COLEX AMERICA

STD-WORDS

FEATURES

- STD Bus Compatible
- VOTRAX™ SC-01 Speech Synthesizer Device
- Phoneme Driven - Unlimited Vocabulary
- Easy To Use
- Text-To-Speech Capabilities
- Parallel Bus I/O for Fast Data Transfers
- Occupies Single I/O Port Address
- On-board Audio Amplifier (800 miliWatt)
- Direct Connect to 8 Ohm Speaker
- 1 Year Warranty

Figure 1. STD-WORDS

DESCRIPTION

The COLEX STD-WORDS board is a cost effective means of adding electronic speech to any STD Bus microcomputer system. The STD-WORDS is based on the Votrax™ SC-01 Phoneme Speech Synthesizer, is easy to use, and is capable of synthesizing continuous speech of unlimited vocabulary from extremely low data rate 6-bit codes.

BLOCK DIAGRAM

Figure 3. STD-WORDS Control Header and Connector Locations

THEORY OF OPERATION

There have been a number of schemes devised to allow human sounding speech to be generated by computer systems. These schemes range from analog formant filtering of waveforms and noise to wholesale digitization of the analog voice signal and then later digital to analog regeneration of the original signal.

The quality of the resultant speech ranged from passable with the former system (using moderate data rates) to outstanding for the latter systém (using extremely high data rates). But in neither case is the ratio of speech quality to memory requirements satisfactory.

Signal Digitization

Speech digitization is a brute force type of procedure that produces the highest quality speech but uses up the most amount of memory. The analog signal is sampled at a rate that is roughly twice that of highest frequency of interest expected in the analog sample. At each sampling point, the instantaneous voltage of the signal is digitized and stored in consecutive memory locations as a byte of data. Each word in the vocabulary to be spoken by the machine is input, digitized, and assigned a block of memory.

To regenerate the original signal, each word to be spoken is selected and the corresponding block of memory addressed. Then consecutive memory locations within that block are read at the same rate as the signal was originally sampled and the contents applied to a digital to analog converter and low-pass filter. This procedure is repeated for each word to be spoken. The resulting output is a faithful recreation of the original signal.

Human speech (especially female speech) contains significant harmonic energy up to and somewhat beyond 8 kHz. Therefore, to provide good quality reproduction and to prevent excessive aliasing (beat notes between the sampling frequency and the higher frequencies of the signal to be sampled that fall within the pass band of the output low-pass filter and therefore cannot be easily removed from the output signal), the sampling rate should be around 16 kHz.

The memory requirements for the storage of the digitized speech works out to be about 16 kbytes per second of speech. To reconstruct the speech, a data rate of 16 kHz. is required. Various methods have been developed to reduce the memory requirements and data rates required in this sort of system. These have included reducing the bandwidth of the input signal and/or the sampling rate, reducing the conversion resolution, and special data compaction routines but have not produced satisfactory results for low cost systems.

Formant Synthesis

In formant synthesis systems, electronic filter networks are designed to model the human vocal tract. These filters have variable characteristics and are implemented by either analog, or more recently, digital methods and closely model the qualities of the tongue, teeth, resonant cavities, and other components of the vocal tract.

Excitation signals consisting of periodic and random waveforms resembling vocal cord pitch and the sounds of air turbulence are applied to the vocal tract model filter network. The filter network removes unwanted portions of the excitation signal spectra as the components of the human vocal tract remove portions of the signal from the vocal cords. An algorithm in the computer generates complex control signals for the filter network as well as the filter excitation signals in real time for each word spoken. The characteristics of both the excitation signals as well as the filter network are varied together in such a way as to produce artificial speech.

In ordinary formant synthesis systems, the excitation signal characteristics as well as control parameters (parametric data) for the filter network are analyzed for each word in the vocabulary and stored in memory. When the word is to be spoken, these data are read from memory and applied to the signal generators and filter network. And thus the word is spoken by the system. This realizes a significant savings in both data rates and memory requirements over the voice digitization systems since only filter and excitation signal parameters must be stored for each word in the vocabulary.

Phoneme Synthesis

The next level of data rate and storage reduction is achieved when formant synthesis data for entire words are no longer stored. This requires that the words of speech be broken down into a number of basic sounds that can be strung together in various combinations to form the words of English speech. These basic sounds are called phonemes.

It has been found that English speech can be broken down into 62 phonemes (along with two different no-sound intervals) that can be strung together in various combinations to adequately reconstruct most English words. Now, instead of storing the formant synthesis data for each word in the vocabulary to be spoken, only 64 phonemes need be stored for a vocabulary of any size. A phoneme list for each word to be spoken is either stored in memory or obtained from an outside source at the time of speech.

To create speech, the computer reads the formant synthesis data from memory for each phoneme required to simulate the word to be spoken. This data is applied to the excitation signal generators and the filter network to create a string of phonemes approximating the desired word.

The SC-01 Phoneme Synthesizer Chip

The next reduction in data rate and memory requirements for speech synthesis systems (and the one used by the COLEX STD-WORDS board) removes the complex filter network parameter and excitation signal characteristic control duties from the host processor and gives them to a hardware device designed specifically for the job. This eliminates about 99% of the processor overhead required for synthetic speech. All that is now required from the host is a list of the phonemes required for the word to be spoken. The hardware does the rest.

In the case of the COLEX STD-WORDS board, the phoneme synthesis hardware is in the form of a VOTRAX SC-01 LSI CMOS phoneme synthesizer chip and a few cther items such as data latches, logic blocks, audio amplifiers, and the like. The SC-01 can produce 62 different phonemes and two no sound intervals, each of which are accessed by a 6-bit binary code.

Synthetic speech using the SC-01 requires an average data rate of approximately 70 bits (less than 9 bytes) per second. The normalized duration of each phoneme ranges from about 47 miliseconds to 250 miliseconds. The pitch of the phoneme is increased and duration of the phoneme is decreased as the clock rate is increased (standard timing and pitch result from a 720 kHz. clock rate).

The SC-01 device can be divided into two functional parts (figure 4). The first part is called the phoneme controller and translates the 6-bit digital word applied to its input lines into the required phoneme. Internal algorithms and look-up tables generate the complex array of temporal vs spectral parameters that control the second part of the device (the filter network model and excitation signal generators) for the selected phoneme.

Figure 4. The SC-01 Phoneme Synthesizer Chip

The second part of the device contains a pair of signal sources. The first is a variable frequency oscillator for simulating the action of the vocal cords. The second is a pink noise generator that simulates the sound of rushing air. These signal sources are controlled by the phoneme controller to match the requirements of the desired phoneme.

The output of these two sources are summed together and become the excitation signals that are applied to the filter network. This network is composed of four bandpass filters that simulate the voicing components of the human vocal tract (tongue, sinus cavities, teeth, etc.). The transfer function for each of the four filters is instantaneously adjusted by the phoneme controller (parametric data) in real time to produce the required phoneme.

The combination of controlling the excitation signal sources (inflection) and parametric data driving the filter network (voicing) produce life-like phonemes that can be combined to provide good quality speech.

The SC-01 Phoneme Synthesizer Chip Operation

A six bit data word corresponding to the desired phoneme is applied to the six data lines of the SC-01. The data word is latched into the register and applied to the phoneme controller by bringing the STROBE line down. This also RESETS the ACKNOWLEDGE/REQUEST flip-flop causing that line to go low.

Once data is applied to the phoneme controller, it determines which phoneme is desired, generates a spectral matrix for that phoneme, and operates the excitation signals and filter network accordingly. The output sound is amplified and appears at the OUTPUT pin of the chip.

Each phoneme is internally timed and has a duration of from 47 to 250 milliseconds. When generation of the phoneme is complete, the REQUEST/ACKNOWLEDGE flip-flop is SET causing the REQUEST/ACKNOWLEDGE line to go high signifying that the synthesizer is ready for the next phoneme data word. A dynamic articulation controller provides a smooth transition from one phoneme to the next producing a higher quality speech.

An on-chip clock oscillator provides a clock signal to the various parts of the SC-01 device. The clock rate is adjusted by changing the external R C time constant. A nominal clock rate of 720 kHz. provides the standard phoneme pitch and durations. Increasing the clock rate raises the pitch of the output sound and reduces the duration of the phonemes. Accurate phonemes are still generated due to the fact that all parts of the synthesizer track each other closely.

This is made possible by the fact that the filter network is of the switched-capacitor type. The bandpass of such filters is dependent upon the clock rate applied to them. Therefore, as the clock rate increases, the filter excitation signal frequency increases, and the bandpass of the filter network increases as well.

Two pitch control lines allow gross adjustment of the excitation signal frequency without disturbing any parameters of the filter network. This allows more than one voice to be emulated.

STD-WORDS OPERATION

Latch U5 receives the 8-bit data word from the bus, latches it, and applies the lower six bits (phoneme selection word) directly to the control word inputs of the SC-01 phoneme synthesizer chip in response to the WRITE ENA* signal generated elsewhere on the board. The SC-01 is a CMOS device and is operated off the +12 vdc power supply line. The six data byte input lines, however, are TTL level capable and only and require the output of latch U5 to be pulled up by resistor network UR1.

The MSB and next to MSB data bits (I1 and I2) are inflection bits. They are inverted and level-shifted to 12 volts by transistors Q1 and Q2 before being applied to the SC-01 device.

During the time that the SC-01 is "talking", before the phoneme in progress times out, it outputs a high on the A/R line. This signal is inverted and driven out on the bus by four elements of U8. This low on the MSB indicates to the bus that the SC-01 is busy. The processor tests the MSB of the port where the data word was sent out by activating IORQ* and RD*. When the MSB goes high, the STD-WORDS card is ready for another data byte.

There are no timing problems with the output data byte; watch MSB; write another data byte procedure because the The SC-01 continues to produce the last phoneme until told to be silent, stop, or to speak the next one.

A pair of 4-bit magnitude comparators check for coincidences between the port address select header and the address on the bus. If a coincidence is found, the on-board ADDRESS DECODE signal goes true. This signal is applied to the read/write decode logic (U4 and three elements of U8). Bus RD*, IORQ*, and WR* signals are inverted and applied to decoder gates U4.

A coincidence of IORQ*, RD*, and a valid port address (as detected by U6 and U7) creates an on-board READ ENA* signal which drives the MSB of the port with the A/R signal from the SC-01 chip. This is used when the bus processor tests the MSB of the port to see if the SC-01 is finished with the last phoneme and is ready for the next one.

To write a data byte to the SC-01, the bus processor addresses the STD-WORDS card and activates the IORQ* and WR* lines. These signals are decoded and a WRITE ENA signal applied to the data latch (U5) and one-shot U3. The first section of U3 inserts a delay in the SC-01 STB strobe line allowing the data byte to be latched (U5), applied to the data lines of the SC-01, and the SC-01 data inputs to settle before the chip is strobed.

The second half of U3 generates the appropriate pulse width for the SC-01 strobe signal. The I/O write pulse coming from the processor card is very narrow -- on the order of a microsecond or so, and is much too brief for the CMOS SC-01.

The clock signal for the SC-01 is generated on the chip and the frequency is controlled by C7 and the resistor network attached to pins 15 and 16 of the SC-01. The clock rate is user adjustable through a small range making the overall pitch higher or lower by VR1 which is the trim pot closest to the card ejector.

Speech output is obtained from pins 20, 21, and 22. This signal is applied to the input of audio power amplifier U1 through volume control trim pot VR2. The amplified speech is then available at J-2, a miniature phone jack.

OPTION SELECTION

Jumper selectable options, port addresses, and so on are selected by installing a shorting strap across a pair of control header pins. The STD-WORDS card uses a special three-row control header. The center row is connected to the control circuitry and the outside rows are connected to the power supply rails.

