DIGITAL EFFECTS PROCESSORS

XP2 & XP4

CARVIN

OPERATING MANUAL

INTRODUCTION

This manual covers the XP2 and XP4 units with the software release of r009 or higher. Check the software release for compatibility if you purchased your XP unit prior to Oct 2000. *see pg 17 for instructions*

The Carvin XP series is a line of quality digital effect processors designed for professional use in studio and live sound reinforcement applications. The **XP2** and the **XP4** are identical except that the **XP4** has 4 processors instead of 2. Thus, the **XP4** is capable of processing 4 independent mono channels, 2 stereo pairs or 2 independent mono channels and 1 stereo pair in a single rack space. The XP series processors deliver this performance through the use of easy to configure effect engines that may be placed in either stereo or mono mode. This allows the **XP2** and **XP4** to work with stereo audio sources while still maintaining the flexibility to provide independent mono processing when it is needed.

In independent mono engine processing, the engines may be digitally linked in a serial fashion thus allowing each side of the **XP4** to function as a multi-effects processor.

XP2 - Two Engine DSP

XP4 - Four Engine DSP

ULTRA-FLEXIBLE FOOTSWITCHING

The footswitching capabilities of the XP processors are unparalleled in their flexibility. The unit can be easily operated in a live situation without requiring the use of MIDI. Our flexible footswitching setup allows you to bypass either effect engine independently, both at once, or alternately (channel switching) using either our own FS22 footswitch or other footswitches that have a 1/4" plug and suitable switch circuits!

COMPREHENSIVE MIDI SUPPORT

Both the XP4 and XP2 have a comprehensive MIDI implementation that allows you to select effect programs and change any parameter or effect program that has been selected on either side of the XP4 (this includes the effect wet/dry setting which is included in the effect program setup for each effect engine). MIDI channels may be selected for each effect engine and/or optionally disabled without having to disconnect cables.

RECEIVING INSPECTION—read before getting started

INSPECT YOUR PRODUCT FOR ANY DAMAGE which may have occurred during shipping. If any damage is found, please notify the shipping company and CARVIN immediately.

SAVE THE CARTON & ALL PACKING MATERIALS. In the event you have to reship your unit, always use the original carton and packing material. This will provide the best possible protection during shipment. CARVIN and the shipping company are not liable for any damage caused by improper packing.

SAVE YOUR INVOICE. It will be required for warranty service if needed in the future.

SHIPMENT SHORTAGE. If you find items missing, they may have been shipped separately. Please allow several days for the rest of your order to arrive before inquiring.

RECORD THE SERIAL NUMBER on the enclosed warranty card or below on this manual for your records. Keep your portion of the card and return the portion with your name and comments to us.

EFFECTS LIST

- **Reverb:** Plate, Hall & Room. The reverbs carefully designed for smooth realistic sound!
- **Chorus:** Rich 4-voice chorus with the ability to use triangle or sine LFO.
- **Flanger:** High quality flanging algorithms with + or - feedback selection.
- **Phaser:** Thick phasing effects with + or - feedback selections.
- **EQ:** Low, Mid, and High +6db, to -12db
- **Delay/Echo:** Precise delay time selection for up to 1 second of delay per effect engine, and selectable loop filter.
- **Rotary Speaker:** Features ability to change drum and/or rotor slew rate for vintage rotary speaker effects.

For a more in depth explanation of the effects and parameters, refer to page 13.

XP2/XP4 SUGGESTED USES

- **Live Applications:** Use with small and large concert sound systems for vocal effects or to add effects to other instrument such as drums / percussion, guitars, bass keyboards etc.
- **Live Recording:** Use the XP processors to enhance 2 track stereo live recordings and get a professional sounding recording direct-to-tape with the right combination of effects.
- **Studio Recording:** Mixing down a multi-track master will sound awesome even in the smallest home studio with the XP2 or XP4.
- **Time Delay:** Use with a live sound system to correct time/distance delays between front of house speakers and rear or fill speakers.

XP2/XP4 SPECIFICATIONS:

THD+N:	Less than .01%
Dynamic Range:	>93dB (typically 95dB A-wt)
Frequency Response:	10 - 10kHz
Audio Interface:	Unbalanced 1/4" Jack
Maximum Signal Output:	15dBu (5.8 Vrms)
Power Requirements:	95 to 250 VAC 50-60Hz
MIDI In/Thru:	Program change, CC events
Size:	5.25"D x 19"W x 1.75"H
Weight:	4.5 lbs

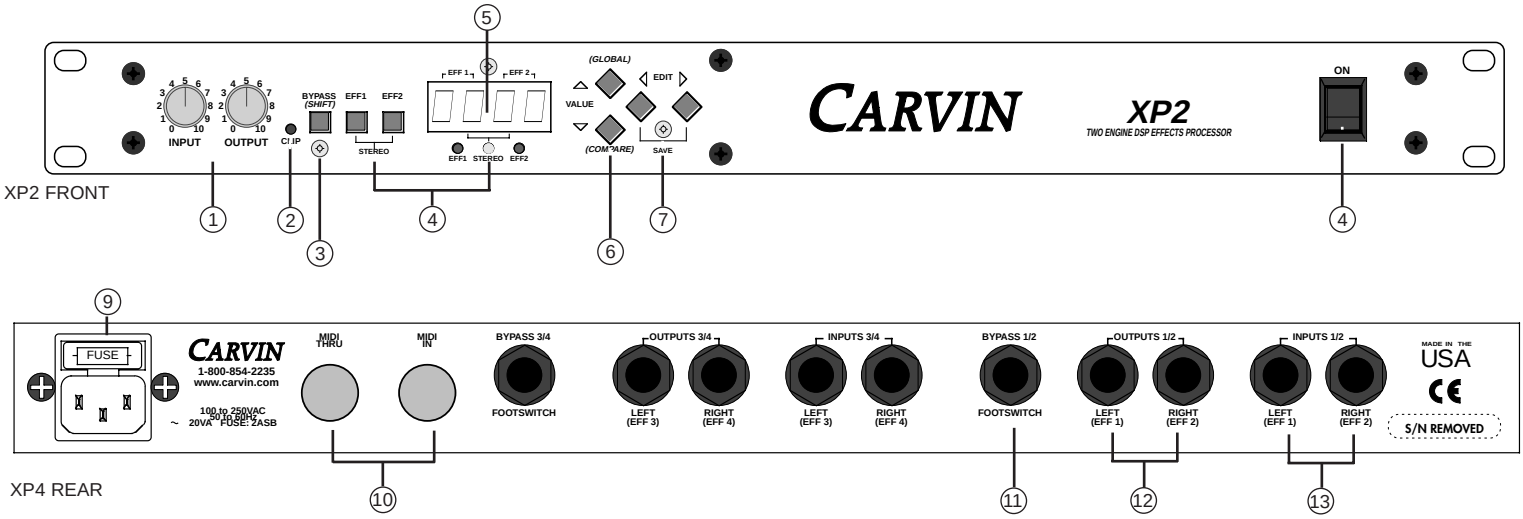
CARVIN

12340 World Trade Drive, San Diego, CA 92128
(800) 854-2235
www.carvin.com

For your records, you may wish to record the following information.

Serial No._____ Invoice Date_____

FRONT & REAR PANEL



FRONT PANEL

1. INPUT AND OUTPUT LEVELS

The input and output level controls are stereo level controls adjusting both the EFF1 and EFF2 engines at the same time. When adjusting the input level control be sure to watch the clip LED to prevent overloading the input.

