

THE VERTIGO SOUND VSE-2

THE DISCRETE GYRATOR EQ

Thank you for purchasing a **Vertigo Sound Product**.

The VSE-2 is another **Big Impact Design** and is setting a new benchmark for Tracking, Mix-Bus and Mastering applications. Unlike other EQs on the market the VSE-2 is equipped with six discrete gyrators and lots of matchless detailed features.

This unique set-up makes the sound of the golden decade of analog recording equipment available in today's studio environment.



THE BASIC IDEA AND CONCEPT OF THE VSE-2

The VSE-2 is a 3-Band Dual Mono Equalizer with 18 selectable frequencies on each channel. This EQ utilizes discrete circuitry in the EQ section only. The frequency is selected by a discrete gyrator circuit in each band. Cut and Boost are realized with a dual discrete operational amplifier which is also used in Vertigo Sound's Mic Pre — the VSP-2.

The Discrete Gyrator concept gives you that gentle and smooth frequency processing everyone is looking for in nowadays digital studio environment.



INSTALLATION AND HOOK UP

The VSE-2 generates very little heat so it is not necessary to leave an empty space for ventilation above or below the unit. Don't put heat generating devices below and above inside your rack. The unit can be used with either balanced or unbalanced sources and the outputs can be loaded either balanced or unbalanced.

INPUT

The audio input is totally isolated by a **Jensen™** input line transformer. The primary winding of the transformer is wired to Pin 2 and Pin 3.

Max. Input Level is +22 dbu.

OUTPUT

The audio output is of the type *electronically floating balanced* with **Burr Brown®** or 1646 IC-Type. The output load should not be less than 600 Ohms. If one of the output pin 2 or 3 is grounded, the signal level on the other pin raises by +6 dB.

**UNBALANCED CONNECTION:
PIN 3 MUST BE CONNECTED TO PIN 1 (0V)**
Max Output Level is +23 dbu at 600 Ohms.

BALANCED IN/OUT

Pin 1 = Ground/Shield
Pin 2 = Audio + (hot)
Pin 3 = Audio - (cold)

UNBALANCED IN/OUT

Pin 1 = Ground/Shield
Pin 2 = Audio + (hot)
Pin 3 = Audio Common/Ground/Shield

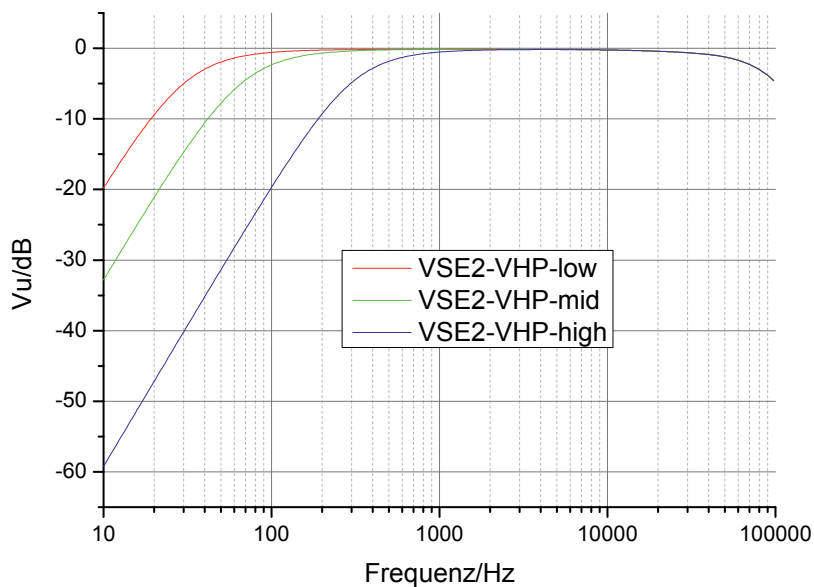
BYPASS, EQ IN AND FILTER

BYPASS

The unit immediately is going into hardware bypass when switched off. This prevents your signal chain gets interrupted in case of lack of mains supply or any malfunction of the unit itself.

