



# IBM PC Voice Communications Application Program Interface Reference

## IBM PC Voice Communications Application Program Interface Reference (6280743)

The IBM PC Voice Communications Application Program Interface (API) Reference can help experienced programmers create their own applications for the IBM PC Voice Communications Adapter. The API Reference enables programmers to write voice communications applications by issuing commands at the API level.

Voice communications applications can include programs that emulate modems; recognize, record and play back voice; synthesize speech; dial telephone numbers; monitor telephone lines; and transmit data files.

To use the API Reference, programmers should be familiar with PC Assembly Language, a high-level programming language, and how the two interact.

The API Reference consists of two instruction manuals and one toolkit diskette. The manuals provide information on the following functions:

- Telephone Management—allows an application to dial phone numbers and monitor outgoing calls
- Line Monitoring—enables applications to detect incoming telephone signals, including the DTMF tones generated when the keys on a touch-tone phone are pushed
- Asynchronous Communications—provides Bell 103/212 modem emulation and Asynchronous Communications protocols for data transmission over telephone lines
- Audio Record—provides the capability to receive, digitize and compress audio input and send the resulting data to the application<sup>1</sup>

<sup>1</sup>The IBM PC Voice Communications Option provides three compression modes to meet differing voice quality and storage requirements. Recording rates and minutes per megabyte of storage are:

Bytes per second	Minutes per megabyte
3.6K	4.5
2.4K	6.8
1.8K	9.2

## Other IBM PC Voice Communications Software

Program	Announcement Number
IBM PC Voice Communications Operating Subsystem—to provide IBM PC Voice Communications Adapter functions and control them	SA-111
IBM Voice/Phone Assistant—to use a personal computer as a sophisticated answering service	SA-112
IBM Voice-Activated Keyboard Utility—to enable software developers to create voice-command programs	SA-113
IBM Augmented Phone Services—to provide special telephone services for the hearing or speech impaired	SA-115
IBM Personal Telephone Manager Program or IBM Personal Telephone Manager Program / Voice Communications Option—to link your telephone to an IBM Personal Computer	SA/HA-116

- Audio Playback—enables applications to reconstruct data into audio output signals and send the signals to an output device<sup>2</sup>
- Speech Synthesis—provides the capability to generate speech—from ASCII text strings—for transmission through an output device
- Voice Recognition—enables applications to translate voice commands into program input

The toolkit diskette provides the programmer with hands-on experience and instruction on voice communications applications. It includes a tutorial that guides developers through voice recognition exercises.

The diskette also contains three sample programs that show key adapter functions. A Text-to-Speech Sample Program, for example, converts ASCII files to synthetic speech. A Record/Playback Sample Program records and plays back audio files. And a Telephone Dialer Sample Program dials telephone numbers by using pulse tones.

<sup>2</sup>Each voice command is made of several audio signals, separated from each other with short pauses.

## Highlights

The IBM PC Voice Communications Application Program Interface Reference can help programmers develop programs that:

- Connect one telephone, one or two telephone lines, one microphone and one speaker to an IBM Personal Computer
- Recognize touch-tone signals as entered data
- Generate tone signals to automatically dial telephone numbers
- Generate pulse dial tones to allow automatic dialing on pulse phone systems
- Detect call progress signals: busy, ringing, voice or silence
- Support Asynchronous Communications protocols at data transmission rates of 110, 300 or 1200 bits per second
- Support MODEM (Modulate/Demodulate) functions compatible with Bell 103A and Bell 212A standards
- Digitize and compress voice or other audio received through a connected telephone, telephone line or microphone

- Generate synthetic speech from ASCII data streams, enabling the PC to "read" text and data to the user through a connected telephone, telephone line or speaker
- Translate spoken commands into keyboard commands

#### **System Requirements**

- One of the following IBM Personal Computers with at least 256KB of memory:
  - IBM Personal Computer
  - IBM Personal Computer XT™ system
  - IBM Personal Computer AT® system
- Two double-sided diskette drives, or one double-sided diskette drive and one fixed disk drive
- One of the following displays:
  - IBM Personal Computer Color Display with either the IBM Color/Graphics Monitor Adapter or the IBM Enhanced Graphics Adapter
  - IBM Personal Computer Enhanced Color Display with the IBM Enhanced Graphics Adapter, which supports the enhanced text mode
  - IBM Monochrome Display with the IBM Monochrome Display and Printer Adapter
  - Other compatible display
- IBM PC Voice Communications Option with appropriate telephone, microphone and speaker connections as required
- IBM Disk Operating System (DOS) 2.10 or higher

#### **Compatibility**

The IBM PC Voice Communications Application Program Interface Reference is compatible with and requires the IBM Personal Computer Disk Operating System Version 2.10 or higher and the IBM Voice Communications Operating Subsystem Program.

#### **Installation and Operation**

Information pertaining to the installation and operation of the IBM PC Voice Communications Application Program Interface Reference is contained in the documentation shipped with the product. It is the user's responsibility to install and operate the API Reference following the guidelines contained in the documentation.

#### **Security, Auditability and Control**

User management is responsible for the evaluation, selection and implementation of security features, for administrative procedures, and for appropriate controls in application systems. User management may wish to pursue the application of cryptography if sensitive data is sent over external communication facilities.

#### **Customer Responsibilities**

The customer is responsible for program setup and operation and for implementation of backup procedures, applicable problem determination procedures, and appropriate security measures to limit the risk of unintended modification, destruction or disclosure of sensitive data.

#### **Packaging and Publications**

IBM PC Voice Communications Application Program Interface Reference is distributed as a two-volume book with one double-sided diskette.

#### **Warranty – U.S.**

The IBM Program License Agreement with standard Limited Warranty provisions applies to this software product (standard 90-day, media-only Licensed Program provisions).

#### **IBM Program License Agreement**

A copy of the Agreement is packaged and shipped with each program and is visible to the customer before opening the package. The customer is advised that opening the package indicates acceptance of those terms and conditions. No signature is required.

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