TalkBox
ACOUSTIC GENERATOR - STIPA REFERENCE

Made in Switzerland

STIPA REFERENCE IN ACC. WITH IEC 60268-16

SYSTEM LINE-UP

PRECISE FLATNESS

CALIBRATED LEVEL

Introduction

The TalkBox is an active acoustic signal generator for speech intelligibility measurements of evacuation and announcement systems, as well as for level alignment of teleconference or any audio system incorporating a microphone input. In combination with the XL2, it facilitates complete end-to-end evaluation of the speech intelligibility STIPA from the talker's microphone to the listeners' ears.

The TalkBox simulates a human talker (60 dBA @ 1 meter according to the IEC 60268-16 standard) with the STIPA test signal and spoken messages. Further it provides a wide range of test signals like sine, pink noise, white noise and delay.

The TalkBox features human head-like dimensions and is based on a solid-state generator. It replays the STIPA test signal with a precise frequency response, individually equalized for each TalkBox, also ensuring best performance through the internal amplifier and the precision loudspeaker. A variety of supplied or user-defined test signals may be faithfully reproduced for different alignment application areas.

Application Areas

› Evacuation System Commissioning

› Installed Sound System Calibration

› Classroom testing

› AV Installations

TalkBox

Portable and easy to operate

Output Mode

Mute LineOut

CF Card

Select Track

Play

Clip

Line In

Line Out

CF Card containing
Test Signals & Calibration Data

DC Input
Remote Mute
Input

Stand Mounting
Adapter

Power Amplifier and
Signal Processor

How can a TalkBox help you?

The TalkBox is a professional tool that simplifies STIPA measurements. It combines sound samples, an amplifier, and a loudspeaker into a lightweight, human-head-sized box. It delivers the built-in equalized acoustic test signals at exactly the levels specified by the standard. Pop it onto a microphone stand to position it where the mouth of the human speaker would normally be.

The NTi Audio TalkBox removes the uncertainties and reduces your effort, as it is designed precisely for this use; it assists you in testing the entire signal path, including the microphone and the acoustic environment. Also, the Line Out connection may be used to inject test signals into systems which do not include an announcement microphone.

Testing the whole signal chain

The TalkBox, together with the XL2 Acoustic Analyzer, are used to test the entire signal chain from the speaker's mouth to the listeners' ears, considering the acoustic environment of both the sending and the receiving rooms.

Acoustic Input
> Microphone
  (Frequency Response & Distortion)
> Room Acoustics
> Background Noise

Audio Processing
> Distortion
> Noise
> Limiter
> Amplifier

Acoustic Output / Distribution
> Speakers
  (Frequency Response & Distortion)
> Room Acoustics
> Background Noise

Calibrating Conference Systems

Teleconference systems play a significant role in today's connected world, allowing companies to communicate seamlessly across continents. Proper system alignment, delivering consistent speech levels and excellent intelligibly is a key success factor for the installing company.

The conference participants expect that they be allowed to concentrate on the business topics at hand and not be distracted by any inadequacies or failures in the communication system. NTi Audio equipment provides you with the tools to align the systems and rooms with excellence and confidence.

The NTi Audio TalkBox simplifies and improves the setup of microphones, system levels and equalization. It generates a reference human speech signal or other standard audio test signals, so that entire conference systems can be adjusted by a single person. Additional test signals support the determination of system flatness and response effects e.g. in teleconference applications.

The TalkBox generates all test signals for professional conference room setup. Typically the TalkBox is placed at measured reference points, those being each anticipated speaking position in the room. The XL2 then objectively measures speech intelligibility at the different listening positions.

The TalkBox is also often used to objectively determine the intelligibility of speech in rooms where no amplification system is used, such as in classrooms. In this case only the acoustic environment is tested. The TalkBox is placed at the teacher's usual speaking position while the XL2 objectively measures speech intelligibility at the different student positions.

