



BETA BASS



BASS GUITAR PREAMP PEDAL OWNERS MANUAL

INTRODUCTION

Congratulations on your purchase of the Beta Bass Pedal. The Beta Bass Pedal was designed to provide professional performance in a floor foot pedal. The Beta Bass Pedal includes a bass, treble plus two semi parametric mid band EQ circuits, studio compression, Bass Exciter, Bass Distortion and an on board Decimator II G-String noise reduction system. The Beta Bass Pedal can be used to drive your stage rig and also offer a balanced direct output (post processing) for direct recording or to feed front of house. Please read this manual carefully for a through explanation of the Beta Bass Pedal and its functions.

IMPORTANT SAFETY INSTRUCTIONS

Please read the following very carefully before operating this unit

- Read ALL instructions carefully before using this unit. Keep these instructions for future reference. Heed all warnings and follow all instructions.
- Do not use this unit near water, in the rain, or where there is moisture. If this warning is ignored a serious electrical shock or death may occur.
- Do not attempt to service this unit. No user serviceable parts inside. Refer servicing to qualified, ISP approved personnel. Servicing is required when the unit is damaged in any way, such as power adaptor is damaged, liquid has been spilled into the unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Care should be taken to avoid to spill any foreign objects or liquid into this unit. Avoid exposure of this equipment to dripping or splashing and ensure that no objects filled with liquid, such as vases, are placed on the equipment.
- Only use accessories or attachments that are specified by the manufacturer.
- Failure to follow these instructions may void the warranty.



NO USER SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED ISP TECHNOLOGIES SERVICE PERSONNEL.



The lightning bolt triangle is used to alert the user to the risk of electric shock.

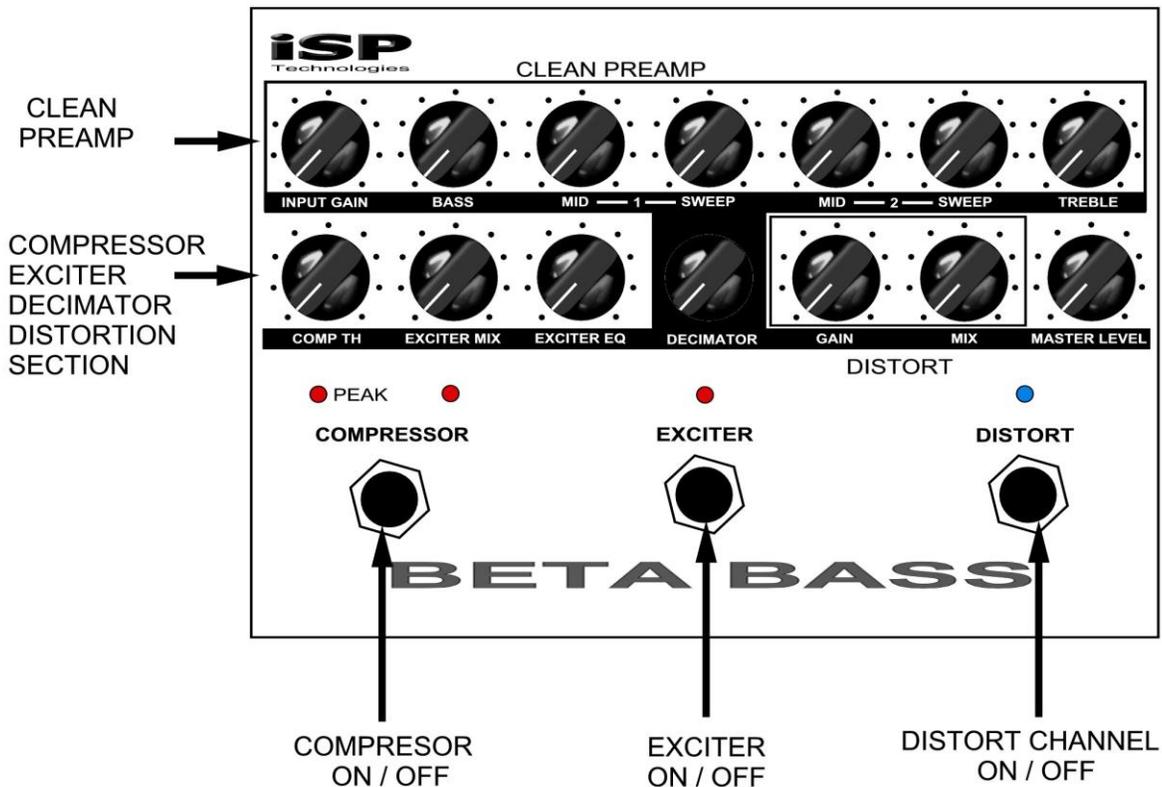
The exclamation point triangle is used to alert the user to important operating or maintenance instructions.



