

# STEVE JACOBY ENTERPRISES

THE ULTIMATE IN ADAM (TM) SOFTWARE

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DEAR VALUED CUSTOMER:

WE ARE DELIGHTED THAT YOU HAVE PURCHASED THE ATTACHED BOOKLET WHICH WILL INTRODUCE YOU TO THE WONDERFUL WORLD OF MAKING ADAM(TM) TALK!

PLEASE MAINTAIN A POSITIVE MENTAL ATTITUDE AS YOU READ THE VARIOUS WARNINGS, CAUTIONS AND LIABILITY/WARRANTY AND "HELP ME" TYPE STATEMENTS. WE ARE SURE THAT YOU UNDERSTAND WHY SUCH ITEMS MUST BE INCLUDED.

THE FACT IS THAT "SUPER TALK" IS AN EXTREMELY SIMPLE DEVICE IN EITHER KIT OR FINAL FINISHED FORM. IT WILL TAKE ONLY ABOUT 30 MINUTES TO GET ORGANIZED TO BUILD YOUR KIT. THIS INCLUDES THE TIME YOU WILL SPEND FINDING A SOLDERING IRON, LONG NOSE PLIERS WITH SIDE CUTTERS AND SOLDER. THAT'S ALL YOU NEED! YOUR SECOND 30 MINUTES WILL BE SPENT IN CAREFUL ASSEMBLY OF YOUR KIT. YOU CAN THEN PLUG IN AND TALK.

IF YOU DO NOT HAVE A PROGRAM READY TO GO, THEN AN ADDITIONAL 30 MINUTES WILL BE SPENT CRUNCHING THE CODE WE HAVE GIVEN YOU INTO YOUR COMPUTER. THE TOTAL ELAPSED TIME FROM UNWRAPPING TO TALKING IS 90 MINUTES - NO MORE!

IF YOU HAVE NOT YET PURCHASED THE KIT OR THE FINISHED AND TESTED UNIT, WE ANXIOUSLY AWAIT YOUR ORDER. PLEASE ALSO NOTE OUR "SUPER TALK" SOFTWARE CLUB INFORMATION IN THE BOOKLET.

SINCE YOU HAVE ALREADY PURCHASED THE MANUAL SEPARATELY, YOUR PRICE FOR THE KIT IS \$47.00 AND FOR THE FINISHED AND TESTED UNIT - \$87.00. THESE PRICES INCLUDE THE FREE SOFTWARE.

THE SUPER TALK PROGRAMS IN TAPE OR DISK FORM ARE AVAILABLE FOR \$19.95.

THANK YOU AGAIN - AND HAPPY COMPUTING!

SINCERELY,

STEVE JACOBY



YOU HAVE JUST PURCHASED THE KEY TO A NEW WORLD OF COMPUTER TECHNOLOGY - THAT OF VOICE SYNTHESIZATION! EVEN IF YOU DO NOT BUILD THE "SUPERTALK" KIT OR PURCHASE THE FINISHED SYNTHESIZER, THE INFORMATION THAT FOLLOWS WILL BE OF GREAT EDUCATIONAL BENEFIT TO YOU. THIS BOOKLET CONSISTS OF THREE PARTS. THESE ARE: KIT ASSEMBLY INSTRUCTIONS - ADAM(TM) SOFTWARE GUIDE - FREE PHONETIC PROGRAMMING GUIDE

### KIT ASSEMBLY INSTRUCTIONS

**WARNING:** DO NOT PROCEED TO UNPACK THE KIT OR FINISHED SYNTHESIZER UNTIL YOU HAVE READ THESE INSTRUCTIONS IN THEIR ENTIRETY AND FURTHER AGREE WITH THE WARRANTY/GUARANTEE/LIABILITY STATEMENT AT THE END OF THE ASSEMBLY INSTRUCTIONS.

THE FOLLOWING TOOLS ARE NEEDED TO ASSEMBLE YOUR KIT: LONG NOSE PLIERS WITH SIDE CUTTER - ELECTRONICS TYPE FINE POINT SOLDERING IRON - ELECTRONIC SOLDER. NOW, CAREFULLY REMOVE THE KIT COMPONENTS FROM THE PACKAGE. DO NOT TOUCH THE WIRE ENDS OF ANY OF THE PARTS, OR THE OIL FROM YOUR FINGERS COULD CAUSE CONTACT PROBLEMS LATER. TAKE SPECIAL CARE IN HANDLING THE TWO INTEGRATED CIRCUITS, AS JUST A SLIGHT JOLT OF STATIC ELECTRICITY CAN 'ZAP' THESE MODERN MIRACLES OF ELECTRONIC WIZARDRY. THE PC BOARD SHOULD ALSO BE GIVEN MINIMAL HANDLING. LET'S NOW TAKE AN INVENTORY OF PARTS: SSI-263 SPEECH SYNTHESIZER CHIP ( ) PC BOARD ( ) 74LS74 IC CHIP ( ) CONNECTOR 5024 ( ) 2.2 K/1/4/5% RESISTOR ( ) 3.3 K /1/4/5% RESISTOR ( ) 4.7 K /1/4/5% RESISTOR 24 PIN DIP-SOCKET ( ) 14 PIN DIP-SOCKET ( ) 10 MF ELECTROLYTIC CAPACITOR 16 V (P6616), 2 EACH ( ) ( ) 0.047 POLYESTER CAPACITOR ( ) 0.1 POLYESTER CAPACITOR ( ) AUDIO CONNECTOR ( ). IF YOU NEED TO ORDER A REPLACEMENT PART BECAUSE IT IS DEFECTIVE OR MISSING, USE THE PARTS ORDER FORM. IF, AFTER ASSEMBLY, YOUR KIT DOES NOT WORK AND YOU NEED HELP, USE THE HELP ME FORM.

NOW PROCEED TO ASSEMBLE THE KIT AS FOLLOWS:

1. INSERT THE 24 PIN DIP-SOCKET INTO THE PC BOARD AND SOLDER.
2. INSERT THE 14 PIN DIP-SOCKET INTO THE PC BOARD AND SOLDER.
3. USE THE LONG NOSE PLIERS TO SIZE AND TRIM THE 2.2K AND 3.3K AND 4.7K RESISTORS AND THEN SOLDER TO THE BOARD.
4. INSTALL THE 4 CAPACITORS AS SHOWN ON THE DIAGRAM MAKING SURE THAT THE POLARITY IS CORRECT. THE KIT WILL NOT WORK WITH INCORRECT POLARITY!
5. INSTALL AND SOLDER THE 60 PIN EDGE CONNECTOR MAKING SURE THAT THE ORIENTATION AND PIN ALIGNMENT IS CORRECT PER THE DIAGRAM AND SKETCH.
6. INSTALL AND SOLDER THE AUDIO CONNECTOR.
- 6A. INSURE THAT NO SOLDER BRIDGES ANY TRACES ANYWHERE ON THE BOARD. ALL SOLDER JOINTS MUST BE CLEAN AND NEAT!







WARRANTIES/GUARANTEES/LIABILITY

THE "SUPER TALK" DEVICE FULLY ASSEMBLED AND TESTED BY STEVE JACOBY ENTERPRISES IS GUARANTEED TO OPERATE PROPERLY AND SPEAK VIA THE 'SPEECH' PROGRAMS CONTAINED HEREIN. THIS GUARANTEE EXTENDS FOR A PERIOD OF 30 DAYS FROM THE DAY SHIPPED FROM CLEARWATER, FLORIDA TO THE CUSTOMER. "SUPER TALK" KIT COMPONENTS ONLY ARE GUARANTEED TO BE FUNCTIONAL. A KIT ASSEMBLED BY A CUSTOMER IS NOT GUARANTEED TO WORK. IN THAT THE FINISHED AND TESTED HARDWARE IS INSTALLED BY THE CUSTOMER AND THE KIT IS ASSEMBLED, TESTED AND INSTALLED BY THE CUSTOMER, STEVE JACOBY ENTERPRISES ASSUMES NO LIABILITY FOR DAMAGE TO A CUSTOMER'S ADAM(TM) COMPUTER RESULTING FROM INSTALLATION OF THE "SUPER TALK" DEVICE. FURTHER, STEVE JACOBY ENTERPRISES ASSUMES NO LIABILITY FOR ELECTRIC SHOCK TO THE CUSTOMER OR ANY OTHER ACCIDENTS, RESULTING FROM WORKING WITH THE DEVICE.

"SUPER TALK" SOFTWARE CLUB

WE INVITE AND STRONGLY URGE OWNERS OF "SUPER TALK" TO SUBMIT TAPES OR PRINTOUTS OF THEIR TALKING PROGRAMS TO STEVE JACOBY ENTERPRISES, INC. THROUGH OUR POST OFFICE BOX ATTN: DEPT STSC.

