DigiMax™ DP88

8x8 96kHz preamp, converter with ADAT IO, direct analog inputs, remote mic preamps, DAC outputs, and Word Clock IO

Owner's Manual

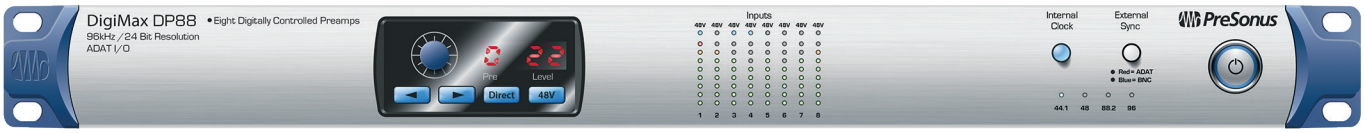

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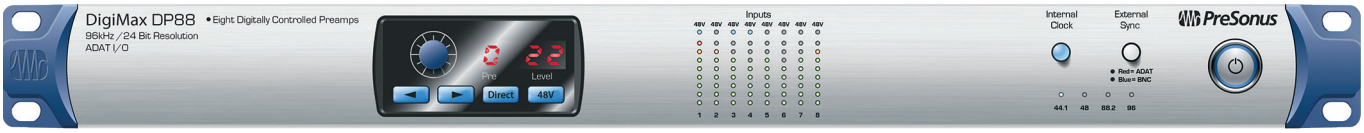
Table of Contents

1 Overview

1.1 Introduction



Thank you for purchasing the PreSonus DigiMax™ DP88 8x8 96kHz preamp/converter. PreSonus Audio Electronics has designed the DigiMax DP88 utilizing high-grade components to ensure optimum performance that will last a lifetime. Loaded with 8 high-headroom, Class A, digitally controlled XMAX™ microphone preamplifiers; 24-bit/96kHz ADAT/dual SMUX I/O; direct-to-converter line inputs; direct preamp outputs; DAC outputs; and Wordclock I/O, the DigiMax DP88 provides unique interoperability with the PreSonus Studio 192 USB 3.0 Audio Interface and Studio Command Center, but is the perfect hardware expansion for any digital recording system with optical lightpipe expansion capability.

We encourage you to contact us at 225-216-7887 (9 a.m. to 5 p.m. M-F Central Standard Time) with questions or comments regarding your PreSonus DigiMax DP88. PreSonus Audio Electronics is committed to constant product improvement, and we highly value your suggestions. We believe the best way to achieve our goal of constant product improvement is by listening to the real experts: our valued customers. We appreciate the support you have shown us through the purchase of this product and are confident that you will enjoy your DigiMax DP88!

About this manual: *We suggest that you use this manual to familiarize yourself with the features, applications, and correct connection procedures for your DigiMax DP88 before trying to connect it to your other studio equipment.*

Throughout this manual you will find ***Power User Tips*** *that will help you to get the most from your DigiMax DP88 expert. Please pay close attention when connecting your DigiMax DP88 to your system. Bad cables and improper grounding are the most common causes of problems encountered in recording and sound reinforcement environments. We recommend checking your cables, connections, and grounding if you experience any noise or sonic performance problems.*

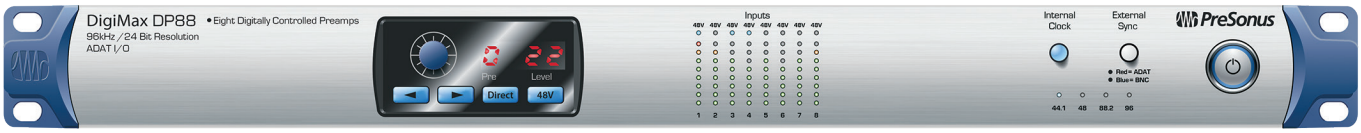
1.2 Summary of DigiMax DP88 Hardware Features

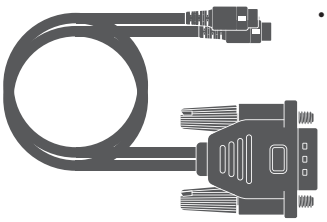
- Flawless analog signal path with top-quality 118dB Burr-Brown digital conversion, and 24-bit resolution
- 8 digitally remote-controlled XMAX™ microphone preamps
    - Controlled from front panel or standard MIDI using simple CC messages to remote control and recall preamp settings
    - Controlled from UC Surface and Studio One 3.0 when connected to Studio 192
- Expands both the inputs and outputs of any interface with ADAT I/O
- 8 channels of ADAT optical I/O at up to 96 kHz (via dual SMUX)
- Individual 48V phantom power with LED indicators
- 8 x 8-LED input metering
- 8 Balanced Direct A/D Line Level inputs (DB25)
- 8 Balanced DAC Outputs (DB25) to expand your interface outputs
- 8 Balanced Direct Outputs (DB25)
- 8 XLR Bypass Mic Inputs (DB25)
- BNC Wordclock I/O
- MIDI I/O
- Solid metal chassis

1.3 What is in the Box

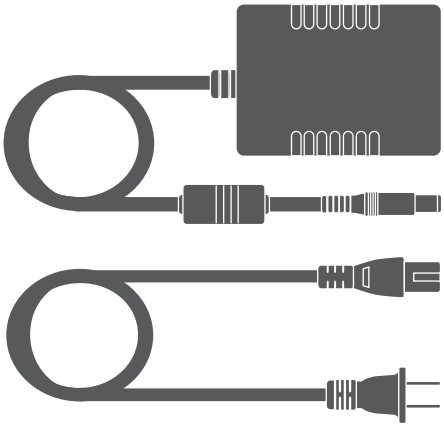
In addition to this User Manual, your DigiMax DP88 package contains the following:

• **PreSonus DigiMax DP88 24-bit/96kHz preamp/converter**





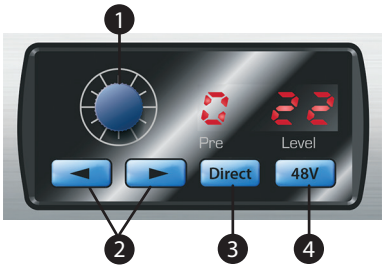
• **MIDI I/O Break-out cable**



• **External power supply**

2 Hookup

2.1 Front Panel Controls



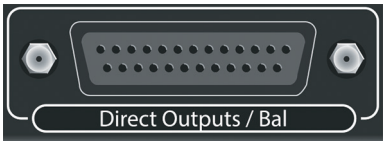
Preamp Controls. These controls allow you to adjust the gain and enable phantom power for every onboard microphone preamp.

1. Preamp Gain: Use this control to adjust the level of microphone preamps 1-8. The display to the far right will show the current trim level.

2. Next / Prev: Use these buttons to select the microphone preamp you wish to control. The display to the right of the trim control will show which preamp is currently being controlled.

3. Direct: The DigiMax DP88 provides direct-to-converter line inputs for every channel via a DB25 connector on the rear panel. Press this button to enable the Direct input for the currently selected channel.

4. 48V: The DigiMax DP88 provides 48V phantom power for each microphone preamp. This feature can be individually enabled for each channel, using this button. When 48V is active, the blue LED at the top of that channel's meters will illuminate.



Power User Tip: *Use the Direct-to-Converter input to connect line level devices or your favorite boutique analog mic preamps. When active, this input completely bypasses the mic preamp circuit and its gain stage to directly access the analog-to-digital converter.*

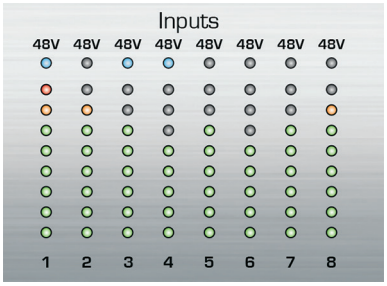
⚠ ***Warning:*** *Phantom power is only required for condenser microphones and can severely damage dynamic mics, especially ribbon mics. Therefore, switch phantom power off for all channels where it is not required.*

XLR connector wiring for phantom power:

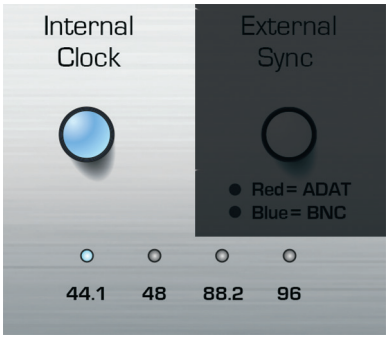
Pin 1 = GND

Pin 2 = +48V

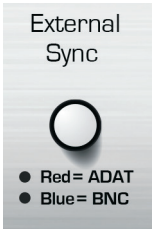
Pin 3 = +48V



Input Meters. These 8-LED meters show the input level of the eight analog inputs on your DigiMax DP88. The green LEDs will illuminate when the input signal ranges from -50 dBFS to -6 dBFS. The yellow LEDs will illuminate when the input signal ranges from -4 dBFS to -2 dBFS. The red Clip LED will illuminate when your input signal reaches -0.5 dBFS. At this level, the signal will begin to overload the analog-to-digital converters and exhibit signs of clipping. Use the gain controls to keep the signal below this level.



Internal Clock / Sample Rate Selector. Use this button to select the internal sample rate for your DigiMax DP88 (44.1, 48, 88.2, or 96 kHz) when it is clocking internally. Pressing this button will cycle through the available sample rates. As each sample rate is selected, its indicator LED will illuminate.



External Clock. The External Clock button allows you to select an external source as the word clock master. Pressing the button once will select the BNC input as the word clock source and the button will illuminate blue. Press it again to select the ADAT 1 input. The button will illuminate red to indicate ADAT as the word clock source.

Power User Tip: *When in either mode, the DigiMax DP88 will recognize to which sample rate the external clock master is set and automatically switch to accommodate it.*

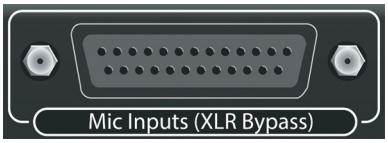
Power Button and Sync light. The lighted ring around the power button of your DigiMax DP88 is a clock source / sync indicator. It lets you know if you unit is receiving word clock correctly.

- **Blue.** When this light is blue, your DigiMax DP88 is correctly synced via Word clock, ADAT, or its internal clock.
- **Flashing Red and Blue.** When this light flashes between blue and red, your DigiMax DP88 is not syncing properly to its chosen word clock. Check your cables and connections.

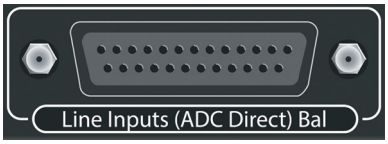
Power User Tip: *Word clock is the timing signal with which digital devices sync frame rates. Proper word clock sync prevents digital devices from having pops, clicks, and distortion in the audio signal due to mismatched digital audio transmission.*

2.2 Back Panel Connections

Microphone Inputs. Your DigiMax DP88 is equipped with 8 digitally controlled PreSonus XMAX™ microphone preamplifiers for use with all types of microphones. The XMAX design provides a Class A input buffer, followed by a dual-servo gain stage. This arrangement results in ultra-low noise and wide gain control, allowing you to boost signals without increasing background noise.

