LISTEN INC

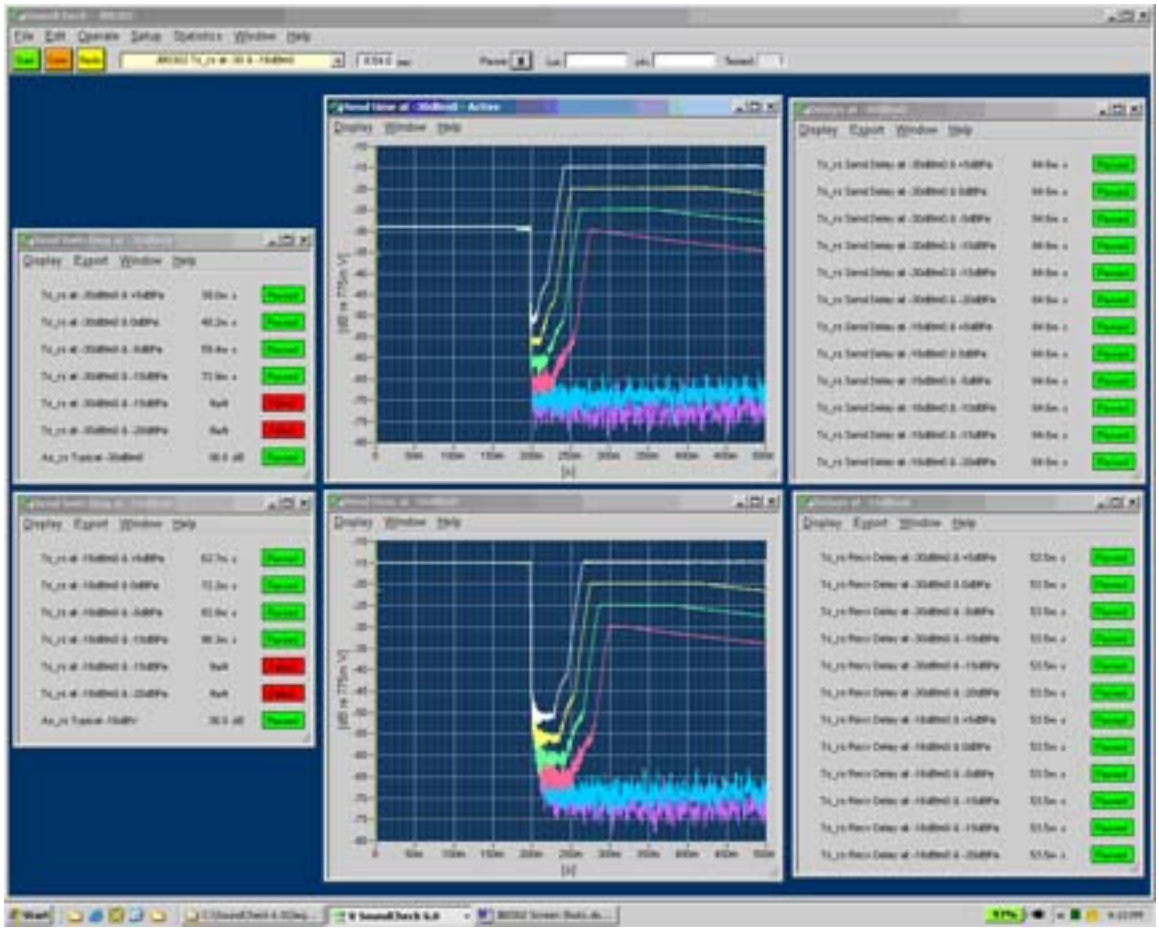
Transforming Sound into Knowledge

Sequence Note

IEEE 1329-1999 Voice Switching Measurements
Clause 10 of Standard Method for Measuring Transmission

Introduction

This set of application sequences (part number 3103) measures various switching time parameters on speakerphones. With an appropriate interface between the phone and the sound card, the sequences can be used with either analog or digital telephones.



Send Switching Time

The measurements generally follow IEEE 1329-1999, Clause 10 “Voice switching measurements.”

Since this is a measurement standard, not a performance specification, there are no limits or pass/fail criteria included. User-defined pass/fail limits can be added using standard SoundCheck tools.

Completely prompted sequences for calibration of all the transducers are included. After a one-time setup with a Sound card and other user-specific interfaces, the sequences are automatic. They run by simply selecting, pressing start, and following prompts where user interaction with the device under test is required.