THE OWNER PRODUCING WHAT IS JUDGED TO BE THE BEST ORIGINAL TALKING SOFTWARE FOR ADAM(TM) DURING 1986 WILL BE AWARDED A \$100 CASH PRIZE NOT LATER THAN JANUARY 10, 1987. SOFTWARE CLUB CREATIONS WILL BE MADE AVAILABLE TO CONTRIBUTORS AND OTHER CUSTOMERS AS WELL.

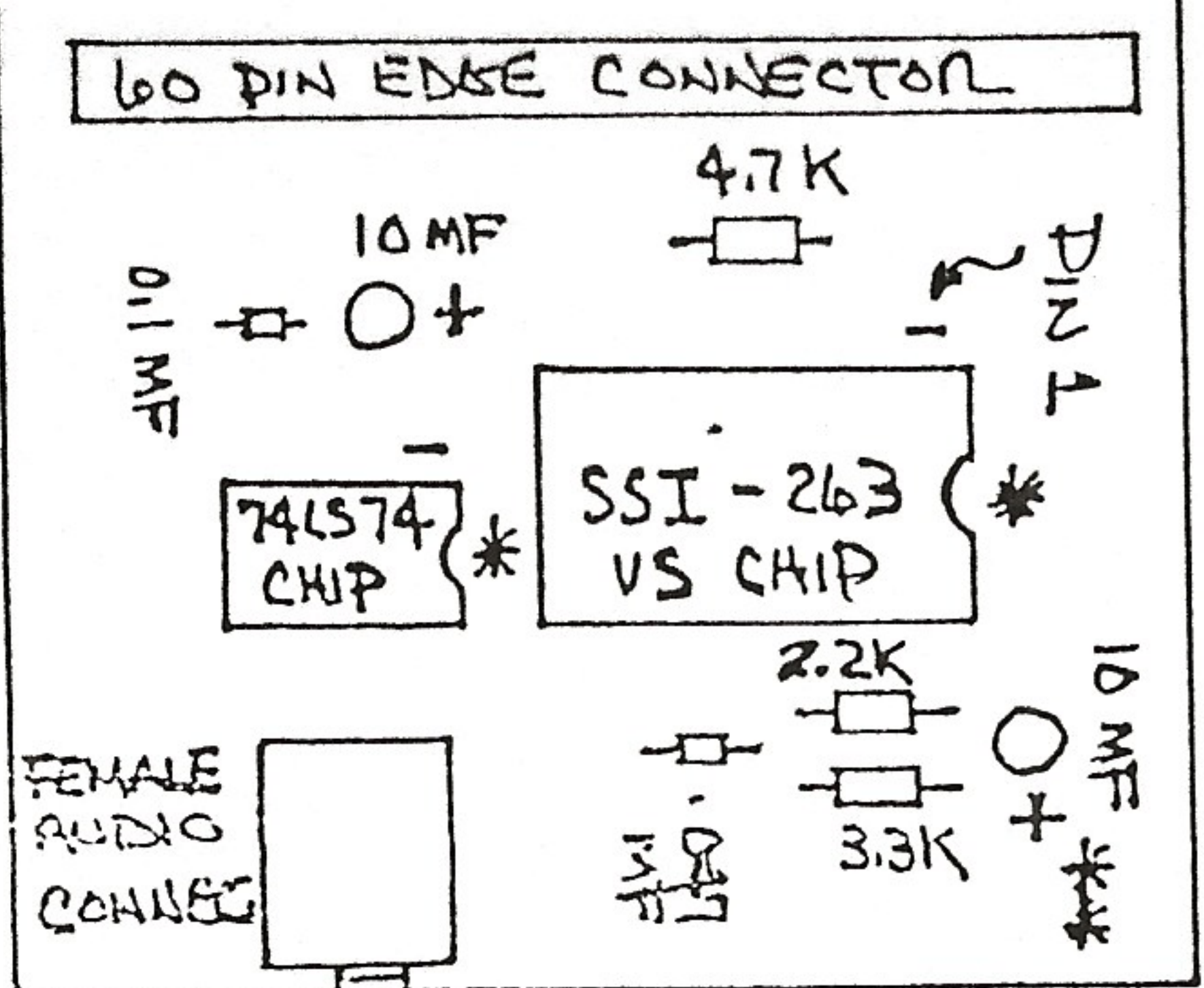
WHEN SUBMITTING YOUR PROGRAM, PLEASE INCLUDE A SIGNED AND DATED STATEMENT WITH YOUR PACKAGE THAT STATES YOU RELEASE YOUR PROGRAM AS PUBLIC DOMAIN SOFTWARE. WE PREFER THAT YOUR PROGRAMS BE SUBMITTED IN TAPE OR DISK FORM - RATHER THAN A PRINTOUT. WHEN SUBMITTED IN THIS MANNER, WE WILL COPY YOUR MEDIA AND MAIL IT BACK TO YOU WITHIN 7 DAYS OF OUR RECEIPT. THIS WAY, YOU DO NOT LOSE YOUR TAPE OR DISK AND WE DO NOT HAVE TO DO A LOT OF TYPING. YOUR SUBMISSION WILL THEN COST YOU ABOUT \$1.00 FOR THE POSTAGE.

SOUNDS LIKE FUN? YOU BET, SO LET US HEAR FROM YOU SOON. MANY THANKS.

CIRCUIT COMPONENT ASSEMBLY DIAGRAM  
REV 1.0 3/1/86

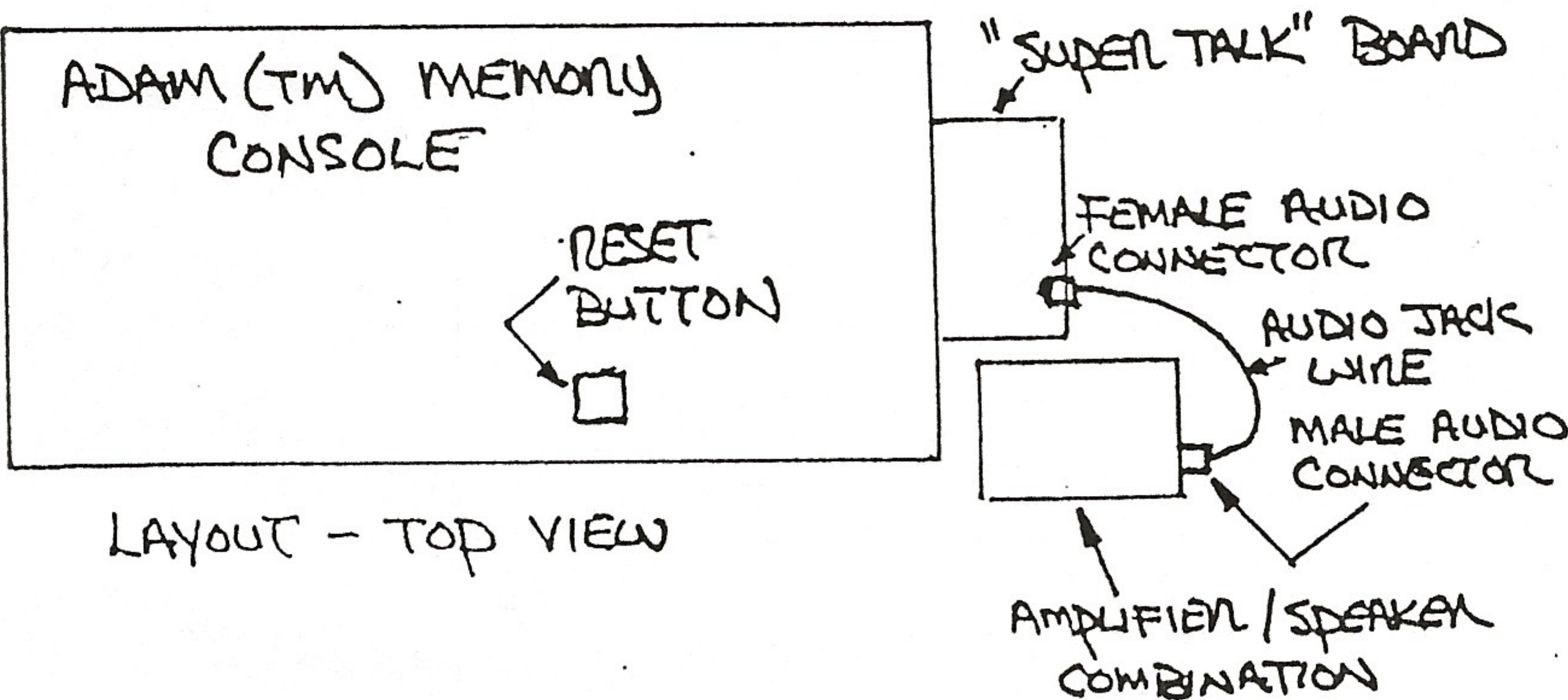
RESISTOR COLOR CODE  
2.2K RED - RED - RED  
3.3K ORG - ORG - RED  
4.7K YEL - VIO - RED

