCH

This switch toggles phantom power on off. If you set the switch on, the mixer supplies power to all channels that provide XLR MIC input jacks.

Set this switch on when using one or more condenser microphones.

NOTE: When this switch is on, the mixer supplies DC +48V power to pins 2 and 3 of all XLR-type MIC INPUT jacks.

⚠ * Be sure to leave this switch off (□) if you do not need phantom power.

* When tuning the switch on (■), be sure that only condenser MICs are connected to the XLR input jacks.

Devices other than condenser MICs may be damaged if connected to the phantom power supply.

Note, however, that the switch may be left on without problem when connecting to balanced dynamic microphones.

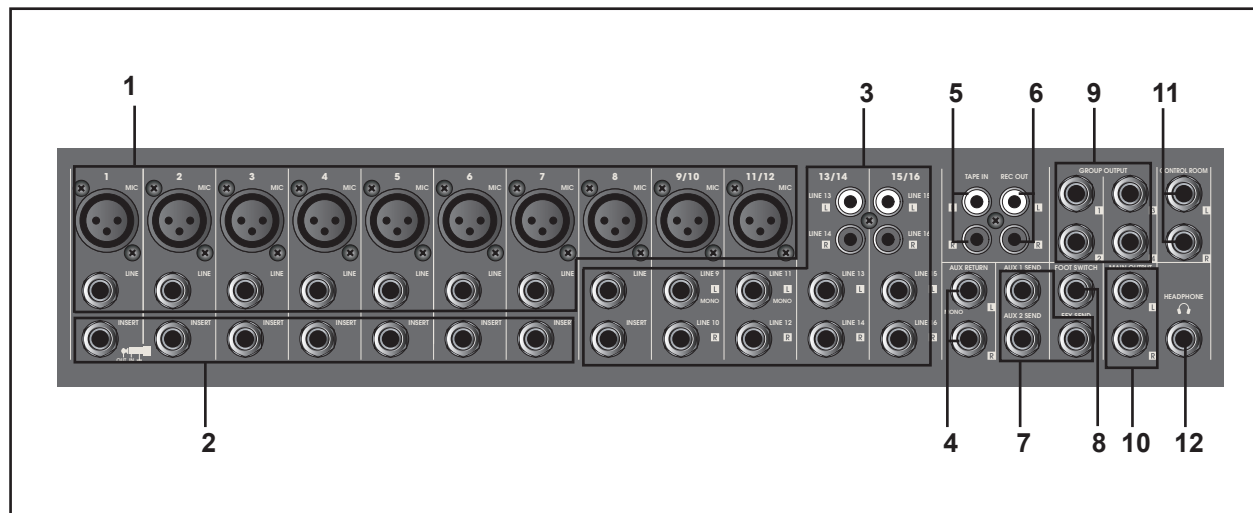
* To avoid damage to speakers, be sure to turn off amplifier (on powered speakers) before turning this switch on or off. We also recommend that you turn all out controls (MAIN master fader, ALT3/4 fader, etc.) to minimum settings before operating the switch, to avoid risk of loud noises that could cause hearing loss or device damage.

24. POWER INDICATOR

This indicator lights when the mixer power switch is turned on.

Front Panels Controls

1. INPUT/OUTPUT CONNECTORS



(1). CHANNEL INPUT JACKS

MIC JACKS

These are balanced XLR-type input jacks. (1: Sleeve, 2: Hot, 3: Cold)

BALANCED LINE IN JACKS

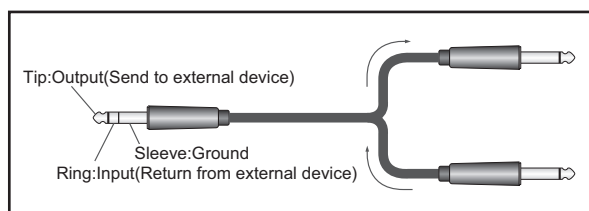
A standard 1/4" TRS phone jack is used for balanced or unbalanced line level signals. Examples of line level signals include most electronic keyboards, synthesizers, turn-tables (with appropriate pre-amps), tape decks and the line outputs from other mixers.

(2). CHANNEL INSERT I/O JACK

These are input/output jacks located between the head-amplifier and the high pass filter.

These jacks can be used to independently connect these channels to devices such as graphic equalizers, compressors, and noise filters. These are 1/4" TRS (tip, ring, sleeve) phone jacks that support bi-directional operation.

NOTE: Connection to an INSERT I/O jack requires a special separately-sold insertion cable such as illustrated below.



(3). CHANNEL INPUT JACKS

These are unbalanced stereo line input jacks. Two jack types are provided: phone type and RCA pin type. Use these jacks to input stereo signals, input the L signals to the L channel output and the R signals to the R channel output.

NOTE: 1. Where a channel provides a phone jack and an RCA pin jack, you may use either one of these jacks but you may not use both at the same time. Please connect to only one of these jacks on each channel.
2. The phone type jacks for CH9/10 and 11/12 also support monaural input. Specifically, if you input only into the L (MONO) jack of either pair (while leaving the R jack empty), the mixer will propagate the same signal through both L (MONO) and R inputs.

(4). STEREO RETURN L (MONO), R JACK

These are unbalanced 1/4" TRS phone-type line input jacks. The signal received by these jacks is sent to the MAIN bus and AUX1/AUX2 buses. These jacks are typically used to receive a return signal from an external effector (reverb, delay, etc.)

NOTE: These jacks can also be used as an auxiliary stereo input. If you connect to the L (MONO) jack only, the mixer will recognize the signal as monaural and will propagate the identical signal on both L and R jacks

(5). TAPE IN JACKS

These RCA pin jacks input a stereo sound source.