POWER REQUIREMENTS

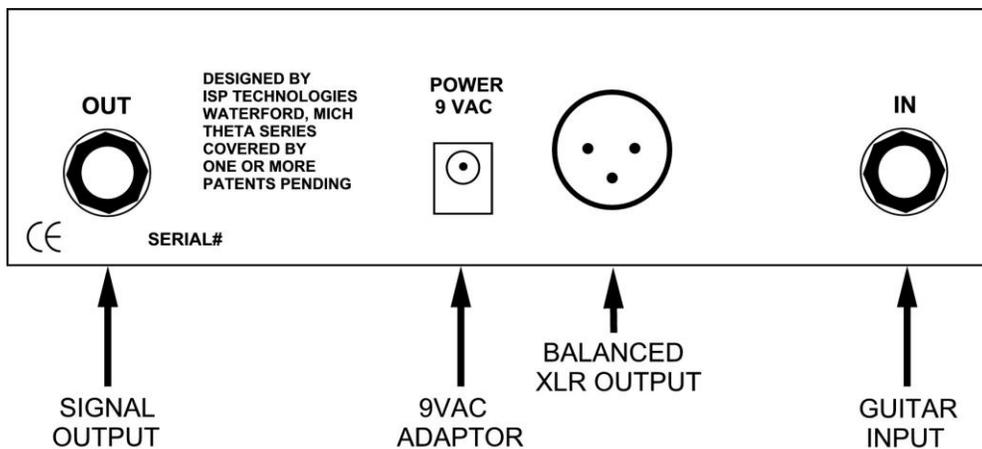
This unit requires the connection of the external AC Power Adaptor to a 120 volt AC outlet. Do not attempt to connect this unit to any power source other than the specified 120VAC. The Beta Bass Pedal will typically draw approximately .5 amps of current.

BETA BASS PEDAL CONTROLS



The upper row of controls are for the clean preamplifier. The lower row of controls are for the Compressor, Exciter, Decimator Noise Reduction and Distortion Circuit. Three footswitches are provided with the first footswitch allows the player to select Compressor ON / OFF. The second footswitch switches ON and OFF the Bass Exciter. The third footswitch switches ON and OFF the Distortion circuit.