\*\* USE CORRECT POLARITY FOR THE 2-10 MF CAPACITORS



PRINTED CIRCUIT BOARD

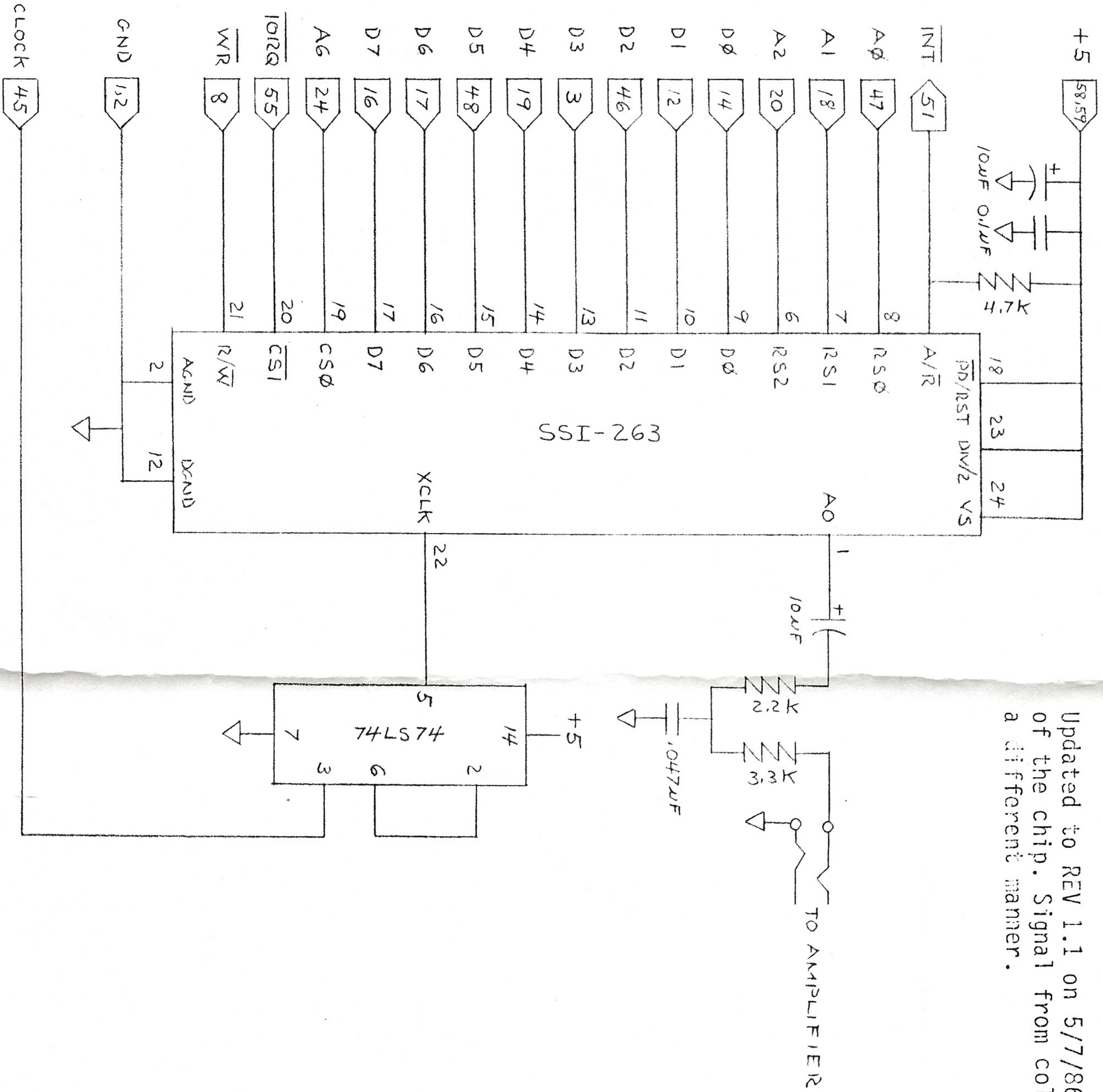
\* IMPORTANT - ORIENT CHIP NOTCHES AS SHOWN TO INSURE PROPER OPERATION



LAYOUT - TOP VIEW



# ADAM EXPANSION MODULE CONNECTOR



WIRING DIAGRAM FOR SUPER TALK REV 1.0 3/1/86  
 A Voice Synthesizer For The Adam(tm) Computer  
 STEVE JACOBY ENTERPRISES  
 Copyright (C) 1986  
 All Rights Reserved  
 Updated to REV 1.1 on 5/7/86 to improve performance  
 of the chip. Signal from colorburst clock handled in  
 a different manner.



## HELP ME FORM

I AM RETURNING MY COMPLETED KIT POSTAGE PAID FOR HELP BECAUSE IT DOES NOT WORK. I AM ENCLOSING \$25.00 TO COVER THE COST OF PARTS AND AM ALLOWING UP TO FOUR WEEKS FOR RETURN.

RETURN WORKING SYNTHESIZER TO:

NAME \_\_\_\_\_ ADDRESS \_\_\_\_\_

CITY/STATE \_\_\_\_\_

ZIP \_\_\_\_\_ DATE MAILED \_\_\_\_\_

SEND PARTS ORDER FORMS AND HELP ME PROJECTS TO: STEVE JACOBY ENTERPRISES, BOX 11205-DEPT.PH, CLEARWATER, FL 33516.

## PARTS PRICE LIST

#1 SSI-263 CHIP \$27.00 #2 PC-BOARD \$12.00 #3 74LS74 CHIP \$1.00 #4 60 PIN CONNECTOR (5024) \$5.00 #5 2.2K RESISTOR \$1.00 #6 3.3K RESISTOR \$1.00 #7 24 PIN DIP SOCKET \$1.00 #8 14 PIN DIP SOCKET \$1.00 #9 10MF CAPACITOR \$1.00 #10 .047 POLYESTER CAPACITOR \$1.00 #11 0.1 POLYESTER CAPACITOR \$1.00 #12 AUDIO CONNECTOR \$1.50 #13 RADIO SHACK CABLE FOR AMPLIFIER/SPEAKER (SHACK #42-2420) \$3.95 #14 AMPLIFIER/SPEAKER (SHACK #277-1008) \$19.95 #15 CABLE FOR HOME AMPLIFIER IF YOU DO NOT PURCHASE THE AMPLIFIER/SPEAKER (SHACK #42-2444) \$3.99 #16 4.7K RESISTOR \$1.00 NOTE: NUMBERS 13,14,15 DO NOT COME WITH THE KIT. IF YOU ELECT NOT TO GO TO RADIO SHACK YOURSELF TO PURCHASE THESE ITEMS, YOU MAY PURCHASE THEM FROM US THROUGH THE MAIL.

## SOFTWARE GUIDE

THE SILICON SYSTEMS USER'S GUIDE FOR PHONETIC PROGRAMMING USING THE SSI 263A VOICE SYNTHESIZER IS INCLUDED AT NO CHARGE AS A SERVICE FROM THE MANUFACTURER OF THE CHIP. PLEASE REVIEW THIS FINE SYNTHESIZER PRIMER IN DETAIL BEFORE PROCEEDING TO BEGIN PROGRAMMING YOUR "SUPER TALK" HARDWARE. (AT LEAST ONE HOUR PASSES.) NOW THAT YOU ARE FAMILIAR WITH THE RUDIMENTARY THEORY, LET US EXAMINE THE FIRST EXAMPLE ADAM(TM) PROGRAM CALLED "SPEECH". AT THE FIRST POINT IN YOUR PROGRAM THAT YOU DESIRE SPEECH, YOU MUST POKE SOME INSTRUCTIONS IN TO SPECIAL MEMORY LOCATIONS THAT ARE NOT USED FOR ANY OTHER COMPUTER OPERATIONS. THESE POKES TAKE PLACE IN LINES 0 THROUGH 320 OF THE "SPEECH" EXAMPLE PROGRAM. PLEASE NOTE THAT THE KEY VARIABLE HERE IS 'R' WHICH FIRST APPEARS IN LINE 10. DIFFERENT MODELS OF ADAM HAVE MOTHER BOARDS THAT ARE SLIGHTLY DIFFERENT. WE HAVE AN 'OLD ADAM' AND A 'NEW ADAM' AND FIND THAT THE VALUE OF 'R=64' AT LINE 10 WORKS ON BOTH OF OUR COMPUTERS. SHOULD 64 NOT WORK ON YOURS, TRY THE OTHER NUMBERS 8,16,32 AND 128. LINES 330 THROUGH 999 ARE AVAILABLE TO YOU TO ASSEMBLE 'PHONEMES' AND BUILD ANY WORD IN THE ENGLISH LANGUAGE (AND PERHAPS OTHERS) THAT YOU WOULD LIKE TO CONSTRUCT. VARIABLE 'J' IN LINE 2030 SETS THE LENGTH FOR EACH PHONEME AS IT IS SPOKEN. CHANGE THE 130 COUNT AS YOUR TASTE DICTATES. IN YOUR WORD CONSTRUCTION, USE THE PHONEME CHART ON PAGE 4 OF THE CHIP USER'S GUIDE AND SUBSEQUENT