Front Panels Controls

Use these jacks when you want to connect a CD or DAT directly to the mixer for monitoring. You can adjust the signal level using the TAPE IN control in the MAIN CONTROL SECTION.

(6). REC OUT JACKS

The REC OUT jacks send the pre-fader signal from the master bus for recording by the tape deck.

(7). SEND JACKS

* AUX1, AUX2

These are 1/4" TRS unbalanced phone jacks-type output jack.

These jacks output the signal from AUX1 and AUX2 bus respectively. You can use these jacks, for example, to connect to an effector or to a cue box or other such monitoring system.

* EFX

These are unbalanced phone jacks-type output jack that output the signal from the EFFECT bus.

You use this jack, for example, to connect to an external effector

(8). FOOT SWITCH JACK

This phone input jack can connect to the foot switch. With the foot switch connected, you can use your foot to toggle the digital effects ON and OFF

(9). GROUP OUT (1 to 4) JACKS

These are unbalanced 1/4" TRS phone type output jacks that output the GROUP 1-2/3-4 signals.

Use these jacks to connect to the input jack of an MTR, external mixer, or other such device.

(10). MAIN L/R OUTPUT JACKS

These jacks are 1/4" TRS phone-type balanced output jack.

These jacks deliver stereo output of the mixer signal. You use these jacks, for example, to connect to the power amplifier driving your main speakers. You also use these jacks when you wish to record the signal utilizing the level control applied by the main fader in the Master Control section.

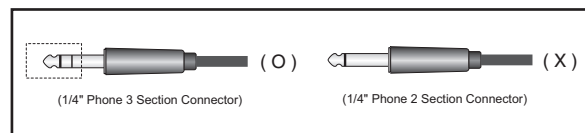
(11). CONTROL ROOM OUTPUT JACKS

These are unbalanced 1/4" TRS phone type output jacks. These jacks output the mixed signal whose level is adjusted by the C-R/PHONES control. Output is in stereo (L and R). These jacks are typically used to connect a monitoring system.

NOTE: The signal monitored by these jacks is selected by the settings of the LEVEL METER SIGNAL SWITCHES, the TAPE IN switch, and the PFL switches on the input channels.

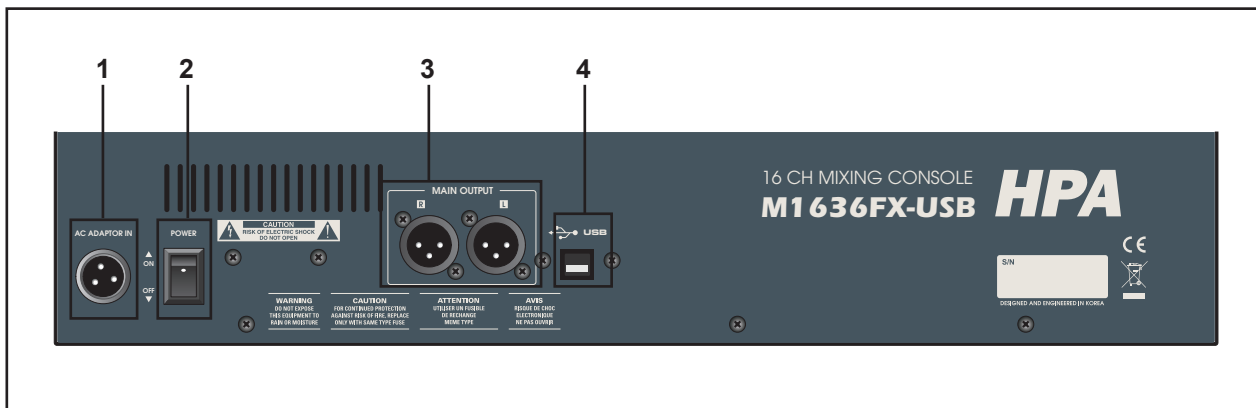
(12). PHONES JACK

Connect for headphones. This is stereo phone-type output jack.



NOTE: The signal monitored by these jacks is selected by the settings of the LEVEL METER SIGNAL SWITCHES, the TAPE IN switch, and the PFL switches on the input channels.

Rear Panels Controls



1. AC ADAPTOR IN CONNECTOR

Connects to the included PA-M1224 For M1636FX / PA-M2436 For M2436FX power adaptor

NOTE: Use only the PA-M1224 For M1636FX / PA-M2436 For M2436FX adaptor included with this mixer. Use of a different adaptor may result in fire or electric shock.

2. POWER SWITCH

Use this switch to power the mixer ON or OFF.

3.MAIN L/R OUTPUT XLR JACK.

4.USB PORT CONNECT STANDARD USB CABLE HER

Using the USB I/O

The M series consoles have a built-in stereo USB audio interface allowing you to record and playback from a PC using virtually any digital recording software. In addition, the M series consoles feature powerful routing options that let you route your USB digital recording and playback.

Connecting the M series to your computer is a simple procedure that takes just a few minutes. Since the M Series consoles are USB compliant, you can use either a MAC or PC, connect USB cable and plug IN and play. You will be able to control your M series using the standard audio interface controls in the MAC or Windows operating system. You will find detailed instructions on setting up with MAC OS and Windows in the following sections of this manual.

Getting Started with Windows XP

1. The first time you plug the M series into a USB port, Windows will install the universal drivers for that port. A balloon tip will pop up, telling you it has found the USB Audio codec (figure 1).

