



MixSwitch-C 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 manufacturer's 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 been 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 them being walked 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 Government 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 MIXSWITCH-C CONSOLE SWITCHING DEVICE

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

MixSwitch-C Front Panel Overview



MixSwitch-C Rear Panel Overview



MixSwitch-C Functional Description

MixSwitch-C can be thought of as a high-quality, 4-channel A-B Switch. Four “A” Inputs and four “B” Inputs are either switched or combined into four Outputs. A1 is switched or combined into Output-1, A2 into Output-2, A3 into Output-3, and A4 into Output-4. Inputs B1 through B4 are likewise steered to Output-1 through Output-4.

A front-panel mode-switch determines whether the A and B Inputs are selected individually (Switch) or mixed together (Sum). 4 LEDs indicate the desired Mode (A Input Only; B Input Only, Sum A+B, External Control). Inputs are routed to their respective Outputs at Unity Gain. When A and B are both selected, they are mixed together equally, both at unity gain. The gain-staging of the MixSwitch provides the headroom needed for this function.

Basic Features

A front panel switching function of the MixSwitch-C is controlled by a single 3 position switch:

Fully Counter Clockwise: Input A Only

Center Position: Input A + Input B (Summed)

Fully Clockwise: Input B Only

The Center Position Mode (Input A + Input B) is useful to combine the outputs of 2 consoles (up to 4 of the Outputs from each console) to create a “bigger” console; each set of Input signals is summed at unity.

If more than 4 Outputs need to be combined (Auxes or Subgroups from 2 consoles), then additional MixSwitch-C units can be connected to and controlled by a MixSwitch or MixSwitch-C Master using a DSub-9 cable. When connected, the secondary unit selection switch will be overridden by the master unit with a Red LED indicated that the unit is being controlled remotely. When connected, only control signals are sent from the Master unit (MixSwitch or MixSwitch-C). The individual audio Ins and Outs remain isolated to each MixSwitch or MixSwitch-C.

Main Inputs: Rear Panel Connectors

There are two sets of 4 input jacks: Inputs A1 through A4 and Inputs B1 through B4.

The jacks are Latching, 3-Pin Female XLR.

Pin-2 is in-polarity, Pin-3 is out-of-polarity, Pin-1 is connected directly to the chassis metalwork. Electronically Balanced.

Maximum Input Level: +24dBu

Input Impedance: >20K Ω (Differential)

Inputs are labeled 1 through 4, but 1 also indicates (L), and 2 also indicates (R). This L-R labeling is for convenience only, these signals can come from any source.



Main Outputs: Rear Panel Connectors

There is one set of 4 output jacks: Outputs 1-4

The jacks are Latching, 3-Pin Male XLR.

Pin-2 driven +, Pin-3 driven -, Pin-1 is connected directly to the chassis metalwork.

Electronically Balanced Output.

Maximum Output Level: +28dBu into 600 Ω or higher

Output Impedance: 50 Ω

Outputs are labeled 1 through 4, but 1 also indicates (L), and 2 also indicates (R). This L-R labeling is for convenience only, these signals can go to any destination.



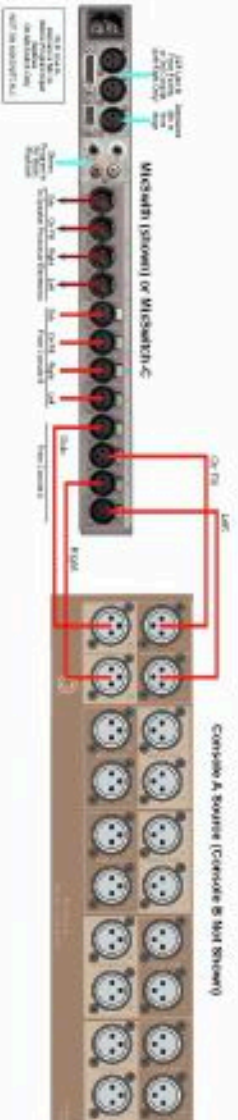
Remote Connectors (DSub-9 Input and Output):

The DSub-9 connectors allow the MixSwitch or MixSwitch-C Master to control any added MixSwitch-C unit to act as an expander. Units are fitted with In & Out DSub-9 connectors (Male & Female) to allow this control function to daisy-chain to additional units when connected.