A selection is made by strapping the center pin to either of the outside pins as required by the desired port address. The pins are situated directly across the header from each other allowing the option to be selected by wire-wrapping or inserting a Berg˜ type strap.

PORT ADDRESSING

ADDRESS SELECTION HEADER J-3

A7	1 `	`(2) `	3
A6	4 `	`(5) `	6
A5	7 `	`(8) `	9
A4	10 `	`(11) `	12
A3	13 `	`(14) `	15
A2	16 `	`(17) `	18
A1	19 `	`(20) `	21
A0	22 `	`(23) `	24
	Vcc		Vss

ADDRESS STRAP SELECTION CHART

	A3	A2	A1	A0	— LSB
X	A7	A6	A5	A4	— MSB
0	0	0	0	0	
1	0	0	0	1	
2	0	0	1	0	
3	0	0	1	1	
4	0	1	0	0	
5	0	1	0	1	
6	0	1	1	0	
7	0	1	1	1	
8	1	0	0	0	
9	1	0	0	1	
A	1	0	1	0	
B	1	0	1	1	
C	1	1	0	0	
D	1	1	0	1	
E	1	1	1	0	
F	1	1	1	1	

NOTES

0 indicates a strap connected from the center pin to the Vss (ground) pin on header J3.

1 indicates a strap connected from the center pin to the Vcc (+ 5 VDC) pin on header J3.

Figure 5. STD-WORDS Port Address Charts

IOEXP

IOEXP (I/O EXPand) is used in some STD Bus systems to double the number of I/O ports available. There are 256 strappable I/O ports in a basic system. When IOEXP is pulled high, another 256 ports sharing the same logical addresses become available. This line is usually tied to either + 5 vdc or to ground, but may be toggled either way during system operation according to the requirements of the boards on the bus.

The IOEXP line is, essentially, an additional address line and I/O boards are most likely to use this it. When a port is addressed, an I/O function on a board that is strapped for that port address is selected. If IOEXP is used, then two I/O functions may be strapped for the same address with the IOEXP line determining which is to be activated.

In most cases, IOEXP is ignored. To configure the STD-WORDS card for operation excluding IOEXP, strap pins one and two of J-4 together. The board is shipped with this option strapped.

To configure the STD-WORDS board for use in systems where IOEXP is used, strap pins one and three on J-4 together. The board then becomes active only when its port is addressed **AND** IOEXP is high.

```
1  ~   ~  2

3  ~
```

Figure 6. IOEXP HEADER

USING THE STD-WORDS

Using the STD-WORDS card is very simple and quite straight forward. The procedure is to write a data byte to the STD-WORDS port and toggle the IORQ* and WR* bus lines. The card latches the data byte and speaks the phoneme selected. When the phoneme is complete (but the phoneme is still sounding), the MSB of the port goes high. The next data byte is then applied to the card, and so on, and so on.

While the data byte is eight bits wide, only six are required for phoneme selection. The other two (MSB and next to MSB) are inflection bits specifying one of four subtle pitch variations. This helps to alleviate the "robot monotone" quality of most phoneme synthesized speech and make the output more life-like. The inflection bits work on the phoneme specified by the other six bits and do things like produce the upward movement in pitch in the last few sounds of a question.

The SC-01 chip, once started, produces sound (the phoneme selected) until instructed to be quiet for a specific time with a PAUSE phoneme or to shut-up entirely with a STOP command, or to produce the next sound phoneme.

The following flowchart, Z-80 machine language code, and data DATA describe how a processor can send a string of phonemes to the STD-WORDS card to cause it to speak the word "HELLO". Similar sequences can be used to send a single sound, a group of sounds (word), or a group of words to the card and can be implemented with high-level languages and look-up tables for accurate text-to-speech operation.

```
Z80 CODE                                 START

          LD  HL,data                Set A Pointer To
                                     1st Sound

READ:     IN A,(port)                Get STD-WORDS Data
                                     From Port

          BIT 7,A                        IS BIT
          JP NZ,READ                     7 SET?

          LD A,(HL)

          OUT(port),A                Output Sound To
                                     STD-WORDS Card

          INC HL                    Point TO Next
                                    Sound

          LD A, 3FH                    Is
          CP (HL)                     It A
          JP NZ,READ                  STOP?

                                      STOP
```

DATA

PHONEME	HEX
H,	1B
EH1	02
UH3	23
L	18
UH3	23
O1	35
U1	37
PA1	3E
STOP	3F

NOTE In this program, it is important to silence the chip with a PAUSE before issuing a STOP command.

PHONEME SOUND CHART

Phoneme Code	Phoneme Symbol	Example Word	Phoneme Code	Phoneme Symbol	Example Word
00	EH3	jacket	20	A	day
01	EH2	enlist	21	AY	day
02	EH1	heavy	22	Y1	yard
03	PA0	no sound	23	UH3	mission
04	DT	butter	24	AH	mop
05	A2	made	25	P	past
06	A1	made	26	O	cold
07	ZH	azure	27	I	pin
08	AH2	honest	28	U	move
09	I3	inhibit	29	Y	any
0A	I2	inhibit	2A	T	tap
0B	I1	inhibit	2B	R	red
0C	M	mat	2C	E	meet
0D	N	sun	2D	W	win
0E	B	bag	2E	AE	dad
0F	V	van	2F	AE1	after
10	CH*	chip	30	AW2	salty
11	SH	shop	31	UH2	about
12	Z	zoo	32	UH1	uncle
13	AW1	lawful	33	UH	cup
14	NG	thing	34	O2	for
15	AH1	father	35	O1	aboard
16	OO1	looking	36	IU	you
17	OO	book	37	U1	you
18	L	land	38	THV	the
19	K	trick	39	TH	thin
1A	J*	judge	3A	ER	bird
1B	H	hello	3B	EH	get
1C	G	get	3C	E1	be
1D	F	fast	3D	AW	call
1E	D	paid	3E	PA1	no sound
1F	S	pass	3F	STOP	no sound

* T must precede CH to produce CH sound;
D must precede J to produce J sound

STD-Z80 BUS CONNECTOR

Bus Connector: 56 pin dual edge connector, 0.125 inch contact centers

SIGNAL NAME	PIN NUNBERS		SIGNAL NAME
+ 5 VDC	2	1	+ 5 VDC
GROUND	4	3	GROUND
N/C	6	5	N/C
D7	8	7	D3
D6	10	9	D2
D5	12	11	D1
D4	14	13	D0
N/C	16	15	A7
N/C	18	17	A6
N/C	20	19	A5
N/C	22	21	A4
N/C	24	23	A3
N/C	26	25	A2
N/C	28	27	A1
N/C	30	29	A0
RD*	32	31	WR*
N/C	34	33	IORQ*
N/C	36	35	IOEXP
N/C	38	37	N/C
N/C	40	39	N/C
N/C	42	41	N/C
N/C	44	43	N/C
N/C	46	45	N/C
N/C	48	47	N/C
N/C	50	49	N/C
PCI	52	51	PCO
N/C	54	53	N/C
N/C	56	55	+ 12 Volts

SPECIFICATIONS

ELECTRICAL

System Bus: STD Bus
Audio Output: 0.8 Watt into 8 Ohm load
I/O Address: Single I/O Port, Jumper Selectable
System Interrupt Units: 0 SIU
Bus Signal loading: Inputs: one 74LS load maximum
Outputs: -3 mA min @ 2.4 volts
24 mA min @ 0.5 volts
Operating Temperature: 0` to 60` C.

Power Requirements @ 25` C:

PARAMETER	CONDITION	MIN	TYP	MAX	UNITS
V_{cc}	-	4.75	5.00	5.25	volts
I_{cc}	5vdc	--	100	125	mA
V_{cc}	-	11.50	12.00	12,50	volts
I_{cc}	12vdc	--	100	75	mA

MECHANICAL

Card Dimensions:

FORM FACTOR	H	W	L	UNITS
STD Bus	0.60	4.50	6.50	inches

PC Board Thickness: 0.062 inch

CONNECTORS

STD Bus	56 pin dual readout; 0.125 inch centers
Audio Output	Standard miniature phone jack

ORDERING INFORMATION

ITEM	DESCRIPTION
STD-WORDS	STD Bus Phoneme Speech Synthesizer Board
STM-WORDS	Technical Manual for STD-WORDS board

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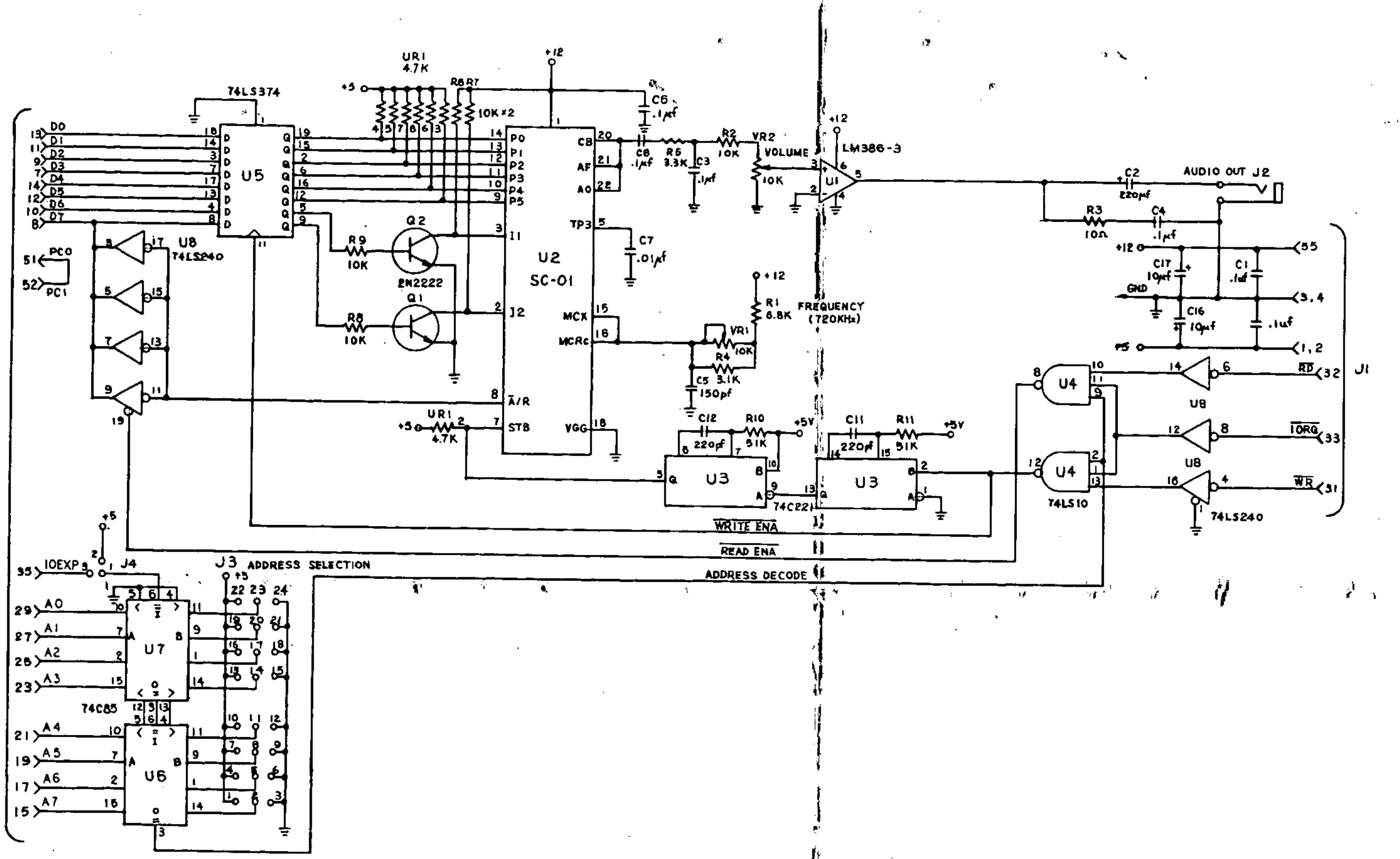
REV.	DATE	REVISION RECORD	ECN#



COLEX ELECTRONIC CO., LTD.

