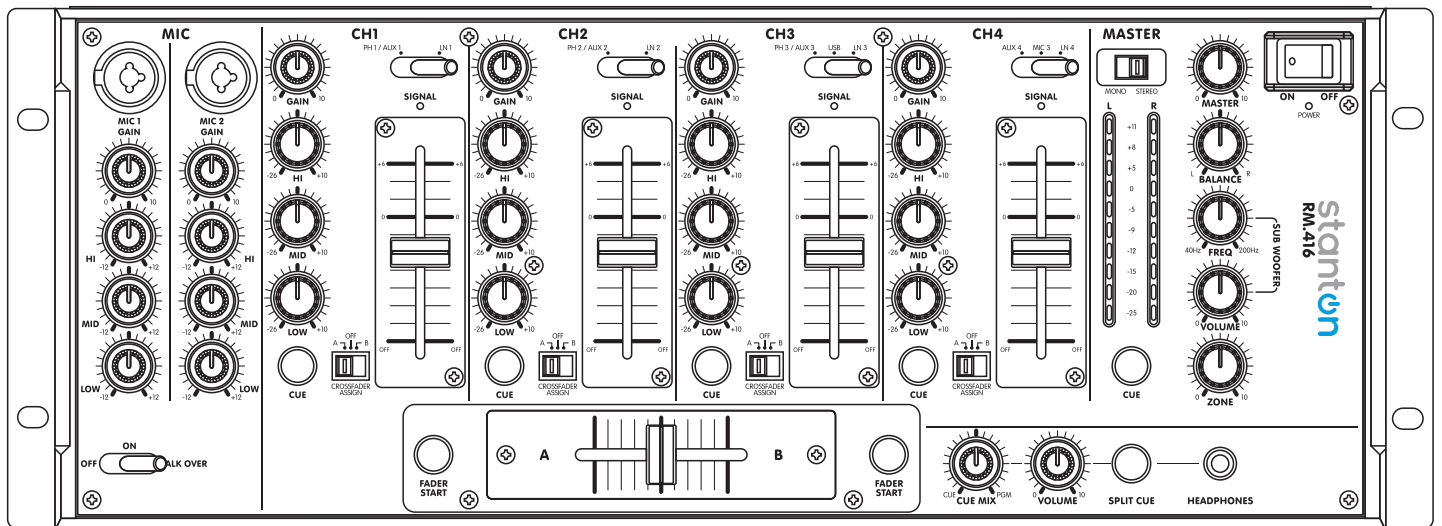




stanton

RM.416

4 CHANNEL RACK MOUNT MIXER



Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use the apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer'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-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 provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with a 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. 
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service 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, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. When the mains plug or appliance coupler used as the disconnect device, it shall remain readily operable.
16. Please keep the unit in a good ventilation environment.
17. 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. 

WARNING

To reduce the risk of electric shock, do not expose this apparatus to rain or moisture. Ensure that the apparatus is not exposed to splashing and that no objects filled with liquids, such as vases, are placed on the apparatus.



CAUTION
DO NOT OPEN
RISK OF ELECTRIC SHOCK



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



The lightning flash with arrowhead symbol within the equilateral triangle is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product enclosure that may be significant enough 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.

1. Introduction	1
1.1. Welcome to the RM.416!	1
1.2. Overview	1
2. Connecting the RM.416	2
3. RM.416 Description	3
3.1. Front Panel	3
3.2. Rear Panel	5
4. Troubleshooting	6
Specifications	7
Registration Card	10
Stanton Warranty	11

1. Introduction

1.1 Welcome to the RM.416!

Thank you for purchasing the RM.416.

Before starting, please check that you have received the following items:

- RM.416 unit
- Power Cable
- User Manual

Now that you have checked that everything was included in the box, let's talk about the RM.416.

1.2 Overview

The RM.416 is Stanton's latest addition to the RM (Rack Mount) series of mixers. With four traditional channels coupled with three microphone inputs the RM.416 is a perfect mixer for the most demanding mobile or club DJ. In addition to a vast array of traditional connectivity, the RM features a USB connection for either playing music from your favorite DJ application or recording your mix in real time.

Additionally, the RM.416 features a subwoofer output with built-in crossover control minimizing the need for an external crossover while maintaining the ability to adjust the output to perfectly match your sound system. All of these features are packed into a 4-space rack unit with rugged metal inner chassis ensuring that the components are protected from damage and maintaining a consistent feel through the long life of the product.

