<u>Blue Alpha Electronics</u>

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Thank you for buying 'The VoiceBox' for your SAM Coupe. We hope that you are pleased with your purchase and that you   will continue to support us in supporting your home computer. Please do not forget to send us your guarantee card as soon as possible.

<u>Introduction.</u>

The VoiceBox is an allophone based speech synthesizer It comes complete with its own driver software which enables you to type in English text, which is converted to speech. A written description of software to drive the VoiceBox from your own BASIC or machine code programs is given in this document.

<u>What you should have.</u>

This manual, a guarantee card, a white plastic box with a connecter on one side, and a disk (or tape).

<u>Connecting to the Coupe</u>

Switch your computer OFF at the mains.   Never connect or disconnect any interface to your computer with the power on, as this could damage your interface and/or your computer. Plug the VoiceBox into the Expansion Euroconnecter (see your Coupe User Guide) at the rear of your machine (If you have any other interfaces connected to the Euroconnecter, you will have to disconnect them). Now switch on your Coupe.   You should get the normal start-up message.

<u>Hearing your Coupe speak.</u>

Turn the volume up on your TV, monitor or stereo. If you have a tape based system, press F7 and start the tape deck. If you have a disk based system, boot the system from one of your own, bootable disks, and then insert the VoiceBox disk in the. left hand drive and press F9.

A demonstration of the Coupe speaking should now be loading. It autoruns when loaded. The text to speech converter will then load automatically.

You may now type English text and upon pressing RETURN, the computer will convert the English to a phonetic representation of the speech, and then say the speech. You may vary the speed by pressing 1 to 5 followed by RETURN at the "Enter your text :" prompt. The program may be exited by typing 'STOP.' (without the quotes). Quite often the correct speech will be obtained by an irregular spelling of the words.

If you can not hear the speech by following the above procedure, please check that you have followed the above instructions exactly, and if it still does not appear to work, please ring us on the above number.

<u>Theory of operation</u>.

It is important to understand the operation of the VoiceBox before attempting to drive it from within your own programs. The VoiceBox can be interrogated as to whether it is connected to the computer. If it is connected, it can be sent a code corresponding to an allophone, and then polled to see if it has finished saying the current allophone, and then sent the next allophone. (An allophone is a basic building block of speech, from which any word can be constructed.) An example of a BASIC subroutine to

accomplish this is given in the next section. It should be noted that the letters which make up an English word are not necessarily the same as those suitable to be sent to the VoiceBox

Using the VoiceBox from your own programs

The VoiceBox appears to the computer as a single IO mapped port, at the IO address FF7F Hex, or 65407 Decimal. The input port responds with the VoiceBox signature of 24 on its uppermost 7 bits, and the Least Significant Bit (LSB) is the BUSY status of the VoiceBox. The VoiceBox must be sent a silence code (0) at the end of each word, or the last allophone will be repeated indefinitely.

For full handshaking operation, the VoiceBox should be driven as shown in the following BASIC subroutine:
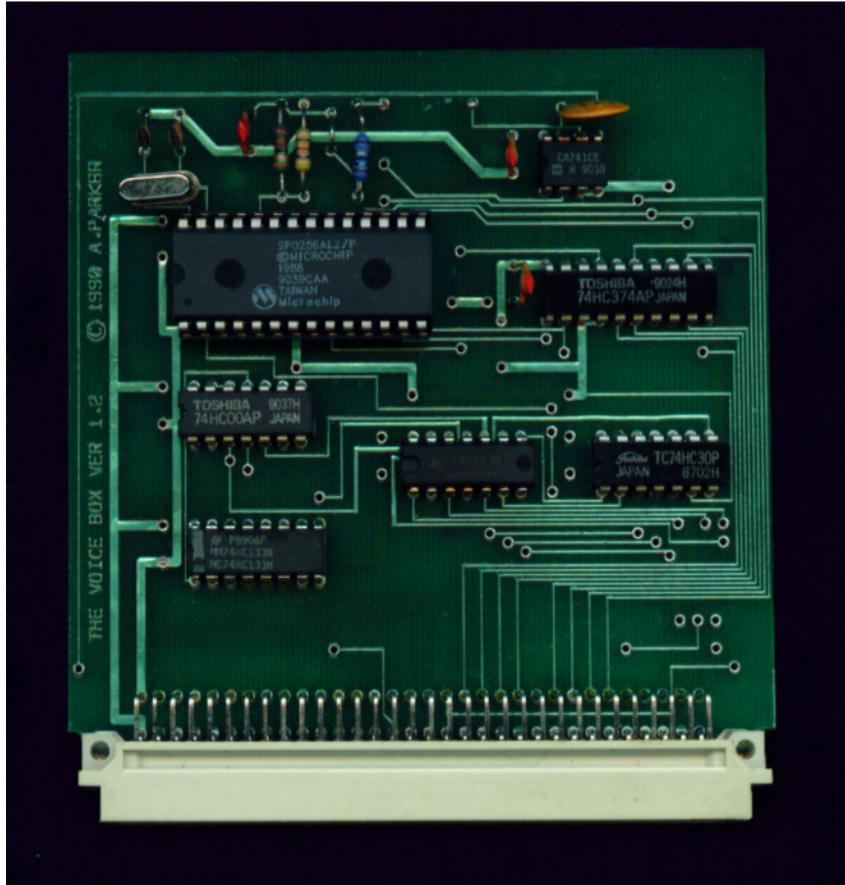
1. Poll port 65407.	1000 LET Inport = IN 65107
2. Is the VoIceBox connected ?	1010 LET sig = Inport BAND 254
	1020 IF sig <> 24 THEN stop
3. Is It still speaking ?	1030 LET busy -=IN 65407 BAND 1
	1040 IF busy =1 THEN GOTO 1030
4.Output the allophone.	1050 OUT 65407,allophone
	1060 RETURN

