

The **WAG**TM OWNERS MANUAL



***The Power of Your Effects in the Palm
of Your Hand.***

by **XPRESENSE**

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FCC Declarations Page

Wag Ring

FCC ID: UBDWR1

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Base Unit is a RECEIVE ONLY DEVICE.

NOTE: This Radio equipment is intended for use in musical entertainment and similar applications.

Warning:

Changes or modifications not expressly approved in writing by Xpresense LLC may void the users authority to operate this equipment.

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Chapter 1. Product Overview

Congratulations! You are now the proud owner of The Wag. WAG stands for Wireless Audio Gesture. The WAG is a wireless remote controller, in the form of a finger ring, which extends your control over musical effects units that have expression pedal or MIDI inputs. The complete system is comprised of the WAG Ring, Base Unit, and Ring Charger.

The WAG was specifically designed with guitarists in mind, to put effects control into their hands where they could integrate it into their playing technique while freeing them from dancing on pedals. We have found that this allows the guitarist to use effects in a much more intuitive and spontaneous manner opening up new vistas of creativity. The WAG may provide many of the same benefits to other musicians that use effects.

You control your effects through simple hand movements without the need to take your hand away from the strings - allowing you to integrate effects control into your performance. For example, by opening and closing your hand slightly, you can use the Ring like an expression pedal to modulate volume, WAH, or other effect parameters. You can also use the WAG to turn effects off and on using the MIDI interface.

Generally, the WAG Ring continuously senses the opening and closing of the hand. More specifically, the WAG Ring has a proximity sensor that detects changes in the space around the ring band. So, the more **CLOSED** the hand position, the more flesh surrounds the sensor plate and the greater the value generated by the sensor. The Wag Ring sends the sensor data to the Base Unit. The Base Unit converts the sensor data to effects control signals that are sent over the MIDI and Pedal Output interfaces. The Base Unit settings allow you to configure the sensitivity, direction of control, zone of control, damping, and other parameters allowing you to customize the WAG in virtually any manner that you chose to satisfy your creativity while adapting it to your playing style.

The WAG Ring is powered by an internal, rechargeable, lithium ion battery. A stand alone charger is provided to charge the Ring battery.

The system operates in the 2,4 GHZ radio band. The system operates over a 40 foot distance. Four radio channels are provides so that 4 systems can operate in the same space.

Product Tour

A **WAG** system consists of the following units:

Wag Ring. Continuously senses the movements of your finger, and wirelessly sends that information to the Base Unit. The ring band is adjustable. The ring is powered by a rechargeable lithium-ion button cell battery.

Wag Base Unit. Interprets information received from the WAG Ring and converts that information into control signals that control your effects using the Expression Pedal Output and/or Midi Output.

Wag Charger

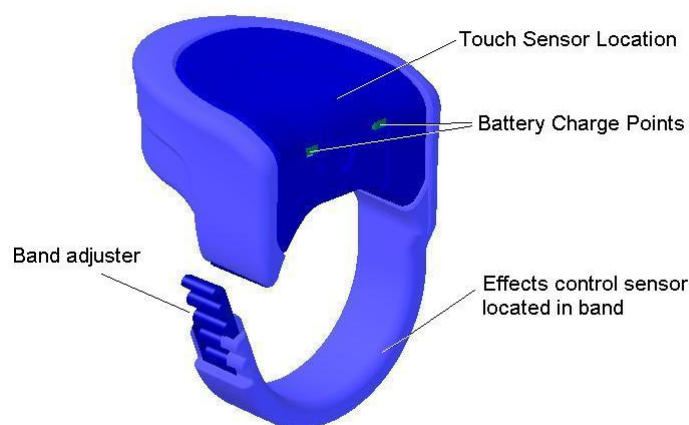
Charges the Wag Ring battery.

The Diagrams and Tables on the following pages describe the basic components of the system.

Wag Ring

Table 1. Components of the Ring

#	Item	Description
1	Ring	Continuously senses what you're doing with your hand, and wirelessly sends that information to the Base Unit.
2	Ring Band	Senses the proximity of skin around the ring band.
3	Charging Points	Connect to the Charger to enable recharging of the battery.



Wag Base Unit (Front Panel)

