

TextSpeakTM

Model TS-04 -W

Wireless Speech Keyboard System 2.0

Users' Guide



Overview

TextSpeak™ TS-04 text-to-speech speaker and wireless keyboard system instantly converts typed text to a natural sounding voice. The easy-to-use speaker/keyboard combination works right out of the box without setup, and speaks with an unlimited vocabulary.

- Easy to use AAC Augmentative Communication Device
- Just type to talk, use any speakerphone to talk over a phone line
- Nothing to learn, ready to work when you open the box!
- Programmable phrase storage using integrated *FLASH* memory
- Operates on AC wall adaptor or batteries
- Uses exclusive Digital Acoustics® technology

TS-04 SPEAKER CONTROLS AND CONNECTIONS



LED Status Display

- On continuously
 - Flashing quickly
 - Flashing slowly
 - Flashing very slowly
- Active/Normal – waiting to Speak
Synthesizing Speech
Function key phrase recording in progress
Battery “standby” operation

Power Modes and Battery Operation

AC Adapter Operation

A 9-volt AC power adaptor is supplied with the TS-04. AC powering permits you to leave the TS-04 on all the time and be ready to use instantly when you type on the keyboard.

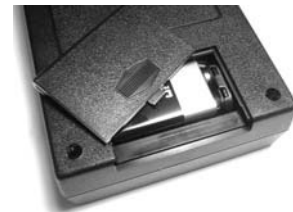
The wireless keyboard has a 10-foot range to enable portable typing across a room.



Portable/Battery Operation

Battery operation is enabled automatically if the AC power is not used or detected.

Press the **ON/OFF** button to control power in AC or battery modes




Smart powering modes: (Battery operation only)

Smart power management prolongs battery life and may provide weeks of usage before requiring a new battery in the speaker

- **Standby** - When the keyboard is not used to generate speech for **Power** 3 minutes the TS-04 will enter Sleep Mode.
- **Resume** - Press the space bar 2-4 times in quick succession to 'wake **Power** up the TS-04 from sleep mode.
- **Auto Off** - After 10 minutes of inactivity the TS-04 will automatically turn off to conserve battery power. Pressing the "END" key will also turn the power off and may be used at any time.

NOTE: The TS-04 keyboard has automatic ON/OFF powering and extremely long battery life. Normal use requires battery replacement of 2 AAA batteries only once every 6-12 months. Refer to Appendix A to learn more about keyboard battery replacement.

Low Battery Indication:

 When the low battery indicator is flashing change the 9 Volts Battery in the TS-04 or use external AC power.

Getting Started

TextSpeak TS-04 system includes 2 components, the speech generating speaker and a wireless keyboard. For normal operation, simply press the Power ON/OFF switch, type on the keyboard, press ENTER, and you're ready to start talking!



TS-04 Speaker TS-04 Keyboard

Step 1:

Connect AC Power or install a 9-volt battery



Step 2:

Press the white **On/Off** button on TS-04 Speaker for powering

Step 3:

Type on the keyboard **H e l l o** and **press Enter** to 'speak' your first word! Type other words or phrases, press **Enter** again, and you'll be typing and talking!

Power Modes and Battery Operation

AC Adapter Operation

A 9-volt AC power adaptor is supplied with the TS-04. AC powering permits you to leave the TS-04 on all the time and be ready to use instantly when you type on the keyboard.

The wireless keyboard has a 10-foot range to enable portable typing across a room.



Portable/Battery Operation

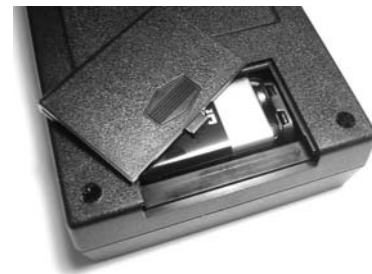
Battery operation is enabled automatically if the AC power is not used or detected.

Press the **ON/OFF** button to control power in AC or battery modes

Smart powering modes: (Battery operation only)

Smart power management prolongs battery life and may provide weeks of usage before requiring a new battery in the speaker

- **Standby** - When the keyboard is not used to generate speech for **Power** 3 minutes the TS-04 will enter Sleep Mode.
- **Resume** - Press the space bar 2-4 times in quick succession to 'wake **Power** up the TS-04 from sleep mode.
- **Auto Off** - After 10 minutes of inactivity the TS-04 will automatically turn off to conserve battery power. Pressing the "END" key will also turn the power off and may be used at any time.



NOTE: The TS-04 keyboard has automatic ON/OFF powering and extremely long battery life. Normal use requires battery replacement of 2 AAA batteries only once every 6-12 months. Refer to Appendix A to learn more about keyboard battery replacement.

