

TextSpeakTM

Users' Guide



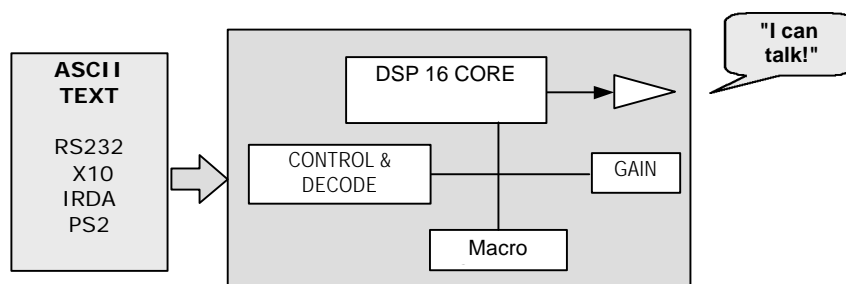
TTS-03-SPL
Speech
Synthesizer
Module

OVERVIEW

TextSpeak™ text synthesis modules speak directly with ASCII input

TextSpeak Text-To-Speech processor converts ASCII text to a natural, voice with unlimited vocabulary. It is the first board level solution that accepts direct PS/2 and RS-232 input to provide speech from standard AT keyboard *or* serial data.

- Unlimited vocabulary, American English voice
- Flexible input options for fast design-in
- 10 macros available with non-volatile storage.
- Optional IrDA infra-red input for PDA
- Low voltage, low power and auto-power down
- Priced for cost sensitive applications
- Small footprint, 1" x 2", with standard .1" header



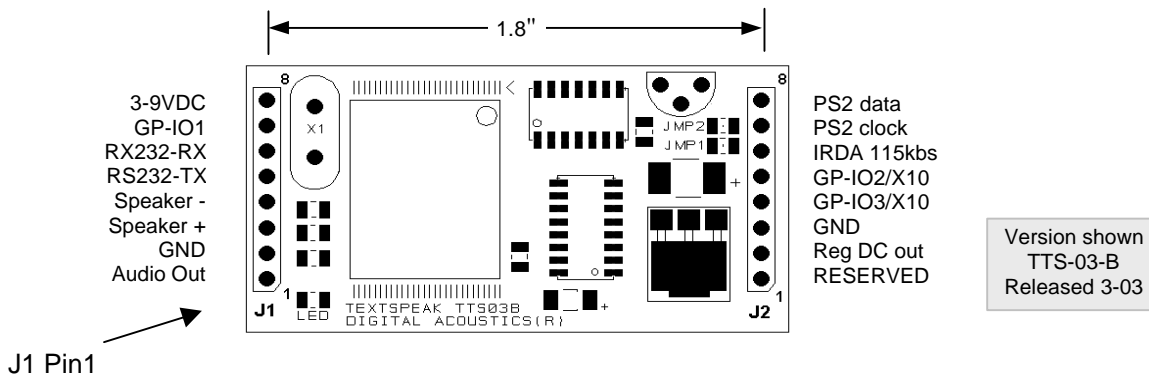
Applications

- Assisted speech aid
- Alarm and security
- Learning and language tool
- Internet data reader
- Machine and control interfaces
- Sight impaired text confirmation
- Streaming text reader

Other Applications include:

Wireless audio transmitters and information systems, Email/SMS Readers, GPS/Navigation Systems, Warning systems, Machine accessories, Hobby and experiment, Smart Pagers, Products for visually, speech and mobility impaired individuals.

CONTROLS AND CONNECTIONS



PIN	Signal	Description
J1-1	Audio Out	Speech output nominal 1v p-p into 10K (software adjust in 4 dB steps)
J1-2	GND	System ground
J1-3	Speaker +	+ Headphone level output 300 mw max (8ohm)
J1-4	Speaker -	- Headphone level output 300 mw max (8ohm)
J1-5	RS232-TX	Serial status output text 9600 kbs default
J1-6	RS232-RX	Serial ASCII text input 9600 kbs default (256 character buffer)
J1-7	GP-IO1	General Purpose I/O (selectable output, OEM specified)
J1-8	Power DC	7- 12VDC @ 75 ma with JMP2 installed (default), 5 vdc with JMP1 installed & JMP2 removed
J2-1	Reserved	Test pin, do not connect
J2-2	Reg DC	5vdc output from on-board regulator (50 ma max)
J2-3	GND	System ground
J2-4	GP-IO2 / X10	General Purpose I/O (default condition is logic LOW)
J2-5	GP-IO3 / X10	General Purpose I/O (default condition is logic LOW during speech generation only)
J2-6	IRDA data	IRDA compatible signal (requires external PIN detector and licensed development code)
J2-7	PS2 data	PS2 'AT' keyboard signal for direct keyboard speech
J2-8	PS2 clock	PS2 'AT' keyboard signal for direct keyboard speech

OEM-TTS-03 RS-232 interface - low level commands

TextSpeak will speak the phrases you type in real time. Press the Enter key, <CR>, to begin a speech playback. You may also type freely and TextSpeak will automatically start speaking after a buffer of 5-10 words has been entered.

IMPORTANT: Use lowercase or sentence case for normal speech
(To spell letters directly, separate by spaces, such as A B C or I B M)

The F12 key (or "~" character) will toggle operation between Word Mode and Sentence Mode

- Sentence mode will commence speech after the Enter key is pressed.
- Word mode will commence speech after a word is typed and space is pressed.

