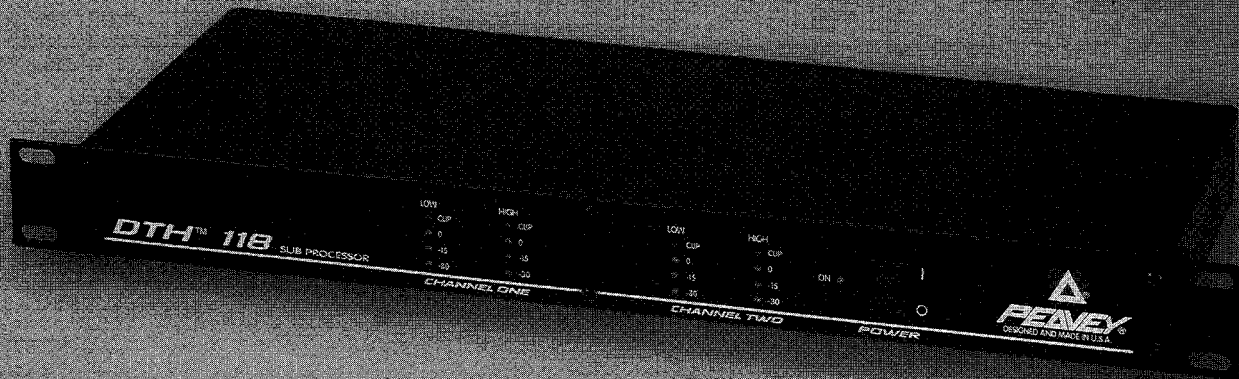


S P E C I F I C A T I O N S



DTH[®] 118 Sub Processor

SPECIFICATIONS

Number of Channels:

2

**Frequency Response,
1 Meter On-Axis, Swept Sine in
Anechoic Environment:**

30 Hz to 120 Hz (lowpass section)
120 Hz to 20 kHz (highpass section)

Crossover Frequency:

120 Hz

Crossover Type:**Lowpass:**

2nd order (12 dB/octave) hybrid
damping

Highpass:

3rd order (18 dB/octave) hybrid
damping

Subsonic Filter Slope:

24 dB/octave — $f_3 = 30$ Hz

Input Impedance:

40 kohms (balanced)
20 kohms (unbalanced)

Maximum Input Level:

@ 40 Hz: 3.2 volts RMS (+10 dBV,
+12.2 dBu)

@ 100 Hz and above: 9 volts RMS
(+19 dBV, +21.3 dBu)

NOTE: Maximum input levels for the
lowpass section are limited by the
electrical headroom in the horn
compensation EQ circuitry. The
output levels however are correctly
indicated on the front panel LED
meters, so that interpretation is not
required by the user.

Maximum Output Level:

30 Hz to 20 kHz: 9 volts RMS
(+19 dBV, +21.3 dBu)

Total Gain:

@ 40 Hz: 2.8 volts RMS
(+9 dBV, +11.2 dBu)

@ 100 Hz and above: unity

Total Harmonic Distortion:

0.01%, 30 Hz to 20 kHz

Hum and Noise:

Better than -96 dBu, 20 Hz to 20 kHz
Better than -109 dBV, IEC weighted
(150 ohms input termination)

**Front Panel Audio Indicators (for
each channel):****Lowpass Level:**

Green at -30, -15, and 0 dBV,
Red at +19 dBV clip indicator

Highpass Level:

Green at -30, -15, and 0 dBV,
Red at +19 dBV clip indicator

Power Requirements:

120 VAC, 60 Hz, 15 watts

Physical Dimensions (H x W x D):

19" x 1 3/4" x 7 1/2"
(49.3 cm x 4.44 cm x 19.1 cm)

Weight:

5.8 lbs. (2.63 kg)

PEAVEY



Intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



Intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION: Risk of electrical shock — DO NOT OPEN!

CAUTION: To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

WARNING: To prevent electrical shock or fire hazard, do not expose this appliance to rain or moisture. Before using this appliance, read the operating guide for further warnings.



Este símbolo tiene el propósito, de alertar al usuario de la presencia de “(voltaje) peligroso” sin aislamiento dentro de la caja del producto y que puede tener una magnitud suficiente como para constituir riesgo de descarga eléctrica.



Este símbolo tiene el propósito de alertar al usuario de la presencia de instrucciones importantes sobre la operación y mantenimiento en la información que viene con el producto.

PRECAUCION: Riesgo de descarga eléctrica ¡NO ABRIR!

PRECAUCION: Para disminuir el riesgo de descarga eléctrica, no abra la cubierta. No hay piezas útiles dentro. Deje todo mantenimiento en manos del personal técnico cualificado.

ADVERTENCIA: Para evitar descargas eléctricas o peligro de incendio, no deje expuesto a la lluvia o humedad este aparato. Antes de usar este aparato, lea más advertencias en la guía de operación.



