



NM-1 NOVA Modulator

USER'S MANUAL

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INTRODUCTION

Nova Modulator – Creativity Enhanced

Never before have all of TC's acclaimed modulation effects been packed into a single stompbox. With seven stellar effects including the brand new Tri-Chorus and Through-Zero-Flanger, Nova Modulator gives you all the modulation effects you'll ever need – and then some. This is an effects pedal for the guitarist who has come to terms with the basics of guitar effects and is now on the lookout for the icing on the cake. With its Dual Engine design, Nova Modulator allows you to combine Chorus, Flanger, Phaser, Tremolo and Vibrato effects, sync the tempo between them and even trigger the LFO to start right on the beat. Nova Modulator gives you unlimited sound shaping possibilities. And with nine presets, there is plenty of room to store your favorite settings.

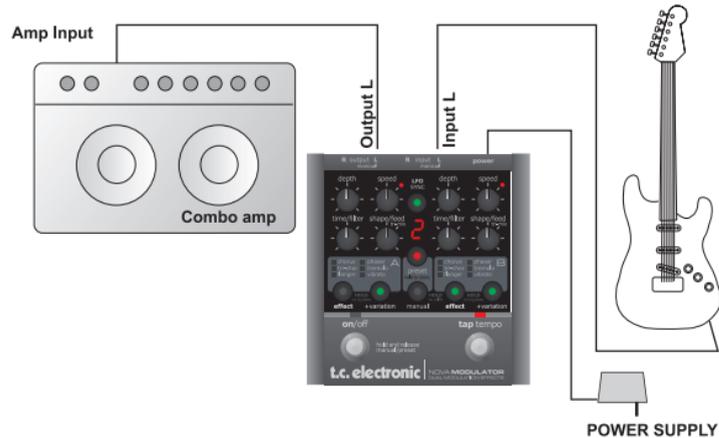
Destined to spark new inspiration for your music

Nova Modulator Features

- Seven studio-quality modulation effects
- Dual Engine design
- 9/18 user-programmable presets
- LFO synchronization
- LFO trigger
- Tap tempo
- Auto input gain adjustment
- Stereo in/out

t.c. electronic

SETUP EXAMPLE: MONO



This is a standard mono setup consisting only of your guitar, your amp and the NOVA Modulator.

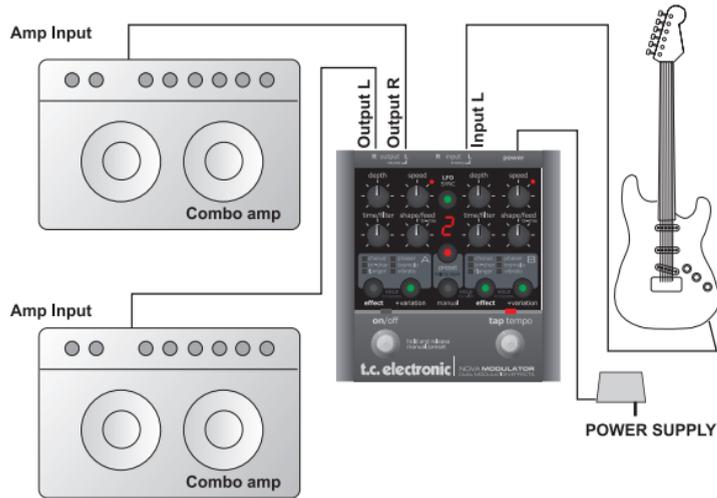
- Connect your guitar to the left input (L) of the NOVA Modulator.
- Connect the left output (L) of the NOVA Modulator to the input of your amp.

We recommend placing the NOVA Modulator pedal in the signal path after distortion/overdrive pedals.



For best signal to noise ratio, calibrate the pedal according to the level of the input signal. For further information, refer to this manual's "Calibration" section.

SETUP EXAMPLE: STEREO



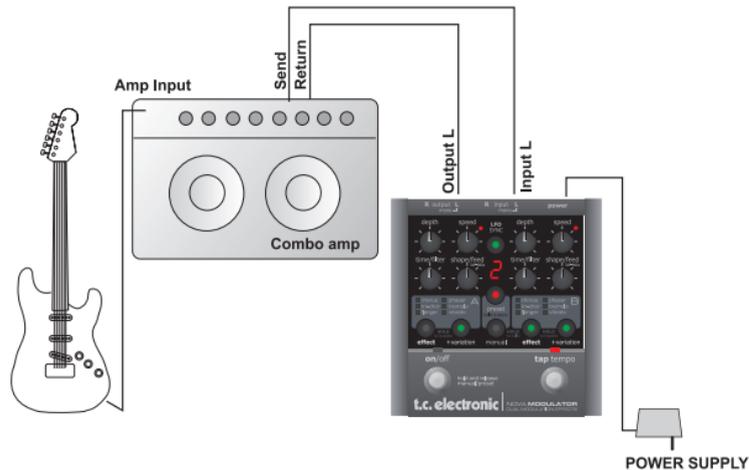
This is a classic stereo setup, giving you all the benefits of the NOVA Modulator's stereo effects.