EQ IN AND FILTER

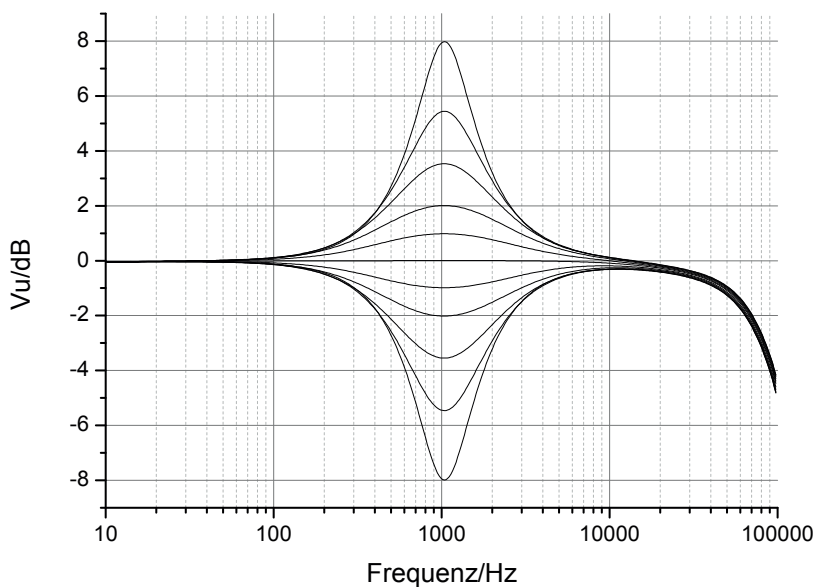
The EQ section and High Pass Filter can be used independently or together. The High Pass Filter is tunable from 10Hz to 400Hz. Switching off the filter bypasses the filter circuitry completely.



It's recommended to switch off the Filter when not in use to shorten the signal path and to avoid a slight roll off at low frequencies.

THE EQ SECTION

The VSE-2 is a Gyrator based equalizer with variable Q. The more you boost or cut the more narrow the bandwidth gets. In practice this characteristic is very musical. With high Boosts for example the EQ gets more focused around the selected center frequency and is not pushing too much the lower and higher areas.



The VSE-2 delivers a very unique soft and smooth processing performance so it's easy to overdo things. It's quite seductive to dial in especially frequencies like 5k, 8k and 10k just a little bit too much.

In the first time the VSE-2 gives you the impression to be very subtle and you might wish more drastic Cut Boost steps. This happens due to the listening habits using other more aggressive sounding Equalizers in the past.

CUT BOOST

Cut Boost provides a maximum gain of ± 8 dB. The stepped Gain Steps are: ± 1 dB, ± 2 dB, $\pm 3,5$ dB, $\pm 5,5$ dB and ± 8 dB

The Boost and Cut is realized using a fully discrete circuitry. The *in house* developed discrete operational amplifier is doing the job adding *grip*, while staying natural sounding at any time.



THE FREQUENCY SELECTOR AND DISCRETE GYRATOR

18 Frequencies can be selected via rotary switches on each channel. The VSE-2 is a Dual Mono device which makes the unit perfect for Tracking, Mixing and MS applications. The frequency band is electronically selected by the Discrete Gyrator Circuit.

By way of comparison, an inductor realized with an op amp and passive components will have almost no self capacitance, and can be designed to have an extremely low equivalent winding resistance compared to the wound component. There is also nothing to pick up stray magnetic fields! Gyrators actually do have the same energy storage capabilities as real inductors! This is the reason why a Gyrator EQ gives you the same silky smooth sound like vintage inductor based Equalizers but providing more punch and grip at the same time.