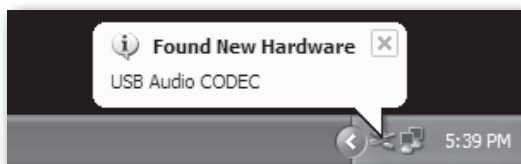


Figure 1

2. When it is finished installing the drivers, it will say "Your new hardware is installed and ready to use" (figure 2).

Note: This balloon will not pop up again for the same USB port.

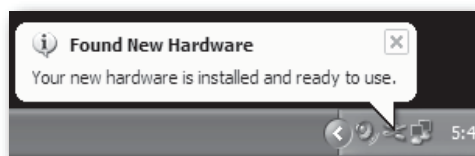


Figure 2

3. Most of the time, you'll want the output volume from the computer at the maximum position, but sometimes it defaults to the middle of the slider, making the output very quiet. The volume can be increased in several ways. The simplest is to click the loudspeaker icon (figure 3) in the system tray and drag the slider to the top (figure 4).



Figure 3



Figure 4

4. If the icon is not there, the volume can be changed by going to Control Panel and opening Sounds and Audio Devices (figure 5).

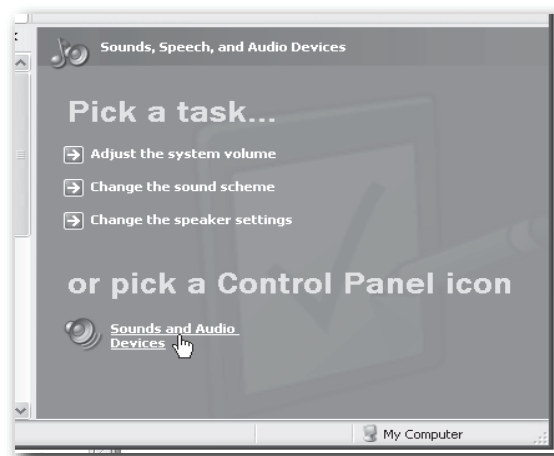


Figure 5

Using the USB I/O

Getting Started with Windows XP - continued

5. To use the M Series as your default input/output device (for system sounds and programs like Sound Recorder), ensure that it is set for playback and recording in the Audio tab (figure 6).

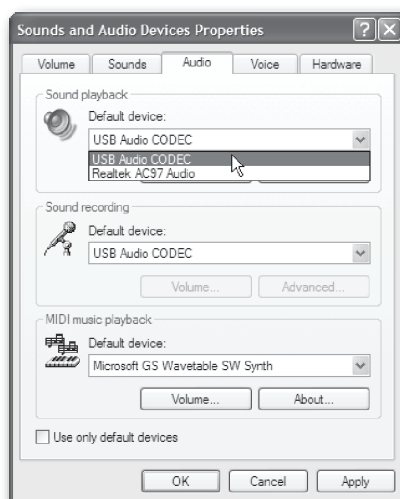


Figure 6

6. The volume can then be set by pressing the Volume button (figure 7).

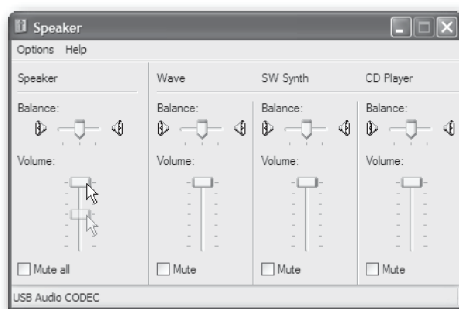


Figure 7

7. To prevent system sounds from coming through the M Series, select a different sound card for the system default, and then choose the M Series manually within your DAW software.

Getting Started with MAC OS X

1. Connect the M Series console to your mac using a standard USB cable. The LED will light to indicate it is receiving USB power. The MAC will recognize the USB audio device and automatically install a universal driver.

2. To select the M SERIES as the computer's audio input, open the System Preferences from the dock or the main Apple Menu (figure 8).



Figure 8

3. Next open the Sound preference (figure 9).

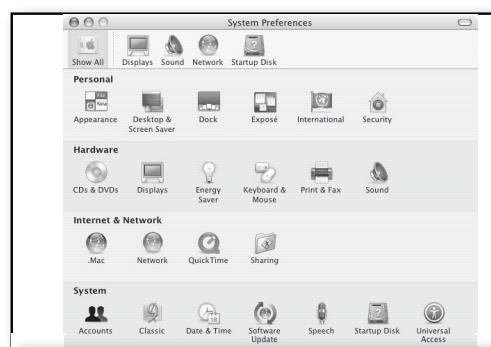


Figure 9

4. Now, click in the Input tab and select USB Audio Codec (figure 10). You may notice that the Volume slider sets itself to the full level. This will allow you to have full range using M Series's hardware input level controls.

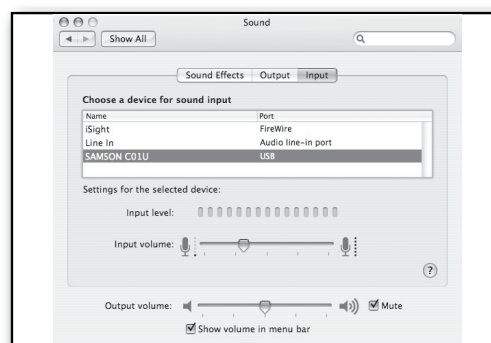


Figure 10

Using the USB I/O

Getting Started with MAC OS X - continued

5. Next, click in the Output tab and select USB Audio Codec (figure 11). You may notice that the Volume slider sets itself to the full level. This will allow you to have full range using L Series' hardware MAIN Volume control.