BETA BASS PEDAL REAR PANEL

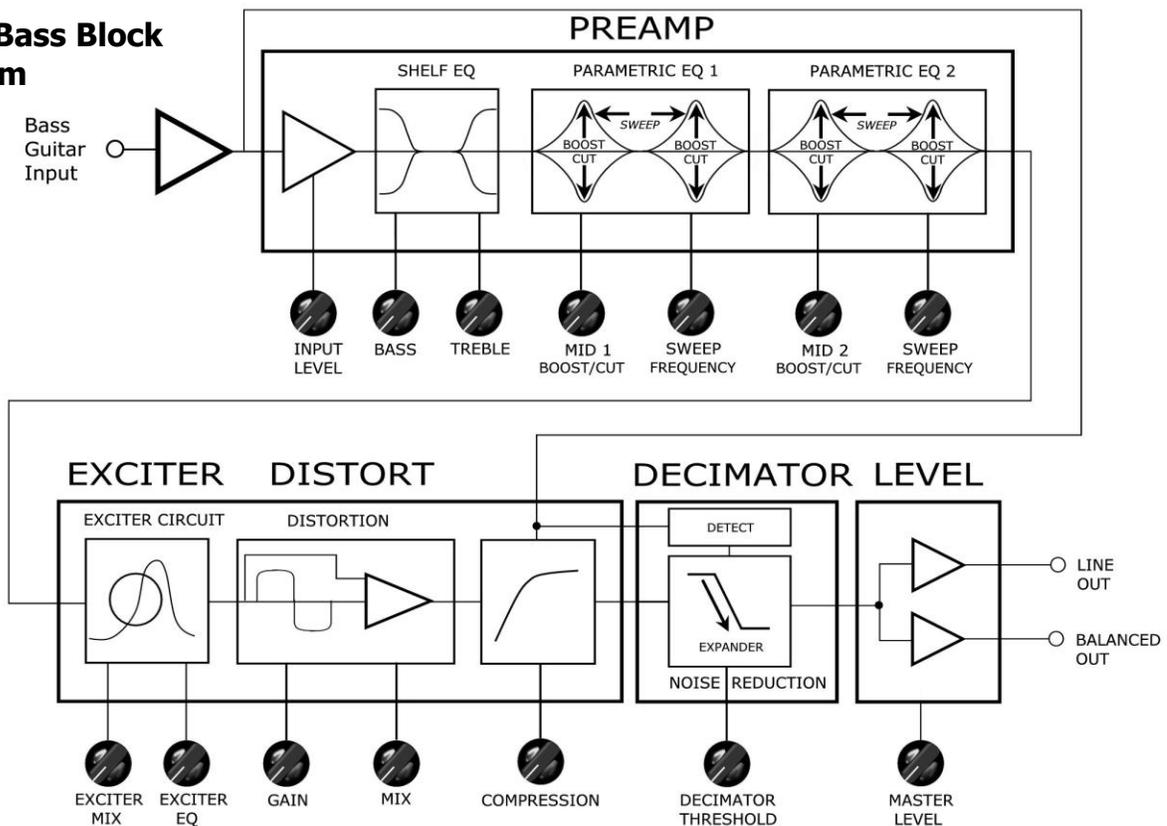


The rear panel has two ¼ inch phone jacks with one for the Bass Guitar input, one for the final output signal. The Power Jack is connected to the supplied 9VAC power adaptor. The Beta Bass Pedal internally converts the 9 volt AC signal from the power adaptor to a professional +/- 15 volt DC power supply. This allows a 30 volt internal signal swing required for proper headroom and professional level performance. The Beta Bass Pedal will only operate on a 9VAC power source, **do not use any other power adaptor or damage may result.** A balanced XLR output is also provided for direct output to a mixer or a professional power amplifier input.