- Connect your guitar to the left input (L) of the NOVA Modulator.
- Connect the left output (L) of the NOVA Modulator to the input of one amp, and the right output (R) to another amp.



For best signal to noise ratio, calibrate the pedal according to the level of the input signal. For further information, refer to this manual's "Calibration" section.

SETUP EXAMPLE: MODULATOR IN LOOP



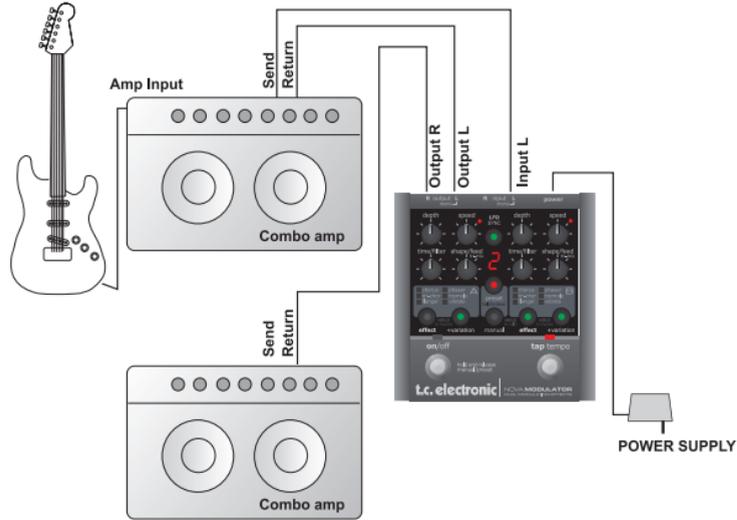
In this setup, we operate the NOVA Modulator in the effects loop of a combo amp (i.e., after the preamp section, before the power amp).

- Connect your guitar to the amp's input.
- Connect the amp's effect send to the left input of the NOVA Modulator.
- Connect the left output of the NOVA Modulator to the amp's effect return.



For best signal to noise ratio, calibrate the pedal according to the level of the input signal. For further information, refer to this manual's "Calibration" section.

SETUP EXAMPLE: STEREO LOOP SETUP



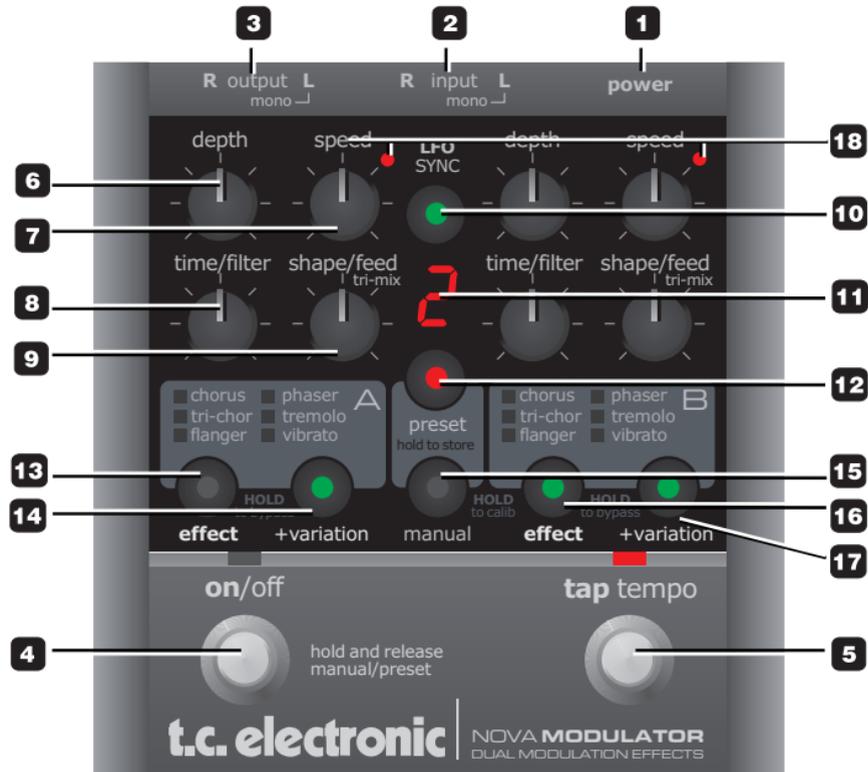
In this setup, we use the pre-amp from one of the combo amps to generate the basic sound and the NOVA Modulator to split the signal into stereo. Please note that by connecting one of the Modulator's outputs to the return jack of amp B, we only use the power amp section of that second amp.