TITLE STD-WORDS

DRAWN	DATE 08/25/83	DRAWING NO. 07-02-001 REV.A	
CHECKED	DATE	PROJECT/NEXT ASSY. NO. 09-02-000	
APPROVED	DATE	SCALE	SHEET 1 OF

COLEX

COLEX ELECTRONIC CO., LTD.
PARTS LIST FOR STD-WORDS

RUN DATE: 02DEC83 PAGE: 1

PART CODE	FACTOR	UNIT	PARTICULARS DESCRIPTION	LOCATIONS
01-02-000	1	PC	PCB/STD-WORDS	
01-02-105	1	PC	IC 74LS10 TRIPLE 3-INPUT NAND	U4
01-02-130	1	PC	IC 74LS221 DUAL ONE SHOT	U3
01-02-131	1	PC	IC 74LS240 OCTAL INVERTER	U8
01-02-138	1	PC	IC 74LS374 OCTAL LATCH	U5
01-02-221	1	PC	IC CMOS SC-01 VOTRAX SPEECH	U2
01-02-227	2	PC	IC TTL 74C85	U6,7
01-02-228	1	PC	IC LIN LM386-3	U1
01-02-303	2	PC	CAP 10 UF AL EL AXIAL 0.6" SPC	C16-17
01-02-305	10	PC	CAP 0.1 UF MYLAR 0.2 IN.	C1,3,4,6,08-10,13-15
01-02-312	1	PC	CAP 220 UF 15V AXIAL 0.8 IN. S	C2
01-02-313	1	PC	CAP 150 PF MICA 100V 0.256" SP	C5
01-02-314	2	PC	CAP 220 PF MICA 100V 0.256" SP	C11-12
01-02-315	1	PC	CAP 0.01 UF 0.2" SPC	C7
01-02-324	2	PC	TRANSISTOR 2N2222	Q1-2
01-02-408	1	PC	RES 3K OHM 1/4 WATT 5%	R4
01-02-409	1	PC	RES 3.3K OHM 1/4 WATT 5%	R5
01-02-411	2	PC	RES 5.1K OHM 1/4 WATT 5%	R10,11
01-02-413	1	PC	RES 6.8K OHM 1/4 WATT 5%	R1
01-02-414	5	PC	RES 10K OHM 1/4 WATT 5%	R2,6,7,8,9
~~01-02-423~~	~~1~~	~~PC~~	~~RES 1K OHM 8 PIN SIP BUSSED~~	~~UR1~~
01-02-435	2	PC	RES 10K OHM ONE TURN LIN POT T	VR1,2
01-02-436	1	PC	RES 100 OHM 1/4 WATT 5%	R3
01-02-501	1	PC	CARD EJECTOR	
01-02-508	1	PC	SOCKET 22 PIN ST. LP 0.6" WIDE	X2
01-02-516	1	PC	CONN MIN AUDIO JACK	J2
01-02-602	1	PC	HEADER 0.1" 1 BY 2 ST.	J4
01-02-609	1	PC	HEADER 0.1" 2 BY 8 ST.	J3
01-02-628	1	PC	HEADER 0.1" 1 BY 8 ST.	J3
01-02-629	1	PC	HEADER 0.1" 1 BY 1 ST.	J4

SIZE	CODE	NUMBER	REV
A4	PL	07-02-010	D

SHEET 1 OF 1

GENERAL DESCRIPTION OF THE SC-01 CHIP

The SC-01 Speech Synthesizer is a completely self-contained solid state device. This single chip phonetically synthesizes continuous speech, of unlimited vocabulary, from low data rate inputs.

Speech is synthesized by combining phonemes (the building blocks of speech) in the appropriate sequence. The SC-01 Speech Synthesizer contains 64 different phonemes which are accessed by a 6-bit code. It is the proper sequential combination of these phoneme codes that creates continuous speech.

PHONEME DESCRIPTION

Table 1 lists the 64 phonemes produced by the SC-01. Each sound is represented by its VOTRAX* phoneme*code and is accompanied by its phoneme symbol and an example. The underlined segments of the example word demonstrate the phoneme use, i.e., sound to be pronounced.

Table 2 provides the phoneme sequences used to produce vowels in the group called dipthongs, (2 vowel sounds in sequence, identified as a single sound, e.g., the long "i" vowel).

Phonetic Programs

A	A1, AY, Y
a-2	UH2, UH3
able	A1, Y, B, UH3, L
abort	UH1, B, O2, O2, R, T
about	UH1, B, UH2, AH2, U1, T
above	UH1, B, UH1, UH3, V
accept	EH1, K, PAO, S, EH1, EH3, P, T
access	AE1, EH3, K, PAO, S, EH1, EH3, S
account	UH1, K, AH1, UH3, W, N, T
acid	AE1, EH3, S, I1 D
act	AE1, EH3, K, T
active	AE1, EH3, K, T, I1, V
actual	AE1, EH3, K, T, CH, U1, UH3, L
add	AE1, EH3, D
address	AE1, EH3, D, R, EH1, EH3, S
ade	(use "aid" program)
adjust	UH1, D, J, UH1, UH3, S, T
adjucent	UH1, D, J, A1, AY, S, EH3, N, T
advance	AE1, EH3, D, V, AE1, EH3, N, T, S
advise	AE1, EH3, D, V, AH1, EH3, Y, Z
affect	UH1, F, EH1, EH3, K, T
after	AE1, EH3, F, T, ER
again	UH1, G, A2, EH1, N
age	A1, AY, Y, D, J
agent	A1, Y, D, J, EH3, N, T
ahead	UH1, H, EH1, EH3, D
aid	A1, AY, Y, D
air	EH2, EH2, R
alarm	UH1, L, AH1, R, M
alert	UH1, L, ER, R, T
all	AW, L
allocate	AE1, UH3, L, UH2, K, A1, Y, T
allow	UH1, L, AH1, UH3, U1
alpha	AE1, AW2, L, F, UH1
already	AW, L, R, EH1, EH3, D, Y
also	AW, L, S, O1, U1
altitude	AE1, UH3, L, T, I2, T, IU, U1, U1, D
aluminum	UH1, L, IU, U1, M, I3, N, UH1, M
am	AE1, EH3, M
america	UH1, M, EH1, R, I3, K, UH2, UH3
amount	UH1, M, AH1, UH3, W, N, T
amp	AE1, EH3, M, P
amplify	AE1, EH3, M, P, L, I3, F, AH1, EH3, AY
an	AE1, EH3, N
and	AE1, EH3, N, D
angle	AE1, EH3, NG, G, UH3, L
another	UH1, N, UH1, UH3, THV, ER
answer	AE1, EH3, N, S, ER
any	EH2, EH2, N, Y
apostrophe	UH1, P, AH1, UH3, S, T, R, UH3, F, Y
approach	UH1, P, R, O1, U1, T, CH
approve	UH1, P, R, IU, U1, U1, V
approximate	UH1, P, R, AH1, K, PAO, S, EH3, M, I3, T
approximate-2	UH1, P, R, AH1, K, PAO, S, EH3, M, A2, Y, T
april	A1, Y, P, R, UH2, L
architect	AH1, R, K, UH2, T, EH3, EH2, K, T
are	(see "R" program)
area	EH1, EH3, R, Y, UH1
arrive	UH1, R, AH1, EH3, Y, V
arrow	EH1, EH3, R, O1, U1
article	AH1, R, T, EH3, K, UH3, L
as	AE1, EH3, Z
ASCII	AE1, EH3, S, K, Y
ask	AE1, EH3, S, K
assemble	UH1, S, EH1, EH3, M, B,
asset	AE1, EH3, S, EH1, T
assign	UH1, S, AH1, EH3, Y, N
assist	UH1, S, I1, I3, S, T
associate	UH1, S, O1, SH, Y, A1, Y, T
associate-2	UH1, S, O1, SH, Y, I2, T
assume	UH1, S, IU, U1, M
at	AE1, EH3, T
ate	(see "eight" program)
attach	UH1, T, AE1, EH3, T, CH
attempt	UH1, T, EH1, EH3, M, P, T
attend	UH1, T, EH1, EH3, N, D
audio	AW, D, Y, O1, U1
august	AW2, AW2, G, EH2, S, T
authorize	AW2, AW2, TH, ER, AH1, Y, Z
automatic	AW2, AW2, DT, UH3, M, AE1, EH3, DT, I3, K
available	UH1, V, A1, Y, L, UH3, B, UH3, L
average	AE1, EH3, V, R, I1, D, J
avoid	UH1, V, O1, UH3, I3, AY, D
B	B, E1, Y
back	B, AE1, AE1, K
bad	B, AE1, AE1, D
badge	B, AE1, AE1, D, J
bag	B, AE1, AE1, G
balance	B, AE1, AH2, L, I3, N, DT, S
ball	B, AW2, AW1, L
band	B, AE1, EH3, N, D
bank	B, AE1, I3, NG, K
bar	B, AH1, UH3, R
base	B, A1, AY, Y, S
basic	B, A1, Y, S, I2, K
bat	B, AE1, EH3, T
batch	B, AE1, EH3, T, CH
bath	B, AE1, AE1, EH3, TH
battery	B, AE1, EH3, T, ER, Y
be	(use "B" program)
bed	B, EH1, EH3, D
been	B, EH1, EH3, N
beep	B, E1, Y, P
before	B, Y, F, O2, O2, R
begin	B, Y, G, I1, I3, N

bell	B, EH1. UH3, L
below	B. Y. L, UH3. O2, U1
bend	B, EH1, EH3, N, D
best	B, EH1, EH3, S, T
beta	B, A2, A2, AY, T, UH2
better	B, EH1, EH3, T, ER
between	B, Y, T, W, E1, Y, N
bid	B, I1, I3, D
big	B, I1, I3, G
bill	B, I1, I3, L
billion	B, I1, I3, L, Y, UH3, N
bin	B, I1, I3, N
binary	B, AH1, Y, N, EH3, EH3, ER, Y
birthday	B, ER, R, TH, D, A1, I3, Y
bit	B, I1, I3, T
bite	B, UH3, AH2, Y, T
black	B, L, AE1, EH3, K
blank	B, L, AE1, EH3, NG, K
blew	(use "blue" program)
blind	B, L, AH1, EH3, Y, N, D
block	B, L, AH1, UH3, K
blown	B, L, O1, U1, N
blue	B, L, IU, U1, U1
blur	B, L, ER, R
board	B, O1, O2, R, D
bolt	B, O2, O2, L, T
bond	B, AH1, UH3, N, D
book	B, OO1, OO1, K
bored	(use "board" program)
boss	B, AW1, AW2, S
bother	B, AH1, UH3, THV, ER
bottom	B, AH1, UH3, T, UH1, M
bought	B, AW1, AW2, T
box	B, AH1, UH3, K, PAO, S
brace	B, R, A1, Y, S
brain	B, R, A1, Y, N
brake	B, R, A1, Y, K
branch	B, R, AE1, EH3, N, T, CH
bravo	B, R, AH1, UH3, V, O1, U1
break	(use "brake" program)
bridge	B, R, I1, I3, D, J
brief	B, R, AY, Y, F
bright	B, R, UH3, AH2, Y, T
bring	B, R, I1, I3, NG
broke	B, R, O1, U1, K
brought	B, R, AW, T
brown	B, R, AH1, UH3, U1, N
bubble	B, UH1, UH2, B, UH3, L
budget	B, UH1, UH3, D, J, I2, T
bug	B, UH1, UH2, G
build	B, I2, I2, L, D
bus	B, UH1, UH2, S
business	B, I3, I3, Z, N, EH2, S
busy	B, I3, I2, Z, Y
but	B, UH1, UH2, T
button	B, UH1, UH3, T, EH3, N
buy	B, AH1, EH3, I3, Y
by	B, AH1, EH3, I3, Y
bye	B, AH1, EH3, I3, Y
byte	(use "bite" program)

