



# GeNetX™ BASS WORKSTATION

## USER'S GUIDE



**Digitech®**  
*The Power to Create*



These symbols are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash means that there are dangerous voltages present within the unit. The exclamation point indicates that it is necessary for the user to refer to the owners manual.

These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service.

Disconnect the unit during storms to prevent damage.

### U.K. Mains Plug Warning

A molded mains plug that has been cut off from the cord is unsafe. Discard the mains plug at a suitable facility. **Never under any circumstances should you insert a damaged or cut mains plug into a 13 amp power socket.** Do not use the mains plug without the fuse cover in place. Replacement fuse covers can be obtained from your local retailer. Replacement fuses are 13 amps and MUST be ASTA approved to BS1362.

### Safety Instructions

Notice for customers if your unit is equipped with a power cord.

Warning: This appliance must be earthed.

The cores in the mains lead are colored in accordance with the following code:

Green and Yellow - Earth Blue - Neutral Brown - Live

As colors of the cores in the mains lead of this appliance may not correspond with the colored markings identifying the terminals in your plug, proceed as follows:

- The core which is colored green and yellow must be connected to the terminal in the plug marked with the letter E, or with the earth symbol, or colored green, or green and yellow.
- The core which is colored blue must be connected to the terminal marked N, or colored black.
- The core which is colored brown must be connected to the terminal marked L, or colored red.

This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. If the attachment plug needs to be changed, refer servicing to qualified service personnel who should refer to the table below. The green/yellow wire shall be connected directly to the unit's chassis.

CONDUCTOR		WIRE COLOR	
		Normal	Alt
L	LIVE	BROWN	BLACK
N	NEUTRAL	BLUE	WHITE
E	EARTH GND	GREEN/YEL	GREEN

**Warning:** If the ground plug is defeated, certain fault conditions in the unit or in the system to which it is connected can result in full line voltage between chassis and earth ground. Severe injury or death can then result if the chassis and earth ground are touched simultaneously.

### WARNING FOR YOUR PROTECTION PLEASE READ THE FOLLOWING:

KEEP THESE INSTRUCTIONS

HEED ALL WARNINGS

FOLLOW ALL INSTRUCTIONS

Do not use this apparatus near water

CLEAN ONLY WITH A DRY CLOTH.

DO NOT BLOCK ANY OF THE VENTILATION OPENINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

DO NOT INSTALL NEAR ANY HEAT SOURCES SUCH AS RADIATORS, HEAT REGISTERS, STOVES, OR OTHER APPARATUS (INCLUDING AMPLIFIERS) THAT PRODUCE HEAT.

ONLY USE ATTACHMENTS/ACCESSORIES SPECIFIED BY THE MANUFACTURER.

UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME.

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 third prong are provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

Use only with the cart stand, tripod bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



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.

**POWER ON/OFF SWITCH:** For products provided with a power switch, the power switch DOES NOT break the connection from the mains.

**MAINS DISCONNECT:** The plug shall remain readily operable. For rack-mount or installation where plug is not accessible, an all-pole mains switch with a contact separation of at least 3 mm in each pole shall be incorporated into the electrical installation of the rack or building.

**FOR UNITS EQUIPPED WITH EXTERNALLY ACCESSIBLE FUSE RECEPTACLE:** Replace fuse with same type and rating only.

**MULTIPLE-INPUT VOLTAGE:** This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. Connect this equipment only to the power source indicated on the equipment rear panel. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel or equivalent.

### Electromagnetic Compatibility

Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.
- Use only shielded interconnecting cables.
- Operation of this unit within significant electromagnetic fields should be avoided.

## DECLARATION OF CONFORMITY

Manufacturer's Name: DigiTech  
Manufacturer's Address: 8760 S. Sandy Parkway  
Sandy, Utah 84070, USA

declares that the product:

Product name: BNX3  
Note: Product name may be suffixed by the letters EU, JA, NP and UK.

Product option: all (requires Class II power adapter that conforms to the requirements of EN60065, EN60742, or equivalent.)

conforms to the following Product Specifications:

Safety: IEC 60065 (1998)

EMC: EN 55013 (1990)  
EN 55020 (1991)

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC as amended by Directive 93/68/EEC.

Vice-President of Engineering  
8760 S. Sandy Parkway  
Sandy, Utah 84070, USA  
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## Warranty

We at **DigiTech** are very proud of our products and back-up each one we sell with the following warranty:

- 1. The warranty registration card must be mailed within ten days after purchase date to validate this warranty.*
- 2. DigiTech warrants this product, when used within the U.S., to be free from defects in materials and workmanship under normal use and service.*
- 3. DigiTech liability under this warranty is limited to repairing or replacing defective materials that show evidence of defect, provided the product is returned to DigiTech WITH RETURN AUTHORIZATION, where all parts and labor will be covered up to a period of one year. A Return Authorization number may be obtained from DigiTech by telephone. The company shall not be liable for any consequential damage as a result of the product's use in any circuit or assembly.*
- 4. Proof-of-purchase is considered to be the burden of the consumer.*
- 5. DigiTech reserves the right to make changes in design, or make additions to, or improvements upon this product without incurring any obligation to install the same on products previously manufactured.*
- 6. The consumer forfeits the benefits of this warranty if the product's main assembly is opened and tampered with by anyone other than a certified DigiTech technician or, if the product is used with AC voltages outside of the range suggested by the manufacturer.*
- 7. The foregoing is in lieu of all other warranties, expressed or implied, and DigiTech neither assumes nor authorizes any person to assume any obligation or liability in connection with the sale of this product. In no event shall DigiTech or its dealers be liable for special or consequential damages or from any delay in the performance of this warranty due to causes beyond their control.*

**NOTE:** The information contained in this manual is subject to change at any time without notification. Some information contained in this manual may also be inaccurate due to undocumented changes in the product or operating system since this version of the manual was completed. The information contained in this version of the owner's manual supersedes all previous versions.

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## Introduction

The DigiTech BNX3, is the most advanced bass processor of its kind. Thanks to the highly advanced technology provided by GeNetX™, and the extreme horsepower contained in the Audio DNA™ DSP engine, you now have the tools to create your own bass amplifier and speaker cabinet models. All of this power lets you create a sound that is your own.

The intuitive user interface makes programming as simple as turning a knob. However, your time would be well spent by reading through this User's Guide with your BNX3 in front of you.

## Included Items

Please check to make sure the following items have been included:

- **PSS3 Power Supply**
- **Warranty Card**
- **GenEdit™ Editor/Librarian Resource CD**
- **Sonic Foundry™ Loop Sampler CD**

The utmost care was taken in the manufacturing and packaging of your BNX3. Everything should be included and in perfect working condition. However, if you find anything missing, please contact the factory at once. Please take a moment to fill out the warranty card. It is your safeguard in the unlikely event that the BNX3 develops a problem.

# Introduction

## Quick Start

The Quick Start section is included for those of you who would rather play now and read later.

### Making Connections

1. Connect your instrument to the **INPUT** jack on the rear panel.
2. Connect the **LEFT/RIGHT OUTPUTS** to the input(s) of your amplifier(s), power amp, or mixer.

**Note:** See page 66 for Bi-Amp feature

### Apply Power

1. Turn the **OUTPUT** level knob, on the rear panel of the BNX3, all the way down (fully counter clockwise).
2. Connect the PSS3 power supply to the **POWER** jack on the BNX3.
3. Connect the other end of the PSS3 power supply to an AC outlet.
4. Turn the BNX3 **POWER** switch on.
5. Turn your amplifier(s) on, and adjust the volume(s) to a normal playing level. Gradually turn up the BNX3's **OUTPUT** level.

### Select an Analog Output Mode

1. Press the **UTILITY** button.
2. Rotate the **DATA WHEEL** to select an output mode.
3. Select one of the following settings: *MONO*, *STEREO*, *B>L R>R* (bass>left recorder>right), *MONOBASS*, *STERBASS*, or *BIAMP*.

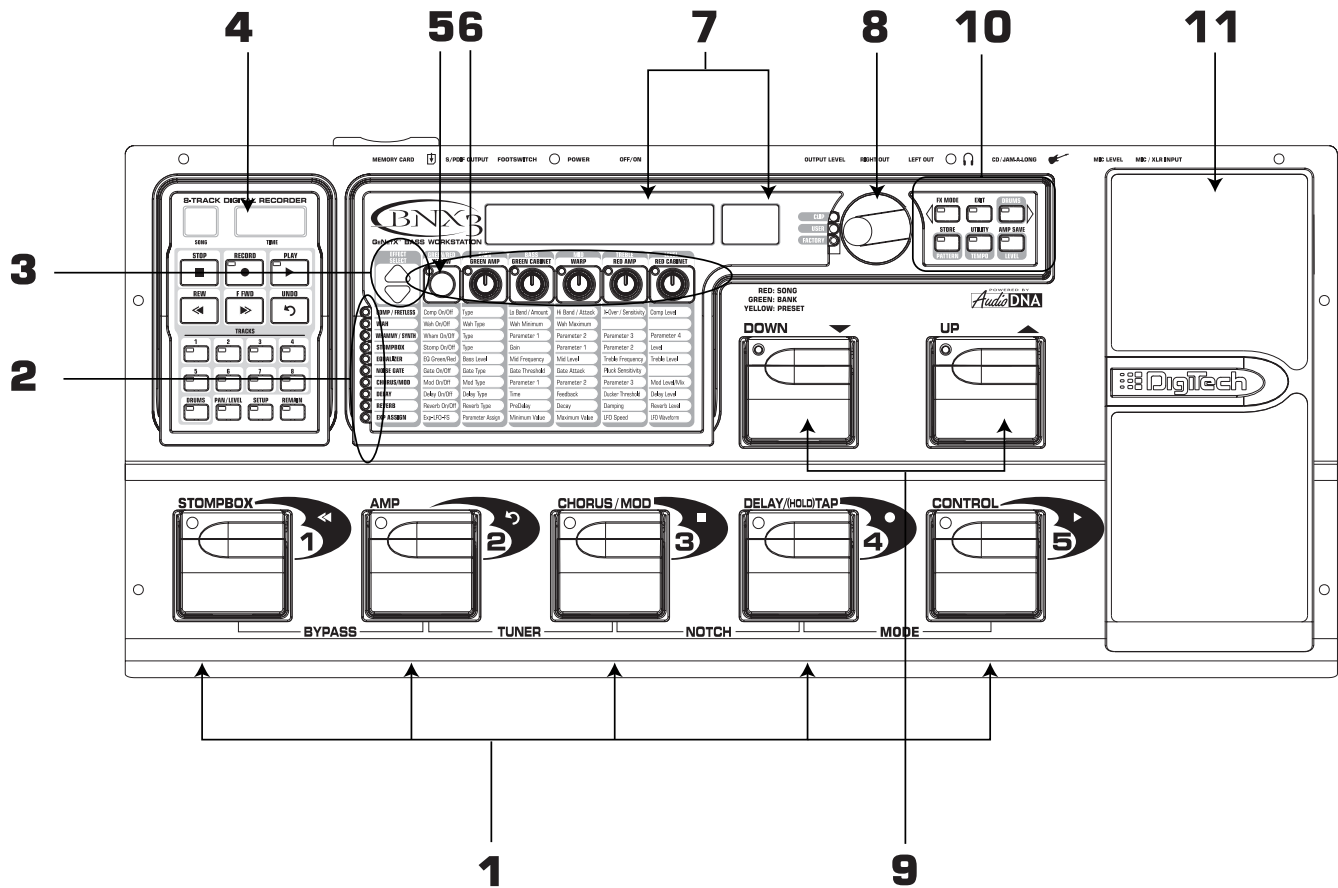
### Select a Preset

The BNX3 comes with 65 pre-programmed Factory Presets, and 65 User Presets. From the factory, the User Presets are exact duplicates of the Factory Presets.

1. Press the **UP/DOWN** footswitches to select a Bank.
2. Press **Footswitches 1-5** to select a preset, or rotate the **DATA WHEEL**.

**Note:** To edit a preset, see page 14.

## A Guided Tour of the BNX3 The Front Panel



### 1. Footswitches 1 - 5

Depending on the selected mode, these 5 footswitches select presets, change amp channels, turn individual effects on and off, and give you hands-free operation of the BNX3's recorder. Bypass, Tuner, Notch Filter, and Mode functions are accessed by pressing the labeled pair of footswitches simultaneously.

### 2. Matrix

The Matrix LEDs light identifying the active effects for the selected preset, or the selected row of effects while editing.

### 3. Effect Select Buttons

The Effect Select buttons are used together with the Matrix LEDs to choose the effects you want to edit.

### 4. Recorder Panel

The Recorder panel controls the BNX3's digital recorder settings.

### 5. Status Button

The Status button selects the Green or Red Amp Channel. It also activates the amp and cabinet Warping feature (indicated by a yellow LED next to the Status button). In Edit mode it turns the selected effect on and off, or selects a controller type for the expression assignment.

# Introduction

## 6. Parameter Knobs

These 5 knobs select Amp Models, Speaker Cabinets, and Warp Models. In Green or Red mode, they adjust the Amp Gain, EQ and Level of the selected amp channel. In Edit mode, they adjust the parameters listed in the column directly below each knob for the selected group of effects.

## 7. Display

The display shows the selected preset name and number. The display also shows bank names when changing banks, and momentarily flashes the active amp channel when the amp channel is changed. In Edit mode, the alpha-numeric display shows the selected effect's parameter and value or status. In Tuner mode, the numeric display shows the note played and the alpha-numeric display indicates whether the note is sharp or flat. While recording, messages associated with the recorder are displayed.

## 8. Data Wheel

The Data Wheel is used to scroll through presets. It increases and decreases the value or status of the selected Recorder, Utility, or Drum Machine function, and scrolls characters in the naming procedure.

## 9. Down/Up Footswitches

These footswitches select User preset banks (Bank Mode), User presets (Stompbox Mode), and select songs (Recorder Mode).

## 10. Mode Buttons

The Exit button is only used to exit a function, while the other 5 buttons perform dual functions dependent on the selected mode of operation. The buttons are labeled as follows:

**MODE** - This button changes the functionality of footswitches 1-5. When the Mode button is lit yellow, footswitches 1-5 toggle effects on and off and change amp channels. When the Mode button is lit green, footswitches 1-5 select presets in the current preset bank. When the Mode button is lit red, footswitches 1-5 control the BNX3's recorder functions. This button also selects the previous character when naming a preset, and the previous menu in the Utility menu. The Down/Up footswitches functionality changes depending on the status of the Mode button. (see Down/Up Footswitches section below).

**EXIT** - Exits all functions back to the preset display.

**DRUMS** - This button accesses the BNX3's Drum Machine Functions. When the Drum button is enabled, the LED lights and the drum loop begins playing. The bottom row of Mode buttons are used in conjunction with the Data Wheel to select the Pattern, Tempo, and Level. This button also selects the next character when naming a preset, and the next menu in the Utility menu.

**STORE** - This button saves preset edits to the User presets, or selects the drum pattern while the drum machine is active.

**UTILITY** - This button accesses the BNX3's global functions, or selects the drum tempo while the drum machine is active.

**AMP SAVE** - This button stores Amp and Cabinet changes (tone, gain, level, amp type, cabinet type, warp, or cabinet tuning) as HyperModels™ (See page 30 to create an amp HyperModel). It also selects the drum machine level when the drum machine is active.

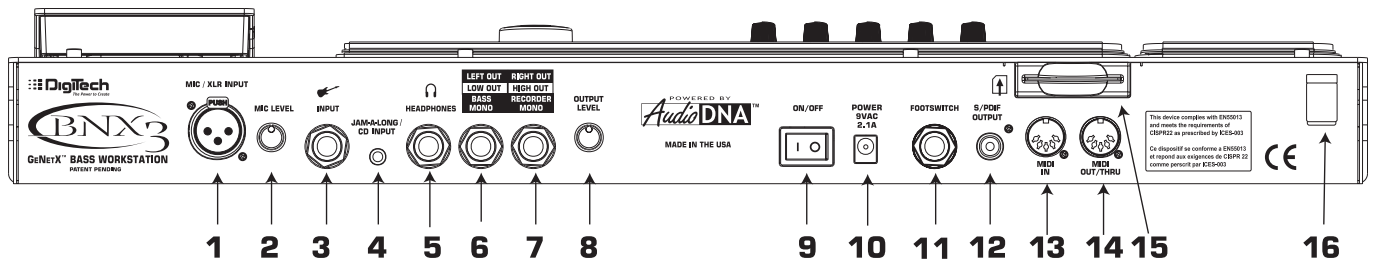


## 11. Expression Pedal

The Expression Pedal controls effect parameters in real time. Most BNX3 parameters can be assigned to the Expression Pedal. Applying extra pressure to the toe of the Expression Pedal switches control between the assigned parameter(s) and the Wah.

# Introduction

## The Rear Panel



### 1. Mic/XLR Input

This XLR jack connects a low impedance dynamic mic to the BNX3 that can be used for recording vocals or an acoustic instrument into the BNX3's Recorder. A mic with a cardioid pattern is recommended. Use this input with the instrument Input for a stereo source recording.

### 2. Mic Level

Controls the gain of the mic input preamp when the mic input gain is set correctly. The **CLIP** LED next to the **DATA WHEEL** should only flash occasionally with peak signals.

### 3. Input Jack

Connect your instrument to this jack.

### 4. Jam-A-Long/CD In Jack

Connect a 1/8" stereo plug between this jack and the output of a tape or CD player. This lets you play along with the music, or record a musical passage.

### 5. Headphone Output

Connect stereo headphones to this jack. Do not connect a mono plug to this jack, because you may damage the output driver.

### 6. Left Output/Low Output/Bass Mono Output

Connect to the input of an amplifier, input of a power amp, or line input of a mixing console. See page 66 for more on Analog Output Configurations.

### 7. Right Output/High Output/ Recorder Mono Output

Use this jack in conjunction with the Left Output for stereo applications. Connect to the input of a second amplifier, right input of a stereo power amp, or mixing console. See page 66 for more on Analog Output Configurations.

### 8. Output Level

Controls the overall volume level of the BNX3's 1/4" analog and headphone outputs.

### 9. Power Switch

Turns the power on and off.

### 10. Power Input

Connect only the provided DigiTech PSS3 power supply to this jack.

### 11. Footswitch

Connect a GNXFC footswitch to this jack. Use a 1/4" TRS cable only.

## 12. S/PDIF Output

This is the BNX3's digital output. The output signal is in a stereo digital format, and is intended to be connected to a digital S/PDIF input found on other S/PDIF compatible devices and sound cards.

**NOTE: Do not connect the S/PDIF output to analog auxiliary, CD, phono, or tape inputs on consumer electronic devices. It is not compatible with these inputs.**

## 13. MIDI In

This jack receives all incoming MIDI data. Connect this jack to the MIDI out of a computer, sequencer, MIDI controller, or MIDI storage device.

## 14. MIDI Out/Thru

This jack sends MIDI data from the BNX3. Connect this jack to the MIDI in of a computer, or external MIDI recording device. When enabled, MIDI Thru sends the same information the BNX3 received at the MIDI In.

## 15. SMART MEDIA™ Card Slot

This slot is used for memory card upgrades to increase the available recording time. The BNX3 supports 16, 32, 64, and 128 Megabyte SmartMedia™ cards.

## 16. Strain Relief

This secures the power cord to help prevent it from disconnecting during a performance.

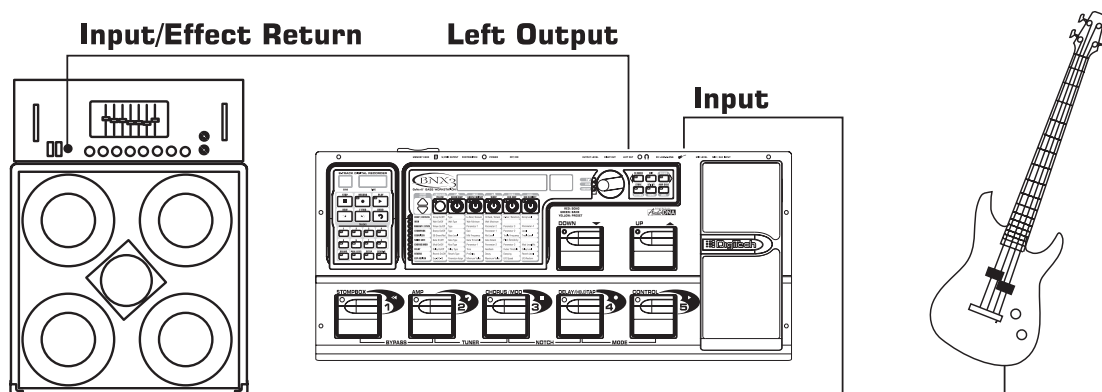
# Getting Started

## Making Connections

The BNX3 has several different connection options. You can run mono into an amp or power amp, stereo into two amps or a stereo power amp, direct into a mixing console, to a computer or S/PDIF equipped device, or to a bi-amped bass amp system. Before connecting the BNX3, make sure both the BNX3 and the amplifier are OFF. Connect the PSS3 to the power jack, on the back of the BNX3, and the other end to an AC outlet. The following diagrams show some examples.

## Mono Operation

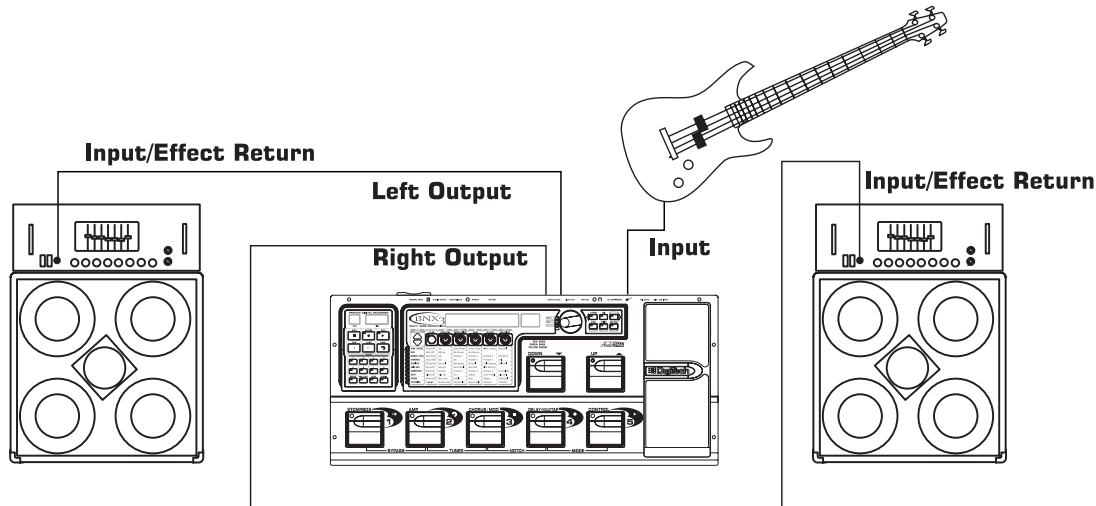
1. Connect the bass to the input of the BNX3.
2. Connect the BNX3's Left Output to the instrument input or effect return on your amplifier, or to the line input of a power amp.
3. Turn on the BNX3.
4. Select Mono as the Output configuration from the Utility menu. See page 66 for more on selecting the Output configuration.



# Introduction

## Stereo Operation

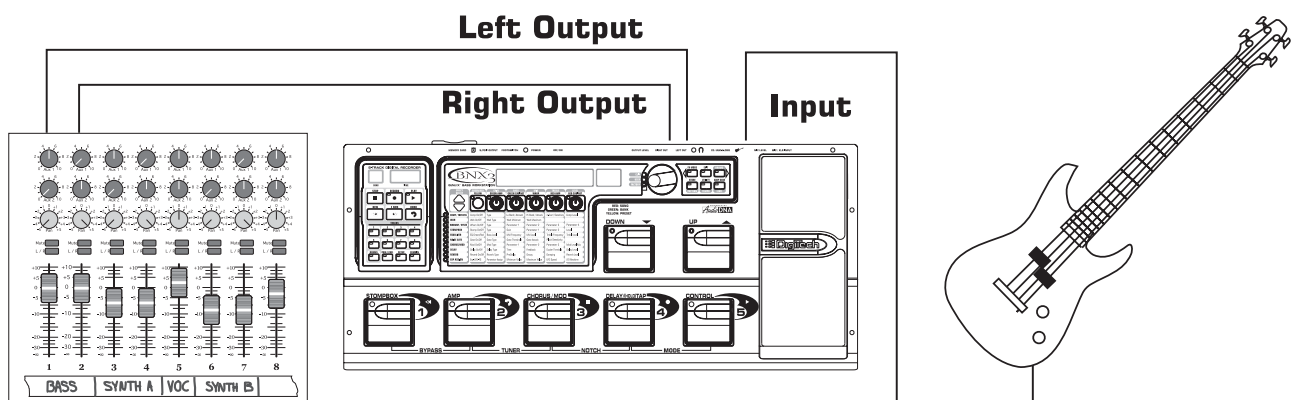
1. Connect the bass to the input of the BNX3.
2. Connect the BNX3's Left Output to the input of one amplifier or channel of a power amp.
3. Connect the BNX3's Right Output to a second amplifier, or to a second channel of a power amp.
4. Turn on the BNX3.
5. Select Stereo as the Output configuration from the Utility menu. See page 66 for more on selecting the Output configuration.



## Direct to a Mixing Console

The BNX3 can be connected directly to the inputs of a house PA system, or a recording console.

1. Connect the bass to the BNX3's input.
2. Connect the BNX3's outputs to the channel inputs of the mixing console.
3. Turn on the BNX3.
4. If the BNX3 is used in Stereo configuration, set the pan controls of the mixer hard left and right, and select Stereo as the output configuration from the Utility menu. See page 66 for more information on selecting the Output configuration.



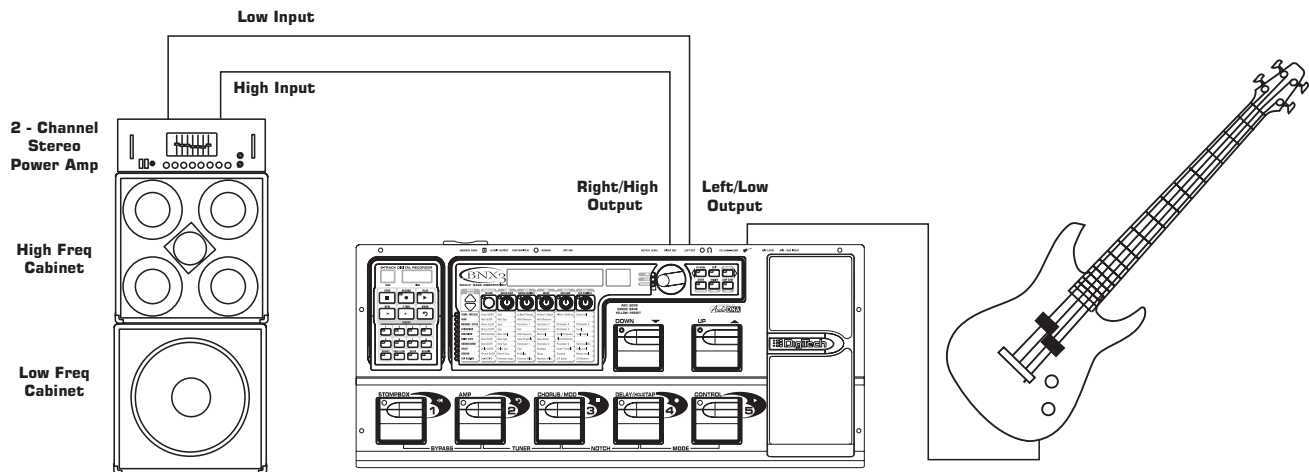
## Bi-Amp Setup

The BNX3 can also run into a Bi-Amped system. You are given the option of using the High and Low output setup that lets you set the Cross-Over frequency. To select the Bi-Amp setup, do the following:

# Introduction

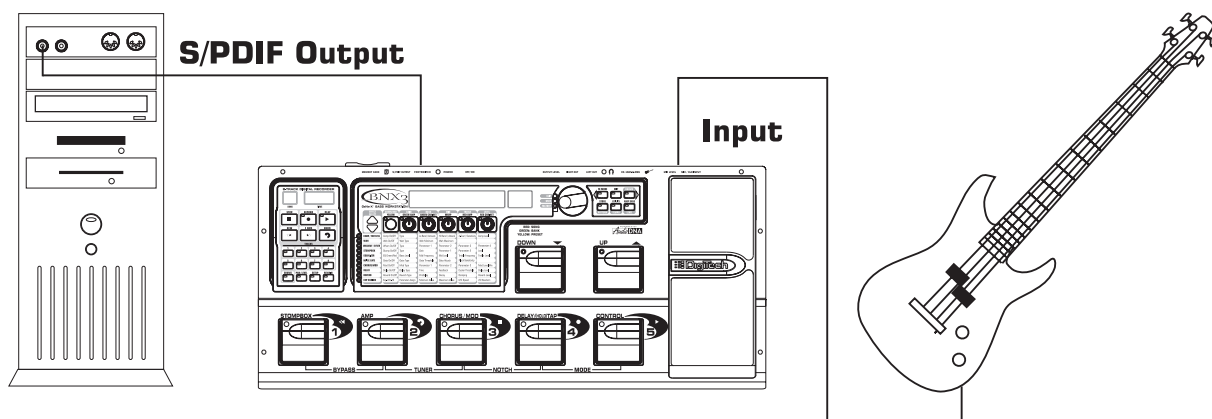
1. Connect the bass to the BNX3's input.
2. Connect the Low Output to the Amp Channel that feeds the low frequency driver or cabinet.
3. Connect the High Output to the Amp Channel that feeds the high frequency driver or cabinet.
4. Turn on the BNX3.
5. Select Bi-Amp as the output configuration from the Utility menu. Set the crossover frequency no lower than the high frequency driver's recommended rating. See page 66 for more information on selecting the Output configuration.