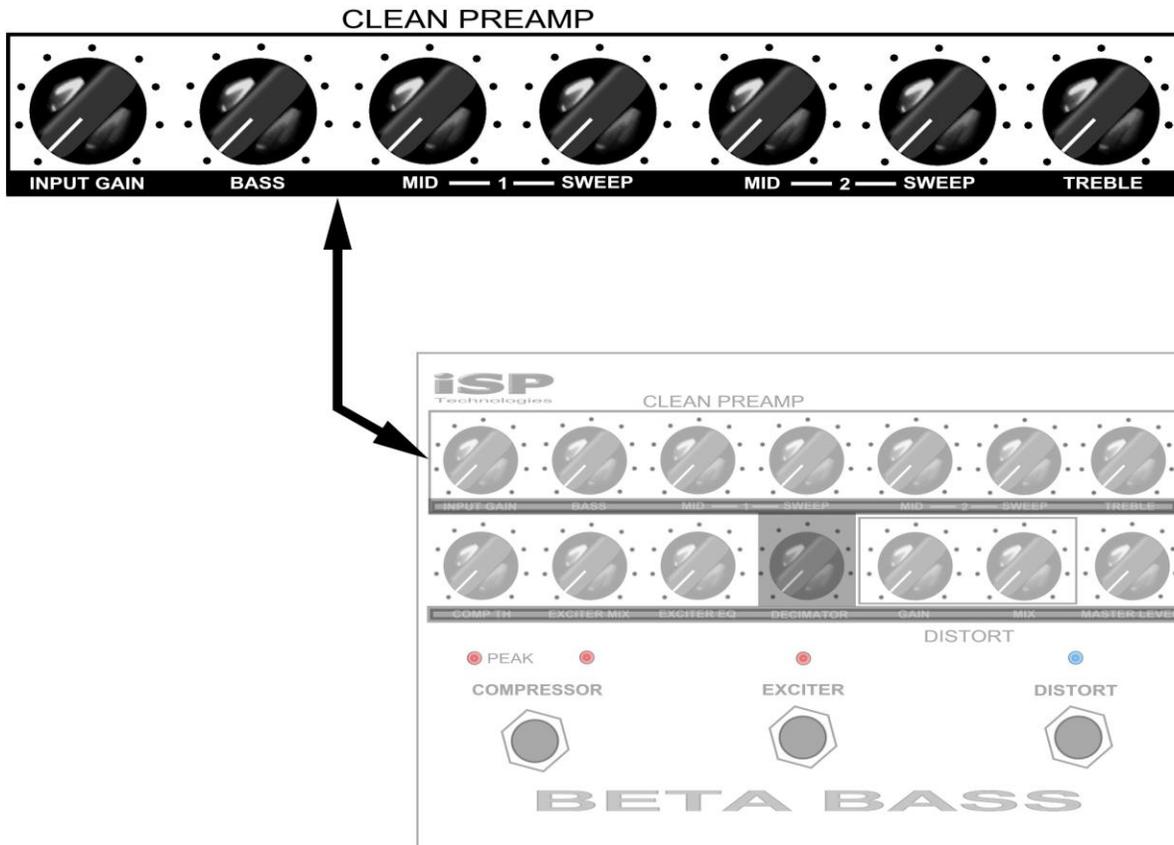
UNDERSTANDING THE BETA BASS PEDAL

The Beta Bass Pedal runs on an external 9VAC power adaptor and internally multiplies the 9VAC to produce a +/- 15 volt power supply. This allows the Beta Bass to provide true professional internal headroom and not a typical 9 volt DC swing like other Bass guitar pedals. The input signal is buffered and connected to the input of the clean **PREAMP**. The clean preamp includes an input gain block to trim the Bass Guitar level so as to avoid overdriving the Beta Bass Pedal at any point in the signal chain, a shelving bass and treble control, and dual mid frequency semi parameteric equalizers which includes a boost/cut control plus frequency sweep, which will be described in more detail in the PREAMP section. The output of the EQ section feeds the input of the Exciter circuit followed by the Distortion circuit followed by the Decimator / Compression VCA and then the Master Output Level. The Compression and Decimator level detection circuits are reading the direct Bass Guitar Input which allows the Decimator to function like our G String pedal. Because of this, adjustments in the EQ, EXCITER COMPRESSOR and DISTORTION will not require any adjustment of the Decimator Threshold control. You can also switch ON and OFF these functions without any need to adjust the noise reduction threshold. The Bass Exciter is a phase manipulation Exciter which allows subtle mid-range shaping to help enhance the midrange and provide extra separation of the Bass from other instruments. The Compression circuit is designed to provide amazingly smooth compression and keeps a constant Bass level without squashing the dynamics. The compression circuit is designed to provide "MAKE UP GAIN" when using compression. This brings the final output level up based on the amount of compression or gain reduction being used. The Distortion circuit allows a MIX between the clean preamp output and a Bass Distortion circuit. This allows the player to add subtle crunch to full blown distortion based on player preference. The Master output Level controls both stage level, via 1/4" output jack, and Balance Output to feed a front of house mix.

Beta Bass Block Diagram



PREAMP CIRCUIT



PREAMP CIRCUIT

The Preamp Circuit is always active and allows for the core instrument tone shaping.

