Balanced Audio Connector

The **Balanced Audio Connector** is a professional USB-to-XLR bi-directional stereo audio codec. It provides unparalleled audio performance with the ease of USB connectivity in any application where digital audio from a computer needs to interface with a professional analog audio system. The NCast BAC is USB powered and solves the myriad of problems caused by using computer sound cards in broadcast and professional audio environments.

The Sound Card Problem

Using the Analog sound interface of the Telepresenter™ to interface with a professional audio system can lead to audio quality problems. The inputs and outputs may be at the wrong levels. The unbalanced interface can create ground loops that cause hum and buzz. Further. the EMI noise inside the Telepresenter™ chassis creates noise. Although these shortcomings may be accepted by a non-technical user, they have no place in a broadcast station or professional audio installation.

The USB Solution

The **Balanced Audio Connector** plugs right into the USB port of the Telepresenter™; no special drivers or software are needed. The
Telepresenter will instantly recognize the **BAC** and present the operater with the appropriate controls.

The **Balanced Audio Connector** has been designed "from the ground up" as a true professional product that solves all of these problems. It delivers impeccable audio quality, XLR connectivity, and the convenience of a simple USB connection to the computer.

TECHNICAL SPECIFICATIONS

- **XLR Analog Inputs X2**
  Balanced, 30K input impedance
  -6 to +8 dBu nominal input level
- **RCA Analog Inputs X2**
  Unbalanced, 10K input impedance
  -10 dBv nominal input level
- **XLR Analog Output X2**
  Balanced, 600 ohm load or higher
  +4 dBu nominal, +26 dBu max level
- **SPKR Output**
  -10 dBv, 3.5mm stereo jack
- **MUTE**
  GPI closure to mute SPKR
- **USB Compliance**
  USB 1.1 or higher
- **Sample Rates**
  32, 44.1, 48 kHz
- **Bit Depth**
  16-Bit Delta-Sigma ADC and DAC
- **Power**
  USB powered
- **Physical**
  5.7" w x 1.7"h x 6.0"d 3 lbs

The heart of the **Balanced Audio Connector** is a Burr Brown Delta Sigma 8X Oversampled codec with SpAct audio clock recovery architecture. The codec's superb performance is further enhanced with a proprietary L/C pre-filtering and edge-of-the-art analog circuitry. This carefully tuned design eliminates the transient intermodulation products caused by inadequate reconstruction filters found in even high-end sound cards. Careful attention to component selection and circuit board layout further enhance the design to yield true Audiophile performance: ultra smooth, open and transparent "un-digital" audio with rock-solid bass and crystal-clear highs. In addition, the units internal switch-mode power system virtually eliminates ground loops through the PC, and allows operation at true professional levels with liberal headroom.

The net result is obvious with a simple listening test: The **Balanced Audio Connector** will sonically outperform the Analog input port on the back of the Telepresenter™.

For The Professional

The **Balanced Audio Connector** provides the quality that professional users require. Its dual-PLL asynchronous design permits simultaneous record and playback. Front panel controls allow precise adjustment of input Level and L/R Balance trim. Output levels are calibrated with recessed trimmers. Rear panel connections include XLRs for balanced analog I/O, Auxiliary unbalanced line inputs, and outputs for amplified speakers. The Speaker output can be muted with an external contact closure via the Mute jack. The steel chassis provides effective RF and EMI shielding. All ICs that connect to the "outside world" are mounted in sockets.

The **Balanced Audio Connector** is 1/3 rack width, and can be rack-mounted on a rack-mount shelf, or can be set on a tabletop.

INSTALLATION

ANALOG LINE INPUT/OUTPUTS

Connect balanced analog inputs and output to the XLR connectors as follows:

PIN 1 = GND, PIN 2 = HI, PIN 3 = LOW

Note: Ground loops cause hum, buzz, and other noises that are created by the Telepresenter Power Supply, fans, drives and other devices and circuits. **Prevent noise by connecting ground wires at one end only.**

The unbalanced AUX IN jacks can also be used; connect them as usual (White = LEFT, Red = Right).

The Speaker outputs can be used to feed an amplified monitor speaker system or computer speakers. Use a 3.5mm TRS plug wired as follows: Tip = LEFT, Ring = RIGHT, Sleeve = GND. The Speaker output level is fixed. The Speaker audio can be muted via a contact closure at the MUTE jack. Use a 3.5mm TRS plug. Connect an external contact closure between the Tip and Sleeve.

TELEPRESENTER CONNECTION: Use a USB cable to connect the BAC to a USB port on the back of the Telepresenter™. **DO NOT USE A USB HUB. CONNECT THE CABLE FROM THE BAC *DIRECTLY* TO THE USB PORT ON THE TELEPRESENTER™.** The Telepresenter™ should recognize the **BAC** as a *USB Audio Codec* and configure itself to use this audio system. No additional software or drivers are needed. The Volume can be set via the Telepresenter™ interface. The BAL trimmer can be used to fine-tune the left/right channel balance. Use a small screwdriver to carefully adjust.

OUTPUT LEVEL CALIBRATION

The **BAC** is calibrated to operate with balanced I/O levels of +4 dBu. Output levels can be changed via the recessed OUTPUT trimmers. Use a small screwdriver to carefully adjust the output level. There is 15 dB of digital headroom above the +4 dBu. A calibration tome recorded at 0 dBfs will produce an output level of about +19 dBu.

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