2. CLIP INDICATOR

The red CLIP LED indicator will start to flash when the input signal is near maximum (6db below distortion levels). To avoid clipping, decrease the INPUT level.

3. BYPASS/SHIFT

Disengages the effect when pressed. Acts as a shift button for the compare and global parameters.

4. EFF1, EFF2 SWITCHES AND LED INDICATORS

These switches select the individual effect engines for editing and changing effects. When both of these buttons are pressed together, the two effect engines function as one STEREO engine. The EFF1, EFF2 and STEREO LEDs indicate which engine is selected and if they are in STEREO mode.

5. PARAMETER DISLPAY

Displays the effect assigned to EFF1 & EFF2. Also displays the edit parameters.

6. VALUE , GLOBAL & COMPARE These buttons are used for scrolling through the effects and editing effect parameters.

7. EDIT

Selects the parameters to edit.

8. POWER SWITCH

The XP series of processors do a brief initialization when powered on. This is indicated by "----" on the displays while this is being done.

REAR PANEL

9. AC FUSE & AC POWER

The XP series processors have a switching power supply circuit capable of accommodating all voltages from 95-250 VAC.

10. MIDI IN & MIDI THRU

Standard MIDI Patches. See MIDI section for more information.

11. FOOTSWITCH JACK

The footswitch jack is designed to accept a footswitch (like Carvin's FS22) with a stereo or mono 1/4" plug. See the Global Parameters section for more information.

12. OUTPUTS 1/2

When the XP2/XP4 is in stereo mode, these 1/4" jacks are stereo L/R outputs from the effect processor. When the unit is in dual mono mode these are outputs from two separate mono effects.

13. INPUTS 1/2

While in dual mono mode, EFF1 & EFF2 are mono 1/4" inputs. When in STEREO mode, EFF1 & EFF2 become the STEREO LEFT and EFF2 becomes the STEREO RIGHT input.

CONNECTING TO AN EFFECTS LOOP

You will need audio-instrument cables with 1/4" mono plugs. These are not included with your XP processor and are required for connecting to an effects loop on a mixer or preamp. Carvin suggests high quality shielded cables for the best possible signal. Carvin's SH instrument cables are well suited for this type of installation.

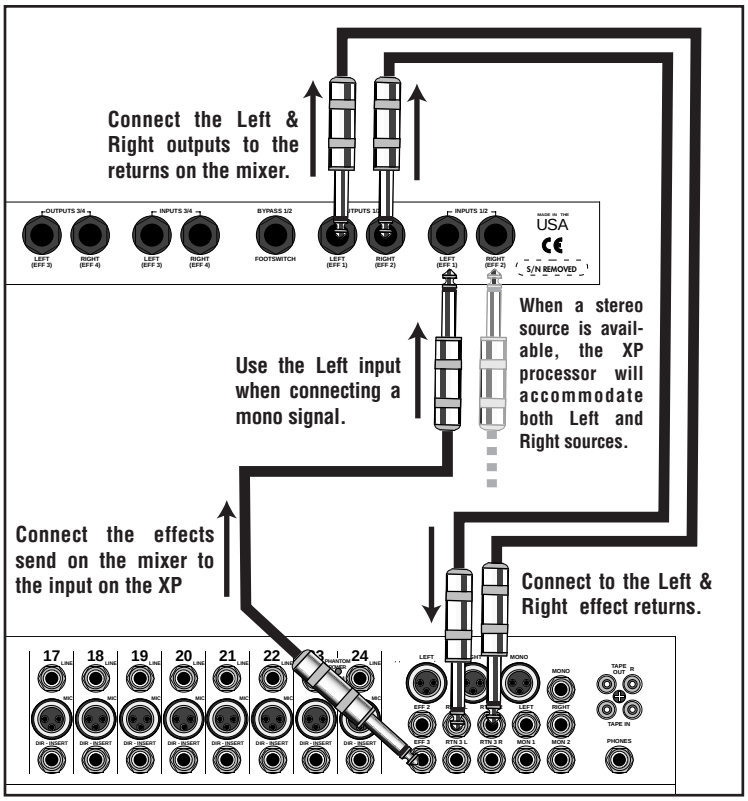
1. Turn off all audio components that are to be connected.

2. Turn all your mixer's send levels down as well as the input and output levels on the XP.

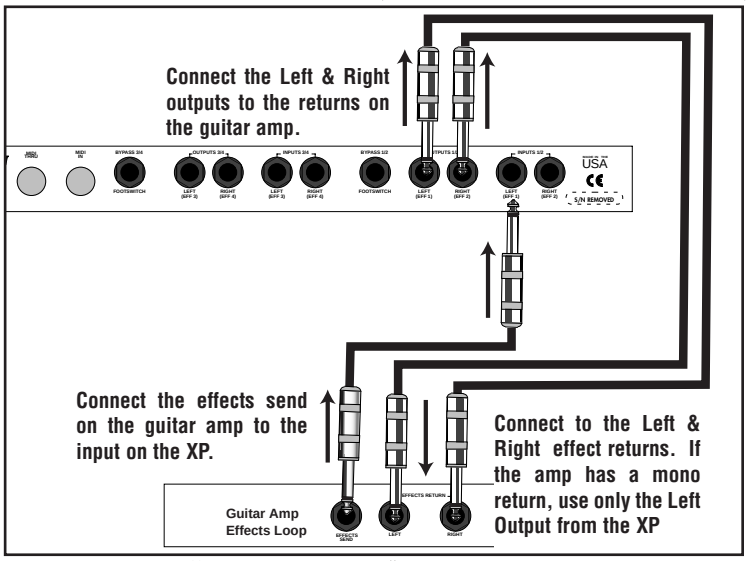
3. Connect the XP's inputs to the Send (output) on the mixer or preamp effects loop.

4. Connect the XP's output(s) to the Return(s) (input) on the mixer or preamp effects loop. Both Left and Right stereo outputs will need to be used when in Stereo mode.

MIXER CONNECTION (STEREO MODE)



GUITAR AMP CONNECTION (STEREO OR MONO MODE)



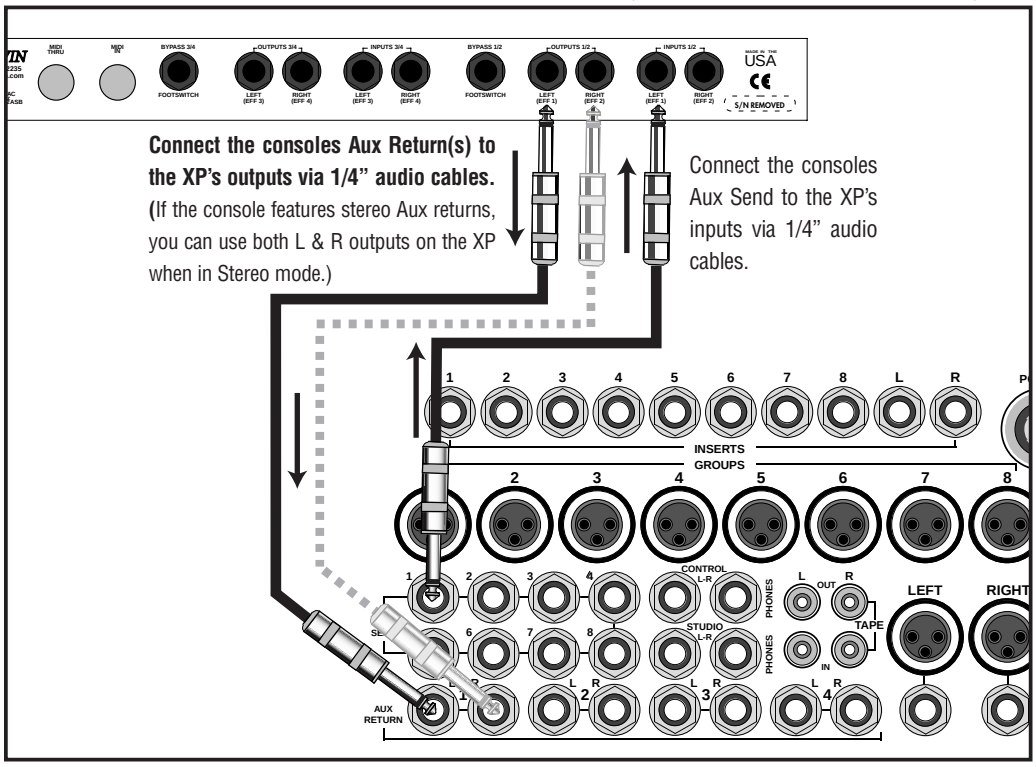
To use multiple effects please see the "Digital Linking" section on page 10