INSTRUCTIONS ON PAGE 5. RUDIMENTARY WORD CONSTRUCTION SHOULD SATISFY MOST OF YOUR PROGRAMMING NEEDS. HOWEVER, IF YOU DESIRE TO GET REALLY FANCY, YOU MIGHT WANT TO TRY THE COMPLEX WORD BUILDING AS SHOWN FOR THE WORD 'HELLO' ON PAGE 5. WE BUILT THE WORD 'HELLO' USING JUST 6 PHONEMES. A SUPER-DUPER BUILDING PROJECT FOR THE WORD REQUIRES 14 PHONEMES AS SEEN IN PART 8 ON PAGE 5. WE HAVE GIVEN "SUPER TALK" SOME STANDARD SETTINGS IN LINES 20 THROUGH 320 OF OUR FIRST EXAMPLE PROGRAM 'SPEECH'. FINE ADJUSTMENT REQUIRES CHANGING OF THE MANY CHARACTERISTICS FROM WORD TO WORD. AS A FURTHER NOTE, SET A FLAG IN YOUR PROGRAMS SO THAT YOU DO NOT RUN ADAM THROUGH THE LINE 10 THROUGH 320 ROUTINE MORE THAN ONCE. ONE TIME IS ALL THAT IT TAKES. IMPORTANT: THE 'P' VARIABLE IS THE ONE THAT SETS THE PHONEME FOR EACH PORTION OF WORDS THAT YOU CREATE FOR ADAM. 'P' IS A DECIMAL NUMBER, AND THE PHONEME NUMBERS GIVEN ON THE PHONEME CHART ON PAGE 4 OF THE USER'S GUIDE ARE IN HEX CODE. THE 'P' TO BE USED IN YOUR ADAM PROGRAMS IS A DECIMAL NUMBER. THE CHIP MANUFACTURER, HOWEVER, MADE IT VERY CONVENIENT FOR US BY PUTTING ALL OF THE NUMBERS ON HIS CHART IN NEAT, DECIMAL SEQUENCE FROM 0 TO 63. THEREFORE, THE ADAM 'P' CODE FOR PA (PAUSE) IS 0, THE 'P' CODE FOR UH1 IS 25, AND THE 'P' CODE FOR LB IS 63. ALL OF THE OTHER 'P' NUMBERS FIT NICELY IN SEQUENCE AS WELL. THE SECOND EXAMPLE PROGRAM IS A COMPRESSED VERSION OF THE FIRST DISCUSSED ABOVE. WE HAVE PUT ALL OF THE SET UP COMMANDS IN JUST A FEW LINES AND HAVE CHANGED GOSUB 2000 TO GOSUB 6 SO THAT PHONEME WORD BUILDING KEYSTROKES REQUIRED ARE GREATLY REDUCED. THE ROUTINE THAT SPEAKS THE PHONEMES HAS BEEN REDUCED TO JUST ONE LINE. USING THIS COMPRESSED METHOD OF DOING BUSINESS BY PLACING AS MANY COMMANDS ON ONE LINE AS POSSIBLE NOT ONLY REDUCES MEMORY SPACE REQUIRED BUT EASES EDITING AS YOU SEARCH FOR JUST THE RIGHT PHONEME COMBINATION THAT PLEASES YOU. THE VOICE CHIP IS MANUFACTURED BY VOTRAX AT 1394 RANKIN ROAD, TROY, MICHIGAN, 48083. THEIR SALES PHONE NUMBER IS 800-521-1350, ANOTHER SALES NUMBER IS 313-588-2050, AND ENGINEERING IS 313-583-1877. THE VOICE CHIP THAT YOU HAVE IN "SUPER TALK" IS A 'THIRD GENERATION' CHIP THAT HAS CAPABILITIES THAT GO FAR BEYOND THIS DISCUSSION. IT CAN TALK IN MALE AND FEMALE VOICES AND IS ALSO CAPABLE OF SINGING. THUS, IF IT IS YOUR DESIRE TO BECOME A 'SYNTHESIZER HACKER' THEN 'GO FOR IT'. PRINTOUTS OF SAMPLE PROGRAMS TO GET YOU GOING FOLLOW. A DDP OR DISK IS AVAILABLE WITH THESE PROGRAMS AND OTHERS FOR \$19.95.





## User's Guide for Phonetic Programming Using the SSI 263A

### Phonetics

Every speech sound (phoneme) in any language may be represented by a special symbol (phonetic symbol). These symbols are used in WRITING precisely the sound sequence (phonetic transcription) of a word according to the way it is pronounced. There are many different phonetic symbol sets (phonetic alphabets). Each would contain a minimum number of symbols to represent the basic sounds (phonemes) required to pronounce any word in the language. Additional symbols are usually included which represent sounds with slight to great variations in the basic sounds (allophones). These symbols are used to assist in the transcription of words that reflect a regional, dialectic, or foreign pronunciation.

The process of transcribing a spoken word into its phonetic components begins with identifying the number of sounds in the word, then tagging each with a label to specify its type. Consonants and vowels are the most familiar labels but these may be broken down into subtypes (e.g., stop consonants, back vowels, etc.) as the need for more specificity arises. Once the sounds have been identified, their symbols are selected, then written in sequence. The resulting transcription should allow another person to identify the pronunciation without having heard the word spoken.

Note that when using a phonetic alphabet to transcribe words into their sound sequences, there is not a one-to-one correspondence between the alphabet characters (orthographics) used to spell words and the phonetic symbols (phonetics) used to represent their pronunciations. For example, in the word "phones" there are 6 letters but only 4 sounds. Conversely, the word "I" has 1 letter but 2 sounds. It may be of some assistance to keep a dictionary handy for reference. Dictionaries use their own phonetic system to describe the pronunciations of every word entry. It will be necessary to learn at least one phonetic alphabet in order to engage in phonetic transcription. The SSI 263A Phonetic Alphabet is the referent used in this manual. However, if another system is already known, it is easily translated into the referent.

When transcribing vocabulary from orthography (standard alphabet spelling) to phonetics, it is common to place the phonetic sequence between right slash marks when the transcription appears in running text. The word "phones," for example, would be transcribed as /F O N Z/ when using SSI 263A phonetic symbols. This allows the reader easier identification of phonetic segments.

### SSI 263A Phonetic Alphabet

The phonetic alphabet used to represent the SSI 263A phonemes is the SSI 263A PHONETIC ALPHABET. Refer to the Phoneme Chart for a complete listing of the phoneme symbols.

Of the 64 alphanumeric symbols in the SSI 263A Phonetic Alphabet, 34 represent sound BASIC to the pronunciation of American English. The remaining 30 symbols fall into 2 groups: the ALLOPHONE group and the NO-SOUND group. The BASIC sound symbols are:

A, AE, AH, AW, B, D, E, EH, ER, F, HF, I, J, K, KV, L, M, N, NG, O, OO, P, R, S, SCH, T, TH, THV, U, UH, V, W, Y, Z.

Symbols in the ALLOPHONE group represent speech sounds that vary in pronunciation from one of the basic sounds. They may be used in transcribing words or word segments (syllables or morphemes) whose pronunciations are not satisfied by the basic phonemes alone (words rooted in a foreign language, words adapted by a regional dialect, etc.). The ALLOPHONE symbols are:

A1, AE1, AH1, AY, E1, E2, EH1, HN, HV, IE, IU, IU1, L1, LB, LF, OU, R1, R2, U1, UH1, UH2, UH3, YI, :A, :OH, :U, :UH.

The NO-SOUND symbols represent silent states. One of these symbols represents a "pause" state. It is used to separate phoneme sequences into phrase-like segments which assist in more closely imitating the natural pausing in human speech for breathing or for delayed emphasis. The "pause" is treated as a phoneme when it is selected for a transcription and will be subject to phoneme parameter programming. It has the ability to maintain the parametric levels of duration, inflection, amplitude, etc., during its silence, thus audibly affecting the movement of the preceding and following phonemes. Other NO-SOUND symbols represent "hold" states. They are used in combination with BASIC phonemes or ALLOPHONEs to generate articulation variations on their pronunciations. The NO-SOUND symbols are:

HFC, HVC, PA.

Now that there is a tool to use for writing the sounds that are heard, the next stage is to identify the sounds that are produced by the SSI 263A speech synthesizer.

### SSI 263A Phoneme Review

Thus far in this program, it has been established that: (1) spoken words are made up of a series of sounds; (2) each speech sound in a language may be represented by an identifying symbol; and (3) the spoken word may be written according to its sound sequence using these special symbols. Before a word may be written phonetically, however, users may wish to study further the SSI 263A speech sounds. What makes one sound different from another and how these differences may be helpful to phonetic programming will be essential information for phonetic programmers.