Ce symbole est utilisé dans ce manuel pour indiquer à l'utilisateur la présence d'une tension dangereuse pouvant être d'amplitude suffisante pour constituer un risque de choc électrique.



Ce symbole est utilisé dans ce manuel pour indiquer à l'utilisateur qu'il ou qu'elle trouvera d'importantes instructions concernant l'utilisation et l'entretien de l'appareil dans le paragraphe signalé.

ATTENTION: Risques de choc électrique — NE PAS OUVRIR!

ATTENTION: Afin de réduire le risque de choc électrique, ne pas enlever le couvercle. Il ne se trouve à l'intérieur aucune pièce pouvant être réparée par l'utilisateur. Confiez l'entretien et la réparation de l'appareil à un réparateur Peavey agréé.

AVERTISSEMENT: Afin de prévenir les risques de décharge électrique ou de feu, n'exposez pas cet appareil à la pluie ou à l'humidité. Avant d'utiliser cet appareil, lisez attentivement les avertissements supplémentaires de ce manuel.



Dieses Symbol soll den Anwender vor unisolierten gefährlichen Spannungen innerhalb des Gehäuses warnen, die von Ausreichender Stärke sind, um einen elektrischen Schlag verursachen zu können.



Dieses Symbol soll den Benutzer auf wichtige Instruktionen in der Bedienungsanleitung aufmerksam machen, die Handhabung und Wartung des Produkts betreffen.

VORSICHT: Risiko — Elektrischer Schlag! Nicht öffnen!

VORSICHT: Um das Risiko eines elektrischen Schlages zu vermeiden, nicht die Abdeckung entfernen. Es befinden sich keine Teile darin, die vom Anwender repariert werden könnten. Reparaturen nur von qualifiziertem Fachpersonal durchführen lassen.

ACHTUNG: Um einen elektrischen Schlag oder Feuergefahr zu vermeiden, sollte dieses Gerät nicht dem Regen oder Feuchtigkeit ausgesetzt werden. Vor Inbetriebnahme unbedingt die Bedienungsanleitung lesen.

DTH® 118 SUB PROCESSOR

Features:

- Two-channel or stereo operation
- 30 Hz subsonic filter
- Highpass outputs
- Balanced/Unbalanced inputs and outputs
- LED level and clip indicators
- Lowpass summing switch for mono bass
- Fits standard IEC 19" single rack space (1U)
- User installable rubber feet included

DESCRIPTION

The DTH® 118 Sub Processor was designed for use with the Peavey DTH 118, and DTH 118b folded bass horn cabinets. The DTH 118 Sub Processor specifically provides all the necessary elements that enhance the performance of these particular bass cabinets. Subsonic protection that allows maximum power handling is also integral to the circuit design. Additionally, optimized highpass outputs are provided for the DTH 4000 series mid/high speakers.

Front panel indicators show general lowpass and highpass signal levels for each channel, and provide increasing level indications at -30, -15, 0 and +19 dBV.

A unique feature of the DTH 118 Sub Processor is lowpass summing. The purpose of this feature is to maximize the amount of low frequency output when two or more DTH 118/118b cabinets are used to reproduce a stereo mix. The maximum benefit can be up to +6 dB SPL of extra bass by summing the two lowpass stereo channels.

For the purpose of explanation, we used the *generally* accepted principle that sound in the low

frequency range is difficult to localize. That is, the source of a bass instrument is difficult to pinpoint in a stereo mix, as opposed to say, a clarinet. We can say that a bass instrument tends not to *image* well in a typical stereo sound field. We take advantage of this by internally mixing the two stereo channels, but only in the lowpass filter sections. Of course when we do this, the bass mix is now monaural instead of stereo. But that is of little consequence when compared to the benefit of increased output.

The switch for lowpass summing is located approximately in the center of the rear panel. Pressing the switch button in enables lowpass summing. The output is identical on both lowpass output connectors when this switch is on. The highpass outputs, of course, remain unaffected.

Another use of lowpass summing is to send up to four* identical low frequency signals to separate destinations, even from a mono mix. In this application the lowpass outputs become a simple distribution amplifier. The advantage here is to provide more electrical drive capability to a bank of subwoofer amplifiers.

*(using both XLR and 1/4" TS lowpass outputs)

CONNECTION

The DTH 118 Sub Processor accepts balanced 1/4" TRS or XLR full frequency range line level inputs. There is a convenient polarity switch located adjacent to each input connector on the rear panel. This switch allows selection of either pin 2 plus, pin 3 minus; (switch button out) or pin 3 plus, pin 2

minus (switch button in) on the XLR jack. Pin 1 of the XLR jack remains connected to signal ground in both switch positions. This polarity switch does not affect the polarity of the TRS 1/4" input jack. The 1/4" TRS input jack is wired: Tip: plus, Ring: minus, Sleeve: signal ground.