Low Battery Indication:



When the low battery indicator is flashing change the 9 Volts Battery in the TS-04 or use external AC power.

Typing To Talk

To start using the TS-04 press the speaker Power ON/OFF switch, wait until the blue Active indicator is ON, and begin typing to talk. There is no ON/OFF switch for the keyboard. It powers on instantly every time you begin typing and powers off automatically.

To talk, type a word or phrase, then press the enter key.

If you make a mistake typing just press the backspace key to delete the last key-press entry (or words) while typing.



*In normal operation TextSpeak waits to speak until after the **ENTER** key is pressed!*

Advanced features such as auto-repeat, saving phrases, continuous speech generation and speaking over telephones are described below.

Using Function Keys to Say Phrases

Function keys can be used to store commonly used phrases. After programming, pressing any function key will speak the pre-programmed phrases.



A total of 32 phrases are available. F1 and F2 pre-allocated to special factory stored phrases. 30 other phrases are programmable.

F1 is pre-programmed to speak

"Hello, I cannot speak and will be using a speech synthesizer"



F2 is pre-programmed to speak

"Please be patient while I type responses"



F3 to F12 are User Programmable



Function key phrases are recorded and saved to memory after the TS-04 is powered off.

"Alt" and "Control" key combinations may be used to store 20 additional phrases. Hold down (or press and release) the ALT or CTRL key, *then* press the desired Function Key (F3 to F12) to program recorded phrases.



Storing Speech Keyboard Phrases To Memory

Record a Keyboard

Step 1

Press Press the **accent/tilde** key

Listen Listen for the reply "**Press F Key**"



Step 2

Select Press the desired key by pressing F3 to F12

Wait Wait for the confirmation of the key number to be spoken

Note: 10 phrases may be stored using F3 to F12. 20 additional phrases may be used by adding the ALT and CTRL key with keys F3 to F12. To program these press the ALT or CTRL key *before* the each function key.

Step 3

Type Text Type the text or phrase wish to record

Press ENTER Press the 'Enter' key to stop recording

Listen Listen for the audio reply "**O.K.**", *indicating success*

Step 4

Verify Press **the function key to verify the phrase**

- The ESC (Escape) key may be used to cancel a phrase recording sequence
- Saved phrases pressed sequentially will be spoken in order *and combined*.
- Phrases are saved in memory when power is removed.

SAMPLE PHRASES

F3	<i>My name is John Russell, I live at 2, Main Street</i>
F7	<i>Please contact by brother at 203-820-1234</i>
CTRL+F3	<i>Tomorrow</i>
ALT+F3	<i>I am OK, thanks</i>
ALT+F4	<i>I would like to eat</i>
ALT+F5	<i>I would like to call home</i>


Speaking on a telephone line

You can use TextSpeak TS-04 to speak directly into a telephone using any standard speakerphone.

Simply place the TS-04 speaker near the phone and the distant caller will hear your typed phrases *loud and clear*.














Adjusting Volume and Speech Generation Speed

+/-  The Hi and Lo Switch on the TS-04 controls 2 levels of volume. If more adjustment is required press the keyboard Arrow Up and Arrow Down keys multiple times.

Talking Speed (time between each word) is adjustable in 4 steps. To slow down talking speed, press the Left Arrow multiple times. To speed up speech, press the Right Arrow multiple times. If you wish to save the settings as a power up default, refer to Appendix A.

Special Key control commands

	Enter	Press to speak a typed phrase (default mode)
	Page Up	Sentence Mode (speak when <i>Enter</i> is pressed)
	Page Down	Spelling Mode (speak every letter typed)
	Program	(refer to "Storing Phrases" in previous section)
	'Escape'	Cancel current action
	'Slash'	Repeat last phrase
	End	Power off command
	Arrow Down	Volume Down
	Arrow Up	Volume Up
	Arrow Left	Slow down speech playback
	Arrow Right	Speed up speech playback

FUNCTION KEY WORKSHEET

F1	<i>Hello, I cannot speak and will be using a</i>
F2	<i>Please be patient while I type responses</i>
F3	Available for saved phrases
F4	Available for saved phrases
F5	Available for saved phrases
F6	Available for saved phrases
F7	Available for saved phrases
F8	Available for saved phrases
F9	Available for saved phrases
F10	Available for saved phrases
F11	Available for saved phrases
F12	Available for saved phrases