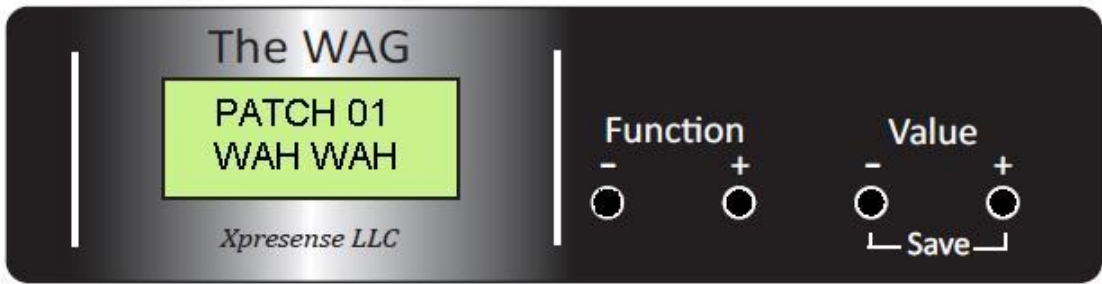


Table 2. Base Unit Front Panel Components

#	Item	Description
1	Base Unit	Interprets information received from the WAG Ring and, according to your configuration, converts that information to signals used to control your effects.
2	LCD Display	Shows the Preset/Patch number, value for the currently selected menu item, or a status message.
3	Menu Buttons (+/-)	Use these buttons to select the parameter that you want to view or modify. By default this is the current Patch number.
4	Value Buttons (+/-)	Turn this to select the value for the currently selected menu item (Patch number or configuration parameter).
5	Save	Press Value + and Value – together to save the current settings to a User Patch. After pressing SAVE the Patch number can be changed , otherwise the current Patch number is saved.

Wag Base Unit (Rear Panel)



Table 3. Base Unit Rear Panel Components

#	Item	Description
1	Rear Panel	Here is where you connect your effects gear and the receive antenna.
2	Antenna	Receives the wireless transmission from the Ring.
3	MIDI OUT	Connect this port to effects units that accept MIDI input for effects control.
4	EXP OUT	Connect a 1/4" stereo (Tip, Ring, Sleeve (TRS) or Mono (TS) cable to effects units that accept an expression pedal input. See compatibility table.
5	PWR	AC power adapter connection. Use only the power supply shipped with the product.

Wag Charger



With the charger lid open, the ring is inserted straight down from overhead with the ring lid facing toward the front of the charger. A blue led will illuminate the ring lid if installed properly and charging is in progress. A green led will light at the front of the charger behind the charger lid snap.

Quick Start Tutorials

We strongly recommend that you read and understand this entire manual to get the most out of the WAG. However, the short tutorials in this section may get you going more quickly if your effects gear matches one of the Presets we have configured for popular gear.

Tutorial 1 – General Flow

	Instruction	Comments
	Charge the Ring.	
1	a. Connect the AC adapter cord into the PWR jack of Charger, and plug the transformer into a 110 VAC power outlet. b. Insert the ring into the charger and close the lid.	A blue led will illuminate the ring when the ring is installed properly and the ring is charging. When the Green Led at the front of the charger illuminates, the ring is fully charged and ready for use.
2	Slip the Ring on the finger of your choice (Typically, the 3 rd finger of your pick hand), adjust the band, and wait for the ring to wake up (20 seconds max).	The ring goes to sleep with non use to save the battery. In PATCH view, the cursor bar graph will move with hand opening/closing. In RADIO CHAN view the word SIGNAL will display if the Ring is transmitting.
3	Connect an effect pedal that you want to control with the WAG to the rear of the Base Unit.	Examples: Connect PEDAL OUT to a compatible effects unit's Expression Pedal Input. Connect MIDI OUT to a compatible effect unit's Midi Input jack.
4	Use the VALUE knob to select a preset that provides the desired type of control.	See the Patch Reference – Appendix C
5	START WAGGIN'!	

Modulating Effects using the Expression Pedal Output

In this example, you will use the WAG's expression pedal output (PEDAL OUT) to modulate an effect. Examples of this are pedal position of a WAH-WAH effect, volume swells, delay effect level, and Whammy effects. You must use an effect device that accepts a standard 10K TRS/TS expression pedal input. TRS stands for Tip, Ring, Sleeve.

Tutorial 2 - Using Expression Pedal Output

	Instruction	Comments
1	Make your normal audio connections between your guitar, effects, and amplifier.	
2	Connect the appropriate TRS (stereo) cable or Mono cable (TS) from the EXPR OUT jack to the expression pedal input of your effect unit.	Your effect manual should help you figure out which cable to use. For now, don't connect the MIDI cable.
3	With the Menu set to PATCH view, use Value +/- to select Patch 01 (default) which has Pedal Output enabled.	
4	Configure your effect unit for expression pedal control	This will depend on the capabilities of your effect pedal/unit
5	Be sure that the ring is awake	The bar graph cursor should move in PATCH view In RadioCh view the status should read "SIGNAL"
6	Opening and closing your hand should modulate the selected effect.	We recommend moving the last 3 fingers of your hand together rather than moving just the ring finger.
7	Try editing some of the Wag parameters	Examples: FWD/REV will change the direction of operation.

Now have fun. Now, strum a chord on your guitar while you open and close your hand; you should hear a change in the sound as you control the effect with the WAG. Squeeze or open your finger/hand with each played note of an arpeggio or slow strum. You should be able to selectively apply effects modulations (e.g., WAH) to full chords or individual notes in a solo. Setting Tips: Turn on Damping to do smooth volume swells. Try different Pedal Zones allow you to select the range of hand motion that suits your playing style. Use FWD/REV to select the direction of the hand motion (akin to toe up versus toe down) you prefer.

MIDI Expression Control

In this tutorial, you will use the WAG MIDI OUT to control volume. This assumes that you have an effect unit that allows midi control of volume. The standard MIDI CC number for volume control is 007 so we use that here. If you are controlling something that doesn't have volume control, you will need to change the MIDI CC number at the Base Unit to match a CC number in the MIDI table found in your effects unit manuals. We also assume you are using MIDI channel 1. Otherwise, you will need to change this at your effect unit or at the Base Unit so that they match. Our Factory patches have been set up to control some common effects units. See Appendix C.