The sound that is represented by each phonetic symbol in the SSI 263A Phonetic Alphabet must be audibly learned. The easiest way to approach this task is to start with the sounds already known and associate a symbol with them. For example, from spelling we have already learned that vowels may be "long" or "short" and are often differentiated by their particular spelling formats. Every time a word with a "short a" sound is heard (sat, fat, cat, bat, happy, plaster, ankle, Saturday, amplify, contaminate, etc.) the symbol /AE/ should come to mind. A "long a" sound (fate, state, bait, lace, maybe, stable, arrangement, etc.) is actually a diphthong (two sounds combined into a single unit) and may be represented by the symbols /A AY/.

In standard orthography, there are only 5 vowel letters to represent 17 vowel sounds. In phonetics, each vowel sound will be represented by its own symbol or symbol combination.

Again, from spelling, we have learned that the letter "c" may have a hard sound as in "cat" or a soft sound as in "city." The hard sound is actually a /K/ as in "kite" and the soft sound is an /S/ as in "sing." Users must identify which sound (/K/ or /S/) is used in the transcription of a "c." You will not find a symbol C in a phonetic alphabet. Like "C," the letters "Q" and "X" will not be found in phonetic alphabets. They are transcribed into the sound sequences /K W/ and /K PA S/. Refer to the Phoneme Chart during this learning period. It provides example words to describe the pronunciations corresponding to each symbol.

Users may add more words to the examples above to continue identifying the symbol-sound relationship for /AE/ and /A AY/. Follow this technique for each symbol in the alphabet. For auditory verification, enter the sound that is being reviewed into the device. Speak aloud your example word for the SSI 263A.



sound in an attempt to match that which the synthesizer is emitting.

Example: /E/ = "long e" vowel sound  
 = meat, read, need, repair, before, phoneme, erase, brief, people, timeliness, seniority, receive, catastrophe.

Example: /F/ = "voiceless fricative" consonant  
 = farm, false, aft, feet, finger, phrase, phone, Africa, alphabet, cough.

Once you have reviewed auditorily the sounds you already have a familiarity with from spelling, proceed to the BASIC sound list in the above text and continue the review. Be aware that several consonant sounds will not provide output unless they have another sound following. This is the case with /B/, /D/, /P/, /T/, and /K/. When one of these sounds is entered into the SSI 263A, follow it by a vowel and listen to both in sequence.

Users who already have a familiarity with phonetics and SSI 263A synthetic sounds, may wish to follow the sound review procedures in order to auditorily determine the difference between two sounds or identify new ones. For example, enter the /UH/ phoneme into the device. Then enter /UH1/, /UH2/, and /UH3/. Listen to each sound noting the pronunciation variations. Be aware that there are no duplicate sounds resident on the SSI 263A chip.

Whenever a SSI 263A sound is audited that cannot be readily identified as to its appropriate usage, do not be concerned. The review is designed only to provide a method for establishing an auditory memory for each sound and a visual memory for its symbol. Phonetic programming may begin anytime after the initial review. Return to the review later as your familiarity with the BASIC sounds increases and as your need for sound alternatives to those BASIC sounds becomes more apparent.

If there is a question as to which symbols should be chosen to transcribe a word into its sound sequence, make a written note of the word by circling the letter(s) that present the problem. Later, when phonetic programming has begun, a phoneme sequence may be created for the word and users may verify auditorily which phonetic selection produces the most appropriate translation.

**SSI 263A Phoneme Discussion**

The SSI 263A Phonetic Alphabet is divided into 3 groups for the purpose of differentiating between phonemes and allophones. Another way of dividing the Alphabet is according to usage. The most familiar division is a two sections split: CONSONANT sounds and VOWEL sounds. Within each of these sections, sounds may be further subdivided according to the distinctive features that best describe the sounds phonetically or acoustically. The more that is known about a sound, the easier it is to determine how it may be used in transcribing and phonetically programming a word.

**Consonant Sounds**

There are 22 Consonant Phonemes, subdivided according to their manner of production in the human speech mechanism. Some are characterized by the noise emitted when the articulators obstruct the air flow (Fricatives like /S/). Vowel-like consonants have the least amount of obstruction and may occasionally be used as a vowel substitute. Stop consonants are obstructed completely, release of air flow occurring at the onset of the next sound. Notice that Affricates are a sequence of 2 sounds (a Stop followed by a Fricative) spoken as a single unit. Unlike vowels, which always have a vocal source during production, consonants may be voiced (V) or unvoiced (U) (no vocal source during air flow). When listening to the manner in which a consonant is produced during speech, note its special characteristics that distinguish it from all other consonants. The figure below displays all of the consonant sounds within their production groups.

	<b>Stops</b>	<b>Fricatives</b>	<b>Affricates</b>
<b>Voiced</b>	B, D, KV	Z, V, J, THV	(D, J)
<b>Voiceless</b>	P, T, K	S, F, SCH, TH, HF	(T, SCH)

	<b>Semi-vowels</b>	<b>Glides</b>	<b>Nasals</b>
<b>Voiced</b>	R, L	W, Y	M, N, NG
<b>Voiceless</b>			

**Consonant Chart**

Voiced and voiceless consonants are subdivided into 6 categories according to the manner in which they are produced in the human vocal tract: i.e., how the air flow is obstructed by the articulators to make each sound different.

Consonant sounds are selected for a sequence in much the same manner as an alphabet character would be selected for the spelling of a word. Users must be alert, however, to identify the exceptions. Occasionally, a consonant appears in the spelling of a word but not in its sound sequence: the "b" in "comb" is not pronounced and the sound sequence reflects the absence of the "b": /K OU M/. Some exceptions have grammatical rules that may be used in determining the appropriate sound. For example, a consonant may have 2 pronunciations according to its sound environment. The "s" used to pluralize the two words that follow are pronounced differently based on whether the sound that precedes it is voiced or unvoiced. An "s" pronunciation will match the voicing characteristics of the sound it follows.

Examples: tips = /T I P S/  
 tabs = /T AE B Z/

There are other types of consonantal exceptions. For example, the "t" in a word like "nation" is pronounced /SH/ and the program might look like this: nation = /N A AY SH UH3 N/. Users must listen to each word's pronunciation to determine the appropriate phoneme selection.

There are 7 Consonant Allophones, each noted in the table below. The /L/ consonant is used in the initial position of a sequence for words beginning with "L", while the /LF/ allophone will occupy a medial or final position in a sequence: e.g., lull = /L UH LF/. The /LB/ and the /LI/ allophones would be used when a most constricted pronunciation of an "L" was required, as would occur for some words of foreign languages.

<b>Consonant Phoneme</b>	<b>Consonant Allophones</b>	<b>Consonant Phoneme</b>	<b>Vowel Allophone</b>
L	L1, LB, LF	R	ER
R	R1, R2	Y	YI

Allophone Listing for /L/, /R/, & /Y/

The /R/ is an initial position phoneme. Both /R1/ and /R2/ have more constricted pronunciations than /R/ and may be used in sequence with soundless interrupts to create a trilled /R/. Often when the /R/ is required in a medial or final position, it is vowelized and the /ER/ is used. Listening to the production of all four of these sounds will auditorily show that they may, occasionally, be used interchangeably.

Examples: red = /R EH D/  
 bird = /B ER D/  
 motor = /M OU T ER/

The /Y/ consonant, used as the final sound in words ending with "y," has a vowel allophone that may be used as the initial sound of words starting with "y." Note that both /Y/ and /YI/ are auditorily very close to the /E/ and the /IE/ vowels and may be considered interchangeable.

**Vowel Sounds**

There are 12 BASIC Vowel Phonemes. Vowels are subdivided according to the manner in which they are produced. All vowels are voiced sounds but each has a different output based on the degree of obstruction created by the opening of the mouth and the tongue position. Lip positions, another obstructing articulator, may range from spread flat to round. While the lips are in any of these positions, the jaw may be simultaneously dropped from a closed to an open position.



	Front Vowels	Medial Vowels	Back Vowels
	Spread	—————▶	Rounded
Closed ↓ Open	E		U
	I		OO
	A	UH	O
	EH	(ER)	AW
	AE		AH

### Vowel Quadrilateral

Vowels begin their production with the same voiced energy. Changes in the position of the tongue (front or back), the shape of the lips (from spread flat to rounded), and the position of the lower jaw (from closed to open) determine the final characteristics that allow listeners to distinguish between vowel sounds.

Refer to the SSI 263A Phoneme Chart for the pronunciation reference on each BASIC vowel sound. Utilize the sound review techniques on the previous pages to practice identifying the vowel sounds in words and associating them with their phonetic symbols.

