momentum™

mo8me

Mix Engine with mrc (The "Tweak") Unit
Manual

Warranty

Pro Co Sound guarantees Momentum for five years, any excuse, even abuse. If you need to return the Momentum unit(s), ship them to Pro Co Sound in the original carton or a suitable shipping container via insured freight. Pro Co will return the Momentum unit(s) to you, free of charge including return postage. Once out of Warranty, Pro Co also offers service on all its products.

Customer Responsibility:

Please read the owner's manual thoroughly before operating the system. Complete the Warranty Card within ten days after receipt of your Momentum system. Mail the card to us or register your product on line at www.procomomentum.com.

The Warranty is subject to the following conditions:

1. Pro Co Sound or its authorized representative or dealer must perform all warranty servicing of the units, otherwise all aspects of this warranty are void.
2. All tamper-proof seals on the unit(s) must be intact in order for the unit(s) to be serviced as a warranty claim.

How obtain Warranty services:

If, after following all of the operating instructions in this manual, you find that service or support is still needed:

1. First contact the dealer or contractor from which you purchased your Momentum product for help.
2. If your problem is not resolved after contacting your dealer, call Pro Co Sound at 1-800-253-7360 and ask for Momentum Service. Our hours are 8:00 a.m. to 6:00 p.m. EST, Monday through Friday.

If the problem cannot be resolved remotely, Pro Co Sound may, at its discretion, advance the replacement of the defective unit(s) and at that time provide a Return Authorization number by which the defective unit(s) can be returned for credit or repair.

Table of Contents

Safety Precautions

Always follow the basic precautions listed below to avoid the possibility of physical injury to you or others, or damage to the device or other property. These precautions include, but are not limited to, the following:

CAUTION

DO NOT EXPOSE TO RAIN OR MOISTURE

To reduce the risk of fire or electrical shock, do not expose any part of your Momentum System to rain or moisture.

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

To reduce the risk of electrical shock, do not remove cover. There are no user serviceable parts inside. Refer servicing to service personnel.

Use Extreme Caution!

Before making adjustments to your Momentum system, be aware that certain actions could possibly damage your hearing and/or the audio system itself. Think through your actions and the possible ramifications of your adjustments. Proceed with caution and follow these important Safety Instructions:

1. Read these instructions carefully.
2. Retain these instructions for future reference.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use any part of this apparatus near water.
6. Do not block any ventilation openings.
7. Do not install near any heat source.
8. Do not defeat the safety purposes of the polarized or grounding type plugs.
9. Do not use the Momentum power supply for any purpose other than stated in this manual.
10. Only use Pro Co recommended accessories with any Momentum device.

Welcome

Thank You

Thank you for your recent purchase of the Pro Co Momentum **mo8me**. We hope you find our product to be versatile and flexible. The entire line of Momentum products was designed with the intention of offering optimal flexibility for a multitude of applications.

Pro Co Sound, a Michigan based business, was founded in 1974. We build audio interface products, in-ear monitor controllers and facility distribution systems. We continue to live by our mission;

"To become our customers' very best partner, by building a world class organization, through continual, rapid improvement in all that we do, and to share in the successes and failures of our efforts."

Welcome to the Pro Co Family.

Receiving Your Momentum mo8me

Upon receiving your Momentum System, please check all cartons for damage. If there is damage, notify the shipper and dealer in that order. Before removing any components of your Momentum System from the shipping cartons, be sure that the order is complete as expected. Do this by checking each Momentum System component on your packing slip to be sure it matches the number of packing boxes and the specific type and number of components contained within. Fill out the warranty cards and send them in! You should find the following in the carton:

1 x **mo8me**	1 x Antenna*
2 x Rack Ears	1 x One Spot Power Supply
2 x Stage Boots (optional)	1 x **mrc** (the Tweak)

NOTE: Stage boots may be requested, for no additional charge at time of order.

* Antenna is left unattached to prevent possible damage during shipping. It will need to be attached after delivery.

Chapter 1

Overview

Momentum System

The Momentum digital snake system by Pro Co is designed to replace traditional analog audio wiring anywhere audio distribution is needed. By capturing audio at the source, converting it to digital audio and distributing it over a standard Ethernet network, many of the difficulties in executing the increasingly complicated audio systems of today can be simplified. By reducing the amount of field terminations, installation becomes less time consuming. Texas Instrument, Burr Brown mic preamps and Cirrus Logic digital converters provide a platform that is as close to analog as possible without the inherent problems that are associated with traditional wiring.

Flexibility and expandability are enhanced through the use of modules for inputs, outputs and DSPs. Signal routing becomes as easy as clicking a key. You can place inputs, outputs, DSPs and controls anywhere on the Momentum network. Also digital interfaces are available for seamless system integration into many of the popular formats.

Features

The Momentum network uses standard Gigabit Ethernet technology. With using standard Ethernet technology, the Momentum system can be setup and controlled using standard Ethernet products.

- Standard Gigabit Ethernet Protocol
- Power Over Ethernet (PoE) 802.3af Compatible
- Up to 256 total active system inputs
- 1.00 ms A/A latency 48k sampling (with DSP)
- Fiber optic option
- Firmware upgradable in the field
- 8 mono, 4 stereo or any combination of output mixes
- Allows 32 input channels from the network for the output mixes
- 32 three band input EQ's and 8 three band output EQs

- The "Tweak" wireless remote control allows user to access all system mixing functions
- 48K sampling only
- Clip LED indicators for each output
- Front mounted control panel
- Available with rack mount kit or optional stage boots
- Onboard memory and programming
- Control via mrc, free pc software
- Phoenix connector and DB25 options available for permanent installations or easy passive splits

Description of the mo8me

The Momentum **mo8me** is the DSP based mix engine component of Pro Co's digital snake system. It utilizes 32 network inputs with 3 band EQ and HPF (high pass filter). Output mixes can be mono or stereo and include 3 band EQ and panning control. The **mo8me** is suitable for numerous tasks such as personal monitor mixing and distributed audio systems.

Gigabit Ethernet is standard on all Momentum audio products and all components are Power Over Ethernet (PoE) 802.3af compliant. All DSP functions are controlled by the "Tweak", a wireless user interface, or PC software. In order for the **mo8me** to function as it has been designed to, a minimum of one input (mi8) devices must be present on the Network. A full compliment of options are available to ensure that Momentum can integrate into your system configuration.

