

Multi-Speech, Model 3700

Low-Cost Speech Analysis Software

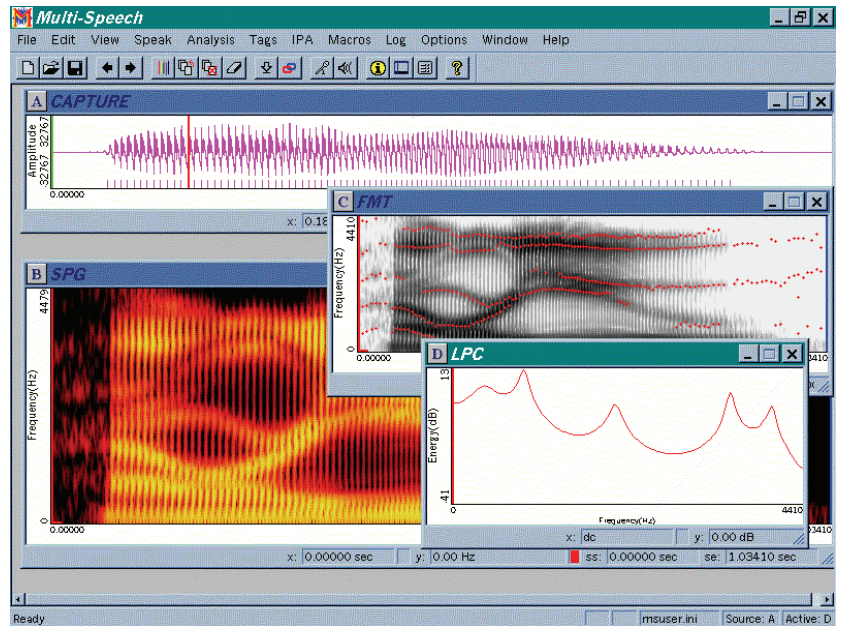
Introduction

Multi-Speech™, Model 3700, software is a low-cost, Windows®-based, speech analysis program, which uses standard multimedia hardware (e.g., Sound Blaster® boards) to capture, analyze, and play speech samples. Multi-Speech software brings KayPENTAX quality to the Windows-based software product category.

Applications

Multi-Speech software is a comprehensive speech recording, analysis, feedback, and measurement program. It includes the same analysis features as CSL™ software, the most widely used speech analysis system. Multi-Speech software also has numerous application-specific program options. It is only limited by the specifications, features, and S/N limitations typical of audio devices in the host computer. If you are using a professional-level device (e.g., CSL, DAT, ADAT, etc.), or your application does not require robust acoustic measurements, Multi-Speech software is ideal. For measurements, or when budgets allow, consider a CSL system. Multi-Speech software is also ideal as an option for CSL so that multiple users can analyze signals acquired by CSL.

Multi-Speech software, with the caveats noted above, can be used for teaching, research, voice measurements, clinical feedback, second language articulation, and forensic work.



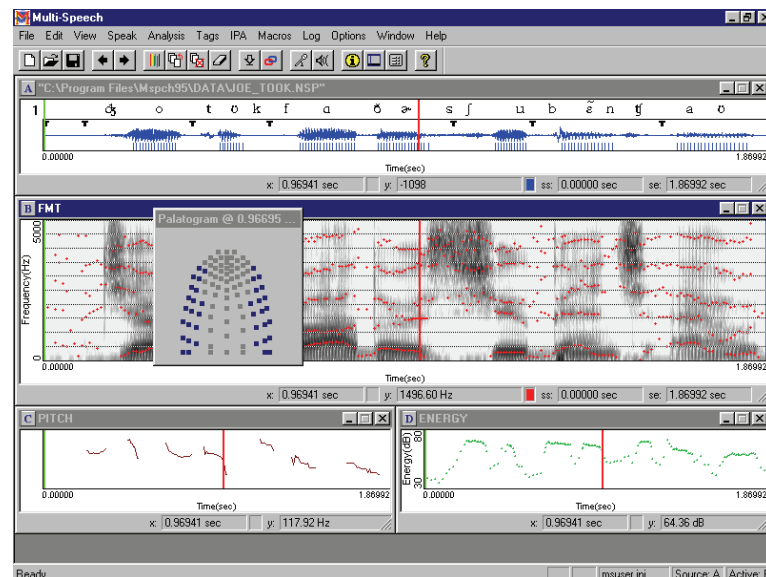
Example of Multi-Speech screen with waveform (A), colored spectrogram (B), gray-scale spectrogram with formant history (C), and LPC formant analysis (D). All graphic views have cursors and numerical analysis. All views are sizable and movable.

Easy to Use

Although powerful, Multi-Speech software is easy to use. Extensive online Help and tutorials guide the user. Commonly performed functions are on the toolbar or are accessed by defined keys (e.g., the F3 key plays the signal). All functions are available on the pull-down menus. A feature called macros stores a list of functions which can be recalled. Multi-Speech software is delivered with many pre-written macros, and users can create their own as well. Macros make it easy to automate teaching lessons or clinical protocols. For example, Multi-Speech software includes a macro that loads a speech file, filters the signal to sound like a phone connection, and illustrates the spectrum changes typical of a phone connection. Other macros automate clinical protocols so that evaluation and feedback with clients are quick and easy. Reports are easy because all graphic displays include complete numerical analysis and automatic statistical analysis.

