



## AmpConnect ISC™

### USB Controlled Test Interface for Loudspeakers, Microphones and Headphones

#### Introduction

AmpConnect ISC is a complete, self-contained audio measurement interface which provides a complete solution for measuring speakers, headphones and microphones. Replacing multiple hardware devices, AmpConnect ISC connects to your computer via a single USB cable and is fully integrated with SoundCheck. The initial setup is fully automated; SoundCheck automatically detects when an AmpConnect ISC is connected and reads the factory programmed calibration data - no user intervention is required.

In addition to the audio interface, AmpConnect ISC also provides microphone power, drives speakers and headphones, and includes impedance measurement circuits. Further features include automated control of signal routing, input gain and instrument configuration. Especially useful is complete integration peak level detection and automatic input gain control. When used with SoundCheck the input gain is automatically optimized for every acquisition.

AmpConnect's simple setup and compact package make it ideal for production line applications. The digital I/O ports can be used for communicating with relay boards, lighted pass/fail indicators, footswitches and other devices. The front panel can be disabled, locked out, and the instrument controlled exclusively via SoundCheck to ensure that the hardware is always configured correctly. Furthermore, automated output signal routing and dual microphone inputs allows AmpConnect to be configured to alternate between two test stations, maximizing throughput.

It also offers excellent functionality for the R&D lab. The two independently configurable signal routing options enable virtually any test to be realized – for example they can be used for measuring impedance using the internal reference loads (and Listen's patent-pending high accuracy single channel impedance measurement method), connecting the output of the power amp back to the soundcard for calibration, or sending reference or DUT signals to the outputs.

#### Loudspeaker and Microspeaker Testing

For loudspeaker measurement AmpConnect provides:

- 60W power amplifier output to drive the speaker under test
- Integrated current sense function for impedance measurement
- Dual measurement microphone inputs with low noise pre-amps and automatically controlled gain from -20 to +40 (in 10 dB steps).



AmpConnect ISC

#### Microphone Testing

For microphone testing AmpConnect can be configured to:

- Drive a mouth simulator or source speaker
- Use one microphone input for a reference measurement microphone and the second microphone input to simultaneously measure the device under test



#### Headphone/Headset Testing

For headphone and headset test, AmpConnect can:

- Connect and power up to two ear simulators / couplers using the built in pre-polarized microphone power supplies and pre-amplifiers
- Directly drive typical headphone drivers with the integrated headphone amp
- Drive a source speaker or mouth simulator to test a microphone integrated in to the headset with the power amplifier output