So let's summarize the main RM.416 features:

- 4 Channel 19" rack mount mixer
- Soft power On/Off for silent operation
- 2 Front panel microphone inputs with Gain and 3-band EQ
- USB connection for recording to or playback from a computer
- 3-Band EQ per channel (-26 dB to +10 dB)
- Subwoofer output with Gain and Crossover (40 Hz-200 Hz) control
- VCA crossfader reduces noise and improves life of fader
- User replaceable crossfader and line faders
- Balanced XLR Master output with Trim control
- Balanced 1/4" Zone output (Booth/Aux out)
- 3 Microphone, 8 stereo line, and 3 stereo Phono/Line switchable inputs
- Talkover control for front panel microphone inputs
- A/B/Bypass crossfader assign per channel
- Signal indicator for each channel
- 10 segment LED metering for Master output
- Versatile cueing section with Cue/Master mix control
- Illuminated Cue and Fader Start buttons
- Unbalanced stereo RCA record output
- Internal Power supply (AC 110-240 V switchable)
- Fader Start control for triggering external CD players with crossfader
- Mono/Stereo switch for Master output

Ok, now that we've covered the RM.416 basics, let's get started!

2. Connecting the RM.416

Before starting to connect the RM.416, please read the *Important Safety Instructions* page and study this setup diagram (Figure 2.1). Make sure all faders are at "zero," the Master Volume is turned all the way counterclockwise, and all devices are Off.