Tips 'N Tricks

Midi, while more complex, allows you to use expression control, switch effects on/off, switch effects patches, and combinations of the above over a single cable!

Tutorial 3 - MIDI Expression Control

	Instruction	Comments
1	Make your normal audio connections between your guitar, effects, and amplifier.	
2	Connect a MIDI cable from the WAG MIDI OUT jack to the MIDI input of an effects unit that uses MIDI for effects control.	For now, don't connect the Pedal Output to anything.
3	With the Menu knob set to PATCH, use the Value knob to select a MIDI Patch 01 (default).	See Patch Reference (Appendix C). If your equipment is not listed try using PATCH 02 which uses a standard MIDI CC value (007) for volume control.
4	Depending on your effects gear, you may have to configure your effect unit to receive MIDI and set other options.	Please refer to your effect unit manual. MIDI Channel 1 is our default.
5	Be sure that the ring is awake	The bar graph cursor should move in PATCH view
6	Now, strum a chord on your guitar then open and close your finger or hand.	You should hear a change in the sound as you control the effect using the WAG.

Now have fun. Now, strum a chord on your guitar while you open and close your hand; you should hear a change in the sound as you control the effect with the WAG. Squeeze or open your finger/hand with each played note of an arpeggio or slow strum. You should be able to selectively apply effects modulations (e.g., Volume or WAH) to full chords or individual notes in a solo.

Chapter 2. Basic Setup

Read this chapter to learn how to do the following:

- Turn the WAG Base Unit on and off.
- Charging the Ring
- Waking the Ring
- Pausing/Un-pausing the Ring
- Making Connections
- Optimizing Wireless Reception
- Multiple Wag Systems on the Same Stage

Power On/Power Off

To turn on the Base Unit, just connect the power supply (Wall Wart) to the rear of the unit, and then plug the power supply into 110 volt AC outlet. When power is applied, the LCD should light up and display PATCH 01.

To turn off the Base Unit, simply remove the connection or the power adapter from the wall.

Charging the Ring

The WAG Ring is powered by a rechargeable battery (lithium ion). To ensure proper operation of the Ring, you should recharge it after long periods of continuous use. The ring enters a low power sleep mode when off of your finger but still may need to be charged after sitting idle for a long period.



Charging in progress
Led (Blue) Illuminates ring lid

To recharge the WAG Ring:

	Instruction	Comments
1	Plug the AC adapter cord into the PWR jack of the Charger	
	Plug the AC adapter into a 110 v power outlet.	
	Insert the ring into the charger as shown above and close the lid. The ring must be positioned in the charger as shown.	The ring will be illuminated by a blue LED if installed properly and charging. A green LED will light up at the front of the Charger when the ring is fully charged and ready for use.



Tips 'N Tricks

A short recharge of about 15 minutes can extend the use considerably.

Waking the Ring

The ring goes to sleep after about 3 minutes of non use. This will not likely happen while the ring is mounted on your finger. The longest wake up period should be about 20 seconds after putting the ring back on your finger. Closing your hand partially may help insure that the ring wakes up.

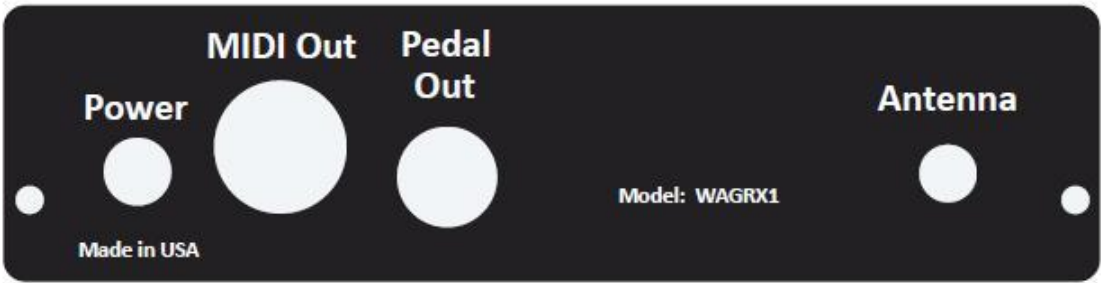
Pausing/Un-pausing the Ring

If you want to temporarily discontinue using the Wag Ring you can pause the ring communications with the Base Unit by touching the sensor area on top of the ring lid. The lid will light up briefly to acknowledge the request. To un-pause the ring, touch the ring lid a second time. When the ring is operating (not paused), the LEDs under the lid will flicker each time you close your hand. When paused, the LEDs will flicker at a fixed periodic rate.

Making Connections

As shown in the following figure, the WAG Base Unit currently provides 2 interfaces to external devices, via the rear panel. These are MIDI OUT and Pedal Out. The Pedal Out simulates a standard 10K Expression Pedal (potentiometer). The MIDI Out sends MIDI CC and MIDI Program Change messages.