Essential TalkBox features

Typical Frequency Response (meets the specified ±1 dB tolerance band IEC 60268-16 requirement)
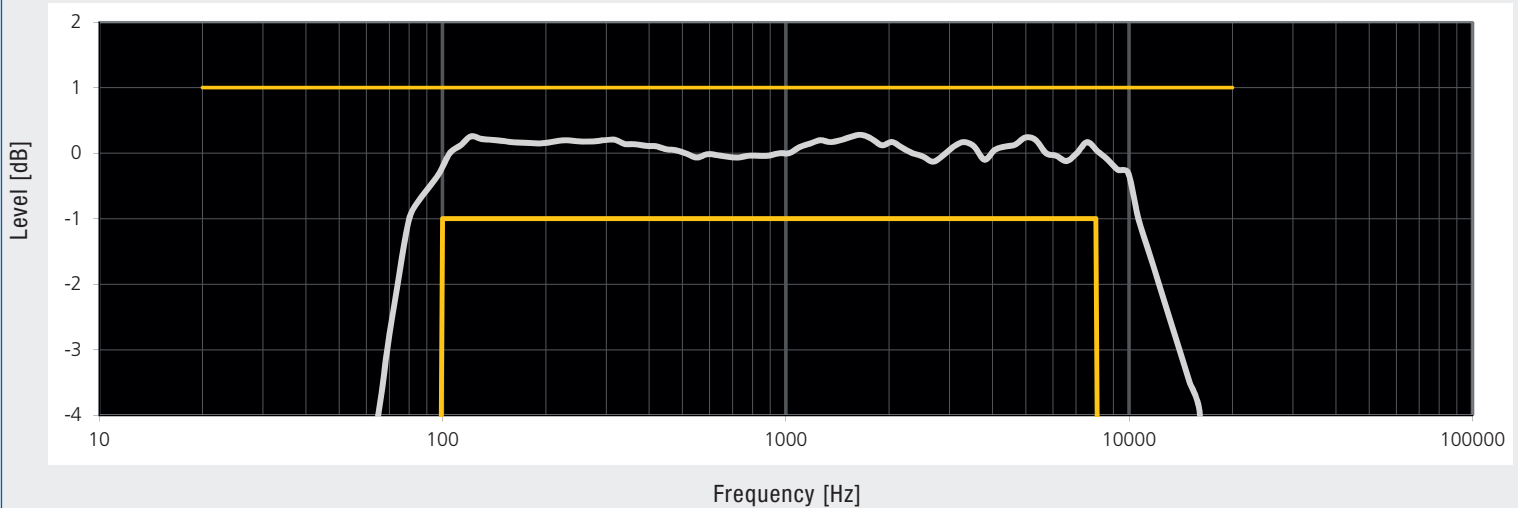
Individually Equalized

The NTi Audio TalkBox includes a precision broadband loudspeaker. Precise flatness of ±1 dB over the relevant frequency range and the highest reproduction quality are guaranteed by individual equalization and calibration using advanced FIR filtering and DSP technology. The radiation characteristic complies with ITU-T P.51 in wide ranges.

Calibrated Output Level

The IEC 60268-16 standard specifies a sound pressure level for a speaker simulator of 60 dBA at 1 meter distance. The TalkBox output levels are calibrated to comply with this standard. To avoid operating failures the TalkBox has no volume control.

Balanced Line Out

Using the balanced Line Out, the TalkBox operates as an audio signal generator. Deviations in sampling frequency - a dangerous trap when using CD players for STIPA measurements - are eliminated.

Universal Power Supply

The TalkBox supports a power supply range of 10 - 18 VDC. An external power supply for worldwide operation is included.

Standard and Custom Signals

The TalkBox also generates additional waveforms; white noise, pink noise, sine wave, reference speech signals and the delay time measurement chirp. Custom signals may be loaded onto the CF Card and are seamlessly looped.

Lombard Effect

Human voices tend to rise in level in emergency situations. In order to reproduce this so-called Lombard effect, all STIPA-related signals are additionally available at an increased level of 70 dBA at 1 meter distance.

Balanced Line In

Any external signal can be connected to the system using the balanced Line In. The signal is simultaneously looped to the Line Out and reproduced through the internal DSP to the loudspeaker.

Technical Specifications

TalkBox	

Waveform	• Up to 15 different signals
	• Waveforms can be added / changed by the user
	• Factory signal set:
	  NTi Audio STIPA Test Signal, Reference Speech Signal,
	  Sine 1 kHz, White Noise, Pink Noise, Delay Time Chirp

Line Out	• XLR, balanced 100 Ω, unbalanced 50 Ω • Maximum output level: +18 dBu
Line In	• XLR, balanced 38 kΩ • Maximum input level: +18 dBu • Internal delay XLR input to speaker: 59 ms
CF Card	• 512 MB included, FAT32 formatted • Wave file format: 16 bit, 44.1 kHz mono
Acoustical Flatness	• STIPA band levels (on-axis) • typ. < ±0.5 dB @ 24°C • typ. < ±1.0 dB @ 10°C – 30°C

Acoustical Output Level	• STIPA: 60 dBA @ 1m ± 0.5 dB,
	  acc. IEC60268-16
	• STIPA band sensitivity gradient:
	  - 0.07 dB / °C (average)
	• Others see track list in user manual

Power Supply	• 10 - 18 VDC, 10 W • External switching power supply included (for worldwide usage 100 V .. 240 V)
External Mute	Jack 3.5 mm (1/8") Floating switch required
Mounting	• Mic Stand 5/8" with Adapter to 3/8"
Dimensions	• L x W x H: 150 x 150 x 175 mm (5.9 x 5.9 x 6.9 inch)
Included Accessories	• Mains Power Adapter • CF Card • Soft Carrying Case
Weight	• 3.5 kg

Related Products

Signal Generator

Analog Audio: Minirator MR-PRO

Analyzer

XL2 Analyzer with STIPA Option

Sound Source

DS3 Dodecahedron Loudspeaker and PA3 Amplifier

TalkBox »