INPUT GAIN

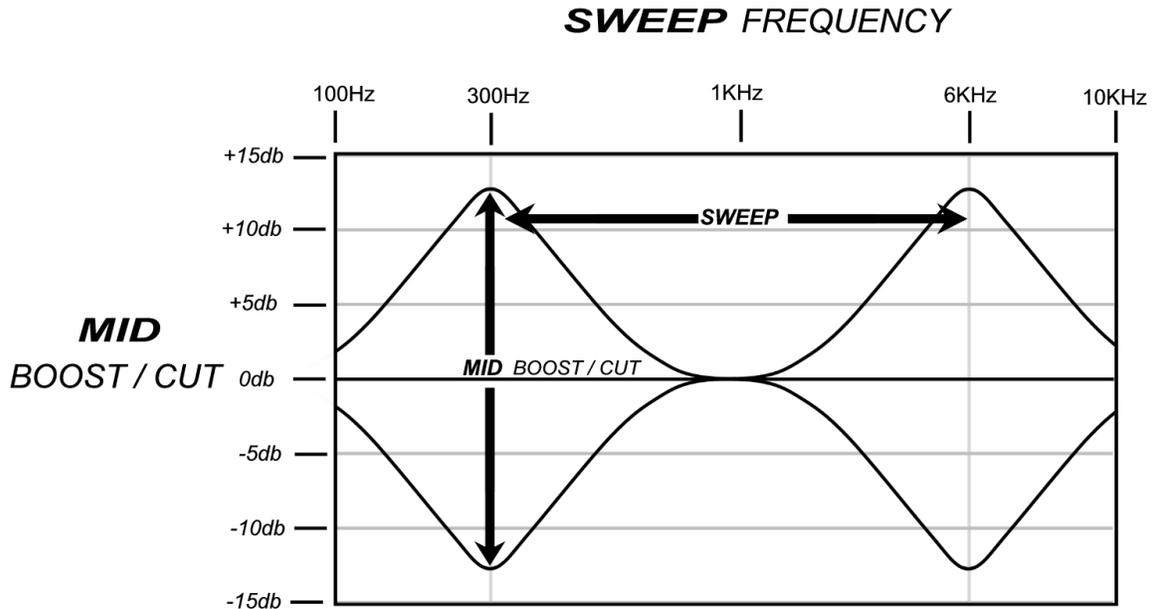
The Input Gain is right after the input buffer and is used to set the proper input level for the Beta Bass Pedal to keep the best possible headroom and noise floor performance. Connect the Bass Guitar to the input and adjust the Input Level control until the PEAK led above the COMPRESSOR switch flashes on transients or loud playing. The PEAK circuit monitors the entire signal chain and will indicate clipping at any point in the signal chain. Increases in EQ or Exciter will increase the signal chain level and requires that the Input Level be turned down to avoid clipping of the instrument signal. Once all adjustments are made for all other controls re-adjust the Input Level so the PEAK LED only flashes on extreme transients and does not stay lit under normal playing.

BASS

This control adjusts the amount of boost or cut in the low frequency portion of the spectrum of PREAMP. The available BASS boost and cut range is +/- 15 decibels. Note: the Bass control is flat when the control is centered at 12:00.

MIDRANGE BOOST/CUT CONTROL 1 AND 2

This control works in conjunction with the SWEEP frequency control. The MID and SWEEP controls work together to provide a semi-parametric tone control. When the MID control is set at 12:00 straight up there is no boost or cut in the MID frequency portion of the spectrum. The graph below shows the response of the MID boost/cut and SWEEP controls. The MID control allows +/- 12db of boost or cut to be applied at the frequency determined by the SWEEP control.

