

This is the Revision A version of the [SpeechQV RoboBrick](#). The status of this project is [work in progress](#).

SpeechQV1 Robobrick (Revision A)

Table of Contents

This document is also available as a [PDF](#) document.

- [1. Introduction](#)
- [2. Programming](#)
- [3. Hardware](#)
 - ◆ [3.1 Circuit Schematic](#)
 - ◆ [3.2 Printed Circuit Board](#)
- [4. Software](#)
- [5. Issues](#)

1. Introduction

The SpeechQV1 RoboBrick is used to output synthesized speech. It uses the [Quadravox QV306M4–TTS](#) module.

This module requires that a piece of text be entered into a text to diphone converter. The Quadravox documentation gives a good 60 second overview of what diphones are and why they are used in speech synthesis. Quadravox provides a text to diphone converter that runs on the Windows® operating system with the purchase of QV306–TTS module. The Quadravox software is based on the t2a software written by Tom Jennings that is currently available at <http://www.wps.com/products/Story–Teller/technical/T2A/>. (Tom's version is based on some software written by John Wasser.) Once the text has been converted to diphones, the diphone sequences are downloaded into the SpeechQV1 RoboBrick for eventual output as synthesized speech using the QV306M4–TTS module.

2. Programming

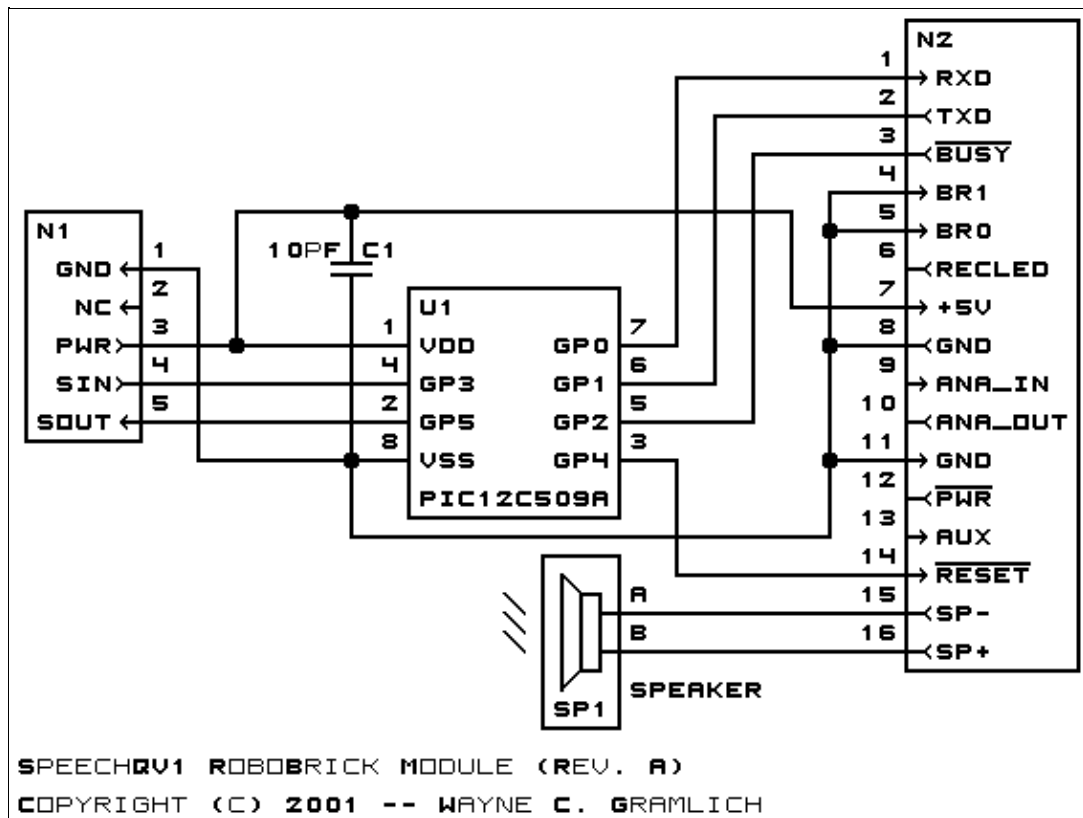
There is no programming specification yet.

3. Hardware

The hardware consists of a circuit schematic and a printed circuit board.

3.1 Circuit Schematic

The SpeechQV1 RoboBrick schematic is shown below:



This board requires a special cable that connects the 2×8 header on the RoboBrick (N2) to the 1×16 header on the QV306M4–TTS.