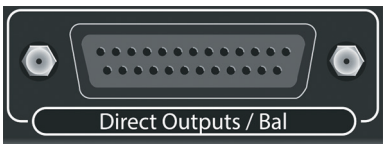


Both DB25 and individual XLR connections are provided for these inputs. Engaging the DB25 input will bypass the corresponding XLR input. In this way, you can hardwire your DigiMax DP88 into your patch bay using the DB25 connection and then bypass the XLR connection as needed.

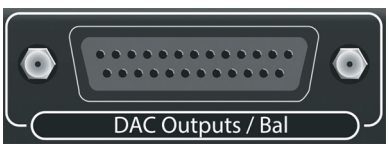


Direct-to-Converter Line Inputs. This DB25 connector is for use with line-level devices. These inputs are scaled to accept line-level signals up to +18 dBFS.

Power User Tip: *When these inputs are engaged, the microphone preamp circuit is bypassed completely and no trim control is available. Typical examples of line-level connections are synthesizer outputs, signal processors, and stand-alone mic preamps and channel strips. Use the output level control on your line level device to adjust its level.*



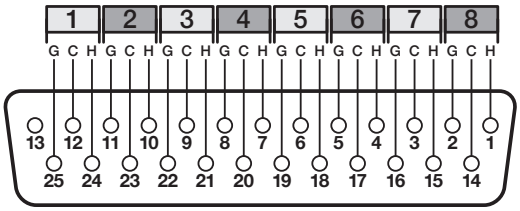
Direct Analog Outputs. These are the balanced, direct analog outputs for the eight microphone preamps on your DigiMax DP88. These outputs are post-gain, and pre-A/D converter.



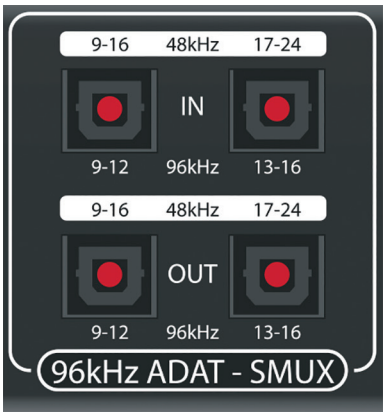
DAC Outputs. These balanced outputs carry the digital-to-analog converter signal from the ADAT input(s) and converts the ADAT optical input signal to an analog signal.

Power User Tip: *Use these outputs in conjunction with ADAT input(s) to expand the analog outputs of your audio interface for monitor mixing or speaker switching. By wiring the ADAT output to the ADAT input, you can also use the DAC and Direct Analog Outputs to create an analog split of your eight input channels. See Section 2.3.3.*

A Quick Note About DB25



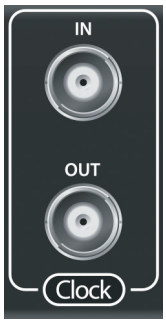
DB25 connectors provide eight balanced channels on a single analog connector. Balanced DB25 fan-out snakes can be obtained in various configurations at most recording and live-sound retailers. Common configurations are DB25 to (8) XLRM, DB25 to (8) XLRF, and DB25 to (8) TRS.



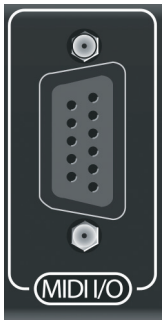
ADAT – S/MUX Input and Output. These are the ADAT – Dual S/MUX connections to connect your DigiMax DP88 to your audio interface. When the sample rate is set to 44.1 or 48 kHz, only the ADAT 1 input and output will function. When set to 88.2 or 96 kHz, each connection will provide four of the available eight channels:

	ADAT 1 Input	ADAT 2 Input	ADAT 1 Output	ADAT 2 Output
44.1 / 48 kHz	Channels 1-8	n/a	Channels 1-8	n/a
88.2 / 96 kHz	Channels 1-4	Channels 5-8	Channels 1-4	Channels 5-8

Power User Tip: *When connecting your DigiMax DP88 to a Studio 192, the ADAT connections will also send and receive preamp control information for the DigiMax DP88 so that it can be controlled directly from UC Surface or Studio One.*



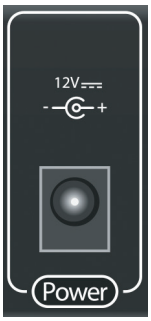
BNC Input and Output. These allow the DigiMax DP88 to receive and transmit word clock to and from other digital audio devices.



MIDI I/O. This is the connection for the included MIDI I/O break-out cable. You can use the MIDI connections to send and receive control data for your microphone preamps in your DAW application. Once you configure your DigiMax DP88 as a MIDI device inside your DAW application, you can control trim and phantom power from within your DAW environment and store those settings with your session.

