# ProSpec-1U4M4S / ProSpec-1U8M
# OWNER'S MANUAL


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**IMPORTANT SAFETY INSTRUCTIONS**

**CAUTION: PLEASE READ AND OBSERVE ALL WARNINGS AND INSTRUCTIONS IN THIS INSTALLATION AND OPERATING GUIDE AND THOSE MARKED ON THE UNIT.**

**RETAIN THIS GUIDE FOR FUTURE REFERENCE.**

This unit has been designed and manufactured to assure personal safety. Improper use can result in electric shock or fire hazard. The safeguards incorporated in this unit will protect you if you observe the following procedures for installation, use, and servicing.

This unit does not contain any parts that can be repaired by the user.

**DO NOT REMOVE ANY COVERS OR SUB-ASSEMBLIES, OR YOU MAY BE EXPOSED TO DANGEROUS VOLTAGES. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.**

- Read these instructions. – All of these safety and operating instructions should be read before this product is operated
- Keep these Instructions. – The safety, operating and use instructions should be retained for further reference.
- Heed all warnings. – All warnings on the product and in the operating instructions should be adhered to.
- Follow all instructions. - All operating and use instructions should be followed.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the prong does not fit into your outlet, consult an electrician of the obsolete outlet.
- Do not use this apparatus near or water. – Do not expose apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, glasses or cups are placed on this apparatus. Do not operate on or near wet surfaces such as swimming pools and do not expose to rain.
- Clean only with dry cloth. – Unplug the product from the wall outlet before cleaning. Do not use liquid cleaners.
- Do not block ventilation openings. Install in accordance with manufacturers instructions. – Slots and openings in the assembly are provided for ventilation, to ensure reliable operation of the product, and to protect from overheating. Care should be taken never to block these openings in any operating situation.
- Do not install near any heat source such as radiators, heat registers, stoves, or other apparatus that produce heat.
- Protect the power cord from being walked upon or pinched, particularly at the plugs, convenience receptacles, and the point where they exit from the unit.
- Only use attachments/accessories specified by the manufacturer.
- Use only the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long period of times.
- Refer all servicing to qualified service personnel. Service is required when the apparatus has been damaged in any way, such as power-supply cord or plug damaged, liquid has bee spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- To completely disconnect mains power from this apparatus, the power supply cord must be unplugged.
- Check AC power source for correct voltage and sufficient current capacity.
- Unplug the unit from AC mains before moving, servicing, or cleaning.
- Do not use frayed or damaged power cords or connectors.
- Do not place the unit on an unstable surface.
- Do not operate and immediately unplug equipment from AC mains if liquid has entered the unit.
- Do not plug unit into AC mains if it has physically been damaged in any way.
- Secure and protect ALL cabling to and from the units to prevent they being walled on, pinched, or pulled.
- Do not install the unit in areas of high electromagnetic or RF fields.
- Observe proper procedures for lifting and moving this unit as its weight and size requires that more than a single person be employed in these operations.
- Should the unit be damaged in any way or contaminated with liquid, have the unit inspected and serviced by qualified service personnel.
- This unit contains no user serviceable parts. All servicing must be performed by a qualified service engineer or through
  APB-DynaSonics or its qualified dealer.
- Operate in accordance with Governments' Occupational and Health Administration requirements, specifications, suggestions and regulations or those of any other local governing requirements where the equipment is to be used or serviced.

## YOUR PROSPEC MIXER

Welcome to the APB-DynaSonics family. Please take a moment to review this manual. It will ensure a better understanding of the operation of this mixer and may open up new possibilities into how you use this product.

This manual will appear within our web site www.apb-dynasonics.com with the latest updates as well as new supplemental information. We suggest that you occasionally check our web site for additional information about your mixer as well as for new product releases and news from APB-DynaSonics. Should you have any questions or comments about this or any other APB product, please do not hesitate to contact us at:


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### Manual Scope

This manual is not intended to teach you how to mix or how to set up a complete sound system. Should you be looking for such information, May we suggest that you do a search for "Pro Audio Books" on the internet, or attend one of the many fine Recording Schools that may be available to you. Many of these schools offer courses in Live Performance associated subjects as well as basic mixing techniques.