where : allophone, busy, sig and inport are variable names.

This subroutine should be called for each allophone In the speech to be said. Machine Code programmers should easily be able to convert the above into the corresponding Z80 mnemonics.

The allophones thus far referred to may be found in the final section of this manual. Each letter is followed by the allophone occurrence In an example word, followed by the corresponding code.

Board scan

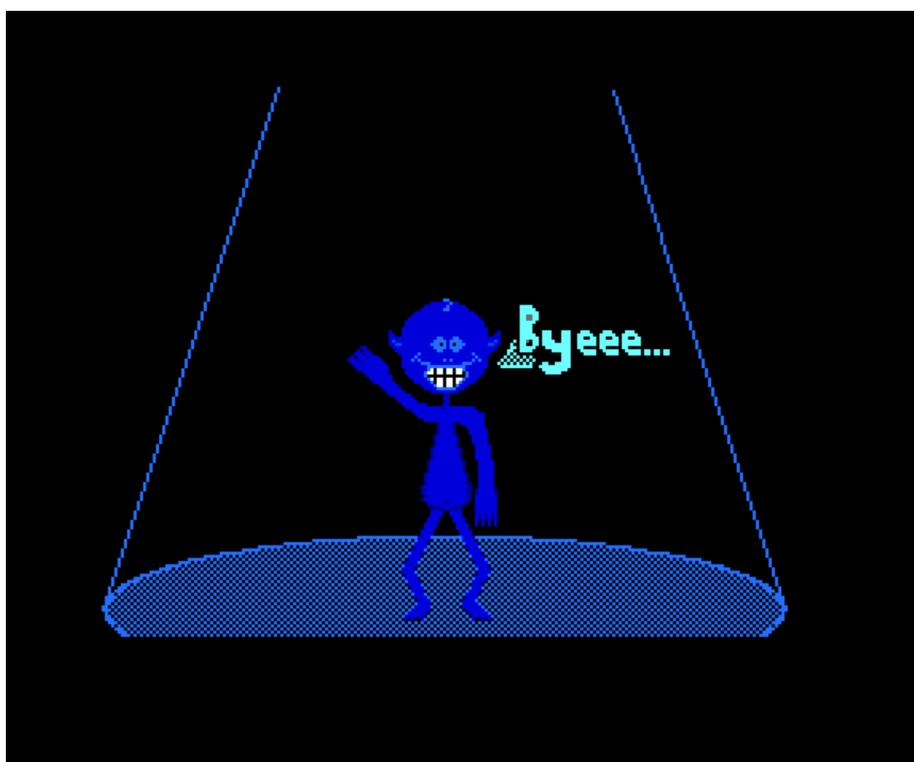The voiceBox
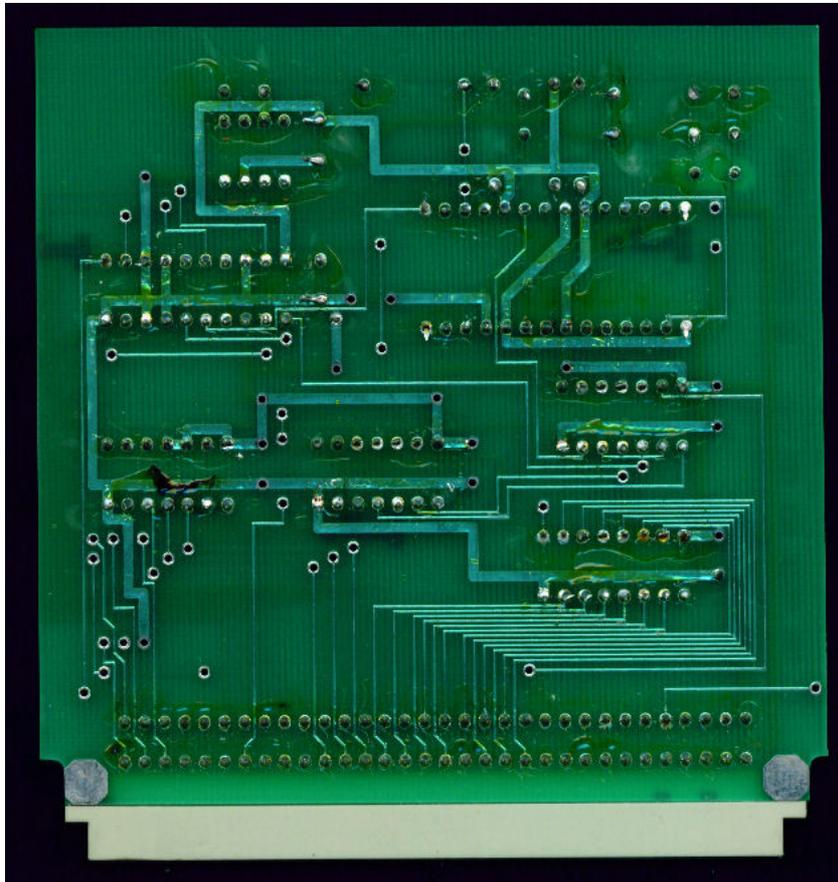
Sam Coupé VoiceBox