A.I.R MODE

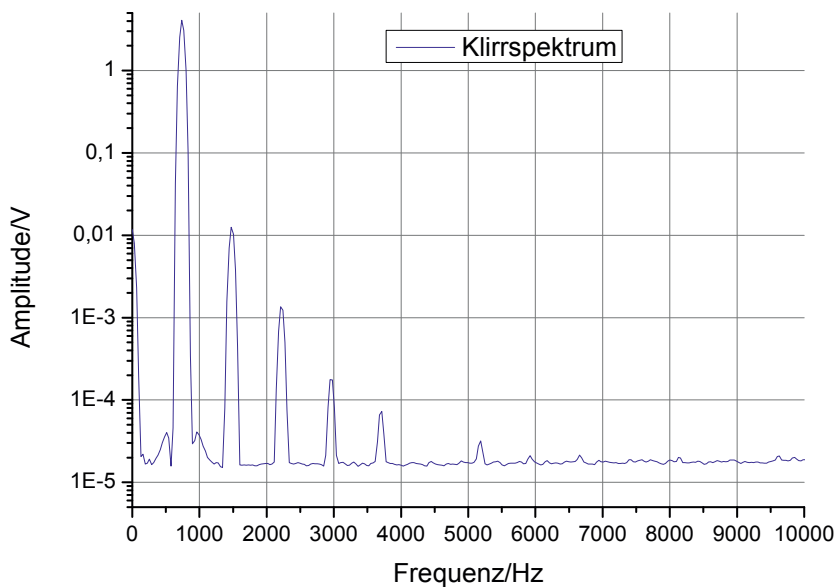
The Air mode (All Impedance Resonance) sets the gyrator to work at the auditory threshold. This mode is perfect to extend your signal frequency response to the top end limit without adding any presence or harshness to your signal.

A.I.R. is a good alternative to 10k for signals with high frequency content like Cymbals, Drums and full Mixes.

This mode is not processing the original signal primarily, but rather pushes artefacts and higher distortion products.

WHAT MAKES THE VERTIGO SOUND DISCRETE GYRATOR STAND OUT FROM THE CROWD?

The Vertigo Sound **Discrete Triple Gyrator 1972** uses a fully discrete circuitry. While other devices on the market realize the Gyrator using an standard IC. The well thought out design of Vertigo's Gyrator delivers a tube unit like distortion spectrum. The distortion is produced by the Gyrator itself at the frequency you dial in.



CLIP LED

The Clip Led flashes red if the level has reached +22dBu at the output. The unit can provide up to +24dBu at the output (1% THD).

The clip Led does not show the Gyrator load and it's distortion. The higher the input and output level with high EQ boost the higher the load and distortion products produced by the Gyrator.



VERTIGO SOUND

– ONE NAME STEPS OUT OF THE HERD

TECHNICAL SPECIFICATIONS

- Jensen Balanced In. That 1646 or Burr Brown Balanced Out
- Dynamic Range: 122 db
- Frequency response: 10 Hz ... 80 kHz (-3 db)
- Max. Output Level: +23 dBu/600 Ohm balanced floating
- Signal to Noise Ratio at +6 dBu = 105 db (20 ... 20 kHz, unweighted, RMS)
- Noise: -99 dBu (20 Hz - 22 kHz - unweighted, RMS) at 0 db Unity Gain
- Crosstalk between channels: > 100 db
- Power consumption: max. 10 Watts

SAFETY, GROUNDING, GROUNDLOOPS AND MORE

This Appartus must be earthed!

- To avoid groundloops all Audio-Grounds (XLR-Pin 1) are separated from the outer metallcase (housing of the VSE-2)
- To keep them separated, please avoid connecting any XLR-Pin 1 with of any XLR-housing or the housing of the VSE-2. Unnecessary groundloops might occur!
- The powersupply is secured against overload and is fire-protected: Several melting fuses, overheat sensors, security resistors etc. The powersupply is of noiseless linear construction: There is no *digitally switching* type psu with unaudible but AD-Conversion disturbing HF-Noise.
- There are no signal relevant magnetic or static fields coming out of the unit. The toroidal power transformer works with reduced primary voltage, therewith the already neglectable stray field is reduced once again dramatically. The steelcase of the VSE-2 shields all the rest, electrostatic and magnetic and for that reason your studio stays 100% clean.



TECHNICAL SPECIFICATIONS

Mains Voltage either 115 V or 230 V.
Please contact the manufacturer for Mains voltage change.