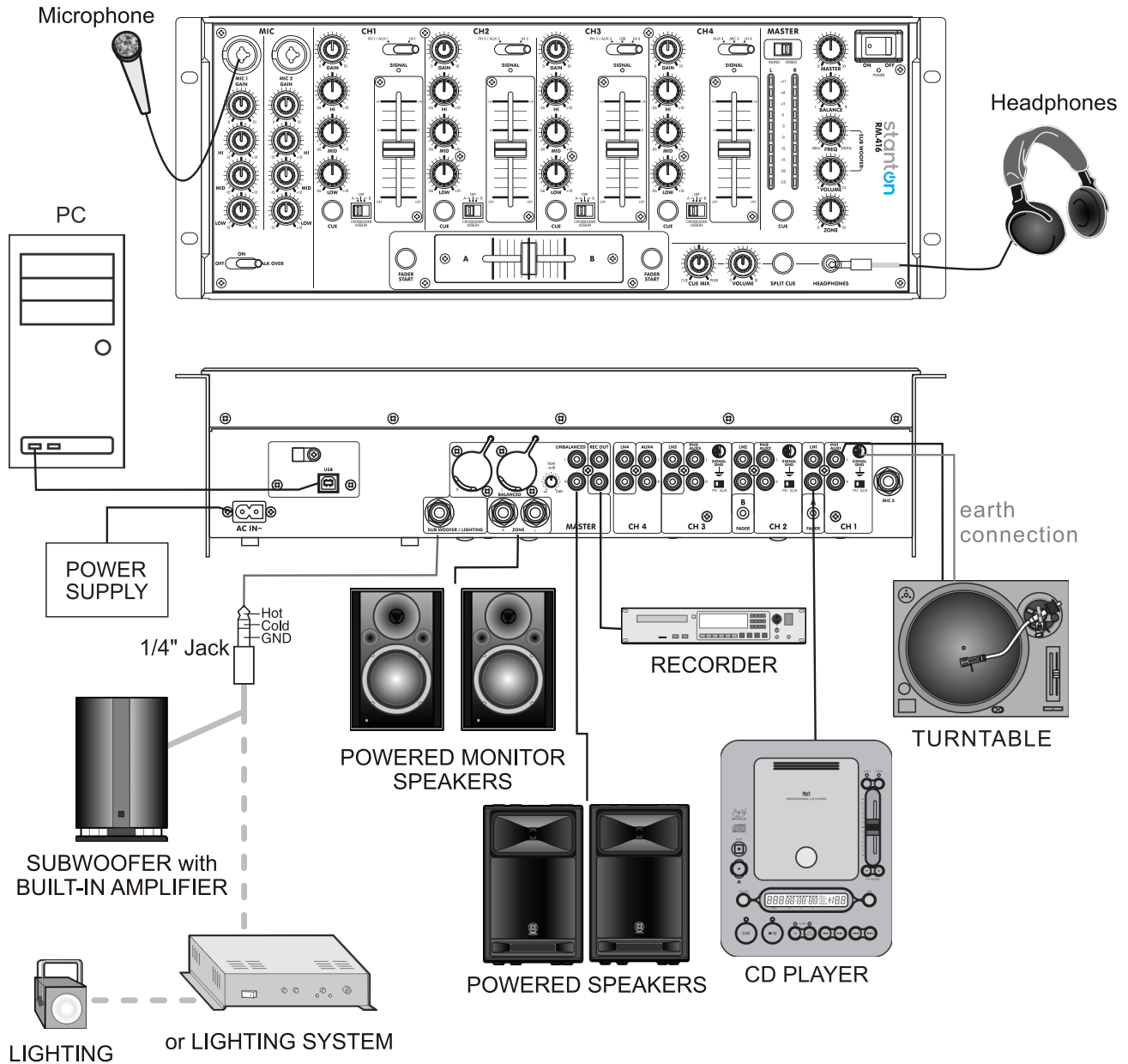


Figure 2.1

Now, please follow these simple instructions:

1. Connect all input sources.
2. Connect your microphone and monitor headphones.
3. Connect the stereo outputs to the power amplifier(s) and/or audio receivers such as tape decks.
4. Plug your mixer and other devices into AC power.
5. Connect your PC to the RM.416 via USB cable.
6. Switch everything On in the following order:
 - Audio input sources (such as turntables or CD players, etc).
 - Mixer
 - Amplifiers

Note: When turning Off, always reverse this operation by turning Off amplifiers, then your mixer, and lastly any input devices.

3. RM.416 Description

3.1 Front Panel (Figure 3.1)

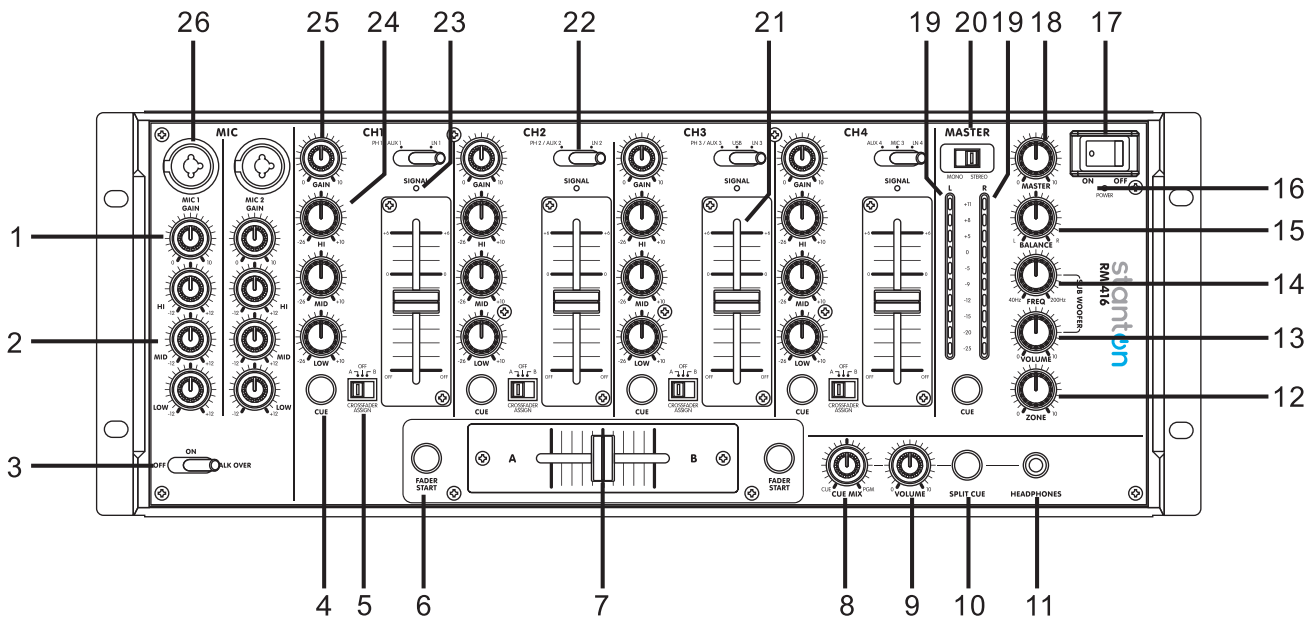
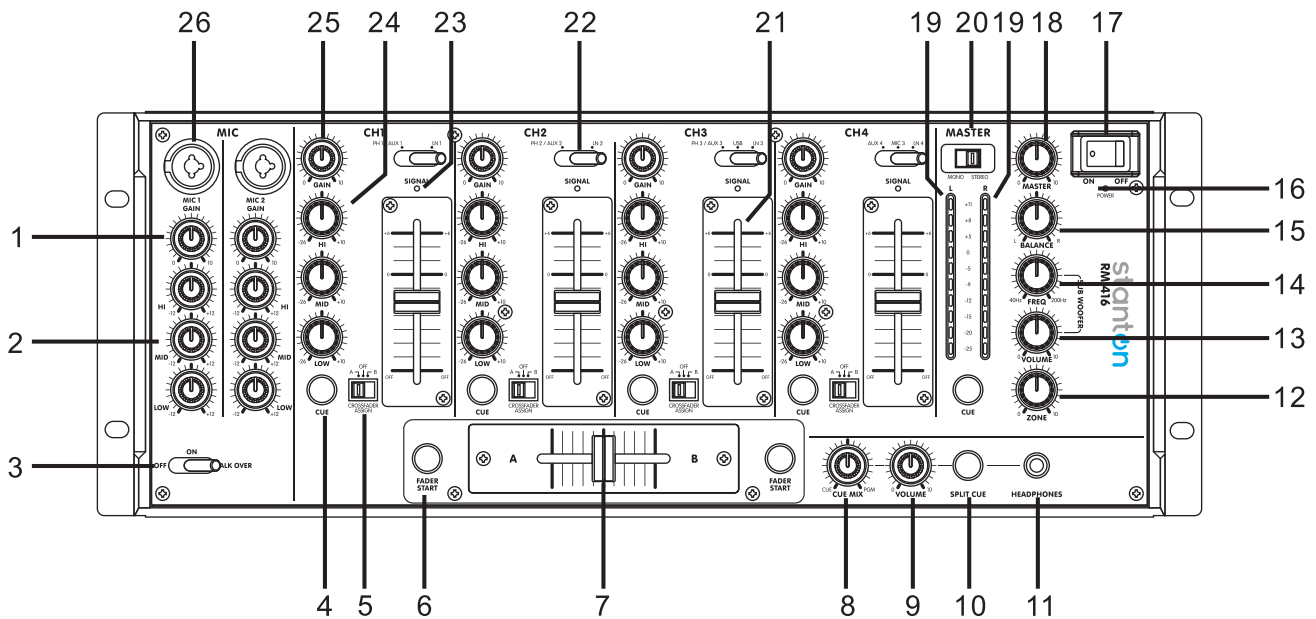