Block Diagram:
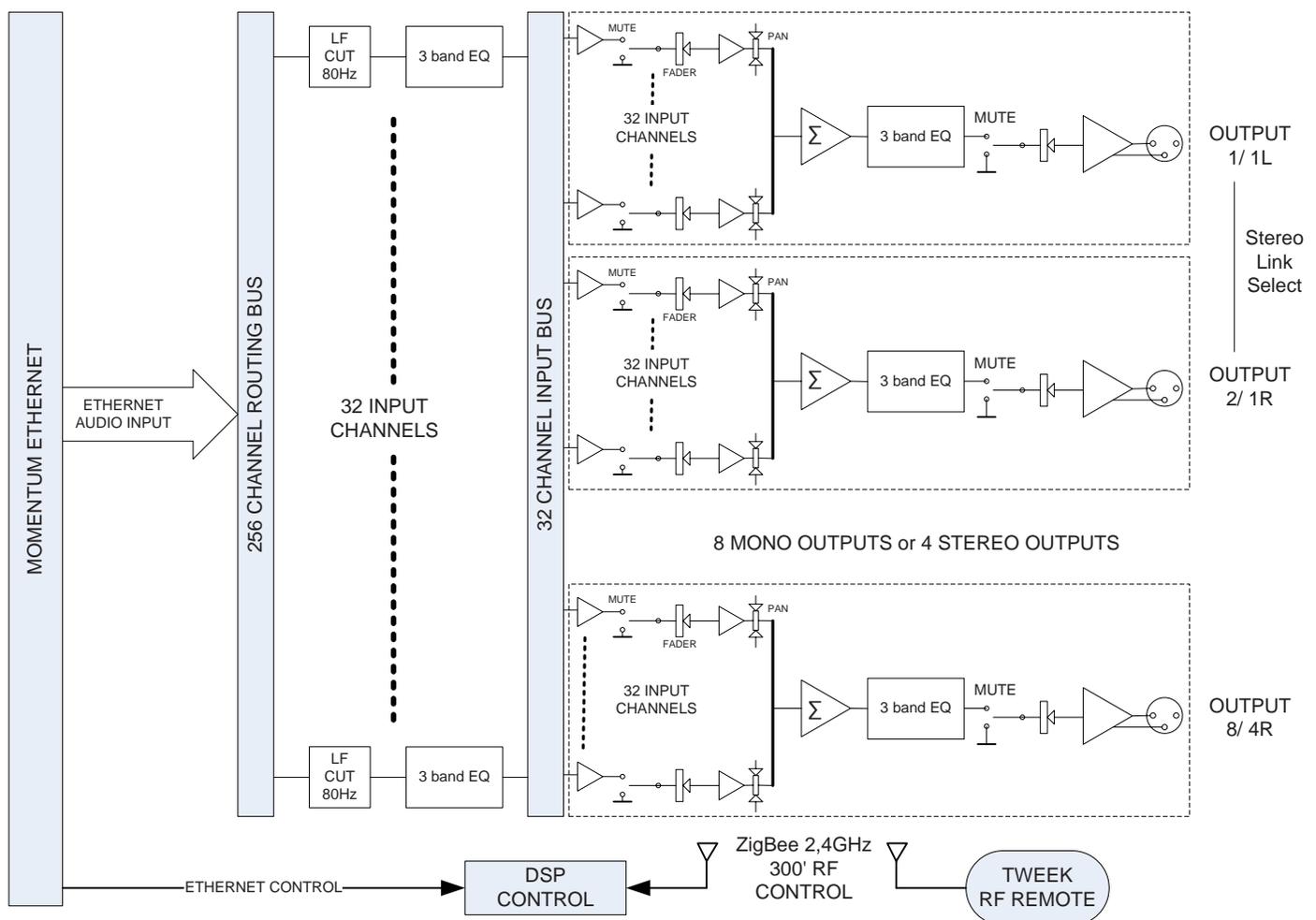
The mo8me Enclosure

The **mo8me** enclosure can be used in a number of different configurations depending on the needs of the end user. Units are shipped with rack ears, which can be front or rear mounted or can rotate for vertical or horizontal surface mounting. Optional rubber stage boots allow the units to be used as stage boxes.

An optional contractor panel can be ordered, which then allows the end user to terminate all analog connections with simple "phoenix" screw terminal connectors or utilize a standard DB25 "break out cable" instead of the front panel XLR connectors. This also allows passive "splitting" of the analog signals if needed. Pro Co offers whatever breakout cables you need. Just ask for them when you order your system.

mo8me Front View with Rack Ears

mo8me Front View with optional Stage Boots

Front Panel

The front of the **mo8me** has a 2-key control panel, eight channels capable of any combination of eight mono and four stereo output mixes and an antenna for remote mixing. Each channel has one **signal / clip LED** indicator that is visible on the front panel.

The control panel includes a **power LED**, **status LED**, **a 3-digit readout display** and **control keys**.
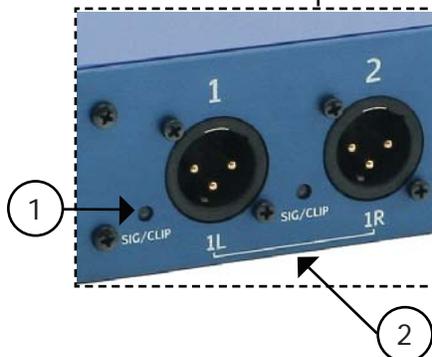
	Index	Description
1	Signal/Clip LED	Green = -40dB F.S. or above; Red= -3dB F.S. or above
2	Stereo Channel	**mo8me** offers 4 stereo channels
3	Display	Three character LCD display
4	F1 & F1 Selectors	Select and edit **mo8me** functions
5	Status LED	Green = Audio sync present; Red = Network fault
6	Power LED	Green = Digital power OK
7	Antenna	Communicates with **mrc**

Rear Panel

The rear panel offers network status LEDs for monitoring the unit's network connection. The **mo8me** may be purchased with an optional contractor panel. Shown below.

	LED	Description
1	Active Link	Shows network activity
2	TX	Indicates that the **mo8me** is transmitting data on the network
3	1000m	Indicates that the **mo8me** is connected at one gigabit
4	Quality	Indicates an acceptable Ethernet signal to noise ratio

Rear View with Contractor Panel

The optional contractor panel allows input analog connection from the rear of the device. These inputs are connected in parallel to the XLR connectors on the front of the **mo8me**.

MRC (The "Tweak")

The "Tweak" or **mrc** (Momentum remote control) is the companion unit to the **mo8me**. It is a wireless remote control that allows the user to create and save personal mixes. See chapter 5 for a more detailed description of the Tweak's functions.

	Index	Description
1	8 Soft Keys	Used to select functions, EQ bands and saved mixes.
2	Encoder	Turn to toggle channels and push down to return to previous screen

Connection and Startup 2

Power

⚠ Use only with the power supplies provided by Pro Co Sound.
OR
Use only 802.3af PoE power supplies.

The Momentum input unit requires **48VDC** power to operate. There are two recommended ways to power the unit:

Use the **Pro Co One Spot power supply.** It is shipped with the unit and allows the powering of only one device. An alternative to the One Spot is the **Multi Unit Power Supply (MUPS).** This power supply comes with three jumper cables that will allow up to four units to be linked together and powered by one MUPS. The MUPS is an additional option and must be ordered separately.

Alternative Method of Powering Device:

Use a standard **Gigabit IEEE 802.3af PoE network switch** to power the device through the Ethernet cable. The POE switch must be capable of 15.4Watts per Ethernet port.

Ethernet port   One Spot or MUPS power supply ports

POE Precautions

POE is an IEEE regulated protocol. The use of this power method is only recommended as an alternative to the one spot or MUPS power supplies. POE is not recommended for use when multiple mi8s will be connected to a common device such as a mixing console or multi-track recorder. Also do not use POE where excessive static electricity is present. Doing so may result in inconsistent POE performance.

Use POE only in situations where individual sources are connected to individual mi8s, such as mics, keyboards, or mixing console outputs. Never connect more that one mi8 to a single device when powered off POE.

Failure to follow these guidelines may result in unpredictable power issues due to the nature of the IEEE (802.3af) standard. Pro Co Sound is not responsible for power up anomalies due to the use of POE.

Network Wiring

Copper Wiring

- Use **CAT6** network cable
- Maximum cable length is 100 meters
- Maximum cable length with POE active is 50 meters.

Copper Connection

- Use T568B or equivalent connectors when wiring your system. This view shows the color code as viewed from the front of the female socket or the rear of the male connector.
- Crossover wiring is not needed; the Momentum network interface compensates for unit-to-unit connections.
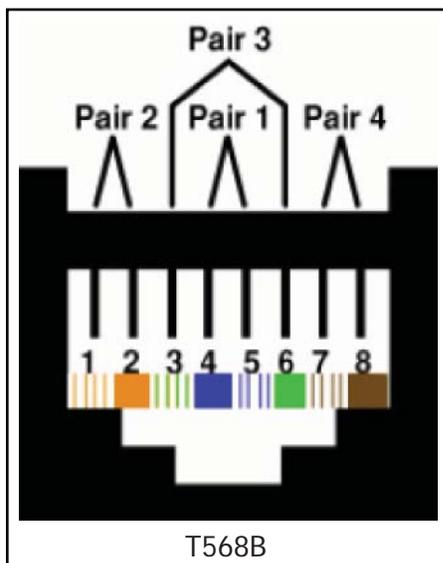
T568B

Pin	T568B (female)	Description
1	Orange/White	Bi-directional pair +A
2	Orange	Bi-directional pair - A
3	Green/White	Bi-directional pair +B
4	Blue/Power	Bi-directional pair +C
5	Blue/White	Bi-directional pair - C
6	Green Receive	Bi-directional pair - B
7	Brown/White	Bi-directional pair +D
8	Brown Power	Bi-directional pair - D

Fiber Connection (Optional)

The Momentum Fiber option uses ST style connectors and operates at 850nm. The system is fully IEEE 802.3z Gigabit Ethernet compliant. The following are performance based on the cable type:

- 220 meter distance use 62.5/125um MMF 160MHz Km Cable
- 275 meter distance use 62.5/125um MMF 200MHz Km Cable
- 500 meter distance use 50/125um MMF 400MHz Km Cable
- 550 meter distance use 50/125um MMF 500MHz Km Cable

Network Configurations

The following are examples of network configurations. These samples show configurations using ana-log inputs and outputs. Momentum digital input and outputs or DSP devices use the same methods for network configuration.