The Blue Alpha`s software running on Sim Coupé.

The Sim Coupé emulator dose not support the
Sam VoiceBox at the moment.

This screen is displayed when the software cannot make the speech
chip say a word that's been entered

Quit program screen.

"I don't know of any software written to take advantage of the VoiceBox. Blue Alpha Electronics when out of business and support stopped. Not many of these VoiceBoxs were made and are quite rare to find. The software & three page manual for me was very dis-appointing. So, when I first got my VoiceBox I tried to right a small demo program to see what speech it could say. Screen shots and listing follows not very well programmed but it works !."

Steve Parry-Thomas

```
         Sam Voice Box Demo
        By Steve  Parry-Thomas
1-Information.

2-Letters (A to Z).

3-Months.

4-Days of the week.

5-Numbers.

6-Some words.
```

```
              Sam Voice Box Information
The chip that makes your Sam talk is a SP0256 allophone based speech processor. The
allophone speech synthesis technique provides the user with the ability to synthesize
an unlimited vocabulary. Fifty nine speech sounds (called allophones) and five pauses
are used to make up any word.
 The allophone set contians two or three versions of some phonames ( a single allo -
phone). To speak a  word all you need to do, is to string a gruop of allophones  to-
gether.
        Eg.    'Computer' uses allophones :-    KK1,AX,MM,PP1,YY1,UW1,TT1,ER

        'Computer' allophone codes are :-    42,15,16,9,49,22,13,51

  The codes are then sent out to port 65407, always sent a  '0' code at the end. This
 is a stop signal, the last phoname sent will be repeated if it is not sent.
  On the next page is a list of codes, Allophones, sample words and duration.

 Have a look at this basic program lines  10000 to 10480. All the speech for the demo
  is there.                                          Press any key to continue ...
```

Sam Voice Box Information

Code	Allophone	sample	duration	Code	Allophone	sample	duration
0	PA1	PAUSE	10MS	17	TT1	PART	100ms
1	PA2	PAUSE	13MS	18	DH1	THEY	290ms
2	PA3	PAUSE	50MS	19	IY	SEE	250ms
3	PA4	PAUSE	100MS	20	EY	BEIGE	280ms
4	PA5	PAUSE	200MS	21	DD1	COULD	70ms
5	OY	Boy	420MS	22	UW1	TO	100ms
6	AY	Sky	260MS	23	AO	AUGHT	100ms
7	EH	End	70MS	24	AA	HOT	100ms
8	KK2	COMB	120MS	25	YY2	YES	180ms
9	PP	POW	210MS	26	AE	HAT	120ms
10	JH	DODGE	140MS	27	HH1	HE	130ms
11	NN1	THIN	140MS	28	BB1	BUSINESS	80ms
12	IH	SIT	70MS	29	TH	THIN	190ms
13	TT2	TO	140MS	30	UH	BOOK	100ms
14	RR1	RURAL	170MS	31	UW2	FOOD	260ms
15	AX	SUCCEED	70MS	32	AW	OUT	370ms

Press any key for the rest....

Code	Allophone	sample	duration	Code	Allophone	sample	duration
33	DD2	DO	160MS	49	YY1	YES	130ms
34	GG3	WIG	140MS	50	CH	CHURCH	190ms
35	VV	VEST	190MS	51	ER1	FIR	160ms
36	GG1	GOT	80MS	52	ER2	FIR	300ms
37	SH	SHIP	160MS	53	OW	BEAU	240ms
38	ZH	AZURE	190MS	54	DH2	THEY	240ms
39	RR1	BRAIN	120MS	55	SS	VEST	90ms
40	FF	FOOD	150MS	56	NN2	NO	190ms
41	KK2	SKY	190MS	57	HH2	HOE	180ms
42	KK1	CAN'T	160MS	58	OR	STORE	330ms
43	ZZ	ZOO	210MS	59	AR	ALARM	290ms
44	NG	ANCHOR	220MS	60	YR	CLEAR	350ms
45	LL	LAKE	110MS	61	GG2	GUEST	40ms
46	WW	WOOL	180MS	62	EL	SADDLE	190ms
47	XR	REPAIR	360MS	63	BB2	BUSINESS	50ms
48	WH	WHIG	200MS				