One of the best sources of teaching the technical aspect of system design and operation is through the Syn-Aud-Con organization:

Synergetic Audio Concepts, Inc., 8780 Rufing Road Greenville, IN, 47124 – USA
Tel: 800-796-2831 Fax : 812-923-3610 For calls outside of the US: 812.923.0174
Email: bbrown@synaudcon.com
www.synaudcon.com

## Front Panel Overview

ProSpec-1U8M

ProSpec-1U4M4S

## Rear Panel Overview

ProSpec-1U8M

ProSpec-1U4M4S

# PROSPEC 1U- MONO INPUT CHANNEL

## (ProSpec-1U8M includes 8 Mono Input Channels)
## (ProSpec-1U4M4S includes 4 Mono Input Channels)

**48 -Volt Phantom Power Switch (Illuminated when active)**
When depressed, activates 48-Volt phantom power to the XLR connector. Phantom power is required for operation of most condenser microphones. See your microphone instructions to see if phantom power is required or is to be defeated (some –though few-microphones require phantom power NOT be activated or they may be damaged). Some active Direct Boxes can also use phantom for power.

**Polarity Reverse Switch (Illuminated when active)**
When depressed, reverses the electrical input polarity of any microphone or line level input signal. Use of this control may alter the sound quality of an input relative to other channels when multiple microphones are picking up the same sound. (In the past, many consoles labeled this function as "Phase" or used the Ø symbol).

**High Pass Filter Switch (Illuminated when active)**
Inserts a high pass filter at 75 Hz at a roll off rate of 18dB per octave. This switch is used to remove unwanted signal content below 75Hz such as stage rumble. This results in a clearer signal that reduces low frequency buildup in an audio system, which is often perceived as a muddy signal.

**Left-Right / Center Assignment Switch (Illuminated when assigned to Center)**
Assigns input sign to either the L-R Mix bus (Default) through the Pan Control or when switch is depressed, to the Center Mix Bus. This assignment method prevents the signal from being accidently fed to all mix buses.

**Pan Control**
This control blends the post fader signal between the assigned L-R bus pairs. When at the center, position, both Left and Right mix buses are fed equal amounts of signal (each down by 3dB). This pan control has no effect on the Center mix bus.

**Peak/Signal Present LED Level Monitor**
Dual-color LED monitors the channel levels. In normal operation, varying intensity of the green LED represents acceptable signal levels. Should levels approach clipping, the LED will illuminate red. This should be an indication to the operator that the channel input level control should be decreased until the red peak indicators are no longer activated. (Overall output levels can be adjusted by raising the master output level position to offset any decrease in level caused by lowering the input channel faders).

**Channel Level**
This high quality rotary control adjusts the channel level that is feeding to the master output of the mixer .

**Solo Switch (Internally Illuminated when activated)**
When pressed, this latching switch will route the channel signal to the Solo system (located in the Master section). This switch illuminates when activated.

# PROSPEC 1U - Mono Input Channel Connectors (Rear Panel)

## (ProSpec-1U8M includes 8 Mono Input Channels)
## (ProSpec-1U4M4S includes 4 Mono Input Channels)

**XLR portion Combo Microphone Input Connector**
This connectors XLR portion is designed to accept typical microphone input signals, and has an input impedance of >3000 ohms. This is a locking connector. To remove an XLR cable, depress the Tab on the connector before attempting to remove the cable plug from the console connector.

**1/4" TRS portion Combo Line Input Connector**
The 1/4" TRS connector portion of this connector accepts line input signals and has an input impedance of >10k ohms. The line input may be a balanced or unbalanced signal.

**1/4" TRS Insert Connector**
This connector allows external processing or effects electronics to be inserted into the channel's signal path after the fixed high pass filter. Tip= Send, Ring= Return, Sleeve= Ground. Examples of external devices include additional equalization, notch filters, compressors, limiters, vocal doublers and harmonizers, reverb devices, etc. The insert send has an output impedance of 100 ohms unbalanced and the insert return has an input impedance of 5k ohms unbalanced. Operating level is +4dBu.

NOTE: The user should ensure that any device inserted into the channel's signal path is capable of maintaining the signal integrity of the console. The device must be able to accept a +22dBu signal without clipping, and have an output impedance of 100 Ω or less and be capable of driving +22dBu into a 2k Ω load.