Using the Momentum system, the network configuration possibilities are endless. For more information on advanced configurations and support, visit **www.procomomentum.com.** For further support, con-tact you local dealer or Pro Co technical support.

Basic Mix System

SHOWN IN STEREO MODE

Wireless
Mix 1 Control

Wireless
Mix 2 Control

Wireless
Mix 3 Control

Wireless
Mix 4 Control

To In-Ear
Monitors
Mix 2

To In-Ear
Monitors
Mix 4

To In-Ear
Monitors
Mix 1

To In-Ear
Monitors
Mix 3

mo8me Mix Engine
Chn=001 Adr=005

mi8 Input
Chn=001 Adr=001

mi8 Input
Chn=009 Adr=002

mi8 Input
Chn=017 Adr=003

mi8 Input
Chn=025 Adr=004

Ethernet Switch

Chn 001 must be present on the network at all times. This unit will sync the network clock.

Control Device

CAT6

You MUST set the Ethernet port that is connected to your control PC to multicast filtering.
Multicast MAC 01:15:AB:C6:00:00
(See Network Design White Papers)

Setup

Network Clock Sync

PLEASE TAKE NOTE OF THE FOLLOWING:

The Momentum network **MUST** have **ONE mi8** or **md16ae** that is assigned **CHANNEL 1**. This assignment is used to synchronize all of the device clocks on the network. Without this assignment, the system clock will not sync and audio 'clicks' will be heard.

Using the Control Panel

The **mo8me** unit includes a **control panel** with an **LED display** and **two push keys (F1 and F2)**. The device can be configured through a series of key strokes using F1 and F2. The **control panel** will only control the local device and cannot change other units via the network.

Display

F1 - Mode Edit / Decrease Value

F2 - Mode Select / Increase Value

Power Indicator

Status Indicator

Key/LED	Description
F1 Mode Select:	F1 activates the edit mode within a particular function.
F2 Mode Select:	F2 generally selects which function to edit.
Power Indicator:	The power indicator shows that a power source is connected to the Momentum units. The LED is connected to the digital power source. All other power sources in the system can be monitored via the PC software.

Status Indicator:	The status indicator is a bi-color LED. **GREEN** indicates all Momentum Network connections have been found and the network is running. **RED** indicates there are one of two problems;
	    1) An Ethernet link is not established or is not connected.
	    2) The audio sync packet (channel 1) is not found.

Setting Device Before Use

THE FOLLOWING FRONT PANEL SETTINGS MUST BE CONFIGURED PRIOR TO USING MOMENTUM.
The IP setting is required only if the unit is to be controlled with a PC or external controller.
A detailed description of control functions can be found in chapter 3, pages 16-17.

↪ **Start Channel Route**

Chn

The **mo8me** does not require a start channel. The unit is shipped with routing channels pre-set to Network input channels 1-32. This function can be used to change the factory default if required, to another set of 32 sequential channels.

The start channel, in this case, will be the first of the selected sixteen inputs. While in resting or time-out mode, the **mo8me** will display "- - -" . Channels are set in grouping of thirty-two i.e. 1-32, 33-64, 65-96 etc.

↪ **IP Address**

Adr

An IP address will need to be set **only** if the Momentum network will be controlled with a PC or external controller. The IP address defaults to **192.168.1.1**. When in the idle menu state, pressing the F1 key will flash the current address. **The number shown is the LSB of the IP address (192.168.1.[LSB]).** If the network is to be controlled with a PC, each mi8 unit will need a unique IP address. All IPs need to be set manually on the individual unit.

It is best practice to keep the input unit's IP address sequential with its channel. In other words, Chn 001-008 would be Adr 001 and Chn 009-016 would be Adr 002 and so on.

↪ **Sample Rate**

Sr

PLEASE NOTE: The **mo8me** can **ONLY** be set at a sample rate of **48k.** All other network devices must also be 48k. A setting for sample rate 96k has been added for future use, but it is not available at this time. You will be unable to execute and save this sample rate change.

Chapter 3

Control Panel Functions

This chapter describes each of the control panel functions and how to access them to make changes to your network. Changes are made using the F1 and F2 keys.

F1 - Function Edit / Decrease Value   F2 - Function Select / Increase Value
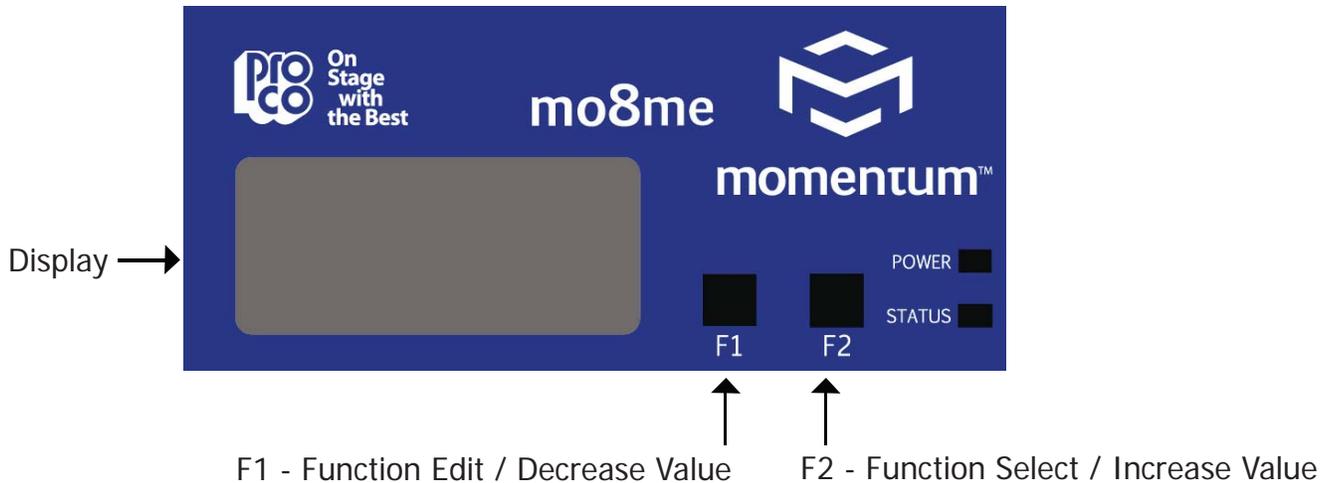
F1 and F2 Functions

The settings of the Momentum units are accessible through a series of key strokes between F1 and F2. In general, F2 selects which function to edit, and F1 activates the edit mode within that function.

The flow chart below displays each of the controlling F1 and F2 functions. Descriptions of each functions follow in a guide on pages 16 and 17.