End - press any key for menu...

```
  5 PALETTE
    LIST FORMAT 2
    CLS
 10 DO
      MODE 4
       menu
    LOOP
 50 STOP
100 DEF PROC menu
105   LOCAL c
110   CLS
115   PRINT AT 0,7;"Sam Voice Box Demo"; AT 1,5;"By Steve  Parry-
Thomas"
120   PRINT AT 3,0;"1-Information."'''"2-Letters (A to Z)."'''"3-
Months."'''"4-Da
      ys of the week."'''"5-Numbers."'''"6-Some words."
130   GET c
135
140   ON c
         info
         letters
         months
         weekdays
         numbers
         words
199 END PROC
200 DEF PROC escape
205   LOCAL k$
      LET k$=INKEY$
210   IF k$="x" OR k$="X" THEN CLEAR
         RUN
220 END PROC
400 DEF PROC info
405   MODE 3
      CLS
      LOCAL t,d$
      RESTORE 10500
410   PRINT AT 0,0; PAPER 2; PEN 0;"
Sam Voice Box
      Information                                  "
420   FOR t=1 TO 45
422     READ d$
        IF d$="255" THEN PAUSE 0
          PRINT AT 1,0;
          LET d$=""
          GO TO 422
430     PRINT d$;
449   NEXT t
      PAUSE 0
450 END PROC
500 DEF PROC words
505   CLS
      LOCAL a,a$,x
      RESTORE 10152
      PRINT AT 0,8;"Press X for menu"
510   FOR a=1 TO 165
        READ a$
        PRINT AT 10,5;"                "
        PRINT AT 10,5;a$
515     DO
          READ x
```

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          EXIT IF x=255
            voice x
          LOOP
          endvoice
          escape
        NEXT a
520 END PROC
600 DEF PROC numbers
605   CLS
      LOCAL a,a$,x
      RESTORE 10052
      PRINT AT 0,8;"Press X for menu"
610   FOR a=1 TO 31
        READ a$
        PRINT AT 10,5;"          "
        PRINT AT 10,5;a$
615     DO
          READ x
        EXIT IF x=255
620       voice x
        LOOP
        endvoice
        escape
      NEXT a
630 END PROC
750 DEF PROC weekdays
755   CLS
      LOCAL a,a$,x
      RESTORE 10114
      PRINT AT 0,8;"Press X for menu"
760   FOR a=1 TO 7
        READ a$
        PRINT AT 10,5;"               "
        PRINT AT 10,5;a$
765     DO
          READ x
        EXIT IF x=255
770       voice x
        LOOP

775     endvoice
        escape
      NEXT a
790 END PROC
850 DEF PROC months
855   CLS
860   LOCAL a,a$,x
865   RESTORE 10128
      PRINT AT 0,8;"Press X for menu"
870   FOR a=1 TO 12
875     READ a$
        PRINT AT 10,5;"          "