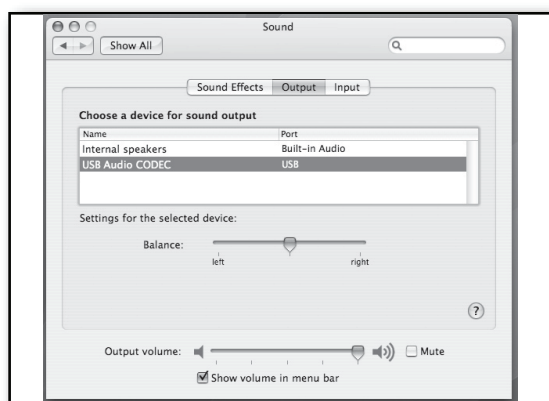


Figure 11

At this point you can begin using your M Series console with most any audio recording software, but you need to select it as an input and output device within the DAW. When selecting the inputs and outputs just look for and select the USB Audio Codec.

Recording from the M Series' USB I/O

For recording a live performance, you can send the Be sure that the each channel input volume proper level is set to to send the MAIN Left and Right mix to the USB input. The USB I/O is always active and signal, the signal sent to the computer will be comprised of the input channels that are assigned to the MAIN Left and Right Bus. The mix level follows the channel FADER and the stereo image set by the channel's PAN control.

You can also assign the USB out to feed from the AUX1 and AUX2 outputs enabling you to build a stereo mix for recording that's independent from the house sound system. Press the USB SEND switch down to send the AUX1 and AUX2 mix to the USB input.

Playing Back From the M Series' USB I/O

For playback, you can return the USB stereo signal directly into the TAPE IN left and right mix bus so that the playback from the PC sums with the MAIN mix on the console.

To hear the USB playback in the MAIN mix, be sure that the TAPE/USB volume is set to proper level.

Points to Remember

- In all cases, use good quality twin screened audio cable. Check for instability at the output.
- Always connect both conductors at both ends, and ensure that the screen is only connected at one end.
- Do not disconnect the mains earth from each piece of equipment. This is needed to provide both safety and screen returns to the system star point.
- Equipment which has balanced inputs and outputs may need to be electrically isolated from the equipment rack and/or other equipment, to avoid earth loops.

It is important to remember that all equipment which is connected to the mains is a potential source of hum and interference and may radiate both electrostatic or electromagnetic radiation. In addition, the mains will also act as a carrier for many forms of RF interference generated by electric motors, air-conditioning units, thyristor light dimmers etc. Unless the earth system is clean, all attempts to improve hum noise levels will be futile. In extreme cases there will be no alternative but to provide a completely separate and independent 'technical earth' to replace the incoming 'noisy earth'. However, always consult your local electricity supply authority to ensure that safety regulations are not being infringed.

Connections

HPA products are wired to reflect accepted wiring practices used throughout the world.

Balanced XLR connectors are wired as described:

Pin #1 Shield

Pin #2 Positive

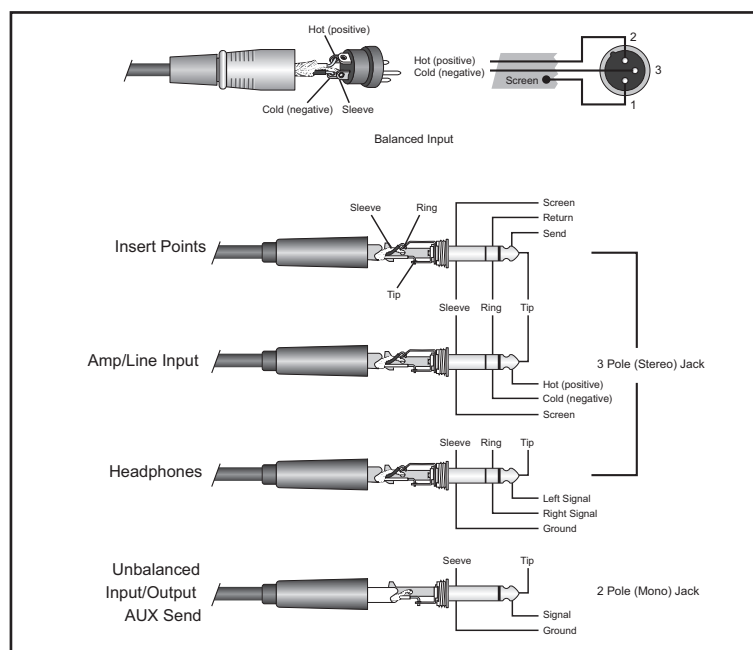
Pin #3 Negative

Balanced 1/4" TRS connectors are wired as described:

Tip is Positive

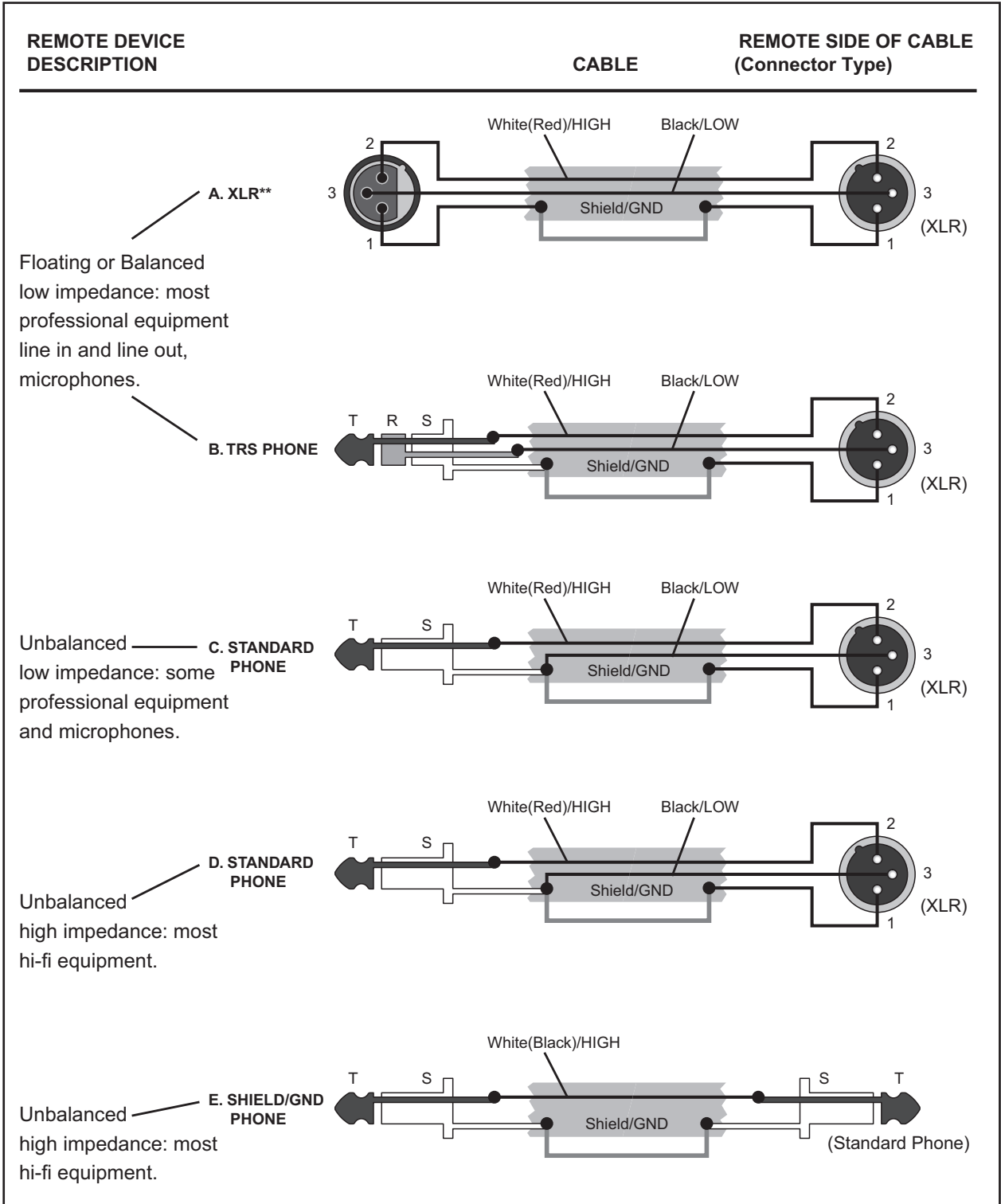
Ring is Negative

Sleeve is Shield



Connections

CONNECTOR AND CABLE CONFIGURATIONS



Connector and cable configurations recommended for use with the M1636FX/M2436FX.
These cables are based on the use of auxiliary equipment that is isolated from the AC power mains.

Applications

Setup Procedure

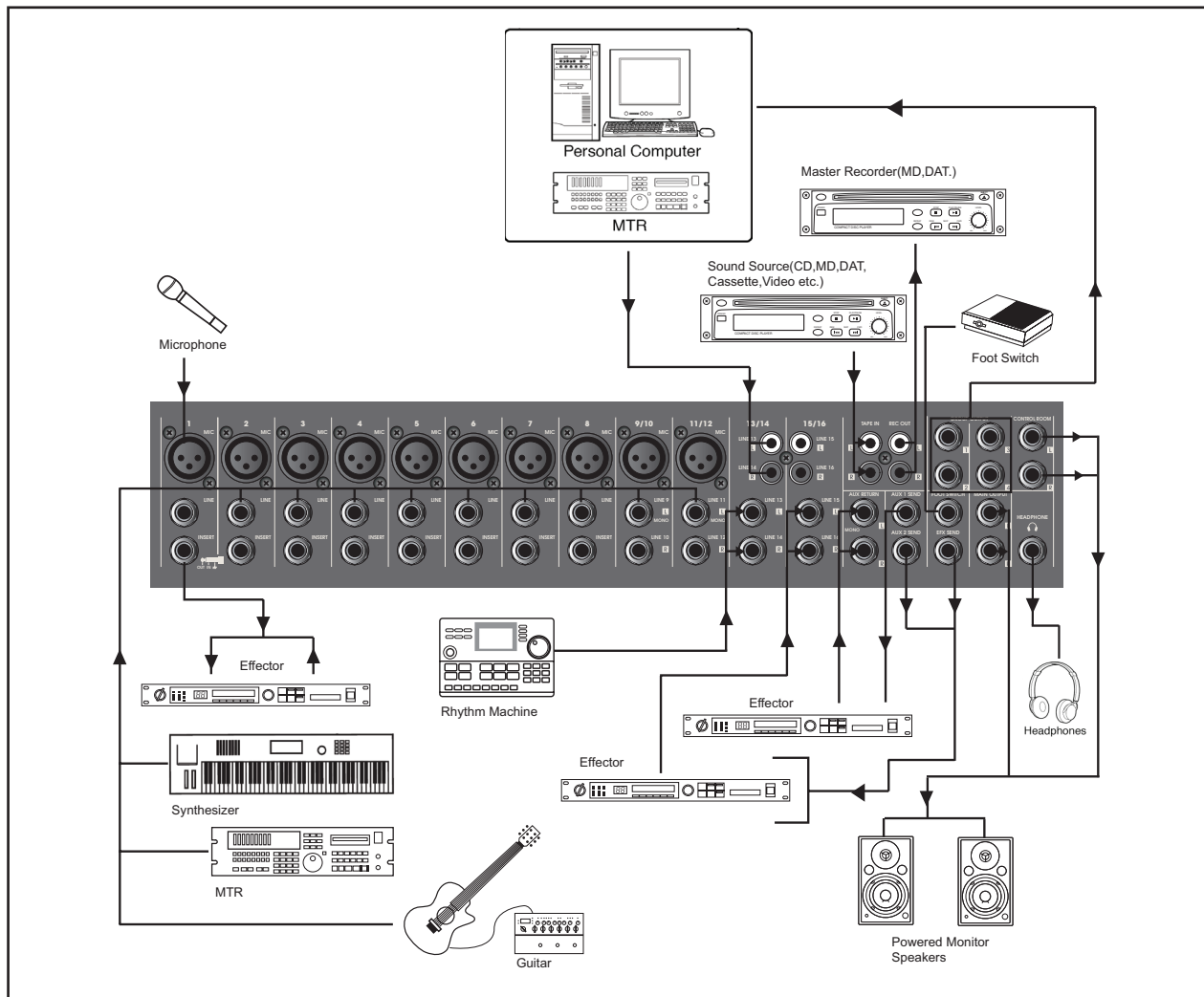
1. Before connecting to microphones and instruments, be sure that all devices are turned off. Also be sure that all of the mixer's channel fader and master control faders are set all the way down.
2. For each connection, connect one end of the cable to the relevant microphone or instrument and connect the other end to the appropriate input jack on the mixer.