F1	F2

F1	F2	F2	F2	F2	F2
[Adr] IP Address Display	**[rou]** Route	**[Chn]** Start Channel	**[Adr]** IP Address	**[Sr]** Sample Rate	**[Clr]** Clear Settings
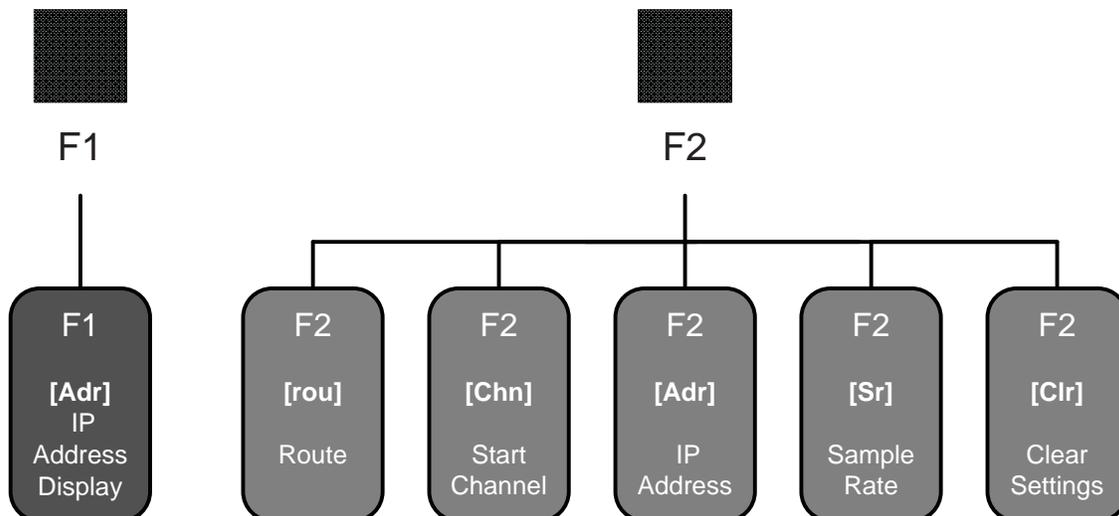
Description of Functions

To return to the beginning of the menu, allow the display to time out. When the display times out and when the unit is at idle, the LCD will display " - - -".

Please note:
1. The functions in the step by step guide are presented in the same order as the functions on the unit's menu structure.
2. In order to edit a channel, the user must first scroll to the function in need of editing, select the appropriate channel and make the edit.

⤳ IP Address View

Adr

1. Pressing F1 will flash the IP address of the unit.

⤳ Individual Channel Route

rou

The channel route function is used to route any 32 of the 256 Network input channels to the **mo8me**.

1. Toggle F2 to until rou is displayed.
2. Tap F1 to activate rou "edit" mode.
3. Toggle F1 to scroll channels. Toggle F2 to select a channel.
4. Tap F1 to decrease value. Tap F2 in increase value.
5. Press and hold F1 and F2 to execute and save the change.
6. Return to selecting channels or exit by allowing display to time out.

⤳ Channel Start Route (Off or 1-240)

Chn

The start channel routes 32 channels sequentially. The **mo8me** channels are named sequentially ie. 1-32, 33-64, 65-96 etc.

1. Toggle F2 until Chn is displayed.
2. Tap F1 to activate Chn "edit" mode.
3. Tap F1 to decrease value. Press F2 in increase value. Channels increase/decrease in groupings of eight. (Off mutes all channels)
4. Press and hold F1 and F2 to execute and save the change.

Description of Functions

⤷ IP Address Edit

Adr

1. Within this function, selecting Clr will allow the user to reset the IP to the factory default of 192.168.1.1.
2. Toggle F2 until Adr is displayed.
3. Tap F1 to activate Adr "edit" mode.
4. Tap F1 to decrease value. Press F2 in increase value. (Toggle F2 to select Clr to set the IP to factory default of 192.168.1.1.)
5. Press and hold F1 and F2 to execute and save the change.
6. Exit by allowing display to time out.

⤷ Sample Rate

Sr

The sample rate is currently only available in 48K. The sample rate on the **mo8me** is set to default to 48K. Although 96K will be displayed as an option in the Sr function, the user will be unable to execute and save this sample rate change.

⤷ Clear Settings

Clr

1. This function can be used to reset all current mixes back to factory default (Output at full, all channels down and EQs back to flat.) (This WILL NOT effect saved scenes. Saved scenes can only be cleared via a PC.)
2. Toggle F2 to select Clr.
3. Tap F1 to activate Clr. (It will flash)
4. Press and hold F1 and F2 simultaneously to execute and save the change.
5. Exit by allowing display to time out.

Menu Layout

Splash Screen

First Boot Starts Here

Encoder Push

Select Mix Menu

Select mix
or
Encoder Push

Channel Mix Menu

Encoder Push

Master Mix Menu

Tweak will return here upon waking from sleep mode when there is no default mix set. Otherwise, it wakes where left off.

Soft Key Held with Channel Selected

Channel Menu
(Encoder Push = Back)

Setup Menu*

Memory Menu

EQ Selected (Mix 1 Only)

EQ Menu
(Encoder Push = Back)

* Note – Only Setup Menu for Mix 1 will allow user to make changes to routing, mo8me connection, stereo/mono mode and Tweak ID. Setup Menu for Mix 2 – 8 is limited.

Overview

The following chapter will outline the Tweak's features and give detailed descriptions of its functions. The Tweak is the companion remote unit to the **mo8me** and offers the user flexibility in remotely mixing input channels from the Momentum Network. It is suitable for such tasks such as personal monitor mixing and distributed audio systems.

Features of the Tweak

- The Tweak's factory default **mo8me** address is set to Network channel 1.
- All users share EQ, routing and channel names.
- Up in 8 Tweaks can mix from one **mo8me.**
- Each Tweak in a given environment must have a unique Tweak ID 1-99.
- Time-out mode can be turned off or be setup for up to 4 minutes.
- FCC approved.
- Operating frequency - ISM 2.4GHz.
- Wireless range - 300' indoors.
- Approved for use in US, Canada, Australia and Europe.
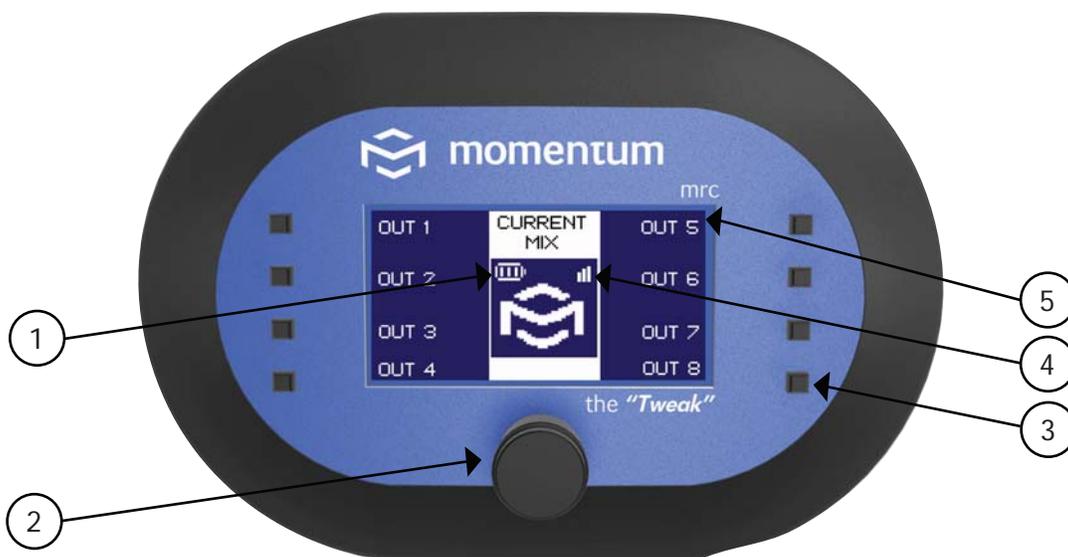
	Index	Description
1	Battery Indicator	Indicates level of battery power
2	Encoder	1) Turn to adjust volume and EQ 2) Push down to move between main menus and return to previous screen
3	Soft Key (8)	Selects functions and menu items based on the display
4	Signal Indicator	Indicates the strength of the remote signal
5	Name of Function	Displays functions

Powering Up

First Power Up

- The Tweak is powered by 3 AAA batteries inserted at the back of the unit.
- To remove back panel, push down and turn.
- The Tweak will power up when batteries are inserted.
- The unit will default to a **mo8me** address of A01. This is the least significant byte of the **mo8me's** IP address, for example A01 would equal "192.168.1.**1**".
- When not in use, the unit automatically times out.
- Press any key to resume.

After powering up for the first time, please take the following steps:
   (If these steps are missed, the Tweak will be unable to set routing or any of the other mixing capabilities.)
- The Tweak must be set to two addresses, the first one being the **mo8me** address that the Tweak will be connected to and the second being the Tweak's individual ID.
- The unit is shipped with a factory default Network address of 1, which may not correspond with your **mo8me** address, especially if you already have a Network up and running. You MUST reset the Tweak to the correct Network address.
- The address of the Tweak must match the address of the **mo8me**. See page 24 - Connecting to a **mo8me** Unit.
- The Tweak ID must be set to a unique number different to the other Tweaks being used with the same **mo8me.**
- To assign your Tweak a unique ID number see page 26 - Assigning Your Tweak an ID Number.