        PRINT AT 10,5;a$
880     DO
885       READ x
895     EXIT IF x=255
896       voice x
897     LOOP
        endvoice
        escape
```

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           NEXT a
 898 END PROC
 900 DEF PROC letters
 905   CLS
       LOCAL a,a$,x
       RESTORE 10000
       PRINT AT 0,8;"Press X for menu"
 915   FOR a=1 TO 26
 920     READ a$
         PRINT AT 10,10; a$
 925     DO
 930       READ x
 935     EXIT IF x=255
 940       voice x
 945     LOOP
         endvoice
         escape
       NEXT a
 950 END PROC
 960 DEF PROC endvoice
 961   voice 0
 962   PAUSE 10
 963 END PROC
1000 DEF PROC voice x
1005   LOCAL inport,sig,busy
1010   LET inport=IN 65407,sig=inport BAND 254
1020   IF sig<>24 THEN CLS
         PRINT AT 10,6;"No Voice Box Present"
         PAUSE 0
         CLEAR
         RUN
1025   LET busy=IN 65407 BAND 1
1030   IF busy=1 THEN GO TO 1025
1035   OUT 65407,x
1040 END PROC
10000 DATA "A",20,255
10002 DATA "B",63,19,255
10004 DATA "C",55,55,19,255
10006 DATA "D",33,19,255
10008 DATA "E",19,255
10010 DATA "F",7,7,40,40,255
10012 DATA "G",10,19,255
10014 DATA "H",20,1,2,50,255
10016 DATA "I",24,6,255
10018 DATA "J",10,7,20,255
10020 DATA "K",42,7,20,255
10022 DATA "L",7,7,62,255
10024 DATA "M",7,7,16,255
10026 DATA "N",7,7,11,255
10028 DATA "O",53,255
10030 DATA "P",9,19,255
10032 DATA "Q",42,49,31,255
10034 DATA "R",59,255
10036 DATA "S",7,7,55,55,255
10038 DATA "T",13,19,255
10040 DATA "U",49,31,255
10042 DATA "V",35,19,255
10044 DATA "W",33,15,1,63,49,31,255
10046 DATA "X",7,7,2,41,55,55,255
10048 DATA "Y",46,6,255
10050 DATA "Z",43,7,21,255
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10052 DATA "ZERO",43,60,53,255
10054 DATA "ONE",46,15,15,11,255
10056 DATA "TWO",13,31,255
10058 DATA "THREE",29,14,19,255
10060 DATA "FOUR",40,40,58,255
10062 DATA "FIVE",40,40,6,35,255
10064 DATA "SIX",55,55,12,12,2,41,55,255
10066 DATA "SEVEN",55,55,7,7,35,12,11,255
10068 DATA "EIGHT",20,2,13,255
10070 DATA "NINE",11,24,6,11,255
10072 DATA "TEN",13,7,7,11,255
10074 DATA "ELEVEN",12,45,7,7,35,12,11,255
10076 DATA "TWELVE",13,48,7,7,45,35,255
10078 DATA "THIRTEEN",29,51,1,2,13,19,11,255
10080 DATA "FOURTEEN",40,58,1,2,13,19,11,255
10082 DATA "FIFTEEN",40,12,40,1,2,13,19,11,255
10084 DATA "SIXTEEN",55,55,12,2,41,55,1,2,13,19,11,255
10086 DATA "SEVENTEEN",55,55,7,35,29,11,1,2,13,19,11,255
10088 DATA "EIGHTEEN",20,1,2,13,19,11,255
10090 DATA "NINETEEN",11,6,11,1,2,13,19,11,255
10092 DATA "TWENTY",13,48,7,7,11,1,2,13,19,255
10094 DATA "THIRTY",29,52,1,2,13,19,255
10096 DATA "FORTY",40,58,2,13,19,255
10098 DATA "FIFTY",40,40,12,40,40,1,2,13,19,255
10100 DATA "SIXTY",55,55,12,2,41,55,1,2,13,19,255
10102 DATA "SEVNTY",55,55,7,35,11,1,2,13,19,255
10104 DATA "EIGHTY",20,2,13,19,255
10106 DATA "NINETY",11,6,11,2,13,19,255
10108 DATA "HUNDRED",57,15,15,11,11,1,33,39,12,12,0,21,255
10110 DATA "THOUSAND",29,24,32,43,29,0,0,11,21,255
10112 DATA "MILLION",16,12,12,45,49,15,11,255
10114 DATA "SUNDAY",55,55,15,15,11,1,33,20,255
10116 DATA "MONDAY",16,15,15,11,1,33,20,255
10118 DATA "TUESDAY",13,31,43,1,33,20,255
10120 DATA "WEDNESDAY",46,7,7,11,43,1,33,20,255
10122 DATA "THURSDAY",29,52,43,1,33,20,255
10124 DATA "FIRDAY",40,39,6,1,33,20,255
10126 DATA "SATURDAY",55,55,26,2,13,1,33,20,255
10128 DATA "JANUARY",10,26,26,11,25,47,19,255
10130 DATA "FEBRUARY",40,7,7,1,28,39,31,47,19,255
10132 DATA "MARCH",16,59,2,50,255
10134 DATA "APRIL",20,2,9,39,12,12,45,255
10136 DATA "MAY",16,20,255
10138 DATA "JUNE",10,31,11,255
10140 DATA "JULY",10,22,45,6,255
10142 DATA "AUGUST",23,23,1,61,15,55,2,17,255
10144 DATA "SEPTEMBER",55,55,7,2,9,2,13,7,7,3,28,28,51,255
10146 DATA "OCTOBER",24,1,41,2,13,53,0,63,51,255
10148 DATA "NOVEMBER",56,53,35,7,7,16,0,63,51,255
10150 DATA "DECEMBER",21,19,55,55,7,7,16,0,63,51,255
10152 DATA "ALARM",15,45,59,16,255
10154 DATA "BATHE",63,7,54,255
10156 DATA "BATHER",63,20,54,51,255
10158 DATA "BATHING",63,20,54,12,44,255
10160 DATA "BEER",63,60,255
10162 DATA "BREAD",28,39,7,7,0,21,255
10164 DATA "BY",63,24,6,255
10166 DATA "CALENDER",42,26,26,45,7,11,1,33,51,255
10168 DATA "CLOCK",42,45,24,24,2,41,255
10170 DATA "CLOWN",42,45,32,11,255
10172 DATA "CHECK",50,7,7,2,41,255
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10174 DATA "cheched",50,7,7,2,41,1,13,255
10176 DATA "checker",50,7,7,2,42,51,255
10178 DATA "checkers",50,7,7,2,42,51,43,255
10180 DATA "cheching",50,7,7,2,42,12,44,255
10182 DATA "checks",50,7,7,2,42,55,255
10184 DATA "cognitive",8,24,24,34,11,12,2,13,12,35,255
10186 DATA "collide",8,15,45,6,21,255
10188 DATA "computer",42,15,16,9,49,22,13,51,255
10190 DATA "cookie",8,30,42,19,255
10192 DATA "coop",8,31,1,9,255
10194 DATA "correct",42,52,7,7,1,41,1,17,255
10196 DATA "corrected",42,52,7,7,1,41,1,13,12,1,21,255
10198 DATA "correcting",42,52,7,7,1,41,1,13,12,44,255
10200 DATA "corrects",42,52,7,7,1,41,1,17,55,255
10202 DATA "crown",42,39,32,11,255
10204 DATA "date",33,20,2,13,255
10206 DATA "daughter",33,23,13,51,255
10208 DATA "day",33,7,20,255
10210 DATA "divided",33,12,35,6,1,33,12,1,21,255
10212 DATA "emotional",19,16,53,37,15,11,15,62,255
10214 DATA "engage",7,7,0,11,36,20,1,10,255
10216 DATA "engagement",7,7,0,11,36,20,1,10,16,7,7,11,1,2,13,255
10218 DATA "engages",7,7,0,11,36,20,1,10,12,43,255
10220 DATA "engaging",7,7,0,11,36,20,1,10,12,44,255
10222 DATA "enrage",7,11,14,20,1,10,255
10224 DATA "enraged",7,11,14,20,1,10,1,21,255
10226 DATA "enrages",7,11,14,20,1,10,12,43,255
10228 DATA "enraging",7,11,14,20,1,10,12,44,255
10230 DATA "escape",7,55,55,2,42,1,2,9,255
10232 DATA "escaped",7,55,55,2,42,1,2,9,1,13,255
10234 DATA "escapes",7,55,55,2,42,1,2,9,55,255
10236 DATA "escaping",7,55,55,2,42,1,2,9,12,44,255
10238 DATA "equal",19,1,2,8,48,15,62,255
10240 DATA "equals",12,1,2,8,48,15,62,43,255
10242 DATA "error",7,47,58,255
10244 DATA "extent",7,42,55,13,7,7,11,13,255
10246 DATA "fir",40,52,255
10248 DATA "freeze",40,40,14,19,43,255
10250 DATA "freezer",40,40,14,19,43,51,255
10252 DATA "freezers",40,40,14,19,43,51,43,255
10254 DATA "freezing",40,40,14,19,43,12,44,255
10256 DATA "frozen",40,40,14,53,43,7,11,255
10258 DATA "gauge",36,20,1,10,255
10260 DATA "gauged",36,20,1,10,1,21,255
10262 DATA "gauges",36,20,1,10,12,43,255
10264 DATA "gauging",36,20,1,10,12,44,255
10266 DATA "hello",27,7,45,15,53,255
10268 DATA "hour",32,51,255
10270 DATA "infinitive",12,11,40,40,12,12,11,12,1,2,13,10,35,255
10272 DATA "intrigue",12,11,2,13,39,19,0,34,255
10274 DATA "intrigued",12,11,2,13,39,19,0,34,1,21,255
10276 DATA "intrigues",12,11,2,13,39,19,0,34,43,255
10278 DATA "intriguing",12,11,2,13,39,19,0,34,12,44,255
10280 DATA
"investigate",12,12,11,35,7,7,55,1,2,13,12,0,36,20,1,13,255
10282 DATA
"investigated",12,12,11,35,7,7,55,1,2,13,12,0,36,20,1,13,12,1,21,25
5
10284 DATA
"investigater",12,12,11,35,7,7,55,1,2,13,12,0,36,20,1,13,51,255
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10286 DATA
"investigaters",12,12,11,35,7,7,55,1,2,13,12,0,36,20,1,13,51,43,255
10288 DATA
"investigates",12,12,11,35,7,7,55,1,2,13,12,0,36,20,1,17,55,255
10290 DATA
"investigating",7,7,11,35,7,7,55,1,2,13,12,0,36,20,1,13,12,44,255
10292 DATA "key",42,19,255
10294 DATA "legislate",45,7,7,1,10,10,55,55,45,20,1,2,13,255
10296 DATA "legislated",45,7,7,1,10,10,55,55,45,20,1,2,13,12,21,255
10298 DATA "legislates",45,7,7,1,10,10,55,55,45,20,1,2,17,55,255
10300 DATA
"legislating",45,7,7,1,10,10,55,55,45,20,1,2,13,12,44,255
10302 DATA "legislature",45,7,7,1,10,10,55,55,45,20,1,2,50,51,255
10304 DATA "letter",45,7,7,2,13,51,255
10306 DATA "litter",45,12,12,2,13,51,255
10308 DATA "little",45,12,12,2,13,62,255
10310 DATA "memory",16,7,7,16,52,19,255
10312 DATA "memories",16,7,7,16,52,19,43,255
10314 DATA "minute",16,12,11,12,2,13,255
10316 DATA "month",16,15,11,29,255
10318 DATA "nip",11,12,12,1,2,9,255
10320 DATA "nipped",56,12,12,1,2,9,2,13,255
10322 DATA "nipping",11,12,12,1,2,9,12,44,255
10324 DATA "nips",11,12,12,1,2,9,55,255
10326 DATA "no",56,15,53,255
10328 DATA "physical",40,40,12,43,12,2,42,15,62,255
10330 DATA "pin",9,12,12,11,255
10332 DATA "pinned",9,12,12,11,1,21,255
10334 DATA "pinning",9,12,12,11,12,44,255
10336 DATA "pins",9,12,12,11,43,255
10338 DATA "pledge",9,45,7,7,2,10,255
10340 DATA "pledged",9,45,7,7,2,10,1,21,255
10342 DATA "pledges",9,45,7,7,2,10,12,43,255
10344 DATA "pledging",9,45,7,7,2,10,12,44,255
10346 DATA "plus",9,45,15,15,55,55,255
10348 DATA "ray",14,7,20,255
10350 DATA "rays",14,7,20,43,255
10352 DATA "ready",14,7,7,0,33,19,255
10354 DATA "red",14,7,7,0,21,255
10356 DATA "robot",14,53,1,63,24,2,13,255
10358 DATA "robots",14,53,1,63,24,2,17,55,255
10360 DATA "score",55,55,2,8,58,255
10362 DATA "second",55,55,7,2,42,12,11,1,21,255
10364 DATA "sensitive",55,55,7,7,11,55,55,12,1,2,13,12,35,255
10366 DATA
"sensitivity",55,55,7,7,11,55,55,12,1,2,13,12,35,12,1,2,13,19,255
10368 DATA "sincere",55,55,12,12,11,55,55,60,255
10370 DATA "sincerely",55,55,12,12,11,55,55,60,45,19,255
10372 DATA "sincerity",55,55,12,12,11,55,55,7,7,14,12,1,2,13,19,255
10374 DATA "sister",55,55,12,12,55,2,13,51,255
10376 DATA "speak",55,55,2,19,2,41,255
10378 DATA "spell",55,55,2,9,7,7,62,255
10380 DATA "spelled",55,55,2,9,7,7,62,2,21,255
10382 DATA "speller",55,55,2,9,7,7,62,52,255
10384 DATA "spellers",55,55,2,9,7,7,62,52,43,255
10386 DATA "spelling",55,55,2,9,7,7,62,12,44,255
10388 DATA "spells",55,55,2,9,7,7,62,43,255
10390 DATA "start",55,55,2,13,59,2,13,255
10392 DATA "started",55,55,2,13,59,2,13,12,0,33,255
10394 DATA "starter",55,55,2,13,59,2,13,51,255
10396 DATA "starting",55,55,2,13,59,2,13,12,44,255
```