Figure 3.1

1. **Mic Gain (GAIN):** These rotary knobs control the output volume of the Mic channels.
2. **Mic EQ:** These knobs control the frequency response of MIC 1/2 separately. Range -12 dB to +12 dB.
 HI: Adjusts the High frequencies (centered at 10 kHz).
 MID: Adjusts the Mid range frequencies (centered at 1 kHz).
 LOW: Adjusts the Low frequencies (centered at 100 Hz).
3. **Mic ON/OFF/TALKOVER Switch:** Turns the Mic ON or OFF. When the switch is in the TALKOVER position, the mixer's sound level will decrease around 14 dB (except the Mic) so that the announcement is more clearly heard over the music.
4. **Cue (CUE):** Pressing any or all of the CUE buttons routes the respective sources to the headphones .
5. **Crossfader Assign Switch (CF ASSIGN):** To send a channel to the Left or Right side of the crossfader, move the switch to the corresponding position (A or B). If you set the switch to OFF (middle position), the channel *is not* assigned to the crossfader.
6. **Fader Start (FADER START):** This feature allows you to use the crossfader to start and stop a compatible CD player. Press this button to activate it.
7. **Crossfader:** It blends the output signals of CH 1-4 based on the position of the CROSSFADER ASSIGN SWITCH (5).
8. **Cue Mix (CUE MIX):** This knob controls the mix between the Cue signal and the Program audio. When a channel CUE button is pressed, you will hear it on the CUE side of the CUE MIX knob. When the MASTER CUE is pressed, it will be heard on the PGM side of the knob. This feature is particularly useful when mixing without a monitor.
9. **Cue Level Control (VOLUME):** Adjusts Cue volume.
10. **Split Cue (SPLIT CUE):** When this button is engaged, the audio from the Cue bus and the Program bus are merged into a mono signal and routed to either side of the headphones.
11. **Headphone Output (HEADPHONES):** Insert your 1/4" headphones plug here. Be sure to set the CUE LEVEL CONTROL (9) to minimum before you put the headphones on.