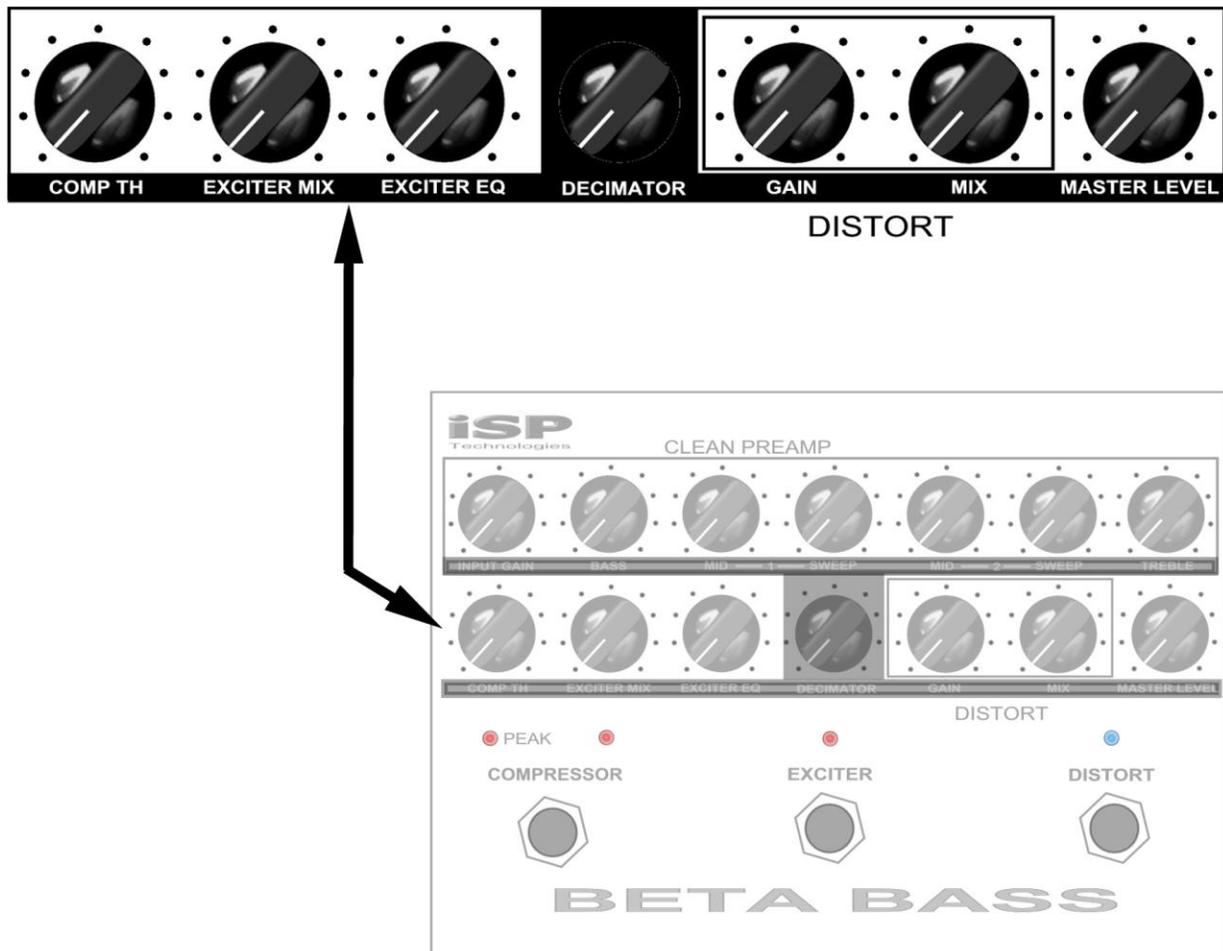


SWEEP FREQUENCY CONTROL

This control works in conjunction with the MID boost/cut control and adjusts the center frequency of the MID boost or cut signal. At the full counter clockwise setting the midrange 1 frequency will be at 60Hz, at the full clockwise setting the center frequency of the midrange will be at 1.2KHz. Midrange 2 will sweep from 250HZ to 6KHZ. NOTE: when the MID control is set at 12:00 straight up the SWEEP will not have any effect on the signal since there is no boost or cut being applied.

TREBLE CONTROL

The TREBLE control adjusts the boost or cut that is applied in the high frequency portion of the spectrum of the PREAMP. The available TREBLE boost and cut range is +/- 15 decibels.



COMPRESSION THRESHOLD CONTROL

Adjusts the amount of compression and simultaneously adjusts the amount of makeup gain in the compression circuit. The Compressor has a varying ratio that changes based on the amount of compression being applied.

EXCITER MIX

Adjusts the amount of Exciter signal mixed in the signal path.

EXCITER EQ

Adds and subtracts midrange and high frequencies to add transparency by altering the harmonic structure of the signal.

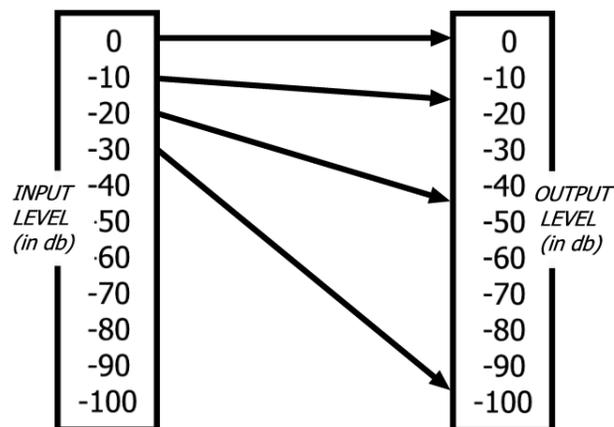
DECIMATOR CONTROL NOISE REDUCTION CONTROL

The DECIMATOR control adjusts the THRESHOLD of the Decimator G-String II. The Decimator works with both the Clean PREAMP and the DISTORT circuit and will switch completely out of the signal path when both the PREAMP and DISTORT circuits are switched off. If either the PREAMP or DISTORT circuits are switched on, the Decimator circuit will be automatically switched into the signal path. The DECIMATOR noise reduction is a low level downward expander incorporating ISP's patented TIME VECTOR PROCESSING. The Decimator is covered under multiple patents including 6,944,305, 7,532,730 and 7,957,546 with other patents pending.