Auto-repeat Adding a forward-slash "/" at the end of a sentence will provide a method to repeat a phrase automatically at an interval specified in BTR command. **Forward-slash character sequences must have a leading space after the text of the phrase to be repeated.** For example to repeat the word Hello 3 times enter:

"hello ///

Single Character Controls

<CR> is the convention for *Enter, Carriage Return* (ASCII 13, 0xD)
Single Character Controls must be uses within <CR> pairs; example <CR> (<CR>

)	Volume Up (must be entered twice for a 4 dB step, 7 steps - 28db)
(Volume Down (must be entered twice for a 4 dB step, 7 steps - 28db)
~	Toggle Word/Sentence mode
<esc>	Cancel current action
,	Macro record must be the beginning and end marker, for keyboard input only. See 'Recording Macros'
/	Repeat (must follow a space and precede the <CR>, and may be repeated example <i>hello<space> // <cr></i> for 2 repeats of "hello")

<CR> and Period will commence a phrase session in all modes
Space will commence a session in Word Mode Only (enabled by F12 or ~ character)

Low Level Command Set

Commands MUST be capital letters and entered in a single line
<CR> *BTCOMMAND* <CR>

BT	OK
BTS	RS-232 Speed change 0,1,2 (for 9.6 19.2 and 115.2 kbs respectively). Speed change will occur immediately after the <CR> For added security, speed changes are not stored in non-volatile memory unless BTW is entered. After a BTW the module MUST be contacted at the new baud rate.
BTW	Write current configuration to non-volatile memory, including speed changes
BTE	Restore non-volatile memory to factory default (confirm at prompt with second "E" and <CR>)
BTI	Product ID revision
BTR	Auto-repeat setting Format N:I (Number of repeats : Interval in seconds) 9 repeats at 9 seconds maximum 9:9
BTX	Reserve for X10 default codes
BTO	Enter default OEM data, spoken on power-up. 10 character maximum
BTN	Send default OEM data to RS-232
BTZ	Reset

Streaming text via RS-232

Text may be continuously sent to the TTS-03 using SOFTWARE (ctrl q/s) RS-232 handshaking (flow control). *The last character in a flow controlled text message MUST be a space to trigger an end of text sequence!*

LED display

- On continuous
 - Flashing quickly
 - Flashing slowly
- Normal Operation
Synthesizing Speech (Active)
Key macro recording in progress

Technical Support

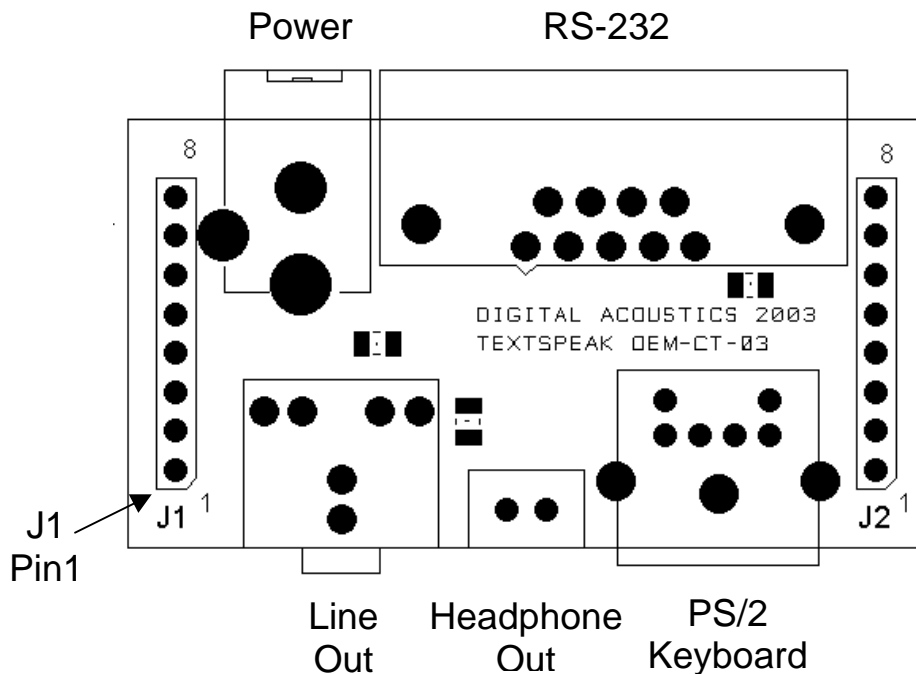
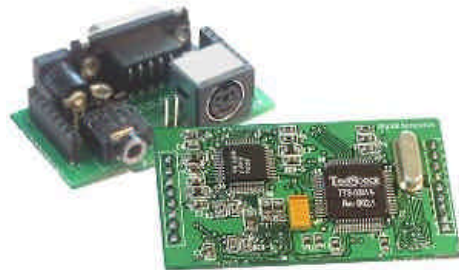
Information online www.digitalacoustics.com
Email tsupport@digitalacoustics.com
Telephone +1 (203)-227-6267 M-F 9-5

Using the TTS-03 evaluation mini-motherboard

TTS-03 optional mini-motherboard provides all the connections for test and evaluation of your TTS-03 module.

Features include:

- 5-12 vdc power options
- Direct speaker drive on header
- Line Out 3.5 mm jack
- PS/2 Keyboard jack on 6 pin mini-din
- RS-232 connection on DB-9 female connector



###

Digital Acoustics Corporation 1 Compbeach Road, Westport, CT 06880 U.S.A.

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. Digital Acoustics' product designs are packaged by leading manufacturers around the world. Digital Acoustics® is a registered trademark.

© 2003 2004 Digital Acoustics Corporation (D0100604-b106c)