Below is a chart explaining the MIDI controls for your DigiMax DP88 preamps:

Preamp	MIDI Channel	Trim Level	Phantom Power ON /OFF	Direct Line In On/Off
Preamp 1	Channel 1	CC #7	CC #14 (0 to 63 = On, 64 to 127 = Off)	CC #15 (0 to 63 = On, 64 to 127 = Off)
Preamp 2	Channel 2	CC #7	CC #14 (0 to 63 = On, 64 to 127 = Off)	CC #15 (0 to 63 = On, 64 to 127 = Off)
Preamp 3	Channel 3	CC #7	CC #14 (0 to 63 = On, 64 to 127 = Off)	CC #15 (0 to 63 = On, 64 to 127 = Off)
Preamp 4	Channel 4	CC #7	CC #14 (0 to 63 = On, 64 to 127 = Off)	CC #15 (0 to 63 = On, 64 to 127 = Off)
Preamp 5	Channel 5	CC #7	CC #14 (0 to 63 = On, 64 to 127 = Off)	CC #15 (0 to 63 = On, 64 to 127 = Off)
Preamp 6	Channel 6	CC #7	CC #14 (0 to 63 = On, 64 to 127 = Off)	CC #15 (0 to 63 = On, 64 to 127 = Off)
Preamp 7	Channel 7	CC #7	CC #14 (0 to 63 = On, 64 to 127 = Off)	CC #15 (0 to 63 = On, 64 to 127 = Off)
Preamp 8	Channel 8	CC #7	CC #14 (0 to 63 = On, 64 to 127 = Off)	CC #15 (0 to 63 = On, 64 to 127 = Off)



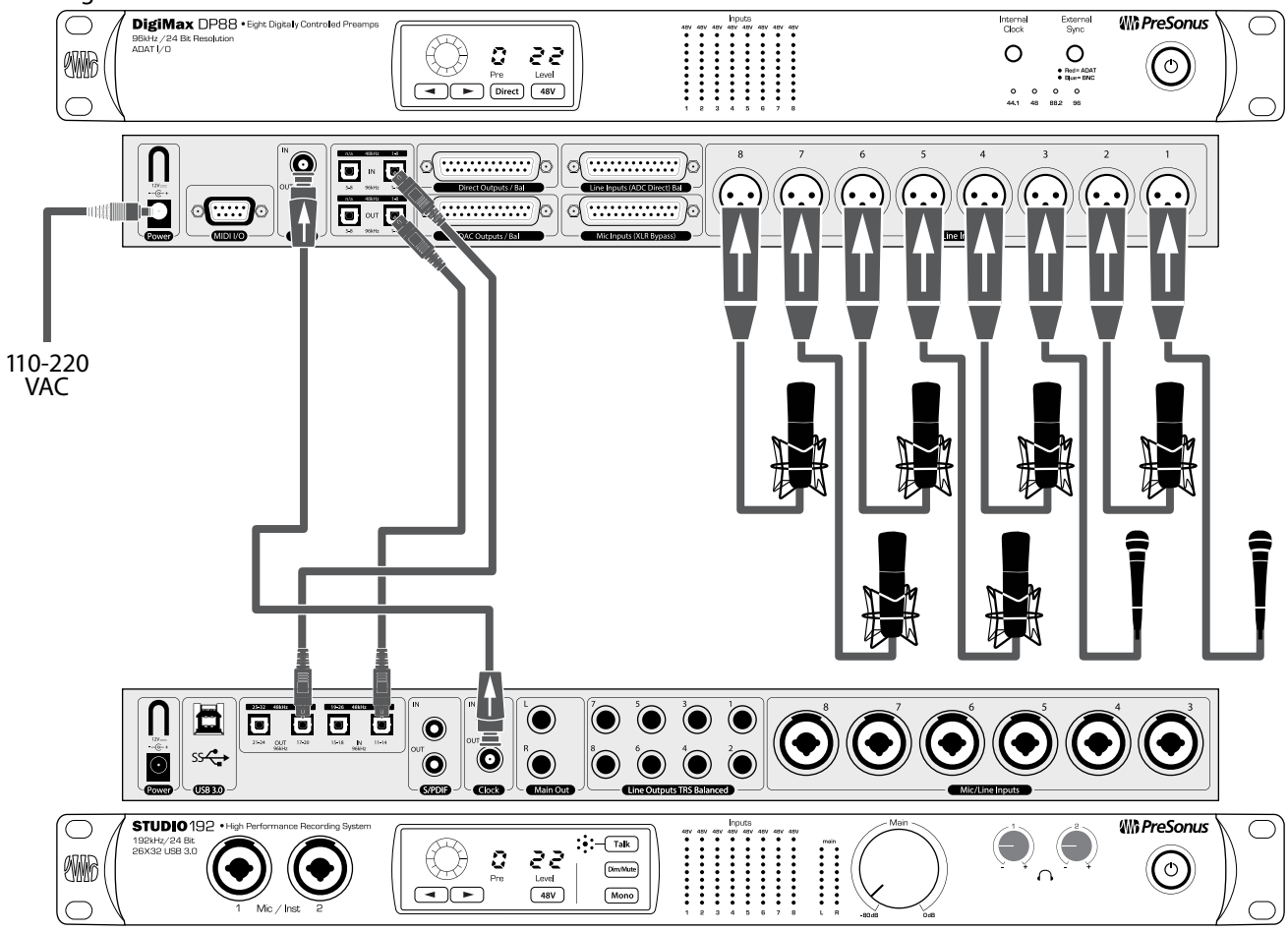
Power User Tip: *Studio One version 3+ provides a device template for the DigiMax DP88 if you are not using it with the Studio 192. Simply select it from device list in the External Device set-up window.*

Power Input. This is where you connect the power supply for your DigiMax DP88.