The allophonic variations of vowels, 20 in number, are used in a phonetic program to enhance the pronunciation of a word. There are some cases where the allophone is required for articulate pronunciations. This is true for /AY/, /YI/ and /IU/, which are integral components in the phonetic sequences for the "long a" and the varied "long u".

Examples: same = /S A AY M/  
you = /YI IU U/

The table below places each allophone into the vowel quadrilateral to demonstrate approximately how they might relate to the BASIC vowels. Users are in no way restricted to traditional phonetic transcriptions that use only the BASIC vowel phonemes. Be encouraged to experiment with allophones. Place them in different positions in a sequence to auditorily check how they effect the overall pronunciation of a word.

	Front Vowels	Medial Vowels	Back Vowels
	Spread	—————▶	Rounded
Closed ↓ Open	YI E1 IE		U1
	AY	E2	IU IU1
	A1	UH1	OU
	EH1	UH2	
	AE1	UH3	AH1

### Allophone Placement in Vowel Quadrilateral

Vowel allophones are placed in the vowel quadrilateral according to their production features. The sounds they emit vary slightly from the BASIC vowels that occupy the same positions.

Four vowel allophones—/A/, /OH/, /U/, and /UH/ — are adapted pronunciations of four of the BASIC vowels. These sounds are most commonly used for phonetically programming a foreign word. They may also be used as transitory sounds to link phonemes with opposite production features such as a round, open vowel with a very constricted, narrow consonant.

There are five vowels that require two or more vowel sounds in sequence in order to achieve their pronunciations. These are generally referred to as diphthongs. Refer to the Diphthong Conversion Chart.

The vowel quadrilateral is a handy tool to use for selecting vowel phonemes for diphthongs and other multi-phoneme units. For example, the diphthong in the word "I" starts with an /AH/ and ends with an /E/. In order to move smoothly from the first sound to the second (transition), another vowel may be inserted between these two sounds in sequence. The most likely choice would be a vowel that falls somewhere between /AH/ and /E/ in the quadrilateral: e.g., /UH/, /EH/, /I/, etc. The sequence may look like

this: /AH EH E/ or /AH1 UH3 IE/ or /AH1 EH3 AY/. In their fullest durations, a three-sound sequence would over articulate the diphthong. Shortening the first and last sounds by 1 duration and the medial sound by 2 durations will produce a more acceptable pronunciation (see SSI 263A Phoneme Parameters).

### SSI 263A Phoneme Parameters (Attributes)

To achieve an accurate pronunciation of a word produced by the SSI 263A synthesizer requires more than a selection of the appropriate phonemes. Like human speech sounds, synthesized sounds are further defined by the rate at which they are emitted (duration), the level of pitch at which they are emitted (inflection or frequency), and the intensity with which they are produced (amplitude). These are considered the three major speech parameters which give the overall production of a word its linguistic character, transforming simple speech into more complex language. Inflection, amplitude, and duration are only three of the parameters that users have control of during the programming process. The rate at which one sound moves into another (articulation) is also a controllable parameter. Other parameters are: the slope of the inflection (slope), the rate of each selected duration (rate), and the extended inflection frequencies (extension). Users may also select the base frequency at which speech may be produced (filter frequency). Refer to SSI 263A Phoneme Parameters, for the range of each and typical default values selected.

Every phoneme selected for a sequence must be accompanied by assignments for each of the eight parameters. As users become more aware of their need to create different language effects with their synthesized speech output, they will require the flexibility and choice that comes with programmable parameters. For example, with 4 selectable durations per phoneme, each actual pronunciation of each sound may be changed. Thus, every sound has four possible outputs increasing the users' choice from 64 phonemes and allophones to 256. Each of the 256 may be effected differently by each of the 32 possible inflection assignments. Add to these possibilities 16 variations in amplitude and 16 variations in rate. The possible combinations are not limitless, of course, but they are very great and users are encouraged to experiment with as many as possible.

Several of the parameters effect synthetic speech output as a whole. These are articulation, pitch extension, and filter frequency. Users may select a single level at which to set the filter frequency, for example, and maintain that level throughout the programming process.

### Phonetic Programming Methodology

Due to the great variety of phonemes and parameter choices, as well as the different effects the parameter selections have on the speech sounds, a systematic approach to selecting the variables is advised. The approach described below is only one of several that might be used. It may be adjusted to accommodate the user's special programming style or to accommodate later implementation of automatic control techniques.

The first step is to transcribe the target word, phrase, etc., into its basic phonetic components. Next, enter these sounds into the SSI 263A and auditorily check the output. Use the default values suggested in the Nominal Phoneme Parameter Table. The results should be a bit stilted if not misarticulated for the first trial program. Phoneme adjustment is next. Continue to make changes in the phoneme sequence, auditorily monitoring the changes, until an adequate pronunciation of the target is established.

Begin parameter adjustments. First, maintain articulation, pitch extension and filter frequency at nominal values. The device should be kept in the transitioned inflection mode. Make adjustments in the levels of only one of the remaining 4 parameters at a time, beginning with the duration and moving on to the inflection, rate, and amplitude (in that order) once the specific effect that the parameter can make has been made. Return to a previously adjusted parameter at any time based on need.



# DECIMAL CONVERSION - USE FOR 'P' IN YOUR PROGRAMS

12

## PHONEME CHART

Hex Code*	Phoneme Symbol	Example Word (or Usage)
00	PA	(pause)
01	E	MEET
02	E1	BENT
03	Y	BEFORE
04	YI	YEAR
05	AY	PLEASE
06	IE	ANY
07	I	SIX
08	A	MADE
09	AI	CARE
0A	EH	NEST
0B	EH1	BELT
0C	AE	DAD
0D	AE1	AFTER
0E	AH	GOT
0F	AH1	FATHER
10	AW	OFFICE
11	O	STORE
12	OU	BOAT
13	OO	LOOK
14	IU	YOU
15	IU1	COULD
16	U	TUNE
17	U1	CARTOON
18	UH	WONDER
19	UH1	LOVE
1A	UH2	WHAT
1B	UH3	NUT
1C	ER	BIRD
1D	R	ROOF
1E	R1	RUG
1F	R2	MUTTER (German)
20	L	LIFT
21	L1	PLAY
22	LF	FALL (final)
23	W	WATER
24	B	BAG
25	D	PAID
26	KV	TAG (glottal stop)
27	P	PEN
28	T	TART
29	K	KIT
2A	HV	(hold vocal)
2B	HVC	(hold vocal closure)
2C	HF	HEART
2D	HFC	(hold fricative closure)
2E	HN	(hold nasal)
2F	Z	ZERO
30	S	SAME
31	J	MEASURE
32	SCH	SHIP
33	V	VERY
34	F	FOUR
35	THV	THERE
36	TH	WITH
37	M	MORE
38	N	NINE
39	NG	RANG
3A	:A	MARCHEN (German)
3B	:OH	LOWE (French)
3C	:U	FUNF (German)
3D	:UH	MENU (French)
3E	E2	BITTE (German)
3F	LB	LUBE

## SSI 263A Diphthong Conversion Chart

Phoneme Sequence	Example Words
A AY Y	rain, became, stay
A IE EH1 UH3 LF	mail, hale, avail
AH1 AE1 EH1 Y	time, rhyme, sky
AH1 EH1 IE AW UH3 LF	smile, style, while
AH1 EH1 IE UH3 ER	fire, liar, inspire
UH3 AH1 Y	mice, right, sniper
O U	road, stone, lower
OU O O	tore, four, floor
AH1 AW O U	loud, flower, hour
UH3 AH1 O U	house, about, ouch
O UH1 AH1 I IE	boy, noise, annoy
O UH3 EH1 I OO LF	boil, spoil, doily
IU U U	tune, spoon, do
YI IU U U	you, few, music

## SSI 263A Multi-Unit Conversion Chart

Phoneme Sequence	Example Words
T HFC SCH	church, latch
KV HVC HF	good, lag, angry
D J	just, ledge, wage
KV HF HFC	lake, corn, check
P HF	pipe, pay, poor
K HF W	quest, quick, aqua
T HF	top, trip, strain
HFC K HF HVC S	six, exit, taxi

## Nominal Phoneme Parameter Table (Suggested Default Values for Speech Development)

### Amplitude (A3 → A0)

Range—0 to F (softest to loudest, 0 = silent)

Default—C

Exceptions—KV = 0, B = D = 6

### Duration (DR1, DR0)

Range—3 to 0 (shortest to longest)

Default—0

### Filter Frequency Range (F7 → F0)

Range—00 to FF (lowest to highest)

Default—E9

### Inflection (Pitch) (I10 → I6, Transitioned Inflection Mode Only)

Range—0 to 1F (lowest to highest, 0 = silent)

Default—04

### Extension and Range of Pitch (I11, 12 → I0)

Range—0 to 7 (low); 8 to F (high)

Default Value—8

### Rate of Speech (R3 → R0)

Range—0 to F (slowest to fastest)