C	S, E1, Y
cable	K, A1, Y, B, UH3, L
calendar	K, AE1, UH3, L, I3, N, D, ER
calibrate	K, AE1, UH3, L, UH3, B, R, A1, Y, T
call	K, AW2, AW1, L
came	K, A1, AY, Y, M
can	K, AE1, EH3, N
cancel	K, AE1, EH3, N, S, UH3, L
capable	K, A1, Y, P, UH3, B, UH3, L
capacitor	K, UH2, P, AE1, EH3, S, EH3, T, ER
capacity	K, UH2, P, AE1, EH3, S, I3, DT, Y
car	K, AH1, UH3, R
card	K, AH1, R, D
care	K, EH3, EH3, ER
carpenter	K, AH1, R, P, I3, N, D, ER
carriage	K, EH2, EH3, R, I1, D, J
carry	K, EH2, EH3, R, Y
carton	K, AH1, R, T, I3, N
case	K, A1, AY, Y, S
cash	K, AE1, EH3, SH
cassette	K, UH1, S, EH1, EH3, T
cassette-2	K, A2, AY, S, EH1, EH2, T
category	K, AE1, EH3, DT, UH3, G, O1, R, Y
catalog	K, AE1, EH3, DT, UH3, L, AW2, AW2, G
caution	K, AW2, AW1, SH, UH3, N
cent	S, EH1, EH3, N, T
center	S, EH1, EH3, N, T, ER
centi	S, EH1, EH3, N, T, I1, I3
centigrade	S, EH1, N, T, I3, G, R, A1, Y, D
certify	S, R, R, T, I3, F, AH1, Y
change	T, CH, A1, AY, Y, N, D, J
character	K, EH1, R, EH1, K, T, ER
charge	T, CH, AH1, R, D, J
charlie	T, CH, AH1, R, L, Y
chart	T, CH, AH1 R, T
check	T, CH, EH1, EH3, K
cheer	T, CH, AY, I2, R
chip	T, CH, I1, I3, P
choice	T, CH, O1, UH3, I3, AY, S
circle	S, ER, R, K, UH3, L
circuit	S, R, R, K, I2, T
city	S, I1, T, Y
claim	K, L, A1, AY, Y, M
class	K, L, AE1, EH3, S
clean	K, L, E1, AY, N
clear	K, L, AY, I3, R
clerk	K, L, ER, K
clip	K, L, I1, I3, P
clock	K, L, AH1, UH3, K
close	K, L, UH3, O1, U1, Z
close-2	K, L, UH3, O2, U1, S
cloud	K, L, AH1, UH3, W, D
coarse	K, O1, O2, R, S
code	K, OO1, O2, U1, D
coin	K, O1, UH3, I3, AY, N

collar	K, AH1, UH3, L, ER
collect	K, UH1, L, EH1, K, T
colon	K, OO1, O2, U1, L, I2, N
color	K, UH2, UH2, L, ER
column	K, AH1, UH3, L, UH3, M
combine	K, UH2, M, B, AH1, EH3, Y, N
comma	K, AH1, UH3, M, UH1
command	K, UH2, M, AE, EH3, N, D
commerce	K, AH1, UH3, M, ER, S
commercial	K, UH1, UH3, M, ER, SH, UH3, L
communicate	K, UH2, M, Y1, IU, U1, N, I3, K A1, Y, T
company	K, UH1, UH3, M, P, EH3, N, Y
compare	K, UH1, UH3, M, P, EH3, EH3, ER
compile	K, UH1, UH3, M, P, AH1, EH3, I3, UH3, L
complete	K, UH1, UH3, M, P, L, AY, Y, T
comply	K, UH1, UH3, M, P, L, AH1, EH3, Y
component	K, UH2, M, P, O2, O1, N, EH2, N, T
computer	K, UH1, M, P, Y1, IU, U1, T, ER
conceal	K, UH1, N, S, E1, AY, L
condense	K, UH1, N, D, EH1, EH3, N, S
condition	K, UH1, N, D, I1, I3, SH, UH3, N
confirm	K, UH1, N, F, ER, R, M
confuse	K, UH1, N, F, Y1, IU, U1, U1, Z
confusion	K, UH1, N, F, Y1, IU, U1, U1, ZH, UH3, N
congratulations	K, UH1, N, G, R, AE1, D, J, UH3, L, A1, AY, SH, UH3, N, Z
connect	K, UH1, N, EH1, EH3, K, T
console	K, AH1, UH3, N, S, O1, U1, L
console-2	K, UH1, N, S, O1, O2, L
consult	K, UH1, N, S, UH1, UH2, L, T
consume	K, UH1, N, S, IU, U1, U1, M
contain	K, UH3, UH3, N, T, A1, AY, Y, N
continue	K, UH1, N, T, I1, I3, N, Y1, IU, U1
contract	K, AH1, UH3, N, T, R, AE1, EH3, K, T
contrast	K, AH1, UH3, N, T, R, AE1, EH3, S, T
control	K, UH1, N, T, R, O1, O2, L
convenient	K, UH2, N, V, E1, N, AY, EH3, N, T
copper	K, AH1, UH3, P, ER
copy	K, AH1, UH3, P, Y
correct	K, O2, O2, R, EH1, EH3, K, T
correspond	K, O1, R, I3, S, P, AH1, AH2, N, D
cosine	K, O1, U1, S, AH1, Y, N
cost	K, AW2, AW1, S, T
could	K, IU, IU, OO1, D
count	K, AH1, UH3, W, N, T
country	K, UH1, N, T, R, Y
couple	K, UH3, UH1, P, UH3, L
courage	K, ER, R, I3, D, J

course	K, O1, O2, R, S
court	K, O1, O2, R, T
cover	K, UH1, UH3, V, ER
crane	K, R, A1, AY, Y, N
crash	K, R, AE1, EH3, SH
crease	K, R, E1, Y, S
create	K, R, Y, A1, Y, T
creation	K, R, Y, A1, Y, SH, UH3, N
credit	K, R, EH1, EH3, D, I1, T
crew	K, R, IU, U1, U1
critical	K, R, I1, T, I3, K, UH3, L
cross	K, R, AW, S
crowd	K, R, AH1, UH3, U1, D
cry	K, R, AH1, EH3, I3, Y
cue	(use "Q" program)
cup	K, UH1, UH2, P
curious	K, Y, ER, Y, UH1, S
current	K, ER, R, EH3, N, T
currency	K, ER, R, I2, N, DT, S, Y
curse	K, ER, R, S
curve	K, ER, R, V
customer	K, UH1, UH2, S, T, UH1, M, ER
cut	K, UH1, UH2, T
cycle	S, UH3, AH2, Y, K, UH3, L
D	D, E1, Y
daily	D, A1, AY, Y, L, Y
damage	D, AE1, EH3, M, I1, D, J
danger	D, A1, AY, Y, N, D, J, ER
dark	D, AH1, R, K
dash	D, AE1, EH3, SH
data	D, A1, Y, DT, UH1
date	D, A1, AY, Y, T
day	D, A1, I3, Y
dead	D, EH1, EH3, F
dealer	D, E1, AY, L, ER
dear	D, AY, I3, R
debit	D, EH1, EH3, B, I2, T
debt	D, EH1, EH3, T
december	D, Y, S, EH1, EH3, M, B, ER
decide	D, Y, S, AH1, EH3, Y, D
decimal	D, EH1, S, M, UH3, L
decision	D, Y, S, I1, ZH, UH3, N
decline	D, Y, K, L, AH1, EH3, Y, N
decrease	D, Y, K, R, E1, Y, S
deduct	D, Y, D, UH1, UH2, K, T
deep	D, E1, Y, P
deer	(use "dear" program)
defeat	D, Y, F, E1, AY, T
defend	D, Y, F, EH1, EH3, N, D
defensive	D, Y, F, EH1, EH3, N, S, I1, V
defer	D, E1, F, ER R
deficit	D, EH1, F, I3, S, I1, T
degree	D, Y, G, R, E1, Y
delay	D, I1, L, EH3, A1, Y
delete	D, E1, L, E1, Y, T
deliver	D, Y, L, I1, V, ER
delta	D, EH2, EH3, L, T, UH1
demand	D, Y, M, AE1, EH3, N, D

examine	EH1, EH3, G, PAO, Z, AE1, EH3, M, I1, N
exceed	EH1, EH3, K, PAO, S, E1, Y, D
except	EH1, EH3, K, PAO, S, EH1, EH3, P, T
exchange	EH1, EH3, K, PAO, S, T, CH, A1, AY, Y, N, D, J
execute	EH1, EH3, K, PAO, S, UH3, K, Y1, IU, U1, T
exempt	EH1, EH3, G, PAO, Z, EH1, EH3, M, P, T
exit	EH1, EH3, G, PAO, Z, I1, I3, T
expect	EH1, EH3, K, PAO, S, P, EH1, EH3, K, T
expedite	EH1, EH3, K, PAO, S, P, EH1, EH3, D, UH3, AH2, Y, T
expend	EH1, EH3, K, PAO, S, P, EH1, EH3, N, D
experiment	EH1, K, PAO, S, P, EH1, R, UH3, M, EH3, N, T
exponent	EH1, K, PAO, S, P, O2, O2, N, EH3, N, T
express	EH1, EH3, K, PAO, S, P, R, EH1, S
extension	EH1, EH3, K, PAO, S, T, EH1, EH3, N, SH, UH3, N
F	EH1, EH2, F
face	F, A1, AY, Y, S
facility	F, UH2, S, I1, L, I3, T, Y
fact	F, AE1, EH3, K, T
fahrenheit	F, EH1, R, I2, N, H, UH3, AH2, Y, T
fail	F, A1, AY, I3, UH3, L
fall	F, AW, L
false	F, AW, L, S
familiar	F, UH1, M, I1, L, Y1, ER
far	F, AH1, UH3, R
farad	F, EH3, EH3, ER, AE1, EH3, D
fast	F, AE1, EH3, S, T
fault	F, AW, L, T
feat	(use "feet" program)
feature	F, E1, AY, T, CH, ER
february	F, EH1, B, Y1, IU, W, EH1, R, Y
federal	F, EH1, EH3, D, R, UH3, L
fee	F, E1, Y
feed	F, E1, Y, D
feet	F, E1, Y, T
female	F, AY, Y, M, A1, AY, UH3, L
field	F, E1, AY, UH3, L, D
fifteen	F, I1, I3, F, T, E1, Y, N
fifth	F, I1, I3, F, TH
fifty	F, I1, I3, F, T, Y
file	F, AH1, EH3, I3, UH3, L
fill	F, I1, I3, L
final	F, AH1, Y, N, UH3, L
finance	F, AH1, EH3, Y, N, AE1, EH3, N, S
find	F, AH1, EH3, Y, N, D
finger	F, I1, I3, NG, G, ER