**1/4" TRS Insert Connector used as a Direct Output**
In place of its insert function, this connector may instead be used as an unbalanced direct output. The connector provides a unbalanced line level output of the input channel's signal by using a 1/4" male connector where the Tip and Ring have been tied (shorted) together. This utility output can be used to feed a multi-track recording device, effects device, or to feed another mixing or processing device including distributed monitor mixing systems.

# PROSPEC 1U –STEREO INPUT CHANNELS

## (ProSpec-1U8S includes 8 Stereo Line Input Channels)
## (ProSpec-1U4M4S includes 4 Stereo Line Input Channels)

## Channel Preamps

**Channel Mute Switch (Internally Illuminated when Muted)**
When pressed, this latching switch will mute the outputs of the channel. The Mute does not affect the channel's PFL feed or channel metering. This switch illuminates RED when activated and allow for "Cueing" up a channels source while monitors through headphones without feeding it to the output of the mixer.

**Polarity Reverse Switch (Illuminated when active)**
When depressed, reverses the electrical input polarity of the left line level input signal in reference to the right channel. Use of this control may alter the sound quality of an input channel if the recorded material is of a reverse polarity to each other. (In the past, many consoles labeled this function as "Phase" or used the Ø symbol).

**High Pass Filter Switch (Illuminated when active)**
Inserts a high pass filter at 75 Hz at a roll off rate of 18dB per octave for both sides (L & R) of the channel path. This switch is used to remove unwanted signal content below 75Hz such as any rumble that may be part of source material. This results in a clearer signal that reduces low frequency buildup in an audio system, which is often perceived as a muddy signal.

**Left-Right / Center Assignment Switch (Illuminated when assigned to Center)**
Assigns the stereo input sign to either the L-R Mix bus (Default) through the Pan Control or when switch is depressed, the sum of Left-Right to the Center Mix Bus. This assignment method prevents the signal from being accidently fed to all mix buses.

**Balance Control**
This control blends the post-fader signal between any of the left-Right bus-pairs When at the center, detented position, both sides are fed equal amounts of signal (each down by 3dB). This Balance control has no effect on the Center mix bus.

**Peak/Signal Present LED Level Monitor**
Dual-color LED monitors the left-Right channel levels as a summed signal. In normal operation, varying intensity of the green LED represents acceptable signal levels. Should levels approach clipping, the LED will illuminate red. This should be an indication to the operator that the channel input level control should be decreased until the red peak indicators are no longer activated. (Overall output levels can be adjusted by raising the master output level position to offset any decrease in level caused by lowering the input channel faders).

**Channel Stereo Level**
This high quality rotary control adjusts the left-Right channel levels that are feeding to the master output of the mixer.

**Solo Switch (Internally Illuminated when activated)**
When pressed, this latching switch will route the channel stereo signal to the Solo system (located in the Master section). This switch illuminates when activated.

## PROSPEC 1U - Stereo Input Channel Connectors (Rear Panel)

**1/4" TRS Line Input Connector (Separate connectors for Left and Right inputs)**
These connectors pairs accept line input signals and has an input impedance of >10k ohms. The line input may be balanced or unbalanced signal.

# PROSPEC 1U – MASTER SECTION

### LED Power On Indicator
Illuminates when AC power is applied to the unit and its DC Power supplies are operating properly. This unit is to be powered from a switched AC source of 100 to 240 Volts at 50/60Hz with no manual voltage selection required for different operating voltages. This unit may to be left on at most times and draws less than 25 watts.

## MASTER OUTPUTS (Left-Right, Center, Mono)

### Left / Right and Mono Level Control
This single level knob simultaneously adjusts the Left, Right and Center output levels of the mixer and has a control has a range of from cut-off to +10dB of gain above unity. The use of a single control simplifies the operation of the mixer be it used in a Mono, Stereo, or LCR installation as all output levels remain proportional in output level.

### Master Output Metering (Left - Right - Center Outputs)
The post-fader levels of the Mono, Center, Left and Right outputs are displayed on the 3 master meters.