2.3 Connection Diagrams

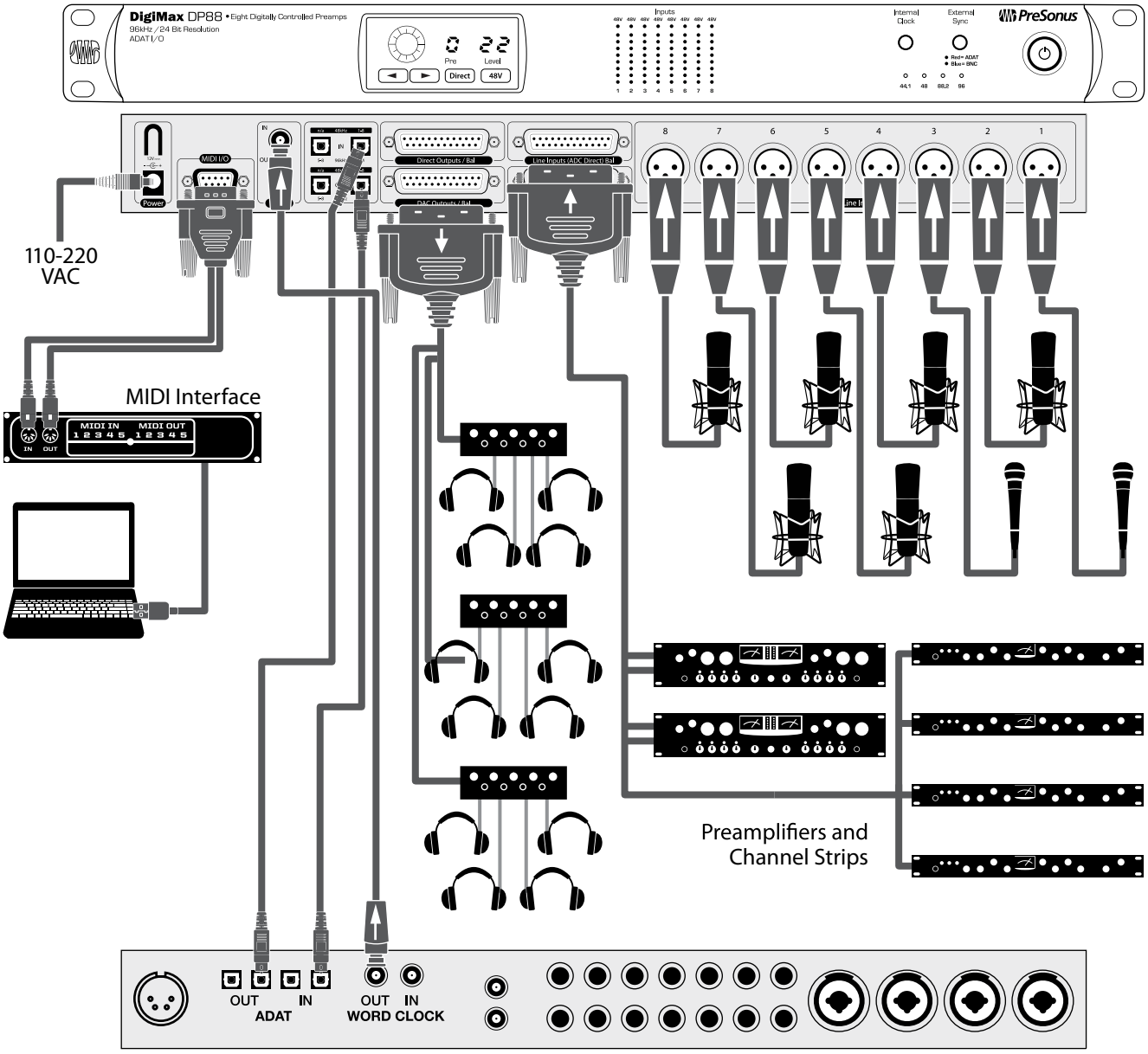
2.3.1 DigiMax DP88 with Studio 192

DigiMax DP88



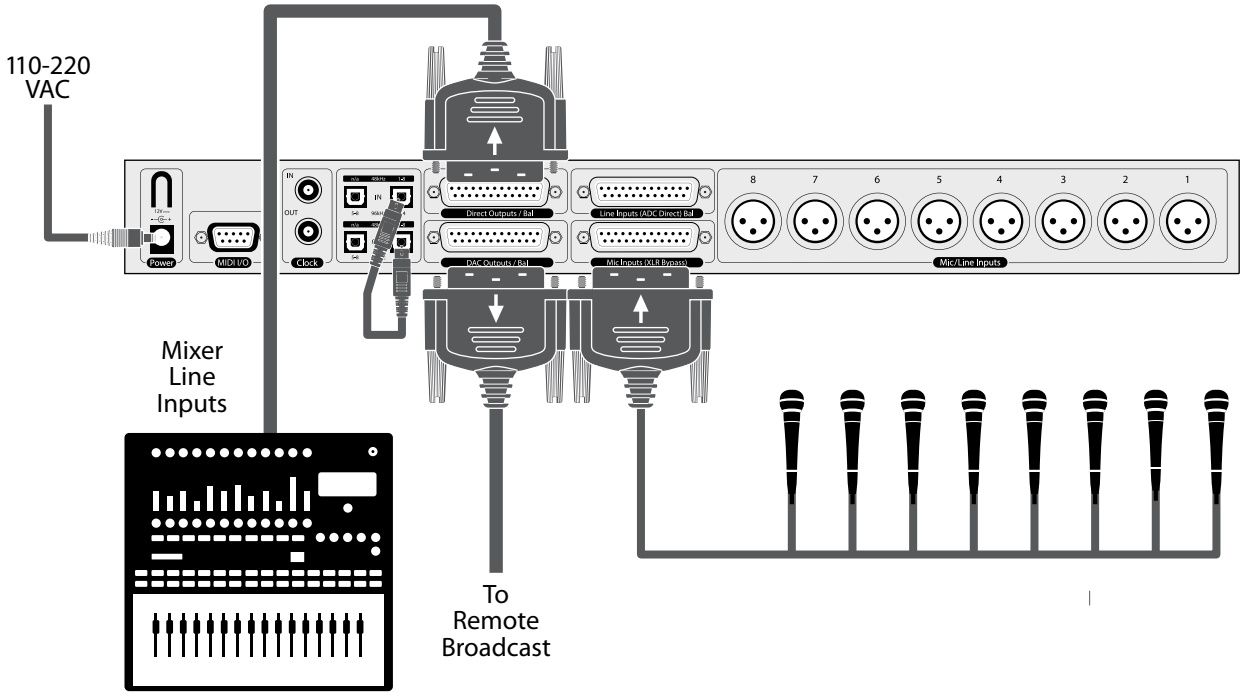
Studio 192

2.3.2 Project Studio



Brand X Interface

2.3.3 Using the DigiMax DP88 as a Mic Split



3 Technical Information

3.1 Audio Specification

Microphone Preamp (XLR Balanced)

Type	XLR Female & DB25 Female, Balanced Remote
Maximum Input level (min. gain, 1 kHz@0.5% THD+N)	+12 dBu, +/-0.5 dB
Gain Control Range	85 dB, +/-1 dB
Frequency Response (A-D)	10 Hz to 40 kHz, +/-0.2 dB
Dynamic Range (min. gain, a-wtd)	> 110 dB
Dynamic Range (mid. Gain, unwtd)	> 105 dB
THD+N (min. gain, a-wtd)	< 0.005%
Input Impedance	1600 Ω
EIN (+55 dB gain, 150Ω input, 20 Hz-22 kHz, a-wtd)	< -128 dBu
Common Mode Rejection Ratio (1 kHz, +55dB gain)	> 55 dB
Phantom Power	+48 V, +/- 3 V, > 8mA per channel

Line Inputs

Type	DB25 Female, Balanced
Maximum Input Level (min. gain, 1 kHz@0.5% THD+N)	+22 dBu, +/-0.5 dB
Gain Control Range	+/-20dB, +/-1 dB
Frequency Response (A-D)	20 Hz to 20 kHz, +/-0.2 dB