12. **Zone (ZONE):** This knob controls the level of the ZONE output located on the Rear Panel (5). The ZONE level *is not* affected by the MASTER VOLUME and MASTER BALANCE. The ZONE output is essentially a second Master output and can be used to drive a booth monitor, feed a recorder, or provide audio to a secondary set of PA speakers.
13. **Subwoofer (VOLUME):** This knob controls the level of the SUBWOOFER output located on the Rear Panel (3).
14. **Frequency (FREQ):** This knob adjusts the cut off frequency of the low pass filter from 40 Hz to 200 Hz. The low adjustment will affect the Subwoofer output.
15. **Balance (BALANCE):** Used to adjust the Left-Right balance of the Master output.
16. **Power Indicator (POWER):** When the POWER SWITCH is in the ON position, the POWER INDICATOR lights red.
17. **Power Switch:** Turns the mixer ON or OFF.
18. **Master Volume (MASTER):** Controls the Master output volume.
19. **PFL/PGM Level Meter:** It allows you to monitor the STEREO Master output level or the Mono output level.
 - In STEREO mode, the meter indicates the stereo level in the Left and Right Master channels.
 - In SPLIT CUE (MONO) mode, Cue level is displayed on the Left meter and Master level is displayed on the Right meter.
20. **Master Switch (MASTER):** Selects either MONO or STEREO for Master output. This is useful if you have a device attached that is only outputting one channel.
21. **Channel Fader:** These faders are used to control the output signal of any source assigned to its particular channel.
22. **Input Selector Switch:** Selects the input source assigned to each channel.
23. **Signal Indicator:** These LEDs indicate the level of the audio input signal.
 - A green light indicates that the RM.416 is receiving audio from a source device.
 - A red light indicates that the audio input level is clipping (over 0 dB). Please turn down the related GAIN knob.
24. **Channel EQ:** These rotary knobs control the frequency response of the selected inputs.
 - HI: Adjusts the High frequencies from -15 dB to +10 dB (at 13 kHz).
 - MID: Adjusts the Mid frequencies from -25 dB to +10 dB (at 1 kHz).
 - LOW: Adjusts the Low frequencies from -25 dB to +10 dB (at 70 Hz).
25. **Channel Gain:** Adjusts the level of the selected input from $-\infty$ to 14 dB.
26. **Microphone Input (MIC):** Connect a standard unbalanced 1/4 plug or XLR 3-pin balanced male plug.