- Connect your guitar to the input of amp A.
- Connect amp A's effect send to the left input of the NOVA Modulator.
- Connect the left output of the NOVA Modulator to amp A's effect return.
- Connect the left output of the NOVA Modulator to amp B's effect return.



For best signal to noise ratio, calibrate the pedal according to the level of the input signal. For further information, refer to this manual's "Calibration" section.

OVERVIEW



OVERVIEW

This section describes in short the functions of the knobs and buttons on the NOVA Modulator. For detailed explanations of the various parameters, please refer to the manual section describing the effects.

Connections

1 – Power

The NOVA Modulator requires 12V DC 300 mA. Use the power supply provided in the product box or a power supply with similar specifications.

2 – Inputs

These are ¼" mono jack connectors for signal input. NOVA Modulator will sense if a signal source is connected to both inputs and treat these signals as one stereo source. *If you connect a mono source only, ALWAYS use the left input!*

3 – Outputs

These are ¼" mono jack connectors which carry the signals from channels A and B.

Controls

4 – ON/OFF Switch

The ON/OFF switch has several functions.

- Press the ON/OFF switch once to bypass or activate the pedal.
- Press and hold the ON/OFF switch for approximately 0.5 seconds to alternate between Manual mode and Preset mode.

5 – TAP TEMPO Switch

Tap this switch rhythmically to enter the global tempo. Typically, you will tap quarter notes.

Example: Preset selection using the ON/OFF and the TAP TEMPO switches

When you are in Preset mode, you can step through presets by pressing the PRESET button repeatedly. The same function can be invoked by first pressing the TAP/TEMPO switch once and immediately thereafter pressing the ON/OFF switch multiple times.

Illustration - step up in presets



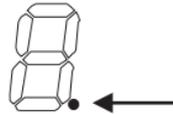
You can even scroll downwards using the foot switches: Press TAP TEMPO once, followed by one tap on the ON/OFF switch. Then press the TAP TEMPO switch again on or more times. Now you scroll downwards through the preset list.

Illustration - step down in presets



The dot in the lower right corner of the display indicates when toggle modes active. As long the dot is lit, it is possible to step up/down in presets as described above.

Edited dot



6 – DEPTH Knob

The DEPTH knob operates as a standard depth control for all effect types.

- In the Chorus, Tri-Chorus Flanger and Vibrato effects the knob controls the pitch depth.
- In the Phaser effect, the knob controls the filter depth.
- In the Tremolo effect, the knob controls the amount of volume attenuation, also known as the intensity of the tremolo.

7 – SPEED Knob

The SPEED knob operates as a standard speed control for all effect types.

OVERVIEW

8 – TIME/FILTER Knob

The function of this knob depends on the selected effect type:

Chorus:	Chorus delay time
Tri-Chorus:	Chorus delay time
Flanger:	Flanger delay time
Phaser:	4, 8 or 12 filters (indicated in the display)
Tremolo:	Subdivision (indicated in the display)
Vibrato:	Ramp time*

** Ramp: This is a function available in Variation mode that, when activated, gradually increases the depth of the Vibrato, similar to what a vocalist does.*

9 – SHAPE/FEED/TRI-MIX Knob

The function of this knob depends on the selected effect type:

Chorus:	Hi-Cut
Tri-Chorus:	Chorus mix (amount)
Flanger:	Flanger Feedback
Phaser:	Phaser Feedback
Tremolo:	Pulse-width

10 – LFO SYNC Button

The LFO Sync function syncs the speed of effect Engines A and B. With LFO Sync activated (LED lit), tapping the tempo on the TAP TEMPO switch will sync both Engines to this tapped tempo. For the Tremolo effect it is possible to select the sub-division using the TIME knob. This is explained further in the “Effects” chapter in this manual.

11 – Display

The 7-segment display may indicate different parameters:

- Either the current preset number or
- The number of filters (for the Phaser) or
- The Subdivision (for the Tremolo)

The dot in the lower right corner can indicate:

- When a knob is placed at the currently stored position
- When the pedal is in preset toggle mode

12 – PRESET Button

Press the PRESET button once to enter Preset mode. Press it several times to step through presets. In Preset mode, you can store and recall up to nine different presets. In bank mode up to 18 (2x9) presets can be stored.

Please also refer to the section “Limiting the Number of Presets” in chapter “Presets” of this manual.

13 & 16 – EFFECT Buttons

Use the EFFECT buttons to switch the two effects on or off individually and to set the effect type for each Engine. Press an EFFECT button once to engage that effect’s Engine. Press and hold an EFFECT button to disengage that Engine. Please note that it is not possible to disengage both Engines at the same time. If only one Engine is active and you disengage that Engine, NOVA Modulator will automatically engage the other Engine.