Dynamic Range (min. gain, A-weighted)	> 114 dB
Dynamic Range (mid. gain, un-weighted)	> 105 dB
THD+N (1 kHz, -1 dBFS, A-weighted)	< 0.005%
Input Impedance	10 kΩ
Crosstalk (1 kHz, channel-to-channel)	< -80 dB

ADC Direct Line Inputs

Type	DB25 Female, Balanced
Maximum Input Level (min. gain, 1 kHz@0.5% THD+N)	+22 dBu, +/-0.5 dB
Frequency Response (A-D)	20 Hz to 20 kHz, +/-0.2 dB
Dynamic Range (min. gain, A-weighted)	> 118 dB
Dynamic Range (mid. gain, un-weighted)	> 105 dB
THD+N (1 kHz, -1 dBFS, A-weighted)	< 0.005%
Input Impedance	10 kΩ
Crosstalk (1 kHz, channel-to-channel)	< -80 dB

DAC Outputs

Type	DB25 Female, Balanced
Maximum Output Level	+24 dBu, +/-0.5 dB
Frequency Response	20 Hz to 20 kHz, +/-0.2 dB
Dynamic Range (A-weighted)	> 120 dB
THD+N (1 kHz, -1 dBFS, un-weighted)	< 0.005%
Output Impedance	51 Ω
Crosstalk (1 kHz, channel-to-channel)	< -80 dB

Digital Audio

Connection Type	ADAT / Dual SMUX
ADC Dynamic Range (A-wtd, 48 kHz)	118 dB
DAC Dynamic Range (A-wtd, 48 kHz)	118 dB
Bit Depth	24 bits
Internally Supported Sample Rates	44.1, 48, 88.2, 96 kHz