### Sum L-R Switch (Illuminated when activated)
Sums the Left and Right Mix buses to a mono signal while not affecting the Center output of the mixer. This allows for separate left and right speakers in an installation to carry they same signals and is a simple solution for situations where each left and right speaker location cannot cover near 100% of the audience area making a stereo mix ineffective.

### Left / Right XLR Balanced Output Connectors
These three XLR output connectors provide an optimum +4dBu balanced line level output (100 ohm symmetrically-balanced) signal for each of the console's primary outputs. Note that when the front panel L-R Sum switch is selected, that the sum of Left and Right appears as the same mono signal on both Left and Right XLR output connectors.

## HEADPHONE MONITOR SYSTEM

### Headphone Level Control
This control adjusts the level being fed to the headphone system.

### 1/4" And 1/8" Headphone Connectors
A 1/4" and a 1/8" set of headphone connectors are located on the front panel of the console.

### Center (C) Headphone Monitor Source Switch (Illuminated when selected)
When this switch is selected, it will route a post master level Center signal equally to the left and right stereo headphones as a "phantom center" image. Note: Center and Left-Right monitor switch may be selected and monitored simultaneously.

### Left-Right (L-R) Headphone Monitor Source Switch (Illuminated when selected)
When selected, this switch will route a post master level left-right signal to the left and right stereo headphone and monitor level controls. Note: Left-Right and Center monitor switch may be selected and monitored simultaneously.

### Automatic Solo to Headphones
When any input channels Solo switch is selected (as indicated by the channels solo switch being illuminated), the selected input channels solo signal will automatically override the default Left-Right and/or Center monitored signal.

## LINKING SYSTEM

A multi-pin connector system is provided that allows the ProSpec pre output level mix-buses and Solo systems of multiple mixers to be linked together. Contact APB about made-to-order cables tailored to your specific need.

# SPECIFICATIONS

## Mono Input Channel

### Balanced Mic Input (XLR Input of Combo Connector)

| | |
|---|---|
| Mic Gain (Max): | 60 dB |
| Mic Input Z: | 2k Ω |
| Mic EIN: | -127 dBu @ 60dB gain, 150 Ω source |
| THD + Noise (Mic input to Main Output) (ref to 1kHz) | <0.005% @ 15dBu Output and with 40dB Gain >200kHz |

Bandwidth Microphone Input to Main Output @ 60dB Gain approx 160 kHz (ref 1kHz)

| | |
|---|---|
| Phase response: | +/-11 degrees, 20Hz to 20kHz (ref 1kHz) |
| HPF: | 75Hz @-18dB/Octave |
| Unity Gain | approx 2 o'clock Pot rotation |

### Balanced Line Input (TRS input of Combo Connector)

| | |
|---|---|
| Line Gain (Max): | 42 dB |
| Line Input Z: | >10k Ω |
| THD + Noise (Line input to Main Output) | <0.01% @ 15dBu Output |
| Bandwidth: | approx 160kHz (ref to 1kHz) |

Line Input to Main Output

| | |
|---|---|
| Phase Response: | +1.5/-17.5 degrees 20Hz to 20kHz (ref 1kHz) |
| Unity Gain: | approx 10 o'clock Pot rotation<br>10 dB Gain at approx 2 o'clock Pot rotation |

## Stereo Channel

### Balanced Line Input (TRS)

| | |
|---|---|
| Max Gain: | 20 dB |
| Line Input Z: | >10k Ω |
| THD + Noise (input to Main Output) | <0.005% @ 15dBu |
| Output Bandwidth: | >200kHz (ref to 1kHz) |
| Input to Main Output Phase Response | +3/-9 degrees, 20Hz to 20kHz (ref 1kHz) |
| HPF: | 40Hz @-18dB/Octave |
| Unity Gain: | approx 10 o'clock Pot rotation<br>10 dB Gain at approx 2 o'clock Pot rotation |

## Outputs

Balanced XLR using OutSmarts® Driver ICs (also capable of unbalanced operation)

| | |
|---|---|
| Max Output Level: | +26dBu (into 600 ohms or greater) |
| Balanced Output Z: | 50 Ω |
| Residual Output Noise: | < -95 dBu * |

*All channels unassigned and channel sends down, Master at unity (2 o'cl