**NOTE:** The recorder output is not heard in the analog outputs when Bi-Amp setup is used.



## S/PDIF Digital Output

Connect the BNX3's S/PDIF output to the S/PDIF input on your digital audio compatible mixer or computer sound card. You must have S/PDIF inputs on the receiving device in order to use this output. Be sure to use a 75 ohm or RCA video cable to connect from the Digital Output to the input of the other device. The BNX3 must be setup as the Master (the clock source), on the receiving device, when using this output. You can use the analog and digital outputs of the BNX3 simultaneously.



**NOTE:** Do not connect the S/PDIF output to analog auxiliary, CD, phono, or tape inputs on mixers or consumer electronic devices. It is not compatible with these inputs.

## Setting Output Level

1. Once the audio connections are made, turn the BNX3's Output Level, on the rear panel, all the way down (counterclockwise).



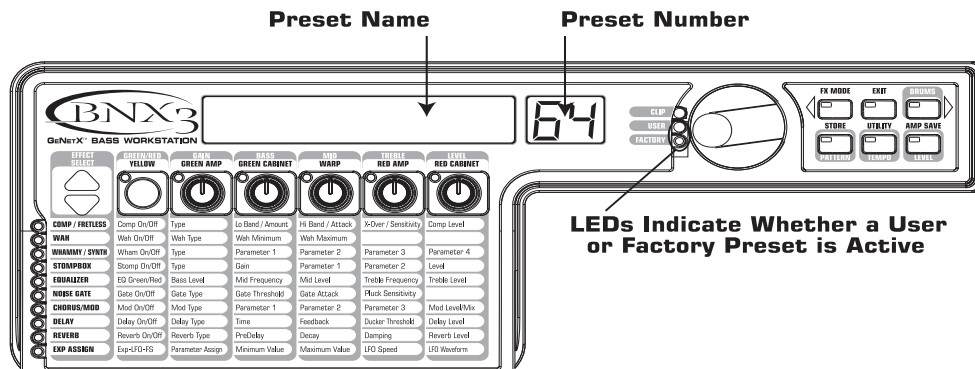
# Introduction

2. Turn the power to your amplifier(s) on.
3. Set the amp(s) to a clean tone and set the tone controls to a flat EQ response (on most amps, this would be 0 or 5 on the tone controls).
4. Turn the Output Level of the BNX3 up to increase the volume.

## About the BNX3

# The Presets

A preset is a named and numbered location of a programmed sound that resides in the BNX3. Presets can be recalled with the **FOOTSWITCHES** or the **DATA WHEEL**. The BNX3 comes with 65 Factory and 65 User presets. The Factory Presets do not let you store changes to them. The User presets let you store changes. From the factory, the 65 User presets are exact duplicates of the 65 Factory presets. This lets you create your own presets without worrying about losing any of the original presets. When you select a preset, the name of the preset appears in the green alpha-numeric display and the number of the preset appears in the red numeric display. The User LED to the right of the numeric display lights indicating the User preset is active. The Factory LED lights indicating a Factory preset is active.



## The BNX3's Modes

When you first apply power to the BNX3, it powers up in one of three modes: Bank, Stompbox, or Recorder. Modes are selected in two different ways:

1. Press the **MODE** button (located to the right of the **DATA WHEEL**).  
OR
2. Press **FOOTSWITCHES 4** and **5** simultaneously.

Depending on which mode is selected, the UP/DOWN footswitches and Mode Button light a different color. When Bank mode is selected, these footswitches are lit green (this is the default mode from the factory). When Stompbox mode is selected, these footswitches are lit yellow. And when Recorder mode is selected, these footswitches are lit red. In any of the modes, the display shows the selected preset's name and number. The vertical LEDs on the Matrix indicate which effects are active for the selected preset.

## Bank Mode

When Bank Mode is active the **UP/DOWN** footswitches are used to select the 13 User Banks. Successive presses of the **UP/DOWN** footswitches advances through all User/Factory Banks. Pressing and holding a **UP/DOWN** footswitches scrolls through the User Banks. Once a Bank is selected, a preset within that bank needs to be selected. If a preset is not selected within 5 seconds, the BNX3 returns to the previous bank and preset.

## Stompbox Mode

Stompbox mode is another mode of operation that can be used during a performance. When Stompbox mode is active, the **UP/DOWN** footswitches are used to select the BNX3's presets. The 1-5 Footswitches turn the effects on and off. **FOOTSWITCH 1** turns the Distortion Stompbox modeling on and off. **FOOTSWITCH 2** switches between the Green, Red, and Yellow amp channels. **FOOTSWITCH 3** turns the Chorus/Mod Effects module on and off. **FOOTSWITCH 4** turns the Delay on and off. **FOOTSWITCH 5** can be used to control any 3 parameters in the BNX3 by either toggling the parameter between 2 values or by momentarily changing a parameter's value while the footswitch is pressed and returning to its original value when the footswitch is released (see Expression Assign on page 62 for more information).

### Delay TapTempo

As an added feature, **FOOTSWITCH 4** (the Delay footswitch) can be used as a tap-tempo switch for setting the delay time during a live performance. To create a tap-tempo switch, do the following:

1. Turn the delay on while in Stompbox Mode.
2. Press and hold the **FOOTSWITCH 4** until the footswitch flashes at the rate of the delay time.
3. To set the delay time, tap **FOOTSWITCH 4** at least two times at the rate you want the delay to repeat.
4. Once the delay time is set, press and hold it again to change it back to a Delay on/off switch.

## Recorder Mode

When Recorder mode is active, the BNX3's UP/DOWN footswitches are used for selecting songs and loops that reside in the recorder's memory. The 1-5 footswitches are used for hands-free control of the recorder's functions. **FOOTSWITCH 1** rewinds back through a song. **FOOTSWITCH 2** deletes the last track recorded. **FOOTSWITCH 3** stops the recorder playback. **FOOTSWITCH 4** begins recording. **FOOTSWITCH 5** plays back the recorded tracks.

## The Expression Pedal

The expression pedal performs different functions depending on the preset. The Expression Pedal can control three different parameters in each preset. Rock the Expression Pedal back and forth to change the values of the assigned parameters. The pedal can control assigned minimum and maximum values (stop points) for each parameter. The Expression Pedal also includes a feature called V-Switch that lets you override the parameters assigned to the Expression Pedal and replace them with the Wah effect. See page 62 for more information on assigning the Expression Pedal.

## Bypass

The BNX3 presets can be bypassed for a clean, unprocessed bass tone. Bypass turns off all effects and modeling. To bypass the BNX3 in Bank mode, press the active preset's Footswitch (the 1-5 footswitch that is lit), or press Footswitches 1 and 2 simultaneously. To bypass the BNX3 while in Stompbox or Recorder Mode, press Footswitches 1 and 2 simultaneously. When the BNX3 is bypassed, the display reads *BYPASS* and all LEDs in the matrix are off. Press any Footswitch to exit Bypass and return to the last preset. The Matrix and Programming buttons are not available in Bypass.

## Tuner

The Tuner in the BNX3 lets you quickly tune or check the tuning on your bass. Press Footswitches 2 and 3 simultaneously to access the Tuner. The display briefly flashes *TUNER*. The BNX3's output is muted when in Tuner Mode. To begin tuning, play a note on your bass (a harmonic at the 12th fret usually works best). The red numeric display shows the note being played, and the green alpha-numeric display indicates

# Introduction

whether the note is sharp or flat. Arrows to the left (◀◀◀) indicate the note is sharp and should be tuned down. Arrows to the right (▶▶▶) indicate the note is flat and should be tuned up. When your note is in tune, --> <-- is displayed.

While the tuner is selected, you can set your tuning reference with the Data Wheel. The default factory setting is  $A=440\text{ Hz}$ . The tuning references range from 427 Hz to 453 Hz ( $\pm 50$  cents (1/2 semitone) from either direction of 440 Hz). Below 427 Hz, are alternate dropped tunings. The alternate tunings are *REF A* ( $A=A_b$ ), *REF G* ( $A=G$ ), and *REF G* ( $A=G_b$ ). The display window briefly flashes the selected tuning preference.

## Notch Filter

The BNX3 offers an adjustable notch filter that helps reduce annoying low frequency room resonance from one venue to the next. This filter globally affects the analog outputs. To edit the notch filter, do the following:

1. Press and hold **FOOTSWITCHES 3** and **4** simultaneously.
2. *NOTCHOFF* or a previously selected frequency appears in the display.
3. Use the **UP** and **DOWN FOOTSWITCHES** or the **EXPRESSION PEDAL** to select the frequency. The notch filter range is 30-300Hz.
4. To exit, press **FOOTSWITCHES 3** and **4** simultaneously again.

## Jam-A-Long

The Jam-A-Long feature lets you connect a Tape, CD, or MP3 player to the BNX3. The tape, CD, or MP3 player's signal is output through the BNX3's left, right, and headphone outputs. To use the Jam-A-Long feature, do the following:

1. Connect the headphone output of your player to the **JAM-A-LONG INPUT**, on the rear panel of the BNX3, with a 1/8" stereo cable.
2. Press play on your Tape, CD, or MP3 player.

## Drum Machine

The BNX3's Built-in Drum Machine can be used to develop a great sense of timing, rehearse different musical styles, or just jam with. The Drum Machine plays sampled drum patterns in an infinite loop. You can select from a variety of patterns, change the tempo, and adjust the playback level. When the Drums button is pressed, the drum patterns are mixed with your bass signal at the BNX3's left, right, and headphone outputs.

To use the Drum Machine, do the following:

1. Press the **DRUMS** button. The Drums button's LED lights and the current drum pattern begins playing, and the Store, Utility, and Amp Save LEDs light.

### Select a Pattern

1. Press the **STORE** (Pattern) button to adjust the drum pattern. The selected drum pattern is shown in the display.
2. Rotate the **DATA WHEEL** to select a new pattern. There are 30 different patterns and a metronome available including:

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ROCK 1	POP 2	DANCE 2	SWING 1
ROCK 2	POP 3	DANCE 3	SWING 2
ROCK 3	FUNK 1	DANCE 4	REGGAE
ROCK 4	FUNK 2	URBAN 1	CHACHA
HRDROCK1	FUNK 3	URBAN 2	BOSSA 1
HRDROCK2	BLUES	COUNTRY1	BOSSA 2
HRDROCK3	JAZZ	COUNTRY2	METRONOM
POP 1	DANCE 1	COUNTRY3	

## Tempo

To adjust the Tempo, do the following:

1. Press the **UTILITY** (Tempo) button. The display shows the current tempo in beats per minute (BPM).
2. Rotate the **DATA WHEEL** to select a new tempo. Tempo ranges are from 40 beats per minute (40BPM) to 240 beats per minute (240BPM).

## Level

To adjust the Level, do the following:

1. Press the **AMP SAVE** (Level) button. The display reads **DRUM LVL** (drum level).
2. Rotate the **DATA WHEEL** to select the playback volume of the drum loop. Level ranges are from 1 to 99.
3. Press the **DRUMS** button again to turn the Drum Machine off.

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## Editing/Creating a Preset

The BNX3 was designed to make sound processing easy and intuitive. Because the BNX3 provides both Amp Modeling and Effects Processing, the editing functions are divided into two sections: the Amp/Cabinet Modeling section and the Effects section. The GeNetX™ technology contained in the BNX3 lets you go much further than mere Amp Modeling. GeNetX™ lets you create your own Amp/Cabinet HyperModel™ and store this custom creation to a User Amp/Cabinet location. When editing either the Amp/Cabinet Modeling, or the Effects section, you must start with one of the User or Factory Presets. It is not possible to start with a completely empty preset. The preset you begin with does not need to be in the location that you intend to save it. To begin creating a HyperModel™ or just edit the effects, you must select a preset as your starting point.

## Amp/Cabinet Modeling

After selecting a preset, you can select the Amp Models or Cabinet Types for your preset. Amp/Cabinet Modeling applies the tone of one of several vintage or modern Amp Models and Cabinet Types to your bass signal. The BNX3 includes accurate emulations of sixteen bass Amp Models, four guitar Amp Models, and nineteen Speaker Cabinet Types. Your choices include:

### Amp Models

- |  |  |
|--|--|
| <b>DIRECT</b> 1 - Turns the amp modeling off             | <b>HARTKEY</b> 13 - Based on a Hartke Model 2000           |
| <b>ROCKBASS</b> 2 - Based on a modern Ampeg SVT          | <b>DEMETUBE</b> 14 - Based on a Demeter VTBP - 201S        |
| <b>VINTAGE</b> 3 - Based on a '69 Ampeg SVT Classic      | <b>HIWATTAG</b> 15 - Based on a HiWatt 50 watt stack       |
| <b>BOMBER</b> 4 - Based on an Ampeg B15                  | <b>CLEANTUB</b> 16 - A clean tube combo setting            |
| <b>BASIC</b> 5 - Based on a SWR Basic Black              | <b>MODERN</b> 17 - Based on an SWR Grand Prix              |
| <b>STELLAR</b> 6 - Based on a SWR Interstellar Overdrive | <b>BRITCMBO</b> 18 - Based on a Vox AC30 top boost         |
| <b>BASS MAN</b> 7 - Based on a Fender Bassman            | <b>TWEED</b> 19 - Based on a '57 Fender Tweed Deluxe       |
| <b>DUALSHOW</b> 8 - Based on a Fender Dual Showman       | <b>BRITSTAK</b> 20 - Based on a '78 Marshall Master Volume |
| <b>ASH DOWN</b> 9 - Based on a Ashdown ABM 500           | <b>RECTIFIED</b> 21 - Based on a Mesa Dual Rectifier       |
| <b>SOLAR</b> 10 - Based on a Sunn 200S                   | <b>FUZZ</b> 22 - Based on a Digi fuzz distortion           |
| <b>BRITBASS</b> 11 - Based on a Trace-Elliott Commando   | <b>EMPTY</b> U1 to U9 - User HyperModel™ Locations         |
| <b>BOOGIMAN</b> 12 - Based on a Mesa Boogie Bass 400+    |  |

### Cabinet Types

- |  |  |
|--|--|
| <b>DIRECT</b> 1 - Turns the cabinet modeling off | <b>HART4X10</b> 12 - Based on a Hartke 4x10      |
| <b>FOLD1X18</b> 2 - Based on an Acoustic 360     | <b>AMER4X10</b> 13 - Based on an Bassman 4x10    |
| <b>HART1X15</b> 3 - Based on a Hartke 1x15       | <b>TWEED1X12</b> 14 - Based on a Tweed 1x6 '65   |
| <b>JAZZ1X15</b> 4 - Based on a Peavey 1516 1x15  | <b>AMER2X12</b> 15 - Based on an American 2x12   |
| <b>BASS1X15</b> 5 - Based on an Ampeg Portaflex  | <b>BLND2X12</b> 16 - Based on a Blonde 2x12      |
| <b>BASIC15H</b> 6 - Based on a SWR Basic Black   | <b>BRIT2X12</b> 17 - Based on a British 2x12     |
| <b>SOLR2X15</b> 7 - Based on a Sunn 2x15         | <b>BRIT4X12</b> 18 - Based on a British 4x12     |
| <b>VNTG8X10</b> 8 - Based on an Ampeg 8x10       | <b>VNTG4X12</b> 19 - Based on a Johnson V30 4x12 |
| <b>ASH 4X10</b> 9 - Based on an Ashdown ABM 410  | <b>FANE4X12</b> 20 - Based on a Hiwatt 4x12 Fane |
| <b>EDN4X10H</b> 10 - Based on an Eden 4x10       | <b>EMPTY</b> U1 to U9 - User Locations           |
| <b>GLTH4X10</b> 11 - Based on a SWR Goliath III  |  |

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## Editing Amp Models and Cabinet Types

Each BNX3 preset has a Green, Red, and Yellow (Warped) Amp Channel. The Green and Red Amp Channels include individually selectable Amp Models, Cabinet Types, Gain, EQ, and Level settings. The Speaker Cabinet's resonant frequency can be selected. Once the Green and Red channel's models are selected, you can toggle channels instantly using the **Amp Channel Footswitch** (only when Stompbox Mode is active). After models are selected for the Green and Red channels, the models can be Warped together to create a HyperModel™.

### Selecting Amp/Cabinet Models

The first step to editing an Amp Model, Cabinet Type, or creating your own HyperModel™ is to select the Amp and Cabinet types for the Green and Red Amp channels in your preset. The procedure for selecting an Amp Model or Cabinet Type for the Green or Red Amp Channels is as follows:

1. Press the **EXIT** button to return to the top level of operation.
2. Use the Parameter 1 knob (far left) to select the Green Amp Model. The Amp Model name appears in the alpha-numeric display. See the Amp/Cabinet Modeling section on page 14 for a complete list of Amp Models.
3. Use the Parameter 2 knob (second from the left) to select the Green Cabinet Type. See the Amp/Cabinet Modeling section on page 14 for a complete list of Cabinet Types.
4. Use the Parameter 4 knob (second from the right) to select the Red Amp Model.
5. Use the Parameter 5 knob (far right) to select the Red Cabinet type.

### Adjusting Amp Parameters

The Gain, EQ, and Level Parameters can be adjusted individually for the Green and Red Amp Channels. The Gain ranges from 0 (0) to 99 (99). The Bass, Mid, and Treble EQ range from -12 (-12 dB) to 12 (+12 dB). The Level ranges from 0 (0) to 99 (99). The procedure for adjusting the Amp Parameters is as follows:

1. Press the **STATUS** button until all horizontal LEDs across the columns light green. This indicates that you have accessed the Amp Parameters for the Green Channel.
2. Use the Parameter 1 knob to adjust the Gain (distortion drive) for the Green Amp Channel.
3. Use the Parameter 2 knob to adjust the Bass (low frequency) enhancement for the Green Amp Channel.
4. Use the Parameter 3 knob to adjust the Mid range frequency enhancement for the Green Amp Channel.
5. Rotate the Parameter 4 knob to adjust the Treble (high frequency) enhancement for the Green Amp Channel.
6. Rotate the Parameter 5 knob to adjust the Level (volume) for the Green Amp Channel.
7. Press the **STATUS** button again until all horizontal LEDs across the columns turn red indicating the Amp Parameters for the Red Channel have been accessed. Then repeat steps 2 through 6 for adjusting the Red Amp Channel.

### Cabinet Tuning

The resonant frequency of the selected speaker cabinets can be tuned individually. Cabinet Tuning ranges are from -120 (one octave below) to 120 (one octave above). The procedure for tuning the cabinets is as follows:

1. Press and hold the **STATUS** button. Release the Status button after about 2 seconds when the display reads Cabinet Tuning (CAB TUNE) and only the LEDs next to the Parameter 2 and 5 knobs are lit.
2. Rotate the Parameter 2 knob to adjust the tuning of the Green Cabinet type (GT).
3. Rotate the Parameter 5 knob to adjust the tuning of the Red Cabinet type (RT).
4. Once the tuning has been selected for both Green and Red Cabinets, press **EXIT**.

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## Creating HyperModels™

Creating new, unique HyperModels™ is what GeNetX™ is all about. Once the Green and Red Amp Models and Cabinet types are selected, and the Amp Parameters and Cabinet Tuning have been adjusted, GeNetX™ technology lets you do something amazing. The characteristics of each Amp and Cabinet assigned to the Green and Red Channels can actually be combined or “Warped” to create a completely new Amp HyperModel™. The procedure for Warping the Green and Red Amps together is as follows:

1. Press the **STATUS** button until its LED lights yellow.
2. Rotate the Parameter 3 knob to Warp the Green and Red Amps and Cabinets together. Rotating counterclockwise adds Green Channel characteristics, and clockwise adds Red Channel characteristics.

## Saving HyperModels™ (Amp Save)

When you have finished editing the Green and Red Channels, you can save the HyperModel™ for future use, in one of 9 User HyperModel™ locations. After it has been saved, it can be used in either the Green or Red Amp Channel. The Amp Save procedure is as follows:

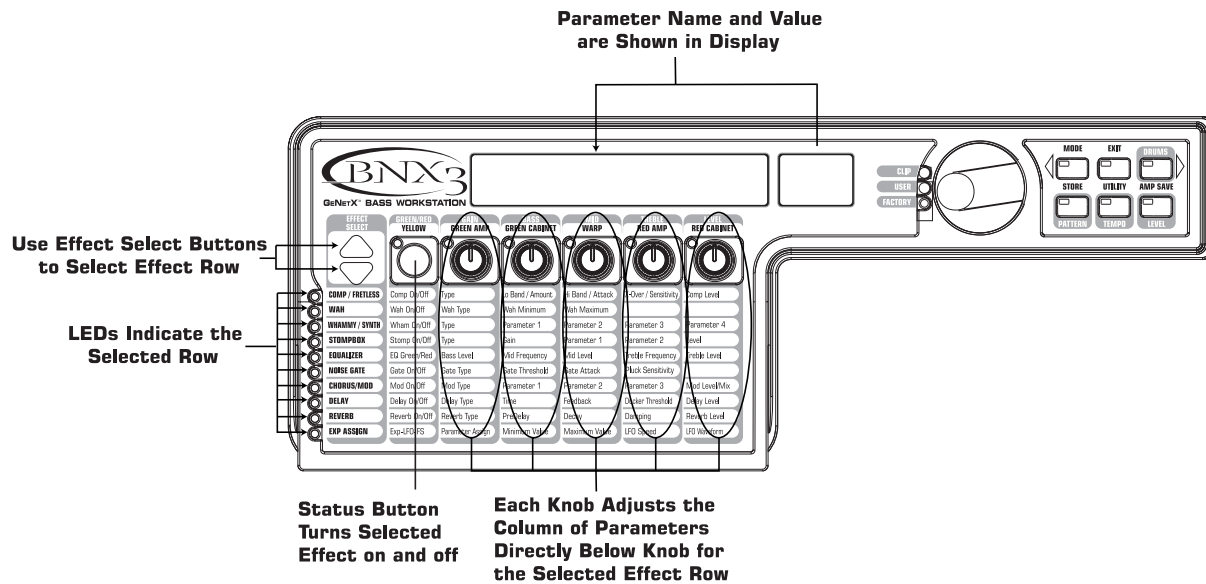
1. Press the **AMP SAVE** button. The Amp Save button begins flashing and the display reads *NEWAMP*. The *N* of *NEWAMP* is flashing indicating that you can name your HyperModel™.
2. Use the **DATA WHEEL** to select the alpha-numeric character.
3. Use the **DRUMS** button to move to the next character (to the right), or the **MODE BUTTON** to select the previous character (to the left).
4. Repeat steps 2 and 3 until the HyperModel™ name appears in the display.
5. Press the **AMP SAVE** button again to select one of the 9 User HyperModel™ locations. If the BNX3 has any unused HyperModel™ locations available, the display reads *EMPTY UI*. The UI flashes indicating that this is the first available location for HyperModel to be stored. If all 9 HyperModel™ locations are full, the BNX3 defaults to the first HyperModel™ location and displays the name of HyperModel™ stored in the first location.
6. Use the **DATA WHEEL** to select a User location to save the HyperModel. If all locations have been used, the display shows the name of the HyperModel™ about to be overwritten.
7. Press the **AMP SAVE** button again to complete the Amp Save procedure.

Press **EXIT** at any time during the Amp Save procedure to abort the process.

**Note: The Amp Save procedure only saves Amp/Cabinet combinations to the User HyperModel™ locations. It does not store changes or the new HyperModel™ to the selected preset. See page 17 for information on storing changes to a Preset.**

## Editing the Effects

The BNX3 contains a comprehensive library of fully programmable, studio quality Effects. The Effects section is accessed with the Effect Select Up/Down buttons. The Matrix LEDs light one at a time to identify the selected row of effects. When you have selected the effect row, you have up to 5 Parameters that can be edited. Each effect row is divided into 6 columns of Parameters. The first column is the on/off control. Pressing the Status button at the top of the first column turns the effect group on and off. The knobs at the top of the other 5 columns control the Parameters listed directly beneath the corresponding knob. Each effect's parameter is labeled in the Matrix. When a knob is turned, the corresponding parameter name appears in the green alpha-numeric display and the parameter value displays in the red numeric display.

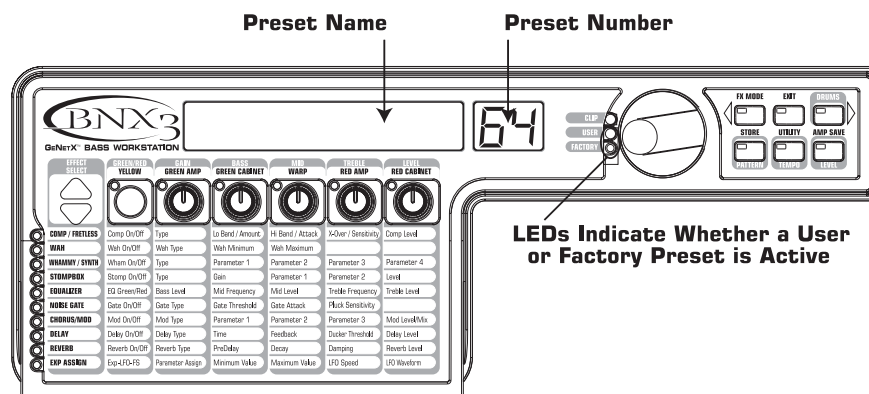


Rotating the parameter knobs increases or decreases the value of the parameter and you hear the change in real time. When parameter values have changed, the Store LED lights indicating the preset has been modified and needs to be stored (see below for more on the storing procedure). Changing presets, or turning the power off before storing any changes will erase your changes and revert to the stored values. When the preset has been edited, you may store your settings to any of the 65 User Preset locations.

## Storing/Copying a Preset

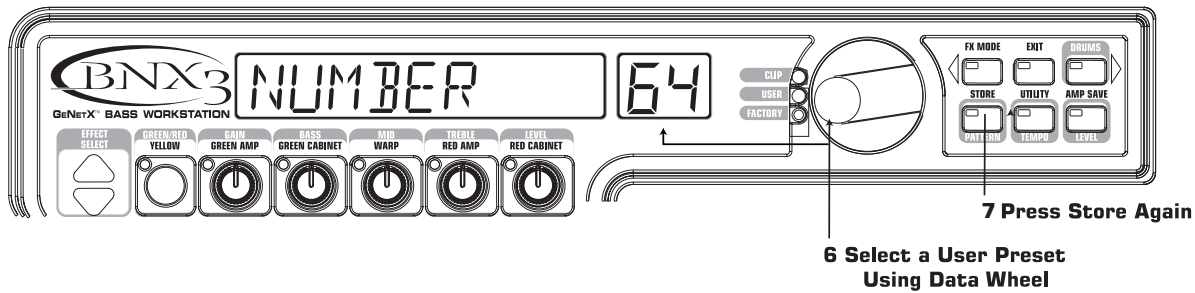
When editing a preset, the Store LED lights indicating you have changed a parameter and need to store the changes. Once you have modified the Amp Models, Cabinet types, and Effect Parameters, store it to a User Preset location. The following steps outline the procedure for storing a preset:

1. Press the **STORE** button. The first letter of the preset name begins flashing.
2. Use the **DATA WHEEL** to select the alpha-numeric character.
3. Press the **DRUMS** button to select the next character to the right, and the **EDIT** button to select the previous character to the left.