CONNECTING TO AUXILIARY SENDS

In this case, the Aux sends and returns will be used as a mono effects loop. If the console features stereo Aux returns, use both L & R outputs on the XP.

1. Turn off all audio components that are to be connected.
2. Turn all mixer's aux send levels down as well as the input and output levels on the XP.
3. Connect the consoles' Aux Send to the XP's inputs via 1/4" audio cables.
4. Connect the consoles' Aux Return(s) to the XP's outputs via 1/4" audio cables.

DIAGRAM FOR AUX SEND/RETURN (DUAL MONO MODE)



SELECTING EFFECT PROGRAMS

FOR ADVANCED USERS
See page 10 to enable Expert Mode and how to re-number the order of the effects parameters !

EFFECTS PARAMETERS *for a more detailed list of effects, please see the Effects Algorithms listed on pg.11*

reverb

FACTORY PRESETS	
00-19	Plates
20-29	Rooms
40-49	Halls

phaser

FACTORY PRESETS	
60-64	+ Feedback
65-69	- Feedback

flanger

FACTORY PRESETS	
70-74	+ Feedback
75-79	- Feedback

chorus

FACTORY PRESETS	
50-54	Triangle
55-59	Sine

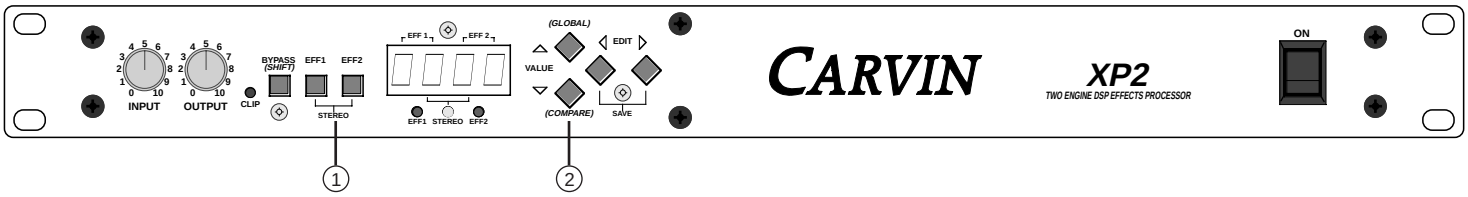
delay

FACTORY PRESETS	
80-89	Misc Delays

rotary speaker

FACTORY PRESETS	
90-99	Various

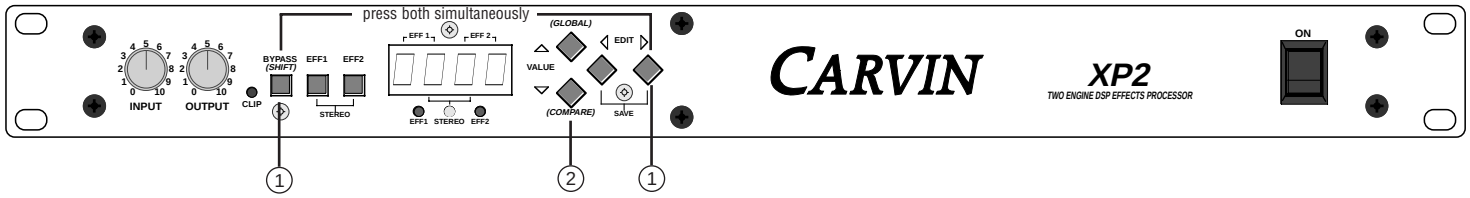
HOW TO CHANGE EFFECT PROGRAMS



1. Choose either effect 1 or 2
2. Use your value buttons to scroll up or down until you reach the desired factory set effect program.

TIP: To scroll up or down very quickly hold down the value button. To limit the scroll speed, simultaneously push the other value button while scrolling.

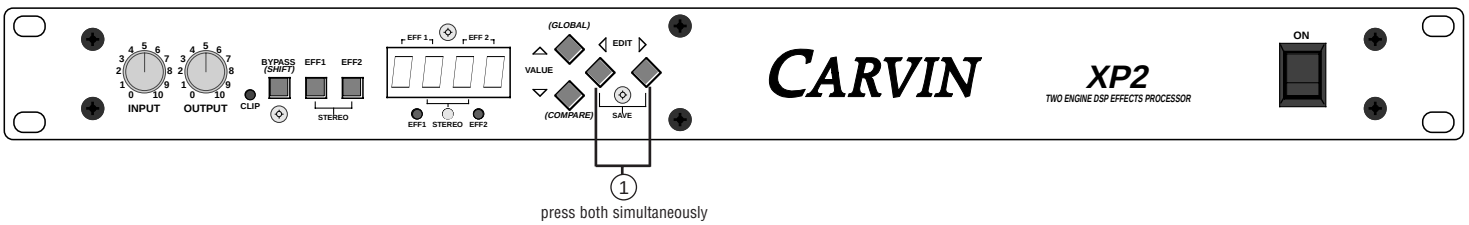
HOW TO CHANGE EFFECTS PARAMETERS



1. Push the right EDIT button & BYPASS/SHIFT button (you will now be able to edit)
2. Now use the VALUE buttons to select the desired parameter to be changed.
3. Push the right EDIT button again and use the VALUE buttons to change the value of the parameters.

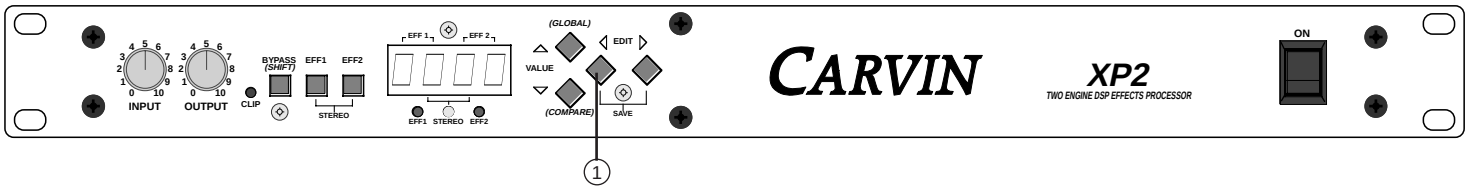
Please see pg 11 for more on effect parameters. To exit this operation, simply press either of the EFF buttons.