NOTE: Where an input channel provides both a MIC INPUT jack and a LINE INPUT jack, you may use either one of these jack but you may not use both at the same time. Please connect to only one of these jacks on each channel.

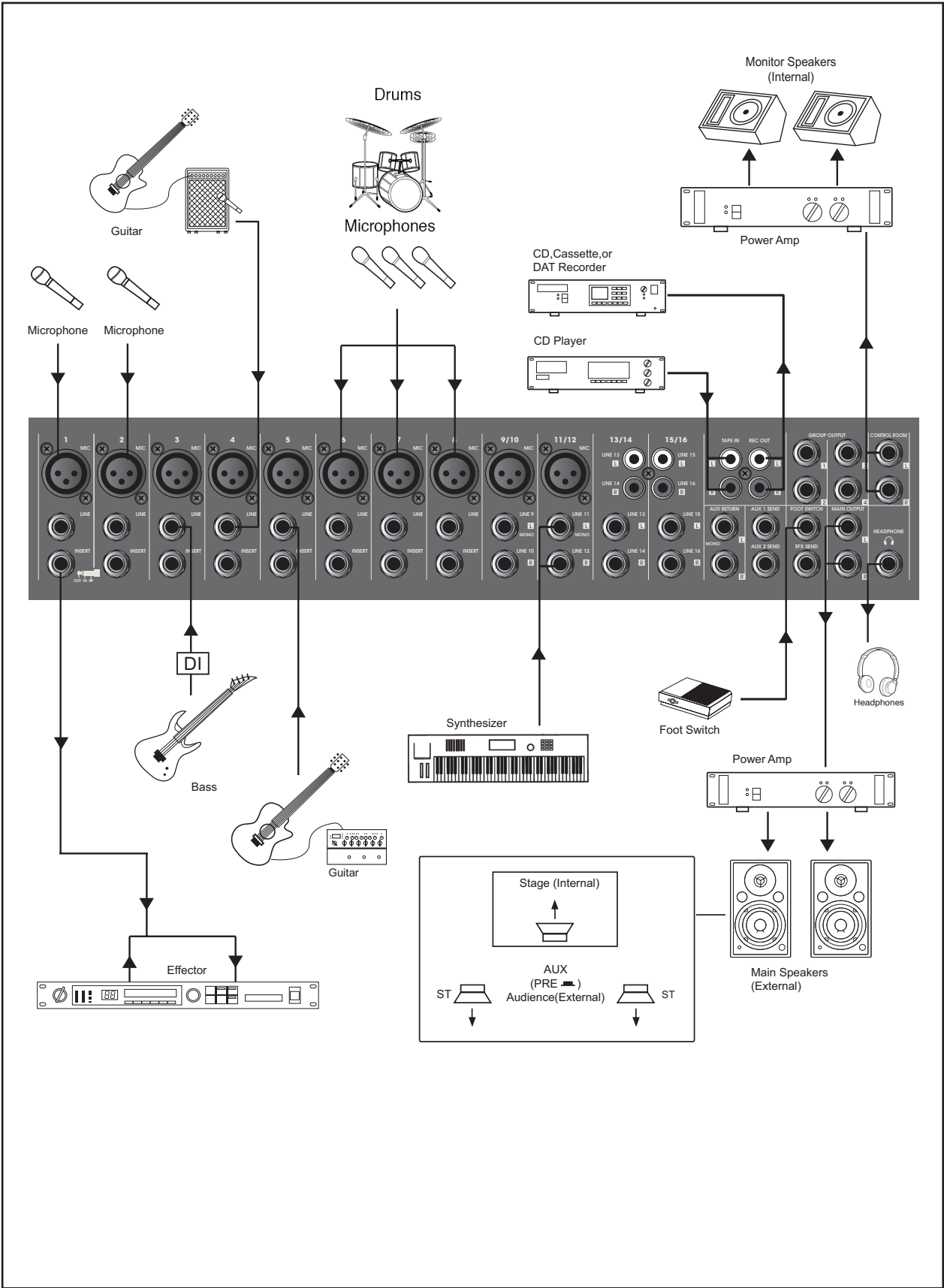
3. To avoid causing damage to speaker, power up the devices in the following order: Peripheral devices → mixer → power amps (or powered speakers).