finish	F, I1, N, I1, SH
fire	F, AH1, EH3, AY, R
first	F, ER, R, S, T
fit	F, I1, I3, T
five	F, AH1, EH3, Y, V
fix	F, I1, I3, K, PAO, S
fixture	F, I1, I3, K, PAO, S, T, CH, ER
flash	F, L, AE1, EH3, SH
flat	F, L, AE1, EH3, T
flight	F, L, UH3, AH2, Y, T
flip	F, L, I1, I3, P
floor	F, L, O1, O2, R
flop	F, L, AH1, UH3, P
flow	F, L, O1, U1
fly	F, L, AH1, EH3, Y
fold	F, O2, O2, L, L, D
follow	F, AH1, AW2, L, O1, U1
food	F, U1, U1, D
foot	F, OO1, OO1, T
for	(use "four" program)
fore	(use "four" program)
force	F, O2, O2, R, S
foreman	F, O2, O2, R, M, EH2, N
forget	F, O2, O2, R, G, EH1, EH3, T
forgive	F, O2, O2, R, G, I1, I3, V
form	F, O2, O2, R, M
format	F, O2, O2, R, M, AE1, EH3, T
forty	F, O2, O2, R, T, Y
forward	F, O2, O2, R, W, ER, D
found	F, AH1, UH3, W, N, D
four	F, O1, O2, R
fourth	F, O1, O2, R, TH
fox trot	F, AH1, UH3, K, PAO, S, T, R, AH1, UH3, T
frame	F, R, A1, AY, Y, M
fraud	F, R, AW, D
free	F, R, E1, Y
french	F, R, EH1, EH3, N, T, CH
frequency	F, R, E1, K, W, EH3, N, DT, S, Y
frequent	F, R, E1, K, W, EH3, N, T
friday	F, R, AH1, EH3, Y, D, A1, I3, Y
fright	F, R, UH3, AH2, Y, T
from	F, R, UH1, UH3, M
front	F, R, UH3, UH1, N, T
fruit	F, R, IU, U1, T
fuel	F, Y1, IU, U1, UH3, L
full	F, OO1, L
function	F, UH1, UH2, N, K, SH, UH3, N
fund	F, UH1, UH2, N, D
furnace	F, ER, R, N, EH3, S
further	F, ER, R, THV, ER
future	F, Y1, IU, U1, T, CH, ER
G	D, J, E1, Y
gage	(use "gauge" program)
gain	G, A1, AY, Y, N
gait	(use "gate" program)
gallon	G, AE1, AH2, L, UH3, N
game	G, A1, AY, Y, M
gamma	G, AE1, EH3, M, UH2, UH3
gap	G, AE1, EH3, P

demonstrate	D, EH1, M, UH3, N, S, T, R, A1, Y, T
deny	D, Y, N, AH1, EH3, Y
destroy	D, Y, S, T, R, O1, UH3, I3, AY
detail	D, E, T, EH3, A1, I3, UH3, L
determine	D, Y, T, ER, M, I1, N
device	D, Y, V, UH3, AH2, Y, S
dew	(use "do" program)
diagnostic	D, AH1, AY, I3, G, N, AH1, UH3, S, T, I3, K
dial	D, AH1, EH3, I3, UH3, L
dictionary	D, I1, I3, K, SH, UH3, N, EH3, EH3, ER, Y
did	D, I1, I3, D
die	D, AH1, EH3, Y
diet	D, AH1, EH3, AY, I2, T
differ	D, I1, I3, F, ER
difference	D, I1, F, R, EH3, N, DT, S
different	D, I1, F, R, EH3, N, T
digit	D, I1, D, J, I1, T
digital	D, I1, D, J, I3, T, UH3, L
dime	D, AH1, EH3, Y, M
diode	D, AH1, EH3, AY, O1, U1, D
direct	D, ER, EH1, EH3, K, T
directory	D, ER, EH1, EH3, K, T, ER, Y
dirt	D, ER, R, T
disagree	D, I1, S, UH1, G, R, E1, Y
disappear	D, I1, S, UH1, P, AY, I3, R
disconnect	D, I1, S, K, UH1, N, EH1, EH3, K, T
discuss	D, I1, I3, S, K, UH1, UH2, S
disk	D, I1, I3, S, K
display	D, I1, I3, S, P, L, A1, I3, Y
distance	D, I1, S, T, EH3, N, T, S
divide	D, I1, V, AH1, EH3, Y, D
dividend	D, I1, V, I1, D, EH1, EH3, N, D
division	D, I1, V, I1, ZH, UH3, N
do	D, IU, U1, U1
dock	D, AH1, UH3, K
doctor	D, AH1, UH3, K, T, ER
document	D, AH1, K, Y1, UH3, M, EH3, N, T
does	D, UH2, UH1, Z
dollar	D, AH1, UH3, L, ER
done	D, UH1, UH3, N
door	D, O1, O2, R
double	D, UH3, UH1, B, UH3, L
doubt	D, UH3, AH2, U1, T
down	D, AH1, UH3, U1, N
draft	D, R, AE1, EH3, F, T
draw	D, R, AW
drill	D, R, I1, I3, L
drink	D, R, I1, I3, NG, K
drive	D, R, AH1, EH3, Y, V
drop	D, R, AH1, UH3, P
drum	D, R, UH1, UH2, M
dry	D, R, AH1, EH3, I3, Y
due	(use "do" program)
dump	D, UH1, UH2, M, P
duration	D, ER, R, A1, Y, SH, UH3, N

during	D, ER, R, I1, NG
duty	D, IU, U1, U1, T, Y
dwell	D, W, EH1, EH3, L
E	E1, Y
each	E1, AY, T, CH
ear	E1, I2, R
early	ER, R, L, Y
earn	ER, R, N
east	E1, AY, S, T
easy	E1, AY, Z, Y
echo	EH1, EH3, K, O1, U1
edge	EH1, EH3, D, J
edit	EH1, EH3, D, I2, T
educate	EH1, D, J, U1, K, A1, Y, T
effect	UH1, F, EH1, EH3, K, T
efficient	E1, F, I1, SH, EH3, N, T
effort	EH2, EH3, F, ER, T
eight	A2, A2, Y, T
eighth	A2, A2, Y, DT, DT, TH
eighty	A2, A2, Y, T, Y
either	E1, Y, THV, ER
electric	EH3, L, EH1, K, T, R, I2, K
electrician	EH3, L, EH1, K, PAO, T, R, I1, SH, UH3, N
electronic	EH3, L, EH1, K, T, R, AH1, N, I2, K
elevator	EH1, L, UH3, V, A2, AY, D, ER
eleven	EH1, L, EH1, EH3, V, I2, N
eligible	EH1, L, UH3, D, J, EH3, B, UH3, L
eliminate	EH1, L, I1, M, I1, N, A1, Y, T
else	EH1, EH3, L, S
emit	Y, M, I1, I3, T
employ	EH1, EH3, M, P, L, O1, UH3, I3, AY
empty	EH1, EH3, M, P, T, Y
enable	EH1, N, A1, Y, B, UH3, L
enclose	EH1, EH3, N, K, L, O1, U1, Z
end	EH1, EH3, N, D
engine	EH1, EH3, N, D, J, I1, N
engineer	EH1, N, D, J, I2, N, AY, I1, R
endorse	EH1, EH3, N, D, O2, O2, R, S
english	I1, NG, G, L, I2, SH
enter	EH1, EH3, N, T, ER
entry	EH1, EH3, N, T, R, Y
epsilon	EH1, P, S, UH3, L, AH1, UH3, N
equal	Y, K, W, UH3, L
equipment	E1, K, W, IL, P, M, EH3, N, T
erase	E1, R, A1, Y, S
error	EH3, EH3, EH3, R, ER
escape	EH1, EH3, S, K, A1, AY, Y, P
escrow	EH1, EH3, S, K, R, O1, U1
establish	UH1, S, T, AE1, EH3, B, L, I2, SH
estate	EH1, EH3, S, T, A1, AY, Y, T
estimate	EH1, S, T, EH3, M, I3, T
exact	EH1, EH3, G, PAO, Z, AE1, EH3, K, T

garage	G, UH1, R,-AH1, UH3, ZH
gas	G, AE1, EH3, S
gate	G, A1, AY, Y, T
gauge	G, A1, AY, Y, D, J
general	D, J, EH1, EH3, N, ER, UH3, L
generate	D, J, EH1, N, ER, A1, Y, T
gentlemen	D, J, EH1, EH3, N, T, L, M, I2, N
german	D, J, ER, R, M, EH2, N
get	G, EH1, EH3, T
girl	G, ER, R, L
give	G, I1, I3, V
glass	G, L, AE1, EH3, S
glitch	G, L, I1, I3, T, CH
globe	G, L, O1, U1, B
go	G, OO1, O1, U1
golf	G, AW2, AW2, UH3, L, F
good	G, OO1, OO1, D
govern	G, UH1, UH3, V, ER, N
grade	G, R, A1, AY, Y, D
gram	G, R, AE1, EH3, M
grand	G, R, AE1, EH3, N, D
graph	G, R, AE1, EH3, F
grate	(use "great" program)
gray	(use "grey" program)
great	G, R, A1, Y, T
green	G, R, E1, Y, N
greet	G, R, E1, Y, T
grey	G, R, A1, AY, Y
grind	G, R, AH1, EH3, Y, N, D
grocery	G, R, O1, U1, S, ER, Y
ground	G, R, AH1, UH3, W, N, D
group	G, R, U1, U1, P
grow	G, R, O1, U1
guard	G, AH1, R, D
guarantee	G, EH1, R, I3, N, T, E1, Y
guess	G, EH1, EH3, S
H	A1, AY, Y, T, CH
had	H, AE1, EH3, D
half	H, AE1, EH3, F
halt	H, AW, L, T
hammer	H, AE1, EH3, M, ER
hand	H, AE1, EH3, N, D
handle	H, AE1, EH3, N, D, UH3, L
hang	H, AE1, I3, NG
happy	H, AE1, EH3, P, Y
hard	H, AH1, R, D
has	H, AE1, EH3, Z
have	H, AE1, EH3, V
he	H, E1, Y
head	H, EH1, EH3, D
hear	H, AY, I3, R
heart	H, AH1, UH3, R, T
heat	H, E1, AY, T
heavy	H, EH1, V, Y
height	H, UH3, AH2, Y, T
held	H, EH1, UH3, L, D
hello	H, EH1, UH3, L, UH3, O1, U1
help	H, EH1, EH3, L, P
henry	H, EH1, EH3, N, R, Y