HOW TO SAVE CHANGES AND/OR SAVE CREATED EFFECT PROGRAMS



1. After making adjustments to your effect program, press both EDIT LT and EDIT RT at the same time . The screen will read Prxx. The "xx" indicates that effect program's number.
   To exit this operation without saving, simply press either of the EFF buttons.
2. To complete the save push both EDIT buttons again simultaneously.

HOW TO USE THE "MIX" FEATURE

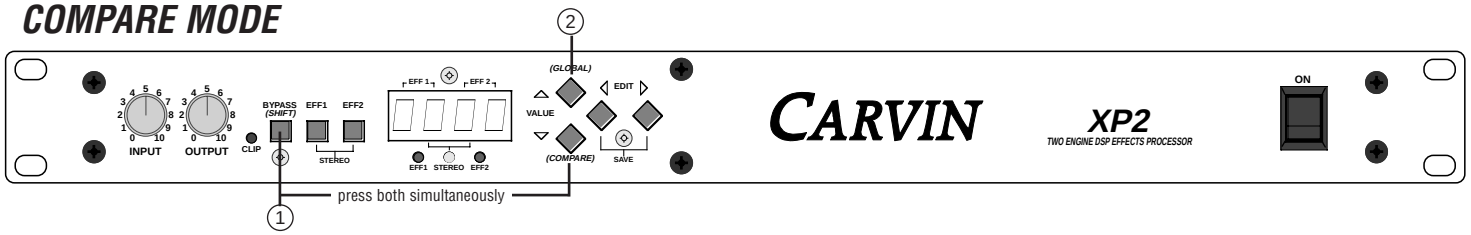


The MIX control allows you to vary the level of the (effect) wet /dry (original) signal.

1. To access this function push the EDIT LT button.
2. Use the VALUE buttons to change the MIX.

The parameter lists 0-100. 0 being the dry signal almost exclusively and 100 being a completely effected signal coming from your output. In a live sound situation when you are running the effected signal in one of your consoles aux, this parameter should be set at 100. This way you can vary the desired level of effect by using your aux. send on each channel. The MIX control is great when using the XP2/XP4 in an effect loop of a guitar or bass amp that has an effects loop. Simply vary the level of the mix parameter to your taste (see Guitar Tips on pg. 15).

COMPARE MODE



COMPARE MODE is a feature that allows you to toggle between a stored or modified effect program and a factory preset program. This gives you the ability to compare your edits to the original factory effect.

1. This screen is entered by pushing BYPASS/SHIFT and VALUE (COMPARE) at the same time.
   Tip: Compare Mode can be entered at any time while editing Effects or Global Parameters.
2. Once you have engaged the compare mode, you will use the VALUE buttons to select what you want to compare your effect program to.
3. You may compare it to the stored effect program as indicated by SP on the display, or you can compare it to the factory effect program labeled FP.

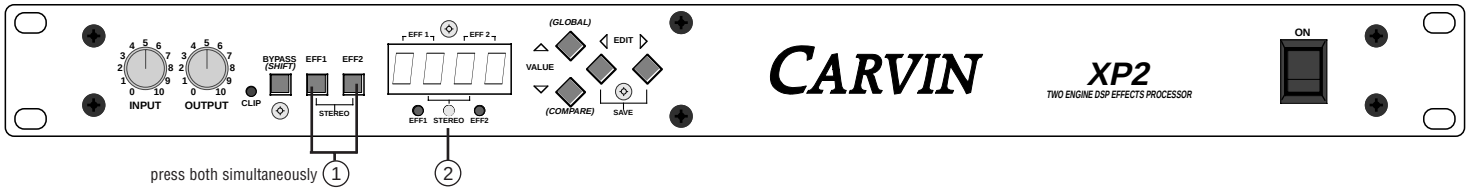
CHANGING THE EFFECT PROGRAM IN COMPARE MODE

If you want to replace your effect program, with either the stored or factory preset version, use the effect program save procedure while listening to the desired effect program.

EXITING WHILE KEEPING YOUR EFFECT PROGRAM

If you want to exit and keep your effect program either press BYPASS/SHIFT or exit using one of the EFFECTS buttons.

STEREO MODE

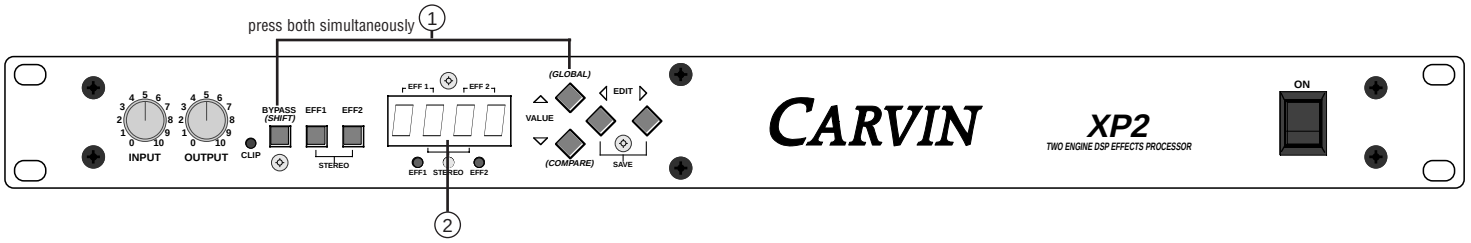


When in the STEREO mode, you have the ability to have 2 independent inputs (L & R Inputs) processed by using a single parameter control.

1. To engage this mode press EFF1 and EFF2 at the same time.
2. The parameter screen will change to a double-digit with the yellow Stereo LED on to indicate Stereo Mode. All parameter changes will affect inputs and outputs 1 and 2. Using this function with the XP, gives you the option of having a dual stereo setup by applying these instructions to EFF3 and EFF4.

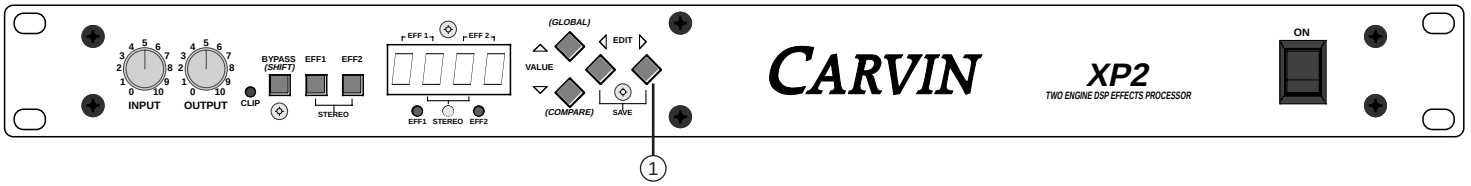
GLOBAL PARAMETERS

ENTERING GLOBAL PARAMETERS



1. Press BYPASS/SHIFT button and GLOBAL button to enter Global Parameters.
2. If done correctly "ParA" should appear (abbreviation for "parameters").
3. Scrolling to the right with the right EDIT button will display all the Global Parameters explained below.
   To exit this operation simply press either of the EFF buttons.

DESCRIPTIONS OF GLOBAL PARAMETERS



bO- *BYPASS OPERATION (0 OR 1)*

After entering the GLOBAL PARAMETERS function, scroll right with the EDIT buttons. The first parameter you encounter will be the "bO" operation.