If you want to fully switch off both Engines (i.e., bypass the pedal), use the ON/OFF switch.

Press an EFFECT button several times to select between the different effect types. The available types

are Chorus, Tri-Chorus, Flanger (LED red), Through-Zero-Flanger (LED green), Phaser, Tremolo and Vibrato.

14 & 17 – VARIATION Buttons

The various effect types have so-called variations. E.g., for the Tremolo, there are “hard” and “soft” types. The Chorus has phase tilts. You will find additional information on these variations in the manual section describing the effects.

18 – SPEED LEDs

When LFO SYNC mode is not active, you can change the speed of the two engines individually using the SPEED knobs and the TAP TEMPO switch. Only one Engines SPEED LED will be lit at any time as the TAP TEMPO switch directly controls the tempo of the other Engine.
(See also the “LFO Sync mode “off” example on page 26).

When LFO SYNC mode is active, the same speed is applied to both Engines. In this case, the speed is

EFFECT TYPES: CHORUS

controlled either by Engine A's SPEED knob or by tapping the TAP TEMPO switch. When you set the speed using Engine A's SPEED knob, the SPEED LED in Engine A indicates the tempo. When you set the tempo by tapping it with the TAP TEMPO switch, the TAP TEMPO switches' LED indicates the tempo.



In LFO Sync mode, the SPEED knob of Engine B is inactive!

Chorus

Introduction

The basic idea of a Chorus effect is to split the signal and pitch modulate one of the signals slightly, then mix the two signals again. In this “regular” type of Chorus, the Chorusing effect occurs when the pitch modulated signal is played against the dry signal.

DEPTH Knob

Use the DEPTH knob to specify the intensity of the effect. The more you turn the knob clock-wise, the more “out of tune” the modulated part of the signal will be.

EFFECT TYPES: CHORUS

SPEED Knob

Use the SPEED knob to set the speed of the effect.



The relationship between the depth and speed parameters is important. The faster the speed, the less depth can be applied before the Chorus sounds “out of tune”.

TIME/FILTER Knob: Time Parameter

Use the TIME/FILTER knob to set the delay time for the Chorus effect. Changing the delay time will change the perceived “width” of the Chorus effect. Set this knob to a 12 o'clock position for a nice traditional Chorus effect.

SHAPE/FEED Knob: Hi-Cut Parameter

Use the SHAPE/FEED knob to reduce the high-end frequencies in the Chorus effect. Try using this parameter if you feel the Chorus effect is too dominant in your sound.

VARIATION Button

Use the VARIATION button to tilt the phase of the signal on the right channel by 90 degrees, resulting in a very broad stereo sound.



This only applies in stereo setups.

Tri-Chorus

Introduction

The Tri-Chorus is a variation of the regular Chorus that uses three stereo Choruses with various offsets for both depth, speed, phase and chorus delay time to produce a unique, very broad and lush Chorus sound. Speed, Depth and Time parameter descriptions are similar to the standard Chorus descriptions.

SHAPE/FEED/TRI-MIX Knob: Tri-Mix Parameter

In Tri-Chorus mode, use the SHAPE/FEED/TRI-MIX knob to set the mix between the dry signal and the chorused effect.

EFFECT TYPES: CHORUS

+VARIATION Button

Two phase settings are available for the Tri-Chorus. One option produces a more traditional Chorus sound where the phases of the three Choruses are tilted by 90, 180 and 270 degrees respectively. The other option is an asymmetric type where the phase and depth parameters are tuned to produce a wilder and more “uncontrolled” Chorus effect.

Flanger

Introduction

The Flanger belongs to the same “family” of modulation effects as the Chorus effect. The signal is split, and one of the signals is pitch modulated. The characteristic “flanging” sound occurs when the pitch-modulated part of the signal is slightly delayed and fed back to the input of the effect algorithm. In a Flanger effect, the delay times of the modulated signal are typically shorter compared to a Chorus effect. Experiment with the Feedback parameter to get an idea of the effects you can achieve.

Normal or TZF (Through Zero Flange) mode

Two Flanger modes are available. To select the Flanger, press the EFFECT button repeatedly. The LED will turn red, indicating Normal mode. Press the EFFECT button once more, and the LED will turn green, indicating TZF mode. The TZF mode emulates the original way of creating a flange effect, with two identical pieces of audio material being played back simultaneously on two tape decks and then being mixed on a third deck. The flanging effect was achieved by slowing down and speeding up the two decks at different times. An essential part of the special effect created this way is the unique phase cancellation occurring when the two signals pass each other in time (the zero point). A conventional Flanger pedal/ algorithm tries to emulate this effect, but because the two signals will never cross each other in time, until now, phase cancellation wasn't possible. But with the NOVA Modulator's TZF mode, it is.

DEPTH Knob

Use the DEPTH knob to set the intensity of the effect. The more you turn the knob clock-wise, the more “out of tune” the modulated part of the signal is.