The parts list kept in a separate file --- [speechqv1.ptl](#).

3.2 Printed Circuit Board

The available printed circuit boards are listed below:

[speechqv1_back.png](#)

The solder side layer.

[speechqv1_front.png](#)

The component side layer.

[speechqv1_artwork.png](#)

The artwork layer.

[speechqv1.gbl](#)

The RS–274X "Gerber" back (solder side) layer.

[speechqv1.gtl](#)

The RS–274X "Gerber" top (component side) layer.

[speechqv1.gal](#)

The RS–274X "Gerber" artwork layer.

[speechqv1.drl](#)

The "Excellon" NC drill file.

[speechqv1.tol](#)

The "Excellon" NC drill rack file.

4. Software

There is no software yet.

5. Issues

The following fabrication issues came up:

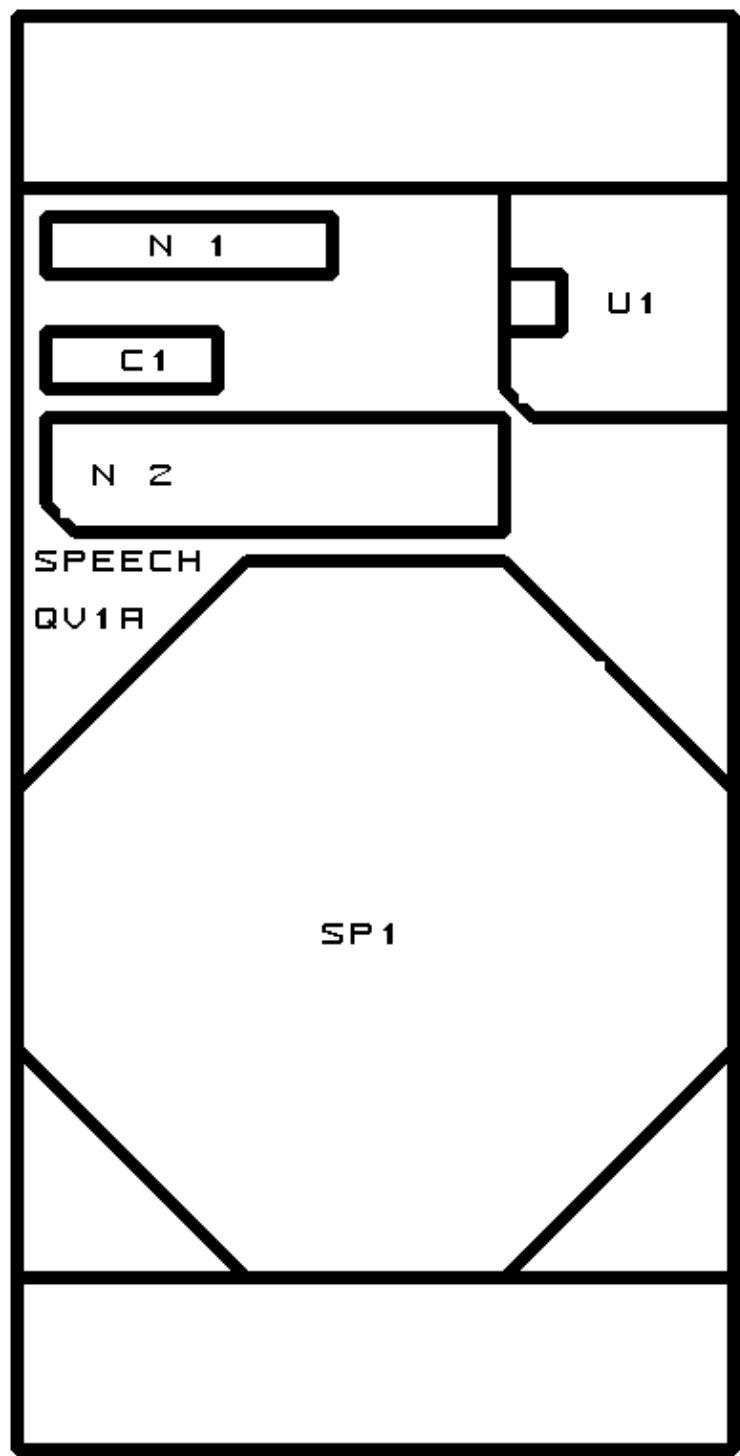
- The speaker holes are too small (size 2) and need to be at least size 3.
- The connection cable needs to be documented.
- The parts list needs to mention the connection shell and pins.
- Think about providing a place to mount the QV306M–TTS.