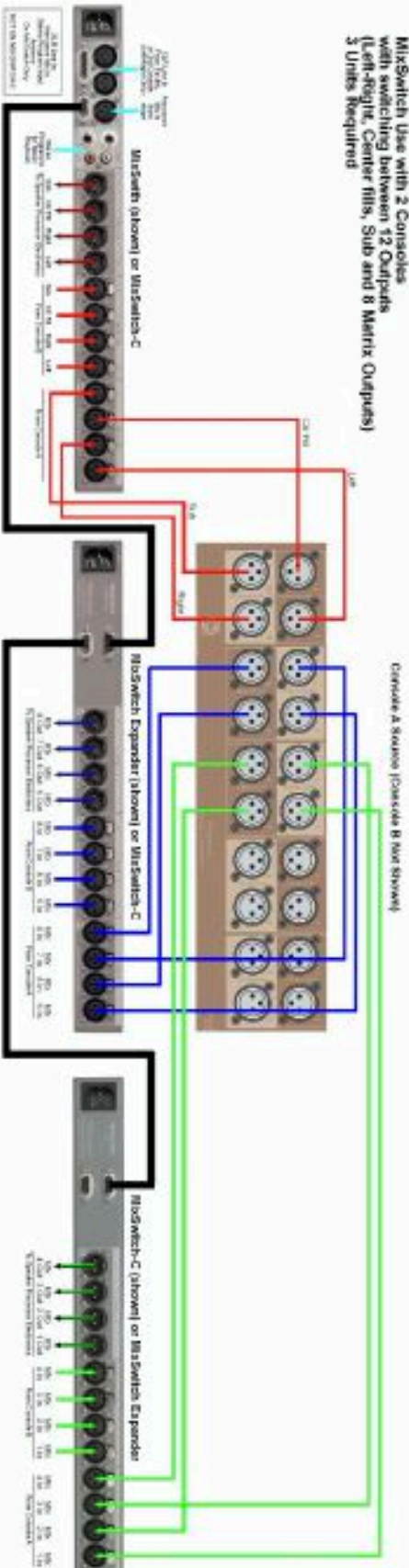
DSub-9 connections: MixSwitch and MixSwitch-C DSub-9 Connector Pin# Function (Some pins shown below are not currently used on MixSwitch-C, but all wiring between Male and Female connectors should be connected):

- 1: 0-Volts (Internally tied to Chassis with 10 Ω resistor)
- 2: Solo Audio – (Balanced signal for Listen Audio)
- 3: Solo DC Control
- 4: Select A (Tied to 0-Volts when active)
- 5: Mute Command (Tied to 0-Volts when active)
- 6: Solo Audio + (Balanced signal for Listen Audio)
- 7: 0-Volts (Internally tied to Chassis with 10 Ω resistor)
- 8: Power OK (Tied to 0-Volts when active)
- 9: Select B (Tied to 0-Volts when active)

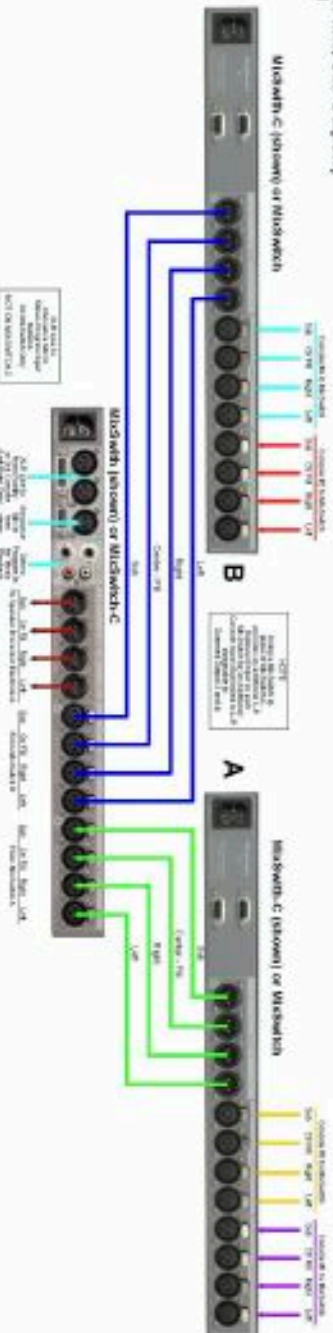
MIXSWITCH USE EXAMPLE #1
 MixSwitch Use with 2 Consoles
 with switching between 4 Outputs
 (Left-Right, Center fills, Sub Outputs)
 1 Unit Required