her	H, ER
here	(use "hear" program)
hertz	H, R, R, T, S
hex	H, EH1, EH3, K, PAO, S
high	H, AH1, EH3, Y
his	H, I1, I3, Z
hold	H, O2, O2, L, L, D
hole	H, O1, U1, L
home	H, O1, U1, M
hook	H, OO1, OO1, K
host	H, O1, U1, S, T
hot	H, AH1, UH3, T
hotel	H, O1, U1, T, EH2, EH2, L
hour	AH1, UH3, W, ER
house	H, UH3, AH2, U1, S
how	H, AH1, O2, U1
human	H, Y1, IU, U1, U1, M, EH2, N
hundred	H, UH1, UH2, N, D, R, I3, D
hungry	H, UH1, UH2, NG, G, R, Y
I	AH1, EH3, I3, Y
idle	AH1, Y, D, UH3, L
idol	(use "idle" program)
if	I1, I3, F
immediate	I1, I3, M, E1, D, Y, EH3, T
important	I1, I3, M, P, O2, O2, R, T, EH3, N, T
improper	I1, I3, M, P, R, AH1, UH3, P, ER
improve	I1, I3, M, P, R, IU, U1, U1, V
in	I1, I3, N
inch	I1, I3, N, T, CH
include	I1, I3, N, K, L, IU, U1, U1, D
income	I1, I3, N, K, UH1, UH3, M
indep endent	I1, N, D, E1, P, EH2, EH3, N, D, EH3, N, T
index	I1, I3, N, D, EH1, EH3, K, PAO, S
india	I2, I3, N, D, Y, UH2
indicate	I1, N, D, I3, K, A1, Y, T
industrial	I1, I3, N, D, UH1, UH2, S, T, R, AY, UH3, L
inform	I1, I3, N, F, O2, O2, R, M
initial	I1, I3, N, I1, SH, UH3, L
inn	(use "in" program)
input	I1, I3, N, P, OO1, OO1, T
inquire	I1, I3, N, K, W, AH1, EH3, AY, R
insert	I1, N, S, R, R, T
inspect	I1, I3, N, S, P, EH1, EH3, K, T
install	I1, I3, N, S, T, AW, L
instead	I1, I3, N, S, T, EH1, EH3, D
instruct	I1, I3, N, S, T, R, UH1, UH2, K, T
instrument	I1, I3, N, S, T, R, UH1, M, EH1, EH3, N, T
insufficient	I1, N, S, UH2, F, I1, SH, EH3, N, T
insurance	I1, I3, N, SH, ER, R, EH3, N, T, S
interest	I1, N, T, R, EH1, S, T
interface	I1, I3, N, T, ER, F, A1, AY, Y, S
interpret	I1, I3, N, T, ER, P, R, EH3, T
interupt	I1, N, T, ER, UH3, UH1, P, T
intrude	I1, I3, N, T, R, IU, U1, U1, D
invalid	I1, I3, N, V, AE1, AW2, L, I1, D

invent	I1, I3, N, V, EH1, EH3, N, T
inventory	I1, N, V, EH1, N, T, O1, R, Y
invest	I1, I3, N, V, EH1, EH3, S, T
invoice	I1, I3, N, V, O1, UH3, I3, AY, S
irregular	I1, R, EH1, G, Y1, UH3, L, ER
is	I1, I3, Z
it	I1, I3, T
item	AH2, UH3, Y, D, UH3, M
J	D, J, EH3, A1, AY, Y
jack	D, J, AE1, EH3, K
january	D, J, AE1, EH3, N, Y1, UI, EH3, EH3, ER, Y
job	D, J, AH1, UH3, B
join	D, J, O1, UH3, I3, AY, N
jolt	D, J, O2, O2, L, T
joy	D, J, O1, UH3, I3, AY
judge	D, J, UH1, UH2, D, J
juliet	D, J, IU, U1, L, Y, EH2, EH3, T
july	D, J, UH1, L, AH1, EH3, Y
jump	D, J, UH1, UH2, M, P
june	D, J, IU, U1, U1, N
K	K, EH3, A1, AY, Y
keep	K, E1, Y, P
key	K, E1, Y
keyboard	K, AY, Y, B, O1, O2, R, D
kill	K, I1, I3, L
kilo	K, E1, AY, L, UH3, O2, U1
knew	(use "new" program)
knot	(use "not" program)
know	(use "no" program)
knowledge	N, AH1, UH3, L, I3, D, J
L	EH1, EH3, UH3, L
lab	L, AE1, EH3, B
labor	L, A1, Y, B, ER
language	L, AE1, EH3, NG, G, W, I1, D, J
lapse	L, AE1, EH3, P, S
large	L, AH1, R, D, J
last	L, AE1, EH3, S, T
late	L, A1, AY, Y, T
law	L, AW
lead	L, E1, Y, D
led	L, EH1, EH3, D
left	L, EH1, EH3, F, T
leg	L, EH1, EH3, G
legal	L, E1, G, UH3, L
lend	L, EH1, EH3, N, D
length	L, EH1, EH3, NG, TH
less	L, EH1, EH3, S
let	L, EH1, EH3, T
letter	L, EH1, EH3, T, ER
level	L, EH1, EH3, V, UH3, L
life	L, UH3, AH2, Y, F
light	L, UH3, AH2, Y, T
like	L, UH3, AH2, Y, K
lima	L, AY, Y, M, UH1
limit	L, I1; M I1, T
line	L, AH1, EH3, Y, N

linear	L, I2, I3, N, AY, Y, ER
link	L, I1, I3, NG, K
lip	L, I1, I3, P
liquid	L, I1, K, W, I1, D
list	L, I1, I3, S, T
listen	L, I1, I3, S, I2, N
little	L, I1, I3, T, UH3, L
load	L, UH3, 01, U1, D
loan	L, UH3, 01, U1, N
local	L, 02, 02, K, UH3, L
lock	L, AH1, UH3, K
log	L, AW, G
long	L, AW, NG
look	L, 001, 001, K
loss	L, AW, S
lost	L, AW, S, T
lot	L, AH1, UH3, T
low	L, 01, U1
M	EH1, EH2, M
machine	M, UH2, SH, E1, Y, N
mail	(use "male" program)
maintenance	M, A1, Y, N, T, EH2, N, EH3, N, DT, S
make	M, A1, AY, Y, K
male	M, A2, A2, AY UH3, L
man	M, AE1, EH3, N
manage	M, AE1, EH3, N, I1, D, J
manual	M, AE1, EH3, N, Y1, U1, UH3, L
manufacture	M, AE1, EH3, N, Y1, U1, F, AE1, EH3, K, T, CH, ER
many	M, EH2, EH2, N, Y
map	M, AE1, EH3, P
march	M, AH1, R, T, CH
margin	M, AH1, UH3, R, D, J, I2, N
mark	M, AH1, R, K
market	M, AH1, R, K, EH3, T
match	M, AE1, EH3, T, CH
mature	M, UH1, T, CH, IU, ER
maximum	M, AE1, EH3, K, PAO, S, EH3, M, UH2, M
may	M, A1, I3, Y
me	M, E1, Y
measure	M, EH3, EH1, ZH, ER
meat	M, E1, AY, T
mechanical	M, UH1, K, AE1, EH3, N, I3, K, UH3, L
media	M, E1, AY, D, Y, UH1
medicine	M, EH2, EH3, D, I3, S, I1, N
medium	M, E1, D, AY, UH1, M
meet	(use "meat" program)
mega	M, EH1, EH3, G, UH2, UH3
member	M, EH1, EH3, M, B, ER
memory	M, EH1, EH3, M, ER, Y
men	M, EH1, EH3, N
merchandise	M, ER, T, CH, EH3, N, D, AH1, EH3, Y, Z
merge	M, ER, R, D, J
message	M, EH1, EH3, S, I2, D, J
metal	M EH1, EH3, T, UH3, L

meter	M, E1, Y, T, ER
micro	M, UH3, AH2, AY, K, R, 01, U1
middle	M, I1, I3, D, UH3, L
mike	M, UH3, AH2, Y, K
mile	M, AH1, EH3, I3, UH3, L
mill	M, I1, I3, L
milli	M, I1, I3, L, UH3
million	M, I1, I3, L, Y, UH3, N
mini	M, I2, I2, N, Y
minus	M, AH1, Y, N, EH3, S
minute	M, I1, N, EH3, T
miscell aneous	M, I1, S, UH3, L, A1, AY, N, Y, UH3, S
miss	M, I1, I3, S
mistake	M, I1, I3, S, T, A1, AY, Y, K
mode	M, 01, U1, D
model	M, AH1, UH3, D, UH3, L
module	M, AH1, UH3, D, J, IU, U1, UH3, L
monday	M, UH3, UH1, N, D, A1, I3, Y
money	M, UH3, UH1, N, AY, Y
month	M, UH3, UH1, N, TH
more	M, 02, 02, R
morning	M, 02, 02, R, N, I1, I3, NG
most	M, 01, U1, S, T
motor	M, 01, U1, T, ER
mount	M, AH1, UH3, W, N, T
move	M, U1, U1, V
Mr.	M, I1, S, T, ER
Mrs.	M, I1, S, I2, Z
Ms.	M, I1, I3, Z
much	M, UH1, UH2, T, CH
multi	M, UH2, UH3, L, T, Y
multiple	M, UH1, L, T, EH3, P, UH3, L
multiply	M, UH1, L, T, I3, P, L, AH1, Y
N	EH1, EH2, N
name	N, A1, AY, Y, M
nano	N, AE1, EH3, N, 01, U1
national	N, AE1, EH3, SH, UH3, N, UH3, L
native	N, A1, Y, T, I1, V
near	N, AY, I1, R
neat	N, E1, AY, T
neck	N, EH1, EH3, K
need	N, E1, Y, D
negative	N, EH1, G, EH3, T, I1, V
net	N, EH1, EH3, T
neutral	N, IU, U1, T, R, UH2, L
new	N, IU, U1, U1
next	N, EH1, EH3, K, PAO, S, T
nice	N, UH3, AH2, Y, S
nickel	N, I1, I3, K, UH3, L
night	N, UH3, AH2, Y, T
nine	N, AH1, EH3, Y, N
ninety	N, AH1, EH3, Y, N, T, Y
nineth	N, AH1, Y, N, DT, TH
no	N, 001, 01, U1
noise	N, 01, UH3, I3, AY, Z
none	N, UH1, UH3, N
noon	N, IU, U1, U1, N

normal	N, 02, 02, R, M, UH3, L
north	N, 02, 02, R, TH
not	N, AH1, UH3, T
note	N, 01, U1, T
nothing	N, UH1, TH, I1, I3, NG
notice	N, 01, U1, T, I1, S
notify	N, 01, U1, T, I1, F, AH1, EH3, Y
november	N, 01, U1, V, EH1, EH3, M, B, ER
now	N, AH1, UH3, U1
number	N, UH1, UH2, M, B, ER
nurse	N, ER, R, S
nut	N, UH1, UH2, T
O	02, 01, U1
oar	(use "or" program)
object	UH1, B, D, J, EH1, EH3, K, T
object-2	AH1, UH3, B, D, J, EH2, EH2, K, T
obligation	AH1, B, L, I3, G, A1, Y, SH, UH3, N
obsolete	AH1, UH3, B, S, UH3, L, AY, Y, T
october	AH1, UH3, K, T, O1, U1, B, ER
odd	AH1, UH3, D
of	UH1, UH3, V
off	AW, F
office	AW, F, I1, S
official	UH1, F, I1, SH, UH3, L
often	AW2, AW2, F, I3, N
ohm	O2, O2, U1, M
oil	O1, EH3, I3, UH3, L
old	O2, O2, L, L, D
omega	O1, U1, M, A1, Y, G, UH2
omit	O1, U1, M, I1, I3, T
on	AH1, UH3, N
once	W, UH1, N, T, S
one	W, UH1, UH2, N
only	O1, O2, N, L, Y
open	O1, P, I2, N
operable	AH1, UH3, P, ER, UH3, B, UH3, L
operate	AH1, UH3, P, ER, A1, Y, T
operator	AH1, UH3, P, ER, A1, Y, T, ER
option	AH1, UH3, P, SH, UH3, N
or	O2, O2, R
orange	O2, O2, R, I1, N, D, J
order	O2, O2, R, D, ER
ore	(use "or" program)
original	O2, R, I2, I3, D, J, I3, N, UH3, L
oscar	AH1, UH3, S, K, ER
other	UH1, UH3, THV, ER
ounce	AH1, UH3, W, N, S
out	UH3, AH2, U1, T
oven	UH1, V, I2, N
over	O1, O2, V, ER
oxygen	AH1, UH3, K, PAO, S, I3, D, J, I2, N
own	O1, U1, N
P	P, E1, Y
pack	P, AE1, EH3, K