Default—A

### Slope of Inflection (I6 → I3, Transitioned Inflection Mode Only)

Range—0 to 7

Default—0

### Articulation (Rate of) (A3 → A0)

Range—0 to 7 (slow to fast)

Default—5

\*Note — Hex codes shown with DR0, DR1 = 0 (longest Duration)



Example of Using Phonetic Programming Methodology:

Developing "Hello"

Phoneme Parameters	SSI 263 Register Data
Pho.D T In-S A R E FF	DP IS RE TA FF

KEY: Pho = Phoneme  
 D = Duration  
 T = Articulation  
 In = Inflection  
 S = Slope of Inflection  
 A = Amplitude  
 R = Rate  
 E = Extension and Range of Pitch  
 FF = Filter Frequency

DP = Duration/Phoneme Register      Address 000  
 IS = Inflection/Slope Register      001  
 RE = Rate/Extension Register      010  
 TA = Articulation/Amplitude Register      011  
 FF = Filter Frequency Register      1XX

1. Original Phoneme Entry:

Pho.D T In-S A R E FF	DP IS RE TA FF
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
HF .0 5 0A-0 C A 8 E9	2C 50 A8 5C E9
EH .0 5 0A-0 C A 8 E9	0A 50 A8 5C E9
L .0 5 0A-0 C A 8 E9	20 50 A8 5C E9
O .0 5 0A-0 C A 8 E9	11 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9

2. Phoneme Selection Refinement

Pho.D T In-S A R E FF	DP IS RE TA FF
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
HF .0 5 0A-0 C A 8 E9	2C 50 A8 5C E9
EH .0 5 0A-0 C A 8 E9	0A 50 A8 5C E9
UH3 .0 5 0A-0 C A 8 E9	1B 50 A8 5C E9
LF .0 5 0A-0 C A 8 E9	22 50 A8 5C E9
UH3 .0 5 0A-0 C A 8 E9	1B 50 A8 5C E9
O .0 5 0A-0 C A 8 E9	11 50 A8 5C E9
OU .0 5 0A-0 C A 8 E9	12 50 A8 5C E9
U .0 5 0A-0 C A 8 E9	16 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9

3. Duration Adjustment

Pho.D T In-S A R E FF	DP IS RE TA FF
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
HF .1 5 0A-0 C A 8 E9	6C 50 A8 5C E9
EH .0 5 0A-0 C A 8 E9	0A 50 A8 5C E9
UH3 .2 5 0A-0 C A 8 E9	9B 50 A8 5C E9
LF .0 5 0A-0 C A 8 E9	22 50 A8 5C E9
UH3 .2 5 0A-0 C A 8 E9	9B 50 A8 5C E9
O .2 5 0A-0 C A 8 E9	91 50 A8 5C E9
OU .0 5 0A-0 C A 8 E9	12 50 A8 5C E9
U .3 5 0A-0 C A 8 E9	D6 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9

4. Phoneme and Duration Adjustment

Pho.D T In-S A R E FF	DP IS RE TA FF
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
HF .1 5 0A-0 C A 8 E9	6C 50 A8 5C E9
EH1 .1 5 0A-0 C A 8 E9	4B 50 A8 5C E9
UH3 .2 5 0A-0 C A 8 E9	9B 50 A8 5C E9
LF .0 5 0A-0 C A 8 E9	22 50 A8 5C E9
UH3 .2 5 0A-0 C A 8 E9	9B 50 A8 5C E9
O .2 5 0A-0 C A 8 E9	91 50 A8 5C E9

OU .0 5 0A-0 C A 8 E9	12 50 A8 5C E9
U .2 5 0A-0 C A 8 E9	96 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9

5. Inflection Adjustment

Pho.D T In-S A R E FF	DP IS RE TA FF
PA .0 5 0B-0 C A 8 E9	00 58 A8 5C E9
PA .0 5 0B-0 C A 8 E9	00 58 A8 5C E9
HF .1 5 0A-0 C A 8 E9	6C 50 A8 5C E9
EH1 .1 5 08-0 C A 8 E9	4B 40 A8 5C E9
UH3 .2 5 09-0 C A 8 E9	9B 48 A8 5C E9
LF .0 5 08-0 C A 8 E9	22 40 A8 5C E9
UH3 .2 5 05-0 C A 8 E9	9B 28 A8 5C E9
O .2 5 05-0 C A 8 E9	91 28 A8 5C E9
OU .0 5 06-0 C A 8 E9	12 30 A8 5C E9
U .2 5 07-0 C A 8 E9	96 38 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9
PA .0 5 0B-0 C A 8 E9	00 58 A8 5C E9

6. Phoneme, Duration, Inflection, and Rate Adjustment

Pho.D T In-S A R E FF	DP IS RE TA FF
PA .0 5 0B-0 C A 8 E9	00 58 A8 5C E9
PA .0 5 0B-0 C A 8 E9	00 58 A8 5C E9
HF .1 5 0A-0 C 7 8 E9	6C 50 78 5C E9
EH1 .1 5 08-0 C D 8 E9	4B 40 D8 5C E9
UH3 .2 5 09-0 C C 8 E9	9B 48 C8 5C E9
LF .0 5 08-0 C C 8 E9	22 40 C8 5C E9
UH3 .2 5 05-0 C 9 8 E9	9B 28 98 5C E9
O .2 5 05-0 C 9 8 E9	91 28 98 5C E9
OU .0 5 06-0 C A 8 E9	12 30 A8 5C E9
U .2 5 07-0 C C 8 E9	96 38 C8 5C E9
U .3 5 0A-0 C 7 8 E9	D6 50 78 5C E9
PA .0 5 0B-0 C A 8 E9	00 58 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9

7. Phoneme, Duration, Inflection, Rate, and Amplitude Adjustment

Pho.D T In-S A R E FF	DP IS RE TA FF
PA .0 5 0B-0 C A 8 E9	00 58 A8 5C E9
PA .0 5 0B-0 C A 8 E9	00 58 A8 5C E9
EH .0 5 07-0 0 D 8 E9	0A 38 D8 50 E9
HF .1 5 0A-0 4 7 8 E9	6C 50 78 54 E9
EH1 .1 5 08-0 C D 8 E9	4B 40 D8 5C E9
UH3 .2 5 09-0 A C 8 E9	9B 48 C8 5A E9
LF .0 5 08-0 A C 8 E9	22 40 C8 5A E9
UH3 .2 5 05-0 C 9 8 E9	9B 28 98 5C E9
O .2 5 05-0 C 9 8 E9	91 28 98 5C E9
OU .0 5 06-0 C A 8 E9	12 30 A8 5C E9
U .2 5 07-0 A C 8 E9	96 38 C8 5A E9
U .3 5 0A-0 0 7 8 E9	D6 50 78 50 E9
PA .0 5 0B-0 C A 8 E9	00 58 A8 5C E9
PA .0 5 0A-0 C A 8 E9	00 50 A8 5C E9

8. Further Adjustment (depending on personal preference)

Pho.D T In-S A R E FF	DP IS RE TA FF
0 PA .0 5 0D-0 C A 8 E9	00 68 A8 5C E9
0 PA .0 5 0D-0 C A 8 E9	00 68 A8 5C E9
10 EH .0 5 0D-0 0 D 8 E9	0A 68 D8 50 E9
44 HF .1 5 07-0 2 8 8 E9	6C 38 88 52 E9
11 EH1 .1 5 09-2 C D 8 E9	4B 4A D8 5C E9
21 UH3 .2 5 09-4 A C 8 E9	9B 4C C8 5A E9
22 LF .0 5 09-0 A C 8 E9	22 48 C8 5A E9
21 UH3 .2 5 07-7 C 9 8 E9	9B 3F 98 5C E9
17 O .2 5 06-4 C 9 8 E9	91 34 98 5C E9
18 OU .1 5 05-2 C A 8 E9	52 2A A8 5C E9
22 U .2 5 06-3 3 5 8 E9	96 33 58 53 E9
23 U .3 5 07-4 0 C 8 E9	D6 3C C8 50 E9
0 PA .0 5 05-4 C C 8 E9	00 2C C8 5C E9
0 PA .0 5 01-4 C C 8 E9	00 0C C8 5C E9