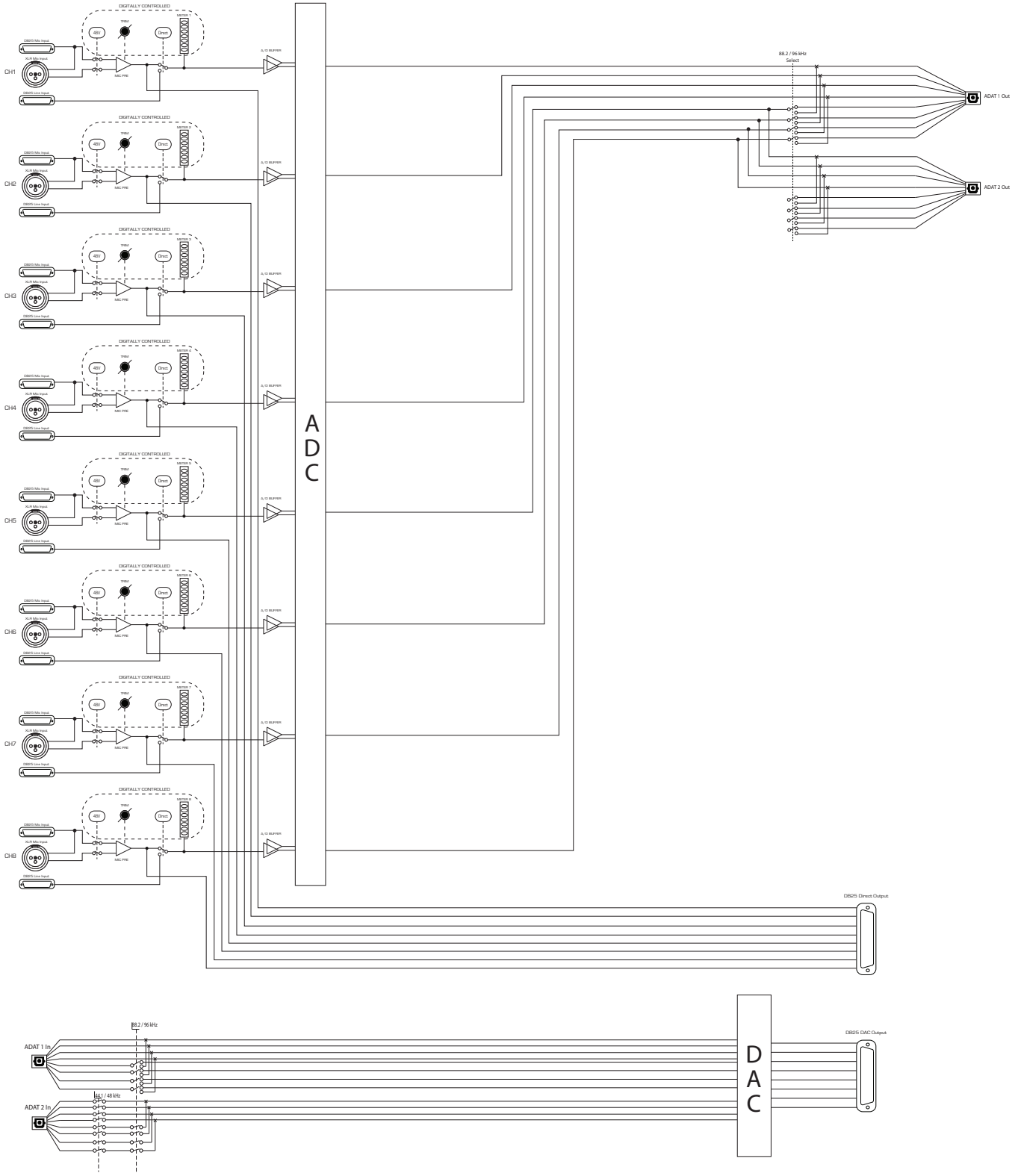
Clock

Jitter	<20 ps RMS (20 Hz – 20 kHz)
Jitter Attenuation	>60 dB (1 ns in => 1 ps out)

Signal Level LEDs

Signal 1	-50 dBFS
Signal 2	-30 dBFS
Signal 3	-20 dBFS
Signal 4	-10 dBFS
Signal 5	-6 dBFS
Signal 6	-4 dBFS
Signal 7	-2 dBFS
Clip	-0.5 dBFS

3.2 Block Diagram



4 Warranty Information

PreSonus' warranty obligations for this hardware product are limited to the terms set forth below:

4.1 How Consumer Law Relates To This Warranty

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE (OR BY COUNTRY OR PROVINCE). OTHER THAN AS PERMITTED BY LAW, PRESONUS DOES NOT EXCLUDE, LIMIT OR SUSPEND OTHER RIGHTS YOU MAY HAVE, INCLUDING THOSE THAT MAY ARISE FROM THE NONCONFORMITY OF A SALES CONTRACT. FOR A FULL UNDERSTANDING OF YOUR RIGHTS YOU SHOULD CONSULT THE LAWS OF YOUR COUNTRY PROVINCE OR STATE.

4.2 PreSonus Products And EU Statutory Warranty

When you purchase PreSonus products, European Union consumer law provides statutory warranty rights in addition to the coverage you receive from the PreSonus limited warranty. A summary of the EU Statutory Warranty and the PreSonus Limited Warranty is below:

	EU Consumer Law	PreSonus Limited Warranty
Repair or Replacement Coverage For	Defects present when customer takes delivery	Defects arising after customer takes delivery
Warranty Period	2 years (minimum) from original date of purchase (unless superseded by PreSonus)	1 year from original date of purchase (unless superseded by PreSonus)
Cost of Coverage	Provided at no additional cost	Included at no additional cost
Who to contact to make a claim	The seller	PreSonus technical support for your region

4.3 What This Warranty Covers

PreSonus Audio Electronics, Inc., ("PreSonus") warrants defects in material and workmanship in PreSonus-branded products under normal use. This Limited Warranty applies only to hardware products manufactured by or for PreSonus that can be identified by the PreSonus trademark, trade name, or logo affixed to them.

4.4 Exclusions and Limitations

This warranty does ***not*** cover the following:

1. Damage caused by accident, abuse, improper installation, failure to follow instructions in the applicable owner's manual or improper operation, rental, product modification, alteration, or neglect.
2. Damage from improper grounding, faulty wiring (AC and signal), faulty equipment, or connection to a voltage range outside published specifications (see applicable owner's manual).
3. Damage to drivers or diaphragm assemblies found to have burnt voice coils from over/under driving or signal surge from another device.
4. Damage occurring during shipment or improper handling.
5. Damage caused by repair or service performed by persons not authorized by PreSonus.
6. Products on which the serial number has been altered, defaced, or removed.
7. Products purchased from an unauthorized PreSonus dealer (products that have transferable warranties are excluded from this provision provided the customer and the product are registered with PreSonus).

4.5 Who This Warranty Protects

This Warranty protects only the original retail purchaser of the product (products that have transferable warranties are excluded from this provision provided the customer and the product are registered with PreSonus)

4.6 How Long This Warranty Lasts

A 1-Year Limited Warranty begins on the original date of purchase from the retail purchaser.