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10398 DATA "starts",55,55,2,13,59,2,13,12,44,255
10400 DATA "stop",55,55,2,17,24,24,2,9,255
10402 DATA "stopped",55,55,2,17,24,24,2,9,2,13,255
10404 DATA "stopper",55,55,2,17,24,24,2,9,51,255
10406 DATA "stopping",55,55,2,17,24,24,2,9,12,44,255
10408 DATA "stops",55,55,2,17,24,24,2,9,55,255
10410 DATA "subject",55,55,15,15,1,28,1,10,7,2,41,2,13,255
10412 DATA "sweat",55,55,46,7,7,2,13,255
10414 DATA "sweated",55,55,46,7,7,2,13,12,2,21,255
10416 DATA "sweater",55,55,46,7,7,2,13,51,255
10418 DATA "sweaters",55,55,46,7,7,2,13,51,43,255
10420 DATA "sweating",55,55,46,7,7,2,13,12,44,255
10422 DATA "sweats",55,55,46,7,7,2,13,55,255
10424 DATA "switch",55,55,48,12,12,2,50,255
10426 DATA "switched",55,55,48,12,12,2,50,2,13,255
10428 DATA "switches",55,55,48,12,12,2,50,12,43,255
10430 DATA "switching",55,55,48,12,12,2,50,12,44,255
10432 DATA "system",55,55,12,12,55,55,2,13,7,16,255
10434 DATA "systems",55,55,12,12,55,55,2,13,7,16,43,255
10436 DATA "talk",13,23,23,1,41,255
10438 DATA "talked",13,23,23,2,41,2,13,255
10440 DATA "talker",13,23,23,2,42,51,255
10442 DATA "talkers",13,23,23,2,42,51,43,255
10444 DATA "talking",13,23,23,2,42,12,44,255
10446 DATA "talks",13,23,23,1,41,55,255
10448 DATA "thread",29,14,7,7,1,21,255
10450 DATA "threaded",29,14,7,7,1,33,12,1,21,255
10452 DATA "thraeder",29,14,7,7,1,33,51,255
10454 DATA "threaders",29,14,7,7,1,33,51,43,255
10456 DATA "threading",29,14,7,7,1,33,12,44,255
10458 DATA "threads",29,14,7,7,1,21,43,255
10460 DATA "then",18,7,7,11,255
10462 DATA "time",13,24,6,16,255
10464 DATA "times",13,24,6,16,43,255
10466 DATA "uncle",15,44,2,8,62,255
10468 DATA "whale",46,20,62,255
10470 DATA "whaler",46,20,45,51,255
10472 DATA "whalers",46,20,45,51,43,255
10474 DATA "whales",46,20,62,43,255
10476 DATA "whaling",46,20,45,29,44,255
10478 DATA "year",25,60,255
10480 DATA "yes",25,7,7,55,55,255
10500 DATA "The chip that makes your Sam talk is a SP0256 allophone
based speech
        processor. "
10505 DATA "The  allophone speech synthesis technique provides the
user with the
        ability to synthesizean unlimited vocabulary."
10510 DATA " Fifty nine speech sounds (called allophones) and five
pausesare use
      d to make up any word.
          "
10515 DATA "The allophone set contians two or three versions of
some phonames (
      a single allo - phone). "
10520 DATA "To speak a  word all you need to do, is to string a
gruop of allopho
      nes  to- gether.
                        "
10525 DATA "Eg.    'Computer'  uses allophones :-
KK1,AX,MM,PP1,YY1,UW1,TT1,E
```