EFFECT TYPES: FLANGER

SPEED Knob

Use the SPEED knob to set the speed of the effect.

SHAPE/FEED Knob: Feedback Parameter

Use the SHAPE/FEED knob to control the amount of feedback (Resonance) of the short modulated delay that causes the Flanging effect. When the Feedback is set too high (above approximately 90 % to 95 %), this might introduce internal feedback, resulting in a squealing noise that in most cases is unwanted in flanging effects. Be aware of this side-effect when experimenting at high volumes. Negative values inverse the phase of the signal that is fed back to the algorithm's input.



Negative Feedback



Positive Feedback



Although the NOVA Modulator effects have been tuned to sound great with the knobs in 12 o'clock position you should notice that setting the FEEDBACK knob to the 12 o'clock position results in NO feedback. For traditional pedal flanging sounds, this will sound a little tame, so you should use at least some feedback.

If, on the other hand, you have selected TZF mode and are aiming for the most authentic through-zero-flange sound, you should try setting the feed-back knob exactly at the 12 o'clock position.

TIME/FILTER Knob: Flanger Delay Parameter

Typically, delay values around 5 ms are used for flanging effects, whereas Chorus effects occur with delay times around 10 ms. Short delay times give very intense, "jet engine"-type sounds. Longer delay times give more "bathroom"-type sounds.

EFFECT TYPES: FLANGER

+VARIATION Button

The +VARIATION button allows you to select between two distinct flavors of tape flanging effects: negative and positive summing.

The button essentially flips the phase of the "flanged" signal 180 degrees, creating radically different sounds particularly when the two signals are mixed together. With negative summing (+VAR "off") the delayed signal is phase reversed resulting in severe frequency cancellations as the two signals get closer to the zero point. When the two signals are exactly at the same point they will cancel out each other completely.

Positive summing (+VAR "on") happens when the delayed signal is in phase with the dry signal. When mixed the result is a warm, less extreme, but very musical sound that gets more pronounced as the delayed signal gets closer to the zero point.

EFFECT TYPES: PHASER

Phaser

Introduction

The electronic phasing effect is created by splitting an audio signal into two paths. One path treats the signal with an all-pass filter, which preserves the amplitude of the original signal and alters the phase. The amount of change in phase depends on the frequency. When signals from the two paths are mixed, the frequencies that are out of phase will cancel each other out, creating the “notches” characteristic for a Phaser. Changing the mix ratio changes the depth of these notches. The deepest notches occur when the mix ratio is 50 %, which is the fixed ratio of the Phaser in NOVA Modulator.

DEPTH Knob

Use the DEPTH knob to specify the intensity of the effect. The higher the setting the more aggressive the effect will sound.

SPEED Knob

Use the SPEED knob to set the speed of the effect.

SHAPE/FEED Knob: Feedback Parameter

Use the SHAPE/FEED knob to control the amount of feedback in the Phaser. Negative values inverse the phase of the signal that is fed back to the algorithm’s input.



Negative Feedback



Positive Feedback

EFFECT TYPES: PHASER



Although the NOVA Modulator effects have been tuned to sound great with the knobs in 12 o'clock position you should note that setting the FEEDBACK knob to the 12 o'clock position with the Phaser selected results in NO feedback. This may sound too tame compared to traditional stomp box pedal phasers. Experiment with either positive or negative settings.

TIME/FILTER Knob: Filter Parameter

Use the TIME/FILTER knob to set the number of filters used for the phaser. The variations are 4, 8 or 12 filters. The display will indicate the number of filters while you turn the knob. The fewer filters, the more "grainy" the effect. The more filters are used, the smoother the effect sounds.

Indication



4 – filters



8 – filters



12 – filters



Most "old-school" pedals use four filters.

+VARIATION Button

Use the VARIATION button to shift between high and low emphasis.



When the LED is "on" the emphasis is on the high frequencies. This gives a subtle, transparent Phaser that is not too dominant.



When the LED is "off" the emphasis is on the low-end frequencies and the phasing sound is a more pronounced, grindy "old-school" type.



EFFECT TYPES: TREMOLO

Tremolo

Introduction

The Tremolo effect periodically increases and decreases the level of the signal. With this particular Tremolo, you can choose between soft(sine) and hard (square) curves. You can also change the pulse width.

DEPTH Knob

Use the DEPTH knob to set the intensity of the effect. A 100 % setting means that the signal is completely muted between signal peaks.

SPEED Knob

Use the SPEED knob to set the speed of the effect.