Opening Screen

```
MOMENTUM
TAKE THE STAGE
CONNECTING TO ADDR: X


STATUS: FAILED
PRESS ANY KEY TO CONTINUE
```

Screen Item	Description
Connecting to Addr: X	Displays the **mo8me** address to which the Tweak is connected
Status: Failed	This indicates one of two things: 1. The **mo8me** is not powered up 2. The connecting **mo8me** address is incorrect (See the Communication Time Out screen to reset the **mo8me** address, page 21)
Press any key to continue	Pressing any key will take unit to the Communication Time Out screen (See page 21)

Communication Time Out Screen

```
RF OFF                          ABORT

GOTO SETUP    ⧗                 RETRY


       NO MO8ME RESPONSE
```

The Tweak will go to the **Communication Time Out Screen** if the **mo8me** is not powered up or if the address is incorrect. This screen could also appear if a communications error occurs while Tweak is in use (i.e. User steps outside of the wireless range). If the Network is up and the address is correct, this screen will be skipped.

| Soft Key	Description
RF Off	The Tweak will not try to reestablish connection until power cycle or **mo8me** address is changed
Goto Setup	Takes user to New Unit screen to view and change current address (See page 24 - Connecting to a **mo8me** Unit)
Abort	Terminates communication attempt
Retry	Retries communication

Note: After initial power up, and if the Tweak has been reset to the correct address, the Opening and Communication Time Out Screens will automatically be skipped during the next power up.

Warning: When the unit goes into sleep mode, the Tweak will wake to the last screen used if a default mix is selected. If a default mix is not selected, the unit will wake to "CURRENT MIX" screen.

Setup Menu

Navigating to the Setup Menu

Before any mixing can begin, the user must set preferences such as default mix, routing, mo8me address, Tweak ID and password through the Setup Menu screen. Press the encoder to move between the Current Mix, Channel Mix and Mix master screens to access the Setup Menu.
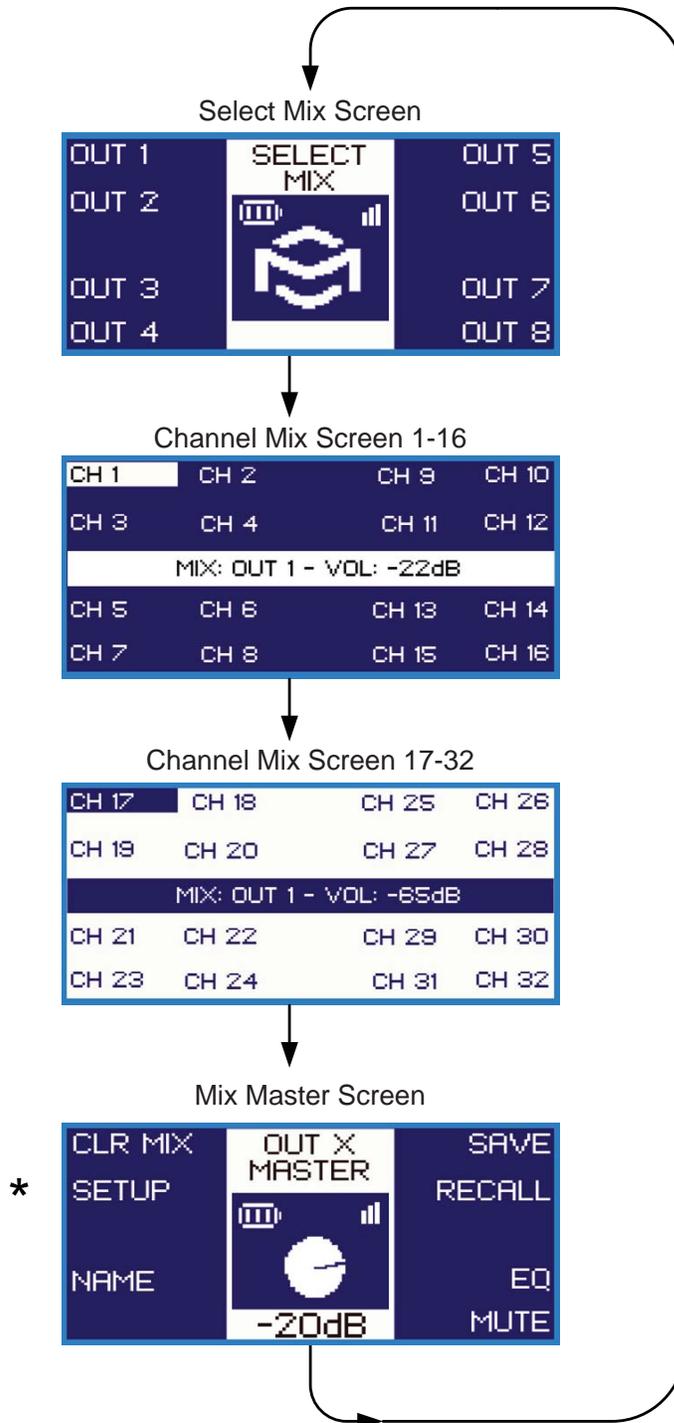
Feature Quick Reference

Select Mix Screen

OUT 1	SELECT MIX	OUT 5
OUT 2		OUT 6
OUT 3		OUT 7
OUT 4		OUT 8

Select Mix:
- Use this screen to change current mix.
- Will not be available if default mix is selected.

Channel Mix Screen 1-16

CH 1	CH 2	CH 9	CH 10
CH 3	CH 4	CH 11	CH 12
MIX: OUT 1 - VOL: -22dB			
CH 5	CH 6	CH 13	CH 14
CH 7	CH 8	CH 15	CH 16

Channel Mix 1-16:
- Volume on individual channels is adjusted by turning the encoder.
- Press and hold soft key to view Channel Menu.

Channel Mix Screen 17-32

CH 17	CH 18	CH 25	CH 26
CH 19	CH 20	CH 27	CH 28
MIX: OUT 1 - VOL: -65dB			
CH 21	CH 22	CH 29	CH 30
CH 23	CH 24	CH 31	CH 32

Channel Mix 17-32:
- Volume on individual channels is adjusted by turning the encoder.
- Press and hold soft key to view Channel Menu.

Mix Master Screen

CLR MIX	OUT X MASTER	SAVE
* SETUP		RECALL
NAME		EQ
	-20dB	MUTE

Mix Master:
- Adjusts master volume by turning encoder.
- Adjusts master EQ by turning encoder.

* Press SETUP soft key to access the Setup screen. See following page for details on Setup.

Description of Setup Menu

```
BK LIGHT      SETUP       ROUTING
DFLT MIX                  ST/MONO


MO8ME                        MY ID
32CH MD                      PWORD
```

Soft Key	Description
Bk/Light	Has two functions - 1) Sets the time-out 2) Adjust back light to high or low setting (Page 26)
DFLT Mix	Used to assign the Tweak to only operate one mix (Page 25)
mo8me	Connects the Tweak to the appropriate mo8me (Page 24)
32ch MD	Switches between 16 channel and 32 channel mode
Routing	Allows user to select any 16 input channels from the Network (Page 23)
St/Mono	Switches outputs between mono and stereo mode (Page 24)
My ID	Sets the Tweak ID to 1-99 (Page 26)
Password	If password is enabled, the Setup menu will not be accessible with out the password (Page 27)

Setting the Routing

```
EXIT         ROUTING        SET
                           ROUTE
          MO8ME CH: XX

          ROUTED FROM:
PREV      SNAKE CH: X       NEXT
CH          <SCROLL>         CH
```