NOTE: When shutting the system down, turn off the power in the opposite order: Power amps (powered speakers) → mixer → Peripheral devices.

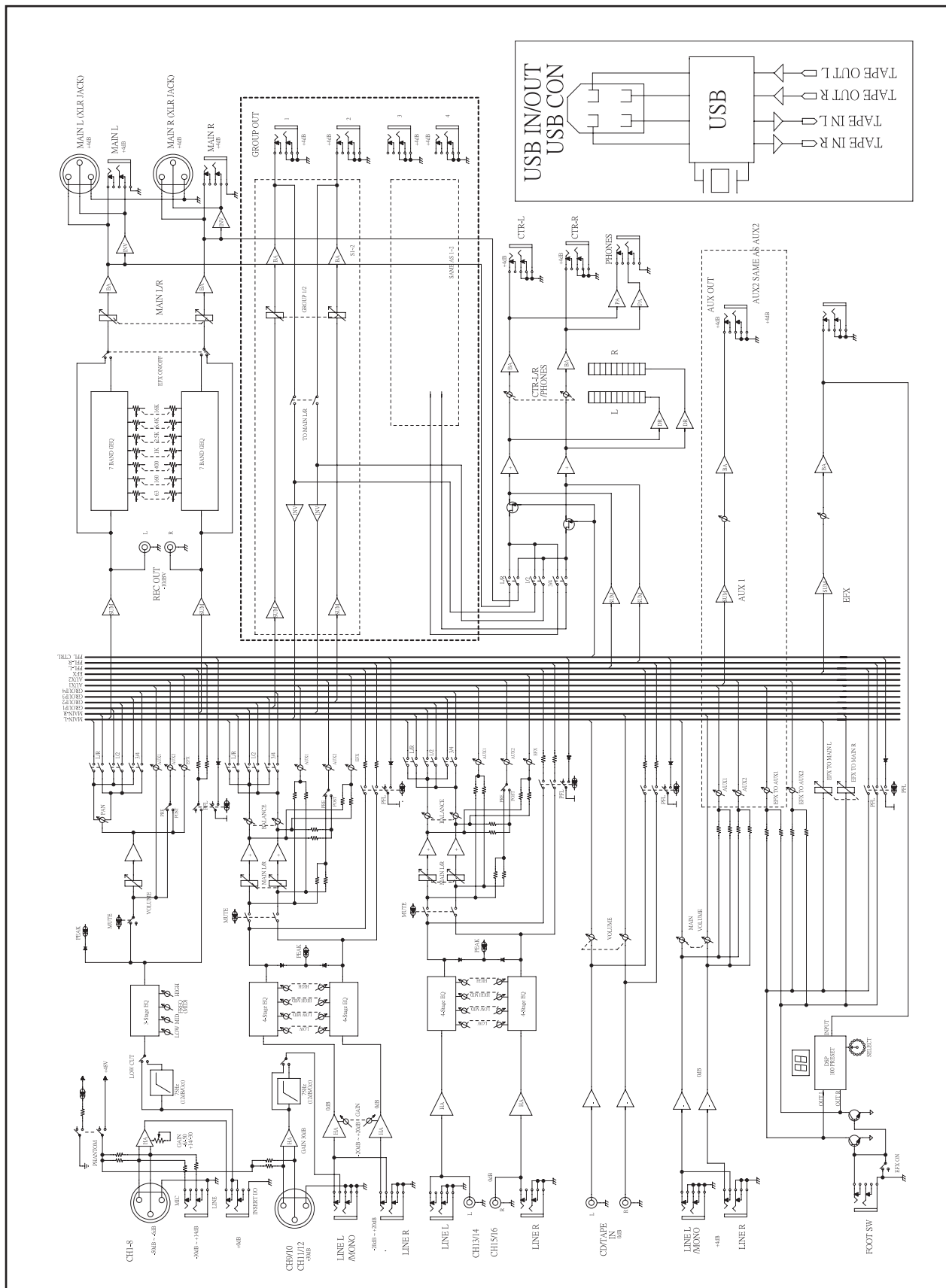
Home Recording



Sound Reinforcement For Live Performance



Block diagrams



Specifications

***0dB=0.775Vrms, 0dBV=1Vrms**

- GENERAL

Maximum Output Level (0.5% T.H.D at 1kHz)	+26dB(MAIN L/R) @10kΩ, +20dB(GROUP1-2/3-4, AUX1,AUX2/EFX, CTRL ROOM) @10kΩ, +20dB(INSERT) @10kΩ, More than 100mW(HEADPHONES) @33Ω
T.H.D	<0.1% @+14dB 20Hz ~ 20kHz (MIX L/R, GROUP1-2/3-4, AUX 1/AUX2/EFX SEND, CTRL ROOM) @10kΩ
Frequency Response	20Hz ~ 20kHz, +1/-2dB (MIX L/R, GROUP1-2/3-4, AUX1/AUX2 /EFX SEND, CTRL ROOM) @10kΩ
Hum and Noise (Average, Rs=150Ω)	-127dB equivalent input noise; -95dB residual noise (MIX L/R, GROUP1-2/3-4, AUX1/AUX2/EFX SEND, CTRL ROOM OUT); -88dB (MIX L/R, GROUP1-2/3-4, AUX1/AUX2/EFX SEND, CTRL ROOM OUT) * Master fader at nominal level and all channel assign switches off.
Maximum Voltage Gain	74dB MIC IN TO Main L/R; 74dB MIC IN TO GROUP1-2/3-4; 66dB MIC IN TO AUX 1/AUX2(PRE); 76dB MIC IN TO AUX 2(POST); 76dB MIC IN TO EFX; 80dB MIC IN TO CONTROL ROOM L/R; 52.2dB MIC IN TO REC L/R; 54dB LINE IN TO MIX L/R; 54dB LINE IN TO GROUP1-2/3-4; 46dB LINE IN TO AUX 1/AUX2(PRE); 56dB LINE IN TO AUX 2(POST); 56dB LINE IN TO EFX; 60dB LINE IN TO CONTROL ROOM L/R; 44dB ST IN TO MAIN L/R; 44dB ST IN TO GROUP1-2/3-4; 16dB AUX RETURN IN TO MIX L/R; 12dB AUX RETURN IN TO AUX1/AUX2; 20dB TAPE IN TO MAIN L/R
Crosstalk (at 1kHz)	-70dB between input channels ; -70dB between input/output channels
Gain Control (mono Input Channel)	44dB Variable (-50dB ~ -6dB), (-30dB ~ +14dB)
Gain Control(mono/stereo combination Input ch)	40dB Variable (-20dB ~ +20dB)
Monaural Input Channel Equalization	HIGH: 12kHz shelving, MID : 100-8 kHz peaking LOW: 80Hz shelving * Turnover/roll off frequencies: located 3dB below maximum boost/cut
Stereol Input Channel Equalization	HIGH: 12kHz shelving, HIGH MID : 3kHz peaking LOW MID: 500Hz peaking LOW: 80Hz shelving * Turnover/roll off frequencies: located 3dB below maximum boost/cut
Graphic Equalizer	7-band (63,160,400, 1K, 2.5K, 6.4K, 16KHz)
LED Meters	10-Segment LEDx2 MAIN L/R, GROUP1-2/3-4, PFL(Selectable)
Internal Digital Effect	100 selectable presets
	FOOT switch (ON/OFF)
Channel Indicators	Peak: An indicator for each channel turns on when the pre-channel fader signal is 5dB below clipping.
Phantom Power (Balanced input)	+48V DC
Included Accessory	Power adaptor PA-M1224 For M1636FX / PA-M2436 For M2436FX
Power Source	USA and Canada: 120V AC, 60Hz
	Europe: 230V AC, 50Hz
	England and Australia: 240V AC, 50Hz