The output connections of both highpass and lowpass sections are balanced XLR male connectors with pin 2 plus, pin 3 minus, and unbalanced 1/4" TS jacks, with Tip, of course, being plus. Both outputs can be used at the same time to drive different downstream equipment. For example, the 1/4" output can be used to drive an amplifier for a local bi-amped powered monitor, while the XLR can be connected to a snake return for onstage power amplifiers.

As stated in the specification section, the crossover frequency is fixed at 120 hertz. This frequency provides optimized acoustic blending of the DTH 118/118b subwoofer and DTH 4000 series mid/high enclosure combination. The overall response of the low and high frequency passbands are represented graphically in Figure 1. The frequency responses shown are identical for both channels.

Other combination possibilities exist. One example is using the lowpass outputs only to augment an existing full range system that needs extra bottom end. Usually, best results are achieved by engaging the lowpass sum switch. Using the DTH 118 Sub Processor with direct radiator types of bass, and other folded horn enclosures with corner frequencies higher than 50 hertz is not recommended. Low frequency speaker damage could result.



The DTH 118 Sub Processor is equipped a standard IEC receptacle. This receptacle is for the IEC line cord (included), which provides AC power to the unit. Connect the line cord to this connector and to a properly grounded AC supply. Damage to the equipment may occur if an improper line voltage is used (see voltage marking on unit). Never remove or cut the ground pin of the line cord plug. This unit is supplied with a properly rated line cord. When lost or damaged, replace this cord with one of the proper ratings.

ENGINEERING SPECIFICATIONS

The DTH 118 Sub processor shall be a two-channel, single-

space IEC 19" rack-mount chassis. Hereafter, the DTH 118 Sub Processor shall be referred to as the unit. The unit shall function as an active crossover. The crossover frequency shall be 120 hertz. The lowpass filter type shall be a 2nd order (12 dB per octave) with hybrid damping which shares characteristics of both Butterworth and Bessel damping functions. The highpass filter type shall be a 3rd order (18 dB per octave) with similar hybrid damping characteristics as the lowpass sections. Each channel shall have electrically balanced and unbalanced inputs. Each balanced input shall have an input impedance of 40 kohms. Each unbalanced input shall have an input impedance of 20 kohms. Each bal-

anced XLR input shall have polarity reversal capability. Each channel shall have low impedance balanced and unbalanced outputs. The unit shall provide folded horn compensation EQ centered at 40 hertz. The unit shall provide subsonic highpass filtering for loudspeaker protection. The subsonic filter corner frequency shall be 30 hertz. The subsonic filter type shall be 4th order (24 dB/octave) Butterworth. The unit shall provide switch selectable mixing of the two lowpass filter channels for bass enhancement. The unit shall provide output level and clip indication by LED metering. The unit shall utilize a standard I.E.C. connector/cable for AC power. The unit shall be a Peavey DTH 118 Sub Processor.

DTH[®] 118b

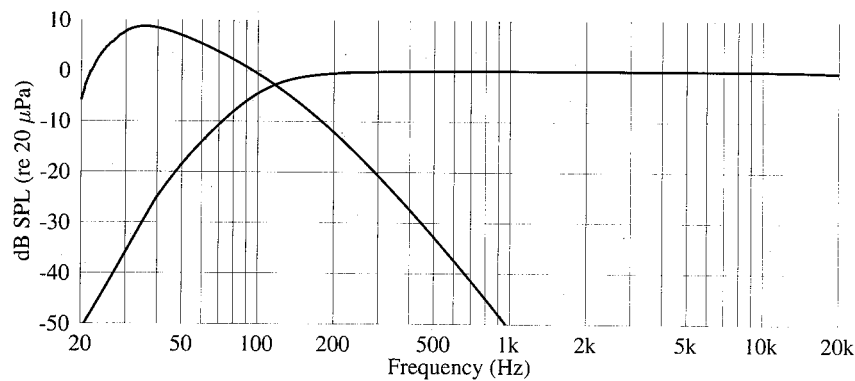


Figure 1. Lowpass and highpass section frequency responses

WARNING

Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures.

Duration Per Day In Hours	Sound Level dBA, Slow Response
8	90
6	92
4	95
3	97
2	100
1-1/2	102
1	105
1/2	110
1/4 or less	115

According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss. Ear plugs or protectors in the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss if exposure is in excess of the limits as set forth above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels such as this amplification system be protected by hearing protectors while this unit is in operation.

TWO + THREE YEAR LIMITED WARRANTY

NOTE: For details, refer to the warranty statement.
Copies of this statement may be obtained by contacting
Peavey Electronics Corporation,
P.O. Box 2898, Meridian, Mississippi 39302-2898.