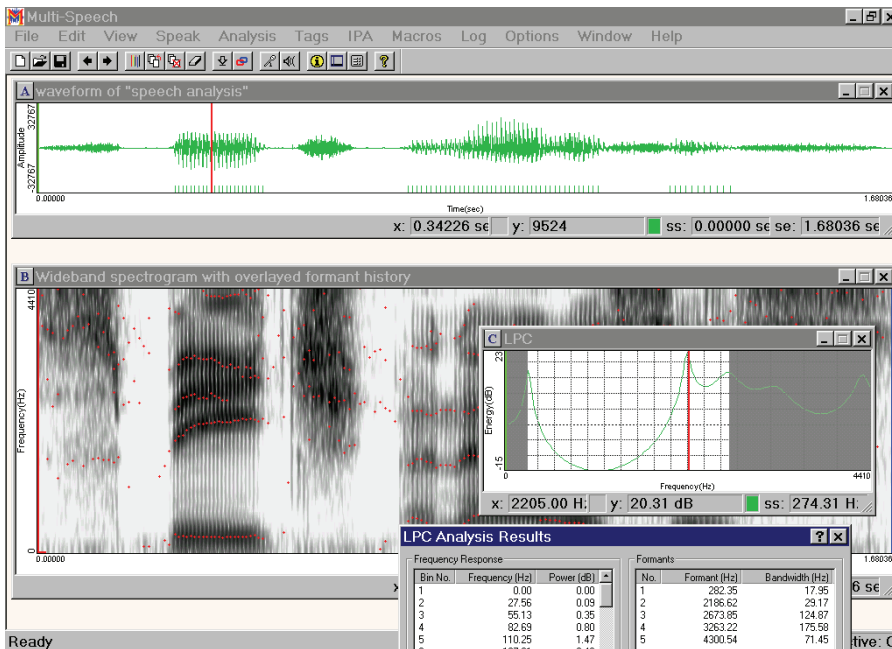
Powerful

Multi-Speech software's ease of use is complemented by the powerful feature set of the program. Every function can be adjusted to suit even advanced research requirements. For example, the spectrographic analysis has adjustments for nine filter bandwidths, four window weightings, full scaling, color, pre-emphasis, and dynamic range.



The screen above is from a sample macro and signal file delivered with Multi-Speech software. Window A shows the IPA symbols time-linked to the speech waveform with glottal impulse markers. Other windows show a spectrogram with formant tracking, a pitch contour, an amplitude contour, and a palatogram, all linked together so that cursor movement shows the different palatometer patterns with the associated acoustic analysis.

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Comprehensive graphic and numerical analyses are available for the rich array of easy-to-use Multi-Speech features. The LPC-derived formant frequencies are shown above.

Features

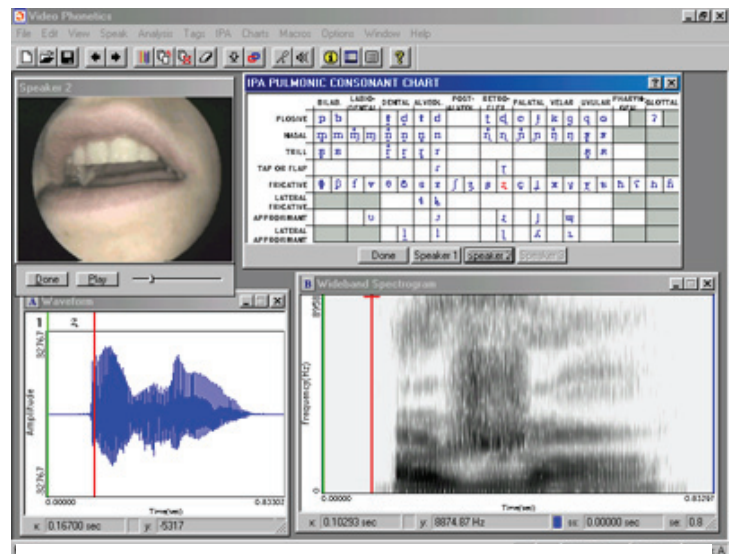
- ◆ Capture and play with any sampling rate
- ◆ Up to eight channels of data
- ◆ Read and write to CSL or .wav file format
- ◆ Complete IPA symbols
- ◆ Editing includes cutting, pasting, digital filtering, and appending
- ◆ Complete online Help and tutorial
- ◆ Analysis includes multiple pitch extraction methods, pitch-synchronous LPC, glottal event markers, FFT, formant history, spectrogram, energy, etc.
- ◆ Logging of cursor values
- ◆ Macros to repeat operational steps
- ◆ Learn mode to memorize steps
- ◆ Tags, storable with signal
- ◆ Complete suite of features for each analysis and editing command
- ◆ All 32-bit, MDI-compliant for fast operation

Summary

Multi-Speech software is a low-cost, powerful, and easy-to-use speech analysis tool with many optional programs. These are ideal for research, teaching, and clinical applications. Multi-Speech, because it is based on the CSL (the leading speech analysis system), includes a wide array of functions and features for speech professionals.

Software Options for Multi-Speech

- Analysis-Synthesis Laboratory (ASL)
- Applied Speech Science for Dysarthrias
- Applied Speech Science for Voice & Resonance Disorders
- Auditory Feedback Tools
- Disordered Voice Database and Program
- Games
- Motor Speech Profile
- Multi-Dimensional Voice Program (MDVP)
- Neuroscience for Human Communications
- Palatometer Database
- Phonetic & Perception Simulation Programs
- Phonetic Database
- Real-Time EGG Analysis
- Real-Time Pitch
- Real-Time Spectrogram
- Respiration, Phonation and Prosody Simulation
- Signal Enhancement Program
- Sona-Match
- Speech Articulation: Animation of Muscle Vectors
- Video Phonetics Program and Database
- Voice Range Profile Program



The Video Phonetics Program shown above is one of many optional programs for Multi-Speech software. Programs are targeted at clinical, teaching, and research applications.

Multi-Speech software requires a host PC computer (Pentium >266 MHz, CD-ROM, 16 MB RAM) and sound device. Multi-Speech is compatible with Windows 2000 and Windows XP.



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