MIDI CC messages typically can modify effects parameters such as volume, reverb level, delay amount, wah wah pedal position, etc. MIDI CC can also frequently be used to turn effects on and off. MIDI Program Change messages are used to switch patches (AKA User Presets) on an effect unit. **TIP:** We find that switching patches introduces more delay than using CC messages to switch individual effects off and on. This depends on the effect unit design. If you are just switching patches between sections of a song it likely doesn't matter. If you are switching on a note by note basis or for some toggling effect the delay may be noticeable.



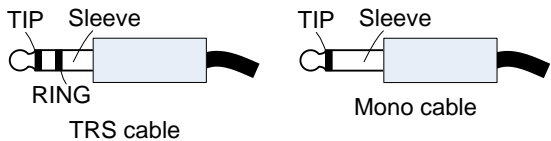
The following table summarizes each port and its available interfaces.

Name	Interface	Description
MIDI OUT	5-pin DIN Jack	Transports MIDI messages over industry standard 5-pin MIDI DIN port.
Pedal Out	1/4" Stereo jack	Simulates 10k TRS Expression Pedals. Can connect with a MONO TS cable if the effect unit only uses TS of Expression Pedal. The wiper of the potentiometer is on the Tip lead of the jack. Don't connect to effect units that put more than 3.5 volts on the TRS cable. See our list of compatible effects units.



IMPORTANT: To avoid potential damage to your gear, refer to the technical manuals for the effects gear that you want to connect directly to the Base Unit. **See our list of compatible effects units.**

For those unfamiliar with TRS cables, refer to the following illustrations:



As described above, the Pedal Output jack fits a 1/4" phone plug that terminates either a Tip-Ring-Sleeve (TRS) cable or mono (TS)cable. To use the WAG effectively, it's important to understand the structure of the jacks, cables, and devices that you connected to them.

Wireless Reception

To ensure the best possible reception of the wireless signal from the WAG Ring, follow these guidelines.

Antenna

The Base Unit has one swiveling antenna located at the rear corner of the base unit. Do not operate the unit without the antenna connected. The antenna should be installed in a vertical orientation. For FCC compliance, you must use only the antenna supplied with the unit.







Base Unit

Position the Base Unit following these guidelines for best reception. To the extent possible, try to place the Base Unit near and to the side of the performer, without sacrificing mobility or stage presence. Maintain a clear line of sight between the performer and the Base Unit especially avoiding obstructing the view with electronic devices, large metal structures, or walls.

Multiple Wag Systems on the Same Stage

The Wag Ring and Base Unit have 4 radio channels so that up to 4 systems could be co-located without interfering with each other. From the factory, the base unit and ring are both configured on channel 1 and ready to function. If another ring or device is interfering with you, you can change radio channels at the Base Unit and ring. A channel change is initiated from the by holding your finger on the ring lid for 5 seconds while observing the channel selection from the Base Unit "Radio Chan" display. The ring sends the selected channel over a dedicated channel which the Base Unit monitors when the "Radio Chan" function is selected. The Base Unit will set its channel to match the Ring channel but only if the Base Unit is in this mode. If you know what channel the ring is on, you can set the Base Unit channel to match it manually using the Value switches on the Base Unit.

To change radio channels:

	Instruction	Comments
	Put the ring on your finger.	
	Use Menu +/- to access the "Radio Chan" view	The Current BU Channel will be displayed. The Base Unit will suspend normal operation and listen on a dedicated channel for notifications from the Ring of channel changes.
	Touch the Ring Lid until the LEDs flash in an alternating pattern (approx. 5 seconds) then release your finger.	This will put the ring in Channel Change Mode. The ring will stop its normal operation and send channel change notifications on a dedicated channel;
	Touch the Ring Lid briefly to change to the next sequential Ring Channel. Each touch thereafter changes the channel again.	The Base Unit will display the new channel.
	When done, touch the Ring Lid until you get the alternating LED pattern again..	The ring will return to normal operation
	At the Base Unit, use the Menu +/- switches to move to any other position.	The Base Unit will save the new radio channel and return to normal operation. Be careful not to press the Value switches or you will manually change the channel and cause a mismatch between the Base Unit and Ring.

Chapter 3. Using the WAG Ring

Read this chapter to learn how to do the following:

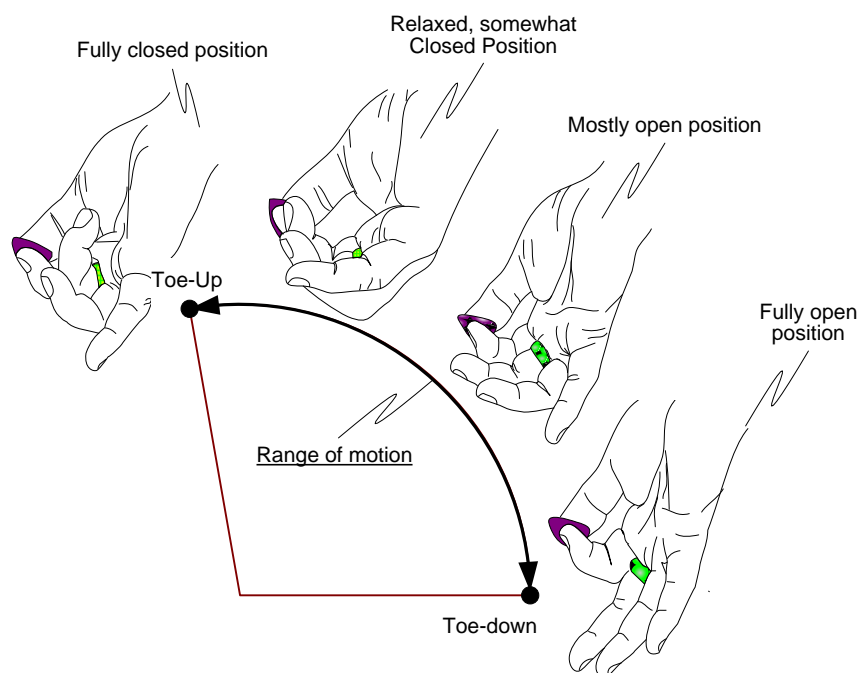
- Wearing the Ring
- Using the Wag as an Expression Pedal
- Limiting the Expression Zone
- Using the Wag to Switch Effects
- Combining Expression Pedal Control with Effects Switching

Wearing the Ring

There are no rules to wearing and using the Ring, but we give you some guidelines here. Guitarists typically wear the Ring on their strumming hand, most often on the 3rd finger (ring finger). The Ring is adjustable. It should be adjusted for a comfortably snug fit. The finger selection may be dependent on the size of your hand as the ring has a limited range of adjustment. You basically control your effects by opening and closing your hand or just the finger wearing the ring. In fact, just spreading your fingers apart laterally can be used with the right zone settings. The range of hand motion that is required depends on how you configure the Base Unit settings. But, if you understand that the sensor is in the ring band and that it detects the amount of skin surrounding it, you may think new ways to use it in your performance.

Using the Wag as an Expression Pedal

You can use the Pedal Output or Midi CC messages to simulate an expression pedal. A conventional expression pedal provides a range of motion between two primary positions: toe-up and toe-down. Using the WAG Ring, you have a corresponding range of motion: the opening and closing of your hand. The direction of operation is settable as is the range of motion required. The diagrams below demonstrate using full range of motion.



Limiting the Expression Zone

As shown above, we refer to your full range of hand motion. By default, this full range of motion represents a full swing of an Expression Pedal which you could call the Expression Zone. With the Wag system, we have divided the full range into a number of expression zones to give you flexibility in adapting the ring to your playing style. So, the Expression Zone can be equal to the full range, or some smaller range that is biased toward the open or closed position. Here are the selections we provide: 0 – 100 %, 75 – 100 %, 50 – 100 %, 25 – 75 %, 0 – 50 %, and 0 – 25 %.

Using the Wag to Switch Effects

The WAG can emulate the behavior of different types of footswitches such as stomp box switches, and footswitches on multi-effect units. This is accomplished using Midi CC and Program Change messages. There are two types of switches; momentary and latch.

With **momentary operation**, an effect is switched on only while your hand is closed. As soon as you open your hand, the effect is switched back off. The direction is reversible. This is very useful for rapid note by note switching of effects. The sensitivity setting (Sw Sens) offers a tradeoff between how fast you want to switch (e.g., rapid fire stutter effects) and guarding against accidentally switching your effects.

With **Latch operation**, closing your hand toggles the effect on. Opening your hand part way then closing it again toggles the effect back off. This is useful for slower switching operations such as between rhythm parts and extended solos and where you are more concerned about accidentally switching. This mode lets you switch effects yet relax your hand in between so you can play freely without concern for accidental switching.

Combining Expression Pedal control with Effects Switching

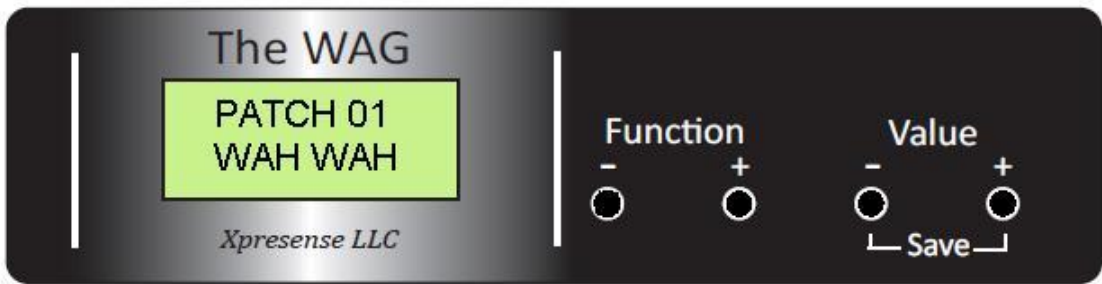
It is possible to combine expression pedal control with effects switching. For example, you could set up a latch switch to turn your overdrive effect off and on. Then set up an expression control to control your wah-wah pedal position. You might want to set a small zone for the expression control so that you don't accidentally switch your overdrive. So, a full squeeze of the hand switches your overdrive on for a solo while a subtle change in hand position near the open position controls your wah-wah. This sounds complex but in practice it's not. The system is designed to give you the flexibility to explore all possibilities.

