

How To ...

Measure Speech Intelligibility

This document provides a practical guide on how to use professional instruments to measure speech intelligibility in venues with Public Address systems used for evacuation and life safety as well as general public announcements.



Exel Acoustic Set
Installed Sound Solution



TalkBox Acoustic Generator

What you Need:

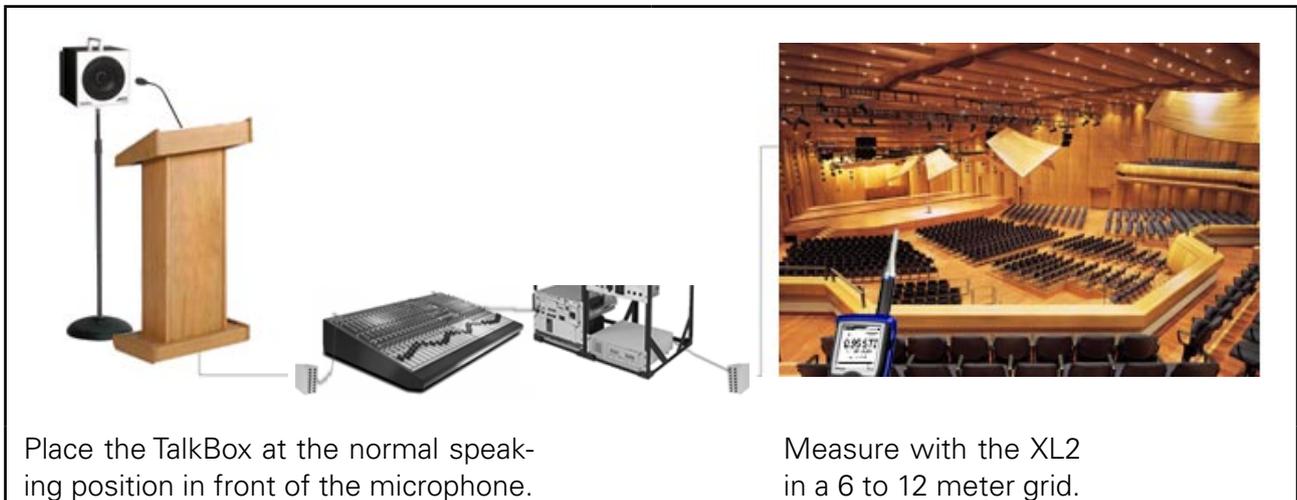
Exel Kit for Speech Intelligibility Measurements

including

- XL2 Audio and Acoustic Analyzer
- STIPA Option for XL2
- M4261 Measurement Microphone
- Minirator MR-PRO Signal Generator
- ASD Cable for XL2
- Cable Test Plug (MR-PRO)
- 2x Mains Power Adapters
- 3x Calibration Certificates
- Exel System Case
- TalkBox Acoustic Generator

How to Measure Speech Intelligibility STIPA

The XL2 quantifies the intelligence of speech in your installed system.



Place the TalkBox at the normal speaking position in front of the microphone.

Measure with the XL2 in a 6 to 12 meter grid.

1. Measure Background Noise (with a full room)

- On the XL2, select STIPA from the main menu, and “Noise Correction” from the second menu.
- Turn Ambient Noise Correction On.
- At a time when the room is full of people and the background noise is at a level you would expect during announcements, click MEASURE to measure the background noise.
- Click SAVE to save the noise file.



2. Measure STI (with an empty room - perhaps at night)

- On the TalkBox, select the STIPA signal (signal number 1) and play it through the microphone.

Alternatively, play the STIPA signal with an MR-PRO directly into the system.

- Adjust the gain of your system until the STIPA signal can be heard at the normal operating level of the system.
- On the XL2, select **123** from the second menu.
- On the XL2, press the Play button.
- Remain silent during the next 15 seconds while the STI value is measured.





- The ambient-noise-corrected STI value is shown. “Measured” shows the STI value without the ambient noise corrections.



- If the STI value measured is close to the limit specified in the design requirements of your installation then select Avr from the second menu on the XL2.

- Click ADD CYCLE to measure again from the same measurement position. Repeat for at least 3 cycles. The deviation Δ should be less than 0.03.

- Click FINISH.

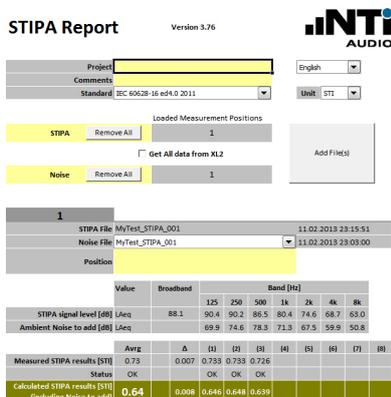


- Result is Auto-saved. Click KEEP.

- Move to the next measurement position in the room and start a new series of measurements.

3. Create an STI Report

- Once all of your positions have been measured, connect your XL2 to your PC via USB and select “Mass Storage” on the XL2.



- Open the Reporting Tool *

- Click the “Get All Data from XL2” checkbox.

- The measurement data is automatically loaded into the report, and your Speech Intelligibility report generated.

- Add your text to the description fields.

- HINT: You can right-click and replace the NTi logo with your own logo

* <https://my.nti-audio.com/support/xl2/download/NTi-Audio-STI-Report.zip>