[Copyright](#) (c) 2001–2002 by [Wayne C. Gramlich](#). All rights reserved.

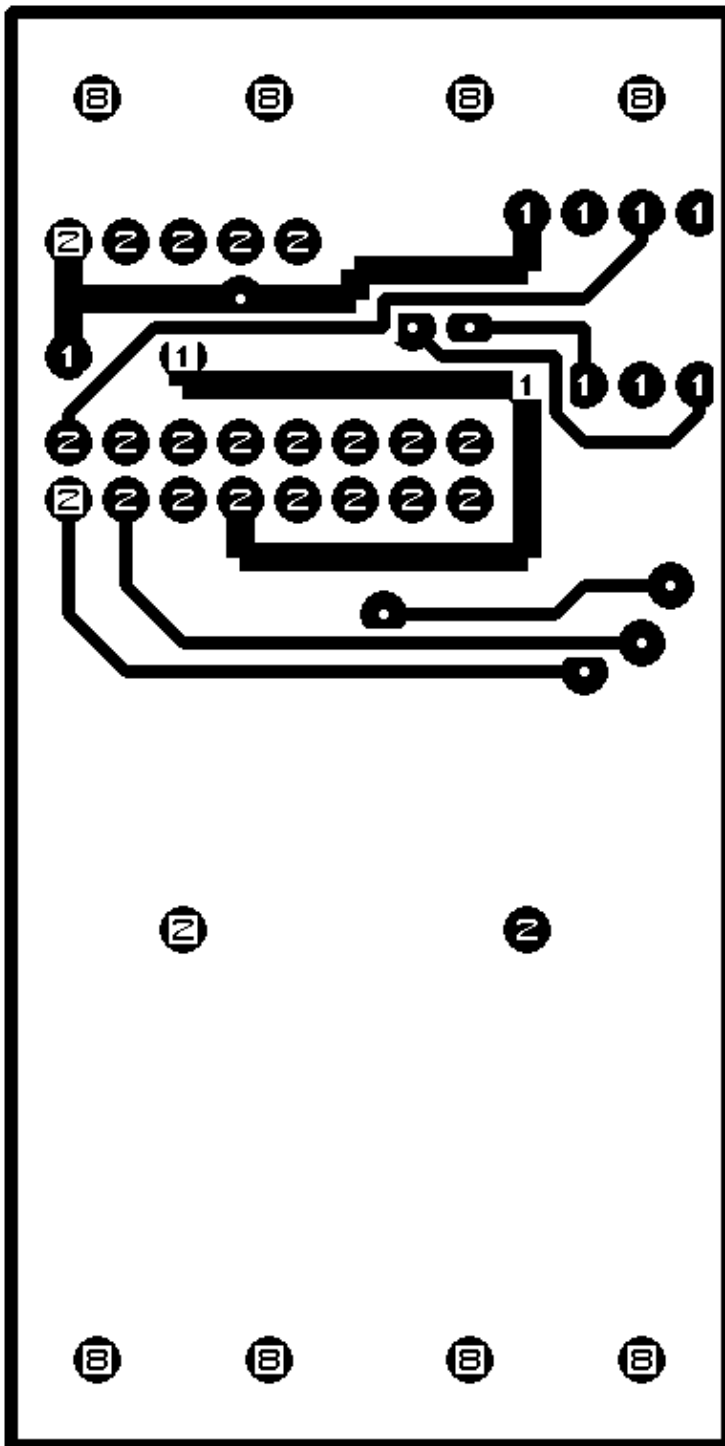
A. Appendix A: Parts List

```
# Parts list for SpeachQV1 RoboBrick (Rev. A)
#
C1: Capacitor10pF - 10 pF Ceramic Capacitor [Jameco: 15333]
N1: Header1x5.RBSlave - 1x5 Male Header [5/40 Jameco: 160881]
N2: Header2x8.SpeechQV1 - 2x8 Male Header [16/80 Jameco: 117196]
SP1: Speaker - [Jameco: 135722]
U1: PIC12C509.SpeechQV1 - Microchip PIC12C509 [Digikey: PIC12C509A-04/P-ND]
```

B. Appendix B: Artwork Layer



C. Appendix C: Back (Solder Side) Layer



D. Appendix D: Front (Component Side) Layer