J 2 REM THIS IS SPEECH2 REV 1.1 DATED 5/6/86. COPYRIGHT(C) 1986 - STEVE JACO  
BY ENTERPRISES

```

4 GOTO 10
6 POKE 50001, P: CALL 50000: FOR J = 1 TO 130: NEXT J: RETURN
10 XY = XY+1: IF XY > 1 THEN 321
20 HIMEM: 49999: R = 64: POKE 50000, 62: POKE 50001, 0: POKE 50002, 211: POKE
50003, 0: POKE 50004, 201: POKE 50001, 128
21 POKE 50003, R+3
30 CALL 50000: POKE 50001, 192: POKE 50003, R: CALL 50000: POKE 50001, 124: P
OKE 50003, R+3: CALL 50000: POKE 50001, 231
31 POKE 50003, R+4
40 CALL 50000: POKE 50001, 168: POKE 50003, R+2: CALL 50000: POKE 50001, 136:
POKE 50003, R+1: CALL 50000: POKE 50003, R
321 HOME: VTAB 10: PRINT "WELCOME TO SPEECH 2": PRINT "PRESS ANY KEY TO BEGIN"
: GET G$
330 PRINT "HELLO "
332 P = 0: GOSUB 6: P = 44: GOSUB 6: P = 10: GOSUB 6: P = 27:
GOSUB 6: P = 3
335 GOSUB 6: P = 17: GOSUB 6: P = 18: GOSUB 6: P = 22: GOSUB 6: P = 22: GOSUB
6: P = 0: GOSUB 6: P = 0: GOSUB 6
337 PRINT "I "
339 P = 15: GOSUB 6: P = 1: GOSUB 6: P = 192: GOSUB 6
341 PRINT "AM "
343 P = 10: GOSUB 6: P = 55: GOSUB 6: P = 0: GOSUB 6
350 PRINT "SUPER "
352 P = 48: GOSUB 6: P = 20: GOSUB 6: P = 22: GOSUB 6: P = 39: GOSUB 6: P = 44
: GOSUB 6
353 P = 10: GOSUB 6: P = 29: GOSUB 6
355 P = 0: GOSUB 6
357 PRINT "TALK "
360 P = 0: GOSUB 6: P = 0: GOSUB 6: P = 40: GOSUB 6: P = 40: GOSUB 6: P = 44:
GOSUB 6: P = 16: GOSUB 6: P = 41: GOSUB 6
362 P = 41: GOSUB 6: P = 0: GOSUB 6: P = 0: GOSUB 6
365 PRINT "YOU "
367 P = 0: GOSUB 6: P = 0: GOSUB 6: P = 3: GOSUB 6: P = 20: GOSUB 6
SUB 6: P = 22: GOSUB 6: P = 0: GOSUB 6: P = 0: GOSUB 6
370 PRINT "WILL "
373 P = 35: GOSUB 6: P = 35: GOSUB 6: P = 7: GOSUB 6: P = 34:
GOSUB 6: P = 0: GOSUB 6: P = 0: GOSUB 6
375 PRINT "LOVE "
376 P = 0: GOSUB 6: P = 33: GOSUB 6: P = 25: GOSUB 6: P = 51: GOSUB 6: P = 45:
GOSUB 6: P = 45: GOSUB 6: P = 0: GOSUB 6
379 PRINT "ME "
381 P = 0: GOSUB 6: P = 0: GOSUB 6: P = 55: GOSUB 6: P = 1: G
999 GOTO 321
1000 END

```

```

1 REM THIS IS THE PROGRAM CALLED SPEECH REV 1.1 5/6/85 COPYRIGHT (C) 198
6 - STEVE JACOBY ENTERPRISES
2 XY = XY+1: IF XY > 1 THEN GOTO 322
5 HIMEM: 49999
10 R = 64
20 REM SET I/O CODE
30 POKE 50000, 62
40 POKE 50001, 0
50 POKE 50002, 211
60 POKE 50003, 0
70 POKE 50004, 201
80 REM SET CONTROL BIT
90 POKE 50001, 128
100 POKE 50003, R+3
110 CALL 50000
120 REM SET DURATION
130 POKE 50001, 192
140 POKE 50003, R
150 CALL 50000
160 REM SET AMPLITUDE
170 POKE 50001, 124
180 POKE 50003, R+3
190 CALL 50000
200 REM SET FILTER
210 POKE 50001, 231
220 POKE 50003, R+4
230 CALL 50000
240 REM SET RATE
245 REM IF YOU WANT A LOW VOICE THEN SET LINE 250 AT 167 OR 166 OR 176 THROU
GH 180 - FOR HIGH SET TO 168 OR 169 THROUGH 175
250 POKE 50001, 168
260 POKE 50003, R+2
270 CALL 50000
280 REM SET INFLECTION
290 POKE 50001, 136
300 POKE 50003, R+1
310 CALL 50000
320 POKE 50003, R
322 HOME: VTAB 10: PRINT "SUPER TALK DEMONSTRATION": PRINT "PRESS ANY KEY TO S
PEAK": GET G$
330 REM SPEAK HELLO
332 PRINT "HELLO "
340 P = 44: GOSUB 2000
350 P = 10: GOSUB 2000
360 P = 32: GOSUB 2000
370 P = 17: GOSUB 2000
380 P = 35: GOSUB 2000
400 P = 0: GOSUB 2000
460 REM SPEAK I
462 PRINT "I "
470 P = 15: GOSUB 2000
480 P = 1: GOSUB 2000
490 P = 192: GOSUB 2000
525 PRINT "AM "
530 P = 10: GOSUB 2000
540 P = 55: GOSUB 2000
550 P = 0: GOSUB 2000
570 REM SPEAK A
572 PRINT "A "
580 P = 8: GOSUB 2000
590 P = 1: GOSUB 2000
600 P = 0: GOSUB 2000

```

```

605 REM SPEAK SUPER
607 PRINT "SUPER "
610 P = 48: GOSUB 2000
612 P = 48: GOSUB 2000
620 P = 20: GOSUB 2000
630 P = 22: GOSUB 2000
640 P = 39: GOSUB 2000
642 P = 44: GOSUB 2000
645 P = 10: GOSUB 2000
648 P = 29: GOSUB 2000
651 P = 0: GOSUB 2000
665 REM SPEAK TALK
666 PRINT "TALK "
670 P = 0: GOSUB 2000
675 P = 0: GOSUB 2000
680 P = 40: GOSUB 2000
690 P = 40: GOSUB 2000
700 P = 44: GOSUB 2000
701 P = 16: GOSUB 2000
702 P = 41: GOSUB 2000
703 P = 41: GOSUB 2000: P = 43: GOSUB 2000: P = 43: GOSUB 2000
704 P = 0: GOSUB 2000
705 REM PAUSE THEN SPEAK YOU
706 PRINT "YOU "
710 P = 0: GOSUB 2000
712 P = 4: GOSUB 2000
713 P = 20: GOSUB 2000
714 P = 22: GOSUB 2000
715 P = 22: GOSUB 2000
720 PRINT "PRESSED "
721 REM SPEAK PRESSED
722 P = 39: GOSUB 2000
723 P = 44: GOSUB 2000
724 P = 31: GOSUB 2000
725 P = 10: GOSUB 2000
726 P = 48: GOSUB 2000
728 P = 40: GOSUB 2000
731 PRINT "THE "
732 REM SPEAK THE
733 P = 40: GOSUB 2000: P = 45: GOSUB 2000
734 P = 54: GOSUB 2000
736 P = 27: GOSUB 2000
739 PRINT "WRONG "
740 REM SPEAK WRONG
742 P = 31: GOSUB 2000
745 P = 16: GOSUB 2000
749 P = 57: GOSUB 2000
754 PRINT "BUTTON "
755 REM SPEAK BUTTON
758 P = 36: GOSUB 2000
759 P = 27: GOSUB 2000
760 P = 40: GOSUB 2000
761 P = 62: GOSUB 2000
763 P = 56: GOSUB 2000
770 PRINT "JENNIFER "
771 REM SPEAK JENNIFER
773 P = 49: GOSUB 2000
776 P = 11: GOSUB 2000
779 P = 56: GOSUB 2000
782 P = 2: GOSUB 2000
785 P = 52: GOSUB 2000
788 P = 28: GOSUB 2000
790 P = 45: GOSUB 2000
792 P = 0: GOSUB 2000

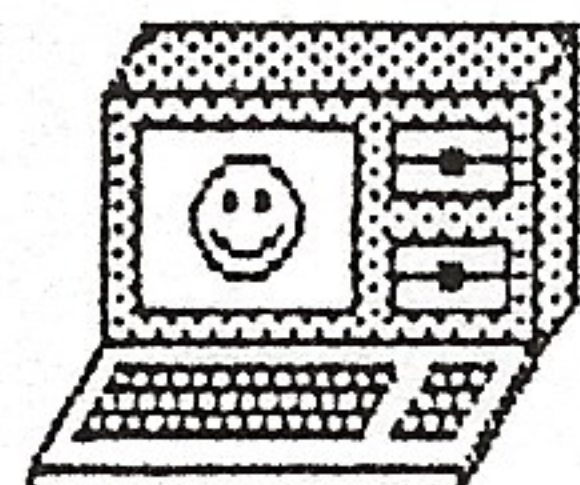
```

```

999 GOTO 2
1000 REM END
1020 END
2000 REM SPEAK PHONEM
2010 POKE 50001, P
2020 CALL 50000
2030 FOR J = 1 TO 130
2040 NEXT J: RETURN
65535 END

```





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