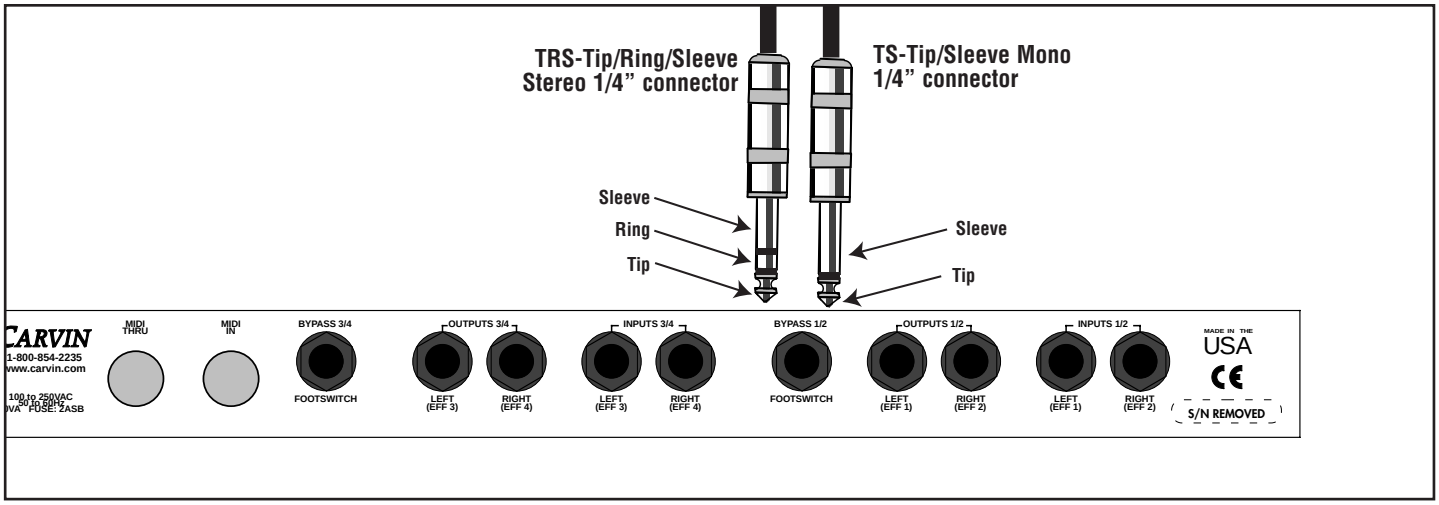
bO- *BYPASS OPERATION* (0 OR 1) *cont.*

When set to 0, the bypass operation blocks all audio and leaves the direct signal as specified by the MIX (for more on the MIX control see pg 7). When set to 1 (use the VALUE buttons), the bypass operation blocks all effect audio and routes the uneffected signal straight through. Mode 0 is good for a console setup and mode 1 is good for a guitar effect chain set up.

bF- *BYPASS FOOTSWITCH MODE* (0 OR 1)

Scroll again using the right EDIT button and you will come to the "bF" function.

When this particular function is set to 0, the footswitch tip bypasses EFF1 and the footswitch ring bypasses EFF2. When set to 1, the tip and ring act as an EFF1 and EFF2 switching (such as on a 2 channel amp). When in stereo mode the tip and ring act identically. It is not necessary to have a stereo plug. If a mono plug is inserted, the XP processor will listen to the tip and ignore the ring.



Cx (C1 & C2)-*MIDI CHANNEL CONFIGURATION*

Scroll to the right again to come to C1 & C2.

C1 and C2 allow you to set up what MIDI channel each engine is routed to (See MIDI section).

CE-*MIDI DATA ENABLE* (0 OR 1)

Scroll to the right to come to the "CE" function.

When set to 0, all MIDI data handling for this unit is disabled (both engines). The MIDI implementation includes the ability to respond to effect program change commands and continuos controller events on controllers 96-104 (see MIDI section on pg 15).

GLOBAL PARAMETERS

dI- *DIGITAL LINK FUNCTION* (0 OR 1)

Scroll again to the right to come to the "dI" function.

The DIGITAL LINK FUNCTION is active when set to 1 and inactive when set to 0. Use this function when you want to run 2 different effects at once. We designed this function to minimize the analog-to-digital and digital-to-analog conversion step. When using this mode, the first effect in the chain is always EFF1. The EFF1 effect is digitally routed to the input of EFF2. At this point, you can use the EFF2 output as your final output or with the XP4 you can route the signal to EFF3 with a patch cable. When the DIGITAL LINK FUNCTION is active on both sides of an XP4 you can have a total of 4 different effects linked.

Fr- *FORCE RATIO FUNCTION* (0, 1 or 2)

Scroll once more to the right to come to the "Fr" function.

The MIX setting varies from 0 to 100% in each effect program. When you are using the effect loop of a console (send and return loop), you want the MIX control to always be 100%. This parameter gives you an easy way of overriding the MIX setting that is specified in the effect program. The function is active when set to 0. When set to one the function is in-active. When set to 2 the original signal is passed thru and the MIX function determines volume level of the effect signal. This setting is ideal for guitar effect loops.

E-*EXPERT MODE*

Scroll once more to the right to come to the "E" function.

The Expert mode is intended for users that have mastered the interface of the XP. By engaging the Expert mode the following features are available:

1. The EFF display is no longer fixed, you have the ability to view both effects at once on the screen (stereo mode will remain the same). You are able to see what effect is being used on each engine simultaneously.

2. You are also able to change any of the factory effect program locations. Meaning, you could have effect programs 1-10 designated for Delay instead of Reverb. This allows you to put your most commonly used effect programs next to each other for easy access. See “How to Change Effects Parameters” on Pg 6. When you reach step 1 of the next section called ‘How to Save Changes...” you will see the characters Prxx displayed where xx is the number of the Effect Program. Use the Value up or down buttons to select a new destination number for this effect program. It is recommended to use a number other than a factory stored number.

3. In Expert mode, the save feature will now allow you to designate a destination number for the effect program you are saving.

REVERB & CHORUS

00-19 **PLATE REVERB**

Simulates the old reverb device of the same name. It generated reverb by playing sound through a small speaker on one end of a 6-foot by 4-foot plate of steel with a transducer on the other end to pick up the reverberated sound. This reverb is excellent for vocals and Drums.

20-29 **ROOM REVERB**

Simulates various room sizes. Excellent for guitar and vocals.

40-49 **HALL REVERB**

Similar to the Room, but is a simulation of a larger room. The high ceilings, irregular shapes and the uniform density of the reflections characterize Halls.

REVERB PARAMETERS

RA- Reverb algorithm selection (choose Plate, Room, or Hall).
PL1-Plate algorithm #1
PL2-Plate algorithm #2 - thinner, tighter sound
HA-Hall algorithm
ro1-Room algorithm #1
ro2-Room algorithm #2 - brighter, more open sound

ADDITIONAL PARAMETERS

RF- Input band width limit allows you to select the frequencies you would like to accentuate with the reverb. (Example: Accentuating the high frequencies will give you a very airy open sound. Accentuateing low frequency on a bass drum gives an ideal reverb effect.)

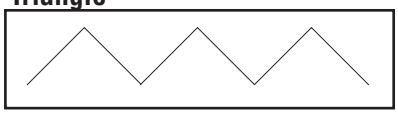
RP-Pre-delay is a slight delaying of the reverb so that the original signal stands out easily from the reverb.

RD-Decay time determines how long the reverb will sound before it dies away. Adjust this to create “long-tail” reverb

RH-Reverb damping alters intensity of the reverb for a darker or brighter sound.

50-54 **Triangle Choruses.**

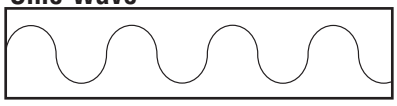
Triangle



The Triangle Chorus is an sharp edged chorus used for clear sounding acoustic guitars and background vocals.