```
      R
                                        'Computer' allophone codes
are :-      4
     2,15,16,9,49,22,13,51
                                                "
10530 DATA "The codes are then sent out to port 65407, always sent
a  '0' code a
     t the end. This is a stop signal, the last phoname sent will
be repeated i
     f it is not sent.          On the next page is a list of
codes, Allophone
     s, sample words and duration.
                              "
10531 DATA "                              Have a look at this basic
program line
     s  10000 to 10480. All the speech for the demo  is there.
                              "
10535 DATA "Press any key to continue ...","255"
10555 DATA "Code    Allophone      sample      duration     Code
Allophone
      sample    duration"
10560 DATA "0       PA1           PAUSE        10MS         17
TT1
        PART        100ms"
10561 DATA "1       PA2           PAUSE        13MS         18
DH1
        THEY        290ms"
10562 DATA "2       PA3           PAUSE        50MS         19
IY
        SEE         250ms"
10563 DATA "3       PA4           PAUSE        100MS        20
EY
        BEIGE       280ms"
10564 DATA "4       PA5           PAUSE        200MS        21
DD1
        COULD       70ms"
10565 DATA "5        OY           Boy          420MS        22
UW1
        TO          100ms"
10566 DATA "6        AY           Sky          260MS        23
AO
        AUGHT       100ms"
10567 DATA "7        EH           End          70MS         24
AA
        HOT         100ms"
10568 DATA "8       KK2           COMB         120MS        25
YY2
        YES         180ms"
10569 DATA "9        PP           POW          210MS        26
AE
        HAT         120ms"
10570 DATA "10       JH           DODGE        140MS        27
HH1
        HE          130ms"
10571 DATA "11      NN1           THIN         140MS        28
BB1
        BUSINESS    80ms"
10572 DATA "12       IH           SIT          70MS         29
TH
        THIN        190ms"
```

