Boss EH-2 Enhancer, what exactly is it doing?

by **Clean Channel** » 06 May 2013, 03:22

Hey all,

So I've been using my EH-2 on my all-Boss board for a few weeks with great results. That said, I actually can't really describe what it's doing very well, aside from calling it some kind of specifically-tweaked EQ.

Today someone posted the following description on another forum, and I thought I'd run it by the Boss experts here (as usual, hoping Laurie might chime in!).

Here's what the other post said:

The enhancer is really cool. Technically, it's actually an expander (the inverse of a compressor). Basically, when the signal crosses a the threshold, it boosts certain frequencies (rather than squashing them like a compressor does). And the boosted frequency can be swept from like 200 Hz all the way up to like 2k. I used to have one and I dig it. EHX makes an expander too (the Steel Leather), but it has the frequency hard-set at like 800 or 1kHz, so it's not as versatile as the EH-2.

So, if I understand correctly, basically it's not just a volume increase in the certain EQ range, but also an extension of that range,thus making those particular frequencies decay slower?

Any other descriptions are welcome!

Clean Channel

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **sclitheroe** » 06 May 2013, 04:43

The aspect of the EH-2 that nobody talks about (directly) and that I keep trying to get my head wrapped around is the INV / NOR knob. We know that the sensitivity knob controls when the effect kicks in (and how strongly), and we know that the frequency knob controls where it centers operation on, but I still can't quite get my head wrapped around that last (first) knob - Boss describes it as the mix level in the manual, but INV and NOR are boolean logic terms - INV turns a logical 1 into a 0 and vice versa, whereas NOR returns a 1 only when inputs A & B are 0.

Is it essentially controlling whether the harmonics are added in or out of phase, and how far in or out of phase?

Further to this, I've seen quite a few pictures of people using the EH-2 with the mix knob at 12'oclock, which is supposed to provide no enhancement, and leaves me scratching my head even more - my own (limited) experience with the pedal suggests its still doing something even at that setting.

-Scott

sclitheroe

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **Laurie** » 06 May 2013, 06:28

Looked at the schematic. Can't comment on the exact frequencies but that description looks about right.

INV / NOR is exactly that... on the NOR side the enhanced frequencies are added in phase, on the INV side the

enhanced frequencies are added out-of-phase.

At 12 o'clock on the INV / NOR there should be no effect. Period. At exactly the right spot on the pot, the wiper is connected to the 9V rail (ie. DC) so no effected signal can reach the output - this is not theoretical, it is the physical reality of the pot geometry. The only thing the pedal can be doing at that point is providing a FET buffer.

Laurie

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **nathanscribe** » 06 May 2013, 11:35

Also, INV = inverse and NOR = normal. Not Boolean, just abbreviations.

Further to Laurie's description, the basic result is that you have a pedal that either enhances or reduces certain frequencies based on the dynamics of the signal.

nathanscribe

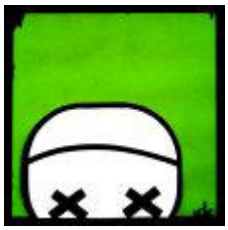
Re: Boss EH-2 Enhancer, what exactly is it doing?

by **natthu** » 06 May 2013, 12:44

Having never used an EH-2 myself, I like to think it functions something like this:

Signal goes in -> Magical Process -> Undescribably better signal comes out.

I used to have a BBE Sonic Maximiser, which achieved a similar effect... I'm not sure if it actually implemented a similar process, but the end result could be described in a similar way to that of the EH-2.... it just made the signal sound better.



natthu

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **sclitheroe** » 06 May 2013, 15:39

> *nathanscribe wrote:*
> *Also, INV = inverse and NOR = normal. Not Boolean, just abbreviations.*
>
> *Further to Laurie's description, the basic result is that you have a pedal that either enhances or reduces certain frequencies based on the dynamics of the signal.*

Hah! I'd never really considered that - coming from an IT background I immediately assumed it had logic implications for when the effect was applied. Probably explains part of my confusion.

-Scott

sclitheroe

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **Clean Channel** » 06 May 2013, 16:42

Thanks everyone for all of the great info!

Clean Channel

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **Clean Channel** » 06 May 2013, 17:24

> *Laurie wrote:*
> *At 12 o'clock on the INV / NOR there should be no effect. Period. At exactly the right spot on the pot, the wiper is connected to the 9V rail (ie. DC) so no effected signal can reach the output - this is not theoretical, it is the physical reality of the pot geometry. The only thing the pedal can be doing at that point is providing a FET buffer.*

I forgot to respond to this in my previous post...

Laurie is right on, there's no effect when MIX knob is set to noon.

As always, thanks Laurie!

Clean Channel

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **Pepe** » 06 May 2013, 17:38

And this is why the EH-2 was known as the "do nothing pedal". Most guys think that a pedal instantly sounds useful if all knobs are set to 12:00h. That's certainly the case with many pedals, but this one is an exception.

Pepe

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **Johnnyseven** » 06 May 2013, 18:50

I had one and added it after my chain of effects. I thought it sounded great when on but when I turned it off everything sounded better so it went straight to ebay.

Johnnyseven

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **DB Cooper** » 07 May 2013, 00:11

I have but haven't given it much of a test run. This thread has me curious, so perhaps I'll bust it out.

I'm currently trying to figure out if the LM-2 at the beginning of my pedals is doing anything. I can't say I notice much of a difference...maybe it's just my (bad) ears... (LM-2 should probably be a topic for another thread).

DB Cooper

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **Ptak** » 07 May 2013, 03:04

> *nathanscribe wrote:*
> *Also, INV = inverse and NOR = normal. Not Boolean, just abbreviations.*
>
> *Further to Laurie's description, the basic result is that you have a pedal that either enhances or reduces certain frequencies based on the dynamics of the signal.*

This post completely changed my thinking on the EH-2. I thought it strickly enhances things. I didn't think it reduces any frequencies, I purely thought things get boosted. I have an EH-2 right now and I noticed essentially no improvement with my Mesa Mark V. The only time I noticed anything was on the INV side which makes sense as

the mark v has great harmonics already, especially at the settings im using. The pedal definitely cant boost with much noticeable effect but it may make a difference for me now in regards to possibly reducing some frequencies I don't like. I was ready to sell but now i'll have another try with the INV control. thanks great post.

Ptak

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **nathanscribe** » 07 May 2013, 12:12

Glad it helped

I dabbled with the EH-2 on keys, and found it added dynamic life to rather static piano samples - hit them harder, and add some top.

nathanscribe

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **Jeremy** » 08 May 2013, 03:14

I've got one - its in my 'useful studio tools' box - along with my EP-Pre, my noise gates and most of my compressors

it has a lovely effect, but limited usefulness live IMO

Jeremy

Re: Boss EH-2 Enhancer, what exactly is it doing?

by **Pieraga** » 12 Feb 2016, 21:55

Thanks for the detailed info from the previous comments, I didn't know how to use it either, I just placed it after my dirt pedals to hear its effect,

Pieraga