- Press encoder until Mix Master Menu comes up
- Press SETUP soft key
- Press ROUTING soft key on Setup Menu to view Routing screen
- The Tweak is shipped with factory default routing of Network channels 1-32
- Use the PREV CH / NEXT CH soft keys to select channels 1-16 from the **mo8me**; **mo8me** channels be displayed as MO8ME CH: XX
- Turn encoder to select 32 input channels from the 256 Network channels. Network channels are displayed as ROUTED FROM: SNAKE CH: XX. Each network channel will correspond to a specific **mo8me** channel; For example; **mo8me** Ch: 1 = Snake Ch: 5, **mo8me** Ch: 2 = Snake Ch: 8, **mo8me** Ch: 3 = Snake Ch: 12 and so on to **mo8me** ch: 32
- Press SET ROUTE to set each route
- SUCCESS! will appear to indicate the selected route has been saved
- *Network channel routes are global to all eight output channels*
- Press EXIT to return to Setup Menu

Connecting to a mo8me Unit

```
EXIT        NEW UNIT        SAVE

          CURRENT: AXX

           NEW: AXX
            <CHANGE>
```

- Press encoder until Mix Master Menu comes up
- Press SETUP soft key
- Press MO8ME soft key on Setup screen to view the New Unit screen
- The CURRENT: AXX shows address of the **mo8me** currently connected to the Tweak
- The **mo8me** address corresponds to the least significant byte of the **mo8me's** IP address, such as A01 = 192.168.1.**1**
- Turn the encoder to select the new address, NEW: AXX will display new address (i.e. A03)
- Press SAVE soft key to save the new address
- Press EXIT to return to Setup Menu

Selecting Mono or Stereo Mode

```
EXIT        OUT MODE        SAVE

           MIX X & Y

            STEREO
PREV                        NEXT
MIX         <CHANGE>        MIX
```

- Press encoder until Mix Master Menu comes up
- Press SETUP soft key
- Press ST/MONO soft key on Setup Menu to view the Out Mode screen
- The display shows pairs of mix channels shown as MIX X & Y
  (i.e. MIX 1 & 2, Mix 3 & 4)
- Press the PREV MIX / NEXT MIX soft keys to scroll through mix channels
- Turn the encoder to select STEREO or MONO mode
- Press the SAVE soft key to save the setting
- Press EXIT to return to Setup Menu

The following is a sample of the Select Mix Menu displaying a combination of mono and stereo channels. Out 1 indicates mix channels 1 and 2 are in stereo. (Use soft keys 1 or 2 to select Out 1); Out 3, 4, 5 and 6 are in mono; Out 7 indicates mix channels 7 and 8 are in stereo. (Use soft keys 7 or 8 to select Out 7)

```
          SELECT
OUT 1      MIX       OUT 5

                     OUT 6

OUT 3

OUT 4     <SCROLL>   OUT 7
```

Selecting Default Mix and Master User

```
EXIT        DEFAULT        SAVE
              MIX


              ALL
           <CHANGE>
```

What is a Default Mix?
The default mix is the output or mix channel that is selected for a particular Tweak. Assigning a default mix to each user, allows only one person (the master user or mix 1) to control global changes, and gives individual users (mix 2-8) control of their own mix.

By setting a default mix you are putting the Tweak in single user mode.
When a default mix is selected:
•   The Select Mix Menu will not be available
•   The Tweak wakes where it left off

When no default or "ALL" is selected:
•   The Tweak wakes to Current Mix Menu
•   User can easily select a new mix

Follow the instructions below to assign a default mix:

•   Press encoder until Mix Master Menu comes up
•   Press SETUP soft key
•   Press DFLT MIX soft key on Setup screen to get to the Default Mix screen
•   Turn the encoder to select the desired channel or ALL (i.e. MIX 1 or MIX 1 & 2 [stereo channels])
•   The MIX 1 is the master user. Only the master user can adjust input EQ levels and change channel names.
•   Press the SAVE soft key to save the setting
•   Press EXIT to return to Setup Menu

Setting the Time Out and Back Light

```
EXIT          BACK          SAVE
              LIGHT

           TIME OUT

LOW        XX SECS

HIGH       <CHANGE>
```

Setting the Time Out:

- Press encoder until Mix Master Menu comes up
- Press SETUP soft key
- Press BK/LIGHT soft key on Setup Menu to view the Back Light screen
- Turn the encoder to set time-out
- Time-out can be set at OFF or for up to 4 minutes (displayed in 10 second increments)
- Press the SAVE soft key to save the setting
- Press EXIT to return to Setup Menu

Adjusting the Back Light:

- Press BK/LIGHT soft key on Setup Menu to view the Back Light screen
- Back light can be adjusted by pressing the LOW or HIGH soft key

## Assigning Your Tweak an ID Number 1-99

```
EXIT         TWEAK         SAVE
             SETUP

        SELECT TWEAK ID

            ID: XX

          <SCROLL>
```

NOTE: Each Tweak in a given environment must have a unique Tweak ID 1-99.

- Press encoder until Mix Master Menu comes up
- Press SETUP soft key
- Press MY ID soft key on Setup Menu to view the Tweak Setup screen
- Turn the encoder to toggle ID numbers 1-99.
- The displayed ID: XX identifies the selected ID number (i.e. ID: 1)
- Press the SAVE soft key to save the setting
- Press EXIT to return to Setup Menu

Enabling the Password
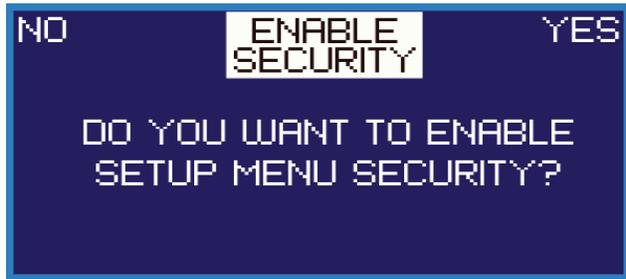
- Press encoder until Mix Master Menu comes up
- Press SETUP soft key
- Press PWORD soft key on Setup Menu to view the Enable Security screen
- Press YES to enable the password
- Use soft keys to enter a four number password, see the illustration below. User can only use a combination of the numbers 1, 2, 3 and 4

- User will be prompted to reenter password
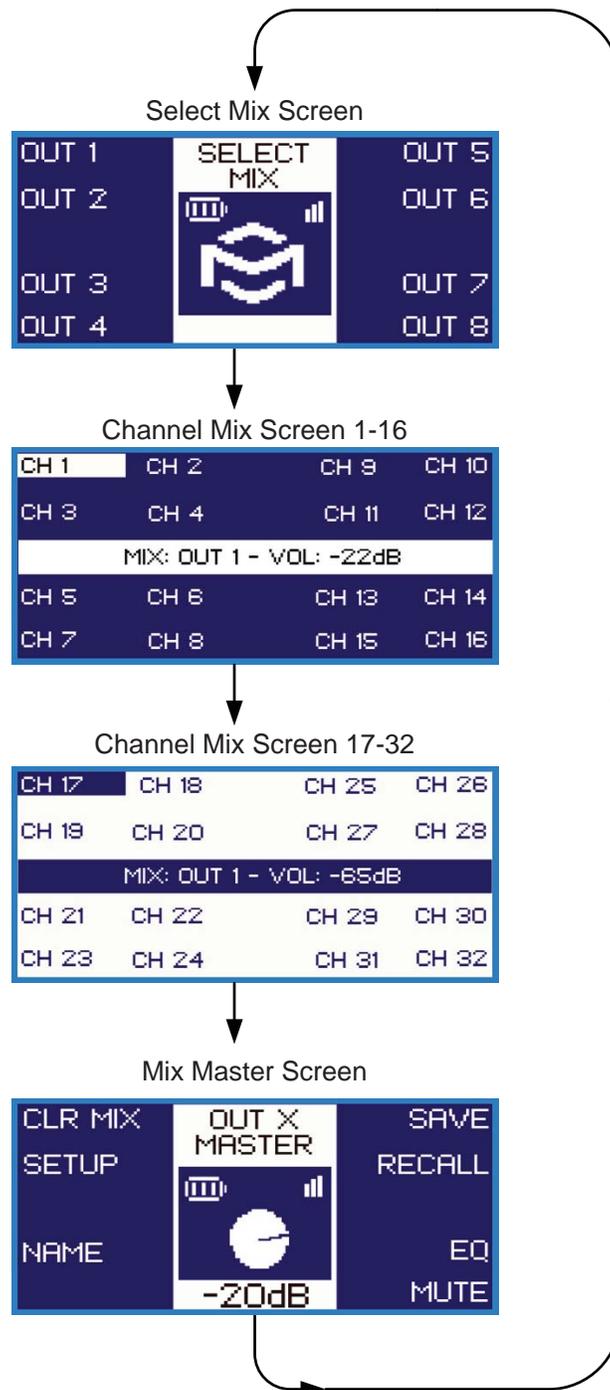- Screen will flash PASSWORD SAVED and return to the Setup Menu

Disabling the Password

- If password has been enabled and user wishes to disable it;
- Press encoder until Mix Master Menu comes up
- Press SETUP soft key
- Press PWORD on Setup Menu
- User will be prompted to enter the password which will open the Enable Security screen
- Press NO to disable password
- Unit will automatically return to the Setup Menu

NOTE: For password problems and troubleshooting, please call Pro Co Sound technical support at 888-253-7360.