TIME/FILTER Knob: Time Parameter

Use the TIME/FILTER knob to set the subdivisions of the global tempo used for the Tremolo effect. The options are:



Set the knob in this range for 1/4 (quarter notes)

The display will show



Set the knob in this range for 1/4 triplets

The display will show

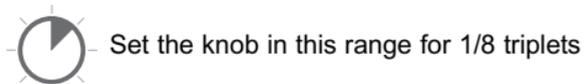


Set the knob in this range for 1/8

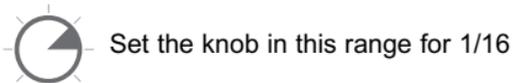
The display will show



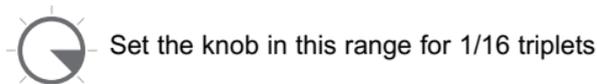
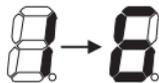
EFFECT TYPES: TREMOLO



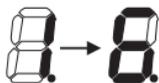
The display will show



The display will show



The display will show



SHAPE/FEED Knob: Pulse-width Parameter

Use the SHAPE/FEED knob to set the width of the pulse.

Example – narrow peaks with a “hard” waveform



Knob position



Waveform

Example – classic symmetric tremolo



Knob position



Waveform

Example – wide peaks with a “hard” waveform



Knob position



Waveform

EFFECT TYPES: TREMOLO

+VARIATION Button

Two waveforms are available as modulation sources for the Tremolo effect. Using the “Hard” option results in a steeper effect. Listen and choose the appropriate option.



Soft



Hard



TIP - For a 100 % “on/off” kind of Tremolo, choose “Hard Tremolo” and turn the DEPTH knob fully clockwise.

EFFECT TYPES: VIBRATO

Vibrato

Introduction

The Vibrato effect modulates the pitch of the incoming signal. The result is similar to the vibrato technique used by vocalists. In contrast to a Chorus or Flanger effect, no direct signal is combined with the pitch-modulated signal.

DEPTH Knob

Use the DEPTH knob to specify the intensity of the effect. The setting represents the amplitude of the modulating waveform.



The higher the amplitude the more the pitch is modulated.

SPEED Knob

Use the SPEED knob to set the speed of the effect.

TIME FILTER Knob

This knob sets the Ramp time in when +VARIATION is activated. Read more below.

SHAPE/FEED Knob

Use the SHAPE/FEED knob to set the frequency of the high-cut filter applied to the signal. Adding high-cut on a vibrato results in a more subtle, vintage sounding effect.

VARIATION Button

With the VARIATION button activated, you can hold the TAP TEMPO switch to activate/deactivate the Vibrato function AND the “Ramp” function. In this mode, the TAP TEMPO button works as a latching switch for turning the effect on/off.

The Ramp Function:

When you have activated the Ramp function, you can press and hold the TAP TEMPO switch to start the vibrato with only little depth and “ramp up” until the maximum vibrato setting is achieved. You can set the maximum vibrato depth using the DEPTH knob. Set the Ramp Time using the TIME/FILTER knob.

ADDITIONAL FEATURES

Two Engines

NOVA Modulation contains two identical effect Engines. This allows you to use two different modulation effects at the same time, or to even combine two identical algorithms for a more extreme and pronounced effect.

But for a more traditional effect – or to listen to only one effect at a time when creating a new preset – either Engine can be turned off by pressing and holding the EFFECT button for approximately 500 ms.

Pressing the EFFECT button again (in this case, holding is not necessary) turns the Engine on again.

LFO Sync

What is an LFO?

The LFO (Low Frequency Oscillator) is an audio signal with a very low frequency that creates a pulsating rhythm rather than an audible tone. In the NOVA Modulator, this rhythm is routed to control the speed of the various effects.

LFO Sync

- Press the LFO SYNC button to activate this function.

The LFO Sync function allows synchronization of the two effect Engines' Speed parameters. With LFO Sync activated, tapping the tempo on the TAP TEMPO foot switch or turning Engine A's SPEED knob will set both Engines to the same tempo – i.e. synchronize them.

Use LFO Sync when you want to create pronounced effects. E.g., you might double two identical Chorus sounds, sync the tempo of a Tremolo effect to a Flanger/Phaser or create rhythmic Tremolos by using two Tremolos with different subdivisions. This feature really opens up a world of sounds and applications, so experiment and be creative!

The SPEED Knob in LFO Sync mode

In LFO Sync mode, the SPEED knob on Engine A becomes a master speed control for both Engines and disables the SPEED knob on Engine B.

ADDITIONAL FEATURES

Tempo Indication in LFO Sync mode

In LFO Sync mode the tempo is set either by turning the Engine A SPEED knob or by tapping the TAP TEMPO switch.

If you set the tempo using the Engine A SPEED knob the LED next to the SPEED knob will indicate the tempo.

If you tap the tempo using the TAP TEMPO switch, the TAP TEMPO LED will indicate the tempo.

Switching LFO Sync mode on and off

When switching LFO Sync mode off in Manual mode, the value of the Speed parameter in Engine B will change to the current position of Engine B's SPEED knob. Engine A will retain the tap tempo speed.