	Korea: 220V AC, 60Hz
Power Consumption	M1636FX/M1636FX-USB: 40W M2436FX/M2436-USB: 55W
Weight	M1636FX/M1636FX-USB: 5.36kg M2436FX / M2436-USB: 7.60kg
Dimensions(W x D x H)mm	M1636FX/M1636FX-USB: 436 x 420 x 90mm M2436FX/M2436FX-USB: 652 x 420 x 90mm

Specifications

-INPUT

Input Connector	Input Impedance	Nominal Impedance	Rated Input Level	Connector Type
CH Mic	4k Ω	50 ~ 600 Ω	-50dB	XLR Female Type Balanced
CH Line	10k Ω	600 Ω	-30dB	Phone Jack (TRS) T = Hot R = Cold S = GND
Stereo Input Mic	3k Ω	600 Ω	-44dB	XLR Female Type Balanced
Stereo Input	5k Ω	600 Ω	-20dB	Unbalanced Phone Jack
Mono Channel Insert Input	10k Ω	600 Ω	0dB	Phone Jack (TRS) T = Out R = In S = GND
Tape In	10k Ω	600 Ω	-10dBV	RCA pin Jack

-OUTPUT

Output Connector	Output Impedance	Nominal Impedance	Rated Output Level	Connector type
MIX Out L/R	240 Ω	20K Ω	+4dB	Balanced Phone Jack
Group 1-2/3-4	75 Ω	10K Ω	+4dB	Unbalanced Phone Jack
CTRL Room Out	75 Ω	10K Ω	+4dB	Unbalanced Phone Jack
Aux / Aux / EFX Send	75 Ω	600 Ω	+4dB	Unbalanced Phone Jack
Mono Channel Insert Input	600 Ω	10k Ω	0dB	Phone Jack (TRS) T = Out R = In S = GND
Rec Out	600 Ω	10k Ω	-10dBV	RCA pin Jack
Phones Out	100 Ω	33 Ω	3mW	Stereo Phone Jack

Specifications and descriptions in this owner's manual are for information purposes only. HPA reserves the right to change or modify products or specifications at any time without prior notices. Since specifications, equipment or options may not be the same in every locale, please check with your HPA dealer.

Service

Procedures

Take steps to insure the problem is not related to operator error or other products within the system. Information provided in the troubleshooting portion of this manual may help with this process. Once it is certain that the problem is related to the product contact your warranty provider as described in the warranty section of this manual.

Schematic

A Schematic is available by contacting your warranty provider.

Parts List

A Parts List is available by contacting your warranty provider.

Variations and Options

Variations

Products supplied through legitimate sources are compatible with local AC power requirements.

Options

No optional items are available for this product.

Warranty

Warranty terms and conditions vary by country and may not be the same for all products. Terms and conditions of warranty for a given product may be determined first by locating the appropriate country which the product was purchased in, then by locating the product type.

To obtain specific warranty information and available service locations contact HPA directly or the authorized HPA Distributor for your specific country or region.

HPA