Mainfuse 230 V 315 – 400 mA

Mainfuse 115 V 630 – 800 mA

Note

Check the line voltage marked on the rear panel of the VSC-2 and verify that it is correct for your country.

Caution

Never remove the cover. There are no user serviceable parts inside.

Grounding

This Appartus must be earthed!

Warning

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

Water And Moisture

Appliance should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

Power Sources

The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

Grounding Or Polarization

Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

Servicing

To reduce the risk of fire or electric shock, the user should not attempt to service the appliance. All servicing should be referred to qualified service personnel.

For units equipped with externally accessible fuse receptacle

Replace fuse with same type and rating only.

Multiple-Input Voltage

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

RoHS Conformity

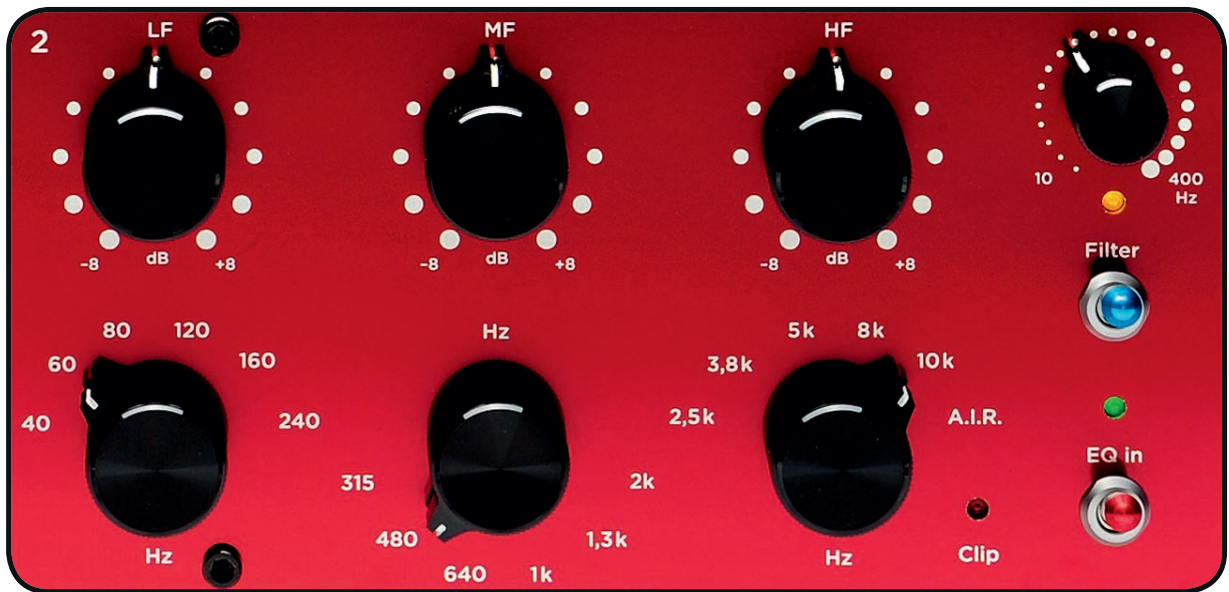
Vertigo Sound herewith declares that all our products will be manufactured RoHS conformal.

FCC Compliance Statement

This device complies with the FCC Rules. Vertigo Sound declares a FCC grant of equipment authorization and a FCC Id is not required, but the equipment complies with FCC technical requirements.

Notes on Environmental Protection

At the end of its operating life, this product must not be disposed of with regular house-hold waste but must be returned to a collection point for the recycling of electrical and electronic equipment. The wheelie bin symbol on the product, user's manual and packaging indicates that. The materials can be reused in accordance with their markings. Through reuse, recycling of raw materials, or other forms of recycling of old products, you are making an important contribution to the protection of our environment. Your local administrative office can advise you of the responsible waste disposal point.



CONTACT

MUSTANG SOUND GERMANY
Zenettstraße 11
80337 München
Germany

Phone: +49 - (0)89 - 840 617 - 77
contact@mustangsound.com
www.mustangsound.com