Tests included:

- Receive volume control setting
- Send and receive threshold, with 3 levels of introduced noise
- Send and receive buildup and hangover time at three levels
- Send and receive VAD (voice activity detector) time at two levels
- Send and receive switching time, at various levels
- Attenuation range (measured during switching time measurements)
- Send and receive takeover time, at various levels

Most timing tests are performed with 1004Hz tone bursts and analysis of the response envelopes.

Threshold measurements are made using 3 short bursts at approximately 1004Hz, with level measurements of each burst compared.

Many measurements include a conditioning signal prior to the actual measurement, to increase the probability that the phone is measured in a stable and reproducible state.

Required Equipment

Hardware

Mouth Simulator

Power amplifier (if needed to power mouth simulator)

SoundConnect Microphone Power Supply

SCM microphone or equivalent

Acoustic calibrator

For Hoth noise, also add:

4 – small loudspeakers

Power amplifier (for all 4 speakers in parallel)

Software

SoundCheck 6.1 Telephone Testing R&D Package Part Number 1105

or alternative package including:

2005 RTA

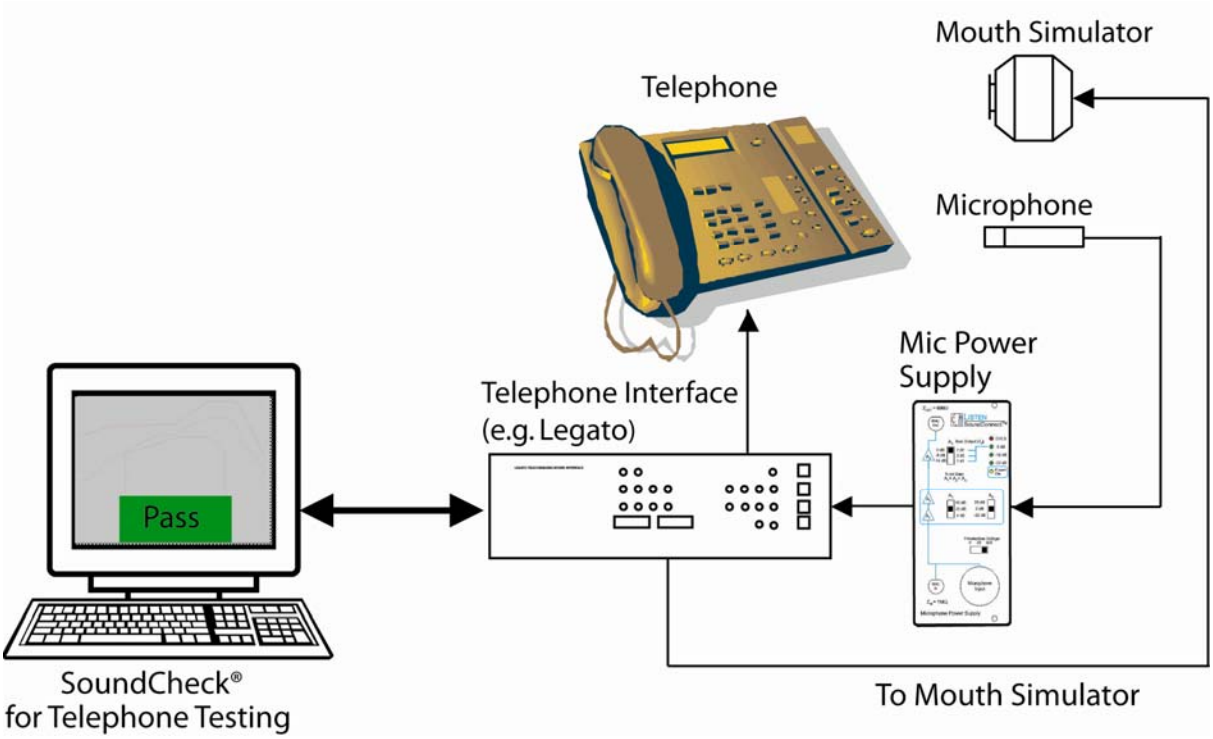
2013 Wave file equalization

2007 Loudness rating

2009 Statistics

Note: This sequence has only been verified to work with SoundCheck version 6.1. If you are using a different version, please check with your sales engineer before purchasing.

System diagram



Setup and calibration

Due to the complex nature of this sequence, please refer to the detailed instructions that are provided as part of the package.