package	P, AE1, EH3, K, I1, D, J
paid	P, A1, AY, Y, D
pain	P, A1, AY, Y, N
pane	(use "pain" program)
panel	P, AE1, EH3, N, UH3, L
papa	P, AH1, UH3, P, UH3, UH3
paper	P, A1, Y, P, ER
parcel	P, AH1, R, S, UH3, L
paren	P, EH3, EH3, ER, I2, N
part	P, AH1, R, T
partial	P, AH1, R, SH, UH2, L
pass	P, AE1, EH3, S
passed	(use "past" program)
past	P, AE1, EH3, S, T
pat	P, AE1, EH3, T
pattern	P, AE1, EH3, T, ER, N
pause	P, AW, Z
pay	P, A2, A2, AY, Y
pea	(use "P" program)
peace	(use "piece" program)
peak	P, E1, AY, K
peek	(use "peak" program)
percent	P, ER, S, EH1, EH3, N, T
period	P, I1, R, Y, UH2, D
permanent	P, ER, M, EH2, N, EH1, N, T
person	P, ER, S, UH1, N
personal	P, ER, S, UH3, N, UH2, L
personality	P, ER, S, UH3, N, AE1, UH3, L, I3, T, Y
phase	F, A1, AY, Y, Z
phone	F, O1, U1, N
pick	P, I1, I3, K
pico	P, E1, Y, K, O2, U1
piece	P, E1, Y, S
pint	P, AH1, Y, N, T
pipe	P, UH3, AH2, Y, P
place	P, L, A1, AY, Y, S
plain	(use "plane" program)
plan	P, L, AE1, EH3, N
plane	P, L, A1, AY, Y, N
plant	P, L, AE1, EH3, N, T
play	P, L, A1, I3, Y
please	P, L, E1, Y, Z
plot	P, L, AH1, UH3, T
plus	P, L, UH1, UH2, S
pocket	P, AH1, UH3, K, EH3, T
point	P, O1, UH3, I3, AY, N, T
poke	P, O1, U1, K
police	P, UH1, L, AY, Y, S
plain	(use "plane" program)
plan	P, L, AE1, EH3, N
plane	P, L, A1, AY, Y, N
plant	P, L, AE1, EH3, N, T
play	P, L, A1, I3, Y
please	P, L, E1, Y, Z
plot	P, L, AH1, UH3, T
plus	P, L, UH1, UH2, S
pocket	P, AH1, UH3, K, EH3, T
point	P, O1, UH3, I3, AY, N, T
poke	P, O1, U1, K

police	P, UH1, L, AY, Y, S
policy	P, AH1, UH3, L, I3, S, Y
poor	(use "pour" program)
pop	P, AH1, UH3, P
port	P, 02, 02, R, T
position	P, UH1, Z, I1, SH, UH3, N
positive	P, AH1, UH3, Z, I1, T, I1, V
possible	P, AH1, UH3, S, UH3, B, UH2, L
post	P, 01, U1, S, T
potential	P, 01, T, EH1, EH3, N, T, CH, UH3, L
pound	P, AH1, UH3, W, N, D
pour	P, 01, 02, R
power	P, AH1, UH3, W, ER
practice	P, R, AE1, EH3, K, T, I1, S
premium	P, R, AY, Y, M, Y, UH1, M
prepare	P, R, E1, P, EH1, EH3, R
press	P, R, EH1, EH3, S
pressure	P, R, EH1, SH, ER
prevent	P, R, Y, V, EH1, EH3, N, T
previous	P, R, Y, V, Y, UH1, S
price	P, R, UH3, AH2, Y, S
principal	(use "principle" program)
principle	P, R, I1, N, DT, S, UH3, P, UH3, L
print	P, R, I1, I3, N, T
prior	P, R, AH1, Y, ER
priority	P, R, AH1, Y, 01, R, I3, DT, Y
private	P, R, AH1, EH3, Y, V, I3, T
probe	P, R, 01, U1, B
problem	P, R, AH1, UH3, B, L, UH3, M
procedure	P, R, UH1, S, E1, D, J, ER
proceed	P, R, 01, S, E1, Y, D
process	P, R, AH1, UH3, S, EH1, EH3, S
produce	P, R, UH1, D, IU, U1, U1, S
product	P, R, AH1, UH3, D, UH1, UH2, K, T
progress	P, R, AH1, UH3, G, R, EH1, S
profession	P, R, UH1, F, EH1, EH3, SH, UH3, N
profit	P, R, AH1, UH3, F, I1, T
program	P, R, 01, G, R, AE1, EH3, M
project	P, R, AH1, UH3, D, J, EH2, EH2, K, T
PROM	P, R, AH1, UH3, M
promote	P, R, UH1, M, 01, U1, T
propose	P, R, UH1, P, 01, U1, Z
protect	P, R, UH1, T, EH1, EH3, K, T
public	P, UH1, UH3, B, L, I3, K
pull	P, 001, 001, L
pulse	P, UH1, UH2, L, S
punch	P, UH1, UH2, N, T, CH
purpose	P, R, R, P, EH2, S
purchase	P, R, R, DT, CH, I2, S
pure	P, Y1, IU, ER
push	P, 001, IU, SH
put	P, 001, 001, T
Q	K, Y1, IU, U1, U1
qualify	K, W, AW1, L, I1, F, AH1, EH3, Y

quantity	K, W, AH1, N, T, I3, T, Y
quart	K, W, O1, R, T
quarter	K, W, O1, R, T, ER
quebec	K, W, I1, B, EH1, EH3, K
question	K, W, EH1, EH3, S, T, CH, UH3, N
quick	K, W, I1, I3, K
quiet	K, W, AH1, EH3, AY, I2, T
quit	K, W, I1, I3, T
quiz	K, W, I1, I3, Z
quota	K, W, O1, O2, T, UH1
quote	K, W, O1, U1, T
R	AH1, UH2, ER
rail	R, A1, AY, I3, UH3, L
rain	R, A1, AY, Y, N
raise	R, A1, AY, Y, Z
range	R, A1, AY, Y, N, D, J
radio	R, A1, Y, D, Y, O1, U1
rate	R, A1, AY, Y, T
ratio	R, A1, Y, SH, Y, O1, U1
reach	R, E1, Y, T, CH
read	R, E1, Y, D
ready	R, EH1, EH3, D, Y
real	R, E1, AY, L
reason	R, E1, Y, Z, UH1, N
rebate	R, E1, B, A1, Y, T
recall	R, E1, K, AW2, AW1, L
receipt	R, E1, S, AY, Y, T
receive	R, E1, S, E1, Y, V
record	R, E1, K, O2, O2, R, D
record-2	R, EH1, EH3, K, ER, D
red	R, EH1, EH3, D
reel	(use "real" program)
refer	R, E1, F, UH1, UH2, N, D
refuse	R, E1, F, Y1, IU, U1 U1, Z
register	R, EH1, D, J, I1, S, T, ER
regular	R, EH1, G, Y1, IU, L, ER
rein	(use "rain" program)
reject	R, E1, D, J, EH1, EH3, K, T
relay	R, E1, L, A1, I3, Y
release	R, E1, L, E1, AY, S
remain	R, E1, M, A1, AY, Y, N
remove	R, E1, M, U1, U1, V
repair	R, E1, P, EH2, EH2, R
repeat	R, E1, P, E1, AY, T
replace	R, E1, P, L, A1, AY, Y, S
report	R, E1, P, O2, O2, R, T
represent	R, EH1, P, R, I2, Z, EH1, EH3, N, T
request	R, E1, K, W, EH1, EH3, S, T
require	R, E1, K, W, AH1, EH3, AY, R
requisition	R, EH1, K, W, I2, Z, I1, SH, UH3, N
rescue	R, EH1, EH3, S, K, Y1, IU, U1
resemble	R, E1, Z, EH1, EH3, M, B, UH3, L
reset	R, E1, S, EH1, EH3, T
resistor	R, E1, Z, I1, S, T, ER
respect	R, E1, S, P, EH1, EH3, K, T
respond	R, E1, S, P, AH1, UH3, N, D

responsible	R, I2, S, P, AH1, UH3, N, DT, S, UH3, B, UH3, L
rest	R, EH1, EH3, S, T
restrict	R, E1, S, T, R, I1, I3, K, T
result	R, E1, Z, UH1, UH2, L, T
resume	R, E1, Z, IU, U1, U1, M
retail	R, AY, E1, T, EH3, A1, I3, UH3, L
retain	R, E1, T, A1, AY, Y, N
return	R, E1, T, ER, R, N
revision	R, E1, V, I1, ZH, UH3, N
revolve	R, E1, V, AH1, UH3, L, V
ribbon	R, I2, I3, B, UH3, N
right	R, UH3, AH2, Y, T
romeo	R, O1, U1, M, Y, O1, U1
room	R, U1, U1, M
root	R, U1, U1, T
round	R, AH1, UH3, W, N, D
route	R, UH2, AH2, U1, T
row	R, O1, U1
run	R, UH1, UH3, N
rush	R, UH1, UH2, SH
S	EH1, EH2, S
safe	S, A1, AY, Y, F
sail	(use "sale" program)
salary	S, AE1, AH2, L, UH3, R, Y
sale	S, A1, A2, AY, UH3, L
same	S, A1, AY, Y, M
saturday	S, AE1, EH3, T, ER, D, A1, Y
save	S, A1, AY, Y, V
say	S, A1, I3, Y
scan	S, K, AE1, EH3, N
scent	(use "cent" program)
schedule	S, K, EH1, EH3, D, J, IU, U1, L
school	S, K, U1, U1, L
science	S, AH1, I3, Y, EH3, N, DT, S
score	S, K, O2, O2, R
scrap	S, K, R, AE1, EH3, P
screw	S, K, R, IU, U1, U1
sea	(use "C" program)
seat	S, E1, AY, T
second	S, EH1, EH3, K, UH1, N, D
secret	S, E1, K, R, I3, T
section	S, EH1, EH3, K, SH, UH3, N
security	S, EH1, EH3, K, Y, ER, I1, T, Y
see	(use "C" program)
seize	S, E1, Y, Z
select	S, UH1, L, EH1, EH2, K, T
sell	S, EH1, EH3, L
semi	S, EH1, M, AH1, Y
semicolon	S, EH1, M, AH1, Y, K, OO1, O1, L, I2, N
send	S, EH1, EH3, N, D
sent	(use "cent" program)
sentence	S, EH1, N, T, I2, N, DT, S
separate	S, EH1, EH3, P, UH1, R, A1, AY, T
separate-2	S, EH1, EH3, P, R, I2, T