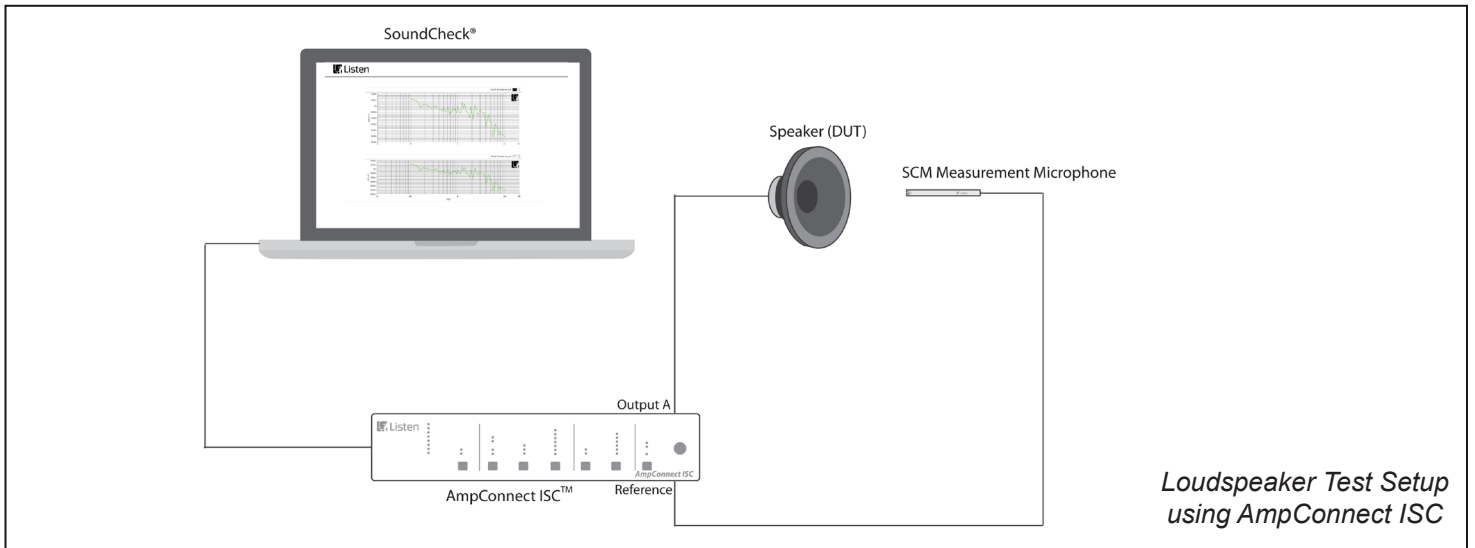


#### Feature Overview

- All components for testing loudspeakers, headphones and microphones in a single unit with just one USB connection to the computer
- True plug and play operation and fully integrated with SoundCheck
- Automated control via SoundCheck or manual control via the front panel interface.
- Rugged and rack-mountable for demanding production environments
- Excellent ground loop immunity compared to discrete components
- Clear indications (software and LED) that microphone, DUT, and power amplifier levels are all operating within maximum dynamic range
- Unique patent pending high accuracy single channel impedance measurement

## AmpConnect ISC (cont.)

### Setup Diagram



### Specifications

#### Audio Interface

2 Channel, balanced inputs and outputs, supports up to 44.1 kHz sample rate and 24 or 16 bits.  
 Input Dynamic Range: 110 dB typical  
 Output Dynamic Range: 114 dB typical  
 Input/Output Coupling: AC  
 Amplitude linearity:  $\pm 0.3$  dB  
 Amplitude Flatness: 20 – 20 kHz  $\pm 0.25$  dB  
 THD @ 1 kHz: 0.001% typical  
 Crosstalk @ 1 kHz: -110 dB  
 Phase Linearity:  $\pm 5$  degrees

#### Power Amplifier

Continuous Output Power: 60W RMS into 4 $\Omega$ , 47W RMS into 8 $\Omega$   
 Frequency Response: -0.5dB at 20Hz; -0.2dB at 20kHz  
 THD at 60W, 4 Ohms: 0.019%  
 Voltage Gain: +26.4dB, +/-0.1dB

#### Loudspeaker Current Measurement

Z-High = 1V/A +/-1%  
 Z-Low = 100mV/A +/-1%  
 Output Impedance = 0 $\Omega$

#### Internal Sine Generator

Output Level: 0dBV (1V RMS) +/-0.1dB  
 Output Frequency: 1kHz +/- 1Hz

#### Reference & DUT Inputs

Gain: -20dB to +40dB in 10dB steps  
 Maximum input at -20dB: 100V RMS  
 Maximum input at +40dB: 100mV RMS  
 Frequency Response: -3dB at 20Hz & 150kHz;  
 IEPE Bias: 10mA, 20VDC (max)  
 ECM / Electret Bias: 500mV - 12 VDC through 2.2k $\Omega$

#### USB 2.0 Interface

All front panel functions USB controllable  
 Front panel can be locked out via USB  
 Outputs automatically disabled upon USB disconnect or PC shutdown

#### Physical

Without rack mounting flanges: 17 in. wide, 2-Unit (3-1/2 in.) high, 11 in. deep  
 Weight: 7 lbs (3.2kgm) approx.  
 Power: 85 – 264VAC 50/60 Hz, 150 Watts (max)



*AmpConnect ISC Rear View*

NOTE: Specifications are subject to change. Please contact Listen for current information or questions.