4. Repeat steps 2 and 3 until the preset name shows in the display.
5. Once you have entered the name for the preset, press the **STORE** button again. The current preset location flashes in the numeric display.
6. Select the User Preset location using the **DATA WHEEL**.

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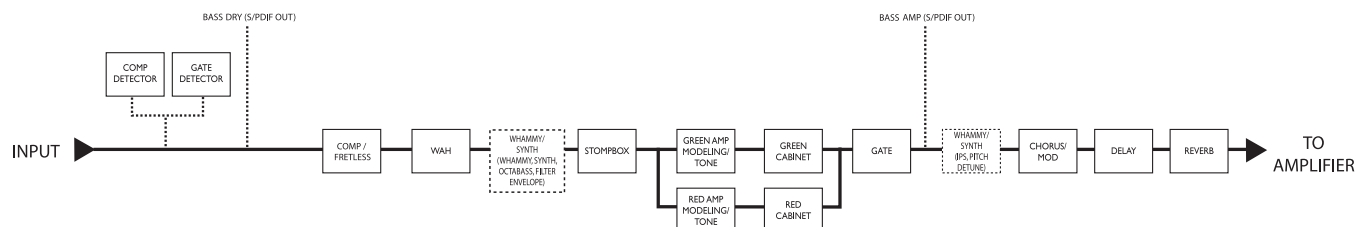
7. Press the **STORE** button again to finish.

To copy one preset to another preset location, begin by selecting the preset you want to copy, then follow the steps listed above.

Press **EXIT** at any time during the procedure to aborts the process.

## Effects and Parameters

The BNX3 can be thought of as several different “virtual” amplifiers, and individual, hi-tech stomp boxes. With stomp boxes, the order in which they are connected can make a big difference in how good the overall sound is. Whether the stomp boxes are placed before the amp, or in the amp’s effects loop will also make a difference. The following diagram shows the signal path through the processing contained in the BNX3.



## Effect Definitions

Each Effect within the BNX3 is fully programmable. Understanding how these effects alter the sound, and how each parameter alters the effect will help you achieve the sound you are looking for. The following overview outlines how each effect and parameter in the BNX3 alters the sound.

### Compressor/Fretless

The Compressor/Fretless module is a dual-purpose effect. You can select either the compressor or fretless simulator for your preset’s application. The BNX3’s compressor is a true dual-band compressor complete with an adjustable crossover frequency. You can use it for either mildly compressing the lows and highs independently or as a radical tone shaping tool.

The fretless simulator creates a fretless bass sound when using a fretted bass.

#### Compressor Settings

**Comp On/Off** - The **STATUS** button turns the Compressor/Fretless module on and off.

**Type** - The Parameter 1 knob selects whether the compressor or or fretless effect is active. Set this so that the display reads *COMPRESS*.

**Low Band** - The Parameter 2 knob adjusts the compression amount for frequencies (*LOW BAND*) below the crossover frequency. Range is 0 to 99.

**High Band** - The Parameter 3 knob adjusts the compression amount for frequencies above (*HIGH BAND*) the crossover frequency. Range is 0 to 99.

**Crossover Freq** - The Parameter 4 knob adjusts the frequency where the Low and High band controls will affect the signal. Range is 100Hz to 3000Hz.

**Compressor Level** - The Parameter 5 knob adjusts the overall level (*COMP LEVEL*) of the compressor effect. Range is 0 to 99.

#### Fretless Settings

**Fretless On/Off** - The **STATUS** button turns the Compressor/Fretless module on and off.

**Type** - The Parameter 1 knob selects whether the compressor or fretless effect is active. Set this so that the display reads *FRETLESS 1*, *FRETLESS 2*, or *FRETLESS 3*. Each type has a different resonant characteristic that is applied to the sound.

**Amount** - The Parameter 2 knob adjusts the amount of character (*AMOUNT*) each fretless type will impart on the signal. Range is 1 to 99.

**Attack** - The Parameter 3 knob adjusts the attack time (*ATTACK*) of the fretless effect. Higher values correspond to longer attack times. Range is 1 to 99.



# Effects and Parameters

**Sensitivity** - The Parameter 4 knob adjusts the sensitivity (*SENSITIVITY*) of the fretless effect. Higher values correspond to increased sensitivity to your playing. Range is 0 to 99.

The Parameter 5 knob has no function when the fretless simulator is active.

## Wah

Wah is an effect controlled by the Expression Pedal. A Wah applies a boost in gain to a narrow band of frequencies. As the Expression Pedal is rocked back and forth, the center frequency receiving the boost is swept up and down making the bass sound as if it is saying “Wah.” The Wah is engaged and disengaged by applying pressure to the V-Switch located under the toe of the Expression Pedal. See page 67 for more information regarding the V-Switch.

**Wah On/Off** - The **STATUS** button (or the V-Switch) turns the Wah (*WAH*) on and off.

**Wah Type** - The Parameter 1 knob selects the type of Wah. Values include: Bass Cry (*BASS CRY*) is a bass sounding Wah, Boutique Wah (*BOUTIQUE*) is a wide sweeping Wah with a more modern sound and Full Range Wah (*FULLRANG*) sweeps the entire spectrum of audible frequencies.

**Wah Minimum** - The Parameter 2 knob is used to select the minimum point the Wah (*WAH MIN*) will reach in the toe up position of the Expression Pedal. Ranges from 0 to 99.

**Wah Maximum** - The Parameter 3 knob is used to select the maximum point the Wah (*WAH MAX*) will reach in the toe down position of the Expression Pedal. Ranges from 0 to 99.

The Parameter knobs 4 and 5 don’t function when the Wah module is selected.

## Whammy™/Synth

This module includes eight types of pitch altering effects: Whammy™, IPS, Detune, Octavider, Synth, Filter, Envelope, and Pitch Shift. The Status button turns the Whammy™/Synth (*WHAM/SYN*) module on and off. The Parameter 1 knob selects whether the module is a Whammy™ (*WHAMMY*), Intelligent Pitch Shifter (*IPS*), Detuner (*DETUNE*), Pitch Shifter (*PITCH*), Octavider (*OCTAVIDER*), Synth (*SYNTH*), Formant Filter (*FILTER*), or Envelope Filter (*ENVELOPE*). Parameters 1, 2, 3, and 4 in the Matrix have different functions depending upon which effect is selected in this module.

Whammy™ is an effect that uses an Expression Pedal to bend the pitch of the incoming signal, or add a bendable harmony with the original signal. As the Pedal is moved, the note bends either up or down. When Whammy™ is selected, it is automatically placed before the Amp Modeling as shown in the block diagram (see page 19). The Whammy™ effect must be linked to the Expression Pedal in order to function. See page 62 for more information on linking the Expression Pedal.

### Whammy™

**Parameter 1 (Whammy™)** - The Parameter 2 knob selects the interval and direction of the pitch bend. Choices are as follows:

#### Whammy™ (no Dry Signal)

1 OCT UP (1 octave up)  
2 OCT UP (2 octaves up)  
2ND DOWN (a second down)  
REV 2ND DN (a second down reversed pedal action)  
4TH DOWN (a fourth down)  
1 OCT DN (an octave down)  
2 OCT DN (2 octaves down)  
DIVE BOMB (Dive Bomb)

#### Harmony Bends (Dry Signal Added)

M3 MAJ3 (a minor third to a Major third)  
2ND MAJ3 (a second above to a Major third up)  
3RD 4TH (a third above to a fourth up)  
4TH 5TH (a fourth above to a fifth up)  
5TH OCT (a fifth above to an octave up)  
1 OCT UP (one octave up)  
1 OCT DN (one octave down)  
OCT UP DN (one octave up to one octave down)

# Effects and Parameters

**Parameter 2 (Whammy™ Pedal)** - The Parameter 3 knob provides a manual control of the (WHAM PED) Whammy™ pedal position. Ranges from 0-99.

**Parameter 3 (Whammy™ Mix)** - The Parameter 5 knob adjusts the Mix (WHAM MIX) of all pitch altering effects in this module. Ranges from 0-99.

The Parameter 4 knob has no function when the Whammy™ is selected.

## Intelligent Pitch Shifting (IPS)

Intelligent Pitch Shifting makes a copy of the incoming signal, and then changes the pitch of the copied note to a diatonically correct interval specified by the Amount parameter. An Intelligent Pitch Shifter sharpens or flattens the shifted pitch in order to keep the specified interval within the selected key and scale creating a true harmony.

**Parameter 1 (Shift)** - The Parameter 2 knob selects the Amount or harmony interval for the Intelligent Pitch Shifter. Interval choices include:

OCT DOWN (octave down)	2ND UP (a second above)
7TH DOWN (a seventh below)	3RD UP (a third above)
6TH DOWN (a sixth below)	4TH UP (a fourth above)
5TH DOWN (a fifth below)	5TH UP (a fifth above)
4TH DOWN (a fourth below)	6TH UP (a sixth above)
3RD DOWN (a third below)	7TH UP (a seventh above)
2ND DOWN (a second below)	OCT UP (an octave above)

**Parameter 2 (Scale)** - The Parameter 3 knob selects the scale the IPS uses. Scale choices include: Major (MAJOR), Minor (MINOR), Dorian (DORIAN), Mixolydian (MIXOLYD), Lydian (LYDIAN), Harmonic Minor (HARMINOR).

**Parameter 3 (Key)** - The Parameter 4 knob selects the musical key the IPS uses. Key choices range from Key E (KEY E) through Key Eb (KEY Eb).

**Parameter 4 (Level)** - The Parameter 5 knob adjusts the Level (LEVEL) of the IPS effect. Range is 0-99.

## Detuning

Detuning is similar to a standard pitch shifter with the exception that it shifts the copied signal by less than a semitone resulting in an effect as if two basses were slightly out of tune and playing in unison.

**Parameter 1 (Detune)** - The Parameter 2 knob selects the Amount (AMOUNT) of detuning applied to the copied pitch in cents (100 cents equals 1 semitone). Ranges are from 24 cents below (-24) to 24 cents above (+24).

**Parameter 2 (Level)** - The Parameter 5 knob adjusts the Level (LEVEL) of the detune effect. Range is 0-99.

The Parameter 3 and 4 knobs don't function when Detune is selected.

## Pitch Shifter

A Pitch Shifter makes a copy of the incoming signal and shifts the pitch of the copied signal and keeps the shifted pitch at a parallel distance from the input note.

**Parameter 1 (Pitch)** - The Parameter 2 knob selects the Shift (SHIFT) of the pitch in semitone intervals. Ranges from two octaves below (-24) to two octaves above (+24).

**Level** - The Parameter 5 knob adjusts the Mix (MIX) of the pitch shift effect. Range is 0-99. The Parameter 3 and 4 knobs do not function when Pitch is selected.

# Effects and Parameters

## Octavider

The Octavider effect features both a sub-octave note shifter with a synth envelope. Both sub and synth levels can be controlled independently making Octavider a great tool for emphasizing low end with just a touch of funky synth.

**Parameter 1 (Sensitivity)** - The Parameter 2 knob controls the synth triggering sensitivity (*SENSIVITY*). Higher settings open the synth envelope easier. Range is 1-99.

**Parameter 2 (Attack)** - The Parameter 3 knob controls the synth attack (*ATTACK*). Higher settings create longer attack times. Range is 1-99.

**Parameter 3 (Synth Level)** - The Parameter 4 knob controls the synth level (*SYNTHLEVEL*). Range is 0-99.

**Parameter 4 (Sub Level)** - The Parameter 5 knob controls the octave sub level (*SUBLEVEL*). Range is 0-99.

## Synth

The Synth effect creates convincing analog monophonic synth tones. Adjustable start/stop frequencies and attack controls let you create funky synth bass lines to dramatic synth filter sweeps.

**Parameter 1 (Sensitivity)** - The Parameter 2 knob controls the synth triggering sensitivity (*SENSIVITY*). Higher settings open the synth envelope easier. Range is 1-99.

**Parameter 2 (Attack)** - The Parameter 3 knob controls the synth attack (*ATTACK*). Higher settings create longer attack times. Range is 1-99.

**Parameter 3 (Start)** - The Parameter 4 knob controls the synth start cutoff frequency (*START*). Range is 1-99.

**Parameter 4 (Stop)** - The Parameter 5 knob controls the stop cutoff frequency (*STOP*). Range is 1-99.

## Filter

The Filter effect creates vocal format sounds. Adjustable range, attack, and inverse controls can produce unique sounds unlike anything you have heard before.

**Parameter 1 (Sensitivity)** - The Parameter 2 knob controls the filter's triggering sensitivity (*SENSIVITY*). Range is 1-99.

**Parameter 2 (Attack)** - The Parameter 3 knob controls the amount of filter attack (*ATTACK*). Higher settings create longer attack times. Range is 1-99.

**Parameter 3 (Range)** - The Parameter 4 knob controls the range (*RANGE*) of the filter's sweep. Range is 1-99.

**Parameter 4 (Sweep)** - The Parameter 5 knob controls the direction of filter sweep (*NORMAL / INVERSE*).

## Envelope Filter

The BNX3's Envelope Filter provides classic autowah functionality with a sub-octave generator.

**Parameter 1 (Sensitivity)** - The Parameter 2 knob controls the envelope filter's sensitivity (*SENSIVITY*). Higher settings open the filter easier. Range is 1-99.

**Parameter 2 (Blend)** - The Parameter 3 knob controls the dry/effect signal blend (*BLEND*). Range is 0-99.

**Parameter 3 (Range)** - The Parameter 4 knob controls the envelope filter's range (*RANGE*). Range is 0-99.

**Parameter 4 (Sub Level)** - The Parameter 5 knob controls the octave sub level (*SUBLEVEL*). Range is 0-99.

# Effects and Parameters

## Stomp Box Modeling

The BNX3 Stomp Box Modeling emulates the tones of the most popular distortion boxes ever used including the DOD OD250, Boss DS-1, Arbiter Fuzz Face, Electro Harmonix Big Muff, ProCo RAT, DOD Grunge, Boss Metal Zone, Ibanez TS-9, Voodoo Labs Sparkle Drive, and the Guyatone OD-2\*.

\*Arbiter, Boss, Electro-Harmonix, ProCo, Ibanez, Voodoo Labs, Guyatone, DS-1, Fuzz Face, Big Muff, RAT, Metal Zone, TS-9, Sparkle Drive, and OD-2 are trademarks of their respective companies and are in no way associated with DigiTech

**Stomp Box On/Off** - The **STATUS** button turns the Stomp Box (*STOMPBOX*) Modeling on and off.

**Stomp Box Type** - The Parameter 1 knob selects the type of stomp box to be used. Choices include:

<i>SCREAMER</i> - Based on an Ibanez TS-9	<i>BIG MP</i> - Based on the Electro Harmonix Big Muff Pi.
<i>FUZZY</i> - Based on an Arbiter Fuzz Face	<i>GUY OD</i> - Based on a GuyaTone OD-2
<i>DOD 250</i> - Based on a DOD Overdrive 250	<i>RODENT</i> - Based on a Rat distortion
<i>GRUNGE</i> - Based on a DOD Grunge™.	<i>SPARK DRV</i> - Based on a Voodoo Labs SparkleDrive.
<i>DS DIST</i> - Based on a Boss DS-1.	<i>ZONE</i> - Based on a Boss Metal Zone.

Type	Gain	Param1	Param2	Param3*	Param4*	Level
SCREAMER	DRIVE	TONE				LEVEL
RODENT	DIST	FILTER				VOLUME
DS DIST	DIST	TONE				LEVEL
DOD 250	GAIN					LEVEL
BIG MP	SUSTAIN	TONE				VOLUME
GUY OD	DRIVE					LEVEL
SPARK DRV	GAIN	TONE	CLEAN			VOLUME
GRUNGE	GRNGGAIN	BUTT	FACE			LOUD
FUZZY	FUZZ					VOLUME
ZONE	DIST	MID FREQ	MID LVL	LOW	HIGH	LEVEL

**Gain** - Controls the amount of distortion or gain in the Stompbox model. Range is 0-99

**Param1** - A tone control for the Stompbox model. Range is 0-99

**Param2** - A second Tone control for the Stompbox model (not available in all models). Range is 0-99

**\*Param3** - Controls the Mid Frequency in the Zone stompbox model. Range is 0-99

**\*Param4** - Controls the Mid Level in the Zone stompbox model. Range is 0-99

**Level** - Controls the output level of the Stompbox model. Range is 0-99

## EQ

Equalization helps shape the tonal response of your bass signal. The EQ in the BNX3 is similar to the tone knobs on an amplifier with the exception that the BNX3 lets you choose the center frequency for the Mid Range and Treble adjustments.

**EQ Green/Red** - The **STATUS** button adjusts the EQ when a Warped combination (green and red) of amps is selected. This button does not function if only the green or red channel is selected.

**Bass Level** - The Parameter 1 knob adjusts the amount of low end enhancement. Ranges from *GRN/RED* *BASS* -12 to 12 (dB).

**Mid Frequency** - The Parameter 2 knob selects the frequency that the boost is applied by the Mid Level knob. Ranges from 300Hz to 5000Hz.

**Mid Level** - The Parameter 3 knob adjusts the amount of mid range enhancement. Ranges from *GRN/RED* *MID* -12 to 12 (dB).

**Treble Frequency** - The Parameter 4 knob selects the frequency that the boost is applied to by the Treble Level knob. Ranges from 500Hz to 8000Hz.

**\*These Parameters are only available using the GENEDIT™ computer editor software.**

# Effects and Parameters

**Treble Level** - The Parameter 5 knob adjusts the amount of high end enhancement. Ranges from *GRN/RED TRBL* -12 to 12 (dB).

## Noise Gate

A Noise Gate is designed to eliminate hiss and ambient noise while you are not playing. A Noise Gate can also be used to create an automatic swell in volume. The BNX3 includes two different types of Noise Gates: Silencer™, and Pluck. The Silencer™ operates as a standard Noise Gate. The Pluck Noise Gate is designed to close after every note (depending on the Pluck Sensitivity). This allows automatic volume swells to occur on a note by note basis.

**Gate On/Off** - The **STATUS** button turns the Noise Gate (*GATE*) on and off.

**Gate Type** - The Parameter 1 knob selects between the Silencer™ (*SILENCER*) or Pluck (*PLUCK*) type of Noise Gates.

**Gate Threshold** - The Parameter 2 knob sets the signal strength required to open or close the Noise Gate. The Gate Threshold (*THRESHLD*) parameter ranges from 0 (opens easily) to 40 (requires strong signals to open).

**Gate Attack** - The Parameter 3 knob adjusts the length of time it takes the gate to open (*ATTACK*) and the signal to become audible once the Threshold has been exceeded. Ranges from 0 (immediate signal), to 9 (This setting will gradually ramp up the volume).

**Pluck Sensitivity** - Selects the threshold (*PLUCK*) where the Gate re-triggers when using the Pluck type Noise Gate. This parameter is only available when Pluck is the selected type of Noise Gate. Ranges from 0 (requires strong input signals) to 99 (re-triggers with weak input signals).

The Parameter 5 knob does not function when the Noise Gate is selected.

## Chorus/Mod Effects

The Modulation Effects group is a multi-function module allowing you to select effects such as; Chorus, Flanger, Phaser, Tremolo, Panner, Vibrato, Rotary Speaker, AutoYa™, YaYa™, Detune, and Pitch Shift. Only one of the effects in this row can be used at a time. When the Chorus/Mod group is selected, the **STATUS** button is used to turn the Effect (*EFFECT*) module on and off. The Parameter 1 knob is used to select the type of effect. After selecting the type of effect in this module, the Parameter 2-5 knobs can then be used to adjust the individual parameters associated with the selected effect. The following pages describe each effect and their parameters in more detail.

### Chorus

A Chorus adds a short delay to your signal. The delayed signal is modulated in and out of tune and then mixed back with the original signal to create a thicker sound.

**Parameter 1** - The Parameter 2 knob adjusts the rate (*SPEED*) of the modulation. Ranges from 1 to 99.

**Parameter 2** - The Parameter 3 knob adjusts the intensity (*DEPTH*) of the modulation. Ranges from 1 to 99.

**Parameter 3** - The Parameter 4 knob adjusts the PreDelay (*PREDELAY*) or length of time before the Chorus effect is applied to the input signal. Ranges from 1 to 20.

\* **Parameter 4** - Selects the waveform used by the Chorus. Waveforms include: Triangle, Sine, and Square.

\* **Parameter 5** - Adjusts the left to right balance of the wet signal. Ranges from L 99 to R 99.

\* These Parameters are only available using the GENEDIT™ computer editor software.

# Effects and Parameters

**Mod Level** - The Parameter 5 knob controls the level (*MOD LEVEL*) of the Chorus. Ranges from 0 to 99.

## Flanger

A Flanger uses the same principle as a Chorus but has a shorter delay time and adds regeneration (or repeats) to the modulating delay. This results in an exaggerated up and down sweeping motion to the effect.

**Parameter 1** - The Parameter 2 knob adjusts the rate (*SPEED*) of the modulation. Ranges from 1 to 99.

**Parameter 2** - The Parameter 3 knob adjusts the intensity (*DEPTH*) of the Modulation. Ranges from 1 to 99.

**Parameter 3** - The Parameter 4 knob adjusts the amount of feedback (*REGEN*) added to the Flanger delay. Ranges from 0 to 99.

\* **Parameter 4** - Selects the waveform used by the Flanger. Waveforms include: Triangle, Sine, and Square.

\* **Parameter 5** - Adjusts the left to right balance of the wet signal. Ranges from L 99 to R 99.

**Mod Mix** - The Parameter 5 knob controls the mix (*MOD MIX*) of wet and dry signal. Ranges from 0 (all dry) to 99 (all wet).

## Phaser

A Phaser splits the incoming signal, takes the split signal in and out of phase and mixes it back in with the original signal. As the phasing changes, different frequencies are canceled resulting in a warm sort of twisting sound.

**Parameter 1** - The Parameter 2 knob adjusts the rate (*SPEED*) of the modulating phase. Ranges from 1 to 99.

**Parameter 2** - The Parameter 3 knob adjusts the intensity (*DEPTH*) of the modulation. Ranges from 1 to 99.

**Parameter 3** - The Parameter 4 knob adjusts the amount of effected signal returned to the input of the Phaser (*REGEN*). Ranges from 0 to 99.

\* **Parameter 4** - Selects the waveform used by the Phaser. Waveforms include: Triangle, Sine, and Square.

\* **Parameter 5** - Adjusts the left to right balance of the wet signal. Ranges from L 99 to R 99.

**Mod Mix** - The Parameter 5 knob controls the mix (*MOD MIX*) of wet and dry signal. Ranges from 0 (all dry) to 99 (all wet).

## Tremolo

A Tremolo effect modulates the volume of the signal at an even rate.

**Parameter 1** - The Parameter 2 knob adjusts the rate (*SPEED*) at which the volume modulates. Ranges from 1 to 99.

**Parameter 2** - The Parameter 3 knob adjusts the intensity (*DEPTH*) of the modulating volume. Ranges from 0 to 99.

**Parameter 3** - The Parameter 4 knob selects the type of wave form the modulation uses. Choices include: Triangle, Sine, and Square.

The Parameter 5 knob does not function when the Tremolo is selected.

\* These Parameters are only available using the GENEDIT™ computer editor software.



# Effects and Parameters

## Panner

An Auto Panner modulates the sound from left to right at an even rate.

**Parameter 1** - The Parameter 2 knob adjusts the rate (*SPEED*) at which the signal pans from side to side. Ranges from 1 to 99.

**Parameter 2** - The Parameter 3 knob adjusts the intensity (*DEPTH*) of the changing pan. Ranges from 0 to 99.

**Parameter 3** - The Parameter 4 knob selects the type of wave form the modulation uses. Choices include: Triangle , Sine, and Square.

The Parameter 5 knob does not function when the Panner is selected.

## Vibrato

A Vibrato effect modulates the pitch of the incoming signal at an even rate.

**Parameter 1** - The Parameter 2 knob adjusts the rate (*SPEED*) at which the pitch modulates. Ranges from 1 to 99.

**Parameter 2** - The Parameter 3 knob adjusts the intensity (*DEPTH*) of the modulating pitch. Ranges from 1 to 99.

**Parameter 3** - The Parameter 4 knob selects the type of wave form the modulation uses. Choices include: Triangle , Sine, and Square.

## Rotary Speaker

Rotary Speaker is an emulation of a device that includes a spinning horn and rotor (woofer). The rotation of these two speakers produced an interesting combination of sound panning from side to side, as well as a slight pitch change due to the speed of the sound coming towards, and then going away from the listener.

**Parameter 1** - The Parameter 2 knob adjusts the rate (*SPEED*) of the spinning speakers. Ranges from 0 to 99.

**Parameter 2** - The Parameter 3 knob controls the intensity (*DEPTH*) of the Effect. Ranges from 0 to 99.

**Parameter 3** - The Parameter 4 knob controls the Pitch Shift (*DOPPLER*) effect that is the ratio between the horn and the rotor positions. Ranges from 0 to 99.

\* **Parameter 4** - Selects the crossover frequency between the horn and rotor. Ranges from 200Hz to 1500Hz.

**Mod Mix** - The Parameter 5 knob controls the mix (*MOD MIX*) of wet and dry signal. Ranges from 0 (all dry) to 99 (all wet).

## AutoYa™

An AutoYa™ combines the characteristics of a Wah and a Flanger together creating an almost human vowel sound as if the bass were saying “Yah.” The AutoYa™ automatically provides this animation by modulating the sound at an even rate.

**Parameter 1** - The Parameter 2 knob adjusts the rate (*SPEED*) of the AutoYa. Ranges from 1 to 99.

**Parameter 2** - The Parameter 3 knob adjusts the intensity (*DEPTH*) of the AutoYa™ effect. Ranges from 1 to 99.

\* These Parameters are only available using the GENEDIT™ computer editor software.



# Effects and Parameters

**Parameter 3** - The Parameter 4 knob adjusts the throaty quality (*RANGE*) of the AutoYa™ effect.  
Ranges from 1 to 50.

\* **Parameter 4** - Adjusts the left to right balance of the wet signal. Ranges from L 99 to R 99.

**Mod Mix** - The Parameter 5 knob controls the mix (*MOD MIX*) of wet and dry signal. Ranges from 0 (all dry) to 99 (all wet).

## YaYa™

The YaYa™ is an effect exclusive to DigiTech products. The YaYa™ is controlled by the Expression Pedal and combines the characteristics of a wah and a flanger together providing a unique talk box type of effect. As the Expression Pedal is rocked back and forth, the bass appears to say “Yah.” The YaYa™ effect must be linked to the Expression Pedal in order to function. See page 62 for more information on linking the Expression Pedal.

**Parameter 1** - The Parameter 2 knob adjusts the Ya Pedal position (*YA PEDAL*). Ranges from 0 to 99.

**Parameter 2** - The Parameter 3 knob adjusts the intensity (*DEPTH*) of the YaYa™ effect. Ranges from 1 to 99.

**Parameter 3** - The Parameter 4 knob adjusts the throaty quality (*RANGE*) of the YaYa™ effect.  
Ranges from 1 to 50.

\* **Parameter 4** - Adjusts the left to right balance of the wet signal. Ranges from L 99 to R 99.

**Mod Mix** - The Parameter 5 knob controls the mix (*MOD MIX*) of wet and dry signal. Ranges from 0 (all dry) to 99 (all wet).

## Detune

A Detuner makes a copy of your incoming signal, takes the copied signal slightly out of tune from the original, and mixes the two signals together. The result is a doubling type of effect as if two basses were playing the same part together.

**Parameter 1** - The Parameter 2 knob adjusts the amount of pitch difference (*AMOUNT*) applied to the copied signal. Ranges from -24 cents to +24 cents.