september	S, EH1, EH3, P, T, EH1, EH3, M, B, ER
sequence	S, E1, K, W, EH1, EH3, N, S
serial	S, I1, R, Y, UH3, L
series	S, I1, R, Y, Z
service	S, ER, V, I1, S
set	S, EH1, EH3, T
seven	S, EH1, EH3, V, I2, N
seventh	S, EH1, EH3, V, I2, N, DT, TH
seventy	S, EH1, V, I2, N, D, Y
several	S, EH1, V, ER, UH3, L
sew	(use "so" program)
share	SH, EH3, EH3, ER
sharp	SH, AH1, R, P
shift	SH, I1, I3, F, T
ship	SH, I1, I3, P
shop	SH, AH1, UH3, P
short	SH, O2, O2, R, T
should	SH, IU, IU, IU, D
shunt	SH, UH1, UH2, N, T
shut	SH, UH1, UH2, T
side	S, AH1, EH3, Y, D
sierra	S, E1, I3, EH1, R, UH1
signal	S, I1, I3, G, N, UH3, L
silver	S, I1, I3, L, V, ER
single	S, I1, I3, NG, G, UH3, L
six	S, I1, I3, K, PAO, S
sixth	S, I1, I3, K, PAO, S, TH
sixty	S, I1, I3, K, PAO, T, Y
size	S, AH1, EH3, Y, Z
skin	S, K, I1, I3, N
sky	S, K, AH1, EH3, I3, Y
slang	S, L, AE1, EH3, NG
slash	S, L, AE1, EH3, SH
slave	S, L, A1, AY, Y, V
slip	S, L, I1, I3, P
slow	S, L, O1, U1
small	S, M, AW, L
smell	S, M, EH1, EH3, L
smile	S, M, AH1, EH3, I3, UH3, L
smoke	S, M, O1, U1, K
snow	S, N, OO1, O2, U1
so	S, OO1, O2, U1
soft	S, AW, F, T
sold	S, O2, O2, L, L, D
solid	S, AH1, UH3, L, I1, D
son	(use "sun" program)
some	(use "sum" program)
sorry	S, AW, R, Y
sort	S, O2, O2, R, T
sound	S, AH1, UH3, W, N, D
source	S, O1, O2, R, S
south	S, AH1, UH3, U1, TH
space	S, P, A1, AY, Y, S
spark	S, P, AH1, R, K
speak	S, P, E1, AY, K
special	S, P, EH1, EH3, SH, UH3, L
speed	S, P, E1, Y, D
speech	S, P, E1, Y, T, CH
spell	S, P, EH1, EH3, L

spend	S, P, EH1, EH3, N, D
split	S, P, L, I1, I3, T
spoon	S, P, U1, U1, N
spring	S, P, R, I1, I3, NG
square	S, K, W, EH1, R
stack	S, T, AE1, EH3, K
stair	(use "stare" program)
stand	S, T, AE1, EH3, N, D
standard	S, T, AE1, EH3, N, D, ER, D
star	S, T, AH1, UH3, R
stare	S, T, EH3, EH3, ER
start	S, T, AH1, R, T
state	S, T, A1, AY, Y, T
station	S, T, A1, Y, SH, UH3, N
status	S, T, AE1, EH3, T, I2, S
steal	(use "steel" program)
steel	S, T, E1, Y, L
step	S, T, EH1, EH3, P
stick	S, T, I1, I3, K
stock	S, T, AH1, UH3, K
stop	S, T, AH1, UH3, P
store	S, T, O2, O2, R
strait	(use "straight" program)
straight	S, T, R, A1, AY, Y, T
street	S, T, R, E1, Y, T
stress	S, T, R, EH1, EH3, S
string	S, T, R, I1, I3, NG
structure	S, T, R, UH1, K, T, CH, ER
style	S, T, AH1, EH3, AY, UH3, L
subject	S, UH1, UH2, B, D, J, EH1, EH3, K, T
substitute	S, UH1, UH3, B, S, T, I3, T, IU, U1, T
subtract	S, UH1, UH2, B, T, R, AE1, EH3, K, T
sufficient	S, UH1, F, I1, SH, EH3, N, T
suggest	S, UH1, UH2, G, D, J, EH1, EH3, S, T
suit	S, IU, U1, T
suite	S, W, AY, Y, T
sum	S, UH1, UH2, M
summary	S, UH2, UH2, M, ER, Y
summer	S, UH1, UH2, M, ER
sun	S, UH1, UH2, N
sunday	S, UH1, UH2, N, D, A1, I3, Y
super	S, IU, U1, P, ER
supply	S, UH2, P, L, AH1, Y
surface	S, ER, F, I2, S
surge	S, ER, R, D, J
surgery	S, ER, D, J, ER, Y
surgical	S, ER, D, J, UH3, K, UH3, L
surplus	S, ER, P, L, UH1, S
suspend	S, UH1, S, P, EH1, EH3, N, D
sweep	S, W, E1, Y, P
sweet	(use "suite" program)
switch	S, W, I1, I3, T, CH
syntax	S, I1, N, T, AE1, EH3, K, PAO, S
system	S, I1, S, T, UH3, M

T	T, E1, AY, Y
table	T, A1, Y, B, UH3, L
tail	(use "tale" program)
tale	T, A1, Y, UH3, L
talk	T, AW, K
tangent	T, AE1, EH3, N, D, J, EH3, N, T
target	T, AH1, UH3, R, G, I2, T
tea	(use "T" program
team	T, E1, Y, M
technical	T, EH1, EH3, K, N, I3, K, UH3, L
tee	(use "T" program)
temperature	T, EH1, EH3, M, P, ER, UH1, T, CH, ER
ten	T, EH1, EH3, N
terminal	T, ER, M, EH3, N, UH2, L
test	T, EH1, EH3, S, T
than	THV, EH1, EH3, N
the	THV, UH1, UH3
then	(use "than" program)
theory	TH, AY, I2, R, Y
thin	TH, I1, I3, N
thing	TH, I1, I3, NG
think	TH, I1, I3, NG, K
third	TH, ER, R, D
thirteen	TH, ER, T, T, E1, Y, N
thirty	TH, ER, R, D, Y
thousand	TH, AH1, UH3, U1, Z, EH3, N, D
three	TH, R, E1, Y
threw	(use "through" program)
through	TH, R, IU, U1
thursday	TH, ER, R, Z, D, A1, I3, Y
ticket	T, I1, I3, K, EH3, T
till	T, I1, I3, L
time	T, AH1 EH3, Y, M
tire	T, AH1, EH3, AY, R
title	T, UH3, AH2, Y, T, UH3, L
to	(use "two" program)
today	T, U1, D, A1, I3, Y
toilet	T, O1, EH3, I3, L, I3, T
toll	T, O2, O2, OO1, L
tomorrow	T, U1, M, AH1, R, O1, U1
ton	T, UH1, UH2, N, N
tone	T, O1, U1, N
too	(use "two" program)
tool	T, U1, U1, L
total	T, O1, U1, T, UH3, L
touch	T, UH1, UH3, T, CH
towel	T, AH1, W, UH3, L
trace	T, R, A1, AY, Y, S
trade	T, R, A1,. AY, Y, D
train	T, R, A1, AY, Y, N
transact	T, R, AE1, EH3, N, S, AE1, EH3, K, T
transfer	T, R, AE1, EH3, N, S, F, ER
transistor	T, R, AE1, N, Z, I1, S, T, ER
transmit	T, R, AE1, EH3, N, Z, M, I1, I3, T
transport	T, R, AE1, EH3, N, S, P, O2, O2, R, T
transportation	T, R, AE1, N, S, P, ER, T, A1, AY, SH, UH3, N

travel	T, R, AE1, EH3, V, UH3, L
triangle	T, R, AH1, I3, AE1, EH3, NG, G, UH3, L
trouble	T, R, UH3, UH1, B, UH3, L
truck	T, R, UH1, UH2, K
true	T, R, IU, U1, U1
trust	T, R, UH1, UH2, S, T
try	T, R, AH1, EH3, I3, Y
tuesday	T, IU, U1, U1, Z, D, A1, Y
tune	T, IU, U1, U1, N
turn	T, ER, R, N
twelve	T, W, EH1, EH3, UH3, L, V
twenty	T, W, EH1, EH3, N, T, Y
two	T, IU, U1, U1
type	T, UH3, AH2, Y, P
U	Y1, IU, U1, U1
ultra	UH3, UH2, L, T, R, UH1
under	UH2, UH2, N, D, ER
uniform	Y1, IU, U1, N, I3, F, O1, R, M
until	UH2, UH2, N, T, I1, I3, L
up	UH1, UH2, P
urgent	R, R, D, J, I3, N, T
us	UH1, UH2, S
use	Y1, IU, U1, U1, Z
use-2	Y1, IU, U1, S
V	V, E1, AY, Y
vacant	V, A1, Y, K, EH3, N, T
valid	V, AE1, UH3, L, I1, D
vary	(use "very" program)
value	V, AE1, EH3, L, Y1, IU, U1
vendor	V, EH1, EH3, N, D, ER
vent	V, EH1, EH3, N, T
verify	V, EH1, R, I3, F, AH1, EH3, Y
very	V, EH1, R, Y
via	V, E1, AY, UH2, UH3
victor	V, I1, I3, K, T, ER
voice	V, O1, UH3, I3, AY, S
void	V, O1, UH3, I3, AY, D
volt	V, O2, O2, L, T
volume	V, AH1, UH3, L, Y1, IU, U1, M
W	D, UH1, B, UH3, L, Y1, IU, U1
wage	W, A1, AY, Y, D, J
wait	W, A1, AY, Y, T
want	W, AH1, UH3, N, T
was	W, UH1, UH3, Z
wash	W, AW, SH
water	W, AH1, UH3, T, ER
watt	W, AH1, UH3, T
wave	W, A1, AY, Y, V
way	(use "weigh" program)
we	W, E1, Y
weak	(use "week" program)
weapon	W, EH2, EH2, P, UH1, N
wear	(use "where" program)
wednesday	W, EH1, N, Z, D, A1, I3, Y
week	W, E1, Y, K
weigh	W, A2, A2, Y

weight	(use "wait" program)
went	W, EH1, EH3, N, T
west	W, EH1, EH3, S, T
wet	W, EH1, EH3, T
what	W, UH3, UH1, T
wheel	W, E1, Y, L
when	W, EH1, EH3, N
where	W, EH3, A2, EH3, R
which	W, I1, I3, T, CH
while	W, AH1, EH3, I1, UH3, L
whiskey	W, I1, I3, S, K, AY, Y
white	W, UH3, AH2, Y, T
who	H, IU, U1, U1
whole	(use "hole" program)
why	(use "Y" program)
will	W, I1, I3, L
window	W, I1, N, D, O1, U1
winter	W, I1, I3, N, T, ER
wire	W, AH1, EH3, AY, R
with	W, I1, I3, TH
withdraw	W, I1, I3, TH, D, R, AW
without	W, I1, I3, TH, UH2, AH2, U1, T
won	(use "one" program)
word	W, ER, R, D
work	W, ER, R, K
write	(use "right" program)
wrong	R, AW, NG
X	EH1, EH2, K, PAO, S
x-ray	EH1, EH2, K, PAO, S, R, A1, I3, Y
Y	W, AH1, EH3, I3, Y
yankee	Y1, AE1, EH3, NG, K, E1, Y
yard	Y1, AH1, R, D
year	Y1, AY, I3, R
yellow	Y1, EH1, EH3, L, O1, U1
yes	Y1, EH3, EH1, S
yesterday	Y1, EH3, EH1, S, T, ER, D, A1, I3, Y
yet	Y1, EH1, EH3, T
you	(use "U" program)
your	Y, O2, O2, R
you're	(use "your" program)
Z	Z, E1, Y
zap	Z, AE1, EH3, P
zero	Z, AY, I1, R, O1, U1
zone	Z, O1, U1, N
zulu	Z, IU, U1, L, IU, U1

PREFIXES

Prefixes	
con...	K, UH1, N
dis...	D, I1, S
en...	EH1, N
in...	I1, N
non...	N, AH1, UH3, N
pre...	P, R, E1
re...	R, E1
un...	UH1, N

Suffixes	
...d	D
...ed	I2, D
...er	ER
...es	I2, Z
...ful	F, UH3, L
...ing	I2, NG
...less	L, EH2, S
...ly	L, Y
...ment	M, EH3, N, T
...ness	N, EH3, S
...s	S
...t (...ed)	T
...tion (...sion)	SH, UH3, N
...teen	T, E1, Y, N
...ward	W, ER, D
...y	Y
...z (...es)	Z