```
10573 DATA "13     TT2           TO          140MS        30
UH
       BOOK       100ms"
10574 DATA "14     RR1           RURAL       170MS        31
UW2
       FOOD       260ms"
10575 DATA "15     AX            SUCCEED     70MS         32
AW
       OUT        370ms"
10576 DATA "                    Press any key for the
rest....","255"
10577 DATA "Code   Allophone     sample     duration    Code
Allophone
       sample  duration"
10578 DATA "33     DD2           DO          160MS        49
YY1
       YES        130ms"
10580 DATA "34     GG3           WIG         140MS        50
CH
       CHURCH     190ms"
10582 DATA "35     VV            VEST        190MS        51
ER1
       FIR        160ms"
10584 DATA "36     GG1           GOT         80MS         52
ER2
       FIR        300ms"
10586 DATA "37     SH            SHIP        160MS        53
OW
       BEAU       240ms"
10588 DATA "38     ZH            AZURE       190MS        54
DH2
       THEY       240ms"
10590 DATA "39     RR1           BRAIN       120MS        55
SS
       VEST       90ms"
10592 DATA "40     FF            FOOD        150MS        56
NN2
       NO         190ms"
10594 DATA "41     KK2           SKY         190MS        57
HH2
       HOE        180ms"
10596 DATA "42     KK1           CAN'T       160MS        58
OR
       STORE      330ms"
10598 DATA "43     ZZ            ZOO         210MS        59
AR
       ALARM      290ms"
10600 DATA "44     NG            ANCHOR      220MS        60
YR
       CLEAR      350ms"
10602 DATA "45     LL            LAKE        110MS        61
GG2
       GUEST      40ms"
10604 DATA "46     WW            WOOL        180MS        62
EL
       SADDLE     190ms"
10606 DATA "47     XR            REPAIR      360MS        63
BB2
       BUSINESS   50ms"
10608 DATA "48     WH            WHIG        200MS
                  "
```

```
10610 DATA "                                    End - press
any key for me
     nu...","255"
```

This pdf by Steve Parry-Thomas

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For Sam Users everywhere