**Parameter 2** - The Parameter 3 knob adjusts the left/right balance of the detuned signal. Ranges from left 99 (*MOD LEFT 99*) to right 99 (*MOD RIGHT 99*).

**Mod Level** - The Parameter 5 knob controls the level (*MOD LEVEL*) of the detuned note. Ranges from 0 to 99.

The Parameter 4 knob does not function when the Detune effect is selected.

## Pitch Shift

A Pitch Shifter copies the incoming signal, then shifts the pitch of the copied note to a different note. The shifted note is then mixed back with the original signal sounding as if two basses were playing parallel notes.

**Parameter 1** - The Parameter 2 knob adjusts the Amount of Pitch Shift (*SHIFT*) in intervals of one semi-tone. Ranges from 24 semitones below to 24 semitones above.

**Parameter 2** - The Parameter 3 knob adjusts the left/right balance of the shifted pitch. Ranges from left 99 (*MOD LEFT 99*) to right 99 (*MOD RIGHT 99*).

\* These Parameters are only available using the GENEDIT™ computer editor software.

# Effects and Parameters

**Mod Level** - The Parameter 5 knob controls the level (*MOD LEVEL*) of the shifted pitch. Ranges from 0 to 99.

The Parameter 4 knob does not function when the Pitch Shifter is selected.

## Delay

Delay records a portion of the incoming signal, and plays it back a short time later. The recorded segment can repeat just once, several times, or infinitely (that turns off the input to the Delay and lets you play over the top of a passage in the Delay loop). The Delay in the BNX3 also includes a Ducker Threshold that lets you set the signal strength required before the Delay records. This feature lets you control the Delay with your playing.

**Delay On/Off** - The **STATUS** button turns the Delay (*DELAY*) on and off.

**Delay Type** - The Parameter 1 knob selects one of the 5 different types of Delay. The Delay choices include:

*MONO* (clear concise repeats)

*ANLG PONG* (side to side with deterioration)

*PING PONG* (bounces from side to side)

*SPREAD* (clear concise repeats with stereo

*ANALOG* (deteriorates with each repeat)

imaging)

**Time** - The Parameter 2 knob adjusts the length of time between repeats. Ranges from 10 MS through 2000MS (10 through 2000 milliseconds) in 10 ms increments. Use the Data Wheel while the Delay Time appears in the Display to adjust the Delay Time in 1 ms increments.

**Feedback** - The Parameter 3 knob adjusts the number of times the delayed signal will repeat (*FEEDBACK*). Ranges from 1 to 99 and *RPT HOLD* (infinite repeat).

**Ducker Threshold** - The Parameter 4 knob adjusts the level (*THRESHOLD*) the input signal must reach before the Delay signal is attenuated. Ranges from 0 to 99 and off (*OFF*).

\* **Ducker Attenuation** - The Ducker Level selects the amount of attenuation applied to the Delay signal when the Ducker Threshold has been exceeded. Ranges from 0 to 99.

\* **Delay Balance** - The Delay Balance adjusts the left/right balance of the Delay signal. Ranges from L 99 to R 99.

\* **Spread** - This parameter increases or decreases the stereo imaging for the Spread Delay. Range is 1-50.

**Delay Level** - The Parameter 5 knob adjusts the volume (*DELAY LEVEL*) of the Delay signal. Ranges from 0 to 99.

## Reverb

Reverb gives the listener a sense that the music is being performed in various acoustical environments. It can provide the tight acoustics of a small room, or the ambience of huge arena.

**Reverb On/Off** - The **STATUS** button turns the Reverb (*REVERB*) on and off.

**Reverb Type** - The Parameter 1 knob selects the type of Reverb or acoustic environment. The BNX3 provides ten different environments to choose from including:

\* **These Parameters are only available using the GENEDIT™ computer editor software.**

# Effects and Parameters

STUDIO = Studio  
ROOM = Wood Room  
CLUB = Club  
PLATE = Plate  
HALL = Hall

THEATER = Amphitheater  
CHURCH = Church  
GARAGE = Parking Garage  
ARENA = Arena  
SPRING = Spring

**PreDelay** - The Parameter 2 knob adjusts the amount of time (*PREDELAY*) it takes for the initial sound to reach the first reflective surface in the simulated environment. Ranges from 0 to 15.

**Decay** - The Parameter 3 knob adjusts the length of time the Reverb is audible (*DECAY*). Ranges from 1 to 99.

**Damping** - The Parameter 4 knob controls the amount of sound which is absorbed (*DAMPING*) in the simulated environment. Ranges from 0 to 99.

\* **Reverb Balance** - The Reverb Balance adjusts the left/right balance of the Reverb signal. Ranges from L 99 to R 99.

**Reverb Level** - The Parameter 5 knob adjusts the level (*REVB LEVL*) of the Reverb. Ranges from 0 to 99.

\* **These Parameters are only available using the GENEDIT™ computer editor software.**

# Tutorial

## Tutorial

Suppose you wanted to create your own HyperModel™ that incorporates the sweet tone of a Vintage bass amp using a *VNT68x10* cabinet, and the thick bottom end of a boutique bass amp with an *ASH 4x10* cabinet. Let's also suppose that you want to be able to toggle between the Fuzz amp and this new HyperModel™ with a preset that uses no Compression, has a Noise Gate that opens quickly, a subtle Chorus effect, no Delay, and a little bit of a Hall reverb. The following steps guide you through the process of creating just that preset in the BNx3.

## Select a Preset

The first step to create a preset is to select your starting point. You can start with any preset, but for this example let's start with Preset 40. Use the Footswitches or the Data Wheel to select Preset 40.

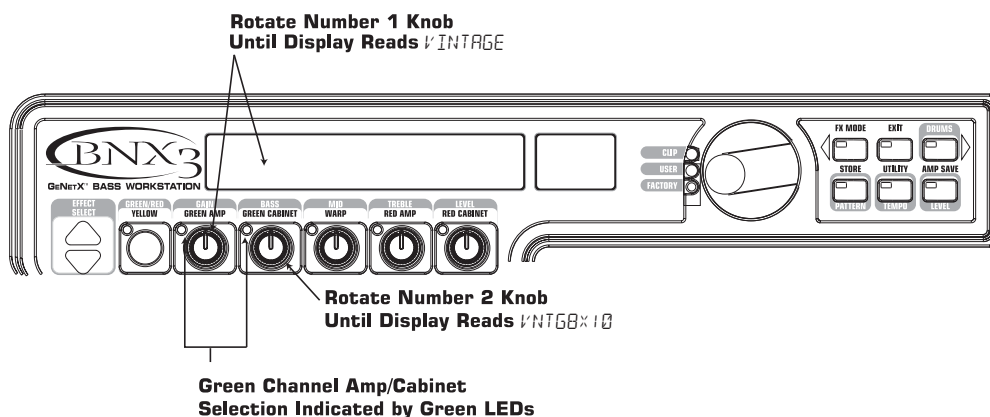
## Create a HyperModel™

1. Select Preset 40. The BNx3 is ready to select the Amp Models (indicated by the Status button's yellow LED).

### Select the Green Channel Amp and Cabinet

The LEDs next to the Parameter 1 and Parameter 2 knobs are green indicating you can select the Amp and Cabinet types for the Green Channel. To assign the Vintage bass amp to the Green Channel, do the following:

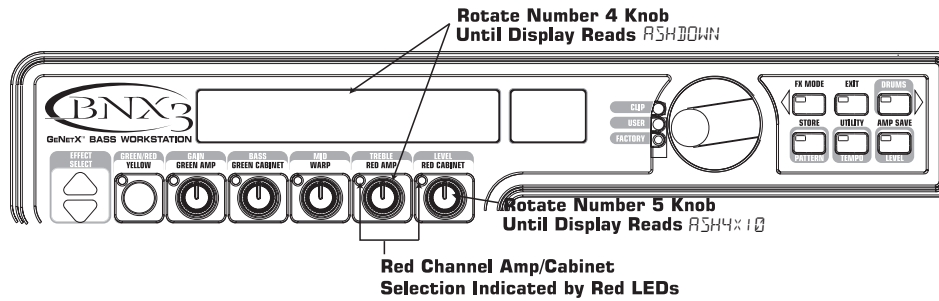
1. Rotate the Parameter 1 knob until the display reads *VINTAGE* (Vintage).
2. Rotate the Parameter 2 knob until the display reads *VNT68x10* (Vintage 8x10).



### Select the Red Channel Amp and Cabinet

The LEDs next to the Parameter 4 and 5 knobs are red indicating you can select the Amp and Cabinet types for the Red Channel. To assign the Ashdown amp to the Red Channel, do the following:

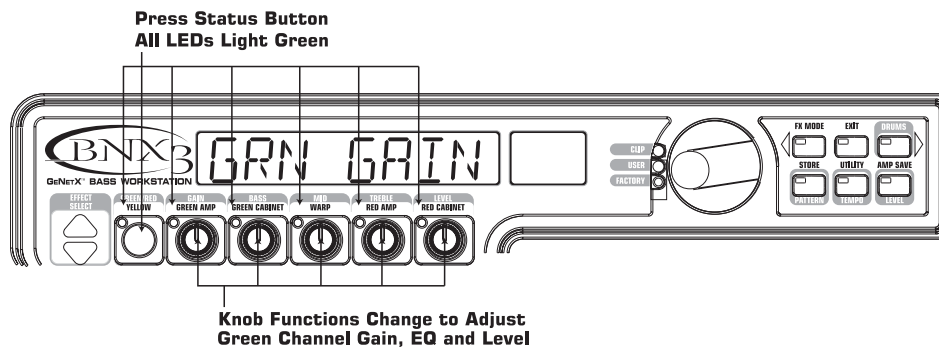
1. Rotate the Parameter 4 knob until the display reads *ASH DOWN* (Ashdown).
2. Rotate the Parameter 5 knob until the display reads *ASH 4x10* (Ash 4x10).



## Adjust the Green Channel Parameters

The Vintage bass amp that we selected for our Green Channel assignment uses the factory default settings for the Gain, EQ, and Level Parameters. Therefore, you may want to change the settings. To access the Green Channel Parameters, do the following:

1. Press the **STATUS** button. All horizontal LEDs light green indicating that all 5 knobs will adjust the Green Channel Parameters.
2. Rotate the Parameter 1 knob to adjust the Vintage Gain.
3. Rotate the Parameter 2 knob to adjust the Vintage Bass.
4. Rotate the Parameter 3 knob to adjust the Vintage Midrange.
5. Rotate the Parameter 4 knob to adjust the Vintage Treble.
6. Rotate the Parameter 5 knob to adjust the Vintage Level.

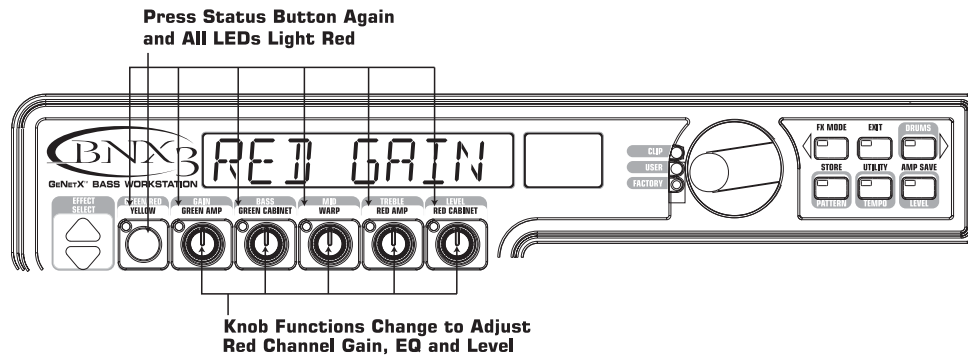


## Adjust the Red Channel Parameters

Like the Vintage bass amp in the Green Channel, the Ashdown amp in the Red Channel may need to be adjusted to suit your personal taste. To access the Red Channel Parameters, do the following:

1. Press the **STATUS** button. All horizontal LEDs light red indicating that all 5 knobs will adjust the Red Channel Parameters.
2. Rotate the Parameter 1 knob to adjust the Ashdown Gain.
3. Rotate the Parameter 2 knob to adjust the Ashdown Bass.
4. Rotate the Parameter 3 knob to adjust the Ashdown Midrange.
5. Rotate the Parameter 4 knob to adjust the Ashdown Treble.
6. Rotate the Parameter 5 knob to adjust the Ashdown Level.

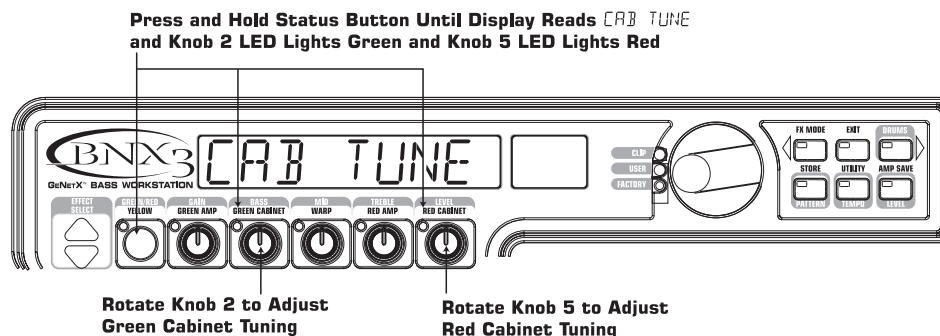
# Tutorial



## Tune the Cabinets

As an option, you may also want to adjust the resonance for the Vintage 8x10 and the Ash 4x10 Cabinets. To access the Cabinet tuning for both Red and Green Channels, do the following:

1. Press and hold the **STATUS** button until the display reads **CAB TUNE** (Cabinet Tuning).
2. Release the **STATUS** button and rotate the Parameter 2 knob to adjust the tuning for the Green Cabinet (**GTUNE 00**).
3. Rotate the Parameter 5 knob to adjust the tuning for the Red Cabinet (**RTUNE 00**).
4. Once the tuning of both Cabinets has been adjusted, press the **EXIT** button.



## Warp the Green and Red Amps Together

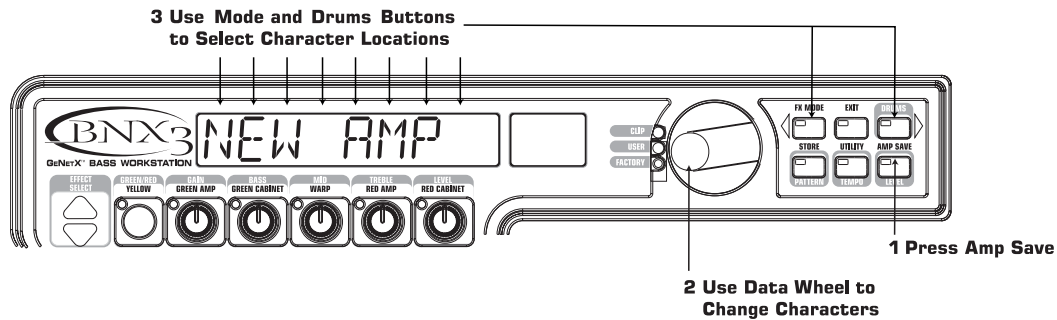
When the Amps and Cabinets in our Green and Red Amps are dialed in to suit your taste, you can Warp their characteristics together to create a new HyperModel™. To warp the green and red amps do the following:

1. Press the **STATUS** button until its LED turns yellow.
2. Rotate the Parameter 3 (Warp) knob to blend the Amps and Cabinets in our Green and Red Channels.

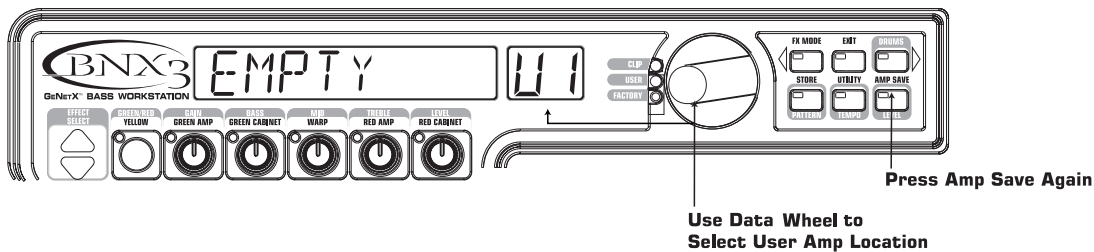
## Save the HyperModel™

Now that we have designed our own Amp/Cabinet HyperModel™, you need to save it to one of the 9 User HyperModel™ locations. This allows you to use it in presets. To save the HyperModel, do the following:

1. Press the **AMP SAVE** button until the display reads **NEW AMP** and the first letter (N) is flashing. For this example, let's name the HyperModel™ "VNTGASH" (Vintage Ashdown).
2. Rotate the **DATA WHEEL** to select V as the first letter.
3. Press the **DRUMS** button to select the next character in the display. Continue using the Data Wheel and Drums button until the display reads **VNTGASH**.



- When the display reads *VNTGASH*, press the **AMP SAVE** button again. Use the **DATA WHEEL** to choose one of the 9 User HyperModel™ locations. The alpha-numeric display should read *EMPTY* (Empty) and the red numeric display should read *01* if this is the first HyperModel™ stored to your BNX3.
- Press the **AMP SAVE** button again to save to this Amp location. The display briefly reads *AMP SAVED* (Amp Saved) and then returns to the name of the selected preset.



## Select Models for the Preset's Channels

In the previous steps, you selected a Vintage bass amp model for the Green Channel and an Ashdown amp model for the Red Channel. Then you Warped the two together to create our HyperModel™. This HyperModel™ is saved as an amp type that you named *VNTGASH*, but it is not currently part of your preset. In this example preset, you need to be able to toggle between a Fuzz bass simulation and your new HyperModel™. To do this you need to select the Fuzz model for the Green Channel and *VNTGASH* for the Red Channel of your preset, as follows:

- The LED next to the **STATUS** button should be yellow. If it is not, press **EXIT**.
- Rotate the Parameter 1 knob until the display reads *FUZZ*. This is the Green Channel Model for the preset.
- Rotate the Parameter 4 knob until the display reads *VNTGASH* (our new HyperModel™). This is the Red Channel Model for the preset. This lets you toggle between these two sounds using the Amp Footswitch (when Stompbox Mode is active).

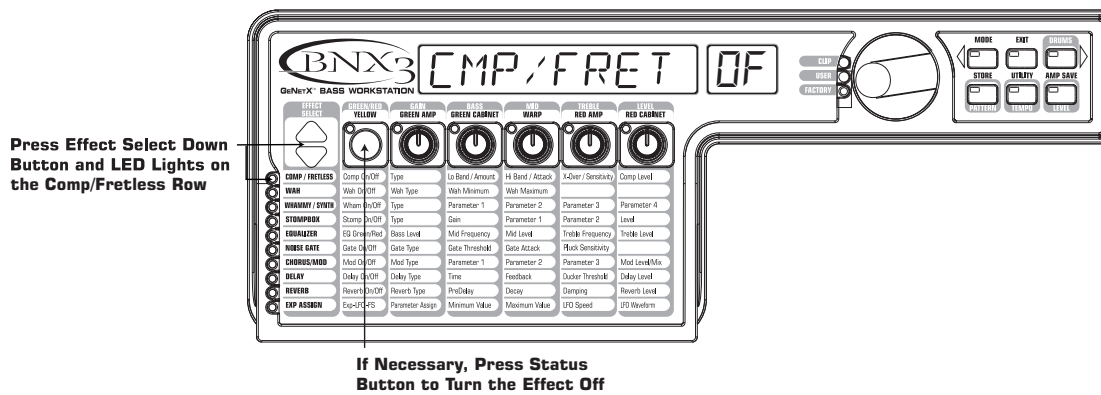
## Edit the Preset

The next step to creating our example preset involves editing the preset. To edit the preset, do the following:

### Turn the Compressor/Fretless Simulator Off

- Press the **EFFECT SELECT DOWN** button. The Matrix LED in the Comp/Fretless row lights. The display briefly reads *EDIT* and then cycles between the status of the Compressor/Fretless effects.
- If the red display reads *COMP/FRET ON*, press the **STATUS** button once to turn the compressor off (since our example does not use the compressor).





## Turn the Wah Off

You don't use Wah in your preset so, you need to turn the Wah off. To turn the Wah off, do the following:

1. Press the **EFFECT SELECT DOWN** button. The Wah LED lights and the display shows the current status of the Wah.
2. If the Wah is on, press the **STATUS** button until the red display reads off (OF).

## Turn the Whammy™/Synth Off

You don't want Whammy™ or Synth effects in this preset. To turn these effects off, do the following:

1. Press the **EFFECT SELECT DOWN** button, and the Whammy™/Synth LED is lit.
2. If the display indicates that either one of these effects is active, press the **STATUS** button until the display reads off (OF).

## Turn the Stompbox Modeling Off

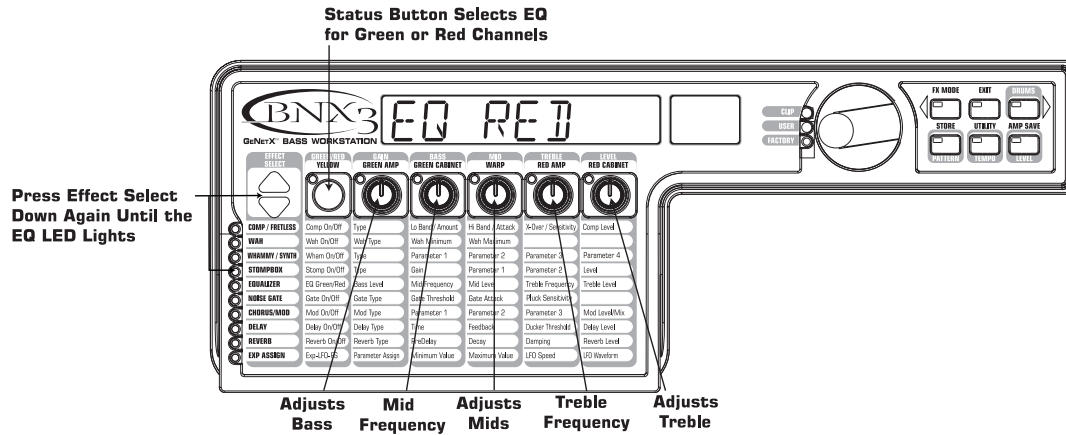
To turn the Stompbox Modeling off for this preset, do the following:

1. Press the **EFFECT SELECT DOWN** button until the Stompbox LED is lit.
2. If the display indicates that it is active, press the **STATUS** button until the display reads off (OF).

## Adjust the EQ

The EQ for both the Fuzz Model (Green Channel) and the VNTGASH HyperModel™ ( Red Channel) can also be adjusted individually here as well as the way described on page 31. Here, you have added control over the Mid and High frequency centers for greater tone shaping flexibility. To adjust the EQ, do the following:

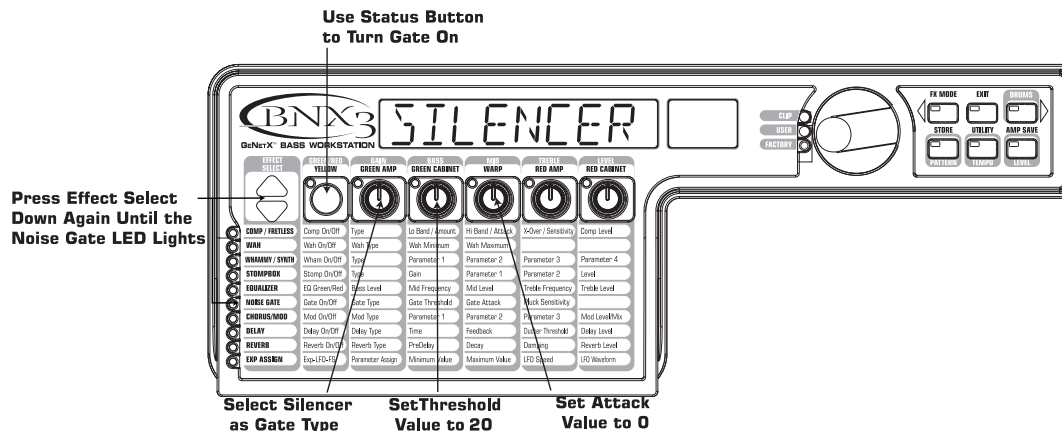
1. Press the **EFFECT SELECT DOWN** button until the Equalizer LED lights. The BNX3 defaults to the Green Channel EQ adjustments. Therefore, the display briefly reads **EQ GREEN**.
2. Rotate the Parameter 1 knob to adjust the Green Channel's Bass enhancement.
3. Rotate the Parameter 2 knob to select the center frequency for the Mid-range.
4. Rotate the Parameter 3 knob to adjust the Green Channel's Mid-range enhancement.
5. Rotate the Parameter 4 knob to select the center frequency for the Treble.
6. Rotate the Parameter 5 knob to adjust the Green Channel's Treble enhancement.
7. Press the **AMP** Footswitch to select the Red Channel's EQ adjustments. The display briefly reads **EQ RED** and the same knobs adjust the same EQ Parameters for the Red Channel.



## Adjust the Noise Gate

For your example, you want our Noise Gate to open quickly with a relatively weak signal. This type of gate uses the Silencer™ with a low threshold and short attack time. To create this type of Noise Gate, do the following:

1. Press the **EFFECT SELECT DOWN** button and the Noise Gate's LED lights.
2. If the display reads off (OF), press the **STATUS** button until the display reads on (ON).
3. Rotate the Parameter 1 knob until the display reads *SILENCER* for the type of gate.
4. Rotate the Parameter 2 knob to set the Threshold to 20 (this may need to be adjusted depending upon your bass).
5. Rotate the Parameter 3 knob to set the Attack Time to 0 (fast attack).

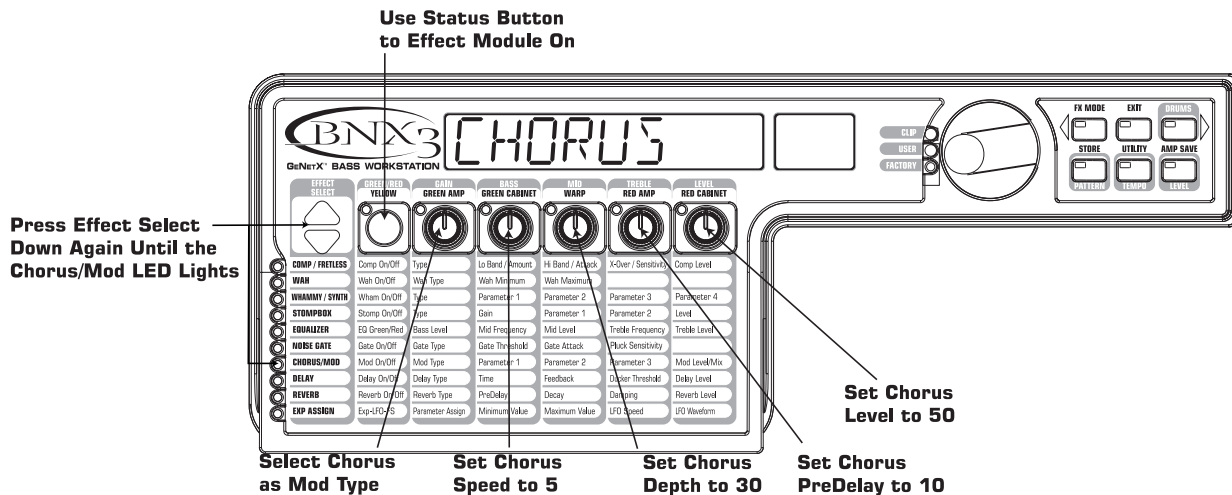


## Select and Adjust the Chorus

Next you wanted to thicken up the sound, by adding a subtle Chorus effect, in the following manner:

1. Press the **EFFECT SELECT DOWN** button again and the LED in the Chorus/Mod row lights.
2. If the display reads off (OF), press the **STATUS** button until the display reads on (ON).
3. Rotate the Parameter 1 knob until the display reads Chorus (*CHORUS*) for the effect type.
4. Rotate the Parameter 2 knob to set the Chorus Speed to 5.
5. Rotate the Parameter 3 knob to set the Chorus Depth to 30.
6. Rotate the Parameter 4 knob to set the PreDelay to 10.
7. Rotate the Parameter 5 knob to set the Chorus Level to 50.