55-59 **Sine Wave Choruses.**

Sine Wave



The Sine Wave Chorus is a smooth sounding chorus excellent for thickening lead and background vocals and great for lead and rhythm guitar.

CHORUS PARAMETERS

r1-Oscillator 1&2 Speed
How fast the frequency cycles are.

d1- Oscillator 1&2 Depth.

Fd-Feedback
Determines the amount of signal fed back through the processor. Adds harmonic richness.

LF-LFO(low freq. oscillation)
select - triangle or sine
r1-Oscillator 1 Speed
r2-Oscillator 2 Speed
d1-Depth Oscillator 1
d2-Depth Oscillator 2
Fd-Feedback

(60-64) PHASER POSITIVE FEEDBACK
(65-69) PHASER NEGATIVE FEEDBACK

The Phaser or "phase shifter" is a classic effect. It uses phase cancellation to create a sweeping effect. This is great for solos and rhythm guitars when you need them it to stand out.

PHASER PARAMETERS

FF-Feedback polarity
Allows you to select either positive feedback (thicker sound) or negative feedback (thinner sound).

SP-Modulation speed
Controls (LFO) speed of phase.

PF-Phaser frequency
This allows you to choose what frequency you want effected.

Fd-Feedback
Allows you to control how dramatic the effect is.

(70-79) FLANGER

A Flanger is very similar to a chorus. It is a modulation effect, but where it differs from chorus is its ability to loop back into itself. Before digital delay effects were available, the flanging effect could be accomplished by playing two tape machines in synchronization, then causing one tape to become slightly out of sync by dragging a finger on the tape reel the result is an airplane-like sound or sound reflections in a metal pipe.
(70-74) positive feedback
(75-79) negative feedback

FLANGER PARAMETERS

FF-feedback polarity
Allows you to choose either positive feedback (thicker sound) or negative feedback (thinner sound).

SP-modulation Speed
Controls speed of the Flanger.

DP-Depth
Controls the intensity of the Flanger.

Fd-Feedback
Controls how much feedback is put back into the input of the module.

Ib-input bandwidth
Selects which part of the frequency is effected (between high and low).

DELAY/ECHO

Use the DELAY/ECHO effects to simulate “canyon-like” reflections for guitar, vocals. drums etc... Also use it for correcting time delays in speaker systems. Please see page 15 for “Delayed Loudspeakers”.

80-90 Misc. Delays

DELAY PARAMETERS

d-Select LO for subtle delay effects (0-495), or select HI (500-595) for a more dramatic effect.

dL-Left delay time.

dR-Right delay time.

rL-Left regeneration time. The higher the number, the longer the echo decay.

rR- Right regeneration time. The higher the number, the longer the echo decay.

fL&fR-Loop low pass filter for the right or left signal (when in stereo mode).

ROTARY SPEAKER

This effect reproduces the classic sound of a rotating speaker such as the old “Leslie” speaker. This is a great effect for guitar and keyboards.

90-94 Rotary Speaker

ROTARY SPEAKER PARAMETERS

Sr-Rotary speed slew selection. The difference in the rate of speeds between the woofer and the tweeter.

rS-Rotor speed.

dS-Drum speed-Speed of rotation.

dP-Rotary pan depth/Cabinet height.

rP-Rotary pan depth/Dispersion level.

EQ

The digital EQ provides +6dB to -12dB for Low Mid and High frequencies as well as phase adjustment.

95-99 EQ

EQ PARAMETERS

PI-Phase.

L-Low.

C-Mid.

H-High.

GUITAR TIPS

Usage tips as a guitar multi-effect processor.

CLEAN TONE GUITAR REVERB:
Select 00- (BLUE PLATE).
Ra-PL1
RH 2
Rd 7
Rp 3
Rf 3

MULTI PURPOSE CHORUS:
Select 50-(CHORDAL CHORUS).
MIX-30
LF-5
FD-1
D2-10
D1-7
R2-3
R1-8

MODERN ROCK & ROLL LEAD WITH REVERB+DELAY:
Digitally link EFF1 and EFF2 (See DIGITAL LINKING on page 10).

For EFF1 Select 41 (VATICAN-VERB).
MIX-15
D-LO
FL-5
RL-30
DL-200

For EFF2 Select 89-(DELAYED TRIP).
MIX-15

"ROCKABILLY" SLAP BACK DELAY:
Select -80.
D-LOW
FL-5
RL-30
DL-200
MIX-35

USING THE XP TO CORRECT DISTANCES IN LOUDSPKEAR PLACEMENTS

In a large sound system as seen at many stadiums or ampitheaters, there is usually a second set of loudspeakers that are used to cover the back or distant seats. Since the sound from these speakers will reach the listener's ear faster than the sound coming from the stage, a time delay must be used to correct for the physical distance between the two speaker systems. Without this time delay, the sound may sound cluttered and undefined. With the proper time delay, all audio will arrive simultaneously and sound more intelligable and clearer.

Delay time is determined by the distance between your main stage loudspeakers and the rear speakers in direct relation to the amount of time it takes sound to travel. Sound travels at a rate of 1.086 ft per millisecond therefore you will need a 1ms delay for every 1.086 feet. Use this simple formula to calculate delay time:

$$\frac{\Delta}{1.086} = \text{ms delay}$$

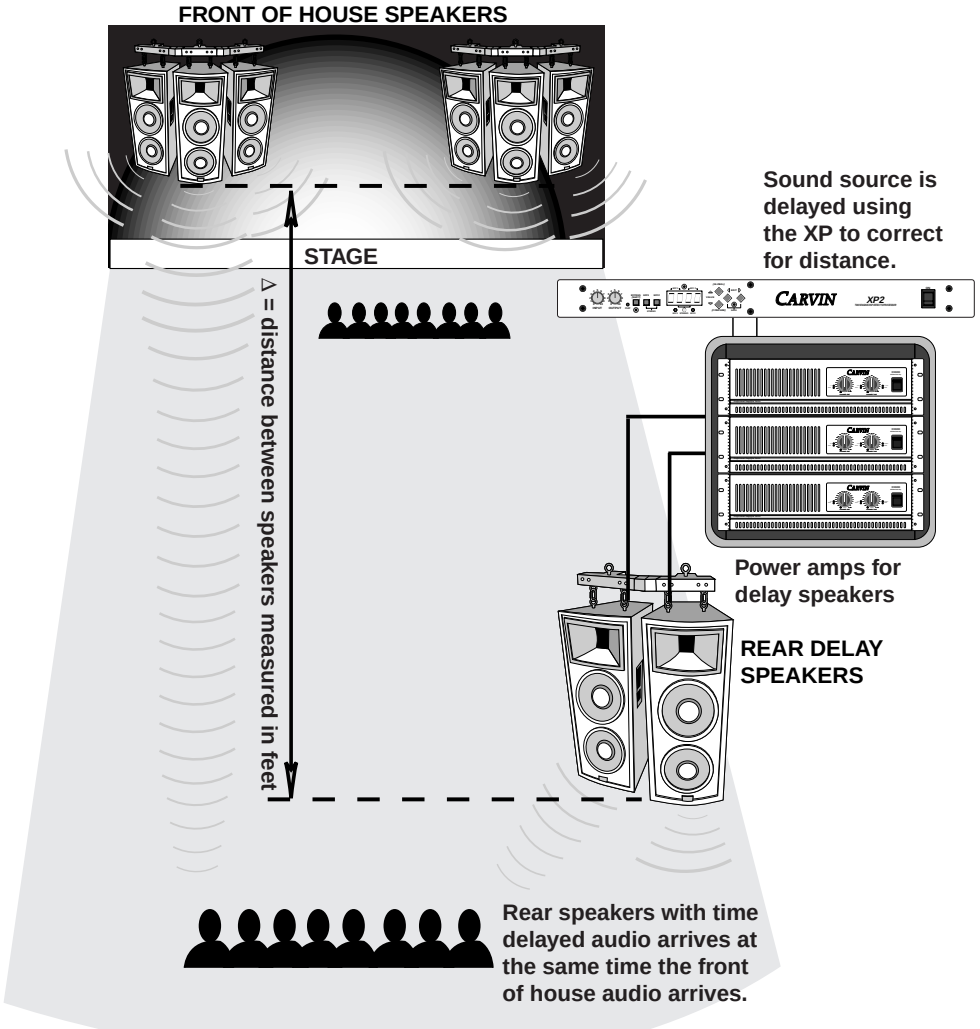
Δ = The delta is the distance in feet between the main speakers and secondary speakers.
1.086 = constant velocity of sound in ft per millisecond (ft/ms)
ms delay = the delay value in milliseconds that will be applied to the delay speakers.
example: Δ=250ft (distance between speakers) Divide 250 by 1.086. The result is a 230 ms delay