A BRIEF EXPLANATION OF THE DECIMATOR NOISE REDUCTION SYSTEM

Low Level Downward Expansion is performed by use of a high quality voltage controlled amplifier controlled by an RMS based audio level detection circuit. A Time Vector Processing circuit is used which varies the release response over a 1000 to 1 ratio and controls the release response of the Downward Expander. The release response will be extremely fast, about 2 milliseconds, if the input signal has a fast decaying envelope, and upwards of 2 seconds if the input signal has a slow decay. Downward Expansion takes place when the input signal level drops below the preset threshold. For example, if the threshold is set for 0db, an input signal of 0db will produce no expansion. As the input signal drops below 0db, downward expansion starts and increases exponentially the farther the input signal drops below the threshold point. The figure below shows the response of the Expander with a 0db threshold.

TYPICAL EXPANSION RATIO with a threshold setting of 0db.



As the input signal level decreases at the input below the threshold

This output signal level will decrease exponentially

SETTING THE DECIMATOR THRESHOLD

Start by setting the Threshold for minimum, full counterclockwise. Turn the Threshold control clockwise until the desired effect of the downward expander is achieved. The expander should start to operate when there are gaps in the audio or as the input signal gets close to the noise floor. **NOTE:** Setting this control too high will cause the expander to start to cut off the input signal to soon.

DISTORT GAIN

Adjusts the gain in the distortion clipper circuit from 3db to over 50db.

DISTORT MIX

Adjusts the amount of distortion mixed in with the non-distorted signal. In the full counterclockwise setting, no distortion is added, at a 12:00 setting the mix will be 50% clean and 50% distortion and at full clockwise, the mix is 100% distortion.

MASTER LEVEL

Adjusts the output level of both the ¼ inch output jack and the XLR balanced line output.

BETA BASS SPECIFICATIONS

Input Impedance	500K ohms
Maximum Input Level	+20dbu typical
Maximum Output Level	+20dbu typical
Bass Treble Cut Boost Level	+/- 15db
Low/Mid parametric frequency range	60Hz-1kHz
High/Mid parametric frequency range	200Hz-6kHz
Compression Section	Based on Time Vector Processing adaptive response auto makeup gain.
Decimator Noise Reduction	Greater than 80db
Power Requirements	9V AC 1000ma
Current Draw	865mA
Dimensions	19" x 6" x 1³/₄"

WARRANTY AND SERVICE

The Internal Circuitry is fully guaranteed to be free of defects under normal use and service for a period of three years from the date of purchase.

Any damage resulting from the misuse or the failure to follow the precautions and instructions will void the warranty.

In the event that the unit needs to be repaired, please return the unit to ISP Technologies directly. Simply repack the unit, send a copy of the original receipt, a note stating the problem and your contact information and send it to:

ISP Technologies, LLC
5479 Perry Drive, Suite B
Waterford, MI 48329
Attn: Repair Dept.

All shipping charges must be fully prepaid.

ISP will not be responsible for any damages incurred in shipping of any unit. Any claim will need to be settled with the shipping company.

The warranty will be voided if the serial number has been tampered with in any way. The warranty card must also be filled out and returned in order to activate the warranty.

Should you have any questions for the repair department prior to returning the product please call 248-673-7790

INTERNATIONAL CUSTOMERS PLEASE NOTE: ISP Technologies' policy is to ship USA product to our USA retailers with 110VAC power supplies **only**, which function properly in the USA and Canada. Purchasing ISP Technologies product from a retailer or authorized ISP Technologies distributor within **your** own country guarantees receipt of the proper voltage power supply for operation in your country, as well as coverage and service under the ISP Technologies warranty policy. Should you purchase from a USA retailer, none of whom are authorized to sell out of the USA, you must rely on that *same* retailer for warranty coverage. If you cannot find a dealer in your country, contact ISP Technologies directly for assistance.



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