# Tutorial



## Turn the Delay Off

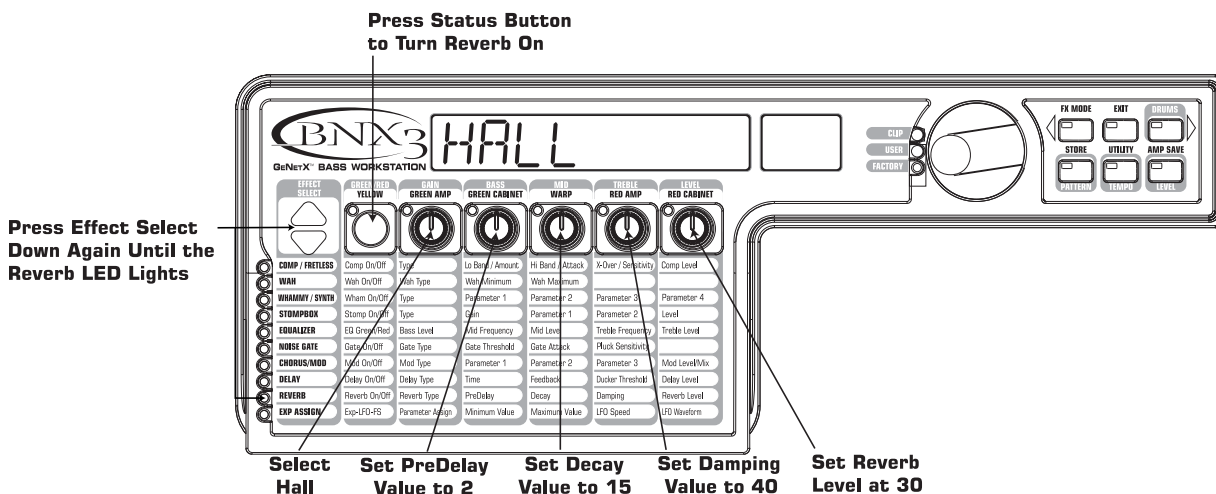
To bypass the Delay, do the following:

1. Press the **EFFECT SELECT DOWN** button until the LED in the Delay row lights.
2. If the display reads on (ON), press the **STATUS** button until the display reads off (OFF).

## Select and Adjust the Reverb

In your example preset you want a little bit of Hall Reverb to provide some ambience. To add the reverb, do the following:

1. Press the **EFFECT SELECT DOWN** button until the LED in the Reverb row lights.
2. If the display reads off (OFF), press the **STATUS** button until the display reads on (ON).
3. Rotate the Parameter 1 knob to select Hall (HALL) for the Reverb Type.
4. Rotate the Parameter 2 knob to set the Reverb Predelay to 2.
5. Rotate the Parameter 3 knob to set the Reverb Decay to 15.
6. Rotate the Parameter 4 knob to set the Reverb Damping to 40.
7. Rotate the Parameter 5 knob to set the Reverb Level to 30.



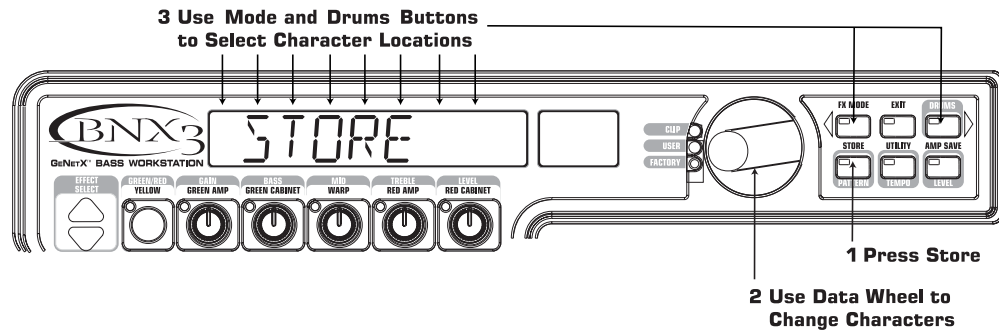
## Store the Preset

The last step, is to store your changes to a User Preset. If you changed presets or turned the BNX3 off without storing these settings, it would forget what you had done and revert back to the original preset. To store the preset, do the following:

1. Press **STORE**. The first letter in the display begins to flash. Since this is an example preset, name the

preset *EXAMPLE*.

2. Rotate the **DATA WHEEL** until the flashing character in the display is an *E*.
3. Press the **DRUMS** button once and the second character begins to flash.
4. Rotate the **DATA WHEEL** again until the flashing character is an *%*. Continue using the Drums button to select the character location and the Data Wheel to change the characters.



5. Once the Display reads *EXAMPLE*, press **STORE** again. The numbers in the red numeric display are flashing.
6. Rotate the **DATA WHEEL** to select 48 as the destination.
7. Press **STORE** once more to save the preset.

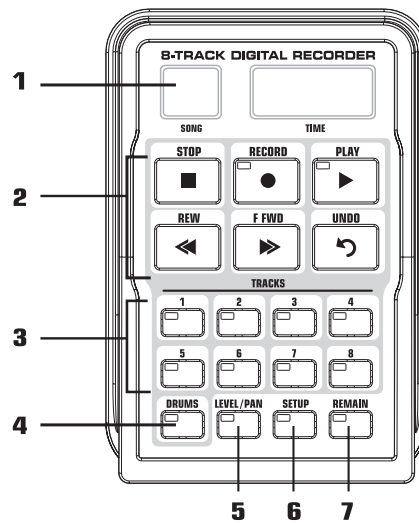
Congratulations! You have successfully created a Preset.

# Recorder

## Recorder

The BNX3 is equipped with an 8-track digital recorder. The recorder interface features standard recording transport buttons, Track buttons, Drums button, Level/Pan button, Setup button, and Remain (time remaining) button. Song and Time displays help you keep track of what song or loop you are working with and how much recording time has elapsed or remains. The recorder functions are also mapped to the BNX3's footswitches allowing hands-free functionality to the recorder.

## Recorder Panel



The recorder panel is divided into 7 basic sections:

1. **DISPLAY** – There are 2 different displays on the BNX3's recorder panel
  - SONG** – A Song is a group of recorded tracks that are combined to create songs. This display shows the selected Song or Loop for recording and playback.
  - TIME** – This display shows elapsed time of recorded material of the current Song when the recorder is playing back tracks. When the **REMAIN** button is on, it also displays the amount of recording time left in memory when the recorder is stopped.
2. **TRANSPORT BUTTONS** – The 6 transport buttons just below the displays are used for beginning the record, playback, and search functions of recorded material. They include Stop, Record, Play, Rewind, Fast Forward, and Undo.
3. **TRACKS** – A Track is an individual memory location in a song that you record audio to. The BNX3 has eight individual tracks that can be recorded to.
4. **DRUMS** – Records drum audio tracks or syncs the Drums playback to tracks using the BNX3's built-in drum machine.
5. **LEVEL/PAN** – Accesses the playback level and pan controls for each track.
6. **SETUP** – Accesses setup options for each song including Input Select, Stereo Enable, Click Track, Tempo, Pre-Roll, Song Repeat and more.
7. **REMAIN** – When Remain is turned on, the **TIME** display shows the remaining recording time available in track minutes when the recorder is stopped. When the recorder is playing back tracks, it shows the amount of time remaining in the current song.

## Recorder Setup

Before you begin recording your first song, you will want to become acquainted with the recorder Setup functions. Setup functions include: Record Input, Stereo Record, Click Track, Drum Pattern, Tempo, Drum Level, Pre-Roll, Song Repeat, Auto Stop, Quantize, Record Quality, Card>PC, Int>Card, and Erase? . These functions dictate how the recorder works for each song. Each song can have these functions setup in different ways so that you can customize how the recorder works depending on your needs.

### Record Input

The BNX3's recorder has several input routing configurations that are used for getting your bass, voice, or external music into the recorder. Each of these is specifically designed for a specific recording purpose and is outlined below with application tips.

**Note:** The bass input is always active regardless of the selected input configuration with the exception of Re-Amp.

**BASS** – Select this input when only bass tracks are being recorded. The Mic and CD inputs are disabled when this input configuration is selected.

**BASS+CD** – Select this input for recording a source using the Jam-a-long/CD input. All stereo sources are summed to mono using this input.

**B+MIC** – This input records the bass on one track and the mic input on another. This input records mono bass on the first track, and the mic input on the second track when both tracks are armed before recording begins. This input is great for bassist/singers who like to sing as they play. This input can also be used for recording stereo signals into the BNX3's recorder. By properly setting the Mic Level and using a 1/4" to XLR impedance (DI) box, you can run one side of the stereo signal into the Bass input and the other side through the XLR Mic input. These two signals are recorded on separate tracks, preserving the left/right stereo image.

**B+MICDRY** – Select this input when you want to record a dry, unprocessed vocal or acoustic instrument into the BNX3's recorder. Both the bass and mic are recorded on the same track(s) armed for recording.

**B+MICREV** – This input routes the mic input through the reverb of the BNX3's current preset. You can modify reverb settings by editing the reverb parameters of the preset (see section Editing a Preset). If the reverb is off in the current preset, the effect is not heard. Both the bass and mic are recorded on the same track(s) armed for recording.

**B+MICMOD** – Select this input to route the mic input through the Chorus/Mod, Delay, and Reverb modules of the BNX3's current preset. You can modify the chorus/mod, delay, and reverb settings by editing these parameters within the current preset (see section Editing a Preset). If these effects are turned off in the current preset, the effects are not heard. Both the bass and mic are recorded on the same track(s) armed for recording.

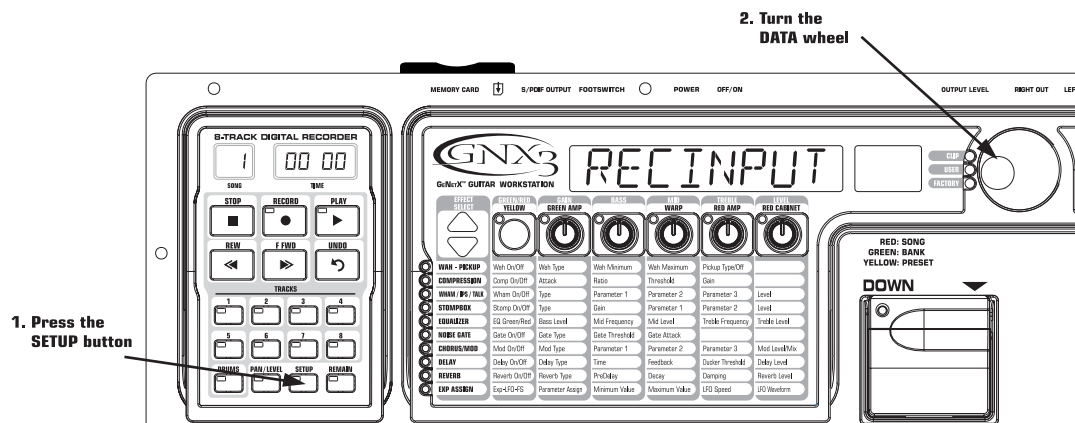
**B+MICFX** – Select this input to route the mic input through the all of the effects, including amp modeling, of the BNX3's current preset. You can modify the effect and amp modeling settings by editing the parameters of the preset (see section Editing a Preset). Both bass and mic are recorded on the same track(s) armed for recording.

# Recorder

**BASS DRY** – Select this input to route a dry, unprocessed bass signal direct from the input to the recorder while processed signal is heard at the BNX3's outputs. This input is great for laying down a dry bass track that can be replayed through different amp models and presets using the Reamp input. You can still monitor the bass signal through all of the BNX3's effects processing while recording.

**BASS AMP** – Select this input to tap the bass signal right after the Noise Gate, and send it to the recorder, while a processed signal is heard at the BNX3's outputs. This mode is great for laying down a dry bass amp track without modulation, delay, or reverb effects but still monitoring these effects out the BNX3's outputs while recording.

**REAMP 1-8** – Select one of these inputs to route the selected track back through the current BNX3's preset. This is great for bass tracks that were recorded using **BASS DRY** or **BASS AMP** because you can experiment by playing these tracks back through different amp models, effects, or entirely new presets. This is exactly how professional recording engineers mix down bass tracks. To select the input configuration for recording, follow these steps:



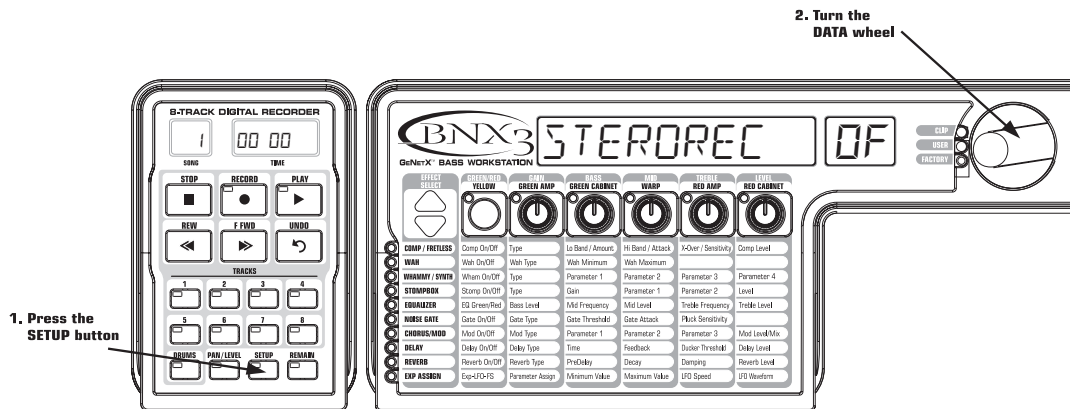
1. Begin with the recorder stopped.
2. Press the **SETUP** button once. The BNX3's main display reads **RECINPUT**. The display flashes the selected input configuration. Default from the factory is **BASS**.
3. Use the **DATA WHEEL** to select one of the 10 different input configurations you want to use for recording.
4. When finished, press **EXIT**.

**NOTE:** When the **STOP** button is pressed after using the **REAMP** input configuration for recording, the input configuration will automatically be reset to **BASS**.

## Stereo Record

The recorder can be setup to automatically arm pairs of tracks for recording in stereo. When Stereo Record is enabled, each time you press the **RECORD** button or footswitch, the recorder will automatically arm a pair of tracks to record to. Each track is automatically panned hard left and hard right respectively to maintain a stereo image. Track 1 is paired with track 2, track 3 is paired with track 4, and so on. To use Stereo Record, follow these steps:



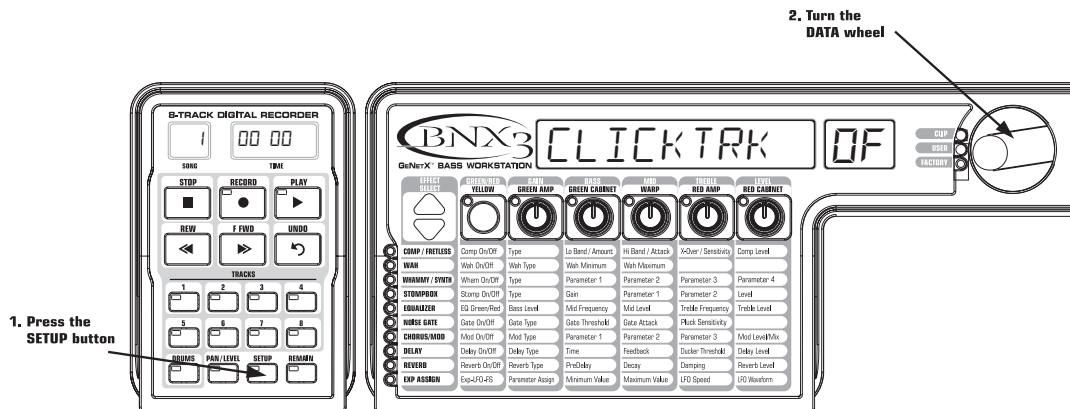


1. Begin with the recorder stopped.
2. Press the **SETUP** button until the BNx3's main display reads **STEREOREC OF**.
3. Use the **DATA WHEEL** to turn the Stereo Enable feature on and off.
4. When finished, press **EXIT**.

This feature doesn't affect track arming when using the recorder panel. You can arm two tracks using the track buttons. When two tracks are armed for recording using the panel, they are automatically panned hard left and right.

## Click Track

The Click Track keeps time when the recorder is recording. When Click Track is enabled, a metronome is set to the selected songs tempo while recording. To setup the Click Track, follow these steps:



1. Begin with the recorder stopped.
2. Press the **SETUP** button until the BNx3's main display reads **CLICKTRK OF**.
3. Use the **DATA WHEEL** to turn Click Track on and off.
4. When finished, press **EXIT**.

## Drum Pattern

The Drum Pattern sets which drum pattern is used for playback when the Drums button is enabled (Green LED is lit) on the recorder panel. This lets you save the drum pattern to a song without having to record the drums with the song.

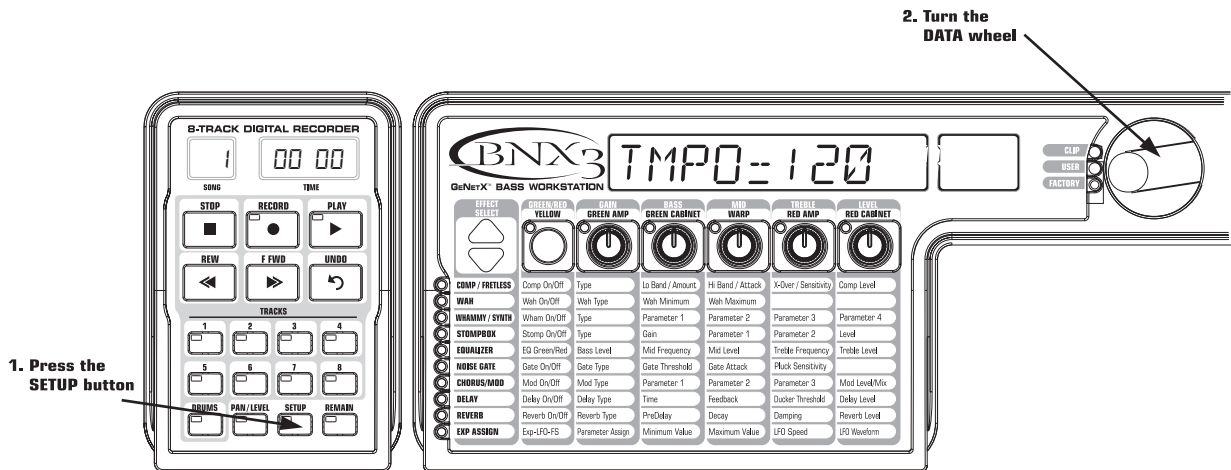
1. Begin with the recorder stopped.

# Recorder

2. Press the **SETUP** button until the BNX3's main display reads *ROCK 1* (This is the factory default pattern).
3. Use the **DATA WHEEL** to change the pattern.
4. When finished, press **EXIT**.

## Tempo

Tempo designates how fast the Click Track plays during recording. It also sets the tempo for the BNX3's drum machine that can be recorded or synchronized to each song. To setup the Tempo, follow these steps:



1. Begin with the recorder stopped.
2. Press the **SETUP** button until the BNX3's main display reads *TMPO=120*.
3. Use the **DATA WHEEL** to adjust the tempo.
4. When finished, press **EXIT**.

**NOTE:** Although the Tempo of a song can be changed after tracks have been recorded, it is not advised that you do so because previously recorded tracks will not be synchronized with tracks recorded after the change. The Recorder Tempo also controls the Drum Machine tempo when recording or playing a virtual Drum track.

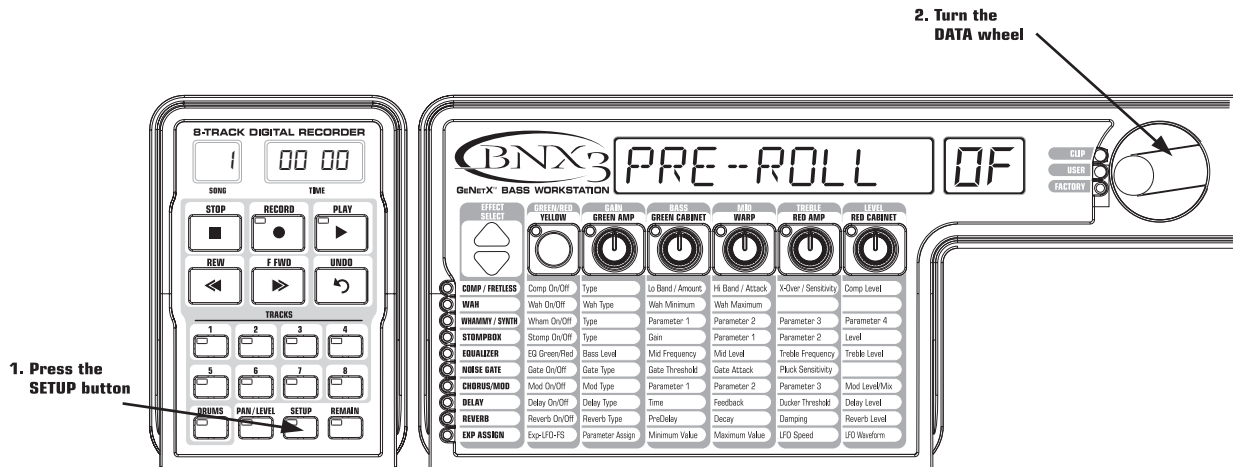
## Drum Level

The Drum Level sets the playback level of the selected drum pattern.

1. Begin with the recorder stopped.
2. Press the **SETUP** button until the BNX3's main display reads *DRUM LVL*.
3. Use the **DATA WHEEL** to adjust the playback level.
4. When finished, press **EXIT**.

## Pre-Roll

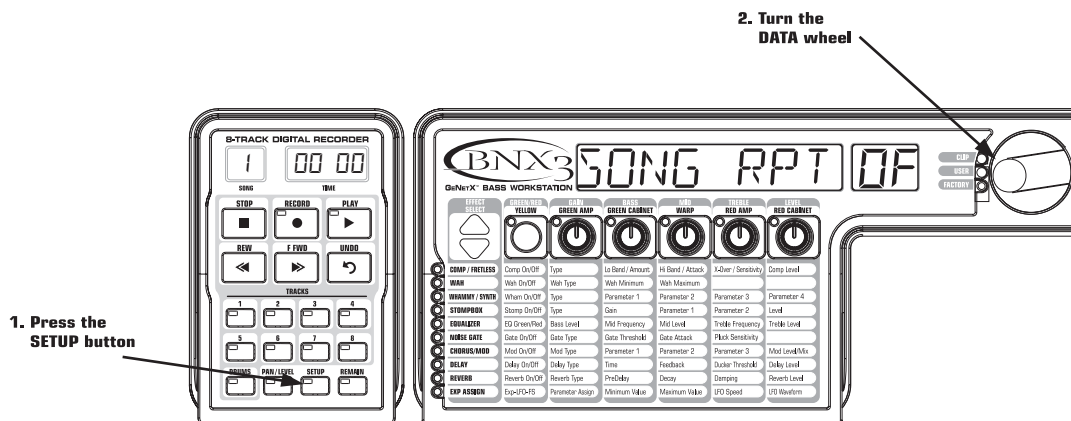
Pre-Roll is an amount of time you can have the recorder count off before actually beginning to record. Use Click Track during Pre-Roll so that you can then get a feel for the tempo of the track or song you are about to record. Pre-Roll can also be used as a cue, indicating when the very beginning of the song starts. The BNX3's Pre-Roll has 3 settings, 4, 8, or 16 counts. To setup the Pre-Roll function, follow these steps:



1. Begin with the recorder stopped.
2. Press the **SETUP** button until the BNX3's main display reads *PRE-ROLL*.
3. Use the **DATA WHEEL** to select the amount of Pre Roll or turn it off. You can select from 4, 8, or 16 counts before recording begins.
4. When finished, press **EXIT**.

## Song Repeat

To rehearse with the song you just created, Song Repeat continuously plays the song without having to press the REWIND and PLAY buttons to re-start it. Each time the song ends during playback, it automatically restarts from the beginning when this feature is turned on. To enable Song Repeat, follow these steps:



1. Begin with the recorder stopped.
2. Press the **SETUP** button until the BNX3's main display reads *SONG RPT*.
3. Use the **DATA WHEEL** to turn Song Repeat on and off.
4. When finished, press **EXIT**.

## Auto Stop

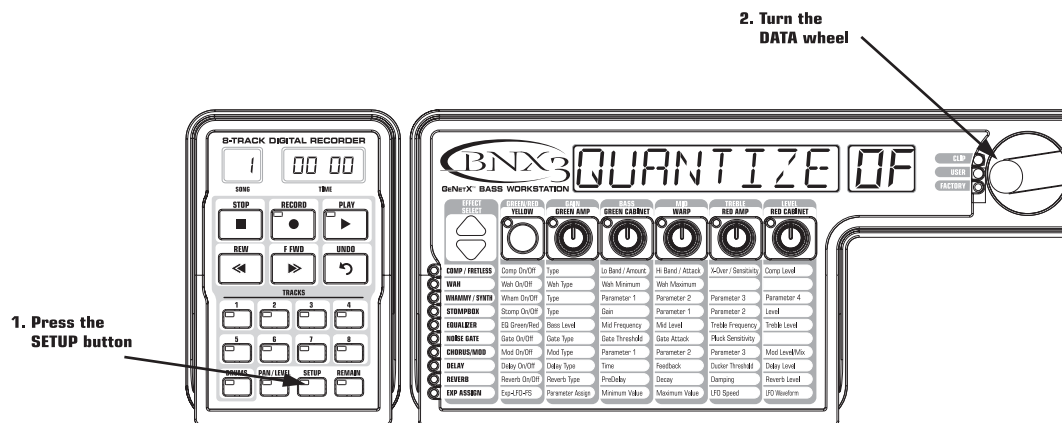
When trying to conserve recording memory, or to automate the recording process, you can use the recorder's Auto Stop feature. Begin by recording your longest track first in a new song. Then enable the Auto Stop feature in the recorder Setup menu. The recorder will now automatically stop at the end of playback of the longest recorded track while recording new tracks. To enable the Auto Stop feature, follow these steps:

# Recorder

1. Press the **SETUP** button until *AUTO STOP* appears in the BNX3's main display. The Auto Stop menu appears in the display.
2. Use the **DATA WHEEL** to turn the Auto Stop feature on and off.
3. Press the **EXIT** button to exit setup.

## Quantize

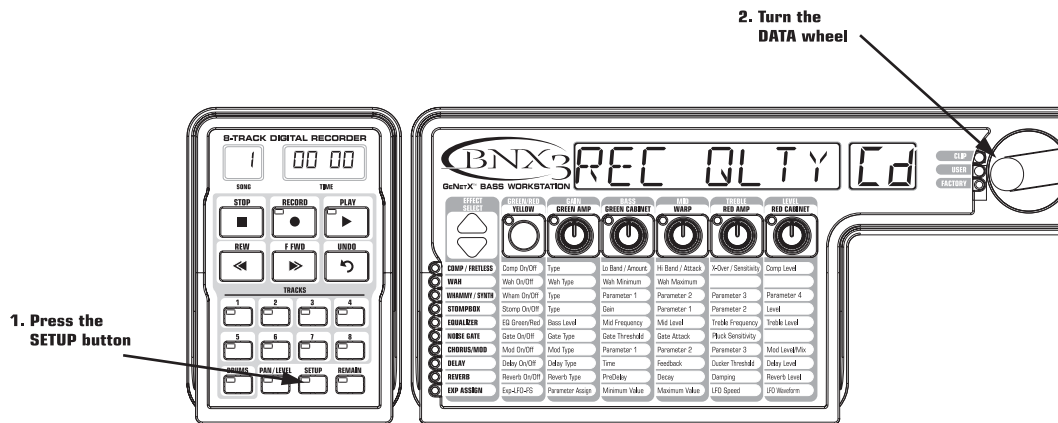
This option is used only when the BNX3's recorder uses a JamMan™ delay looper. The Quantize function creates perfectly timed loops to the nearest eighth note of a given tempo. Therefore, if you set a loop length just a little too long to sync with the recorder click track or the BNX3's drum machine, the quantize function pulls in the actual loop length to make it sync up exactly with the tempo you have selected. More about this is found in the JamMan delay looper section of this manual. To setup the Quantize function, follow these steps:



1. Begin with the recorder stopped.
2. Press the **SETUP** button until the BNX3's main display reads *QUANTIZE*.
3. Use the **DATA** wheel to turn the quantize function on or off .
4. When finished, press **EXIT**.