3.2 Rear Panel (Figure 3.2)

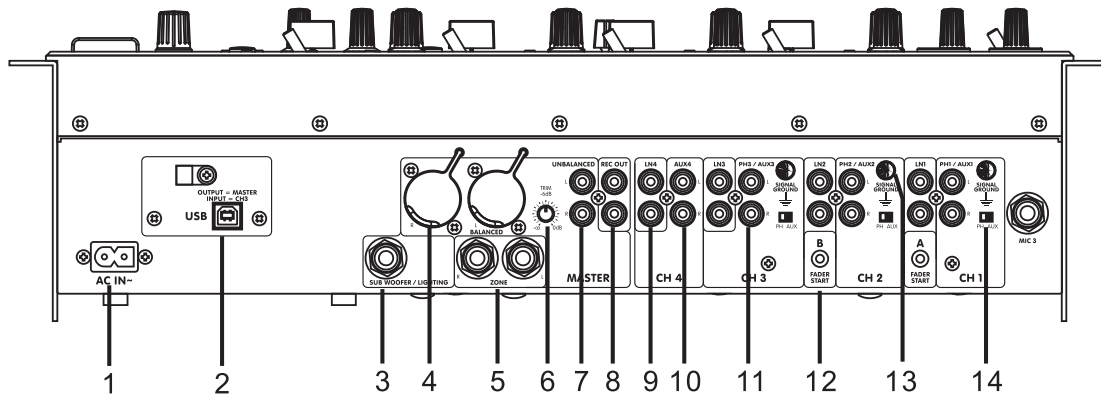


Figure 3.2

1. **Power Connector (AC IN):** While the power is switched OFF, plug the included power cord into the mixer first, and then plug it into the outlet.
2. **USB Port (USB):** After hooking up your computer with the USB 1.1 connections, your computer will detect the RM.416 as an external sound card. You may either play music on your computer or send it via the USB connection as a source (set Channel 3 source to USB), or you may record the Master output audio on your computer using the USB connection.
 - The sent Master output signal *is not* affected by the position of the volume controls. To use the USB connection, please refer to the manual for your chosen software.
 - USB cable limit within 3 meters.
3. **Subwoofer/Lighting Output (SUBWOOFER/LIGHTING):** This 1/4" connector provides a mono line level output of main out. Connect this output to either your subwoofer input, or to the audio input on your lighting controller. The signal *is* affected by the MASTER VOLUME (Front Panel, 18).
4. **Balanced XLR Master Output (BALANCED):** The Master Output includes a pair of balanced XLR connections. These should be used whenever possible.
5. **Zone Output (ZONE):** These stereo pair of unbalanced outputs provides a line level signal with an independent front panel Zone control and *is not* affected by the MASTER VOLUME.
6. **Master Output Trim (TRIM):** This knob is used to decrease the Master output to protect connected amplifiers and speakers from excessive input.
7. **RCA Master Output (UNBALANCED):** The RCA jacks send a low current unbalanced output signal. Use this output for shorter cable runs to signal processors or looping to another mixer. For cable runs greater than 15 feet, please use the XLR outputs.
8. **Rec Output (REC OUT):** This is an unbalanced output designed for various tape and CD recorders. The Record Out level is dictated by the CHANNEL FADER, and it *is not* affected by the MASTER VOLUME.
9. **Line Inputs (LN4):** These inputs are used for unbalanced line level devices (like CD players or soundcards). Input volume will be controlled by the 4th CHANNEL FADER. To monitor any source connected to these jacks, set the channel INPUT SELECTOR SWITCH to LN4.
10. **Aux 4 Inputs (AUX4):** These inputs could be used to connect CD players, Tape Decks and other line level instruments. Input volume will be controlled by the 4th CHANNEL FADER. To monitor any source connected to these jacks, set the channel INPUT SELECTOR SWITCH to AUX 4.
11. **PH/Aux Input (PH3/AUX3):** You can use these Inputs to connect your turntable, CD players, etc. For example:
 - Connect your turntables and set the PH/AUX switch to PHONO.
 - Connect your CD players, Tape decks, iPods, etc and set the PH/AUX switch to AUX.
 To monitor any source connected to these inputs, set the channel INPUT SELECTOR SWITCH to PH 3/AUX 3.
12. **Fader Start Control Jack (FADER):** Connect the mini plug included with your CD player and press the FADER START button. This function allows the fader to activate or return to the preset Cue Point on your compatible CD player.
13. **GND (GROUND TERMINAL):** To eliminate electrical hum, connect the ground cable from your standard turntable ground post to the RM.416 ground terminal. Some turntables (like the Stanton STR8.150) do not require grounding wire.
14. **Channel Line Level Selector Switches (PH/AUX):** These switches are used to change the voltage line levels of their related Phono/Aux RCA inputs jacks. Turn OFF the RM.416 before changing the position of the LINE LEVEL SELECTOR SWITCH. When connecting turntables with magnetic cartridges to these jacks set the switch to PHONO, and when using line level input devices set the switch to AUX.

4. Troubleshooting

Problem / Symptom	Possible Cause / Solution
No Sound.	Is the power ON? Based on your connections, check that you have properly set the INPUT SELECTOR SWITCH. Make sure that the GAIN, CHANNEL FADER, and MASTER VOLUME are turned up. Make sure the channels are properly assigned to the crossfader.
No Sound-Headphones.	Check the CUE VOLUME, CUE MIX, and CUE button settings.
Mixer sounds noisy.	If a microphone is not being used, move the Mic switch to the OFF position and turn all its related controls down.
Microphone doesn't work.	Is the Mic GAIN turned up? Does the microphone require phantom power? This mixer does not provide microphone phantom power.
Sound is distorted-Line Input.	Turn down the channel GAIN. Check EQ settings.
Sound is distorted-Phono Input.	Only plug turntables into this input, do not plug in CD players or other line level sources. Turn down the channel GAIN and check EQ settings.
I hear hum.	Make sure you are using good shielded audio cables. Some less expensive audio cables can be susceptible to hum and interference. Keep your audio cables away from AC power cables and AC transformers. Make sure the mixer is not mounted too close to high power amplifiers or lighting equipment power supplies or ballasts. Make sure your turntables are properly grounded to the back of the mixer if they include a grounding wire.
I hear feedback.	If you are using a microphone, make sure that you are not too close to the speakers or headphones. If you hear feedback on the Phono Input, then the turntable may be mounted too close to the speakers and/or subwoofer. Also, make sure the turntable base is placed on a surface that does not vibrate or resonate easily when the speakers are turned up loudly.