Chapter 4. Configuring the WAG Base Unit

The tutorials at the beginning of this manual gave you an idea of what you can do with the WAG. Further, the factory presets provide a great way to jump in and get started using it. However, while the WAG is simple and intuitive to use, there is more to learn, in order to use it to your best advantage. Read this chapter to learn how to do the following:

- Select a Patch
- Edit a Patch Parameter
- Copy/Save a Patch

For the following sections, refer to this figure of the front panel of the WAG Base Unit.



Load a Preset/Patch

For your convenience, the WAG Base Unit provides 20 patches for you to save your configurations. The patches have been configured at the factory for a number of popular effects units to help you get started. If you edit the patches and save them you will lose these settings. See instructions below for restoring the Factory Patch settings.

If you have changed any of the current patch settings and not saved the patch they will be lost when you switch patches.

Loading a Patch:

	Instruction	Comments
1	Use the MENU +/- switches to navigate to the PATCH view	In this position the current PATCH is displayed. You can select a different PATCH with VALUE +/-
	Use the Value +/- switches to select the desired PATCH	

Edit a Preset Parameter

Procedure 2. To select and change a menu item:

	Instruction	Comments
1	Use the MENU +/- switches to navigate to the desired parameter	
	Use the VALUE +/- switches to change the value of the parameter	The Value dial cycles through the available values for the selected parameter. As you rest on a value, it will take effect immediately

Save or Copy a Preset/Patch

You can save your edits to a Patch. You can also copy from one patch to another.

To save or copy a patch:

	Instruction	Comments
1	Press the MENU + and VALUE – together This combination is labeled on the front panel	The word SURE? Will be displayed
	To save to the same Patch number just press the MENU + and VALUE – together a second time	The word SAVING will be displayed briefly. If you press any other switch combination you will exit the SAVE mode.
	To copy the current patch settings to another patch: use the VALUE +/- switches to select the destination patch number.	The patch number will change on the display
	Press the MENU + and VALUE – together A second time to complete the save	The word SAVING will be displayed briefly. If you press any other switch combination you will exit the SAVE mode.

Restoring the Factory Patch Settings:

	Instruction	Comments
2	Power down the Base Unit	
	Hold down MENU – and VALUE + at the same time while powering up the base unit	The Factory patches will be restored

Chapter 5. Preset/Patch Parameter Descriptions

This section describes the individual Preset/Patch parameters in detail. Understanding these parameters should help you to customize the Wag to your style of playing and to get the full creative value out of the WAG. Appendix A contains a TABLE of Operating Parameters which lists these parameters with their range of values and a brief description.

Patch

You can save 20 configurations called Patches.

Ped Type

This stands for Pedal Type and pertains to the Pedal Output which is a simulated Expression Pedal. The pedal types are Off, Normal, and Offset. Off turns the interface off so that you can leave the cable connected when not in use. Normal provides the full range of resistance from the simulated expression pedal. This ranges from approximately 100 ohms to 10,000 ohms (10k). There is some variance in conventional expression pedal output so effects units are sometimes designed to not start responding until the resistance reaches a couple hundred ohms. This ensures that the effect can reach a value of 0 at toe up. Likewise they are designed to look for something less than 10,000 ohms (maybe 8 K) for a maximum to insure that the effects value can reach its max value. This sometimes means that the expression pedal doesn't respond until it is moved a little ways and stops responding before it hits toe down. Some expression pedals have a trimming potentiometer to allow you to compensate for this. With the Wag we provide several pedal types with offsets built in. Normal is the default and a good place to start. You might find that one of the offset types gives you a better range of motion.

Ped Zone, CC1 Zone and CC2 Zone

As described in Chapter 4 we provide you with control over the range of hand position that controls your effects. This parameter controls the zone just for the respective output. The values are 0-100, 75-100, 50-100, 25-75, 0-50, and 0-25. These represent a percentage of the full range of hand motion from fully open to fully closed. For example with a setting of 75-100 for Ped Zone, the Pedal Out sweeps from minimum to maximum resistance with a hand movement from 75% open to 100% open. You might use this if you are primarily playing with your picking hand fingers resting on the pick guard in a generally open hand position and choose to use very subtle hand gestures to control your effect.

Ped Dir

This stands for Pedal Direction. It determines whether an open hand represents a toe down or toe up (conventional expression pedal terminology). Midi CC1 and CC2 each have their own independent direction control.

MidiChan

This sets the Midi Channel number which ranges from 01 – 16. The default is Chan 01 which should work for most situations.

MidiCC1 and MIDI CC2

Use these to select 1 or 2 Midi Continuous Controller Numbers. CC number 007 is generally used for volume control by effects unit. Other than that you need to find the midi table in your effects manual to make the selection. Some units allow you to map any CC number to any effect. If so, consider this because it may allow you to use 1 patch setting at the Wag Base unit with many different effects patches at your effects unit.