## Record Quality

There are 3 different recording qualities the BNX3's recorder can record in. *CD* is the highest quality the BNX3's recorder offers and is the default setting from the factory. It is a true 44.1kHz CD quality sample rate but limits recording time the most. *LP* is the middle recording quality that doubles the amount of recording time that CD quality offers. *EP* is the BNX3's most economical recording quality. It has four times the amount of recording time as CD quality. The higher the selected quality, the shorter the total amount of available recording time. To setup the song's record quality, follow these steps:



1. Begin with the recorder stopped.
2. Press the **SETUP** button until the BNX3's main display reads *REC QLT Y C d*. The display flashes the selected recording quality of the current song. Default from the factory is *C d*.
3. Use the **DATA WHEEL** to select which recording quality you want to use for a song.
4. When finished, press **EXIT**.

**NOTE: Once the recording quality is set and a track is recorded, the recording quality cannot be changed unless all tracks or the entire song is deleted.**

## Card>PC - Preparing a Card for the Computer

The BNX3's recorder uses a proprietary format when recording audio to an external memory card. In order to access tracks created using the BNX3's recorder on a computer, it is necessary to save these files in a format that can be read by an external card reader connected to a PC. Here are the steps for preparing the card for this purpose:

1. Once recording is complete, press the **SETUP** button until the BN3's main display reads *CARD>PC*. This is the card preparation menu. The RECORD button will begin flashing at this time.
2. To begin the preparation procedure, press the **RECORD** button. The BN3's main display reads *BUSY* as the card is being checked. The TIME display on the recorder panel will begin counting backwards from 100 indicating the procedure's progress. The BN3's buttons and footswitches are disabled during this procedure and the outputs will be muted.
3. When the procedure is complete, the TIME display reads 0. The BN3's main display then reads *PC READY* followed by *REMOVE*.

The card should be removed from the BNX3 and inserted into a card reader connected to a PC, and the BNX3's recorder data is then accessible.

**WARNING:** If any recorded material or Setup utilities are added, deleted, or modified on the external memory card, the `CARD>PC` procedure must be performed before removing the card from the BNX3 and inserting it into an external card reader. If this procedure is not performed, recorded data may be lost.

## Int>Card - Copying Songs to External Memory

This function is used to copy songs stored in the BNX3's internal memory to a SmartMedia™ Card. The memory internal to the BNX3 is equivalent to a 16 Megabyte SmartMedia™ Card. This function can copy to a 16, 32, 64, or 128 Megabyte SmartMedia Card. However, any songs that are on the card will be erased during the copy procedure. Be sure to back up your songs before performing this copy function.

# Recorder

1. Press the **SETUP** button until the display reads *INT > CARD*. The recorder's RECORD button begins flashing prompting the user to press it to begin copying.
2. Press the **RECORD** button. The display reads *SURE?*, prompting the user that the next press will begin the copy procedure. To abort formatting, press **EXIT**.
3. Pressing the **RECORD** button a second time to begin copying. The BN3's main display reads *BUSY* during this time. The BN3's buttons and footswitches are disabled during this procedure.
4. When the procedure is complete, the BN3's main display then reads *PC READY* followed by *REMOVE*.

The card should be removed from the BN3 and inserted into a card reader connected to a PC, and the BN3's recorder data is then accessible.

**Note: A SmartMedia™ Card must be in the SmartMedia card slot for this option to be available.**

## Erase

To quickly erase all recorded data from either internal or external memory, the BN3's setup menu provides an erase function. If a memory card is not present in the memory card slot, the erase function erases the BN3's internal recording memory. If a card is present, the external memory card is only erased. To erase either internal or external memory, follow these steps:

1. Press the **SETUP** button until the display reads *ERASE?*. The recorder's RECORD button begins flashing prompting the user to press it to begin erasing.
2. Press the **RECORD** button. The display reads *SURE?*, prompting the user that the next press will begin the memory erase procedure. To abort formatting, press **EXIT**.
3. Press the **RECORD** button a second time to begin Erasing?. The BN3's main display reads *ERASING* during this time. The BN3's buttons and footswitches are disabled during this procedure.
4. When the recording memory is completely erased, the display shows *READING*, indicating the BN3 is reading the erased memory. The BN3 returns to the preset screen where you can begin recording.

## Using SmartMedia™ Memory Cards

There are many different formats used for memory cards depending on the electronic device they were last used with. Fresh memory cards that have never been used are typically formatted in a manner that the BN3 can already use. If you have a card that has been used in other electronic devices, it may be necessary for the BN3 to format the card prior to using it. To use memory cards effectively, we recommend formatting/erasing any card you intend to use in the BN3's **Memory Card** slot. To properly format a card, please follow the steps below:

### Inserting Memory Card for the First Time

1. Insert the memory card with the contacts side facing down. The recorder's time display counts back from 100 while it is reading the card.
2. If the card is not formatted, when the card reading is complete, the BN3's display reads *MEM ERR* indicating the card is either unformatted or using a format not recognized by the BN3. The display prompts you to *FORMAT?* the card. Proceed by pressing the flashing **record** button to format. The card begins formatting and all data is erased. Once formatting is complete, the card is ready for recording

If the BN3's main display returns to the preset screen after the memory card has been read without a prompt to format, the memory card already has a valid format that the BN3 can use. You may however want to erase the card's memory, (see the Erase section of this manual).



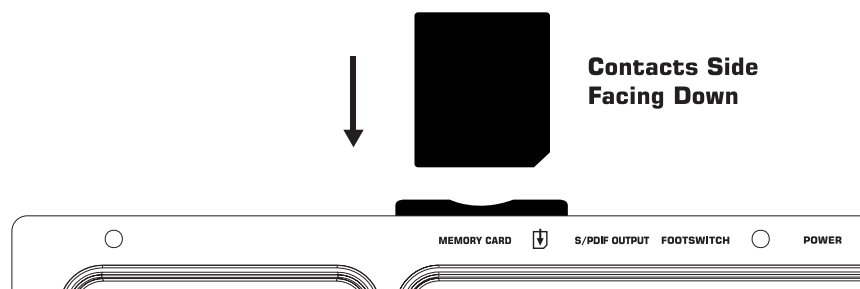
## SmartMedia™ Memory Cards

The BNX3 recorder's memory can be increased by using an optional external SmartMedia™ memory card. On the back panel is a card slot for adding memory. The BNX3 supports memory cards from 16Meg to 128Meg in size. The table below shows the amount of record time each of the currently available cards will provide:

Card Size	CD	LP	EP
16Meg	3 track minutes	6 track min	12 track min
32Meg	6 track minutes	12 track min	24 track min
64Meg	12 track minutes	24 track min	48 track min
128Meg	24 track minutes	48 track min	96 track min

To use an external memory card with the BNX3, follow these steps:

1. Place the card into the **MEMORY CARD** slot with the contacts facing down.



When a memory card is inserted into a BNX3 for the first time, it needs to be formatted by the BNX3 in order to use it. To format the card, do the following:

1. Once a card has been inserted into the BNX3's Memory Card slot, the display reads *FORMAT?* and the **RECORD** button begins flashing.
2. Press the **RECORD** button once and the display asks if you are *SURE?* you want to format.
3. Press the **RECORD** button again to begin formatting the card. The BNX3's functions are temporarily disabled during the card formatting process. Depending on the memory card size, this process may take several minutes.
4. When formatting is complete, the display reads *READING*, indicating the BNX3 is reading the newly formatted card. The BNX3 returns to the preset screen indicating the card is now ready for recording.

**NOTE:** Once you have recorded onto an external card, you must run the **Card>>PC** utility explained in the **Recorder Setup** section on page 39. if you plan to use the card with an external card reader connected to a computer. Failure to do so can result in recorded material being lost.

## Transferring Audio Tracks to the Computer

The BNX3's recorder uses a proprietary format when recording audio to an external memory card. In order to access tracks created using the BNX3's recorder on a computer, it is necessary to save these files in a format that can be read by an external card reader connected to a PC. The following are steps for preparing the card for this purpose:

1. Once recording is complete, press the **SETUP** button repeatedly until the BNX3's main display reads *CARD>>PC*. This is the card preparation menu. The **RECORD** button begins flashing.
2. To begin the preparation procedure, press the **RECORD** button. The BNX3's main display reads *BUSY* as the card is being prepared. The **TIME** display on the recorder panel begins counting back-



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wards from 100 indicating the procedure's progress. The BNX3's buttons and footswitches are disabled during this procedure and the outputs are muted.

3. When the procedure is complete, the TIME display reads 0. The BNX3's main display then reads *PC READY* followed by *REMOVE*.

The card should be removed and inserted into a SmartMedia™ compatible card reader connected to the computer to access the BNX3's recorder data.

**WARNING:** If any recorded material or Setup utilities are modified when using the external memory card, the **CARD>>PC** procedure must be performed before removing the card from the BNX3 and inserting it into an external card reader. If this procedure is not performed, recorded data may be lost.

## Transferring Audio Tracks from the Computer

When returning the card back to the BNX3 from the computer, the BNX3 reads the card before recorded data can be accessed. The BNX3's main display shows the card *SIZE*, followed by *BUSY*. The time display counts back from 100 indicating the reading progress. When the card reading is complete, the card can be accessed for playback and recording.

## Memory Card/Computer File Format

Once the card has been properly prepared (Preparing Card for Computer) using the card preparation routine in the BNX3's recorder setup menu, you can now use a computer's memory card reader to access these files. These files can be copied between the memory card and your computer using standard drag and drop routines you are familiar with. When plugging a card into a card reader, you can open it up on your computer screen and see each of the song file folders. The audio track files are found inside each of the song folders.

The BNX3's uses a specific song and track file naming convention that needs to be maintained when exchanging files with a computer. When a card is inserted into a card reader, the songs appear as folders named SONG01, SONG02, etc... The number of songs can change depending on how many songs or loops are saved on the memory card. Inside each of the song folders are the separate audio tracks which will be named TRAK01.wav, TRAK02.wav, up to TRAK08.wav. It is important that each song's name starts with SONGXX (67 = song number) with no spaces, and each audio track is named TRAK01-TRAK08 with a .wav extension in order for the BNX3 to recognize these files. You can rename tracks and songs while viewing them in the computer with some restrictions. Here are some naming formats that are acceptable.

The following names are acceptable for song folders:

Song01\_rock  
song01 rock  
SONG01 rock  
Song01rock

The following names are not acceptable for song folders:

Song\_01  
Song 01  
Song l

The following names are acceptable for individual audio track files:

Trak01\_solo.wav  
trak03lead.wav  
trak04\_rhythm.wav  
TRAK05\_bass.wav

The following names are not acceptable for audio track files:

TRAK\_01  
Track 01  
track 1

It is possible to have duplicate songs or tracks when renaming them in the computer. For instance, song01\_rock and song01\_jazz are really the same name to the BNX3 as are trak01\_solo.wav and trak01\_solo2.wav. The BNX3 only looks at the first six characters to identify the song and track information. The remainder of the name is not recognized but is provided for the purpose of identifying song and track names in your file system. There can only be a maximum of 99 songs on a memory card, and a maximum number of 8 tracks in each song.

## Recording Time

The BNX3 is equipped with 16 Meg of on-board recording memory. This gives you three total track minutes using CD Record Quality (six minutes using LP Record Quality and 12 minutes using EP Record Quality). Therefore, you can record one track for six minutes, two tracks for 3 minutes, and so forth using LP Quality. The number of songs that can be in memory is dependent on the total amount of record time. For example, with an optional 128 Meg Smart Media® card, the BNX3 has a total of 96 EP Quality track minutes available. This would be the equivalent of two – 6 minute 8-track songs or four – 6 minute 4-track songs.

## Using the BNX3's Recorder Panel for Recording

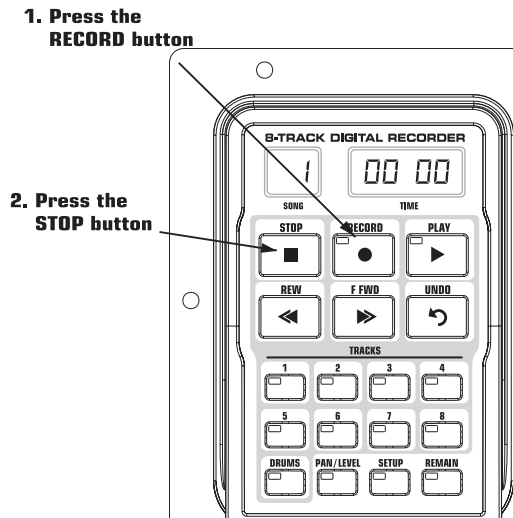
### Recording a Track

When the BNX3 is first powered up, the recorder is immediately ready to use. The Song display reads 1, indicating the first song is selected to record. To begin recording a track, follow these steps:

1. Press the **RECORD** button. The TRACK 1 button automatically lights red, indicating it is armed for recording, and the recorder begins recording on this track. The TIME display begins counting off the recording time.
2. Once recording is complete, press the **STOP** button. This stops the recording process. The display reads **SAVING** as the track is being saved to memory. The TIME display shows the elapsed time used, and the TRACK 1 button automatically lights green indicating it is enabled for playback.

**NOTE:** Pressing the **RECORD** button when a track is not armed for recording will force the BNX3's recorder to arm and begin recording on the next empty track of a song (next pair of tracks when Stereo Record is enabled). You may arm any track(s) for recording prior to pressing **RECORD**.

# Recorder



## Using the UNDO Button to Erase a Track

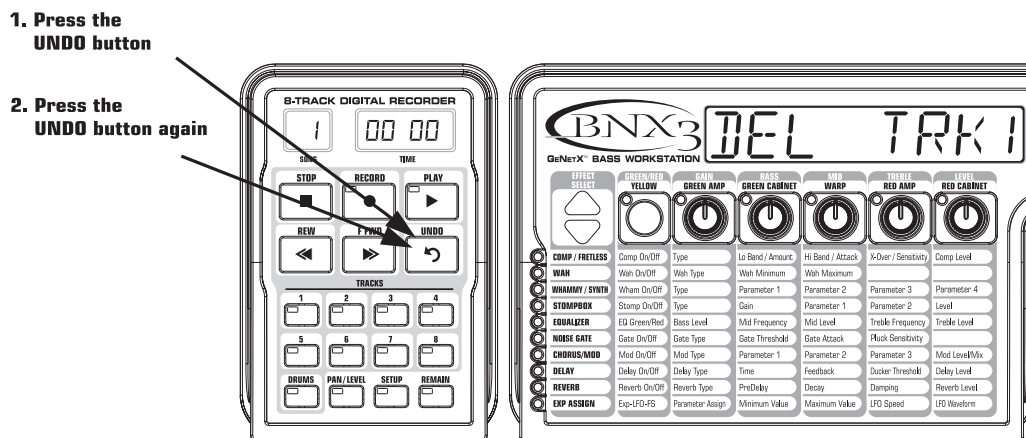
Every track you record may not be a take you want to keep. The BN33's recorder features an UNDO button, that erases the contents of a track. You can Undo a track even while recording is in progress, thus eliminating having to stop and start all the recording procedures again.

**WARNING:** Deleting a track is permanent and once it is deleted it cannot be retrieved. Please use the **UNDO** button with caution.

The following steps explain how Undo works.

### Using Undo While the Recorder is Stopped

If you stopped the recorder and decided you were unhappy with the last take, you can Undo (erase) the track information. To undo the last track you recorded, follow these steps:



1. Press the **UNDO** button once. The BN33's main display reads **DEL TRK X**, indicating the last recorded track will be deleted. If you want to delete a different track, press the track button you want to delete.
2. Press the **UNDO** button again within 3 seconds to delete the track. If the UNDO button is not pressed a second time within 3 seconds of the first press, the recorder ignores the undo request and returns to its normal stopped state.

## Using Undo While Recording is in Progress

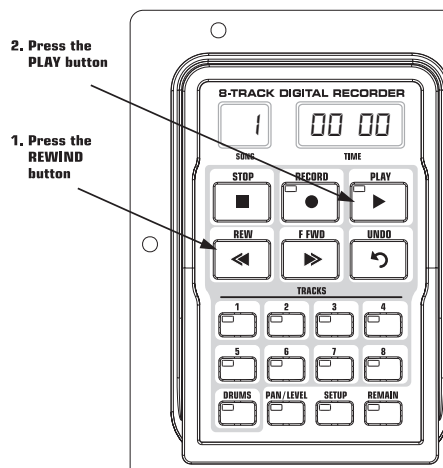
You can Undo a track while recording is in progress. This eliminates having to stop the recorder, rewinding, and having to start over. To undo the track you are currently recording on, follow these steps:

1. Press the **UNDO** button once. The BNX3's main display reads *RERECORD*.
2. Press the **UNDO** button again within 3 seconds to start re-recording. The display reads *UNDO DONE* and the recorder returns to the beginning of the song and resumes recording on the same track. If the UNDO button is not pressed again within 3 seconds of the first press, the recorder ignores the undo request and recording continues unaffected.

If you don't want to have the recorder automatically start re-recording when using UNDO, press the **STOP** button to stop recording before using the UNDO function.

## Playing Back a Recorded Track

After a track is recorded, playing it back is simple. If you are at the end of the track or the song, press **PLAY**. The recorder automatically begins playing back the track/song from the very beginning. If you want to start playback at the beginning of a track or song but are someplace other than the end of the song, follow these steps:



1. Begin with the Recorder stopped.
2. Press the **REWIND** button once to move to the beginning of the song. Press and hold the rewind or fast forward buttons to quickly move back and forth through the track until it is released.
3. Press the **PLAY** button. The newly recorded track is automatically armed in PLAY status (the track button is lit green) and the track begins playing back.

## Setting Track Playback Levels and Panning

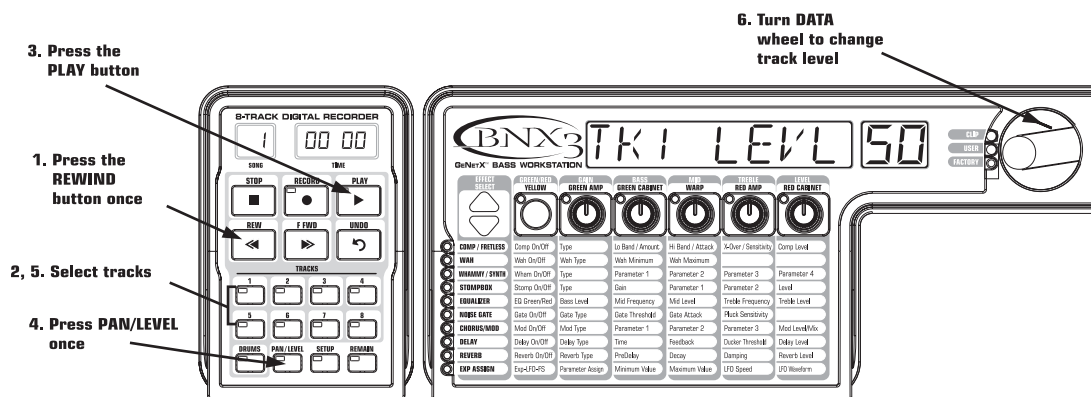
After a track has been recorded, you can set the pan and playback level for each track. This is done using the **LEVEL / PAN** button. This feature is most useful if done while the recording is playing back so you can hear the changes as they are being made. To set level and pan controls for each track, follow these steps:

### Setting each track's playback level:

1. Press the **REWIND** button once to return the song to the beginning.
2. Enable any track(s) you want to playback by pressing their **TRACK** buttons until they are lit green.
3. Press the **PLAY** button. Playback of the tracks begins.

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4. To adjust the playback level of the tracks, press the **LEVEL / PAN** button once. It lights green.
5. Press any track button that is playing back. It flashes green. The main display reads **TKX LEVL 50** (X = track number).
6. Turn the **DATA WHEEL** to adjust this track's playback level.
7. Select other tracks and adjust their playback level by repeating steps 5 and 6.
8. Press the **LEVEL / PAN** button twice to exit.



## Setting each track's pan:

1. Press the **LEVEL / PAN** button twice. It lights green and the main display reads **TKX ENTR 0** (X=track number).
2. Turn the **DATA WHEEL** to the left to pan the track to the left in the stereo field (**TKX LEFT**).  
Turn the **DATA WHEEL** to the right to pan the track to the right (**TKX RIGHT**).
3. Select other tracks and adjust their pan position by pressing the track button and repeating step 2.
4. Press the **LEVEL / PAN** button again to exit.

## Recording Multiple Tracks

After a track has been recorded, you may want to record other tracks that play along with it. Previously recorded track(s) should already be in play mode and are ready for monitoring while you record your new track. To record a new track with a previously recorded track, follow these steps:

1. Press the **RECORD** button. The next available track for recording automatically lights red, indicating it is armed to record, and the recorder begins recording on this track from the beginning of the song. The **TIME** display begins counting off the recording time. If Autostop is turned on, the recorder will automatically stop when the longest track playing back is finished. If Autostop is turned off, go to step 2.
2. When recording is complete, press the **STOP** button.

## Changing Track Status

Each recorded track can be in 1 of 4 states; playback, record, merge, or off. Tracks with recorded material can be turned on for playback (**TRACK** button is lit green), armed for recording (**TRACK** button is flashing red), armed for merging other recorded tracks to it (**TRACK** button is flashing yellow) or turned off (button is not lit). If a track does not have material recorded on it, it can only be enabled for recording, merge, or turned off. To change the status of a track, do the following:

1. Press any **TRACK** button repeatedly until it lights green, flashes red, or flashes yellow.

If the button lights green, there is recorded material present. If the **RECORD** or **PLAY** button is pressed the material is played back. If the button light flashes red, and the **RECORD** button is pressed (the button light is a solid red) the track is recorded on. If the light flashes yellow, it merges armed tracks for playback, including recorded material already present on this track.

**NOTE:** If a **TRACK** is placed in record and the **PLAY** button is pressed, it will not be recorded on but the track button will remain flashing red. All tracks with material recorded on them playback their material, even if their button is flashing red. If the **RECORD** button is then pressed during playback, tracks armed for recording are recorded on.

## Punching In / Punching Out

There may be times you want to replace a track section in the middle of a song. Rather than recording on a new track at the very beginning and wasting recording time with silence, you can “punch in” the phrase you want to record at a certain point on the track. To punch in record, follow these steps:

1. Arm the track you want to punch in record on (TRACK button is flashing red).
2. Press the **PLAY** button. All tracks that are armed for playback begin playing, and the TRACK button armed for recording continues flashing red.
3. When you reach the point in the playback that you want the recording to begin, press the **RECORD** button. The TRACK button armed for recording lights red and recording begins on this track at this point.
4. When you are finished recording, press the **RECORD** button again to disable the track armed for recording and continue listening to the playback.

## Bouncing/Merging Tracks

Once you have recorded several tracks, you may want to combine them onto a single track or pair of tracks to free up recording memory. This is done using the recorder's Merge function. Merging is essentially the same as bouncing tracks as you would on old analog 4 and 8-track tape recorders, only without the signal degradation. You can merge playback tracks with recorded tracks and retain the recorded material on the tracks you are merging to. This means you don't need empty tracks to merge to if all tracks have recorded material on them.

Merging tracks is irreversible to the tracks that are merged to. It is wise to make sure your individual track levels and pans are set prior to merging to tracks with recorded material present, as once tracks are merged, the individual track information cannot be adjusted. To merge recorded tracks, follow these steps:

1. Begin with the recorder stopped.
2. Arm the track(s) you want to merge for playback (TRACK buttons lit flashing green).
- 3.. Press the **TRACK** button you want to merge to until it begins flashing yellow. Only a maximum of two tracks at a time can be selected to merge to.
- 4.. Press the **RECORD** button. The recorder begins merging the audio from the tracks armed for playback onto the tracks armed for merge. Once merging has begun, it cannot be stopped until playback through the entire song is completed.

## Drums Track

The BN3's built-in drum machine is not only a great practice tool but can actually be used for song creation as well. Using the Drums button located in the recorder panel, you can either sync the drum machine with your other recorded audio tracks, or record the drum machine patterns to any of the recorder's tracks.

### Syncing Drums to Songs

The BN3's drum machine can be synced to recorded tracks when you first begin recording a song, essentially creating a 'virtual' drum track that plays back with your recorded tracks. When the Drums



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button is armed for playback (button is lit green), the BNX3 begins playing the drum machine using the pattern you have selected when either the **RECORD** or **PLAY** button is pressed. The drums play at the tempo designated in the recorder Setup utility for the current song. Rather than using a track to record drums on, the recorder starts the Drum machine and it plays for the length of the song.

To sync the BNX3's drum machine to the current song, follow these steps:

1. Begin with the Recorder stopped.
2. Press the **DRUMS** button in the upper right control panel area on the BNX3. This enables the Drums playback.
3. Press the **PATTERN** button.
4. Use the **DATA WHEEL** to select the pattern you want to sync to.
5. Press the **DRUMS** button again to stop the drums.
6. Press the **DRUMS** track button on the recorder panel once. It lights green.
7. Press the **PLAY** button. The drum machine begins playing in sync from the beginning of the song at the tempo designated in the Setup utility.
8. When finished, press the **STOP** button.

## Recording Drum Machine Tracks

You may also want to record the BNX3's drum machine as an actual audio track. Recording the drums lets you process the drums track through any of the BNX3's effects via the Re-amp input mode. To record the BNX3's drum machine as an audio track, follow these steps:

1. Begin with the Recorder stopped.
2. Press the **DRUMS** button in the upper right control panel area on the BNX3. This enables the Drums playback.
3. Press the **PATTERN** button.
4. Use the **DATA WHEEL** to select the pattern, tempo, and level you want to record.
5. Press the **DRUMS** button again to stop the drums.
4. Press the **DRUMS** track button on the recorder panel until it lights flashing red.
5. Press the **RECORD** button. The next available track for recording arms for recording. The drum machine begins playing at the same time, and is recorded on the armed track.
6. When finished, press the **STOP** button.

## Recording the Mic Input

The BNX3 is equipped with a mic input that is used for recording vocals or acoustic instruments. In order to get the best level recorded, it is necessary to setup the mic input gain properly. To setup the input gain for the mic, follow these steps:

1. Connect a microphone to the **MIC INPUT** on the rear panel.
2. Begin singing or playing the instrument into the mic.
3. Turn the **MIC LEVEL** control on the rear panel clockwise for more gain and counter-clockwise for less gain until the CLIP LED next to the BNX3's main display only flashes occasionally. If it is flashing often or solid red, turn down the gain. If the CLIP LED doesn't flash, turn up the gain until it does flash occasionally.

Once the mic input gain is set properly, you need to select one of the mic input configurations in the recorder Setup utility. To select a mic input configuration, follow these steps:

1. Press the **SETUP** button once on the recorder panel. The display reads *RECINPUT* and then begins flashing the selected input configuration.
2. Use the **DATA WHEEL** to select one of the mic input configurations. See page 39 for the BNX3's recorder input configurations and their descriptions.
3. When finished, press **EXIT**.



Now you can begin recording the mic input like any other track using the steps outlined in the Recording a Track section.

## Recorder Output Configuration

The BN3's analog and digital outputs can be configured in a number ways to best utilize the recorder and bass processor both independently and simultaneously. If you plan on using the bass processing along with playback of the recorder, there are several options for routing the bass processor and the recorder signals independently of each other. This works well when either running directly into a mixer or using a bass amp and mixer together. To set the Output configuration, follow these steps:

1. Press the **UTILITY** button.
2. Press the **MODE** or **DRUMS** button until the display reads *ANLG OUT*. The default configuration from the factory is *STEREO*.
3. Use the **DATA WHEEL** to select *MONO*, *STEREO*, or *B>L R>R*. The *STEREO* and *MONO* output configurations have both recorder and bass processor mixed together while *B>L R>R* configures the left and right analog outputs as a mono bass processor out and a mono recorder out respectively. *MONOBASS*, *STERBASS*, or *BIAMP* configurations send bass processor signal only out the BN3's analog outputs.