When switching LFO Sync mode off in Preset mode, the Speed parameter values of both Engine A and Engine B will change to the values originally stored in the preset.

LFO Sync mode “Off”

When LFO Sync mode is “off” it is possible to select which effects Engine that is controlled using the TAP

TEMPO switch. This is great if you e.g. want to control the speed of a tremolo in Engine A, but not the speed of the chorus selected in Engine B.

Step by step example:

Object: TAP TEMPO controlling the speed of Engine B

Turn the SPEED knob on Engine A and then tap the TAP TEMPO switch. You have now set the tempo of Engine A using the Engine A SPEED knob and the tempo of Engine B using the TAP TEMPO switch.

- The Engine A Speed LED is showing the tempo (of Engine A).
- The Tap Tempo LED is showing the tempo of Engine B.
- The Engine B Speed LED is not lit.

Object: TAP TEMPO controlling the speed of Engine A

- The Engine B Speed LED now indicates the tempo of Engine B according to the position of the SPEED knob.
- The Engine A tempo (that was previously indicated by the Engine A Speed LED) is now shown in the Tap tempo LED.
- The Engine A SPEED LED is not lit.

ADDITIONAL FEATURES

LFO Trigger

Every time the NOVA Modulator is switched on using the ON/OFF switch, the LFO is re-triggered. This is a nice feature that allows you e.g. to sync the tempo of a Tremolo to the tempo of a song and to make sure that the sound is “spot-on” all the time.

Example:

- Bypass the NOVA Modulator.
- Select the Tremolo effect for Engine A and activate Engine A (the EFFECT switch LED is lit).
- Select e.g. 1/8 as subdivision by setting the TIME/FILTER knob within this interval:



- Tap the tempo of the song in quarter-notes using the TAP TEMPO switch.
- Press ON/OFF in tempo, e.g. on the count of “one”.



The LFO trigger works on all effects. You can e.g. set a Phaser to start at its lowest point and peak on the next “one” count.

PRESETS

Preset and Bank mode

The NOVA Modulator has two ways of organizing your presets. Depending on your application you may choose either.

Preset mode

This is the default mode in which you can store and recall up to nine presets. In this mode you can alternate between the Preset and “Manual”, where the positions of the knobs always apply.

Selecting Preset mode:

- Enter Calibration mode by holding the MANUAL button for one second. The PRESET button should now be steadily lit – if it is flashing; press the PRESET button once.
- Exit Calibration mode by pressing any other button than PRESET.

Accessing a Preset:

- Press PRESET to access a preset. You can store up to nine presets. Each preset holds the parameter settings for both Engines A and B.



You can not toggle between Engines A and B as both Engines are always part of a preset, whether they are active or not.

Selecting presets can be done in a couple of ways:

- Press the PRESET button several times to step through the presets.
- Press the TAP/TEMPO switch once and immediately after that the ON/OFF button multiple times.

In Preset mode, you can switch between the current preset and the manual settings.

Alternating between the two settings can be done in two ways:

- Press the MANUAL button to access Manual mode. In this mode, the position of the knobs always apply.
- Alternate between Manual mode and Preset mode by holding the ON/OFF button for approximately one second and then releasing.

PRESETS

Bank mode

Bank mode allows you to store up to nine banks holding two presets each. This is the mode to use if you have a number of different songs that require dedicated presets.

Selecting Bank mode:

- Enter Calibration mode by holding the MANUAL button for one second. The PRESET button's LED should now be flashing. If it is steady lit, press the PRESET button once.
- Exit Calibration mode by pressing any button other than PRESET.

The 7-segment display now shows the current preset bank. For each of the nine banks, you can store two presets. The presets are dedicated to the PRESET and MANUAL buttons.



Preset #1



Preset #2

Alternating between the two presets in a bank can be done in two ways:

- Press the PRESET button (for preset #1) or the MANUAL button (for preset #2) or
- Press and hold the ON/OFF button for approx. one second.

Selecting banks can also be done in a couple of ways:

- You can press the PRESET button several times to step through the banks or
- You can press the TAP/TEMPO switch once and immediately thereafter the ON/OFF button multiple times.

See also the example on how to select presets using the TAP TEMPO and ON/OFF switches on pages 10-11.

Bank mode differs from Preset mode in the following ways:

- when the MANUAL buttons LED is lit it means that preset #2, in the current bank is recalled. Unlike in Manual mode – you can not rely on the position of the knobs as an indication of the current parameter values.

PRESETS

- When storing a preset in bank mode, only the modified parameters will be stored. There is no “overwrite” function.

- The 2x9 presets in Bank mode are completely separate from the 9 presets in Preset mode. No presets will be deleted when switching back and forth between the two modes.