Next, set your XP to delay the signal with your calculated ms delay.

SET DELAY PARAMETERS

1. In Dual Mono mode select a delay effect program (80-89).
2. Edit the Effect Program with the following settings:

dL= ms delay value, Fr=1, Bo=1, rL=0, MIX=0. The signal will not regenerate into an echo with these settings. Instead you will only get the delayed signal.



MIDI

MIDI, the acronym for Musical Instrument Digital Interface, allows for the connection of music synthesizers, musical instruments and computers. The MIDI standard is based partly on hardware, and partly on a description of the way in which music and sound are encoded and communicated between MIDI devices. The hardware portion of the MIDI standard defines these types of input/output channels, called MIDI ports and specifies a particular type of cable (a MIDI cable) that plugs into the ports. The three types of ports defined by the MIDI specification are MIDI IN, MIDI OUT, and MIDI THRU. A synthesizer or other MIDI device receives MIDI messages via its MIDI In port. It also echoes the messages back out through the MIDI THRU port so that other devices can receive them. MIDI devices send their own messages to other devices via the MIDI Out port.

The information transmitted between MIDI devices is in a form called a MIDI message, which encodes aspects of sound such as pitch and volume as 8-bit bytes of digital information.

What does all this mean?

MIDI is supposed to be here to make our lives easier. For use with the XP simply use an existing MIDI controller as a way to make a "Virtual Pedal Board" for your guitar, or use it "live" for vocals, drums and guitars. In the studio it will communicate with your existing MIDI gear.

In order to use MIDI, the XP's MIDI data enable switch needs to be turned on. This switch is located in the global parameters and is titled "CE". When this is set to "1", MIDI functionality is enabled. MIDI is off when "CE" is set to "0" (See Global Parameters section for details)

When you want to change the active effect program of an effect engine, send a program change command on the channel that the engine is listening in on. The MIDI channel configuration is also located in the global parameters and is labeled "Cx" where x is the actual effect engine #. (See Global Parameters section for more info)

When you want to change an active parameter in an effect engine, send data on the appropriate controller number tuned to that engine's channel. (see effect parameter chart for details on what the controller numbers are). If the display mode that is currently selected indicates anything with regard to that controller, the display will update to reflect the value.
Examples:

1) If changing the effect wet/dry mix and the display mode is on the mix screen, sending controller #96 on the appropriate MIDI channel will change the mix. You will see the new value display in real time on the display.

2) If changing an effect parameter value (for instance, reverb decay length rd) and the display mode is set to parameter select, every time the controller messages are sent, the display is updated to display "rd". This gives you a visual indication of what parameter the XP processor thinks that you want to change.

3) If changing an effect parameter value and the display modes is set to the value change mode, the numerical value changes that the continuous controller messages produce is shown on the screen in real-time.

SPECIAL POWER-ON BUTTON COMBINATIONS
Hold down the following buttons while powering up your XP2/XP4 to activate these special features.

1) BYPASS-EFF1-EFF2 – Reset all effect programs on one side.
When this combination is held down while powering on, all effect programs of the unit are restored to factory settings. Only one unit (side) of the XP4 model may be done at once.

2) BYPASS-PG RT – Reset the XP2/XP4
Total factory restore of both units. All effect programs and config. data is reset to factory condition. Instructions for use: Power on with the buttons down, when you see "FFFF" on the display(s), release the buttons and depress BYPASS-EFF1-EFF2. This begins the factory restore operation. When you are returned back to the effect program screen, the restore is complete.

3) BYPASS – Software Release.
Allows you to check the software release # while powering on.

FREQUENTLY ASKED QUESTIONS

Question	Possible Solution
Unit will not power up	Check to make sure your AC cable is securely plugged in to the XP. If you continue to have the same symptom check the fuse holder and make sure the fuse is good.
I want to run one signal through two or more effect programs, how do I do it ?	Check the Digital Link section of the of the manual to make sure you have it set properly. Also check your cables to make sure they are properly connected.
I can't get my effect program number to stop blinking	Simply hit the bypass button and it will stop. Also check to see if the LED is corresponding with the effect that is blinking.
My MIDI footswitch is not working with my XP	Review the global parameters section and make sure your CX and CE parameters are properly set, also refer to your external MIDI controller's manual.
My XP is noisy	Double-check your cables and connections. Make sure your input and output levels are properly set. A low input setting with a high output setting may yield noise. Increase the input level and decrease the output.
My XP doesn't work and displays EErr when I turn it on.	The unit is experiencing EEPROM failure and will need servicing. This type of failure is highly unlikely, but is correctable with factory service.
My XP doesn't work exactly the way this manual describes.	This manual is for the XP2 and XP4 software release r009. To check the software on your unit see the item 3 above.

EFFECTS LIST

00-19 Plate Reverb

20-39 Room Reverbs

40-49 Halls

50-54 Triangle Chorus

55-69 Sine Chorus

70-74 +Feedback Flanger

75-79 -Feedback Flanger

80-89 Delays/Echos

90-94 Rotary Speaker

95-99 EQ

00-BLUE PLATE
Simulates a Vintage Spring reverb. Ideal for guitar and vocals.

01-PLATEOON
A multi-purpose Plate reverb with a short pre-delay.

02-"SPEKTOR VERB"
A very encompassing reverb with no pre-delay. Great for vocals and drums.

03-VERBAGE
A reverb to use when you need to keep things punchy in the mix. Has a moderate pre-delay and is great for drums and clean toned guitars.

04-VINTAGE-VOCO-VERB
Vintage Vocal Plate Reverb with no pre-delay and a moderately high decay.

05-VINTAGE-VOCO-VERB II
Same as Vintage-Voco-Verb I but with a higher decay.

06-PICKED CLEAN
Reverb for clean sounding vintage guitar tones.

07-LONG VIEW
A long-tailed reverb with no pre-delay.

08-VERB-TO-GO
Multi-purpose reverb.

09-PLATE STATION
A number of uses. Great for experimenting with parameters.

10-HIDDEN VALLEY VERB
A very subtle reverb effect that is best used for applications that need a light overall reverb.

11-DRUMMERS PLATE
A great reverb for drums of all types.

12-PERCUSSION VERB
Great for drums of all types.