The S/PDIF digital output can also be configured in a variety of ways that best suit your recording or performance situation. To setup the S/PDIF options, follow these steps:

1. Press the **UTILITY** button.
2. Press either the **MODE** or **DRUMS** button until the display reads *DIGI OUT*. The default configuration from the factory is *BASS+REC*. This configuration sends both bass processor and recorder output to the S/PDIF output.
3. Use the **DATA WHEEL** to select *RECORDER* if only the recorder output is what you want sent to the S/PDIF output. Configurations 2 and 3 are for the Dry Track setup (see the section on Digital Output setup for more on Dry Track).
4. Press the **EXIT** button.

## Working with Songs and Loops

A Song and a Loop are a group of recorded tracks. The BN3's recorder has 99 songs available to record to as recording memory allows. With an optional 128 Meg Smart Media™ card, for example the BN3 has a total of 48 EP quality track minutes available. This would be the equivalent of four 3-minute, 4-track songs, leaving no memory available for songs 5-99. Loops, however, are generally shorter in length so more loops could be saved than songs in the same amount of memory.

### Selecting Songs and Loops

Selecting songs on the BN3's recorder is easy. To select songs, follow these steps:

1. Press the **STOP** button (if the recorder isn't already stopped).
2. Use the **F FWD** or **REWIND** buttons to select the next or previous song. The BN3's main display shows *READING* and the number in the SONG display changes as the new song is selected. The TIME display shows the selected song's length.

**NOTE:** You can also use the **DOWN** and **UP** footswitches to select songs when Recorder mode is active.

### Deleting Songs and Loops

Deleting songs is a simple procedure. To delete songs, follow these steps:

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1. Select the song you want to delete by quickly pressing the **F FWD** or **REWIND** button until the song number you wish to delete appears in the Song display.
2. Press and hold the **UNDO** button until the BNX3's main display reads *DEL SONG*.
3. Press the **UNDO** button again within 3 seconds to delete the song. The display reads *DELETING* and returns to the preset screen when deletion is complete. If the UNDO button is not pressed again within 3 seconds of the first press, the recorder ignores the undo request and recording continues unaffected.

## Using the BNX3's Footswitches for Recording

The BNX3's footswitches can perform different functions depending on what state they are in: Bank Mode, Stompbox Mode, and Recorder Mode. When Recorder mode is selected, the UP/DOWN footswitches are used to select next and previous Songs. The 5 numbered footswitches are used for Rewind, Undo, Stop, Record, and Play. To select the Recorder mode for using the footswitches to record, press the 4 and 5 footswitches simultaneously until the DOWN/UP footswitches are lit red. This turns your BNX3's pedalboard into a hands-free remote control for the recorder.

### Recording a Track

To begin recording a track using the footswitches, follow these steps:

1. Press the **RECORD** footswitch. The TRACK 1 button automatically lights red, indicating it is armed to record, and the recorder begins recording on the track. The TIME display begins counting off the recording time.
2. Once recording is completed, press the **STOP** footswitch. This stops the recording process, and the track is saved. The TIME display shows the elapsed time used and the TRACK 1 button is lit green indicating it is now enabled for playback.

### Using the UNDO Footswitch to Erase a Track

You can undo tracks using the BNX3's footswitches just as you can using the recorder panel. To undo tracks, follow these steps:

#### Using Undo While the Recorder is Stopped

1. Press the **UNDO** footswitch once. The BNX3's main display reads *DEL TRKX*, indicating the last recorded track will be deleted.
2. Press the **UNDO** footswitch again within 3 seconds to delete the track. If the UNDO footswitch is not pressed a second time within 3 seconds of the first press, the recorder ignores the undo request and returns to its normal stopped state.

#### Using Undo While Recording is in Progress

You can Undo a track while recording is in progress. This eliminates having to stop the recorder, rewinding, and having to start over. To undo the track you are currently recording on, follow these steps:

1. Press the **UNDO** footswitch once. The BNX3's main display reads *RERECORD*.
2. Press the **UNDO** footswitch again within 3 seconds to start re-recording. The display reads *UNDO DONE* and the recorder returns to the beginning of the song and resumes recording on the same track. If the UNDO footswitch is not pressed again within 3 seconds of the first press, the recorder ignores the undo request and recording continues unaffected.

If you don't want to have the recorder automatically start re-recording when using UNDO, press the **STOP** footswitch to stop recording before using the UNDO function.

## Playing Back a Recorded Track

After a track is recorded, playing it back is simple. If you are at the end of the track or the song, press **PLAY**. The recorder automatically begins playing back the track/song from the very beginning. If you want to start playback at the beginning of a track or song but are someplace other than the end of the song, follow these steps:

1. Begin with the Recorder stopped.
2. Press the **REWIND** footswitch. Press and hold this button to slowly move back through the track until it is released.
3. Press the **PLAY** footswitch. The newly recorded track is automatically armed in **PLAY** status (the track button is lit green) and the track begins playing back.

## Recording Multiple Tracks

After a track has been recorded, you may want to record other tracks that play along with it. To create a monitoring source while recording new tracks, play the previously recorded track(s). To record a new track with a previously recorded track, follow these steps:

1. Press the **RECORD** footswitch. The next available track for recording automatically lights red, indicating it is armed to record, and the recorder begins recording on this track from the beginning of the song. The **TIME** display begins counting off the recording time. If Autostop is turned on, the recorder will automatically stop when the longest track playing back is finished. If Autostop is turned off, go to step 2.
2. When recording is complete, press the **STOP** footswitch.

## Punching In / Punching Out

There may be times you want to replace a track section in the middle of a song. Rather than recording on a new track at the very beginning and wasting recording time with silence, you can “punch in” the phrase you want to record at a certain point on the track. To punch in record, follow these steps:

1. Arm the track you want to punch in record on (TRACK button is lit flashing red).
2. Press the **PLAY** footswitch. Tracks that are armed for playback begin playing, and the TRACK button armed for recording remains flashing red.
3. When you reach the point in the playback that you want the recording to begin, press the **RECORD** footswitch. The TRACK button armed for recording lights solid red and recording begins on this track at this point.
4. When you are finished recording, press the **RECORD** footswitch to continue listening to playback and disable the track armed for recording, or press the **STOP** footswitch to stop

## Using the BNX3's JamMan Delay Looper

The BNX3's recorder also doubles as a JamMan™ Delay Looper. The JamMan is used to create a recording loop that you can playback with. The JamMan functions are accessed using the BNX3's footswitches while they are in Recorder mode. The only difference between regular multi-track recording and looping is the way you use the footswitches after recording your first track.

When recording multiple tracks for a song, you would normally record your first track, stop, rewind, and then set up for recording your overdub track. The BNX3's footswitches provide hands-off operation for these functions. But when you want to create loops on the fly that you can layer, you want the transition from the first take to the second and so on to be seamless.

To use the JamMan feature of the BNX3 you must first have the footswitches in Recorder mode. To do this, press the 4 and 5 footswitches simultaneously until the DOWN/UP footswitches are lit red. If you have

# Recorder

songs already in memory, you must select a new Song to record your loop to. To select a new song, press the **UP** footswitch. A new song is defined as a song that has no previously recorded material present on any of its tracks. Looping uses CD recording quality mode only.

You are now ready to begin recording a loop.

## Recording a Loop

Recording a loop is no different than doing multi-track recordings. Here are the steps for creating a loop:

1. Press the **RECORD** footswitch. The TRACK 1 button automatically lights red, indicating it is armed to record, and the recorder begins recording on this track. The TIME display begins counting off the recording time.
2. Just as you reach the end of your take, press the **PLAY** footswitch. This sets the loop length and places TRACK 1 into playback. You can listen to what you just recorded, and the TRACK 2 button is flashing red indicating it is now armed and ready to begin recording on.

**NOTE:** If the **RECORD** footswitch is pressed instead of the **PLAY** footswitch after recording the first pass, recording is stopped and the loop's length is set. The **TRACK 1** button is still armed for recording (flashing red) but is now playing back what you just recorded. You can now add material to track 1 rather than record on a new track by pressing the **RECORD** footswitch to record on this track again. The new material is added to existing recorded material. Until the **PLAY** footswitch is pressed, only track 1 is available to record on.

## Recording Layered Overdubs to your Loop

Adding overdubbed layers to your first loop is easy. After recording your first track and pressing the **PLAY** footswitch, TRACK 2 is already armed for recording. To add overdubs to the current loop, follow these steps:

1. Press the **RECORD** footswitch. The TRACK 2 button lights solid red and begins recording on this track.
2. When finished, you can press **PLAY** to stage the next track for recording or press **RECORD** to begin adding your next overdub.

If at anytime you are not satisfied with your current take while recording overdubs with your original loop, you can undo it by pressing the **UNDO** footswitch. This erases the contents of a track and lets you proceed with trying another take without having to stop. To use the **UNDO** function while recording a loop, follow these steps:

1. Press the **UNDO** footswitch once. The BNX3's main display reads *RERECORD*.
2. Press the **UNDO** footswitch again within 3 seconds to start re-recording. The display reads *UNDO DONE* and the recorder returns to the beginning of the song and resumes recording on the same track. If the **UNDO** footswitch is not pressed again within 3 seconds of the first press, the recorder ignores the undo request and recording continues unaffected.

## Using Quantize for Seamless Loops

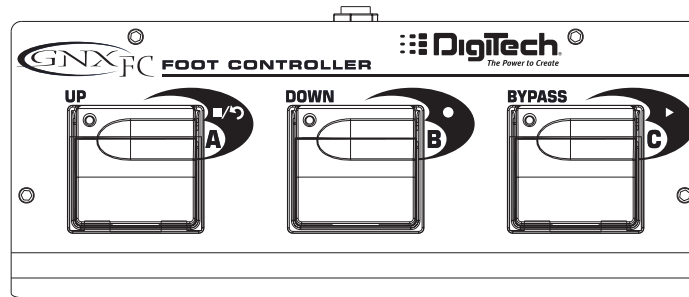
When recording loops, it is important that you set the loop length exactly so that your loop is seamless from finish to start. Sometimes our timing may not be perfect when pressing the **PLAY** footswitch to set the length. The BNX3 provides a Quantize feature that corrects these timing problems to the nearest eighth note. Quantize looks at the point where you pressed the **PLAY** footswitch in relation to the tempo you are using for your loop. Lets say you were recording a four second loop and you pressed the

PLAY footswitch just a little late. No problem, with Quantize enabled, the looper will automatically cut off the extra recording and give you a perfect four second loop.

To enable the Quantize feature, follow these steps:

1. Begin with the recorder stopped by pressing the **STOP** button.
2. Press the **SETUP** button until the BNX3's main display reads: *QUANTIZE*.
3. Use the **DATA WHEEL** to turn the Quantize feature on and off. Quantize only affects delay loops and does not affect songs.
4. Press the **EXIT** button.

## Using the GNXFC for Recorder Functions



The BNX3 is equipped with a footswitch jack that allows you to connect an optional GNXFC for controlling the BNX3's recorder. This 3-button footswitch features functions for **STOP/UNDO** (switch A), **RECORD** (switch B), and **PLAY** (switch C). The GNXFC is an ideal companion for JamMan users as it allows you to leave your BNX3 footswitches setup for changing presets or switching amp channels and effects on and off while the GNXFC is used for both recording songs and creating loops.

### Recording a Track

To begin recording a track using the GNXFC footswitches, follow these steps:

1. Press the **B-RECORD** footswitch. The TRACK 1 button will automatically light red, which will arm it to record, and the recorder will begin recording on this track. The TIME display will begin counting off the recording time.
2. Once recording is completed, press the **A-STOP/UNDO** footswitch. This stops the recording process, and saves the track. The TIME display will show the elapsed time used and the TRACK 1 button will be lit green indicating it is now enabled for playback.

### Using the UNDO Footswitch to Erase a Track

You can undo tracks using the GNXFC just as you can using the recorder panel. To undo tracks, follow these steps:

#### Using Undo While the Recorder is Stopped

1. Press and hold the **A-STOP/UNDO** footswitch once. The BNX3's main display reads *DEL TRKX*, indicating the last recorded track will be deleted.
2. Press the **A-STOP/UNDO** footswitch again within 3 seconds to delete the track. If the UNDO footswitch is not pressed a second time within 3 seconds of the first press, the recorder ignores the undo request and returns to its normal stopped state.

# Recorder

## Using Undo While Recording is in Progress

You can Undo a track while recording is in progress. This eliminates having to stop the recorder, rewinding, and having to start over. To undo the track you are currently recording on, follow these steps:

1. Press and hold the **A-STOP/UNDO** footswitch once. The BNX3's main display reads *RERECORD*.
  2. Press the **A-STOP/UNDO** footswitch again within 3 seconds to start re-recording. The display reads *UNDO DONE* and the recorder returns to the beginning of the song and resumes recording on the same track. If the UNDO footswitch is not pressed again within 3 seconds of the first press, the recorder ignores the undo request and recording continues unaffected.
- If you don't want to have the recorder automatically start re-recording when using UNDO, press the **STOP** footswitch to stop recording before using the UNDO function.

## Playing Back a Recorded Track

After a track has been recorded, playing it back is simple. If you are at the end of the track or the song, press the **C-PLAY** footswitch. The recorder automatically begins playing back the track/song from the very beginning. If you want to start playback at the beginning of a track or song but are someplace other than the end of the song, follow these steps:

1. Press the **A-STOP/UNDO** footswitch twice. This will rewind to the beginning of the current song.
2. Press the **C-PLAY** footswitch. The newly recorded track is automatically armed in PLAY status (track button is lit green) and the track begins playing back.

## Recording Multiple Tracks

After a track has been recorded, you may want to record other tracks (overdub) that will play along with it. You will want to play the previously recorded track(s) as a monitoring source while recording new tracks. To overdub a new track with previously recorded tracks do the following:

1. Return the Song to the beginning by pressing the **A-STOP/UNDO** footswitch twice.
2. Press the **B-RECORD** footswitch. The next available track for recording will automatically light red, which arms it to record, and the recorder begins recording on this track. The TIME display begins counting off the recording time.
3. When recording is complete, press the **A-STOP/UNDO** footswitch.

## Punching In / Punching Out

There may be times you will want to record in the middle of a song rather than from the very beginning. Rather than recording on a new track at the very beginning and wasting recording time with silence, you will want to "punch in" the phrase you want to record at a certain point on the track and then punch out. To punch in record do the following:

1. Arm the track you want to punch in record on (TRACK button is flashing red).
2. Press the **C-PLAY** footswitch. Any tracks that are armed for playback will begin playing and the TRACK button armed for recording will remain flashing red.
3. When you reach the point in the playback that you want the recording to begin, press the **B-RECORD** footswitch. The TRACK button armed for recording will now light solid red and recording will now begin on this track at this point.
4. When you are finished recording, press the **C-PLAY** footswitch to continue listening to playback and disable the track armed for recording, or press the **A-STOP/UNDO** footswitch to stop.



## Using the GNXFC for Looping

### Recording a Loop

To record a loop is no different than when you are doing multi-track recording. You must begin with a new song in order to create a loop. Press the BNX3's **UP** footswitch (the BNX3's footswitches must be in recorder mode first) or the **F FWD** button to select a new song that has not been recorded on.

Here are the steps for creating a loop:

1. Press the **B-RECORD** footswitch. The TRACK 1 button will automatically light red, which will arm it to record, and the recorder will begin recording on this track. The TIME display will begin counting off the recording time.
2. Just as you reach the end of your take, press the **C-PLAY** footswitch. This will set the loop length and place TRACK 1 into playback. You will now begin hearing what you just recorded. You will now see that the TRACK 2 button is flashing red meaning it is now armed and ready to begin record.

You have just successfully recorded your first loop and are now ready to start layering overdubs.

**NOTE:** If the **RECORD** footswitch is pressed instead of the **PLAY** footswitch after recording the first pass, recording will stop and the loop's length will be set. The **TRACK 1** button will now be armed for record (flashing red). You will begin hearing playback of track 1 at this time. If you decide you want to add material to track 1 rather than recording on a new track, press the **RECORD** footswitch again to enable recording on this track again. The new material will now be added to existing recorded material. Until the **PLAY** footswitch is pressed, only track 1 will be available to record on.

### Recording Layered Overdubs to your Loop

To begin adding overdubbed layers to your first loop is easy. Since TRACK 2 is already armed for recording, press the **RECORD** footswitch when you are ready to begin recording your overdub.

1. Press the **B-RECORD** footswitch. The TRACK 2 button will light solid red and will begin recording on this track.
2. When finished, you can press **C-PLAY** to arm the next track for recording or just press **B-RECORD** to begin adding your next overdub.

If at anytime you are not satisfied with your current take, you can undo it by pressing and holding the **A-STOP/UNDO** footswitch. This will erase the last recorded track and let you proceed with trying another take without having to stop.



# Other Functions

## Other Functions

### Expression Assign

The BNX3 has several options for real-time control over effects parameters in each of its presets.

Parameters can be modified during performance both manually and automatically by several methods. These are referred to as expression controllers and include the following: the built-in Expression Pedal, Internal LFOs (low frequency oscillators), and the Control Footswitch. Each of these controllers can be programmed specifically for each preset, giving you many options for manipulating each in a different manner.

### Expression Pedal

The Expression Pedal on the BNX3 can control up to 3 parameters in real time. Each parameter assigned to the Expression Pedal can have specific ranges of how much the parameter is controlled by using the minimum and maximum controls. The BNX3's Expression Pedal includes DigiTech's exclusive V-Switch. The V-Switch lets you switch the Expression Pedal assignment on the fly. Apply extra pressure to the toe of the Expression Pedal to engage the V-Switch, and the Expression Pedal switches between the assigned parameter and the Wah. The sensitivity or amount of pressure required to engage the V-Switch can be adjusted to suit your personal taste (or weight of your foot). See page 67 for the V-Switch Threshold adjustment procedure.

The procedure for assigning a parameter to the Expression Pedal is as follows:

1. Press the Effect Select button until the Exp Assign row has been selected.
2. Press the Status button until the display reads *EXP PDL1* (Expression Pedal Link 1), *EXP PDL2* (Expression Pedal Link 2), or *EXP PDL3* (Expression Pedal Link 3), depending upon which assignment you want to use or the number of parameters you intend to assign. The display alternates between the Expression Pedal selection and the assigned parameter.
3. Rotate the Parameter 1 knob until the parameter appears in the display. See the Expression Parameter Assignment List on page 64 for a complete list of assignable Parameters.
4. Rotate the Parameter 2 knob to select the minimum value the parameter reaches with the Expression Pedal in the toe up position (not available when volume is the assigned parameter).
5. Rotate the Parameter 3 knob to select the maximum value the parameter reaches with the Expression Pedal in the toe down position (not available when volume is the assigned parameter).
6. Store your Expression Pedal assignment to your preset. See page 17 for more information on the storing procedure.

### LFOs

The BNX3 includes two low frequency oscillators (LFO1 and LFO2) that can be assigned to the Expression Pedal parameters. A low frequency oscillator automatically varies the value of the assigned parameter at a steady rate. A minimum and maximum value can be assigned. For instance: if the Amp Gain was assigned to LFO1, and the minimum value was set at 1 and the maximum value was set at 99, the BNX3 would automatically sweep the amount of distortion from clean to distorted and back to clean. Individual LFO speeds can also be assigned. In the previous example, the LFO speed would determine the length of time it took the LFO to sweep from the clean to the distorted sound. The procedure for assigning the LFOs in the BNX3 is as follows:

1. Press either **EFFECT SELECT** button until the Exp Assign row is selected.
2. Press the **STATUS** button to assign LFO1 (*LFO 1*) or LFO2 (*LFO 2*).
3. Rotate the Parameter 1 knob until the Parameter is displayed. See the Expression Parameter Assignment list on page 64 for a complete list of assignable Parameters.
4. Rotate the Parameter 2 knob to select the minimum value the assigned parameter reaches at the bottom turn around point for the LFO (not available when volume is the assigned parameter).

5. Rotate the Parameter 3 knob to select the maximum value the assigned parameter reaches at the top turn around point for the LFO (not available when volume is the assigned parameter).
6. Rotate the Parameter 4 knob to select the speed that the LFO oscillates from the minimum to the maximum values. LFO speed ranges from ( .05 HZ) to 10 Hz (100 HZ).
7. Rotate the Parameter 5 knob to select the waveform the LFO oscillates on. Your choices include:  
*TRIANGLE* (Triangle) - a smooth rise and fall, but abrupt turn around in oscillation.  
*SINE* (Sine) - a smooth rise, fall, and turn around in oscillation.  
*SQUARE* (Square) - an abrupt rise, fall, and turn around in oscillation.
8. Store your LFO assignment to your preset. See page 17 for more information on the storing a preset.

## Amp Footswitch

The Amp Footswitch allows switching between the Green, Red, and Yellow (Warped) Amp Channels when using the BN3 in stompbox mode. There are different combinations of amp channel switching the BN3 provides. To select which combination you need for your application, follow these steps:

1. Press either **EFFECT SELECT** button until the Exp Assign row is selected.
2. Press the **STATUS** button until the main display reads *AMP FS* (Amp Footswitch).
3. Rotate the Parameter 1 knob to select the Amp Footswitch function. Your choices include:  
*G-R* - Switches between the Green and Red Amp Channels.  
*G-Y* - Switches between the Green and Yellow (Warped) Channels.  
*R-Y* - Switches between the Red and Yellow (Warped) Channels.  
*G-R-Y* - Switches between the Green, Red, and Yellow (Warped) Channels.
4. Store your Amp Footswitch assignment to your preset. See page 17 for more information on the storing a preset.

## Control Footswitch

When using the BN3 in Stompbox mode, **FOOTSWITCH 5** becomes a Control Footswitch. This provides even more real-time expressive control during performance when used in conjunction with the Expression pedal. Up to three 3 parameters can be controlled between two different values in each preset using the Control footswitch. The Control footswitch can function in two different ways, as a Toggle footswitch or as a Momentary footswitch.

When using the Toggle function, the Control footswitch behaves like a normal footswitch in that it switches to an ON state when pressed once and then an OFF state when pressed again. This type of function is useful when you want to use it for turning effects like the Compressor or Whammy™ on and off. It can also be used to toggle between two different parameter settings, for instance, a delay level of 10 or a Delay level of 50.

When using the Momentary function, the Control footswitch switches ON as long as it is being pressed, and turns OFF when it is released. Experimenting with different parameters can produce some very interesting results. For instance, you can assign Pitch Shift amount and have your bass shift from a fifth above when the Control footswitch is pressed and return to normal pitch when it is released. The procedure for assigning the Control footswitch in the BN3 is as follows:

1. Press either **EFFECT SELECT** button until the Exp Assign row is selected.
2. Press the **STATUS** button until Control footswitch assignment #1 is displayed, *CTRL FS* (Pressing the **STATUS** button again accesses assignments #2 and #3).
3. Rotate the Parameter 1 knob until the Parameter is displayed. See the Expression Parameter Assignment list on the next page for a complete list of assignable Parameters.
4. Rotate the Parameter 2 knob to select the minimum value the assigned parameter reaches when the Control footswitch is turned off (not available when volume is the assigned parameter).

# Other Functions

5. Rotate the Parameter 3 knob to select the maximum value the assigned parameter reaches when the Control footswitch is turned on (not available when volume is the assigned parameter).
6. While on Control footswitch assignment #1 only, rotate the Parameter 4 knob to select the type of footswitch function you want it to perform, Toggle, *TOGGLE*, or Momentary, *MOMENTARY*.
7. Store the assignment to your preset. See page 17 for more information on storing a preset.

## Expression Parameter Assignment List

The following Parameters can be assigned to the any of the 3 Expression Pedal links, LFO 1, or LFO 2.

*NO LINK* (No Link) - No Parameter is assigned

*COMPONOFF* (Compressor/Fretless On/Off) - Turns the Compressor or Fretless effect on and off.

*LOW BAND* (Compressor Low Band) - Controls the Compressor's Low Band.

*HIGHBAND* (Compressor High Band) - Controls the Compressor's High Band.

*CROSSOVER* (Compressor Crossover) - Controls the Compressor's Crossover frequency.

*CMP LEVL* (Compressor Level) - Controls the Compressor's overall Level.

*AMOUNT* (Fretless Amount) - Controls the Fretless Simulator Amount.

*ATTACK* (Fretless Attack) - Controls the Fretless Simulator Attack.

*SENSVTY* (Fretless Sensitivity) - Controls the Fretless Simulator Sensitivity.

*WAHONOFF* (Wah On/Off) - Turns the Wah on and off.

*SYNONOFF* (Whammy™/Synth On/Off) - Turns the Whammy™/Synth module on and off.

## Whammy™/Synth Parameters

Active Effect

Whammy™	AMOUNT	WHAM PDL		WHAM MIX
IPS	SHIFT	SCALE	KEY	LEVEL
Detune	AMOUNT			MOD BAL
Pitch	AMOUNT			MIX
Octavider	SENSVTY	ATTACK	SYNTHLVL	SUBLEVEL
Synth	SENSVTY	ATTACK	START	STOP
Filter	SENSVTY	ATTACK	RANGE	SWEEP
Envelope Filter	SENSVTY	BLEND	RANGE	SUBLEVEL

*STOMPBOX* (Stompbox On/Off) - Turns the Stompbox module on and off.

## Stompbox Effect Parameters

Screamer	DRIVE	TONE	LEVEL			
Rodent	DIST	FILTER	VOLUME			
DS Dist	DIST	TONE	LEVEL			
DOD 250	GAIN	LEVEL				
Big MP	SUSTAIN	TONE	VOLUME			
Guy OD	DRIVE	LEVEL				
Sparkdrv	GAIN	TONE	CLEAN	VOLUME		
Grunge	GRNGGAIN	BUTT	FACE	LOUD		
Fuzzy	FUZZ	VOLUME				
Zone	DIST	MID FREQ	MID LVL	LOW	HIGH	LEVEL

*AMP CHAN* (Amp Channel) - Switches Amp Channels.

*AMP WARP* (Amp Warp) - Warps the Green and Red Amp Models.

*CAB WARP* (Cabinet Warp) - Warps the Green and Red Cabinet types.

*WARP* (Warp) - Warps the Green and Red Channels.

*GRN GAIN* (Green Gain) - Controls the Amp Gain for the Green Channel.

**GRN LEVL** (Green Level) - Controls the Volume of the Green Channel.  
**RED GAIN** (Red Gain) - Controls the Amp Gain for the Red Channel.  
**RED LEVL** (Red Level) - Controls the Volume of the Red Channel.  
**GATONOFF** (Noise Gate On/Off) - Turns the Noise Gate on and off.  
**GATTHRES** (Noise Gate Threshold) - Controls the Noise Gate's Threshold.  
**GATATTAK** (Noise Gate Attack) - Controls the Noise Gate's Attack time.  
**PLK SENS** (Noise Gate Pluck) - Controls the Noise Gate's Pluck Sensitivity.  
**FX ONOFF** (Chorus/Mod On/Off) - Turns the Chorus/Mod module on and off.

## Modulation Effects Parameters

### Active Effect

Chorus	SPEED	DEPTH	PREDelay	MOD BAL	MOD LEVEL	
Flanger	SPEED	DEPTH	REGEN	MOD BAL	MOD MIX	
Phaser	SPEED	DEPTH	REGEN	MOD BAL	MOD MIX	
Tremolo	SPEED	DEPTH				
Panner	SPEED	DEPTH				
Vibrato	SPEED	DEPTH				
Rotary Speaker	SPEED	DEPTH	DOPPLER	CROSSOVER	MOD BAL	MOD MIX
Auto Ya™	SPEED	DEPTH	RANGE	MOD BAL	MOD MIX	
YaYa™	YA PEDAL	DEPTH	RANGE	MOD BAL	MOD MIX	
Detune	AMOUNT	MOD CNTR	MOD LVL			
Pitch Shift	SHIFT	MOD CNTR	MOD LVL			

**DLY ONOFF** (Delay On/Off) - Turns the Delay module on and off.  
**DLY FDBK** (Delay Feedback) - Controls the amount of Delay Feedback.  
**DLKTHRES** (Delay Threshold) - Controls the Ducker Threshold for the Delay.  
**DLK ATTN** (Ducker Attenuation) - Controls the attenuation level applied to the Delay signal when the Ducker Threshold is exceeded.  
**DLY LEVL** (Delay Level) - Controls the Mix Level of the selected Delay Type.  
**DLY BAL** (Delay Balance) - Controls the left/right balance of the selected Delay Type.  
**RVB ONOFF** (Reverb On/Off) - Turns the Reverb effect on and off.  
**RVB PRE** (Reverb Predelay) - Controls the Reverbs Predelay time.  
**RVB DECAY** (Reverb Decay) - Controls the Reverbs Decay time.  
**RVB LEVL** (Reverb Level) - Controls the Reverbs Mix Level.  
**RVB BAL** (Reverb Balance) - Controls the left/right balance of the selected Reverb Type.  
**VOL PRE** (Volume Pre) - Controls the Volume after the Amp Modeling but before the Effects.  
**VOL POST** (Volume Post) - Controls the Volume at the end of the Effects chain.  
**LFO1 SPD** (LFO 1 Speed) - Controls the modulation speed of Expression LFO 1.  
**LFO2 SPD** (LFO 2 Speed) - Controls the modulation speed of Expression LFO 2.