The Tweak: Mixing

Main Mix Menus

The Main Mix Menus are Current Mix, Channel Mix and Mix Master. Press the encoder to move between these main menus. See pages 29 through 36 for details on using the mix menus.

Select Mix Screen

OUT 1	SELECT MIX	OUT 5
OUT 2		OUT 6
OUT 3		OUT 7
OUT 4		OUT 8

Channel Mix Screen 1-16

CH 1	CH 2	CH 9	CH 10
CH 3	CH 4	CH 11	CH 12
MIX: OUT 1 - VOL: -22dB			
CH 5	CH 6	CH 13	CH 14
CH 7	CH 8	CH 15	CH 16

Channel Mix Screen 17-32

CH 17	CH 18	CH 25	CH 26
CH 19	CH 20	CH 27	CH 28
MIX: OUT 1 - VOL: -65dB			
CH 21	CH 22	CH 29	CH 30
CH 23	CH 24	CH 31	CH 32

Mix Master Screen

| CLR MIX	OUT X MASTER	SAVE
SETUP		RECALL
NAME		EQ
	-20dB	MUTE

Select Mix Menu

- This screen allows the user to select a mix to create personal mixes.
- Each **mo8me** can support up to eight Tweaks.
- Each user is assigned a mix 1-8.
- Select the mix using the corresponding soft key.
- Selecting any mix will bring user to the **Channel Mix Menu** for that output. (See below)
- Pressing the encoder will also advance to the Channel Mix Menu.
- If a default mix is selected, the Current Mix Menu will not be available.

Note: Mix 1 is the master user. Only the master user can adjust the input EQ levels and change channel names.

Channel Mix Menu (1-16 and 17-32)
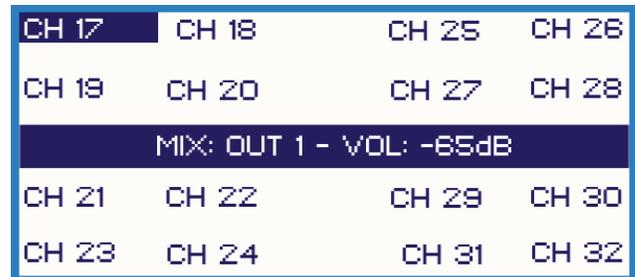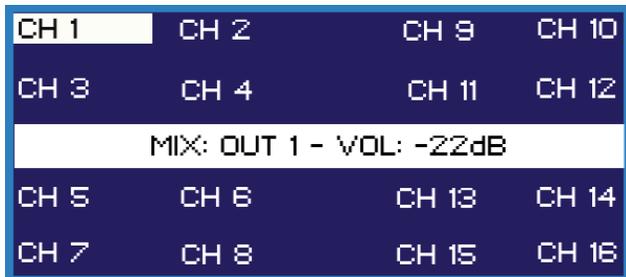
- Press and hold the desired channel soft key to view the **Channel Menu**, illustrated below. The Channel Menu allows user to make adjustments such as EQ, name, solo, mute and pan (if channels are in stereo.) For details on making adjustments; see page 30-31 for master user (mix 1 or mix 1 & 2). See page 31 for mix 2-8 users.
- Volume can be adjusted for each channel on this screen by selecting a channel and turning the encoder to the desired level.

Channel Menu:
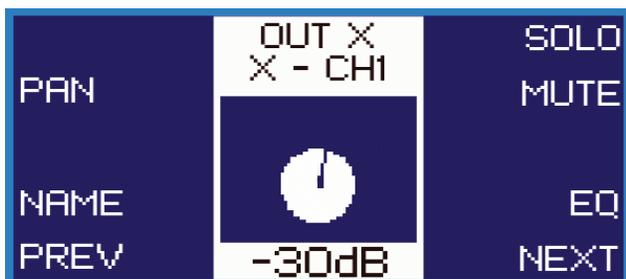
Setting Your Input Levels (For Master User - Mix 1, Mix 1 & 2)

```
        OUT X
        X - CH1                  SOLO
PAN                              MUTE


                    ●
NAME                             EQ
PREV         -30dB               NEXT
```

- Use this menu to make adjustments to the 32 **mo8me** input channels.
- Press encoder until Channel Mix Menu comes up.
- Press and hold the desired channel soft key to view Channel Menu.
- Only the master user (mix 1, mix 1 & 2) can make changes to EQ and channels names.
- Pan will only be available when outputs are in stereo.
- The PREV/NEXT soft keys can also be used to scroll through channels.

▸▸ **Setting Channel Volume:**

- Turn the encoder to change volume level
- It will be shown in dB's on the screen dial
- The PREV/NEXT soft keys can also be used to scroll through channels.
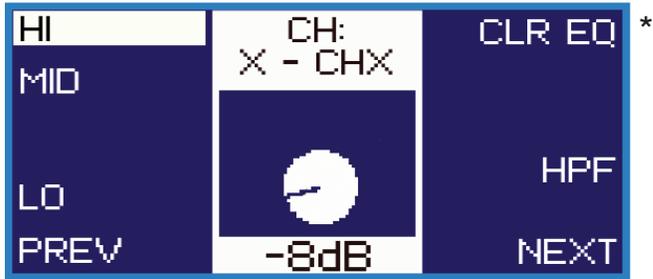
▸▸ **Naming Input Channels:**

```
EXIT          CH X            SAVE
              NAME


              CH X


  <<        <SCROLL>           >>
```

Why name individual input channels?
Naming channels makes is easier for the user to mix. For example Ch 1 can be renamed
HIHAT, CH 2 renamed TOMS, CH 3 renamed CYMBL and so on.

- Select NAME soft key from the Channel Menu
- Turn the encoder to enter channel name
- Names have a 5 character limit
- Use the << >> soft keys to move curser
- Press the SAVE soft key to save the name
- Press EXIT to return to Channel Menu

➤ **Adjusting (and Clearing) EQ Levels for Channels 1-32:**

 *

- Press EQ soft key from Channel Menu
- Press PREV/NEXT soft keys scroll input channels 1-32
- Select HI, MID or LO and use encoder to make adjustments
- Select HPF to engage the High Pass Filter. Deselect it to disengage
- Push down on encoder to return to previous menu

* Pressing CLR EQ will clear the EQ levels for all 32 channels

EQ Specifications:

|	
High Shelving … +/-12dB @ 16kHz	Mid Peaking … +/-12dB @ 1.6kHz
Lo Shelving … +/-12dB @ 80Hz	HPF … 12 dB/octave, -3 dB @ 80Hz

Setting Your Output Levels (Mixes 2-8)

- Press encoder until Channel Mix Menu comes up
- Press and hold the desired channel soft key to view Channel Menu
- Users for mixes 2-8 can adjust volume by turning the encoder
- For instructions on: panning see page 33, muting see page 34 and selecting solo see page 33
- Use PREV/NEXT to scroll though all 32 channels
- Press encoder to return to Channel Mix Menu

Setting the Pan for Stereo Channels
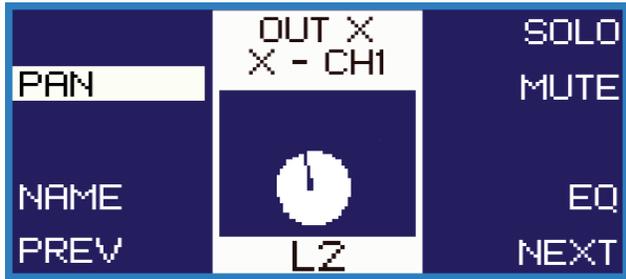
- Press encoder until Channel Mix Menu comes up
- Press and hold the desired channel soft key to view Channel Menu
- Select PAN soft key
- Use PREV/NEXT soft keys to scroll input channels 1-32
- Turn encoder to select pan left or right and the desired volume (i.e. L1-L12, Center, R1-R12)
- Change will automatically be saved
- Press down on encoder to return to Channel Mix Menu

Note: Panning is ONLY available for stereo channels. See page 24 for details on **How to Select Mono or Stereo Mode**.