13-SPACE DRUM
Reverb that is suited for bass drums.

14-AIRY SNARY
Reverb that works well with snare drums.

15-VERB ALIVE
If you want the Plate reverb sound in a live situation, this effect program is excellent. Moderately high pre-delay to prevent any muddiness.

16-LONG TAILED SHORT HAIR
Reverb similar to 07 LONG VIEW, but with a pre-delay.

17-LONG TAILED SHORT HAIR II
Similar to Long Tailed Short Hair, but with an even longer decay.

18-SPECIALTY VERB I
Great for dramatic reverb effects.

19-SPECIALTY VERB II
Good for light reverb effects.

20-COZY ROOM
Simulates a reverb in a reflective small room.

21-INTO THE BLUE ROOM
Reverb similar to 20. Cozy Room but a bit larger sounding. Great for adding a warm ambience.

22 -DEEP BROOM CLOSET VERB
A big reverb sound with a quick decay.

23-DAMP ROOM
A less intense room reverb with a short decay.

24-AMBIENT BOX
A big reverb sound with very little decay and no pre-delay.

25-VERB IN-THE-LEU
Mimics a big sound in a highly reflective small room.

26-BIG ROOM
Sounds good for guitars and vocals. It really shines "live" in a small club for adding ambience to vocals and guitars.

27-BIGGER ROOM
When you need an ambient reverb in a small room, live or in the studio.

28-BIGGEST ROOM
This effect program is great for guitar and vocals. Use live for guitar solo sounds or in the studio for vocal and guitar tones.

29-INSIDE THE WHALE VERB
This is a very large room verb that sounds great for vocals in small rooms.

30- ACOUSTICALLY YOURS
Reverb ideal for acoustic guitars, live and in the studio, with very little decay and no pre-delay.

31-LITTLE ACOUSTICALLY YOURS
The decay in this reverb really helps smaller body acoustic guitars. It helps make up for their lack of sustain.

32-VOICE OVER
This reverb is well suited for voice-over in the studio.

33-THE BALLADIZER
Works well for adding reverb to guitars and vocals, especially for ballads.

34-SPACE DRUM II
Excellent reverb for toms and bass drums.

35-SHOWER STALL
Great reverb for that mic in the shower stall sound.

36-BRIGHT BACK ROUND
Great live or in the studio reverb for background vocals.

37-CAVENOURS VERB
Gives a cave reverb effect to your mix.

38-CARLSBAD CAVERNS
A reverb that works well for special effects whenever you want to add some creativity.

39-GRAND CANYON
Makes vocals and instruments sound very distant, use your mix control liberally with this effect program.

40-CARVIN-GIE HALL
Large hall reverb with a moderately high pre-delay. Best used for live vocals and guitars.

41-VATICAN VERB
Large hall sounding reverb that has many reflective surfaces.

42-HALLACIOUS
Drums, guitars and vocals will sound amazingly huge and ambient with this reverb.

43-HALL-O-WEEN
A little less dramatic when compared to 42. HALLACIOUS.

44-INSTANEOUS AMBIENCE
Similar to 42. HALLACIOUS reverb but with no pre-delay.

45-DEEP HALL
A dramatic hall reverb with a much broader frequency response.

46-THE LONG HALL
Similar to Deep Hall reverb, but with a larger frequency response.

47-OPEN ENDED
Similar to Long Hall reverb, but with more pre-delay.

48-OPEN ENDED II
Similar to Long Hall reverb, but with more pre-delay.

49-PLATE II
Bright thin sounding reverb.

50-ACOUSTA CHORUS
Light chorus that excellent for adding some depth and ambience to a dull sounding acoustic instrument.

51-PICKERS CHORUS
Great when a lot of ambience is not necessary and you just want a clean chorus for electric guitar, acoustic guitar, or even vocals.

52-CRISPY FALLS
Utility chorus use it to fatten up and add life to your mix.

53-NEEDS SOMETHING? HMMM
When you are doing your mix down and it sounds kind of flat, give this chorus a try!

54-ON THE EDGE OF DRAMA
Rich brilliant chorus effect for any application.

55-MILD CHORUS
When you need to tame a bright sounding instrument and add a touch of ambience and color.

56-FRETLESSLY
This chorus helps you get a fretless tone out of your electric bass or enhance and help with intonation on a fretless bass.

57-BACK ROUND VOCAL
A great chorus for acoustic instruments.

58-UFO LFO
The extra terrestrial chorus experience that increases by upping the value of the feedback control.

59-UFO LFO II
An even more terrestrial chorus experience.

60-PHAZE THE MUSIC
A great phase effect for any instrument or vocal.

61-CLEAN PHASED OUT RHYTHM
Great for a clean rhythm with a twist of phase.

62-PURPLE PHASE
A great phase for solo guitar.

63-FUNK PHASE
Gives your electric bass or keyboard a funkified tone.

64-PHASE AWAY
Dramatic phase with a slow oscillation speed.

65-THIN ON PHASE
Negative feedback phase that will work well with bass and rhythm guitar.

66-PHASE'IN
Quick phase modulation speed for special effects.

67-PHASING OUT QUICKLY
Quick phase for specialty effects.

68-SLOW AND INTENSE
A great phase for volume control swell with added ambience and color.

69-KEEP YOU LOWS CLEAN
Phase effect that will only effect the high end.

70-SOLO FLANGE
Flanger that adds some depth and character.

71-FLANGELIC
Special effect for vocals and guitars.

72-BASS FLANGER
Special flanging effect for bass guitar and guitar.

73-DEEP FLANGE
Quick flange for a lot of depth.

74-FLANGE LITE
When only a light flanger is needed.

75-NEGATRON
Negative feed back Flanger for special effects. Negative feed back Flanger that is brighter and thinner sounding then their positive feedback counterparts.

76-FUNKIFIED SOLO GUITAR FLANGER
Self explanatory.

77-PLANATERY FLANGULATION
Special effect for just about anything. Use sparingly!

78-PLANETARY FLANGULATION II
Little less feedback but all the funk!

79-SLOW SWEEP ROTATION MODULATION
Great for jangle guitar rhythms with a twist.

80-SLAP BACK
Great for low to medium slap back delay effects.

81-DELAYVIS
Great vintage vocal delay.

82-50'S STYLE
Vintage vocal delay.

83-LIGHT ACOUSTIC DELAY
Great delay for acoustic instruments.

84-SILLY BILLY
Light slap back style delay.

85-SLAP HAPPY
Another great guitar delay.

86-SLAP HAPPY II
A little more dramatic than Slap Happy.

87-SNARE SLAP
Cool effect for drums.

88-DELAY-CIOUS
Nice long delay for guitar and special vocal effects.

89-TRIP DELAY
A more dramatic version of delay-cious.

90-BRUCE LEZ-LEE
Great for vocals and guitar mimics those vintage roto-speaker sounds.

91-WHIRL WIND
Watery effect.

92-SLOW-TO -ROTO
Deep slow rotary effect.

93-SLOW-TO-ROTO II
Deeper than Slow-To-Roto.

94-SPIN CYCLE
Quick speaker rotation simulation.

95-LEVEL "Q'
An effect program with flat EQ (no cuts or boosts).

96-MID BOOST
EQ that cuts the mids and highs, while accentuating the mids.

97-CUT THROUGH
Use this EQ when you need to cut through in the mix.

98-THE DIP
Boosts the highs, cuts the mids and boosts the lows. This is a typical “HiFi” EQ setting for listening to music.

99-SOLO
EQ for boosting your instruments tone into a mellow solo tone.

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