When switching to a new bank NOVA Modulator is automatically bypassed and preset #1 (PRESET button) is selected, ready to be activated when you press ON/OFF

Limiting the Number of Presets

As explained in the previous paragraphs, you can cycle through presets in different ways:

- Either by pressing the PRESET button repeatedly or
- By hitting TAP TEMPO once, followed by the ON/OFF switch.

However, you may only need e.g. four presets for a show. In that case, having to scroll through all of the nine presets to find the one you need would be

annoying. Therefore you have the option of limiting the available preset range – e.g. to four presets.

Example:

Let's say you want to use only presets 1, 2, 3 and 4. To do so, set up the pedal as follows:

- Press and hold the MANUAL button for approximately 500 ms. The unit is now in Calibration mode.
- Turn the DEPTH knob of Engine B to select the upper limit of the preset range. In this case, select “4”.
- Now turn the DEPTH knob of Engine “A” to select the lower limit of the preset range.



Let us say that you play in two different bands. With one band you want to use presets 1 to 4; with your other band, it's presets 5 to 8. As the NOVA pedal easily holds eight presets, all you have to do is change the range for each session.



No presets are deleted when limiting the preset range. The “hidden” presets can always be accessed again by increasing the preset range.

Store

First of all please note that no matter if you are in Preset mode, Bank mode or Manual mode, the display always shows the last recalled preset.

To Store a Preset in Preset mode

- Press and hold PRESET until the ON/OFF LEDs flash three times (approx 4 seconds).
- The current settings are now stored in the current location.

To store a Preset in Bank mode

As explained on the previous page, the Bank Preset mode holds two presets per bank. The two presets can be stored individually.

Example:



Bank # 2 is selected and the preset represented by the PRESET button LED is active.

Press and hold PRESET (approx 4 seconds) to store the current settings in the same location.



Bank # 2 is selected and the preset represented by the MANUAL button LED is active.

Press and hold PRESET (approx 4 seconds) to store the current settings in the same location.

APPENDIX: CALIBRATING INPUT SENSITIVITY

Input Level Calibration

Your NOVA Modulator pedal is per default set to work well right out of the box – just as any other “stompbox” pedal. However, you can optimize the performance of the NOVA Modulator’s AD/DA converters by calibrating the input sensitivity. To do so, follow this step-by-step guide:

- Calibration of the input sensitivity should be set according to the expected maximum input level. Therefore, you should always start by turning on boosters and other signal-attenuating equipment that has been placed before the NOVA Modulator pedal in the signal chain.
- Press and hold the MANUAL button until the 5 green button LEDs are lit.
- Play using your loudest* sound for a few seconds. The LEDs will turn off one by one. How many LEDs are turned off depends on the output of your guitar. When there seem to be no more changes, the pedal is calibrated.
- Press any button to exit.
- The calibration process is now complete.

* *By “loudest”, we mean the sound with the highest dynamic content. This is most likely a clean sound, as by definition overdrive sounds are compressed – i.e. they have less dynamics.*

APPENDIX: TECHNICAL SPECIFICATIONS

Analog Inputs

Connectors: ¼" phone jacks w. mono sense
Input Type: Single-ended
Impedance: 1 MOhm
Max. Input Level: 10 dBu @ 12V supply

Analog Outputs

Connectors: ¼" phone jacks with mono sense
Max. Output Level: 10 dBu @ 12V supply
Output Type: Balanced/Single ended with ground sense
Impedance: 0 Ohm
Sense Input Impedance: 225 Ohm

Overall Data

D to A Conversion: 24 bit, 128 x oversampling bitstream
A to A Delay: 1.65 ms
Dynamic Range: 106/98 dB, 20 Hz to 20 kHz
@ Input level 16/-2 dBu, not A-weighted
< -90 dB (0.0032 %) @ 1 kHz, I/O Level
THD 16 dBu, Load > 2400 Ohm
Frequency Response: +0.1/-0.2 dB, 20 Hz to 20 kHz
Crosstalk: < -100 dB, 20 Hz to 7 KHz, < -94 dB,
7 kHz to 20 KHz

EMC

Complies with: EN 55103-1 and EN 55103-2 FCC part 15,
Class B, CISPR 22, Class B

Environment

Operating Temperature: 32° F to 122° F (0° C to 50° C)
Storage Temperature: -22° F to 167° F (-30° C to 70° C)
Humidity: Max. 90 % non-condensing

General

Finish: Anodized aluminum front
Plated and painted steel end caps
Dimensions: 130 x 130 x 55 mm
Weight: 765 g
Mains Voltage: 100 to 240 VAC, 50 to 60 Hz
(auto-select) AC wall adapter.
AC adapter supplies 12VDC
minimum 0.3 A to pedal
Power Consumption: <5 W

Warranty

Parts and labor: 1 year

Due to continuous development, these specifications are subject to change without notice.

t.c. electronic