"ALT" KEY + FUNCTION KEY COMBINATIONS

ALT F3	Available for saved phrases
ALT F4	Available for saved phrases
ALT F5	Available for saved phrases
ALT F6	Available for saved phrases
ALT F7	Available for saved phrases
ALT F8	Available for saved phrases
ALT F9	Available for saved phrases
ALT F10	Available for saved phrases
ALT F11	Available for saved phrases
ALT F12	Available for saved phrases

"CTRL" KEY + FUNCTION KEY COMBINATIONS

CTRL F3	Available for saved phrases
CTRL F4	Available for saved phrases
CTRL F5	Available for saved phrases
CTRL F6	Available for saved phrases
CTRL F7	Available for saved phrases
CTRL F8	Available for saved phrases
CTRL F9	Available for saved phrases
CTRL F10	Available for saved phrases
CTRL F11	Available for saved phrases
CTRL F12	Available for saved phrases

Appendix A Changing voice, language and settings

The TS-04 is capable of supporting 2 voice styles as well as English and Spanish languages. Selecting these may be made by entering a special "Setup Mode"

Pressing the 'CTRL' and "S" key enables "Setup Mode"



- E** Press "E" to alternate language between English and Spanish.
(For Spanish, the "ñ" key is mapped at the English ";" key)
- V** Press "V" to alternate voices between Female and Male.
- F** Press "F" to restore all original factory volume and voice settings.
- S** Press "S" to save settings. This stores the current voice and language setting in memory. The current selection of volume and speech rate will also be saved and used as the new power up default setting.

Appendix B Replacing Keyboard Batteries



When keyboard batteries are replaced wireless links must be restored for speech to be generated

Keyboard batteries should normally be replaced every year. However, when batteries are removed a special CONNECT process MUST be used to reactivate the keyboard link to the TS-04. ***This process is ONLY needed for KEYBOARD batteries. The TS-04 9v main battery does not require this process.***



Step 1

- Locate the 2 AAA keyboard batteries
- Locate position of "CONNECT" button



Step 2

- Depress **BOTH** ON/OFF *and* SPEAKER buttons **simultaneously** for 2 seconds
- Wait for Speech Audio phrase "Press Keyboard Connect Now"



Step 3

- Press the red CONNECT button on the underside of the keyboard.
(Location is next to the battery compartment)

Specifications

Size and Weight

TS-04 Speech Generating Speaker

- L: 5.3 inches W: 4.0 inches H: 1.5 inches W: 10 oz

TS-04 Wireless Keyboard

- L: 13 inches W: 7 inches H: 1.2 inches W: 1 lb 2 oz

Power and Battery

Speaker Operation

- 9 Volt AC Adaptor
- Battery 9V Alkaline MN1604 or Equiv
- Battery Life (Est) 100+ Hours based on 10 minutes/hour use

Keyboard Operation

- Auto Power On/Off
- Battery 2 AAA Alkaline
- Battery Life (Est) 6-12 months

Keyboard Access

- Wireless QWERTY Full Size, Mini-keyboard 2.4Ghz , 3 Meter range

What's In The Box?

- One TextSpeak TS-04 Speech Generating Speaker
- One TextSpeak Wireless Keyboard
- Power transformer for DC Operation
- Batteries
- Instruction manual

Technical – How the TS-04 Works

- Unlimited Phoneme Based Word Generation
- Sleep mode power use 125 mW
- 24 mHz Flash Based DSP Processor with integrated Codec
- 2KB Flash hold 30 Items for phrase storage
- Real time conversion for streaming text

The TS-04 Speaker performs text-to-speech synthesis based on concatenative unit samples. The units can vary from whole words down to phonemes. A corpus of pre-recorded words is stored in flash memory using patented multilevel storage (MLS) memory and a mapping of the various sub-word parts is held in a lookup table. Speech creation is achieved by combining concatenation units of speech elements to produce words. Speech may be generated in real time, with unlimited vocabulary

The system process flow includes Text Normalization, Words to Phoneme, Phoneme Mapper, MLS, Memory and Audio D/A Conversion.

Keyboard/Speaker Radio links utilize via 2.4 GHZ Channel Hopping Transceivers.
External Keyboards (TS-04K), incorporate auto-detecting PS/2 Keyboard connectors

Technical Support

Technical support is available M-F 9AM - 5PM EST

Telephone: (203) 557-0222

Email: tsupport@textspeak.com

TextSpeak Design Group

Westport, CT 06880

www.TextSpeak.com

This document may contain advance information. Contact factory for technical specification before product design and/or use. Design and specifications are subject to change without notice. This product is NOT INTENDED to be used for life-safety or medical critical care alarms and/or notifications. TextSpeak™ and Digital Acoustics® are trademarks of Digital Acoustics Corporation © 2008/2011 (D03-TS04C_Users-1X.docu 0910)