## Utilities

The Utility section contains all of the menus for assigning global functions to the BNX3. Global functions affect the BNX3 in its entirety rather than on a per preset basis. The Utility menus include: Mono/Stereo Output, Bi-Amp Output, Volume Pedal Update, V-Switch Threshold, Expression Pedal Calibration, Dry Track Enable, Bank Naming, MIDI Channel, MIDI Sysex Dumps, Amp Dumps, MIDI Mapping, MIDI Merge, and Factory Reset. To enter the Utility section, press the Utility button. Once in the Utility menu, the Drums button selects the next menu (scrolls to the right), and the Mode button selects the previous menu (scrolls to the left). Each of these Utility menus is described in more detail in the following pages.

# Other Functions

## Analog Output Configuration

The BNX3's analog outputs can be configured several different ways, giving you a variety of signal routing possibilities for both recording and performing applications. The available analog output configurations are: *MONO* (bass processor and recorder output summed to mono), *STEREO* (bass processor and recorder output in stereo), *B>L R>R* (bass left output, recorder right output), *MONOBASS* (Mono output, bass processor only), *STERBASS* (Stereo output, bass processor only), and *BIAMP* (Bi-Amp output, bass processor only).

When using either Mono or Stereo, both the BNX3's bass processing and the recorder's outputs are mixed together at the analog outputs. When Bass *B>L R>R* (bass left output, recorder right output) is selected, the BNX3's bass processing is summed to mono and sent to the left analog output while the recorder's output is summed to mono and sent to the right analog output. This is useful if you want to run the BNX3 to an amplifier setup (using the Left/Bass output) while sending the recorder output direct to a mixer (using the Right/Recorder output). When using either *MONOBASS* (Mono output, bass processor only), and *STERBASS* (Stereo output, bass processor only), only the BNX3's bass processing is sent to the analog outputs and the recorder output is muted.

To select the analog output configuration, do the following:

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Using the **MODE** or **DRUMS** button, scroll to the left or right until *ANLG OUT* is displayed (Analog Output Configuration setup menu). The display begins flashing between *ANLG OUT* and the selected output configuration. Note: *STEREO* is the default set from the factory
3. Use the **DATA WHEEL** to change the output configuration.
4. Press the **EXIT** button to exit.

## Bi-Amp Configuration

The BNX3 offers a Bi-Amp (High/Low) output configuration. This lets you configure the analog Left and Right outputs as High and Low frequency outputs. These signals are sent to separate channels of a stereo power amp and then to separate cabinets loaded with different drivers. When the Bi-Amp configuration is used, the recorder output is muted in the analog outputs. The procedure for setting up the Bi-Amp configuration is as follows:

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Using the **MODE** or **DRUMS** button, scroll to the left or right until *ANLG OUT* is displayed (Analog Output Configuration setup menu). The display begins flashing between *ANLG OUT* and the selected output configuration. Note: *STEREO* is the default set from the factory.
3. Use the **DATA WHEEL** to change the output configuration to *BIAMP 80*. This is the first crossover setting for the Bi-Amp configuration which is 80Hz. Frequencies below 80Hz are routed to the Low Output and above 80Hz are routed to the High Output. Continue turning the data wheel to select the crossover frequency your system requires. Crossover range is from 80-500Hz.
4. Press the **EXIT** button to exit.

## Volume Pedal Update

The BNX3 lets you select the Expression Pedal's position to be updated, after changing presets, when it is linked to the Volume Parameter. This feature lets you change presets and keep the volume level from the previous preset, if the Expression Pedal controls the volume for both presets. If this feature is disabled, new presets are set to the volume level value stored with the preset. The procedure for enabling or disabling the Volume Pedal Update is as follows:

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Using the **MODE** or **DRUMS** button, scroll to the left or right until *VOLUMPDL* (Volume Pedal Update) is displayed.
3. Rotate the **DATA WHEEL** to select *ON* (enabled), or *OFF* (disabled).
4. Press **EXIT** to return to the BNX3 presets.



## V-Switch Threshold

Applying extra pressure to the toe of the Expression Pedal engages a feature called V-Switch. V-Switch is used to alternate between controlling assigned Parameter(s) with the pedal, and using the pedal as a Wah pedal. The sensitivity of the V-Switch can be set to the amount of pressure you want to use. The following steps explain how to set the V-Switch threshold:

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Using the **MODE** or **DRUMS** buttons, scroll to the left or right until *V SWITCH* (V-Switch) is displayed
3. Rotate the **DATA WHEEL** to select the threshold setting. Ranges are from 1 to 99 (with 99 requiring more pressure to engage). The sensitivity may be auditioned while making adjustments. Depending on the status of the Wah the display reads either *WAH ON*, or *WAH OFF* as the V-Switch engages and disengages.
4. Press **EXIT** to return to the BNX3 presets.

## Expression Pedal Calibration

The Expression Pedal on the BNX3 needs to be recalibrated for use after a factory reset has been performed. This calibration procedure is automatically activated after a factory reset procedure. In the event the pedal's calibration fails, or if the pedal does not function properly, it can be re-calibrated using the Pedal Calibration menu. The procedure for Calibrating the Expression Pedal is as follows:

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Using the **MODE** or **DRUMS** buttons, scroll to the left or right until *PEDALCAL* is displayed.
3. Press the blinking **STORE** button to enter the Pedal Calibration Menu. The display reads *TOE DN* (Toe Down).
4. Rock the Expression Pedal all the way forward to the toe down position and press the blinking number **2 Footswitch**. The display changes to read *TOE UP* (toe up).
5. Rock the Expression Pedal all the way back to the toe up position and press the blinking number **3 Footswitch**. *V SWITCH* is displayed and allows you to adjust the V-Switch threshold.
6. Rock the Expression Pedal forward and apply the V-Switch pressure to the toe of the pedal. If further adjustment to the threshold is required, use the Data Wheel to select the threshold.

**NOTE:** If the Display shows *ERROR*, a calibration error has occurred and steps 2 through 5 need to be repeated.

7. Press **EXIT** to return to the BNX3 presets.

## Bank Names

The BNX3 lets you customize the names of the 13 User Banks where the 65 User presets reside. Customized Bank names aids in quickly identifying the User Bank containing the presets you may need for a particular song or set. The procedure for naming the User Banks is as follows:

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Using the **MODE** or **DRUMS** buttons, scroll to the left or right until *BANKS* is displayed.
3. Use the **DATA WHEEL** to select the User Bank you want to rename.
4. Press **STORE** to access the naming menu. The far left character of the Bank name begins to blink.
5. Use the **DATA WHEEL** to select the desired alpha-numeric character.
6. Press the **DRUMS** button to select the next character to the right, and the **MODE** button to select the previous character to the left.
7. Repeat steps 5 and 6 until the Bank name appears in the display.
8. Once the Bank name appears correctly in the display, press **STORE** again. *NAME SAVED* is displayed briefly indicating the Bank name has been saved, and then new Bank name appears.
9. Press **EXIT** to return to the BNX3 presets.

# Other Functions

## MIDI Channel

The BNX3 MIDI channel is only used for receiving incoming MIDI data. The BNX3 sends MIDI program change commands. The procedure for selecting the MIDI channel is as follows:

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Using the **MODE** or **DRUMS** buttons, scroll to the left or right until *MIDI CHNL* is displayed. The numeric display show the selected MIDI channel.
3. Rotate the **DATA WHEEL** to select the MIDI channel. Your choices include 1 through 16, *ALL* (all), and *OFF* (off).
4. Press **EXIT** to return to the BNX3 presets.

## Bulk Dump

The Sysex Bulk Dump uploads all the BNX3 presets and utility data to a sysex librarian, or MIDI recording device. This is useful for making a backup copy of all your customized settings. The procedure for performing a Bulk Dump is as follows:

1. Connect a MIDI cable from the BNX3 MIDI Out to the the MIDI In of a MIDI recording device.
2. Press the **UTILITY** button. The Utility button's LED lights.
3. Using the **MODE** or **DRUMS** buttons, scroll to the left or right until *BULK DUMP* is displayed. The Store button blinks indicating it must be pressed to begin the bulk dump.
4. Set the MIDI recording device to record.
5. Press **STORE** to begin the dump. The display reads *SEND BULK* until the dump is complete at which time the display reads *BULK DUMP*.
6. Press **EXIT** to return to the BNX3 presets.

**NOTE:** The Bulk Dump sends information on the MIDI channel defined in the MIDI Channel menu.

## MIDI Preset Dump

The Sysex Preset Dump uploads individual BNX3 presets to a sysex librarian, or MIDI recording device. This is useful for making a backup copy of customized presets, or copying your presets into another BNX3. The procedure for performing a Sysex Preset Dump is as follows:

1. Connect a MIDI cable from the BNX3 MIDI Out to the the MIDI In of a MIDI recording device or the MIDI in of another BNX3.
2. Press the **UTILITY** button. The Utility button's LED lights.
3. Using the **MODE** or **DRUMS** buttons, scroll to the left or right until *PRST DUMP* (Preset Dump) is displayed.
4. Use the **DATA WHEEL** to select the preset number you want to dump.
5. Press **STORE**. The Display reads *SEND TO*.
6. Use the **DATA WHEEL** to select the destination preset number.
7. Set the MIDI recording device to record.
8. Press **STORE** again. The display reads *SEND PRST* until the dump is complete at which time the display briefly reads *DONE* before it returns to *PRST DUMP*.
9. Press **EXIT** to return to the BNX3 presets.

**NOTE:** The Preset Dump sends information on the MIDI channel defined in the MIDI Channel menu.

## User Amp Dump

User Amp Dump uploads the BNX3 Amp HyperModels™ to a sysex librarian, or MIDI recording device. This is useful for making a backup copy of your customized Amp HyperModels™, and copying your HyperModels™ into another BNX3. The procedure for performing a User Amp Dump is as follows:



1. Connect a MIDI cable from the BNX3 MIDI Out to the the MIDI In of a MIDI recording device or the MIDI in of another BNX3.
2. Press the **UTILITY** button. The Utility button's LED lights.
3. Using the **MODE** or **DRUMS** button, scroll to the left or right until *AMP DUMP* (Amp Dump) is displayed.
4. Use the **DATA WHEEL** to select the Amp number you want to dump.
5. Press **STORE**. The display reads *SEND TO*.
6. Use the **DATA WHEEL** to select the destination User Amp number.
7. Set the MIDI recording device to record.
8. Press **STORE** again. The display reads *SEND AMP* until the dump is complete at which time the display briefly reads *DONE* before it displays *AMP DUMP*.
9. Press **EXIT** to return to the BNX3 presets.

**NOTE:** The Amp Dump sends information on the MIDI channel defined in the MIDI Channel menu.

## MIDI Mapping

MIDI Mapping provides access to all factory and user presets from external MIDI program change commands that may not correspond to the BNX3 preset. This is useful when multiple MIDI devices are chained together and controlled by one central unit. For example, the main MIDI controller can send out a program change command telling a particular MIDI unit to change to Program 10, but you may want the BNX3 to change to User Preset 27. You can remap the BNX3 so when it receives MIDI Program change 10, it calls up User Preset 27. The Procedure for mapping MIDI program changes is as follows:

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Using the **MODE** or **DRUMS** buttons, scroll to the left or right until *M IDU* is displayed.
3. Use the **DATA WHEEL** to select the incoming MIDI program number you want to remap. Notice the flashing number to the right of the *M* increases and decreases as you turn the Data Wheel.
4. Press the **DRUMS** button. Notice the number in the red numeric display begins flashing. This number represents the BNX3 preset number that is accessed when the BNX3 receives the MIDI program number shown to the right of the *M* in the alpha-numeric display.
5. Rotate the **DATA WHEEL** to select the preset number the BNX3 will use when it receives the selected MIDI program change.
6. Press **EXIT** to return to the BNX3 presets.

## MIDI Merge

The MIDI Merge function echos the incoming MIDI data to the MIDI Out port of the BNX3. This is useful when multiple MIDI devices are chained together, and you want to pass incoming MIDI Data on to MIDI devices downstream from the BNX3. The procedure for enabling or disabling the MIDI Merge function is as follows:

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Using the **MODE** or **DRUMS** buttons, scroll to the left or right until *MIDIMERGE* is displayed. The red numeric display reflects the current MIDI Merge status *On* or *Off*.
3. Rotate the **DATA WHEEL** to select the status.
4. Press **EXIT** to return to the BNX3 presets.

## Digital Level

When plugging the BNX3's digital output into a recording device, it is important that the recording device gets as much signal as possible without being pushed into digital clipping. If your recorder is not receiving enough level from the BNX3's digital output, you can boost it using the Digital Level option in the Utility menu. The procedure for adjusting the Digital Level is as follows:

# Other Functions

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Using the **MODE** or **DRUMS** buttons, scroll to the left or right until *DIGI LVL* is displayed. The red numeric display reflects the current Digital Level.
3. Rotate the **DATA WHEEL** to increase or decrease the amount of Digital Level boost needed. Range is from 1-20.
4. Press **EXIT** to return to the BNX3 presets.

## Digital Output Configuration

The BNX3's S/PDIF digital output has several combinations of signal routing possibilities for recording and performance situations. As with the analog outputs, the BNX3's digital outputs can be independently configured for more flexibility when using both analog and digital outputs simultaneously. The different digital output configurations are: *BASS+REC* (both BNX3 bass processing and recorder outputs are mixed in stereo), *BASS DRY* (taps the bass signal directly off the input), *BASS AMP* (taps the bass signal off just after the amp modeling and noise gate), *RECORDER* (only the BNX3's recorder output is sent to the digital output).

When using *BASS+REC*, both the BNX3's bass processing and the recorder stereo outputs are mixed together at the digital output. *BASS DRY* and *BASS AMP* configurations are DigiTech's exclusive Dry Track™ features. *BASS DRY* taps the bass signal immediately off the input before it runs through the BNX3's processing. This lets you send an unprocessed bass signal out the digital output while still monitoring the effects processing through the analog and headphone outputs. You can then bring the signal back into the BNX3's analog input and hear the same dry bass signal run through each of the presets. *BASS AMP* taps the signal off just after the noise gate but gives you all the amp and cabinet modeling without the Chorus/Mod, Delay, or Reverb effects processing. *RECORDER* is used when only the BNX3's recorder output is to be sent to the digital output. If you have a live mixer with digital input capability, you can use this configuration in conjunction with the *STER BASS* analog output configuration. Using this combination, the analog outputs send bass processing to an external amplifier setup while the digital output sends recorder playback to the digital input of the mixer. This gives you the best of both worlds when using the BNX3's bass processing and recorder live, with high fidelity recorder output through the mixer and the bass processing through an amplifier at the same time.

To change the BNX3's digital output configuration, follow these steps:

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Press the **MODE** or **DRUMS** button, to scroll to the left or right until *DIGI OUT* is displayed (Digital Output configuration setup menu). The display begins flashing between *DIGI OUT* and the selected digital output configuration. Note: *BASS+REC* is the default digital output configuration set from the factory.
3. Rotate the **DATA WHEEL** to change the output configuration.
4. Press the **EXIT** button to exit.

## Factory Reset

This function resets the BNX3 to its original factory settings. This procedure erases ALL custom user presets, utility settings, and re-calibration of the Expression Pedal. The procedure for performing a Factory Reset is as follows:

**NOTE:** Performing this function will erase all user-programmed data. Be sure you want to erase the memory and start fresh before continuing with this procedure. A factory reset does not erase the internal or external recorder memory.

1. Press the **UTILITY** button. The Utility button's LED lights.
2. Using the **MODE** or **DRUMS** buttons, scroll to the left or right until *RESET* (Reset) is displayed.
3. Rotate the **DATA WHEEL** clockwise, until the display reads *NO YES* (No Yes) and NO is blinking.

**NOTE:** This procedure resets **ALL** user settings. Rotate the **DATA WHEEL** counterclockwise, or press **EXIT** while **NO** is blinking in the display to abort.

4. Press the **DRUMS** button. Yes begins blinking in the display.
5. Press **STORE** to reset the BNX3. The display returns to the Reset screen.
6. Press **EXIT** to return to the BNX3 presets.

## Formatting Recorder Memory

In the unlikely event the recorder memory (either internal or external) fails to work, it may need to be reformatted. If internal memory is to be reformatted, remove any memory cards from the BNX3's Memory Card slot before performing this procedure. If external memory cards are to be reformatted, insert them into the Memory Card slot before performing this procedure

**NOTE:** Performing this procedure will erase all recorded information from either internal or external memory. Be sure you want to erase this memory before continuing with this procedure.

To reformat the BNX3's recorder memory follow these steps:

1. Begin with the BNX3's power turned off.
2. Press and hold the **RECORD** button on the BNX3's recorder panel and turn the power on.
3. When the BNX3's main display reads *FORMAT?*, release the **RECORD** button. It will now be flashing red.
4. Press the **RECORD** button to begin the recorder memory formatting procedure. The display read *ERASING* while the procedure is in progress. When completed, the display returns to the preset screen.

## GENEDIT™ Editor/Librarian

The possibilities are endless when you install the GENEDIT™ Editor/Librarian software on your home computer. Before installing GENEDIT™ on your Mac or PC, connect the computer's MIDI output to the BNX3's MIDI input, and the BNX3's MIDI output to the computer's MIDI input. Then insert the GENEDIT™ CD ROM into the CD ROM drive on your computer, and follow the install instructions that appear on the screen.

### PC

If the install instructions do not appear automatically after inserting the CD, select **RUN** from the Start menu, and double-click **SETUP.EXE** located on the CD ROM drive.

# Other Functions

## Mac

If the install instructions do not appear automatically after inserting the CD, double click the **CD** icon on your monitor. Double-click the **INSTALLER** icon and follow the installation instructions.

**NOTE:** Previous versions of **GENEDIT™** will not work with the **BNX3**. You must install the new version of **GENEDIT™** from the **CD** that came with the **BNX3**. For the latest version of **GENEDIT™** software, visit DigiTech's website at [www.digitech.com](http://www.digitech.com).

# Appendix

## Preset List

### Bank 1 SHOWCASE

1. HYPERAMP
2. OCTABASE
3. SYNTHBAS
4. ENVELOPE
5. NO FRET

### Bank 2 GENETX

6. TRAC/ASH
7. SVTHEAVN
8. SOLARMAN
9. 2TUBEPRE
10. 2-TONE

### Bank 3 AMPS ONE

11. BRITISH
12. AMERICAN
13. MODERN
14. TUBEPRES
15. BOOGSHOW

### Bank 4 STUDIO

16. SLAP-IT
17. STANDARD
18. PUNCHY
19. DRIVER
20. GROOVIN

### Bank 5 FX BASS

21. CRYBASSY
22. WOBBLE
23. BASSWHAM
24. TITE 5TH
25. SPACEMAN

### Bank 6 DIRTBASS

26. GRINDY
27. DIRT BAG
28. PIE FAZE
29. LEADBASS
30. SHREDNIT

### Bank 7 AMPS TWO

31. CUSTOM
32. CLENTUBE
33. TUBEDIRT
34. FAT PRE
35. BOOGIMAN

### Bank 8 HYBRID

36. POPPEN
37. LEVSTICK
38. BASICASH
39. ROCKBOMB
40. VTGBOMBER

### Bank 9 GTR AMPS

41. BRIT/GTR
42. AMER/GTR
43. CHOR/GTR
44. MEGA/GTR
45. TWED/GTR

### Bank 10 EXPRESSN

46. CHAPSTIK
47. PEDAL FX
48. ROTARY
49. PDLSYNTH
50. YAYA PDL

### Bank 11 BIG BOTM

51. FAT-N-LO
52. OCTSYNTH
53. PHAT BOY
54. BIGFATTY
55. FATSYNTH

### Bank 12 SPECIAL

56. RUBBRMAN
57. BASSECHO
58. UPRIGHT
59. BADVINYL
60. PICHPLAY

### Bank 13 SYNTH

61. EXPSYNTH
62. LFOFILTR
63. FILTERPDL
64. HOLD IT
65. DIRECT

## MIDI Implementation Chart

Function	Transmitted	Received	Remarks
MIDI Channel	1 - 16	1 - 16	
Mode	X	2, 4	
Note Number	X	X	
Velocity	X	X	
After Touch	X	X	
Pitchbend	X	X	
Control Change	X	0 - 127	See MIDI CC List
Program Change	O	0 - 128	
System Exclusive	O	O	
System Common			
Song Position:	X	X	
Song Select:	X	X	
Tune:	X	X	
System Real Time			
Clock:	X	X	
Commands:	X	X	
Aux Messages	X	X	

Mode 2: Omni On, Mono  
Mode 4: Omni Off, Mono

O: Yes  
X: No

# Appendix

## MIDI CC List

Parameter	CC#	Parameter	CC#
Wah On/Off	CC 2	Amp Morph	CC 79
Wah Type	CC 3	Cabinet Morph	CC 80
Wah Minimum	CC 4	Amp/Cabinet Morph	CC 81
Wah Maximum	CC 5		
Wah Pedal	CC 6	Gate On/Off	CC 50
		Gate Type	CC 51
Comp/Fretless On/Off	CC 8	Gate Threshold	CC 52
Comp/Fretless Type	CC 1	Gate Attack	CC 53
Comp Param 1	CC 9	Gate Pluck	CC 54
Comp Param 2	CC 10		
Comp Param 3	CC 11	Effect On/Off	CC 55
Comp Param 4	CC 12	Effect Type	CC 56
Wham/Synth On/Off	CC 13	Effect Level	CC 57
Wham/Synth Type	CC 14	Effect Param 1	CC 58
Wham/Synth Level	CC 15	Effect Param 2	CC 59
Wham/Synth Param 1	CC 16	Effect Param 3	CC 60
Wham/Synth Param 2	CC 17	Effect Param 4	CC 61
Wham/Synth Param 3	CC 18	Effect Param 5	CC 62
Whammy™ Pedal	CC 19		
		Delay On/Off	CC 63
Stompbox On/Off	CC 84	Delay Type	CC 120
Stompbox Type	CC 85	Delay Level	CC 65
Stompbox Gain	CC 86	Delay Time (Coarse)	CC 66
Stompbox Level	CC 87	Delay Time (Fine)	CC 67
Stompbox Param 1	CC 88	Delay Feedback	CC 68
Stompbox Param 2	CC 89	Ducker Threshold	CC 69
Stompbox Param 3	CC 90	Ducker Attenuation	CC 70
Stompbox Param 4	CC 91	Delay Balance	CC 71
Amp Channel (FS)	CC 20	Reverb On/Off	CC 72
		Reverb Type	CC 73
Green Amp Type	CC 22	Reverb Level	CC 74
Green Amp Gain	CC 23	Reverb Decay	CC 75
Green Amp Level	CC 24	Reverb Damping	CC 76
Green Cab Type	CC 25	Reverb PreDelay	CC 77
Green Cab Tuning	CC 26	Reverb Balance	CC 78
Green Bass Freq	CC 28		
Green Bass Level	CC 29	Volume Pre	CC 7
Green Mid Freq	CC 31	Volume Post	CC92
Green Mid Level	CC 32		
Green Treble Freq	CC 34	LFO 1 Speed	CC 105
Green Treble Level	CC 35	LFO 1 Waveform	CC 106
		LFO 2 Speed	CC 110
Red Amp Type	CC 36	LFO 2 Waveform	CC 111
Red Amp Gain	CC 37		
Red Amp Level	CC 38		
Red Cab Type	CC 39		
Red Cab Tuning	CC 40		
Red Bass Freq	CC 42		
Red Bass Level	CC 43		
Red Mid Freq	CC 45		
Red Mid Level	CC 46		
Red Treble Freq	CC 48		
Red Treble Level	CC 49		

## Specifications

### General Specifications

A/D Converter:	24 bit
D/A Converter:	24 bit
Sampling Frequency:	44.1 kHz
DSP Section:	3 - Audio DNA™ DSP Processors
Preset Memory:	65 Factory Presets, 65 User Presets

### Connections:

Bass Input and Outputs:	1/4" TS
Jam-A-Long/CD_Input:	1/8" Stereo TRS
Mic Input:	Balanced XLR
Headphone:	1/4" Stereo TRS
MIDI:	In and Out/Thru
S/PDIF Output:	RCA connector
Memory Card:	SmartMedia™ Memory (3.3 Volt cards only, 16 MB or greater)
Footswitch:	Optional GNX FC

### Audio Performance Specifications:

#### Analog Outputs:

##### Bass Input

Frequency Response:	20 Hz - 17 kHz +0 dB, - 3 dB
S/N ratio (Analog Outputs):	> 100 dB A-weighted; ref = max signal, 22kHz measurement bandwidth.
Total Harmonic Distortion:	Less than 0.05% (1kHz).

##### Microphone Input (Recorder Input set to B+MICDRY)

Frequency Response:	20 Hz - 20 kHz +0 dB, - 1 dB
S/N ratio(Analog Outputs):	> 99 dB A-weighted; ref = max signal, 22kHz measurement bandwidth.
Total Harmonic Distortion:	Less than 0.022% (1kHz).

### 8 Track Digital Recorder (Record Quality set to CD mode):

Resolution:	16 bit
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##### Bass Input

Frequency Response:	20 Hz - 17 kHz +0 dB, - 3 dB
S/N ratio:	> 95 dB A-weighted; ref = max signal, 22kHz measurement bandwidth.

##### Microphone Input

Frequency Response:	20 Hz - 20 kHz +0 dB, - 1 dB
S/N ratio:	> 95 dB A-weighted; ref = max signal, 22kHz measurement bandwidth.

### Power Requirements:

US and Canada:	120 VAC, 60 Hz	Adapter: PSS3-120
Japan:	100 VAC, 50/60 Hz	Adapter: PSS3-100
Europe:	230 VAC, 50 Hz	Adapter: PSS3CE-230
UK:	240 VAC, 50 Hz	Adapter: PSS3-240

Power Consumption:	18.5 Watts
Dimensions:	Length 20.75" Width 9" Height 3"
Unit Weight:	8.9 lbs.



# Appendix

## Trouble Shooting Guide

PROBLEM	SOLUTIONS
Recorded tracks cannot be heard on playback.	Check analog output configuration in Utility section. Set this to MONO or STEREO.  Verify recorded tracks are lit GREEN during playback. This applies to looped tracks as well.
Unable to hear track recorded from MIC input.	Check output mode in Utility. Check MIC input level. Check SETUP to route MIC to recorder.
Cannot change record quality from CD or LP or EP.	Only one recorder quality for all tracks is possible per song. Record mode of first track determines mode for subsequent tracks.
I can't access internal songs recorded on the BNX3.	Remove Smart Media Card.
Why can't I select Re-Amp track as record input?	Re-Amp is not available unless previous tracks have been recorded.  Verify Stereo Record is set to OF
Cannot Merge tracks.	Tracks that are lit Green will be merged to Tracks that are lit Yellow. Merge cannot be Undone. Only up to 2 tracks can be merged (to yellow) at a time. Looped tracks cannot be merged.
FS300/GNX FC footswitch not functioning properly.	Verify that a TRS stereo cable is being used.
Expression pedal will not respond properly.	Re-calibrate the Expression Pedal in the Utility menu.
Why can't I access Factory presets with footswitches in Bank Mode?	In Bank Mode only User programs are accessible by footswitch. Use Data Wheel to access Factory presets.
Wah won't engage easily.	Adjust V-Switch threshold in Utility section.  Turn Wah on for current preset in Edit Mode.

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