4.7 What PreSonus Will Do

PreSonus will repair or replace, at our sole and absolute option, products covered by this warranty at no charge for labor or materials. If the product must be shipped to PreSonus for warranty service, the customer must pay the initial shipping charges. PreSonus will pay the return shipping charges.

4.8 How to Get Warranty Service (USA)

1. You must have an active user account with PreSonus and your hardware must be on file with your account. If you do not have an account, please go to **https://my.presonus.com** and complete the registration process.
2. Contact our Technical Support Department at (225) 216-7887 or log a support ticket at: **http://support.presonus.com**. TO AVOID THE POSSIBILITY OF SENDING IN A PRODUCT THAT DOES NOT HAVE A PROBLEM, ALL SERVICE REQUESTS SHALL BE CONFIRMED BY OUR TECH SUPPORT DEPARTMENT.
3. The return authorization number, as well as shipping instructions, shall be provided after your service request is reviewed and confirmed.
4. The product should be returned for service in the original product packaging. Products may be shipped in a manufactured "flight" or "road" style cases but PreSonus will NOT cover any shipping damage to these cases. Products that are not shipped in the original product package or a manufactured case may not receive a warranty repair, at PreSonus' sole discretion. Depending on the product model and the condition of your original packaging, your product may not be returned to you in the original packaging. The return shipping box may be a generic box that has been fitted for that model tested if the original gift box is not available.

4.9 How to Get Warranty Service (outside of USA)

1. You must have an active user account with PreSonus and your hardware must be on file with your account. If you do not have an account, please go to: **https://my.presonus.com** and complete the registration process.
2. Contact the Technical Support/Service Department for your region at **www.presonus.com/buy/international_distributors** and follow procedures provided by your PreSonus contact.

Added bonus: Presonus' previously Top Secret recipe for...

Chicken and Andouille Gumbo

Ingredients:

- 1 cup all-purpose flour
- 3/4 cup vegetable oil
- 1 large onion (diced)
- 1 small onion (quartered)
- 6 celery stalks (diced)
- 3 cloves garlic (2 minced, 1 whole)
- 1 lb link andouille sausage
- 4 chicken leg quarters
- 4 qt water
- 4 bay leaves
- 1 tsp thyme
- 1 tsp Old Bay seasoning
- 1-2 cup frozen okra, sliced
- 1/4 cup fresh parsley, minced
- 6-8 eggs (optional)

Cooking Instructions:

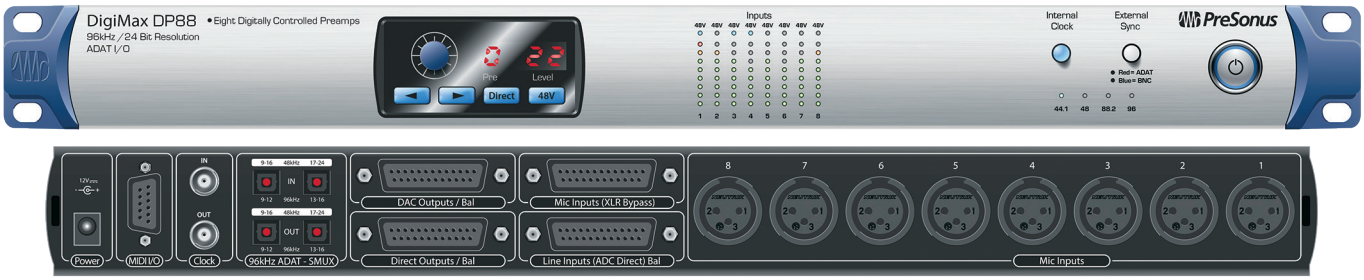
1. In a large pot, combine whole chicken leg quarters, water, quartered onion, Old Bay, 2 bay leaves, and 1 whole garlic clove. Cover and bring to a low boil. Simmer stock until chicken is falling off the bone. Remove the chicken and set aside. Discard the onion, bay leaves, and garlic, reserving the liquid.
2. In a heavy saucepan, heat 1 Tbspn of the oil on medium high heat and brown the andouille until it is cooked through. Set aside sausage for later.
3. In the same saucepan, add and heat the remaining oil. Slowly add flour 1-2 Tbspn at a time, stirring continuously. Continue cooking and strirring the roux until it is a dark brown (it should look like melted dark chocolate). Be careful not to get the oil too hot or the flour will burn and you'll have to start over.
4. Once roux has reached the correct color, add diced onion, celery, green pepper, and minced garlic. Cook until vegetables are very tender. Do not cover.
5. Slowly add 1 qt of chicken broth and bring to a low boil, stirring constantly.
6. Transfer roux mixture to a soup pot and bring to low boil. Do not cover, the roux will settle on the bottom of the pot and burn.
7. Add remaining chicken broth, bay leaves, and thyme. Simmer for 30 minutes.
8. While gumboi is simmering, debone and shred chicken and slice the andouille.
9. Add chicken and andouille to gumbo and return to a simmer. Simmer for 30-45 minutes.
10. Stir in frozen okra and parsley and bring to a rolling boil.
11. Optional: Crack one egg into a teacup and quickly pour into the boiling gumbo. Repeat with the other eggs being careful not to cluster them too closely. After all the eggs have risen back to the surface, reduce heat and simmer.
12. Correct seasoning with salt and pepper (red, white, and/or black) if necessary.
13. Serve over rice with potato salad.

Serves 12

DigiMax™ DP88

8x8 96kHz preamp, converter with ADAT IO, direct analog inputs, remote mic preamps, DAC outputs, and Word Clock IO

Owner's Manual



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