MIXSWITCH USE EXAMPLE #2
 MixSwitch Use with 2 Consoles
 with switching between 12 Outputs
 (Left-Right, Center fills, Sub and 8 Matrix Outputs)
 3 Units Required



MIXSWITCH USE EXAMPLE #3
 MixSwitch Use with 4 Consoles
 with switching between 4 Outputs
 (Left-Right, Center fills, Sub Outputs)
 3 Units Required





Art of the Analog Console



MixSwitch-C[®] (Console Switching Device)

APB-DynaSonics' MixSwitch-C is a versatile, multi-channel audio switching and combining system that occupies only 1U of rack space. It is a simplified Contractor version of APB's proven MixSwitch that is so often used in concert applications. Typical applications include selecting between the Primary console and Backup or secondary consoles, or between Headline and Opening Act consoles in concert/presentation situations. MixSwitch-C also allows for the simultaneous use of both consoles (A+B equally mixed). In demanding club applications, selection between FOH and DJ mixers into a common audio system can easily be performed solving the long found dilemma of who's equipment is fed directly into the sound system. Each MixSwitch-C unit can control 2 channels of 4 line-level audio signals; Additional units can be added to jointly control additional line level channels such as switching between a pair of consoles with LCR+Sub outputs plus 8 Matrix Channels which would take three MixSwitch units with the first acting as a master and the 2nd two units acting as the expander providing switching of 12 Channel outputs of two consoles. MixSwitch-C is also used as an expander to the full function MixSwitch.

Another application of MixSwitch-C is to use a pair of these devices with a standard MixSwitch to select between additional console sources. A MixSwitch-C is plugged into input A and a MixSwitch-C plugged into input B of a master MixSwitch. This allows easy switching between 4 Consoles in a festival or multiple console performance situation while maintaining full talk and music playback inputs as well as an additional 2 Channel input by way of the master MixSwitch device.

FEATURE OVERVIEW:

- Provides ability to easily switch between a primary and a backup console.
- Select between headline and opening act consoles in concert/presentation situations or operate both consoles simultaneously in A+B mode.
- Allows easily selection between FOH and DJ mixers in club applications.
- Units may be linked in a master-expander fashion to control additional multiples of blocks of 4 line level input channels to an equal number of output channels.
- 4 Consoles may be switch when three MixSwitch or MixSwitch-C devices are used together.
- Connectors for remote switching.
- Linking system of MixSwitch-C compatible with standard MixSwitch units.



TECHNICAL SPECIFICATIONS

General Specifications

Frequency Response (A or B input to Output)	-	+0/-0.1dB 5Hz to 50kHz (ref to 1kHz)
THD + Noise (A or B Input to Output)	-	<0.005% @ +15dBu output 20Hz to 20kHz
Phase Response (A or B Input to Output)	-	+2/-2 degrees 20Hz to 20kHz (ref to 1kHz)

Noise

Output Noise- No Inputs Selected	-	<-95dBu
Output Noise- A or B Input Selected	-	-90dBu (Inputs terminated with 600Ω)

Crosstalk (measured at 1KHz, +15dBu Out)

A to B Isolation	-	>90dB
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Input / Output Impedance

A and B Line Input (XLR)	-	>20KΩ Balanced
Main Outputs	-	50Ω Symmetrically-Balanced

Input / Output Levels

A or B XLR Balanced Inputs	-	+24dBu Max Input Level
XLR Balanced Outs	-	+28dBu Max Output into 600Ω