CC1 Mode and CC2 Mode

Each CC has its own independent Zone, Direction, and type of operation set by these mode controls. The valid modes are:

Off – disables the Continuous Controller

FwdExp - Outputs values 0-127 (full range) in the open to closed direction

RevExp - Outputs values 0-127 (full range) in the closed to open direction

FwdMomSw - Outputs 127 when the hand is at or passed the closed end of the selected zone.
Outputs 0 otherwise

RevMomSw - Outputs 127 when the hand is at or passed the open end of the selected zone.
Outputs 0 otherwise

FwdLatSw – Toggles between 0 and 127 each time the hand reaches the open end of the selected zone.

RevLatSw– Toggles between 0 and 127 each time the hand reaches the closed end of the selected zone.

See chapter 4 “Using the Wag to Switch Effects” for a description of momentary and latch switches.

For example, CC1 could be configured to increase overdrive in an open direction and CC2 to increase wah-wah pedal position in a closed direction. Or, CC1 could be used for wah-wah control and CC2 to turn overdrive on/off.

Exp Damp

Damping slows the rate of change of the effects control. This is useful for creating smooth changes such as horn like volume swells. The valid settings are off, Low, Medium, and High. High is the slowest swell. For example, you can hold your hand closed, strum a chord, then rapidly open your hand and continue playing. The 1st chord will slowly swell up in volume with damping. Without any damping you need to control the rate of the swell manually.

Exp Hold

This stands for Expression Hold. It holds the maximum effect value until the hand moves to the opposite end of the zone. This allows you to swell an effect to maximum then hold that value while you relax your hand. If you move your hand well toward the opposite end of the zone, the effect value will reset and you can swell it back up again.

SW Sens

This stands for Switch Sensitivity. For CC switch modes and Program Changes, this controls how sensitive the switching is. With a lower sensitivity you will be less prone to accidental switching but won't be able to toggle effects as rapidly.

PrgMode

This stands for Program Change Mode. Midi Program Changes are used to switch effects patches on multi-effect units. The valid settings are :

Off – Disable Program Change Messages

FwdMom – Momentary switching of patches in the forward direction.

RevMom – Momentary switching of patches in the reversed direction.

FwdLatch – Latch Switching of patches in the forward direction.

RevLatch – Latch Switching of patches in the reversed direction.

See chapter 4 “Using the Wag to Switch Effects” for a description of momentary and latch switches.

ProgChg1 and PrgChg2

These set the Program Change numbers (000 – 127) which select two effects patches to switch between. Note: Some effects units start counting Patches with 000 and others with 001.

NAME

Here is where you can name the Wag Base Unit Patch something meaningful (8 characters max).

Radio Ch

Here is where you change the radio channel (1-4) if you are getting radio interference.

Appendix A - Table of Operating Parameters

Parameter/Screen Name	Value Range	Summary
PATCH	01 - 20	Your configurations can be saved to 20 named patches
Ped Type	Off, Normal, Offset, TYPE 3 - 6	Applies to the Pedal Out jack. You can leave the cable connected and set Ped Type to OFF to disable the interface. Normal is for full range output. Some effects units don't respond to low values from an expression pedal. Offset type compensates for this.
Ped Zone	0-100, 75-100, 50-100, 25-75, 0-50, 0-25	This determines the range of hand motion that controls your effects using the Pedal Output. See Chapter 4 Limiting the Expression Zone for further explanation.
Ped Dir	FWD, REV	Sets the direction of hand motion akin to toe up versus toe down for your Pedal Output.
MidiChan	01 - 16	Sets the Midi Channel number for the current PATCH
Midi CC1	000 – 127	Sets the 1 st of 2 Continuous Controller Numbers (CC)
CC1 Mode	Off, FwdExp, RevExp, FwdMomSw, RevMomSw, FwdLatSw, RevLatSw	Sets the Mode of operation for CC1. Exp stands for expression mode versus switch mode. In expression mode we send values 0 – 127 to provide expression pedal functionality like volume swells. Fwd/Rev sets the direction of hand motion. MomSw stands for Momentary Switch. LatSw stands for Latch Switch. In switch mode we send midi values of 000 or 127 only. Effects units typically turn an effect on with a value greater than 064 (mid range) and off if below 064. See text for further explanation.
CC1 Zone	0-100, 75-100, 50-100, 25-75, 0-50, 0-25	This determines the range of hand motion that controls your effects using Midi CC1. See text for further explanation.
Midi CC2	000 - 127	Sets the 2 nd of 2 Continuous Controller Numbers (CC)
CC2 Mode	Off, FwdExp, RevExp, FwdMomSw, RevMomSw, FwdLatSw, RevLatSw	Sets the Mode of operation for CC2. Exp stands for expression mode versus switch mode. In expression mode we send values 0 – 127 to provide expression pedal functionality like volume swells. Fwd/Rev sets the direction of hand motion. MomSw stands for Momentary Switch. LatSw stands for Latch Switch. In switch mode we send midi values of 000 or 127 only. Effects units typically turn an effect on with a value greater than 064 (mid range) and off if below 064. See text for further explanation.
CC2 Zone	0-100, 75-100, 50-100, 25-75, 0-50, 0-25	This determines the range of hand motion that controls your effects using Midi CC2. See text for further explanation.
Exp damp	Off, Low, Medium, High	Damping slows the rate of change of the effects control. This is useful for creating smooth volume swells. High is the slowest swell.
Exp Hold	Off, On	Holds the maximum effect value until the hand moves to the opposite end of the zone. This allows you to swell an effect to maximum then hold that value while you relax your hand.
SW Sens	Low, Medium, High	For CC switch modes and Program Changes, this controls how sensitive the switching is. With a lower sensitivity you will be less prone to accidental switching but won't be able to toggle effects in rapid succession.
PrgMode	Off, FwdMom, RevMom, FwdLatch, RevLatch	PrgMode pertains to the sending of Midi Program Change messages which are used to change your effects unit patches. Reverse and Forward directions as well as momentary and latch modes are selectable. You can also turn this feature off.
ProgChg1	000 - 127	If PrgMode is on this specifies the 1 st of 2 Program Change numbers which equates to 1 of 2 effects patches.
ProgChg2	000 - 127	If PrgMode is on this specifies the 2nd of 2 Program Change numbers which equates to 1 of 2 effects patches.
NAME	8 characters	Here is where you can name the Wag Base Unit Patch something meaningful.