Selecting a Solo Channel

What does it mean?
Selecting SOLO gives the user the ability to hear only one selected channel.

- Press encoder until Channel Mix Menu comes up
- Press and hold the desired channel soft key to view Channel Menu
- Press PREV/NEXT soft keys to scroll input channels 1-32
- Select SOLO soft key
- Only the selected channel will be heard
- Deselect SOLO to hear all channels again
- Scrolling to the next channel will automatically deselect SOLO mode
- Push down on encoder to return to Channel Mix Menu

Muting a Channel
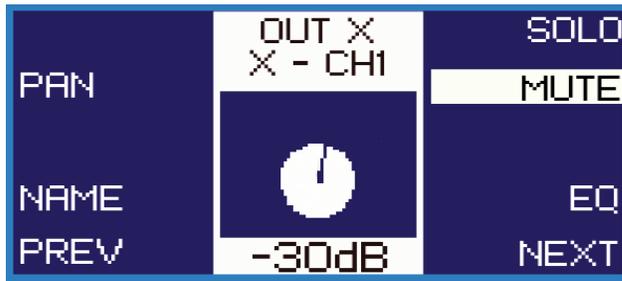
What does it mean?
Selecting MUTE will mute only the selected channel(s).

- Press encoder until Channel Mix Menu comes up
- Press and hold the desired channel soft key to view Channel Menu
- Select MUTE soft key
- Only the selected channel(s) will be muted
- If multiple channels need to be muted, use PREV/NEXT soft keys scroll input channels
- To turn channel(s) back on, deselect MUTE on each channel
- Push down on encoder to return to Channel Mix Menu

Setting Your Output Channel Master Mix Levels

*

```
CLR MIX      OUT X       SAVE
             MASTER
SETUP                    RECALL
             [||||]   .il

NAME                       EQ
             -20dB       MUTE
```
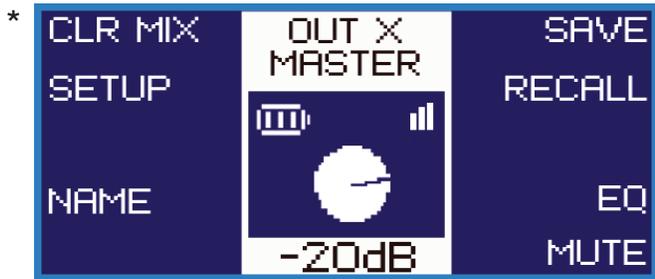
* CLR MIX will clear Master
volume and pan.

- Press encoder until Master Mix Menu comes up.
- User will be able to adjust **master** EQ levels and change the mix name for their individual output channel.

  ⇸ **Setting Master Mix Volume:**

  - Turn the encoder to change volume level
  - It will be shown in dB's on the screen dial
  - The PREV/NEXT soft keys can also be used to scroll through channels
  - Mute entire Master Mix by pressing MUTE soft key and deselect to remove mute

  ⇸ **Setting Master Mix Name:**

```
EXIT         MASTER      SAVE
             NAME

             OUT 1

<<          <SCROLL>      >>
```

  - Press NAME on Master Mix Menu
  - Scroll encoder to change output master name (i.e. DAVE)
  - Names have a 5 character limit
    Use << >> to move curser
  - Press the SAVE soft key to save the name
  - Press EXIT to return to Master Mix Menu

  ⇸ **Setting Master Mix EQ:**

```
HI           OUT X      CLR EQ
             MASTER
MID

             ( | )
LO

             -3dB
```

* CLR EQ will only clear
Master Mix EQ levels.

  - Press EQ on Master Mix screen
  - Press HI, MID or LO soft keys to adjust EQ levels by turning the encoder
  - EQ levels will automatically save
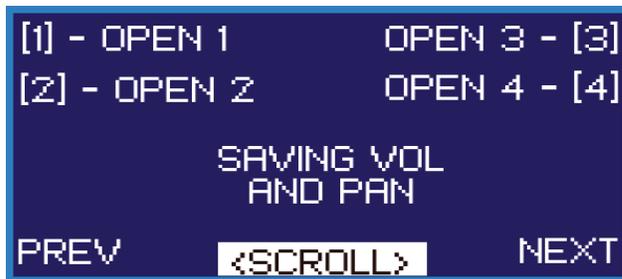 - Press encoder to return to Master Mix Menu

Saving Mixes

```
[1] - OPEN 1          OPEN 3 - [3]
[2] - OPEN 2          OPEN 4 - [4]

       SAVING VOL, PAN,
        ROUTE AND EQ

PREV      <SCROLL>        NEXT
```

What does it mean?
The Tweak can save up to 16 different individual mixes. See the **Recalling Mixes** on page 36 for details on recalling previously saved mixes.

Note: When the master user (mix 1, mix 1 & 2) does a save or recall, the EQ, route and new names are also saved or recalled. For all other mixes, only the volume levels and pan settings are saved or recalled. If mixes 2-8 are saved or recalled, the Saving Mixes screen will look like the following: (Mix 1 will include EQ and route)

```
[1] - OPEN 1          OPEN 3 - [3]
[2] - OPEN 2          OPEN 4 - [4]

         SAVING VOL
          AND PAN

PREV      <SCROLL>        NEXT
```

After creating a mix, follow the steps below to save it:

- Press encoder until Mix Master Menu comes up
- Press SAVE soft key on Mix Master screen
- Press PREV/NEXT soft keys to scroll open numbers 1-16
- Select an open number (i.e. [1] - OPEN 1) and the below screen will open

```
EXIT       MEMORY        SAVE
            NAME

          OPEN X


PREV      <SCROLL>        NEXT
```

- Turn the encoder to enter a name for the mix (i.e. VOCALS MIX)
- Mix names have a 10 character limit
- Use the << >> soft keys to move curser
- Press the SAVE soft key to save the setting
- Press EXIT to return to Saving Mixes screen
- The saved mix will be displayed as [1] - VOCALS MIX
- Push down on encoder to return to Master Mix screen

Recalling Mixes

```
[1] - VOCALS MIX    OPEN 3 - [3]
[2] - OPEN 2        OPEN 4 - [4]

     RECALLING VOL, PAN,
       ROUTE AND EQ

<<        <SCROLL>          >>
```

- Select a mix from Current Mix Menu
- Press encoder until Mix Master Menu comes up
- Press RECALL soft key on Mix Master screen
- Press PREV/NEXT soft keys to scroll saved mixes
- Select a previously saved mix (i.e. [1] - VOCALS MIX)
- Unit will ask for confirmation:

```
[1] - VOCALS MIX    OPEN 3 - [3]
[2] - OPEN 2        OPEN 4 - [4]

        PRESS AGAIN
        TO RECALL

PREV      <SCROLL>        NEXT
```

- Select desired mix again and unit will display SUCCESS! to indicate recall was made
- Push down on encoder to return to Mix Master Menu

mo8me Specifications

Output Module: mo8me

Resolution .... 24 bit, 48 kHz

Output Impedance .... 300-600 ohms, balanced

Maximum Output Level .... +7dBu

Dynamic Range .... 110dB, minimum

Crosstalk ....<-100dB at 1 kHz

Frequency Response .... 20-20kHz +/- 0.05dB

Wireless Range .... 300′ Indoor

Wireless Frequency .... ISM 2.4GHz

Network Specifications

Standard Gigabit Ethernet Protocol

Power Over Ethernet (PoE) 802.3af Compatible

Up to 256 total active system inputs at 48K sampling

Onboard memory and programming

0.630 ms A/A latency 48K sampling (no DSP)

1.00 ms A/A latency 48K sampling (with DSP)

Open UDP Ethernet communication for 3rd party control