Specifications

1. GENERAL SECTION:	
PRODUCT	Professional Mixer
POWER SOURCE	AC 100 - 240V, 50/60 Hz
POWER CONSUMPTION	21 W
DIMENSIONS (H x W x D)	136.8 mm x 482 mm x 177 mm
WEIGHT	4.5 kg
2. INPUT/OUTPUT IMPEDANCE & SENSITIVITY: (EQ FLAT, MAXIMUM GAIN, CUE MIXING CENTER, LOAD=100 k ohm)	
2.1 Input Impedance and Reference Level:	
Line	20k ohm /-14 dBV +/-0.1 dB (200 mV)
Aux	47k ohm /-14 dBV +/-0.1 dB (200 mV)
Phono	47k ohm /-50 dBV +/-0.1 dB (2 mV)
Mic 1,2,3	10k ohm /-54 dBV +/-0.1 dB (2 mV)
2.2 Output Impedance and Level:	
Rec	1k ohm /-10 dBV (316 mV) +/-2 dB
Master Unbal.	300 ohm /0 dBV (1V) +/-2 dB
Master Bal.	600 ohm /+4 dBm (+1.23 V) +/-2 dB @ LOAD= 600 ohm
Zone	600 ohm /+4 dBm (1.23 V) +/-2 dB @ LOAD= 600 ohm
Subwoofer	600 ohm /+2 dBm (975 mV) +/-2 dB @ LOAD= 600 ohm
Phones	33 ohm /+9.5 dBV (3 V) +/-2 dB @ LOAD= 32 ohm
3. FREQUENCY RESPONSE: (EQ FLAT, MAXIMUM GAIN, MASTER OUTPUT, LOAD= 100k ohm)	
Line, Aux	25 - 20 kHz +/-2 dB
Phono	25 - 20 kHz +2/-3 dB (RIAA)
Mic	25 - 20 kHz +2/-3 dB
4. THD + N: (EQ FLAT, MAXIMUM GAIN, w/ 20 kHz LPF, MASTER OUTPUT, LOAD=100k ohm)	
Line, Aux	Less than 0.05%
Phono	Less than 0.15% @ 1 kHz (A-WEIGHTED)
Mic	Less than 0.15% @ 1 kHz (A-WEIGHTED)
5. MAXIMUM INPUT: (1 kHz, MASTER OUTPUT, THD= 1%, EQ FLAT, MAXIMUM GAIN)	
Line, Aux	More than +4 dBV
Phono	More than -36 dBV
Mic	More than -36 dBV
6. MAXIMUM OUTPUT: (EQ FLAT, MAXIMUM GAIN, THD= 1%, LOAD= 100k ohm)	
Master, Zone	More than +18 dBV (8.0V)
Rec:	More than +8 dBV (2.5V)
Phones	More than +9.5 dBV (3.0V) @ LOAD=32 ohm
7. S/N RATIO: (MAXIMUM GAIN, EQ FLAT, W/20 kHz LPF, A-WEIGHTED, MASTER OUTPUT)	
Line, Aux	More than 80 dB
Phono	More than 69 dB
Mic	More than 64 dB
8. CROSSTALK: (MAXIMUM GAIN, EQ FLAT, W/20 kHz LPF, A-WEIGHTED, MASTER OUTPUT)	
Line, Aux, Phono	More than 70 dB @ 1 kHz between L and R channel
	More than 70 dB @1 kHz between channels

9. EQ	
MIC 1/2	12 +/- 3 dB, -12 +/- 3 dB, at 100 Hz
	12 +/- 3 dB, -12 +/- 3 dB, at 1 kHz
	12 +/- 3 dB, -12 +/- 3 dB, at 10 kHz
MIC 3/CHANNEL	10 +/- 2 dB, below -25 dB at 70 Hz
	10 +/- 2 dB, below -25 dB at 1 kHz
	10 +/- 2 dB, below -15 dB at 13 kHz
10. CHANNEL BALANCE	Within 3 dB, from 0 to -40 dB
11. FADER KILL	More than 75 dB at 1 kHz for CHANNEL FADER
	More than 70 dB at 1 kHz for CROSSFADER
12. USB SECTION: (EQ FLAT, W/ 20 kHz LPF, MASTER OUTPUT, LOAD=100k ohm)	
PLAYBACK:	
OUTPUT	0 dBV (1V) +/- 2 dB (-20 dBfs, 1 kHz, MAXIMUM GAIN.)
THD+N	Less than 0.06% (0 dBfs, 1 kHz, MASTER= 0 dBV OUT)
FREQUENCY RESPONSE	31 - 20 kHz +/- 2 dB (GAIN AT CENTER)
S/N RATIO	More than 80 dB (A-WEIGHTED, GAIN AT CENTER)
CH SEPARATION	More than 65 dB at 1 kHz (0 dBfs, A-WEIGHTED, GAIN AT CENTER)
RECORDING AND PLAYBACK: (LINE 1 kHz, -14 dBV INPUT, GAIN MAXIMUM)	
OUTPUT	4 dBV (1.57 V) +/- 2 dB
THD+N	Less than 0.15%