Appendix B – Preset Tables

		Factory Patch Table														
			Ped	Ped	Ped	Midi	Midi	CC1	CC1	Midi	CC2	CC2	Exp	Exp	Sw	PrgC
Patch	Name	Description	Type	Zone	Dir	Chan	CC1	Mode	Zone	CC2	Mode	Zone	Damp	Hold	Sens	Mode
01	ExpPed1	Expression Pedal 1	Normal	0-100	FWD	01	007	Off	0-100	001	Off	0-100	Off	Off	High	Off
02	ExpPed2	Expression Pedal 2	Normal	0-100	REV	01	007	Off	0-100	001	Off	0-100	Off	Off	High	Off
03	ExpPed3	Expression Pedal 3	Normal	50-100	FWD	01	007	Off	0-100	001	Off	0-100	Off	Off	High	Off
04	ExpPed4	Expression Pedal 4	Normal	0-50	FWD	01	007	Off	0-100	001	Off	0-100	Off	Off	High	Off
05	MidiVol	Generic Midi Volume Control (Midi CC 007)	Normal	0-100	Off	01	007	FwdExp	0-100	001	Off	0-100	Off	Off	High	Off
06	MidVol-R	Generic Midi Volume Control Reversed (Midi CC 007)	Normal	0-100	Off	01	007	RevExp	0-100	001	Off	0-100	Off	Off	High	Off
07	Boss Gtx	Boss Gt-x Midi Continuous Controller (CC 004)	Normal	0-100	Off	01	004	FwdExp	0-100	001	Off	0-100	Off	Off	High	Off
08	Whammy	Digitech Whammy Pedal (Midi CC 011)	Normal	0-100	Off	01	011	FwdExp	0-100	001	Off	0-100	Off	Off	High	Off
09	GNX Exp	GNX Midi Expression Pedal (Midi CC 004)	Normal	0-100	Off	01	004	FwdExp	0-100	001	Off	0-100	Off	Off	High	Off
10	GNXStomp	GNX Stomp Box On/Off (Midi CC 022)	Normal	0-100	Off	01	022	FwdExp	0-100	001	Off	0-100	Off	Off	High	Off
11	GNXDelay	GNX Delay On/Off (Midi CC 073)	Normal	0-100	Off	01	073	FwdMomSw	0-100	001	Off	0-100	Off	Off	High	Off
12	PODTweak	POD XT Midi Tweak Control (Midi CC 001)	Normal	0-100	Off	01	001	FwdExp	0-100	001	Off	0-100	Off	Off	High	Off
13	PODStomp	POD XT Stomp On/Off (Midi CC 25)	Normal	0-100	Off	01	025	FwdMomSw	0-100	001	Off	0-100	Off	Off	High	Off
14	PODDelay	POD XT Delay On/Off (Midi CC 28)	Normal	0-100	Off	01	028	FwdMomSw	0-100	001	Off	0-100	Off	Off	High	Off
15	M9 Exp	Line6 M9 Stomp Box Modeler Exp Pedal 1 (Midi CC 001)	Normal	0-100	Off	01	001	FwdExp	0-100	001	Off	0-100	Off	Off	High	Off
16	M9Bypass	Line6 M9 Stomp Box Modeler FX 1A Bypass (Midi CC 011)	Normal	0-100	Off	01	011	FwdMomSw	0-100	001	Off	0-100	Off	Off	High	Off
17	Zoom EXP	Zoom G9.2t Expression Pedal 1 (Midi CC 007)	Normal	0-100	Off	01	007	FwdExp	0-100	001	Off	0-100	Off	Off	High	Off
18	ZoomZNR	Zoom G9.2t ZNR On/Off (Midi CC 067)	Normal	0-100	Off	01	067	FwdMomSw	0-100	001	Off	0-100	Off	Off	High	Off
19	ProgChg1	MIDI - Program Change - Momentary	Normal	0-100	Off	01	001	Off	0-100	001	Off	0-100	Off	Off	High	On
20	ProgChg2	MIDI - Program Change - Latch	Normal	0-100	Off	01	001	Off	0-100	001	Off	0-100	Off	Off	High	On