

digital audio

weiss engineering ltd.

Florastrasse 42, 8610 Uster, Switzerland

☎ +41 1 940 20 06 📠 +41 1 940 22 14

🌐 <http://www.weiss.ch> / <http://www.weiss-highend.com>

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GAMBIT HYDRA / HYDRA-X OPERATING MANUAL



Software Version:

0S: 1.0

INTRODUCTION

Congratulations on purchasing the Weiss Gambit Series HYDRA !

The Hydra takes care of the arising problem to interface various double sampling (88.2kHz / 96kHz) digital audio equipment. Some manufacturers equip their units with two AES/EBU connectors for a double sampling link, i.e. each connector carries one channel at normal frame rate, while other manufacturers prefer the single connector solution at twice the normal frame rate.

Both methods are standardized in the AES3-1992 Amendment 3-1999.

The Hydra unit is a small box with two AES/EBU inputs and two AES/EBU outputs. The following format conversion modes can be selected via a switch:

A) single channel (two connectors / fs) to double channel (one connector / 2fs)

B) double channel (one connector / 2fs) to single channel (two connectors / fs)

C) bypass of one connector to two connectors (Y - function)

An option for the Hydra is a VCXO based PLL for efficient dejittering purposes. With this option installed, the Hydra can act similar to a "Clock-work" (one of our earlier products) in addition to its standard changing features. The dejittering function is active even in mode "C)", so it can act just as a reclocking unit.

Frontpanel / backpanel elements are:

A total of four XLR connectors, a mode switch to select modes "A)", "B)" or "C)", a power on LED, a PLL locked LED and a power connector to connect an external +12V wall type power supply.

Features

- * Auto detection of input sampling frequency
- * Supported input and output sampling frequencies and frame rates: 44.1 / 48 / 88.2 / 96 kHz
- * 24 bit transparent
- * LED for display of three different operating conditions
- * Power-on LED
- * Switch for 1>2 / 2>1 / 1>1 conversion mode selection

OPERATION

Power Supply

Connect a +12V / 400mA power supply to the appropriate connector. It is a 3.5mm Jack connector, tip positive. The unit won't work with false polarity (no damage occurs though).

Operation

Connect the AES/EBU signal(s) to the input and output plugs at the rear of the HYDRA.

The sampling frequencies of the connected signal(s) are measured and validated according to the selected operation mode. The following table shows all possible conversion modes with appropriate input / output signals and "locked" LED indication:

1>1 mode (bypass):

- Sampling frequency / frame rate at input 44.1...96kHz
- Sampling frequency / frame rate at output 44.1...96kHz
- Signal at DI1 is forwarded to DO1 and DO2 simultaneously
- Locked LED: "On" if sampling frequency and AES/EBU format valid. "Off" if no or wrong AES/EBU signal

1>2 mode:

- Sampling frequency / frame rate at input: 88.2..96kHz
- Sampling frequency at output: 88.2..96kHz, frame rate at output: half the frame rate at input
- Connect input signal to DI1
- Outputs channel 1 on DO1 and channel 2 on DO2

- Locked LED: "On" if frame rate and AES/EBU format at input valid. "Blinking" if frame rate out of range. "Off" if no or wrong signal.

2>1 mode:

- Sampling frequency at input: 88.2..96kHz, frame rate at input: 44.1..48kHz
- Sampling frequency / frame rate at output: twice the frame rate at input
- Connect input signal channel 1 to DI1, channel 2 to DI2
- Output on DO1 and DO2 simultaneously (same signal)
- Locked LED: "On" if frame rate and AES/EBU format at input valid. "Blinking" if frame rate out of range. "Off" if no or wrong signal.

VCXO option

The HYDRA-X model has VCXO based PLLs built in. This means that the input frame rates are restricted to the following frequencies within a tolerance of about +-80ppm: 44.1, 48, 88.2 and 96kHz.

The HYDRA-X is capable of reducing jitter from input to output to a high degree. This jitter reduction takes place in all three modes (1>1, 1>2 and 2>1).

Jitter attenuation curve: of the HYDRA-X version (attenuation vs. jitter frequency)