**PLACE
STAMP
HERE**

**Stanton Magnetics, Inc
772 S. Military Trail
Deerfield Beach, FL 33442
USA
Attn: Technical Support**

stanton
www.stantondj.com

Thank you for choosing Stanton!

Your satisfaction is extremely important to us. We proudly stand behind the quality of our work and appreciate that you put your trust in us. Registering your product will help us guarantee that you are kept up to date on our latest advances.

Warranty Service in the United States:

Please contact Stanton Tech Support BEFORE sending your product. In some cases, our Tech Support team can resolve your problem immediately, avoiding down time due to shipping delays. However, if Tech Support determines that a repair is needed; please call us at +1 (954) 949-9600 to obtain a Return Authorization Number (RA#) PRIOR to shipping your product to us.

Warranty Service outside the United States:

To initiate a warranty repair, please contact the authorized Stanton dealer from whom you purchased your product, and follow the dealer's return policy.

Save your shipping boxes and all packaging materials!

For the fastest and safest product return to Stanton, please use the original shipping carton and packaging materials. Stanton cannot be responsible for any damages incurred during the shipping process due to poor or inadequate packing. Please remember to insure your shipment!

To register your Stanton product on-line, please visit:
http://www.stantondj.com/v2/login_product.asp

Model Type _____ **Model No.** _____ **Serial No.** _____

Date of Purchase _____

Dealer's Name _____

Your Name _____

Your Address _____

E-mail Address _____

Please check this box to receive updates and important information about Stanton via e-mail.

How did you hear about us?

Dealer Magazine Friend Web Other (Please specify) _____


www.stantondj.com

Stanton Warranty

Through Stanton's authorized dealers around the World, Stanton, or one of Stanton's authorized distributors outside the U.S., will, without charge, repair or replace, at the sole discretion of the entity responsible for making the repair or providing the replacement, any Stanton merchandise proved defective in material or workmanship for a period of one (1) year following the date of original purchase. Exceptions to this warranty are as noted below:

The warranty for mechanical parts which are subject to wear and tear are limited to either the earlier of thirty (30) days following the date of original purchase or for 10,000 cycles for switches.

Stanton will warrant all replacement parts and repairs for ninety (90) days from the date of original shipment. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Returns

Authorized Stanton dealers are only authorized to sell and distribute merchandise within a specific country. All goods requiring warranty repair or replacement must be returned (freight prepaid if not hand-delivered) to the authorized Stanton dealer from whom the merchandise was purchased and in the same country where the merchandise was purchased. For purposes of purchases made via the Internet, the merchandise must be returned to the authorized Stanton dealer in the country where the authorized Stanton dealer which sold the merchandise to purchaser is located and not the authorized Stanton dealer in the country where the purchaser is located or the country in which the merchandise was received. Any returns to a non-authorized dealer or to an authorized Stanton dealer not in the same country as the merchandise was intended to be sold or as set forth above will void this warranty.

To initiate a warranty repair, you must contact the authorized Stanton dealer from whom you purchased the merchandise, and follow such authorized Stanton dealer's return policy.

Stanton assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the merchandise. Stanton's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party, or product liability, and relating to the merchandise shall not exceed the price received by Stanton from your purchase of such merchandise. In no event will Stanton be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Stanton or otherwise. To the extent permitted by law and except as otherwise provided above, Stanton disclaims any express or implied warranties of merchantability or fitness for a particular purpose.

The above warranty provides you with specific legal rights. You may also have additional rights, which are subject to variation from state to state and country to country.

If there is a dispute regarding the warranty of merchandise that does not fall under the warranty conditions stated above, please include a written explanation with the merchandise when returned pursuant to the terms and conditions set forth herein.



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